

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

_____)	
In re:)	
)	
Florence Copper, Inc.)	Appeal Nos. UIC 17-01.
)	
UIC Permit No. R9UIC-AZ3-FY11-1)	
)	
_____)	

REGION IX's RESPONSE TO JOHN L. ANDERSON'S PETITION FOR REVIEW

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B-1	Revised October 2014 UIC Permit Application, Attachment A – Area of Review (AR #2a) Region 9 is providing the relevant Exhibit 14A-1 from Exhibit A-1 of the UIC Permit Application Attachment A consisting of the aquifer test data from aquifer pump testing at the FCI site. Please note due to the voluminous nature of the Attachment A of the UIC Permit Application, Region 9 is only including the relevant Exhibit of the attachment. To the extent the Board would like copies of the additional Sections and Exhibits, Region 9 can provide them in hardcopy and Groundwater Model Files in electronic format, as provided by the applicant.
B-2	Revised October 2014 UIC Permit Application, Attachment F – Maps & Cross Sections of Geologic Lithology (AR #2e)
B-3	Revised October 2014 UIC Permit Application, Attachment H – Operating Data (AR #2f)
B-4	Revised October 2014 UIC Permit Application, Attachment I – Formation Testing Program (AR #2g) Region 9 is providing the main section of UIC Permit Application Attachment I consisting of the first 5 pages that describe the formation testing conducted at the FCI site. Please note due to the voluminous nature of the exhibits I-1 and I-2, Region 9 is only including the relevant section of the attachment. To the extent the Board would like copies of the additional exhibits, Region 9 can provide them.
B-5	Revised October 2014 UIC Permit Application, Attachment S – Aquifer Exemption (AR #2p)
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I. INTRODUCTION

The United States Environmental Protection Agency (“EPA”), Region 9 (“Region”) hereby responds to the Petition for Review (“Petition”) submitted by John L. Anderson (hereinafter referred to as the “Petitioner” or Mr. Anderson). On December 20, 2016, the Region issued a Class III Underground Injection Control (“UIC”) Area Permit (Permit No. R9UIC-AZ3-FY11-1) (“Permit”) to Florence Copper Inc. (“FCI”) for an In-Situ Copper Production Test Facility under the UIC Program of the Safe Drinking Water Act (“SDWA”), 42 U.S.C. § 300h *et seq.* Pursuant to 40 C.F.R. § 124.19, Petitioner filed his Petition on January 12, 2017, with the Environmental Appeals Board (“EAB” or “Board”) to seek review of the Permit. Four petitions for review of the FCI Permit were filed with the EAB; one was dismissed as untimely. The Region will respond to each of the remaining three petitions separately.¹ Attached to this response are a certified index of the Administrative Record for the challenged Permit and the relevant portions of the Administrative Record.

Mr. Anderson seeks Board review of the Permit because he is concerned that the project may impact the community’s drinking water. Mr. Anderson raises a list of general concerns referencing articles about other types of in-situ mines and impacts from in-situ mines generally. As set forth below, the Permit issued by the Region is in compliance with the UIC regulations and is supported by an extensive Administrative Record which demonstrates that the Permit is protective of underground sources of drinking water (“USDWs”). The Region addressed the substantive concerns raised by Mr. Anderson’s comments on the draft permit in the Response to Comments. The Petition fails to identify a contested Permit condition or a specific response and show that the Permit condition or response is based on a clearly erroneous finding of fact or conclusion of law, or involves an important policy consideration that the Board should, in its discretion, review. Petitioner has failed to meet his burden to obtain review by the Board, and the Region requests that the EAB deny the Petition.

II. LEGAL AND FACTUAL BACKGROUND

Congress enacted the SDWA in 1974 to ensure that the Nation’s sources of drinking water are protected against contamination and “to prevent underground injection which endangers drinking water sources.” 42 U.S.C. § 300h(b). The SDWA directs the EPA to promulgate regulations containing minimum requirements for state programs to protect USDWs. 42 U.S.C. § 300(h). The UIC program regulations cover the construction, operation, permitting and closure of injection wells used to place fluids underground. 40 C.F.R. Parts 144-148. The EPA directly implements the UIC regulations and issues permits in states without an approved

¹ The other two extant petitions were filed by Gila River Indian Community (GRIC) and a joint petition from Southwest Value Partners (SWVP) and the Town of Florence, Arizona.

UIC program. 40 C.F.R. § 144.1(e). Because the State of Arizona has not received approval to implement the UIC Program, the Region is the permitting authority in Arizona. *See* 40 C.F.R. § 144.1(e); 40 C.F.R. §§ 147.1(a-b), 147.151 (Subpart D).

The SDWA requires a person to obtain a permit to operate an underground injection well, unless the well is authorized by rule. 42 U.S.C. § 300h-3(b), 40 C.F.R. § 144.11. Central to the permitting requirements in the UIC regulations is a stringent non-endangerment standard for UIC permits. These regulations prohibit injection activities that allow the movement of fluid containing contaminants into a USDW if the presence of the contaminant may cause a violation of drinking water standards or otherwise adversely affect human health. 40 C.F.R. §§ 144.1(g), 144.12. The regulations define six classes of wells; Class III wells are defined as injection wells for the extraction of minerals, such as copper. 40 C.F.R. § 144.6(c). UIC regulations also allow the EPA to exempt an aquifer or a portion of an aquifer when certain criteria are met and to permit activities such as in-situ mining in exempt aquifers, where it can be done in a manner that is protective of USDWs outside of the exempt portion of the aquifer. 40 C.F.R. § 146.4. Once the EPA approves an aquifer exemption, the exempt portion is no longer considered a USDW as defined in 40 C.F.R. § 144.3, and it is not protected as a USDW under UIC regulations.

The EPA Region 9 Water Division Director has authority to issue permits for underground injection activities under 40 C.F.R. § 144.31 (AR #586, #587). FCI applied for a UIC permit to construct and operate a pilot-scale in-situ copper recovery (“ISCR”) facility known as the Production Test Facility (“PTF”) on FCI property near the town of Florence, Arizona. FCI will use wells to inject a dilute sulfuric acid solution into the ore-body and recover copper-laden solution to produce copper and to assess the feasibility of future commercial ISCR operations on the FCI property.

Factual Background: Past UIC Class III Permit and Copper Recovery Activity

The EPA issued UIC Permit # AZ396000001 to BHP Copper, Inc. (BHP) in 1997 authorizing BHP to operate an ISCR facility on what is now the FCI property. At the same time, the EPA also approved an aquifer exemption for the proposed mining area (“Aquifer Exemption”). In accordance with requirements at 40 C.F.R. §§ 146.4 and § 144.7, the Region determined the federal aquifer exemption criteria were satisfied because the aquifer did not serve as a current source of drinking water and would not in the future serve as a source of drinking water because it contained commercially producible quantities of copper (Statement of Basis (“SOB”) at 12-15, AR #18, #24, #238). The Aquifer Exemption includes the Oxide Bedrock Zone, which is approximately 475 to 1,200 feet below ground level and contains the copper ore body, and a portion of the Lower Basin Fill Unit (LBFU), which is approximately 400-1,600 feet below ground and is the portion of the aquifer immediately above and in contact with the Oxide Bedrock Zone (Permit Appx. A, Figure S-2, AR #596a). The Aquifer Exemption was not

challenged under the judicial review provisions of the SDWA and remains in place today. *See* 42 U.S.C. § 300j-7(a)(2).

Pursuant to its UIC Permit, BHP drilled four Class III injection wells, nine recovery wells, and seven observation wells into the Oxide Bedrock Zone. These wells were part of a pilot project to demonstrate hydraulic control, which is a system designed to prevent migration of fluids outside the exempted area. BHP did not develop a full-scale facility and in 2000, sold the property to Merrill Mining, LLC, who sold it in 2010 to Curis Resources (Arizona), Inc., later known as FCI.

Factual Background: UIC Class III Permit for Production Test Facility

FCI initially submitted an application for a Class III UIC Permit in March 2011 to amend and transfer the BHP UIC permit. It sought authority to construct and operate the ISCR project on both a pilot scale and a commercial basis on 212 acres of property it owned or leased under the Arizona State Mineral Lease No. 11-26500. In June 2012, after conferring with the Region, FCI revised the application to seek authorization to construct and operate a PTF operation on 13.8 acres located within the State Mineral Lease. Over approximately two years, FCI provided substantial supplemental information to modify and update the permit application (*See* AR #1-15). Under the revised application, the PTF operations were limited to a small portion of the exempted aquifer below the State Mineral Lease boundary (*See* Permit, Appx. A, Figure S-1, AR #596).

Due to the passage of time since the 1997 Aquifer Exemption, the Region reviewed the existing Aquifer Exemption to determine whether the subsurface area affected by the PTF injection continued to meet the criteria for exemption under the UIC regulations (SOB at 12-15, AR #18). In addition, the Region reviewed the existing Aquifer Exemption and determined that the injected fluids associated with the PTF activity will be fully contained within the existing exempted area (*Id.*) After completing a thorough technical review of all submitted information, the EPA determined that the information provided by FCI was sufficient to prepare a draft permit.

On December 7, 2014, the Region issued a draft UIC permit to FCI, provided an opportunity for public comment and held a public hearing on January 22, 2015 in Florence, Arizona, pursuant to 40 C.F.R. § 124.12. The Region extended the public comment period from the required 30 days to 129 days due to interest from the public (AR #21-22). The Region also provided supplemental data to the public for review and comment regarding historical modeling and field test reports for the BHP facility (AR #22). *See* 40 C.F.R. § 124.10(b). The Region received approximately 300 comments in total during in the public comment process, including

testimony at the public hearing (*See* AR #327-579). Petitioner’s comments are attached. (AR #331-37.).

The Region also conducted extensive consultation beginning in 2012 under Section 106 of the National Historic Preservation Act (“NHPA”) to identify, assess and resolve potential adverse effects of the PTF on historic properties located on the FCI property.² This process included Petitioner Town of Florence, the Advisory Council on Historic Preservation (“ACHP”), FCI, four federally recognized tribes (including the GRIC), the Arizona State Historic Preservation Officer, the Arizona State Land Department, National Park Service, Arizona State Museum and Archaeology Southwest. The consultation included in-person site visits to the FCI property, several conference calls, and numerous communications seeking input from consulting parties at each step of the process. The consultation culminated with a Memorandum of Agreement (MOA), to resolve adverse effects of the PTF, which was executed by signatory parties, including the ACHP in February 2015 (Permit, Appx. G, AR #596g). The EPA also consulted with the GRIC on a government-to-government basis on the Permit.

The Region carefully considered all comments received and as provided in 40 C.F.R. § 124.17, prepared a 48-page Response to Comments (RTC) (AR #581). The Region made 26 changes to the final Permit from the draft permit, mostly to address concerns raised by the commenters (RTC at 1-5, AR #581). The Region’s engineers and contractor personnel extensively reviewed the application and draft permit to ensure that they met the requirements of the SDWA and UIC regulations. The broad scope of that review is evidenced by the extensive Administrative Record, which contains close to 600 entries (Appendix A). The Region considered all comments, including the issues identified by the tribes during the consultation on the Permit and the NHPA, before issuing the final Permit to FCI on December 20, 2016.

The Final Permit allows FCI to operate the PTF for the approximate two-year operational life of the project and requires it to conduct five years of post-closure monitoring, which may be extended if the EPA determines it is necessary (Permit Part I, p. 6-7, AR #596). Prior to operating the PTF, FCI must demonstrate that it has satisfied the Permit requirements for well construction, plugging and abandonment of existing wells, financial responsibility, and specific operational parameters (Permit Part II, Sections C, D, E-2, and L, AR #596). For example, FCI must obtain \$4,457,000 in financial responsibility to guarantee aquifer restoration, ground water monitoring, and plugging and abandonment activities before the EPA will authorize FCI to proceed with construction and operation of the PTF (Permit Part II.L.1.a, AR #596).

The Permit contains specific parameters for mechanical integrity, injection fluid constituents, pressure, and volume, and the Region must approve any modifications to these parameters (Permit Part II.E.1-5, AR #596). The PTF is surrounded by eight monitoring wells

² 54 U.S.C. § 306108, 36 C.F.R. Part 800.

located within the 500-foot Area of Review (“AOR”). This area defines a subsurface zone affected by the wellfield injection activities, as described in 40 C.F.R. § 146.6(a)(1)(ii) (*See* Permit Part I, p. 6, AR #596). FCI is required to drill the PTF injection wells deeper than 40 feet below the top of the Oxide Bedrock Zone within the existing EPA-approved Aquifer Exemption area (*Id.*)

FCI must apply for a new permit should it want to construct and operate a commercial scale ISCR mine on the property, pending the outcome of the PTF operations. The EPA would evaluate any future permit application for a commercial scale ISCR pursuant to the same criteria in the SDWA and implementing regulations. If the Region issued a new draft permit, it would require the same public notice and comment procedures, and commenters would have the ability to seek EAB review if the Region issued a final permit.

III. STANDARD OF REVIEW

The standard of review for appeal of an EPA-issued UIC permit issued is governed by 40 C.F.R. § 124.19. In any appeal from a permit granted under 40 C.F.R. Part 124, the petitioner bears the burden of demonstrating that review is warranted. 40 C.F.R. § 124.19; see *In re Pennsylvania Gen’l Energy Co. LLC*, UIC Appeal Nos. 14-63, 14-64, & 14-65, slip op. at 4 (EAB Aug. 21, 2014); *In re City of Palmdale*, 15 E.A.D. 700 (EAB 2012); *In re Wash. Aqueduct Water Supply Sys.*, 11 E.A.D. 565, 573 (EAB 2004); *In re Am. Soda, LLP*, 9 E.A.D. 280, 286 (EAB 2000). To obtain review, the petitioner must identify the contested permit condition and show that the permit condition in question is based on a “clearly erroneous” finding of fact or conclusion of law, or involves an “exercise of discretion or an important policy consideration that the Environmental Appeals Board should, in its discretion, review.” 40 C.F.R. § 124.19(a)(4)(i); *See In re Guam Waterworks Auth.*, 15 E.A.D. 437, 443 n. 7 (EAB 2011); *In re Environmental Disposal Sys., Inc.*, 12 E.A.D. 254, 263 (EAB 2005).

The petitioner must also demonstrate that each issue raised in the petition was raised during the public comment period, and for each issue that was not raised previously, the petition must explain why it was not required to be raised during the public comment period as required by 40 C.F.R. § 124.13. Additionally, if the petition raises an issue that the EPA addressed in the response to comment document, the petitioner must provide a specific citation to the relevant comment and response, and explain why the EPA’s response was clearly erroneous or otherwise warrants review. 40 C.F.R. § 124.19(a)(4)(ii). *See EAB Practice Manual (Aug. 2013)* at 45; *In re City of Attleboro*, 14 E.A.D. 398, 405 (EAB 2009), (“[T]he Board will not entertain vague or unsubstantiated claims.”); *In re Westborough*, 10 E.A.D. 297, 305, 311-312 (EAB 2002) (noting that “a petitioner must demonstrate with specificity in the petition why the Region’s prior response to those objections is clearly erroneous or otherwise merits review”). The Board has held that “mere allegations of error” are not enough to warrant review. *See In re City of*

Attleboro, 14 E.A.D. 398, 405-406, 418, 432, 440 (EAB 2009). Applying these principles, the EAB denies review where the petitioner merely reiterates or attaches comments previously submitted regarding a draft permit and does not engage the EPA's responses to those comments. *See also In re Cherry Berry B1-25, SWD*, UIC Appeal No. 09-02 (EAB Aug. 13, 2010) (Order Denying Review) at 5 ("This Board has frequently stated that [i]t is not sufficient simply to repeat objections made during the comment period; instead, a petitioner must demonstrate why the permit issuer's response to those objections is clearly erroneous or otherwise warrants review."); *In re Chukchansi Gold Resort*, 14 E.A.D. 260, 264 (EAB 2009) ("Assuming the issues have been preserved, the petitioner must then explain with sufficient specificity why a permit issuer's previous response to those objections [raised during the public comment period on the draft permit] were clearly erroneous, an abuse of discretion, or otherwise warrant Board review.").

The preamble to the original EAB permit appeal provisions at 40 C.F.R. § 124.19 states that "this power of review should only be sparingly exercised," and that "most permit conditions should be finally determined [by the permitting authority]." (Consolidated Permit Regulations) 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). *See In re City of Attleboro*, 14 E.A.D. 398, 405 (EAB 2009); *In re Environmental Disposal Sys., Inc.*, 12 E.A.D. 254, 263-64 (EAB 2005); *In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 717 (EAB 2006); *In re City of Moscow*, 10 E.A.D. 135, 140-41 (EAB 2001); *In re Jett Black, Inc.*, 8 E.A.D. 353, 358 (EAB 1999); *In re Maui Electric Co.*, 8 E.A.D. 1, 7 (EAB 1998). Subsequent revisions to Part 124 did not expand the scope of review. *See* Revisions to 40 C.F.R. Part 124, 78 Fed. Reg. 5281, 5284 (Jan. 25, 2013) ("...the revised language is not intended to expand the Board's existing scope of review.")

On matters that are fundamentally technical or scientific in nature, the Board will typically defer to a permit issuer's technical expertise and experience, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record. *In re City of Palmdale*, 15 E.A.D. 700, 705 (EAB 2012); *See also In re Beeland Group, LLC*, 14 E.A.D. 189, 196 (EAB 2008); *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 510 (EAB 2006); *In re Russell City Energy Ctr.*, 15 E.A.D. 1, 66 (EAB 2010), *petition denied sub nom.*; *Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 Fed. Appx. 219 (9th Cir. 2012); *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 41, 46, 51 (EAB 2005); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 570-71 (EAB 1998). Further, "[w]hen issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter." *In re NE Hub* 7 E.A.D. at 567.

In addition, the Board's authority to review a UIC permit does not extend beyond the goals of the UIC program to protect USDWs. *See In re Environmental Disposal Sys., Inc.*, 12 E.A.D. 254, 266 (EAB 2005); *See also In re Sunoco Partners Marketing & Terminals, LP*, UIC

Appeal No. 05-01, slip op. at 10 (EAB June 1, 2006); *In re Envotech, L.P.*, 6 E.A.D. 260, 264, 286 (EAB 1996) (“[T]he SDWA ... and the UIC regulations ... establish the *only* criteria that EPA may use in deciding whether to grant or deny an application for a UIC permit.”) (emphasis in the original).

IV. ARGUMENT

Mr. Anderson’s Petition fails to meet his burden to demonstrate that the Permit warrants review based on a “clearly erroneous” finding of fact or conclusion of law, or involves an “exercise of discretion or an important policy consideration that the Environmental Appeals Board should, in its discretion, review.” *See* 40 C.F.R. § 124.19(a)(4)(i). As discussed in Section III, and in accordance with 40 C.F.R. § 124.19(a)(4), a petitioner must identify the contested *permit condition* or other specific challenge to the *permit decision* and clearly set forth, with legal and factual support, their contentions for why the *permit decision* should be reviewed by the Board. Petitioner fails to meet this burden and simply restates concerns raised previously and responded to by the Region in the Response to Comments. The Petition also fails to specify the comments that were not adequately addressed or why the Region’s responses to those comments were clearly erroneous, an abuse of discretion, or otherwise warrant Board review.

The Region summarizes the issues raised by Petitioner below and how those issues are addressed in the Permit or why these concerns are beyond the scope of EPA’s review authority for UIC permits under the SDWA. Petitioner states that he does not understand how the U.S. Government and the State of Arizona could approve in-situ mining in or near an aquifer that is used for drinking water and agriculture. Petition at 1. EPA is the permitting authority in Arizona for Class III wells, however, many other aspects (including the surface impacts) of the project are regulated by the State of Arizona and are beyond the scope of EPA’s review authority for UIC permits under the SDWA. Therefore, the Region’s response will be limited to the federal UIC Permit and will not address the aspects of the project which require approval by or a permit from the State of Arizona.

Petitioner’s assertion that mining should not be permitted in the same aquifer that is being used for drinking water and agriculture fails to acknowledge the regulatory structure of the SDWA or the protections in the Permit for USDWs. The Area of Review³ (AOR) potentially impacted by the PTF is not a USDW as defined in 40 C.F.R. § 144.3 because the Region approved an Aquifer Exemption for that portion of the aquifer in 1997 (AR #596a). The permitting process included a detailed analysis which demonstrates that the PTF will not impact adjacent USDWs and the Permit has stringent controls to ensure that injected fluids do not

³ The AOR, also known as the zone of endangering influence, is the area surrounding a well field where the pressure in the injection zone may cause migration of the injection or formation fluids out of the injection zone and into a USDW, as described in 40 C.F.R. § 146.6(A)(1)(ii).

migrate outside the AOR. This issue was addressed in the Response to Comments. See Response to Comment 12 below:

12) Comment: A commenter cites data from the BHP Pilot Test regarding vertical migration of mining solutions into the LBFU and questions how EPA can allow such migration to occur at the PTF site, which they claim is the primary drinking water supply for a growing city.

EPA Response: EPA disputes that vertical migration of ISCR fluids into the lowermost portion of the LBFU during PTF operations is likely to occur. Movement of ISCR fluids into the LBFU was predicted to be 20 to 40 feet at the BHP site, and under a worst case scenario of a loss of hydraulic control for up to 30 days, modeling for the current permit indicates up to 54 feet of vertical migration into the LBFU at the PTF site. However, the lowermost 200 feet of the LBFU is not a protected “underground source of drinking water” because it is an exempted portion of the aquifer. Moreover, all ISCR constituents must be reduced to acceptable levels in compliance with permit conditions before post-injection aquifer rinsing stops and EPA authorizes closure of the PTF. The PTF permit also requires monitoring of the LBFU water quality to ensure that any ISCR constituents, if present, do not migrate downgradient beyond the AOR. These conditions will ensure protection of any underground sources of drinking water outside the PTF site (RTC at 13, AR #581).

The Administrative Record and Response to Comments demonstrate that the Permit protects USDWs and meets the criteria under the SDWA and the UIC implementing regulations. Petitioner fails to specify the comments that were not adequately addressed or why the Region’s responses to those comments were clearly erroneous, an abuse of discretion, or otherwise warrant Board review as required by 40 C.F.R. § 124.19(a)(4)(ii).

Although Petitioner raises concerns about other types of in-situ mines, he has not identified Permit conditions warranting Board review as required by 40 C.F.R. § 124.19(a)(4)(i). Mr. Anderson cites U.S. Geological Survey studies primarily based upon uranium and coal mines to support his concerns about the FCI ISCR project, asserting that the impacts are similar for all three types of in-situ recovery mines. Petition at 1. Petitioner also attaches a sample document describing metals that have been released at other mines and claims these releases are a “non-recoverable contamination of the aquifer” and asserts that there has never been an in-situ mine where the aquifer has been restored. Petition at 1. This issue was raised and responded to in the Response to Comments. See Response to Comment 46:

46) **Comment:** A commenter asserts that all available evidence indicates that complete restoration of an in situ leach mine has never been successful, as shown by uranium ISR mines. The commenter claims it will be impossible for FCI to return the aquifer to meeting drinking water standards.

EPA Response: The commenter refers to restoration results at ISR uranium mines, which have had documented challenges. However, aquifer restoration success was demonstrated for ISR copper mining at the BHP Pilot Test site within six years of cessation of ISCR operations. The BHP project is much more relevant and applicable to the PTF project than the ISR uranium mining operations cited by the commenter. EPA approved closure of the BHP well field in 2005 after rinsing operations were concluded in 2004. No exceedances related to ISCR operations have been reported in quarterly monitoring of POC wells since initiation of the BHP Pilot Test in 1997 (RTC at 33, AR #581).

Petitioner raises non-project specific concerns about in-situ mining, but does not identify any contested permit condition or other specific challenge to the permit decision that would warrant Board review as required by 40 C.F.R. § 124.19(a)(4)(i).

Petitioner must demonstrate that each issue raised in the petition was raised during the public comment period, and for each issue that was not raised previously, the petition must explain why it was not required to be raised during the public comment period as required by 40 C.F.R. §124.19(a)(4)(ii). Petitioner cites and attaches an article by Arizona Geological Survey titled “Recovery of Copper by Solution Mining Methods, Contributed Report CR-15-A, August 2015” as support for his concerns. Petition at 1. Mr. Anderson did not include this report in any of his previous comments and does not provide a rationale as to why it was not raised during the public comment period as required by 40 C.F.R. § 124.13. On this basis alone, the issues raised by Petitioner in the Arizona Geological Survey article are not a basis for the Board to review the Permit.

Although the issues raised in the Arizona Geological Survey article are not a basis for Board review, the Region will respond briefly to the issues raised by Petitioner. Petitioner asserts that the project should not be allowed and expresses concern that solution mining may require costly and difficult field testing. Petition at 1. Although this is not part of the criteria used to evaluate permits under the SDWA, the Region notes that significant and costly field tests have been performed by previous owners (Continental Oil Company, Magma Copper Company, and BHP Copper, Inc.) as well as FCI at the property; and the PTF itself is a pilot to determine whether a commercial scale project is feasible (AR #2g Attachment i at 1-4).

The concerns raised by Petitioner, citing the Arizona Geological Survey article, about the differences between ISCR and conventional mining are not relevant to whether the project may impact USDWs. Petitioner expressed concern that a) physical and chemical constraints limit ISCR application to a few sites, where conditions are favorable, b) copper recoveries are generally less effective than conventional methods, c) time required for metal extraction is generally greater than conventional mining, and d) ISCR can only recover copper and is not able to recover byproduct metals like molybdenum, gold, and silver. The Region's role in reviewing a UIC permit application is not to compare how ISCR compares to surface mining, it is to ensure that ISCR is done in a manner that is protective of USDWs. *See In re Environmental Disposal Sys., Inc.*, 12 E.A.D. 254, 266 (EAB 2005); *See also In re Sunoco Partners Marketing & Terminals, LP*, UIC Appeal No. 05-01, slip op. at 10 (EAB June 1, 2006); *In re Envotech, L.P.*, 6 E.A.D. 260, 264, 286 (EAB 1996) (“[T]he SDWA ... and the UIC regulations ... establish the *only* criteria that EPA may use in deciding whether to grant or deny an application for a UIC permit.”) (emphasis in the original). Thus, Petitioner's concerns about the effectiveness of ISCR as compared to conventional mining are not a basis for the Board to review the Permit.

The Petitioner raises other issues that are beyond the scope of the Board's authority for reviewing UIC permits under the SDWA. The Petition raises concerns about the safety of ISCR generally, citing the same article by the Arizona Geological Survey that was not included in previous comments. These concerns are restated below:

- “By its very nature, solution mining technology relies on hydrological models and predictions. It is generally very difficult to observe what is really happening below the earth's surface.
- Solution flow patterns are very difficult to accurately quantify, engineer and control.
- Solution mining works best under saturated conditions.
- Leachable deposits are not always located below the water table.
- Environmental management works best when the ore body can be isolated from adjacent aquifers.”

Petition at 2. These generic concerns about in-situ mining are addressed in the permitting process by requiring a permit that protects USDWs in accordance with the UIC regulations through robust Permit terms that are extensively supported in the Administrative Record. Petitioner fails to identify any contested permit condition or other specific challenge to the permit decision that would warrant Board review as required by 40 C.F.R. § 124.19(a)(4)(i).

Mr. Anderson may have misinterpreted a technical statement about migration by an EPA employee or contractor at the public meeting. Mr. Anderson states that EPA informed him at the public meeting that EPA's model shows migration from the proposed mine will reach the community well in 20 years and that EPA openly admitted that the model shows migration. Petition at 2. The Region does not know what comment Mr. Anderson is referring to, but the

Response to Comments sets forth the migration timeframes analyzed by the Region. In the Response to Comments for the Permit, the Region explained:

For the PTF, EPA reviewed whether the groundwater within the AOR is currently being withdrawn for drinking water and if such ground water will be withdrawn in the future by drinking water wells currently in existence. EPA confirmed that there are no drinking water wells withdrawing water from the identified portion of the aquifer today, which is consistent with the exemption status of that aquifer. In addition, EPA determined that the groundwater in the project's AOR would take at least 127 to 211 years to travel the distance to the nearest potential (inactive) drinking water well (ADWR No. 55-212512), located approximately 1.2 miles downgradient of the PTF well field. EPA based this determination on an estimated hydraulic conductivity ranging from an average of 15 feet/day to a maximum of 25 feet/day and a groundwater flow velocity of 30 to 50 feet per year in the LBFU. If tortuosity of pore spaces were considered in the calculation, the travel time would be even longer. Moreover, because ADWR No. 55-212512 has only been used for test purposes and has not been used for municipal drinking water purposes, EPA documented in our Draft Permit Statement of Basis the groundwater migration to the location of the closest active drinking water well. As described in the Statement of Basis, the travel time from the LBFU above the PTF mine zone to the closest active drinking water well (at Merrill Ranch) would be greater than 200 years. This time period exceeds the reasonable lifetime of any active public drinking water wells (RTC at 15-16, AR #581).

This analysis was based on groundwater modeling of flow gradients in the subsurface, site characterization data, and the location of both active and inactive drinking water wells located approximately one to three miles from the PTF (AR # 18 at 13-14). The Board generally defers to the permit issuer's technical expertise and experience on matters that are fundamentally technical or scientific in nature, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record. *In re City of Palmdale*, 15 E.A.D. 700, 705 (EAB 2012); *See also In re Beeland Group, LLC*, 14 E.A.D. 189, 196 (EAB 2008). Further, "[w]hen issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter." *In re NE Hub 7* E.A.D. at 567. Petitioner does not provide any data or evidence that indicate how current drinking water aquifers or existing wells will be impacted by the PTF or why the Region's Response to Comments was clearly erroneous or otherwise warrants review by the Board.

Finally, the Region respectfully disagrees with Petitioner's assertion that the Region did not respond to his comments and the concerns he raised at the public meeting. Petitioner fails to meet his burden to provide a specific citation to the relevant comments and explain why the

Region's response was clearly erroneous or otherwise warrants review. *See EAB Practice Manual* at 45; 40 C.F.R. § 124.19(a)(4)(ii); *In re City of Attleboro*, 14 E.A.D. 398, 405 (EAB 2009), (“[T]he Board will not entertain vague or unsubstantiated claims.”); *In re Westborough*, 10 E.A.D. 297, 305, 311-312 (EAB 2002) (noting that “a petitioner must demonstrate with specificity in the petition why the Region’s prior response to those objections is clearly erroneous or otherwise merits review”). The Region responded to all significant comments in the Response to Comments and Petitioner’s unsupported assertion does not warrant Board review.

IV. CONCLUSION

The Region’s Permit decision was made in accordance with the SDWA and UIC regulations. The Permit is supported by the Administrative Record, including a thorough Responses to Comments. The final Permit includes significant modifications from the draft permit to address concerns raised by commenters. The Permit is protective of USDWs and has a strong and well-developed technical basis that is supported by the Administrative Record.

Petitioner has not identified any contested Permit conditions or any policy decisions by the Region that warrant Board review. The Region therefore respectfully requests that the Petition for Review be denied.

V. STATEMENT OF COMPLIANCE WITH WORD COUNT

Pursuant to 40 C.F.R § 124.19(d)(3), the Region states that this Response to Mr. Anderson’s Petition for Review contains approximately 7,000 words, which does not exceed the 14,000-word limit set by the EAB.

Date: April 7, 2017

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that I caused a copy of the attached **RESPONSE TO PETITION FOR REVIEW** to be served by electronic mail upon the persons listed below.

Date: April 7, 2017

Respectfully submitted,



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