

From: JJ England [<mailto:jj@baumstarkbraaten.com>]

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To: bbjella@crowleyfleck.com; Jeffcoat-Sacco, Ilona; -Info-Attorney General

Cc: 'Derrick Braaten'; 'Becky Osborn'; Deutsch, James R.

Subject: Notification of Service for Case No. 08-2015-CV-01056 (Casey Voigt vs. North Dakota Public Service Commission and Coyote Creek Mining Company, LLC)

Due to an error in filing with the Odyssey system, I am sending by email a courtesy copy of the brief filed yesterday in Case No. 08-2015-CV-01056 (Casey Voigt vs. North Dakota Public Service Commission and Coyote Creek Mining Company, LLC). Please see attached.

-JJ England

JJ England

BAUMSTARK BRAATEN LAW PARTNERS

109 North 4th Street, Suite 100

Bismarck, ND 58501-4003

Phone: 701-221-2911

Fax: 701-221-5842

jj@baumstarkbraaten.com

www.baumstarkbraaten.com

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3. Whether several of the PSC's findings of fact describing the lack of an alluvial valley floor along Coyote Creek are supported by a preponderance of the evidence.
4. Whether the PSC's conclusions of law regarding the lack of an alluvial valley floor along Coyote Creek are supported by its factual findings.

III. Statement of the Case

[¶ 3] Appellant Casey Voigt is a rancher in Mercer County North Dakota. He is married to Julie Voigt. The Voigts' house is located within Section 31 of Township 143N, Range 88W, on the banks of Coyote Creek in the Coyote Creek Valley. In 2014, the Voigts owned and leased several thousand acres of land, a large portion of which was dedicated to ranching. A substantial portion of Coyote Creek Mine will be located directly upon the surface of, adjacent to, and within close proximity of the Voigts' owned and leased land. The Voigts have lived at this location for at least forty-four years.

[¶ 4] Appellee Coyote Creek Mining Company, L.L.C., ("CCMC") is a North Dakota Corporation with principal offices located at 6502 17th Street SW, Zap, ND 58580. Defendant is a subsidiary of North American Coal Corporation, which owns, through other subsidiaries, a number of other coal mines throughout North Dakota. Coyote Creek Mine is in the business of lignite coal production.

[¶ 5] Appellee Public Service Commission is an administrative agency of the state of North Dakota. The PSC is charged with implementing North Dakota's surface coal mining laws, including those laws derived from the federal Surface Mining and Reclamation Control Act.

[¶ 6] On October 31, 2013, CCMC submitted an application to the PSC for Permit NACC-1302 to conduct surface coal mining and reclamation operations on 8,091.511 acres of land in Mercer County, North Dakota, including on and adjacent to the Voigts' land. On October 22,

2014, the PSC conditionally approved CCMC's permit subject to the right of any person adversely affected to request a formal hearing. Doc. ID 40. Casey Voigt requested a formal hearing before the PSC in this matter on November 24, 2014. Doc. ID 43.

[¶ 7] A formal hearing in this matter was held in the PSC's hearing room on December 19th, 2015, December 23rd, 2015, and January 2nd, 2015. At the formal hearing, Mr. Voigt argued that AVF studies used to support the conditionally approved permit were insufficient to comply with law, that an AVF likely existed at Coyote Creek, and further that the conditionally approved permit was unlawful under SMCRA because it would allow for inadequate reclamation.

[¶ 8] The parties submitted written closing arguments, proposed Findings of Fact, Conclusions of Law, and a proposed PSC Order. Doc. IDs 112, 114, 121, 122, 123. On April 14, 2015, the PSC issued its findings of fact, law, and final Order in this matter. Doc. ID 125. The order affirmed and finalized CCMC's conditionally approved surface mining permit NACC-1302, concluded that an AVF does not exist along Coyote Creek, and also required that CCMC submit a revised application to account primarily for issues related to soil compaction. Doc. ID 125, at pp. 16, 17.

IV. Applicable Law

A. The Surface Mining Control and Reclamation Act

[¶ 9] The Surface Mining Control and Reclamation act ("SCMRA"), 30 U.S.C. § 1201, *et seq*, is a federal law passed in order to "strike a balance between protection of the environment and agricultural productivity and the Nation's need for coal." 30 U.S.C. § 1202(f). North Dakota has primacy to implement SMCRA, and the PSC implements SMCRA in North Dakota as opposed to the federal Office of Surface Mining ("OSM"). The PSC's implementing statutes are located in Chapter 38-14.1 of the Century Code. The PSC's implementing regulations are located in Article 69-05.2 of North Dakota's Administrative Code. As a general matter, SMCRA is

designed to ensure that surface mining operations do not occur in sensitive areas and that, after surface mining occurs, the permittee adequately reclaims the preexisting land use.

B. Alluvial Valley Floors

[¶ 10] SMCRA defines “Alluvial valley floor” (“AVF”) as “the unconsolidated stream-laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities.” 30 U.S.C. § 1291(1) (federal definition); N.D.C.C. § 38-14.1-02(1) (parallel state definition). Further refining this statutory definition, OSM’s guidance states that an AVF exists “when the following criteria are met”:

- i. Geologic criteria:
 - a. A topographic valley with a continuous perennial, intermittent, or ephemeral stream channel running through it; and
 - b. Within that valley , those surface landforms that are either flood plains or terraces if these landforms are underlain by unconsolidated deposits; and
 - c. Within that valley, those side-slope areas that can reasonably be shown to be underlain by alluvium and which are adjacent to flood plain or terrace landform areas.
- ii. Water availability criteria:
 - a. Water is available by surface-water irrigation or subirrigation and is being, or has successfully been, used to enhance production of agriculturally useful vegetation; or
 - b. Surface water is available and could be used to enhance production of agriculturally useful vegetation.

OSM guidance at II-11, Doc. ID 130.

[¶ 11] Thus, the PSC “will determine that an alluvial valley floor exists if:

- a. Unconsolidated streamlaid deposits holding streams are present; and
- b. There is sufficient water to support agricultural activities as shown by:

- (1) The existence of flood irrigation in the area or its historical use;
- (2) The capability to be flood irrigated, based on streamflow water yield, soils, water quality, and topography; or
- (3) Subirrigation of the lands from the ground water system from the valley floor.”

N.D.A.C. 69-05.2-08-13(2).

[¶ 12] The terms “subirrigation” and “flood irrigation” are further defined with respect to alluvial valley floors. “‘Flood irrigation’ means ... supplying water to plants by natural overflow, or the diversion of flows in which the surface of the soil is largely covered by a sheet of water.”

N.D.A.C. 69-05.2-01-02(34); see also 30 C.F.R. § 701.5. “‘Subirrigation’ means, with respect to alluvial valley floors, the supplying of water to plants from a semisaturated or saturated subsurface zone where water is available for use by vegetation. Subirrigation may be identified by:

- a. Diurnal fluctuation of the water table, due to the differences in nighttime and daytime evapotranspiration rates;
- b. Increasing soil moisture from a portion of the root zone down to the saturated zone, due to capillary action;
- c. Mottling of the soils in the root zones;
- d. Existence of an important part of the root zone within the capillary fringe or water table of an alluvial aquifer; or
- e. An increase in streamflow or a rise in ground water levels, shortly after the first killing frost on the valley floor.”

N.D.A.C. 69-05.2-01-02(103); see also 30 C.F.R. § 701.5.

[¶ 13] Due to the importance of AVFs to agriculture, they are protected under SMCRA. Both federal and state law provide that “No [mining] permit or revision application shall be approved

unless the application affirmatively demonstrates ... that ... the proposed surface coal mining operation, if located west of the one hundredth meridian west longitude, would—

- a. not interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated...; [and]
- b. not materially damage the quantity or quality of water in surface or underground water systems that supply these valley floors...”

30 U.S.C. § 1260(b)(5) (emphasis added); N.D.C.C. § 38-14.1-21(3)(e); N.D.A.C. 69-05.2-08-13(1). Federal and state law also require mining operations to “preserv[e] throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors in the arid and semiarid areas of the country” (defined as areas west of the one hundredth meridian). 30 U.S.C. § 1265(b)(10)(F); N.D.C.C. § 38-14.1-24(8)(g); N.D.A.C. 69-05.2-10-03(6)(b)(2)(b).

[¶ 14] Because an applicant for a surface mining permit is required to “affirmatively demonstrate” that the proposed mine will not interrupt or preclude farming on alluvial valley floors or materially damage water supplies in alluvial valley floors, determining the presence or absence of an AVF that could be affected by mining is a critically important prerequisite to obtaining a surface mining permit.

[¶ 15] The PSC has set forth detailed regulations describing the steps required to prove or disprove the presence of an AVF. This regulation, N.D.A.C. 69-05.2-08-13, lies at the heart of arguments made by Appellant, and therefore, it is provided here in full:

1. Before applying for a permit to conduct operations within a valley holding a stream or in a location where the adjacent area includes any stream, the applicant shall either affirmatively demonstrate, based on available data, the presence of an alluvial valley floor, or submit the results of a field investigation of the permit and adjacent areas. The investigations must include sufficiently detailed geologic, hydrologic, land use, soils, and vegetation studies on areas required to be investigated by the commission, after consultation with the applicant, to enable the commission to make an evaluation regarding the existence of the probable alluvial valley floor in the permit or adjacent area and to determine which areas, if any, require more

detailed study in order to make a final determination regarding the existence of an alluvial valley floor. Studies performed during the investigation by the applicant or subsequent studies required of the applicant must include an appropriate combination, adapted to site-specific conditions, of:

- a. Mapping of the probable alluvial valley floor including geologic maps of unconsolidated deposits, delineating the streamlaid deposits, maps of streams, delineation of surface watersheds and directions of shallow ground water flows through and into the unconsolidated deposits, topography showing local and regional terrace levels, and topography of terraces, floodplains, and channels showing surface drainage patterns.
 - b. Mapping of all lands included in the area used for agricultural activities, showing the different types of agricultural lands and accompanied by measurements of vegetation productivity and type.
 - c. Topographic maps of all lands that are or were historically flood irrigated, showing the location of each diversion structure, ditch, dam and related reservoir.
 - d. Documentation that areas identified in this section are, or are not, subirrigated, based on ground water monitoring data, representative water quality, soil moisture measurements, and measurements of rooting depth, soil mottling, and water requirements of vegetation.
 - e. Documentation, based on representative sampling, that areas identified under this subdivision are, or are not, flood irrigable, based on streamflow, water quality, water yield, soils measurements, and topographic characteristics.
 - f. Analysis of a series of aerial photographs, including color infrared imagery capable of showing any late summer and fall differences between upland and valley floor vegetative growth and of a scale adequate for reconnaissance identification of areas that may be alluvial valley floors.
2. Based on the investigations conducted under subsection 1, the commission will determine the extent of any alluvial valley floors within the study area....”

N.D.A.C. 69-05.2-08-13.

V. Facts

A. Background – AVF Determinations

[¶ 16] As its name suggests, Coyote Creek Mine will be located near and adjacent to Coyote Creek in Mercer County, North Dakota.

[¶ 17] Two separate AVF determinations and investigations were conducted at Coyote Creek, each covering a different geographic portion of the Creek. This is most clearly shown in the map contained in Section 2.6.2 of CCM's application. Doc. ID 78 (CD-ROM submitted to Court). For ease of reference, this map will be provided separately to this Court as a color hard-copy. Color-Document 01.

[¶ 18] In 2009, the PSC determined that the portion of Coyote Creek closest to the Voigts' farmstead in Section 31 of T143N-R88W does not contain an AVF. Doc. ID 116. ("2009 AVF Determination"). This determination was based upon two documents. The first document is a study performed by neighboring Dakota Westmoreland Mine (hereafter "2009 AVF Study"). Doc. ID 48. This mine is located to the east of Coyote Creek, whereas Coyote Creek Mine is located immediately to the west of the Creek. The second document is a field study completed by the PSC (hereafter "2009 PSC Field Review"). Doc. ID 66.

[¶ 19] In 2013, the PSC determined that those portions of Coyote Creek adjacent to Coyote Creek Mine but not included in its 2009 AVF Determination also did not contain an AVF ("2013 AVF Determination"). Doc. ID. 58. Like the 2009 AVF Determination, the 2013 AVF Determination was also supported by two documents, a study performed by CCMC ("2013 AVF Study"), Doc. ID 50., and a field investigation conducted by the PSC ("2013 PSC Field Review").

B. Evidence offered to the PSC at the administrative hearing in this matter

[¶ 20] A primary focus of the administrative proceeding before the PSC was whether an alluvial valley floor exists along Coyote Creek in Section 31 of T143N, R88W, the area covered by the PSC's 2009 AVF Determination. As discussed in ¶ 11, *supra*, the PSC's regulations require that an area be identified as an AVF if it meets the requisite geologic criteria and water availability criteria. See N.D.A.C. 69-05.2-08-13(2) subparts a and b, respectively.

[¶ 21] All parties agree that Coyote Creek Mine lies west of the 100th Meridian, and therefore SMCRA's alluvial valley floor rules apply to this mine.

[¶ 22] All parties also agree that Coyote Creek meets the requisite geologic criteria. Doc. ID 135, Transcript at 463 lines 1-8 (testimony of Coyote Creek Mine's expert); Doc. ID 140, Transcript at 174 line 18 (testimony of Casey Voigt's expert). This question is not in dispute. Rather, the parties disagree as to whether Coyote Creek meets the water availability criteria. Mr. Voigt contends that two of his alfalfa fields adjacent to Coyote Creek are subirrigated, and therefore this area is an AVF. This was the focus of the evidence provided to the PSC at the administrative hearing. Mr. Voigt also contends that Coyote Creek clearly exhibits the capability to be surface irrigated.

[¶ 23] Casey Voigt's home is located in Section 31 of T143N, R88W. Additionally, Mr. Voigt has several alfalfa fields that support his ranching operation. Mr. Voigt identified two of these fields as immediately adjacent to Coyote Creek and near his farmstead (hereafter "North Field" and "South Field", collectively "Lowland Fields"). Doc. ID 141, Transcript at 232. Additionally, he identified two other alfalfa fields located to the northwest of his house on uplands (hereafter "Upland Fields"). *Id.*

[¶ 24] Mr. Voigt provided several types of evidence to the PSC at the formal hearing in this matter showing that Coyote Creek meets the water availability criteria of an AVF in the area adjacent to the North Field and the South Field. First, Mr. Voigt provided federal Office of Surface Mining reconnaissance survey information for Coyote Creek. Doc. IDs 133, 134. As characterized by OSM, this survey information represents “a reconnaissance-level effort in identification of areas which are likely to meet this definition” (where “this definition” refers to the definition of alluvial valley floors). Doc. ID 133, at pp. 1 (emphasis added).

[¶ 25] OSM’s reconnaissance study of Coyote Creek was based upon “field investigations, supplemented by interviews with agricultural producers, information from regulatory and land management agencies, from published reports, and from aerial photographs and Landsat imagery.” *Id.* at pp. 2. Based on this information, OSM concluded that the area of Coyote Creek adjacent to the South Field and North Field is “likely” an Alluvial Valley Floor. Specifically, OSM stated that in addition to “tributary water from Coyote Creek [being] used” to support “intensiv[e] irrigation” along the Knife River “between Crooked Creek and Elm Creek,”

Coyote Creek[’s]...broad second terrace...is extensively used for pasture and hayfields. The lower parts of this terrace flood during high runoff; the other parts could be flood irrigated by spreading and/or pumping runoff water. Deep-rooting alfalfa probably receives beneficial moisture through subirrigation...[and additionally,] lower parts of [the upper reach of Coyote Creek] will occasionally flood, and all of it is flood irrigable.

Id. at pp. 20.

[¶ 26] Mr. Norris, a geohydrologist who specializes in surface mining issues, provided expert testimony that further verified OSM’s conclusions. Mr. Norris stated that he believes “to a reasonable degree of scientific certainty” that “AVF is demonstrated to exist in the Coyote Creek drainage where the Voigt property is used for hay production,” in Section 31 of T143N, R88W.

He further stated that he “share[s] the opinion of OSM in 1985 that AVF is likely to occur elsewhere in the Coyote Creek drainage.” Doc. ID 140, Transcript at 185-186.

[¶ 27] Mr. Voigt also presented as evidence two infrared photos of the area taken by OSM, numbered 291 (centered on Coyote Creek), and 306 (containing the Knife River near Beulah). Doc. IDs 99, 100. These photos will be provided separately to this court as color hard-copies. Color-Document 02 (Photo 291); Color Document 03 (Photo 306).

[¶ 28] Mr. Norris quoted OSM’s Alluvial Valley Floor Guidelines, Doc. ID 130 at pps. II-17, II-18, to explain that “identification of [subirrigation] at the initial stage is usually dependent on color infrared air photo interpretation.” Doc. ID 117 at ¶ 12. Mr. Norris explained that “areas of interest with respect to subirrigation – those with relatively high moisture content in vegetation – are identified with deepening concentrations of red” in these photographs. *Id.* at ¶ 11. Reviewing these two infrared photographs, Mr. Norris concluded that “[t]he comparison of these two photographs establishes why OSMRE in 1985 considered it likely that Coyote Creek held AVF lands and why the Knife River near Beulah likely did not. First, the photographs were taken in late summer, a time of year when vegetative evidence of subirrigation is most readily apparent. Second, Photograph 306 shows limited subirrigated lands along the Knife River in the eastern portion of the Coyote Creek AVF Study area based upon limited red coloration of fields along the Knife River, whereas photograph 291, containing Coyote Creek, shows much more substantial fields with deep red coloration.” *Id.* at ¶ 17.

[¶ 29] Mr. Bickel, CCMC’s AVF expert, revealed at the administrative hearing that he had reviewed groundwater data for two wells within a couple hundred feet of the Voigts’ two lowland alfalfa fields. Both wells showed that, over the course of August 2012 to September

2014, the water table in the area ranged from 8.68 to 10.84 feet. Doc. ID 135, Transcript at 430-440; Doc. ID 59 (well readings).

[¶ 30] Appellant provided evidence that OSM's case study of alfalfa subirrigation indicates that at groundwater depths of 8.68 to 10.84 feet, "on the average, subirrigation supplied a large portion of the water requirements of alfalfa." Doc. ID 131, at pp. C-34. In other words, at these groundwater depths, the expectation is that the Voigts' alfalfa fields should receive beneficial subirrigation that would enhance their production. This is particularly true in dry years when water from precipitation may be limited, and in such years, these fields would be particularly important to the overall ranching operation since they would supply a larger total percentage of hay for the ranch than in high precipitation years.

[¶ 31] Additionally, Mr. Voigt provided to the PSC comparative historical production records for his lowland and upland alfalfa fields in order to demonstrate water availability along Coyote Creek. Doc. ID 52. The years 2009-2011 and 2013 represent the Voigts' best data for direct quantitative comparison because, according to Mr. Voigts' records, none of his fields were grazed in those years and therefore production was quantified for all lowland and upland fields. Mr. Voigts' records show that the two lowland fields together averaged 7,648 lbs/acre of production annually during these four years, while the upland fields averaged 4,835 lbs/acre of production annually. Comparing the production of the lowland fields to the upland fields shows that the lowland fields produced about 45% more alfalfa than the upland fields. Moreover, Mr. Voigts' 2012 production records (not included in the calculations above but included in the production records provided to the PSC) indicate that his two lowland fields produce two cuttings even in exceptionally dry years, whereas the upland fields do not.

[¶ 32] The 45% difference in productivity cannot be explained by different soil types, as CCMC's witness Ms. Flath claimed at the hearing. Section 2.4.7.3 of CCM's application, Doc. ID 78, compared expected productivity of Section 25 T143N R89W to that of Section 31 of T143N R88W, i.e., the areas of the upland and lowland fields, respectively. This comparison was based on average productivity of soil types in each of these locations. Section 2.4.7.3 of CCM's application found that based on existing soils in each of these areas, Section 31 of T143N R88W should average 1,916 lbs/acre of production, and Section 25 of T143N R89W should average 2,158 lbs/acre—a difference of 12.6% in favor of the upland fields in Section 25. The fact that the Voigts' lowland fields regularly outproduced their upland fields can therefore not be explained by soil productivity.

[¶ 33] Mr. Bickel, CCMC's expert on alluvial valley floors, acknowledged the strength of the evidence submitted by Appellant to the PSC that the lowland fields are subirrigated, stating that "I think from all -- all testimony there -- there's no refuting that when you plant alfalfa on Mr. Voigt's two fields, there is the potential that those plants can reach and utilize groundwater." Doc. ID 136, Transcript at 467.

[¶ 34] While subirrigation along Coyote Creek at Mr. Voigt's two lowland alfalfa fields is sufficient to meet the water availability criteria, Coyote Creek also exhibits the "capability to be flood irrigated," a second method of showing that the water availability criteria are met. N.D.A.C. 69-05.2-08-13(2). The 2009 AVF Study found that even excluding one purportedly abnormal year with four times as much flow as average, average water yield from Coyote Creek was sufficient for irrigation of 102 acres of crops with a foot of water based on June flows, and an additional 70 acres of crops with a foot of water based on July flows. Doc. ID 48, at pp. 26 (discussing water availability).

[¶ 35] The 2009 AVF Study also determined that portions of Coyote Creek have a flat floodplain, Doc. ID 48, at pp. 24, which would tend to allow for flood irrigation, and that Coyote Creek's salinity levels are low enough to be continuously used on soils, even with restricted drainage. *Id.* at pp. 27. This is the textbook definition of exhibiting "The capability to be flood irrigated, based on streamflow water yield, soils, water quality, and topography." N.D.A.C. 69-05.2-08-13(2).

C. Evidence in the administrative record supporting a negative AVF determination

[¶ 36] The PSC's negative 2009 AVF Determination, as noted previously, was supported by the 2009 AVF Study completed by Dakota Westmoreland and the 2009 PSC Field Review. The information contained in these studies, however, is extremely limited, especially with respect to Mr. Voigts' alfalfa fields—the area along Coyote Creek which should have the highest likelihood of being an AVF.

[¶ 37] The 2009 AVF Study concluded that Mr. Voigts' two lowland alfalfa fields were not subirrigated based upon two pieces of information: visual observation of the surface of these fields in Spring, 2009, and a study from 1970 indicating depth to water table in the S1/2 of Section 31 of 20-22 feet and salinity of 2,200 and 2,500 $\mu\text{mhos/cm}$. Doc. ID 48, pps. 28-30.

[¶ 38] The 2009 AVF Field Review did not visit Section 31 of T143 N, R88W, the location of Mr. Voigts' alfalfa fields. Doc. ID 66.

D. Evidence in record rebutting negative AVF determination

[¶ 39] The only information contained in 2009 AVF Study and 2009 AVF Field Review—the two documents supporting the PSC's negative AVF determination at the location of Mr. Voigts' lowland alfalfa fields—were a visual survey of Mr. Voigts' lowland fields in spring of 2009, 45 year old water measurements at an unspecified location in the South $\frac{1}{2}$ of Section 31, T143N, R88W, and a PSC field review that never actually visited Mr. Voigts' lowland fields.

[¶ 40] In response to this evidence, Mr. Norris provided expert testimony explaining why these studies are insufficient to “affirmatively demonstrate” a lack of subirrigation at these fields as required by N.D.C.C. § 38-14.1-21(3)(e). Mr. Norris stated that:

First, “the walkover of the field was conducted at the worst time of the year to assess the impact of subirrigation. It was done in early spring, mid-May, at a time of early annual growth. Late summer, long after spring rains, snowmelts, the spring water are gone, is the appropriate time to investigate subirrigation.” This is because this is “the time of year when subirrigation will be supporting the plant growth. During the spring there's lots of water in virtually any area for the early growth of crops. It's in the mid and late summer when things heat up, dry out, that you've lost the impact of spring rains and snowmelt, that there is not enough active water being provided by precipitation for active plant growth. That's the time of year when the influence of subirrigation can be observed.” Doc. ID 140, Transcript at 177 lines 19-25

The second “problem is that the subjective perception that there are progressive changes of plant vigor and population across the site is without any supporting data or documentation at least in the report ... There was no photographic evidence ... of the vegetative trends. There were no counts of plant density, numbers and varieties or any quantification of plant vigor.” Id. at 178-79.

Third, the walkover’s “observations are not the result of the [] 2009 growing season. They're the conditions going into the 2009 growing season. The previous winter, December of '08, January and February of '09, were exceptionally wet in Beulah. Those three months were 250 percent -- precipitation was 250 percent of the 30-year climatic average. March of 2009 recorded seven and a half times the normal precipitation. This is based on USDA climate data, the WETS table, that can be found at agacis.rec-acis.org/38057... There was no consideration that, for example, what was being looked at in terms of plant distributions was not stressed to the area, observed that the stress to the area was simply the result of perhaps prolonged submergence and scouring by flood waters in the areas nearest the stream in response to exceptional March precipitation that followed immediately after an unusually wet, snowy winter. Something other than a dismissal of subirrigation would appropriately have been considered and discussed, particularly since it was not the time of year when you can even see the effects of subirrigation.” Id. at 179-80.

Fourth, “If the plant patterns perceived by the author in the 2009 report in fact exist ... those patterns reflect drought stress rather than some other process or event. That stress is found exactly where it would be expected in the alluvial valley sediments that do not have subirrigation support. It is a verification of the observation of OSM in 1985 that subirrigation in Coyote Creek drainage is important and it is a confirmation of OSM's expectation that AVF is likely.” Id. at

183; see also Doc. ID 131 at C-36 (showing, in OSM case study involving alfalfa subirrigation, that subirrigation first increases as you move away from the valley floor, eventually peaks with distance, and then decreases).

VI. Argument

[¶ 41] The PSC’s findings of fact, conclusions of law, and final Order contain four categories of reversible error. First, certain portions of the Order are not in accordance with law, as required by N.D.C.C. § 28-32-46(1). Second, the findings of fact made by the agency do not sufficiently address the evidence presented to the agency by the Appellant, as required by N.D.C.C. § 28-32-46(7). Third, the findings of fact made by the agency are not supported by a preponderance of the evidence, as required by N.D.C.C. § 28-32-46(5). And fourth, certain conclusions of law and the PSCs’ order are not supported by its findings of fact, as required by N.D.C.C. § 28-32-46(6)

A. Portions of the PSC’s Order are not in accordance with law

[¶ 42] The PSC’s order is not in accordance with law, as required by N.D.C.C. § 28-32-46(1), for two reasons.

i. Noncompliance with N.D.C.C. § 38-14.1-21(3)(e) and N.D.A.C. § 69-05.2-08-13(1)

[¶ 43] The Order does not comply with the requirements of N.D.C.C. § 38-14.1-21(3)(e), which states that an applicant for a surface mining permit must “affirmatively demonstrate” that “the proposed surface mining operations...would...[n]ot interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated...[and would] not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors.” N.D.A.C. § 69-05.2-08-13(1) states that an applicant for a surface mining permit “must include sufficiently detailed geologic, hydrologic, land use, soils, and vegetation studies on areas required to be investigated by the commission, after consultation with the applicant, to enable the commission to make an evaluation regarding the existence of the

probable alluvial valley floor in the permit or adjacent area.” This Section of the N.D.A.C. goes on to list six types of information that an applicant “must” submit, “in appropriate combination, adapted to site-specific conditions” to meet this requirement. See ¶ 15, *supra*.

[¶ 44] Here, CCMC did not “affirmatively demonstrate” that its operations would “[n]ot interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated...[and would] not materially damage the quantity or quality of water in surface or underground systems that supply these floors.” While the 2009 AVF Study and 2009 AVF Field Review collectively include the maps identified by N.D.A.C. 69-05.2-08-13(1)(a),(b),(c), they include almost none of the information required by subsections (d),(e),(f) of this provision. These latter subsections require at least analysis beyond mere mapping. In regards to subirrigation, these sections require an appropriate combination of ground water monitoring data sufficient to identify subirrigation, representative water quality, soil moisture measurements, and measurements of rooting depth, soil mottling, water requirements of vegetation, and infrared aerial imagery capable of showing any late summer and fall differences between the upland and valley floor.

[¶ 45] Here, the 2009 AVF Study and 2009 AVF Field Review collected almost none of this information, and even information such as infrared photography that was already on file with the PSC was not reviewed. Doc. ID 119, ¶ 4. Ground water monitoring data was not collected and only came to light during the hearing itself—this data shows a *likelihood* of subirrigation based on a shallow water table of 8.68 to 10.84 feet within just a few hundred feet of Mr. Voigts’ lowland alfalfa fields. Doc. ID 135, Transcript at 430-440; Doc. ID 59 (well readings). No efforts to obtain representative water quality data from groundwater wells (other than from 1970, at an unspecified location in the South ½ of Section 31, and even then, only for salinity) were

collected. Rooting depths of Mr. Voigts' alfalfa was never measured. The water requirements of Mr. Voigts' alfalfa were never specified in these reports. And while the PSC did undertake some limited soil mottling assessment, PSC staff never visited Section 31 during their 2009 Field Review, and soil mottling assessment was not completed at this location. Doc. ID 66.

[¶ 46] In short, other than providing maps of the area, none of the scientific analysis required by N.D.A.C. 69-05.2-08-13(1) was completed. The 2009 AVF Study relied upon in CCMC's application for this permit did not include "sufficiently detailed geologic, hydrologic, land use, soils, and vegetation studies on areas required to be investigated by the commission, after consultation with the applicant, to enable the commission to make an evaluation regarding the existence of the probable alluvial valley floor." Therefore, because CCMC did not comply with law in this permit process, the PSC's order is not in compliance with law. CCMC's application did not "affirmatively demonstrate" that "the proposed surface mining operations...would...[n]ot interrupt, discontinue, or preclude farming on alluvial valley floors that are irrigated or naturally subirrigated...[and would] not materially damage the quantity or quality of water in surface or underground water systems that supply these alluvial valley floors." N.D.C.C. § 38-14.1-21(3)(e).

ii. The order does not comply with N.D.A.C. § 69-05.2-01-02(103) because it is not supported by an alluvial valley floor determination that contains data necessary to identify "subirrigation," as defined by law.

[¶ 47] The definition of "subirrigation" in N.D.A.C. § 69-05.2-01-02(103) explains that "Subirrigation may be identified by:

- a. Diurnal fluctuation of the water table, due to the differences in nighttime and daytime evapotranspiration rates;
- b. Increasing soil moisture from a portion of the root zone down to the saturated zone, due to capillary action;
- c. Mottling of the soils in the root zones;

- d. Existence of an important part of the root zone within the capillary fringe or water table of an alluvial aquifer; or
- e. An increase in streamflow or a rise in ground water levels, shortly after the first killing frost on the valley floor.”

Similar to that described in the previous section of this brief, CCMC and the PSC did not undertake any analysis identified in N.D.A.C. § 69-05.2-01-02(103) to determine if Mr. Voigts’ lowland alfalfa fields were subirrigated. Therefore, the PSC’s order does not comply with N.D.A.C. § 69-05.2-01-02(103) because it is not supported by an alluvial valley floor determination that contains data necessary to identify “subirrigation,” as defined by law.

B. The PSC’s findings of fact do not sufficiently address the evidence presented by Appellant

[¶ 48] The findings of fact made by the agency do not sufficiently address the evidence presented to the agency by the Appellant, as required by N.D.C.C. § 28-32-46(7), for four reasons.

[¶ 49] First, the Appellant’s expert hydrogeologist testified as to a number of reasons why the 2009 alluvial valley floor study applicable to Section 31 of T143N, R88W (the location of the appellant’s alfalfa fields immediately adjacent to Coyote Creek) is scientifically indefensible. Doc. ID 140, Transcript at pps. 177-180, 183; see also *supra*, ¶ 37. The agency’s applicable findings of fact, Nos. 55-58, addressed none of this extensive testimony.

[¶ 50] Second, Appellant provided evidence of his alfalfa production showing that (1) his lowland alfalfa fields regularly produce more cuttings of alfalfa than his upland fields, and that (2) in the year 2012, a year of extreme drought, his lowland fields nonetheless produced two cuttings of alfalfa relative to one cutting on his upland fields. Doc. ID 52. Because the agency’s

applicable finding of Fact No. 59 makes no effort to weigh the importance of this evidence, this evidence was not sufficiently addressed.

[¶ 51] Third, the Appellant provided evidence from the federal Office of Surface Mining that “Coyote Creek[’s]...broad second terrace...is extensively used for pasture and hayfields [and] [t]he lower parts of this terrace flood during high runoff; other parts could be flood irrigated by spreading and/or pumping runoff water [and additionally,] lower parts of [the upper reach of Coyote Creek] will occasionally flood, and all of it is flood irrigable.” The PSC’s findings of fact Nos. 53 and 54 do not address this evidence.

[¶ 52] Fourth, the Appellant provided evidence from the federal Office of Surface Mining that “deep-rooting alfalfa along Coyote Creek probably receives beneficial moisture through subirrigation.” The PSC’s findings of fact Nos. 55-72 do not address this evidence.

C. Findings of fact are not supported by a preponderance of the evidence.

i. Finding of fact No. 54

[¶ 53] PSC finding of fact No. 54 is not supported by the preponderance of the evidence. Land adjacent to Coyote Creek contains sufficient water for flood irrigation agricultural activities. The 2009 AVF Study found that even excluding one purportedly abnormal year with four times as much flow as average, average water yield from Coyote Creek was sufficient for irrigation of 102 acres of crops with a foot of water based on June flows, and an additional 70 acres of crops with a foot of water based on July flows. Doc. ID 48, at pp. 26 (discussing water availability).

[¶ 54] The 2009 AVF Study also determined that portions of Coyote Creek have a flat flood-plain, Doc. ID 48, at pp. 24, which would tend to allow for flood irrigation, and that Coyote Creek’s salinity levels are low enough to be continuously used on soils, even with restricted drainage. *Id.* at pp. 27. This is the textbook definition of exhibiting “The capability to be flood

irrigated, based on streamflow water yield, soils, water quality, and topography.” N.D.A.C. 69-05.2-08-13(2).

[¶ 55] Additionally, finding of fact No. 54’s statement that “the water quality in Coyote Creek is marginally suitable for limited or restricted irrigation based on salinity” is not supported by a preponderance of the evidence. Rather, the portion of the record cited by this finding of fact directly contradicts this finding and notes that salinity levels are “permissible” for agriculture. See Doc. ID 48 at pp. 27 (2009 AVF Study).

[¶ 56] Thus, finding of fact No. 54’s statement that “the potential for flood irrigation along Coyote Creek is very low” is not supported by a preponderance of the evidence. Rather, the administrative record directly contradicts this statement. In addition to information contained in the 2009 AVF Study, Appellant also provided OSM data showing

That Coyote Creek[’s]...broad second terrace...is extensively used for pasture and hayfields. The lower parts of this terrace flood during high runoff; the other parts could be flood irrigated by spreading and/or pumping runoff water. Deep-rooting alfalfa probably receives beneficial moisture through subirrigation...[and additionally,] lower parts of [the upper reach of Coyote Creek] will occasionally flood, and all of it is flood irrigable.

Doc. ID 133, at pp. 20 (OSM Reconnaissance) (emphasis added).

ii. Finding of fact No. 64

[¶ 57] PSC finding of fact No. 64 states that “Dr. Bickel testified that no subirrigation of significance was noted.” There is no location noted in this sentence, but the remainder of this paragraph discusses Coyote Creek as a whole. To the extent that this finding of fact asserts that Dr. Bickel testified that “no subirrigation of significance was noted” along the entirety of Coyote Creek, this is an incorrect characterization of his testimony and is not supported by the preponderance of the evidence.

iii. Finding of fact No. 72

[¶ 58] PSC finding of fact No. 72's statement that "none of the evidence presented at the hearing indicated that subirrigation significantly enhances hay production on Mr. Voigt's fields along Coyote Creek" is not supported by a preponderance of the evidence. Rather, evidence presented at the hearing including expert testimony, production records, groundwater levels, infrared photographs, data collected by the Office of Surface Mining, and CCMC's own expert on alluvial valley floors clearly indicate that subirrigation does enhance and facilitate production on these fields. See supra, ¶¶ 20-35.

[¶ 59] Additionally, the PSC's statement in finding of fact No. 72 that "the overall higher hay production from [Mr. Voigt's fields along Coyote Creek] compared to his upland fields is due to the inherent high productivity of the Straw soils" is not supported by a preponderance of the evidence. Rather, CCMC's own mining permit application undermines this conclusion, as does other evidence presented at the hearing including expert testimony, production records, groundwater levels, infrared photographs, and data collected by the Office of Surface Mining. See supra, ¶¶ 20-35.

D. The PSC's conclusions of law are not supported by the PSC's findings of fact.

[¶ 60] PSC conclusion of law No. 6 that "the alluvium along Coyote Creek is not an alluvial valley floor as defined by subsection 1 of N.D.C.C. Section 38-14.1-02" is not supported by the agency's findings of fact. The PSC made no supporting finding of fact that "water availability [at Coyote Creek] is [in]sufficient for subirrigation...agricultural activities" such that agriculture is "enhanced or facilitated" by this irrigation. To the extent that finding of fact No. 72 discusses whether "subirrigation significantly enhances hay production," (emphasis added) this is not the appropriate legal standard and cannot be used to support the PSC's conclusion of law No. 6.

[¶ 61] Because CCMC's application for surface coal mining permit NACC-1302 does not meet all regulatory standards, the PSC's conclusion of law No. 2 that the permit application does meet all regulatory standards is not supported by its findings of fact. Additionally, because there are multiple bases for the Commission to rescind or revoke Permit NACC-1302, the PSC's conclusion of law No. 3 that there is not a basis to rescind or revoke this permit is not supported by its findings of fact. In the alternative, conclusions of law No. 2 and 3 are not in accordance with law.

VII. Request for Oral Argument

[¶ 62] Pursuant to Rule 9.1, Appellant requests oral argument in this matter.

VIII. Conclusion

[¶ 63] For the reasons explained above, Appellant respectfully urges this Court to reverse the Order of the PSC dated April 14, 2015 in Agency Case No. RC-13-850 and remand to the Public Service Commission for further proceedings consistent with this Court's order.

DATED this 21st day of August, 2015

BAUMSTARK BRAATEN LAW PARTNERS

/s/ Derrick Braaten _____
Derrick Braaten, ND Bar # 06394
JJ England, ND Bar #08135
Attorneys for Appellant
109 North 4th Street, Suite 100
Bismarck, ND 58501
Phone: 701-221-2911
Fax: 701-221-5842
derrick@baumstarkbraaten.com
jj@baumstarkbraaten.com