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MONTANA BOARD OF ENVIRONMENTAL REVIEW

IN THE MATTER OF: APPEAL AMENDMENT AM4 WESTERN ENERGY COMPANY ROSEBUD STRIP MINE AREA B, PERMIT NO. C1984003B	Case No.: BER 2016-03 SM **RESPONDENT'S BRIEF IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT**

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INTRODUCTION

COMES NOW, Respondent, State of Montana, Department of Environmental Quality ("DEQ"), by and through its counsel of record, Rebecca A. Convery and John F. North, and submits the following Brief in Opposition to Respondent's Motion for Summary Judgment.

I. DISPUTED FACTS

This Brief in Opposition incorporates herein by reference DEQ's Statement of Disputed Facts ("SDF"), which is attached hereto as Appendix A. Since Petitioners have included 26 pages of "Factual Background" in their Brief in Support of Motion for Summary Judgment (Petrs.' Br., pp.19-45 (June 15, 2016)) without specifically designating which facts it considers to be undisputed, DEQ has summarized Petitioners' factual allegations and indicated which facts are disputed based on DEQ's supporting evidence. As indicated below, DEQ asserts that each of the facts included in its SDF are "material facts" which raise "genuine issues" for trial. Therefore, Petitioners' Motion for Summary Judgment must be denied.

II. STANDARD OF REVIEW

A. Summary Judgment.

Rule 56, M.R.Civ.P., controls the Board of Environmental Review's (Board) consideration of a motion for summary judgment. Rule 56 provides, in pertinent part, as follows:

> (a) A party claiming relief may move, with or without supporting affidavits, for summary judgment on all or part of the claim.
>
> (c)(3) The judgment sought should be rendered if 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.
>
> (e) (1) A supporting or opposing affidavit must be made on personal knowledge, set out facts that would be admissible in evidence, and show that the affiant is competent to testify on the matters stated . . . .
>
> (2) When a motion for summary judgment is properly made and supported, *an opposing party* may not rely merely on allegations or denials in its own pleading; rather, its response must -- *by affidavits or as otherwise*

> *provided in this rule -- set out specific facts showing a genuine issue for trial.* If the opposing party does not so respond, summary judgment should, if appropriate, be entered against that party.

Rule 56, M.R.Civ.P. (emphasis added).

"The purpose of summary judgment is to dispose of claims for which there remains no genuine issues of material fact, which serves to eliminate the expense and burden associated with unnecessary trials." *Kane v. Miller*, 258 Mont. 182, 186, 852 P.2d 130, 133 (1993). "Summary judgment may only be granted when the record discloses no genuine issue of material fact and the moving party is entitled to judgment as a matter of law." Rule 56(c), M.R.Civ.P.; *Dillard v. Doe*, 251 Mont. 379, 382, 824 P.2d 1016, 1018 (1992).

"The *movant has the initial burden* to show that there is a *complete absence of any genuine issue of material fact.*" *Kober v. Stewart*, 148 Mont. 269, 117, 121, 417 P.2d 476 (1966) (emphasis added); *Berens v. Wilson*, 246 Mont. 269, 271, 806 P.2d 14, 16 (1990). "The courts hold the movant to a strict standard. To satisfy this burden, the *movant must make a clear showing* as to what the truth is so as *to exclude any real doubt* as to the existence of any genuine issue of material fact." *Kober*, 148 Mont. at 122 (emphasis added). "[W]hen the record, as made by the *movant, discloses no genuine issue as to any material fact,* the *burden then shifts* to the party opposing the summary judgment motion to *present evidence of a material and substantial nature* raising a genuine issue of fact." *Cole v. Flathead County*, 236 Mont. 412, 416, 771 P.2d 97, 100 (1989) (emphasis added).

Since it is not the function of the trial court to adjudicate genuine factual issues at the hearing on the motion for summary judgment, in ruling on the motion *all inferences of fact* from the proofs proffered at the hearing *must be drawn against the movant and in favor of the party opposing the motion. Kober*, 148 Mont. at 122 (emphasis added); *Smith v. Barrett*, 242 Mont. 37, 40, 788 P.2d 324, 326 (1990); *Jobe v. City of Polson*, 2004 MT 183, ¶ 10, 322 Mont. 157, 94

P.3d 743 ("Because summary judgment is an extreme remedy which should not be a substitute for a trial on the merits, all reasonable inferences which can be adduced from the evidence presented should be drawn in favor of the non-moving party."). "And the papers supporting movant's position are closely scrutinized, while the opposing papers are indulgently treated, in determining whether the movant has satisfied his burden." *Kober*, 148 Mont. at 122.

"When raising the allegations that disputed issues of fact exist, the nonmoving party has an affirmative duty to respond by affidavits or other sworn testimony containing material facts which raise genuine issues; conclusory or speculative statements will not suffice." *Koepplin v. Zortman Mining*, 267 Mont. 53, 59, 881 P.2d 1306 (1994) (emphasis added). "The opposing party's facts must be *material and of a substantial nature*, not fanciful, frivolous, gauzy nor merely suspicions." *Westlake v. Osborne*, 220 Mont. 91, 94, 713 P.2d 548, 550 (1986) (citing *Silloway v. Jorgenson*, 146 Mont. 307, 310, 406 P.2d 167, 169 (1965))(emphasis added). Further, "*disputed facts are material*... if they involve the *elements of the cause of action or defense at issue*, to an extent that necessitates resolution of the issue by a trier of fact." *St. Med. Oxygen v. American Med. Oxygen*, 267 Mont. 340, 344, 883 P.2d 1241, 1243 (1994) (emphasis added).

Summary judgment is clearly not favored in the courts. "[T]he procedure is never to be a substitute for trial if a factual controversy exists." *Reaves v. Reinbold*, 189 Mont. 284, 287, 615 P.2d 896, 898 (1980). "If there is any doubt as to the propriety of a motion for summary judgment, it should be denied." *Rogers v. Swingly*, 206 Mont. 306, 312, 670 P.2d 1386, 1389 (1983); *Cheyenne W. Bank v. Young*, 179 Mont. 492, 587 P.2d 401 (1978); *Kober*, 148 Mont. at 122, 417 P.2d at 479.

B. The Montana Strip and Underground Mine Reclamation Act.

The U.S. Department of the Interior, through the Office of Surface Mining Reclamation and Enforcement ("OSMRE"), has regulatory jurisdiction under the Surface

Mining Control and Reclamation Act of 1977 ("SMCRA"), 30 U.S.C. § 1201 *et seq.* The statute was enacted, *inter alia,* to ensure that coal mine permittees throughout the United States take the necessary steps to protect the public from serious environmental and health risks that could arise from the coal mining operations, activities, and effects regulated under SMCRA. 30 U.S.C. §§ 1201-1201.

SMCRA establishes a program of cooperative federalism that allows the states to enact and administer their own regulatory programs within limits established by federal minimum standards and with prescribed backup enforcement authority by OSMRE. 30 U.S.C. § 1253. To obtain an approved State program and achieve and maintain "primacy," states must develop and implement a program consisting of elements that are no less stringent than SMCRA and no less effective than its implementing regulations. 30 U.S.C. § 1253; 30 C.F.R. § 730.5. Once a state obtains primacy, it exercises primary jurisdiction over the regulation of the surface effects of coal mining and reclamation operations within that state. *Id.*; *Mont. Envtl. Info. Ctr. v. Opper,* 2013 U.S. Dist. LEXIS 29184 (2013), *affirmed Mont. Envtl. Info. Ctr. v. Stone-Manning,* 766 F.3d 1184 (9th Cir. 2014)(finding "[w]here a state has achieved primacy, 'the State's laws and regulations implementing the program become operative for the regulation of surface coal mining, and the State officials administer the program, giving the state exclusive jurisdiction over the regulation of coal mining within its borders.").

The State of Montana achieved primacy under SMCRA in 1982. See 45 FR 21560; 30 CFR 926.15, 926.16 and 926.30; *Mont. Envtl. Info. Ctr.,* 2013 U.S. Dist. LEXIS 29184 at 7. Accordingly, the State of Montana has exclusive jurisdiction over the regulation of coal mining within its borders, and State, and not federal law, applies to the regulation of coal mining within Montana. *Mont. Envtl. Info. Ctr.,* 2013 U.S. Dist. LEXIS 29184 at 7, 12. Therefore, the Board must apply State, not federal, law in deciding the matters presented in this appeal.

The Montana Legislature enacted The Montana Strip and Underground Mine Reclamation Act ("MSUMRA") with the intent that the "requirements of [MSUMRA] provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources." Section 82-4-202, MCA. MSUMRA explicitly authorizes strip and underground coal mining operations within the state in accordance with its provisions and requirements. DEQ is responsible for ensuring that surface and underground coal mines in Montana operate in accordance with the requirements of MSUMRA. *Id.*

No person may engage in strip or underground mining operations in Montana without first obtaining a permit from DEQ. Section 82-4-221, MCA. "The department may not approve an application for a strip- or underground-coal-mining *permit* or *major revision* unless the *application affirmatively demonstrates* that . . . 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*[.]" Section 82-4-227(3), MCA (emphasis added); *see also* ARM 17.24.405(6).

For purposes of assessing the probable cumulative impacts of all anticipated mining on the hydrologic balance and for making the "material damage" determination required pursuant to Section 82-4-227(3), MCA, the following definitions apply:

> 1. "'Cumulative hydrologic impacts' means the expected total qualitative and quantitative, direct and indirect effects of mining and reclamation operations on the hydrologic balance." ARM 17.24.301(31).
>
> 2. "'Cumulative hydrologic impact area' or [CIA] means the *area . . . within which impacts* to the *hydrologic balance* resulting from the *proposed operation may interact* with the *impacts of all previous, existing and anticipated mining* on surface and ground water systems. "*Anticipated mining*" includes, at a minimum, the entire projected lives through bond release of *all operations with*

pending applications . . . for which there is *actual mine-development information available*." ARM 17.24.301(32) (emphasis added).

3. "'Hydrologic balance' means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit, such as a drainage basin, aquifer, soil zone, lake, or reservoir, and encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground water and surface water storage." Section 82-4-203(24), MCA.

4. "Material damage" means, with respect to protection of the hydrologic balance, degradation or reduction by coal mining and reclamation operations of the *quality or quantity of water outside of the permit area* in a manner or to an extent that: i) land uses or *beneficial uses* of water are adversely affected; ii) *water quality standards are violated*; iii) or *water rights* are impacted. Section 82-4-203(31), MCA (emphasis added).

Thus, the questions of law presented for the Board's consideration in this matter are twofold:

1. Whether DEQ properly defined the cumulative hydrologic impact area to include those areas within which impacts to the hydrologic balance resulting from the proposed operation of AM4 may interact with the impacts of all previous, existing and anticipated mining on surface and groundwater systems.

2. Whether the proposed operation of AM4 has been designed to prevent material damage outside the permit area.

C. The Board's Role as Fact-finder under the Montana Administrative Procedure Act.

An applicant, permittee, or person with an interest that is or may be adversely affected may request a hearing before the Board on a decision made by DEQ to approve or deny an *application for a coal mining permit* or *major revision* of a coal mining permit under MSUMRA by submitting a written request for a hearing before the Board within 30 days of DEQ's decision. Section 82-4-206(1), MCA. The contested case provisions of the Montana Administrative Procedure Act ("MAPA") contained in Title 2, chapter 4, part 6, apply to hearings before the

Board regarding DEQ permit decisions made pursuant to MSUMRA. Section 82-4-206(2), MCA.

Pursuant to Section 2-4-612(1), MCA, *all parties* to a contested case hearing "*shall*" be afforded opportunity to "respond and *present evidence and argument on all issues involved.*" "Except as otherwise provided by statute relating directly to an agency, agencies shall be bound by *common law and statutory rules of evidence*. Section 2-4-612(2), MCA. "*A party shall have the right to conduct cross-examinations required for a full and true disclosure of facts*, including the right to cross-examine the author of any document prepared by or on behalf of or for the use of the agency and offered in evidence." Section 2-4-612(5), MCA. "Notice may be taken of judicially cognizable facts. In addition, *notice may be taken of generally recognized technical or scientific facts within the agency's specialized knowledge.* Parties shall be notified either before or during the hearing or by reference in preliminary reports or otherwise of the material noticed, including any staff memoranda or data. They shall be afforded an opportunity to contest the material so noticed." Section 2-4-612(6), MCA. "The agency's experience, technical competence, and specialized knowledge may be utilized in the evaluation of evidence." Section 2-4-612(7), MCA.

Furthermore, the Board's findings of fact must be based on a *preponderance of the evidence. Id.* (citing § 26-1-403(1), MCA). "Thus, the *Board' s role* in the contested case proceeding [is] to *receive evidence from the parties*, enter findings of fact based on the preponderance of the evidence presented and then enter conclusions of law based on those findings." *Mont. Envtl. Info. Ctr. v. Mont. Dept. of Envtl. Quality*, 2005 MT 96, ¶ 22, 326 Mont. 502, 112 P.3d 964 (holding "§ 75-2-211(10), MCA, expressly states that the hearing before the Board must be conducted pursuant to the contested case provisions of part 6 of the MAPA. To

that end, the Board entered findings of fact based on the evidence presented and conclusions of law based on those findings").

III. STANDING

DEQ is not challenging Petitioners' standing to bring this contested case proceeding, but reserves the right to challenge Petitioners' standing in any future actions before the Board.

IV. LEGAL ARGUMENT

A. DEQ May Present Evidence in the Form of Affidavits and Testimony to Explain the Contents of the Cumulative Hydrologic Impact Assessment.

During a contested case proceeding before the Board, the *party challenging the issuance of the permit has the burden of proving that the permit was improperly granted* by the permitting agency. *Mont. Envtl. Info. Ctr.*, ¶ 16 (holding that in the contested case proceeding, the Montana Environmental Information Center ("MEIC") had the burden of proving that DEQ's decision to issue an air quality permit violated Montana law).

Similarly, in the instant case, the same "general common law and statutory rules of evidence apply to contested case hearings before the Board" under Section 82-4-206(2), MCA, the contested case provision under MSUMRA. There is no statute applicable to the Board or DEQ that would require that alternative rules of evidence apply to contested case proceedings under MSUMRA. *See* section 2-4-612(2), MCA. Because Section 82-4-206(2), MCA, provides that the contested case provisions of MAPA are applicable to all hearings before the Board under MSUMRA, the Board must allow "all parties", including DEQ, to present evidence and argue all issues involved in the case. *See Mont. Envtl. Info. Ctr.*, ¶¶ 25-26.

Citing the Board's decision in *In re Bull Mountain Mine*, Petitioners assert that "the Board may, in its discretion, rely entirely on the record before it or receive additional evidence

on such matters as it may deem appropriate." See *In re Bull Mountain Mine*, No. BER-2013-07 SM, at 55, ¶ 60 (Jan. 14, 2016) (citing *Mont. Envtl. Info. Ctr.*, ¶¶ 18, 26). Relying on the provisions contained within ARM 17.24.405(6)(c)[1] and 17.24.314(5)[2], Petitioners further assert that "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." (Petrs.' Br., p. 46 (citing *In re Bull Mountain Mine*, No. BER-2013-07 SM, at 56, ¶ 66.)).

Petitioners are incorrect in their assertion for the following reasons:

First, although the statutory language of MSUMRA and the administrative rules adopted thereunder place the burden on the mine permit applicant to "affirmatively demonstrate" and DEQ to "confirm" through the CHIA, that the proposed operation has been "designed to prevent material damage outside the permit area", the burden is on Petitioners in this contested case proceeding to prove that the permit was improperly granted by DEQ. *Mont. Envtl. Info. Ctr.*, ¶ 16. In *Mont. Envtl. Info. Ctr.,* MEIC argued that since the Clean Air Act of Montana, placed the burden on the applicant for an air quality permit as well as DEQ to establish that the application met the permit criteria, this burden extended to the contested case proceeding before the Board. *Mont. Envtl. Info. Ctr.,* ¶ 12. The Montana Supreme Court disagreed.

Citing the applicable evidentiary provisions contained in § 26-1-401 and 402, MCA, the Court stated that "the initial burden of producing evidence as to a particular fact is on the party who would be defeated if no evidence were given on either side[,]" in addition, "a party has the

[1] ARM 17.24.405(6)(c) states that DEQ may not approve a mine permit application unless the applicant "affirmatively demonstrates", and DEQ "confirms" . . . that the cumulative hydrologic impacts will not result in material damage outside the permit area.

[2] ARM 17.24.314(5) states that DEQ'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 outside the permit area.

burden of persuasion as to each fact the existence or nonexistence of which is essential to the claim for relief or defense he is asserting." *Mont. Envtl. Info. Ctr.*, ¶ 14. The Court went on to say that MEIC asserted a claim before the Board that DEQ's "decision to issue the air quality permit violated Montana law." *Mont. Envtl. Info. Ctr.*, ¶ 16. "If . . . no evidence were presented at the contested case hearing establishing that issuance of the permit violated the law, the Board would have no basis on which to determine [DEQ's] decision was legally invalid." *Id.* "Thus, as the party asserting the claim at issue, MEIC had the burden of presenting the evidence necessary to establish the facts essential to a determination that the Department's decision violated the law." *Id.* (citing §§ 26-1-401 and -402, MCA).

Similarly, in this case, Petitioners challenged DEQ's decision to issue a mine permit for the AM4 Amendment of the Rosebud Mine by requesting a contested case hearing before the Board. Therefore, the initial burden is on Petitioners to prove that issuance of the permit violated the law; the burden is not on DEQ or the permit applicant to show that DEQ acted in compliance with the law when it issued the permit for AM4. *Id.*

Second, in *Mont. Envtl. Info. Ctr.*, the Montana Supreme Court remanded the case to the District Court for remand to the Board "for entry of new findings of fact and conclusions of law in conformity with part 6 of MAPA." *Mont. Envtl. Info. Ctr.*, ¶ 26. The Montana Supreme Court went on to say, that "[i]n entering *new findings of fact and conclusions of law*, the Board may, in its discretion, rely entirely on the record before it, or receive additional evidence on such matters as it may deem appropriate." *Id.* The Montana Supreme Court did not hold that the Board has the discretionary authority *in other contested case proceedings* to ignore the plain language of Section 75-2-211(10), MCA, which provides that all contested case proceedings before the Board under the Clean Air Act of Montana *be conducted pursuant to the contested case provisions of part 6 of MAPA*. Nor did the Montana Supreme Court hold that the Board could

ignore the procedural rules set forth in part 6 of MAPA and prohibit the parties from introducing additional evidence on all matters at issue in contested case proceedings in general. After all, each of the parties had already presented evidence during the underlying administrative proceeding, but the Montana Supreme Court allowed the Board upon remand to accept additional evidence at its discretion.

On the contrary, the Montana Supreme Court explicitly stated that the Board's findings of fact and conclusions of law in the case that was remanded by the Court, must be issued in "conformity with part 6 of MAPA." *Id.* (emphasis added). Therefore, it would be improper for the Board to rely on the Court's holding in *Mont. Envtl. Info. Ctr.* to limit DEQ's ability to introduce evidence and present argument in the instant case. Since Section 82-4-206(2), MCA, requires that contested case proceedings under MSUMRA be conducted in accordance with part 6 of MAPA, the Board does not have the discretion to limit its consideration of the evidence to only those facts and analyses included within the "four corners" of the CHIA.

Third, "[p]rocedural due process requires that parties be given reasonable opportunity to be heard; these due process requirements are reflected in MAPA in §§ 2-4-601, and 2-4-612(1), MCA." *In the Matter of the Proposed Disciplinary Treatment of the Occupational Veterinarian's License of Jeffrey C. Peila*, 249 Mont. 272, 280, 815 P.2d 139, 144 (1991). "Section 2-4-612(1), MCA, provides that 'opportunity shall be afforded all parties to respond and present evidence and argument on all issues involved.'" *Peila,* 249 Mont. at 281. In a summary judgment proceeding, due process requires the development of facts through an evidentiary hearing, unless there are no genuine issues of material fact in dispute. *See e.g. Id.* That is not the case here.

Fourth, Rule 56, M.R.Civ.P., provides that . . . once the moving party has met its initial burden to show that there is a complete absence of any genuine issue of material fact, the burden shifts to the party opposing summary judgment to present affidavits or other evidence of a

material and substantial nature raising a genuine issue of fact. *Kober*, 148 Mont. at 121; *Cole*, 236 Mont. at 416. When raising allegations that disputed issues of fact exist, the nonmoving party has an affirmative duty to respond by affidavits or other sworn testimony containing material facts which raise genuine issues. *Koepplin*, 267 Mont. at 59. Failure to do so will result in summary judgment being granted in movants favor *Id.*

Finally, in the *Bull Mountain Mine* case, Petitioners and DEQ agreed upon a set of stipulated undisputed facts, and the Board decided the issues in that case as a matter of law. See *In re Bull Mountain Mine*, No. BER-2013-07 SM, at ¶ 64. In this case, DEQ is disputing the facts set forth in Petitioners' Brief in Support of Motion for Summary Judgment. Therefore, the Board is acting in the capacity of trier of fact or fact finder. Accordingly, as stated in *Mont. Envtl. Info. Ctr.*, the Board's role in this contested case proceeding is to "receive evidence from the parties, enter findings of fact based on the preponderance of the evidence presented and then enter conclusions of law based on those findings." *Mont. Envtl. Info. Ctr.*, at ¶ 22.

Further, the procedures by which the Board receives evidence in this case are governed by part 6 of MAPA as set forth above, which includes the provision that all parties "shall" be afforded the opportunity to "present evidence and argument on all issues involved" in the case. Section 2-4-612(1), MCA; *Peila*, 249 Mont. at 280-281.

Therefore, contrary to Petitioners' assertion, it would be reversible error, for the Board to restrict its analysis upon administrative review of DEQ's permit application, to *only* those facts and analyses "contained within the four corners of the CHIA [cumulative hydrologic impact assessment]," without affording DEQ the opportunity to "respond and present evidence *and argument on all issues involved*", as limited only by the "common law and statutory rules of evidence", as provided for under part 6 of MAPA and Rule 56, M.R.Civ.P.

B. There are Genuine Issues of Material Fact that Preclude Summary Judgment.

As indicated above, Petitioners have the initial burden to show that there is a "complete absence" of any genuine issue of material fact. *Kober*, 148 Mont. at 121; *Berens*, 246 Mont. at 271. To satisfy this burden, Petitioners must make a "clear showing" as to what the truth is so as to "exclude any real doubt" as to the existence of any genuine issue of material fact. *Kober*, 148 Mont. at 122. Petitioners have failed entirely to meet their initial burden.

As noted above, Petitioners have included 26 pages of "Factual Background" in their Brief in Support of Motion for Summary Judgment without specifically designating which facts it considers to be both "material" and "undisputed". (*See* Petrs.' Br., pp. 19-45.) Petitioners' factual statement consists of a mix of immaterial and irrelevant factual statements designed in part to elicit an emotive response in opposition to coal mining and coal-fired power plants in general, and factual statements taken from DEQ's written findings, which include the AM4 CHIA, that are taken out of context to support Petitioners' position in this contested case proceeding. Upon close examination, this Board will find that Petitioners' factual statement contains many inaccurate characterizations of the factual conclusions presented by DEQ in the CHIA.

Additionally, Petitioners have failed entirely to present any affidavits or other sworn testimony from expert witnesses qualified to challenge the factual conclusions drawn by DEQ hydrologists in the CHIA. In fact, Petitioners designated Rule (30)(b)(6), M.R.Civ.P, witness, Ann Hedges ("Ms. Hedges"), who was designated to "testify about information known or reasonably available to the organization" repeatedly indicated in her deposition that she is not qualified to challenge basic factual scientific conclusions drawn by DEQ in the CHIA.

For example, Ms. Hedges testified that she was not able to determine the direction that groundwater flows in different areas of the Rosebud Mine from a potentiometric map presented as Figure 8-5 in the CHIA because she is not an expert in hydrology. *See e.g.* DEQ Ex. A, pp. 34:22-25, 37:1-2, 39:13-14, 40:11-17. Because Petitioners have failed to present any credible scientific testimony in support of their factual statements, they have failed to satisfy their initial burden to make a "clear showing" as to what the truth is so as to "exclude any real doubt" as to the existence of any genuine issue of material fact. *Kober*, 148 Mont. at 122.

If, however, this Board finds that Petitioners have met their initial burden, then the burden is on DEQ to "present evidence of a material and substantial nature raising a genuine issue of fact." *Flathead County*, 236 Mont. at 416. DEQ has met this burden by submitting a 34 page Statement of Disputed Facts ("SDF"), which is attached hereto as Appendix A, and is incorporated herein by reference. DEQ's SDF is supported by affidavits from qualified experts who are competent to testify on the matters contained therein. These affidavits set forth facts that would be admissible at trial. *See* Rule 56(2), M.R.Civ.P.

The facts contained in DEQ's SDF are "material and of a substantial nature" and not fanciful nor frivolous. See *Westlake*, 220 Mont. at 94. The facts are "material" because they "they involve the elements of the cause of action or defense at issue" to the extent that these factual issues require resolution by the Board at trial. *See St. Med. Oxygen*, 267 Mont. at 344. The factual issues identified in DEQ's SDF go directly to the issue that is central to Petitioners' claim and DEQ's defense, which is whether DEQ's decision to issue the AM4 Amended Permit violated Montana law.

Accordingly, DEQ has met its burden to show that there are genuine issues of material fact in dispute, and therefore, Petitioners' Motion for Summary Judgment must be denied. However, if there is any doubt that DEQ has met this burden, then the Board has a duty to hold a

hearing on this motion, and to draw all "inferences of fact from the proofs proffered at the hearing" against Petitioner and in favor of DEQ. See *Kober*, 148 Mont. at 122; *Barrett*, 242 Mont. at 40. If the Board finds that genuine issues of material fact exist, then summary judgment must be denied. Rule 56(c), M.R.Civ.P.; *Dillard,* 251 Mont. at 382.

If, on the other hand, the Board finds that there are no genuine issues of material fact in dispute, then this Board must decide, the questions of law contained in Section C and D below.

C. Whether DEQ Properly Defined the Cumulative Hydrologic Impact Area to Include Those Areas Within Which Impacts to the Hydrologic Balance Resulting from the Proposed Operation of AM4 may Interact with the Impacts of All Previous, Existing, and Anticipated Mining on Surface and Groundwater Systems.

1. DEQ Properly Excluded Consideration of Area F from the AM4 Cumulative Hydrologic Impact Assessment.

Petitioners have alleged the AM4 permit amendment was issued in violation of Section 82-4-227(3), MCA, and ARM 17.24.405(6)(c), because DEQ failed to include "all anticipated mining, including anticipated mining operations with pending applications" in its AM4 CHIA. (Petrs.' Br., p. 49.) In particular, Petitioners' allege that DEQ was required to consider the cumulative impacts from Area F and all other areas with pending permit applications [B-Ext [extension], Area A MR62 [minor revision 62], Area A MR66], in the CHIA for AM4. (Petrs.' Br., pp. 49-51; SDF, pp. 2-3.)

Additionally, based on Petitioners' interpretation of some hand written notes, emails and other correspondence attached as exhibits to Petitioners' Brief, Petitioner concluded that DEQ intentionally "limited its assessment of cumulative impacts to 'all permitted mining' and 'the proposed cuts in Area B (AM4)," and, that based upon DEQ's direction, Intervenor "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." (SDF, p. 2; Petrs.' Br., pp. 50-51.) According to Petitioners', DEQ's "most egregious omission" was DEQ's failure to consider impacts from the "massive proposed Area F operations" in the AM4 CHIA. (Petrs.' Br., p. 51.)

> Petitioners maintain that Area F should have been included in the AM4 CHIA because:
>
> 1) the Area F permit application was pending before DEQ at the time the CHIA was issued;
>
> 2) a portion of Area F was included "within the cumulative hydrologic impact area, or cumulative impact area that has been determined for the mine [See CHIA Fig. 5-1]"; and
>
> 3) the proposed operation of Area B/AM4 and the proposed operation of Area F will "both affect some of the same watersheds, which are outside the permit boundary."

(SDF, p. 2.)

Petitioners' assertion is based upon erroneous factual conclusions and an incorrect interpretation of the legal standard. First, DEQ has interpreted the applicable statute and administrative rules to mean that the agency is *only* required to consider those areas "within which impacts to the hydrologic balance resulting from the *proposed operation may interact* with the *impacts of all previous, existing and anticipated mining* on surface and groundwater systems" in the cumulative hydrologic impact area [CIA]. (SDF, p. 4; *see* § 82-4-227(3)(a), MCA; ARM 17.24.301(32)(emphasis added).)

Therefore, contrary to Petitioners' assertion, DEQ is *only* required under Montana law to consider impacts from "anticipated mining" that "may interact" with "impacts from" the "proposed operation". (SDF, pp. 4-5.) DEQ is not required to consider impacts on the hydrologic balance from anticipated mining that will have no interaction with impacts from the proposed operation in AM4. *Id.*

The error that Petitioners have made in interpreting the legal standard is that they have attempted to read the definition of "anticipated mining" as if it is a stand-alone definition. That is clearly not the case. The definition of "*anticipated mining*" is contained within the definition of "*cumulative hydrologic impact area*" or cumulative impact area [CIA], which "means the *area . . . within which impacts* to the hydrologic balance resulting from the *proposed operation may interact with the impacts of all previous, existing and anticipated mining* on surface and ground water systems. '*Anticipated mining*' includes, at a minimum, the entire projected lives through bond release of *all operations with pending applications* . . . for which there is *actual mine-development information available*." ARM 17.24.301(32) (emphasis added).

"Based on the plain language of § 82-4-227(3)(a), MCA, and ARM 17.24.301(32), DEQ limited its cumulative hydrologic impact assessment (CHIA) for AM4 to those areas within which impacts to the hydrologic balance resulting from the proposed operation in AM4 may interact with the impacts of all previous, existing and anticipated mining, including all pending permit applications for which actual mine-development information was available at the time the CHIA was being prepared." (SDF, p. 4.) This limitation comports with the plain meaning of the statute. Furthermore, absent compelling indications that the agency's construction of the statutory language is wrong, the Board must follow the statutory interpretation by the agency responsible for its execution. *Safeway Inc. v. Mont. Petroleum Release Compensation Bd.*, 281 Mont. 189, 194, 931 P.2d 1327, 1330 (1997) (citation omitted)(finding an administrative agency's interpretation of statutes under its domain is presumed to be controlling); *Mont. Power Co. v. Mont. Pub. Serv. Commn.*, 2001 MT 102, ¶ 24, 305 Mont. 260, 26 P.3d 91 (citation omitted); *Glendive Med. Ctr. v. Mont. Dep't. of Pub. Health and Human Servs.*, 2002 MT 131, ¶ 15, 310 Mont. 156, 49 P.3d 560 (finding the general principles of statutory construction also apply to construction of administrative rules).

Petitioners have also relied on erroneous factual conclusions to support the argument that Area F and other areas with pending permit applications were improperly excluded from the AM4 CHIA. As indicated in DEQ's SDF, DEQ does not dispute that impacts from proposed operations in Area F and other areas with pending permit applications are not addressed in the AM4 CHIA; however, DEQ disputes the reason why these areas were excluded from consideration in the CHIA. (SDF, p. 3.)

"DEQ excluded Area F from consideration in the AM4 CHIA because groundwater and surface water in Area F are isolated from the groundwater and surface water in Area B, which includes AM4. Since there is no hydrologic connection between Area B/AM4 and Area F, there will be no cumulative impacts on the hydrologic balance from the proposed operation in AM4 that interact with impacts from Area F." (SDF, p. 5.) "Impacts from Area F will occur primarily in the West Fork Armells Creek ("WFAC") drainage, while impacts from AM4 will occur only in the East Fork Armells Creek ("EFAC") drainage. No impacts from Area F will occur in the EFAC drainage."[3] *Id.*

Therefore, Petitioners were incorrect in their assertion that Area F should have been included in the AM4 CHIA because the proposed operation of Area B/AM4 and the proposed operation of Area F will "both affect some of the same watersheds, which are outside the permit boundary." Because the proposed operations in AM4 and the proposed operations in Area F affect different hydrologic units or drainages, DEQ correctly determined that it would more appropriate to address the cumulative impacts of the proposed operations in Area F in a separate CHIA for Area F, if and when the permit application is determined by DEQ to be acceptable. (SDF, p. 5.)

[3] For a complete explanation on the lack of hydrologic connection between Area B/AM4 and Area F, and the reasons why Area F and other areas with pending permit applications were excluded from the AM4 CHIA, see SDF, pp. 2-7.

If, however, this Board should find that DEQ erred by not inserting a paragraph in the CHIA to explain why Area F was excluded from consideration, then DEQ's omission constitutes nothing more than harmless error. Rule 61, M.R.Civ.P. Nothing in DEQ's cumulative hydrologic impact assessment for AM4 would have changed, except a brief statement to indicate that Area F was excluded because there is no hydrologic connection between Area B/AM4 and Area F. Therefore, there will be no cumulative impacts on the hydrologic balance from the proposed operation in AM4 that interact with impacts from Area F.

Based on this information, it cannot be said that the substantial rights of Petitioners have been violated as a result of DEQ's failure to include a statement in the CHIA explaining why Area F was not considered. Accordingly, the Board should "disregard all errors and defects that do not affect any party's substantial rights." Rule 61, M.R.Civ.P.; *Liberty Cove, Inc. v. Missoula County*, 2009 MT 377, ¶ 21, 353 Mont. 286, 220 P.3d 617; *See e.g. Pannoni v. Bd. of Trs.*, 2004 MT 130, ¶ 55, 321 Mont. 311, 90 P.3d 438 (Department of Labor and Industry's failure to enter a specific finding of fact was harmless error because the record as a whole supports the conclusion reached by the agency).

2. DEQ Properly Excluded Consideration of the Minor Revisions to Area A from the AM4 Cumulative Hydrologic Impact Assessment.

With respect to Area A MR62 and MR66, these applications were both minor revisions, which, by definition, do not result in changes that affect the hydrologic balance[4]. DEQ Ex. B, p. 4. Therefore, impacts from these proposed operations were not considered in the CHIA. *Id.*

With respect to Area B-Ext., this area was amended to the Area B permit on January 31, 1995 (Area B, AM1). (SDF, p. 3.) The written findings for this decision included an update to

[4] Minor revision "means any change to the mine and reclamation plan not meeting the criteria for amendment or major revision." See ARM 17.24.301(72). Major revision " means any change in the mining or reclamation plan that ... results in a change that may affect the reclaimability of the area or the hydrologic balance on or off of the permitted area. See ARM 17.24.301(66)(d).

the Area B CHIA. *Id.* Therefore, the approved mining within this area was included in the hydrologic impact assessment in the CHIA for AM4. *Id.* However, an application for a minor revision (MR76) to the Area B permit was submitted to DEQ on January 25, 2016. *Id.* Since the written findings for the AM4 permit application were published on December 4, 2015, the MR76 application was *not* pending before DEQ, and was not included in the CHIA for AM4. (SDF, p. 4.)

For the foregoing reasons, DEQ did not err in eliminating consideration of impacts from Area F, and the minor revisions from Area A in the AM4 CHIA. Therefore, Petitioners are not entitled to judgment as a matter of law.

D. Whether the Proposed Operation of AM4 has been Designed to Prevent Material Damage Outside the Permit Area.

Pursuant to Section 82-4-227(3), MCA, the applicant must affirmatively demonstrate to DEQ through the submission of a comprehensive permit application, which includes the preparation of a plan for protection ("Plan for Protection") of the hydrologic balance and a probable hydrologic consequences[5] ("PHC") determination, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

The Plan for Protection must contain a "detailed description ... of the measures to be taken during and after the proposed mining activities to minimize disturbance of the hydrologic balance on and off the mine plan area and to prevent material damage to the hydrologic balance outside the permit area" ARM 17.24.314(1). The measures must provide protection of . . . the quality of surface and ground water systems, within both the proposed mine plan and *adjacent*

[5] PHC is defined as "the projected results of proposed strip or underground mining operations that may reasonably be expected to alter, interrupt, or otherwise affect the hydrologic balance. The consequences may include, but are not limited to, effects on stream channel conditions and the aquatic habitat on the permit area and adjacent areas." ARM 17.24.301(3)(emphasis added).

areas[6], from the adverse effects of the proposed strip or underground mine operations, and the quantity of surface and ground water within both the proposed mine plan area and *adjacent areas* from adverse effects of the proposed mining activities, or to *provide alternative sources of water . . . where the protection of quantity cannot be ensured.*" ARM 17.24.314(1)(a)-(c) (emphasis added).

The PHC must explain to what extent each hydrologic consequence can be *mitigated* by measures taken pursuant to the Plan for Protection. ARM 17.24.314(3)(c). Additionally, whenever the PHC indicates that adverse impacts to the hydrologic balance *on or off the permit area may occur*, DEQ shall require submission of supplemental information to evaluate such impacts and to evaluate plans for remedial and long-term reclamation activities. ARM 17.24.314(4) (emphasis added).

Finally, DEQ "shall provide an assessment of the cumulative hydrologic impacts of the proposed operation and all anticipated mining upon surface and ground water systems in the cumulative impact area [CIA]." "The cumulative hydrologic impact assessment [CHIA] must be sufficient to determine, for purposes of a permit decision, whether the *proposed operation* has been designed to prevent material damage to the hydrologic balance outside the permit area." ARM 17.24.314(5); *see also* Section 82-4-227(3), MCA; ARM 17.24.405(6).

As noted above, although Section 82-4-227(3), MCA, and ARM 17.24.314(5) place the burden on the mine permit applicant to "affirmatively demonstrate" and on DEQ to "confirm" through development of the CHIA that the "proposed operation" has been "designed to prevent material damage outside the permit area" the burden is on Petitioners in this contested case

[6] "Adjacent area" is defined as "the area outside the permit area where a resource or resources, determined in the context in which the term is used, are or could reasonably be expected to be adversely affected by proposed mining operations, including probable impacts from underground workings." Section 82-4-203(2), MCA.

proceeding to prove that the permit was improperly granted by DEQ. *Mont. Envtl. Info. Ctr.*, ¶ 16. "Thus, as the party asserting the claim at issue, MEIC has the burden of presenting the evidence necessary to establish the facts essential to a determination that the Department's decision violated the law." *Id.*

1. DEQ Properly Determined that the Proposed Operation of AM4 will not cause a Violation of the Numeric Water Quality Standard for Electrical Conductivity in Rosebud Creek.

Petitioners assert that DEQ "is in violation of the law because it failed to assess potential violations of water quality standards for electrical conductivity for the tributaries of Rosebud Creek." (Petrs.' Br., p. 53.) Petitioners go on to state that DEQ justified its failure to assess potential violations of water quality standards for electrical conductivity ("EC") in Rosebud Creek tributaries because impacts from the proposed operation in AM4 would not affect any of the Rosebud Creek tributaries. (Petrs.' Br., p. 54.)

Based on Petitioners' interpretation of the phrase "proposed operation of the mining operation" contained within § 82-4-227(3), MCA, Petitioners assert that DEQ cannot limit its material damage determination in the AM4 CHIA to impacts from the "proposed operation" of AM4; rather, DEQ must make a material damage determination for the *entire operations of the Rosebud Mine*. *Id.* At a minimum, DEQ must consider the *totality of the operations in the Area B Permit Area.* (Petrs.' Br., pp. 54-55 (emphasis added). Therefore, according to Petitioners, it was not sufficient for DEQ to conclude that there would be no material damage to the tributaries of Rosebud Creek from violations of water quality standards for EC solely from the proposed operation of AM4. *Id.*

Once again, Petitioners' allegations are based upon an incorrect interpretation of the facts and applicable legal standard. Petitioners' argument fails for the following reasons: First, DEQ did assess potential violations of water quality standards for EC to the tributaries of Rosebud

Creek in the AM4 CHIA. (SDF, p. 10-11.) However, DEQ concluded that the numeric water quality standard for EC in tributaries to Rosebud Creek will not be violated as a *result of the proposed operation* of AM4 because there is a surface water divide located between the Big Sky Mine and Area B of the Rosebud mine that prohibits the flow of surface water from AM4 to the tributaries of Rosebud Creek. *Id.* Therefore, surface water from AM4 will not interact with surface water in the tributaries of Rosebud Creek, and no material damage will result from violations of water quality standards for EC due to proposed operation of AM4. *Id.*

Second, Petitioners are incorrect in their interpretation of the applicable statute and rule. As indicated above, Section 82-4-227(3), MCA, provides that prior to issuing a permit, DEQ must determine the "*proposed operation of the mining operation*" has been designed to prevent material damage to the hydrologic balance outside the permit area." Section 82-4-227(3), MCA (emphasis added).

DEQ interpreted this statutory language in an administrative rule, which provides that "[t]he cumulative hydrologic impact assessment [CHIA] must be sufficient to determine, for purposes of a permit decision, whether the *proposed operation* has been designed to prevent material damage to the hydrologic balance outside the permit area." ARM 17.24.314(5).

The plain language of the applicable administrative rule is clear that DEQ only has to consider the impacts from the *proposed operation* of AM4 in making its material damage determination in the CHIA. The "*operation*" that is "*proposed*" is the AM4 Amendment to the Area B permit. Contrary to Petitioners' assertion, DEQ is not required to consider impacts from the entire operation of the Rosebud Mine or from all of Area B in making its material damage determination in the AM4 CHIA. Absent compelling indications that DEQ's construction of the language contained in § 82-4-227(3) is wrong, the Board must follow the statutory interpretation by the agency responsible for its execution. *Safeway Inc.* 281 Mont. at 194; *See also Mont.*

Power Co., ¶ 24; *Glendive Med. Ctr.*, ¶ 15.

For the same reason, Petitioners' argument contained on pages 73-76 of their Brief fails. The applicable statute and rules provide that the applicant must "affirmatively demonstrate" and DEQ must "confirm" that the "proposed operation" "has been designed to" prevent material damage to the hydrologic balance outside the permit area. See § 82-4-227(1) and (3); ARM 17.24.314(5); ARM 17.24.405(6). Based on the information provided in the permit application, DEQ confirmed that the *proposed operation* of AM4 would not result in material damage to Rosebud Creek. Because surface water in AM4 flows to EFAC and not Rosebud Creek, no material damage will result from the proposed operation in AM4 to Rosebud Creek. (SDF, pp. 8-11.)

For the foregoing reasons, DEQ did not err in concluding that there would be no violations of water quality standards for EC in tributaries to Rosebud Creek as a result of the proposed operation of AM4[7]. Further, DEQ met its duty to "confirm" that the permit applicant "affirmatively demonstrated" that no material damage would result from the proposed operation of AM4 to Rosebud Creek, which is located outside, but adjacent to, the permit area. Therefore, Petitioners are not entitled to judgment as a matter of law.

2. DEQ properly Concluded that the Mine is not the Source of Nitrogen that has Allegedly Caused the Impairment of the Lower Segment of East Fork Armells Creek for Aquatic Life Support.

Petitioner asserts that DEQ "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." (Petrs.' Br., p. 55.) Petitioners further assert, based upon information contained in the 2014 DEQ Water Quality Standards Attainment

[7] For a complete explanation on the lack of hydrologic connection between Area B/AM4 and Area F, and the reasons why Area F and other areas with pending permit applications were excluded from the AM4 CHIA, see SDF, pp. 2-7.

Record ("Attainment Record") for lower EFAC (segment MT42K002_110) (Colstrip to the mouth at Armells Creek), that DEQ has identified nitrogen pollution as a *cause* of the creek's failure to meet water quality standards, and that DEQ identified coal mining as a suspected *source* of the pollution causing this violation of water quality standards. (Petrs.' Br., p. 57.)

Accordingly, Petitioners go on to argue that in spite of DEQ'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, [DEQ's CHIA] 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." (Petrs.' Br., pp. 57-58.)

Once again Petitioners' assertions are based on a misrepresentation of the factual data, and on an erroneous application of Montana law. DEQ concedes that it did not apply the more stringent numeric water quality standards for nitrogen that protect aquatic life contained in Department Circular DEQ 12-A ("DEQ 12-A") to its analysis of EFAC. (SDF, p. 20.) However, the numeric nutrient standards contained in DEQ 12-A only apply to wadeable streams, which by definition means "a perennial or intermittent stream in which most of the wetted channel is safely wadeable by a person during baseflow conditions." (Department Circular DEQ-12A, p. 1; SDF, p. 21.) They do not apply to those portions of EFAC or any other stream that are ephemeral[8]. *Id.*

[8] Petitioners request that the Board take judicial notice pursuant to Rule 201, M.R.Evid. of a recent opinion issued by Judge Kathy Seeley of the First Judicial District Court, Lewis and Clark County. In that opinion, the Court indicated that surface waters that are classified as C-3 waters under Montana's water use classification system may not be treated as ephemeral streams under ARM 17.30.637(4) for purposes of determining the applicable water quality standards, without complying with the procedures set forth in ARM 17.30.615(2) for reclassifying a specific water body in Montana. *Mont. Envtl. Info. Ctr. v. Mont. Dept. of Envtl. Quality*, Cause No. CDV-2-12-1075, (March 4, 2016). However, the judgment has not yet been entered in the Judge Seeley case, and the decision may be appealed. As indicated in Petitioners' Brief at page 56, all surface waters located in the CIA for AM4 are classified as C-3 waters under Montana's surface water classification system. However, DEQ is not relying on ARM 17.30.637(4) in this case. That rule provides that the provisions of ARM 17.30.629 do not apply to

Most of the streams analyzed in the CHIA are ephemeral, flowing only in response to precipitation events, runoff or snowmelt. (SDF, pp. 6-7.) With respect to EFAC, the upper segment is predominantly ephemeral and is flanked by active mining along most of its reach. (SDF, p. 7.) However, there are two segments on upper EFAC that potentially had periods of flow that would classify them as intermittent. *Id.* These two segments are located in Section 8, which is located upstream of the Rosebud Mine, and Section 15, which is located between Area C and Area B of the Rosebud Mine. *Id.*

Section 8 is located upstream of the Rosebud mine and is not impacted by operation of the Rosebud Mine. Therefore, there was no reason for DEQ to apply the numeric nutrient standards for nitrogen to this segment of stream. *Id.* Additionally, as noted in Petitioners' Brief, Section 15 of EFAC has been observed in recent years to have no flow. (Petrs.' Br., p. 63.) This is the same Section of EFAC that Petitioners' allege is now *ephemeral* as a result of dewatering from the Rosebud Mine. *Id.* Petitioners cannot argue for purposes of establishing material damage to EFAC from mine dewatering that Section 15 is *ephemeral*, while at the same time arguing that DEQ should have analyzed Total Nitrogen in this Section of the stream under DEQ 12-A, which only applies to *wadeable streams*, which by definition are intermittent or perennial.

Further, even though there has been recent evidence that Section 15 now has some surface water present, there was insufficient historical flow data available for DEQ to affirmatively establish whether Section 15 had sufficient premining flow to be classified as intermittent or perennial. (SDF, p. 7.) Since Section 15 had been observed during field visits by DEQ staff to be a dry grassy channel bottom with some riparian streams, it cannot be said that

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ephemeral streams. DEQ is relying on ARM 17.30.629 and Department Circular DEQ12-A, which provide that the numeric nutrient limits apply only to intermittent and perennial streams.

Section 15 of EFAC met the definition of a wadeable C-3 stream for purposes of applying the numeric nutrient standards contained in DEQ 12-A at the time the CHIA was issued. (Petrs.' Br., p. 63.)

With respect to lower EFAC, DEQ noted in the CHIA that this segment of stream does have reaches with intermittent to perennial flow. (SDF, p. 10.) However, the surface and alluvial water quality data analyzed by DEQ for the Rosebud Mine indicated that the relative contribution of nitrogen to lower EFAC from the Rosebud mine is minimal. (SDF, p. 9.) While the CHIA acknowledges that mining is a potential source of nitrogen in the water samples that exceeded the human health standard, agricultural activities, city runoff and municipal sources were also identified as potential sources of the pollutant. (SDF, p. 9.) Since the available data indicated that coal mining was not the source of the nitrogen in lower EFAC, there was no reason for DEQ to do further analysis applying the more stringent standards contained within DEQ 12-A. (SDF, p. 10.)

Regardless, even if DEQ had considered the more stringent nitrogen standard from DEQ 12-A in its analysis of whether the cumulative impacts of the proposed operation will cause or contribute to violations of the applicable numeric nitrogen standards for aquatic life, DEQ's conclusions would not have changed. SDF, pp. 21-22. The total nitrogen samples taken at SW-55, which is the surface water monitoring station located on that portion of upper EFAC which has recently demonstrated intermittent flow, have not exceeded the DEQ 12-A standard of 1.3 mg/L for nitrogen. *Id.* Additionally, all of the data that was available to DEQ indicated that operations of the Rosebud mine was not the source of the nitrogen that was causing the impairment of EFAC for aquatic life support[9]. (SDF, pp. 16-21.) Rather, the lower portion of

[9] For a complete explanation concerning DEQ's conclusion that the operation of AM4 will not result in violations of water quality standards in Rosebud Creek see SDF, pp. 9-11.

EFAC receives nitrogen-rich effluent from numerous sources, including runoff from the town of Colstrip, the water treatment plant, the golf course, as well as agriculture and grazing. (SDF, p. 17.) Additionally, the surface and alluvial water quality data reviewed by DEQ for the Rosebud Mine indicated that exceedances of water quality standards for nitrate-nitrite nitrogen is uncommon, "which indicated to DEQ that the relative contribution of nitrogen to EFAC of the Rosebud Mine is minimal." *Id.*

Therefore, DEQ's failure to consider the more stringent water quality standards for nitrogen that protect aquatic life contained in DEQ 12-A, if error, constitutes "harmless error" because DEQ determined in the CHIA that coal mining is not the source of nitrogen that is allegedly causing the impairment of lower EFAC for aquatic life support. Further, DEQ is not required to consider impacts outside the permit area that result from sources other than coal mining. *See* § 82-4-203(31), MCA ("material damage" means, with respect to protection of the hydrologic balance, degradation or reduction by *coal mining*...of the quality or quantity of water outside the permit area). Based on this information, it cannot be said that the substantial rights of Petitioners have been violated as a result of DEQ's omission. Accordingly, the Board should "disregard all errors and defects that do not affect any party's substantial rights." Rule 61, M.R.Civ.P.; *Liberty Cove,* ¶ 21; *Pannoni,* ¶ 55.

For the foregoing reasons, DEQ did not err in concluding that the Rosebud mine was not the source of the nitrogen that was causing the impairment of EFAC for aquatic life support, and any failure on the part of DEQ to apply the more stringent numeric nutrient standards for nitrogen contained in DEQ 12-A constitutes harmless error. Therefore, Petitioners are not entitled to judgment as a matter of law.

3. DEQ Properly Concluded that the Proposed Operation of AM4 would not cause Dewatering of "Intermittent" Segments of East Fork Armells Creek.

Petitioners assert that DEQ failed to adequately assess whether the proposed operation of AM4 will cause dewatering of EFAC that will result in material damage outside the permit area. (Petrs.' Br., pp. 64-66.) In support of its assertion, Petitioners' argue that evidence of past dewatering from previous operations of the Rosebud Mine in Section 15 of EFAC "demonstrates that destruction of the Rosebud coal aquifer as a result of mining can have a similar effect on other reaches of the stream." (Petrs.' Br., p. 62.) Further, while the "past dewatering does not necessarily prove that future dewatering will occur," it does require DEQ to assess the potential that future mining of the Rosebud coal seam may dewater or reduce surface flow in adjacent reaches of EFAC. *Id.*

Ultimately, Petitioners assert that DEQ "violated the law" for the following two reasons: First, DEQ "failed to make a material damage determination with respect to the dewatered reach of [EFAC] in Section 15"; and second, DEQ "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 [EFAC]." (Petrs.' Br., p. 66.)

First, it should be noted, that Petitioners have cited an incorrect legal standard for determining whether dewatering of an intermittent or perennial stream reach constitutes "material damage." According to Petitioners, "[d]ewatering of an intermittent or perennial stream violates water quality standards, causing material damage." (Petrs.' Br., p. 62.) Petitioners' support this assertion with citations to federal district court case from the Southern District of West Virginia (*Bragg v. Robertson*, 72 F. Supp. 2d 642, 662 (S.D. W.Va. 1999)), and

the Proposed Stream Protection Rule, 80 Fed. Reg. 44436, 44502 (July 27, 2015), which has not yet been adopted by the OSMRE.

As indicated above, neither of these authorities are applicable or controlling, because Montana is a primacy state under SMCRA, and therefore State and not federal law is controlling. *Mont. Envtl Info Ctr.,* 2013 U.S. Dist. LEXIS 29184 at 7. Additionally, the *Bragg* case is easily distinguishable from this contested case proceeding. The issue in *Bragg* related to violations of the "buffer zone" rule under SMCRA and did not address whether the dewatering of a stream constitutes material damage under State or federal law. Therefore, *Bragg* has no relevance to this case.

Further, Petitioners are incorrect in their assertion that "dewatering" in and of itself constitutes "material damage" under Montana law. As stated numerous times above, under Montana law, "material damage" means the "*degradation or reduction by coal mining* and reclamation operations of the *quality or quantity of water outside of the permit area* in a *manner or to an extent* that: i) land uses or beneficial uses of water are adversely affected; ii) water quality standards are violated; iii) or water rights are impacted. Section 82-4-203(31), MCA (emphasis added). Therefore, unless the dewatering adversely affects a beneficial use, violates a water quality standard, or impacts a water right outside the permit area, material damage does not occur.

Finally, Petitioners are incorrect in their assertion that DEQ failed to make a material damage determination with respect to the dewatering of EFAC in Section 15 and the downstream reaches of EFAC. As indicated in the CHIA, DEQ analyzed all of the available surface water quality data for the Rosebud and Big Sky Mines and concluded that there are simply too few data monitoring points to accurately determine historic stream flow on EFAC, including flow in Section 8, which is located upstream of the Rosebud Mine, and Section 15, which is located

between Area C and Area B of the Rosebud Mine. SDF, p. 13. Nevertheless, DEQ acknowledged that mining activities in the 1980s and 1990s had an impact on alluvial water levels in the area of Section 15, which may have contributed to the dewatering of Section 15.

However, DEQ also noted that any dewatering in Section 15 of EFAC due to the historic operation of the Rosebud Mine did not impact any water rights, as the Montana Department of Natural Resources ("DNRC") does not list any water rights for that section of the stream. (SDF, p. 8.) Additionally, there was insufficient historical data available for DEQ to determine the impact of historic dewatering on macroinvertebrates in Section 15 of EFAC. *Id.* However, as indicated above, DEQ is not required to make a material damage determination for "past operations" of the mine. For purposes of the AM4 CHIA, DEQ is only required to determine whether the *proposed operation* has been *designed to prevent* material damage to the hydrologic balance outside the permit area." ARM 17.24.314(5).

DEQ has met this burden. Based on available flow data and field observations, DEQ ultimately concluded in the CHIA that the effects of dewatering in some segments of EFAC alluvium have been counteracted by recharge from pit water discharges made directly into outfalls of EFAC, and from seepage from sediment ponds. SDF, p. 15. Additionally, recent flow data indicates that, while some segments of EFAC have seen a decrease in surface flow, other sections have seen an increase in flow, which has caused some segments that were previously ephemeral to be intermittent or perennial. *Id.* Finally, DEQ concluded that even if there is a reduction in flow to Section 15 as a result of historic mining, mining operations in AM4 will not affect the quantity of water in this section because any impacts to EFAC surface water flow will occur much further downstream[10]. *Id.*

[10] For a complete discussion on DEQ's conclusions with respect to mine-related dewatering in EFAC see SDF, pp. 11-16.

For the foregoing reasons, DEQ did not err in concluding that the proposed operation of AM4 will not contribute to mine-related dewatering in EFAC, and no material damage will result from mine-related dewatering of EFAC from the proposed operation of AM4. Therefore, Petitioners are not entitled to judgment as a matter of law.

4. DEQ Properly Concluded that Aquatic Life Support will not be Impaired by Mine-Related Water Quality Violations in East Fork Armells Creek.

Petitioners assert that DEQ failed to: 1) properly consider whether the mine is the source of sulfates and chlorides that have allegedly caused the impairment of aquatic life support in EFAC; and 2) employ standard operating procedures ("SOPs") and methodologies for assessing whether the cumulative hydrologic impacts from the "totality of the mining operation" would violate water quality standards in EFAC.

With respect to Petitioners' first issue, DEQ reviewed the available data and determined that no adverse impacts from increased sulfates due to the proposed operation of AM4 would occur to aquatic life support in EFAC. (SDF, p. 23.) In analyzing the data, DEQ applied the guideline sulfate toxicity threshold of 2,000 mg/L for aquatic life to account for the very high hardness of stream water. *Id.* Even in baseline samples, sulfate thresholds for aquatic life were exceeded. *Id.* Therefore, DEQ concluded that existing macroinvertebrate communities in Eastern Montana are likely adapted to high sulfate water. *Id.*

Additionally, even though the Attainment Record for this segment of EFAC identifies specific conductance (SC) and total dissolved solids (TDS) as a cause of impairment with a "low level of confidence" for aquatic life support, as discussed above, this does not mean that SC and TDS are actually causing impairment. (SDF, p. 23.) Likewise, just because coal mining is identified as an "unconfirmed source" of SC and TDS, it does not mean it is the actual source. *Id.*

Additionally, DEQ indicated that that the high chloride concentrations referenced in the CHIA between Area A Tipple and SW-55, which is located between Area A and Area B, were "likely from flushing of chloride in the soil and alluvium by the [Intervenor's] Area A facilities in addition to chloride from leaking power plant ponds." (SDF, pp. 23-24.) Hence, leaking ponds at the Colstrip Power Plant provided a source of elevated chlorides in addition to the chlorides from facility operations at Area A of the mine. *Id.* DEQ also noted that Montana law does not require the agency to consider impacts from non-mining sources, such as the Colstrip Power Plant, in the CHIA. (SDF, p. 24.)

Additionally, regardless of the cause of the existing high chloride concentrations in EFAC, the proposed mine plan for the AM4 Amendment "is designed not to contribute additional chloride to the stream because lignin sulfonate will be used on roads instead of magnesium chloride." *Id.* Therefore, DEQ concluded that the proposed operations in AM4 are designed to prevent material damage to EFAC from chlorides. *Id.*

With respect to Petitioners second issue, Petitioner is challenging the results of a 2014 aquatic life survey conducted by Intervenor's consultant on the grounds that the survey was not conducted in accordance with DEQ SOPs. Based in part, on the results of the 2014 macroinvertebrate study, DEQ concluded that the creek was meeting the narrative standard for the beneficial use of aquatic life support. (SDF, p. 29.)

Prior to conducting the study, DEQ's Coal Program consulted with Dave Feldman, former macroinvertebrate specialist with the DEQ Water Quality Bureau, who provided Intervenor's consultant with a copy of DEQ's sampling methodology (WQPBWQM-009 (2012)) for how to collect macroinvertebrate samples in different habitats in Montana. *Id.* At the request of DEQ coal program staff, Mr. Feldman advised Intervenor's consultant how to collect samples, but did not advise her how the sample results could be used to determine aquatic life health. *Id.*

Additionally, the 2014 aquatic life survey conducted by Intervenors' consultant was used by DEQ coal program staff to make a material damage determination with respect to the impact of the proposed operations of AM4 on the beneficial use of aquatic life support. It was not used by the DEQ Water Quality Bureau staff in making an impairment determination for aquatic life in EFAC. *Id.* For this reason, Intervenors' consultant was not required to follow DEQ SOPs for making stream segment impairment determinations. *Id.*

Based on the foregoing information, DEQ properly concluded that the proposed operation of AM4 would not degrade the quality of water in EFAC, which is outside, but adjacent to, the permit area in a manner and to an extent that the beneficial use of aquatic life support would be adversely affected[11]. Therefore, Petitioners are not entitled to judgment as a matter of law.

5. DEQ Properly Concluded that Spoils Water from the Rosebud Mine will not cause a Change in Classification of Groundwater from Class I to Class II or III in the Rosebud Coal Seam.

Petitioners assert that DEQ "failed entirely to assess whether cumulative hydrologic impacts would violate water quality standards for highest quality Class I [groundwater] in the Rosebud coal aquifer between Area B of the Rosebud Mine and the Big Sky Mine." (Petrs.' Br., p. 76.) Petitioners' assertion is based upon the assumption that Class I groundwater exists in the Rosebud coal aquifer, and that this Class I groundwater will be degraded by spoils water containing high levels of salts that are migrating from the southern and western parts of Area B to the area between the Rosebud Mine and the Big Sky Mine. (Petrs.' Br., pp. 77-78.) Based on these assumptions, Petitioners conclude that DEQ's material damage determination is also inadequate.

[11] For a complete discussion on DEQ's material damage determination with respect to aquatic life support in EFAC see SDF, pp. 21-30.

Petitioners' argument fails for the following reasons: First, once again Petitioners fail to distinguish between impacts from the proposed operation in AM4 and impacts from the totality of the operations in Area B. As indicated above, in making its material damage determination for the proposed operation of AM4, DEQ is only required to consider the impacts from the proposed operation of AM4. It is not required to consider impacts from the entire operation of the Rosebud Mine or from all of Area B. ARM 17.24.314(5).

Second, DEQ does not dispute the fact that, as the spoils aquifer recharges, the spoils water will contain higher concentrations of salts. However, upon saturation of the spoils aquifer, *only* spoils water from the southern and western parts of Area B will move southeast toward the Big Sky Mine permit areas. (SDF, p. 31.) Spoils water from AM4 cuts will move northeast towards EFAC. *Id.* Therefore, there will be no interaction between spoils water from AM4, which flows toward EFAC, and spoils water from the already permitted portions of Area B, which flow toward the Big Sky Mine. *Id.*

Finally, contrary to Petitioners' assertion, there is insufficient evidence to support the conclusion that Class I groundwater exists in the Rosebud coal aquifer between Area B of the Rosebud Mine and the Big Sky Mine. While DEQ admits that the CHIA included reference to an EC measurement of 880μS/cm taken in 1996 in a Rosebud coal well ("ARCM67") north of the Big Sky Mine Area A, which falls within the range of Class I groundwater, a single measurement from a single well in 1996 does not demonstrate that there is Class I groundwater in the area between Rosebud Area B and the Big Sky Mine that will be degraded to Class II or III groundwater by migrating spoils water. (SDF, p. 32.)

Additionally, it is important to note, that the sample well (ARCM67), from which the single sample was taken that Petitioners claim is indicative of Class I groundwater, is not located

in the area where Area B spoils water moves toward the Big Sky Mine. *Id.* Groundwater flow from spoils water near this well moves north away from the Big Sky Mine. *Id.*

In reality, "Rosebud coal water quality in the area between the two mines (outside the permit areas of both mines) is variable and is currently unaffected by spoil." *Id.* DEQ does not expect that a numeric water quality standard will be violated by the spoils water or that any beneficial uses of groundwater in this area will be adversely affected by the proposed operations in AM4. *Id.* Therefore, DEQ does not expect material damage to result outside the permit area from migrating spoils water from AM4. *Id.* Therefore, Petitioners are not entitled to judgment as a matter of law.

V. CONCLUSION

Based on the foregoing information, DEQ respectfully requests that Petitioners' Motion for Summary Judgment be denied.

DATED this 22nd day of July, 2016.

Montana Department of
Environmental Quality

By: _____
REBECCA A. CONVERY
Attorney for Respondent

CERTIFICATE OF SERVICE

The undersigned certifies that on July 22, 2016, she caused the original or a copy of the foregoing Respondent's Brief in Opposition to Petitioners' Motion for Summary Judgment to be delivered or transmitted to the person named below as follows:

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APPENDIX A

APPEAL AMENDMENT AM4
WESTERN ENERGY COMPANY
ROSEBUD STRIP MINE AREA B,
PERMIT NO. C1984003B

BER 2016-03 SM

July 22, 2016

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STATEMENT OF DISPUTED FACTS

COMES NOW, Respondent, State of Montana, Department of Environmental Quality (hereinafter "DEQ"), by and through its counsel of record, Rebecca A. Convery and John North, and submits the following Statement of Disputed Facts ("SDF") In Opposition to Respondent's Motion for Summary Judgment.

1. Whether DEQ Properly Excluded Consideration of Impacts from Area F and Other Areas with Pending Permit Applications in the Cumulative Hydrologic Impact Assessment for AM4.

Petitioners assert that DEQ was required to consider the cumulative impacts from Area F and all other areas with pending permit applications [B-Ext [extension], Area A MR62 [minor revision 62], Area A MR66], in the cumulative hydrologic impact assessment ("CHIA") for AM4. Petitioners' Br., pp. 37-38. Based on some hand written notes, emails and other correspondence contained in the record, Petitioner concluded that DEQ intentionally "limited its assessment of cumulative impacts to 'all permitted mining' and 'the proposed cuts in Area B (AM4)." Petitioner further concluded that DEQ wrongfully "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.'" Petitioners' Br., p. 38. Based on DEQ's direction, Intervenor and its consultants "stripped" references to Area F and other pending permit applications under DEQ's review. *Id.* Accordingly, the CHIA for the proposed action at AM4 did not address applications for mining in Area F, Area B-Ext, or Area A, minor revisions. Petitioners' Br., p. 39; DEQ Ex. A, (Deposition of Ann Hedges), pp. 18-92.

Petitioners further assert that impacts from Area F should have been considered in the CHIA because the permit application for Area F was pending, and DEQ included a portion of Area F within the surface water and groundwater cumulative hydrologic

impact area ("CIA") in Figure 5-1 of the CHIA. DEQ Ex. A, pp. 24, 30, 41-42 and 91. Petitioners have indicated that they believe that there is a hydrologic connection between surface and groundwater in Area F and Area B, and therefore, Area F should have been included in the AM4 CHIA. DEQ Ex. A, pp. 35, 41-42 and 65. Finally, Petitioners have stated that the burden is on the permit applicant and DEQ to provide an analysis in the CHIA as to whether Area F and Area B interact. DEQ Ex. A, p. 89.

DEQ disputes this factual allegation as follows:

DEQ does not dispute that impacts from the proposed operation in Area F and other areas with pending permit applications are not addressed in the AM4 CHIA; however, DEQ disputes the reason why these areas were excluded from consideration in the CHIA.

Intervenor's application for the AM4 Area B Permit Amendment ("AM4") was submitted on June 15, 2009, and was determined by DEQ to be administratively complete on August 7, 2009. Petitioners' Ex. 1, pp. 2-5; DEQ Ex. B, (Affidavit of Chris Yde), pp. 2-3. Over the course of the next six years, DEQ sent eight deficiency notices to Intervenor requesting additional technical information and data on the application. DEQ Ex. B, p. 3. Finally, on July 8, 2015, DEQ notified Intervenor that the AM4 application was acceptable and met all of the legal requirements for DEQ to make a decision whether to grant or deny the permit application. *Id*. On December 4, 2015, DEQ issued its written findings, which included the CHIA for AM4, approving Intervenor's application for permit for AM4. DEQ Ex. B, p. 6.

With respect to Area B-Ext. (See Petitioners' Br., Ex. 26), this area was amended to the Area B permit on January 31, 1995 (Area B, AM1). DEQ Ex. B, pp. 4-5. The written findings for this decision included an update to the Area B CHIA (See

Petitioners' Br., Ex. 15). DEQ Ex. B, p. 5. Therefore, the approved mining within this area was included in the hydrologic impact assessment contained in both the PHC and CHIA for AM4. *Id*.

An application for a minor revision (MR76) to the Area B permit was submitted to DEQ on January 25, 2016. *Id*. Since the written findings for the AM4 permit application, which includes the CHIA, were published on December 4, 2015, the MR76 application was not pending before DEQ, and was not included in the CHIA for AM4. *Id*.

With respect to Area A MR62 and MR66, these applications were both minor revisions, which by definition, must not result in changes that affect the hydrologic balance[1]. DEQ Ex. B, p. 4. Therefore, impacts from these proposed operations were not considered in the CHIA. *Id*.

With respect to Area F, DEQ excluded it from consideration of the cumulative impacts in the AM4 CHIA because the applicable statute [§ 82-4-227(3)(a), MCA] and Administrative Rules of Montana ("ARM") [ARM 17.24.301(32)] require DEQ to consider *only* those areas "within which impacts to the hydrologic balance resulting from the proposed operation may interact with the impacts of all previous, existing and anticipated mining on surface and groundwater systems" in the cumulative hydrologic impact area ("CIA"). DEQ Ex. B, pp. 5-6. For purposes of determining the CIA, "anticipated mining" is defined in ARM 17.24.301(32) as "the entire projected lives

[1] Minor revision "means any change to the mine and reclamation plan not meeting the criteria for amendment or major revision." See ARM 17.24.301(72). Major revision " means any change in the mining or reclamation plan that … results in a change that may affect the reclaimability of the area or the hydrologic balance on or off of the permitted area. See ARM 17.24.301(66)(d). DEQ requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that Area A minor revisions were not included in the CHIA because they will not result in changes that affect the hydrologic balance. These facts are within the generally recognized scientific facts within DEQ's specialized knowledge, and therefore, the Board may also take notice of them pursuant to § 2-4-612(6), MCA.

through bond release of all operations with pending applications …. for which there is actual mine-development information available." DEQ Ex. B, p. 4.

Based on the plain language of § 82-4-227(3)(a), MCA, and ARM 17.24.301(32), DEQ limited its cumulative hydrologic impact assessment for the AM4 CHIA to those areas of the Rosebud mine within which impacts to the hydrologic balance resulting from the proposed operation [the AM4 permit amendment application] may interact with the impacts of all previous, existing and anticipated mining, including all pending permit applications for which actual mine-development information was available at the time the CHIA was being prepared. *Id*.

DEQ excluded Area F from consideration in the AM4 CHIA because groundwater and surface water in Area F are isolated from the groundwater and surface water in Area B, which includes AM4. Since there is no hydrologic connection between Area B/AM4 and Area F, there will be no cumulative impacts on the hydrologic balance from the proposed operation in AM4 that interact with impacts from Area F. Petitioners' Ex. 16, pp. 3-8, 47-54; DEQ Ex. B, pp. 5-6; DEQ Ex. C, (Affidavit of Emily Hinz), p. 5; DEQ Ex. D, (Affidavit of Angela McDannel), p. 5; Petitioners' Ex. 2, Attachment E, Figures E-5 and E-9 (demonstrating that the drawdown effects of AM4 will be localized). Accordingly, DEQ was not required to include Area F in the CHIA for AM4. *Id*.

Impacts from Area F will occur primarily in the West Fork Armells Creek ("WFAC") drainage, while impacts from AM4 will occur only in the East Fork Armells Creek ("EFAC") drainage. No impacts from Area F will occur in the EFAC drainage. Impacts from all of Area B are limited to the EFAC, with the exception of impacts from a very small portion of Area B-Ext that crosses the surface water divide into Lee Coulee, which drains into the Rosebud Creek drainage. DEQ Ex. B, p. 5; DEQ Ex. C, pp. 3-5;

DEQ Ex. D, pp. 3-5.

Because the proposed operations in AM4 and the proposed operations in Area F affect different hydrologic units or drainages, it is more appropriate to address the cumulative impacts of the proposed operations in Area F in a separate CHIA for Area F, if and when the permit application is determined by DEQ to be acceptable. DEQ Ex. B, p. 6.

In its response to Petitioners' discovery requests concerning this allegation, DEQ responded as follows: "A sizeable stock pond is coincident with the groundwater mound between the west end of Rosebud Mine Area B and south part of Area C. This groundwater mound just west of Area B forms a groundwater divide[2] which separates groundwater in Area B from groundwater in Area F. No groundwater from Area F is predicted to flow to or through Area B." Petitioners' Ex. 16, p. 3; Accordingly, Area B is not downgradient from Area F, and no groundwater will flow between these two areas. Petitioners' Ex. 16, p. 3; Petitioners' Ex. 2, p. 13-21 (Fig. 8-5); DEQ Ex. D, p. 5.

DEQ further indicated in its responses to Petitioners' discovery requests that it was indicated in the AM4 CHIA that the "proposed action [operations in AM4] was determined to have no impacts to mine Area C making it unnecessary to include Area F." Petitioners' Ex. 5, pp. 7-8 (citations to CHIA omitted). Also, "[d]ue to the direction of groundwater flow, Area B mining, including mining proposed in AM4, is not expected to impact Area C interburden. Although impacts from the permitted operation in Area C may interact with potential impacts from Area F, impacts from the proposed operation in

[2] Groundwater divide means "[a] ridge in the water table or other potentiometric surface from which groundwater moves away in both directions normal to the ridge line." See http://or.water.usgs.gov/projs_dir/willgw/glossary.html.

Area B AM4 do not interact with any potential impacts from Area F. Thus, no analysis was required." Petitioners' Ex. 16, p. 3.

In general, the CIA for groundwater includes all drainages, or hydrologic units, impacted by previous or existing mining at the Rosebud Mine and the Big Sky Mine. DEQ Ex. D, pp. 4; Petitioners' Ex. 2, p. 5-1. DEQ established the boundary to account for drawdown or predicted drawdown from existing mining in Area C-West. *Id*. Drawdown has been observed that is likely associated with Area C-West beyond Area C into what would have been Area F-East. *Id*. That is why the eastern portion of Area F was included in the groundwater CIA. *Id*. It was to account for impacts on Area F-East from Area C, not to account for impacts from Area B or the AM4 Amendment to Area B. *Id*. Due to lack of hydrologic connection between Area B and Area F, there will be no groundwater impacts from Area B or AM4 on Area F. *Id*.

Finally, as indicated in the CHIA, there is a surface water divide[3] between Area B and the Big Sky Mine that directs surface water drainage from Area B/AM4 away from Lee Coulee and Rosebud Creek towards EFAC. Petitioners' Ex. 2, pp. 12-37 (Table 9-2) and 13-7 (Fig. 5-1); DEQ Ex. C, p. 5. Accordingly, surface water from AM4 does not interact with surface water from Area F. *Id*. Conversely, surface water from Area F flows towards WFAC, and does not interact with surface water from Area B/AM4. *Id*.

In general, the CIA for surface water includes drainages, or hydrologic units, impacted by previous or existing mining at the Rosebud Mine and the Big Sky Mine, and DEQ extended the CIA boundary for each drainage to its confluence with the next drainage. DEQ Ex. C, pp. 4-5; Petitioners' Ex. 2, p. 5-1. For the EFAC drainage, DEQ

[3] "Surface water divides (also called 'watershed divides') are defined by land topography and separate areas where water flows overland as runoff toward different surface-water bodies." See http://wi.water.usgs.gov/glpf/cn_nt_divides.html.

included all of the creeks that may be impacted by mining as a whole. *Id*. For the WFAC drainage, DEQ extended the surface water CIA boundary to the tributary junction with Donley Creek. *Id*. However, there are no surface water impacts to WFAC from Area B or AM4. *Id*. DEQ included Area C in the boundary because impacts from Area B interact with impacts from Area C on EFAC. DEQ Ex. C, p. 5. Rosebud Creek was included to the confluence with Spring Creek to include impacts from Area D and E of the Rosebud Mine, and impacts from Area A and B of the Big Sky Mine. *Id*. There is also a small sliver of the Rosebud Mine Area B that crosses into the Lee Coulee drainage that impacts Rosebud Creek. *Id*.

The anticipated mining in Area F did not need to be included in the surface water CIA for AM4 because there was no hydrologic connection between surface water in Area F and surface water in Area B, which includes AM4. *Id*. Therefore, there would be no interaction between surface water impacts from AM4 and Area F on the hydrologic balance in the area. *Id*.

The lack of hydrologic connection between groundwater in Area B/AM4 and Area F results from the surface water divide between Area B and the Big Sky Mine that directs surface water drainage from Area B/AM4 away from Lee Coulee and Rosebud Creek towards EFAC. *Id*. Accordingly, surface water from AM4 does not interact with surface water from Area F. *Id*. Conversely, surface water from Area F flows towards WFAC, and does not interact with surface water from Area B/AM4. *Id*.

Additionally, even though the application for Area F was pending prior to DEQ issuing its written findings and CHIA for AM4, the mine-plan for Area-F continued to evolve, and there was not sufficient data available at the time for DEQ to perform an

adequate analysis of the hydrologic impacts from Area F in the AM4 CHIA. DEQ Ex. B, p. 6.

2. Whether the Proposed Operation of AM4 will Impact Tributaries of Rosebud Creek and Whether the Rosebud Mine Discharges "Pollution" to Seven Outfalls on Lee Coulee.

Petitioners assert that the mining operations in Area B and Area D of the Rosebud Mine impact tributaries of Rosebud Creek. Area D strip-mining operations have occurred at the headwaters of Spring Creek, Pony Creek, and Cow Creek. Area B operations "cross into the divide into the Lee Coulee drainage." Area B has seven pollution outfalls that discharge into Lee Coulee." Petitioners' Br., p. 26-27.

DEQ disputes these factual allegations on the following grounds:

Mining permitted under MSUMRA was active in the Rosebud Mine Area D from 2013, but is no longer active. Area D of the Rosebud Mine has been reclaimed. Therefore, there are no current mining operations in Area D that impact tributaries of Rosebud Creek. Petitioners' Ex. 2, p. 9-83.

Additionally, discharges made pursuant to a discharge permit issued by DEQ for outfalls on Rosebud Creek are exempted from the definition of "pollution" contained in § 75-5-103(30)(b)(i), MCA. Therefore, Petitioners' assertion that the mine discharges "pollution" pursuant to its discharge permit to tributaries of Rosebud Creek is incorrect both factually and as a matter of law. See § 75-5-103(30)(b)(i), MCA.

Finally, as discussed above, there is a surface water divide between Area B and the Big Sky Mine that directs surface water drainage from Area B/AM4 away from Lee Coulee and Rosebud Creek towards EFAC. DEQ Ex. C, p. 5. Even though a small portion of the existing Area B permit crossed the surface water divide into the Lee Coulee drainage, DEQ required the mine to construct sediment ponds at the edges of

permit area to prevent offsite discharges to Lee Coulee from Area B.[4] *Id*. No additional discharge points were added to the mine's MPDES permit on Lee Coulee. DEQ Ex. C, p. 6. There will be no new discharge points related to AM4 on Lee Coulee because the proposed operations in AM4 do not cross the surface water divide, and surface water from AM4 will not reach Lee Coulee or Rosebud Creek. *Id*.

3. Whether the Proposed Operation of AM4 will Cause a Violation of the Numeric Water Quality Standard for Electrical Conductivity in Rosebud Creek.

Petitioner alleges that in 2002 this Board adopted electrical conductivity ("EC") standards for Rosebud Creek and its tributaries in order to protect irrigated agriculture along the creek[5]. Petitioners' Br., p. 34-35. 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[6]." *Id*.

In its 2012 public comment on a proposed water "pollution" discharge permit from the Department, Intervenor admitted that "it would not be likely" that the mine could comply with the proposed limits for EC. In response to the comments on the discharge permit, the Department noted that it had no discretion to exempt Intervenor

[4] According to Dr. Michael Nicklin, the quality of discharged water captured by these sediment ponds "is equal to or better than what naturally occurs in the streams in the area and in the groundwater. Thus, a discharge from the sediment ponds [in the highly unlikely event one were to occur] will not diminish water quality either in [the] groundwater or in surface water" of Rosebud Creek and its tributaries. Declaration of Michael Nicklin at ¶ 16 (Attached to Intervenor's Motion).

[5] The rule was actually adopted "to ensure that the designated and existing uses of these waters for agricultural purposes will be protected during the development of coal bed methane (CBM) currently being proposed in Montana." 16 Mont. Admin. Reg. 2273 (Aug. 28, 2002).

[6] The actual definition of electrical conductivity contained in the referenced administrative rule is as follows: "'Electrical conductivity (EC) means the ability of water to conduct an electrical current at 25ºC. The electrical conductivity of water represents the amount of total dissolved solids in the water and is expressed as microSiemens/centimeter (µS/cm) or micromhos/centimeter (µmhos/cm) or equivalent units and is corrected to 25ºC." The definition cited by Petitioners is not the official definition, but rather, is included in the description of the "[r]eason for the proposed numeric standards." See ARM 17.24.602(7); 16 Mont. Admin. Reg. 2273 (Aug. 28, 2002).

from the water quality standards for specific conductivity ("SC") that apply to Rosebud Creek and its tributaries. *Id*.

DEQ disputes this factual allegation as follows:

DEQ concluded in the CHIA that the numeric water quality standard for EC in tributaries to Rosebud Creek will not be violated as a result of the proposed operations in AM4 because impacts from AM4 will not have any interaction with surface water in these tributaries. DEQ Ex. C, p. 6. The reason for this is the surface water divide that is located between the Big Sky Mine and Area B of the Rosebud mine. *Id*. The surface water divide will prohibit surface water from AM4 from flowing south towards Lee Coulee. *Id*. Rather, surface water from AM4 will flow north towards EFAC. *Id*. Therefore, there is no evidence to support a conclusion that surface water runoff from AM4 will cause a violation of EC standards in tributaries to Rosebud Creek. *Id*. Accordingly, there will be no new discharge outfalls added to the mine's MPDES permit on Lee Coulee as a result of the proposed operations in AM4 because surface water from AM4 will drain to EFAC, not Rosebud Creek. *Id*.

4. Whether Ranches have been "Destroyed" by the Rosebud Mine along Armells Creek and Rosebud Creek.

Petitioner asserts that "[r]anching and farming have occurred along Armells Creek and Rosebud Creek since the end of the 19th Century. Except for those ranches destroyed by the mine, these operations continue today." Petitioners' Br., p. 22.

DEQ disputes these factual allegations on the following grounds:

In support of this factual statement, Petitioner cites the AM4 CHIA prepared by DEQ. Nowhere in the CHIA will you find a reference to the Rosebud mine having

destroyed ranches in the area of the mine[7]. Further, it should be noted that cattle grazing and agriculture have been re-established in reclaimed areas of the Rosebud and Big Sky mines. As indicated in the CHIA, cattle grazing or hay production is occurring on previously mined and reclaimed lands. See Petitioners' Ex. 2, pp. 9-13, 9-46, 9-47, 9-57, 9-60, 9-78.

5. Whether Operations at the Rosebud Mine have caused Dewatering of "Intermittent" Segments of East Fork Armells Creek Upstream of Colstrip.

Petitioners assert that mining has reduced the flow of intermittent segments of EFAC located upstream of Colstrip (Sections 8 and 15) that were described in the probable hydrologic consequences ("PHC") assessment for the Rosebud Mine in 1986, and DEQ's 1995 cumulative hydrologic impact assessment ("1995 CHIA") for an earlier Area B amendment. Petitioners' Br., pp. 30-31. Based on information provided in DEQ's 1995 CHIA, Petitioner asserts that mining through the alluvium adjacent to the intermittent segments of stream is the cause of the dewatering in Sections 8 and 15 of EFAC. Petitioners Br., p. 31.

Additionally, Petitioner notes that the PHC report for the AM4 Amendment, indicated that a field survey of this segment in 2014 "showed no flow," and "it is possible that the change in flow is a result of mine related dewatering." Petitioners' Br., p. 33. Petitioners also assert that in the AM4 CHIA, DEQ discounted the historical descriptions of the stream in Section 15 as "anecdotal," and hypothesized that the presence of flow in

[7] Petitioner has repeatedly misrepresented the facts throughout its Brief in a manner and to an extent that may be sanctionable under Rule 11. Rule 11(b) provides in pertinent part, that when an attorney presents a written motion to the court, they are certifying to the best of their knowledge, information and belief, formed after reasonable inquiry, "that the factual contentions have evidentiary support or, if specifically so identified, will likely have evidentiary support after a reasonable opportunity for further investigation or discovery ." Rule 11, M.R.Civ.P.

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*.

On that basis, DEQ concluded that without more information about the nature of the stream flow, a material damage determination could not be made. *Id*. DEQ further concluded that "[r]egardless of the nature of the reaches in Section 15 and Section 8, the proposed permitting action will have no effect on the reach. Therefore, … the proposed action is designed to prevent material damage to these reaches.'" Petitioners' Br., p. 34.

DEQ disputes this factual allegation on the following grounds:

First, it should be noted that DEQ can only determine the nature of flow in creeks located within the CIA at locations monitored by the Rosebud Mine and Big Sky Mine that have sufficient surface water monitoring to determine the nature of the flow. Petitioners' Ex. 2, p. 8-2; DEQ Ex. C, p. 6. "With the exception of some intermittent stream reaches and stock water ponds, the surface water that is monitored by the mines in and near the Rosebud and Big Sky mines are ephemeral, flowing only in response to precipitation events or snowmelt, or for short reaches below the issue point of springs or seeps." *Id*.

However, "[l]ong term monitoring at Rosebud and Big Sky indicates some stream segments that have had periods of flow that would be classified as intermittent[8], including two segments on upper EFAC." *Id*. Nevertheless, "[w]ith only one continually monitored site upstream of mining, natural flow conditions along the entire reach of EFAC cannot be established by the existing record of empirical measurements." *Id*.

[8] Pursuant to ARM 17.24.301(61) "[i]ntermittent stream means a stream or reach of a stream that is below the local water table for at least some part of the water year, and obtains its flow from both surface runoff and groundwater discharge."

In other words, there are simply too few data monitoring points to accurately determine historic stream flow on EFAC, including flow in Section 8, which is located upstream of the Rosebud Mine , and Section 15, which is located between Area C and Area B of the Rosebud Mine. DEQ Ex. C, p. 7.

The CHIA describes the two segments of upper EFAC that have had "periods of flow that would be classified as intermittent" as follows in the CHIA: "[t]wo sections of upper EFAC (a reach in T1N R40E Section 8 and a reach in T1N R40E Section 15) were identified in the middle 1980's as possessing intermittent to perennial flow (Figure 6-3), and both of these reaches are currently observed as being ephemeral (see Appendix A, photos 3 and 17). The reach through T1N R40E, Section 8, is upstream of mining in Areas B and C and directly upstream of a large stock dam (PO-937) on EFAC. The reach through T1N R40E Section 15 is also upstream of an instream dam." Petitioners' Ex. 2, p. 9-9.

It is important to note that Section 8 is located upstream of the Rosebud mine and flow in Section 8 has not been impacted by operations of the mine. DEQ Ex. C, p. 7. Accordingly, contrary to Petitioners' assertion, operations at the Rosebud mine have not caused dewatering of this portion of EFAC. *Id*. Further, any change in flow rate in Section 8 of EFAC is due to causes other than mining. *Id*.

DEQ states in the CHIA that in the 1980s and 1990s mining operations adjacent to EFAC in Areas A, B, and C were conducted close to the alluvium, but have since progressed away from the creek. Petitioners' Ex. 2, p. 9-7. As a result, dewatering of adjacent strata and the withholding of runoff in ponds and pits due to mining, may have contributed to lower water levels in the alluvium and reduced baseflow in EFAC where alluvial water contributed to streamflow. *Id*.

Alluvial water levels in EFAC near the Section 15 reach started to steadily decline starting in the mid 1980's and continued to decline through the 1990's (AM4 CHIA Figure 9-92). Petitioners' Ex. 2, p. 9-9. Monitoring of alluvial water levels indicate that this area experienced both natural (starting in the mid to late 1980's) and mine-related (steep declines in 1993 and 1995) drawdown. Petitioners Ex. 2, pp. 9-10. There is an instream dam in this section that may have been the source of some of the water in the stream, but from the early descriptions of the reach, the reach may have been a gaining reach for at least some parts of the year during the 1970's and early 1980's. *Id*.

"Mining activities such as cutting off tributaries to EFAC could have reduced the amount of runoff reaching the Section 15 instream pond and reach. This section may see a return of some instream ponding once the upstream sediment ponds are removed. The resaturation of the spoils and restoration of the premine groundwater gradient may also help to restore some baseflow." *Id*.; DEQ Ex. C, p. 8.

Notably, there are no surface water rights listed with the Montana Department of Natural Resources ("DNRC") for EFAC through Section 15. Petitioners' Ex. 2, p. 9-10. Additionally, "[w]hile macroinvertebrates were documented using the water in Section 15 in the 1970's, it is unknown if water was present every year, only 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*. "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." *Id*.

In other words, DEQ does not have sufficient historical data to determine whether former and existing operations of the Rosebud mine have caused a degradation of water

quantity in Section 15 of EFAC to the extent that the beneficial use of aquatic life support has been adversely affected, or a water right has been impacted. DEQ Ex. C, p. 8.

Nevertheless, it appears that the effects of dewatering in some segments of EFAC alluvium have been counteracted by recharge from pit water discharges made directly into outfalls of EFAC, and from seepage from sediment ponds. *Id*. This conclusion is supported by monitoring data from "a new and more reliable continuous flow monitor" that was installed in late 2011 upstream of the state highway crossing of EFAC at SW-55, which recorded the presence of water for almost all of 2012, which was a relatively dry year. *Id*.; Petitioners' Ex. 2, Fig. 9-2. Current data available to DEQ indicates that this area of EFAC may routinely have flowing or ponded water for months out of the year. DEQ Ex. C, p. 8.

The flow data coupled with observations during regular mine inspections of EFAC indicate that the reach between the location of the Area A facilities and the Area A Tipple, which is located between Area A and Area B of the Rosebud Mine and is downstream of Section 15, has intermittent to perennial water, at least since 2011. *Id*. This reach currently may be artificially enhanced by discharges made pursuant to an MPDES permit, and infiltration. *Id*. This new data indicates that while some segments have seen a decrease in surface flow, other sections have seen an increase in flow, which has caused some segments that were previously ephemeral to be intermittent or perennial. *Id*.

Even if there is a reduction in flow to Section 15 as a result of historic mining, mining operations in AM4 will not affect the quantity of water in this section because any impacts to EFAC surface water flow will occur much further downstream. *Id*. Additionally, it should be noted that a September 2015 Benthic Survey shows surface

water present in Section 15, as do photographs taken by Wade Steere in July 2016. *See* Declaration of Michael Nicklin at ¶ 23; Declaration of Wade Steere at ¶ 5 (attached to Intervenor's Motion).

6. Whether Coal Mining is the Source of Nitrogen that has Allegedly Caused the Impairment of the Lower Segment of East Fork Armells Creek for Aquatic Life Support.

Petitioners assert that forty years of strip-mining have "hammered" EFAC. Petitioners' Br., p. 28. In support of this contention, Petitioners cite to a 2014 DEQ Water Quality Standards Attainment Record for segment MT42K002_110 ("Attainment Record") (Colstrip to the mouth at Armells Creek) for EFAC, which stated that 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[9]. Petitioners' Br., p. 29.

Petitioners further indicated that DEQ 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*. The Department listed "Coal Mining" as an unconfirmed source of the pollutants suspected of causing the violations of water quality standards. [10] *Id.*.

Petitioners also assert that the CHIA "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

[9] The 2014 Attainment Record for this segment of EFAC attributed these poor biotic conditions to nutrient enrichment that was NOT caused by coal mining. Petitioners' Ex. 7, p. 17. The source of the nutrients was identified as "municipal sources and industrial pond seepage" upstream of Colstrip. *Id.*

[10] The only pollutant that was linked to coal mining in this document was salinity (SC and TDS), not nitrogen and chlorides, as indicated by Petitioners. Petitioners' Ex. 7, p. 19.

remaining in soil are a possible source.'" Petitioners' Br., p. 58. Petitioners further assert that "DEQ's acknowledgment that the human health standard has been exceeded demonstrates that the aquatic life standard has also been exceeded." *Id*.

Finally, Petitioners assert that DEQ failed to apply the correct numeric water quality standard for nitrogen to protect aquatic life in EFAC, and other wadeable C-3 streams. Petitioners argue that DEQ should have applied the more stringent standard for nitrogen contained in Department Circular DEQ 12-A ("DEQ 12-A"), rather than the nitrogen standard designed to protect human health, which is the standard that DEQ considered in the CHIA. Petitioners' Br., pp. 55-61.

DEQ disputes these factual allegations on the following grounds:

DEQ's Attainment Record for this segment of EFAC indicates that the "poor and very poor biotic conditions" that resulted in "[b]lackfly larvae" and "midges" making up a large portion of the macroinvertebrates collected during the sampling event for this segment of EFAC, may have resulted from nutrient enrichment not caused by coal mining. Petitioners' Ex. 7, p. 17. The source of the nutrients was identified as "municipal sources and industrial pond seepage" upstream of Colstrip. *Id*.

In response to public comment on this issue, DEQ indicated that "[t]he lower portion of EFAC receives nitrogen-rich effluent from numerous sources including: runoff from the town of Colstrip, the water treatment plant, infiltration and runoff from the golf course (with fertilized and irrigated greens), agriculture, and grazing…." Petitioners' Ex. 1, p. 9. Additionally, the surface and alluvial water quality data analyzed by DEQ for the Rosebud mine, which is discussed in Sections 9.2.6.4 and 9.2.8.9, and summarized in Table 9-7 and 9-8 of the CHIA, revealed that exceedances for nitrate-nitrite nitrogen is uncommon, which indicated to DEQ that the relative contribution of nitrogen to EFAC

from the Rosebud mine is minimal. *Id*. These sources, along with leaking ponds from the Colstrip power plant, also contribute to SC and TDS in the downstream section of EFAC. *Id*.

As indicated in DEQ's Response to Petitioners' Request for Admission No. 24, the 2014 Attainment Record for this segment lists coal mining as a source of the pollution causing the lower segment of EFAC to not meet applicable water quality standards for aquatic life with a "low level of confidence". This is not a determination by DEQ that coal mining is a source of this pollution. Petitioners' Ex. 5, pp. 15-16; DEQ Ex. E, (Affidavit of Eric Urban), pp. 4-5.

The Attainment Records were developed by the DEQ Water Quality Planning Bureau ("Water Quality Bureau") as a mechanism for determining whether a stream is meeting its designated uses. DEQ Ex. E, pp. 2-3. If it is determined from the available water quality data that a stream is impaired due to particular pollutants, then all potential sources of the pollutants located in the watershed were identified by Water Quality Bureau staff. *Id*. However, the sources of the pollutants were not confirmed. *Id*. In other words, the term "unconfirmed source" as used in the Attainment Records, is really a "potential source". It does not mean that it is an actual source of the identified pollutant[11]. *Id*. The actual sources of the identified pollutants are not confirmed until the Water Quality Bureau develops a Total Maximum Daily Load ("TMDL") for the stream that is identified as impaired in an Attainment Record. *Id*. TMDL's have not been developed for upper or lower EFAC. *Id*.

11 The Bureau uses this information to identify streams that require a Total Maximum Daily Load ("TMDL") determination. If a TMDL is developed for a particular stream, the sources of the pollution and the relative contribution of the source for a given pollutant are determined at that time. DEQ Ex. E, Affidavit of Eric Urban, p. 3.

Similarly, as indicated in DEQ's Response to Petitioners' discovery requests, the 2014 Attainment Record for lower EFAC (MT42K002_110-Colstrip to the mouth) identifies Nitrogen (Total) as a cause of impairment of aquatic-life-uses with a "low level of confidence." This is not a determination that nitrogen is a cause of the impairment. Petitioners' Ex. 5, p.15; DEQ Ex. E, p. 3. If a "cause" of impairment is identified with "low confidence" that generally means that the data used to make that causation determination was either outdated or insufficient to make a more definitive determination with respect to causation. DEQ Ex. E, p. 3. "Just because the Attainment Record identifies nitrogen as a "cause" of the impairment of a particular designated use, it does not mean that nitrogen is "actually" causing the impairment." *Id*. It means that the assessor had a low level of confidence in the data used to support that determination. *Id*.

As indicated above, "[w]hen a TMDL is developed for a particular stream, the actual cause and source of the impairment is more precisely determined for that segment of stream and the sources of the pollution and the relative contribution of the source for a given pollutant is determined at that time." *Id*. TMDL's have not yet been developed for the upper or lower segment of EFAC. *Id*.

Further, once again Petitioners have boldly mischaracterized the facts as set forth in the CHIA. DEQ Ex. C, p. 9. For example, the CHIA indicates that "[h]igh nitrogen may be in surface water samples due to residual chemicals from blasting materials, from agricultural activities, or from city runoff and municipal sources." Petitioners' Ex. 2, p. 9-26. Additionally, "samples above the human health limit of 10 mg/L are shown as dark red[']" and "[m]any of the highest values have been detected downstream of active mining and in areas actively used by livestock." *Id*. Thus, while the CHIA acknowledges that mining is a potential source of nitrogen in the water samples that exceeded the

human health standard for nitrogen, agricultural activities, city runoff and municipal sources were also identified as potential sources of the pollutant." *Id.*; DEQ Ex. C, p. 9.

It should be noted that the 2014 Water Quality Attainment Record for upper EFAC (MT 42K002-170-headwaters to Colstrip), which is the reach most impacted by the Rosebud Mine, does not identify nitrogen as a cause of impairment of aquatic life support. The Attainment Record indicates that upper EFAC is impaired for aquatic life support due to "alteration in stream-side or littoral vegetative covers." Petitioners' Ex. 6, p. 12; DEQ Ex. C, pp. 12-13.

Additionally, Petitioners misrepresent DEQ's factual findings contained in the CHIA with respect to violations of water quality standards for nitrogen that protect human health. *Id*. First, Petitioners state that these standards were "repeatedly violated." Petitioners' Br., p. 58. As indicated in Tables 9-7 (surface water exceedances) of the CHIA, out of 46 samples taken for surface water, there were zero exceedances of the human health standard for nitrogen in upper EFAC. DEQ Ex. C, p. 9; Petitioners' Ex. 2, p. 12-42, Table 9-7. All of the surface water exceedances (12 out of 64 samples) occurred downstream of Colstrip, where potential sources other than mining have been identified. *Id*.

With respect to groundwater exceedances for nitrogen in upper EFAC, Table 9-9 indicates that nitrogen was rarely detected in spoil wells and were not persistent over time in any given well sample. Petitioners' Ex. 2, p. 12-48 (Table 9-9); DEQ Ex. C, p. 10. The fact that groundwater exceedances of the human health standard for nitrogen were not persistent over time indicated that nitrogen in spoils water from the mine is not an issue to be concerned about. *Id*.

With respect to DEQ's alleged failure to apply the correct numeric water quality standard for nitrogen to protect aquatic life in EFAC, and other wadeable streams, it is important to note, that the standards set forth in DEQ-12A only applied to wadeable streams analyzed in the CHIA. DEQ Ex. C, p. 10. DEQ-12A defines "wadeable stream" as "a perennial or intermittent stream in which most of the wetted channel is safely wadeable DEQ-12A was adopted by the Board of Environmental Review under its rulemaking authority in § 75-5-301(2), MCA, and became effective on August 8, 2014.[12] Additionally, it should be noted, that DEQ-12A As indicated in DEQ's Responses to Petitioners' discovery requests, Rosebud Creek is the only stream analyzed within the CHIA that is a wadeable C-3 stream for its entire reach. Petitioners' Ex. 16, p. 12; DEQ Ex. C, p. 10. There are additional stream reaches that are wadeable, but not entire streams other than Rosebud Creek. *Id*. Therefore, the nitrogen standard for the protection of aquatic life contained in DEQ 12-A would only be applicable to those reaches of EFAC that are wadeable, which means by definition that they are perennial or intermittent. Petitioners' Ex. 5, p. 16; DEQ Ex. C, p. 10. They are not applicable to those portions of EFAC or any other stream that are ephemeral. *Id*.

At the time that the CHIA was developed, there was very little Total Nitrogen data available for the streams analyzed within the CHIA, including EFAC. However, since the available data indicated that coal mining was not the source of the nitrogen in

12 Pursuant to ARM 17.30.637(4), these numeric water quality standards apply to perennial/intermittent streams but not to ephemeral streams . However, in a recent opinion issued by Judge Kathy Seeley of the First Judicial District Court, Lewis and Clark County, the Court indicated that surface waters that are classified as C-3 waters under Montana's water use classification system, may not be treated as ephemeral streams for purposes of determining the applicable water quality standards, without complying with the procedures set forth in ARM 17.30.615(2) for reclassifying a specific water body in Montana. However, the Written Findings and CHIA for AM4 were issued prior to Judge Seeley's opinion. DEQ requests that the Board take judicial notice pursuant to Rule 201, M.R.Evid., of the fact that DEQ-12A became effective on August 8, 2014.

lower EFAC, there would have been no reason for DEQ to do further analysis applying the more stringent standards contained within DEQ 12-A. DEQ Ex. C, p. 10.

Even if DEQ had applied the more stringent numeric nutrient standards contained in DEQ 12-A, the results of DEQ's analysis would not have changed. The total nitrogen samples taken at SW-55, which is the surface water monitoring station located on that portion of upper EFAC which has recently demonstrated intermittent flow, have not exceeded the DEQ 12-A standard of 1.3 mg/L for nitrogen. DEQ Ex. C, p. 11.

7. Whether Coal Mining is the Source of Sulfates and Chlorides that has Allegedly Caused the Impairment of the Lower Segment of East Fork Armells Creek for Aquatic Life Support.

Petitioners assert that during the permit application process, DEQ hydrologists raised concerns that "potential inputs of additional salinity, sulfate, and chloride to EFAC may cause material damage to the protected beneficial use [of] aquatic life support for C-3 waters." Petitioners' Br., p. 40.

Petitioners also indicate that based on information contained in the CHIA, sulfate levels in certain reaches of EFAC adjacent to Area B mining have exceeded thresholds for harm to aquatic life. *Id*.

With respect to chlorides, Petitioner states that DEQ's 2014 Attainment Record for lower EFAC (segment MT42K002_110), which runs for 32.36 miles from Colstrip to the mouth at Armells Creek, indicated that this segment of EFAC is not meeting water quality standards for aquatic life due to chlorides. Petitioners' Br., p. 41. Additionally, Intervenors PHC for AM4 indicates that there have been increases in chloride concentrations in EFAC that are attributed to the use of magnesium chloride for dust control on haul roads at the mine. *Id*. Intervenor predicted that the elevated chloride levels will slowly attenuate with time. *Id*.

Further, DEQ's AM4 CHIA also noted "extremely high" chloride levels in EFAC due 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*. Petitioner notes that in "response to the DEQ's concerns, Intervenor recently stopped using magnesium chloride as a dust suppressant. However, the chloride pollution associated with past use will "slowly attenuate with time." *Id*. at 41-42.

DEQ disputes these factual allegations on the following grounds:

DEQ's concerns with respect to sulfates and chlorides were raised in the AM4, Seventh Round Acceptability Deficiency letter dated June 3, 2014. In the letter, DEQ requested additional information from Intervenors, including an aquatic life survey, to address any concerns DEQ staff had regarding the potential for material damage to EFAC from sulfate, chloride, or salinity due to the proposed mining operation in AM4. *Id*. After DEQ reviewed the additional information provided by Intervenors in the ABC PHC Addendum to Appendix M of the AM4 permit application, no mitigation was required as no material damage was anticipated to EFAC as a result of increased levels of sulfates or chloride from mining. DEQ Ex. C, p. 11. However, the Written Findings for the AM4 permit amendment contains stipulations for continued aquatic life monitoring in all intermittent reaches of EFAC. Petitioners' Ex. 16, pp. 18-19; DEQ Ex. C, p. 13.

With respect to DEQ's concerns about the impact of elevated levels of sulfates on aquatic life support in lower EFAC, even though the Attainment Record for this segment of EFAC identifies SC and TDS as a cause of impairment with a "low level of confidence" for aquatic life support, it does not mean that SC and TDS are actually causing impairment. DEQ Ex. E, Affidavit of Eric Urban, pp. 3-4. Likewise, just because

coal mining is identified as an "unconfirmed source" of SC and TDS, it does not mean it is the actual source. *Id*.

Additionally, as indicated in the CHIA, DEQ applied the guideline sulfate toxicity threshold of 2,000 mg/L for aquatic life to account for the very high hardness of stream water. Petitioners' Ex. 2, p. 9-8. Even in baseline samples, sulfate thresholds for aquatic life were exceeded, however, macroinvertebrate communities in Eastern Montana are likely adapted to high sulfate water. *Id*.; DEQ Ex. C, p. 11. Therefore, based on DEQ's review of the available data, DEQ was satisfied that no adverse impacts to aquatic life in EFAC were anticipated as a result of increased levels of sulfates. *Id*.

Further, it should be noted, that the high chloride concentrations referenced in the CHIA between Area A Tipple and SW-55, which is located between Area A and Area B, was "likely from flushing of chloride in the soil and alluvium by the [Intervenor's] Area A facilities in addition to chloride from leaking power plant ponds." *Id*. at 9-8; DEQ Ex. C, p. 11. Hence, leaking ponds at the Colstrip Power Plant provided a source of elevated chlorides in addition to the chlorides from facility operations at Area A of the mine. *Id*. MSUMRA does not require DEQ to consider impacts from non-mining sources, such as the Colstrip Power Plant, in the CHIA. *Id*. (citing § 82-4-227(3), MCA).

Additionally, regardless of the cause of the existing high chloride concentrations in EFAC, the proposed mine plan for the AM4 Amendment "is designed not to contribute additional chloride to the stream because lignin sulfonate will be used on roads instead of magnesium chloride." *Id*.; DEQ Ex. C, p. 12. Therefore, DEQ concluded that the proposed operations in AM4 are designed to prevent material damage to EFAC from chlorides. *Id*.

Finally, Petitioners are incorrect in their assertion that the 2014 Attainment Record for lower EFAC identifies chlorides as a cause of impairment for aquatic life support. Petitioners' Br., p. 41. Although the narrative summary contained on page 17 of the Attainment Record indicates that salinity/TDS/chlorides is a cause of impairment, this does not mean that chloride is actually a cause. DEQ Ex. E, p. 4. It simply means that "salts" in general are a cause of impairment. *Id*. On page 20 of the same document, DEQ identified the individual pollutants that were identified as a cause of impairment. Salinity and TDS are identified separately as causes of impairment, but chloride is not identified as a cause. *Id*. at 4. Therefore, the 2014 Attainment Record for lower EFAC does not identify chloride as a cause of impairment for aquatic life support. *Id*.

8. Whether Coal Mining is the Source of Alterations in Littoral Vegetative Cover that has Allegedly Caused Impairment of the Upper Segment of East Fork Armells Creek for Aquatic Life Support.

Petitioners assert that with respect to the upper segment of EFAC (segment MT42K002_170 -headwaters to Colstrip), the Water Quality Bureau determined with "medium confidence" that the stream was not meeting water quality standards due to "alteration in stream-side or littoral vegetative covers." The unconfirmed cause was "surface mining." The 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."[13] Petitioners' Br., p. 30; DEQ Ex. A, pp. 103-127 and 147-155. The 2014

[13] It should be noted that the pit mine never cut through the stream channel and, therefore, was not evidence of habitat impairment due to mining. The referenced record states that "A mine employee said the open pit mine cut through the stream channel in one spot, but was unable to confirm on site or through aerial photographs. Petitioners' Ex. 6, p. 6; DEQ Ex. E, Affidavit of Eric Urban, pp. 5-6.

Attainment Record for upper EFAC is the sole evidence that Petitioners relied on to demonstrate that upper EFAC is impaired due to coal mining. DEQ Ex. A, p. 111.

DEQ disputes this factual allegation on the following grounds:

During the public comment period, DEQ indicated that the 2014 Attainment Record for upper segment of EFAC was conducted in 2006, and no substantive updates have been conducted since this initial assessment. Petitioners' Ex. 1, p.8. As indicated in DEQ's response to Petitioners' discovery requests, the conclusion that aquatic life was impaired in 2006 was based upon evidence of habitat impairment that was incorrect. Petitioners' Ex. 16, p. 13. No aquatic life survey was done at that time to support the aquatic life impairment determination[14]. *Id*. Since the 2006 assessment there has been extensive data collected, including aquatic life surveys for EFAC. *Id*.

The CHIA summarizes the results of various aquatic life surveys conducted along EFAC and Rosebud Creek beginning in the 1970s. See Petitioners' Ex. 2, p. 9-7. With regards to the studies conducted in the 1970's, DEQ concluded that the surveys "provide an indication of the presence or absence of aquatic life but cannot be used to assess the quality of the habitat or stream water. *Id*.; DEQ Ex. C, p. 12. This conclusion is consistent with the position of the Water Quality Bureau that the health of aquatic life in eastern Montana streams cannot be determined by the completion of a macroinvertebrate study alone. DEQ Ex. E, p. 6. The surveys indicate that, in the past, there has been sufficient water at the sites that were sampled to provide aquatic habitat and support a number of aquatic species." DEQ Ex. C, p. 12.

[14] According to the Water Quality Bureau, no aquatic life survey was done at that time because this segment of stream was ephemeral. Therefore, no water samples or aquatic life samples could be collected at that time. Only habitat could be analyzed as a result. DEQ Ex. E, Affidavit of Eric Urban, p. 5-6.

DEQ also summarized the results from a 1995 wetland assessment conducted on two reaches of EFAC (See Fig. 6-3 of the CHIA) that were previously sampled in the 1970s as part of a macroinvertebrate inventory. Petitioners' Ex. 2, pp. 9-7 to 9-8. This section of EFAC has been observed in recent years to have larger stretches of intermittent to perennial water with wetland vegetation than was identified in 1995 (see Appendix A, photos 5 – 7 and 10 – 12). *Id*. Since it is unlikely that the 1995 assessment missed wetland features that were present in this reach, DEQ concluded that the extent of the 1995 wetland area has grown compared to the 1970s, during which time there was "insufficient flow for macroinvertebrate sampling". *Id*.

To address any concerns that DEQ had about the impact of surface mining on aquatic life support in EFAC, DEQ required Intervenor to hire a consultant to conduct an updated aquatic life survey for upper EFAC. Petitioners' Exs. 20-23. DEQ hyrdologists had observed an increase in EC, sulfates and chlorides in this segment of EFAC, but were not able to confirm the source. DEQ Ex. C, p. 12. Mining operations in Area A were identified as a potential source of chlorides due to the use of magnesium chloride for salting access roads located within the mine plan area. *Id*. However, the State of Montana and Rosebud County also used magnesium chloride on state and county roads located within the mine plan area. *Id*.

Additionally, baseline macroinvertebrate data from the aquatic surveys performed in the 1970s was outdated and DEQ wanted the mine to collect additional data that could be used to get cursory qualitative measurements of aquatic life use in EFAC. DEQ Ex. C, p. 13. DEQ would not be able to use the data collected by the mine to conduct a quantitative analysis, because the data was too variable to compare and the methods used to sample the data in the 1970s were different than those used today. *Id*. Therefore, there

could be no direct numeric comparison between the data collected in the 1970s and that collected by the mine in 2014. *Id*. DEQ also made it a condition of Intervenors' AM4 permit that the mine continue to conduct aquatic life surveys to monitor EFAC for aquatic life support throughout the life of mine. *Id*.

In October 2014, Intervenor hired a consultant to conduct an aquatic life survey with the objective of evaluating aquatic life support in upper EFAC (segment MT42K002_170). Petitioners' Ex. 1, p. 8-9. The results of this survey show that the aquatic environments in upper EFAC support a diverse assemblage of aquatic insects, and consist of taxa commonly found in eastern Montana prairie streams. Petitioners' Ex. 1, p. 9. DEQ concluded that the recent aquatic survey provides qualitative evidence that streams impacted by mining can still support a diverse macroinvertebrate assemblage. *Id*.; DEQ Ex. C, p. 13.

The 2014 aquatic life survey concluded that the "low quality of habitat and benthic communities" do not provide a "strong indicator of water quality impacts due to mining activity." Petitioners' Ex. 10, p. 12. The aquatic communities in EFAC are more likely affected by the lack of flow (ephemeral nature[15]) and natural levels of organic matter that exist in EFAC, than they are by mining. *Id*. "Although EFAC supports aquatic life, aquatic life criteria are not met." *Id*. Ongoing aquatic life monitoring will likely demonstrate natural variability in aquatic life communities and is "unlikely to demonstrate impacts from mining." *Id*.

15 The 2014 Attainment Record for this segment of EFAC indicates that the stream is "ephemeral"; that in spite of the fact that mining activity surrounds the stream for much of its reach, areas that have been reclaimed are in good condition; and in 1996 the stream was "[l]isted as partially supporting aquatic life, swimmable, and warm water fishery. The causes were nutrients and suspended solids. The sources were agriculture and range land." Petitioners' Ex. 6, pp. 5-8.

It should be noted that physical habitat is only one of the factors typically considered by the Water Quality Bureau in making an impairment determination. DEQ Ex. E, p. 6. The other two factors that are considered are chemistry and biology. *Id*. In Eastern Montana, the Water Quality Bureau has found that stream habitat and water chemistry is highly variable, which results in a highly variable biological community due to the harsh conditions of the natural environment. *Id*. Accordingly, just because an aquatic life survey indicates that a stream segment may contain less than desirable macroinvertebrate communities, that does not mean that the cause of this condition is man-made and or that the stream is impaired as a result. *Id*.

Additionally, as explained above, just because "alteration in stream-side or littoral vegetative covers" is listed as a cause of the impairment with "medium confidence", it does not mean it is actually the cause of the impairment. *Id*. at p. 5. Likewise, just because surface mining is listed as an "unconfirmed source" of the alteration of stream-side vegetative covers, it does not mean that it is actually the source. *Id*.

9. Whether the 2014 Aquatic Life Survey was Properly Conducted in Accordance with DEQ Standards for Aquatic Life Surveys.

Petitioner asserts that in October 2014, Intervenor's consultant conducted an aquatic life survey of EFAC at DEQ's request, but failed to "conduct an assessment that would determine the creek's compliance with water quality standards," and failed to follow DEQ, Standard Operating Procedure: Water Quality Assessment Process and Methods (2006). Petitioners' Br., pp. 42-43. According to Petitioners, "The survey was not intended to and did not follow the Department's assessment metrics and protocols for determining compliance with water quality standards." Petitioners' Br., p. 43. Petitioners also indicated in their brief that the DEQ personnel who reviewed the aquatic life study

were hydrologists from the Coal Program, and not biologists from DEQ's Water Quality Bureau, suggesting they were not qualified to review the study and make that determination. *Id*. at 45; DEQ Ex. A, pp. 113-119.

Petitioners also dismissed the conclusions drawn by the 2014 macroinvertebrate study that the creek was meeting the narrative standard for the beneficial use of aquatic life, because the 2014 study did not follow DEQ standard operating procedures. DEQ Ex. A, pp. 113-119.

DEQ disputes these factual allegations on the following grounds:

Prior to conducting the study, DEQ consulted with Dave Feldman, former Macroinvertebrate Specialist with the Water Quality Bureau, who provided Intervenor's consultant with a copy of DEQ's sampling methodology (WQPBWQM-009 (2012)) for how to collect macroinvertebrate samples in different habitats in Montana. DEQ Ex. E, p. 6. At the request of DEQ Coal Program staff, Dave Feldman advised Penny Hunter how to collect samples, but did not advise her how the sample results could be used to determine aquatic life health. *Id*. Because of the high variability of the natural system, the DEQ Water Quality Bureau does not believe that the health of aquatic life in eastern Montana streams can be determined by the composition of a macroinvertebrate sample alone. *Id*.

Additionally, the 2014 aquatic life survey conducted by Intervenors' consultant was used by DEQ Coal Program staff to make a material damage determination with respect to the impact of the proposed operations of AM4 on the beneficial use of aquatic life support. DEQ Ex. E, p. 7. It was not used by the DEQ Water Quality Bureau staff in making an impairment determination for aquatic life in EFAC. *Id*. For this reason,

Intervenors' consultant was not required to follow DEQ standard operating procedures ("SOPs") for making stream segment impairment determinations. *Id*.

10. Whether the Rosebud Coal Seam is Saturated with Water and Functions as an Aquifer.

Petitioners assert that the Rosebud coal seam that Rosebud Mine is removing is saturated with water and functions as an aquifer. Petitioners' Br., p. 35. The Rosebud coal aquifer contains some of the highest quality groundwater in the area. Groundwater in the Rosebud coal aquifer includes high quality Class I water. *Id*.

DEQ disputes this factual allegation as follows:

Although the Rosebud coal seam has been referred to as an aquifer[16] because it contains and transmits water, it is generally not regarded as such, even though locally it may offer a limited water supply. Petitioners' Ex. 2, p. 8-6 and (Tables 8-2, 8-3); DEQ Ex. D, p. 5. Nevertheless, the Rosebud and McKay coal seams are the most reliable sources of shallow groundwater in the area. *Id*. However, the low transmissivity and low yield from the coal seams makes them a less than desirable source as a dependable water supply. *Id*. The most reliable water supply comes from sandstone units in the underburden and thus most wells are completed in the underburden." *Id*.

In addition to providing limited water quantity, the quality of the water in the Rosebud coal aquifer, based on measures of specific conductivity ("SC"), varies from

16 Section 82-4-203(5), MCA, defines 'aquifer' as "any geologic formation or natural zone beneath the earth's surface that contains or stores water and transmits it from one point to another in quantities that permit or have the potential to permit economic development as a water source." DEQ maintains that based on the definition of aquifer under MSUMRA, the Rosebud coal seam would be considered an aquifer in some parts of Area F and not an aquifer in other parts of Area F due to a lack of potential to permit economic development of the resource. Petitioners Ex. 16, pp. 2-3.

Class I, II and III, with most samples falling into Class II. At Big Sky Area B, Rosebud coal groundwater is Class II and Class III. Petitioners' Ex. 2, p. 8-11; DEQ Ex. D, p. 5.

11. Whether Spoils Water from the Rosebud Mine will Cause a Change in Classification of Groundwater from Class I to Class II or III in the Rosebud Coal Seam.

Petitioner alleges that after the coal is removed from the Rosebud coal aquifer in Area B, the overburden that is backfilled into the pit will eventually become saturated with water, creating a "spoils aquifer," and recovery of the spoils aquifer will take "centuries." Petitioners' Br., pp. 35-36. Over time, water quality in the spoils aquifer will degrade with higher salt concentrations. *Id*. As the spoils aquifer re-saturates, the "polluted" water will begin to migrate downgradient away from the project boundary and south towards the Big Sky Mine. *Id*.

Petitioner further alleges that DEQ has documented high quality Class I groundwater 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. The polluted spoils groundwater would likely be Class III ground water. *Id*.

DEQ disputes this factual allegation as follows:

DEQ does not dispute the fact that as the spoils aquifer recharges, the spoils water will contain higher concentrations of salts. Petitioners' Ex. 2, p. 9-59; DEQ Ex. D, p. 6. However, upon saturation of the spoils aquifer, only spoil water from the southern and western parts of Area B will move southeast towards the Big Sky Mine permit areas. *Id*. Spoil water from AM4 cuts will move northeast towards EFAC. Petitioners' Ex. 2, p. 13-21 (Fig 8-5); DEQ Ex. D, p. 6. Therefore, there will be no interaction between spoil water

from AM4, which flows toward EFAC, and spoils water from the already permitted portions of Area B, which flow toward the Big Sky Mine. *Id.*

Additionally, DEQ denied in its written discovery responses that baseline measurements contained in Appendix D of the CHIA in Rosebud coal wells between the Rosebud Mine and Big Sky Mine have groundwater conductivity which falls in the Class I groundwater range, but admitted that the CHIA included reference to an EC measurement of 880µS/cm taken in 1996 in a Rosebud coal well ("ARCM67") north of the Big Sky Mine Area A, which falls within the range of Class I groundwater. Petitioners Ex. 5, p. 23.

DEQ maintains that a single measurement from a single well in 1996 does not demonstrate that there is Class I groundwater in the area between Rosebud Area B and the Big Sky Mine that will be degraded to Class II or III groundwater by migrating spoil water. Petitioners' Ex. 5, p. 23; DEQ Ex. D, p. 6. Additionally, it is important to note, that the sample well (ARCM67) from which the single sample was taken that Petitioners claim is indicative of Class I groundwater in the area, is not located in the area where Area B spoil water moves towards the Big Sky Mine. *Id.* Groundwater flow from spoil water near this well moves north away from the Big Sky Mine. *Id.*; Petitioners' Ex. 2, Fig. 7-3 and Fig. 8-5.

In reality, "Rosebud coal water quality in the area between the two mines (outside the permit areas of both mines) is variable and is currently unaffected by spoil." Petitioners' Ex. 2, p. 9-59; DEQ Ex. D, p. 6. DEQ does not expect that a numeric water quality standard will be violated by the spoils water or that any beneficial uses of groundwater in this area will be adversely affected by the proposed operations in AM4.

Id.; DEQ Ex. D, pp. 6-7. Therefore, DEQ does not expect material damage to result outside the permit area from migrating spoils water from AM4. *Id.*

DEQ concluded that there is a large deposit of clinker throughout much of the area between the two mines that will enhance aquifer recharge and will dilute spoil water quality impacts in this area. *Id*. DEQ Ex. D, p. 7. "[T]herefore it does not appear that a parameter will increase to a level that renders the water unsuitable for domestic use or livestock and wildlife watering, or harmful, detrimental, or injurious to the beneficial uses listed for Class II and Class III groundwater." *Id*.; DEQ Ex. D, p. 7.

Table of Authority

Cases

Statutes

Rules and Regulations

DEQ EXHIBIT B

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MONTANA BOARD OF ENVIRONMENTAL REVIEW

IN THE MATTER OF: **APPEAL AMENDMENT AM4 WESTERN ENERGY COMPANY ROSEBUD STRIP MINE AREA B, PERMIT NO. C1984003B**	Case No.: BER 2016-03 SM **AFFIDAVIT OF CHRIS YDE IN SUPPORT OF DEQ'S BRIEF IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT**

I, Chris Yde, swear (or affirm) under oath that:

1. I am of majority age;

2. I graduated from Montana State University in 1974 with a Bachelor's of Science in Fish and Wildlife Management, and in 1977 with a Master's of Science in Fish and Wildlife Management;

3. I worked as wildlife biologist for various organizations, including the Bureau of Land Management (5 years), Montana Fish, Wildlife and Parks (9 years), Montana Department of State Lands (3 years), and Montana Department of Environmental Quality ("DEQ") (10 years);

4. I am currently the Section Supervisor for the Coal Section of the Coal and Opencut

Mining Bureau ("Coal Program") at the DEQ and have been employed in that position for nearly 11 years;

5. The Coal Program is responsible for permitting strip and underground coal mines in Montana pursuant to its authority under The Montana Strip and Underground Mine Reclamation Act ("MSUMRA") and the applicable administrative rules;

6. As a part of my regular duties at DEQ, I oversee review of applications for permits, including amendments and major revisions to permits for strip and underground mines in Montana;

7. As Section Supervisor of the Coal Program, I was responsible for reviewing the analysis of the hydrologists that worked on the preparation of the CHIA for the AM4 Amendment to Western Energy Company's Rosebud Coal Mine Area B ("AM4") permit application;

8. Angela McDannel, who is now retired from DEQ, served as the primary groundwater hydrologist, and Emily Hinz was the primary surface water hydrologist that worked on development of the AM4 CHIA;

9. Once an application for a permit is received, DEQ must first determine whether the application is administratively complete, which means that the application "contains information addressing each application requirement in § 82-4-222, MCA, and the rules implementing that section and all information necessary to initiate processing and public review." If the application is complete, DEQ must notify the applicant in writing and make a determination whether to prepare an environmental impact statement ("EIS") under the Montana Environmental Policy Act ("MEPA");

10. Western Energy Company's application for the AM4 was submitted on June 15,

2009. DEQ notified Western Energy Company ("Intervenor") on August 7, 2009, that the application was administratively complete. DEQ also notified Western Energy that preparation of an EIS would not be necessary, as the proposed operation of AM4 was not expected to significantly affect the quality of the human environment in Montana;

11. After determining that the application for AM4 was administratively complete, DEQ was required to determine the "acceptability of the application," which means that the "application is in compliance with all of the applicable requirements of [MSUMRA] and the regulatory program pursuant to [MSUMRA];"

12. Between August 7, 2009 and July 8, 2015, DEQ sent eight deficiency notices to Intervenor requesting additional technical information on the application. On July 8, 2015, DEQ notified Intervenor that the application was acceptable and met all of the legal requirements for DEQ to make a decision whether to grant or deny the permit application;

13. Pursuant to § 82-4-227(3), MCA, the burden is on the applicant to affirmatively demonstrate to DEQ through the submission of a comprehensive permit application, which includes the preparation of a probable hydrologic consequences ("PHC") assessment, that the proposed operation of the mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

14. Prior to approving an application for a strip or underground mining permit or major revision to a permit, DEQ must first assess the probable cumulative impact of all anticipated mining in the area on the hydrologic balance, and make a determination that the "proposed operation" of the mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

15. The Administrative Rules of Montana ("ARM") defines "Cumulative hydrologic

impact area ("CIA")," as "the area, including, but not limited to, the permit and mine plan area within which impacts to the hydrologic balance resulting from the proposed operation may interact with the impacts of all previous, existing and anticipated mining on surface and ground water systems" (See ARM 17.24.301(32));

16. For purposes of the CIA, ARM 17.24.301(32) states that "[a]nticipated mining includes, at a minimum, the entire projected lives through bond release of all operations with pending applications .... for which there is actual mine-development information available";

17. Based on the plain language of § 82-4-227(3)(a), MCA, and ARM 17.24.301(32), DEQ limited its cumulative hydrologic impact assessment ("CHIA") for AM4 to those areas within which impacts to the hydrologic balance resulting from the proposed operation in AM4 may interact with the impacts of all previous, existing and anticipated mining, including all pending permit applications for which actual mine-development information was available at the time the CHIA was being prepared;

18. DEQ had multiple communications with Intervenor concerning the scope of the PHC, including DEQ's interpretation of which areas of the Rosebud Mine needed to be included in the PHC for AM4;

19. DEQ advised Intervenor that it was not necessary to include the proposed operations in Area F or the additional minor revisions in Area A in the PHC for AM4;

20. With respect to Area A MR62 and MR66, these applications were both minor revisions, which by definition must not result in changes that affect the hydrologic balance. (See ARM 17.24.301(66) and (72)) Therefore, they were not included in the CHIA;

21. With respect to Area B-Ext. (See Petitioners' Br., Ex. 26), this area was amended

to the Area B permit on January 31, 1995 (Area B, AM1). A map of the Area B-Ext. that was approved in 1995 is attached hereto as Ex. B1. The written findings for this decision included an update to the Area B CHIA (See Petitioners' Br., Ex. 15). Therefore, the approved mining within this area was included in the hydrologic impact assessment contained in both the PHC and CHIA for AM4;

22. An application for a minor revision (MR76) to the Area B permit was submitted to DEQ on January 25, 2016. Since the written findings for the AM4 permit application, which includes the CHIA, were published on December 4, 2015, the MR76 application was not pending before DEQ, and was not included in the CHIA for AM4;

23. Intervenor submitted an application to DEQ for a new surface mine permit for Area F (Permit ID Number C2011003F) on November 2, 2011. On August 1, 2012, DEQ determined the application was complete and began its review of the application for acceptability. The permit application had been through three deficiency reviews by DEQ and still was not determined to be acceptable at the time the AM4 CHIA was developed;

24. Nevertheless, the anticipated mining in Area F did not need to be included in the PHC for AM4 because there was no hydrologic connection between Area F and Area B or AM4. Therefore, there would be no interaction between impacts from AM4 and impacts from Area F on the hydrologic balance in the area;

25. Impacts from Area F will occur primarily in the West Fork Armells Creek ("WFAC") drainage, while impacts from AM4 will occur only in the East Fork Armells Creek ("EFAC") drainage. No impacts from Area F will occur in the EFAC drainage. Impacts from all of Area B are limited to the EFAC, with the exception of impacts from a very small portion of Area B-Ext that crosses the surface water divide into Lee Coulee,

which drains into the Rosebud Creek drainage;

26. Because the proposed operations in AM4 and the proposed operations in Area F affect different hydrologic units or drainages, it is more appropriate to address the cumulative impacts of the proposed operations in Area F in a separate CHIA for Area F, if and when the permit application is determined by DEQ to be acceptable;

27. Additionally, even though the application for Area F was pending prior to DEQ issuing its written findings for AM4, the mine-plan for Area-F continued to evolve, and there was not sufficient data available at the time for DEQ to perform an adequate analysis of the hydrologic impacts from Area F in the AM4 CHIA;

28. DEQ issued its written findings for AM4 on December 4, 2015, thereby granting Intervenor's AM4 permit application. Based on the information provided by Intervenor in the permit application, and based on DEQ's assessment of the probable hydrologic consequences for all anticipated mining on the hydrologic balance, DEQ determined that the proposed operations in AM4 would not cause material damage outside the permit area.

FURTHER AFFIANT SAYETH NOT.

DATED this 20th day of July, 2016.

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

By: _____
CHRIS YDE
DEQ Coal Section Supervisor

Subscribed and sworn to (or affirmed) before me this 20 day of July, 2016, by CHRIS YDE.

_____

NAME
NOTARY PUBLIC for the State of Montana
Residing in Lewis and Clark County.
My Commission Expires: May 19, 2016

(SEAL)

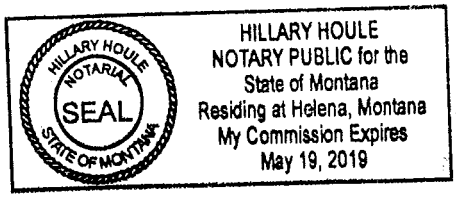
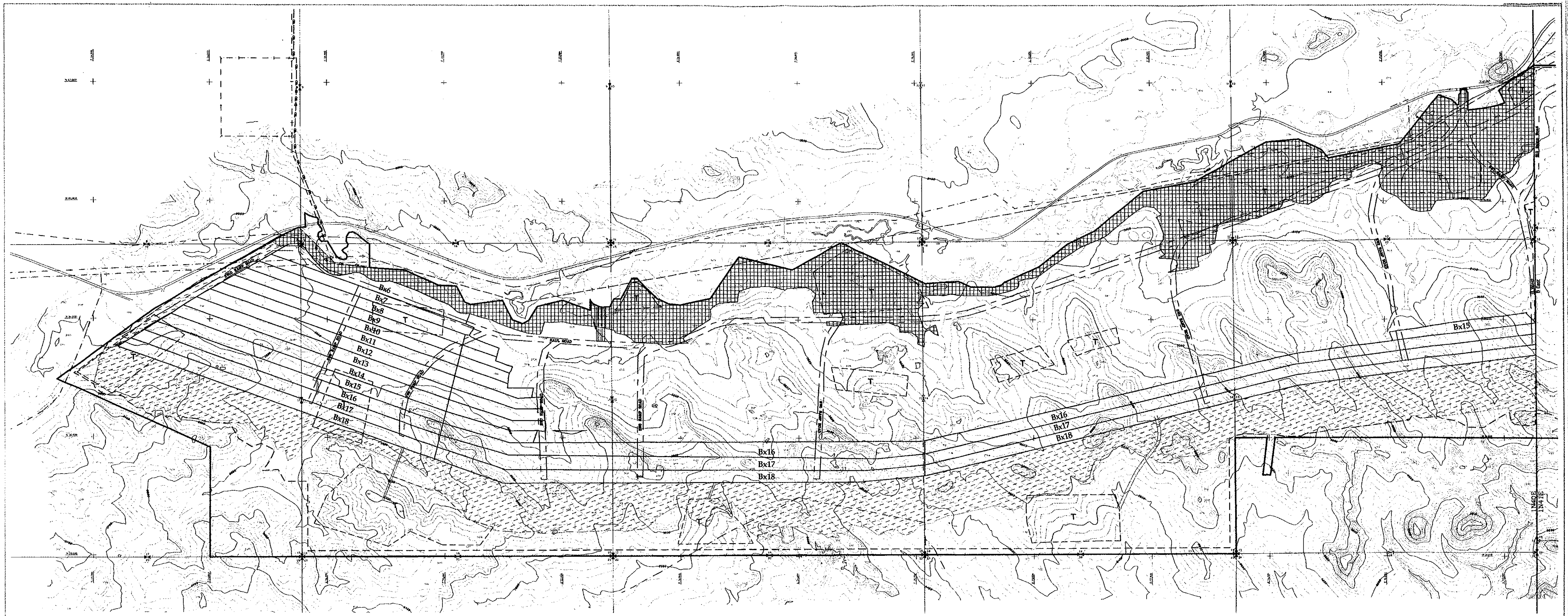


Exhibit B-1

Area B-Extension Mine Plan



LEGEND

Powerlines	
CNG Gas Line	
Water Line	
Underground Power Cable	
Phone Line	
ACCP Slurry Pipeline	
Waste Water Pipeline	
Area A Shop Water Pipeline	
Power Cable	
Dust Suppression Water Line	
Chain Link Fence	
Railroad Tracks	
Found Corner Monument	
Corner Position As Established By Western Energy Company, Or Protracted From Glo Records	
Dragline Corridor	
County Road	
Haulroad	
Permit Boundary	
Disturbance Boundary	
Mined Out (01/01/2015)	
Bx 11	Mine Passes & Identification
Highwall Reduction Area	
Boxcut Reduction Area	
T	Topsoil Stockpiles & Access Roads
Scoria Pits	

N

CERTIFICATE OF ENGINEER

[illegible]

SEAL

REVISION	DESCRIPTION	DATE	CAD DESIGNER	CHECKER
Rev 3	[illegible]	[illegible]	DM	DP
Rev 2	[illegible]	[illegible]	CD	BC
Rev 1	[illegible]	[illegible]	CD	DP

Western Energy Company - *Rosebud Mine*
A Subsidiary of WESTMORELAND COAL COMPANY
P.O. 99 Colstrip, MT 59323 [illegible]

AREA B EXT

EXHIBIT A-5

Approximate Mine Plan

GRAPHICS DESIGNER: DM	DATE COMPLETED: 2015-02
DESIGNED BY: RB	Base: Premier
SCALE: 1" = 400'	Date Approved: -
CAD DRAWING: B Mineplan MR68 2015 02.dwg	

DEQ EXHIBIT C

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MONTANA BOARD OF ENVIRONMENTAL REVIEW

IN THE MATTER OF: **APPEAL AMENDMENT AM4 WESTERN ENERGY COMPANY ROSEBUD STRIP MINE AREA B, PERMIT NO. C1984003B**	Case No.: BER 2016-03 SM **AFFIDAVIT OF EMILY HINZ, Ph.D. IN SUPPORT OF DEQ'S BRIEF IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT**

I, Emily Hinz, Ph.D., swear (or affirm) under oath that:

1. I am of majority age;

2. I graduated from Boise State University in 2012 with a Ph.D. in Geophysics. I also graduated from the University of Texas at Dallas in 2007 with a Master's of Science in Geosciences and 2005 with a Bachelor's of Science in Geosciences;

3. I am currently employed as a Computer Software Engineer with Montana Fish, Wildlife and Parks ("FWP") and have been employed in that position for less than a year;

4. I was previously employed by the Montana Department of Environmental Quality ("DEQ") as a hydrologist, in the Coal Section of the Industrial and Energy Minerals Bureau. I served in that position for 4.5 years;

5. The Coal Section of the Industrial and Energy Minerals Bureau is responsible for permitting strip and underground coal mines in Montana;

6. As a part of my regular duties at DEQ, I reviewed applications for permits and major revisions to permits for strip and underground mines in Montana;

7. I was one of the hydrogeologists that worked on the preparation of the CHIA for The AM4 Amendment to Western Energy Company's Rosebud Coal Mine Area B ("AM4"). I served as the primary surface water hydrogeologist, while Angela McDannel, who is now retired from DEQ, served as the primary ground water hydrologist on the CHIA;

8. Pursuant to § 82-4-227(3), MCA, the applicant must affirmatively demonstrate to DEQ through the submission of a comprehensive permit application, which includes the preparation of a plan for protection of the hydrologic balance ("Plan for Protection") and a probable hydrologic consequences ("PHC") determination, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

9. ARM 17.24.301(93) defines "probable hydrologic consequences" as "the projected results of proposed strip or underground mining operations that may reasonably be expected to alter, interrupt, or otherwise affect the hydrologic balance. The consequences may include, but are not limited to, effects on stream channel conditions and the aquatic habitat on the permit area and adjacent areas.";

10. Section 82-4-203(2), MCA, defines "adjacent area" as "the area outside the permit area where a resource or resources, determined in the context in which the term is used, are or could reasonably be expected to be adversely affected by proposed mining operations,

including probable impacts from underground workings.";

11. Section 82-4-227(3) also provides that prior to approving an application for a strip or underground mining permit or major revision to a permit, DEQ must first assess the probable cumulative impact of all anticipated mining in the area on the hydrologic balance, and make a determination that the "proposed operation" of the mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

12. DEQ relies primarily on the information included in the permit application, including the Plan for Protection and the PHC to assess the probable cumulative impact of all anticipated mining on the hydrologic balance in the area and to make the material damage determination required pursuant to § 82-4-227(3), MCA;

13. The first step in developing the CHIA is to define the cumulative hydrologic impact area ("CIA") for both surface water and groundwater. With respect to the AM4 CHIA, I defined the CIA for surface water and Angela McDannel defined the CIA for groundwater;

14. ARM 17.24.301(32) defines "cumulative hydrologic impact area", as "the area, including, but not limited to, the permit and mine plan area within which impacts to the hydrologic balance resulting from the proposed operation may interact with the impacts of all previous, existing and anticipated mining on surface and ground water systems.";

15. For purposes of the CIA, ARM 17.24.301(32) states that "[a]nticipated mining includes, at a minimum, the entire projected lives through bond release of all operations with pending applications .... for which there is actual mine-development information available";

16. Figure 5-1 on page 13-7 of the CHIA sets forth the location and extent of the surface water and groundwater cumulative impact boundaries, otherwise known as the CIA. Page 5-1 of the CHIA includes a description and justification for the CIA boundaries that were established for surface and groundwater;

17. The surface water CIA boundaries are described as follows in the CHIA: "The surface water CIA includes 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. The cumulative impact area covers upstream portions of West Fork Armells Creek ("WFAC") to the confluence with Donley Creek, East Fork Armells Creek ("EFAC") to the confluence with Stocker Creek, and Rosebud Creek to the confluence with Spring Creek. The CIA boundaries are established down gradient from potentially affected streams and springs, and include all surface water monitoring stations to allow assessment of impacts to stream water quality and quantity. Only impacts from coal mining are included in the CHIA, and although the power plant, power plant ash ponds, the town of Colstrip, and active agricultural activities are within the CIA, the impacts from these sources are only mentioned when their impacts are measured in data collected by the coal mines.";

18. In general, the CIA for surface water includes drainages, or hydrologic units, impacted by previous or existing mining at the Rosebud Mine and the Big Sky Mine, and DEQ extended the CIA boundary for each drainage to its confluence with the next drainage. For the EFAC drainage, DEQ included all of the creeks that may be impacted by mining as a whole. For the WFAC drainage, DEQ extended the surface water CIA boundary to the tributary junction with Donley Creek. However, there are no surface water

impacts to WFAC from Area B or AM4. DEQ included Area C in the boundary because impacts from Area B interact with impacts from Area C on EFAC. Rosebud Creek was included to the confluence with Spring Creek to include impacts from Area D and E of the Rosebud Mine, and impacts from Area A and B of the Big Sky Mine. There is also a small sliver of the Rosebud Mine Area B that crosses into the Lee Coulee drainage that impacts Rosebud Creek;

19. The anticipated mining in Area F did not need to be included in the surface water CIA for AM4 because there was no hydrologic connection between surface water in Area F and surface water in Area B, which includes AM4. Therefore, there would be no interaction between surface water impacts from AM4 and Area F on the hydrologic balance in the area;

20. The lack of hydrologic connection between surface water in Area B/AM4 and Area F results from the surface water divide between EFAC and WFAC that occurs in Area C. Accordingly, surface water from AM4 does not interact with surface water from Area F;

21. The surface water divide for EFAC and the tributaries to Rosebud Creek (Lee Coulee and Miller Coulee) divides AM4 and the majority of Area B from the Big Sky Mine and prohibits surface water from AM4 from reaching tributaries of Rosebud Creek. Therefore, there will be no impacts from operations in AM4 to tributaries of Rosebud Creek;

22. Further, even though a small portion of the existing Area B permit crossed the surface water divide into the Lee Coulee drainage, DEQ required the mine to construct sediment ponds at the edges of permit area to prevent offsite discharges to Lee Coulee from Area B. No additional discharge points were added to the mine's MPDES permit on Lee

Coulee. There will be no new discharge points related to AM4 on Lee Coulee because the proposed operations in AM4 do not cross the surface water divide, and surface water from AM4 will not reach Lee Coulee or Rosebud Creek;

23. Additionally, DEQ concluded in the CHIA that the numeric water quality standard for electrical conductivity ("EC") in tributaries to Rosebud Creek will not be violated as a result of the proposed operations in AM4 because impacts from AM4 will not have any interaction with surface water in these tributaries. The reason for this is that the surface water divide described above will prohibit surface water from AM4 from flowing south towards Lee Coulee;

24. Surface water from AM4 will flow north towards EFAC. Therefore, there is no evidence to support a conclusion that surface water runoff from AM4 will cause a violation of EC standards in tributaries to Rosebud Creek. Accordingly, there will be no new discharge outfalls added to the mine's MPDES permit on Lee Coulee as a result of the proposed operations in AM4 because surface water from AM4 will drain to EFAC, not Rosebud Creek;

25. With respect to whether operations of the Rosebud Mine have caused dewatering of intermittent segments of EFAC, DEQ indicated in the CHIA on p. 8-2, that the nature of flow in the creeks located within the surface water CIA can only be determined at locations monitored by the Rosebud Mine and Big Sky Mine that have sufficient surface water monitoring to determine the nature of the flow;

26. Additionally, with few exceptions, "the surface water that is monitored by the mines in and near the Rosebud and Big Sky mines are ephemeral, flowing only in response to precipitation events or snowmelt, or for short reaches below the issue point of springs or

seeps." (See CHIA p. 8-2);

27. With respect to EFAC, the upper segment is predominantly ephemeral and is flanked by active mining along most of its reach. However, lower EFAC has large reaches with intermittent to perennial flow. While no coal mining occurs adjacent to lower EFAC, the reach is influenced by coal mining activity upstream and in Area D, and water quality and quantity is influenced by runoff from multiple sources, including agriculture, the sewage treatment plant at Colstrip, and industrial treatment ponds not related to mining;

28. Monitoring at the Rosebud and Big Sky Mines, has indicated that there are two segments on upper EFAC that potentially had periods of flow that would classify them as intermittent. These two segments are located Section 8, which is located upstream of the Rosebud Mine , and Section 15, which is located between Area C and Area B of the Rosebud Mine;

29. However, as indicated on p. 8-2 of the CHIA, "[w]ith only one continually monitored site upstream of mining, natural flow conditions along the entire reach of EFAC cannot be established by the existing record of empirical measurements." There are simply too few data monitoring points to accurately determine historic stream flow on EFAC, including flow in Section 8 and Section 15;

30. Further, it is important to note that Section 8 is located upstream of the Rosebud mine and flow in in Section 8 has not been impacted by operations of the mine. Accordingly, contrary to Petitioners' assertion, operations at the Rosebud mine have not caused dewatering of this portion of EFAC. Any change in flow rate in Section 8 of EFAC is due to causes other than mining;

31. While DEQ acknowledged in the CHIA at pages 9-9 and 9-10, that "[m]ining

activities such as cutting off tributaries to EFAC could have reduced the amount of runoff reaching the Section 15 instream pond and reach. This section may see a return of some instream ponding once the upstream sediment ponds are removed. The resaturation of the spoils and restoration of the premine groundwater gradient may also help to restore some baseflow.";

32. DEQ further indicated in the CHIA that it did not have sufficient historical data to determine whether former and existing operations of the Rosebud Mine have caused a degradation of water quantity in Section 15 of EFAC to the extent that the beneficial use of aquatic life support has been adversely affected, or a water right has been impacted. However, there are no surface water rights listed with the Department of Natural Resources ("DNRC") for EFAC through Section 15, and there is insufficient data to determine whether there was sufficient flow in Section 15 of EFAC to support aquatic life in every year, or only in wet years;

33. Monitoring data from "a new and more reliable continuous flow monitor" ("SW-55") that was installed in late 2011 upstream of the state highway crossing of EFAC, indicates that this area of EFAC at the downstream edge of Areas A and B may routinely have flowing or ponded water for months out of the year. The flow data coupled with observations during regular mine inspections of EFAC indicate that the reach between the location of the Area A facilities and the Area A Tipple, which is located between Area A and Area B of the Rosebud Mine and is downstream of Section 15, has intermittent to perennial water, at least since 2011. This reach currently may be artificially enhanced by discharges made pursuant to an MPDES permit, and infiltration;

34. This new data indicates that while some segments have seen a decrease in surface

flow, other sections have seen an increase in surface flow, which has caused some segments that were previously ephemeral to be intermittent to perennial;

35. Even if there is a reduction in flow to Section 15 as a result of historic mining, mining operations in AM4 will not affect the quantity of water in this ection because any impacts to EFAC surface water flow will occur much further downstream;

36. With respect to coal mining's impact on aquatic life support in the lower segment of EFAC which runs from Colstrip to the mouth at Armells Creek, the surface and alluvial water quality data analyzed by DEQ for the Rosebud Mine indicated that the relative contribution of nitrogen from the Rosebud mine is minimal;

37. The CHIA indicates that "[h]igh nitrogen may be in surface water samples due to residual chemicals from blasting materials, from agricultural activities, or from city runoff and municipal sources[,]" and "samples above the human health limit of 10 mg/L are shown as dark red[']" and "[m]any of the highest values have been detected downstream of active mining and in areas actively used by livestock." (See CHIA p. 9-26);

38. Thus, while the CHIA acknowledges that mining is a potential source of nitrogen in the water samples that exceeded the human health standard, agricultural activities, city runoff and municipal sources were also identified as potential sources of the pollutant;

39. Petitioners mischaracterize DEQ's factual findings contained in the CHIA with respect to violations of water quality standards for nitrogen that protect human health. Petitioners state that these standards were "repeatedly violated." (Petitioners' Br., p. 58). As indicated on p. 12-42 of the CHIA, Table 9-7 (surface water exceedances) indicates that out of 46 samples taken for surface water, there were zero exceedances of the human health standard for nitrogen in upper EFAC. All of the surface water exceedances (12 out of 64

samples) occurred downstream of Colstrip, where potential sources other than mining have been identified;

40. With respect to groundwater exceedances for nitrogen in upper EFAC (segment MT42K002-170), on page 12-48 of the CHIA, Table 9-9 indicates that nitrogen was rarely detected in spoil wells and was not persistent over time in samples from any given well. The fact that groundwater exceedances of the human health standard for nitrogen were not persistent over time indicated that nitrogen in spoils water from the mine is not an issue to be concerned about;

41. As indicated on p. 8-2 of the CHIA, Rosebud Creek is the only stream analyzed within the CHIA that is a wadeable stream for its entire reach. There are additional stream reaches that are wadeable, but not entire streams other than Rosebud Creek. For example, lower EFAC does have reaches with intermittent to perennial flow, but upper EFAC is predominantly ephemeral with only two reaches that have historically been described as having intermittent or perennial flow;

42. The nitrogen standard for the protection of aquatic life contained in DEQ 12-A would only be applicable to those reaches of EFAC that are wadeable, which means that they are perennial or intermittent. They are not applicable to those portions of EFAC or any other stream that are ephemeral;

43. At the time that the CHIA was developed, there was very little Total Nitrogen data available for the streams analyzed within the CHIA, including EFAC. However, since the available data indicated that coal mining was not the source of the nitrogen in lower EFAC, there would have been no reason for DEQ to do further analysis applying the more stringent standards contained within DEQ 12-A;

44. Even if DEQ had applied the more stringent numeric nutrient standards contained in DEQ 12-A, the results of DEQ's analysis would not have changed. The total nitrogen samples taken at SW-55, which is the surface water monitoring station located on that portion of upper EFAC which has recently demonstrated intermittent flow, have not exceeded the DEQ 12-A standard of 1.3 mg/L for nitrogen;

45. In its Seventh Round Acceptability Deficiency letter dated June 3, 2014, DEQ requested that the mine provide additional information, including an aquatic life survey, to address any concerns DEQ staff had regarding the potential for material damage to EFAC from sulfate, chloride, or salinity due to the proposed mining operation in AM4;

46. After DEQ reviewed the additional information provided by Intervenors in the ABC PHC Addendum to Appendix M of the AM4 permit application, no mitigation was required as no material damage was anticipated to EFAC as a result of increased levels of sulfates or chloride from mining;

47. As indicated in the CHIA on p. 9-8, DEQ applied the guideline sulfate toxicity threshold of 2,000 mg/L for aquatic life to account for the very high hardness of stream water. Even in baseline samples, sulfate thresholds for aquatic life were exceeded. However, macroinvertebrate communities in Eastern Montana are likely adapted to high sulfate water. Therefore, based on DEQ's review of the available data, DEQ was satisfied that no adverse impacts to aquatic life in EFAC were anticipated as a result of increased levels of sulfates;

48. Further, it should be noted, that the high chloride concentrations referenced in the CHIA at p. 9-8, between Area A Tipple and SW-55, which is located between Area A and Area B, was "likely from flushing of chloride in the soil and alluvium by the [Intervenor's] Area A facilities in addition to chloride from leaking power plant ponds.";

49. Hence, leaking ponds at the Colstrip Power Plant provided a source of elevated chlorides in addition to the chlorides from facility operations at Area A of the mine. MSUMRA does not require DEQ to consider impacts from non-mining sources, such as the Colstrip Power Plant, in the CHIA;

50. Additionally, regardless of the cause of the existing high chloride concentrations in EFAC, the proposed mine plan for the AM4 Amendment "is designed not to contribute additional chloride to the stream because lignin sulfonate will be used on roads instead of magnesium chloride." Therefore, DEQ concluded that the proposed operations in AM4 are designed to prevent material damage to EFAC from chlorides. Nevertheless, the Written Findings for the AM4 permit amendment contains stipulations for continued aquatic life monitoring in all intermittent reaches of EFAC;

51. With regards to the aquatic life studies conducted in the 1970's, DEQ concluded that the surveys "provide an indication of the presence or absence of aquatic life but cannot be used to assess the quality of the habitat or stream water. The surveys indicate that, in the past, there has been sufficient water at the sites that were sampled to provide aquatic habitat and support a number of aquatic species.";

52. To address any concerns that DEQ had about the impact of surface mining on aquatic life support in EFAC, DEQ required Intervenor to hire a consultant to conduct an updated aquatic life survey for upper EFAC;

53. DEQ hydrologists had observed an increase in EC, sulfates and chlorides in this segment of EFAC, but were not able to confirm the source. Mining operations in Area A were identified as a potential source of chlorides due to the use of magnesium chloride for salting access roads located within and adjacent to the mine plan area. However, the State

of Montana and Rosebud County also used magnesium chloride on state and county roads located within the mine plan area;

54. Additionally, DEQ wanted the mine to collect additional data that could be used to get cursory qualitative measurements of aquatic life use in EFAC. However, DEQ would not be able to use the data collected by the mine to conduct a quantitative analysis, because the methods used to sample and classify the data in the 1970s were different than those used today. Therefore, there could be no direct numeric comparison between the data collected in the 1970s and that collected by the mine in 2014;

55. DEQ also made it a condition of Intervenors' AM4 permit that the mine continue to conduct aquatic life surveys to monitor EFAC for aquatic life support throughout the life of mine;

56. In October 2014, Intervenor hired a consultant to conduct an aquatic life survey with the objective of evaluating aquatic life support in upper EFAC. The results of this survey show that the aquatic environments in upper EFAC support a diverse assemblage of aquatic insects, and consist of taxa commonly found in eastern Montana prairie streams;

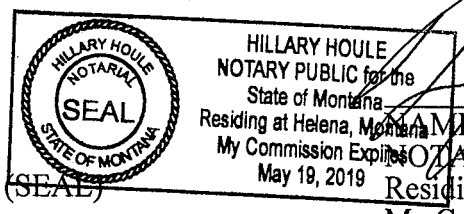
57. Based on the updated information, DEQ concluded that the recent aquatic survey provides qualitative evidence that streams impacted by mining can still support a diverse macroinvertebrate assemblage.

FURTHER AFFIANT SAYETH NOT.

DATED this 22nd day of July, 2016.

By: Emily Hinz
EMILY HINZ, Ph.D.

Subscribed and sworn to (or affirmed) before me this 22nd day of July, 2016, by EMILY HINZ.



(SEAL)

NAME
NOTARY PUBLIC for the State of Montana
Residing in Lewis and Clark County.
My Commission Expires: May 19, 2016

DEQ EXHIBIT D

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MONTANA BOARD OF ENVIRONMENTAL REVIEW

IN THE MATTER OF: **APPEAL AMENDMENT AM4 WESTERN ENERGY COMPANY ROSEBUD STRIP MINE AREA B, PERMIT NO. C1984003B**	Case No.: BER 2016-03 SM **AFFIDAVIT OF ANGELA MCDANNEL IN SUPPORT OF DEQ'S BRIEF IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT**

I, Angela McDannel, swear (or affirm) under oath that:

1. I am of majority age;

2. I graduated from Oregon State University in 1981 with a Bachelor's of Science in Geology; I graduated from Oregon State University in 1989 with a Master's of Science in Geology; I graduated from Western Michigan University in 1994 with a Master's of Science in Hydrogeology;

3. I was previously employed by the Montana Department of Environmental Quality ("DEQ") as a groundwater hydrologist, in the Coal Section of the Industrial and Energy Minerals Bureau. I served in that position for 21 years, 10 months. I retired from DEQ in August, 2015;

4. I worked approximately 6 months in early 1994 as a groundwater hydrologist with a local consulting firm in Kalamazoo Michigan;

5. The Coal Section of the Industrial and Energy Minerals Bureau is responsible for permitting strip and underground coal mines in Montana;

6. As a part of my regular duties at DEQ, I reviewed applications for permits and major revisions to permits for strip and underground mines in Montana;

7. I was one of the hydrologists that worked on the preparation of the CHIA for The AM4 Amendment to Western Energy Company's Rosebud Coal Mine Area B ("AM4"). I served as the primary groundwater hydrologist, while Emily Hinz, served as the primary surface water hydrologist on the CHIA;

8. Pursuant to § 82-4-227(3), MCA, the applicant must affirmatively demonstrate to DEQ through the submission of a comprehensive permit application, which includes the preparation of a probable hydrologic consequences ("PHC") determination, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

9. ARM 17.24.301(93) defines "probable hydrologic consequences" as "the projected results of proposed strip or underground mining operations that may reasonably be expected to alter, interrupt, or otherwise affect the hydrologic balance. The consequences may include, but are not limited to, effects on stream channel conditions and the aquatic habitat on the permit area and adjacent areas.";

10. Section 82-4-203(2), MCA, defines "adjacent area" as "the area outside the permit area where a resource or resources, determined in the context in which the term is used, are or could reasonably be expected to be adversely affected by proposed mining operations, including probable impacts from underground workings.";

11. Section 82-4-227(3) also provides that prior to approving an application for a strip or underground mining permit or major revision to a permit, DEQ must first assess the probable cumulative impact of all anticipated mining in the area on the hydrologic balance, and make a determination that the "proposed operation" of the mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area;

12. DEQ relies primarily on the information included in the permit application, including the Plan for Protection and the PHC to assess the probable cumulative impact of all anticipated mining on the hydrologic balance in the area and to make the material damage determination required pursuant to § 82-4-227(3);

13.The first step in developing the CHIA is to define the cumulative hydrologic impact area ("CIA") for both surface water and groundwater. With respect to the AM4 CHIA, Emily Hinz defined the CIA for surface water and I defined the CIA for groundwater;

14. Figure 5-1 on page 13-7 of the CHIA sets forth the location and extent of the surface water and groundwater cumulative impact boundaries, otherwise known as the CIA. Page 5-1 of the CHIA includes a description and justification for the boundaries that were established for the surface and groundwater CIA boundaries;

15. With respect to the boundaries that were established for the groundwater CIA, page 5-1 of the CHIA states as follows: "The groundwater CIA includes the limits of all mining-induced groundwater impacts or potential impacts based on the hydrology of the mines and adjacent area. Potential impacts to groundwater include changes to water level or water quality such that the resource is no longer available or suitable for established uses. Results of two transient groundwater flow models in the Rosebud Mine, one for permit areas A, B, and C (Western Energy Company, 2014) and one for Area D (Western Energy Company, 1999), and the currently observed drawdown and recovery at the

reclaimed Big Sky Mine are the basis for determining the extent of drawdown impacts for the CIA. Mining-induced water quality impacts are determined and evaluated based on observed changes to baseline water quality and anticipated changes based on location of resources and their potential to be affected."

16. In general, the CIA for groundwater includes all drainages impacted by previous or existing mining at the Rosebud Mine and the Big Sky Mine. DEQ established the boundary to account for drawdown or predicted drawdown from existing mining in Area C-West. Drawdown has been observed that is likely associated with Area C-West beyond Area C into what would have been the eastern portion of Area F. That is why the eastern portion of Area F was included in the groundwater CIA. It was to account for impacts on the eastern portion of Area F from Area C, not to account for impacts from Area B or the AM4 Amendment to Area B. Due to lack of hydrologic connection between Area B and Area F, there will be no groundwater impacts from Area B or AM4 on Area F;

17. In other areas, like at the confluence of East Fork Armells Creek ("EFAC"), with Stocker Creek, the groundwater CIA boundary was drawn to include potential impacts from groundwater to Stocker Creek from Area A and Area C, but not from Area B or AM4. Due to the hydrology of the area, impacts from Area B and AM4 are limited to East Fork Armells Creek ("EFAC");

18. With respect to impacts from Area D, Pony Creek and Cow Creek were included because of the potential for spoils water migrating into those drainages from Area D only. Spoils water from Area B and AM4 will not impact those drainages;

19. With regards to Rosebud Creek, the CIA boundary was drawn to take into consideration impacts from the Big Sky Mine, which includes Lee Coulee, at the confluence between Lee Coulee and Rosebud Creek. Area B and AM4 are not predicted to

cause any further impacts to water quality or quantity in Rosebud Creek. The primary purpose was to track impacts from mining at the Big Sky Mine. However, as Fig. 8-5 on page 13-21 of the CHIA shows, some spoils water from Area B-Extension may eventually make its way to the Big Sky Mine;

20. The anticipated mining in Area F did not need to be included in the groundwater CIA for AM4 because there was no hydrologic connection between groundwater in Area F and groundwater in Area B, which includes AM4. Therefore, there would be no interaction between groundwater impacts from AM4 and Area F on the hydrologic balance in the area;

21. The lack of hydrologic connection between groundwater in Area B/AM4 and Area F is due to the existence of a groundwater mound between the west end of Rosebud Mine Area B and south part of Area C. This groundwater mound just west of Area B forms a groundwater divide, which separates groundwater in Area B from groundwater in Area F. No groundwater from Area F is predicted to flow to or through Area B. Accordingly, Area B is not downgradient from Area F, and no groundwater will flow between these two areas;

22. Although the Rosebud coal seam has been referred to as an aquifer because it contains and transmits water, it is generally not regarded as such, even though locally it may offer a limited water supply. As indicated in the CHIA, the low transmissivity and low yield from the coal seams makes them a less than desirable source as a dependable water supply. The most reliable water supply comes from sandstone units in the underburden and thus most wells are completed in the underburden;

23. In addition to providing limited water quantity, the quality of the water in the Rosebud coal aquifer, based on measures of specific conductivity ("SC"), varies from Class I, II and III, with most samples falling into Class II. At Big Sky Area B, Rosebud coal groundwater is Class II and Class III;

24. After the coal is removed from the Rosebud coal aquifer in Area B, the overburden that is backfilled into the pit will eventually become saturated with water, creating a spoils "aquifer". As the spoils aquifer recharges, the spoils water will contain higher concentrations of salts. However, upon saturation of the spoils aquifer, only spoils water from the southern and western parts of Area B will move southeast towards the Big Sky Mine permit areas. Spoils water from AM4 cuts will move northeast towards EFAC;

25. Therefore, there will be no interaction between spoils water from AM4, which flows toward EFAC, and spoils water from the already permitted portions of Area B, which flow toward the Big Sky Mine;

26. Even though the CHIA included a reference to an EC measurement of 880µS/cm taken in 1996 in a Rosebud coal well (ARCM67) located north of Big Sky Mine Area A, which falls within the range of Class I groundwater, this does not mean that there is Class I groundwater in the area between Rosebud Area B and the Big Sky Mine that will be degraded to Class II or III groundwater by migrating spoils water;

27. The sample well (ARCM67) from which the single sample was taken is not located in the area where Area B spoils water moves towards the Big Sky Mine. Groundwater flow from the Rosebud Mine spoils water nearest this well moves north away from the Big Sky Mine;

28. As indicated in the CHIA at p. 5-59, "Rosebud coal water quality in the area between the two mines (outside the permit areas of both mines) is variable and is currently unaffected by spoils." Also DEQ does not expect that a numeric water quality standard will be violated by the spoils water or that any beneficial uses of groundwater in this area will be adversely affected by the proposed operations in AM4. Therefore, DEQ does not expect material damage to result outside the permit area from migrating spoils water from AM4;

29. DEQ further concluded on p. 5-59 of the CHIA, that there is a large deposit of clinker throughout much of the area between the two mines that will enhance aquifer recharge and will dilute spoils water quality impacts in this area. "[T]herefore it does not appear that a parameter will increase to a level that renders the water unsuitable for domestic use or livestock and wildlife watering, or harmful, detrimental, or injurious to the beneficial uses listed for Class II and Class III groundwater."

FURTHER AFFIANT SAYETH NOT.

DATED this 22nd day of July, 2016.

By: _____
ANGELA MCDANNEL, Hydrologist

Subscribed and sworn to (or affirmed) before me this 22nd day of July, 2016, by ANGELA MCDANNEL.

(SEAL)

HILLARY HOULE NOTARIAL SEAL STATE OF MONTANA

HILLARY HOULE
NOTARY PUBLIC for the
State of Montana
Residing at Helena, Montana
My Commission Expires
May 19, 2019

_____
NAME
NOTARY PUBLIC for the State of Montana
Residing in Lewis and Clark County.
My Commission Expires: May 19, 2016

DEQ EXHIBIT E

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Attorneys for Respondent Department of Environmental Quality

MONTANA BOARD OF ENVIRONMENTAL REVIEW

IN THE MATTER OF:

**APPEAL AMENDMENT AM4
WESTERN ENERGY COMPANY
ROSEBUD STRIP MINE AREA B,
PERMIT NO. C1984003B**

Case No.: BER 2016-03 SM

AFFIDAVIT OF ERIC URBAN IN SUPPORT OF DEQ'S BRIEF IN OPPOSITION TO PETITIONERS' MOTION FOR SUMMARY JUDGMENT

I, Eric Urban, swear (or affirm) under oath that:

1. I am of majority age;

2. I graduated from The University of Montana in 2000 with a Bachelor's of Science in Wildlife Biology, and worked as wildlife biologist for various organizations, including the United States Forest Service and Oregon Department of Fish and Wildlife, for three years prior to working for DEQ;

3. I am currently the Bureau Chief for the Water Quality Planning Bureau ("Water Quality Bureau") at the Montana Department of Environmental Quality ("DEQ") and have been employed in that position for 1.5 years;

4. The Water Quality Bureau is responsible for developing and implementing

Montana's surface and groundwater quality standards; monitoring and assessing surface water quality conditions in the state; developing total maximum daily load ("TMDL") restoration plans for Montana surface waters; identifying impaired streams, lakes and rivers; and managing all data and information systems related to the Montana Water Quality Act;

5. I have been employed by DEQ since 2003, and have held various professional positions within DEQ, including Section Supervisor of the Water Quality Standards Program; Technical Coordinator/Wildlife Biologist of the DEQ Coal Section of the Industrial and Energy Minerals Bureau; Section Supervisor of the Technical Section and Water/Wastewater Certification Program Section of the Public Water Supply Bureau; and Water Quality Specialist within the Monitoring and Assessment Program of the Water Quality Bureau;

6. When I worked in the Monitoring and Assessment Program for DEQ, one of my duties was to develop Water Quality Attainment Records ("Attainment Record(s)") for the Water Quality Bureau;

7. Attainment Records are developed by the DEQ Water Quality Bureau as a mechanism for determining whether a stream is meeting its designated uses;

8. If it is determined from the available water quality data that impairment of a stream is caused by particular pollutants, then all potential sources of the pollutants located in the watershed are identified by Water Quality Bureau staff and noted in the Attainment Record;

9. However, the sources of the pollutants are commonly not "confirmed". In other words, the term "unconfirmed source" as used in the Attainment Records, is really a

"potential source". It does not mean that it is an actual source of the identified pollutants that are causing the "impairment";

10. Likewise, the "cause" of the "impairment" is determined based on available water quality data for a specific parameter such as specific conductance ("SC"), total dissolved solids ("TDS") or nitrogen. If a "cause" of impairment is identified with "low confidence" that generally means that the data used to make that causation determination was either outdated or insufficient to make a more definitive determination with respect to causation;

11. Just because the Attainment Record identifies nitrogen as a "cause" of the impairment of a particular designated use, it does not mean that nitrogen is "actually" causing impairment. Nitrogen is a cause with a low level of confidence means that the assessor had a low level of confidence in the data used to support that determination;

12. The Water Quality Bureau uses the information contained in the Attainment Records to identify streams that require a TMDL to be developed. TMDL's are developed by DEQ for streams that are identified as "impaired" for a particular designated use and a particular pollutant;

13. When a TMDL is developed for a particular stream, the actual cause (pollutant) and source of the impairment is more precisely determined for that segment of stream and the sources of the pollution and the relative contribution of the source for a given pollutant is determined at that time;

14. TMDL's have not yet been developed for the upper or lower segment of EFAC;

15. In 2006, my former colleague, Mike Stermitz, developed the Attainment Records for EFAC, segment MT42K002_110 (headwaters to Colstrip) ("lower EFAC") and

segment MT42K002_170 (Colstrip to mouth) ("upper EFAC") (collectively "EFAC Attainment Records");

16. The EFAC Attainment Records have not been updated since 2006, although they are republished every two years. Accordingly, the information in the 2014 EFAC Attainment Records was eight years old when they were republished;

17. The Attainment Record for lower EFAC , which is a 32.36 mile segment of EFAC located downstream of mining and north of the town of Colstrip, indicates that this segment of the stream is "impaired" for the aquatic life designated use;

18. SC and TDS are identified with "low confidence" as a cause of the impairment of aquatic life, and coal mining and transfer of water from an outside watershed are identified as an "unconfirmed source" of the SC and TDS in the Attainment Record for lower EFAC. It does not mean that coal mining is the actual source of the SC and TDS. It means that Mike Stermitz identified coal mining as a potential source of the SC and TDS;

19. Historically, Attainment Records, including the Attainment Record for lower EFAC, group salinity/TDS/chlorides together as a single cause of impairment. This does not mean that there was an issue with chloride specifically, it simply represented a category for "salts";

20. For example, on page 17 of the Attainment Record for lower EFAC, there is a statement that says "[s]alinity/TDS/chlorides will remain a cause of impairment." This statement was made under the 2006 language, which lumps salinity/TDS/chlorides as a single cause;

21. However, on page 20 of the same record, chlorides are not listed as a cause of impairment. The language used on page 20 identifies causes by individual pollutants.

Salinity and TDS are identified separately as causes of impairment, but chlorides are not identified as a cause of impairment. This language is more precise than the narrative summary provided on page 17;

22. Therefore, the Attainment Record for lower EFAC does not identify chlorides as a cause of impairment;

23. The Attainment Record for upper EFAC, which is 24.67 segment of EFAC that is located upstream of the town of Colstrip, indicates that the stream is "ephemeral";

24. The process for assessing the health of an ephemeral stream in 2006 was to rely solely on the condition of the streamside habitat. According to the assessment record Mr. Stermitz identified mining as an "unconfirmed source" of the "alteration in stream-side or littoral vegetative covers" that was listed as a "cause" of impairment of aquatic life in upper EFAC;

25. This information was based solely on a personal conversation he had with a mine employee, who indicated that the mine had cut through the stream channel in one spot. This information could not be verified through site visits or aerial photographs;

26. As explained above, just because "alteration in stream-side or littoral vegetative covers" is listed as a cause of the impairment with "medium confidence". The level of confidence that Mr. Stermitz placed on this decision was listed as "medium," which was simply a qualitative indication of his confidence in the data/information used for the decision. Likewise, just because surface mining is listed as an "unconfirmed source" of the alteration of stream-side vegetative covers, it does not mean that it is actually the source;

27. It should be noted, that no aquatic life survey was done in 2005-2006 for upper EFAC, because this segment of stream is ephemeral and was predominantly dry at the time

the Attainment Record was developed. Therefore, it was not feasible to collect water samples or aquatic life samples at that time. Only habitat could be analyzed as a result;

28. Additionally, it should be noted that physical habitat is only one of the factors typically considered by the Water Quality Bureau in making an impairment determination. The other two factors that are considered are chemistry and biology;

29. In Eastern Montana, the Water Quality Bureau has found that stream habitat and water chemistry is highly variable, which results in a highly variable biological community due to the harsh conditions of the natural environment;

30. Accordingly, just because an aquatic life survey indicates that a stream segment contains less than desirable macroinvertebrate communities, that does not mean that the cause of this condition is man-made and or that the stream is impaired as a result;

31. In 2014, the DEQ coal program requested that Intervenor hire a consultant to conduct an updated aquatic life survey of EFAC;

32. Prior to conducting the survey, Intervenor's consultant, Penny Hunter from Arcadis, consulted with Dave Feldman, former Macroinvertebrate Specialist with the Water Quality Bureau, who provided Intervenor's consultant with a copy of DEQ's sampling methodology (WQPBWQM-009 (2012)) for how to collect macroinvertebrate samples in different habitats in Montana;

33. At the request of DEQ Coal Program staff, Dave Feldman advised Penny Hunter how to collect samples, but was instructed not to advise her how the sample results could be used to determine aquatic life health;

34. Because of the high variability of the natural system, the DEQ Water Quality Bureau does not believe that the health of aquatic life in eastern Montana streams can be

determined by the composition of a macroinvertebrate sample alone;

35. The 2014 aquatic life survey conducted by Intervenors' consultant was used by DEQ Coal Program staff to make a material damage determination with respect to the impact of the proposed operations of AM4 on the beneficial use of aquatic life support. It was not used by the DEQ Water Quality Bureau staff in making an impairment determination for aquatic life in EFAC;

36. For this reason, Intervenors' consultant was not required to follow DEQ standard operating procedures ("SOPs") for making stream segment impairment determinations.

FURTHER AFFIANT SAYETH NOT.

DATED this 20th day of July, 2016.

MONTANA DEPARTMENT OF
ENVIRONMENTAL QUALITY

By:_____
ERIC URBAN
Bureau Chief, Water Quality Planning

Subscribed and sworn to (or affirmed) before me this 20th day of July, 2016, by ERIC URBAN.

_____
NAME
NOTARY PUBLIC for the State of Montana
Residing in Lewis and Clark County.
My Commission Expires: May 19, 2019

(SEAL)

HILLARY HOULE NOTARIAL SEAL STATE OF MONTANA

HILLARY HOULE
NOTARY PUBLIC for the
State of Montana
Residing at Helena, Montana
My Commission Expires
May 19, 2019