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January 11, 2013

Via E-Mail & U.S. Mail

Mr. Tim Kustic
State Oil & Gas Supervisor
Division of Oil, Gas & Geothermal Resources
State of California Department of Conservation
801 K Street MS 18-00
Sacramento, CA 95814-3530

Re: Approval of Enhanced Oil Recovery (EOR) Accretion Projects Without Aquifer Exemptions

Dear Tim:

This office represents Hathaway, LLC, an oil and gas producer in Kern County. Hathaway recently submitted an application to the Division's District 4 office seeking approval of a proposed steam flood injection project located in the northern Premier and Enas portions of the Poso Creek Oil Field. The formation Hathaway has targeted for steam injection is the basal Etchegoin sand, a well-understood and heavily produced hydrocarbon zone where active cyclic steam and steam flood operations have been ongoing for decades. Although the basal Etchegoin is saturated with 40-50% oil by volume, its interstitial water is relatively fresh (<10,000 ppm Total Dissolved Solids (TDS)), which means it qualifies as an "underground source of drinking water" under Federal regulations implementing Part C of the Safe Drinking Water Act (SDWA).

The Division's index and contour maps for the Poso Creek Oil Field are dated May 1980. These maps use shading enclosed by dashed lines to loosely define the productive limits of the Premier and Enas pools, as these limits were understood back in 1980. Pursuant to the Division's Primacy Application approved by EPA in 1983, these loosely defined productive limits also define the lateral boundaries of the exempted portions of the hydrocarbon-producing formations

(Etchegoin and Chanac) for purposes of California's Class II underground injection control (UIC) program.[1] Hathaway's project proposes new injection wells located both inside and outside the shaded areas on the Division's maps.

Since roughly 1983 (when California acquired primacy over its Class II UIC program), the Division's District offices have been approving certain enhanced oil recovery (EOR) projects which "accrete" beyond the shaded areas on the Division's maps, where water of less than 10,000 mg/liter TDS exists, without requiring operators to obtain aquifer exemptions. This practice, while relatively consistent and widespread among the Districts, has been limited in scope. It has involved only projects which meet the following pre-established conditions demonstrating the injection will not "endanger" drinking water sources:

- The proposed injection must be for EOR purposes only;
- The target formation must be a hydrocarbon-producing formation where underground injection operations have been ongoing;
- EPA must have previously exempted the formation in the area where the targeted injection will occur;
- There must be hydraulic connectivity between the water existing within the exempted boundary (shaded area) and the water existing in the project's proposed area of influence (outside the exempted boundary);
- The same geology must exist both within the exempted boundary and outside the exempted boundary in the project's proposed area of influence;
- The new injection project cannot expand more than a logical distance beyond the exempted boundary; and
- The project's area of influence must remain confined well-within the established administrative boundaries of the oil field.

Hathaway's proposed steam flood project in the northern Premier and Enas portions of the Poso Creek Oil Field is a prime example of an EOR "accretion" project which meets all of the foregoing conditions. Despite this, as explained to Hathaway, EPA is now mandating that the Division stop the practice of approving EOR "accretion" projects without requiring aquifer exemptions. EPA wants all new injection well proposals located outside the shaded areas on the Division's oil field maps to proceed through the formal aquifer exemption process. Because Hathaway's project proposes new injection wells located both inside and outside the shaded areas, Hathaway was told its project could not be approved without an aquifer exemption.

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[1] The Primacy Application, Appendix B, states: "The [exempted portions of the] hydrocarbon-producing aquifers are shown in Volumes I and II of the 'California Oil and Gas Fields', published by the California Division of Oil and Gas. . . . ¶ The aquifers, or portions thereof, are identified in each volume by shading the exempted aquifers on the maps and cross sections. The exempted portions are also described in terms of average depth, thickness, and geologic age on the page opposite each map under the heading 'PRODUCING ZONES'." (Primacy Application, Appendix B.)

For reasons discussed in detail below, Hathaway does not believe EPA has the legal authority to require aquifer exemptions in situations where Division staff has approved, or intends to approve, EOR "accretion" projects which meet the above-described conditions demonstrating the injection will not "endanger" drinking water sources. From a technically legal standpoint, EPA lacks the authority to force the Division to change any aspect of California's approved UIC program without first following the procedures set forth in the SDWA to formally determine California's program, or a portion thereof, is inadequate.

The Districts' practice of approving EOR "accretion" projects without aquifer exemptions has complied in all material respects with the substantive elements of EPA's promulgated approach to preventing injection which "endangers" drinking water sources. The District offices have been applying Federal regulatory criteria, and relying on EPA's prior aquifer exemption decisions, when determining what underground sources of water can or cannot reasonably be expected to supply a public water system. (See 40 CFR 146.4(b).) The practice has not, however, complied with the one Federal procedural element which vests EPA with final approval authority over such determinations. (See 40 CFR 144.7(b)(3).) In situations where the identified conditions of an EOR "accretion" project are met, the District offices have been making these "endangerment" determinations on their own without deferring the decisions to EPA.

The fundamental legal question presented by the Districts' practice is whether the assumption of this role by the State, to the exclusion of EPA, in the limited context of EOR "accretion" projects, renders California's UIC program inadequate. To the extent the practice is not inconsistent with the minimum requirements of the SDWA, and represents an effective approach for preventing injection which "endangers" drinking water sources, EPA has no legal basis for forcing the Division to alter or change the Districts' practice.

The purpose of this letter is to lay out the legal rationale which supports the validity of the Districts' practice. Hathaway will attempt to demonstrate to the Division, and ultimately to EPA that, because EOR "accretion" projects present no risk of "endangering" drinking water sources, they can be approved by the Districts without aquifer exemptions in full compliance with the requirements of the SDWA.

I.
SUMMARY OF LEGAL RATIONALE SUPPORTING APPROVAL OF EOR ACCRETION PROJECTS WITHOUT AQUIFER EXEMPTIONS

Congress enacted Part C of the SDWA to prevent underground injection which "endangers" drinking water sources. Congress specifically defined in the SDWA the concept of "endangerment." According to Section 1421(d)(2), "[u]nderground injection *endangers* drinking water sources if such injection . . . [has the potential to contaminate] underground water which supplies or can reasonably be expected to supply any public water system . . . ." (42 U.S.C. § 300h(d)(2) (italics added).) Pursuant to Federal regulation, EPA uses the aquifer exemption

process to make determinations regarding what can or cannot "reasonably be expected to supply . . . [a] public water system." Aquifer exemptions are essentially determinations made by EPA (with input from the State) that water otherwise meeting the definition of an underground source of drinking water "cannot now and will not in the future serve as a source of drinking water." (See 40 CFR 146.4(b).)

In 1983, pursuant to SDWA § 1425, EPA formally approved California's primacy over Class II injection wells in the State. Section 1425 authorized California to adopt and implement a State UIC program that was different from the Federal regulatory provisions promulgated by EPA - both in terms of substance and procedure. In California and other oil and gas producing States, where underground injection control programs had been underway for years, Section 1425 offered an alternative to adoption of the detailed Federal UIC regulatory requirements. Section 1425 afforded California the flexibility to implement its own program, different from the Federal UIC program requirements, provided California could demonstrate to EPA that its program met the minimum requirements of the Act and represented an effective program for preventing injection which "endangers" drinking water sources,.

When California acquired primacy from EPA in 1983, the State did not adopt, nor did it agree to implement in all circumstances, the Federal procedural requirement for aquifer exemptions which EPA now insists that California enforce. This procedural requirement, promulgated by EPA in its regulations, vests EPA with ultimate approval authority for determining what can or cannot reasonably be expected to supply a public water system. There is nothing express in the SDWA itself, nor in the supporting legislative history, which indicates Congress intended EPA to have exclusive jurisdiction over these determinations, irrespective of the circumstances. As a result, California is not bound verbatim to the terms of the Federal procedural requirement, but instead is free, provided it chooses, to make such "endangerment" determinations on its own. If EPA disagrees with the effectiveness of California's program, or otherwise believes for policy reasons that it alone should have final approval authority in all circumstances, the SDWA requires EPA to proceed through a formal process, involving notice and an opportunity to be heard, as a prerequisite to forcing California to implement the Federal UIC program requirements.

Before injection can "endanger" drinking water sources, the water in question must "reasonably be expected to supply . . .[a] public water system." (SDWA § 1421(d)(2).) The criteria that District offices have been applying as prerequisites to approval of EOR "accretion" projects effectively ensure that the formation in the area where injection is targeted "cannot now and will not in the future serve as a source of drinking water." (See 40 CFR 146.4(b).) These projects involve expansion of the existing area of influence a logical distance beyond the previously exempted boundary, where EPA has already determined that water hydraulically connected to and geologically indistinguishable from water in the project's area of influence "cannot now and will not in the future serve as a source of drinking water." When there is no rational basis for distinguishing the geology within the exempted portion of the formation from the geology in the project's expanded area of influence (outside the exempted boundary), no

reasonable argument can be made that the water can be used as a source of drinking water, or that injection will "endanger" drinking water sources. Under these circumstances, the Districts' practice of approving projects without deferring to EPA on expansion of the exempted boundary does not render California's UIC program ineffective.

Moreover, where it is clear based on application of the substantive elements of EPA's exemption criteria, and a prior determination by EPA that underground water in a project's targeted area of influence cannot be used as a source of drinking water, forcing operators to proceed through the formal exemption process is an unnecessary regulatory impediment to oil and gas production. Federal UIC regulations which interfere with or impede oil and gas production are not enforceable under the express terms of the SDWA, unless they are "essential" to ensuring the protection of drinking water against "endangerment."

Hathaway's project is classic example of an EOR "accretion" project which proposes a logical expansion of injection activity beyond the previously exempted boundaries of a targeted formation. In Hathaway's case, EPA has already formally determined the water in the area of targeted injection does not now and cannot in the future serve as a source of drinking water. Hathaway has demonstrated that the same geology exists both within the exempted boundary and outside the exempted boundary in the project's proposed expanded area of influence. Moreover, because there is hydraulic connectivity between these two areas, injection activities presently occurring within the exempted boundary are having an influence on areas outside the exempted boundary. Under these circumstances, there is no rational scientific basis for distinguishing between the exempted area and the area of Hathaway's proposed expansion. Nor is there adequate legal or policy justification which supports forcing Hathaway through the formal exemption process. In such situations, strict adherence to the Federal procedural requirement of an aquifer exemption represents an unnecessary and non-essential impediment to oil and gas production which, under the SDWA, cannot be enforced.

II.
FEDERAL-STATE APPROACH TO REGULATING UNDERGROUND INJECTION

1. The Concept of "Endangerment"

In 1974, Congress enacted Part C of the SDWA to establish a Federal-State system of regulating underground injection activities. Section 1421 of the Act required EPA to propose and promulgate regulations establishing minimum requirements for State UIC programs "to prevent underground injection which *endangers* drinking water sources." (SDWA §1421(b)(1) codified at 42 U.S.C. § 300h (b)(1) (italics added).) Preventing underground injection which *endangers* drinking water sources is the driving force behind the SDWA and the cornerstone of EPA's UIC regulations.

Congress specifically defined in the SDWA what it meant by "underground injection which *endangers* drinking water sources." According to Section 1421(d)(2), "[u]nderground

injection *endangers* drinking water sources if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in the system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons." (42 U.S.C. § 300h (d)(2) (emphasis added).)

Thus, according to the express terms of the SDWA, there are two key elements to the concept of "endangerment." First, the water must "reasonably be expected to supply . . . [a] public water system." Second, the injection must cause a contaminant to be placed in such water which could result in the public water system "not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons." (See SDWA §1421(d)(2) codified at 42 U.S.C. § 300h (d)(2).) Importantly, both elements must exist in order for the Act to prohibit injection. In other words, if the water in question cannot reasonably be expected to supply a public water system or, alternatively, the injection will not result in a violation of any national primary drinking water regulation and will not otherwise adversely affect the health of persons, the SDWA does not address the injection or prohibit it from occurring. (Id.)

2. Section 1421

Section 1421 directed EPA to promulgate regulations for State UIC programs that met the minimum requirements for preventing "endangerment" set forth by Congress in Section 1421(b)(1)(A)-(D) (codified at 42 U.S.C. § 300h(b)(1)(A)-(D).) Subparagraphs (A) through (D) of section 1421(b)(1) establish the following minimum requirements for State UIC programs: (1) The States must prohibit unauthorized underground injection which is not authorized by permit or rule; (2) they must require applicants for underground injection permits to bear the burden of proving to the State that its injection will not "endanger" drinking water sources; (3) they must refrain from adopting regulations which either on their face or as applied would authorize underground injection which "endangers" drinking water sources; (4) they must adopt inspection, monitoring, recordkeeping, and reporting requirements; and (5) they must apply their injection control programs to underground injections by Federal agencies and by any other person whether or not occurring on Federally-owned or leased property. (See SDWA § 1421(b)(1)(A)-(D) codified at 42 U.S.C. § 300h(b)(1) (A)-(D).)

3. EPA's UIC Regulations

Consistent with its Congressional mandate, EPA proposed and adopted administrative, permitting and technical regulations which addressed the minimum criteria for State programs required by Congress under Section 1421(b)(1)(A)-(D). The administrative and permitting regulations, now codified in 40 CFR Part 144, were promulgated on May 19, 1980 (45 FR 33290), and the technical requirements, codified in 40 CFR Part 146, were promulgated on June 24, 1980 (45 FR 42472). Pursuant to SDWA § 1422(b), a State could receive primary enforcement responsibility to implement and enforce these regulations upon a timely showing to

the EPA Administrator that the State had "adopted . . . and will implement" a UIC program which met all of the regulatory requirements. (SDWA §1422(b) codified at 42 U.S.C. §300h-1(b).)

(A) Groundwater Reasonably Expected to Supply a Public Water System. Congress was clear in 1974 when it enacted the SDWA that it intended to protect not only currently-used sources of drinking water, but also potential future drinking water sources. In House Report No. 93-1185, dated July 10, 1974, Congress clarified this meant water having TDS levels of less than 10,000 ppm.[2] Congress chose a 10,000 ppm (mg/liter) TDS level to ensure that adequate supplies (through future treatment technologies) are available for future generations.

When EPA promulgated its UIC regulations, it incorporated the 10,000 mg/liter benchmark. This was to ensure that both presently-used as well as potential future sources of drinking water were protected. According to the regulations, all groundwaters of sufficient quantity to supply a public water system with a TDS of less than 10,000 mg/l are "protected" as potentially usable future sources of drinking water supply. (See definition of "underground source of drinking water" (USDW) found in 40 CFR 144.3 and 146.3.)[3]

At the same time, EPA recognized that certain groundwater, otherwise meeting the definition of a USDW, may not warrant protection because the water is not likely to ever be used a source of drinking water. Generally speaking, these waters exist in formations which are (i) mineral, hydrocarbon, or geothermal energy-producing, (ii) too deep to be economically produced for drinking water purposes, or (iii) too polluted from natural processes to be economically produced for drinking water purposes. According to 40 CFR 146.4(b), aquifers not currently being used for drinking water may be exempted from protection provided they meet one or more of the foregoing criteria. (See 40 CFR 146.4(a) and (b).)[4]

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[2] See House Report (93rd Congress, 2nd Session) No. 93-1185, dated July 10, 1974, reprinted in its entirety in *A Legislative History of the Safe Drinking Water Act*, February 1982, Serial No. 97-9, p. 564.

[3] EPA's definition of "underground source of drinking water" (40 CFR 144.3 and 146.3) applies both qualitative and quantitative standards. The qualitative standard of less than 10,000 mg/l TDS is established expressly in the regulation itself, while the quantitative standard is not – the regulation simply states that water must be of sufficient quantity to supply a public water system. EPA further explained its intention with regard to the quantitative element in a 1993 memorandum. The memorandum provides that "[t]o better quantify the definition of USDW, EPA determined that any aquifer yielding more than 1 gallon per minute can be expected to provide sufficient quantity of water to serve a public water system and therefore falls under the definition of a USDW." EPA Memorandum: *Assistance on Compliance of 40 CFR Part 191 with Ground Water Protection Standards*. From James R. Elder, Director, Office of Ground Water and Drinking Water, to Margo T. Oge, Director, Office of Radiation and Indoor Air, June 4, 1993.

[4] 40 CFR 146.4, in pertinent part, provides: "An aquifer or a portion thereof which meets the criteria for an 'underground source of drinking water' in § 146.3 may be determined under § 144.7 of this chapter to be an 'exempted aquifer' for Class I-V wells if it meets the criteria in paragraphs (a) through (c) of this section. . . . (a) It does not currently serve as a source of drinking water; and (b) It cannot now and will not in the future serve as a source of drinking water because:

40 CFR 146.4 provides that aquifers meeting the criteria for an exemption may be exempted pursuant to the procedures set forth in 40 CFR 144.7. To quote from 40 CFR 146.4: "An aquifer or a portion thereof which meets the criteria for an 'underground source of drinking water' in § 146.3 may be determined under § 144.7 of this chapter to be an 'exempted aquifer' . . . if it meets the criteria in paragraphs (a) through (c) of this section . . . ."

Section 144.7(b)(1) establishes the procedure States are to follow when designating exempted aquifers as part of their original UIC program submittal. Subsection (b)(2) then follows stating that no designation of an exempted aquifer submitted as part of State UIC program shall be final until approved by the Administrator of EPA. Subsection (b)(3) addresses exemption designations made by States subsequent to approval of their respective UIC programs. Subsection (b)(3) vests EPA with exclusive approval authority over all such subsequent designations. In this way, 40 CFR 146.4 sets forth the substantive criteria States are to apply for purposes of making exemption designations, while 40 CFR 144.7 establishes the procedural element which vests EPA with exclusive approval authority over such designations.

40 CFR 146.3, 146.4 and 144.7 taken together represent EPA's promulgated approach to addressing the first key element of the SDWA's concept of "endangerment." This element requires as a prerequisite to the Act's prohibition on injection that water in the targeted formation reasonably be expected to supply a public water system. To summarize, Section 146.3 protects all groundwaters with a TDS of less than 10,000 mg/l provided they are of sufficient quantity to supply a public water system. If one or more of the substantive criteria set forth in Section 146.4 exist, then an aquifer exemption may be obtained. 40 CFR 144.7 vests EPA with ultimate authority to approve or deny exemptions and, in so doing, determine whether injection may occur. Aquifer exemptions pursuant to 40 CFR 146.4 and 144.7 are essentially determinations made by EPA (with input from the State) that water otherwise meeting the definition of a USDW "cannot now and will not in the future serve as a source of drinking water."

(B) Injection Having The Potential To Cause Contamination. EPA's regulations also address the second element of "endangerment," namely that before injection into an "underground source of drinking water" can be prohibited, it must have the potential to cause a

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(1) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

(2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

(3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or . . .

(c) The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system."

violation of a national primary drinking water regulation, or otherwise adversely affect the health of persons. (SDWA § 1421(d)(2) codified at 42 U.S.C. § 300h(d)(2).) To address this second element, EPA promulgated 40 CFR 144.12:

> *"(a) No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this paragraph are met."*

Importantly, Section 144.12 does not attempt to place a blanket prohibition on all injection whenever "underground sources of drinking water" are involved (i.e. water <10,000 mg/l TDS of sufficient quantity to supply a public water system). The regulation only prohibits injection into "underground sources of drinking water" which could cause a public water system to not comply with any national primary drinking water regulation or may otherwise adversely affect the health of persons. In this way, EPA's regulatory prohibition maintains consistency with the express requirements of the SDWA § 1421(d)(2). The significance of this distinction becomes apparent in EOR steam or water injection situations where for whatever reason an aquifer exemption may not be available.

4. Section 1422

SDWA §1422(a) directed EPA to list those States which, in the Administrator's judgment, required underground injection control programs "to assure that underground injection will not endanger drinking water sources." (SDWA § 1422(a) codified at 42 U.S.C. §300h-1(a).) States identified on EPA's list were required to submit to EPA an application for primary enforcement authority for the State's UIC program. In order for State primacy to be approved, the application needed to demonstrate, among other things, that the State had "adopted . . . and will implement, an underground injection control program which meets the requirements of the [Federal UIC] regulations . . . ." (SDWA §1422(b)(1)(A)(i) codified at 42 U.S.C. §300h-1(b)(1)(A)(i).) In cases where States failed to submit an application for primacy, or EPA disapproved the State submittal, the SDWA directed EPA to implement the Federal UIC regulatory program for that State. (SDWA §1422(c) codified at 42 U.S.C. §300h-1(c).)

5. Section 1425

At the time EPA was developing its UIC regulations, there was growing awareness among members of Congress that most of the 32 States that regulated the recovery and production of oil or natural gas already had programs in place which met the minimum requirements for State programs set forth in Section 1421(b)(1)(A)-(D). This was especially true of the major producing States where underground injection control programs had been underway

for years. This awareness led Congress to amend the SDWA in 1980, only a few months after EPA adopted its final regulations for State UIC programs. The 1980 amendments added a new Section 1425 to the Act (codified at 42 U.S.C. §300h-4).

Section 1425 was passed to provide States an alternative means for acquiring primacy over the control of underground injection activities related to the production of oil and natural gas (i.e., Class II injection activities).[5] This alternative means did not involve adoption and implementation of the detailed regulatory requirements promulgated by EPA, but instead State programs to control underground injection activity related to oil and gas production were to be considered independently on their merits. (46 FR 27333, May 19, 1981; See also EPA Ground Water Program Guidance No. 19 – *Guidance for State Submissions Under Section 1425 of the Safe Drinking Water Act*, Section 1.0, p.1.)

Congress enacted Section 1425 to allow major oil and gas producing States with underground injection regulations in place the opportunity to continue these programs without having to adopt the additional Federal requirements. Quoting from House Report No. 96-1348, dated September 19, 1980: "It is the Committee's intent that states should be able to continue these programs unencumbered with additional Federal requirements if they demonstrate that they meet the requirements of the Act."[6]

Section 1425 thus authorized States to make an alternative demonstration "in lieu of the showing required under subparagraph (A) of section 300h-1(b)(1) [which required States to adopt and implement EPA's minimum regulatory requirements]." (SDWA §1425(a) codified at 42 U.S.C. §300h-4(a).) Section 1425 authorized States to "demonstrate that such portion of the State program [related to Class II injection] meets the requirements of subparagraphs (A) through (D) of section 300h(b)(1) of this title and represents an effective program (including adequate recordkeeping and reporting) to prevent underground injection which endangers drinking water sources."[7] (Id.) Further, Section 1425 required EPA to approve or disapprove

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[5] Section 1425 by its terms is limited to "that portion of any State underground injection control program which relates to - (1) the underground injection of brine or other fluids which are brought to the surface in connection with oil or natural gas production or natural gas storage operations, or (2) any underground injection for the secondary or tertiary recovery of oil or natural gas." (SDWA §1425(a)(1) and (2) codified at 42 U.S.C. §300h-4(a)(1) and (2).)

[6] (See House Report (96th Congress, 2nd session) No. 96-1348, dated September 19, 1980, reprinted in its entirety in *A Legislative History of the Safe Drinking Water Act*, February 1982, Serial No. 97-9, page 63.)

[7] In order to receive approval for its Class II program under the optional demonstration, a State was required to make the same showing that EPA was required to make when it promulgated its regulations under Section 1421(b)(1). As such, State UIC programs submitted for approval pursuant to Section 1425 were required to meet the five minimum conditions set forth in subparagraphs (A)-(D) of Section 1421(b)(1): First, the States must prohibit unauthorized underground injection in such State which is not authorized by permit or rule; second, they must require applicants for underground injection permits to bear the burden of proving to the State that its injection will not "endanger" drinking water sources; third, they must refrain from adopting regulations which either on their face or as applied would authorize underground injection which "endangers" drinking water sources; fourth, they must adopt inspection, monitoring, recordkeeping, and reporting requirements; and fifth, they must apply their injection control

such portion of a State's UIC program for primary enforcement responsibility based on its judgment of whether the State has succeeded in making the required demonstrations. (SDWA §1425(c) codified at 40 U.S.C §300h-4(c).)

The legislative history accompanying Section 1425 sheds additional light on the scope of what Congress intended. Again, quoting from House Report No. 96-1348:

> "The Committee thus proposes to allow any State, in lieu of meeting the Administrator's regulations, to assume primacy for controlling underground injection related to oil and gas recovery and production by demonstrating that its program meets the requirements of subparagraphs (A) through (D) of section 1421(b)(1) . . . . These requirements are the same as must be met by the Administrator in establishing his regulations, thus ensuring that a State program pursuant to an alternative demonstration results in an equivalent degree of protection for drinking water sources. . . . ¶ *So long as the statutory requirements are met, the States are not obligated to show that their programs mirror either procedurally or substantively the Administrator's regulations.*"[8]

The foregoing discussion demonstrates that Congress did not expect States making the alternative demonstration to either adopt or implement EPA's promulgated approach to protecting underground sources of drinking. Instead, Congress intended these States to implement their own programs, provided they represented effective programs for protecting drinking water sources. This flexibility was confirmed by the 11th Circuit Court of Appeal in *Legal Environmental Assistance Foundation, Inc. v. EPA (*276 F.3d 1253, 11th Cir. December 21, 2001). In the court's opinion, the practical difference between the two statutory methods for approval [Section 1422(b) and Section 1425] is that the requirements for those programs covered under Section 1425 allow States more flexibility than the requirements for those programs covered under Section 1422(b). (Id., at p. 1257.)

6. Statutory Prohibition on Federal Regulations Which Unnecessarily Interfere With Production of Oil or Natural Gas

In 1974, when Congress enacted Part C of the SDWA, there was substantial debate in the Congress whether or not the Act should apply to activities of the oil and natural gas producing industries. According to House Report No. 93-1185, dated July 10, 1974, the Committee rejected an amendment which would have excluded oil and natural gas production from the scope of the

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programs to underground injections by Federal agencies and by any other person whether or not occurring on Federally-owned or leased property. (See SDWA § 1421(b)(1)(A)-(D) codified at 42 U.S.C. § 300h(b)(1) (A)-(D).)

[8] See House Report (96th Congress, 2nd session) No. 96-1348, dated September 19, 1980, reprinted in its entirety in *A Legislative History of the Safe Drinking Water Act*, February 1982, Serial No. 97-9, page 63, emphasis added.

SDWA. Instead, the Committee adopted an amendment expressing its intent not to authorize needless interference with oil or gas production.[9]

As such, SDWA § 1421(b)(2), prohibits EPA from prescribing Federal regulations for State underground injection control programs which interfere with production of oil or natural gas, except when such requirements are "essential" to assure that underground sources of drinking water will not be endangered. Specifically, the SDWA provides: "Regulations of the Administrator under this section for State underground injection control programs may not prescribe requirements which interfere with or impede . . . (B) any underground injection for the secondary or tertiary recovery of oil or natural gas, unless such requirements are essential to assure that underground sources of drinking water will not be endangered by such injection." (See SDWA § 1421(b)(2) codified at 42 U.S.C. § 300h(b)(2).)

The intent of Congress in adopting this requirement was not to impose an impossible burden of proof on EPA as a condition of promulgation. Rather, Congress sought to assure that constraints on energy production activities would be kept as limited in scope as possible while still assuring the safety of present and potential sources of drinking water.[10]

Quoting from House Report No. 93-1185, dated July 10, 1974:

> "In deciding what is an '*essential*' requirement, the Committee intends that the types of measures referred to in the Administrator's Decision Statement Number 5 and those referred to in this report be considered to be '*essential*' unless the contrary could be demonstrated with respect to a specific well or injection. Moreover, in using the words 'interfere with or impede' the Committee did not intend to include every regulatory requirement which would necessitate the expenditure of time, money or effort. Rather, the Committee intended to refer to those requirements which could stop or *substantially delay* production of oil or natural gas."[11]

The one measure discussed in House Report No. 93-1185 which Congress viewed as "essential" to preventing endangerment was the protection of groundwater having TDS levels of less than 10,000 ppm.[12] As discussed above, Congress chose a 10,000 ppm (mg/liter) TDS level to ensure that adequate supplies through future treatment technologies are available for future generations. In doing so, the Committee did not indicate any preference for whether EPA or State agencies should be deciding questions concerning exemptions. House Report No. 93-1185 is silent on this issue which suggests the Committee did not view the question as "essential" to preventing endangerment. Nothing in House Report No. 93-1185 suggests Congress intended to

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[9] See House Report (93rd Congress, 2nd Session) No. 93-1185, dated July 10, 1974, reprinted in its entirety in *A Legislative History of the Safe Drinking Water Act*, February 1982, Serial No. 97-9, p. 563.
[10] Id.
[11] Id., italics added.
[12] Id. at p. 564.

vest EPA, as opposed to State agencies, with ultimate authority over exemption decisions. This was a power EPA granted unto itself when it promulgated 40 CFR 144.7 and established the procedure States are to follow when designating exempted aquifers pursuant to the criteria set forth in 40 CFR 146.4.

As such, it does not appear Congress considered strict adherence to the procedural requirements of 40 CFR 146.4 and 144.7 (which vest EPA with exclusive authority over decisions of what can and cannot reasonably be expected to supply a public water system) to be an "essential" component of State programs to prevent injection which "endangers" drinking water sources.

III.
CALIFORNIA'S UIC PROGRAM

In 1981, the Division applied to EPA for primary enforcement authority over its Class II injection program pursuant to the alternative demonstration requirements of SDWA § 1425. (*See* State of California Resources Agency, *Application for Primacy in the Regulation of Class II Injection Wells Under Section 1425 of the Safe Drinking Water Act* (April 1981) (hereinafter the "Primacy Application").)

The Division's Primacy Application described the State's regulatory scheme for Class II injection wells, cross referencing the California statutes and regulatory provisions applicable to oil and gas related underground injection activities. The statutes comprising the Class II injection well program in California are codified in the Public Resource Code (PRC), Division 3, Chapter 1, Sections 3000-3359. The regulations implementing the Class II program are found at Title 14 of the California Code of Regulations Sections 1710 to 1724.10.

The key statutory provision pursuant to which the Division implements its Class II UIC program is Section 3106 of the Public Resources Code. PRC § 3106 mandates, in part, the Division to supervise the drilling, operation, maintenance, and abandonment of all wells drilled in California for the purpose of injecting fluids for stimulating oil or gas recovery, repressuring of oil or gas reservoirs, or disposing of waste fluids from an oil or gas field. In addition, Section 3106 requires the Division to supervise these activities in a manner that will prevent, as far as possible, damage to life, health, property, and natural resources; damage to oil and gas reservoirs; loss of oil, gas, or reservoir energy; and damage to underground and surface waters that are suitable for irrigation or domestic purposes. (Primacy Application, Program Description, p. 1.)

The Division has in place comprehensive regulations governing the submittal requirements an applicant must comply with before the Division will grant approval to begin a

subsurface injection project.[13] Pursuant to PRC § 3106, District Deputies utilize the information submitted by a project applicant, in conjunction with extensive geological and engineering data and well records already on file with the Division, to evaluate, among other things, the risk a proposed project presents to underground and surface waters suitable for irrigation or domestic purposes. (Primacy Application, Program Description, p. 4.)

As part of the Division's Primacy Application, EPA and the Division entered into a Memorandum of Agreement (MOA) setting forth the parameters of California's primacy over Class II wells. The MOA provides a commitment by the Division to "carry out the [State's UIC] program as authorized by Section 1425 of the Safe Drinking Water Act . . . ." The MOU sets forth certain terms related to the Division's commitment. It provides that the Division "will carry out the program as described in the application for primacy of Class II wells . . . . " It further provides that "[a]quifer exemptions for Class II wells will be consistent with aquifer exemptions for the rest of the UIC program." (Primacy Application, Memorandum of Agreement, ¶¶ 1 and 6.)

In 1983, pursuant to the alternative demonstration requirements of SDWA § 1425, EPA formally approved California's primacy over Class II injection wells in the State. (48 FR 6336, February 11, 1983; see also 40 C.F.R. § 147.250.) In doing so, EPA determined that California's Class II UIC program met the minimum requirements of subparagraphs (A) through (D) of Section 1421(b)(1) of the SDWA and represents an effective program (including adequate recordkeeping and reporting) to prevent underground injection which endangers drinking water sources. (SDWA §1425(a) codified at 42 U.S.C. §300h-4(a).)

IV.
CALIFORNIA'S COMMITMENT TO THE AQUIFER EXEMPTION PROCESS

1. The Primacy Application

[13] The operator requesting approval for an underground injection project must provide to the appropriate Division District Deputy detailed data that, in the judgment of the Division, are pertinent and necessary for the evaluation of a proposed project (California Code of Regulations (CCR) Sections 1724.6 and 1724.7). In addition, the Division requires by regulation that the operator submit as part of his application a detailed engineering study that includes a statement of the primary purpose of the project, the reservoir and fluid characteristics of each injection zone, evidence that abandoned wells within the area of review will not have an adverse effect on the project, casing diagrams and plugging information of all wells within the area of review, and the proposed well-drilling and abandonment program that is necessary to complete the project (CCR Section 1724.7(a)). Along with the engineering study, a geologic study and injection plan must also be submitted. At a minimum, the geologic study must include a structural and isopach map, a cross section, and a representative electric log that identifies all geologic units, formations, freshwater aquifers, and oil or gas zones (CCR Section 1724.7(b)). An injection plan must include a map showing all wells within the area of review that penetrate the injection interval, and schematics of surface and subsurface injection facilities; anticipated injection pressure and volumes; monitoring systems; method of injection; corrosion protective measures; and the source, analysis, and treatment of the injection fluid (CCR Section 1724.7(c)). Additional information can be requested for projects that may be hazardous, large, unusual, or particularly complex (CCR Section 1724.7(e)).

The MOU requires the Division to carry out its UIC program as described in the Primacy Application. The Program Description portion of the Primacy Application discusses the extent of California's commitment to implement the Federal aquifer exemption process. (Primacy Application, Program Description, pp. 22-23.) As indicated previously, aquifer exemptions pursuant to 40 CFR 146.4 and 144.7 are essentially determinations made by EPA (with input from the State) that water otherwise meeting the definition of a USDW cannot reasonably be expected to supply a public water system. Importantly, the Program Description does not place limits on the Division's discretion to forego the exemption process in situations where EPA has already determined that formation water hydraulically connected to the targeted EOR injection cannot reasonably be expected to supply a public water system.

According to the Program Description, the Division is to apply the substantive criteria set forth in 40 CFR 146.4 when designating aquifers for exemption. Quoting from the Program Description:

> "To exempt an aquifer, the aquifer must meet the following criteria which is set forth in 40 CFR 146.04:
>
> 1. The aquifer does not currently serve as a source of drinking water; and
>
> 2. The aquifer cannot now and will not in the future serve as a source of drinking water because:
>
> (a) It is mineral, hydrocarbon, or geothermal energy producing.
>
> (b) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical.
>
> (c) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption."

The Program Description goes on to provide that "[a] list of the aquifers exempted by the above procedures is attached as part of the state submittal under Section 1425 of the SDWA."[14] (Primacy Application, Program Description, p.23.)

The Program Description next discusses the process the Division agreed to follow subsequent to program approval when designating additional aquifers for exemption:

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[14] The first page of Appendix B provides further clarification. It states "[t]he [exempted portions of the] hydrocarbon-producing aquifers are shown in Volumes I and II of the 'California Oil and Gas Fields', published by the California Division of Oil and Gas. . . . ¶ The aquifers, or portions thereof, are identified in each volume by shading the exempted aquifers on the maps and cross sections. The exempted portions are also described in terms of average depth, thickness, and geologic age on the page opposite each map under the heading 'PRODUCING ZONES'." (Primacy Application, Appendix B.)

> "Subsequent to program approval, identification of additional aquifers that qualify for exemption may be made by the division; however, any person who wishes to have an aquifer designated must submit to the division information including detailed maps and supportive data that would justify the proposed exemption. If there is sufficient evidence to indicate that an exemption may be justified, the division will provide notice and opportunity for a public hearing." (Primacy Application, Program Description, p.23.)

The foregoing discussion does not represent a commitment by the Division to strictly comply in all material respects with the Federal procedural requirements for aquifer exemptions. Nor does it place limits on the Division's flexibility to make "endangerment" determinations for purposes of evaluating whether an aquifer exemption is required. All it does is provide the Division discretion to decide for itself whether to designate additional aquifers for exemption.

The Program Description thus discusses the process that the Division followed in the early 80's prior to primacy to exempt aquifers or portions thereof where underground injection had been occurring. In addition, the Program Description discusses the criteria the Division agreed to apply subsequent to program approval when designating additional aquifers for exemption. Notably, the Program Description does not address the Division's discretion to avoid the exemption process, or decide an exemption is unnecessary, when EPA has already determined that water hydraulically connected to the targeted injection zone cannot reasonably be expected to supply a public water system.

2. The Memorandum of Agreement

The MOA provides a commitment by the Division to "carry out the [State's UIC] program [for Class II wells] as authorized by Section 1425 of the Safe Drinking Water Act . . . ." The MOU sets forth the terms of the Division's commitment. It provides that the Division "will carry out the program as described in the application for primacy of Class II wells . . . . " It further provides that "[a]quifer exemptions for Class II wells will be consistent with aquifer exemptions for the rest of the UIC program." (Primacy Application, Memorandum of Agreement, ¶¶ 1 and 6.)

Similar to the Program Description, the MOU does not address the Division's flexibility to make "endangerment" determinations on its own for purposes of evaluating whether an aquifer exemption is required. In this regard, the MOU does not address the Division's discretion to forego the exemption process in situations where EPA has already determined that formation water hydraulically connected to the targeted EOR injection cannot reasonably supply a public water system. The MOU simply states that "[a]quifer exemptions for Class II wells will be consistent with aquifer exemptions for the rest of the UIC program."

The scope of the Division's commitment can be interpreted broadly or narrowly depending on the desired result. A broad interpretation suggests the Division has no flexibility to

forego the exemption process, even in situations where no rational argument can be made that "endangerment" will occur. A narrow interpretation suggests there are no limits on the Division's flexibility to make "endangerment" determinations for purposes of evaluating whether an aquifer exemption is required – the Division is simply committed, once a decision is made that an exemption will be required, to process the exemption in the same manner and "consistent with aquifer exemptions for the rest of the UIC program."

The Division is of course free to interpret its primacy authority under Section 1425 and the MOA in any manner that makes good practical and legal sense. Considering this, an interpretation which compels the Division to comply with the strict procedural requirements of 40 CFR §§ 146.4 and 144.7 in all situations regardless of the circumstances, and irrespective of the fact that no reasonable argument can be made that "endangerment" will occur, would appear inappropriate. Such an interpretation would be contrary to Congress' express intent to provide States flexibility in the implementation of programs approved under Section 1425. Similarly, such an interpretation would be inconsistent with Congress' express prohibition on unnecessary Federal regulatory impediments to the production of oil and gas.

V.
THE DIVISION'S APPROACH TO PROTECTING UNDERGROUND SOURCES OF DRINKING WATER

As discussed above, the SDWA does not prohibit all underground injection into water with a TDS of less than 10,000 mg/l, but only injection which "endangers" potential drinking water sources. (See SDWA § 1421(b)(1).) In making a determination that "no endangerment" of potential drinking water sources will result, Division staff evaluate the two essential factors articulated by Congress in SDWA § 1421(d)(2). The first is whether the underground water "can reasonably be expected to supply . . . [a] public water system." The second is whether the proposed injection may result in contamination causing the public water system to not comply with "any national primary drinking water regulation" or which "may otherwise adversely affect the health of persons." If either factor is absent, the SDWA does not prohibit injection, even if the water otherwise meets the criteria for a USDW. (See SDWA § 1421(b)(1).)

In determining what can or cannot "reasonably be expected to supply . . . [a] public water system," the Division applies the substantive elements of EPA's regulatory approach. The Division starts from the premise that all groundwater of sufficient quantity to supply a public water system with less than 10,000 mg/liter TDS warrants protection. California then applies the criteria for aquifer exemptions set forth in 40 CFR 146.4. Projects which meet the criteria for an exemption generally must proceed through the aquifer exemption process set forth in 40 CFR 144.7 to obtain approval from EPA. Only in limited situations involving projects which meet all the conditions of an EOR "accretion" project have District approvals bypassed the procedure requiring submission of the decision to EPA.

The practical reality is that, for projects which meet the conditions of an EOR "accretion" project, there is no logical reason to force operators through the formal exemption process. In these situations, EPA has already determined that water hydraulically connected to and geologically indistinguishable from water in the project's area of influence "cannot now and will not in the future serve as a source of drinking water." The same geology exists both within the exempted boundary and outside the exempted boundary in the project's proposed expanded area of influence. Moreover, because there is hydraulic connectivity between these two areas, injection activities occurring within the exempted boundary have an influence on areas outside the exempted boundaries. As such, there is no rational scientific basis for distinguishing between the exempted area and the area of expansion. Under these circumstances, the Districts have been willing to make the "endangerment" determination on their own, without deferring the matter to EPA.

In the case of EOR "accretion" projects, strict adherence to the Federal UIC regulatory requirements is not legally required. Pursuant to Section 1425, California is not bound, either procedurally or substantively, to EPA's UIC regulations, but instead is free to implement its own program for the protection of water with TDS of less than 10,000 mg/liter. Moreover, deferring to EPA on these projects, when no reasonable argument for "endangerment" can be made, presents an unnecessary regulatory impediment to oil and gas development. The SDWA is clear that only those Federal regulations "essential" to ensuring the protection of underground sources of drinking water can be enforced. (See SDWA § 1421(b)(2).)

VI.
EPA MUST FOLLOW SPECIFIC PROCEDURES TO REMEDY PERCEIVED DEFICIENCIES IN APPROVED STATE UIC PROGRAMS

Section 1425 expressly provides that a State, once it receives primary enforcement responsibility over its Class II UIC program, continues to have primacy and may implement its program as approved, until such time as EPA determines by rule (i.e., after notice in the Federal Register and an opportunity to be heard), that the State's demonstration [regarding the adequacy of its program or a portion thereof] is no longer valid. (SDWA § 1425(c)(2) and (3) codified at 42 U.S.C. § 300h-4(c)(2) and (3).) EPA has no authority to impose the substantive or procedural requirements of the Federal UIC regulations on the State in the absence of a formal determination made, by rule, that the State's program or a portion thereof is inadequate. Only after the necessary procedures are followed, and a determination of inadequacy is made, does EPA have authority to force the Federal regulatory requirements on the State.[15] (See SDWA § 1425(c)(2) codified at 42 U.S.C. § 300h-4(c)(2).)

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[15] House Report No. 96-1348 explained how Congress wanted EPA to approach perceived inadequacies in State UIC programs approved pursuant to Section 1425: "Under certain circumstances, the Administrator will be able to require a new demonstration pertaining to certain aspects of a State program. . . . A new demonstration may . . . be required if the Administrator determines, by rule after public hearing, that a State's demonstration is no longer adequate. This authority is intended for use by the Administrator in instances in which a State significantly alters a program for which a demonstration has been made, *or in which the Administrator determines that new information*

Notably, in situations where EPA follows the required procedures, and a formal determination of State program inadequacy is made, EPA does not have unrestricted authority to impose the Federal UIC program requirements. In the enforcement context, Congress was clear that it did not want EPA to be imposing Federal regulations on States if the regulations unnecessarily interfere with or impede the production of oil or natural gas. SDWA § 1422(c) provides that any Federal regulatory requirement EPA seeks to enforce on a State cannot "interfere with or impede . . . (2) any underground injection for the secondary or tertiary recovery of oil or natural gas, unless such requirements are essential to assure that underground sources of drinking water will not be endangered by such injection." (SDWA § 1422(c) codified at 42 U.S.C. § 300h-1(c).) This restriction duplicates that which prohibits EPA from prescribing such regulations for those States which voluntarily decide to adopt the Federal UIC program requirements. (See SDWA § 1421(b)(2) codified at 42 U.S.C. § 300h(b)(2).)

VII.
CONCLUSION

Pursuant to Section 1425, California's program for protecting underground sources of drinking water need not mirror either procedurally or substantively the Federal program requirements promulgated by EPA. Provided California's program meets the basic requirements of SDWA § 1421(b)(1)(A)-(D), and is an effective program for preventing underground injection which "endangers" drinking water sources, the program is legally adequate. A determination of legal adequacy was made by EPA in 1983. As a result, California has flexibility to implement the unique aspects of its own program, under the oversight of EPA. If EPA disagrees with the effectiveness of an aspect of California's program, the SDWA requires EPA to proceed through a formal process, involving notice and an opportunity to be heard, as a prerequisite to forcing California to implement the Federal requirements.

Before injection can "endanger" drinking water sources, the water in question must "reasonably be expected to supply . . .[a] public water system." (SDWA § 1421(d)(2).) In the case of EOR "accretion" projects which meet all of the conditions the District offices have been imposing, a clear and irrefutable determination of "no endangerment" can be made. In these situations, EPA has already decided that water hydraulically connected to and geologically indistinguishable from water in the project's area of influence will never be used as a source for drinking water. As a consequence, there is no rational basis for requiring operators to go through the exemption process. To do so would represent an unnecessary interference with and impediment on oil and gas development, in contravention of the express requirements of SDWA §§ 1421(b)(2) and 1422(c).

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about the endangerment of drinking water supplies necessitates a new demonstration." (See House Report (96th Congress, 2nd session) No. 96-1348, dated September 19, 1980, reprinted in its entirety in *A Legislative History of the Safe Drinking Water Act*, February 1982, Serial No. 97-9, p. 64, emphasis added.)

Hathaway's proposed steam flood project in the northern Premier and Enas portions of the Poso Creek Oil Field is an EOR "accretion" project which meets all of the required conditions. For the reasons discussed above, Hathaway does not believe Federal or State law requires it to process an aquifer exemption. Hathaway requests the Division approve its project without requiring it to proceed through a formal aquifer exemption process.

Hathaway understands that for this to be possible Division staff must first engage EPA in a dialogue which emphasizes the legal merits of the District office approach. The objective of the dialogue would be to convince EPA that EOR "accretion" projects which meet the established conditions present no risk of "endangering" drinking water sources, and therefore can be approved without formally extending the boundaries of the exempted hydrocarbon zones. Hathaway requests that the Division engage EPA in such a dialogue, and will commit to assisting the Division facilitate the dialogue in whatever manner the Division deems appropriate.

If you have questions regarding the foregoing, or desire further clarification on a particular issue, please do not hesitate to call. Otherwise, I look forward to receiving feedback and the Division's thoughts in response.

Very truly yours,

HOLLISTER & BRACE
A Professional Corporation

By _____
Peter L. Candy

PLC/crr

cc: James Pierce
Justin Turner
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