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MONTANA BOARD OF  
ENVIRONMENTAL REVIEW  
This 15 day of June, 2016  
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By: Hillary Hede

**BEFORE THE BOARD OF ENVIRONMENTAL REVIEW  
OF THE STATE OF MONTANA**

**IN THE MATTER OF:  
APPEAL AMENDMENT AM4,  
WESTERN ENERGY COMPANY,  
ROSEBUD STRIP MINE AREA B  
PERMIT NO. C198400B**

**CASE NO. BER 2016-03 SM**

**Petitioners' Brief in Support of  
Motion for Summary Judgment**

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**Ex. 2:** Montana Dep't of Env'tl. Quality, Western Energy Company Rosebud Mine, Cumulative Hydrologic Impact Assessment, Amendment AM4 (December 4, 2015).

**Ex. 3:** Montana Dep't of State Lands and U.S. Office of Surface Mining, Final Environmental Impact Statement, Western Energy Company's Rosebud Mine Area C, Block 1 (July 1982).

**Ex. 4:** Dep't of Health and Env'tl. Sciences, Environmental Impact Statement on the Proposed Montana Power Company Electrical Generating Plant at Colstrip, Montana (March 1973).

**Ex. 5:** Montana Dep't of Env'tl. Quality, Respondent's Responses to Petitioners' First Set of Requests for Admission, Interrogatories, and Requests for Production, Case No. BER 2016-03 SM (Feb. 27, 2016).

**Ex. 6:** Montana Dep't of Env'tl. Quality, Water Quality Standards Attainment Record, East Fork Armells Creek, Headwaters to Colstrip (Reporting Cycle 2014).

**Ex. 7:** Montana Dep't of Env'tl. Quality, Water Quality Standards Attainment Record, East Fork Armells Creek, Colstrip to Mouth (Reporting Cycle 2014).

**Ex. 8:** Comprehensive Evaluation of Probable Hydrologic Consequences: Areas A, B, and C Western Energy Rosebud Mine, Prepared for Western Energy Company by Nicklin Earth & Water (January 2014).

**Ex. 9:** Western Energy Co., Conf. Call Meeting Notes (June 13, 2014).

**Ex. 10:** Penny Hunter, Aquatic Study Review (September 21, 2015)

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<sup>1</sup> Exhibits are provided on a CD accompanying the brief. Citations to exhibits are provided as [Exhibit #] at [Page #]. The original pagination of the document is given where available. If a document is not numbered, page numbers are given counting from the first page.

**Ex. 11:** Memorandum from Penny Hunter & Jason Vogel, ARCADIS U.S., Inc., to Western Energy Company (Dec. 14, 2014).

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**Ex. 13:** Montana Dep't of State Lands, Written Findings for Big Sky Mine, Lee Coulee, Area B (November 1988).

**Ex. 14:** Western Energy Co., Plan for Protection of the Hydrological Balance, Rosebud Mine, Area B (1986).

**Ex. 15:** Montana Dep't of Env'tl. Quality, Cumulative Hydrologic Impact Assessment Area B, Attachment 1: Western Energy Company B Amendment CHIA; Surface Water, at 4 (1995).

**Ex. 16:** Montana Dep't of Env'tl. Quality, Respondent's Responses to Petitioners' Second Set of Requests for Admission, Interrogatories, and Requests for Production, Case No. BER 2016-03 SM (April 11, 2016).

**Ex. 17:** Letter from Chris Yde, Montana Dep't of Env'tl. Quality, to Dicki Peterson, Western Energy Company (May 3, 2013).

**Ex. 18:** Letter from Chris Yde, Montana Dep't of Env'tl. Quality, to Dicki Peterson, Western Energy Company (Jan. 15, 2014).

**Ex. 19:** Email from Dicki Peterson, Western Energy Company, to John Cartensen, Nicklin Earth & Water (June 6, 2013).

**Ex. 20:** Email from Emily Hinz, Montana Dep't of Env'tl. Quality, to Dicki Peterson, Western Energy Company (July 22, 2014).

**Ex. 21:** Email from Dicki Peterson, Western Energy Company, to Penny Hunter, ARCADIS U.S., Inc. (Aug. 1, 2014).

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**Ex. 24:** Chis Yde, Montana Dep't of Env'tl. Quality, Meeting Notes (May 16, 2013).

**Ex. 25:** Dennis J. Schwehr, Western Energy Co., *The Ecology of East Fork Armells Creek and Some Ponds Near Colstrip, Montana* (1979).

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**Ex. 28:** David W. Clark, U.S. Geological Survey, *Geochemical Processes in Ground Water Resulting from Surface Mining of Coal at the Big Sky and West Decker Mine Areas, Southeastern Montana*, Water-Resources Investigations Report 95-4097 (September 1995).

**Ex. 29:** Letter from Chis Yde, Montana Dep't of Env'tl. Quality, to Dicki Peterson, Western Energy Company (June 3, 2014)

**Ex. 30:** Memorandum and Order in *MEIC v. DEQ*, CDV 2012-1075 (March 14, 2016).

**Ex. 31:** C.E. Dobbin, USGS, *The Forsyth Coal Field: Rosebud, Treasure, and Big Horn Counties, Montana* (1929).

**Ex. 32:** Addendum to the Comprehensive Evaluation of Probable Hydrologic Consequences: Areas A, B, and C Western Energy Rosebud Mine, Prepared for Western Energy Company by Nicklin Earth & Water (2015).

**Ex. 33:** Probable Hydrologic Consequences, Area F Western Energy Rosebud Mine, Prepared for Western Energy Company by Nicklin Earth & Water (February 2016).

**Ex. 34:** Montana Dep't of Env'tl. Quality, Sample Collection, Sorting, Taxonomic Identification, and Analysis of Benthic Macroinvertebrate Communities Standard Operating Procedure (2012).

**Ex. 35:** Email from David Feldman, Montana Dep't of Env'tl. Quality, to Pete Schade, Montana Dep't of Env'tl. Quality (May 16, 2014).

**Ex. 36:** Office of Surface Mining, Draft, Guidelines for Preparation of a Cumulative Hydrologic Impact Assessment (1985).

**Ex. 37:** Montana Dep't of Env'tl. Quality, Respondent's Responses to Petitioners' Requests for Production, Case No. BER 2016-03 SM.

## INTRODUCTION

In the face of compelling evidence that prior strip mining operations have caused ongoing material damage to the hydrologic balance and that the proposed expansion of those operations would only aggravate the damage that past operations have caused, the Montana Department of Environmental Protection (Department) nonetheless approved the application of Western Energy Company (WECO) to amend its Area B Permit for the Rosebud Mine near Colstrip, Montana. Instead of fairly and reasonably applying the statutes and regulations that govern evaluation of mining permit applications, the Department effectively but unlawfully modified the pertinent permit approval standards to fit WECO's perceived need to expand its operations without regard for the further environmental damage that expansion will almost certainly cause.

Montana Environmental Information Center and the Sierra Club (collectively, "Citizens") now seek summary judgment on the Department's numerous errors of law in approving WECO's most recent permit revision, known as the AM4 Amendment. In light of the errors of law identified below, Citizens urge the Board of Environmental Review to vacate the Department's approval of the AM4 Amendment and remand the matter to the Department to conduct a lawful review.

## LEGAL BACKGROUND

This Board has explained the purpose and operation of the federal Surface Mining Control and Reclamation Act (SMCRA), 30 U.S.C. §§ 1201-1328:

Congress enacted SMCRA in response to widespread social and environmental abuse from the coal mining industry. Prior to the enactment of SMCRA, individual states had proven unwilling or unable to police the coal mining industry to prevent such abuse.

The principal purpose of SMCRA is to protect society and the environment from the adverse effects of surface coal mining. . . .

*In re Bull Mountain Mine*, No. BER-2013-07 SM, at 59, ¶ 71 (Jan. 14, 2016) (citing *Hodel v. Va. Surface Mining & Reclamation Ass'n, Inc.*, 452 U.S. 264, 277-80 (1981), and *In re Permanent Surface Mining Regulation Litig. (In re Permanent)*, 653 F.2d 514, 520 (1981)).

SMCRA creates a system of cooperative federalism in which any state may assume day-to-day authority over strip-mining operations by establishing a program that meets the minimum requirements of SMCRA. 33 U.S.C. § 1253(a)-(b). Montana has an approved regulatory program under the Montana Strip and Underground Mine Reclamation Act (MSUMRA), §§ 82-4-203 to -254, MCA, and its implementing regulations, ARM 17.24.301-1309.

SMCRA gives both federal regulators and the public important oversight roles to assure that the ambitious goals of the law are not defeated by agency capture and non-enforcement. *In re Permanent*, 653 F.2d at 521. Under SMCRA

and MSUMRA, members of the public are entitled to inspect and object to permit applications, appeal permitting decisions, seek judicial review, and bring enforcement actions against strip-mining companies and regulators. 30 U.S.C. §§ 1257(e), 1263(b), 1264(c), (f), 1270(a), 1276(a)(2), (e); §§ 82-4-206, -222(8), -252, MCA.

SMCRA emphasizes the protection of water resources. In enacting SMCRA, Congress recognized that many mining operations adversely impact water resources. 30 U.S.C. § 1201(c). Members of the public can petition for a blanket prohibition against strip-mining in sensitive areas, including “aquifers and aquifer recharge areas.” 30 U.S.C. § 1272(a)(2), (3)(C); § 82-4-228(2)(a), (b)(iii). Any application for a mining permit must include detailed information about water resources, which must be made available to the public. 30 U.S.C. § 1257(a)(10)-(11), (e); § 82-4-222(1)(m)-(n), (8), MCA. Regulators may not approve a permit application absent an affirmative showing that cumulative impacts to water resources will not exceed certain thresholds of harm to water resources. 30 U.S.C. § 1260(b)(3); § 82-4-227(3)(a), MCA.

In exercising its authority over strip-mining operations under MSUMRA, the Department’s administration of the laws must be consistent with the State’s duty to “maintain and improve a clean and healthful environment for present and future generations” and with Montanans’ fundamental, “inalienable” “right to a clean and

healthful environment.” § 82-4-202(1), MCA; Mont. Const. art. II, § 3, art. IX, §§

1-3.

Central to the present appeal, the Department

may not approve an application for a strip- or underground-coal-mining permit or major revision unless the application affirmatively demonstrates that

(a) the assessment of the probable cumulative impact of all **anticipated mining** in the area on the hydrologic balance has been made by the department and the proposed **operation** of the mining **operation** is designed to prevent **material damage** to the hydrologic balance outside the permit area.

§ 82-4-227(3)(a) (emphasis added). Regulations adopted by the Board clarify this requirement:

The department may not approve an application [for strip-mining] unless the application affirmatively demonstrates and the department’s written findings confirm, on the basis of information set forth in the application or information otherwise available that is compiled by the department, that:

...

(c) the hydrologic consequences and **cumulative hydrologic impacts** will not result in **material damage** to the hydrologic balance outside the permit area . . . .

ARM 17.24.405(6)(c) (emphasis added).

“Cumulative hydrologic impacts” means “the expected **total** qualitative and quantitative, direct and indirect effects of mining and reclamation operations on the hydrologic balance.” *Id.* 17.24.301(31) (emphasis added). The analysis of

cumulative hydrologic impacts is intended to be broad. *See, e.g.*, ARM 17.24.314 (agency is directed to solicit detailed information from the applicant, seek supplemental information as needed, and provide an assessment that includes the impacts of the proposed operation and *all* anticipated mining in the cumulative impact area). “Operations,” in turn, is defined broadly to mean “**all of the premises**, facilities, railroad loops, road, and equipment used in the process of producing and removing mineral from and reclaiming a designated strip-mine or underground-mine area” and “**all activities**, including excavation incident to operations.” § 82-4-203(35), MCA (emphasis added). “Anticipated mining” includes “at a minimum, the entire projected lives through bond release of **all operations with pending applications** and all operations required to meet diligent development requirements for leased federal coal for which there is actual mine-development information available.” ARM 17.24.301(32) (emphasis added). Each permitted mining operation in the cumulative impact area must also be included in the analysis. *Id.*

Material damage is defined to include “[**v**]iolation of a water quality **standard**.” § 82-4-203(31), MCA (emphasis added). In order to support the required affirmative finding, the Department must prepare a cumulative hydrologic impact assessment, which must be “sufficient to determine . . . whether the proposed action is designed to prevent material damage to the hydrologic balance.”

ARM 17.24.314(5). The burden of showing that material damage “will not result,” ARM 17.24.405(6)(c), rests squarely on the permit applicant. § 82-4-227(1), MCA (“The applicant for a permit or major revision has the burden of establishing that the application is in compliance with this part and the rules adopted under it.”); *see* ARM 17.24.405(6)(c) (applicant must “affirmatively demonstrate[]” that material damage “will not result”); *accord* § 82-4-227(3), MCA.

Finally, a cornerstone of statutory construction of the applicable provisions of MSUMRA and implementing regulations is that “[l]egislation enacted for the promotion of public health, safety, and general welfare, is entitled to liberal construction with a view towards the accomplishment of its highly beneficent objectives.” *Heffernan v. Missoula City Council*, 2011 MT 91, ¶ 38, 360 Mont. 207, 223, 255 P.3d 80, 93 (citing *State ex rel. Florence–Carlton Sch. Dist. No. 15–16 v. Bd. of County Commrs.*, 180 Mont. 285, 291, 590 P.2d 602, 605 (1978)) (internal quotation marks omitted).

## FACTUAL BACKGROUND

### A. The Challenged Action

On December 4, 2015, the Department issued written findings approving the AM4 Amendment to the Area B Permit (C1984003B) of the Rosebud Mine. Ex. 1 at 1. The AM4 Amendment increased

- the Area B Permit Area by 49 acres;

- the surface disturbance in the Area B Permit Area by 146 acres;
- the mineable coal reserves in the Area B Permit Area by 12 million tons;  
and
- the amount of coal aquifer removed by operations under the Area B Permit by 306 acres.

*Id.* With the AM4 Amendment, the “[t]otal proposed permit area” of operations under the Area B Permit will be 6,231 acres. *Id.* In total, strip-mining under the Area B Permit will disturb 5,677 acres of surface land and 3,992 acres of the Rosebud coal aquifer. *Id.* at 1-2. In conjunction with its approval of the AM4 Amendment to the Area B Permit, the Department issued a Cumulative Hydrologic Impact Assessment (CHIA) and “determined that this amendment will not result in material damage to the hydrologic balance outside the permit area.” *Id.* at 5-6.

Petitioners Montana Environmental Information Center and the Sierra Club challenge the Department’s approval of the AM4 Amendment of the Area B Permit as violating MSUMRA in multiple respects set forth below.

## **B. The Setting**

### **1. The Land**

The area of southeast Montana drained by Rosebud Creek and Armells Creek “is characterized by gently sloping valleys bounded by moderately steep to very steep ridges capped by isolated sandstone and clinker mesas.” Ex. 2 at 4-2.

Stands of ponderosa pine and juniper top the ridges and mesas. Ex. 3 at II-79. To the south the land rises to the Bighorn Mountains. Ex. 2 at 4-2. The streams, Rosebud Creek and Armells Creek, flow north to the Yellowstone River. *Id.* The landscape has been described as “a land of buff-colored sandstone cliffs, ochre-tinted Ponderosa pine bark, and expanses of yellow grass” that inspires “a feeling of closeness between man and earth.” Michael Parfit, *Last Stand at Rosebud Creek: Coal, Power, and People* 24 (1980).

## **2. The First Boom and the First Bust**

The Town of Colstrip was founded in the 1920s when the Great Northern Railway opened a coal strip mine to fuel its locomotives. K. Ross Toole, *The Rape of the Great Plains: Northwest America, Cattle, and Coal* 99 (1976). The company opened the Colstrip mine to defeat coal miners’ unions whose frequent strikes disrupted coal supplies from underground coal mines in Red Lodge and Bozeman, among other places. *Id.* at 99-100. The railroad eventually switched its locomotives to a cleaner energy source—diesel fuel—and shuttered the strip mine in the 1950s. *Id.* at 100; Ex. 3 at II-94; Ex. 2 at 3-1.

## **3. The Second Boom and the Second Bust**

The Montana Power Company reopened the Colstrip mine in 1968 to ship coal to its Corette Power Plant in Billings. Toole at 100; Parfit at 61-63. The adjacent Big Sky Mine began strip mining in 1969 along various tributary streams

of Rosebud Creek, on the south-side of the drainage divide from East Fork Armells Creek. Ex. 2 at 3-1; Toole at 100. The Big Sky Mine shipped coal to power plants in the Midwest. Toole at 100. The Corette Power Plant was closed and demolished in 2015.<sup>2</sup> The Big Sky Mine closed in 2003. Ex. 2 at 3-1 to -2. The owner and operator of the Big Sky Mine, Peabody Energy Corporation, filed for bankruptcy protection in April 2016.<sup>3</sup>

Ranching and farming have occurred along Armells Creek and Rosebud Creek since the end of the 19th Century. Ex. 3 at II-94. Except for those ranches destroyed by the mine, these operations continue today. Ex. 2 at 6-2.

#### **4. The Colstrip Power Plant and the Rosebud Mine**

Units 1 and 2 of the Rosebud Strip Mine were built in 1975-1976, in the face of overwhelming public opposition. *Id.*; Ex. 4 at 87 (noting that “95 percent of [public] responses opposed development of the plant and coal mining operations”).

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<sup>2</sup> Jordon Niedermeier, *Billings Skyline Changes as Demolition of Power Plant Continues*, Billings Gazette (Oct. 25, 2015), available at [http://billingsgazette.com/news/local/billings-skyline-changes-as-demolition-of-power-plant-continues/article\\_23ba7503-823d-5a7a-824c-2162ab3d3163.html](http://billingsgazette.com/news/local/billings-skyline-changes-as-demolition-of-power-plant-continues/article_23ba7503-823d-5a7a-824c-2162ab3d3163.html). The Board may and is requested to take judicial notice of this fact. § 2-4-612(6), MCA; Mont. R. Evid. 201(a).

<sup>3</sup> Tiffany Kary et al., *Coal Slump Sends Mining Giant Peabody Energy into Bankruptcy*, Bloomberg (Apr. 13, 2016), available at <http://www.bloomberg.com/news/articles/2016-04-13/peabody-majority-of-its-u-s-entities-file-for-chapter-11>.

Units 3 and 4 were constructed a decade later in 1985-1986<sup>4</sup> after a protracted struggle with local ranchers and the Northern Cheyenne.<sup>5</sup> The asserted life of the plant at the time of construction (1973) was 30 years. Ex. 4 at iii.

The Rosebud Strip Mine exists today for the sole purpose of providing coal to the Colstrip Power Plant. Ex. 2 at 3-2. The Colstrip Power Plant consists of four units totaling 2094 megawatts (MW) in generating capacity.<sup>6</sup> In 2015, it was the third-largest source of carbon dioxide pollution in the United States.<sup>7</sup>

The Colstrip Power Plant consumes approximately 12 million tons of coal each year. Ex. 2 at 3-2. To supply the coal plant's boilers, the Rosebud Strip Mine has sprawled across approximately 25,000 acres. Ex. 2 at 3-2. The mine is divided into five individual permit areas: Area A, Area B, Area C, Area D, and Area E. Ex. 2 at 3-2.

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<sup>4</sup> Talen Energy, Colstrip Power Plant, <https://www.talenenergy.com/generation/fossil-fuels/colstrip>.

<sup>5</sup> See, e.g., *N. Plains Res. Council v. EPA*, 645 F.2d 1349 (9th Cir. 1981); *Nance v. EPA*, 645 P.2d 701 (9th Cir. 1981); *Mont. Power Co. v. EPA*, 608 F.2d 334 (9th Cir. 1979); *N. Plains. Res. Council v. Bd. of Natural Res. & Conservation*, 181 Mont. 500, 594 P.2d 297 (1979).

<sup>6</sup> Talen Energy, Colstrip Power Plant, <https://www.talenenergy.com/generation/fossil-fuels/colstrip>. The Board may and is requested to take judicial notice of this fact. § 2-4-612(6), MCA; Mont. R. Evid. 201(a).

<sup>7</sup> U.S. Environmental Protection Agency, Air Markets Program Data (accessed on June 5, 2016), available at <https://ampd.epa.gov/ampd/>.



## C. Water Resources

### 1. Surface Water

#### a. Setting

The principal streams that drain the Colstrip area are Armells Creek and Rosebud Creek, which ultimately flow north and drain into the Yellowstone River. Ex. 2 at 8-2. Armells Creek has two primary branches, the East Fork and the West Fork. *Id.* at 8-1. West Fork Armells Creek originates in the uplands northwest of Colstrip and flows approximately 18 miles north to where it joins the East Fork to form Armells Creek. Ex. 31 at 5. East Fork Armells Creek originates in the Sarpy Mountains southwest of Colstrip, flows approximately 14 miles east to Colstrip and from there 16 miles north to the confluence with the West Fork. *Id.* at 5, 43. From the confluence of the East and West Forks, Armells Creek flows 12 miles north to the Yellowstone River. *Id.* at 5; *see* Ex. 2 fig. 8-1.

Rosebud Creek originates in the Wolf Mountains approximately 40 miles south of Colstrip and flows north to the Yellowstone River. From the drainage divide between East Fork Armells Creek and Rosebud Creek the following tributary streams flow into Rosebud Creek: Spring Creek, Pony Creek, Cow Creek, Emilie Coulee, Miller Coulee, and Lee Coulee. Ex. 2 at 8-1 to -2.

**b. Impacted Waters**

Operations of the Rosebud Strip Mine have since the late 1960s occurred over 29 square miles of the Armells Creek drainage basin. *Id.* at 8-1 to -2, tbl. 9-2. The great majority of strip-mining operations, 26 square miles, have occurred in the East Fork Armells Creek basin. *Id.* tbl. 9-2. The headwaters of East Fork Armells Creek have been the most impacted, with the strip-mining operation covering 38% of the headwaters basin. *Id.* Portions of each permit area (Permit Areas A-E) occur within the East Fork Armells Creek basin. *Id.* figs. 4-4, 5-1. The mine discharges pollution to surface water in East Fork Armells Creek from 60 distinct outfalls. *Id.* at 7-1; Ex. 37 at 173. Operations of the Rosebud Strip Mine also impact ground water. *See infra* Section C.2.

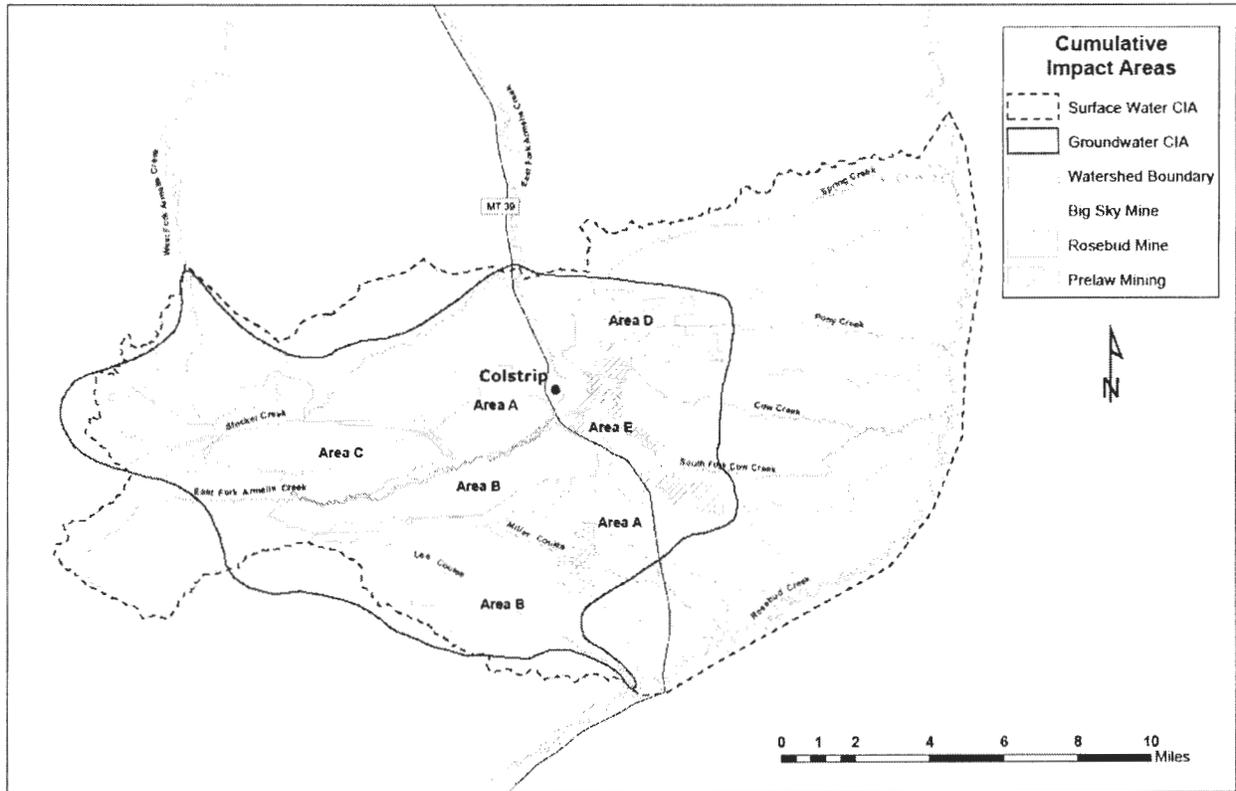
By contrast, only three square miles of strip-mining operations have been approved in the West Fork Armells Creek basin, constituting 1% of its area. Ex. 2 tbl. 9-2. Area C operations extend into the headwaters of West Fork Armells Creek and various tributaries of the West Fork, including Black Hank Creek and Donley Creek. *Id.* at 5-1, 7-1. The mine discharges pollution from 16 outfalls to West Fork Armells Creek, and from one outfall to each of Black Hank Creek and Donley Creek. *Id.* at 7-1.

Strip-mining operations in Area B and Area D of the mine impact tributaries of Rosebud Creek. Area D strip-mining operations have occurred at the headwaters

of Spring Creek, Pony Creek, and Cow Creek. *Id.* at 8-1. Area B operations “cross[] into the divide into the Lee Coulee drainage.” *Id.* Area B has seven pollution outfalls that discharge into Lee Coulee. Ex. 37 at 174.

Strip-mining operations of the adjacent and now-closed Big Sky Mine occurred in Lee Coulee, Miller Coulee, and Emile Coulee, all of which are tributaries to Rosebud Creek. Ex. 2 at 8-2.

In its Cumulative Hydrologic Impact Assessment, the Department designated a cumulative impact area for surface water (and for ground water). The cumulative impact area for surface water “include[d] all areas that may see a measurable change in water quantity or water quality due to mining activities at the Rosebud Mine and Big Sky Mine.” *Id.* at 5-1. The Cumulative Hydrologic Impact Assessment included the following map of the impact area.



Id. fig. 5-1.

### c. Impaired Waters

Forty years of strip-mining have hammered East Fork Armells Creek. As described in more detail below, the Department's assertion in its Cumulative Hydrologic Impact Assessment that East Fork Armells Creek is not impaired simply because it contains *some* aquatic life contradicts its repeated statements over the past two decades that East Fork Armells Creek does not meet water quality standards designed to protect the full range of local aquatic life. The Clean Water Act requires states to identify waters that do not meet "water quality standards" and to submit biennial reports to the U.S. Environmental Protection

Agency listing state waters that are “impaired” or do not meet designated water quality standards (this list is often referred to as the “303(d) List”). 33 U.S.C. § 1313(d)(1)(A). Pursuant to these requirements, the Department’s Water Quality Bureau determined that East Fork Armells Creek does not meet water quality standards for aquatic life. Ex. 5 at 15; Ex. 6 at 10-11; Ex. 7 at 17-19. The Department included East Fork Armells Creek on its 303(d) List in 2014, 2012, 2010, 2008, 2006, and 1998, and has East Fork Armells Creek in its draft 303(d) List for 2016.<sup>8</sup>

DEQ’s own testing reveals significant impairment of East Fork Armells Creek that is linked to coal mining. With respect to the lower segment, from Colstrip to the confluence with the Yellowstone River, macroinvertebrate sampling from 2005 “indicated poor and very poor biotic conditions” with “[b]lackfly larvae” and “midges” making up a large portion of the macroinvertebrates collected. Ex. 7 at 17. The Department determined, albeit with “low confidence,” that the pollutants causing the stream to not meet water quality standards were salts (measured by specific conductance and total dissolved solids), nitrogen (measured by total nitrogen, and nitrate plus nitrite as nitrogen), and chlorides. *Id.* at 17, 19.

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<sup>8</sup> Montana Dep’t of Env’tl. Quality, Montana’s Clean Water Act Information Center, 305(b) and 303(d) Documents, <http://deq.mt.gov/Water/WQPB/cwaic/reports> (follow hyperlinks to 303(d) for each reporting period). The Board may and is requested to take judicial notice of these documents. § 2-4-612(6), MCA; Mont. R. Evid. 201(a).

The Department listed "Coal Mining" as an unconfirmed source of the pollutants suspected of causing the violations of water quality standards. *Id.* at 19.

With respect to the upper segment, from the headwaters to Colstrip, the Water Quality Bureau determined with medium confidence that the stream was not meeting water quality standards due to "[a]lteration in stream-side or littoral vegetative covers." Ex. 6 at 12. The unconfirmed cause was "[s]urface [m]ining."

*Id.* The Water Quality Bureau wrote:

Where the mine has not obliterated the channel the stream habitat is not impaired; however, taking into account the mass amount of surrounding land disturbance, the overall habitat is at least moderately impaired. A huge open pit mine cutting through a stream channel is clear evidence of habitat impairment.

*Id.* at 5.

**d. Intermittent and Perennial Waters**

Evidence suggests that mining has reduced the flow of East Fork Armells Creek upstream of Colstrip. Historically, the Department and WECO described East Fork Armells Creek upstream of Colstrip as an intermittent or perennial stream, with ground water contributing to the flow of the creek.

In its probable hydrologic consequences report for 1986, WECO wrote:

East Fork Armells Creek contains two short segments which have continuous base flow during much of the year ranging from no flow to about 30 gpm [gallons per minute] (within Sections 8 and 15, T1N, R40E). The source of these discharges is believed to be alluvium, with contribution from Rosebud Coal in Section 15.

Ex. 14 at 157. Section 15 identified in WECO's 1986 report is upstream of Colstrip and between Area B and Area C.

In its 1995 cumulative hydrologic impact assessment for an earlier Area B amendment, the Department wrote: "Two adjacent intermittent flow reaches have been described in EFAC [East Fork Armells Creek], beginning near the west end of the amendment area (NW1/4 section 17, T1N, R40E) and continuing about two miles downstream to SE1/4 section 10 (T1N, R40E)." Ex. 15 at 4. This description includes the reach in Section 15. WECO has acknowledged these historical accounts. Ex. 8 at 28; Ex. 32 at 2.

Beginning in 1992 WECO began mining through the East Fork Armells Creek alluvium adjacent to the formerly intermittent or perennial segments of the stream segment of the creek. Ex. 2 at 9-9; Ex. 14 at 170. Alluvial water levels in this segment of the creek suffered "steep" "mine-related" "declines in 1993 and 1995," went dry in 1999, and have "been dry ever since." Ex. 2 at 9-9 to -10. In issuing its water pollution discharge permit for the mine pursuant to Montana's delegated program under the Clean Water Act, the Department insisted that at present the stream is now ephemeral upstream of Area A, including in the historic wet reach between Area B and Area C. Ex. 37 at 50-51.

In July 2014, following two years of significantly above average precipitation,<sup>9</sup> the Department took the following photo of the historic wet reach in Section 15, with the Rosebud strip mine in the background:



Ex. 2 app. A at A-12.

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<sup>9</sup> In 2013 Colstrip received the second highest amount of precipitation ever recorded, 23.40 inches. In 2014 Colstrip received above average precipitation of 18.79 inches with the majority falling in the spring. Western Regional Climate Center, Colstrip, Montana, Monthly Sum of Precipitation, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?mt1905> (follow “Monthly Totals” hyperlink beneath “Monthly Precipitation Listings” heading). The Board may and is requested to take judicial notice of this official precipitation record. § 2-4-612(6), MCA; Mont. R. Evid. 201(a).

In its Probable Hydrologic Consequences report for the AM4 Amendment, WECO noted that a field survey of this segment in 2014 “showed no flow.” Ex. 8 at 28. “[I]t is possible,” WECO wrote, “that the change in flow [i.e., “no flow”] is a **result of mine related dewatering.**” *Id.* at 29 (emphasis added).

The Department’s Cumulative Hydrologic Impact Assessment for the AM4 Amendment to the Area B Permit acknowledged additional historical studies, including wetland surveys and water quality sampling, indicating that the reach in Section 15 used to be intermittent or perennial. Ex. 2 at 9-9. The Department also cited evidence that the segment is now dry. *Id.* at 9-9 to -10 (“[D]EQ staff observed this area as a **dry grassy channel bottom** with some riparian trees.” (emphasis added)).

Ultimately, however, the Cumulative Hydrologic Impact Assessment discounted the historical descriptions of the stream in Section 15 by both the Department and WECO as “anecdotal.” Ex. 2 at 9-10. The Department hypothesized that the presence of flow in Section 15 might only have occurred “in wet years when runoff accumulated behind the instream dam, or only after years where the alluvium was saturated to the point of baseflow.” *Id.* at 9-10. The small instream dam mentioned by the Department is still intact. *Id.* at 9-9. The period from 2005-2014 has been one of the wettest periods in the past 90 years of

precipitation monitoring in Colstrip.<sup>10</sup> East Fork Armells Creek, however, is “a dry grassy channel bottom” in Section 15. Ex. 2 at 9-9.

On the basis of unsubstantiated reasoning, and in the face of significant evidence of material damage, the Department concluded that it could not make a material damage finding relative to the dewatering of East Fork Armells Creek. In its Cumulative Hydrologic Impact Assessment, the Department said: “Without knowing the true nature of the stream flow and the interaction between groundwater and surface water, a determination of material damage cannot be made.” Ex. 2 at 9-10. The Department further concluded: “Regardless of the nature of the reaches in Section 15 and Section 8, the proposed permitting action will have no effect on the reach. Therefore, DEQ finds that the proposed action is designed to prevent material damage to these reaches.” *Id.*

**e. Protected Waters**

Rosebud Creek and its tributaries are protected waters. Specifically, in 2002 this Board adopted electrical conductivity standards for Rosebud Creek and its tributaries in order to protect irrigated agriculture along the creek. 16 Mont.

Admin. Reg. 2269, 2273 (Aug. 28, 2002). Electrical conductivity is “a measure of

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<sup>10</sup> Western Regional Climate Center, Colstrip, Montana, Monthly Sum of Precipitation, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?mt1905> (follow “Monthly Totals” hyperlink beneath “Monthly Precipitation Listings” heading). The Board may and is requested to take judicial notice of this official precipitation record. § 2-4-612(6), MCA; Mont. R. Evid. 201(a).

the amount of dissolved solids ('salts') in water that, at high enough levels, will cause a decrease in plant growth or may cause the destruction of plants." *Id.* at 2274.

In its 2012 public comment on a proposed water pollution discharge permit from the Department, WECO admitted that "it would not be likely that WECO could comply with the proposed limits" for electrical conductivity. Ex. 37 at 12. In response to the comments on the discharge permit, the Department noted that it had no discretion to exempt WECO from the water quality standards for specific conductivity that apply to Rosebud Creek and its tributaries. Ex. 37 at 223.

The Rosebud Mine discharges pollution from 49 outfalls into four tributaries of Rosebud Creek: Spring Creek, Pony Creek, Lee Coulee, and Cow Creek. Ex. 2 at 7-1. Mining operations in Area B discharge pollution from seven outfalls into Lee Coulee. Ex. 37 at 174.

## **2. Ground Water**

Operations of the Rosebud Strip Mine also impact ground water. The Rosebud coal seam that WECO is removing is saturated with water and functions as an aquifer. Ex. 2 at 3-1. The Rosebud coal aquifer contains some of the highest quality groundwater in the area. Ex. 2 at 8-6; Ex. 3 at II-41. Ground water in the Rosebud coal aquifer includes high quality Class I water. Ex. 2 at 8-11.

After WECO blasts and strips out the coal aquifer, it casts the overburden into the pit, which will eventually become saturated with water, creating a “spoils aquifer.” Ex. 8 at 13. The re-saturation or “recovery” process will likely take centuries. Ex. 2 at 9-84; *cf.* Ex. 14 at 166.

Water quality in the spoils aquifer will degrade with higher salt concentrations. Ex. 8 at 13-14. As the spoils aquifer re-saturates, the polluted water will begin to migrate downgradient. *Id.* at 56. The polluted spoils water from Area B will migrate away from the project boundary and south towards the Big Sky Mine. Ex. 2 at 9-59. One study submitted by the Citizens and cited by WECO in the Probable Hydrologic Consequences report found that **salt concentrations** in ground water in the spoils of the adjacent Big Sky Mine **did not diminish** as the water migrated to unmined downgradient coal seams. Ex. 28 at 16.

The Department has documented high quality Class I ground water in the portion of the Rosebud coal aquifer between Area B of the Rosebud Mine and the Big Sky Mine, the portion through which the polluted spoils water from Area B is expected to migrate. *Id.* at 9-40, -59; Ex. 5 at 23 (admitting documentation of Class I water between Rosebud Area B and Big Sky Mine). The polluted spoils ground water would likely be Class III ground water. *Id.* at 9-59.

#### **D. AM4 Amendment**

On June 15, 2009, WECO submitted its application for the AM4 Amendment to its Area B Permit. Ex. 1 at 2. In August 2009 the Department deemed the application complete. *Id.* Following eight rounds of back and forth between WECO and the Department, the Department deemed the application acceptable on July 8, 2015. On August 3, 2015, Citizens submitted comments. *Id.* at 4. On December 4, 2015, the Department issued written findings approving the AM4 Amendment to the Area B Permit based on its Cumulative Hydrologic Impact Assessment. *Id.* at 1; Ex. 2 (Cumulative Hydrologic Impact Assessment (CHIA)).

##### **1. Anticipated Mining**

In its Cumulative Hydrologic Impact Assessment, DEQ addressed only the cumulative impacts from approved operations, even though it was required to consider “all anticipated mining,” § 82-4-227, including “all operations with pending applications,” ARM 17.24.301(32). In 2011 WECO submitted an application to expand strip-mining operations into Area F, to the northwest of current operations. Ex. 5 at 3. The permit area for the proposed Area F operations is 6,746 acres, of which 4,287 acres would be disturbed by strip-mining and associated activities. 78 Fed. Reg. 52967, 52967 (Aug. 27, 2013). Virtually all Area F operations would occur along headwater tributaries of West Fork Armells Creek. Ex. 33 at 5. Portions of the proposed Area F operations are located within

the cumulative hydrologic impact area that the Department established for the AM4 Amendment. Ex. 5 at 4.

In April and May of 2013 Department personnel and WECO representatives discussed whether anticipated operations, including those in Area F, should be included in the cumulative hydrologic impact assessments for the AM4 Amendment. Ex. 17. As part of this conversation, WECO's consultant noted that one option would be to "evaluate [the] significance of **all proposed permits**, including the permit under consideration," which would include "all future **pending permit applications** for B-East [AM4], B-Ext [extension], Area A MR62 [minor revision 62], Area [] MR66, and Area F." Ex. 27 (emphasis added). The advantage of including listed "pending or proposed permits" is that it would "[e]stablish[] the relative significance of all proposed permit applications and would be helpful to DEQ for developing a CHIA." *Id.*

The Department nonetheless limited its assessment of cumulative impacts to "all **permitted mining**" and "the proposed cuts in Area B (AM4)." Ex. 17 (emphasis added). The Department determined that "anticipated mining" included only mining that was "approved—but not mined"; it would not include "mining that isn't approved or part of the current application." Ex. 24.

Thus, with respect to the cumulative impact analysis for the AM4 Amendment, Department personnel wrote: "[P]roposed Area F and additional

mining in Area A—**not included.**” *Id.*; Ex. 17 (“The proposed cuts associated with currently unapproved minor revisions for Area A should not be included.”).

Accordingly, WECO and its consultants “stripped” references to “Area F,” “Area B-Extension,” and “Area A information [that] was submitted as a minor [revision] and is under review.” Ex. 19; Ex. 26 (map). In subsequent letters to WECO, the Department required WECO to remove any references to Area F. Ex. 18 (“Figure 23A, Simulated Potentionmetric Heads, Pre-Mine Conditions still has the proposed Area F permit outline on it. The data may be used, but **the permit outline must be deleted.**” (emphasis added)).

In its Cumulative Hydrologic Impact Assessment, the Department determined that “anticipated mining” should be read narrowly, consistent with its discussions with WECO: “‘Anticipated mining’ includes the entire projected life through bond release of **all permitted operations** and all operations required to meet diligent development requirement for leased federal coal for which there is actual mine-development information available.” Ex. 2 at 5-1 (emphasis added). The assessment did not address cumulative impacts from the anticipated mining associated with the pending—but not yet permitted—applications for mining in Area F, Area B Extension, or Area A. Ex. 5 at 4 (admitting not including any assessment of cumulative impacts from Area F); *see also generally* Ex. 2.

## **2. Concerns About Material Damage Outside the Mine Permit Boundary**

During the permit application process the Department's hydrologists raised concerns that material damage was occurring outside the mine permit boundary. Ex. 5 at 26-27. The hydrologists were worried that "potential inputs of additional salinity, sulfate, and chloride to East Fork Armells Creek may cause material damage to the protected beneficial use [of] aquatic life support for C-3 waters." *Id.* at 27.

### **a. Sulfate**

With respect to sulfate, the Department's Cumulative Hydrologic Impact Assessment noted that recent monitoring revealed levels in East Fork Armells Creek adjacent to mining in Area B that exceeded sulfate thresholds for harm to aquatic life. Ex. 2 at 45, fig. 9-93 (results for SW-55 Reach). Sulfate levels in the creek have increased over the life of the mining operation. *Id.* fig. 9-93 (results for SW-55 Reach). The Department further determined that discharge of polluted spoils ground water to East Fork Armells Creek would lead to a measurable (13%) increase in sulfate levels in the creek. *Id.* at 9-32.

### **b. Chloride**

As noted, in response to its required reporting under the Clean Water Act, the Department's Water Quality Bureau has determined and reported to the U.S.

Environmental Protection Agency that East Fork Armells Creek is not meeting water quality standards for aquatic life due to chlorides. Ex. 7 at 17.

WECO's Probable Hydrologic Consequences report for the AM4 Amendment to the Area B Permit identified "disproportionat[e]" increases in chloride concentrations in East Fork Armells Creek's alluvial ground water. Ex. 8 at 50. WECO attributed the spike in chloride levels to the use of magnesium chloride for dust control on haul roads at the mine. *Id.* WECO predicted that the "elevated chloride levels will slowly attenuate with time." *Id.*

The Department's Cumulative Hydrologic Impact Assessment noted sustained and "extremely high" chloride levels in East Fork Armells Creek, with monitored chloride concentrations increasing to more than two times the established exposure threshold. *Id.* at 2-4 (establishing "a chronic aquatic life limit of 230 mg/L for chloride" used "to assess the suitability of surface water to support aquatic life"); *id.* at 9-8 (noting chloride concentrations up to 464 mg/L); *id.* at 9-68 (considering chloride levels over 150 mg/L to be "extremely high"). The Department's assessment attributed these "extremely high" chloride levels to the mine's use of magnesium chloride on active haul roads and to nearby settling ponds for fly ash and bottom ash from the Colstrip Power Plant. *Id.* at 9-8; *see id.* at 9-68. The Department has approved use of bottom ash to bed culverts and to sand roads and parking areas at the mine. Ex. 16 at 26. In response to the

Department's concerns, WECO recently stopped using magnesium chloride as a dust suppressant. Ex. 2 at 9-8. However, the chloride pollution associated with past use will "slowly attenuate with time." Ex. 8 at 50.

**c. The Aquatic Life Survey**

Given these concerns about material damage occurring in East Fork Armells Creek, the Department asked WECO to conduct an aquatic life survey along the reaches of EFAC adjacent to the Rosebud Mine permit areas (Areas A, B, and C). Ex. 29; Ex. 22. However, although WECO did—after some resistance—agree to conduct a survey, WECO's survey did not follow the Department's metrics or protocols for assessing compliance with water quality standards.

WECO was concerned that the results from a survey of aquatic life could affect the company's continued strip-mining operations: "Do we have a leg to stand on if we refuse to conduct these studies? If we give in are we setting ourselves up for disaster on the other end?" Ex. 21. WECO therefore asked "the Department to re-consider the request in the AM4 deficiencies for 'conducting a current aquatic life survey.'" Ex. 23 at 1-2.

Ultimately, the Department insisted that WECO conduct the survey but, in an apparent concession, said that the company need not conduct an assessment that would determine the creek's compliance with water quality standards. Ex. 20; *see also* Ex. 35 ("I spoke with Eric Urban about this, and he told me that any kind of

impairment determination is beyond the scope of what you need in the Coal Program. He told me the best way I can help you is to describe what taxa are there, and that's it.") WECO's consultant discussed using the Department's standard operating procedure or "SOP" for "water quality assessment to identify 'impaired' waters." Ex. 20 (referring to DEQ, Standard Operating Procedure: Water Quality Assessment Process and Methods (2006)). The Department responded:

The document you sent is designed for **assessment of water quality for impairment decisions** [i.e., compliance with water quality standards]. This involves various assessment metrics and protocols that aren't going to be applicable to the Coal Program's needs with regards to macro sampling. . . .

. . . .

Metrics **do not** need to be run by the consultant on the data. Reporting of the taxa alone is sufficient.

*Id.* (first emphasis added).

Ultimately, WECO's consultant conducted a survey of aquatic life in East Fork Armells Creek in October 2014. Ex. 11. The survey was not intended to and did not follow the Department's assessment metrics and protocols for determining compliance with water quality standards. Applying one biological index of macroinvertebrate diversity associated with nutrient pollution,<sup>11</sup> the survey determined that conditions in the stream were "fairly poor" and "poor." *Id.* at 4.

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<sup>11</sup> Under this index, a given assemblage of macroinvertebrates is associated with a given degree of nutrient pollution in a waterbody.

These scores indicated “[s]ignificant organic pollution” and “[v]ery significant organic pollution.” *Id.* at 4 (reporting Hilsenhoff Biotic Index scores of 6.98 and 7.90 at two sites on East Fork Armells Creek); Ex. 12 at 35 tbl. 1. In 2015 WECO’s consultant who conducted the survey gave a power point presentation to the Department on the survey’s results. The presentation concluded: “Although EFAC [East Fork Armells Creek] supports aquatic life, aquatic life criteria are not met.” Ex. 10.

In its subsequent response to the Citizens’ concerns about the official determination of the Department’s Water Quality Bureau that East Fork Armells Creek was not meeting water quality standards for aquatic life, the Department cited WECO’s aquatic life survey:

The results of the survey show that the aquatic environments in upper East Fork Armells Creek support a diverse assemblage of aquatic insects, and consist of taxa commonly found in eastern Montana prairie streams. The recent aquatic survey provides empirical evidence that Aquatic Life support is not adversely impacted by mining activity.

Ex. 1 at 8-9. The CHIA repeated this analysis:

In 2014, another macroinvertebrate survey was conducted in the stream reach between Area A Tipple and SW-55. The sampling methodology, which followed DEQ’s WQPBWQM-009 (2012), differed from the methodologies used in previous studies so that taxa richness may not be directly comparable. However, the survey demonstrated a diverse community of macroinvertebrates was using the stream reach. Therefore, the reach currently meets the narrative standard of providing a beneficial use for aquatic life.

Ex. 2 at 9-8.

The only Departmental personnel to review the study were hydrologists from the Department's Coal and Opencut Mining Bureau. Ex. 16 at 13-14 (stating that "Emily Hinz, Angela McDannel, and Pete Schade" reviewed the survey); Ex. 5 at 1-3 (identifying them as hydrologists). No biologist from the Department's Water Quality Bureau reviewed the study. *See* Ex. 16 at 13-14.

### STANDARD OF REVIEW

"The Board may, in its discretion, rely entirely on the record before it or receive additional evidence of such matters as it may deem appropriate." *In re Bull Mountain Mine*, No. BER-2013-07 SM, at 55, ¶ 60 (Jan. 14, 2016) (citing *Mont. Env'tl. Info. Ctr. v. DEQ*, 2005 MT 96, ¶¶ 18, 26, 326 Mont. 502, 112 P.3d 964)).

Under MSUMRA, any "person with an interest that is or may be adversely affected may request a hearing" to appeal a decision by the Department to approve a mine expansion. § 82-4-206(1)(c), (d), MCA. The appeal is conducted before the Board pursuant to the contested case provisions of the Montana Administrative Procedure Act (MAPA). *Id.* § 82-4-206(2).

Under MSUMRA, the Department may not approve a mine expansion unless the permit applicant "affirmatively demonstrates" and the Department "confirm[s]" in writing "on the basis of information set forth in the application or information otherwise available **that is compiled by the department,**" that the cumulative

hydrologic impacts will not result in material damage. ARM 17.24.405(6)(c) (emphasis added). The Department’s written findings must include a cumulative hydrologic impact assessment, which “must be sufficient to determine, for purposes of a permit decision, whether the proposed operation has been designed to prevent material damage.” *Id.* 17.24.314(5).

These provisions delimit the proper scope of review in a contested case. “Thus, the only relevant analysis is that contained within the four corners of the CHIA [cumulative hydrologic impact assessment] and the only relevant facts are those concluded by the agency in the permitting process before the agency makes its permitting decision.” *In re Bull Mountain Mine*, No. BER-2013-07 SM, at 56, ¶ 66.

The Board’s standard of review of the Department’s permitting decision is *de novo*, without deference to the Department’s decision. *Mont. Env’tl. Info. Ctr.*, ¶¶ 21-26 (holding that district court erred by upholding “deferential standard of review” and rejecting “*de novo*” review). In reviewing the record and the Department’s decision, the Board may rely on its own “experience, technical competence, and specialized knowledge.” § 2-4-612(7), MCA.

The Board may resolve a contested case on summary judgment when there are no genuine issues of material fact. *Anaconda Pub. Schools v. Whealon*, 2012 MT 13, ¶ 16, 363 Mont. 344, 268 P.3d 1258 (“[No purpose would be served by

conducting an evidentiary hearing where there is an absence of disputed material facts, as testimony is unnecessary.”); *In re Peila*, 249 Mont. 272, 280-81, 815 P.2d 139, 144 (1991) (“[D]ue process does not require development of facts through an evidentiary hearing when there are no material issues in dispute.”); *see also* § 2-4-603(3), MCA (recognizing that contested cases may not “involve a disputed issue of material fact” in which case parties may waive contested case proceedings).

Summary judgment is appropriate when “the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law.” M.R.Civ.P. 56(c)(3). Summary judgment is a proper means of resolving a case with an administrative record and the relevant determination is “whether or not as a matter of law the evidence in the administrative record permitted the agency to make the decision it did.” *City & County of S.F. v. United States*, 130 F.3d 873, 877 (9th Cir. 1997) (quoting *Occidental Eng’g Co. v. INS*, 753 F.2d 766, 769 (9th Cir. 1985)).

Here the issue is whether—as a matter of law—the Department’s cumulative hydrologic impact assessment and the “information compiled by the department” affirmatively demonstrated that the cumulative hydrologic impacts will not result in material damage to water resources outside the permit area. *See* ARM

17.24.405(6)(c); *id.* 17.25.314(5) (stating that cumulative hydrologic impact assessment “must be sufficient” to make material damage determination).

### STANDING

In order to establish standing the Citizens must show that they will be adversely affected by the challenged decision of the Department. MCA § 82-4-206; *see also Heffernan v. Missoula City Council*, 2011 MT 91, ¶ 45, 360 Mont. 207, 255 P.3d 80 (requirements for associational standing). To make this showing, the Citizens must show injury-in-fact, traceability, and redress. *Heffernan*, ¶ 32. It is sufficient if a member of the Citizens’ organization can establish standing. *Heffernan*, ¶ 46. Here, the attached Declarations of Alexis Bonogofsky (member of MEIC and Sierra Club) and Steve Gilbert (MEIC member) establish standing. For example, Ms. Bonogofsky is concerned about the impacts of air and water pollution from the Rosebud Coal mine on the health of the land, on the health of the big game that she hunts and eats, and on her own health. Bonogofsky Dec. at ¶¶ 4, 9-10. Mr. Gilbert is discouraged from recreating around East Fork Armells Creek, Cow Creek, Rosebud Creek, and the Colstrip area because of his concerns about water pollution from the Rosebud Mine. Gilbert Dec. at ¶¶ 11-13. If this Board remands to the Department for appropriate analysis of the expansion in Area B of the Rosebud Mine, that would redress Ms. Bonogofsky and Mr. Gilbert’s injuries by reducing their health, aesthetic, and recreational concerns. Bonogofsky

Dec. at ¶ 11, Gilbert Dec. at ¶ 16. Notably, Steve Gilbert's activities have in the past been found adequate to establish standing for Citizens regarding activities at the Rosebud Mine. *See MEIC v. DEQ*, CDV 2012-1075 at 15 (March 14, 2016) (provided as Ex. 30).

## ARGUMENT

### A. **The Cumulative Hydrologic Impact Assessment Employed an Incorrect Legal Standard to Ignore Cumulative Impacts to Water Resources from Multiple Anticipated Mining Operations, Including the Massive Expansion of Strip-Mining in Area F**

The Department is required to consider in its Cumulative Hydrologic Impact Assessment the cumulative impact on the hydrologic balance of *all* anticipated mining, including anticipated mining operations with pending applications. The Department erred by ignoring anticipated mining, including in Area F.

The Department

may not approve an application for a strip- . . . mining permit or major revision unless the application affirmatively demonstrates . . . the assessment of the probable cumulative impact of **all anticipated mining** in the area on the hydrologic balance has been made by the department and the proposed operation of the mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

§ 82-4-227(3)(a), MCA; ARM 17.24.314(5), 405(6)(c). “**Anticipated mining**” includes, **at a minimum**, the entire projected lives through bond release of **all operations with pending applications** and all operations required to meet diligent development requirements for leased federal coal **for which there is actual mine-**

**development information available.”** ARM 17.24.301(32); *see also Nat. Res. Def. Council, Inc., et al. v. OSM*, 89 IBLA 1 (1985) (affirming OSM’s construction of “all anticipated mining” in 30 U.S.C. § 1260(b) as including proposed mines for which an application has been filed). A CHIA must also consider all existing operations. ARM 17.24.301(32).

Here, contrary to the requirements of MSUMRA, the Cumulative Hydrologic Impact Assessment defined “anticipated mining” incorrectly to include only “**permitted** operations.” Ex. 2 at 5-1. The Department made a calculated decision in coordination with WECO to use this unlawfully narrow and incorrect definition of anticipated mining. Ex. 17; Ex. 24.

As a result of this incorrect determination of law, the Department and WECO removed any reference to or analysis of multiple anticipated mining operations at the Rosebud Mine that had not yet been permitted, but for which applications were pending and mine-development information was available. Ex. 19; Ex. 26 (map). The Department even instructed WECO to remove incidental references to Area F from materials in the Probable Hydrologic Consequences report. Ex. 18.

WECO’s consultant referenced “future pending permit applications for . . . B-Ext [Extension], Area A MR62 [minor revision 62], Area [?] MR66, and Area F.” Ex. 27. The anticipated operations in Area A, Area B Extension, and Area F are located within the cumulative hydrologic impact area established by the

Cumulative Hydrologic Impact Assessment for the AM4 Amendment. *Compare* Ex. 2 fig. 5-1 (cumulative impact area), *with* Ex. 26 (map of proposed operations); Ex. 5 at 4 (admitting portions of Area F are in cumulative impacts area). Mine development information was available for these anticipated operations—WECO had already included information about these operations in its application when the Department told them to remove it. *See, e.g.*, Ex. 26 (map of proposed operations); Ex. 18; Ex. 19. The regulatory definition of “all anticipated mining” therefore required the Department to assess the likely cumulative impacts of each of these proposed but as yet unapproved mining operations together with the approved operations that the Department did in fact consider.

Exclusion of impacts from the massive proposed Area F operations was DEQ’s most egregious omission. The Department admits that WECO’s application for Area F operations—which was submitted in 2011—was pending at the time it issued the Cumulative Hydrologic Impact Assessment for the AM4 Amendment. DEQ, Discovery Resp. at 4. The proposed Area F operation covers 6,746 acres, of which 4,287 acres would be disturbed by strip-mining and associated activities. 78 Fed. Reg. 52967, 52967 (Aug. 27, 2013). Virtually all Area F operations are proposed to occur along headwater tributaries of West Fork Armells Creek—the one branch of Armells Creek that has not yet suffered significant impacts from the Rosebud Mine. Ex. 33 at 5; Ex. 2 tbl. 9-2 (only 1% of West Fork Armells Creek

basin has been disturbed). WECO's draft application materials for the anticipated Area F operation acknowledge that Area F mining will likely increase the salt load in the creek. Ex. 33 at 14. Thus, mining would contribute additional salts to the lower portion of Armells Creek, which already fails to meet water quality standards due to excess salinity pollution. Ex. 7 at 17-19. The Department's unlawful and erroneous determination of "anticipated mining" effectively erased these potential cumulative hydrologic impacts from the analysis and hid them from public view.

**B. The Department's Cumulative Hydrologic Impact Assessment Failed to Assess Whether Cumulative Impacts to Water Resources Will Violate Electrical Conductivity Standards for Rosebud Creek Tributaries**

Operations at the Rosebud Mine, including at the proposed Area B expansion, impact tributaries of Rosebud Creek. Ex. 5 at 9; Ex. 2 at fig. 5-1 (showing the Department's designated cumulative hydrologic impact area). Stringent water quality standards for electrical conductivity apply to these tributaries. Ex. 5 at 9.

For all tributaries and other surface waters in the Rosebud Creek, Tongue, Powder, and Little Powder river watersheds, the monthly average numeric water quality standard for EC [electrical conductivity] is 500  $\mu\text{S}/\text{cm}$  and no sample may exceed an EC value of 500  $\mu\text{S}/\text{cm}$ .

ARM 17.30.670(4).

As noted, the Department is prohibited from approving a strip-mining application absent a showing that the cumulative hydrologic impacts “**will not result in material damage** to the hydrologic balance outside the permit area.” ARM 17.24.405(6)(c); accord § 82-4-227(3)(a), MCA. “Violation of a water quality standard . . . is material damage.” § 82-4-203(31), MCA. To make a lawful material damage determination under ARM 17.24.405(6)(c), the Department must assess “applicable numeric and narrative water quality standards and criteria established to protect existing beneficial uses of water.” Ex. 2 at 2-3. The Department is in violation of law because it failed to assess potential violations of water quality standards for electrical conductivity for the tributaries of Rosebud Creek.

Electrical conductivity is “a measure of the amount of dissolved solids (‘salts’) in water that, at high enough levels, will cause a decrease in plant growth or may cause the destruction of plants.” 16 Mont. Admin. Reg. 2269, 2274 (Aug. 28, 2002). The Montana Board of Environmental Review adopted conductivity standards for Rosebud Creek to protect use of water from the creek basin for irrigated agriculture. *Id.* at 2273. WECO admitted in public comments on its discharge permit for the mine that “it would not be likely that WECO could comply with the proposed limits” from ARM 17.30.670(4). Ex. 37 at 12.

Despite acknowledging that water quality standards for electrical conductivity are material damage criteria and despite knowing that WECO could not comply with the standards, in its Cumulative Hydrologic Impact Assessment, the Department failed entirely to address the applicable electrical conductivity standards in conducting its material damage assessment. This was unlawful. § 82-4-227(3)(a), MCA; ARM 17.24.405(6)(c); *In re Bull Mountain Mine*, BER 2013-07 SM, at 63, ¶ 86 (“The material damage assessment and determination in DE3Q’s CHIA failed entirely to assess whether the proposed mining operation will cause violation of water quality standards outside the permit area.”).

In its discovery responses, the Department asserted that its failure to assess potential violation of water quality standards for electrical conductivity for Rosebud Creek tributaries was justified because impacts from the mine cuts added to the Area B operations through the AM4 Amendment would not affect any of the Rosebud Creek tributaries. Ex. 16 at 11. The Department’s argument fails because the Department may not limit its material damage assessment solely to the effects from the “AM4 cuts.” *E.g.*, Ex. 2 at 9-13. Instead, the Department’s material damage determination applies to the “proposed operation of the **mining operation.**” § 82-4-227(3)(a), MCA (emphasis added). It is plausible that the “mining operation” embraces the totality of the Rosebud Mine, but at a minimum, it must include the totality of the operations in the Area B Permit Area that the

AM4 Amendment expands. The regulations make clear that the material damage determination applies to the “**cumulative hydrologic impacts**,” ARM 17.24.405(6)(c) (emphasis added), which are defined as the “**total . . . effects of mining . . . operations**,” *id.* 17.24.301(31) (emphasis added). “Operations,” in turn, are “**all premises**” and “**all activities**.” § 82-4-203(35), MCA. WECO’s decision to apply for permission to mine the land covered by the proposed AM4 Amendment through a revision of its existing Area B permit – rather than through a new, free-standing permit – compelled DEQ to consider the entire hydrologic impact of Area B as **revised** in evaluating whether the “proposed operation” has been designed to prevent material damage to the hydrologic balance outside the boundaries of Area B as a whole.

**C. The Department’s Cumulative Hydrologic Impact Assessment Failed to Assess Whether Cumulative Hydrologic Impacts Will Cause Violation of Nutrient Standards for Nitrogen Established in Circular DEQ-12**

As with electrical conductivity, certain numeric water quality standards for nitrogen apply to surface waters within the cumulative impact area designated by the Department’s Cumulative Hydrologic Impact Assessment. Ex. 5 at 16. The Department unlawfully failed to assess potential violations of numeric water quality standards for nitrogen that protect aquatic life, as contrasted with the more lenient standards for nitrogen that protect human health. ARM 17.25.405(6)(c);

§ 82-4-227(3)(a), MCA; *id.* § 82-4-203(31) (defining material damage to include “violation of a water quality standard” (emphasis added)); *In re Bull Mountain Mine*, BER 2013-07 SM, at 63, ¶ 86.

All surface waters in the cumulative impact area are classified as C-3 waters, i.e. warm water fisheries, under Montana’s surface water classification system. Ex. 2 at 2-3; ARM 17.30.611(c). The designated beneficial uses of these waters are “bathing, swimming and recreation, and growth and propagation of non-salmonid fishes and associated aquatic life.” ARM 17.30.629(1). The numeric water quality standard for nitrogen to protect aquatic life in wadeable C-3 waters is set forth in Department Circular DEQ-12A. *Id.* 17.30.629(2)(i). This standard is 1.3 mg/L.<sup>12</sup> Importantly, this standard is an order of magnitude more stringent than the nitrogen standard designed to protect human health, which is 10 mg/L.<sup>13</sup>

The following surface waters within the cumulative impact area are subject to the numeric water quality standards from Circular DEQ-12A: “West Fork Armells Creek, Stocker Creek, East Fork Armells Creek, unnamed tributaries of East Fork Armells Creek, Spring Creek, Cow Creek, Hay Coulee, Emile Coulee,

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<sup>12</sup> Mont. Dep’t of Env’tl. Quality, Department Circular DEQ-12A: Montana Base Numeric Nutrient Standards, at 3, *available at* <http://deq.mt.gov/Water/TFA/srf/circulars>.

<sup>13</sup> Mont. Dep’t of Env’tl. Quality, Department Circular DEQ-7: Montana Numeric Water Quality Standards, at 51 (2012), *available at* <http://deq.mt.gov/Water/TFA/srf/circulars>; *see also* Ex. 5 at 14.

Lee Coulee, and Rosebud Creek.” Ex. 5 at 16 (identifying streams in cumulative impact area that are subject to nitrogen standards from Circular DEQ-12A); Ex. 16 at 12 (admitting presence of wadeable streams in cumulative impact area).

Pursuant to its duties under the Clean Water Act, the Department has previously determined that the segment of East Fork Armells Creek directly downstream from the mine is impaired and not meeting applicable water quality standards for aquatic life. Ex. 5 at 15; Ex. 7 at 17-19. The Department has identified nitrogen pollution as a cause of the creek’s failure to meet water quality standards. Ex. 5 at 15; Ex. 7 at 17-19. The Department has further identified coal mining as an unconfirmed, but suspected, source of pollution causing this violation of water quality standards. *Id.* at 16. Nitrogen pollution can originate from blasting the surface rock and coal seam with dynamite. Ex. 2 at 9-26. Nitrogen from the residual blasting materials left in the mine spoils can pollute surface and ground water systems. *Id.* In its Cumulative Hydrologic Impact Assessment, the Department noted (when considering violations of less stringent nitrate plus nitrite standards to protect human health) that “many of the highest values have been detected downstream of active mining.” Ex. 2 at 9-26.

Despite the Department’s own documentation under the Clean Water Act showing that East Fork Armells Creek is violating nitrogen standards for aquatic life, likely as a result of mining operations, the Department’s Cumulative

Hydrologic Impact Assessment for expanded strip-mining operations at the Rosebud Mine failed to address whether the cumulative impacts of strip-mining will cause or contribute to violations of the applicable numeric nitrogen standards for aquatic life. *Cf.* § 82-4-227(3)(a), MCA; ARM 17.24.405(6)(c).

The Department did address the potential violation of water quality standards for nitrogen that protect **human health**. *E.g.*, Ex. 2 at 9-26, -78 to -80, fig. 9-17. The assessment acknowledged that nitrogen levels have repeatedly exceeded human health standards, that “many of the highest values have been detected downstream of active mining,” and that “ammonium nitrate blasting agents remaining in soil are a possible source.” *Id.* at 9-26, 9-78 to -80. Again, the human health standard for nitrogen pollution is an order of magnitude less stringent than the aquatic life standard for nitrogen pollution. DEQ’s acknowledgment that the human health standard has been exceeded demonstrates that the aquatic life standard has also been exceeded.

In response to the Citizens’ discovery requests, the Department asserted that its complete failure to assess numeric water quality standards for nitrogen that protect aquatic life was justified because “there was not enough data available on Total Nitrogen concentrations in waters in the CIA [cumulative impacts area] to make a reasonable determination of the significance of any impacts.” Ex. 5 at 18. The Department’s attempt to excuse its omission due to the absence of relevant

data ignores the express provisions of 30 C.F.R. § 784.14, which provides that where information necessary to assess the probable cumulative impacts of the proposed operation and all anticipated mining are not provided, either by appropriate Federal or State agencies, the permit applicant, or the Department's own efforts, "the permit shall not be approved until the necessary hydrologic and geologic information is available to the regulatory authority." Moreover, this argument fails because it is an improper post hoc rationalization that was not made in the Cumulative Hydrologic Impact Assessment. *In re Bull Mountain Mine*, BER 2013-07 SM, at 80, ¶ 124 (arguments and analysis not made in the assessment may not be used to before the Board). Further, the purported justification fails because the burden of demonstrating that material damage "will not result" rests with the permit applicant—WEC Co. ARM 17.24.405(6)(c); § 82-4-227(1), (3)(a), MCA. Thus, a "permit may not be approved until the [relevant hydrologic] information is available and incorporated into the application." § 82-4-222(1)(m), MCA; *accord In re Bull Mountain Mine*, BER 2013-07 SM, at 79, ¶ 122 (stating that "evidence that is not presented does not constitute an 'affirmative demonstration'" that material damage will not result (quoting ARM 17.24.405(6)(c)).

The Department also stated in its discovery response that its failure to assess numeric aquatic life standards for nitrogen was justified because "the proposed mining in AM4 is located over one mile from EFAC [East Fork Armells Creek]

and is not expected to contribute a **measurable amount** of additional nitrogen to EFAC via either groundwater or surface water pathways.” Ex. 5 at 18. This argument fails because the Department’s statement that the proposed mining is not expected to contribute measurable nitrogen to EFAC is pure speculation. The Department provides no analysis of how much explosive will be used on AM4, how much residue its use will generate, or how much of that residue will eventually enter receiving streams as dissolved nitrogen. This argument also fails because it is improperly limited to “the proposed mining in AM4” rather than the total cumulative hydrologic impacts from all Area B operations. *See supra* Argument, Part B; ARM 17.24.405(6)(c); *id.* 17.24.301(31).

Second, the Department misrepresents the CHIA. The CHIA does not say that mining will not contribute a “measurable amount of additional nitrogen” to the creek, but rather that the distance of the additional AM4 cuts from the creek “should be sufficient to prevent (through dilution) **high concentrations** of nitrate from blasting from entering the stream.” Ex. 2 at 9-26. The Department provides no support for this conjecture. Moreover, SMCRA and MSUMA are not aimed at preventing only “high concentrations” of pollution from a mining operation, but also at preventing material damage that results from the cumulative impact of multiple small sources of pollution. *See* Office of Surface Mining, Draft, Guidelines for Preparation of a Cumulative Hydrologic Impact Assessment at II-1

(1985) (provided as Exhibit 36) (cumulative hydrologic impact assessment necessary to assure that aggregate impacts will not be overlooked).

**D. The Department's Cumulative Hydrologic Impact Assessment Failed to Make a Lawful Material Damage Determination Regarding the Dewatering of East Fork Armells Creek by Mine Operations.**

The evidence in the record strongly suggests that WECo dewatered an intermittent to perennial reach of East Fork Armells Creek in Section 15 by strip-mining the coal aquifer that provided baseflow to the stream, causing material damage. *See generally* Background Section C.1.d.<sup>14</sup> The law requires the Department to make a material damage determination with respect to the dewatering of this portion of East Fork Armells Creek. Additionally, the law requires the Department to consider whether the removal of additional downstream portions of the Rosebud coal seam further downstream will, given the past reduction in overall groundwater discharge to the East Fork Armells Creek alluvium, combine with that past reduction to cause further dewatering, and thus material damage, to portions of East Fork Armells Creek that are still intermittent.

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<sup>14</sup> Petitioners ask the Board to take judicial notice of Judge Kathy Seeley's Memorandum and Order in *MEIC v. DEQ*, CDV 2012-1075 (March 14, 2016) (included as Exhibit 30), with particular reference to the Court's determination that the Department's classification of East Fork Armells Creek as ephemeral (with reduced water quality standards) "must be deemed arbitrary and unsupported and, thus, unlawful." *Id.* at 18-20 (citing *Ravalli County Fish & Game Ass'n v. Mont. Dept. of State Lands*, 273 Mont. 371, 381, 903 P.2d 1362, 1369 (1995)).

Dewatering of an intermittent or perennial stream violates water quality standards, causing material damage. “No effect on related environmental values is more adverse than obliteration. . . . Because there is no stream, there is no water quality.” *Bragg v. Robertson*, 72 F. Supp. 2d 642, 662 (S.D. W.Va. 1999), *reversed on other grounds sub nom, Bragg v. W. Va. Coal Ass’n*, 248 F.3d 275 (4th Cir. 2001); *accord* Office of Surface Mining Reclamation and Enforcement, *Proposed Stream Protection Rule*, 80 Fed. Reg. 44436, 44502 (July 27, 2015) (stating that “conversion of a perennial or intermittent stream to an ephemeral stream” outside the permit area constitutes “material damage”). Although the dewatering of the reach in Section 15 happened in the past, its continuing effects on the hydrologic balance constitute continuing harm that must be recognized and remediated. Perhaps more importantly, the past dewatering of the Section 15 reach demonstrates that destruction of the Rosebud coal aquifer as the result of mining can have a similar effect on other reaches of the stream. The past dewatering does not necessarily prove that future dewatering will occur, but it does require the Department to thoroughly and scientifically assess the potential that future mining of the Rosebud coal seam may dewater or substantially reduce surface flow in adjacent reaches of the stream. Here, the Department merely assumed that proposed mining pursuant to AM4 would be located too far from EFAC to affect

surface water flow there. The Department erred by making this unsupported assumption rather than performing the required data collection and analysis.

The evidence of past dewatering is straightforward: Both the Department and WECO have long acknowledged that a reach of East Fork Armells Creek in Section 15 was historically intermittent to perennial, receiving groundwater discharge from the Rosebud coal aquifer. *See generally* Background Section C.1.d; Ex. 8 at 28; Ex. 14 at 157; Ex. 15 at 4; *see also* Ex. 25 at 11 (“This is one of the few locations on the creek upstream from Colstrip which has at least some flow through most of the year.”); Ex. 2 at 9-9 (citing sources documenting intermittent to perennial flow in Section 15 segment).

Both the Department and WECO report that this portion of the creek is now ephemeral. Ex. 37 at 50-51; Ex. 2 at 9-9 (“In field visits in 2014, DEQ staff observed this area as a dry grassy channel bottom with some riparian trees.”); Ex. 8 at 28 (“A recent field survey . . . of EFAC showed no flow in Section 15.”).

Alluvial wells adjacent to this reach recorded “steep declines” when WECO strip-mined the Rosebud coal seam (and aquifer) and alluvium adjacent to the intermittent stretch in the early 1990s. Ex. 2 at 9-10; Ex. 14. The alluvial wells went dry in 1999 and have remained dry ever since. *Id.*

The Department and WECO both acknowledge that strip-mining the alluvium and source aquifer adjacent to the Section 15 intermittent segment may

have caused it to go dry and become “ephemeral.” Ex. 8 at 28 (“Given the decreased water levels in alluvial wells between Areas B and C, it is possible that the change in flow is a result of mine related dewatering.”); Ex. 2 at 9-10 (“The alluvial water levels indicate that this area experienced both natural (starting in the late 1980’s) and mine-related (steep declines in 1993 and 1995) drawdown.”).

Ultimately, the Department declined to make any material damage determination with respect to the dewatering of the segment of East Fork Armells Creek in Section 15. Ex. 2 at 9-10. The Department discounted all the prior statements from reports of the Department and WECO as “anecdotal.” *Id.* The Department hypothesized that the documented flow in Section 15 may have been due to a small instream dam constructed above this reach, despite admitting that “[n]o records exist of historic status of the instream dam.” *Id.* In discovery responses, the Department admitted that “there are no historic records that attribute the intermittent nature of East Fork Armells Creek in Section 15 to the accumulation of runoff behind the instream dam.” Ex. 5 at 21. Thus, the Department refused to make a material damage determination: “Without knowing the true nature of the stream flow and the interaction between groundwater and surface water, a determination of material damage cannot be made.” Ex. 2 at 9-10.

Attempting to bolster its conclusion, the Department added: “Regardless of the nature of the reaches in Section 15 and Section 8, the **proposed permitting**

**action** will have no effect on the reach. Therefore, DEQ finds that the proposed action is designed to prevent material damage to these reaches.” Ex. 2 at 9-10. The Department makes two errors. First, the Department must consider not only the effect of the proposed expansion of mining pursuant to AM4 on the dewatered reach, but also the effect of the AM4 expansion on the downstream intermittent reaches of East Fork Armells Creek, by considering the impact of the action cumulatively with the reduction in overall groundwater discharge that caused the Section 15 reach to go dry. Second, the material damage determination is not limited to the “proposed permitting action”—i.e., the AM4 cuts. The Department’s parceling out and isolation of the impacts from the relatively modest expansion in the eastern end of Area B from the rest of operations in Area B (included in the same permit) and the Rosebud Mine is directly contrary to the text of ARM 17.24.405(6)(c) and wholly inconsistent with the expansive language of the Montana Surface and Underground Mine Reclamation Act, which requires the Department to make its material damage determination with respect to “total” “cumulative” impacts of “all” mine operations.<sup>15</sup> *See, e.g., Fliehler v. Uninsured*

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<sup>15</sup> Notably, in neither its CHIA nor its written findings does the Department make any finding—required by ARM 17.24.405(6)(c)—that the “cumulative hydrologic impacts will not result in material damage to the hydrologic balance outside the permit area.” *E.g.*, Ex. 1 at 5-6 (finding only that “DEQ has determined that this **amendment** will not result in material damage to the hydrologic balance outside the permit area.” (emphasis added)).

*Employers Fund*, 2002 MT 125, ¶ 13, 310 Mont. 99, 48 P.3d 746 (“We will read and construe the statute as a whole to avoid an absurd result and to give effect to a statute’s purpose.”).

In sum, the Department violated the law when it failed to make a material damage determination with respect to the dewatered reach of East Fork Armells Creek in Section 15. The Department also violated the law when it failed to analyze whether the AM4 cuts, *when combined with the effects of past mining in Area B and all other operations in the Area B permit area*, would further reduce (1) the saturation of East Fork Armells Creek alluvium, and (2) the existing length of surface water flow in East Fork Armells Creek.

**E. The Department Failed to Adequately Assess the Mine’s Violations of Water Quality Standards in East Fork Armells Creek.**

**1. The Department Employed an Incorrect Standard to Assess Whether Cumulative Hydrologic Impacts Would Violate Water Quality Standards in East Fork Armells Creek.**

Again, the Department may not issue a permit for strip-mining unless the applicant “affirmatively demonstrates” and the Department “confirms” on the basis of record evidence that the cumulative hydrologic impacts from the totality of the mining operation “will not result in material damage to the hydrologic balance outside the permit area.” ARM 17.24.405(6)(c); § 82-4-227(3)(a), MCA. Material damage includes “violation of a water quality standard.” § 82-4-203(31), MCA.

Water quality standards consist of “designated use or uses for waters” and “water quality criteria for such waters based upon such uses.” 30 C.F.R. § 131.3(i). Here, the receiving waters are designated as C-3 waters with a designated use, among others, of supporting aquatic life associated with a warm water fishery. ARM 17.30.611(c); *id.* 17.30.629(1). The Department has established numeric and narrative criteria designed to assure that designated beneficial uses are met. *Id.* 17.30.629(2); *Id.* 17.30.637(1). The Department has developed standard operating procedures and methodologies for assessing whether a stream is meeting applicable water quality standards for supporting aquatic life. Ex. 16 at 17.<sup>16</sup> With respect to water quality standards for aquatic life, such as macroinvertebrates, the Department collects samples and then compares them to regionally-defined reference conditions or various biological indices. Ex. 34; *accord* 80 Fed. Reg. 44436, 44469 (Office of Surface Mining proposing the same process for assessing hydrologic impacts at federal level).

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<sup>16</sup> Application of these procedures and methodologies is a bare minimum. Notably, a lawful CHIA involves a *predictive* judgment about whether the mining operation at issue will prevent exceedance of water quality standards outside the proposed permit area. ARM 17.24.405(6)(c); § 82-4-227(3)(a), MCA. Because East Fork Armells Creek is already impaired, that predictive judgment must be informed not only by an appropriate assessment of current compliance with water quality standards, but also by an assessment of compliance with EFAC’s Total Maximum Daily Load (TMDL) pollution budget under the Clean Water Act (as well as waste load allocations and compliance schedules). Arguably, because there is no TMDL in place here, DEQ cannot perform a competent CHIA.

Here, the Department expressly declined to employ its own approved standard operating procedures and methodologies for assessing whether the cumulative hydrologic impacts would violate water quality standards in East Fork Armells Creek. Ex. 35 (“any kind of impairment determination is beyond the scope of what you need in the Coal Program”); Ex. 20 (“The document you sent is designed for water quality impairment decisions. This involves various metrics and protocols that aren’t going to be applicable to the Coal Program’s needs with regards to macro[invertebrate] sampling. The Coal Program wants only to quantify the extent and nature of the aquatic community along the stretch of EFAC [East Fork Armells Creek] bordered by mining.”).

Instead, in its Cumulative Hydrologic Impact Assessment, the Department erroneously determined that the **mere presence** of some aquatic life was sufficient to demonstrate that East Fork Armells Creek was meeting water quality standards for supporting aquatic life associated with a warm water fishery. Relying on a macroinvertebrate survey from WECO, the Department concluded: “[T]he survey demonstrated a diverse community of macroinvertebrates was using the stream reach. Therefore, the reach currently meets the narrative [water quality] standard of providing a beneficial use for aquatic life.” Ex. 2 at 9-8.<sup>17</sup> The Department

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<sup>17</sup> Notably, the Department personnel who reviewed the macroinvertebrate survey were hydrologists (and consummate professionals), but not biologists. Ex. 16 at 14.

concedes that the **mere presence** of some aquatic life is not sufficient to demonstrate that water quality standards for aquatic life are being met. *See* Ex. 5 at 17. Indeed, the Department's Water Protection Bureau previously determined that the creek was not meeting water quality standards, **even though it identified a diversity of aquatic macroinvertebrates** in the creek. Ex. 7 at 17 (2014)<sup>18</sup>; *see generally Ohio Valley Envtl. Coal. v. Elk Run Coal Co.*, 24 F. Supp. 3d 532 (S.D. W.Va. 2014) (holding that mine violated Clean Water Act water quality standards by discharging pollution that would reduce diversity of aquatic life below regional diversity indices).

**2. The Record Evidence Before the Agency at the Time It Issued Its Cumulative Hydrologic Impact Assessment Did Not Affirmatively Demonstrate that the Cumulative Hydrologic Impacts Would Not Violate Water Quality Standards for Aquatic Life in East Fork Armells Creek.**

Setting aside the Department's failure to assess compliance with water quality standards, the undisputed evidence before the Department did not affirmatively demonstrate that the cumulative hydrologic impacts would not violate water quality standards for aquatic life in East Fork Armells Creek.

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<sup>18</sup> Indeed, one can find some aquatic life in even the most toxic environments, such as the Berkeley Pit. *See* Edwin Dobb, *New Life in a Death Trap: Will Algae Blooming in an Acidic, Poisonous Montana Mine Lead Us to an Answer for Superfund Sites?* Discover (Dec. 1, 2000), available at <http://discovermagazine.com/2000/dec/featnewlife>.

As noted the Department's most recent assessment of water quality standards in East Fork Armells Creek—conducted by the Department's Water Protection Bureau (rather than the Coal and Open-cut Mining Bureau)—determined that neither segment of the creek was meeting standards for aquatic life. Ex. 7 at 17-19; Ex. 6 at 11-13. The Department identified salinity (measured by total dissolved solids and electrical conductivity), nitrogen, and chlorides as potential pollutants causing the impairment. Ex. 7 at 17-19; Ex. 6 at 11-13. The Department then identified the Rosebud Mine as an unconfirmed cause of the violation of water quality standards. Ex. 7 at 17-19; Ex. 6 at 11-13. In its water quality assessment, the Department's Water Protection Bureau noted that applying biologic integrity matrices to macroinvertebrates collected from the creek indicated “poor and very poor biotic communities.” Ex. 7 at 17.

Far from affirmatively demonstrating that cumulative hydrologic impacts would not cause material damage, the Cumulative Hydrologic Impact Assessment contained further evidence that operations at the Rosebud Mine are contributing to violations of water quality standards for aquatic life. The assessment documented “extremely high” chloride levels in East Fork Armells Creek from 2012 to 2014, and on at least one occasion,<sup>19</sup> these levels exceeded levels deemed harmful to

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<sup>19</sup> The assessment notes that the chronic exposure level for chloride that is deemed harmful for aquatic life is 230 mg/L. Ex. 2 at 2-4. The CHIA cites chloride levels

aquatic life. Ex. 2 at 9-8, 9-68 (chloride levels above 150 mg/L are “extremely high”). The assessment attributes the elevated chloride levels to the mine’s long-standing use of magnesium chloride on haul roads for dust suppression and from the power plant’s leaking ash ponds.<sup>20</sup> Ex. 2 at 9-8. Even though the mine, in response to the Department’s concerns, has apparently recently stopped using magnesium chloride for dust suppression, the impacts from past use continue: “[I]t is expected that elevated chloride concentrations will **slowly attenuate** with time.” PHC at 50 (emphasis added).

The assessment also documented repeated exceedances of sulfate thresholds for aquatic life in East Fork Armells Creek, with sulfate levels increasing in recent years. Ex. 2 at 9-8, fig. 9-93 (see sulfate levels at SW-55, which is adjacent to the mine). The Cumulative Hydrologic Assessment anticipates that increases in sulfate levels in spoils aquifers may lead to still higher sulfate levels in East Fork Armells Creek. *Id.* at 9-32. As noted, the Department’s own hydrologists believed that the mine was causing material damage to East Fork Armells Creek due to excessive

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in East Fork Armells Creek adjacent to mining operations that “routinely” exceeded “100 mg/L” and notes that four out of five samples from the creek from 2012 to 2014 “had chloride concentrations above 100 mg/L.” Ex. 2 at 9-8.

However, the assessment fails to identify what the exact chloride levels were.  
<sup>20</sup> The mine recently switched from using magnesium chloride on haul roads to using lignin sulfonate for dust suppression. The mine continues to use bottom ash and fly ash from the power plant to sand roads. Ex. 16 at 26.

salinity, sulfate, and chloride pollution. Ex. 5 at 27; Ex. 9 (stating that DEQ was “concerned there is material damage off the mine site”).

Despite this mountain of evidence indicating that water quality in East Fork Armells Creek is not meeting water quality standards for aquatic life, in its Cumulative Hydrologic Impact Assessment, the Department concluded that the creek “currently meets the narrative standard of providing a beneficial use for aquatic life.” Ex. 2 at 9-8. The sole evidence cited in support of this conclusion was a 2014 stream survey of aquatic life commissioned by WECO. *Id.* at 9-8 (citing survey and stating “[b]ecause the stream still maintains its C-3 uses . . . the beneficial use of the stream is still maintained”). The 2014 survey—which, again, was not in conformance with the Department’s procedures and methodologies for assessing water quality standards—does not show that the stream is meeting water quality standards for aquatic life. Indeed, in a presentation to the Department in 2015, the survey’s author concluded that “[a]lthough EFAC [East Fork Armells Creek] supports aquatic life, **aquatic life criteria are not met.**” Ex. 10 (emphasis added). A Department biologist who reviewed data underlying the survey said: “The samples are not very diverse . . . . If we were using these data in any kind of macroinvertebrate indicator of water quality, the samples would all be rated low.” Ex. 35 at 2 (email from David Feldman to Pete Schade). The survey itself further concluded that the limited biologic diversity found in the stream “indicates ‘fairly

poor' to 'poor' conditions.” Ex. 11 at 4; *cf.* Ex. 7 at 17 (2014) (finding “poor” to “very poor” conditions). These ratings indicated “[s]ignificant organic pollution” and “[v]ery significant organic pollution.” Ex. 11 at 4 (reporting Hilsenhoff Biotic Index scores of 6.98 and 7.90 at two sites on East Fork Armells Creek); Ex. 12 at 35 tbl. 1.

**F. The Cumulative Hydrologic Impact Improperly Reversed the Burden of Proof in Its Material Damage Assessment of Electrical Conductivity in Rosebud Creek**

Once more, the Surface Mining Law prohibits the Department from approving a strip-mining operation unless the “applicant affirmatively demonstrates” and the Department “confirms” based on record evidence that the “cumulative hydrologic impacts will not result in material damage.” ARM 17.24.405(6)(c). The burden of proof is on the applicant. § 82-4-227(1), (3)(a), MCA.

Here, the record did not affirmatively demonstrate that the cumulative hydrologic impacts will not result in material damage to Rosebud Creek. As noted, strict electrical conductivity standards apply to Rosebud Creek to protect downstream irrigators. ARM 17.30.670(4). The Cumulative Hydrologic Impact Assessment states that Rosebud Creek downstream from its confluence with Lee Coulee is in the cumulative hydrologic impact area. Ex. 2 at fig. 5-1. The assessment cited evidence that Rosebud Creek gains salt below its confluence with

Lee Coulee. *Id.* at 9-15. The assessment cited evidence that water quality in Rosebud Creek below Lee Coulee violates water quality standards for electrical conductivity. *Id.* at 9-15, fig. 9-5. Relative to upstream levels, electrical conductivity in Rosebud Creek below Lee Coulee has been increasing over the past three decades. *Id.* at fig. 9-5 (graph labeled “Difference in SC (Downstream – Upstream)”). This increase in salt (and hence electrical conductivity) in Rosebud Creek is consistent with the Department’s 1988 Cumulative Hydrologic Impact Assessment for Area B of the Big Sky Mine (in Lee Coulee), which predicted “an approximate 2 percent increase in TDS at the mouth of Rosebud Creek” and an “11 percent rise in TDS” in the “Rosebud Creek alluvial aquifer outside the permit area.” Ex. 13 at 9. In the 1988 assessment, the Department concluded that this increase in salt “may affect land management practices, or cause impacts outside the permit area.” *Id.* As noted, mining operations in the Area B Permit Area are occurring in the headwaters of Lee Coulee, the mine discharges water pollution from seven outfalls into Lee Coulee, and WECO has stated publically that it is unable to comply with conductivity standards. Ex. 2 at 9-11; Ex. 37 at 174; Ex. 37 at 12.

Despite this evidence, the Department’s Cumulative Hydrologic Impact Assessment for the AM4 Amendment of the Area B Permit concluded that no material damage would result to Rosebud Creek. Ex. 2 at 9-15. The Department

reached this conclusion by reversing the applicable standard of proof under MSUMRA:

The proposed action is designed to prevent material damage to Rosebud Creek because as of 2013, **there has not been a change in water quality in Rosebud Creek that can be directly attributable** [attributed] **to mining** in Lee Coulee, Miller Coulee, Cow Creek, Pony Creek, Hay Coulee, or Spring Creek.

*Id.* at 9-15 (emphasis added). Thus, the Department refused to find material damage unless there was an affirmative demonstration that that strip-mining **would** cause such damage. But the standard is just the opposite: the Department may not approve a strip-mining permit unless the “**applicant affirmatively demonstrates**” that the cumulative impacts “**will not** cause material damage.” ARM 17.24.405(6)(c); § 82-4-227(1) (“The **applicant** for a permit . . . **has the burden** of establishing that the application is in compliance with this part and the rules adopted under it.” (emphasis added)).

MSUMRA’s protective standard that requires the applicant to **disprove** material damage is consistent with the preventative nature of Montana’s fundamental and inalienable right to a clean and healthful environment. Mont. Const. art. II, § 2, art. IX, § 1; *Mont. Env’tl. Info. Ctr. v. DEQ*, 1999 MT 248, 296 Mont. 207, 988 P.2d 1236 (right to clean and healthful environment is “both anticipatory and preventative”). The water protections of MSUMRA and spirit of the right to a clean and healthful environment would be nullified if a permit could

only be denied once there has “been a change in water quality in Rosebud Creek that can be directly attribute[ed] to mining.” *Cf.* Ex. 2 at 9-15. As the Board has taught, a lack of evidence “does not constitute an affirmative demonstration.” *In re Bull Mountain*, BER 2013-07 SM, at 79, ¶ 122 (quoting ARM 17.24.405(6)(c)).

Here, as in *In re Bull Mountain*, the Department strayed from the precautionary principal enshrined in Section 82-4-227(1), (3), ARM 17.24.405(6)(c). If accepted, this analysis would turn the protective provisions of § 82-4-227(3)(a), MCA, on their head. As in *In re Bull Mountain*, the Department’s failure to apply the correct legal standard was unlawful.

**G. The Department’s Cumulative Hydrologic Impact Assessment Failed Entirely to Assess the Impact of the Migration of Polluted Spoils Water on Class I Ground Water Outside the Permit Area.**

Because violation of “a water quality standard” constitutes material damage, the Department’s material damage determination was required to assess applicable water quality standards. ARM 17.24.405(6)(c); § 82-4-203(31), MCA; *In re Bull Mountain*, BER 2013-07 SM, at 63, ¶¶ 84-86. Here, the Department failed entirely to assess whether cumulative hydrologic impacts would violate water quality standards for highest quality Class I ground water in the Rosebud coal aquifer between Area B of the Rosebud Mine and the Big Sky Mine.

Class I ground water is the highest quality ground water recognized by Montana law. ARM 17.30.1006. The Cumulative Hydrologic Impact Assessment

identifies ground water in the Rosebud coal aquifer between Area B of the Rosebud Mine and the Big Sky Mine. Ex. 2 at 8-11 (“[R]osebud coal groundwater at the Rosebud Mine is Class I, Class II, and Class III, with most samples falling into Class II.”); *id.* at 9-40 (identifying TDS concentrations in baseline Rosebud coal aquifer in the “east part of Area B” as low as 520 mg/L TDS, which qualifies as Class I water, and baseline ground water in the west part of Area B as low as 758 mg/L TDS, which may qualify as Class I water).<sup>21</sup>

In its Probable Hydrologic Consequences report, WECO acknowledged that strip-mining the Rosebud coal aquifer and replacing it with crushed spoils material would degrade ground water quality: “The impacts of mining will likely result in the deterioration of groundwater quality within some areas of the mine backfill to a degree that will require at least temporary reclassification of the groundwater to a lower usage class.” Ex. 8 at 14. The deterioration is due to increased salts: “As re-saturation of the backfill continues, salt concentrations are expected to be extremely variable and peak at a concentration potentially two to three times that

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<sup>21</sup> Class I ground waters are those ground waters with a natural specific conductance less than or equal to 1,000 microSiemens/cm at 25°C. ARM 17.30.1006. The relationship of TDS and specific conductance of groundwater can be approximated by the following equation:  $TDS = k_e EC$  where TDS is expressed in mg/L and EC is the electrical conductivity in microsiemens per centimeter at 25 °C. The correlation factor  $k_e$  varies between 0.55 and 0.8. Where TDS = 520, EC (specific conductance) is between 650 and 945 depending on the correlation factor. Where TDS = 758, EC (specific conductance) is between 948 and 1,378 depending on the correlation factor.

of the baseline coal groundwater.” *Id.* at 14. The polluted spoils water will then migrate downgradient and away from the mine area: “In areas where groundwater flows into adjoining strata, it can lead to increased TDS concentrations in those strata.” *Id.* at 56. One study cited in WECO’s Probable Hydrologic Consequences report had found that salt concentrations in ground water in the spoils of the adjacent Big Sky Mine **did not change** as the water migrated to unmined downgradient coal seams. Ex. 28 at 16.<sup>22</sup>

The Department’s Cumulative Hydrologic Impact Assessment concurred that the polluted spoils water from Area B would migrate south away from the project boundary and towards the Big Sky Mine farther to the south: “Spoil water from the southern and western parts of Area B will be directed to the area between the Rosebud Mine and the Big Sky Mine, and eventually to the Big Sky Mine permit areas.” Ex. 2 at 9-59. Given expected salinity levels, the spoils ground water would be classified as Class III ground water. *Id.* at 9-59.

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<sup>22</sup> It is noteworthy that in the Probable Hydrologic Consequences report WECO misrepresented the findings of the study, citing it to support the exact opposite of what it found at the Big Sky Mine adjacent to the Rosebud Mine. PHC at 13 (“A study suggests that dissolved-solids concentrations **may decrease** as water moves from the backfill to the un-mined, downgradient coal (Clark 1995).” (emphasis added)); *cf.* Ex. 28 at 16 (“As water flowed from the spoils aquifer to the downgradient coal aquifer, the dissolved-solids concentration essentially was unchanged.”).

In making its material damage determination with respect to the migrating plume of spoils water from Area B, the Department failed entirely to address impacts to Class I ground water in the Rosebud coal aquifer between the permit areas for the Rosebud and Big Sky Mines. The Department only addressed impacts to Class II and Class III ground water:

Due to natural spatial and temporal variability of water quality in the Area B spoils, the unmined coal between Area B and the Big Sky Mine, and Big Sky Area A spoils there is no generally accepted methodology to predict impacts with any certainty. Due to a large deposit of clinker throughout much of the area between the two mines, enhanced aquifer recharge will serve to dilute spoil water quality impacts in the area, therefore it does not appear that a parameter will increase to a level that renders the water unsuitable for domestic use or livestock or wildlife watering, or harmful, detrimental, or injurious to the beneficial uses listed for **Class II or Class III** groundwater. As such, no material damage is expected.

*Id.* at 9-59. Because the material damage determination fails entirely to assess impacts to the Class I waters—the most important and highest quality ground water in Montana—between the Rosebud and Big Sky strip mines, it fails to make a lawful material damage determination. *See* ARM 17.24.405(6)(c) (the Department cannot issue permit until it determines that material damage will not result); § 82-4-203(31), MCA (material damage includes “violation of a water quality standard” (emphasis added)).

## CONCLUSION

The Department's Cumulative Hydrologic Impact Statement failed to comply with the relevant requirements of MSUMRA. Worse, it appears that the Department intentionally changed the rules by which it assessed the cumulative hydrologic impacts in order to approve the AM4 Amendment to the Area B Permit.

The Department used a legally incorrect definition of "anticipated mining," failed entirely to assess whether the mine would cause violations of the most problematic water quality standards (conductivity and nitrogen), ignored the prior determinations by its own Water Protection Bureau that East Fork Armells Creek is not meeting water quality standards, used an incorrect and unlawful standard for determining compliance with water quality standards (the mere presence of some aquatic life), reversed the material damage burden of proof, and ignored impacts to the highest quality ground water. The Department's assessment subverted the very protections to water resources that are at the heart of SMCRA and MSUMRA.

The Board should enter summary judgment in favor of Petitioners, vacate the Department's decision, and remand to the matter to the Department to conduct a lawful review.

Respectfully submitted on this 15th day of June, 2016.

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## CERTIFICATE OF SERVICE

I hereby certify that on this 15th day of June, 2016, I submitted the foregoing PETITIONERS' BRIEF IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT to the Montana Board of Environmental Review, both electronically and by hand-delivery. A true and correct copy of the foregoing was also emailed to the following parties or counsel:

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**BEFORE THE BOARD OF ENVIRONMENTAL REVIEW  
OF THE STATE OF MONTANA**

**IN THE MATTER OF:  
APPEAL AMENDMENT AM4,  
WESTERN ENERGY COMPANY,  
ROSEBUD STRIP MINE AREA B  
PERMIT NO. C198400B**

**CASE NO. BER 2016-03 SM**

**AFFIDAVIT OF STEVE GILBERT  
IN SUPPORT OF PLAINTIFF'S  
MOTION FOR SUMMARY  
JUDGMENT**

I, Steve Gilbert, hereby state as follows:

1. My name is Steve Gilbert. I reside in Helena, Montana. I am a citizen of the United States and am over 18 years of age. I am a member of the Montana Environmental Information Center (MEIC).
2. I have been a Montana resident since 1967. For forty-one of these years I have worked as a biological consultant. For twenty-five years I was part-owner and president of an environmental consulting company that specialized in wildlife, aquatics/fisheries, soils, vegetation, forestry, range and hydrology. Separate from my business, I worked in Yellowstone Park on grizzly bears and studied cliff-nesting falcons in Glacier Park. I am an associate with the Montana Peregrine Institute, and have conducted neotropical bird and raptor surveys in Montana and other parts of the west nearly every year since 1971.
3. I am a strong environmental advocate and have served for a number of years on the boards of various conservation groups in Montana, including MEIC. I am currently a board member of MEIC. I was chosen to be MEIC Community Activist of the Year in 2003. In 2013, I was awarded the Len and Sandy Sargent award for meritorious award by MEIC. I have testified in the Montana Legislature and the U.S. Senate on water and air quality, soils, aquatics, and wildlife habitat issues relating to irresponsible energy development, coal and hard-rock mines.
4. I was a professional licensed Montana fly fishing guide for 20 years. During those years, I guided on nearly every trout stream of note in Montana. I was

an Orvis endorsed guide for many years and National Guide of the Year in 1990.

5. I have worked and/or played in all 56 Montana counties and every mountain range, wilderness area and national park in the state. I have skied and walked through the Bob Marshall and Scapegoat Wilderness, the Mission Mountain Wilderness, Bitterroot-Selway Wilderness, Absaroka-Beartooth Wilderness, and into every corner of Yellowstone and Glacier Parks. I have paddled thousands of miles of Montana's spectacular canoe waters.
6. I presently do some biological consulting on a pro bono basis. I retired in early 2012 as the state nonmotorized trails specialist for Montana Fish, Wildlife and Parks. As such, I helped administer the federally-funded \$1.5 million Recreational Trails Program and inspected trails projects funded by the program, walking many miles a year in the back country. I also worked part-time with the Land and Water Conservation Fund and inspected projects funded by the fund in every county of the state.
7. I am also the father of two adult children. I spend lots of time each fall filling freezers with elk, deer, waterfowl and upland game birds.
8. I have conducted biological research in the Tongue River Valley from 1977 to 1986, and during this time, I spent numerous days in the Colstrip area hunting upland birds, particularly along East Fork Armells Creek, Cow Creek, Green Leaf Creek and Rosebud Creek. In this same period I also wrote the wildlife biology report for the EIS on Area D of the Rosebud Mine and spent time in the field near Colstrip in preparation for writing. While there, I

observed East Fork Armells Creek, Cow Creek, and Rosebud Creek. At first glance, these appear to be pretty southeastern Montana creeks, but they have taken an unnecessary beating from industrial development. It is unfortunate that these creeks have been sacrificed to the degree that they have.

9. During the past ten years, I spent numerous days in and around Colstrip performing Land and Water Conservation Fund inspections on between 15 and 20 projects. Over the past 36 years, I have driven through and around Colstrip at least annually for work, recreation, or as a board member of conservation organizations. I expect to continue to visit the Colstrip area at least on an annual basis in the coming years. As I drive through the area, I will observe the countryside and creeks and streams, including East Fork Armells, Cow Creek, and Rosebud Creek. Most recently, in December of 2016 I hunted sharp tails and pheasants on a private ranch near Colstrip and the Rosebud mine.
10. All of my many experiences with the creeks, streams, and rivers near Colstrip occurred after coal mining had begun. Thus I had low aesthetic expectations, which were all too easily met. I have observed the pits of the Rosebud Mine that swallow the upper reaches of East Fork Armells Creek. I am also familiar with the documentation of the contamination and impairment of East Fork Armells Creek by the Rosebud Mine. In particular, I know that the Montana Department of Environmental Quality has determined that the upper and lower reaches of East Fork Armells Creek are impaired, that the creek does not support healthy assemblages of aquatic life, and that one cause of the

impairment is the strip-mining operation at the Rosebud Mine. I am also aware that the Western Energy Company, which operates the strip-mine, has on multiple occasions violated its pollution discharge limits for boron, iron, sulfates, total suspended solids, and total dissolved solids.

11. Because of my awareness of the pollution from the Rosebud Mine and the Colstrip Power Plant—including specifically water pollution from the mine and the fact that the mine has impaired the downstream receiving waters—it is extremely difficult for me to have positive recreational or aesthetic experiences in the outdoors near Colstrip. While there is some exceptionally beautiful country near Colstrip, my aesthetic experience is always compromised by the industrial development of the Rosebud Mine and Colstrip Power Plant. I love to hunt, fish, and hike in southeast Montana, activities I have done annually since 1977, and I would love to be able to do so in and near Colstrip, and along East Fork Armells Creek, Cow Creek, Rosebud Creek and their tributaries downstream from the Rosebud Mine; however, I am discouraged from doing so because of my concerns about the pollution from the mine and power plant, including specifically water pollution from the Rosebud Mine. The concern about water pollution in these creeks from the Rosebud Mine diminishes my aesthetic enjoyment of the creek and the surrounding area.

12. There is also an ever-present concern that when I drink water in a Colstrip restaurant or in the home of nearby ranchers, I may be drinking water that has been contaminated by mining at the Rosebud Mine or power generation

at the power plant. This concern with groundwater pollution lessens my aesthetic appreciation for the area and discourages me from recreating in the area.

13. While there is some exceptionally beautiful country near Colstrip, my aesthetic experience of East Fork Armells Creek, Cow Creek, Rosebud Creek and the area surrounding Colstrip is always compromised by the industrial development there, including the Rosebud Mine. I have hunted, fished, and hiked in southeast Montana annually since 1977. I have hunted upland birds along East Fork Armells Creek, Rosebud Creek, and Cow Creek five to ten miles downstream from the Rosebud strip-mine in 2014 through 2015. I plan to continue to hunt, fish, and hike in southeast Montana. I also plan to visit people in and around East Fork Armells Creek, Cow Creek, Rosebud Creek, Colstrip, and the Rosebud Mine. I would like to recreate around East Fork Armells Creek, Cow Creek, Rosebud Creek, and the Colstrip area; however, the continued air and water pollution from the mine and power plant will likely continue to impact my recreational interest in and aesthetic appreciation of the area. Because of this, I am less likely to recreate in the area. It is not a positive thing to say that one's low aesthetic expectations are not likely to be met there, but they are. This would be different if it were not for the significant pollution, including water pollution from the mine, in the area.

14. I am also concerned that the Montana Department of Environmental Quality does not always work for the best interests of the people of Montana.

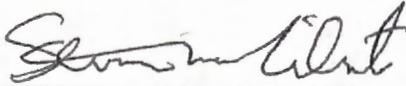
Somehow, it seems DEQ has lost track of its mission to protect and enhance a clean and healthful environment for present and future generations of Montanans. Instead, DEQ seems to think its mission is to make things easier for industry to poison and destroy the air, water, soil, fish and wildlife habitat. Unless there are watchdog organizations, DEQ and the Rosebud Mine will continue to destroy everything they touch.

15. Montana's Constitution recognizes all citizens fundamental civil right to a clean and healthful environment. It is the responsibility of both DEQ and private industry, such as the Western Energy Company, to assure that their actions do not violate or lessen this right. WECO's continued discharge of pollution into the already impaired waters of East Fork Armells Creek and the tributaries of Rosebud Creek, and DEQ's failure to adequately protect the water from this pollution violates my constitutional right to a clean and healthful environment.

16. If DEQ complies with the law prior to issuing a permit to expand to the Rosebud Mine and ensures that no illegal pollution is discharged into East Fork Armells Creek, its tributaries, and the groundwater outside of the permit boundary, my aesthetic and recreational concerns will, to some degree, be reduced. If DEQ complies with the law and imposes lawful restrictions on the mine expansion, the violation of my fundamental civil right to a clean and healthful environment will also be remedied, at least partially.

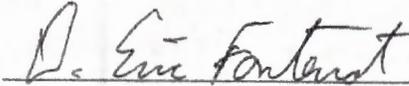
I declare under penalty of perjury under the laws of the United States that, to the best of my knowledge, the foregoing is true and correct.

Dated this \_\_\_ day of June 2016



Steve Gilbert

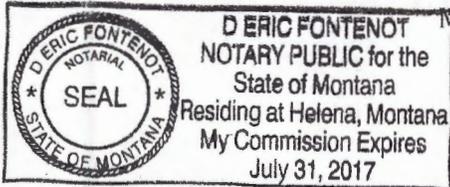
Subscribed and sworn to me by



this 14 day of June 2016

Notary Public for the State of Montana

My commission expires: July 31, 2017



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**BEFORE THE BOARD OF ENVIRONMENTAL REVIEW  
OF THE STATE OF MONTANA**

**IN THE MATTER OF:  
APPEAL AMENDMENT AM4,  
WESTERN ENERGY COMPANY,  
ROSEBUD STRIP MINE AREA B  
PERMIT NO. C198400B**

**CASE NO. BER 2016-03 SM  
AFFIDAVIT OF ALEXIS  
BONOGOSKY IN SUPPORT OF  
PLAINTIFF'S MOTION FOR  
SUMMARY JUDGMENT**

I, Alexis Bonogofsky, hereby declare:

1. I am over eighteen (18) years old, I am competent to testify, and have personal knowledge of the matters set forth herein.
2. I am a fourth generation Montanan and I live at 2020 Tired Man Road, south of Billings, MT on the Yellowstone River on my family's farm and ranch. My partner and I operate Blue Creek Boers, a meat operation. My family has farmed and ranched since they homesteaded in Montana over 100 years ago. In addition, I am a fellow with the Lannan Foundation. In this capacity, I write about politics and energy issues mostly centered around southeastern Montana and document eastern Montana landscapes with photography. Previously, I was the Tribal Lands Program Manager for the National Wildlife Federation. In that capacity, I worked with Tribes on issues ranging from energy issues such as coal, oil and gas, to bison restoration on tribal lands. I continue to work with the Northern Cheyenne tribal community on climate change issues and on environmental issues including water and air pollution related to energy production and development. In addition, I also work with ranchers in southeast Montana on these same issues. Because of my work and personal relationships with the tribe and ranchers, I travel frequently, sometimes up to once or twice a week, to the Colstrip and Lame Deer areas. I am also a big game and upland bird hunter. I do the majority of big game hunting at the L&L Ranch, approximately 17 miles south Colstrip. This is the place where I shot my first mule deer and for over three years I have pursued elk, mule deer, and antelope on this ranch and plan to do so every year that

conditions allow in the future. Hunting is a way of life for me, as I grew up hunting with my mother and father. Hunting provides food for my partner and myself throughout the year. The L&L Ranch is an amazing place for high quality hunting opportunities and provides us with a unique experience that you cannot find anywhere else in Montana. You cannot step a foot in any direction without seeing amazing natural beauty and history of the American West. We are planning to hunt on the L&L this coming fall.

3. I have been a member of the MEIC since October 2012, and currently serve on the Board of Directors. MEIC is a nonprofit corporation founded in 1973 by Montanans concerned about protecting and restoring Montana's natural environment. MEIC has worked extensively on addressing the impacts of air pollution in Montana. I have also been a member of the Sierra Club since 2009. The Sierra Club is the nation's oldest grassroots conservation organization, founded in 1892. The Sierra Club is waging a national campaign to both hold polluters in the coal industry accountable and to speed the nation's transition to cleaner fuels. These efforts extend to Montana.
4. As a hunter, I spend on average 3 to 5 days pursuing big game on the L&L. I spend at least 60 additional days a year in and around Colstrip and Lame Deer, Montana. During my trips to the Colstrip area, I have occasionally seen from a distance the mining operations occurring at the Rosebud mine. This is concerning for me, as I'm aware of the impacts of coal strip mining to the ecology and water quality of southeastern Montana.

5. Growing up on the ranch on the Yellowstone River, I was taught that the land provides for us and we, in turn, need to protect the land. I grew up eating almost exclusively wild game that my family hunted and vegetables that we grew on our farm. Recently, an Exxon oil pipeline ruptured underneath the Yellowstone River and our land was flooded with oil. That disaster has impacted our land greatly and has shown me what pollution can do to the wildlife, plants and livestock that we raise and my own health. It has been devastating to our operation. I am on the Board of the national organization Pipeline Safety Trust. I grew up living around three oil refineries and a coal fired power plant in Billings. The air pollution from these sources impacts the air quality in our region and water quality in the Yellowstone River. I personally have been impacted by environmental pollution my whole life, and now work to protect other people and wildlife from the effects of pollution.
6. I am deeply concerned about the water pollution from the Rosebud Coal mine and its potential impacts on the health of the land and the wildlife that I hunt on the L&L ranch. I believe that the pollution from the Rosebud Coal mine is the major source of water pollution directly north of the area where I annually hunt. I'm aware that the segment of East Fork Armells Creek that flows north from Colstrip is considered an impaired water body by the Montana Department of Environmental Quality. This impairment is due to elevated levels nitrate plus nitrite, electrical conductivity, total dissolved solids, and total Kjeldahl nitrogen. The DEQ has listed coal mining as a probable source of impairment.

7. The L&L Ranch is characterized by large sandstone rock formations flanked by shortgrass prairie and large buttes dominated by pine forests. Besides Rosebud Creek, which is the eastern boundary of the ranch, there is little surface water on the property.
8. Southeastern Montana is a semi-arid climate and therefore existing streams, creeks and wetland areas are extremely important to wildlife that live in the area. Any surface water is an extremely valuable resource in southeastern Montana and necessary to sustain the high quality hunting opportunities that southeast Montana offers. Any impacts to water, whether it is a spring drying up or the discharge of pollution, impacts the wildlife resource.
9. I am concerned and worried that the deer, antelope and elk that I hunt on the L&L are exposed to pollution from the Rosebud mine when they drink out of East Fork Armell's Creek and Rosebud Creek, which is just north and northeast of the ranch that I hunt on, and that pollution impacts their health and, in turn, my health. I am also concerned that they suffer from degraded habitat caused by the strip mine.
10. I am extremely concerned about the toxins being exposed to the wildlife that I eat. We know that wildlife pick up toxins from pollution in the water, and to my knowledge, there have not been studies conducted on the wildlife that live in and around the Rosebud mine.
11. Improving the water quality in the region I work and hunt in will have a positive impact on my health, my family's health, my work, my hunting

opportunities, and my ability to view the scenic vistas and landscapes in southeastern Montana.

12. I declare under penalty of perjury that the foregoing is true and correct.

5-4-16  
Date

Alexis Bonogofsky  
Alexis Bonogofsky

Subscribed and sworn before me this 4<sup>th</sup> day of May, 2016.

Carole Carranco  
Notary Public for the State of Montana  
Residing at Billings  
My Commission Expires: 11-16-2019

