

November 26, 2008

Stephen L. Johnson
Administrator
United States Environmental Protection Agency
c/o Water Docket
Mailcode 2822T
1200 Pennsylvania, N.W.
Washington, D.C. 20460

Re: Comments on Preliminary Regulatory Determination on Perchlorate
Docket ID No. EPA-HQ-OW-2008-0692

Dear Administrator Johnson:

By this letter I am submitting the comments of the New Mexico Environment Department on the Preliminary Determination on Perchlorate that the United States Environmental Protection Agency (EPA) issued on October 3, 2008. 73 Fed. Reg. 60262 (Oct. 10, 2008). Although EPA initially requested comments by November 10, 2008, the agency subsequently extended the comment period through November 28, 2008. 73 Fed. Reg. 66895 (Nov. 12, 2008). The Environment Department appreciates the opportunity to comment on this important regulatory decision, and the extension of time to submit these comments.

In its preliminary determination, EPA has tentatively decided not to promulgate maximum contaminant levels (MCL's) for perchlorate under the federal Safe Drinking Water Act (SDWA), 42 U.S.C. §§ 300f to 300j-26. The Environment Department strongly urges EPA to reconsider this preliminary determination and to promulgate an MCL for perchlorate at a level that will protect human health, including the health of subgroups at greater risk of adverse health effects.

Because perchlorate is not currently regulated under the SDWA, data on perchlorate contamination in New Mexico public water systems is limited. Under the Unregulated

Contaminant Monitoring Rule,¹ public water systems serving communities of greater than 10,000 persons were required to monitor for perchlorate for one year between 2001 and 2003. A “statistically representative” number of additional smaller systems were also required to monitor for perchlorate for one year during this time period. However, with few exceptions, that monitoring data does not appear to have been reported to the State of New Mexico. Therefore, the Environment Department has only a very incomplete picture of perchlorate contamination in public water systems in the State. Nevertheless, the limited available drinking water data that the Environment Department has reviewed show significant perchlorate contamination in several public drinking water systems around the State. In the Department’s view, perchlorate contamination in drinking water occurs at levels and at a frequency that is a public health concern in New Mexico.²

At Cannon Air Force Base, near Clovis, New Mexico, the Environment Department received data in 1999 showing perchlorate concentrations of 46 micrograms per liter (µg/L) in production well PW-2 and 21 µg/L in production well PW-7. These wells are both active drinking water production wells that serve users on the Base.³ Data that the Environment Department gathered in 2001 from Cannon showed perchlorate contamination of 23.5 µg/L in PW-12, another drinking water production well.⁴ Data collected from the system in 2003 and submitted to the Environment Department under the Unregulated Contaminant Monitoring Rule shows a perchlorate level at 30 µg/L.⁵ In addition, the Government Accountability Office (GAO) has compiled data on perchlorate contamination throughout the United States, including New Mexico. In its 2005 report, GAO similarly reported perchlorate at 46 µg/L in drinking water at Cannon Air Force Base.⁶

At the Melrose Bombing Range, also near Clovis, the Environment Department received data in 1999 showing perchlorate contamination in production well PW-11, an active drinking water production well for the facility, at 25 µg/L.⁷ Data the Environment Department obtained in 2001 from Melrose showed perchlorate concentrations of 30.3 µg/L and 40.7 µg/L in PW-11 (shown as MAFR Well-11), and a perchlorate concentration of 5.52 µg/L in PW-13 (shown as MAFR Well-13), another on-site facility drinking water supply well.⁸

¹ 40 C.F.R. § 141.40.

² See SDWA § 1412(b)(1)(A)(ii), 42 U.S.C. § 300g-1(b)(1)(A)(ii) (Westlaw 2008).

³ N.M. Environment. Dep’t, *Perchlorate Survey 2001 Final Report*, vol. 1, tab “Cannon” (unpublished compilation).

⁴ *Id.*

⁵ Safe Drinking Water Information System, State version (SDWIS/State). The State has not verified the accuracy of this data.

⁶ GOVERNMENT ACCOUNTABILITY OFFICE, A SYSTEM TO TRACK SAMPLING AND CLEANUP RESULTS IS NEEDED, AT 37 (GAO-05-462) (May 2005).

⁷ N.M. Environment. Dep’t, *Perchlorate Survey 2001 Final Report*, vol. 2, tab “Melrose” (unpublished compilation).

⁸ *Id.*

At Kirtland Air Force Base, data collected in 2004 show perchlorate contamination in Well #17, a drinking water supply well, at 12.6 µg/L.⁹ Kirtland is located adjacent to the City of Albuquerque, which is the State's largest metropolitan area having a population over 500,000. Yet there is very little available data on perchlorate in drinking water on and around Kirtland.

The GAO also reported perchlorate contamination in the municipal drinking water supply for the City of Deming, New Mexico at 20 µg/L, and for the City of Des Moines, New Mexico at 5 µg/L. GAO reported perchlorate in the drinking water supply for the City of Clovis, New Mexico, operated by the American Water Company, at 7 µg/L. GAO also reported perchlorate in the water supply for the community of Mountain View Albuquerque, in the South Valley of Albuquerque, New Mexico, at 5 µg/L.

The Environment Department has gathered additional data demonstrating widespread perchlorate contamination in groundwater at several military installations and nuclear weapons facilities throughout the State. In many cases, this contamination threatens present and future drinking water supplies.

At Los Alamos National Laboratory, perchlorate contamination has been monitored in groundwater beneath much of the 40-square mile facility. Of particular significance, sampling conducted beginning in 2005 shows perchlorate concentrations ranging between 30 µg/L and 256 µg/L in intermediate wells located in Mortandad Canyon. More recent data shows that this contamination has remained relatively constant. A deeper monitoring well, Well R-15, shows a perchlorate concentration of 7 µg/L. The highest contamination, 256 µg/L in intermediate well MCOBT-4.4, is within 2000 feet from PM-5, a municipal drinking water production well for Los Alamos County. Low concentrations of perchlorate, below 1 µg/L, have been detected in PM-5. Neither the sources of the perchlorate contamination, nor the nature and extent of the perchlorate plume, are fully characterized. The perchlorate contamination threatens the Los Alamos County water supply, which serves approximately 20,000 people.

At Sandia National Laboratories, adjacent to the City of Albuquerque, perchlorate has been found in the EOD Hill monitoring well at concentrations ranging from 680 µg/L to 4300 µg/L. Data from 2006 and 2007 show that perchlorate has been detected in CYN-MW6 monitoring well at concentrations between 6.56 µg/L and 8.93 µg/L. Perchlorate data at Sandia is limited, however.

At the United States Army White Sands Missile Range, near Socorro, New Mexico, high levels of perchlorate contamination in soil and groundwater is widespread. In 2000, perchlorate was detected in 22 of 23 groundwater monitoring wells at concentrations ranging from 5 µg/L to 21,000 µg/L.¹⁰ Currently, the highest concentrations are 19,000 µg/L. The Army has vigorously resisted conducting any corrective action to remedy the contamination.

⁹ Letter from Carl J. Lanz, Chief, Restoration Section, Kirtland Air Force Base, to Sandra Martin, Chief, Hazardous Waste Bureau, N.M. Environment Dep't (Mar. 31, 2004).

¹⁰ N.M. Environment. Dep't, *Perchlorate Survey 2001 Final Report*, vol. 2, tab "White Sands" (unpublished compilation).

At Holloman Air Force Base, groundwater data collected in September 1999 showed perchlorate levels of 15.5 µg/L in monitoring well NM-39-02-01, 15.2 µg/L in monitoring well NM-39-02-02, and 38.9 µg/L in monitoring well NM-39-03.

At Kirtland Air Force Base, data collected in 2006 showed perchlorate levels in monitoring well KAFB-2622 at 8.4 µg/L, and in monitoring well KAFB-2624 at 11.0 µg/L. Data collected in 2008 showed perchlorate in the “School House Mesa Well” at 5.19 µg/L. Yet very little groundwater monitoring data has been obtained for perchlorate at Kirtland.

In considering these comments, particularly this groundwater monitoring data, it is important for EPA to understand that New Mexico is very dependent on its groundwater resources for drinking water. New Mexico is an arid state, with relatively little surface water. New Mexicans obtain approximately 90 percent of their drinking water from groundwater aquifers.¹¹ And New Mexico is growing and developing rapidly, placing greater demands on its aquifers. According to the New Mexico State Demographer at the University of New Mexico Bureau of Business and Economic Research, the population of New Mexico is expected to increase by 30 percent between 2005 and 2020, and by more than 50 percent between 2005 and 2035.¹² We therefore assume that much of the State’s groundwater will be used for drinking water in the future. Consequently, there is a substantial likelihood that this perchlorate contamination will occur in public water systems in the foreseeable future.

Section 1412(b)(1)(A) of the SDWA provides that the EPA Administrator shall “promulgate a national primary drinking water regulation for a contaminant if the Administrator determines that:

- (i) the contaminant may have an adverse effect on the health of persons;
- (ii) the contaminant is known to occur or there is a substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern; and
- (iii) in the sole judgment of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by public water systems.

42 U.S.C. § 300g-1(b)(1)(A) (Westlaw 2008).

Section 1412(b)(1)(C) of the SDWA further provides that in determining whether to regulate drinking water contaminants, the Administrator must take into consideration:

the effect of such contaminants upon subgroups that comprise a meaningful portion of the general population (such as infants, children, pregnant women, the

¹¹ Affidavit of William Olsen, Chief, Ground Water Quality Bureau, N.M. Environment Dep’t, at 3, *In re Appeal of Supplemental Discharge Permit for Closure (DP-1341) for Phelps Dodge Tyrone, Inc.* (N.M. Water Quality Control Comm’n July 9, 2007) (Nos. WQCC 03-12(A) and WQCC 03-13(A)).

¹² University of New Mexico, Bureau of Business and Economic Research, Population Projections for New Mexico and Counties, available at www.unm.edu/~bber. The information was confirmed in a telephone conversation with Adelamar N. Alcantera, Ph.D., New Mexico State Demographer, on November 24, 2008.

elderly, individuals with a history of serious illness, or other subpopulations) that are identifiable as being at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population.

42 U.S.C. § 300g-1(b)(1)(C) (Westlaw 2008).

The Environment Department respectfully submits that each of the three criteria in section 1412(b)(1)(A) is met for perchlorate. Moreover, the risk of adverse health effects from perchlorate ingestion is greater for certain sensitive subgroups of the general population as described in section 1412(b)(1)(C).

As to the first criterion, it is without dispute that perchlorate in drinking water has an adverse effect on the health of persons. According to the National Research Council, perchlorate can adversely affect the function of the thyroid “because it is an ion that competitively inhibits the transport of iodide into the thyroid” by a protein known as the sodium/iodide symporter.¹³ Iodide deficiency resulting from perchlorate ingestion is more likely to have a negative effect in sensitive populations, such as people with thyroid disorders, pregnant women, fetuses, and infants.¹⁴ In pregnant women, severe iodide deficiency can result in major neurodevelopmental deficits and goiter in their offspring.¹⁵ Lesser degrees of iodide deficiency may also cause important neurodevelopmental deficits in infants and children.¹⁶ EPA expressly recognizes the adverse health effects of perchlorate ingestion.¹⁷

As to the second criterion, EPA estimates that 16,000 to 28,000 pregnant women would be exposed to perchlorate at levels exceeding the health reference level (HRL) of 15 “at any given time.”¹⁸ EPA thus concludes that “perchlorate occurs infrequently at levels of health concern in public water systems.”¹⁹ EPA’s analysis is seriously flawed for several reasons.

First, the analysis fails to consider future health effects on women who have not yet become pregnant, and on their future fetuses. This failure is at odds with the plain language of the SDWA. Section 1412(b)(1)(A)(ii) requires EPA to consider not only whether a contaminant is known presently to occur in public water systems so as to cause public health concern, but also whether “there is a substantial likelihood that the contaminant *will* occur in public water systems with a frequency and at levels of public health concern.”²⁰ Thus, Congress wisely directed EPA to consider potential future health effects in its analysis. But EPA has subtly avoided this consideration in its perchlorate analysis. EPA asks, “Is perchlorate known to occur or is there a substantial likelihood that perchlorate *occurs* at a frequency and at a level of public health

¹³ NATIONAL RESEARCH COUNCIL, HEALTH IMPLICATIONS OF PERCHLORATE INGESTION 6 (2005).

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ See 73 Fed. Reg. 60262, 60275 (Oct. 10, 2008).

¹⁸ *Id.* at 60277.

¹⁹ *Id.*

²⁰ 42 U.S.C. § 300g-1(b)(1)(A)(ii) (Westlaw 2008) (emphasis added).

concern in public water systems?”²¹ EPA then answers this question in the negative because the agency finds that no more than 16,000 to 28,000 pregnant women “could be exposed at levels exceeding the HRL *at any given time.*” EPA effectively takes a snapshot of perchlorate exposure at one instant in time. EPA does not take into account the millions of women who will become pregnant and who could be exposed to perchlorate above the HRL in future months, years, and decades. EPA’s failure to account for future health effects is contrary to the SDWA.

Second, the analysis fails to consider health effects on infants. According to the National Research Council, infants comprise a subpopulation that is particularly sensitive to perchlorate exposure. For example, studies have shown that children with a mild iodide deficiency – which perchlorate can cause – have learning disabilities and perform less well on tests of mental and psychomotor ability.²² Moreover, the HRL for infants is likely below the 15 µg/L that EPA determined for pregnant women.²³ EPA’s failure to consider the adverse health effects of perchlorate ingestion on infants, a sensitive subgroup, in (preliminarily) determining that perchlorate occurs infrequently in public water systems at levels of health concern is also contrary to the SDWA.

Third, the analysis fails to take into consideration health effects on persons with thyroid disorders. According to the National Research Council, people with thyroid disorders would be expected to be more sensitive to the effects of perchlorate ingestion.²⁴ Again, EPA’s failure to consider the adverse health effects of perchlorate ingestion on persons with thyroid disorders in (preliminarily) determining that perchlorate occurs only infrequently in public water systems at levels of public health concern is contrary to the SDWA.

As to the third criterion, EPA concludes that a national primary drinking water regulation for perchlorate would not present a meaningful opportunity to reduce health risks for persons served by public water systems.²⁵ EPA bases this conclusion on the flawed analysis, described above, in which the agency determined that perchlorate occurs only infrequently at levels of public health concern. EPA reiterated that of the 900,000 to two million people who may be ingesting public drinking water at levels above the HRL of 15 µg/L, “fewer than 30,000 of them are pregnant women at any given time.”²⁶ EPA’s conclusion fails to account for the reduced health risks to pregnant women in the future, and to their fetuses; to infants; and to persons with thyroid disorders.

For EPA to base a final decision not to establish primary drinking water regulations for perchlorate under the SDWA on this analysis would be arbitrary, capricious, and not in accordance with the plain requirements of the SDWA.

²¹ 73 Fed. Reg. at 60275 (emphasis added).

²² NATIONAL RESEARCH COUNCIL, *supra* note 13, at 59.

²³ See letter from Melanie A. Marty, Ph.D., Chair, Children’s Health Protection Advisory Committee, to EPA Administrator Stephen L. Johnson, at 2 (Nov. 3, 2008).

²⁴ NATIONAL RESEARCH COUNCIL, *supra* note 13, at 51.

²⁵ 73 Fed. Reg. at 60280.

²⁶ *Id.*

Furthermore, section 1412(b)(3)(A) of the SDWA requires that the EPA Administrator, when making a decision based on science, shall use “the best available peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices.”²⁷ However, according to EPA’s Science Advisory Board (SAB), EPA’s preliminary determination not to regulate perchlorate “relies on the use of a dosimetric model which is now undergoing letter peer review.”²⁸ Yet EPA plans to make a final determination whether to regulate perchlorate by December 2008.²⁹ Consequently, the SAB has expressed concern that the soundness of the dosimetric model “will not be publicly vetted.”³⁰ The SAB stresses the importance of such peer review: “The quality of the scientific foundation for EPA’s decisions depends on peer review, which brings a variety of scientific perspectives to bear on critical components of EPA’s decisions. Where science assessments have been conducted with the benefit of external scrutiny, the end products have been better able to support the policy making process.”³¹ It is critical, therefore, that EPA make the determination whether to regulate perchlorate with the benefit of fully peer-reviewed, and publicly-scrutinized scientific analysis. Failure of EPA to do so would be arbitrary and capricious and not in accordance with the requirements of the SDWA.

Thank you for your consideration of these comments.

Sincerely,

Ron Curry
Cabinet Secretary

cc: Governor Bill Richardson
Sarah Cottrell, Office of the Governor
Attorney General Gary King
Stephen R. Farris, Office of the Attorney General

²⁷ 42 U.S.C. § 300g-1(b)(3)(A) (Westlaw 2008).

²⁸ Letter from Dr. Deborah L. Swackhammer, Chair, EPA Science Advisory Board, and Dr. Joan Rose, Chair, EPA Science Advisory Board, Drinking Water Committee, to EPA Administrator Stephen L. Johnson, at 1 (Nov. 5, 2008).

²⁹ 73 Fed. Reg. at 60281.

³⁰ Letter from Dr. Swackhammer & Dr. Rose, at 1.

³¹ *Id.* at 2.