Public Service Commission
Clyde Eisenbeis Complaint
Case No. RC-22-339

Exhibit No.	Document Name
PSC-1	PSC 6-13-19 Response to Formal Complaint
PSC-2	Revision 30 documents
PSC-3	August 18 2011 Inspection Report
PSC-4	August 31 2011 Inspection Report
PSC-5	September 16-17 2014 Inspection Report
PSC-6	April 26 2018 Inspection Report
PSC-7	June 28 2022 Inspection Report
PSC-8	USGS Drainages on 1958 Aerial Photo
PSC-9	Eisenbeis 1958 aerial photo_Sec 34-146-88
PSC-10	Surface Water Management - Watersheds and Ponds
PSC-11	Pre-Mine Watersheds and Flow Path
PSC-12	Post-Mine_Watersheds and Flow Line
PSC-13	Post-Mine Total Watershed Runoff
PSC-14	Pre-Mining Land use and Vegetation Map
PSC-15	Emmer_Hydrology_Modeling for Watersheds 14-14 and 14-15
PSC-16	Houston Engineering Inc Technical Memorandum Case RC-22-339
PSC-17	Watershed Disturbed by Mining
PSC-18	ND-MR-3 Precipitation 8-21-14 through 8-27-14
PSC-19	DOH_correspondence_April 2011_pond_overflows
PSC-20	DOH_correspondence_May 2011_pond overflows
PSC-21	Hydrographs

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Exhibit No.	Document Name
PSC-22	Antelope Creek Aquifer Potentiometric Maps upper unit
PSC-23	Antelope Creek Aquifer Potentiometric Maps lower unit
PSC-24	Antelope Creek Aquifer Cross Section
PSC-25	Curriculum Vitae Guy A. Welch
PSC-26	Curriculum Vitae Jeffery A. Roerick
PSC-27	Curriculum Vitae Preston J. Ripplinger
PSC-28	Curriculum Vitae Jonathan W. Emmer

PSC - 1

Public Service Commission
State of North Dakota

COMMISSIONERS
Brian Kroshus
Julie Fedorchak
Randy Christmann

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

June 13, 2019

Mr. Clyde Eisenbeis
2819 Horgan Drive
Bismarck, ND 58503

Dear Mr. Eisenbeis:

The North Dakota Public Service Commission (Commission) has reviewed your filing, dated May 15, 2019, regarding your land located in the NW¼ of Section 34, T146N, R88W.

Upon review of your filing, the requested manner to process this filing is unclear. However, based upon the Reclamation Division's July 23, 2018 response and the filing's citation (69-05.2-28-01 and 69-05.2-28-02), the Commission is administratively processing this as a request for informal review. On June 12, 2019, the Commission informally reviewed and discussed your filing during a work session on June 12, 2019 and asked me to respond to you.

Your property is located off-permit and adjacent to Surface Coal Mining Permit NACT-9501 at the Coteau Properties Freedom Mine. The E½ of Section 34 is part of Surface Coal Mining Permit NACT-9501. Portions of the permitted area in the E½ of Section 34 were mined and reclaimed. Sedimentation ponds P-H34-04 and P-H34-05 were also constructed in the NE¼ of Section 34 upstream of your property in 1999 and 2004, respectively. The purpose of sedimentation ponds is to detain surface runoff from mine disturbance areas until it meets the required effluent or discharge standards. During active mining operations, Coteau routed discharges from these ponds around your property through pipes to the main drainage channel in the NW¼ of Section 34. Sedimentation pond P-H34-04 was removed and reclaimed in 2013 and sedimentation pond P-H34-05 was removed and reclaimed in 2015.

Many of the points in your filing were previously addressed in the Reclamation Division's July 23, 2018 letter to you. A copy of that letter is attached (Attachment 1) and serves as part of our response; however, each of your specific complaints is addressed below. Also in response to your earlier concerns, we requested additional information from Coteau (see Attachment No. 2)

regarding the diversion/road ditch and erosion on your property. Coteau's response is provided in Attachment No. 3.

Complaint No. 1: *Constructed a diversion ditch on farmland creating a new affected area outside the permit area without a PSC permit revision and without Landowner consent, no associated reclamation plan or performance bond, and resulted in loss of crop income.*

Reclamation Division staff noted on several occasions an existing diversion located on the east side of your property in the NW¼ of Section 34 (off-permit). We are uncertain who constructed this diversion or when it was constructed; however, it was in place well before the adjacent area was permitted, mined, and reclaimed. This diversion flowed to the north until it intercepted the south road ditch of the road between the NW¼ of Section 34 and the SW¼ of Section 27.

On August 28, 2007, Coteau submitted the application for Revision No. 30 to Surface Coal Mining Permit NACT-9501. This revision proposed changes to the postmine topography and watershed boundaries in the NE¼ of Section 34. The size of watershed 14-14 (most of the area controlled by sediment pond P-H34-04) decreased slightly (5 acres smaller than premine) but the size of watershed 14-15 (most of the area controlled by sediment pond P-H34-05) was increased by 132 acres. The combined area of watersheds (14-4 and 14-15) increased by a total of 127 acres. Revision No. 30 also proposed some land use changes for the NE¼ of Section 34 including changing the postmine land use of a portion of the watersheds from cropland to native grassland. Attachment 1 includes maps depicting pre- and post-mine watersheds 14-14 and 14-15.

Due to the changes proposed by Revision No. 30 (increased watershed size and changes to the post mine topography), Coteau was asked to provide additional documentation that downstream areas would not be adversely affected by the increased watershed size of watershed 14-15. Coteau updated the Probable Hydrologic Consequences (PHC) section of the permit to address these concerns. Their analysis compared the premine watershed characteristics to those proposed in Revision 30. A standard and commonly accepted watershed flow model was used to predict runoff velocity and volumes from the revised watershed areas and these values were compared to the premine conditions using the same models. Attachment 1 includes the results of that modeling (Table 3 of Section 2.2.5 of Permit NACT-9501).

The model predicted the peak discharge rate (velocity measured in cubic feet per second or cfs) and total runoff volume measured in acre-feet (ac-ft). Three different rainfall events were modeled: a 2-year, 24 hour rainfall event (1.93"), a 10-year, 24 hour rainfall event (3.12"), and a 25-year, 24 hour rainfall event (3.63"). Peak discharge and total runoff volumes were calculated at the control point (the point where the sedimentation ponds would have discharged) for each watershed and then for the combined flow of both watersheds. The combined total discharge rate and flow volume is simply the sum of the two watersheds. While the calculated peak

discharge and total runoff volume of watershed 14-15 increased over premine conditions, the peak discharge and total runoff volume of watershed 14-14 decreased, and the sum total peak discharge and total runoff volume for both watersheds (or that which would flow in the diversion) actually decreased.

As part of our review of Revision No. 30, Reclamation Division staff have reviewed the flow modeling provided by Coteau and have determined the parameters and assumptions used were appropriate and reflected the actual conditions. In response to your concerns, staff again modeled both watersheds and the results of our independent modeling are similar to those provided by Coteau in Revision 30. The results of our modeling are also included in Attachment 1.

Our analysis shows that even though the total combined watershed size increased after reclamation, the expected total flow rates and volumes are less than the premine condition. This is due to a number of reasons but is primarily due to the reclaimed or postmine watersheds being less steep than the premine watersheds. The premine average slope of watershed 14-15 was 12.7% and the postmine average slope is 4.4%. In addition, the soils with a higher runoff potential (shallow and claypan soils) that were common in the premine watershed were replaced with deeper, loamy soils with higher infiltration rates and lower runoff potential. In addition, there is less cropland and more native grassland in the reclaimed watershed than in the premine watershed. The perennial native grassland vegetation generally has a lower runoff potential than cropland.

North Dakota Century Code 38-14.1-24(8) requires that mining companies "minimize disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation." As part of Revision No. 30, the Reclamation Division determined that although the combined watershed size increased following mining and reclamation, the combined peak discharges and total runoff volume decreased or was near premine conditions. Therefore, there would be no adverse effects to the downstream areas as a result of the changes proposed in Revision No. 30. Revision No. 30 was approved on January 9, 2009.

As previously stated, the original diversion was constructed many years prior to mining and reclamation. At the time that Revision No. 30 to Permit NACT-9501 was approved, Coteau demonstrated that the changes proposed by Revision No. 30 would not have adverse effects on downstream areas and the Reclamation Division concurred. The condition or the functionality of the existing diversion on your property was not evaluated at that time since the Reclamation Division found that the actions proposed by Revision 30 would not result in adverse effects to downstream areas, i.e., the calculated combined flows of reclaimed watersheds 14-14 and 14-15

are less than the premine condition. Our re-analysis of this finding in response to your concerns reaffirms our original finding made in 2009 when Revision No. 30 was approved.

The Reclamation Division was not involved in the reconstruction of this diversion and continues to view this issue as a matter between Coteau and the landowner. We do not view reconstruction of the diversion as a mining related matter and therefore, it is not subject to our jurisdiction nor was it an activity that required to be permitted.

Complaint No. 2: *Discharged more than 7 billion gallons of surface coal mine disturbed area pond water from within the permit area onto the adjacent farmland which resulted in gullies, loss of topsoil, and loss of crop income from the farmland (impact outside the permit area without a PSC permit revision and Landowner consent.*

It appears that the pond discharges listed on Appendix F of your complaint are **all** of the pond discharges from the Freedom Mine for the time period of January 1, 2011 through June 25, 2018. Currently there are 68 active discharge points (sediment ponds) at the Freedom Mine and only a small portion of the discharge points drain to your property. A total of eight discharge points, discharge points no. 38 (Sump S-I02-01), 47 (Pond P-I02-02), 50 (Pond P-I03-01), 59 (Pond P-H34-01), 61 (Pond P-34-04), 85 (Pond P-H34-05), 148 (Pond P-W11-01), and 155 (Pond P-W03-04), are the only discharge points/ponds that could have discharged to your property, all of the other discharge points/ponds discharged to other watersheds. Of the 8 discharge points/ponds, all have been reclaimed with the exception of Ponds P-W11-01 and P-W03-04. As previously stated, pond discharges from sedimentation ponds P-H34-04 and P-H34-05 were routed around your property via a pipe discharge during mining and reclamation. Only when these ponds overflowed, did they flow through the old field-engineered diversion and/or across your property.

It should be noted any pit water (i.e., groundwater) encountered in the west mine area of the Freedom Mine is pumped to the legal drain/Antelope Creek which flows to the south, away from your property. It should also be noted that sedimentation ponds only detain surface runoff that would otherwise have flowed down the natural drainages had the ponds not been in place. Generally, the water in the sedimentation ponds is eventually discharged when it meets the required North Dakota Department of Environmental Quality discharge standards. So the effect of the sedimentation ponds on hydrologic balance is to delay the timing of the flow event to the downstream drainage. Sedimentation ponds do not necessarily increase the volume of water that flows through a drainage system, it only affects the timing of the flow event.

There is evidence that there has been a long-term erosion problem in the NW¼ of Section 34. Historical aerial photographs provide evidence of erosion prior to mining and reclamation. Google Earth contains aerial photos dating back to 1995, prior to any mining having taken place in the watersheds above your property. The 1995 aerial photo shows the same erosion and

drainage patterns as pointed out on Page 9 of 17 of the PSC and OSMRE Complaint: Eisenbeis Farmland. In addition, Attachment No. 4 includes aerial photos from 1977 and 1996 that show similar erosion and drainage patterns. We believe the field-engineered diversion was constructed as an attempt to minimize runoff and reduce erosion well before the adjacent area was permitted, mined, and reclaimed. As previously pointed out, runoff from the upstream areas was routed around your property during mining and reclamation activities via pipe discharges to natural drainage at the north end of property. Runoff from upstream areas continues to be routed around property via the reconstructed diversion.

On page 10 of 17 of the complaint, you provide a map showing elevations of your property in 1970 and 2015. You allege that the differences between the two surveys is due to erosion on your property. Although there are some slight differences in elevation, we believe this is most likely due to differences in technology. Please note that the 1970 contours (red color) are on a ten-foot elevation contour, i.e., there is ten feet of elevation difference between elevation contours. The 2015 contours are on a 2-foot elevation contour and were most likely derived from LIDAR, a much more sophisticated and accurate method of producing surface contour maps. The index contours (elevations 1890, 1900, 1910, and 1920) for the two surveys actually align very well. We believe that the slight differences between the two surveys is the result of different survey methodologies and accuracies and not the result of erosion.

The only time when there would have been flows across your property from the upstream areas east of your property during mining and reclamation is when the ponds overflowed due to a significant runoff event in excess of the design standards. The ponds were designed to contain a 10-year/24-hour storm event. Pond overflows are acceptable provided that water levels of the ponds are maintained at a level below which an adequate amount of water storage is provided to contain a 10-year/24-hour storm event.

We are aware that the rebuilt diversion overflowed twice, both times in 2014. One overflow event took place on the south end of the reconstructed diversion and was likely due to snow blocking the diversion channel making it non-functional during a snowmelt event. The other overflow event took place in August 2014 following a significant rainfall event in excess of the design standard that caused sediment pond P-H34-05 to overflow. The watershed 14-15 outlet into the reconstructed diversion washed out causing the diversion to overtop. The pond overflow was not considered a violation since adequate storage was provided in sediment pond P-34-05 to contain a 10-year/24-hour event. We are aware that the erosion associated with these events was repaired by Coteau.

Any erosion that has taken place while the diversion has been functioning as intended (i.e., taking runoff water from upstream areas around the east side of your property), is not likely to have been caused by runoff from the upstream watersheds. Simply put, the diversion prevents runoff from the areas above the diversion from flowing across your property. Therefore, the

erosion observed on the cropland portion of your property is not caused by runoff from the upstream portions of the watershed as the runoff from the upstream areas (Coteau property) is intercepted by the diversion and does not flow across the cropland portion of your property.

The Reclamation Division has determined that Coteau conducted mining and reclamation activities in the watersheds above your property in the NW¼ of Section 34 in accordance with our surface coal mining laws and regulations. The Commission cannot require Coteau to repair erosion that is not the result of mining and reclamation activities.

Complaint No. 3: *This same 7 billion gallons of surface coal mine disturbed area pond from within the permit area water entered the farmland creek which resulted in flooding the southwest corner of the farmland which caused the loss of crop income (impact outside the permit area, without a PSC permit revision and without Landowner consent).*

As stated in our response to Complaint No. 2, only a small fraction of the discharges from the Freedom Mine listed in Appendix F actually flowed through your property. Water discharged from ponds P-H34-04 and P-H34-05 while they were in place would not have affected the drainage channel through your property as these ponds were discharged via pipe around your property and entered the natural drainage at the very north edge of your property and continued to flow to the north through the natural drainage to Lake Sakakawea. Currently, only discharges from ponds P-W11-01 and P-W03-04 would flow through your property and those discharges flow through the natural drainage that runs through the center portion of your property.

To date, there have been no mine pond discharges to the western-most drainage channel (the cattail area is located in or near this drainage channel) through your property. Flows in the western-most drainage channel are from an entirely undisturbed watershed located south and west of your property. A significant portion of this watershed is not even within the permit area.

Complaint No. 4: *Modified a Mercer County road ditch making it deeper in order to convey the large volume of water discharge away from the coal mine that resulted in blockage of historical direct ramp access to the farmland (such construction was done outside the permit area without a PSC permit revision, without Landowner consent, and without a Mercer County permit)*

Similar to the construction of the diversion, we view the deepening of the road ditch and property access as a matter between Coteau and the landowner. We do not view it as a mining related matter and as such is not jurisdictional to the Commission.

Although mining and reclamation activities modified the watersheds upstream of your property, we believe the demonstration has been made that Coteau has minimized disturbances to the prevailing hydrologic balance at the mine site and associated offsite areas as required by North Dakota Century Code 38-14.1-24(8). Any erosion on your property that was the result of mining

or reclamation activities (overtopping of the diversion) has been repaired. Staff continues to monitor this area during routine mine inspections. At this time, we do not believe that a joint inspection is necessary.

This informal review does not affect an opportunity to request a formal review under North Dakota Century Code section 38-14.1-30, or to a citizen's suit under North Dakota Century Code section 38-14.1-40. If the intent was to file a formal complaint subject to an adjudicative process, please see the attached document, "Filing A Formal Complaint" (Attachment No. 4).

Please feel free to contact our office if you have any questions.

Sincerely,

Dean K. Moos
Director, Reclamation Division

Attachments: 1) July 23, 2018 Letter to Mr. Eisenbeis w/ Attachments
2) May 14, 2018 Letter from the Reclamation Division to Coteau
3) June 19, 2018 Response Letter from Coteau to the Reclamation Division
4) Document "Filing a Formal Complaint"

cc: Jeff Fleischman
David Berry
Sarah Flath

Minedata/Freedom/FormalComplaint/2019/Informal_Review_ltr_to_Eisenbeis_6-13-19

Public Service Commission
State of North Dakota

COMMISSIONERS

Randy Christmann
Julie Fedorchak
Brian Kroshus

Executive Secretary
Darrell Nitschke

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

July 23, 2018

Mr. Clyde Eisenbeis
2819 Horgan Drive
Bismarck, ND 58503

Dear Mr. Eisenbeis:

The Reclamation Division has reviewed your concerns regarding your land located in the NW¼ of Section 34, T146N, R88W, as outlined in your May 4, 2018 email. Your property is located off-permit and adjacent to Surface Coal Mining Permit NACT-9501 at the Coteau Properties Freedom Mine.

The main issues you raise are: the diversion that was reconstructed on your property; access to your property; erosion on your property; and wet areas within your property.

The E½ of Section 34 is part of Surface Coal Mining Permit NACT-9501. Portions of the permitted area in the E½ of Section 34 were mined and reclaimed. Sedimentation ponds P-H34-04 and P-H34-05 were also constructed in the NE¼ of Section 34 upstream of your property in 1999 and 2004, respectively. The purpose of sedimentation ponds is to detain surface runoff from mine disturbance areas until it meets the required effluent or discharge standards. During active mining operations, Coteau routed discharges from these ponds around your property through pipes to the main drainage channel in the NW¼ of Section 34. Sedimentation pond P-H34-04 was removed and reclaimed in 2013 and sedimentation pond P-H34-05 was removed and reclaimed in 2015.

Reclamation Division staff noted on several occasions an existing diversion located on the east side of your property in the NW¼ of Section 34 (off-permit). This diversion flowed to the north until it intercepted the south road ditch of the road between the NW¼ of Section 34 and the SW¼ of Section 27. We are uncertain who constructed this diversion and when it was constructed but it appears to have been in place for a long time. We assume that it was constructed to alleviate erosion on the downstream areas in the NW¼ of Section 34. Historic

aerial photography indicates well-defined erosion patterns in the NW¼ of Section 34, well before the area was permitted, mined, and reclaimed.

On August 28, 2007, Coteau submitted the application for Revision No. 30 to Surface Coal Mining Permit NACT-9501. This revision proposed changes to the postmine topography and watershed boundaries in the NE¼ of Section 34. The size of watershed 14-14 (most of the area controlled by sediment pond P-H34-04) decreased slightly (5 acres smaller than premine) but the size of watershed 14-15 (most of the area controlled by sediment pond P-H34-05) was increased by 132 acres. The combined area of watersheds (14-4 and 14-15) increased by a total of 127 acres. Revision No. 30 also proposed some land use changes for the NE¼ of Section 34 including changing the postmine land use of a portion of the watersheds from cropland to native grassland. Attached are maps depicting pre- and post-mine watersheds 14-14 and 14-15.

Due to the changes proposed by Revision No. 30 (increased watershed size and changes to the post mine topography), Coteau was asked to provide additional documentation that downstream areas would not be adversely affected by the increased watershed size of watershed 14-15. Coteau updated the Probable Hydrologic Consequences (PHC) section of the permit to address these concerns. Their analysis compared the premine watershed characteristics to those proposed in Revision 30. A standard and commonly accepted watershed flow model was used to predict runoff velocity and volumes from the revised watershed areas and these values were compared to the premine conditions using the same models. Attached are the results of that modeling (Table 3 of Section 2.2.5 of Permit NACT-9501).

The model predicted the peak discharge rate (velocity measured in cubic feet per second or cfs) and total runoff volume measured in acre-feet (ac-ft). Three different rainfall events were modeled: a 2-year, 24 hour rainfall event (1.93"), a 10-year, 24 hour rainfall event (3.12"), and a 25-year, 24 hour rainfall event (3.63"). Peak discharge and total runoff volumes were calculated at the control point (the point where the sedimentation ponds would have discharged) for each watershed and then for the combined flow of both watersheds. The combined total discharge rate and flow volume is simply the sum of the two watersheds. While the calculated peak discharge and total runoff volume of watershed 14-15 increased over premine conditions, the peak discharge and total runoff volume of watershed 14-14 decreased, and the sum total peak discharge and total runoff volume for both watersheds (or that which would flow in the diversion) actually decreased.

The Reclamation Division staff have reviewed the flow modeling provided by Coteau and have determined the parameters and assumptions used were appropriate and reflected the actual conditions. In response to your concerns, staff again modeled both watersheds and the results of our independent modeling are similar to those provided by Coteau in Revision 30. A copy of our analysis is attached.

Our analysis shows that even though the total combined watershed size increased after reclamation, the expected total flow rates and volumes are less than the premine condition. This is due to a number of reasons but is primarily due to the reclaimed or postmine watersheds being less steep than the premine watersheds. The premine average slope of watershed 14-15 was 12.7% and the postmine average slope is 4.4%. In addition, the shallow and claypan soils that were common in the premine watershed were replaced with deeper, loamy soils with higher infiltration rates. In addition, there is less cropland and more native grassland in the reclaimed watershed than in the premine watershed. The perennial native grassland vegetation generally has a lower runoff potential than cropland.

North Dakota Century Code 38-14.1-24(8) requires that mining companies "minimize disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems both during and after surface coal mining operations and during reclamation." As part of Revision No. 30, the Reclamation Division determined that although the combined watershed size increased following mining and reclamation, the combined peak discharges and total runoff volume decreased or was near premine conditions. Therefore, there would be no adverse effects to the downstream areas as a result of the changes proposed in Revision No. 30. Revision No. 30 was approved on January 9, 2009.

As previously stated, pond discharges were routed around your property via a pipe discharge during mining and reclamation. Only when the ponds overflowed, did they flow through the old field-engineered diversion. Coteau has indicated that they were approached by the tenant Wayne Eisenbeis in 2010 and 2011 about the erosion in the NW¼ of Section 34. It should be noted that this erosion had taken place while the pond discharges were being routed around the NW¼ of Section 34. In 2011, the tenant reportedly also asked that the diversion be rebuilt to prevent the re-occurring erosion. The diversion was re-built by Coteau in late 2012. Coteau indicated that they have repaired erosion on your property in 2010, 2011, and 2014. In addition, grassed waterways were installed by Coteau on your property in 2015; however, they have been farmed through.

Attached to this letter is a copy of the April 26, 2018 inspection report that you and the current renters participated in.

Each of your specific concerns is addressed separately below:

The diversion that was reconstructed on your property: As previously stated, the original diversion was constructed many years prior to mining and reclamation. At the time that Revision No. 30 to Permit NACT-9501 was approved, Coteau demonstrated that the changes proposed by Revision No. 30 would not have adverse effects on downstream areas and the Reclamation Division concurred. The condition or the functionality of the existing diversion on your property

was not evaluated at that time since the Reclamation Division found that the actions proposed by Revision 30 would not result in adverse effects to downstream areas, i.e., the calculated combined flows of reclaimed watersheds 14-14 and 14-15 are less than the premine condition. Our re-analysis of this finding in response to your concerns reaffirms our original finding made in 2009 when Revision No. 30 was approved.

It is our understanding that the tenant at the time asked Coteau to reconstruct the diversion and south road ditch. The Reclamation Division was not involved in the reconstruction of this diversion and continues to view this issue as a matter between Coteau and the landowner. We do not view reconstruction of the diversion as a mining related matter and therefore, it is not subject to our jurisdiction.

However, in our review of the matter, we concluded that Coteau should reconfigure the upstream drainage channel from watershed 14-15 into the reconstructed diversion channel. This is discussed further under **Required Action** near the end of this letter.

Access to your property: You have requested that the creflex crossing on the north side of your property be replaced with an approach to improve access. The creflex crossing was previously installed by Coteau shortly after the diversion/road ditch had been reconstructed. Coteau has indicated that they were willing to build the approach provided you sign the agreement they prepared. You indicate that you provided them with your permission to construct the approach. We encourage you and Coteau to resolve this issue to both parties' satisfaction. As with the reconstructed diversion, we do not view the road ditch and access as a mining related matter that is jurisdictional to the Commission.

Repair of erosion: There is evidence that there has been a long-term erosion problem in the NE¼NW¼ of Section 34. Historical aerial photographs provide evidence of erosion prior to mining and reclamation. We believe that is why the field-engineered diversion was constructed in the first place. During mining and reclamation, runoff from the upstream areas was routed around your property. The only time when there would have been flows across your property from the upstream areas is when the ponds overflowed due to a significant runoff event in excess of the design standards. We are aware that the rebuilt diversion overflowed twice, both times in 2014. One overflow event took place on the south end of the reconstructed diversion and was likely due to snow blocking the diversion channel making it non-functional during the snow melt event. The other overflow event took place in August 2014 following a significant rainfall event in excess of the design standard that caused sediment pond P-H34-05 to overflow. The watershed 14-15 outlet into the reconstructed diversion washed out causing the diversion to overtop. We are aware that the erosion associated with these events was repaired by Coteau. Any erosion that has taken place while the diversion has been functioning as intended (i.e., taking runoff water from upstream areas around the east side of your property), is not likely to have been caused by runoff from the upstream watersheds.

The Reclamation Division has determined that Coteau conducted mining and reclamation activities in the watersheds above your property in the NW¼ of Section 34 in accordance with all required surface coal mining laws and regulations, and therefore they are not responsible for the erosion that may have occurred on your property. The Reclamation cannot require Coteau to repair erosion that is not the result of mining and reclamation activities.

Wet areas within your property: You imply that Coteau has raised the water table in this area resulting in wet areas in the southwest corner of your property. The natural surface flow in this area is to the north through several low gradient natural drainage channels within the Beulah Trench. Ground water also flows to the north in this area. Since 2010, there have been very limited surface water discharges and no pit water discharges to the north from Coteau's mining operations located to the south of your property. All pit water discharges and most of the surface water discharges have been to the south through West Antelope Creek. However, there are large undisturbed portions of the watershed that still flow naturally to the north and do not flow through a sediment pond.

The elevation of shallow ground water tables have raised over much of western and central North Dakota in recent years due a trend of increased precipitation. In addition, ground water elevations in the Beulah Trench are influenced by the water elevation of Lake Sakakawea, which has been operated at relatively high levels for several years. The Reclamation Division concludes that the wet areas in your field are not the result of Coteau's mining and reclamation activities.

Required Action: During our reanalysis of the Probable Hydrologic Consequences (PHC), we noted the reclaimed grassland drainage channel for watershed 14-15 (within the permit area) enters the reconstructed diversion at a right angle and drops several feet in elevation over a very short distance. This configuration has resulted in erosion and maintenance problems in the past. The original drainage channel flowed in a more northwesterly direction and entered the existing diversion near the northeast corner of the NW¼ of Section 34. We will require Coteau to re-route this drainage channel in a more northwesterly manner, similar to how it existed prior to mining. This will result in a more stable configuration and much of the drainage from watershed 14-15 will flow almost directly into the east-west reconstructed road ditch rather than flowing into the north-south reconstructed diversion. As a result of this reconfiguration, most of the drainage from watershed 14-15 will "bypass" your property with the exception of the south road ditch. Most of this "reconfiguration work" will take place within the permit area; however, the point at which the reconfigured drainage channel will enter the reconstructed diversion is located on your property and we encourage you to work with Coteau to accommodate the reconfiguration of this drainage channel.

As requested in your June 26, 2018 email, we can meet with you at your convenience if you so desire. We can also extend the invitation to Attorney General Stenehjem as you requested once the date of the meeting is established.

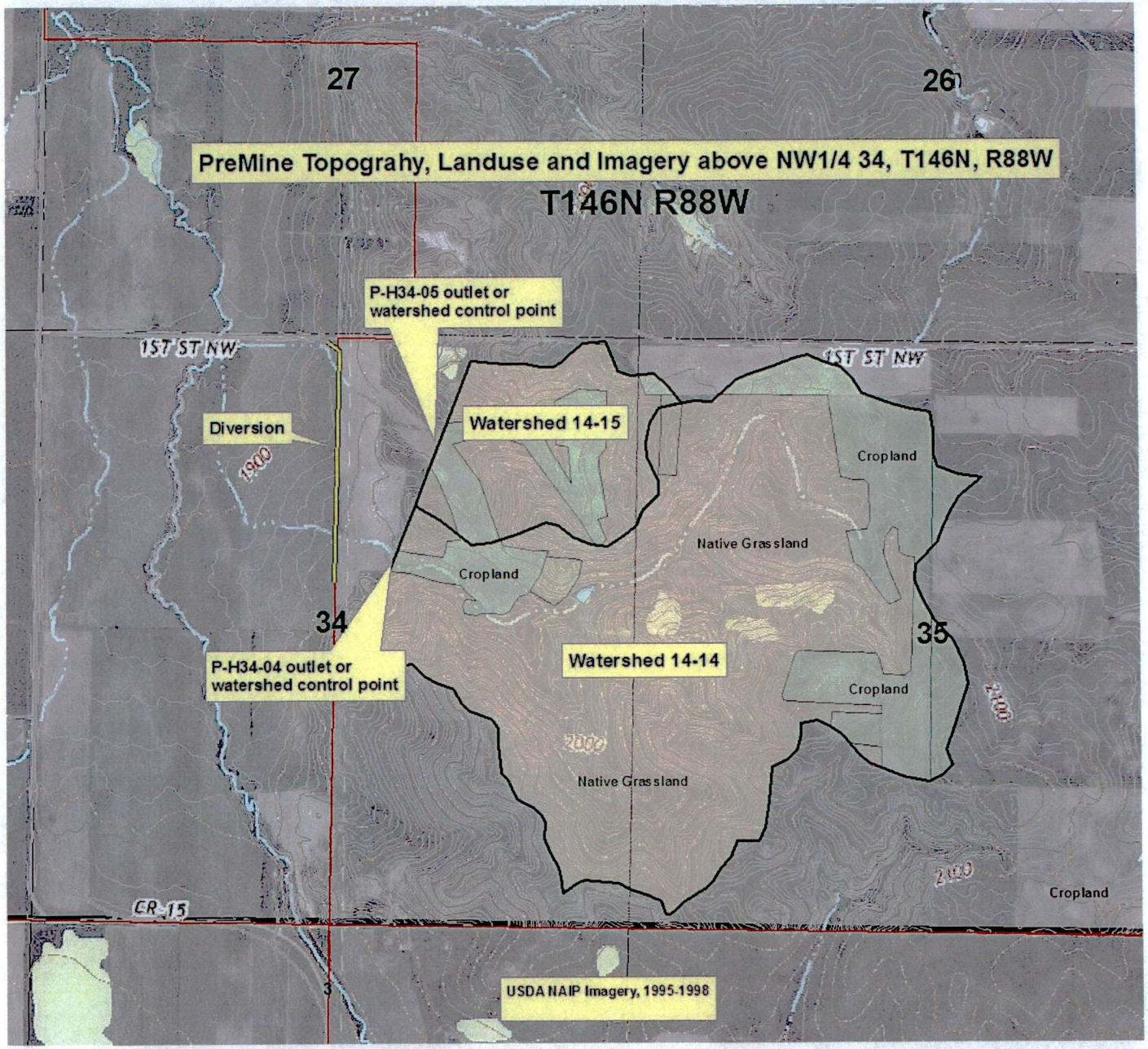
Please feel free to contact our office if you have any questions.

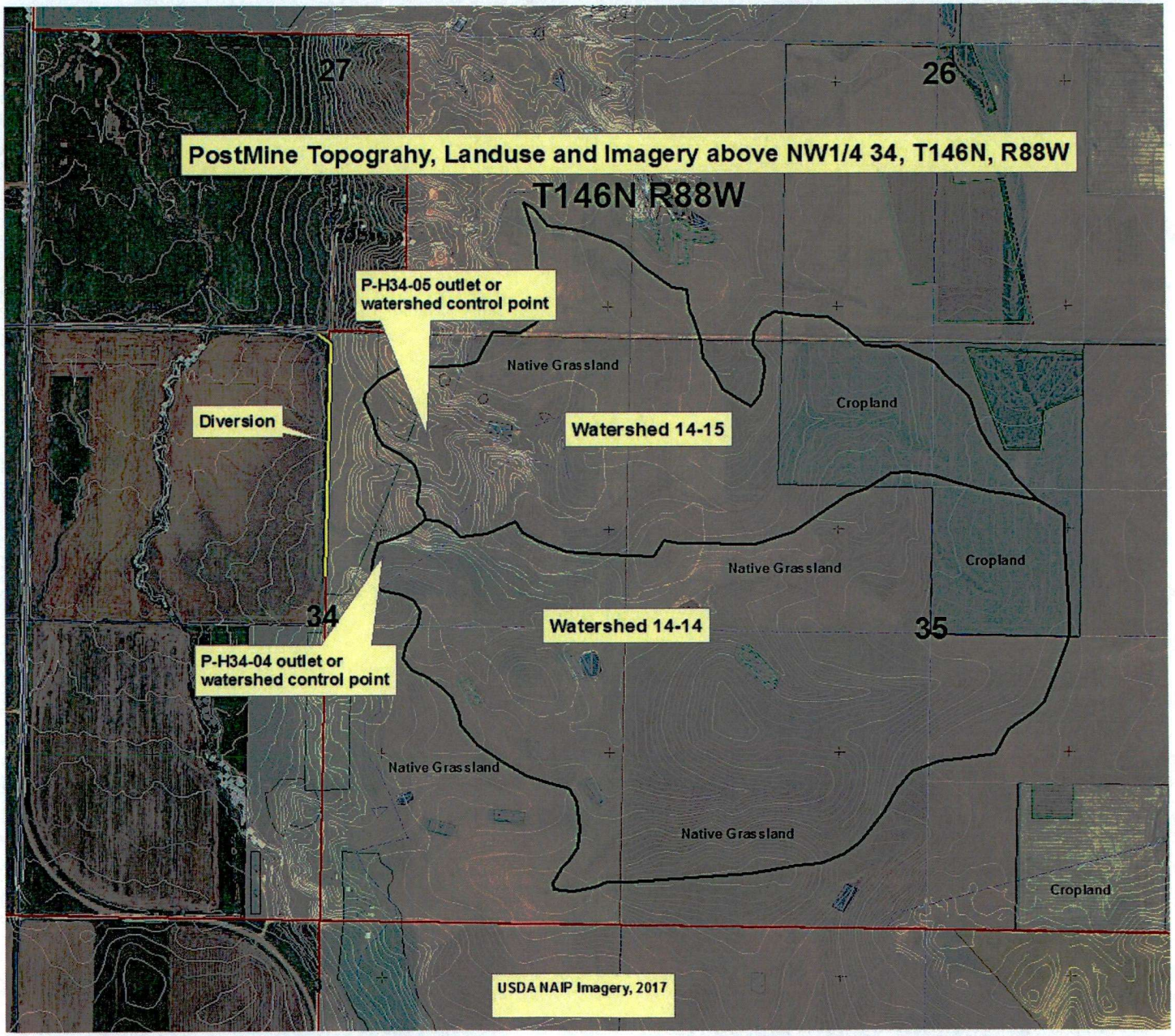
Sincerely,

Dean K. Moos
Director, Reclamation Division

Attachments: 1) Pre-Mine Topography, Landuse, & Imagery above NW¼, T146N, R88W
2) Post-Mine Topography, Landuse, & Imagery above NW¼, T146N, R88W
3) Table 3 of Section 2.2.5, PHC, Revision 30 to Permit NACT-9501
4) Results of the Reclamation Division modeling & map
5) April 26, 2018 Inspection Report

cc: Sarah Flath
Chris Friesz


PreMine Topograhy, Landuse and Imagery above NW1/4 34, T146N, R88W
T146N R88W
27
26
P-H34-05 outlet or watershed control point
1ST ST NW
1ST ST NW
Diversion
1900
Watershed 14-15
Cropland
Native Grassland
Cropland
34
35
P-H34-04 outlet or watershed control point
Watershed 14-14
Cropland
2000
2000
Native Grassland
2000
Cropland
CR 15
USDA NAIP Imagery, 1995-1998


PostMine Topograhy, Landuse and Imagery above NW1/4 34, T146N, R88W
T146N R88W
27
26
P-H34-05 outlet or watershed control point
Native Grassland
Cropland
Diversion
Watershed 14-15
Native Grassland
Cropland
34
Watershed 14-14
35
P-H34-04 outlet or watershed control point
Native Grassland
Native Grassland
Cropland
USDA NAIP Imagery, 2017

+Table 3
COTEAU PERMIT NACT-9501
PEAK DISCHARGE AND TOTAL RUNOFF VOLUME
@ DESIGNATED CONTROL POINTS (AMC - II)

CONTROL POINT	DRAINAGE AREA			DISCHARGE			VOLUME		
	PRE MINING (acres)	POST MINING (acres)	% CHANGE	PRE MINING (cfs)	POST MINING (cfs)	% CHANGE	PRE MINING (ac-ft)	POST MINING (ac-ft)	% CHANGE
2-YEAR, 24-HOUR RAINFALL EVENT, (1.93 inches)									
14-14	340	335	-1.5	92.9	21.5	-76.9	12.4	5.8	-53.2
14-15	78	210	+169.2	6.1	11.9	+95.1	1.2	3.8	+216.7
TOTAL	418	545	+130.4	99.0	33.4	-66.2	13.6	9.6	-29.4
10-YEAR, 24-HOUR RAINFALL EVENT, (3.12 inches)									
14-14	340	335	-1.5	292.0	125.1	-57.2	33.9	21.4	-36.9
14-15	78	210	+169.2	40.1	63.2	+57.6	4.7	13.8	+193.6
TOTAL	418	545	+130.4	332.1	188.3	-43.3	38.6	35.2	-8.8
25-YEAR, 24-HOUR RAINFALL EVENT, (3.63 inches)									
14-14	340	335	-1.5	388.5	187.0	-51.9	44.4	30.0	-32.4
14-15	78	210	+169.2	59.6	93.5	+56.9	6.6	19.2	+190.9
TOTAL	418	545	+130.4	448.1	280.5	-37.4	51.0	49.2	-3.5

REVISION 30
08/22/08
11/14/08

Global Summary Results for Run "Run 10-24"

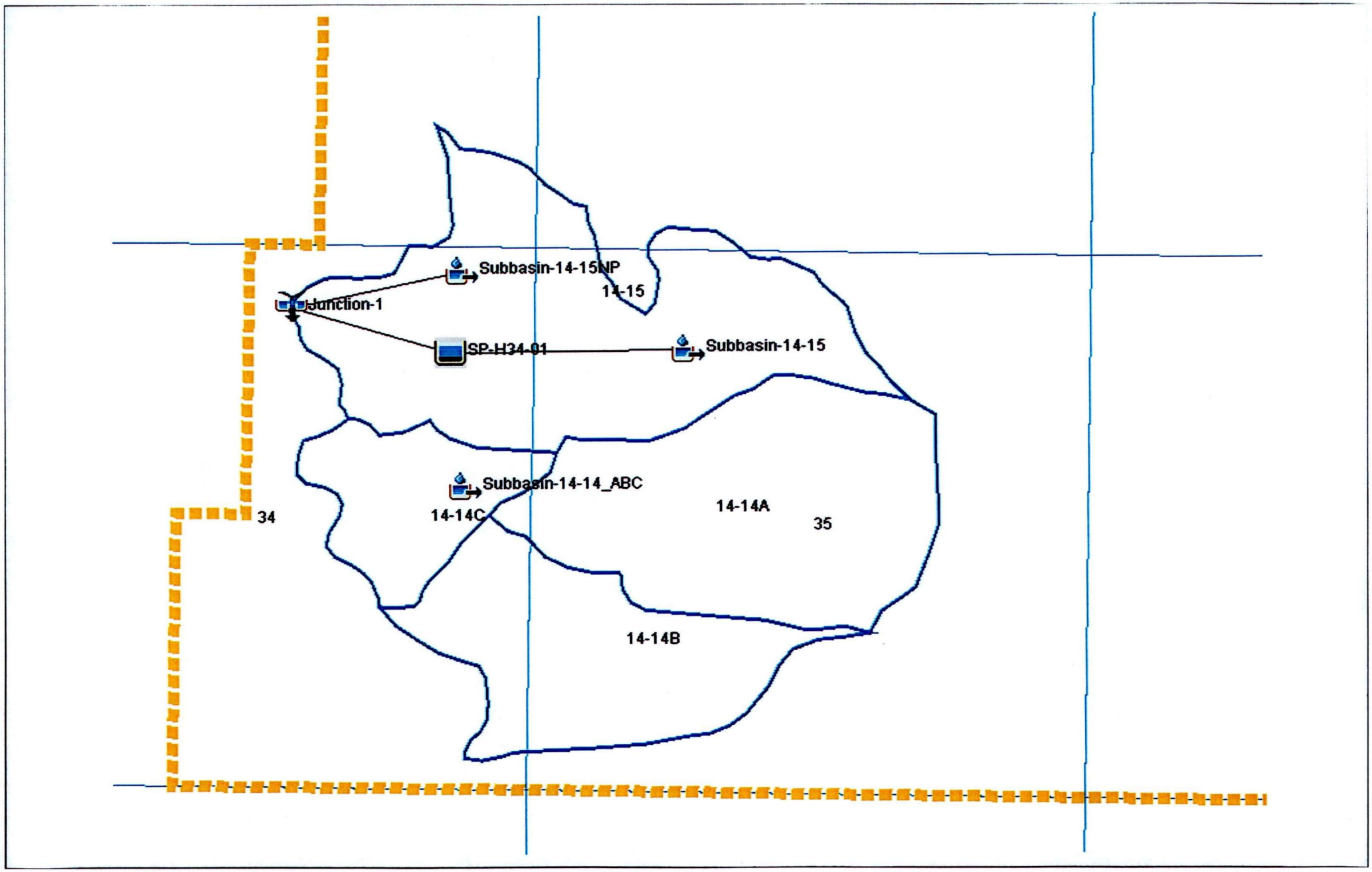
Project: Eisenbeis PostMine2 Simulation Run: Run 10-24

Start of Run: 26Jun2018, 08:00
End of Run: 27Jun2018, 08:00
Compute Time: 23Jul2018, 09:23:35

Basin Model: Basin 14-15
Meteorologic Model: 10yr/24hour
Control Specifications: Control 10_24

Show Elements: All Elements Volume Units: IN AC-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Subbasin-14-14_ABC	0.44	103.8	26Jun2018, 20:45	17.1
Subbasin-14-15	0.28	40.8	26Jun2018, 21:45	10.7
SP-H34-01	0.28	43.2	26Jun2018, 21:45	9.0
Subbasin-14-15NP	0.05	18.6	26Jun2018, 20:15	2.0
Junction-1	0.33	45.7	26Jun2018, 21:45	10.9


Subbasin-14-15NP
14-15
Junction-1
SP-H34-01
Subbasin-14-15
Subbasin-14-14_ABC
14-14C
14-14A
35
34
14-14B

Public Service Commission
State of North Dakota

COMMISSIONERS

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Julie Fedorchak
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Executive Secretary
Darrell Nitschke

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

May 14, 2018

Ms. Sarah Flath
Environmental Manager
Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523

Dear Ms. Flath:

The purpose of this letter is to request additional information regarding the diversion that was constructed in the NW¼ of Section of 34, T146N, R88W on property owned by the Eisenbeis family. Please provide a response to each of the following questions or requests for additional information in a timely manner.

1. What was the condition of the pre-existing north/south diversion between the NE¼ and NW¼ of Section 34 and the pre-existing road ditch on the south side of the road between the NE¼NW¼ of Section 34 and the SE¼SW¼ of Section 27 prior to reconstruction? Were these features in functional condition and capable of handling the flows from the premine watershed?

2. Was the original diversion capable of handling the flows from the upstream areas during and following mining and reclamation activities?

3. Is there evidence that the original diversion overtopped during mining and reclamation (i.e., prior to being reconstructed)?

4. Please explain why the diversion and road ditch were reconstructed.

5. Permit NACT-9501 includes design information for the two permanent grassed waterways that were constructed below sedimentation ponds P-H34-04 and P-H34-05 in the W½NE¼ of Section 34. Was the rebuilt diversion and road ditch designed and reconstructed to handle the combined flows from these two grassed waterways?

6. Are the assumptions and conditions used in the Probable Hydrologic Consequences still valid and applicable? If not, what changes have occurred?

7. How many times has the rebuilt diversion overtopped since being rebuilt and under what circumstances did it overtop?

The Reclamation Division encourages Coteau to work with the Eisenbeis family to address their concerns regarding access to their property.

If you have any questions, please contact this office.

Sincerely,

Dean K. Moos
Director
Reclamation Division

cc: Clyde Eisenbeis
Chris Friesz

Minedata/Freedom/Permits/NACT-9501/AdminCorr/2018/Sec34_Diversion_info_rqst_ltr_5-14-18

THE COTEAU PROPERTIES COMPANY

A SUBSIDIARY OF THE NORTH AMERICAN COAL CORPORATION

FREEDOM MINE
204 County Road 15
Beulah, North Dakota 58523-9475
(701) 873-2281 • Fax (701) 873-7226

RECEIVED
JUN 21 2018
3475
NORTH DAKOTA
PUBLIC SERVICE COMMISSION

June 19, 2018

Mr. Dean K. Moos
Director Reclamation Division
Public Service Commission
600 East Boulevard Avenue
Department 408
Bismarck, ND 58505-0480

Dear Mr. Moos:

This letter is in response to your letter dated May 14, 2018. Provided are responses to each of the following questions or requests.

1. ***What was the condition of the pre-existing north/south diversion between the NE¼ and NW¼ of Section 34 and the pre-existing road ditch on the south side of the road between the NE¼NW¼ of Section 34 and the SE¼SW¼ of Section 27 prior to reconstruction? Were these features in functional condition and capable of handling the flows from the premine watershed?***

   The diversion was in poor condition. It was silted in areas and blown out in others. There were also small trees or shrubs growing in the diversion channel. There was little to no elevation difference between the field and diversion bottom and between the field, ditch bottom, and the road top. The ditch had filled in with sediment over the years and when water did flow in this area, it mostly flattened out over a broad area and flooded into the adjoining field.

   The diversion was not capable of handling pre-mining flows. This is evident by the erosion shown in Figures 1 and 2, attached. Figures 1 and 2 are aerial photographs of the field from 1977 and 1996 respectively.

2. ***Was the original diversion capable of handling the flows from the upstream areas during and following mining and reclamation activities?***

   No. As indicated above, the diversion was not capable of handling pre-mining flows and it was not capable of handling flows during mining and reclamation activities even though runoff was controlled during mining and reclamation activities. From 1999 to 2015, a large portion of runoff from the watershed above the diversion was captured by sedimentation ponds P-H34-04 and P-H34-05. While in place, these ponds were discharged around the downstream cropland through HDPE poly pipe into the main channel flowing through the center of the NW¼ of Section 34. This was done to avoid exacerbating the erosion that was already occurring regularly on the east side of the crop field prior to and during mining

activities. Therefore, it can clearly be concluded that if erosion was occurring when runoff was captured, the existing diversion would not have had the capacity to handle the flows when the ponds were removed.

It should be noted that flows during mining and following mining are less than the flows which occurred pre-mining. It should also be noted that erosion and flooding occurred in the subject field long before mining, as can be shown by viewing aerial photos, including Figures 1 and 2, dating back several decades prior to Coteau entering the area.

3. ***Is there evidence that the original diversion overtopped during mining and reclamation (i.e., prior to being reconstructed)?***

The producer approached Coteau in both 2010 and 2011 about aiding in repairing erosion in the field while the sediment ponds were in place and functioning. Additionally, Figure 3 is the original ground topography survey prior to reconstruction of the diversion. As can be seen in the drawing, there are several areas that show erosion west or below the diversion. Figure 3 includes two cross-sections of the existing diversion, one at the entrance of watershed 14-14 and one at the entrance of watershed 14-15. Both cross-sections indicate that runoff would flow across the diversion to the west uninterrupted. This survey was collected on November 29, 2011, after installation of the sedimentation ponds, but prior to the reconstruction of the diversion or removal of any sedimentation ponds.

Mining operations did not cause increased flows and erosion was already occurring prior to any mining operations in the area. As noted above, flows were less during and following mining than the flows pre-mining.

4. ***Please explain why the diversion and road ditch were reconstructed.***

As noted in a December 6, 2012, PSC inspection report the diversion was redesigned and reconstructed at the landowner's request. The diversion was reconstructed for several reasons. Coteau was approached by the producer, Wayne Eisenbeis, in 2010 about erosion which was occurring in the field. This erosion was occurring even with the sedimentation ponds in place and their discharges being routed around the field through HDPE pipe. Wayne Eisenbeis asked if Coteau could help him fill in the erosion using the washed material near the main drain. Soil in this area had accumulated to the extent that he was getting stuck when farming. Coteau hired an outside contractor to repair the erosion in the field. In the following year, 2011, additional erosion occurred in the field and Wayne Eisenbeis again approached Coteau about repair, and also asked that the diversion be improved to prevent future erosion. The owner at the time, Esther Eisenbeis, agreed with Wayne Eisenbeis's request. Wayne Eisenbeis is the nephew of Esther Eisenbeis. Even though he was not the current surface owner at the time, Clyde Eisenbeis, Esther Eisenbeis's son, became involved in the design and location of the proposed improved diversion. After several discussions with Bill Kirk from Coteau, and additional discussions with the PSC, Clyde Eisenbeis agreed the diversion should be reconstructed in its current location, as did Esther Eisenbeis. Over the years, washing from the existing diversion had filled the road ditch with sediment. The sediment needed to be removed in order for the diversion to function properly and not flood the north edge of the field.

In the interest of being a good neighbor, Coteau engaged contractors to improve the pre-existing diversion with the hope it would alleviate the erosion issues that had plagued this tract for several decades.

5. ***Permit NACT-9501 includes design information for the two permanent grassed waterways that were constructed below sedimentation ponds P-H34-04 and P-H34-05 in the W½NE¼ of Section 34. Was the rebuilt diversion and road ditch designed and reconstructed to handle the combined flows from these two grassed waterways?***

   Yes, the diversion was sized to divert runoff from the reclaimed watersheds as well as the undisturbed area for a 10 year 24 hour storm event or 3.12 inches of rain in 24 hours. As noted above, flows from these new grassed waterways are less than flows prior to any mining activities.

6. ***Are the assumptions and conditions used in the Probable Hydrologic Consequences still valid and applicable? If not, what changes have occurred?***

   Yes, the PHC is still valid; however, it is conservative. For instance, Watershed 14-15 contains a stockpond, which was not considered when modeling. The stockpond would further reduce the amount of water as it will capture a portion of the runoff before overflowing. Additionally this causes the water to slow before entering the last reach of the channel. A second stockpond with a storage capacity of 5.5 acre-feet is planned for construction in the near future in the NE¼ of Section 34. This will further reduce flows as more water is captured.

   Secondly, native grassland in the post mining condition is considered as "fair" for modeling purposes. A visual inspection of the area will show that the vegetation is in much better condition than "fair." This will further reduce the Curve Number and the amount of runoff leaving the site, as more water will infiltrate the ground due to residue and plant uptake.

   Third, the cropland in the NE¼ of Section 34, which was located directly below the sedimentation ponds along the west side of this quarter, has now been converted to native grasslands, reducing the amount of runoff entering the diversion.

   Fourth, the cropland has been assumed to be 20% fallow and 80% crop. However, farming practices have changed and the use of fallow has been virtually eliminated in the area, thus reducing the amount of runoff from the ground.

   Finally, the Antecedent Moisture Condition II (AMC-II) was used in the modeling process. The use of AMC-II is conservative for this area according to a study conducted by Schroeder, Enz, and Larsen, which reports that AMC-I conditions, exist 95.1% of the time between April 1 and October 31 in the Beulah area.

   In conclusion, the PHC could be remodeled to reflect the items above, and doing so would show a reduction in the flows and volumes from what is currently shown.

7. ***How many times has the rebuilt diversion overtopped since being rebuilt and under what circumstances did it overtop?***

To our knowledge, the diversion has overflowed twice, both times in 2014. The first overflow occurred in the spring of the year, near the south end of the diversion. This overflow was most likely caused by snow blocking the diversion and not allowing water to flow through.

The second overflow occurred later that year most likely due to a three-day rainfall event that began August 22, 2014. The rain gauge located in Section 22, T146N, R88W, approximately 1 mile north of the diversion, recorded 3.67 inches of rainfall from this three-day event. The majority of the rainfall occurred on August 23 with 3.19 inches falling in 14 hours. The intensity of the storm would equate to a 200 year/ 24 hour storm event.

These overtoppings were not caused by any mining or reclamation operations.

This ditch/diversion issue is a private matter between Coteau and the Eisenbeis family. As demonstrated, mining operations were never the source or cause of erosion in Eisenbeis fields. Past and current owners have chosen to crop the entire field in the W½ of Section 34 despite being in an obvious downstream location below higher elevation watersheds to the east. These upland watersheds existed pre-mining and remain post-mining. Pursuant to established water law in North Dakota, downstream owners must accept flows which come from higher adjacent uplands. If a landowner chooses to crop through obvious waterways, he does so at his own risk.

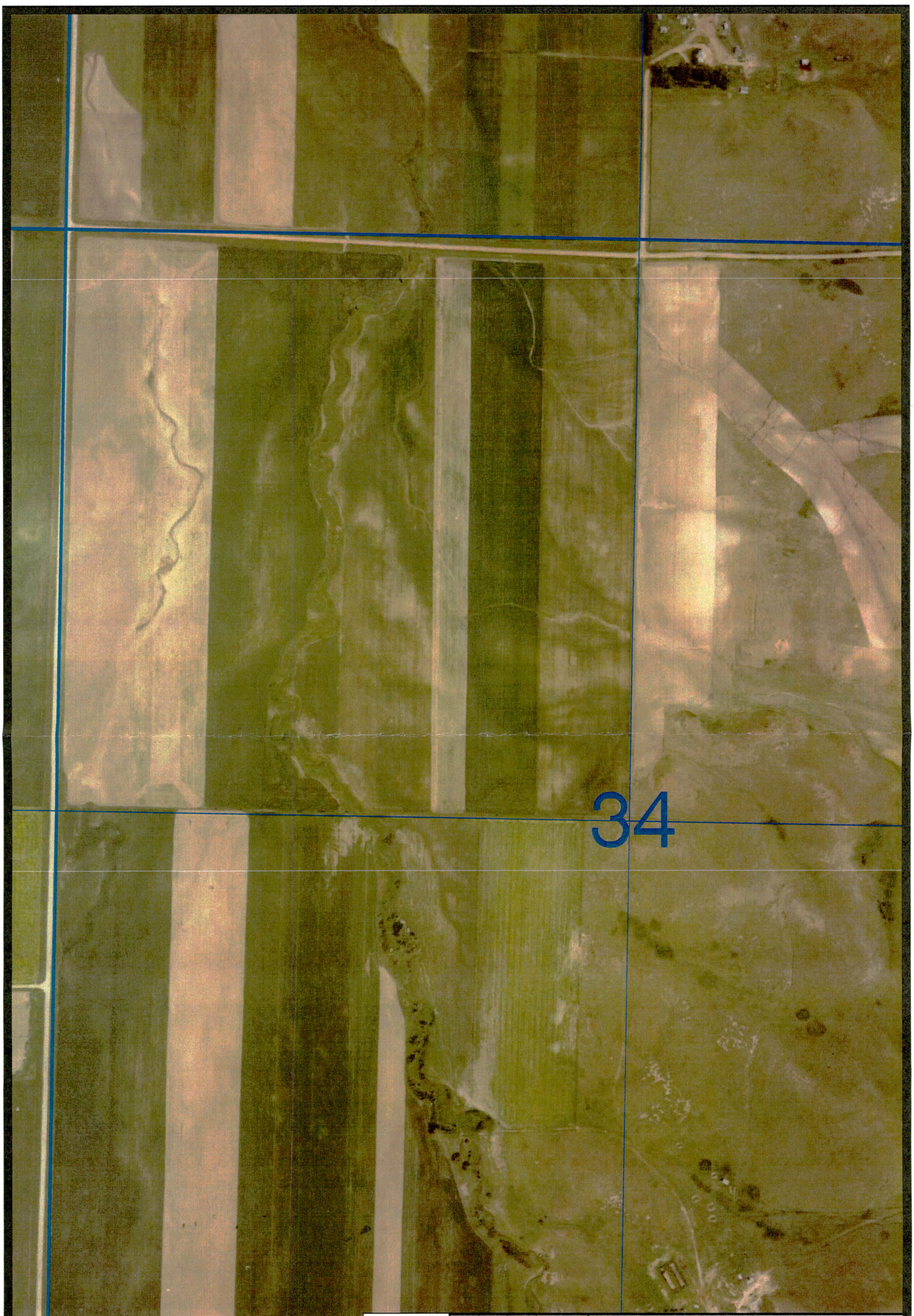
Coteau has tried to work with Clyde Eisenbeis, including by making an offer to alleviate his concerns at no expense to him, and he did not accept that offer. Coteau is always open and willing to work with landowners.

If you have any questions, please contact this office.

Sincerely,

Sarah J. Flath
Environmental Manager
The Coteau Properties Company

cc: Chris Friesz



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DRAWING UPDATES

COTEAU
THE COTEAU PROPERTIES COMPANY

FREEDOM MINE
BEULAH, ND 58523

FIGURE 1

AERIAL PHOTO

1977

SCALE: 1"=400' PAPER SIZE 11"x17"

PROJECT: REVISION:



C.N.

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COTEAU
THE COTEAU PROPERTIES COMPANY

FREEDOM MINE
BEULAH, ND 58523

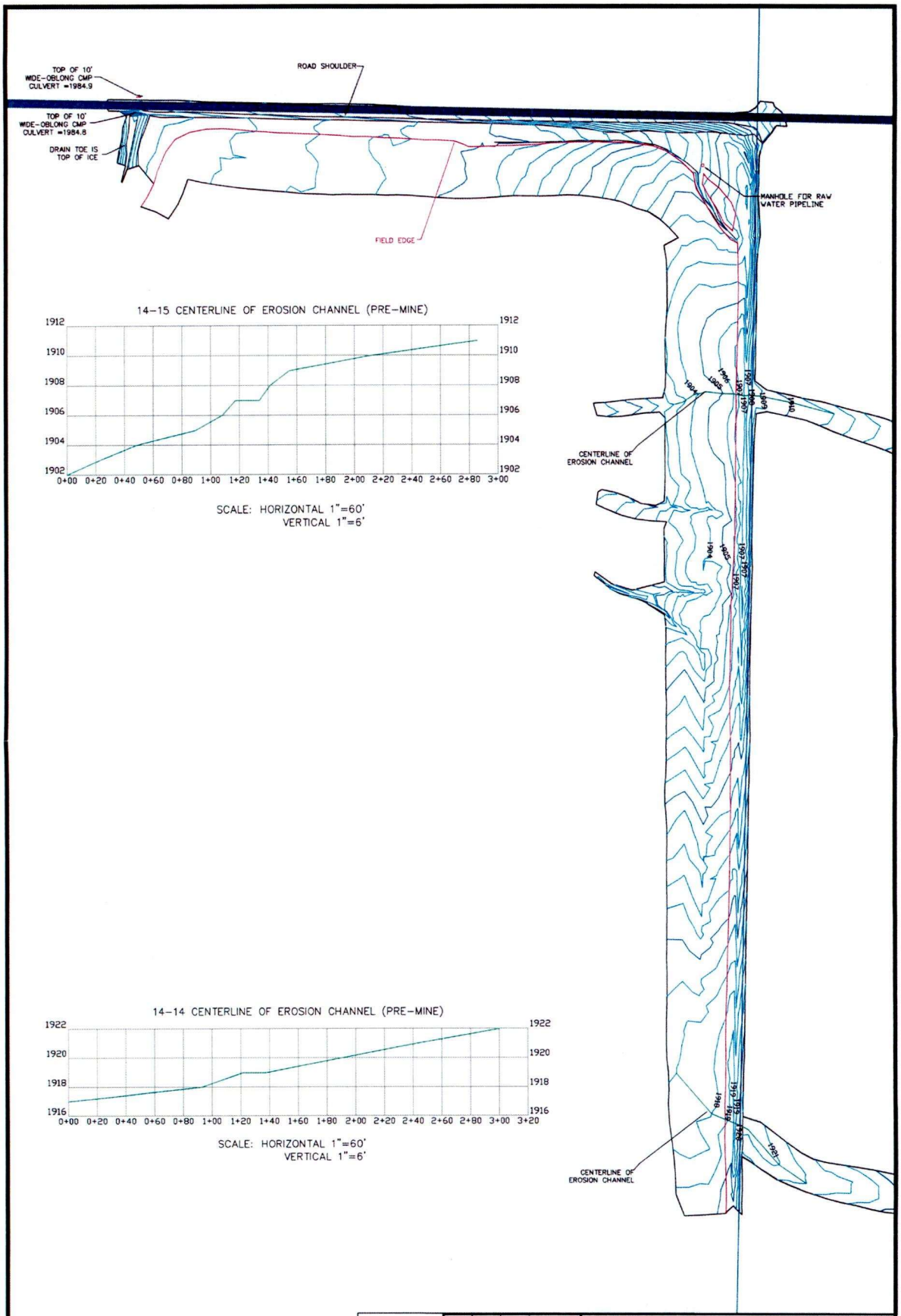
FIGURE 2

AERIAL PHOTO

JULY 2, 1996

SCALE: 1"=400' PAPER SIZE 11"x17"

PROJECT: REVISION:



14-15 CENTERLINE OF EROSION CHANNEL (PRE-MINE)

SCALE: HORIZONTAL 1"=60'
VERTICAL 1"=6'

14-14 CENTERLINE OF EROSION CHANNEL (PRE-MINE)

SCALE: HORIZONTAL 1"=60'
VERTICAL 1"=6'

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DRAWING UPDATES

COTEAU PROPERTIES COMPANY

FREEDOM MINE
BEULAH, ND 58523

FIGURE 3

ORGINAL SURVEY EISENBEIS DIVERSION

NOVEMBER 29 2011

SCALE: 1"=150' PAPER SIZE 11"x17"
PROJECT: REVISION:

You should know...

North Dakota Public Service Commission

Issue GO-2, Updated March 2017

Filing A Formal Complaint

Find out what you need to know in order to file a formal complaint with the Public Service Commission.

North Dakota Public Service Commission

Commissioners:
Randy Christmann
Julie Fedorchak
Brian Kroshus

600 E Boulevard Ave.
Department 408
Bismarck, ND
58505-0480

Telephone:
701-328-2400

Fax:
701-328-2410

TDD/TTY:
800-366-6888

E-mail:
ndpsc@nd.gov

Website:
www.psc.nd.gov

North Dakota LEGENDARY
Public Service Commission

The reader agrees that use of this information is entirely at the customer's own risk. The Public Service Commission's services are provided "as is," without warranty of any kind, either expressed or implied, including without limitation any warranty for information provided through or in connection with this service.

If you have a complaint about mining activities, utility services, weights and measures, or any of the other areas regulated by the Public Service Commission (PSC), you should first take the issue up with the company involved. If the problem is not resolved, you can file an *informal* complaint with the PSC by calling 701-328-2400 or by sending us a letter or e-mail with the complaint details.

A *formal* complaint is a more serious step where you formally allege that a company violated a state law, a tariff or price schedule, or a PSC order or rule. As the complainant, you must prove your case in a formal administrative proceeding, similar to going to court.

HOW TO FILE A FORMAL COMPLAINT

By law, formal complaints must be in writing and be clearly and concisely stated. The complaint should include the facts constituting the basis of the complaint, including relevant dates. The complaint must also include citations to the specific statutes, PSC rules or orders involved and the relief you request. Your name and address and the name and address of your attorney, if you employ one, must appear in the complaint.

STATE LAW AND RULES

The procedural rules covering formal complaints can be found in Chapter 28-32 of the North Dakota Century Code, and Article 69-02 of the North Dakota Aministrative Code. The specific rule governing the form required for a formal complaint is North Dakota Administrative Code §69-02-02-02. Other provisions of law may also be relevant to your complaint. For instance, a complaint regarding phone service might cite the state's phone laws.

LEGAL ADVICE

You do not need an attorney to file a complaint, however, you may wish to consult legal counsel to ensure you have considered all options available to you. If not represented by an attorney, the complainant must include a statement that the complaint document is true and correct to the best of the signer's belief. PSC staff are not allowed to provide legal advice to the public.

PROCESS

After a formal complaint is filed, the first step in the process is for the PSC to serve the complaint on the company. The company has 20 days to answer the complaint, pointing out where it believes the complaint is wrong. (The company can challenge the facts alleged in the complaint, the law relied upon, the relief sought, or any combination of these.)

If the company does not respond, the PSC can decide in your favor because the company defaulted. If the company does respond, the matter will be set for hearing unless you and the company can resolve the matter outside the hearing process. At the hearing, you will have the burden of proving what you asserted in the complaint and the company will have to defend its actions. All testimony will be sworn and subject to cross-examination by the opponent.

If the Commission finds the company violated state law or a Commission order or rule, the Commission can fine the company, revoke any operating authority previously granted by the Commission, and in some cases require the company to correct the wrong or order reparations. In most cases the Commission cannot award any other damages. If you are seeking financial compensation for damages, you would need to consider other legal remedies such as civil litigation.

APPLICATION FOR REVISION OF PERMIT TO ENGAGE IN SURFACE COAL MINING AND RECLAMATION OPERATIONS

PUBLIC SERVICE COMMISSION
RECLAMATION DIVISION
SFN 10562 (Rev. 08-2001)

Date	
August 28, 2007	

Name of Company, Corporation, Partnership, or Individual	Permit Number	Revision Number	
The Coteau Properties Company	NACT-9501	30	
Address	**City**	**State**	**Zip Code**
204 County Road 15	Beulah	ND	58523

The above named hereby makes application for the above Revision Number to: (include a brief description of the surface coal mining and reclamation operation being revised.

See Attachment 1

Attached to this Permit Revision Application are a narrative describing the proposed permit revision, reasons for requesting the revision, and appropriate maps, cross-sections, graphs, construction details, revised reclamation plans and other data which demonstrate compliance with Chapter 38-14.1 of the North Dakota Century Code, Article 69-05.2 of the North Dakota Administrative Code, and the permit conditions of the approved permit. If an incidental boundary revision involving an acreage adjustment is being requested as part of the permit revision application, the following information shall be included (attach a copy of a metes and bounds description):

NAME OF MINE	ACRES	LOCATION			
		SEC.	TWP.	RANGE	COUNTY
Freedom Mine	N/A				
ADDRESS					
204 County Road 15					
Beulah, ND 58523					
TOTAL ACRES	N/A				

Based upon the proposed changes and any incidental boundary revisions to the permit as stated herein, a new or adjusted bond, or its equivalent, duly executed in accordance with Section 38-14.1-16 of the North Dakota Century Code and Chapter 69-05.2-12 of the North Dakota Administrative Code will be delivered to the Public Service Commission prior to issuance of the surface coal mining and reclamation operations permit herein requested. A check for filing fees, pursuant to Section 38-14.1-13 of the North Dakota Century Code, in the amount of $ -0-, is included with the revision application.

Name of Official Authorized to Represent the Applicant: William R. Kirk

I, the above named, certify that:

1. All information and documents required by Sections 38-14.1-13, 38-14.1-14, and 38-14.1-15 of the North Dakota Century Code and Article 69-05.2 of the North Dakota Administrative Code, are submitted as part of this permit application;
2. Information and documentation contained in the permit application affirmatively demonstrate that:
   a. The permit revision application is accurate and complete and all the requirements of Chapter 38-14.1 of the North Dakota Century Code and Article 69-05.2 of the North Dakota Administrative Code have been complied with;
   b. Reclamation as required by Chapter 38-14.1 of the North Dakota Century Code and Article 69-05.2 of the North Dakota Administrative Code can be accomplished under the reclamation plan contained in this permit revision application;

SFN 10562 (Rev. 08-2001)

c. An assessment of the probable cumulative impact of all anticipated mining in the general area on the hydrologic balance as specified in subdivision o of subsection 1 of Section 38-14.1-14 has been made and the proposed operation has been designed to prevent material damage to the hydrologic balance both on and off the mine site;

d. The area proposed to be affected is not included within an area designated unsuitable for all or certain types of surface coal mining and is not within an area under study for such designation in an administrative proceeding;

e. The proposed surface coal mining operation will not interrupt, discontinue or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated and will not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors; and

f. The permit revision applicant has the legal right to surface mine the land for which this permit revision application is made and all of the requirements of Chapter 38-18 of the North Dakota Century Code have been complied with.

3. The area proposed to be affected is not included within an area where mining is prohibited pursuant to Section 38-14.1-07 of the North Dakota Century Code; unless specifically allowed in accordance with the provisions of Section 69-05.2-04-01 of the North Dakota Administrative Code; and

4. The surface coal mining and reclamation operations contained in this permit revision application will be carried out at all times in a manner which ensures that all of the requirements of Chapter 38-14.1 of the North Dakota Century Code, Article 69-05.2 of the North Dakota Administrative Code, and any permit conditions attached thereto are complied with.

Signature of Official	Title
William R. Kirk	Staff Mining Engineer

VERIFICATION

I, Joseph D. Friedlander, being first and duly sworn, verify that the information contained in this Permit Revision Application is true and correct to the best of my knowledge and belief.

Signature of Official	Title
	Environmental Manager

Subscribed and sworn to before me this 28th day of August, 20 07. My commission expires: 9/10/09.

Lisa Ryan
Notary Public

(SEAL)

LISA RYAN
Notary Public, STATE OF NORTH DAKOTA
My Commission Expires SEPT. 10, 2009

ATTACHMENT 1
Page 1 of 1

This revision updates introductory information, operations - general, operations - surface water management, post mining land use and revegetation, reclamation - general, and post mining stockponds to incorporate the latest mine plans, include changes to the post mining topography, material balance, and post mining land use, revise reclamation plans for final highwall and pit areas, and to add information for a dragline trail.

Public Service Commission
State of North Dakota

COMMISSIONERS

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Executive Director
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600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
web: www.nd.gov/psc
e-mail: ndpsc@nd.gov
TTY 800-366-6888 or 711
Fax 701-328-2410
Phone 701-328-2400

September 28, 2007

Mr. Joe D. Friedlander
Environmental Manager
Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523-9475

Dear Mr. Friedlander:

The Reclamation Division has conducted an initial review of the application for Revision No.30 to Permit NACT-9501 for the Freedom Mine. This revision proposes post-mining topographic and land use changes along with other modifications to this permit. Based on the nature of the post-mining topography changes being proposed, we have determined this revision is a significant alteration to the approved permit and therefore will be subject to the public notice requirements. The following items must be addressed before the revision can be deemed complete.

Section 1.2.4

1. Since the revision is considered a significant, please provide a draft newspaper notice in the revision application. (MDB/JRD)

Section 2.2 Surface Water Hydrology and Monitoring

2. Based on proposed revisions to the post-mining topography and related watershed changes, please include an update to the probable hydrologic (surface water) consequences as required in NDCC 38-14.1-14(1)(o) and NDAC 69.05.2-08-04(4). Also, please update the hydrologic reclamation plan that specifically addresses any potential adverse impacts identified in the revised PHC determination and include preventative and remedial measures for those impacts. (BEB)

Section 3.6 Surface Water Management

3. Please update the surface water management plans to reflect the revised post-mining watershed boundaries and update the hydrology calculations for any sediment ponds and post-mine developed water resources which may be affected by the proposed post-mining topography. (MDB)

Section 4.2 Reclamation – General

4. In addition to the comparison of the revised post-mining topography to the pre-mine topography, please compare the changes to the post-mine topographic plan that is currently approved and discuss the reasons for the changes at this time. (MDB)

If you have any questions, please contact this office.

Sincerely,

James R. Deutsch
Director
Reclamation Division

m\freedom\permit 9501\Revisions\No. 30\complete_ltr_9-28-07

THE COTEAU PROPERTIES COMPANY

A SUBSIDIARY OF THE NORTH AMERICAN COAL CORPORATION

FREEDOM MINE
204 County Road 15
Beulah, North Dakota 58523-9475
(701) 873-2281 • Fax (701) 873-7226

NOV 19 2007
30603
ND PUBLIC SERVICE COMMISSION
RECLAMATION DIVISION

FROM DIRECTOR - RECLAMATION DIV.
Date:
Action:
Info. Only:
Info & File:

November 16, 2007

Mr. James R. Deutsch
Director Reclamation Division
Public Service Commission
600 East Boulevard Avenue
Department 408
Bismarck, ND 58505-0480

Dear Mr. Deutsch:

Enclosed are three sets of revised materials for Revision 30 to Permit NACT-9501. Responses below refer to deficiencies in your September 28, 2007 letter:

1. The proposed newspaper publication was sent to you via email, and was approved for publication with one minor change, removing coal owners. Publication began on November 1 for four consecutive weeks, and will end November 22.
2. This item will be addressed as part of technical review.
3. This item will be addressed as part of technical review.
4. See revised pages 5-6 of Section 4.2.1.

If you have any questions, please contact Donn Steffen or me.

Sincerely,

THE COTEAU PROPERTIES COMPANY

Joseph D. Friedlander
Environmental Manager

JDF:lr

Public Service Commission
State of North Dakota

COMMISSIONERS

Susan E. Wefald, President
Kevin Cramer
Tony Clark

Executive Director
Illona A. Jeffcoat-Sacco

600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
web: www.nd.gov/psc
e-mail: ndpsc@nd.gov
TTY 800-366-6888 or 711
Fax 701-328-2410
Phone 701-328-2400

November 26, 2007

Mr. Joe D. Friedlander
Environmental Manager
Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523-9475

Dear Mr. Friedlander:

The Reclamation Division has now deemed the application for Revision No. 30 to Permit NACT-9501 complete. Verbal approval to begin publication of the newspaper notice was granted on October 17, 2007. Please provide proof of publication after the last notice has been published.

If you have any questions, please contact this office.

Sincerely,

James R. Deutsch
Director
Reclamation Division

m\Freedom\permit 9501\revisions\No. 30\app_complete_ltr_11-26-07

Public Service Commission
State of North Dakota

COMMISSIONERS

Susan E. Wefald, President
Kevin Cramer
Tony Clark

Executive Director
Illona A. Jeffcoat-Sacco

600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
web: www.nd.gov/psc
e-mail: ndpsc@nd.gov
TTY 800-366-6888 or 711
Fax 701-328-2410
Phone 701-328-2400

December 27, 2007

Mr. Joe D. Friedlander
Environmental Manager
Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523-9475

Dear Mr. Friedlander:

The Reclamation Division has conducted a review of Coteau's application for Revision No. 30 to Surface Coal Mining Permit NACT-9501 for the Freedom Mine. The items listed below must be addressed before the revision can be approved:

Section 2.2 Surface Water Hydrology and Monitoring

1. Based on proposed revisions to the post-mining topography and related watershed changes, please include an update to the probable hydrologic (surface water) consequences as required in NDCC 38-14.1-14(1)(o) and NDAC 69.05.2-08-04(4). Also, please update the hydrologic reclamation plan that specifically addresses any potential adverse impacts identified in the revised PHC determination and include preventative and remedial measures for those impacts. (BEB)

Section 3.5 Transportation Facilities

2. Please update the transportation narrative to reflect the changes in off-system road standards, as was done in Revision 26 to Permit NACT-8601. (MDB)

Section 3.6 Surface Water Management

3. Please update the surface water management plans to reflect the revised post-mining watershed boundaries and update the hydrology calculations for any sedimentation ponds and post-mine developed water resources which may be affected by the proposed post-mining topography change. (MDB)

Section 4.1 Postmining Land Use and Revegetation

4. Information on page 5 of 4.1.1 seems to indicate that there will be 5 stockponds in Section 35 (SE¼SW¼, NW¼NW¼ , NW¼SW¼, SW¼NW¼, and NE¼SE¼) yet only three are shown on the map in Section 4.1.6 (Post Mining ...Land Use Map) and listed in the table in Section 5.2.2 (Designs Parameters...Stockponds). In addition, the locations listed on page 5 of 4.1.1 and the other two sources do not always match. Please make the necessary corrections so all of the section area is consistent. (SAS & GAW)

5. The Postmining Topography and Land Use Map show that approximately 22 acres of cropland is to be reclaimed in Tract 43, but Table 4.1.5 lists 0.0 acres. Please correct. (GAW)

6. The Postmining Topography and Land Use Map indicates the majority of Shelterbelt SB-14-01 is going to be planted on undisturbed land. This is a replacement shelterbelt so it must be planted on acreage that has been disturbed by mining activities. Additional acreage should not be disturbed to accommodate a replacement tree planting. Revegetation success standards are for demonstrating reclamation success on mined lands, not undisturbed lands. (GAW)

7. According to Table 1 of Section 4.1.5, 39.9 acres of cropland is being converted to native grassland in Tract 35; however, this change is not shown on the Postmining Topography and Land Use Map. It appears that Table 1 was changed in error. Please review and correct as appropriate. (GAW)

8. Please label the tame pastureland tract located in Tract 14. There are 2.0 acres of tame pastureland in Tract 14 according to Table 1 of Section 4.1.5; however, it is not depicted in the Postmining Topography and Land Use Map. (GAW)

9. Please show the post-mining wetland acreage that is to be reclaimed in Tracts 15/16 on the Postmining Topography and Land Use Map. Table 1 indicates that 0.6 acres of wetland is to be reclaimed on this tract. (GAW)

10. Table 1 indicates that 0.3 acres of shelterbelt is going to be reclaimed in Tract 33, but Shelterbelt SB-26-01 is identified as comprising 0.8 acres on the Postmining Topography and Land Use Map. The narrative on page 2 of 4.1.1 also states that 0.8 acres will be planted and it further states that this is to be considered a conservation type planting. In the narrative please clarify if the premine shelterbelts in this tract were disturbed and, if they were, the planting will need to be considered a replacement planting rather than a conservation planting. In addition, the Reclamation Division does not recommend planting Russian Oliver since this species is considered an invasive species by some groups. Please review and update as necessary. (GAW)

11. Table 1 indicates that Tract 2 will have 19.6 acres of native grassland after mining. Please show the location of this acreage on the Postmining Topography and Land Use Map. (GAW)

12. The Postmining Topography and Land Use Map, Section 4.1.6, indicates that about 40 acres of cropland will be reclaimed in Tract 25, but Table 1 shows that 0.0 acres will be reclaimed in this tract. Please review and update as necessary. (GAW)

13. Table 1 indicates that 2.0 acres of native prairie is to be reclaimed in Tract 27. Please show this land use on the Postmining Topography and Land Use Map. (GAW)

14. While Table 1 is being updated and corrected, please review the size of the reclaimed stock ponds for the purpose of determining the correct post-mine land use acreage. The post-mine stock pond acreages listed in this table should be the same as the stock pond surface area acreages listed in Table 5.2.2. (GAW)

15. The areas occupied by SPGM Stockpiles SS-236 and TS-421 and Diversion D-H25-01 in the NW¼ of Section 25 will be reclaimed to tame pastureland according to the Postmine Topography and Land Use Map, Section 4.1.6 and Table 1 of Section 4.1.5. All of the other premine tame pastureland that has been disturbed in this tract is being converted to native grassland. We recommend that Coteau also consider reclaiming these areas to native grassland to facilitate future management and bond release. (GAW)

16. Please review the location of created Wetland CW-31-09. Although the design plan indicates this wetland was to be constructed in the SE¼SW¼NE¼ of Section 31, this wetland location was not evident in the field during the August 17th inspection. The proposed wetland location was farmed through this year. Please review and update as necessary. Also, please note that Table 1 shows that Tract 5 is to have 1.8 acres of post-mine wetlands. (GAW)

17. Reclaimed cropland proposed in the SE¼ of the SW¼ of Section 15, the southwest corner of the SE¼ of Section 15, and the NW¼ of the NE¼ of Section 22 has long slopes that go up to 12% in some area. The proposed slopes in these areas generally appear to be steeper than they were prior to mining. Please consider shifting the hill top that is proposed in the northeast corner of Section 22 further to the southwest to reduce the slopes on the adjacent reclaimed cropland. This will increase the slopes in the reclaimed native grassland, but they would still be less than those present prior to mining. Such a change would also reduce the size of the watersheds draining to the southwest (NW¼ of Section 22). As currently proposed, the increased watershed sizes will increase runoff rates and flow rates in the reclaimed and steep undisturbed drainageways, making them susceptible to erosion. (GAW, MDB & JRD)

18. On the Postmining Area Slope Map, we recommend adding a table to show the premining and post-mining slope comparisons for the native grasslands north of Highway 1806. This is requested due to the acreage and significant slope changes in this area and it can be done in a manner similar to the comparison tables that are currently shown on the map for several other areas. (MDB)

19. Major post-mining topography changes proposed in the SW¼ of Section 26, SE¼ of Section 27, E½ of Section 34, and W½ of Section 35 are unacceptable since the changes do not meet the grading requirements of NDCC 38-14.1-24(3) that requires grading to the gentlest topography consistent with adjacent unmined landscape elements. For example, spoil material is available to the east of the final pit areas in the SE¼ of Section 27 and NE¼ of Section 34 that can be placed in the final pit areas. Addition grading in these areas will reduce slopes with drainages configured to tie into the undisturbed land to the west. It also appears that several knobs proposed in other areas can be further graded to reduce slopes in these areas, such as in the S½ of the SW¼ of Section 35 and N½ of the NE¼ of Section 34. While we do not object to making some adjustments to the post-mining topography to reflect the actual locations of final pits and coal haulage ramps, the revised grading plan needs to comply with the provisions of NDCC 38-14.1-24(3). (MDB & JRD)

20. In reviewing the premine and post-mine drainages, the post-mine drainages appear to be straighter than the premine drainages were. To the extent possible during final grading, please create sinuosity in the major and minor drainages. (MDB)

21. In order to demonstrate that post-mining drainageways will be stable, please provide runoff calculations, drainageway profiles, and flow rates and velocities for many of the reclaimed and undisturbed drainages along the west side of the permit area. This information is requested for any drainageway where the watershed size has increased by more than ten percent compared to the premine condition. (JRD)

Section 4.2 Reclamation - General

22. The current worst-case reclamation condition for setting the bond amount is expected to occur in 2008. However, in viewing the Pit Layout and Facilities Map, it appears the amount of disturbance for the year 2008 has changed in the area located north of Highway 1806 and the amount of land with a respread variance has increased. Please update the worst-case cost estimate to reflect these changes. (MDB)

Section 5.1 – Postmining Wetlands

23. Created Wetland CS-26-01 has been moved a few hundred yards to the north of where it was originally planned, according to the Postmining Topography and Land Use Map. Please review the design plan and update if necessary (it appears it was simply shown in the wrong place on the Land Use Map). (GAW)

We suggest that Coteau consider an alternative post-mine land use for the 1.3 acres of native grassland that is to be reclaimed in the SE¼ of Section 30 that was affected by sediment Pond P-H30-01. This would be an ideal location for a wetland if an adequate sized watershed exists or perhaps trees could be planted to enhance wildlife habitat. Converting the area to cropland will not be approved due to the irregular shape of the area, property boundaries, and the isolated nature of this small tract.

The Reclamation Division intends to compare the premine grassland tall shrub communities with the annual map disturbance boundary to ensure that ample woodland acreage is being replaced as indicated on Page 4 of 4.1.1. Please review your woodland placement plans at this time to ensure ample woodland acreage will be replaced.

If you have any questions, please contact this office.

Sincerely,

James R. Deutsch
Director
Reclamation Division

cc: Mercer County Auditor

m\Freedom\Permit 9501\Revisions\No. 30\tech_ltr_12-27-07

THE COTEAU PROPERTIES COMPANY

A SUBSIDIARY OF THE NORTH AMERICAN COAL CORPORATION

FREEDOM MINE

204 County Road 15
Beulah, North Dakota 58523-9475

(701) 873-2281 • Fax (701) 873-4726

RECEIVED
AUG 26 2008
31024
PUBLIC SERVICE COMMISSION

August 22, 2008

FROM DIRECTOR - RECLAMATION DIV.

Date:_____

Action:_____

Info. Only:_____

Info & File:_____

Mr. James R. Deutsch
Director Reclamation Division
Public Service Commission
600 East Boulevard Avenue
Department 408
Bismarck, ND 58505-0480

Dear Mr. Deutsch:

Enclosed are three sets of revised materials for Revision 30 to Permit NACT-9501. Responses below refer to deficiencies in your December 27, 2007 letter:

1. See new pages 12c-12g and 20 of Section 2.2.5, the Post-Mining Probable Hydrologic Consequences Map (new Sheet 2B of 3) of Section 2.2.7, and new Sections 3.6.95 and 3.6.96.
2. See revised page 6 and new pages 7-8 of Section 3.5.1.
3. See new pages 9a and 12-13 of Section 3.6.1, and new Sections 3.6.91, 3.6.92, 3.6.93, and 3.6.94.
4. See revised page 5 of Section 4.1.1.
5. See revised pages 1-1a of Section 4.1.5.
6. This issue was addressed in Revision 25 to Permit NACT-9501. The location of SB-14-01 was approved at that time because of the extremely desirable site, even though it is not typically desirable to choose an undisturbed location for a tree planting. The tree planting will be part of a larger complex of wetlands, trees, and tame pasture. Because the planting will be part of a larger complex of habitat, it will be more valuable in this location than in a more isolated one. This area will be idle in the future, protected from grazing by its small size and distance from other pastures, and protected from tillage by the slopes of the drainage that runs through it. These features will help assure the planting will not be damaged by cattle, or removed by a future landowner to increase their tillable acres after bond release. Because this location will increase its value as wildlife habitat and will protect it in the future, no changes were made.
7. See revised pages 1-1a of Section 4.1.5.
8. See revised pages 1-1a of Section 4.1.5.
9. See revised pages 1-1a of Section 4.1.5.
10. The 0.3 acres of shelterbelts listed in Tract 33 in Section 4.1.5 are existing shelterbelts that were not disturbed by mining. The additional 0.8 acre shelterbelt that is being added to the east and south of the farmstead are additional trees being added as requested by Sailer's, as stated on page 2 of Section of Section 4.1.1 and their preference statement in Section 4.1.4. The total post-mining shelterbelt acres were changed to 1.1 acres to include the additional conservation shelterbelt. Page 2 of Section 4.1.1 was changed to include buffaloberry instead of Russian olive trees in the species mix for the conservation shelterbelt.

11. See the revised Post-Mining Topography and Land Use Map of Section 4.1.6.
12. See revised pages 1-1a of Section 4.1.5.
13. See revised pages 1-1a of Section 4.1.5.
14. See revised pages 1-1a of Section 4.1.5. The acres used in Section 5.2.2 are based on pre-mining acres, and the actual size of the stockpond will change when designed.
15. See revised pages 1-1a of Section 4.1.5.
16. It was determined that CW-31-09 was not in its designated location. Two other features in the area, totaling 1.8 acres, were identified as wetlands (CW-31-06 and CW-31-09). See revised pages 1-1a of Section 4.1.5, the Post-Mining Topography and Land use Map of Section 4.1.6, revised page 1 of Section 5.1.1, and revised page 1, new Wetland CW-31-06 drawing, and revised Wetland CW-31-09 drawing of Section 5.1.2.
17. See the revised Post-Mining Topography and Land Use Map of Section 4.1.6, the revised Post-Mining Area Slope Map of Section 4.2.5, and the revised Post-Mining Topography Development Map of Section 4.2.8.
18. See the revised Post-Mining Area Slope Map of Section 4.2.5.
19. See the revised Post-Mining Topography and Land Use Map of Section 4.1.6, the revised Post-Mining Area Slope Map of Section 4.2.5, and the revised Post-Mining Topography Development Map of Section 4.2.8.
20. Major drainages are a little straighter, but still acceptable. Coteau will consider sinuosity in some of the secondary drainages during final grading.
21. See new pages 12f-12g and 21-27 of Section 2.2.5.
22. For the area north of Highway 1806, it looks like we have approximately 27 acres not accounted for in the worst case calculation. To offset this, we are 194 acres ahead in Section 8 of the East Mine Area. Updating the calculation is not necessary at this time. It is recommended that we revisit the worst case bond calculation this fall.
23. See the revised Post-Mining Topography and Land use Map of Section 4.1.6.

We considered your suggestion for an alternative post-mining land use for the 1.3 acres of native grassland that is to be reclaimed in the SE¼ Section 30, but no other land use is feasible. The 1.3 acres lie on the crest of a low hill, and do not have a watershed that could contribute to a wetland. Also, the site would not be an ideal location for a tree planting, since the area is exposed and on top of a hill. We plan to keep these 1.3 acres as native grassland.

If you have any questions, please contact me.

Sincerely,

THE COTEAU PROPERTIES COMPANY

Joseph D. Friedlander
Environmental Manager

JDF:lr

Public Service Commission
State of North Dakota

COMMISSIONERS

Susan E. Wefald, President
Kevin Cramer
Tony Clark

Executive Secretary
Darrell Nitschke

600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
Web: www.nd.gov/psc
E-mail: ndpsc@nd.gov
TDD 800-366-6888 or 711
Fax 701-328-2410
Phone 701-328-2400

October 10, 2008

Mr. Joe D. Friedlander
Environmental Manager
Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523

Dear Mr. Friedlander:

The Reclamation Division has reviewed your response to the technical deficiency letter on the application for Revision 30 to Permit NACT-9501. While many of the deficiencies have been adequately addressed, the following items need to be satisfactorily addressed:

1. Follow-up to original item No. 1: The updated surface water probable hydrologic consequences in Section 2.2.5 needs to further address the combined impact of the changes to Watersheds 14-14 and 14-15 on downstream areas. The changes made to Section 2.2.5 in response to the original item appear to be limited to impacts within the permit area. However, the downstream off-permit areas that will be impacted by the watershed changes also need to be addressed. A staff field review noted that the sections of the north-south diversion ditch that is not within the permit area may not be capable of handling increased flows and it appears the post-mine flow rates will be significantly higher than the pre-mine conditions where the south-north diversion ties into the section line road between Sections 27 and 34. Also, the south ditch of this section line road is not well defined and flows would likely go into the cropland to the south of the road. In addition, based on the delineation of Watershed 14-14 on the pre-mine PHC map, Sheet 2 of 3 of Section 2.2.6, it is not clear if the diversion ditch intercepted the runoff from this watershed prior to mining. If it didn't, the post-mine flows into this diversion and road ditch will be greatly increased over the pre-mine conditions. Please update the PHC and hydrologic reclamation plan to address the potential adverse impacts as a result of the increased runoff and flow rates in the diversion ditch, along the section line road, and other off-permit downstream areas. Coteau also needs to discuss measures that need to be taken to prevent or minimize erosion due to the increased and more concentrated flows. If any off-permit area needs to be disturbed to minimize the hydrologic impacts as a result of watershed changes due to mining and reclamation activities, those areas will have to be added to the permit prior to disturbing them. (JRD)

2. Follow-up to original item No. 6: In the last paragraph on page 2 of Section 4.1.1, please clarify that all of Shelterbelt SB-14-01 will be subject to reclamation revegetation success standards even though most of the shelterbelt will be planted on lands not disturbed by mining related activities. (GAW)

3. Follow-up to original item No. 15: With changes made in response to original item 15, we noted that the post-mine land use of the undisturbed tame pastureland in the NW¼ of Section 25 is being changed to native grassland. To implement this change, does Coteau plan to spray undisturbed tame pastureland area be with Roundup or similar chemical and reseed that area with the native grassland seed mix when the adjoining disturbed areas are reclaimed and seeded? Please clarify. (GAW)

4. Follow-up to original item No. 16: The introduction paragraph of Section 5.1.1 has been changed to state that 12 wetlands will be constructed to replace the 19 that will be disturbed. The Post-Mine Topography and Land Use Map, Section 4.1.6, shows that 16 wetlands are to be created. Please review and update or otherwise explain this discrepancy. (GAW)

5. Follow-up to original item No. 22: The worst-case reclamation cost needs to be updated with this revision. Revision 7 to Permit NACT-0401 was granted allowing the use of 2007 variable costs and with the understanding that the reclamation costs would be updated with Revision 30 using the 2008 variable costs. While we agree that changing the worst-case scenario may be delayed until later this year, the variable costs in the current worst-case condition need to be updated prior to the approval of this revision. (MDB)

6. New: Two permanent grassed waterways are now proposed in cropland in the NE¼ of Section 34 to ensure stability of the drainageways. We agree with this practice and believe they will serve the intended purpose. However, flows from the permanent waterways will enter into an existing diversion ditch off-permit and flow north to the section line road ditch. Since the watershed area into this existing drainage ditch is increased significantly as noted in Item 1 above, please provide calculations in the water management plan demonstrating that the diversion ditch, section line road ditch and culverts are capable of handling the additional runoff without causing erosion or other harm to downstream areas. (MDB)

If you have any questions, please contact this office.

Sincerely,

James R. Deutsch
Director
Reclamation Division

m\Freedom\9501\Revisions\No. 30\tech2_rvw_10-10-08

THE COTEAU PROPERTIES COMPANY

A SUBSIDIARY OF THE NORTH AMERICAN COAL CORPORATION

FREEDOM MINE

204 County Road 15
Beulah, North Dakota 58523-9475

(701) 873-2281 • Fax (701) 873-7226

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NOV 1[illegible] 2008

31167

PUBLIC SERVICE COMMISSION

November 14, 2008

FROM DIRECTOR - RECLAMATION DIV.

Date:_____

Action:_____

Info. Only:_____

Info & File:_____

Mr. James R. Deutsch
Director Reclamation Division
Public Service Commission
600 East Boulevard Avenue
Department 408
Bismarck, ND 58505-0480

Dear Mr. Deutsch:

Enclosed are three sets of revised materials for Revision 30 to Permit NACT-9501. Responses below refer to deficiencies in your October 10, 2008 letter:

1. See revised page 12g, new page 12h, and revised page 20 of Section 2.2.5.
2. See revised page 2 of Section 4.1.1.
3. See new page 7 of Section 4.1.1.
4. See revised page 1 of Section 5.1.1.
5. In response to your recent phone conversation with Donn Steffen, Coteau will be submitting a new worst-case cost scenario based on year 2010. This will be submitted in December in conjunction with Revision 11 to Permit NACT-0401.
6. See revised page 12g, new page 12h, and revised page 20 of Section 2.2.5.

Pages 12e-12f of Section 2.2.5 were revised to correct a typo.

If you have any questions, please contact me.

Sincerely,

THE COTEAU PROPERTIES COMPANY

Joseph D. Friedlander
Environmental Manager

JDF:lr
Enc.

THE COTEAU PROPERTIES COMPANY

A SUBSIDIARY OF THE NORTH AMERICAN COAL CORPORATION

FREEDOM MINE

204 County Road 15
Beulah, North Dakota 58523-9475

(701) 873-2281 • Fax (701) 873-7226

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DEC 23 2008
31221
PUBLIC SERVICE COMMISSION

FROM DIRECTOR - RECLAMATION DIV.

Date:_____

Action:_____

Info. Only:_____

Info & File:_____

December 22, 2008

Mr. James R. Deutsch
Director Reclamation Division
Public Service Commission
600 East Boulevard Avenue
Department 408
Bismarck, ND 58505-0480

Dear Mr. Deutsch:

In response to your email to Joe Friedlander dated December 8, 2008, enclosed are three sets of revised materials for Revision 30 to Permit NACT-9501. Pages 13-19 of Section 2.2.5 and the Pre-Mining Probable Hydrologic Consequences Map (Sheet 2 of 3) of Section 2.2.6 were revised.

If you have any questions, please contact me.

Sincerely,

THE COTEAU PROPERTIES COMPANY

William R. Kirk
for
Joseph D. Friedlander
Environmental Manager

JDF:lr
Enc.

PUBLIC SERVICE COMMISSION
Reclamation Division
****

Memorandum

TO: Commissioners Cramer, Clark and Kalk
Darrell Nitschke
Illona Jeffcoat-Sacco

FROM: Michael Berg, Jim Deutsch and Dean Moos

DATE: January 7, 2009

SUBJECT: Application for Revision No. 30 to Permit No. NACT-9501 held by Coteau Properties Company, Case No. RC-07-701

On August 29, 2007, the Coteau Properties Company (Coteau) filed an application for Revision No. 30 to Permit No. NACT-9501 for the Freedom Mine. The permit revision modifies the appropriate sections of the permit for post-mining topography and land use changes and makes other changes to the operations and reclamation plans. The Reclamation Division has completed its review of this revision and respectfully recommends that it be approved.

The primary purpose of Revision No. 30 is to modify the previously approved post-mining topography and land uses in areas affected by final pits. While these changes were proposed by Coteau to reduce the amount of spoil that has to be moved to backfill the final pit areas, the land use capability of the reclaimed land in these areas will be similar to what existed prior to mining. The revision also modifies other sections of the permit including increases to the holding capacity of some sedimentation ponds, updates to the anticipated surface water hydrologic consequences of mining, and adds design standards for reclaimed section line roads.

The Reclamation Division deemed Revision No. 30 as a significant revision to Permit No. NACT-9501 and therefore was subject to the public notice requirements. Coteau submitted affidavits of publication of the newspaper notice from the Beulah Beacon, Hazen Star, and Bismarck Tribune indicating that the notices were published on November 1,8,15, and 22, 2007. No objections to this revision application were received.

Attached for your consideration at the January 14th Commission meeting are the proposed motion, revision approval form, and newspaper notice that must be published following revision approval.

Attachments

caselib\070701\memo.doc

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Coteau Properties Company
Revision No. 30, Permit NACT-9501
Application

Case No. RC-07-701

REVISION OF PERMIT TO ENGAGE IN SURFACE COAL MINING AND RECLAMATION OPERATIONS

January 14, 2009

Based on the Application for **Revision Number 30 to Permit Number NACT-9501 received on August 29, 2007**, and all information and documentation contained therein, the North Dakota Public Service Commission finds that:

1. The revision application submitted on August 29, 2007, and revised through December 23, 2008, is complete and accurate and the applicant has complied with the requirements of Chapter 38-14.1 of the North Dakota Century Code and Article 69-05.2 of the North Dakota Administrative Code;

2. The Commission's other findings that were made when the permit was issued remain applicable to the revised operation and reclamation plans.

Revision Number 30 to Permit NACT-9501 for the Freedom Mine is hereby granted to the Coteau Properties Company to modify the post-mining topography and land uses in and around final pit areas and to update other sections of the permit including the operation plans and other reclamation plans as described in the revision application received August 29, 2007.

The approved revision is subject to the requirements of Chapter 38-14.1 of the North Dakota Century Code, Article 69-05.2 of the North Dakota Administrative Code, and the conditions of the approved permit. Pursuant to Section 38-14.1-23 of the North Dakota Century Code and Article 69-05.2 of the North Dakota Administrative Code, this revision was found to be a significant alteration to the previously approved permit.

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600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
Web: www.nd.gov/psc
E-mail: ndpsc@nd.gov
TDD 800-366-6888 or 711
Fax 701-328-2410
Phone 701-328-2400

January 16, 2009

Mr. Joe D. Friedlander
Environmental Manager
The Coteau Properties Company
204 County Rd. 15
Beulah, ND 58523-9475

Dear Mr. Friedlander:

This is to inform you of the Commission's January 14, 2009, approval of Revision No. 30 to Surface Coal Mining Permit NACT-9501, PSC Case No. RC-07-701, held by The Coteau Properties Company at the Freedom Mine. This revision updates the post-mining topography, post-mining land use as well as operations and reclamation plans. This permit revision was found to be a significant revision and was subject to the public notice requirements.

Enclosed is the original revision approval form. If you have any questions, please contact this office.

Sincerely,

James R. Deutsch
Director
Reclamation Division

Enclosure

m\Freedom\9501\Revisions\No. 30\Rev30_AL_1-16-09

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600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

INSPECTION REPORT

DATE OF INSPECTION: August 18, 2011

TYPE OF INSPECTION: Complete

PERMITTEE - MINE: Coteau Properties Company - Freedom Mine

PERMITS INSPECTED: NACT-8102, NACT-8203, NACT-8401, NACT-8503, NACT-8601, NACT-9001, NACT-9101, NACT-9501, NACT-0201, NACT-0401

PERSONS ACCOMPANYING INSPECTORS: Jessica Unruh - Morning
Terence Schmidt - Afternoon

INSPECTION CONDITIONS: The inspection was conducted between 9:45 a.m. and 5:00 p.m. CDT. Skies were clear. The temperature was near 80° F. Access was unrestricted.

OFFICE RECORDS

Mining permits, permit revisions and other relevant mining permit records were on file and available for review. The following records were reviewed.

Records/Reports/Licenses	Comment(s)
Certificate of Liability Insurance	On file, expires February 1, 2012
Surface Water Monitoring Report	2nd Quarter 2011 report on file
Ground Water Monitoring Report	2nd Quarter 2011 report on file
Annual Ground Water Monitoring Report	2010 report on file
NDPDES Permit No. ND-0025038	Expires **December 31, 2011**
NDPDES Discharge Monitoring Report	1st Half 2011 report on file
Storm Water Discharge Permit	NDR32-0000 expires June 30, 2014
Annual NDPDES Storm Water Discharge Rpt.	2010 report on file

Records/Reports/Licenses	Comment(s)
Quarterly Pond Inspection Reports	2nd Quarter 2011 reports are on file; routine maintenance items were noted such as removal of small trees and possible sediment removal.
Monthly MSHA Pond Inspections	The August 1, 2011pond inspection reports for all ponds were on file. Ponds P-H25-01, P-D12-01, P-D18-01, and P-D15-03 were re-inspected on August 16, 2011 due to a rainfall event. All ponds were reported as being below permanent pool elevation except for Pond P-D12-01which was reported as being above PPE. No major issues were noted.
Pond Certifications	The last pond certified was Pond P-W26-04 on August 10, 2011. Stockpond SP-I02-01 was certified on November 22, 2010.
Haul Road Certifications	2010 Annual Certification Map is on file. The last road certified was on September 23, 2010, in Sections 26, 34, and 35, Permit NACT-0201, also known as the Section 34 SPGM road.
County Conditional Use Permits	On file, most recent issued May 7, 2008
Solid Waste Disposal Permit	Permit #0343, expires June 16, 2019
Air Pollution Control Permit	Expires November 15, 2011
Blasting Notice Affidavit of Publication	Published July 20, 2011, expires July 20, 2012
Blasting Records	On file and briefly reviewed. The last blast record indicated a coal shot was detonated in Section 21 on August 17, 2011, approximately 1,500 feet east of the Amanda Myers residence.
Blasting Certifications	Certificates were on file
Federal Coal Exploration License	Expired October 16, 2002
State Coal Exploration Permit	Expired August 6, 2011
Biennial Wildlife Report	2008/2009 report is on file, the report was incorporated into permit NACT-0401 with Revision 15.
Road Closures and Setbacks	On file, most recent closure dated February 16, 2011
BATF Manufacturer of High Explosives	Expires July 1, 2012
Water Use Permits	Temporary (expires **September 30, 2011**), conditional, and perfected SWC Water Use Permits are on file.
State Wetland Drainage and Army Corps of Engineers 404 Permits	Correspondence and permits are on file. Nationwide permits expire March 18, 2012, and March 13, 2010. A letter of authorization is on file at the mine stating the Section 404 Permit for the 360-acre addition to Permit NACT-0401 is valid until reclamation is complete. Coteau was required to have construction activities completed by March 13, 2010.

SIGNS & MARKERS

Permit boundary signs and markers were noted at various locations during the inspection. The observed mine entrance signs contained the information required by NDAC 69-05.2-13-04. All observed stockpiles and sediment ponds were marked with legible signs.

OVERBURDEN/COAL REMOVAL

The 901 dragline was removing overburden in the NE ¼ of Section 3 in Permit NACT-9101. The 933 and 937 truck/shovel fleet were removing overburden from the basin of Pond P-N21-04 in the NE ¼ of Section 21, Permit NACT-0401, and placing it on a pile adjacent to the pond. The 935 truck/shovel fleet was removing overburden over coal in the SW ¼ of Section 27 and placing the fill in the NE ¼ of Section 33 in Permit NACT-0401. The 931 truck/shovel fleet was prebenching overburden in the NW ¼ of Section 36 and placing the fill in the NE ¼ of Section 36 in Permit NACT-0201. The 902 dragline was removing overburden in the N ½ of Section 36 in Permit NACT-0201.

Coal loading was occurring in the NW ¼ of Section 36 in Permit NACT-0201.

SURFACE WATER MANAGEMENT

The following ponds were viewed during the inspection and their relative water elevations were noted.

Pond	Elevation	Comments
P-H30-01	1 foot below PPE	
P-W25-02	1 foot below PPE	
P-N21-04	NA	Pond is under construction. Embankment has been constructed and overburden was being removed from the pool area of the pond.

A scraper and a compactor were constructing a water load facility in the NW ¼ of Section 30 in Permit NACT-8503. A portion of topsoil pile TS-77 had to me moved in order to construct the load out feature which is located directly north of Pond P-J30-02R.

The sumps at the Section 34 stockpile complex were also viewed during the inspection. Sumps 34 C and 34 D were constructed this spring and appeared to be in good condition at the time of the inspection. Sump 34 A was nearly full and noted as requiring pumping.

A gully was noticed outside of the permit area in the northeast corner of the NW ¼ of Section 34 near Permit NACT-9501. There is an old diversion above the cropland located on this tract that is suppose to transport runoff westward to the section line road ditch between Sections 27 and 34. However, runoff appears to be passing over the diversion and onto the cropland where the gully has formed. The gully is 1 to 2 feet deep, 6-8 feet wide and is about 200 feet in length. Sediment pond P-H34-05 is located in a drainage way about ¼ mile above this diversion. At this point, it is

uncertain if the gully is related to discharges from the upstream ponds. This will require additional review and a possible follow-up inspection.

SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

The 936 truck/shovel fleet was removing subsoil in the N ½ of Section 26 in Permit NACT-0201 and stockpiling the material in the Section 34 stockpile complex.

A subsoil lift approval area in the E ½ of Section 26 was also viewed during the inspection. It appeared all available SPGM including deep lift had been removed and stockpiled. The soil monuments indicated the amount of material actually removed from this area.

ROADS

Two segments of reclaimed prairie/section line trail between Sections 2 and 3 and Sections 2 and 35, Permits NACT-9001 and NACT-9501, were reviewed. Coteau had previously requested and received approval to remove these short segments, 500 feet maximum, of reclaimed road because the landowner has requested that they be removed. Work has been completed on the two segments and the area blends into the surrounding topography.

REVEGETATION

The silty native grassland reference area located in the S ½ of the NE ¼ of Section 9, T145N, R88W of Permit NACT-0201 was inspected. This silty reference area is being used to demonstrate revegetation success in pending final bond release No. 4 to Permit NACT-9101. There are four 8' by 8' enclosures on this reference area site to protect from livestock grazing. There was evidence of clipping in one of the four enclosures. The two enclosures located on the upper reaches of a side slope are in better ecological condition than the two located closer to the bottom drainageway. The dominant vegetation on this site is western wheatgrass, green needlegrass, needle and threadgrass, upland sedges, blue grama and prairie junegrass. Kentucky bluegrass is much more prevalent on the two enclosures located on the lower reaches of the slopes where it appears to be the dominant species. The site is being grazed this year and utilization levels are light. Green and fringed sagewort and western yarrow appeared to be the dominant forbs present on this site. Plant vigor was high and the site appears to have yielded well this year. Photographs of the enclosures are on file with the Reclamation Division.

The seeded native warm season species, particularly sideoats grama and switchgrass, are benefitting from the haying operation that occurred earlier in the growing season on the reclaimed native grasslands located in Sections 2 and 34 of Permits NACT-9001 and NACT-9501, respectively. Mr. Schmidt indicated that Coteau has discussed fencing the native grassland in this area to allow the tracts to be grazed next year. Cattle were noted grazing the reclaimed native grassland located in the S ½ of the SW ¼ of Section 31, Permit NACT-9501.

The majority of the permitted lands at the Freedom Mine were affected by a recent hail storm. The crops growing on the reclaimed lands located north of Coteau's shop office complex were reportedly affected more severely than other areas.

MISCELLANEOUS

A tracklog of the inspection is shown in black on the attached aerial photo.

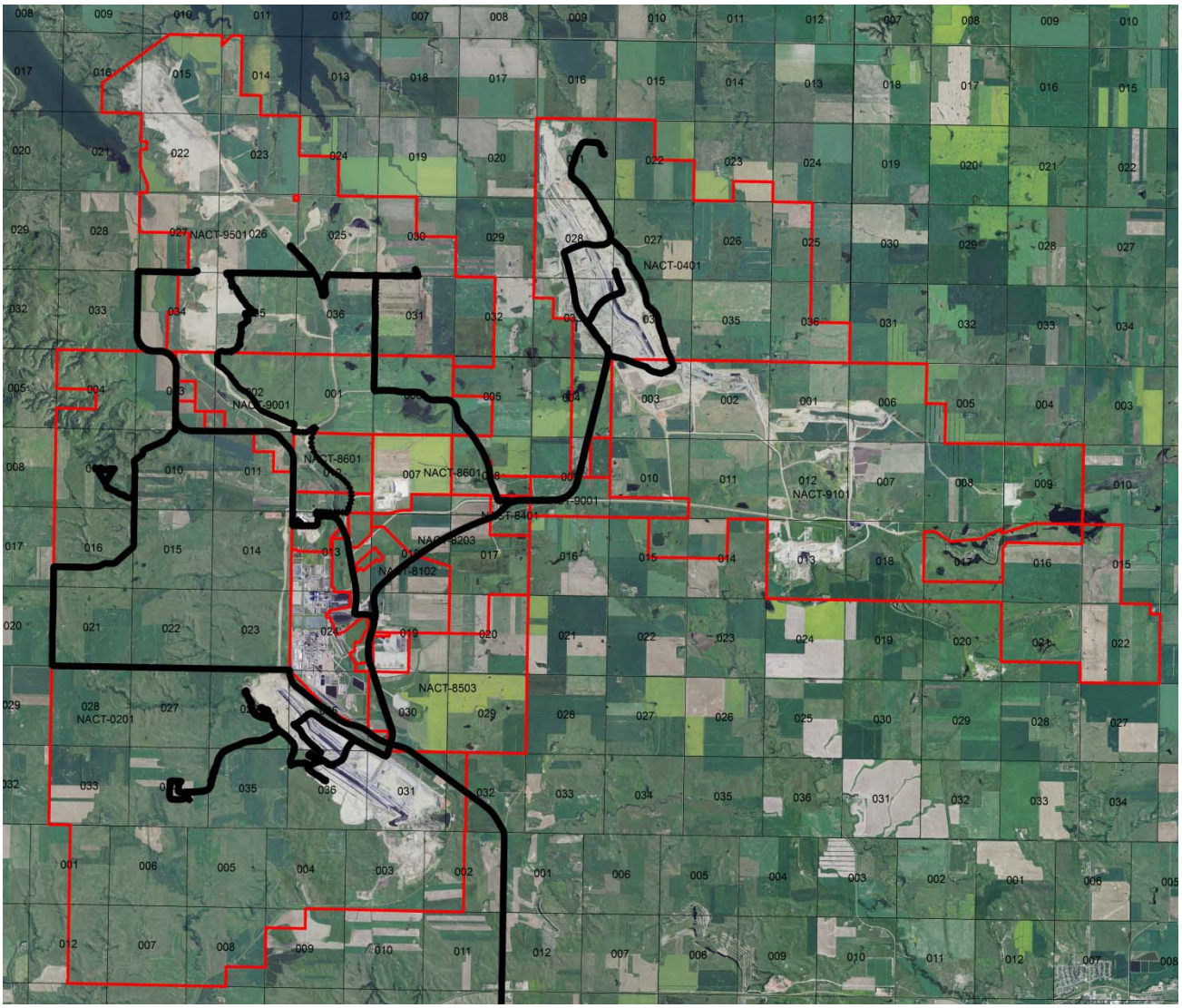
Michael Berg PE
Environmental Engineer

Guy A Welch
Environmental Scientist

cc: Donn Steffen
OSM Casper Field Office
Mercer County Auditor

Minedata/Freedom/InspectionReports/2011/110818.docx

Tracklog shown in black



DKm

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600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

INSPECTION REPORT

DATE OF INSPECTION: August 31, 2011

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coteau Properties Company - Freedom Mine

PERMITS INSPECTED: NACT-8102, NACT-8203, NACT-8401, NACT-8503, NACT-8601, NACT- 9001, NACT-9101, NACT-9501, NACT-0201

PERSONS ACCOMPANYING INSPECTORS: Terence Schmidt

INSPECTION CONDITIONS: The inspection was conducted between 9:40 a.m. and 4:45 p.m. CDT. Skies were overcast in the morning and partly cloudy in the afternoon. The temperature was near 80° F. Access was unrestricted.

OVERBURDEN/COAL REMOVAL

The 902 dragline was operating in the SW¼ of Section 31, Permit NACT-0201. Later in the afternoon, coal trucks were noted traveling to the pit west of Ramp 4 in Permit NACT-0201. The 933 truck/shovel fleet was removing overburden from the N½ of Section 3 and hauling the material to the SW¼ of Section 31, Permit NACT-0201. The 931 shovel was pre-benching in the SW¼ of Section 25 and the overburden was being hauled to the NE¼ of Section 36.

SURFACE WATER MANAGEMENT

The pre-mine diversion located along the east side of the NW¼ of Section 34 (Permit NACT-9501) was inspected. This diversion is located outside of the permit boundary but overflows from sediment ponds P-H34-04 and P-H34-05 as well as undisturbed areas between the ponds and off-permit diversion flow into this diversion. During the August 16, 2011 inspection, a gully was noted below this diversion in cropland in the northeast corner of the NW1/4 of Section 34. After reviewing the pond discharge reports for the two upstream ponds, it was decided that a more thorough inspection of the area was warranted. During this inspection, two additional gullies were found in the cropland in the NE¼NW¼ of Section 34. Mr. Schmidt and Mr. Kirk stated that all controlled discharges from sediment ponds P-H34-04 and P-H34-05 have been piped to areas west of the diversion thus bypassing the diversion altogether. These discharge points were inspected even though no discharges were occurring from these ponds at the time of this

inspection. The discharge point for pond P-H34-04 is located close to the natural drainage channel near the center of the W½ of Section 34. The discharge point for pond P-H34-05 is near the drainageway in the S½SW¼ of Section 27. Discharges from these two ponds have not been passing through the premine diversion located along the east side of the NW1/4 of Section 34. The gullies in the cropland may have formed when these ponds overflowed this past spring due to snowmelt and heavy spring precipitation. There was no evidence of active erosion in the cropland field below pond P-H34-04. Apparently the diversion was able to handle the flow from this pond, but the north end of the diversion was not able to handle the runoff when both ponds overflowed. Some very minor erosion (head cut) was observed in the drainageway below pond P-H34-04 near the intersection of the diversion and the drainageway. In addition, a small erosion feature was noted near the discharge point of pond P-H34-05. This feature will need to be stabilized prior to future releases from this pond. Energy dissipaters were in place at the ends of the discharge pipes for both of these ponds. Photographs of the diversion and erosion in the field were taken and are on file with the Reclamation Division.

The following ponds were briefly inspected and the water levels in relation to the permanent pool elevation stakes were noted.

Water Management Feature	Comment(s)
P-H34-05	Water 1 foot below PPE. Large gully where water enters the northeast corner of this pond.
P-H34-04	Water about 2.5 feet below PPE.
P-H27-02	Water 2 to 3 feet below PPE.
P-D18-01	Water about 3 feet below PPE.
P-W04-01	Being constructed.

A dozer was doing repair work on the upper reaches of the drainageway leading to pond P-H34-05. A delayed grade approval request area is located above this pond.

SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

Scrapers were stripping topsoil and subsoil from the area where sediment pond P-W04-01 was being constructed. Topsoil has been stripped from an access trail leading to this pond site and the topsoil and subsoil were being placed in piles along this access trial. Scrapers were also stripping overburden from this area for construction of the embankment of the pond. A dozer was working to remove SPGM from the pool area of the pond. It appeared that most of the topsoil had been removed from the pool area of the pond. Stakes in the pool area of the pond indicated that a portion of the pool area was deep lift SPGM removal area. However, this deep lift soil mapping unit borders an area of zero lift in the drainageway a short distance north of the embankment. Photographs of the SPGM removal operations and pond construction activities were taken and are on file with the Reclamation Division.

An area staked as a 0/0 SPGM lift area near the access trail east of Pond P-W04-01 was inspected. Although the premine soil survey had mapped this area as a 0/0 area, it was not clear why this area was staked as a zero lift area considering the vegetative growth and species composition on the area. There was very little evidence of sodic "claypan" spots on this area. A review of the premine soils map indicates that this area is mapping unit 74B, Savage-Rhoades silt loam, 3 to 6% slopes. Another area where SPGM has not been stripped in the E½NW ¼ of Section 3 was also inspected. This area is also classified as mapping unit 74C. There was evidence of "claypan" spots on this mapping unit but the site appeared to yield reasonably well this year. The Savage-Rhoades mapping unit descriptions indicates that

these mapping units (74B & 74C) are comprised of 40-60 percent Savage (non-sodic) and 25 to 40 percent Rhoades (sodic) soils with inclusions of Daglum, Belfield, Grail and Regent soils. Topsoil is listed as being from 7 to 14 inches deep on the Savage soil. A significant amount of area in the West Mine Area was originally mapped as 0/0 soil map units. These areas were reviewed in during a September 30, 2008 inspection and the following recommendations were made regarding the more extensive 0/0 map units in the West Mine Area.

Map Unit	SPGM Limitation	SPGM Recommendation
5 Harriet Clay Loam	sodium, salinity	No salvage due to high salinity
21C,E Searing Ringling complex	porcelanite	Salvage topsoil, especially from sideslopes
26 Playmoor-Harriet complex	salinity, sodium	No salvage due to high salinity
74B,C Savage-Rhoades complex	erosion, sodium	Salvage topsoil from at least the sod layer
75, 75B Belfield-Daglum complex	sodium	Salvage topsoil from the sod layer
85 Daglum	sodium	Salvage topsoil from at least the sod layer
89C,D,E Amor-Cabba loams	erosion	Salvage topsoil, especially from sideslopes
95, 95B,C Daglum-Rhoades complex	sodium	Salvage topsoil from the sod layer, avoid "pan" spots
96 Dogtooth	sodium	Limited topsoil salvage (sod layer) may be possible, avoid "pan" spots

In a follow-up phone discussion with Sarah Flath of Coteau, she was reminded that the above recommendations should be followed for 0/0 map units in the West Mine Area. Consideration should be given to updating the soils section in Permit NACT-0201 with this information.

REVEGETATION

Nearly all of the reclaimed native grassland in Permit NACT-9501 that is not being grazed has been hayed this year. The exception was a newer seeding in southeast corner of Section 26 or the SW¼ of Section 27. The reclaimed native grassland in the northwest corner of Section 36 of Permit NACT-9501 was briefly inspected. The seeded native species have established very well on this area and numerous native forbs were present. There was less alfalfa growing on this tract compared to the adjacent areas.

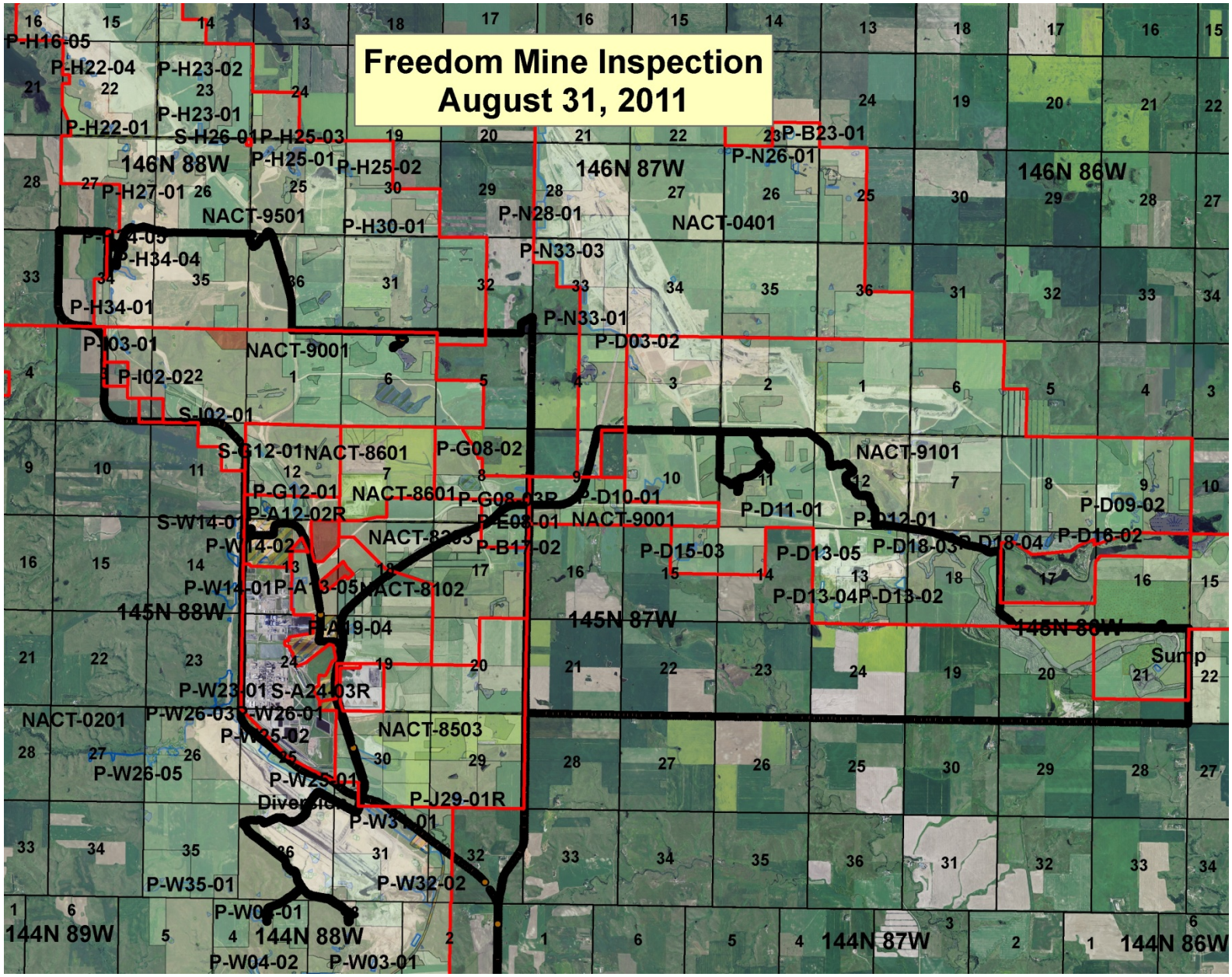
The reclaimed native grassland located in the NW¼NE¼ of Section 6, Permit NACT-9001, was inspected. This area was clipped with a rotary mower this year. Some switchgrass and sideoats grama was noted in this seeding but smooth bromegrass is abundant on the site. Reclaimed native grasslands in Section 11 and 12 of Permit NACT-9101 were also briefly inspected. The seedings in Section 12 have been hayed. The post-mine land use of a portion of the NW¼SE¼ of Section 12 will need to be further reviewed. A portion of this area (cropland) was chem.-fallowed this year but the Reclamation Division's digitized post-mine land use map shows this area as reclaimed native grassland. The reclaimed native grassland in the SW¼ of Section 11 has been idle to date this year. There was evidence of hail damage on the tract. Alfalfa and smooth bromegrass are prevalent on this reclaimed native grassland in the SW¼ of Section 11 but little bluestem and sideoats grama still persist in this seeding.

The differential settling repair area in the SE¼ of Section 16 (NACT-9101) was inspected. A small portion of the 2010 repair area has been reshaped to accommodate drainage. Alfalfa seedlings were emerging on the site. The older portion of the repair area is becoming established with the hayland seed mixture – western and intermediate wheatgrass, switchgrass and alfalfa. Annual weeds such as horsetail, barnyard grass and pigeongrass are also present. A few young Canada thistle plants were noted and there was evidence that portions of the repair area had been sprayed, presumably to control this noxious weed. No issues were identified on this repair area to not approve the pending variance request from the 10-year re-vegetation responsibility period.

Guy A. Welch
Environmental Scientist

cc: Donn Steffan
OSM Casper Field Office
Mercer County Auditor

Minedata/Freedom/InspectionReports/2011/110831.docx


Freedom Mine Inspection
August 31, 2011
146N 88W
146N 87W
146N 86W
145N 88W
145N 87W
144N 89W
144N 88W
144N 87W
144N 86W
P-H16-05
P-H22-04
P-H23-02
P-H22-01
P-H23-01
S-H26-01
P-H25-03
P-H25-01
P-H25-02
P-H27-01
NACT-9501
P-H30-01
P-H34-04
P-H34-01
P-I02-02
S-I02-01
NACT-9001
S-G12-01
NACT-8601
P-G08-02
P-G12-01
P-A12-02R
S-W14-01
P-W14-02
P-W14-01
NACT-8102
P-A19-04
P-W23-01
S-A24-03R
NACT-0201
P-W26-01
P-W25-02
P-W26-05
NACT-8503
P-W25-01
P-J29-01R
P-W31-01
P-W35-01
P-W32-02
P-W04-02
P-W03-01
P-B23-01
P-N26-01
NACT-0401
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P-N33-03
P-N33-01
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NACT-9101
P-D10-01
P-D11-01
P-D12-01
P-D09-02
P-D16-02
P-D18-03
P-D18-04
P-D15-03
P-D13-05
P-D13-04
P-D13-02
P-B17-02
Sump

DKM

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600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

INSPECTION REPORT

DATE OF INSPECTION: September 16 and 17, 2014

TYPE OF INSPECTION: Complete

PERMITTEE - MINE: Coteau Properties Company - Freedom Mine

PERMITS INSPECTED: NACT-8102, NACT-8203, NACT-8401, NACT-8503, NACT-8601, NACT- 9001, NACT-9101, NACT-9501, NACT-0201, NACT-0401

PERSONS ACCOMPANYING INSPECTORS: Terence Schmdt, Brent Flaa (16th) and Jessica Unruh (afternoon of the 17th)

INSPECTION CONDITIONS: The inspection was conducted between 9:30 a.m. and 5:00 p.m. CDT on the 16th and from 10:00 a.m. until 4:15 p.m. on the 17th. Skies were sunny. The temperature reached the low to mid 70° F both days. Access was unrestricted.

OFFICE RECORDS

Mining permits, permit revisions and other mining related information were on file and available for review. The following records were briefly reviewed.

Record/Report/License	Comments
Certificate of Liability Insurance	On file, expires February 1, 2015
Surface Water Monitoring Report	2nd Quarter 2014 report on file
Ground Water Levels Monitoring Report	3rd Quarter 2014 report on file
Annual Ground Water Monitoring Report	2013 Annual Report dated Feb. 3, 2014 on file
NDPDES Permit No. ND-0025038	Expires December 31, 2016
NDPDES Discharge Monitoring Report (Semi- Annual)	1st half 2014 report on file
Storm Water Discharge Permit	Storm Water General Permit has been extended until Jan. 2015
Annual NDPDES Storm Water Disch. Rpt	2013 report on file
Quarterly Pond Inspection Reports	2nd Quarter 2014 reports on file. Minor repair issues noted on a few ponds. Sed. Pond P-W34-01 needs to be reseeded.

Record/Report/License	Comments
Monthly MSHA Pond Inspections	August 25th inspection reports on file. Last sediment pond certified was P-W26-06, September 20, 2013.
Pond Certificates	Last sediment pond certified was P-W26-06, September 20, 2013.
Haul Road Certifications	2013 Annual Certification Map is on file
County Conditional Use Permits	On file. Most recent issued was May of 2008.
Solid Waste Disposal Permit	Permit No. 0343 expires June 16, 2019
Air Pollution Control Permit	Permit No. 085004 expires Nov. 15, 2016
Blasting Notice Affidavit of Publication	Published on July 10, 2014
Blasting Records	On file and briefly reviewed. The last blasting record indicated a coal shot was detonated on September 11, 2014 in Sections 35 and 36, T145N, R88W in Permit NACT-0201. The shot was located approximately 5500 feet southwest of DGC/AVS gas line.
Blasting seismograph records	Blasting seismograph records were on file. The last blasting seismograph record was dated September 3, 2014 at DGC/AVS gas line.
Blast Certification	Certificates were on file
Federal Coal Exploration License	Expired October 16, 2002
State Coal Exploration Permit	Expired August 6, 2011
Biennial Wildlife Report	2012/2013 report submitted Feb 2014 with Rev 26 to NACT-0401
Road Closures and Setbacks	Most recent information on file dated Feb. 16, 2011
BATF Manufacturer of High Explosives	Expires July 1, 2015
Water Use Permits	Temp. permit expires September 30, 2014
State Wetland Drainage and Army Corps of Engineers 404 Permit	Nationwide 21 Permits for mining permits NACT-0401, NACT

The information on file in the Records Room at the Freedom Mine regarding Road Closures and Setbacks appears to be outdated. Pending Revision No. 18 to Permit NACT-0201 contains Mercer County Resolutions dated June 19, 2013 to temporarily close section lines and an amended agreement regarding a road closing dated July 11, 2014.

SIGNS & MARKERS

Permit signs and boundary markers were observed at access points and boundaries during the course of this inspection. Identification signs were observed on all inspected SPGM stockpiles and sedimentation ponds.

OVERBURDEN/COAL REMOVAL

In Permit NACT-0401: The 901 dragline was removing overburden in the SW¼ of Section 27. The 935 truck/shovel fleet was prebenching overburden in the NE¼ of Section 34 and hauling that material to a fill area to the south in the same quarter section between ramps 10 and 11. Coal was being hauled from Ramp 10. The 937 shovel was cleaning mud at the bottom of the pit near ramp 12 in Permit NACT-0401. A dozer and tree truck were part of the operation and the mud was being transported to an area in the proximity to the top of ramp 12.

In Permit NACT-0201: The 902 and 903 draglines were removing overburden in the NE¼ of Section 4 and in the NW¼ of Section 36, respectively. The 931 truck/shovel fleet was prebenching overburden in the SW¼ of Section 36 and the material was being hauled to a fill area in the N1/2 of the same section.

SURFACE WATER MANAGEMENT

The following ponds were inspected and their elevations were estimated and other conditions were noted.

Water Management Feature	Comments
P-J30-02R	6 feet below Spillway Elevation
P-W25-01	PPE marker underwater
P-W25-02	PPE marker underwater
P-W32-02	1 foot below PPE
P-W31-01	At PPE
P-W04-01	6 feet below top of embankment
P-D12-01	At PPE
P-W26-06	At PPE. Concrete mat to control erosion recently installed.
P-W35-01	2 feet above PPE. Discharging from pump at approx. 800 gpm, water was clean and quality appeared to be good.

SUITABLE PLANT GROWTH MATERIAL REMOVAL/RESPREAD

In Permit NACT-0201: Several SPGM removal areas were inspected and field approved. It appeared that all available SPGM had been removed from the inspected areas. The soil monuments were easily read and displayed the required information and field approval was granted. Mr. Flaa stated that the details of the soil removal areas would be sent to the Reclamation Division in a subsequent email.

Figure 1: SPGM removal monuments in Permit NACT-0201



BACKFILLING AND GRADING

Grade approved area WMA-016 was briefly viewed during the inspection. The area consists of 62.98 acres and was approved for respread on July 25, 2014. The SPGM respread appeared to be in good shape and consistent, no signs of erosion were noted in the respread material.

REVEGETATION

Reclaimed native grassland in Section 8 of Permit NACT-8601, Sections 1, 6 and 2 of Permit NACT-9001, Sections 16, 22, 26, 27, 31, 34, 35 and 36 of Permit NACT-9501 were inspected. All of these tracts were hayed or grazed this year with the exception of that which is located in Section 8, the NW1/4 of Section 26 and the NE1/4 of Section 34 of Permit NACT-9501. The established vegetation is generally providing excellent protection from erosion on all observed seedings that are more than two years old but a few rills and gullies were observed that will need to be repaired. Species vigor was high and the reclaimed native grasslands yielded very well this year.

The oldest reclaimed native grasslands that have been managed with prescribed grazing over the years appear to have the greatest species diversity and smooth bromegrass does not appear as prevalent on reclaimed tracts that are spring grazed simply due to the fact that the species is being utilized.

Of the areas looked at during this inspection, the N1/2 of the SW1/4 and part of the NW1/4 of Section 1 and the eastern portion of Section 2 of Permit NACT-9001 contained reclaimed native grassland that most closely resembled undisturbed native grassland. The seeded species, western wheatgrass, green needlegrass, sideoats grama, switchgrass, little bluestem and blue grama are all present in good quantities on these and smooth bromegrass was present in varying amounts. What makes these areas look especially successful is the number and relative abundance of desirable native grasses, native forbs and shrubs that were not seeded but are present on these lands. This diversity is obviously a result of direct respreading of native grassland topsoil. Grass species observed growing in Section 1 but were not seeded included porcupine grass, awned wheatgrass, priairie sandreed, big bluestem and prairie cordgrass. Native forbs observed growing included prairie coneflower, silverleaf scurfpea, Aster ericoides, fringed sagewort, wavyleaf thistle, daisy fleabane, American licorice, curleycup gumweed, Missouri goldenrod and purple coneflower. Buckbrush or western snowberry is prevalent in portions of these tracts and numerous volunteer buffalo berry shrubs have re-established on the native grassland in Section 1 and portions of Section 2. Species composition differences were observed between and within various seeding dates on these tracts and smooth brome is present in varying amounts throughout but grazing makes this species appear to be less prevalent. Plant vigor was very high this year and these reclaimed lands yielded very well this year. Figure 2 shows a volunteer buffalo berry plant on reclaimed native grassland located in the N1/2 of the SW1/4 of Section 1.

Figure 2: N1/2 of SW1/4 of Section 1, Permit NACT-9001



The reclaimed native grassland Tracts that are being hayed and grazed in Sections 22, 26, 34, 35 and 36 are generally all well established with the previously mentioned seeded species. Utilization levels were generally moderate to light and the established vegetation on the older stands are protecting the sites from erosion. The 2014 seeded area in the NW1/4 of Section 36 is heavily grazed as depicted in Figure 3 below. The 2013 seeding in this area is dominated with slender wheatgrass and annual weeds and the other seeded species are establishing. Smooth bromegrass appeared to be quite prevalent on the 2003 seeded area in Section 36.

Figure 3: 2014 seeding in Section 36



Generally, few native forbs were observed on the areas listed in the paragraph above but Aster ericoides was generally present as scattered plants. The one exception was the SE1/4 of Section 34 where golden pea and an Astragulus species were observed growing on an area respread from stockpile and initiated in 2010.

A considerable amount of smooth brome was noted on the reclaimed land located in the SW1/4 of Section 35 that was initiated in 2010. Grazing was initiated on this tract later in the growing season so the smooth bromegrass was allowed to produce seed heads and perhaps it just seemed more prevalent than elsewhere.

Smooth brome appeared as the dominant species established on the older seeded area (1995 & 1996) in Section 6 of Permit NACT-9001. This tract is being managed as hayland and Kentucky bluegrass, and alfalfa in places, are also abundant in these older seedings. The more recent seedings on this tract (2004) continue to be dominated with the seeded native species and the invasive introduced species were present but not abundant. The west end of this tract was in the process of being hayed and was not inspected. Smooth brome was also prevalent in the native grassland tract located in the S1/2 of the SW1/4 of Section 31 but the seeded native species are prevalent throughout. This tract was grazed this year which appears to be helping maintain species composition.

The reclaimed native grassland in Section 8 of NACT-8601 consists of older seedings that have been sprayed with an herbicide and reseeded (R-2013) and areas initiated in 2012 and 2013. Warm season species are quite prevalent on the reseeded area but the seeded cool season species are not prevalent. Smooth bromegrass has re-established in these areas and is abundant. The seeded species are well established on the hilltop area of the 2012 seeded area and species composition looks good but a strip along the west edge of this seeding has an accumulation of litter and few native species were observed. Smooth bromegrass, sweet clover, and noxious weeds are abundant on this area. It was not evident in the field whether this area is part of the subsoil pile area reclaimed in 2012 or if it was part of an older seeding that was sprayed with herbicide. Perhaps it was an area initiated in 2012 that was mistakenly sprayed with a herbicide. In any event, this site needs management to help ensure revegetation success.

The reclaimed native grassland located in the NE1/4 of Section 34 that was seeded in 2012 has developed quite well and the seeded vegetation is generally providing good ground cover. This stand was quite thin last year. The grass stand on this tract is dominated with slender wheatgrass, western wheatgrass, green needlegrass and blue and sideoats grama. Gullies were noted in both drainage ways above sediment pond P-H34-05, but the drainage way moving towards the southeast has not yet been reclaimed which explains why tall wheatgrass was the dominant species established. The gully erosional feature on the reclaimed portion of this tract will need to be repaired prior to pond removal.

A few low areas, presumably differential settling, were noted on reclaimed native grassland during this inspection. This includes reclaimed native grassland located in the S1/2SW1/4 of Section 31, NE1/4 of Section 35, SE1/4 of Section 2 and SE1/4SE1/4 of Section 16. Most of these areas appear to be functioning as temporary wetlands which are not necessarily detrimental to the postmine land use and a few, such as those in Section 16, might be more similar to seasonal wetlands.

The topography of the reclaimed lands in Permits NACT-9001 and 9501 looks quite natural for the most part. The most unnatural features observed were the diversion-like waterways that were constructed in the S1/2 of Section 2 of NACT-9001 that move runoff diagonal along the slope to reduce slope steepness. These diversion-like waterways did pass the excessive amounts of runoff received this year and they appeared stable. The reclaimed haulroad corridor that was reclaimed last winter in Section 12 of Permit NACT-8601 was traversed and the side slopes appeared stable with only minor erosion noted for the most part.

Gully erosion was observed in the main drainage in the W1/2 of Section 36, in the drainage above reclaimed sediment pond P-H34-04 and in a less significant drainage north of a stockpond located in the SE1/4 of Section 35. Gully erosion was also observed in the main drainage way in Section 15 of Permit NACT-9501 and below the diversion located west of the permit boundary in the NW1/4 of Section 34 of Permit NACT-9501. Head cutting is occurring where runoff enters the diversion below sediment pond P-H34-05 and a portion of the diversion berm has been washed away in a low area which allowed runoff to pass over the cropland to the west.

Erosion was also observed on the steep slopes where sediment pond P-H16-05 was reclaimed. The April 22, 2014 pond removal plan states that straw/coconut fabric will be installed if determined to be needed by a post-construction field review. The steep portions of the drainages associated with this pond removal should be stabilized with fabric. Figure 4 shows this area.

Figure 4: Reclaimed pond site P-H16-05



Reclaimed woodlands located in Sections 22, 31, 1, 34 and 35 of Pemits NACT-9501 and 9001were briefly inspected. The older tree plantings in Section 1 have developed considerably over the past two years to the point where a canopy cover exists in portions of these plantings. The tree planting in Section 31 has established with variable success but has a fairly diverse mixture of trees - green ash, box elder, cottonwoods, and shrubs including American plum, chokecherry, buffalo berry, woods rose and silverberry. The newer tree plantings in Sections 34, 35 and 22 of NACT-9501 are establishing with variable success. Only about 50% of the trees and shrubs in the shelterbelt planting located in the NE1/4 of the SE1/4 of Section 34 have survived. The caragana and green ash had the highest survival rate while it appears all of the pine trees died. About half of the trees in the box elder row survived. Weed barrier was installed in this planting and the past two years have been exceptionally wet so it is not clear why survival was not better. The reclaimed woodlands in the SE1/4 of Section 34 appear to have similar survival rates but the planting density is much higher than a shelterbelt planting. The competing weed growth in these woodland plantings was clipped later in the growing season with clipping still continuing, and woodchips were still being placed in some of these plantings. In most instances it appears only an inch or two of woodchips have been scattered over the sites which may not be enough to completely suppress annual weed growth. Wood chips were in the process of being spread on a woodland site in Section 22 that was planting this past spring. Figure 5 shows this operation.

Figure 5: Woodchips being applied to a woodland planting in Section 22, NACT-9501



Water was flowing out of the large recreated wetland in Section 6 of NACT-8601. The reclaimed wetlands located in Section 31 were holding water at a high level and they are functioning as intended. Livestock effects appear minimal on these wetlands this summer, possibly due to high water levels.

ROADS

Equipment was being used to incorporate a mix of flyash, overburden and gravel into soft spots along the haulroad in the SE¼ of Section 8, Permit NACT-8401. Water trucks were observed in Permits NACT-0401 and NACT-0201 spraying the haul roads to control fugitive dust.

WILDLIFE

Ten white tail deer were observed in Section 9 of Permit NACT-9001. Several ducks and other waterfowl species were observed on ponds and wetlands during the inspection.

MISCELLANEOUS

Photographs taken are on file with the Reclamation Division. GPS tracklogs of the routes traveled to look at reclaimed lands are unavailable due to computer malfunction.

Francisco Echeverria
Environmental Engineer

Guy A. Welch
Environmental Scientist

cc: Troy Leingang
OSM Casper Field Office
Mercer County Auditor

Minedata/Freedom/InspectionReports/2014/140916-17c

ZAB

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State of North Dakota

PSC - 6

COMMISSIONERS
Randy Christmann
Julie Fedorchak
Brian Kroshus

Executive Secretary
Darrell Nitschke

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

INSPECTION REPORT

DATE OF INSPECTION: April 26, 2018

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coteau Properties Company - Freedom Mine

PERMITS INSPECTED: NACT-9501

PERSONS ACCOMPANYING INSPECTORS: Clyde Eisenbeis, Jerome Boeshans and Jaymie Boeshans

INSPECTION CONDITIONS: The inspection was conducted between 10:00 a.m. and 12:30 p.m. CDT. Skies were clear and the temperature was near 55° F. Access was unrestricted.

GENERAL

This inspection was conducted to follow-up the January 18, 2018 meeting between the Reclamation Division staff and Clyde Eisenbeis, a co-surface owner of the NW1/4 of Section 34, T146N, R88W, Mercer County, ND. Mr. Eisenbeis' land is located off-permit and adjacent to Surface Coal Mining Permit NACT-9501 at the Coteau Properties Freedom Mine. Mr. Eisenbeis alleges that mining on adjacent land has caused damage to his property.

The E½ of Section 34 is part of Surface Coal Mining Permit NACT-9501. Surface mining and reclamation activities occurred on portions of the E½ of Section 34. The E½ of Section 34 and all of the affected areas in the watersheds up gradient from the Eisenbeis property in the NW¼ of Section 34 have been reclaimed. This includes the removal of two sediment ponds that were reclaimed and seeded in 2014 and 2016.

In the fall of 2012, Coteau reconstructed an pre-existing diversion located along the east side of the NW¼ of Section 34 such that runoff from the NE¼ of Section 34 passes to a county road ditch located along the north side of the NW¼ of Section 34. The Reclamation Division was not involved with re-construction of the diversion.

The diversion was reconstructed in its original location and the reconstruction included the removal of sediment from the road ditch on the north side of the NW¼ of Section 34 and the installation of Flexcrete (a concrete flex matting) through the road ditch to create a Texas style crossing for equipment access to the field. The locations of the diversion, county road ditch, and Flexcrete crossing are depicted on Figure

1. Figure 1 also depicts the locations where the photographs in Figures 2 through 11 were taken. Figures 2 and 3 are photographs of the Flexcrete crossing. Mr. Eisenbeis claims Coteau did not have the proper authorization to reconstruct the diversion on his property and the deeper road ditch now limits equipment access to his land. Mr. Eisenbeis said one potential renter was not interested in leasing his cropland because of poor access to his field.

The current tenants, Jerome and Jaymie Boeshans, have rented the NW¼ of Section 34 for the past two years. During the inspection, Boeshans' said they cannot move a semi and other equipment into the field because of the size and slopes of the flexcrete crossing in the road ditch. Boeshans' grew beans in 2016 and canola in 2017. They chose these crops, in part, because they produce less volume of seed at harvest. Boeshans' are considering planting corn this year, but they have concerns because corn produces more volume at harvest. Last year when harvesting canola, the flexcrete crossing could only be crossed with half-loaded grain carts resulting in twice the normal trips across the tract. Boeshans' are concerned about the additional time, hassle and cost associated with moving grain off the field.

The diversion and its associated berm are generally well established with perennial vegetation, primarily smooth bromegrass. Figure 4. Vegetation is not well established on approximately 100 feet of the west side of the diversion berm and some soil sloughing has occurred in this area. Figure 5. This area is down slope from the drainage of reclaimed sediment pond P-H34-04.

Runoff from the north drainage in the NE¼ of Section 34 enters the reconstructed diversion in the NW¼ of Section 34 at a right angle and drops approximately 10 feet to the bottom of the diversion. This entry point is lined with concrete flex matting and the site appears stable after this year's spring snow runoff event(s). This drop structure was originally constructed of Creflex blocks; however, much of the Creflex was replaced with Flex-A-Mat in June 2017 when erosional features were repaired. Figure 6.

The road ditch on the north side of the NW¼ of Section 34 is generally well established with perennial vegetation that includes smooth bromegrass, reed cannarygrass, cattails and other species. The only noxious weed observed was Absinth wormwood; however, Jaymie Boeshans stated Canada thistle was present during the growing season last year. A head cut was observed in the road ditch about 100 feet west of where the diversion enters the road ditch. This feature needs to be stabilized to prevent future erosion.

Other erosional features were observed on the Eisenbeis property and most were located in the E½NE¼NW¼ of Section 34. It appeared these erosional features were created from runoff that occurred last spring because canola stubble from last year's crop was present in these features. Only minor sediment deposition from runoff that occurred this spring was observed (up to an inch or two of deposition in portions of the older erosional features). The erosional features varied in size and the largest one observed was approximately 16 inches deep, 2 feet wide and 25 feet long. Figures 7, 8, and 9.

Additional erosional features were observed in the NW¼NE¼NW¼ of Section 34 where runoff from the field enters a natural drainageway. These erosional features appeared to have formed last year. Figure 10. Several handfuls of erosion control fabric and an anchoring staple were collected in the field during the inspection.

The drainageway through the Eisenbeis cropland in the southwest corner of the NW¼ of Section 34 was inspected. Surface water runoff from watersheds southwest of the Eisenbeis property flows through a box culvert under County Road 15 a few hundred yards south of the Eisenbeis property into a natural

drainageway in cropland in the NW¼SW¼ of Section 34. The natural drainageway extends northward into the Eisenbeis property at the southwest corner of the NW¼ of Section 34 and continues meandering northward through the Eisenbeis cropland. With the exception of a small portion of the southwest corner, the drainageway is cropped when it is dry enough to support planting equipment; during wet years the drainageway and adjacent area are left idle. The drainageway was too wet to be cropped in 2017 but the field was cultivated when it dried out last summer or fall. Figure 11.

GROUND WATER

The water elevation in groundwater monitoring wells located along the south side of the SW¼ of Section 27, T146N, R88W and in the northwest corner of Section 27 were checked after meeting with Mr. Eisenbeis and the Boeshans'. The water table level of the monitoring wells along the south side of the SW1/4 of Section 27 had groundwater levels approximately 27 feet below the surface and the ground water level was within 2 feet of the surface in the northwest corner of Section 27.

Guy A. Welch
Environmental Scientist

Bruce Beechie
Environmental Scientist

cc: Sarah Flath
Clyde Eisenbeis
OSM Casper Field Office
Mercer County Auditor

Figure 1. Location of the diversion, road ditch, Flexcrete crossing and photographs taken in the NW¼ of Section 34

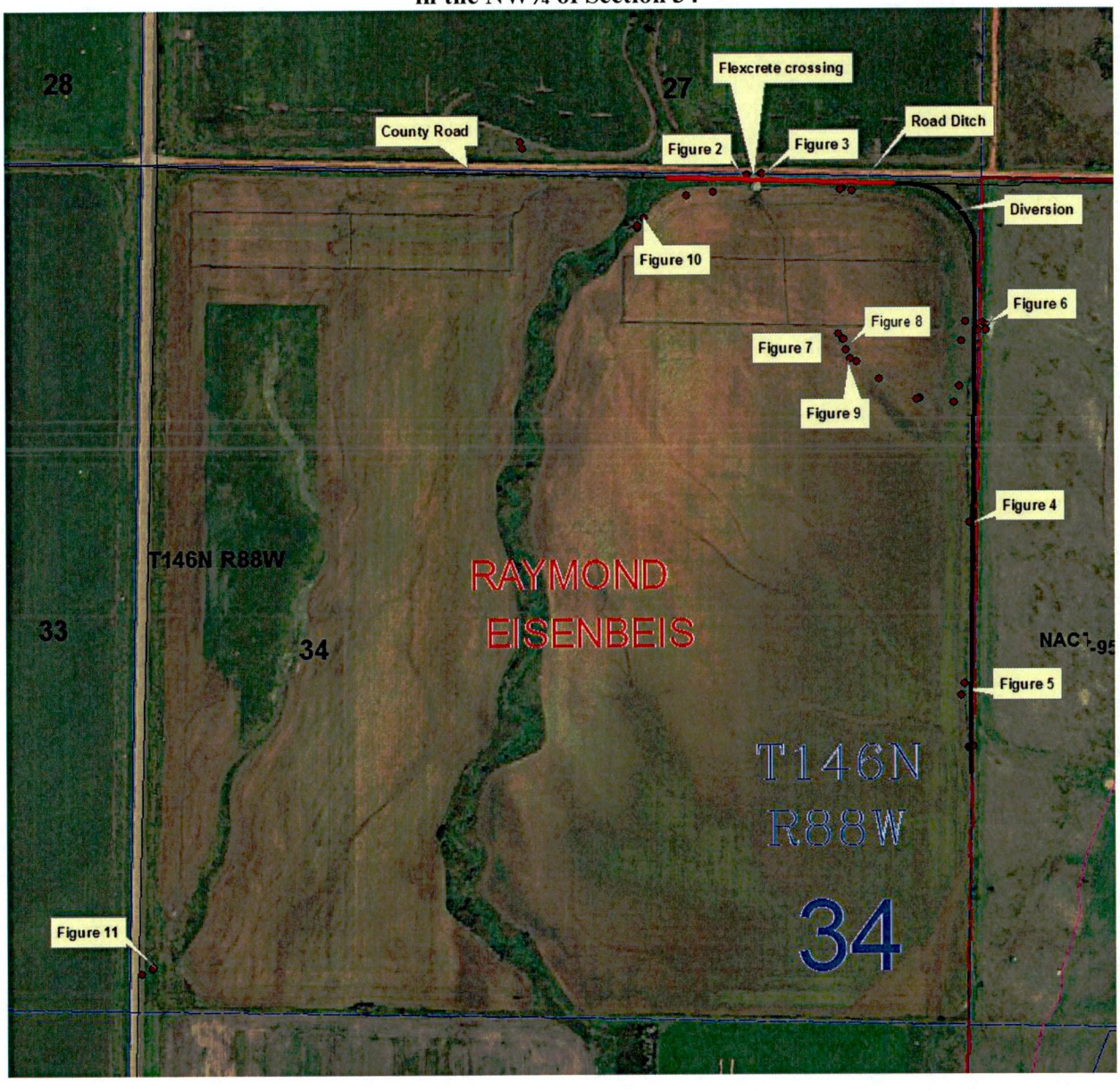


Figure 2. Flexcrete crossing in the road ditch on the north side of the NW¼ of Section 34. Photograph taken facing east.



Figure 3. Flexcrete crossing in the road ditch on the north side of the NW¼ of Section 34. Photograph taken facing west.

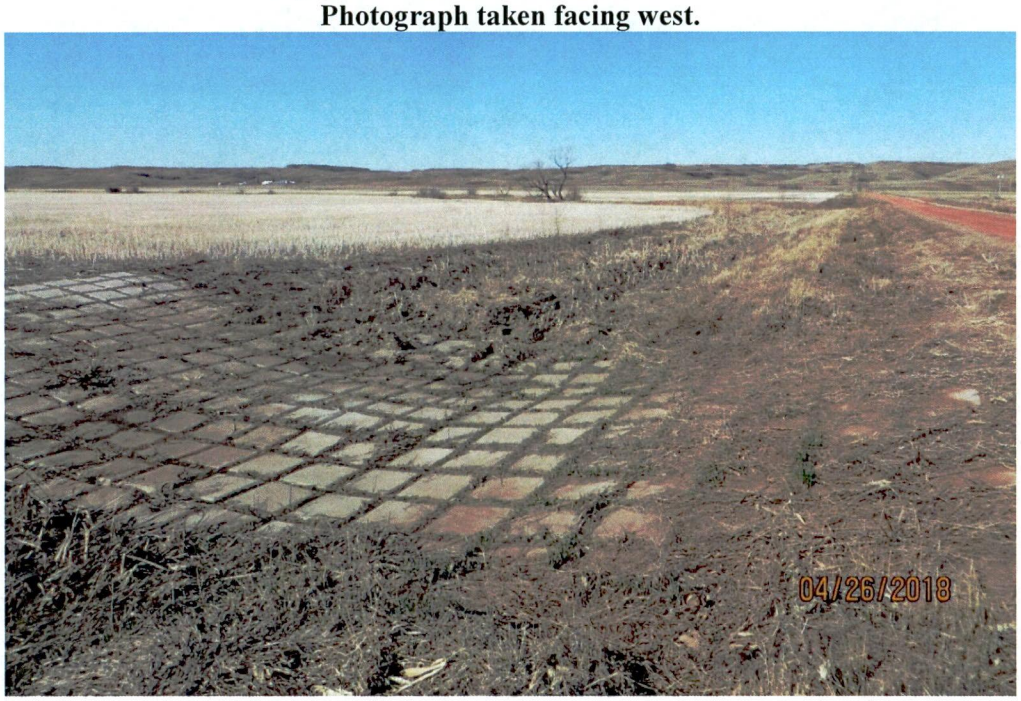


Figure 4. Diversion on the east side of the NW¼ of Section 34.



Figure 5: Soil sloughing on the west side of the diversion berm.



Figure 6. Concrete flex matting at the inlet where water enters the diversion from the NE¼ of Section 34.

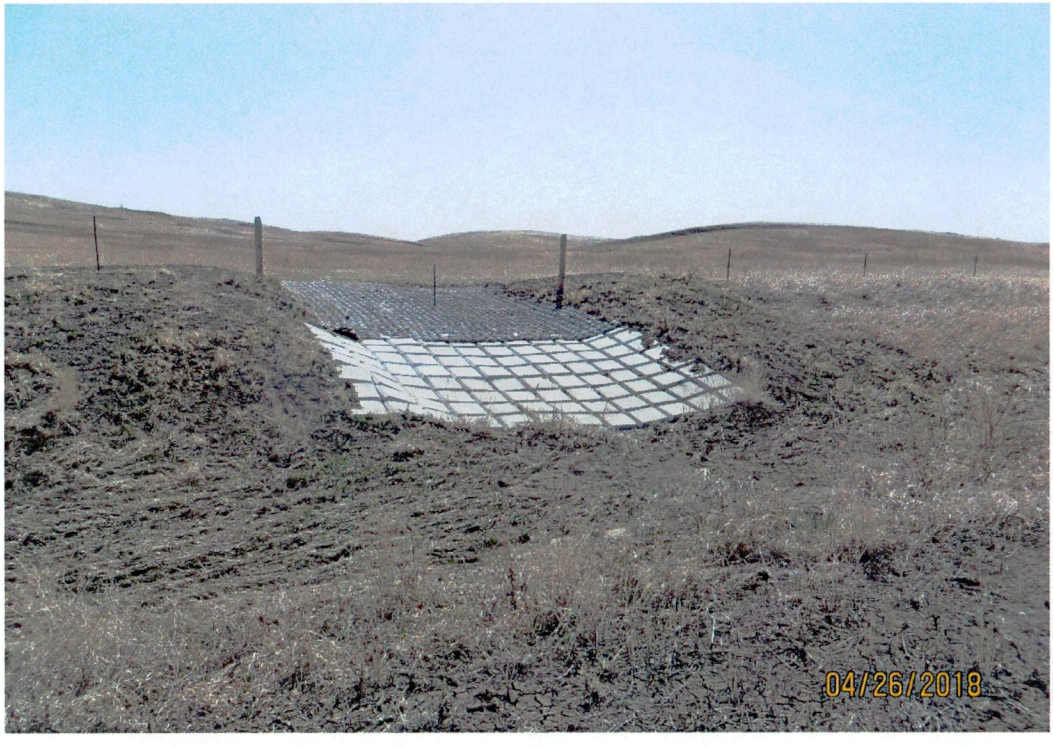


Figure 7: Erosional features on cropland in NW1/4 of Section 34.



Figure 8: Erosional features on cropland in NW1/4 of Section 34



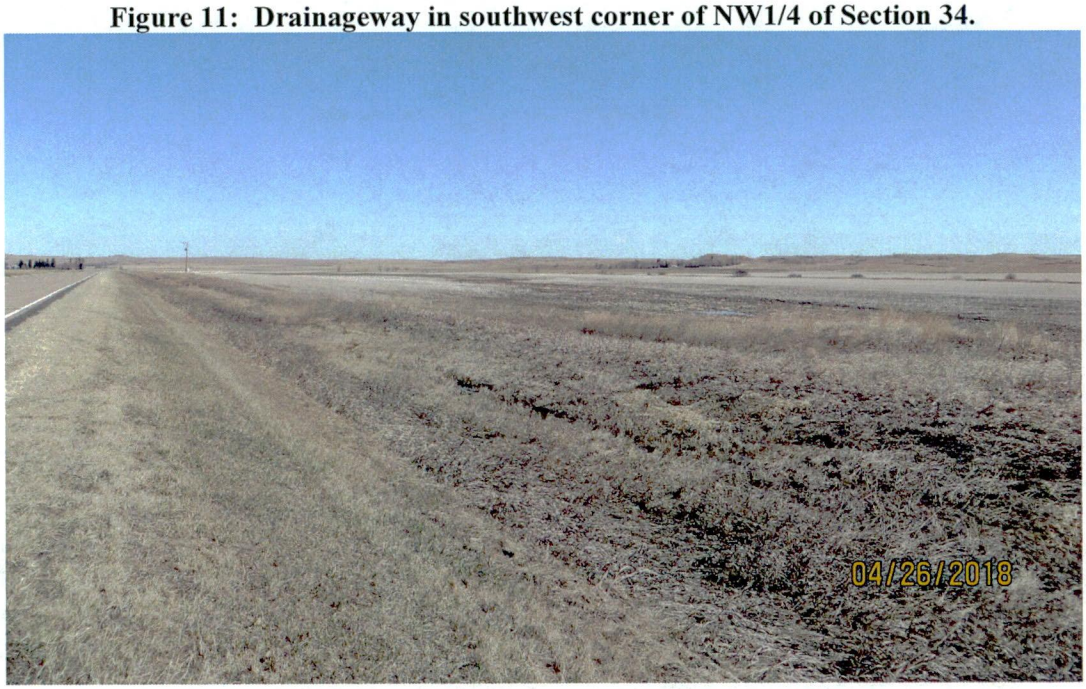
Figure 9: Erosional features on cropland in NW1/4 of Section 34



Figure 10: Erosional features on cropland in the NW1/4 of Section 34.



Figure 11: Drainageway in southwest corner of NW1/4 of Section 34.



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PSC - 7

COMMISSIONERS
Julie Fedorchak
Randy Christmann
Sheri Haugen-Hoffart

600 East Boulevard, Dept. 408
Bismarck, North Dakota 58505-0480
Web: www.psc.nd.gov
E-mail: ndpsc@nd.gov
Phone: 701-328-2400
ND Toll Free: 1-877-245-6685
Fax: 701-328-2410
TDD: 800-366-6888 or 711

INSPECTION REPORT

DATE OF INSPECTION: June 28, 2022

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Coteau Properties Company - Freedom Mine

PERMITS INSPECTED: NACT-9501 Boundary and Adjacent Lands

PERSONS ACCOMPANYING INSPECTORS: Clyde Eisenbeis (property owner); Sarah Flath, Rylan Sundsbak and Dillon Belisle (Coteau Properties Company - adjacent landowner)

INSPECTION CONDITIONS: The inspection was conducted between 12:45 p.m. and 1:45 p.m. CDT. Skies were sunny. The temperature was near 75° F. Access was unrestricted.

OFF-SITE REVIEW

The NW¼ of Section 34, T146N, R88W, Mercer County was inspected with one of the surface owners of this property, Mr. Clyde Eisenbeis. Mr. Eisenbeis has alleged that erosion is occurring on property in the NW¼ of Section 34 because of surface coal mining and reclamation activities on adjacent lands to the east in the NE¼ of Section 34, which is included in surface coal mining permit NACT-9501.

The diversion and road ditch along the east and north sides of the northeastern portion of NW¼ of Section 34 were walked. The diversion is located off permit and was constructed many years before the adjacent area was permitted and mined. The diversion was re-built in 2012. This diversion and the road ditch divert surface water runoff from the east, where mining occurred in the past, around the Eisenbeis' cropland in the NW¼ of Section 34 (**Figure 1**). The diversion appears to have functioned as intended during spring precipitation runoff events.

The cropland in the NW¼ of Section 34 was planted to soybeans this spring with minimal tillage and canola stubble from last year's crop remains on the soil surface. A rill approximately 1 foot wide, 6 inches deep, and about 40 feet in length was observed in the crop about 150 feet west of the diversion **(Figure 2)**. A row of soybeans was planted in this rill which means it had formed prior to spring seeding. No other significant active erosional features were observed in the cropland field.

As previously documented in a June 8, 2022 inspection report, several erosional features have formed in the diversion in the northeast corner of the NW¼ of Section 34. The most significant feature is a head cut that is approximately 40 feet in length, 6 feet wide, and 3 feet in depth **(Figure 3)**. This feature was about

40 feet from the center of the county road to the north. A similar, but smaller head cut, was present in the diversion upstream from the larger feature and several small (1 cubic foot) scour erosion features were observed upstream from this feature. The smaller head cut was about 20 feet in length, 3 feet wide, and 2 feet deep and was approximately 70 feet from the center of the county road. These erosional features were observed in the diversion bend where the diversion transitions into the county road ditch. The entire length of the diversion was walked, and no other erosional features were observed in the diversion or the road ditch.

The diversion is well vegetated with a dense stand of grass, primarily smooth bromegrass. A few patches of Canada thistle and absinth wormwood plants were observed in the diversion. A few trees have established in the county road ditch and in the primary drainage that passes through this property. A group of trees was also observed from a distance in the NE¼ of the SW¼ of Section 34 **(Figure 4)**. Mr. Eisenbeis alleged that all these trees have established because of increased water in the drainage directly related to surface coal mining discharges.

Rock was observed in the drainageway in the NE¼ of Section 34 where runoff from the south watershed enters the diversion on the Eisenbeis property.

A GPS tracklog of the route traveled during this inspection **(Figure 1)** is on file with the Reclamation Division as are additional photographs. Mr. Eisenbeis asked that photographs be taken of the concrete matting that has been placed in the road ditch to provide access into the eastern portion of his field. The concrete matting in the road ditch dips about 3 feet below the surface elevation of the adjacent cropland. Mr. Eisenbeis alleges that current access into his field is inferior to what existed prior to the reconstruction of the diversion and deepening of the county road ditch in 2012. Mr. Eisenbeis expressed that the diversion is reducing the acreage available as cropland in the NW¼ of Section 34. It appears the reconstructed diversion occupies an additional 1 acre of cropland based on digital measurements from aerial photography (2009 NAIP and 2021 NAIP).

Two ground monitoring wells (USGS-3753 1/2) located immediately north of the NW¼ of Section 34, along the south side of the SW1/4 of Section 27, T146, R88W, were examined to determine the depth to ground water. The depth to ground water in these wells were 33.7 and 33. 4 feet below the top of the surface pipe, respectively. The ground water depth in monitoring wells in the northwest corner of Section 27 were also examined (MP93-P01 A/B). The depth to ground water in these wells were 4 and 9.5 feet below the top of the surface pipe, respectively. Mr. Eisenbeis requested a copy of the results of the ground water data from the two USGS monitoring wells just north of his property in excel format.

Jonathan W. Emmer
Assistant Director

for Joanna Brinkman
Guy A. Welch
Permit Administrator

for
Preston J. Ripplinger
Geologist/Hydrologist

Jeffrey A. Roerick
Environmental Scientist

Shawn M. Nixon
Environmental Engineer

Matthew J. Fischer
Environmental Scientist

cc via email only: Sarah Flath (sarah.flath@nacoal.com)
Dillon Belisle (Dillon.Belisle@nacoal.com)
Rylan Sundsbak (Rylan.Sundsbak@nacoal.com)
John Sieving (jsieving@osmre.gov)
John Ahlbrandt (jahlbrandt@osmre.gov)
Samantha Melberg (smelberg@nd.gov)
Clyde Eisenbeis (cte677@gmail.com)

Mine Data\Freedom Mine\Inspection Reports\2022\220628_Eisenbeis

Figure 1. GPS point track log of the inspection route (black) and Freedom Mine permit NACT-9501 (orange).

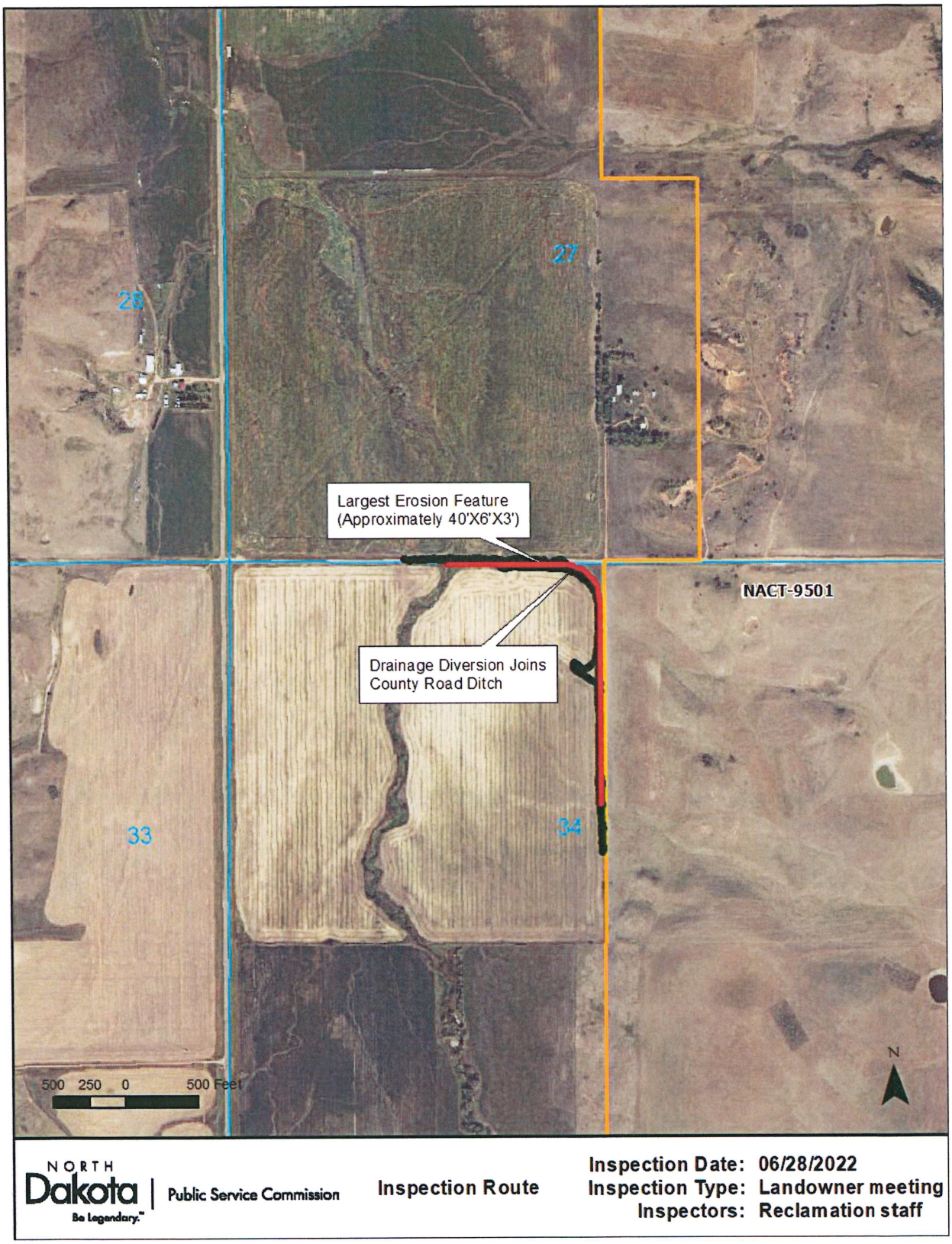


Figure 2. A rill approximately 1 foot wide, 6 inched deep, and about 40 feet in length was observed in the cropland about 150 feet west of the diversion. The photo was taken facing south.

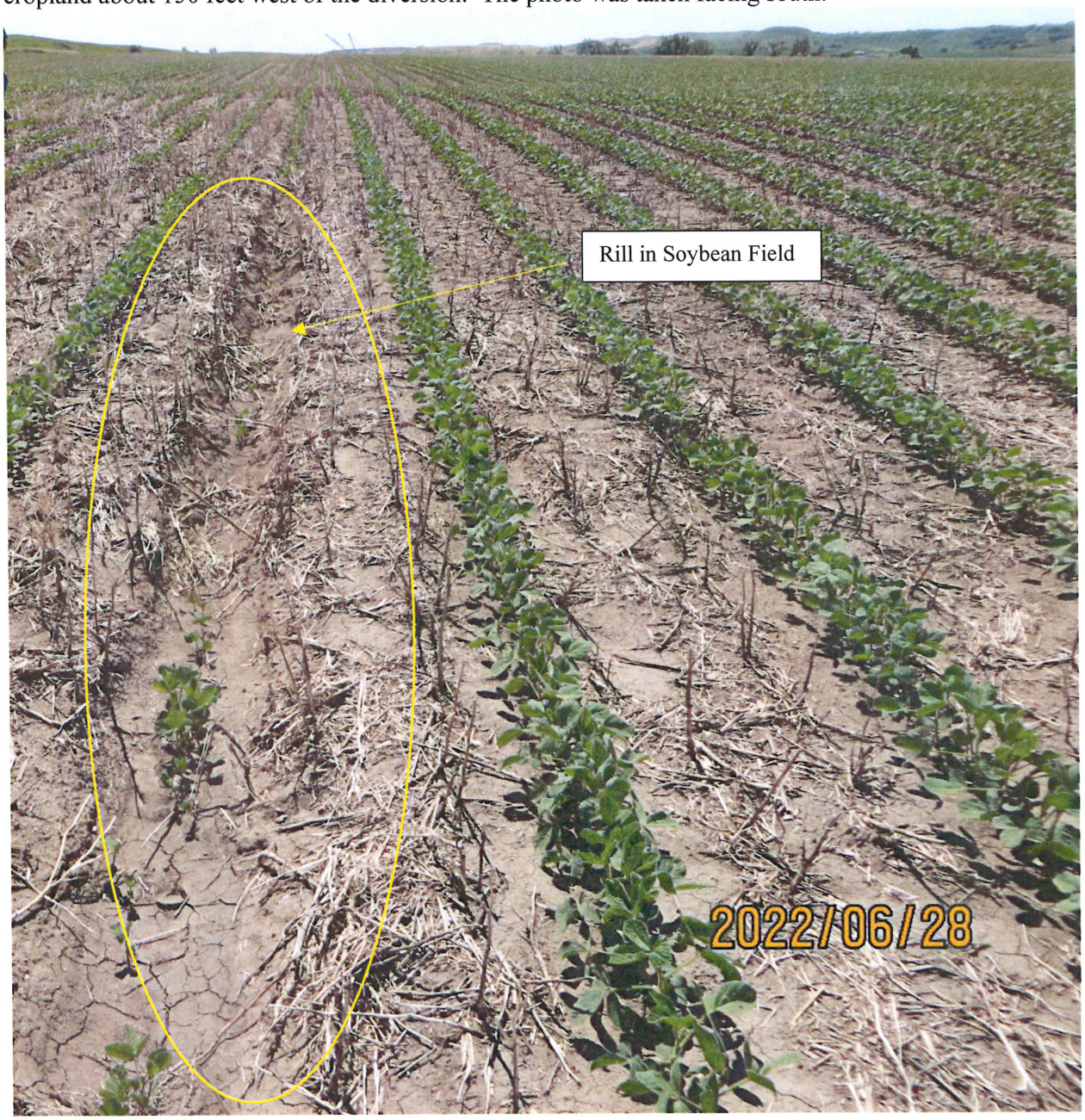
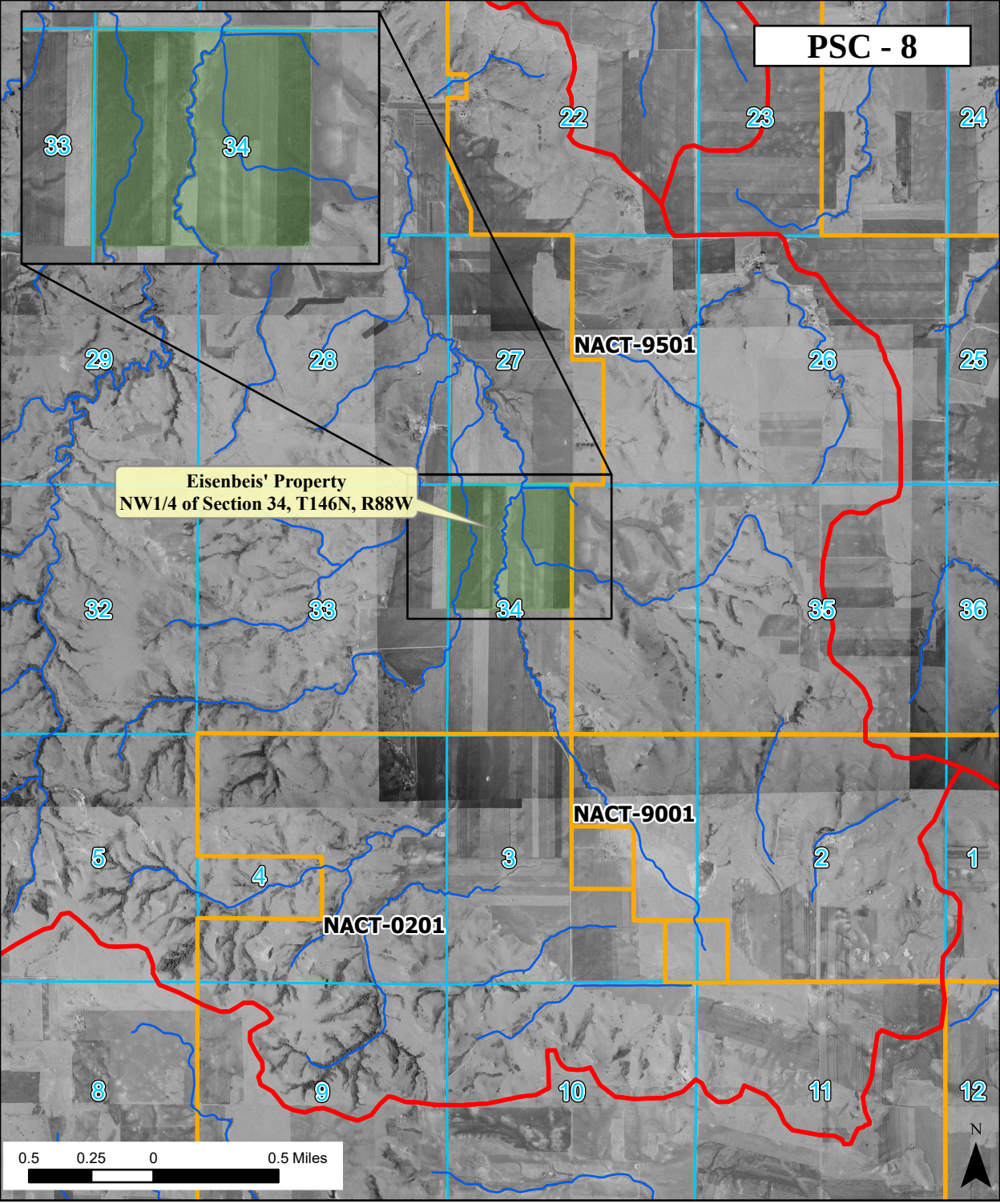


Figure 3. A head cut in the diversion that was approximately 40 feet in length, 6 feet wide, and 3 feet in depth. The inspector standing in the diversion head cut is 6 feet tall. The photo was taken facing south.



Figure 4. A group of trees were also observed from a distance in the NE¼ of the SW¼ of Section 34. The photo was taken facing southwest.





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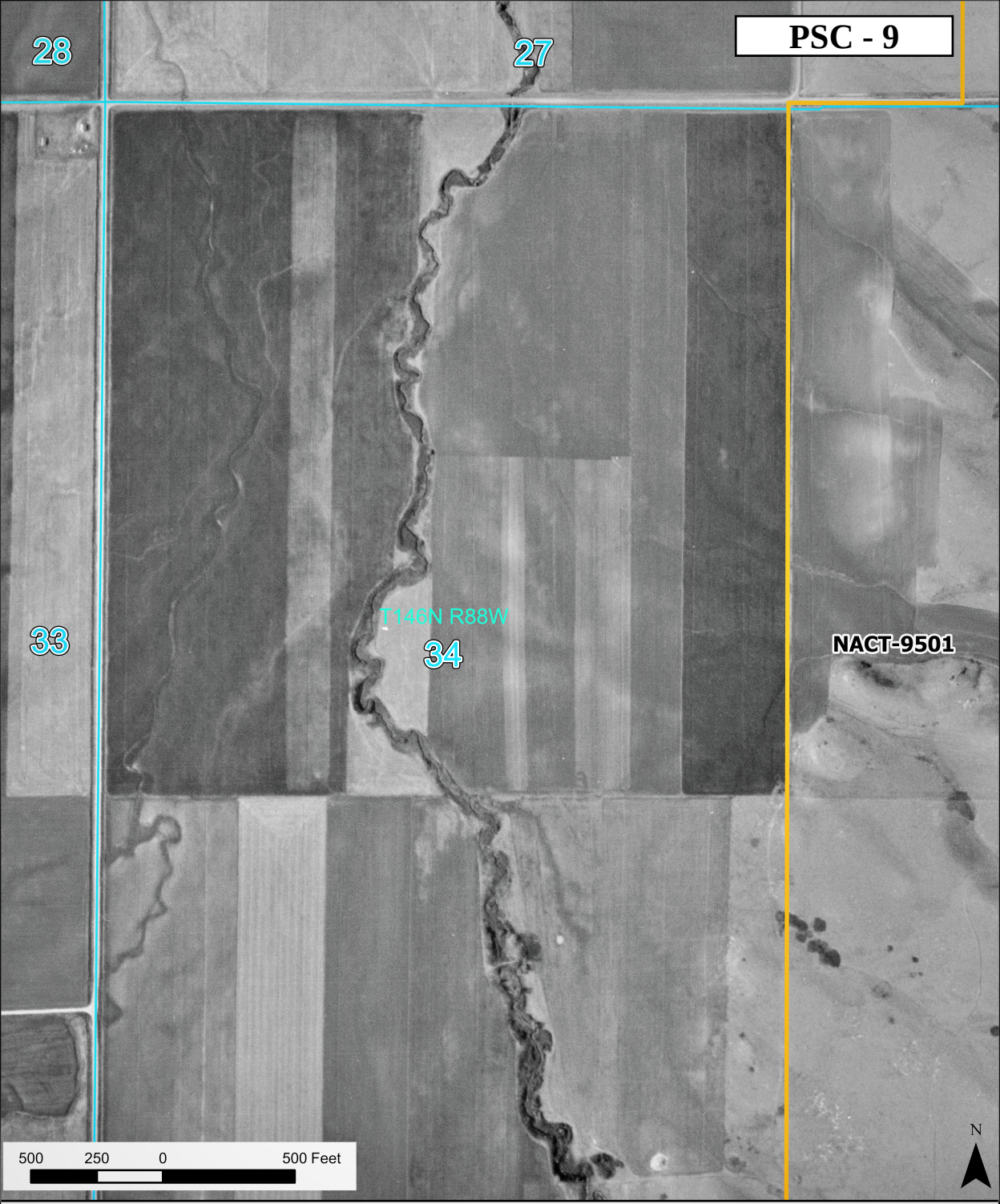
USGS Drainages: Beulah NW Quadrangle
North Dakota - Mercer County

Imagery: Mercer County 1958

Watershed HUC12 (Source: USGS)

Drainage (Source: USGS 1969)



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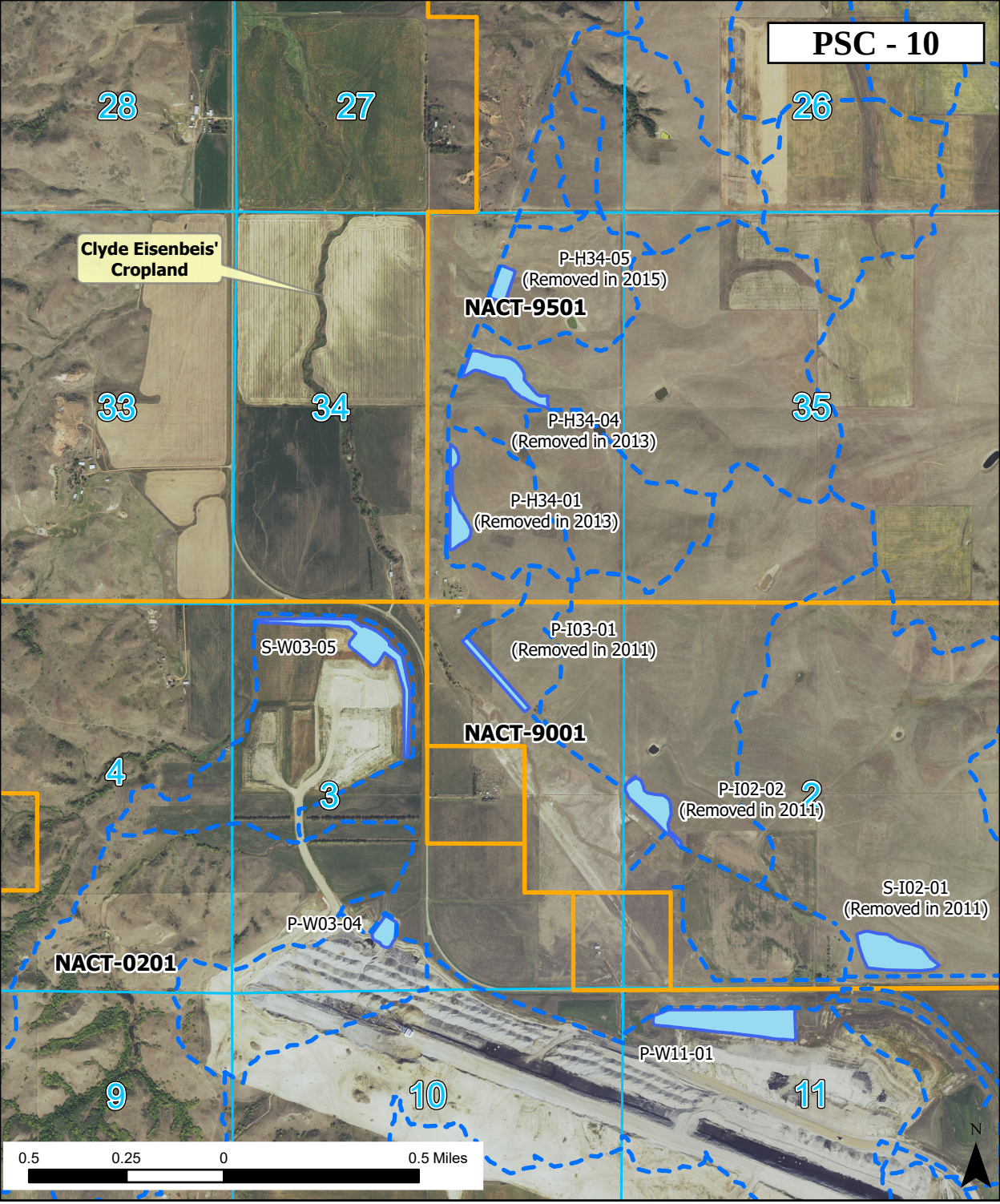
NW1/4 of Section 34, T146N, R88W

Imagery: Mercer County 1958



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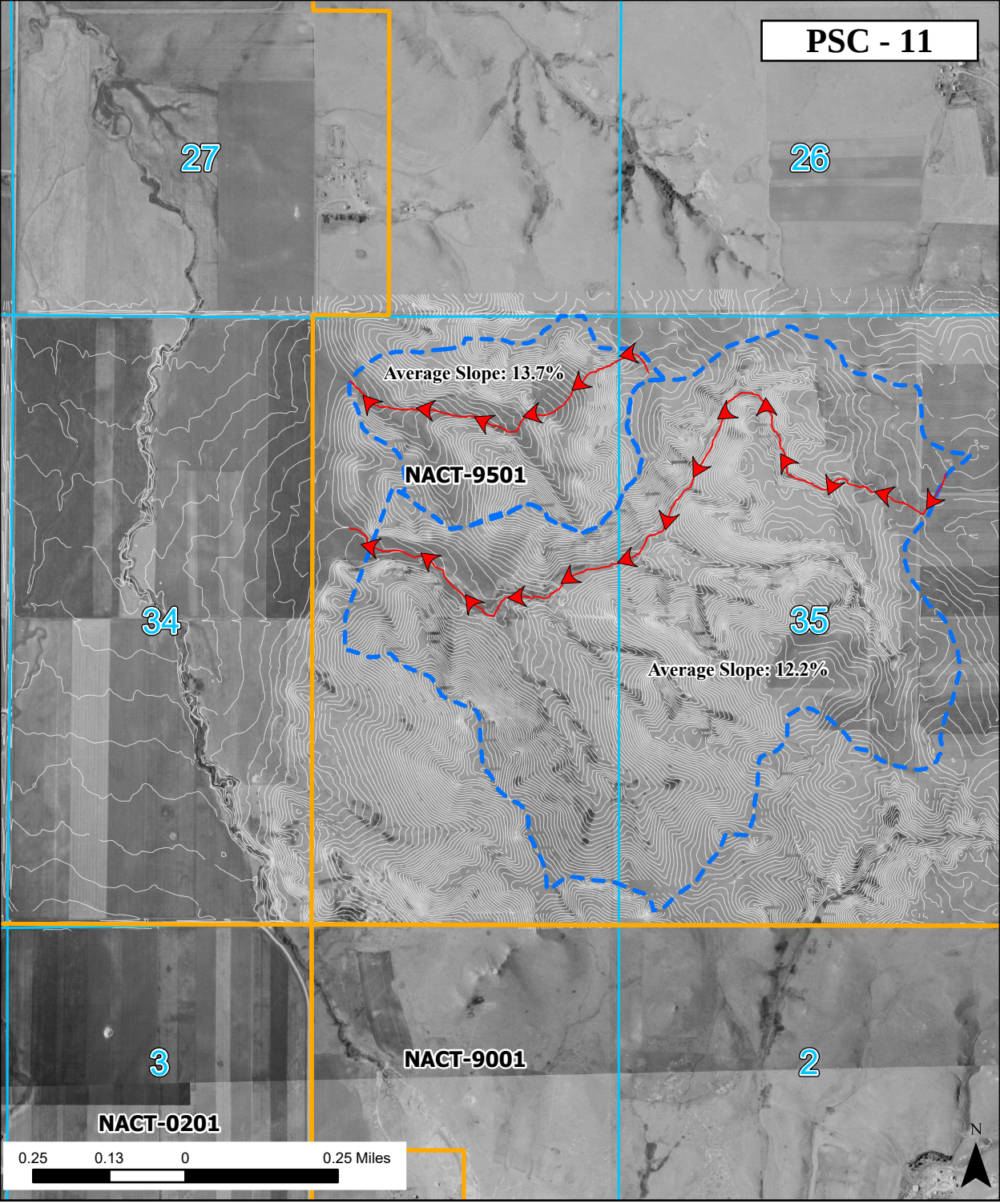
Surface Water Management

Surface Water Management Feature

Subwatershed



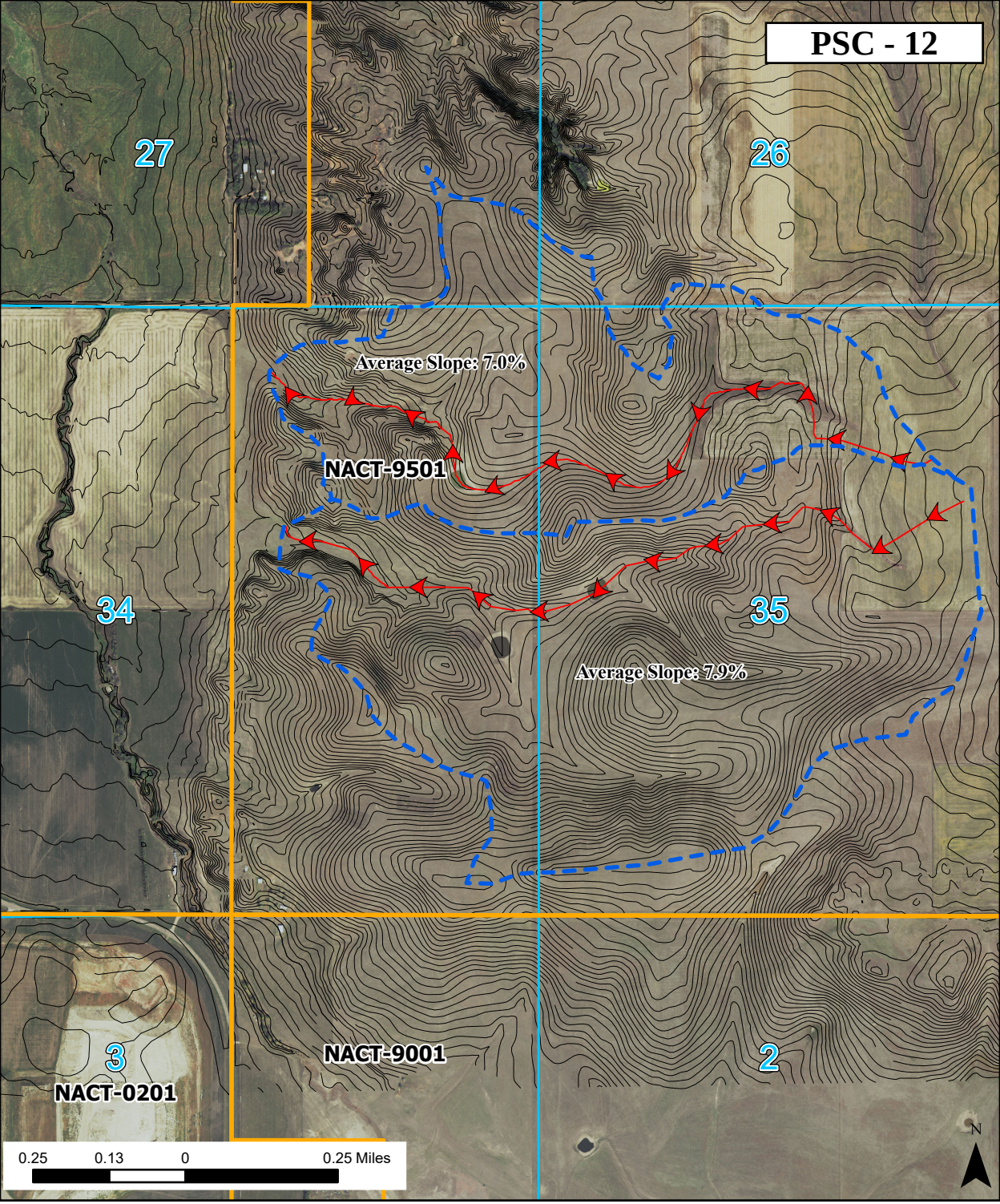
Pre-Mine Watersheds and Flow Path

NORTH Dakota Be Legendary.™ | Public Service Commission

Imagery: Mercer County 1958

Flowpath

Pre-Mine Subwatershed



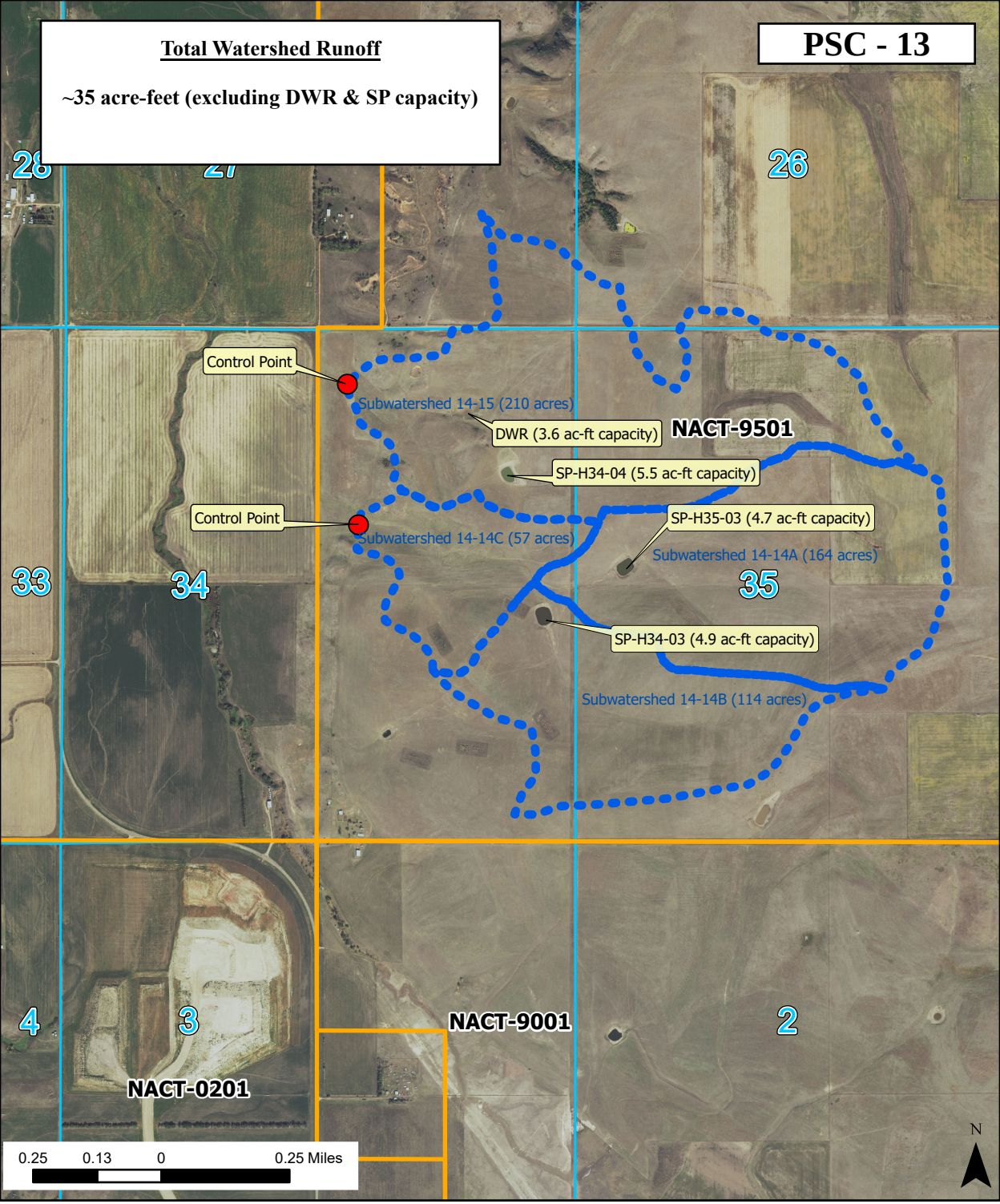
Post-Mine Watersheds and Flow Path

NORTH Dakota Be Legendary.™ | Public Service Commission

Imagery: 2021 NAIP

Flowpath

Post-Mine Subwatershed

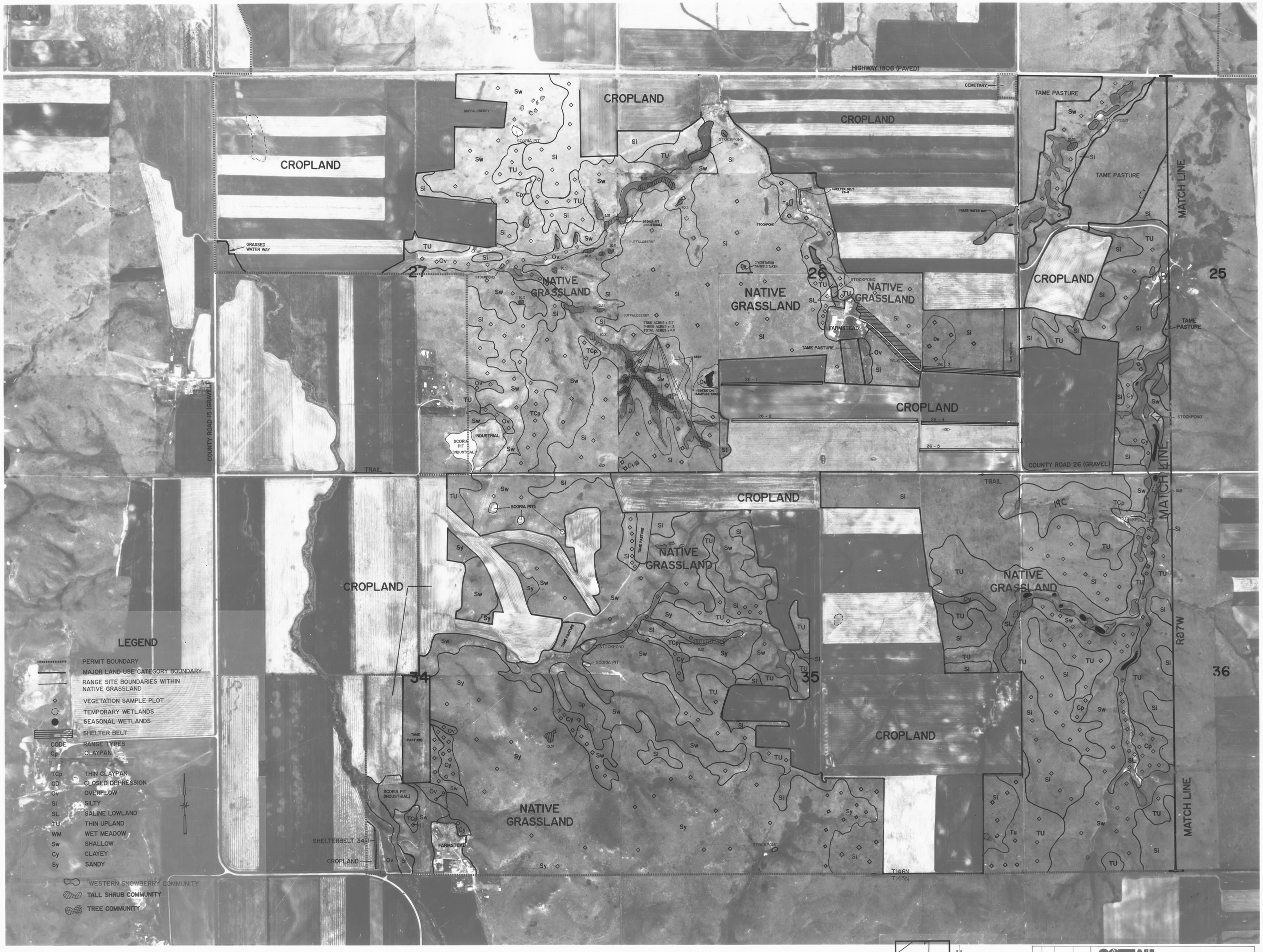


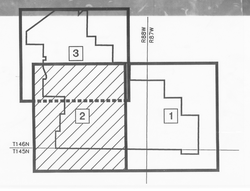
NORTH Dakota Be Legendary. | Public Service Commission

Section 34, T146N, R88W

Post-Mine Subwatershed

PSC - 14





NO.	BY	APP'D	DATE
5	DAS	KOK	10-4-01
4	GMH	SMH	9-2-99
3	CRY	CRY	10-6-98
2	GMH	SMH	2-27-96
1	CEG	SMH	6-7-95
0	HJF	SMH	8-9-93

REVISIONS

COTEAU
THE COTEAU PROPERTIES COMPANY

FREEDOM MINE
BEULAH, ND 58523

PREMINING LAND USE AND VEGETATION MAP

SHEET 2 OF 3

SECTION 2.4.8

SCALE: 1"=400'
PROJECT: NACT-9501 Revision 8

MAP NUMBER
30-107-00016

PSC - 15

Reclamation Division
****

Memorandum

TO: Zanna Brinkman and John Schuh

FROM: Jonathan Emmer

DATE: August 11, 2022

SUBJECT: Hydrology Modeling for Watersheds 14-14 & 14-15 Related to Case No. RC-22-339

Background Information

In Clyde Eisenbeis' August 4, 2022 complaint, he states that pond water overflowed on his land from the Freedom Mine which resulted in gullies, loss of topsoil, and loss of crop income. Clyde owns land in the NW1/4 of Section 34, T146N, R88W that is not within the permit boundary for surface coal mining permit NACT-9501. The two watersheds that direct surface water to his land from the east are designated as 14-14 and 14-15. Watershed 14-15 is the northern watershed and 14-14 is the southern watershed (**Figure 1**). These watersheds were analyzed in the pre mine and post mine conditions to determine changes in surface water runoff.

Analysis

Hydrology models were developed and analyzed for watersheds 14-14 and 14-15 at their pre mine and post mine conditions to determine the peak discharge and total volume of runoff at the control point for each watershed. AutoCAD Civil 3D, HEC-HMS, and Autodesk Storm and Sanitary Analysis were used for this analysis. A 10-year, 24-hour design storm event was used for this analysis.

Results

The total volume of surface water runoff from watershed 14-14 decreased by 35% from its pre mine condition. The total volume of surface water runoff from watershed 14-15 increased by 175% from its pre mine condition. Since both of the watersheds outlet to Clyde's land in the NW1/4 of Section 34, T146N, R88W, the total runoff volume from each watershed (14-14 and 14-15) were combined for the pre mine and post mine conditions. The total runoff volume from both watersheds decreased by approximately 8% as compared to the pre mine condition.

Figure 1 – Post mine watersheds 14-14 and 14-15 in Permit NACT-9501.



HOUSTON engineering, inc.

Technical Memorandum

To: Johnathan Emmer, Assistant Director
North Dakota Public Service Commission

From: Michael HI Gunsch, PE, CFM
Houston Engineering, Inc.

Subject: Coteau Mine Permit Evaluation - NACT-9501
(Case No. RC-22-339)

Date: August 24, 2022

Project: R011252-0001-001

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am duly Licensed Professional Engineer under the laws of the State of North Dakota

MICHAEL H. GUNSCH REGISTERED PROFESSIONAL P.E. ENGINEER NORTH DAKOTA

Michael H. Gunsch, PE CFM — Date

The Public Service Commission requested an independent review of the pre and post mining hydrologic conditions for Watersheds 14-14 and 14-15 in Mine Permit NACT-9501. Data from the NACT-9501 Coteau Hydrological Consequences Report (HCR), along with HEC-HMS hydrologic models from PSC records were used to compare results to our computations. This followed a review of the original data entry, along with an evaluation of supporting documentation, the HCR Report, and modeled results. The hydrologic models from The Coteau Properties were not available.

HYDROLOGICAL MODEL FINDINGS

The following presents the findings identified during our review.

Pre and Post Hydrology Runs: HEC-HMS

The model data input and results were consistent with engineering standards and practices, at the time the permit was submitted, with no notable variations or deficiencies identified. The modeled results from The Coteau Properties and PSC were generally conservative and their results consistent. There was one deviation in the PSC's data entry for Watershed 14-14 related to the post mine drainage area. Our model results, as reported in the data table, mirrored the Coteau/PSC determinations with variations associated with watershed areas and engineering judgment on soils and times of concentration.

Soils Conditions = CN Values

The soils data entry was consistent for pre and post mine conditions, and the original permit values are reasonable within the engineering standards used at the time of the permit application. There are currently newer soils classifications (revisions/updates) that could be applied based under today's engineering practices; however, our review was limited to the standards that applied at the time of the application. Our revisions from the original evaluation reflected changes in Hydrologic Soils Group (HSG) for several soils. In addition, when utilizing a blended soils approach versus using a predominant soils approach this results in an increase in peak flows. These were consistent with the Coteau/PSC data, the exception being our flows from Watershed 14-15 were higher.

Time of Concentrations = Tc

The times of concentrations are consistent with standard practices. There are several methodologies that could be used, and we reasonably replicated the original results.

Basin Areas = BA

The results were consistent with the topography provided, with no significant deviations of concern. Watershed 14-15 was in fact increased by mining activity from 78 acres to 210 acres, with our results indicating this to be 228.7 acres. Impacts associated with increasing the basin area are typically increases in peak flows and total runoff. The peak flows from pre to post conditions appear to be consistent and mitigated with minor changes. The change in runoff, however, also appears to have been mitigated when combining Watershed 14-14 and Watershed 15-15. Our results indicate the runoff volumes, under the blended soils approach are slightly higher than the Coteau/PSC results.

Subsequently, the changes in peak flows and runoff have been reasonably mitigated under post-mine conditions. The impacts related to the downstream complaint and diversion channel are outside the scope of our evaluation. Issues associated with extended flows associated with pond releases or specifics related to pond operations or watershed conditions during the period when the noted erosion occurred downstream were outside the scope of our evaluation. We have provided our observations regarding the diversion channel conditions based on the ground and aerial photos provided.

On-Permit Channel Design

Only a very limited review was undertaken related to the on-permit channel designs. There were questions associated with the design parameters, however this was not the focus or our scope of services, therefore, no further review was completed.

Table of Results

The attached table provides the results determined under the Coteau Hydrological Consequences Report, PSC HMS Results, and Houston Engineering's evaluation. Individual comparatives between pre and post conditions were reviewed, though not specifically tabulated. A combination of the flows from these watersheds was also not completed; however, the combined runoff values were reviewed. While there is consistency between the model results, as it relates to peak flows and runoff, the events that created the erosion issues were not evaluated. The downstream impacts appear best evaluated based on the conditions of the conveyance system and its ability to accommodate the projected flows, which is outside our scope of services.

OFF PERMIT DIVERSION CHANNEL

The diversion channel design information was provided for review, and while a detailed evaluation was outside our scope, we are providing a general overview without exhibits. Based on observations using the available ground photos and the diversion design (circa 2012) questions arose relative to the visual field and channel erosion that occurred, which are noted as follows:

1. The two on-permit channels drain into the diversion channel either at grade or one with a concrete articulating block chute. Each channel has a direction change relative to the diversion channel, with the greatest direction change occurring on the northern most channel, which includes the drop structure. Under high flow or velocities this could result in overtopping the diversion resulting in flows west into the field. This appears to have occurred based on the available site photos. It is unknown how this is occurring or the event or circumstances that created these flows as an on-site review or documentation of the diversion channel design was not completed. It is apparent under natural conditions flows through the cropland were part of the natural drainage pattern (off permit) that remains unchanged; however, the drainage pattern was altered by the diversion. The diversion channel's conveyance capacity governs the risk for overflows into the natural drainage pattern, as would the size of a given rainfall event. The events creating the erosion were not defined, in the data reviewed, though the damage documentation starts in 2011, which was a year of high precipitation and record stream flows throughout North Dakota, and likely affected the pond releases during this period. As a corollary once erosion occurs it has the propensity to grow and expand over time. The diversion reconstruction design was completed in 2012.

2. The diversion channel was intended to convey surface drainage from the east and north along and around the cropland, versus allowing them to continue flowing west through the cropland. The complaint includes photographs of the original diversion (swale) in 2008 (pg 12 of 45) and photos of erosion in the original diversion and road ditch dated August 31, 2011 (pg 13 of 45). The diversion and road ditch were re-constructed in 2012. Additional erosion photos were dated September 16, 2014.

3. Observations relative to the diversion channel design:
    a) The design appears intended to convey the more frequent event runoffs that naturally drained west through the cropland. Anticipate it may have been sized to accommodate upstream pond releases, though that is undetermined. Its capacity is based on establishing a 3-foot flow depth using 3:1 Side Slopes and either the natural or established gradient, which varies along its length.
    b) There are several locations, where the diversion channel depth is less than 3 feet (~2.5 feet) on the eastern boundary. These are located at the original natural drainage patterns through the field, which act as an overflow section (e.g., Station 9+00, 10+50 and 12+50).
    c) The capacity of the diversion varies by location associated with the gradient and containment elevation of 2.5 to 3 feet.
    d) The topography along the east side of the cropland north of the discharge point for Watershed 14-15 indicates a shallow swale that even prior to the diversion conveyed flows north along the field. Those waters that were not conveyed west into the natural field drainage, continued north and combined with flows from Watershed 14-14 at around Station 12+50. The combined waters then drained west into the field and then north to the township roadway through the field. This appears to have been documented in the 2011 erosion photos. With the diversion in place the drainage into the field has been reduced and conveyed directly to the township roadway ROW.
    e) The diversion channel design below the Watershed 14-15 outfall has the capacity to convey around a 10-year event. Where these combine with Watershed 14-14 flows, the design capacity is less than a 10-year event. The measure point for capacity is based on the overflow section into the field drainage.

4. Based on the more recent site photos provided the diversion channel shows heavy vegetative growth. This tends to increase flow depths and could force waters outside the diversion into the natural field drainage pattern, or as noted along the diversion channel which is the path of least resistance. This appears to have occurred where the channel changes direction from north to west near the township roadway. The erosion path being along the west side of the diversion. The status of sedimentation or associated channel capacity degradation was not determined.

5. There were also photos of erosion occurring within the diversion channel. Given its steeper gradient and the associated fill section for conveyance near the township roadway, the risks of erosion are not totally unexpected during high runoff events under either pre-mine or post-mine conditions. The diversion channel's long-term stability can only be determined with additional evaluation, which is outside our current scope of services.

6. A conclusion that can be drawn from these observations is that the diversion reduces the risk for and amount of drainage across the cropland. This comes at the expense of a portion of cropland being converted to use for the diversion channel. The specific conditions that resulted in the erosion and overflows into the cropland were not determined.

Coteau Mine Permit Hydrological Evaluation - NACT-9501 (Case No. RC-22-339)

	Coteau Hydrologic Consequences Report				As-Received PSC HMS Model Inputs and Results				Hydrologic Data Analysis consistent with the standards and practices at the time of permit submittal					
Subbasin ID	**14-14**		**14-15**		**14-14**		**14-15**		**14-14**			**14-15**		
Basin Characteristic	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre[1]**	**Post[2]**	**Post (Blend)[3]**	**Pre[1]**	**Post[2]**	**Post (Blend)[3]**
Drainage Area (ac)	340.0	335.0	78.0	210.0	345.6	281.6	70.4	211.2	339.6	321.6	321.6	79.8	228.7	228.7
Curve Numbers	77	70	69	70	77	71	77	71	79	63	72	81	63	72
Watershed Slope (%)	12.2	7.9	13.7	7.0			-		13.0	5.3	5.3	13.1	6.9	6.9
Lag Time (min)[4]	29	35	14	41	62	36	25	77	27	62	49	13	60	48
Time of Concentration (min)[4]	48	58	23	68	103	60	42	128	45	103	82	22	100	80
2-yr Discharge (cfs)[5]	92.9	21.5	6.1	11.9	39.7	19.8	13.5	8.4	79.0	3.5	22.4	28.7	2.5	16.3
10-yr Discharge (cfs)[5]	292.0	125.1	40.1	63.2	134.0	101.6	47.7	44.8	243.8	38.7	102.9	82.1	28.3	75.4
PSC HMS 10-yr (cfs)			-		147.3	103.8	50.9	45.7				-		
25-yr Discharge (cfs)[5]	388.5	187.0	59.6	93.5	181.5	148.5	64.8	66.5	325.4	63.6	147.9	107.5	47.1	108.2
2-yr Volume (ac-ft)[5]	12.4	5.8	1.2	3.8	11.4	5.4	2.4	3.3	13.4	2.1	6.8	3.6	1.5	4.9
10-yr Volume (ac-ft)[5]	33.9	21.4	4.7	13.8	32.5	19.2	6.7	12.4	35.8	12.5	23.6	9.0	9.0	16.6
PSC HMS 10-yr (ac-ft)			-		32.0	17.1	6.6	10.9				-		
25-yr Volume (ac-ft)[5]	44.4	30.0	6.6	19.2	43.0	26.6	8.9	17.8	46.8	18.7	31.6	11.6	13.5	22.7

Notes

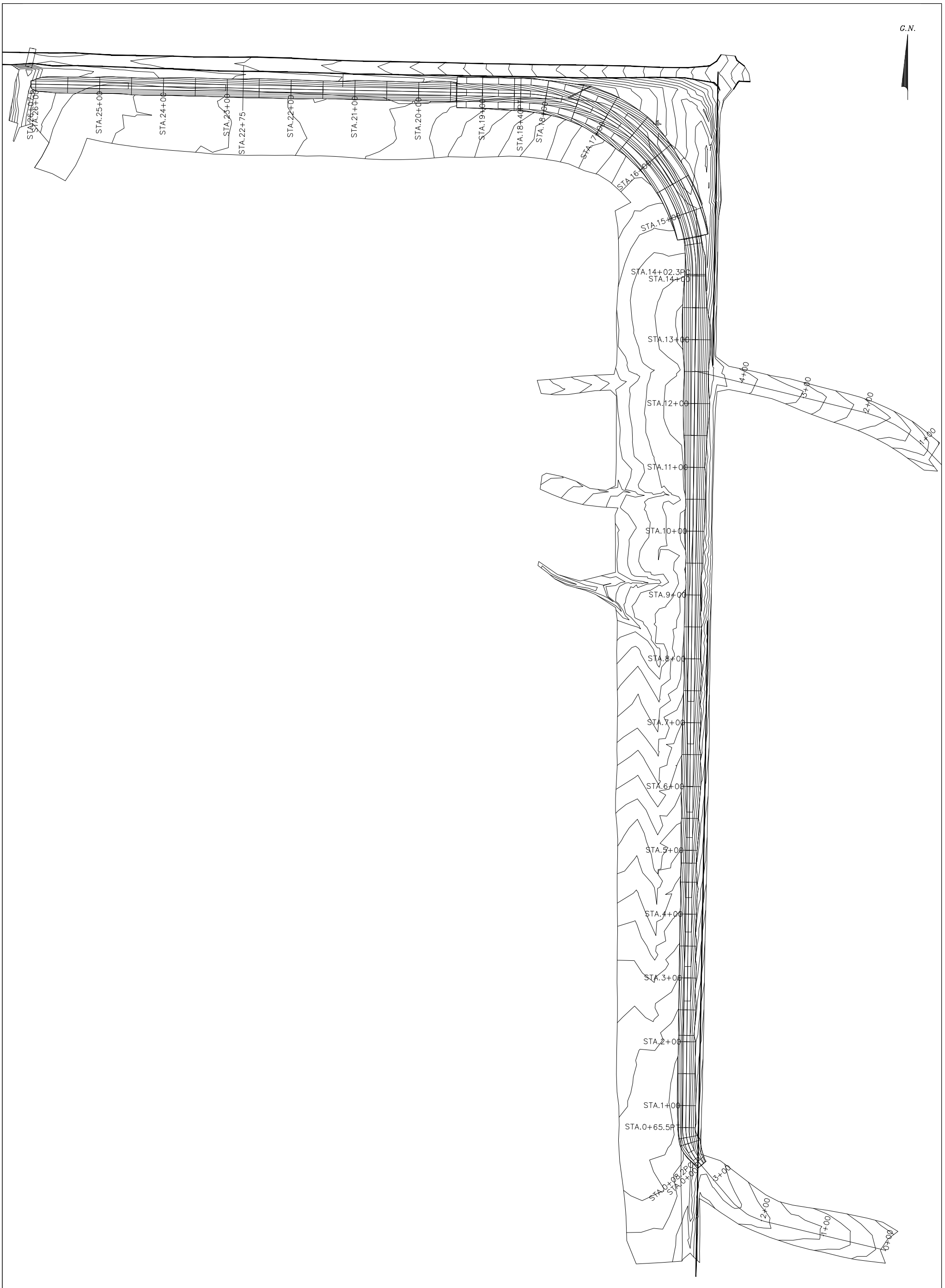
[1] Pre mine curve number values based on historic land use, soil classifications, and CN values listed in the original report

[2] Post mine curve number values based on current day land use, predominant hydrologic soil group (B), and CN values listed in the original report

[3] Post mine curve number values based on current day land use, blend of hydrologic soil groups (B&D), and CN values listed in the original report

[4] Watershed lag method. Relationship between lag time (L) and time of concentration (Tc), L=0.6Tc

[5] Determined from HMS based on SCS Type II storm consistent with ND hydrology manual at time of permit submittal



NO.	BY	APP'D	DATE
9			
8			
7			
6			
5			
4			
3			
2			
1			
0	WRK		10/22/12

DRAWING UPDATES

COTEAU
THE COTEAU PROPERTIES COMPANY

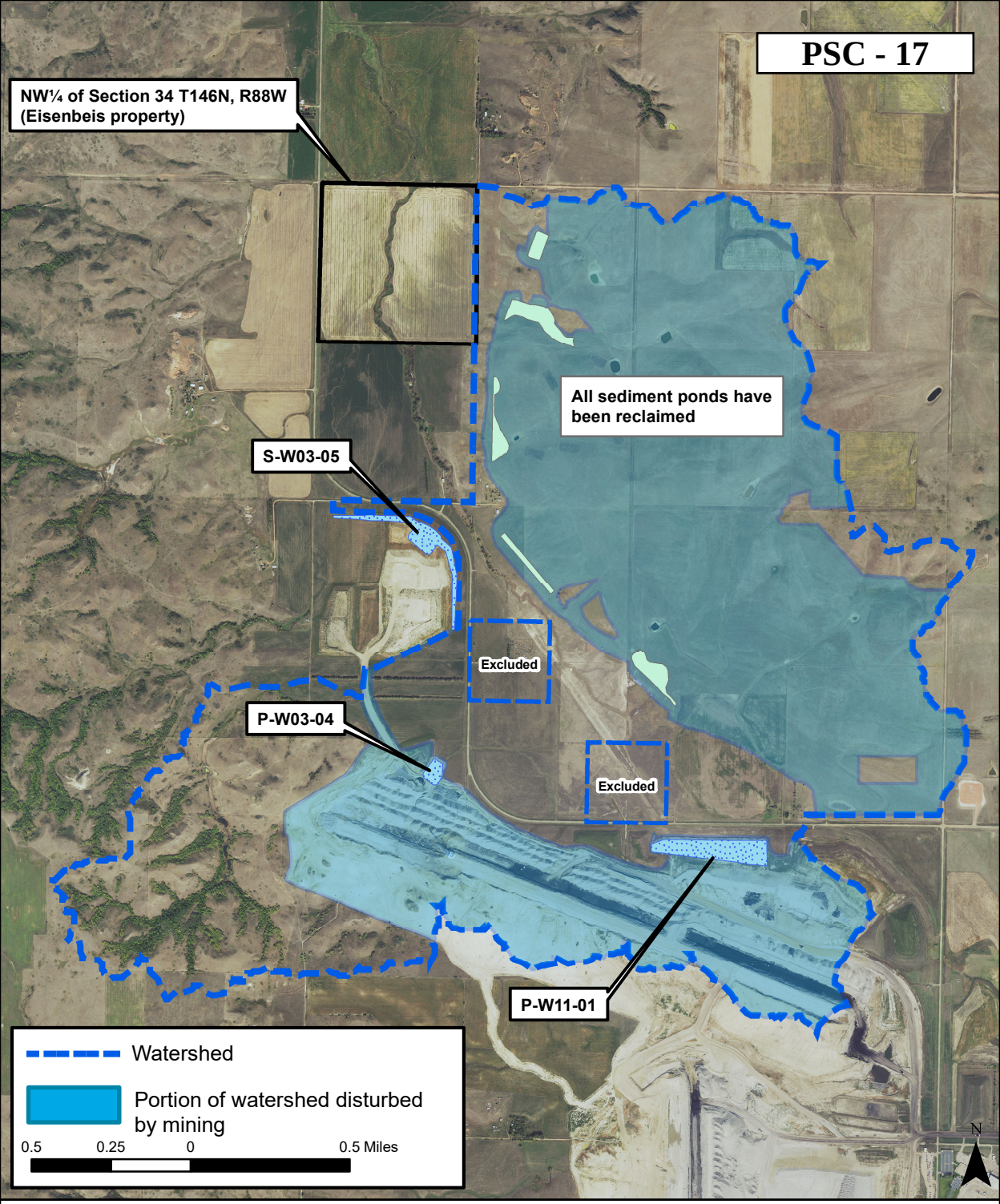
FREEDOM MINE
BEULAH, ND 58523

EISENBEIS DIVERSION

E1/2 NW1/4 SECTION 34, T146N, R88W

SCALE: AS SHOWN
PROJECT: _____ REVISION: _____

SCALE: 3/32" = 1'



Land within permitted areas that contribute runoff to Eisenbeis property (Watershed)

NORTH Dakota Be Legendary.™ | Public Service Commission

Watershed Area: 2,511 acres
Watershed area disturbed by mining: 1,611 acres

PSC - 18

COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

View Data : Station Report Summary

US Units

View Data

- Daily Precip Reports
- Daily Comments Reports
- Significant Weather Reports
- Multiple Day Reports
- Condition Monitoring Reports
- Condition Monitoring Charts
- Soil Moisture
- ET Reports

- Days with Hail
- Search Hail Reports
- Station Hail Reports
- Station Precip Summary

- Water Year Summary
- Station Precip Summary
- Station Snow Summary
- Rainy Days Report
- Total Precip Summary

- Station Water Balance
- Water Balance Summary
- Water Balance Charts

- List Stations

FROST Data

- Frost
- Optics
- Snowflake
- Thunder

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- Training Slide-Shows
- Videos
- Condition Monitoring
- Evapotranspiration
- Soil Moisture
- NCEI Normals

- Volunteer Coordinators
- Hail Pad Distribution/Drop-off
- Help Needed
- Printable Forms

Station Report Summary

Station 1 : ND-MR-3 Example: CO-LR-273

Station 2 :

Station 3 :

Start Date: 8/21/2014 **End Date:** 8/27/2014

Get Summary

Stations:

ND-MR-3
Beulah 15.0 NNW
Lat: 47.4726745
Lon: -101.879463

* indicates Multi-Day Accumulation Report

Station **ND-MR-3**

Date	Precip in.
08/21/2014	0.57
08/22/2014	0.14
08/23/2014	0.14
08/24/2014	2.96
08/25/2014	0.26
08/26/2014	0.05
08/27/2014	0.00
Totals :	**4.12 in.**

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PSC - 19

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

May 4, 2011

RECEIVED
MAY - 5 2011
32630
NORTH DAKOTA
FROM DIRECTOR - RECLAMATION DIV.
Date:
Action:
Info Only:
Info & File:

William Kirk
Staff Mining Engineer
Coteau Properties Company
204 County Road 15
Beulah ND 58523

RE: NDPDES Permit ND0025038
Pond Overflow Discharges

Dear Mr. Kirk:

We have reviewed your May 2, 2011 email describing the spring runoff events which resulted in pond overflow discharges at the mine. As indicated in your letter and our previous discussions alternate limitations were considered for the following overflow samples:

Outfall	Pond ID	Sample Date	Total Iron (mg/L)	Total Suspend Solids (mg/L)	Settleable Solids (mL/L)	Alternate Limits Applied
081	P-H15-01	4/1/2011	23.4	386	0.1	Yes
084	P-H26-05	4/4/2011	--	50	<0.1	Yes
061	P-H34-04	4/5/2011	--	37	0.1	Yes
080	P-D16-02	4/7/2011	--	72	<0.1	Yes
121	P-D13-05	4/7/2011	--	43	<0.1	Yes
100	P-H22-06	4/11/2011	3.71	63	<0.1	Yes

Based on the information you provided the alternate limitations for precipitation related overflows would apply to the overflow discharges as indicated above. The determination made regarding the alternate limitations is supported by the information you provided on pond operation and the amount of snowfall/precipitation received at the mine leading up to the overflows.

Should you have any questions, please contact me at 701-328-5227 or Randy Kowalski at 701-328-5239.

Sincerely,

Gary Bracht
Environmental Engineer
Division of Water Quality

cc: James Deutsch, PSC
EPA

Hibl, Sheila

From: Deutsch, James R.
Sent: Monday, May 02, 2011 3:52 PM
To: Gunnerson, Bill T.; Berg, Mike D.
Cc: Hibl, Sheila; Moos, Dean K.; Welch, Guy A.; Beechie, Bruce E.
Subject: FW: April Sedimentation Pond Overflows Exceeding Monthly Average Limits

---

From: Kirk, Bill [mailto:Bill.Kirk@coteau.com]
Sent: Monday, May 02, 2011 3:46 PM
To: Kowalski, Randy L.
Cc: Deutsch, James R.; Moos, Dean K.; Steffen, Donn
Subject: April Sedimentation Pond Overflows Exceeding Monthly Average Limits

Randy:

In accordance with the Freedom Mine NDPDES permit (ND-0025038), please be informed of the following April overflow sample results that exceed monthly average effluent limits. All overflows were the result of runoff occurring from snowmelt. This listing also incorporates those sample results that were previously reported as having exceeded daily maximum effluent limitations.

Pond P-H15-01	Discharge point: 081	Sample date: Apr. 01, 2011	TSS: 386 mg/l	Fe: 23.4 mg/l
Pond P-H26-05	Discharge point: 084	Sample date: Apr. 04, 2011	TSS: 50 mg/l	
Pond P-H34-04	Discharge point: 061	Sample date: Apr. 05, 2011	TSS: 37 mg/l	
Pond P-D16-02	Discharge point: 080	Sample date: Apr. 07, 2011	TSS: 72 mg/l	
Pond P-D13-05	Discharge point: 121	Sample date: Apr. 07, 2011	TSS: 43 mg/l	
Pond P-H22-06	Discharge point: 100	Sample date: Apr. 11, 2011	TSS: 63 mg/l	Fe: 3.71 mg/l

All of the above ponds collect runoff from active mining areas. Also, please be informed that Coteau has documentation that demonstrates that all of these impoundments were at or below permanent pool elevations at the onset of winter weather.

If you have any questions, please contact me.

William R. Kirk, PE
Staff Mining Engineer
The Coteau Properties Company
204 County Road 15
Beulah, ND 58523
Phone: 701-873-7215
Fax: 701-873-7226
bill.kirk@coteau.com

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kind. This communication is restricted to the intended recipient and is not to be provided to a third party without the prior consent of The North American Coal Corporation or its representatives.

Hibl, Sheila

From: Deutsch, James R.
Sent: Tuesday, May 03, 2011 1:04 PM
To: Gunnerson, Bill T.
Cc: Hibl, Sheila
Subject: FW: April Sedimentation Pond Overflows Exceeding Monthly Average Limits - SS Results

---

From: Kirk, Bill [mailto:Bill.Kirk@coteau.com]
Sent: Tuesday, May 03, 2011 12:50 PM
To: Kowalski, Randy L.
Cc: Steffen, Donn; Deutsch, James R.; Moos, Dean K.
Subject: RE: April Sedimentation Pond Overflows Exceeding Monthly Average Limits - SS Results

Randy:

I apologize for neglecting to include the settleable solids results in the first e-mail. They are as follows:

Pond P-H15-01	SS: 0.1 ml/l
Pond P-H26-05	SS: 0.0 ml/l
Pond P-H34-04	SS: 0.1 ml/l
Pond P-D16-02	SS: 0.0 ml/l
Pond P-D13-05	SS: 0.0 ml/l
Pond P-H22-06	SS: 0.0 ml/l

If you have any other questions, please call or e-mail me.

William R. Kirk, PE
Staff Mining Engineer
The Coteau Properties Company
204 County Road 15
Beulah, ND 58523
Phone: 701-873-7215
Fax: 701-873-7226
bill.kirk@coteau.com

From: Kowalski, Randy L. [mailto:rkowalsk@nd.gov]
Sent: Tuesday, May 03, 2011 9:04 AM
To: Kirk, Bill
Subject: RE: April Sedimentation Pond Overflows Exceeding Monthly Average Limits

Bill,

Could you confirm for us that the settleable solids was tested for each of the overflows that you are seeking alternate limitations. Also indicate the settleable solids results (summarizing the results would be acceptable; such as all <0.4mL/L).

Thank you,

Randy Kowalski
Environmental Scientist
Division of Water Quality

(701) 328-5239

From: Kirk, Bill [mailto:Bill.Kirk@coteau.com]
Sent: Monday, May 02, 2011 3:46 PM
To: Kowalski, Randy L.
Cc: Deutsch, James R.; Moos, Dean K.; Steffen, Donn
Subject: April Sedimentation Pond Overflows Exceeding Monthly Average Limits

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Pond P-H26-05	Discharge point: 084	Sample date: Apr. 04, 2011	TSS: 50 mg/l	
Pond P-H34-04	Discharge point: 061	Sample date: Apr. 05, 2011	TSS: 37 mg/l	
Pond P-D16-02	Discharge point: 080	Sample date: Apr. 07, 2011	TSS: 72 mg/l	
Pond P-D13-05	Discharge point: 121	Sample date: Apr. 07, 2011	TSS: 43 mg/l	
Pond P-H22-06	Discharge point: 100	Sample date: Apr. 11, 2011	TSS: 63 mg/l	Fe: 3.71 mg/l

All of the above ponds collect runoff from active mining areas. Also, please be informed that Coteau has documentation that demonstrates that all of these impoundments were at or below permanent pool elevations at the onset of winter weather.

If you have any questions, please contact me.

William R. Kirk, PE
Staff Mining Engineer
The Coteau Properties Company
204 County Road 15
Beulah, ND 58523
Phone: 701-873-7215
Fax: 701-873-7226
bill.kirk@coteau.com

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PSC - 20

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

June 6, 2011

COPY

RECEIVED
JUN - 7 2011
32654

William Kirk
Staff Mining Engineer
Coteau Properties Company
204 County Road 15
Beulah ND 58523

RE: NDPDES Permit ND0025038
Pond Overflow Discharges

Dear Mr. Kirk:

We have reviewed your June 2, 2011 email describing the spring runoff events which resulted in pond overflow discharges at the mine during May. As indicated in your letter and our previous discussions alternate limitations were considered for the following overflow samples:

Outfall	Pond ID	Sample Date	Total Iron (mg/L)	Total Suspend Solids (mg/L)	Settleable Solids (mL/L)	Alternate Limits Applied
026	P-J29-01	5/4/2011	--	42	<0.1	Yes
132	P-W03-02	5/4/2011	--	113	<0.1	Yes
081	P-H15-01	5/31/11	--	2680	0.1	Yes
061	P-H34-04	5/31/11	--	67	<0.1	Yes

Based on the information you provided the alternate limitations for precipitation related overflows would apply to the overflow discharges as indicated above. The determination made regarding the alternate limitations is supported by the information you provided on pond operation and the amount of snowfall/precipitation received at the mine leading up to the overflows. As provided, the National Weather Service records indicate the Beulah area received 108.1 inches of snowfall from October through early May. Based on the snowfall depth the water equivalent was estimated to be 7.1 inches. Also as provided, the May 31 overflows resulted from 3.3 to 3.4 inches of rain received between May 18, 2011 and May 31, 2011.

We also reviewed the information you provided on the elevated pH for a May 2nd sample from pond P-J30-02 (dp 022) and a May 4th sample from pond P-J29-01 (dp 026); with the reported pH values being 9.50 s.u. and 9.13 s.u. respectively. The pH results are not eligible for alternate limitations provided for precipitation related overflows and would be reported as exceedances in your discharge monitoring report. The department views the pH exceedances as isolated incidents and plans no further action on the matter.

Should you have any questions, please contact me at 701-328-5227.

Sincerely,

Gary Bracht
Environmental Engineer
Division of Water Quality

cc: James Deutsch, PSC
EPA

Jangula, Esther A.

JUN — 2 2011
N
PPP

From: Deutsch, James R.
Sent: Thursday, June 02, 2011 10:58 AM
To: Gunnerson, Bill T.; Berg, Mike D.
Cc: Beechie, Bruce E.; Welch, Guy A.; Moos, Dean K.; Jangula, Est ler
Subject: FW: May Sedimentation Pond Overflows

Esther,

Please login and save the message from Bill Kirk to the following folder: \\Coal\mine data\Freedom Mine\NDPDES\NDPDES Correspondence\2011.

FROM DIRECTOR - RECLAMATION DIV.
Date.
Action:
Info. Only:
Info & File:

Thanks —Jim

From: Kirk, Bill [mailto:Bill.Kirk©coteau.corn]
Sent: Thursday, June 02, 2011 9:39 AM
To: Kowalski, Randy L.
Cc: Deutsch, James R.; Moos, Dean K.; Steffen, Donn
Subject: May Sedimentation Pond Overflows

Randy:

In accordance with the Freedom Mine's NDPDES permit (ND-0025038), please be informed of the following May sedimentation pond overflow sample results that exceed daily maximum and/or monthly average effluent limits. The overflows that occurred during the first week of May were the result of snowmelt and those that occurred on the last day of May were the result of rainfall. The listing includes those sample results that were previously reported as having exceeded daily maximum effluent limitations.

Pond P-130-02 Discharge point: 022 Sampled: May 02, 2011 pH: 9.50 S.U.

Pond P-129-01 Discharge point: 026 Sampled: May 04, 2011 pH: 9.13 S.U. TSS: 42 mg/I SS: 0.0 mI/I

Pond P-W03-02 Discharge point: 132 Sampled: May 04, 2011 TSS: 113 mg/I SS: 0.0 mI/I

Pond P-H15-01 Discharge point: 081 Sampled: May 31, 2011 TSS: 2680 mg/1 Fe: 90.2 mg/1 SS: 0.1 mI/I

Pond P-H34-04 Discharge point: 061 Sampled: May 31, 2011 TSS: 67 mg/I SS: 0.0 m1/I

All of the above ponds collect and treat runoff from active mining areas.

Regarding the maximum daily and/or monthly average TSS limitations that were exceeded in early May for ponds P-129-01 and P-W03-02, the overflows were associated with snowmelt that exceeded the mine's design storm event of 3.1 inches of precipitation. Snowfall records obtained from the National Weather Service in Bismarck indicate that the Beulah area received 108.1 inches of snowfall for the period of late October 2010 through May 1, 2011. Based on conversion factors used by the National Weather Service to convert inches of snowfall to an estimated liquid water equivalent, the 108.1 inches of snowfall for the aforementioned period

of time yields an estimated water equivalent of 7.1 inches. Coteau also has documentation that demonstrates that the two impoundments were at or below permanent pool elevation prior to the onset of winter weather.

Regarding the elevated pH results for ponds P-J30-02 and P-J29-01 in early May, an explanation is difficult. Typically, snowmelt water temperatures are cold and elevated pH values associated with the growth of algae are not common. However, we have noted that pH values for water held in three reclaimed stockponds upstream of pond P-129-01 were elevated the previous summer. Reclaimed stockponds SP-J29-01, SP-J29-02 and SP-J29-03 were sampled on August 5, 2010, and the field pH values were 9.8, 9.6 and 9.6, respectively. Runoff from snowmelt in April and May of 2011 may have flushed this high pH water from the upstream stockponds into and through pond P-J29-01. Algae was also noted growing among the grasses present on the bottom of both emergency spillway channels. As both ponds held water throughout the winter months, algae production and growth may have begun as soon as pond water temperatures warmed and contributed to the elevated pH readings.

Regarding the TSS and Fe values associated with pond P-H15-01 on May 31, 2011, the overflow that produced these results occurred due to a series of precipitation events. On May 17, 2011, the water level in the pond was documented at 0.1 feet below the permanent pool elevation. From May 18 through May 31, 2011, a recording rain gauge operated by Coteau and located in the SW1/4 SW1/4 NW1/4 Section 14, T146N, R88W, recorded 3.3 inches of rainfall. During the fourteen day time period spanning May 18 through May 31, rainfall amounts were recorded on nine of these days. Again, the design storm event for the Freedom Mine is 3.1 inches of precipitation.

Finally, regarding the TSS value associated with pond P-H34-04 on May 31, 2011, the overflow that produced this result also occurred due to a series of precipitation events. Coteau had been actively discharging water from this impoundment beginning May 6 when, on May 19, a downstream landowner contacted the mine and requested that the pond discharge be terminated and the location of the outfall of the discharge pipe be relocated so that he could seed a parcel of cropland. Coteau terminated the discharge and had not relocated the discharge pipeline when the series of precipitation events caused the pond to overflow through the emergency spillway. From May 20 to May 31, a recording rain gauge operated by Coteau and located in the SE1/4 SE1/4 SW1/4 Section 34, T146N, R88W, recorded 3.4 inches of rainfall. During the twelve day time period spanning May 20 through May 31, rainfall amounts were recorded on eight of these days. As previously stated, the design storm event for the Freedom Mine is 3.1 inches of precipitation.

Based on the foregoing discussion, Coteau requests that, where applicable, alternate effluent limitations be applied to the noted sedimentation pond overflows.

If you have any questions, please contact me.

William R. Kirk, PE
Staff Mining Engineer
The Coteau Properties Company
204 County Road 15
Beulah, ND 58523
Phone: 701-873-7215
Fax: 701-873-7226
bill.kirkPcoteau.com

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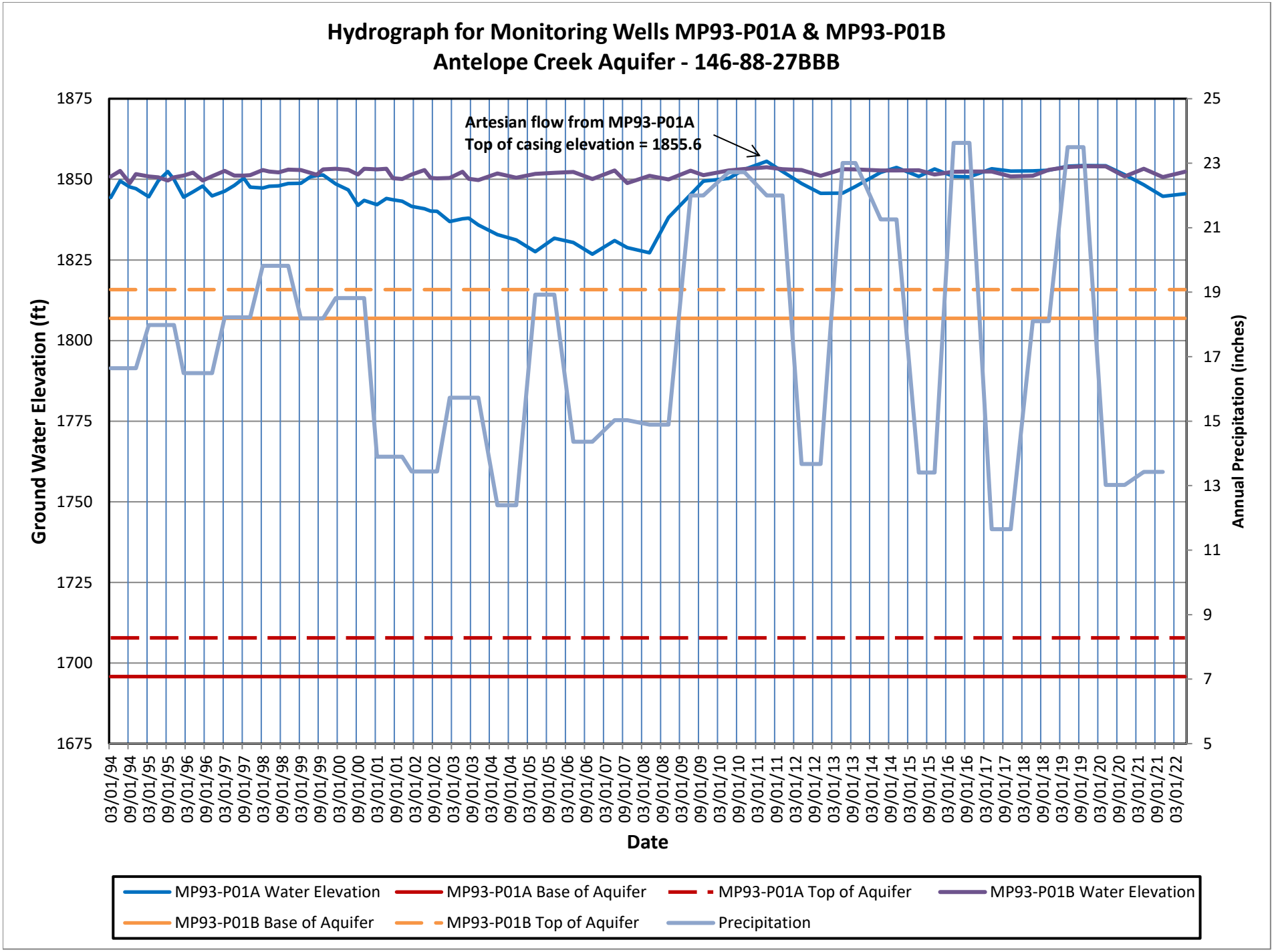
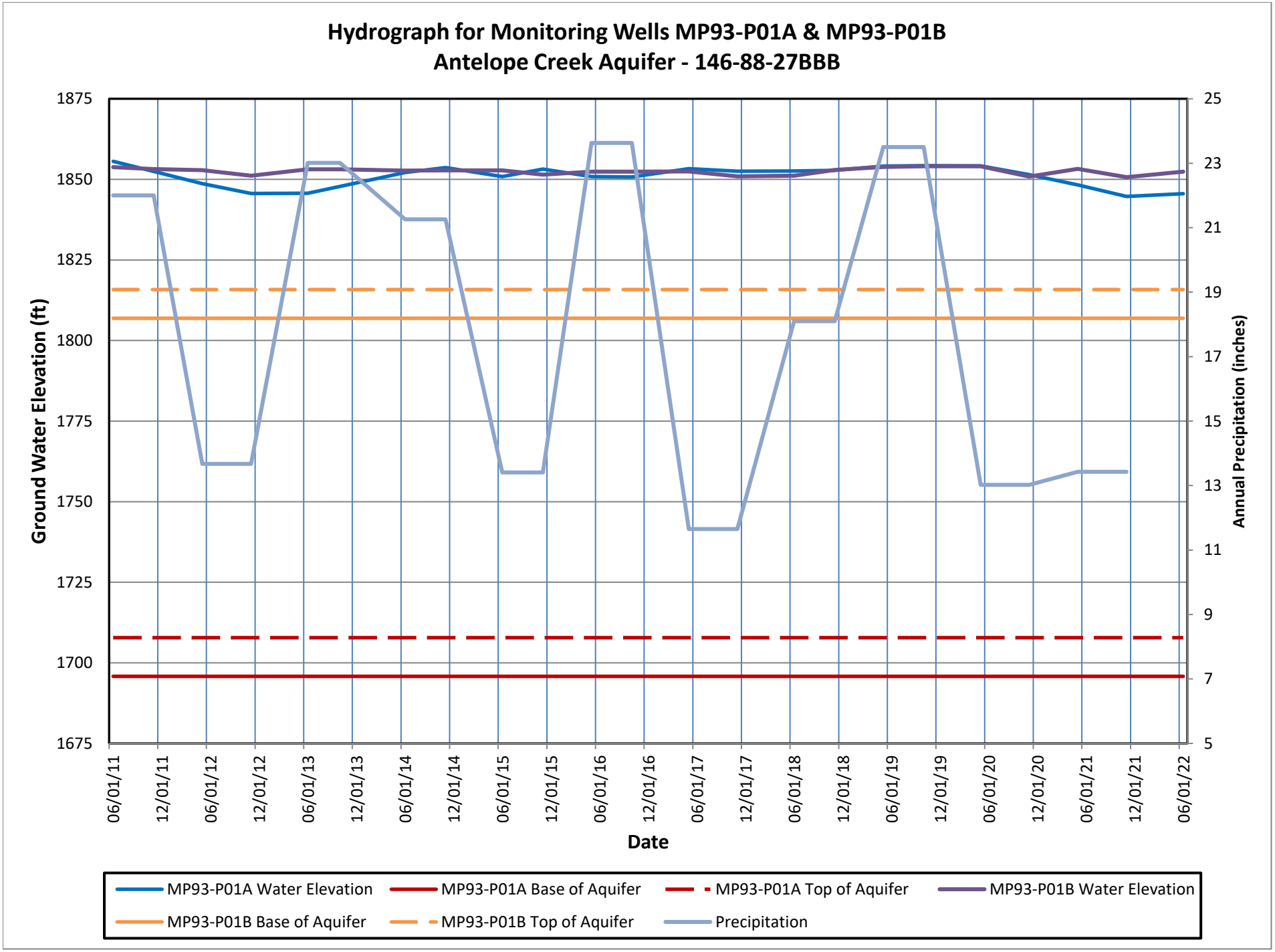

Hydrograph for Monitoring Wells MP93-P01A & MP93-P01B
Antelope Creek Aquifer - 146-88-27BBB
Artesian flow from MP93-P01A
Top of casing elevation = 1855.6
Ground Water Elevation (ft)
Annual Precipitation (inches)
Date
MP93-P01A Water Elevation
MP93-P01A Base of Aquifer
MP93-P01A Top of Aquifer
MP93-P01B Water Elevation
MP93-P01B Base of Aquifer
MP93-P01B Top of Aquifer
Precipitation


Hydrograph for Monitoring Wells MP93-P01A & MP93-P01B
Antelope Creek Aquifer - 146-88-27BBB
Ground Water Elevation (ft)
Annual Precipitation (inches)
Date
1875
1850
1825
1800
1775
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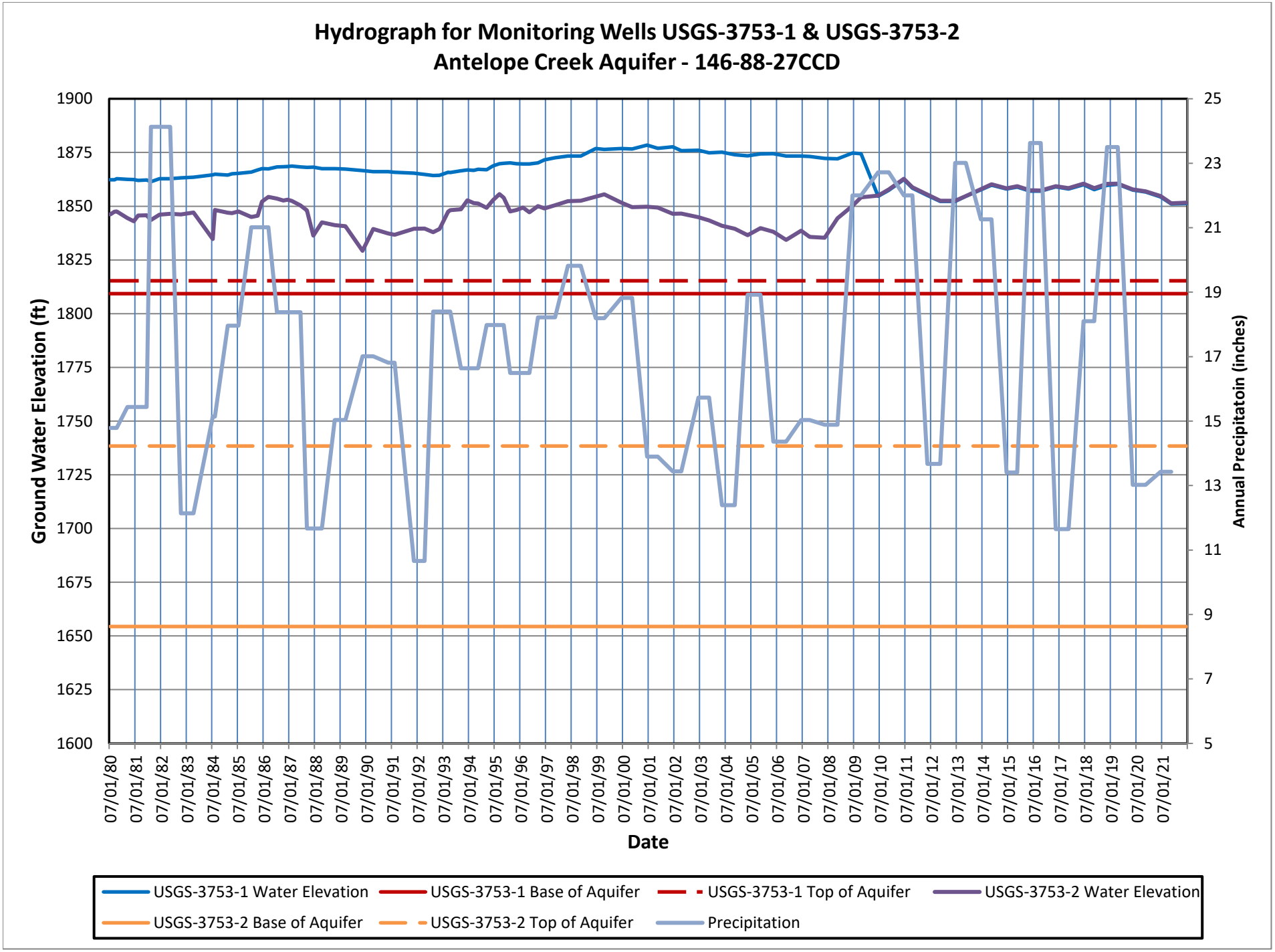
06/01/21
12/01/21
06/01/22
MP93-P01A Water Elevation
MP93-P01A Base of Aquifer
MP93-P01A Top of Aquifer
MP93-P01B Water Elevation
MP93-P01B Base of Aquifer
MP93-P01B Top of Aquifer
Precipitation


Hydrograph for Monitoring Wells USGS-3753-1 & USGS-3753-2
Antelope Creek Aquifer - 146-88-27CCD
Ground Water Elevation (ft)
Annual Precipitatoin (inches)
Date
1900
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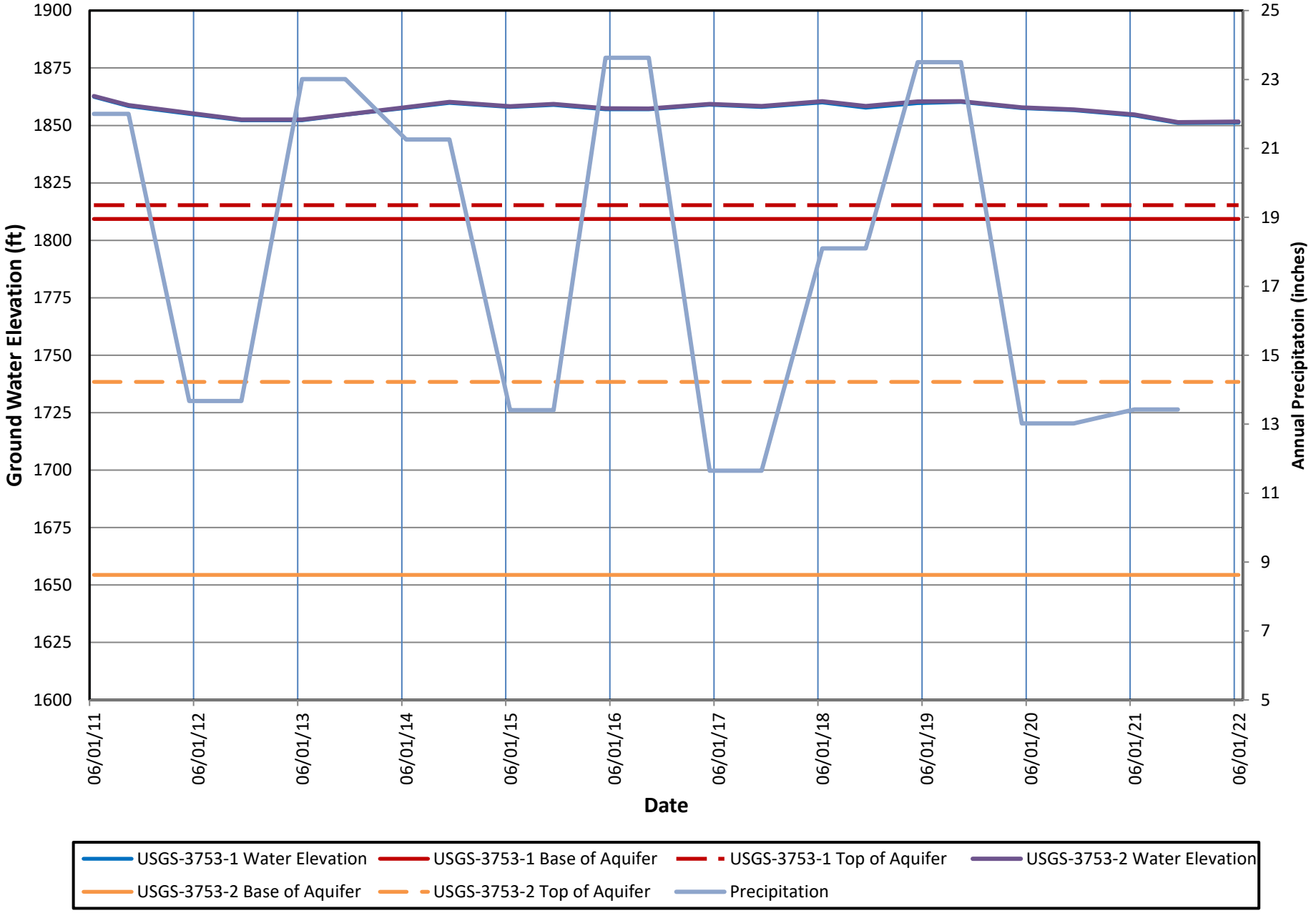
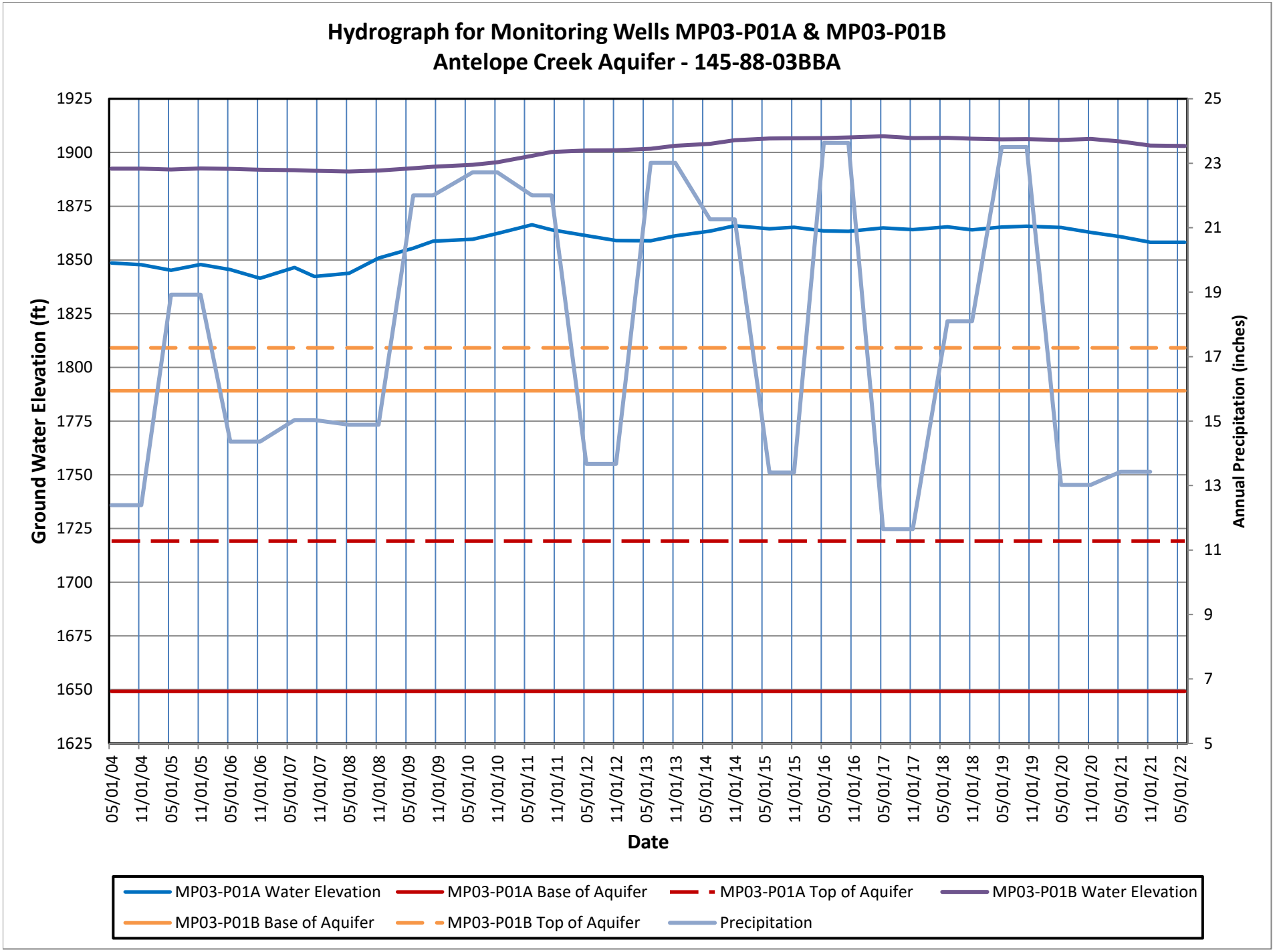
07/01/21
USGS-3753-1 Water Elevation
USGS-3753-1 Base of Aquifer
USGS-3753-1 Top of Aquifer
USGS-3753-2 Water Elevation
USGS-3753-2 Base of Aquifer
USGS-3753-2 Top of Aquifer
Precipitation

Hydrograph for Monitoring Wells USGS-3753-1 & USGS-3753-2
Antelope Creek Aquifer - 146-88-27CCD




Hydrograph for Monitoring Wells MP03-P01A & MP03-P01B
Antelope Creek Aquifer - 145-88-03BBA
Ground Water Elevation (ft)
Annual Precipitation (inches)
Date
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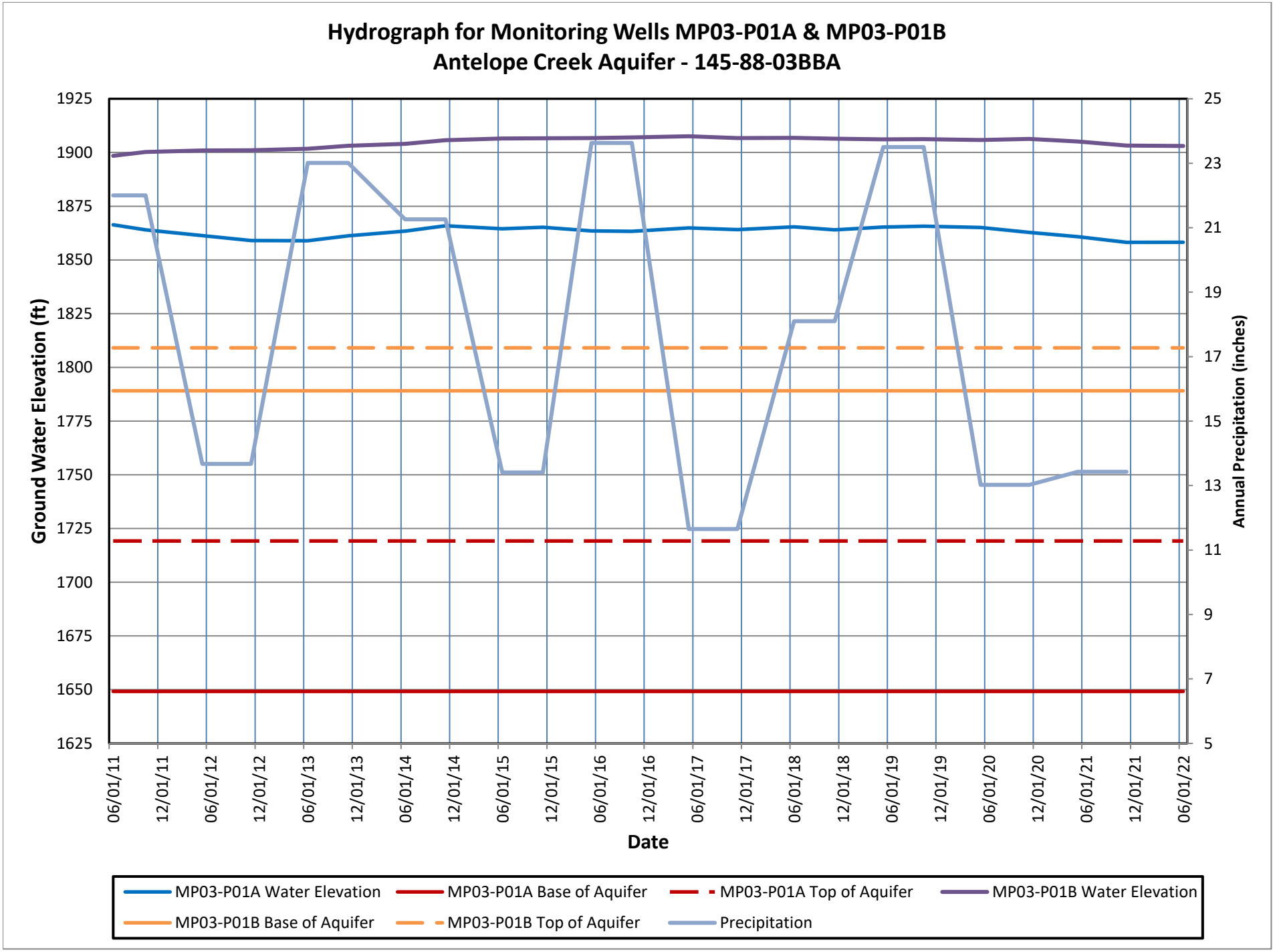
11/01/18
05/01/19
11/01/19
05/01/20
11/01/20
05/01/21
11/01/21
05/01/22
MP03-P01A Water Elevation
MP03-P01A Base of Aquifer
MP03-P01A Top of Aquifer
MP03-P01B Water Elevation
MP03-P01B Base of Aquifer
MP03-P01B Top of Aquifer
Precipitation


Hydrograph for Monitoring Wells MP03-P01A & MP03-P01B
Antelope Creek Aquifer - 145-88-03BBA
Ground Water Elevation (ft)
Annual Precipitation (inches)
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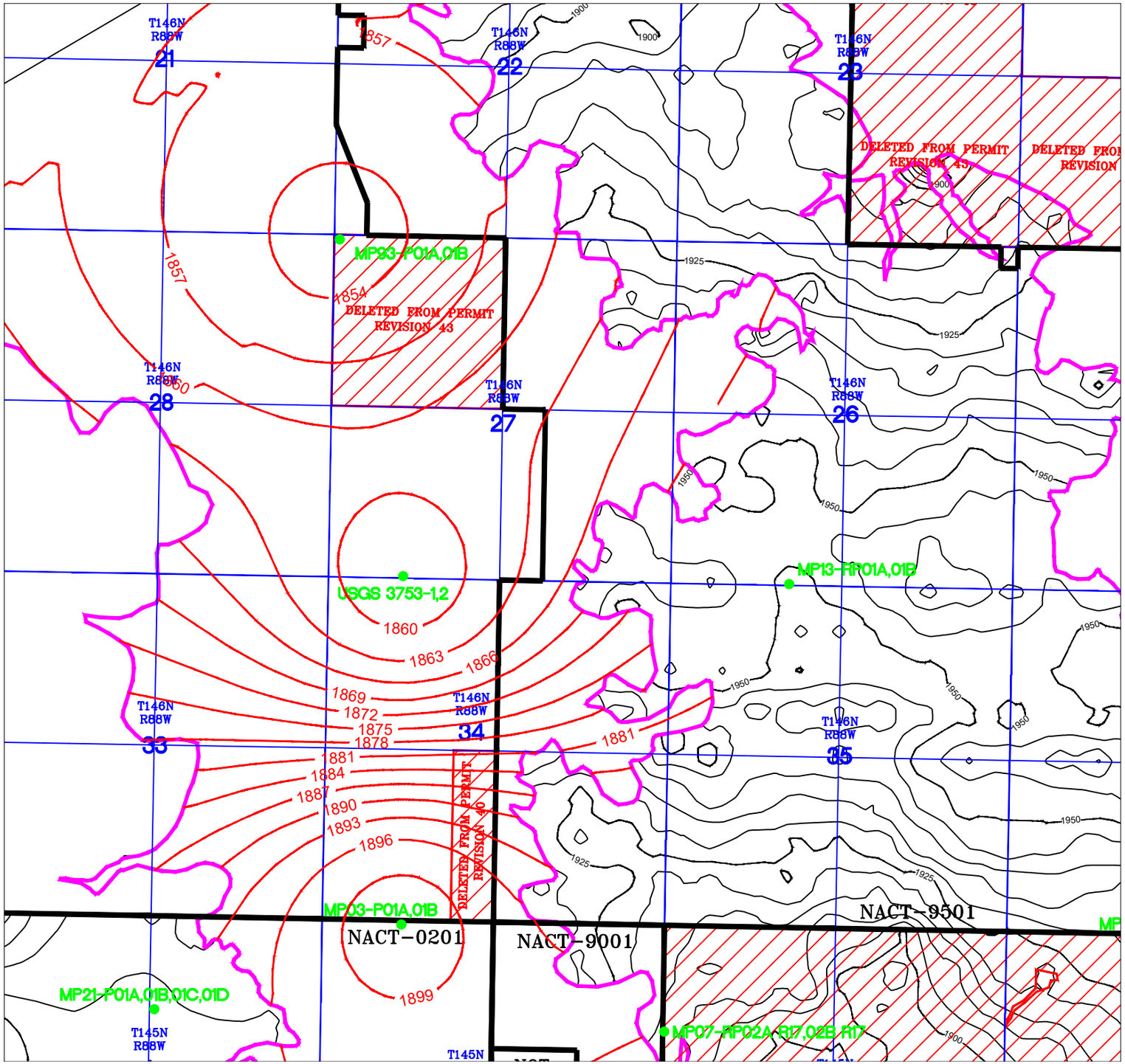
12/01/19
06/01/20
12/01/20
06/01/21
12/01/21
06/01/22
MP03-P01A Water Elevation
MP03-P01A Base of Aquifer
MP03-P01A Top of Aquifer
MP03-P01B Water Elevation
MP03-P01B Base of Aquifer
MP03-P01B Top of Aquifer
Precipitation

PSC - 22



LEGEND

- SECTION LINE–SURVEYED LOCATION
- QUARTER LINE–SURVEYED LOCATION
- SECTION LINE–ASSUMED LOCATION
- QUARTER LINE–ASSUMED LOCATION
- COMBINED BEULAH CROPLINE/LOWER BEULAH SUBCROPLINE COAL LINE
- BASE OF SPOIL/BEUALH STRUCTURE CONTOURS
- 1950 BASE OF SPOIL/BEULAH STRUCTURE ELEVATIONS
- ANTELOPE CREEK AQ UPPER UNIT POTENTIOMETRIC CONTOURS
- 1950 ANTELOPE CREEK AQ UPPER UNIT POTENTIOMETRIC ELEVATIONS
- ANTELOPE CREEK AQ LOWER UNIT POTENTIOMETRIC CONTOURS
- 1950 ANTELOPE CREEK AQ LOWER UNIT POTENTIOMETRIC ELEVATIONS
- MP02-P06B EXISTING MONITORING WELLS
- MP88-RP02B DESTROYED MONITORING WELLS

0 2000' 4000' 6000' 8000'

Scale 1" = 2000'

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DRAWING UPDATES			

COTEAU THE COTEAU PROPERTIES COMPANY

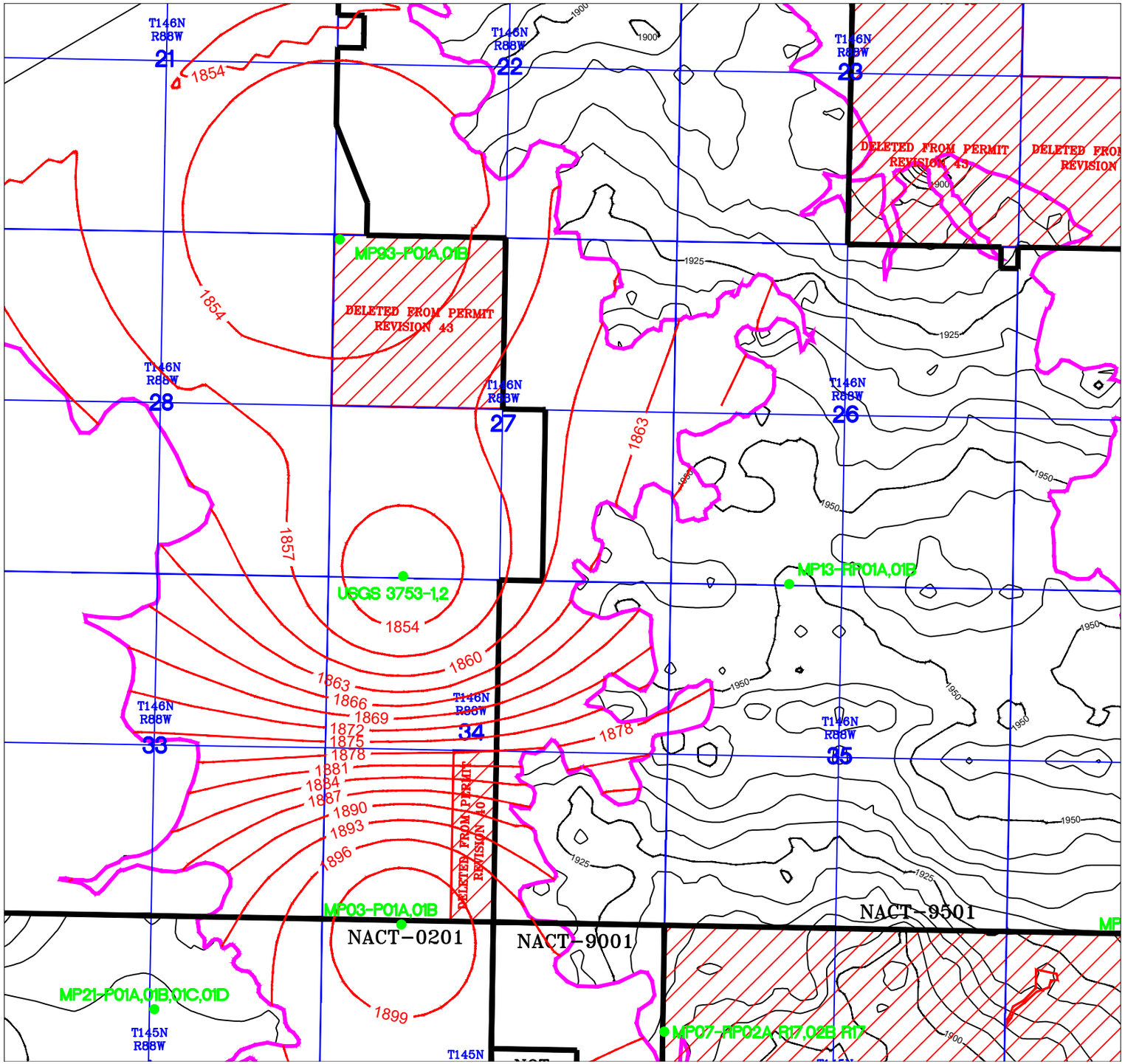
FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

2011

SCALE: 1"=2000' (paper size = Legal)
PROJECT: Section 34 REVISION:



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Scale 1" = 2000'

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FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

2012

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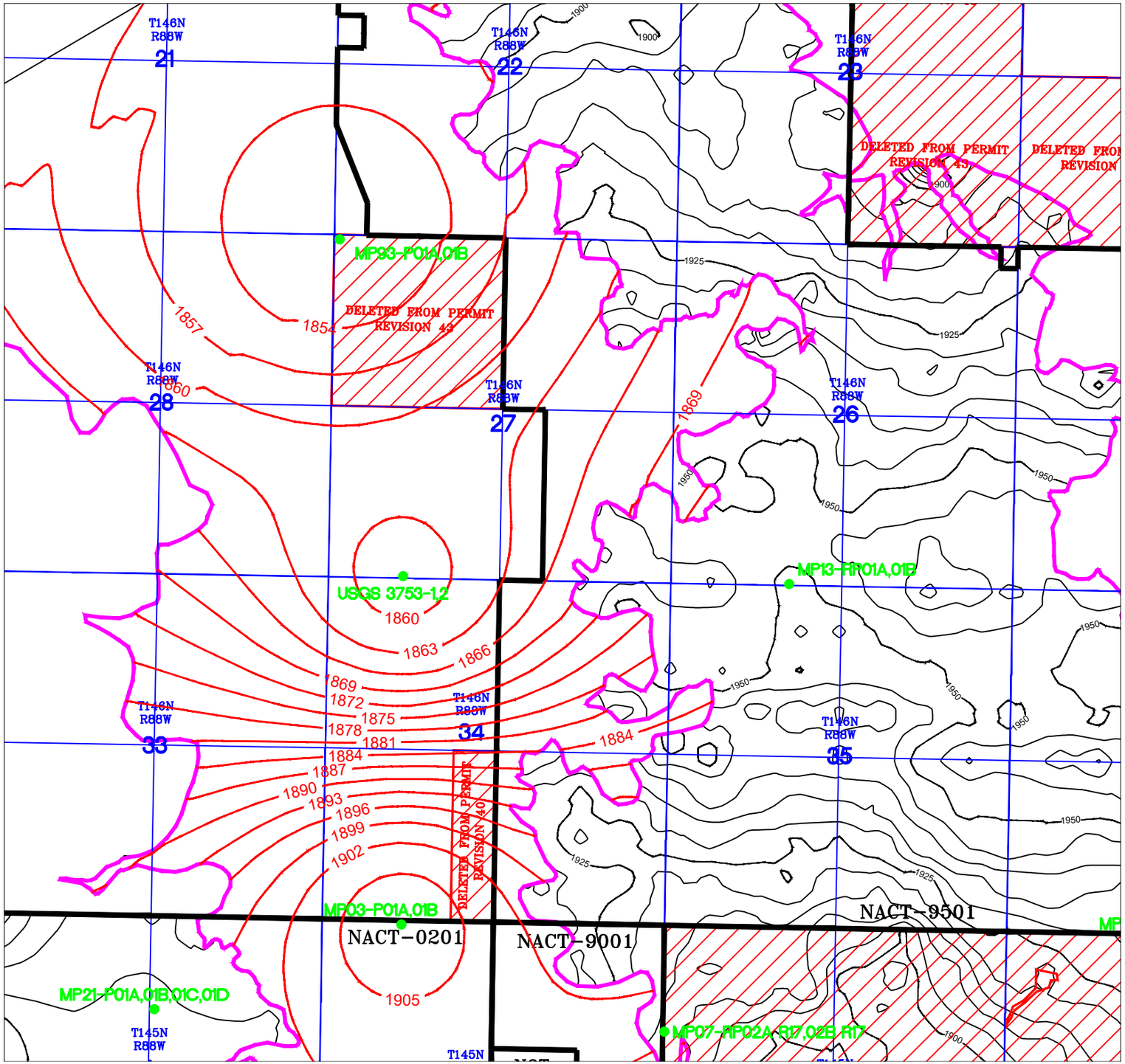

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- MP88-RP02B — DESTROYED MONITORING WELLS

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DRAWING UPDATES			

COTEAU — THE COTEAU PROPERTIES COMPANY

FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

2015

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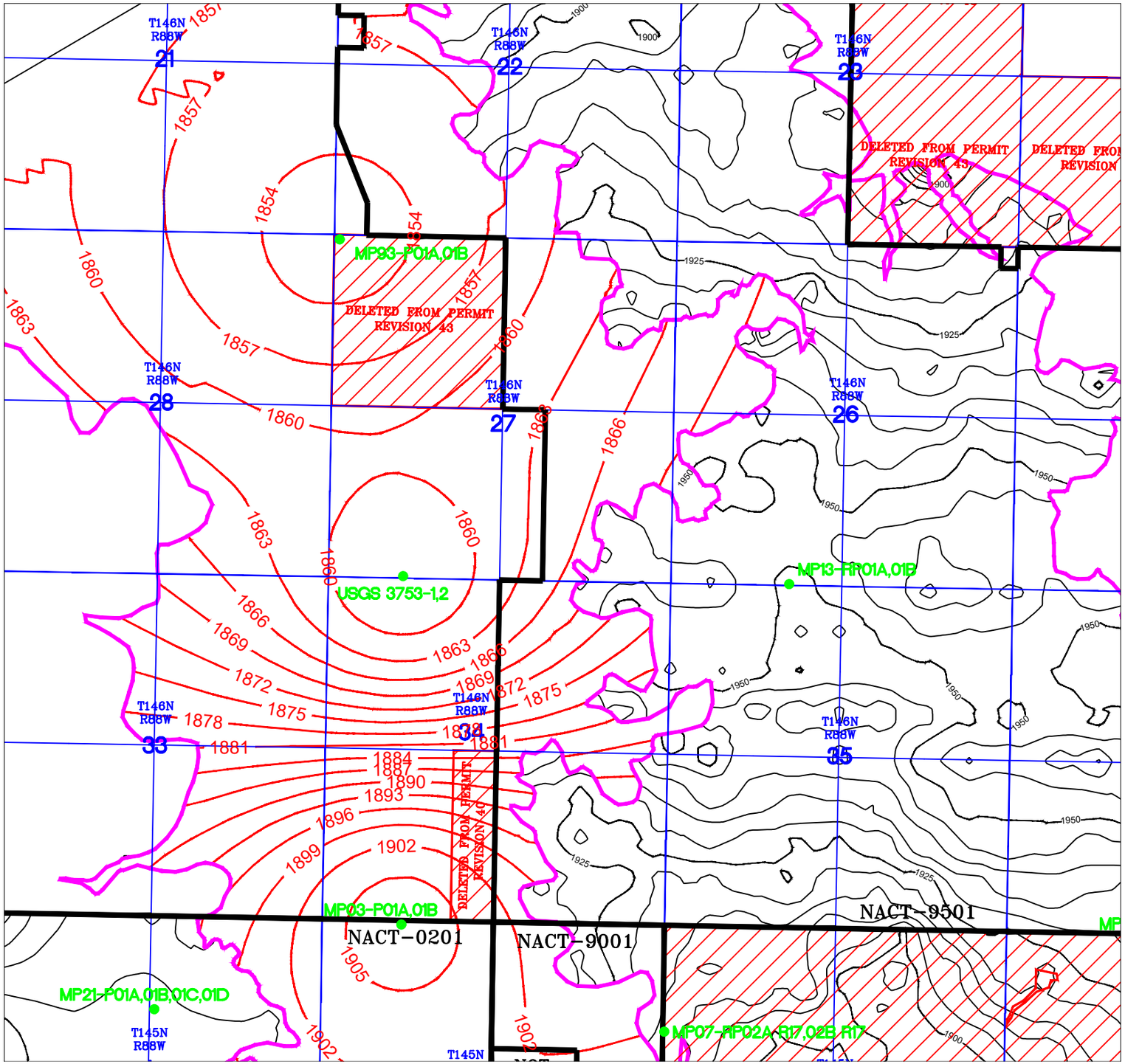

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- ANTELOPE CREEK AQ LOWER UNIT POTENTIOMETRIC CONTOURS
- 1950 — ANTELOPE CREEK AQ LOWER UNIT POTENTIOMETRIC ELEVATIONS
- MP02-P06B — EXISTING MONITORING WELLS
- MP88-RP02B — DESTROYED MONITORING WELLS

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Scale 1" = 2000'

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COTEAU — THE COTEAU PROPERTIES COMPANY

FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

2018

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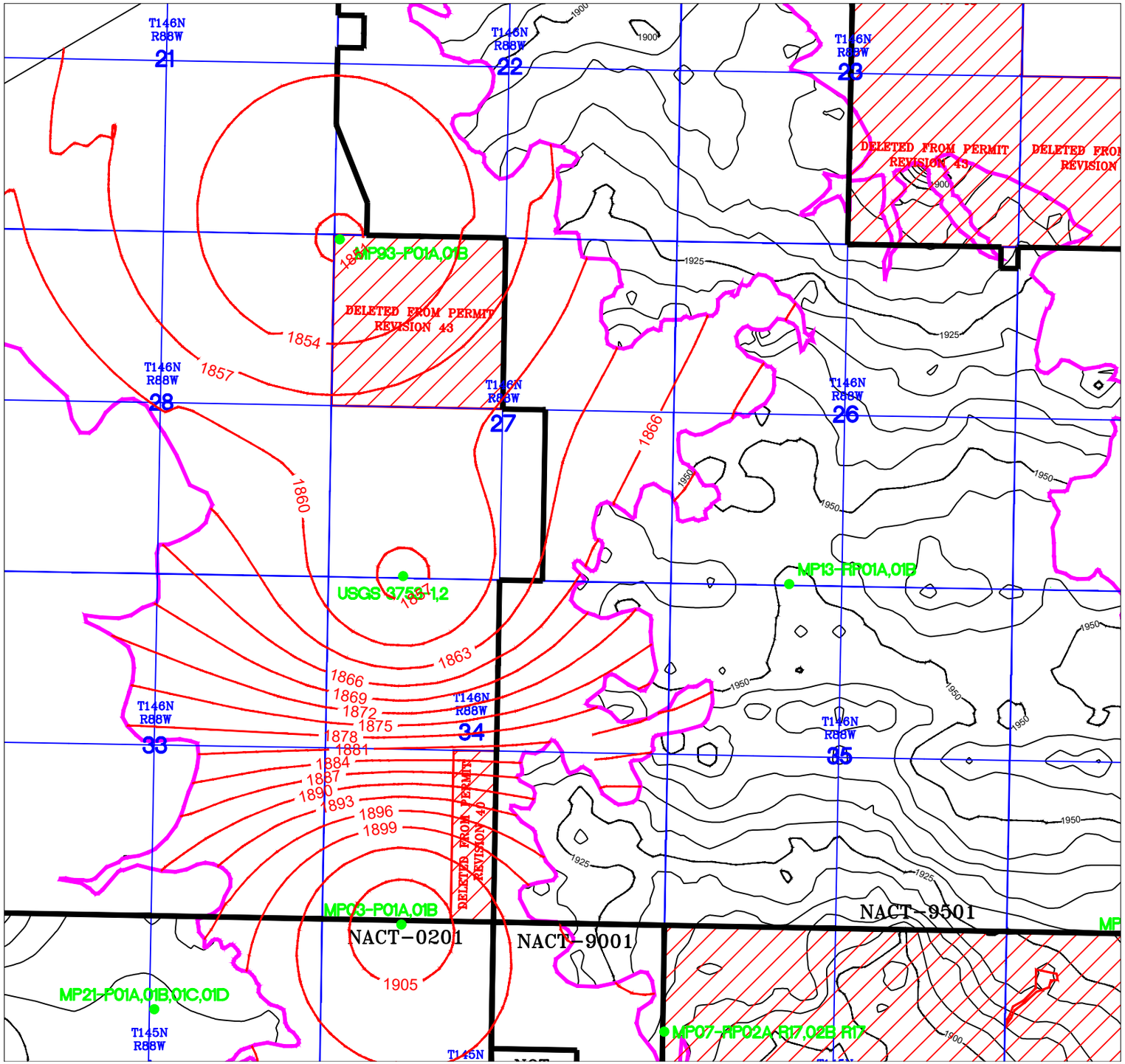

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- QUARTER LINE–SURVEYED LOCATION
- SECTION LINE–ASSUMED LOCATION
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- MP88-RP02B — DESTROYED MONITORING WELLS

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COTEAU — THE COTEAU PROPERTIES COMPANY

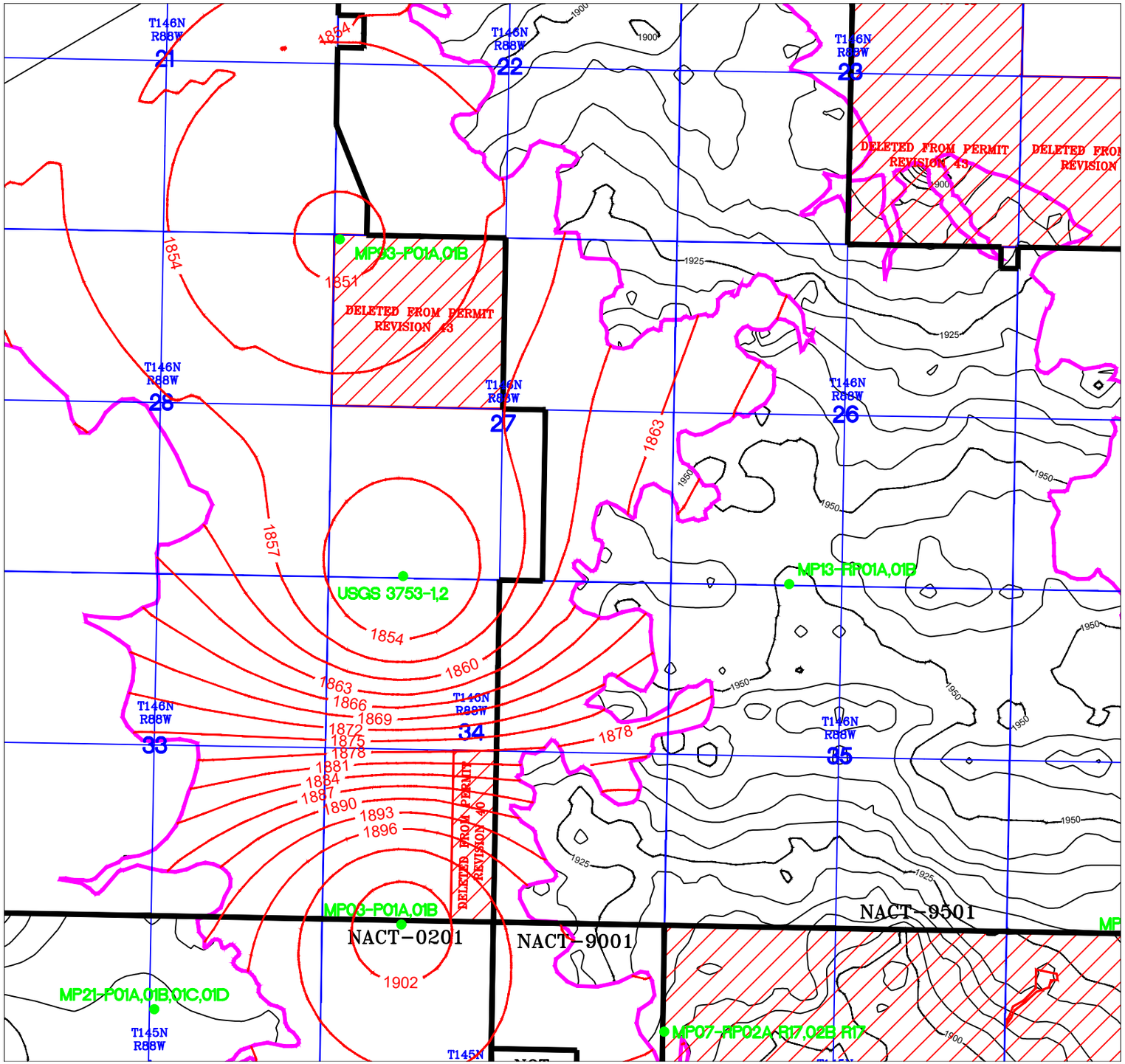
FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

2020

SCALE: 1"=2000' (paper size = Legal)
PROJECT: Section 34 REVISION:



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ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

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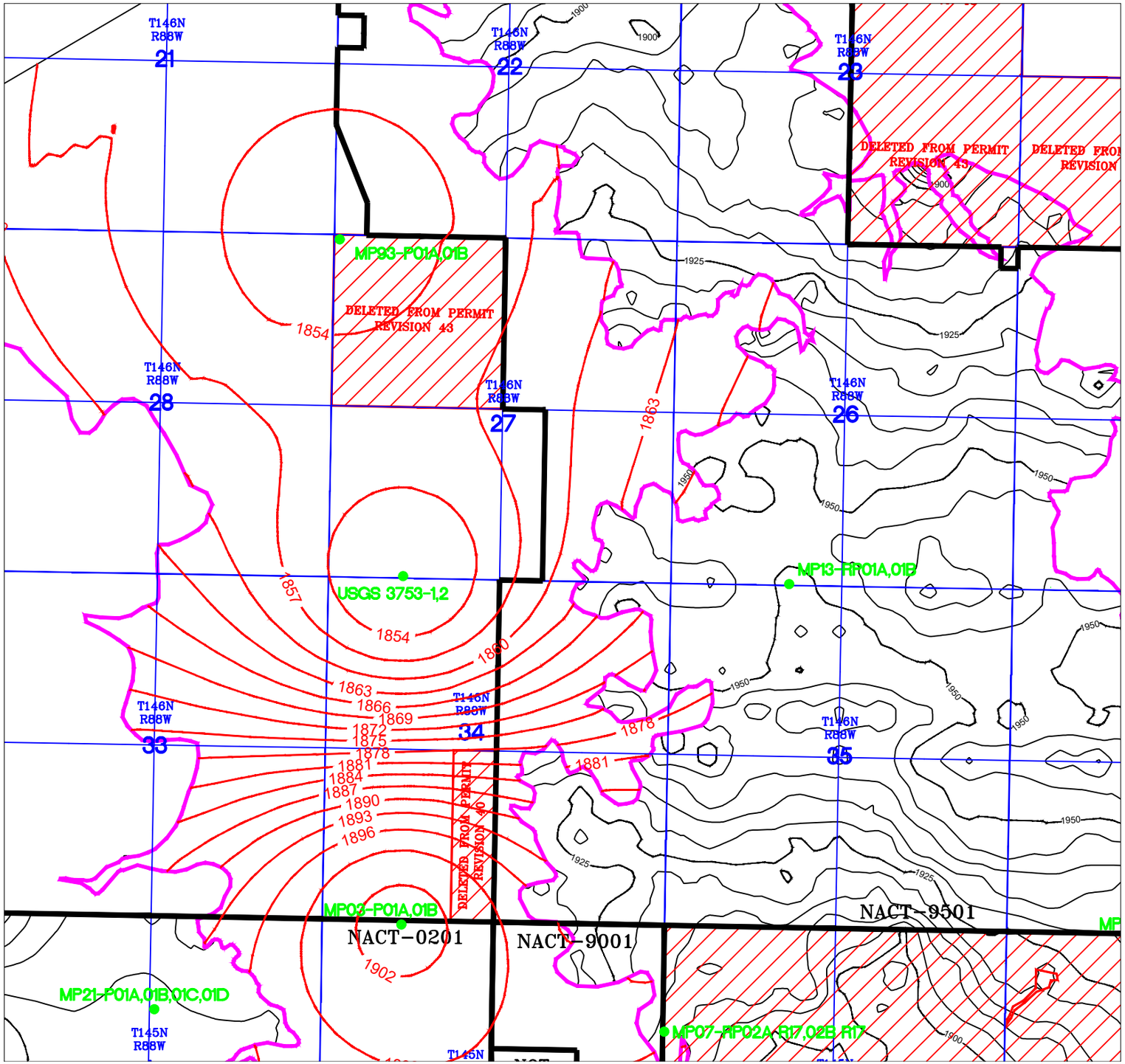

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FREEDOM MINE
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ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

UPPER UNIT

2022 Q2

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PROJECT: Section 34 REVISION:

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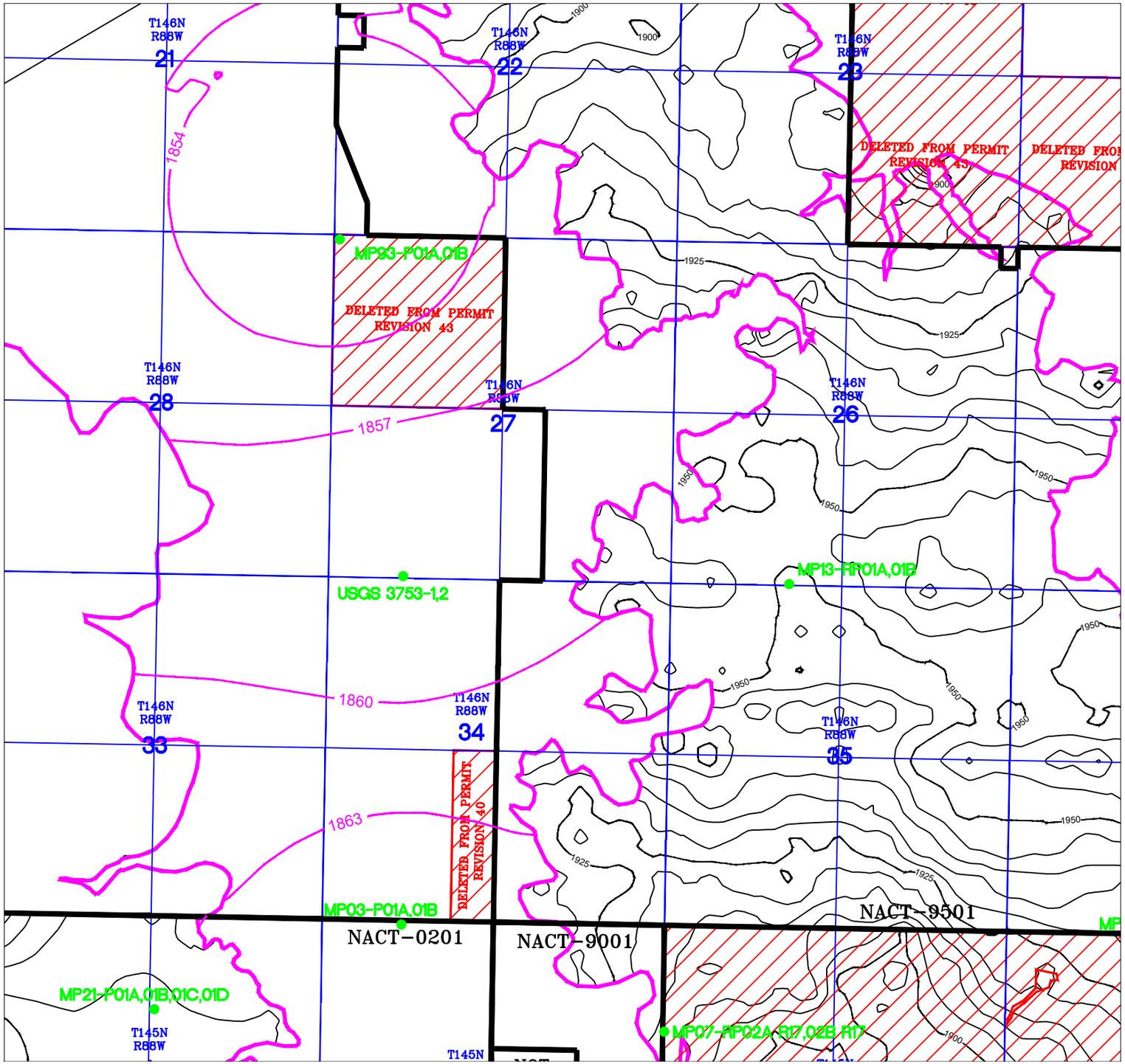

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ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

LOWER UNIT

2011

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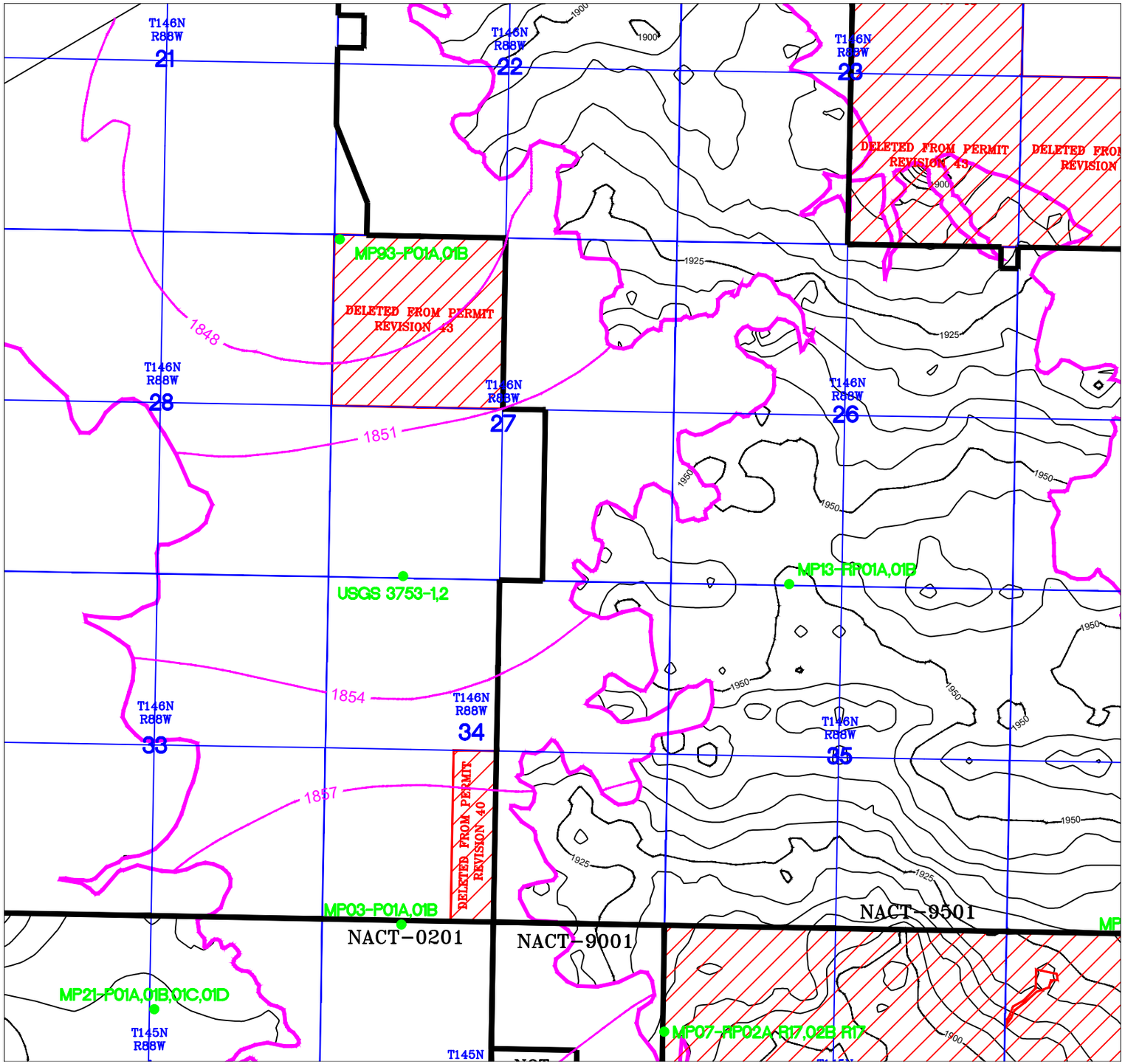

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BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

LOWER UNIT

2012

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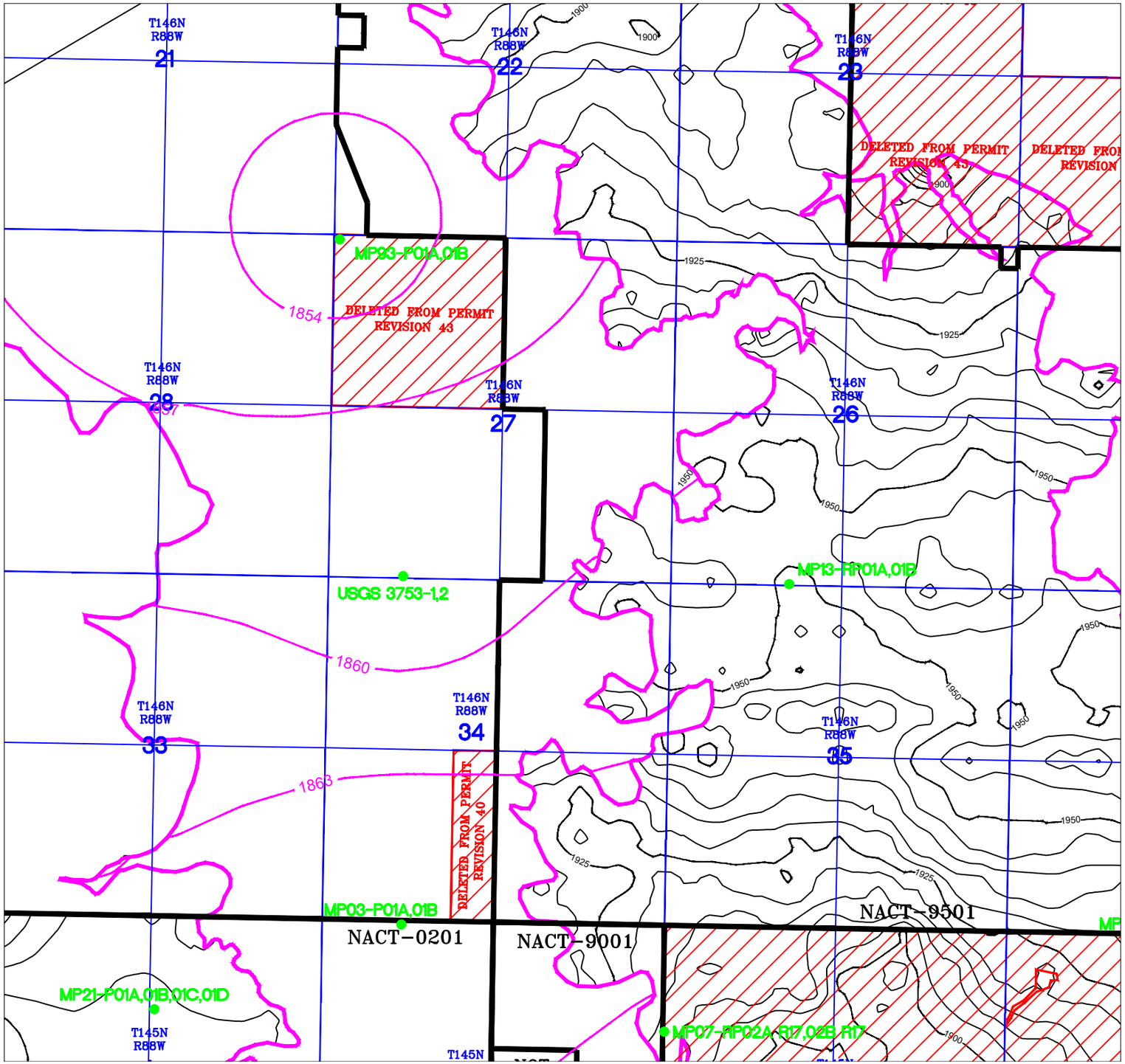

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FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

LOWER UNIT

2015

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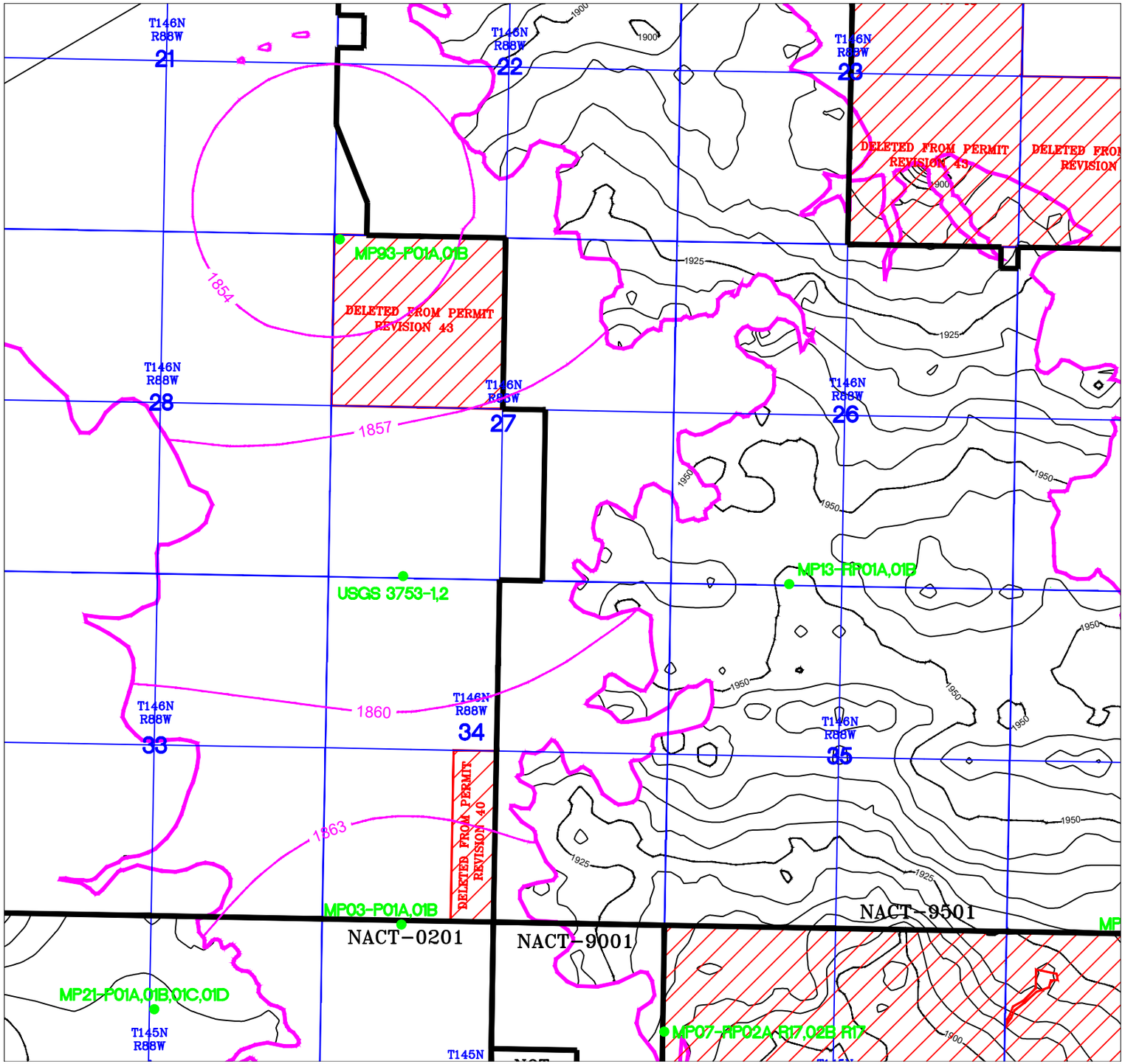

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ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

LOWER UNIT

2018

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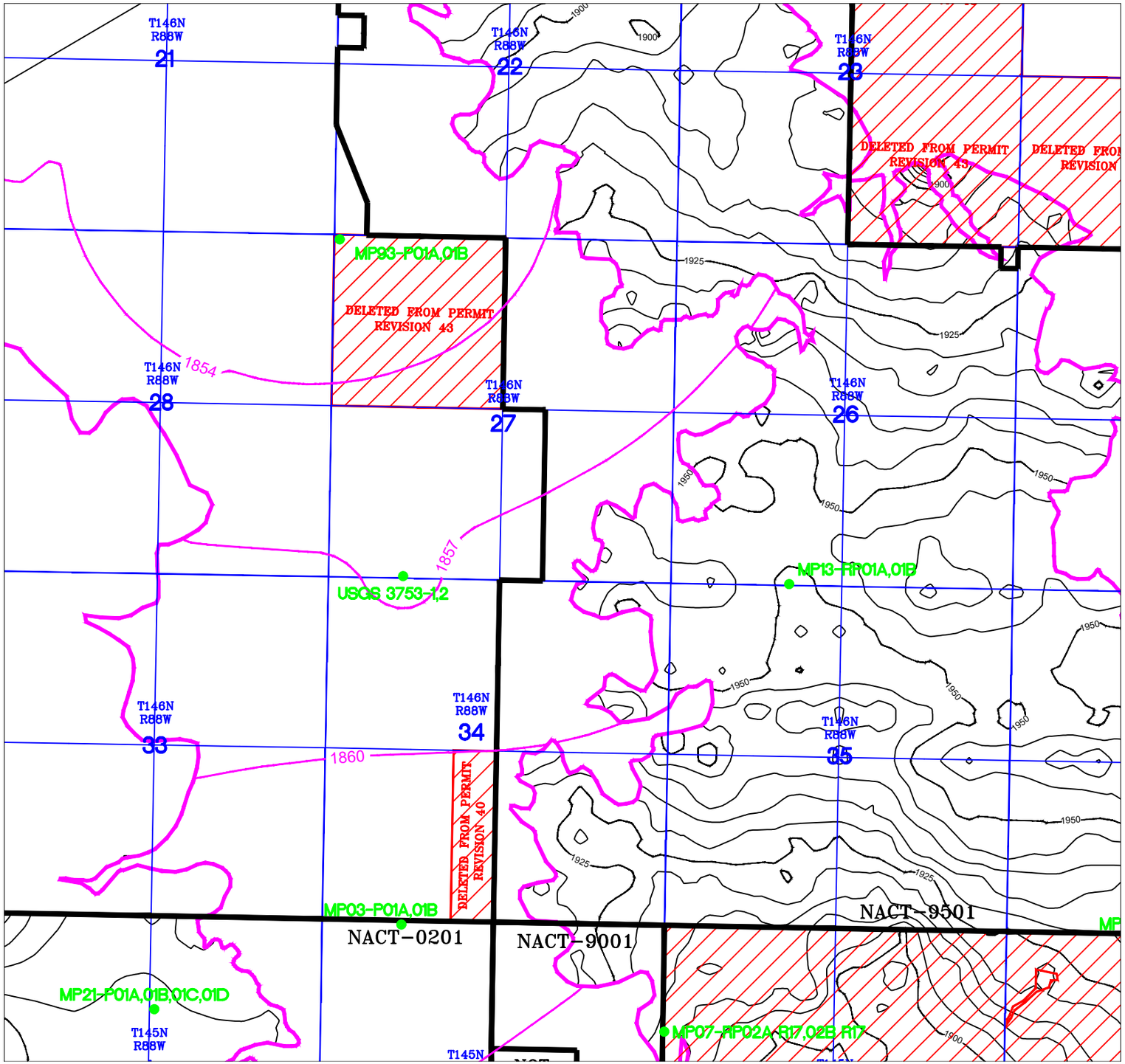

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FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

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2020

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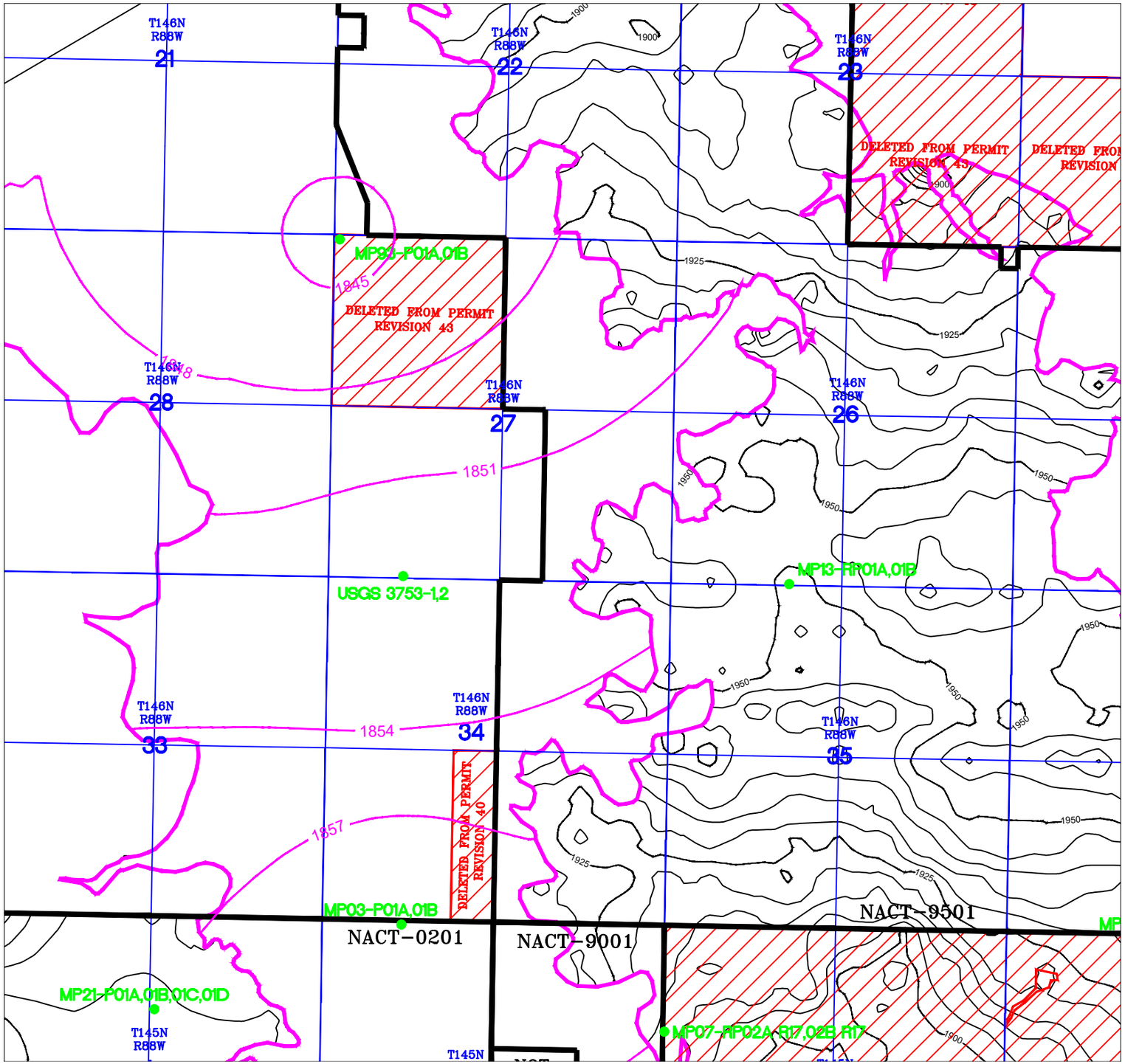

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FREEDOM MINE
BEULAH, ND 58523

ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

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2021

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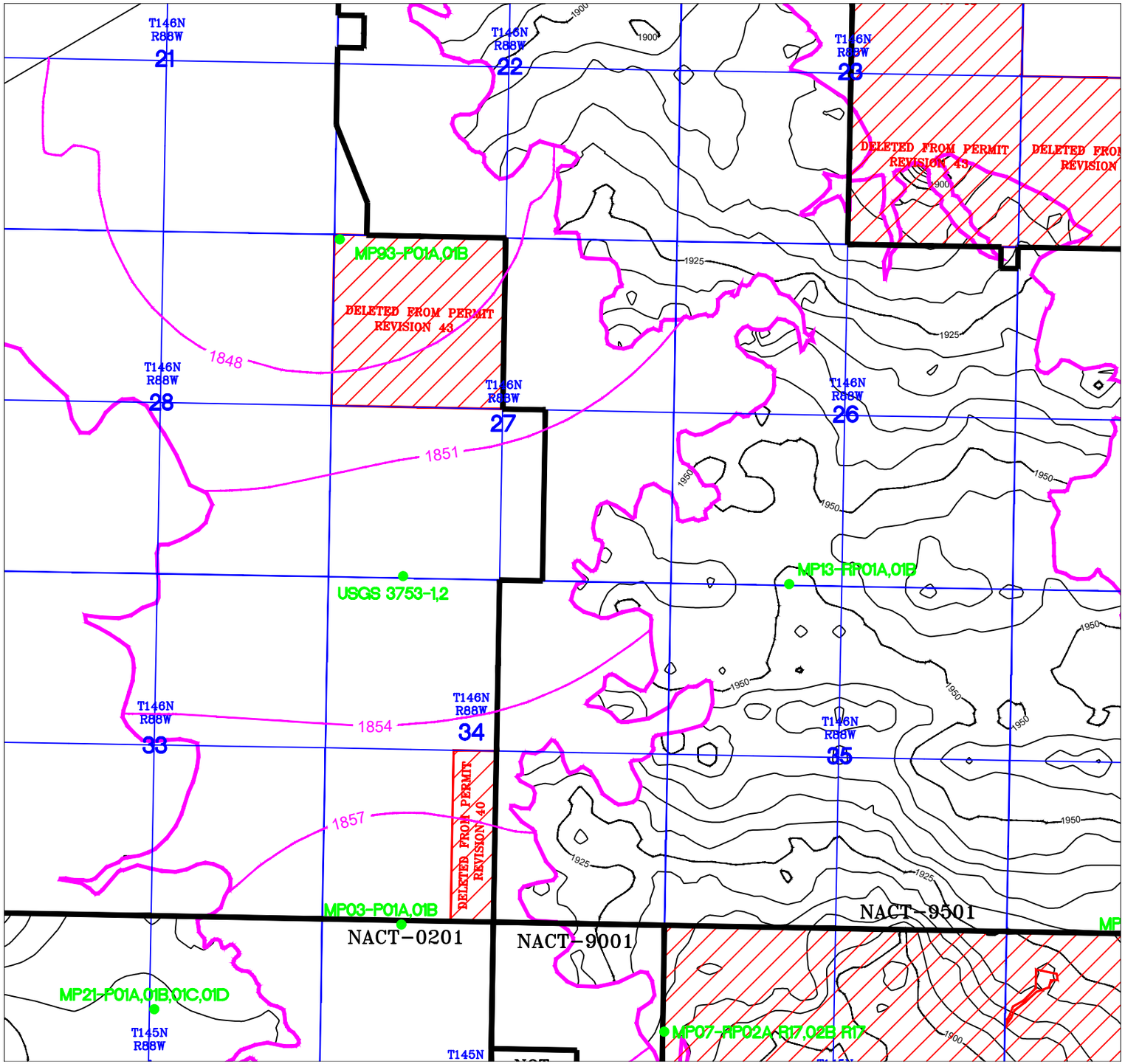

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ANTELOPE CREEK AQUIFER POTENTIOMETRIC MAP

LOWER UNIT

2022 Q2

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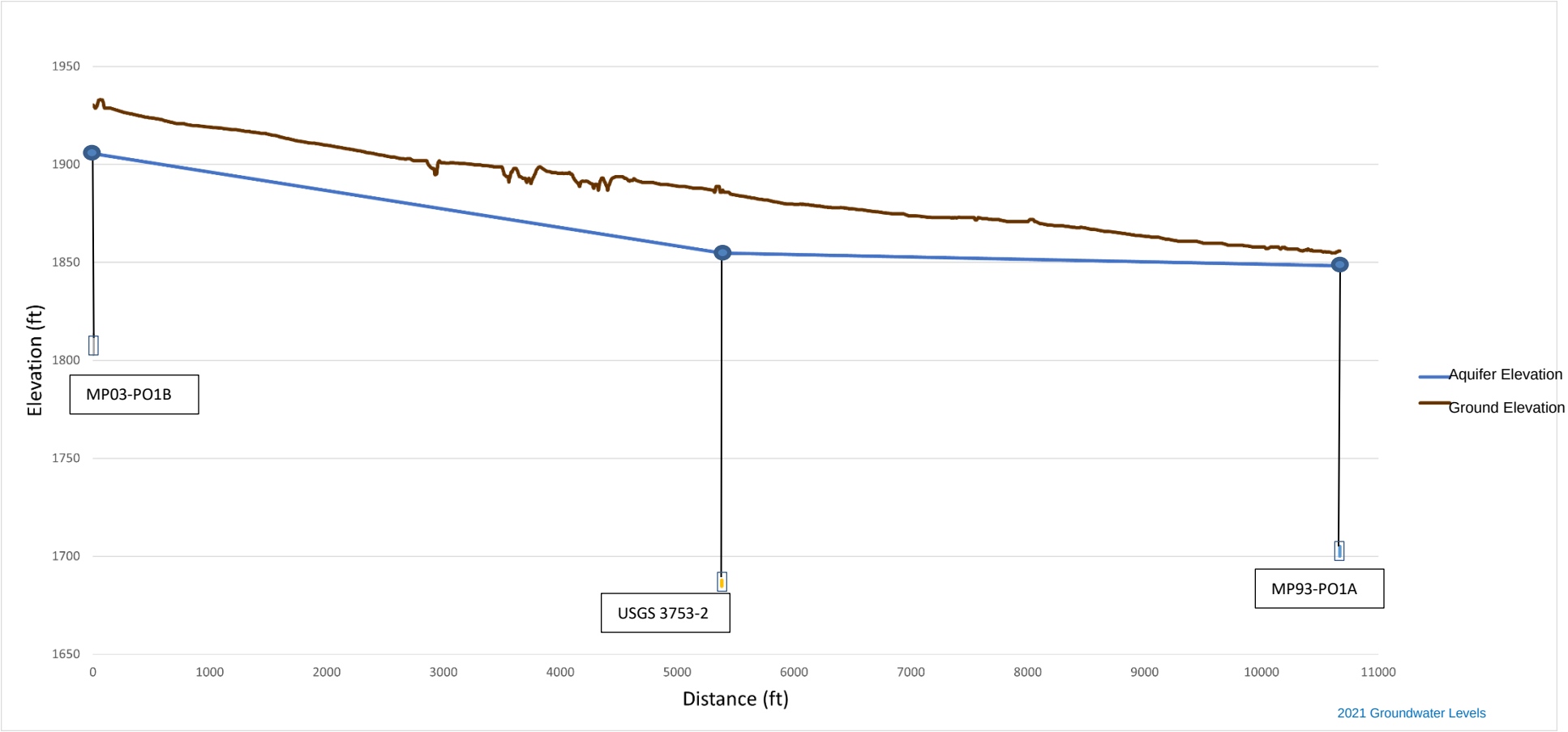
Antelope Creek Aquifer Cross Section



Guy A. Welch

Summary of Qualifications
Over 35 years of professional experience in natural resource management that includes 24 years of experience with surface coal mining permitting and inspection.

Education
B.S. Degree, Range Science, South Dakota State University, 1982

Professional Job Experience
- Environmental Scientist III - Permit Administrator, Reclamation Division, North Dakota Public Service Commission, Bismarck, ND. 1998 – Present.
- State Noxious Weed Specialist, North Dakota Department of Agriculture, Bismarck, ND. 1994-1998
- Rangeland Inventory Private Consultant, Dickinson, ND. 1991 -1994
- Soil Conservationist, USDA Soil Conservation Service, Dickinson, ND. 1989-1991
- Range Conservationist, Bureau of Land Management, Ely, Nevada. 1988-1989
- Soil Conservationist, USDA Soil Conservation Service, Dickinson, ND. 1987-1988
- Range and Soil Conservationist, ND State Land Department, Bismarck, ND 1983-1987

Certifications, Awards, Memberships, and Training
- Received specialized training in range and pastureland inventory and management techniques, soil conservation and management practices, universal soil loss equation, revegetation techniques, wetland mapping and classification, surface and ground water hydrology, blasting techniques, cultural resources, NEPA, statistics and various computer applications.

Knowledge, Skills, Abilities and Experience
- Over 24 years of experience in surface coal mining operations and reclamation, primarily dealing with permitting, inspection, bond release, environmental monitoring and regulatory analysis in North Dakota.
- Knowledgeable about North Dakota's requirements for surface coal mine permit, revision, and bond release applications.
- Knowledgeable in North Dakota's surface coal mining laws, rules and policy memorandums.
- Experience reviewing surface mining permits and revisions to ensure compliance with laws and regulations and prepare written findings.
- Experience inspecting surface mining and reclamation operations to ensure mining and reclamation activities are carried out in compliance with permits and regulations.
- Knowledgeable in revegetation practices and techniques and applicable performance standards.

Jeffrey A. Roerick

Summary of Qualifications

Over 22 years of professional experience in environmental consulting, North Dakota Pollution Discharge Elimination System program permitting, inspection, and enforcement, and surface coal mine permitting, inspection, and enforcement.

Education

B.S., Environmental Science, minor in Chemistry, Western Washington University, 1999

Professional Job Experience

- Environmental Scientist, Reclamation Division, North Dakota Public Service Commission, 2019 to present
- Environmental Scientist, Division of Water Quality, North Dakota Department of Environmental Quality/Health, 2002 to 2019
- Environmental Scientist, Applied Environmental Services, Port Orchard, Washington, 2000 to 2002

Training

- Received specialized training in Surface and Groundwater Hydrology from the Office of Surface Mining Reclamation and Enforcement

Knowledge, Skills, Abilities, and Experience

- 2.5 years of experience in surface coal mining operations and reclamation, primarily dealing with permitting, inspection, bond release, environmental and surface-water monitoring, and regulatory analysis.
- Knowledge of North Dakota's surface coal mining laws, rules, and policy memorandums.
- Knowledge of surface water hydrology and general operations and reclamation plans for surface mine permitting, revisions, and bond releases.
- Over 17 years of experience permitting wastewater discharges to waters of the State, analyzing water quality data, and assessing compliance with federal, state, and local wastewater discharge regulations.
- Knowledge of revegetation practices and techniques and applicable performance standards.

Preston J. Ripplinger

Summary of Qualifications
Seven years of professional experience in geology, hydrology, abandoned coal mine regulation, surface coal mine permitting, inspection and enforcement, solid waste and hazardous waste permitting, inspection and enforcement.

Education
BA, Geology, University of North Dakota, 2014

Professional Job Experience
- Hydrologist/Geologist, Reclamation Division, North Dakota Public Service Commission, 2021 to present; Started training for Hydrologist position under Bruce Beechie in 2019
- Environmental Scientist, Reclamation Division, North Dakota Public Service Commission, 2017 to 2021
- Environmental Scientist, Solid Waste Division, Department of Health, 2015 to 2017
- Inspector, Abandoned Mine Lands Division, North Dakota Public Service Commission, 2015

Certifications, Memberships, Training
- Member of North Dakota Geological Society.
- Received specialized training and certifications in GIS, Global mapper, Erosion and Sediment Control, Soils and Revegetation, Blasting, and Bonding from the Office of Surface Mining Reclamation and Enforcement.
- UND Augite Member, with geological fieldwork in Belize regarding general geology, paleontological work on non-marine snails in North Dakota, and heavy mineral analysis of the Chadron formation.

Knowledge, Skills, Abilities and Experience
- Five years of experience in surface coal mining operations and reclamation.
- Knowledgeable in geology, hydrology, alluvial valley floor identification and post-mining hydrologic assessment.
- Knowledgeable about North Dakota's requirements for surface coal mining permit, revision, and bond release applications.
- Knowledgeable in North Dakota's surface coal mining laws, rules, and policy memorandums.
- Experience inspecting surface mining and reclamation operations to ensure mining and reclamation activities are carried out in compliance with permits and regulations.
- Maintain a GIS groundwater geodatabase incorporating water level and water quality data for all monitoring wells required for mining.

Jonathan W. Emmer

Summary of Qualifications
Six years of professional experience in engineering and mining operations including two years of experience in abandoned coal mine reclamation and surface coal mine permitting.

Education
B.S., Geological Engineering with a minor in Petroleum Systems (Summa Cum Laude), South Dakota School of Mines and Technology, 2016

Professional Job Experience
- Assistant Director, Reclamation Division, ND Public Service Commission, 11/2021 - Present
- Environmental Engineer, Reclamation Division, ND Public Service Commission, 09/2020 - 11/2021
- Environmental Engineer, Abandoned Mine Lands Division, ND Public Service Commission, 02/2020 – 09/2020
- Maintenance Planner, Covia Corporation, Kasota, Minnesota, 05/2019 – 01/2020
- Production and Shipping Supervisor, Covia Corporation, Kasota, Minnesota, 09/2017 – 05/2019
- Staff Engineer, Weaver Consultants Group, Naperville, IL, 05/2016 – 09/2017

Certifications, Memberships, Training
- Engineer in Training (EIT)
- Member of Tau Beta Pi (Engineering Honor Society)
- Received specialized training in AutoCAD Civil 3D, ArcGIS, Global Mapper, and impoundment design

Knowledge, Skills, Abilities, and Experience
- Over two years of experience in surface coal mining operations and reclamation, primarily dealing with permitting, inspection, environmental monitoring, and regulatory analysis in North Dakota
- Knowledge of North Dakota’s requirements for surface coal mining permit, revision, and bond release applications
- Knowledge of North Dakota’s surface coal mining laws, rules, and policy memorandums
- Program management experience including staff supervision
- Over two years of experience working for a silica sand mining company