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Via email and FedEx

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Re: Proposed Arroyo Grande oil field aquifer exemption; request for formal rulemaking

On February 8, 2016 the California Department of Conservation, Division of Oil, Gas and Geothermal Resources ("DOGGR") recommended an aquifer exemption for Class II injection wells in the Arroyo Grande oil field ("AGOF"), operated by Freeport McMoRan ("FMOG"). Under the Safe Drinking Water Act ("SDWA"), the EPA must approve this exemption before it is valid.[1] Some aquifer exemptions are subject to formal rulemaking – that

[1] 40 C.F.R. § 144.7(a)(2).

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is, notice in the Federal Register and an opportunity for public comment.[2] The Center for Biological Diversity ("CBD" or "Center") writes to request Federal Register publication and formal notice and comment period, as well as a public hearing, for the AGOF aquifer exemption.[3]

I. Background

The SDWA is an important safeguard for our nation's drinking water, a precious resource. Water is presumed protected unless exempted.[4] The EPA may not approve an aquifer exemption if the water is currently or could be used as a source of drinking water.[5] In some cases, EPA has delegated primary responsibility for initial review of applications to the states, such as in the case of the California Primacy Agreement.[6]

It has recently come to light that in direct violation of both the Primacy Agreement and the terms of the SDWA, DOGGR permitted up to 5,625 potentially unlawful Class II injection wells to inject waste water, steam, chemicals, and other pollutants into non-exempt aquifers.[7] These include 90 wells at the AGOF: 14 waste disposal wells and 76 enhanced oil recovery wells that primarily injected steam underground, sometimes at high volumes. Subject to an agreement with the EPA, DOGGR has issued "emergency regulations" requiring all non-compliant injection wells to obtain aquifer exemptions by certain deadlines, depending on the quality of the water in the aquifer. FMOG and state regulators request this exemption in order to both legitimize its illegal injections and accommodate a planned massive expansion of production, which will involve drilling 350 wells, including new injection wells.

The Center and AGOF's neighbors are concerned that aquifers currently used for drinking water will be harmed by the exemption. If EPA grants this exemption request for the AGOF, operators will inject into an expanded area of the underlying aquifer beyond that in which they have been illegally injecting for decades. This application rests on the assertion that the aquifer does not currently serve as a source of drinking water and cannot now or in the future serve as a source of drinking water because it is hydrocarbon producing.[8] In addition, DOGGR asserts that

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[2] 40 C.F.R. § 145.32(b)(2).

[3] In the absence of a formal notice and comment period and public hearing, we request that EPA reject the aquifer exemption, because DOGGR has not demonstrated that the exemption meets state and federal regulatory requirements. See Attached: Comments on FMOG Arroyo Grande Oil Field Aquifer Exemption from Maya Golden-Krasner, Center for Biological Diversity (Sept. 21, 2015) ("AE Comments"); Comments on FMOG Arroyo Grande Oil Field Aquifer Exemption Supplement from Maya Golden-Krasner, Center for Biological Diversity (December 16, 2015) ("Supplemental AE Comments"); Comments on the Arroyo Grande Aquifer Exemption Application by Matt Hagemann (Dec. 14, 2015) ("Hagemann Comments").

[4] 40 C.F.R. § 144.7(a); 42 U.S.C. § 300h(d)(2).

[5] 40 C.F.R. § 146.4.

[6] Underground Injection Control Program, Memorandum of Agreement Between California Division of Oil and Gas and the United States Environmental Protection Agency, Region 9 (Sept. 9, 1982) ("Primacy Agreement"), *available at:* http://www.conservation.ca.gov/dog/for_operators/Documents/MOU-MOA/MOA_EPA_UIC_1982.pdf.

[7] Letter from Steve Bohlen, State Oil and Gas Supervisor, DOGGR, and Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board, to Michael Montgomery, U.S. EPA (July 31, 2015) ("July 31, 2015 letter"), p. 1.

[8] DOGGR, California State Water Resources Control Board ("Water Board"), Statement of Basis, Arroyo Grande Field ("Statement of Basis"), *available at:*

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this injection will not affect the quality of water that is, or may reasonably be, used for any beneficial use, and that the injected fluid will remain in the proposed exempted aquifer because the aquifer is zonally isolated.[9] Neighbors of the AGOF as well as an expert hydrogeologist have submitted comments disputing the basis for these claims.[10]

EPA must approve revisions to state Primacy Agreements, including aquifer exemptions. If a revision or aquifer exemption is "substantial," the change must be noticed in the Federal Register with a 30-day comment period.[11] Although the regulations do not define "substantial," EPA has indicated that aquifer exemptions for Class II wells are "substantial" if (1) the water in the aquifer has less than 3,000 mg/l total dissolved solids ("tds"), or (2) the exemption is "not related to action on a permit."[12]

We request that the EPA follow the formal rulemaking process outlined in 40 CFR section 145.32 for the proposed AGOF aquifer exemption for several reasons. First, the aquifer exemption is clearly a "substantial" revision to California's UIC program, because the water in the aquifer has less than 3,000 mg/l tds, and for the additional reasons detailed below. Second, this is a "complex" exemption request, regardless of whether it is deemed substantial. Third, the combination of new technology, climate change and current drought conditions warrant special review of what constitutes drinking water that can be "used in the future." Finally, current and widespread illegal underground injection into California aquifers demonstrates that the State of California has failed to adequately oversee and protect the state's drinking water, making DOGGR's determinations suspect and necessitating close oversight by EPA, as well as transparency and opportunity for public involvement at each stage in this process.

II. The Proposed Aquifer Exemption is "Substantial"

The Arroyo Grande Oil Field aquifer exemption meets the criteria for "substantial" revisions. First, the water quality in this aquifer is well below 3,000 mg/l tds – as low as 1,000 mg/l in some regions.[13] Furthermore, this exemption is not sought in conjunction with other

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ftp://ftp.consrv.ca.gov/pub/oil/Aquifer_Exemptions/County/San_Luis_Obispo/Arroyo_Grande_Oilfield/Dollie_Sands_Pismo_Formation/Arroyo%20Grande%20Statement%20of%20Basis%20Final.pdf; 40 C.F.R. §§ 146.4(a), (b)(1).

[9] Statement of Basis; California Pub. Resources Code § 3131.

[10] *See* Supplemental AE Comments, pp 16-20; Hagemann Comments; and Proposed Aquifer Exemption letter from Natalie Smith-Risner (Dec. 16, 2015). *See also* Cross Sectio, showing location of water well adjacent to proposed aquifer exemption zone created by Rob Hesse (Dec.16, 2015) and Rob Hesse, Aerial Image Overlay Showing Results of CBD's Public Records Act Request for Well Information (Feb. 10, 2016).

[11] 40 C.F.R. § 145.32(b)(2).

[12] US EPA, Underground Injection Control Program: Federally Administered Programs, 48 Fed. Reg. 40098, 40108 (Sept. 2, 1983). Later guidance added a qualifier excepting cases where the exemption involves "enhanced recovery allowed by rule." There is no exception for water disposal wells. (US EPA, Guidance for Review and Approval of State Underground Injection Control (UIC) Programs and Revisions to Approved State Programs, GWPB Guidance #34 at 5 (1984), *available at:* http://www.conservation.ca.gov/dog/general_information/Documents/Aquifer%20Exemption%20Guidance%2034.pdf.)

[13] *See, e.g.,* Freeport-McMoRan, Application for Aquifer Exemption, Arroyo Grande Oil Field ("Aquifer Exemption Application"), p. 20, *available at:* ftp://ftp.consrv.ca.gov/pub/oil/Aquifer_Exemptions/County/San_Luis_Obispo/Arroyo_Grande_Oilfield/Dollie_Sands_Pismo_Formation/Arroyo%20Grande%20Oilfield%20Edna%20Member%20Dollie%20Sands%20Pismo%20Formation%20Aquifer%20Exemption%20Application.pdf. *See also*, Aquifer Exemption Application, Appendix D 1-a,

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current permitting requests. An aquifer exemption may be non-substantial if part of a larger permitting process because the notice and comment provided for the entire permitting process will provide opportunity for public participation in the aquifer exemption review as well.[14] Here, one of the reasons for the aquifer expansion is to accommodate a project that will add 350 new wells.[15] This project is subject to an environmental review process under the California Environmental Quality Act but, at FMOG's request, that review has been delayed pending the outcome of the aquifer exemption process.[16] The aquifer exemption application, however, ignores this clearly foreseeable, planned expansion, and the resulting changes in water quality and hydrogeology that could result from it. Therefore, that permitting process cannot be considered "in conjunction with" the aquifer exemption and the public has been denied its right to comment on the exemption in the context of the planned expansion. Consequently, either EPA must require DOGGR and the State Water Board to reevaluate the exemption in conjunction with this soon-to-be-permitted expansion, or the exemption must be deemed substantial.

III. This Is a Complex Aquifer Exemption

Even if this aquifer exemption is not deemed substantial, it will be complex, and thus should be subject to notice and comment. The EPA has indicated that "[w]here the effect of a proposed exemption that ordinarily would be considered minor appears particularly significant and far-reaching, EPA may choose to use the same rulemaking procedures normally reserved for "major" exemptions."[17] Furthermore, a recent 2014 EPA memo indicated that while many aquifer exemptions are routine, some are "complex" (even if not substantial) and require greater communication both within and outside the EPA.[18]

The circumstances surrounding the AGOF aquifer exemption meet the criteria for "complex" mentioned in the 2014 memo: the "proposed exempted area is located adjacent to an underground source of drinking water (USDW) that is currently in use, or where the potential future use of the USDW is unclear."[19] Furthermore, there is significant controversy regarding: whether the aquifer is hydrocarbon producing throughout the entire area; whether the aquifer might be used as a source of drinking water; incomplete surveys of, and data from, local residential drinking water wells; and the geological structure of the aquifer--namely, the claim that it is zonally isolated and will not affect beneficial use water. In fact, water from the aquifer

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available at: ftp://ftp.consrv.ca.gov/pub/oil/Aquifer_Exemptions/County/San_Luis_Obispo/Arroyo_Grande_Oilfield/Dollie_Sands_Pismo_Formation/Arroyo%20Grande%20Oilfield%20Edna%20Member%20Dollie%20Sands%20Pismo%20Formation%20Aquifer%20Exemption%20Application%20Appendices.pdf.

[14] UIC Control program, *supra* note 12; *see also* Goliad County v. Uranium Energy Corp., 2009 U.S. Dist. LEXIS 47685, 7 (S. Dist. Texas 2009).

[15] San Luis Obispo County Department of Planning and Building, Initial Study, Phase V Oilfield Expansion Conditional Use Permit (November 2012) ("Phase V Initial Study"), p. 2, *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Environmental/initialstudy.pdf.

[16] Freeport McMoran Oil & Gas (formerly PXP) - Phase V Conditional Use Permit (DRC2012-00035), Ongoing Status Report, p. 2, *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/OngoingStatusReport.pdf.

[17] US EPA, UIC Control Program, *supra* note 12.

[18] Peter Grevatt, Office of Groundwater and Drinking Water, EPA, Memo: Enhancing coordination and communication with states on review and approval of aquifer exemption requests under the SDWA (Jul. 24, 2014).

[19] *Id.* at 2.

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is currently withdrawn, treated, and *used for beneficial use* by being discharged into Pismo Creek. This controversy necessitates more public involvement than is provided for "non-complex" aquifer exemptions.

Further adding to the complexity of the exemption request, as noted above, FMOG is contemplating expansion of its operations in the AGOF.[20] The expansion will affect pressure, groundwater flow, and zonal isolation, in addition to potentially increasing seismic risk and subsidence. These operations will also vastly increase the volume of waste water produced at the site, beyond the capacity of the site's Water Reclamation Facility and FMOG's NPDES permit to discharge treated water into Pismo Creek. This raises the likelihood that large amounts of untreated waste water would be injected into the Dollie Sands. As a consequence, this exemption should not be approved until adequate data is collected to ensure that, even after expansion, the injected fluids will remain hydrologically isolated.

IV. The EPA Must Consider Current Technology and Climate Conditions in Assessing Future Use of Water

The technical criteria against which the DOGGR measured the requested aquifer exemption are outdated. The Safe Drinking Water Act was passed 40 years ago, and the technical criteria for USDWs and attendant exemptions are decades old. Technology has advanced significantly in the intervening time, with the result that it is now feasible to use lower-quality water for beneficial use. For example, California's first desalinization plant recently went online--a feat that seemed impossible when EPA adopted the criteria for exempt aquifers. Furthermore, the current drought conditions in California have necessitated new wells that are deeper and tap into previously unused aquifers. With global warming-induced climate change, California (like other states) is likely to continue to experience deep drought cycles, which will necessitate a long-term view toward protecting the state's drinking water.

The EPA should consider updating the technical criteria for aquifer exemptions and USDWs, but in the meantime the assertions made by DOGGR in its Statement of Basis for the AGOF aquifer exemption should be considered in light of current technology and drought conditions. It is clear that the DOGGR has failed to adequately consider and balance the current and future potential that the water in this aquifer will be used as drinking water. Public participation would facilitate the EPA's process of gathering and analyzing the current and future uses of the water.

V. California's History of Illegal Underground Injection--Including at AGOF--Necessitates More Stringent Review

With a history of lax to nonexistent control over oil and gas operations and underground injection in California, DOGGR's Statement of Basis should be subject to careful scrutiny and enhanced public participation. There are currently wells at AGOF that are illegally injecting into the non-exempt aquifer, and DOGGR *has continued to permit these illegal wells--including at AGOF*--even after acknowledging that this is a protected aquifer and pledging to increase

[20] Phase V Initial Study, p. 2.

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regulation, oversight, and enforcement of injection throughout the state.[21] This situation is a direct result of DOGGR's failure to comply with its Primacy Agreement. Now DOGGR is seeking to sanction years of illegal injection at AGOF after the fact. Given this history, EPA should (1) carefully analyze assertions and supporting data for the DOGGR's Statement of Basis and (2) provide an opportunity for public comment during the process to ensure full and accurate information is considered.

Indeed, DOGGR's own "Responses to Comments"[22] demonstrate why EPA should implement a formal public process. Instead of responding to the specific, technical deficiencies commenters pointed out, DOGGR simply maintains that the public should trust that the state agencies have been diligent in reviewing all the necessary data in making its determination that the aquifer meets state and federal exemption criteria. For example, many people and organizations provided comments that there is not enough data about nearby water wells to show that water from this aquifer is not being used for domestic or beneficial purposes--and pointed to evidence that there *are* water wells drawing from the same formation. DOGGR simply and repeatedly responds that there was a thorough survey done and points to the very data that commenters said were inadequate.[23] DOGGR also entirely failed to respond to the Center's comment that US EPA has stated that parts of the proposed exempted area are not hydrocarbon bearing.[24] Instead, DOGGR merely reiterates that it is.[25] DOGGR asks that the public trust its analysis; however, its failure to directly address the technical comments and its history of ineffective UIC regulation makes this request untenable.

What is perhaps worse is DOGGR's casual dismissal of concerns about the effects of injection projects on the aquifer and surrounding water quality by disingenuously asserting that future injection project applications will be subject to a "detailed review of the project area and the project would be open. . . to the public for additional comments and requirements."[26] Once the aquifer has been exempted, however, that water has been sacrificed to FMOG, and no further review of its hydraulic connection to other groundwater will take place. DOGGR is treating this exemption as if the presumption is in favor of injection, rather than the presumption being in favor of protecting groundwater.[27] It is as if obtaining an exemption is merely a procedural hurdle to allowing injection: "[t]he Safe Drinking Water Act requires that an aquifer that meets the definition of a USDW be exempted before injection is permitted."[28] Further, contrary to DOGGR's unwarranted, repeated assertion that there will be an opportunity for the public to

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[21] Supplemental AE Comments, pp 10-11.

[22] DOGGR, Arroyo Grande Aquifer Exemption Request, Public Comment Summaries and Responses (Feb. 8, 2016) ("Responses to Comments"), *available at:* ftp://ftp.consrv.ca.gov/pub/oil/Aquifer_Exemptions/County/San_Luis_Obispo/Arroyo_Grande_Oilfield/Dollie_Sands_Pismo_Formation/Arroyo%20AE%20Response%20to%20ALL%20Comments%20Final%202-8-2016.pdf

[23] Responses to Comments, pp. 17, 23, 35.

[24] Supplemental AE Comments, p. 4.

[25] Responses to Comments, pp. 9, 14, 15, 16, 18, 21, 23-25, 32, 34.

[26] Responses to Comments, pp. 8. *See also* pp. 12, 13, 16, 27, 28, 29, 37, 39, 40-41, 42, 44 ("The public will be a part of the approval process and will have an opportunity to submit comments and concerns" and "The approval process is also open to the public for comments and concerns.")

[27] For a discussion on the presumption favoring protecting drinking water and against exemption, see AE Comments, pp. 5-8.

[28] Responses to Comments, p. 16

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comment, there is, in reality, no public engagement in the injection approval process.[29] The aquifer exemption process is the public's only real opportunity to express its displeasure and deep concerns with DOGGR's cavalier forfeiture of our state's precious groundwater resources.

Ultimately, DOGGR punts the question of the need for additional data to the US EPA as the final arbiter in this matter.[30] As such, we urge the EPA to provide formal notice, the opportunity for the public to comment, and a public hearing for the proposed AGOF aquifer exemption not only because it is substantial, but also because it is highly controversial and complex. Public participation is crucial to ensure that the EPA has full access to the information needed to adequately determine if the water in the affected aquifer can be put to beneficial use. Thank you for your consideration. Please do not hesitate to contact me with any questions.

Sincerely,

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[29] According to the Primacy Agreement, *supra* n. 6, p. 5, DOGGR must, "at a minimum," "provide a 15 day public comment period, and make the non-confidential portions of the project plan and the representative Report on Proposed Operations available for review. If the Supervisor determines that a public hearing is necessary, public notice shall be provided at least 30-days prior to the public hearing." However, in reality, few people see the notices posted for three days in the local paper, and comments and hearings occur rarely, if ever. (*See* Horsley Witten Group, Final Report, California Class II Underground Injection Control Program Review (June 2011), *available at:* ftp://ftp.consrv.ca.gov/pub/oil/uic%20files/fullreport.pdf, pp. 58 ("Most District 1 UIC staff have never gone through the hearing process"), 91 ("No public hearing has ever been conducted in this District [2]"), 123 ("We [District 3] have never had a need to hold a public hearing as part of the approval process"), 162 ("The last public hearing in this district [4] was on December 4, 1986"), 194 ("No public hearings have been conducted [District 5"), 227 ("[District 6] *Have any hearings been held in the past ten years?* None").

[30] Responses to Comments, pp. 22, 41 ("In the event that EPA requires additional data, the State will gather that data.")

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