
Lahontan Regional Water Quality Control Board

March 2, 2016

Paul Ryken
Desert View Dairy
37501 Mountain View Road
Hinkley, CA 92347

Certified Mail No. 7009 0820 0001 6638 8772

Estate of Nick Van Vliet
c/o Gary B. Genske
1835 Newport Boulevard, Ste. 263
Costa Mesa, CA 92627

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Flameling Dairy, Inc.
c/o Bert & Kathleen A. Flameling
2088 Candlewood Avenue
Twin Falls, ID 83301

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Kevin Sullivan
Director, Chromium Remediation
Pacific Gas and Electric Company
77 Beale Street, B28P
San Francisco, CA 94105

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K&H Van Vliet Children LLC
c/o Nellie Ruisch
23925 Waalew Road
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REQUEST FOR COMMENTS: Amended Cleanup and Abatement Order No. R6V-2008-0034A4-(Proposed), requiring Paul Ryken, the Estate of Nick van Vliet, Flameling Dairy, Inc., K&H van Vliet Children LLC, and the Pacific Gas and Electric Company to Clean up or Abate the Effects of Contaminants to Groundwaters of the Mojave River Hydrologic Unit, Desert View Dairy, Hinkley, WDID No. 6B36040900

The California Regional Water Quality Control Board, Lahontan Region (Water Board) intends to issue the subject line amended Cleanup and Abatement Order (CAO) to the Dischargers for dairy waste pollution in groundwater originating at the Desert View Dairy (DVD). Previous CAOs issued to the Dischargers required replacement water for

domestic wells affected by nitrate waste from the DVD, groundwater investigations, domestic well sampling and reporting. This amended CAO is needed to:

1. Expand the affected area for the purposes of domestic well sampling and replacement water requirements;
2. Add sampling for additional constituents of concern related to dairy wastes;
3. Require replacement drinking and cooking water supply (i.e., bottled water or equivalent) for all domestic wells in the revised affected area with concentrations above primary or secondary Maximum Contaminant Levels for constituents of concern;
4. Require a plan and schedule to provide whole house replacement water for all domestic wells in the revised affected area with constituents of concern above primary or secondary MCLs, and
5. Provide more specific reporting requirements for domestic wells.

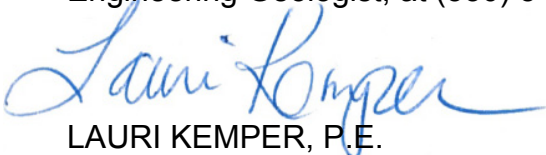
The Water Board is requesting your review and comments upon the proposed amended CAO, which can also be viewed at the Water Board's webpage at

<http://www.waterboards.ca.gov/lahontan>.

All comments regarding the proposed amended CAO must be received by the Water Board by **April 4, 2016, 5:00 p.m.** Please send your comments electronically (**Subject Line: Desert View Dairy Amended CAO comments**) to: RB6enfproceed@waterboards.ca.gov. If you do not have access to the Internet, by mail to:

Sue Genera, Executive Assistant
Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

If you have questions or comments regarding this matter, please contact me at (530) 542-5436 (Lauri.Kemper@waterboards.ca.gov) or Lisa Dernbach, Senior Engineering Geologist, at (530) 542-5424 (Lisa.Dernbach@waterboards.ca.gov).



LAURI KEMPER, P.E.
ASSISTANT EXECUTIVE OFFICER

Enclosure: Cleanup and Abatement Order No. R6V-2008-0034A4-(PROPOSED)

cc (via email): Raudel Sanchez, PhD, Project Navigator
Steve Mockenhaupt, GHD Services
Lisa Dernbach, Lahontan Regional Water Quality Control Board

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

AMENDED CLEANUP AND ABATEMENT ORDER NO. R6V-2008-0034A4-(PROPOSED)

**REQUIRING PAUL RYKEN, THE ESTATE OF NICK VAN VLIET, FLAMELING DAIRY, INC.,
K&H VAN VLIET CHILDREN LLC, AND
THE PACIFIC GAS AND ELECTRIC COMPANY
TO CLEAN UP OR ABATE THE EFFECTS OF
CONTAMINANTS TO GROUNDWATERS OF
THE MOJAVE RIVER HYDROLOGIC UNIT,
DESERT VIEW DAIRY, HINKLEY,
WDID NO. 6B360409002**

San Bernardino County_____

FINDINGS

The California Regional Water Quality Control Board, Lahontan Region (Water Board), finds:

Reason for Action

1. This is an amendment to previous Cleanup and Abatement Orders issued to the Dischargers for dairy waste pollution in groundwater originating at the Desert View Dairy. This amended Order (CAO No. R6V-2008-0034A4; hereafter, Amended Order 4) is needed to:
 - a) Expand the affected area for the purposes of domestic well sampling and replacement water requirements;
 - b) Add sampling for additional constituents of concern related to dairy wastes;
 - c) Require replacement drinking and cooking water supply (i.e., bottled water or equivalent) for all domestic wells in the revised affected area with concentrations above primary or secondary Maximum Contaminant Levels for constituents of concern;
 - d) Require a plan and schedule to provide whole house replacement water for all domestic wells in the revised affected area with constituents of concern above primary or secondary MCLs, and
 - e) Provide more specific reporting requirements for domestic wells.

Legal and Regulatory Authority

2. This Amended Order 4 conforms to and implements policies and requirements of the Porter-Cologne Water Quality Control Act (Division 7, commencing with Water Code section 13000) including (1) sections 13267 and 13304; (2) applicable state and federal regulations; (3) all applicable provisions of statewide Water Quality Control Plans adopted by the State Water Resources Control Board (State Water Board) and the Water Quality Control Plan for the Lahontan Region (Basin Plan) adopted by the Water

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Board including beneficial uses, water quality objectives, and implementation plans; (4) State Water Board policies and regulations, including State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California; Resolution No. 88-63, Sources of Drinking Water; Resolution No. 92-49, Policies and Procedures for Investigation, and Cleanup and Abatement of Discharges under Water Code Section 13304; California Code of Regulations (CCR) Title 23, Chapter 16, Article 11; CCR Title 23, section 3890 et. seq.; and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies.

Order History

3. On November 10, 2008, the Water Board issued CAO No. R6V-2008-0034 (Original Order) to Paul Ryken, the Estate of Nick Van Vliet, Flameling Dairy, Inc., K&H Van Vliet Children LLC, and the Pacific Gas and Electric Company (hereinafter referred to as the Dischargers). In the Original Order, findings 21 and 22 designate primary and secondary responsible parties for the purposes of compliance with the Order. Mr. Paul Ryken, the Estate of Nick Van Vliet and Flameling Dairy Inc. were designated as primary responsible parties, because as the past dairy owners and/or operators they initiated and contributed to the discharge of waste. The current owner/operator Pacific Gas and Electric Company and the past owner, the K&H Van Vliet Children LLC, were designated secondary responsible parties for complying with the Order. The primary and secondary responsible party designations remain in this Amended Order 4.
4. The Original Order required the Dischargers to supply interim water supply (i.e., bottled water) and long-term alternate replacement water supply to residences and businesses in which nitrate was detected at concentrations above Maximum Contaminant Levels (MCLs, also called drinking water standards) of 45 milligrams per liter (mg/L) (nitrate as nitrate [NO₃]) or 10 mg/L (nitrate as nitrogen [N]). Findings 6 through 17 of the Original Order describe how groundwater sampling indicated that the nitrate and other salts (total dissolved solids, chloride, sulfate and sodium) above MCLs, secondary MCLs or a United States Environmental Protection Agency (USEPA) health advisory level in nearby domestic wells originated from dairy waste disposal practices and irrigated agriculture at the DVD. Monitoring requirements for domestic wells in the vicinity of the DVD were described, as well as a deadline to submit a long-term alternate replacement water supply plan.
5. First Amended Order No. R6V-2008-0034A1 (Amended Order 1), issued on June 16, 2009, modified the domestic well sampling requirements of the Original Order. The Water Board's Executive Officer accepted the Dischargers' proposal to implement long-term replacement water supply by continuing the bottled water program that was already in place as required by the Original Order.
6. Second Amended Order No. R6V-2008-0034A2 (Amended Order 2) was issued on March 9, 2010, modifying the replacement water requirements in the Original Order. Amended Order 2 required the Dischargers to submit an *Alternative Water Supply Evaluation* to identify a new, long-term uninterrupted replacement water plan for all domestic uses (i.e., whole house replacement water), while continuing to implement an

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interim replacement water plan. Finding 4 (note there are two findings numbered 4) of Amended Order 2 describes that residents on Thompson Road complained of foul odors and tastes, residues on clothing and dishes, skin rashes, and adverse effects to their appliances. The majority of these effects could not be mitigated by bottled water, but required whole house replacement water to supply bathing and washing facilities and appliances. Results from residential well sampling for four domestic wells on Thompson Road (downgradient of the DVD) show that concentrations of chloride, sulfate, and total dissolved solids (TDS) were anywhere from three to 12 times higher (above) their respective secondary MCLs, as presented in the table in Amended Order 2, finding 4. Locations referred to in this and subsequent findings are shown in attachment 1, Location Map and Affected Area.

7. Secondary MCLs (SMCLs) are set for domestic water supplies (including drinking, cooking, and washing) to control for non-health related effects such as undesirable taste, odor, corrosion, staining, discoloration, foaming, scaling and sedimentation. These three limits are set by the State Water Resources Control Board's Division of Drinking Water and the USEPA, and are shown in Table 1 for the constituents of concern for this Amended Order 4.

Table 1. Ranges of State and Federal Secondary MCLs, in Milligrams per Liter (mg/L).

| Constituent | Recommended SMCL | Upper SMCL | Short term SMCL |
|--------------------|-------------------------|-------------------|------------------------|
| TDS | 500 | 1,000 | 1,500 |
| Sulfate | 250 | 500 | 600 |
| Chloride | 250 | 500 | 600 |

8. On January 26, 2011 the Water Board's Assistant Executive Officer issued a Notice of Violation of CAO R6V-2008-0034A2, and an Investigative Order R6V-2010-0028 (January 2011 NOV) based on the Dischargers' failure to deliver interim replacement water by the July 30, 2010 and October 11, 2010 deadlines in accordance with the Amended Order 2 and a 2010 Investigative Order. This Amended Order 4 in no way absolves the Dischargers from any future potential civil monetary liability indicated in the January 2011 NOV based on violations of previous Orders.
9. Third Amended Order R6V-2008-0034A3 (Amended Order 3), issued on February 24, 2011, required the Discharger to implement new plans to provide long-term whole house replacement water service to affected properties, and conduct a groundwater investigation to determine the extent of dairy and agricultural waste constituents, including nitrate, TDS and other salts. In response to the first requirement, Mr. Ryken provided storage tanks and trucked water to four properties on Thompson Road (after the owners' acceptance of this long-term replacement water approach). The Dischargers submitted two groundwater investigation reports on June 30, 2011.
10. On March 20, 2015 the Water Board's Assistant Executive Officer issued a second Notice of Violation of CAO Nos. R6V-2008-0034 and R6V-2008-0034A1 to the Dischargers for failing to describe nitrate and other constituents above drinking water

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standards in a newly affected domestic well in the CAO affected area; not providing alternate water supply to the residence affected by nitrate pollution of groundwater resulting from the DVD; and failing to provide a written report that alternate water supply was being provided to affected residents. This Amended Order 4 in no way absolves the Dischargers from any future potential civil monetary liability indicated in the March 2015 NOV based on violations of previous Orders.

Basis of and Need for Amendment

11. At the time of issuance of the Original Order in 2008, groundwater sampling indicated that nitrate and salts pollution originating from the DVD had migrated downgradient (generally northward) to at least Thompson Road, about 2,500 feet north of the DVD (see findings 11 and 16 of the Original Order). Therefore, Order No. 1 of the Original Order defined an "affected area" subject to sampling and replacement water requirements in the Original Order as bounded by Serra Road to the west, Santa Fe Road to the south, Summerset Road to the east, and Salinas Road to the north (Salinas Road is about 2,500 north of Thompson Road in the downgradient groundwater flow direction from the DVD). See attachment 1, Location Map and Affected Area, showing these locations.
12. Since late 2008, as directed by the Original Order, Mr. Ryken's consultant Conestoga-Rover Associates (now GHD Services, Inc.) has collected water samples from active domestic wells in the affected area. Data¹ from 2015 sampling of accessible domestic wells in the affected area shows that six active domestic wells show concentrations of two or more constituents of concern (TDS, chloride, nitrate, and sulfate) above the primary or secondary MCLs.
13. Additional groundwater monitoring near and downgradient of the DVD is required pursuant to Board Order No. R6V-2014-0023, *Agricultural Treatment Unit Waste Discharge Requirements* (ATU WDRs), issued to PG&E to regulate discharges from its irrigated alfalfa fields. These fields, called Agricultural Treatment Units (ATUs), are used to contain and treat PG&E's chromium plume in groundwater originating from the Hinkley Compressor Station. Data² collected in 2012 through 2015 from domestic well sampling required by the ATU WDRs indicate that TDS concentrations in domestic wells *north* of Salinas Road in the downgradient flow direction from the DVD are greater than the secondary TDS MCL of 500 mg/L. Maximum TDS concentrations in those domestic wells range from 550 to 1,600 mg/L.
14. In June 2015, PG&E submitted the *Agricultural Treatment Byproducts Investigation Report for Environmental Impact Report Mitigation Measure WTR-MM-5*³. This report provides data from monitoring wells, including several located north of Salinas Road in the downgradient flow direction from the DVD. Data from those wells indicate that TDS

¹ Data from 2015 collected by Conestoga Rover/GHD is available at http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0607171020.

² See Table H-3 in the Third Quarter 2015 Agricultural Treatment Units Monitoring Report, available at http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0607111288.

³ Available at http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0607111288.

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concentrations are greater than the secondary MCL of 500 mg/L in these wells, ranging up to 904 mg/L.

15. This Amended Order 4 does not change the existing requirement for the Dischargers to provide interim and whole house replacement water to domestic wells with nitrate at or above its MCL. This Amended Order 4 does require the Dischargers to provide alternate water supply for drinking and cooking uses and whole house replacement water for additional constituents that reach either recommended or upper SMCLs, as described in findings 16 through 22 below.

Basis for Replacement Water Requirements for TDS Pollution

16. The USEPA and State of California have set a range of SMCLs for TDS (see Table 1 in finding 7). The recommended limit of 500 mg/L is set to control for "hardness, deposits, colored water, staining, and salty taste." These effects are described as "noticeable above the secondary [recommended] MCL" of 500 mg/L⁴. According to the World Health Organization⁵, TDS levels above 500 mg/L result in excessive scaling in water pipes, water heaters, boilers, and household appliances such as kettles and steam irons, shortening the service life of these appliances.
17. Data⁶ reported in the 2013 Final Environmental Impact Report certified by the Water Board for PG&E's chromium cleanup shows that groundwater upgradient of the DVD (and other dairy or farming operations) generally contains constituents below the recommended SMCL for TDS. Data⁷ from PG&E's freshwater supply wells located to the south and east of the Compressor Station and upgradient of dairy or farming operations indicate that Hinkley Valley background groundwater quality for TDS is below the recommended SMCL (TDS concentrations range from 228 to 266 mg/L). Therefore, background water quality for TDS in the Hinkley Valley, not affected by dairy or farming operation, is better (lower) than the recommended SMCL of 500 mg/L.
18. Therefore, whole house replacement water is required when a domestic well reaches the recommended SMCL for TDS of 500 mg/L. In the interim period before whole house water is implemented, well users affected by such TDS pollution shall receive bottled water as specified by this Amended Order 4 (see Orders section III.A and III.B).

⁴ <http://www.epa.gov/dwstandardsregulations/secondary-drinking-water-regulations-guidance-nuisance-chemicals#table-of-secondary>.

⁵ Total Dissolved Solids in Drinking Water: Background Document for Development of WHO Guidelines for Drinking-water Quality. WHO 2003

⁶ See EIR Figure 3.1-7 "Existing TDS Concentrations within Project Area" and accompanying TDS discussion at pp. 3.1-33 through 3.1-35, available at http://www.waterboards.ca.gov/lahtontan/water_issues/projects/pge/docs/feir/ch3_1.pdf.

⁷ See Appendix B, FW-01, FW-02, FW-03, and FW-04 Water Quality Data contained in PG&E's "Hinkley School Supplemental Environmental Project Final Report and Satisfaction of Order Request" dated July 15, 2015 available at http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2518251538/SL0607111288.PDF.

Basis for Replacement Water Requirements for Chloride and Sulfate Pollution

19. Chloride and sulfate are salts in dairy waste which are constituents of concern for this Amended Order 4. The USEPA and the State of California have set a range of secondary MCLs for sulfate and chloride (see Table 1 in finding 7) to address corrosion and staining, as well as taste and odor. However, the "noticeable effect above secondary [recommended] MCL" for chloride and sulfate is noted as "salty taste", but not corrosion and staining (see reference in footnote 4). This suggests that appliance and laundry staining impacts may not be observed at the recommended SMCL of 250 mg/L for these constituents, but at a higher concentration.
20. On June 30, 2011, PG&E submitted the document *Groundwater Investigation and Characterization Report*⁸ pursuant to Amended Order 3. Table 4-2 of that report contains the water quality results from monitoring and extraction wells at, south of, and north of the DVD. These locations represent the source of pollution, the upgradient, and downgradient groundwater flow direction from the DVD. Table 2 below summarizes concentrations of chloride and sulfate in groundwater upgradient and downgradient of the dairy waste source. Note that upgradient concentrations are less (better) than the SMCLs for chloride and sulfate shown in finding 7, Table 1. Downgradient water quality shows a marked increase in these salts, all above the respective SMCLs.

Table 2. Upgradient and Downgradient of DVD, Chloride and Sulfate Results, in Milligrams per Liter (mg/L).

| Well # | Chloride | Sulfate |
|----------------------------|-------------|-------------|
| Upgradient of DVD | | |
| EX-10 | 141 - 198 | 74.6 - 85.5 |
| EX-17 | 40.6 – 44.9 | 26.7 – 28.7 |
| MW-41A | 89.7 – 90.3 | 123 - 124 |
| MW-76S | 103 | 166 |
| Downgradient of DVD | | |
| MW-29 | 890 | 1,500 |
| MW-62A | 686 | 820 |
| MW-83S | 962 | 1,220 |
| DW-03 | 1,120 | 1,510 |

21. Data⁹ from PG&E's freshwater supply wells located to the south and east of the Compressor Station, and upgradient of dairy or farming operations indicate that water quality for chloride and sulfate is less (better) than the recommended SMCLs (chloride concentrations range from 29.4 to 42.3 mg/L; sulfate ranges from 33.8 to 42.3 mg/L). Data in Table 2 and this finding 21 support that background water quality for chloride and sulfate in the Hinkley Valley, not affected by dairy or farming operations, is better (lower) than the recommended SMCL of 250 mg/L.

⁸ Available at http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9745538294/SL0607111288.PDF.

⁹ See reference in footnote 7.

22. Therefore, whole house water is required when a domestic well reaches the upper secondary MCL for sulfate and chloride of 500 mg/L due to the potential for corrosion and staining. Replacement water supply for drinking and cooking (i.e., bottled water or equivalent) is required for domestic wells with water quality at or above the recommended secondary MCL of 250 mg/L for sulfate and chloride due to taste and odor effects.

Consideration of California Water Code Section 106.3

23. Water Code section 106.3 establishes a state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes, and directs state agencies to consider this policy when adopting regulations pertinent to water uses described in the section, including the use of water for domestic purposes.
24. This Amended Order 4 implements Water Code section 106.3 by requiring the Dischargers to sample domestic wells in an expanded area and to provide bottled and whole house replacement water supply at no cost to affected well users. Bottled water shall be provided from commercial vendors and meet all primary and secondary state drinking water standards, and be of sufficient water quantity to fulfill drinking and cooking needs. Whole house replacement water must meet state primary and secondary standards, and be of sufficient quantity to provide for all indoor domestic uses, including drinking, cooking, bathing, washing, and appliance supply. Therefore, the consideration of access to safe, clean and affordable water has been met in this Amended Order 4.

IT IS HEREBY ORDERED, pursuant to Water Code sections 13267 and 13304, that Mr. Paul Ryken, the estate of Nick Van Vliet, Flameling Dairy, Inc., the K&H Van Vliet Children LLC and PG&E are responsible for the discharge of waste that has caused or threatens to cause a condition of pollution or nuisance, and shall abate the effects of waste discharges at, near, and downgradient of the DVD as directed in Cleanup and Abatement Order Nos. R6V-2008-0034, R6V-2008-0034A1, R6V-2008-0034A2, R6V-2008-0034A3, and as amended below.

I. REVISED AFFECTED AREA, SAMPLING TIMEFRAME, AND SAMPLING CONSTITUENTS

- A.** The affected area for this Amended Order 4 is revised as follows: All active domestic and community supply wells in the area bounded by Serra Road to the west, Santa Fe Road to the south, Summerset Road to the east, and expanded to Sonoma Road to the north, including all parcels containing active domestic wells adjacent to Sonoma Road on the north side (see attachment 1, Location Map and Affected Area).
- B.** Sampling frequency for active domestic wells in the revised affected area shall remain semi-annual (twice-yearly). Sampling for all domestic wells in the affected area shall occur during the months of **April and October** of each year.

C. The Dischargers shall sample nitrate, reported as nitrate as nitrogen; total dissolved solids; chloride; and sulfate, using the following methods and reporting limits:

1. TDS by SM 2540C, reporting limit 10 mg/L
2. Chloride and sulfate by USEPA 300.0, reporting limit 25 mg/L
3. Nitrate as nitrogen-N by USEPA 300.0, reporting limit 0.5 mg/L

II. AFFECTED WELL DEFINITION

Affected wells are any private active domestic or community water supply wells in the revised affected area containing constituents **at or above** the primary or secondary Maximum Contaminant Levels (MCLs or SMCLs) listed in Table 3.

Table 3. Levels for Defining Affected Domestic Wells, in Milligrams per Liter (mg/L).

| Replacement Water Type | Nitrate as N | Chloride | Sulfate | TDS |
|---|---------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 1. Drinking and Cooking Supply (Bottled Water) | 10 mg/L (primary MCL) | 250 mg/L (recommended SMCL) | 250 mg/L (recommended SMCL) | 500 mg/L (recommended SMCL) |
| 2. Whole House Replacement Water Supply | 10 mg/L (primary MCL) | 500 mg/L (upper SMCL) | 500 mg/L (upper SMCL) | 500 mg/L (recommended SMCL) |

III. DRINKING AND COOKING REPLACEMENT WATER SUPPLY AND NOTIFICATIONS

- A. Within **14 days** of this Amended Order 4 being issued, the Dischargers shall supply uninterrupted replacement water for drinking and cooking purposes (defined as commercially available bottled water or equivalent) to users of affected wells where the most recent available data¹⁰ shows concentrations for constituents of concern **at or above** the limits in Table 3, row 1. Pursuant to California Water Code section 13304(f), replacement water “shall meet all applicable federal, state, and local drinking water standards, and shall have comparable water quality to that pumped by the public water system or private well owner before the discharge of waste.”
- B. Within **5 business days** of receiving a future laboratory report identifying newly affected well(s) defined by Order II, above, and according to the limits in Table 3, row 1, the Dischargers shall supply uninterrupted replacement water for drinking and cooking purposes to users of such affected wells.
- C. Within **2 business days** of providing replacement water to affected well users as required in III. A and III. B above, the Dischargers shall provide Water Board staff via email the following information:

¹⁰ For the purposes of this Amended Order 4, such data may include analytical results from sampling conducted by the Dischargers pursuant to this Order, other Water Board Orders or voluntary sampling efforts; or data collected by local, state, or federal agencies that have been made available to the Dischargers.

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1. The well number and location of any identified affected wells. Domestic well numbers shall be the same as those used by PG&E in its monitoring reports submitted in compliance with ATU WDRs;
2. The date bottled water was first supplied;
3. The bottled water supplier name; and
4. A copy of the laboratory report indicating concentrations of constituents in the domestic well(s) at or above the limits shown in Table 3.

IV. WHOLE HOUSE REPLACEMENT WATER SUPPLY PLAN AND IMPLEMENTATION SCHEDULE

A. Within 30 days of this Amended Order 4 being issued, the Dischargers must submit a workplan to provide whole house replacement water supply for all indoor domestic uses¹¹ for all currently affected domestic wells, based on most recent data, and for future affected domestic wells. Affected domestic wells eligible for whole house replacement water are those with water quality concentrations **at or above** the limits shown in Table 3, row 2. Pursuant to California Water Code section 13304(f), replacement water “shall meet all applicable federal, state, and local drinking water standards, and shall have comparable water quality to that pumped by the public water system or private well owner before the discharge of waste.” The workplan shall include the following:

1. An evaluation of at least three different methods to provide whole house replacement water supply;
2. A discussion on the feasibility and timing to implement each method including the needs for permits, approvals, and environmental analysis;
3. An evaluation of the quantity of water (gallons per minute) that can be provided by each method compared with typical individual household supply needs for all indoor uses;
4. An evaluation of the quality of water that can be provided by each method in comparison to California primary and secondary drinking water standards (MCLs and SMCLs);
5. An analysis of wastes that may be generated by each method, disposal options, costs, and an analysis of potential byproducts in groundwater created by each method. For example, reverse osmosis generates salts and potentially other compounds that may further impact groundwater quality;
6. An operation, maintenance, and, replacement plan, such as for filters, equipment, etc., of each evaluated method;
7. A water quality monitoring and reporting plan to verify quality and performance of each evaluated method;
8. A complete cost analysis including construction, operations, maintenance, and replacement plan of each evaluated method;
9. A contingency plan to ensure uninterrupted replacement water supply in case of problems occurring with the selected method, and
10. A description of how the workplan and recommended method will be presented to the owner(s) and users of the affected well(s).

¹¹ Indoor domestic uses include drinking, food preparation and cooking, bathing, washing, toilet flushing, laundry, dishwashing, and garbage disposal.

- B. Within 60 days of the Water Board Executive Officer approving in writing the replacement water plan required in Order IV.A,** the Dischargers shall provide whole house replacement water supply for all indoor domestic uses for eligible affected well(s). The Dischargers shall report the date that the whole house water system became operable and system monitoring results in its semi-annual reports. If monitoring results indicate the whole house water system is failing to meet primary and secondary MCLs, the Discharger shall immediately provide bottled water (or its equivalency). The Discharger shall notify the Water Board via email within 5 days of such failure.
- C. Within 21 days of identifying a newly affected well eligible for whole house replacement water according to the limits in Table 3, row 2,** the Dischargers shall consult with the affected well owner and users regarding which method for whole house replacement water would best fit the individual circumstances of the well owner and users. The Dischargers shall obtain written authorization from the well owner to install the preferred whole house replacement water method.
- D. Within 10 days of receiving written authorization from the well owner,** the Dischargers shall submit the following information to the Water Board's Executive Officer for acceptance:
1. The written authorization from the well owner for installation of the preferred whole house replacement water supply method, and
 2. A schedule for installation and start-up of whole house replacement water at the location of the newly affected well.
- E. The Dischargers shall implement** the preferred whole house replacement water supply method according to the accepted schedule.

V. REPORTING REQUIREMENTS

A. Reports

1. **On June 15, 2016 and every six months thereafter (December 15 and June 15 of each year),** submit a report to Water Board staff containing the following information:
 - a) A transmittal letter summarizing the essential points in each report, including discussions of:
 - i. any violations of this Order found since the last report was submitted, and actions taken or planned for correcting those violations;
 - ii. any newly identified affected wells, and
 - iii. any wells in the affected area that have become inactive since the last reporting period;
 - b) A table showing results for all domestic wells that have been sampled under this Order, with current data from the reporting period added to previously tabulated historic data. The table shall include a column showing percentage change (increase or decrease) from the previous reporting period. Data shall be tabulated by well numbers that

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correspond to those used by PG&E in its domestic well sampling under the ATU WDRs. The table shall include sampling results for all constituents for each well sampled, and be compared to levels for all constituents shown in Table 3;

- c) A table of all properties that have been provided replacement water supply, including well numbers and type of replacement water supplied (i.e., whole house supply or for drinking and cooking);
- d) Any newly identified affected well including its number and location, the method used to provide replacement water supply if for whole house use, the date replacement water was first provided, and evidence that water supply meets state primary and secondary drinking water standards (or MCLs);
- e) For all domestic wells sampled, wells owners shall be provided with letters notifying them of the sampling results. The letters shall compare current sampling results to state and federal MCLs or SMCLs, and criteria to determine affected wells for replacement water shown in Table 3. Notification letters must include a clear tabulation of analytical results of current and historical data. The Dischargers shall include copies of all notification letters in the report;
- f) Describe and provide evidence if a well owner did not permit the Dischargers to sample their well or accept replacement water supply. Include the date, time, and manner of communication, and number of attempts to contact the well owner, or to seek permission to sample their well, or to provide whole house replacement water or bottled water;
- g) Describe all actions completed during the reporting period, including monitoring and maintenance of whole house replacement water systems;
- h) Describe any problems that have occurred and how and when they were corrected or remedied. For instance, if sampling indicates that alternate water supply does not meet federal and state drinking water standards, describe what corrective actions were implemented to fix the problem;
- i) An appendix of laboratory data sheets, including quality assurance and quality control results, chain of custody sheets, laboratory certification, method summaries, and sample results;
- j) Should the Dischargers sample any well or analyze any result more frequently than required by this Order, include the results for the parameters and locations specified in this Order, and
- k) All reports shall include the signature and stamp of a California licensed professional geologist or civil engineer verifying statements in the report, laboratory and other sampling results, and work conducted.

B. Required Maps

1. All maps shall have a font size of no less than 9 points and show the following information: scale, legend, street names, affected area boundaries and all sampling locations. The following maps shall be included in each report:
 - a) A map showing sampling results from domestic wells for each constituent analyzed, and;
 - b) Map(s) symbolizing the status of each domestic well in the revised affected area. Separate symbols shall be used to indicate the status of each well for the reporting period:
 - i. not sampled;

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- ii. sampled, and not affected for any constituent of concern under this Order;
- iii. newly identified as affected for reporting period;
- iv. previously identified as affected and receiving bottled water, or
- v. previously identified as affected and receiving whole house water.

C. Geotracker and Hardcopy Submittals

1. Reports, workplans, maps and other documents submitted pursuant to this Order shall be uploaded to the State Water Resources Control Board's Geotracker database, within **one** business day of the report due date, so that reports can be viewed by the public at the link:
https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0607171020. If report appendices are uploaded as separate files, the appendix number or letter shall be included in the file name.
2. Any report, workplan, map, or other documents submitted pursuant to this Order containing maps, figures or tables larger than 11" X 17" must be submitted in hardcopy to the South Lake Tahoe and Victorville offices of the Lahontan Regional Water Quality Control Board:

Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Lahontan Regional Water Quality Control Board
14440 Civic Drive, Suite 200
Victorville, CA 92392

VI. GENERAL PROVISIONS

- A. Laboratory Qualifications.** All samples must be analyzed by California Environmental Laboratory Accreditation Program-certified laboratories using methods approved by the USEPA for the type of analysis to be performed. All water sample analyses shall utilize the most recent testing methods.
- B. Reporting of Changed Owner or Operator.** The Dischargers must notify the Water Board of any changes in occupancy or ownership associated with the property described in this Order.
- C. Certifications for all Plans and Reports.** All technical and monitoring plans and reports required in conjunction with this Order are required pursuant to Water Code section 13267 and shall include a statement by the Dischargers, or an authorized representative of the Dischargers, certifying under penalty of perjury in conformance with the laws of the State of California that the workplan and/or report is true, complete, and accurate. Maps, hydrogeologic reports and engineered plans shall be prepared or directly supervised by, and signed and stamped by a Professional Geologist or Civil Engineer, respectively, registered in California. It is expected that all interpretations and conclusions of data in these documents will be truthful, supported with evidence, and there will be no attempts to mislead

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by false statements, exaggerations, deceptive presentation, or failure to include essential information.

- D. Duty to Submit Other Information.** When the Dischargers becomes aware that it has failed to submit any relevant facts in any report required under this Order, or submitted incorrect information in any such report, the Discharger shall promptly submit such facts or information to the Water Board.
- E. No Limitation of Water Board Authority.** This Order in no way limits the authority of this Water Board to institute additional enforcement actions or to require additional investigation and cleanup of the site consistent with the Water Code. This Order may be revised by the Water Board's Executive Officer as additional information becomes available.
- F. Enforcement.** Failure to comply with the requirements, terms, or conditions of this Order will result in additional enforcement action that may include the imposition of administrative civil liability pursuant to California Water Code sections 13268 and 13350, or referral to the Attorney General of the State of California for civil liability or injunctive relief. The Water Board reserves its rights to take any enforcement action authorized by law. Findings and requirements that are in Cleanup and Abatement Order Nos. R6V-2008-0034, R6V-2008-0034A1, R6V-2008-0034A2 and R6V-2008-0034A3 that are not revised by this Amended Order 4 remain in effect.
- G. Right to Petition.** Any person aggrieved by this action of the Lahontan Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board shall receive the petition by 5:00 p.m., 30 days after the date this Order is issued, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition shall be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

Patty Z. Kouyoumdjian
Executive Officer

Date

Attachment 1: Location Map and Affected Area

Attachment 1: Location Map and Affected Area
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Revised Affected Area ———

Mountain General Rd Mountain General Rd

Mountain General Rd

Sonoma St
Dashed line is previous northern boundary
of Affected Area at Salinas Road

Salinas Rd

Palma Rd

Manacor Rd

Thompson Rd

Coon Canyon Rd

Alcudia Rd

Hinkley

Alcudia Rd

Desert
View
Dairy

Alcudia Rd

Lenwood

Santa Fe Ave

Summerset Rd

Acacia St

Dixie Rd

Lenwood Rd

Old Hwy

Ashwood Rd

Acacia St

Serra Rd

Santa Fe Ave

Barstow-Bakersfield Hwy

Santa Fe Ave

Pal

Val

Flo

Livi

Mor

Fair

Sun

P

