

CALIFORNIA REGIONAL WATER QUALITY CONTROL REGIONAL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0065

NPDES NO. CA0081833

WASTE DISCHARGE REQUIREMENTS
FOR
GENERAL ELECTRIC COMPANY
AND
WELL MADE PRODUCTS COMPANY
GROUNDWATER CLEANUP SYSTEM
MERCED COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The General Electric Company, a New York corporation, and Well Made Products Company (WLMD), a California corporation, (hereafter jointly referred to as Discharger) submitted a Report of Waste Discharge (RWD), dated 28 January 1999, to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from a groundwater cleanup system (GWCS).
2. Waste Discharge Requirements (WDRs) Order Nos. 94-166 and 95-109 (NPDES Nos. CA0081833 and CA0083739) were adopted on 24 June 1994 and 26 May 1995, respectively. Hereafter, NPDES Permit No. CA0083739 is discontinued from use and NPDES Permit No. CA0081833 will reference all discharges described herein. WDRs Order No. 94-166 regulates the discharge from an on-site air-stripping unit of treated groundwater and WDRs Order No. 95-109 regulates the discharge of treated groundwater from two off-site Granular Activated Carbon (GAC) groundwater treatment systems. Monitoring and Reporting Program No. 98-810 prescribes a program for monitoring the clean-up and migration of the pollutant plume. Trichloroethylene (TCE) is the primary groundwater pollutant. The Discharger proposes to continue to discharge treated groundwater from the air-stripper system and the two GAC groundwater treatment systems. In a 25 April 2002 letter, the Discharger requested that WDRs Order Nos. 94-166 and 95-109 be combined into one order.
3. The GWCS is in the City of Merced in Sections 27, 28, 33, and 34, T7S, R14E, MDB&M, as shown in "Attachment A", attached hereto and part of this Order. The Discharger owned the property from 1965 to 1971. The Discharger's disposal practices (volatile organics discharged to an unlined pond) polluted groundwater and affected local industrial, domestic, and municipal supply wells. The Discharger has accepted responsibility for defining the extent of pollution and for the necessary cleanup. The property was owned from 1972 to 1981 by the Kendall Company. WLMD, the current property owner, purchased the property in 1989.
4. The GWCS includes the air stripping system, up to fourteen extraction wells, an

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equalization tank, two GAC groundwater treatment systems, 16 monitoring wells on property owned by WLMD, nineteen additional monitoring wells that are outside of WLMD's property boundary, and three discharge points.

5. The RWD describes the discharge as follows:

Maximum Total Daily Flow: 2.75 million gallons per day (mgd)
Total Design Flow: 2.75 mgd

The discharges are identified below by serial number:

001 – Polluted groundwater is extracted from Monitoring Well No. 46A, treated in one of two GAC groundwater treatment systems (2 – 2,000 lbs carbon vessels in series) at a maximum design flow rate of 0.15 mgd (100 gpm). The treated groundwater is pumped into an adjacent 3-inch pipeline and discharged into the Hartley Lateral Irrigation Canal as shown in Attachment B, attached hereto and part of this Order. The GAC system is on property owned by Mr. Jim Lynn. The outfall is 1,560 feet north of Childs Avenue and 2,640 feet east of Coffee Street in the SE $\frac{1}{4}$ of Section 27, T7S, R14E, MDB&M (Latitude 37° 17' 27.3" North, Longitude 120° 25' 32.4" East).

002 – Polluted groundwater is extracted from Monitoring Well Nos. 57D and 61A, treated in the other GAC groundwater treatment system (2 – 10,000 lbs carbon vessels in series) at a maximum design flow rate of 1.0 mgd (700 gpm). The treated groundwater is pumped into an adjacent 8-inch pipeline and discharged into the Hartley Lateral Irrigation Canal as shown in Attachment B. The GAC system is on property owned by the Weaver School District. The outfall is 1,980 feet east of Childs Avenue and Coffee Street intersection in the SE $\frac{1}{4}$ of Section 27, T7S, R14E, MDB&M (Latitude 37° 17' 15.4" North, Longitude 120° 25' 41.3" East).

003 – Polluted groundwater is pumped from up to nine other on-site extraction wells and collected in an equalization tank where it is mixed with a scale inhibitor (Nalco 8357) and emptied into a distributor at the top of the air-stripper. The polluted groundwater then flows down through the air stripper packing where it is contacted by air that is being forced upward by a blower. As the water flows downward, TCE in the water is volatilized and transferred to the air stream. The treated groundwater can be pumped at a maximum design flow of 1.6 mgd (1,100 gpm) into an adjacent pipeline which discharges into the Hartley Lateral Irrigation Canal as shown in Attachment B. The outfall is 1,540 feet north of Childs Avenue and 2,640 feet east of Coffee Street in the SE $\frac{1}{4}$ of Section 27, T7S, R14E, MDB&M (Latitude 37° 17' 34" North, Longitude 120° 25' 20" East).

6. The GAC treatment units have a typical breakthrough time of six to seven months.
7. Concentrations of TCE in the groundwater fluctuate depending on the depth below ground surface (bgs). In 2002 and 2003, concentrations of TCE in the Shallow Zone (<100 feet bgs) were typically about 4.0 µg/L. Concentrations at 100-150 feet bgs were as high as 680 µg/L. In 2003, the Discharger did not detect TCE at depths greater than 250 feet bgs. Cis-1,2-dichloroethylene was detected at concentrations ranging from 0.5-0.8 µg/L in samples collected from four groundwater monitoring wells in 2003.
8. During March 1994 sampling, carbon tetrachloride was found in one monitoring well at concentrations of 2.5 - 20 µg/L and 1.1 µg/L, respectively. Carbon tetrachloride was detected again in July 2003 sampling at concentrations of 1.2 µg/L and 2.2 µg/L. Other halogenated volatile organics were not detected in the March 1994 sampling. Although 1,1,1-trichloroethane (TCA) was found in several monitoring wells during 1986, 1987, and 1988 sampling events at concentrations of 0.8 - 1.5 µg/L, it has not been detected since. Chloroform was found in two monitoring wells during 1993 sampling events at concentrations of 0.5 - 4.4 µg/L. Tetrachloroethylene (PCE) was found in several monitoring wells during 1992 and 1993 sampling events at concentrations of 1.2 - 96 µg/L, and again in July 2001 at a concentration of 14 µg/L.
9. Industrial supply wells on WLMD property have had TCE levels as high as 18,000 µg/L (50,000 µg/L in an on-site monitoring well). In 2001, detectable levels of TCE (>0.5 µg/L) were present in wells at distances greater than 1.0 mile downgradient from WLMD property. One municipal, 84 domestic, 14 agricultural, and three Merced Irrigation District supply wells are within a one-mile radius of WLMD property (none are on WLMD property).
10. In the past, the Discharger cleaned the air-stripper approximately every four years. The Discharger uses a dilute solution of sulfamic acid to remove the calcium carbonate scale. Wastewater generated from cleaning the air-stripper is slightly acidic and is therefore neutralized with a sodium hydroxide solution. In 2000, the Discharger obtained authorization from the Merced Irrigation District to discharge the maintenance water to the Hartley Lateral Irrigation Canal via Discharge No. 003. The maintenance water had an average electrical conductivity of 10,100 µmhos/cm and an average pH of approximately 6.5. Maintenance water discharged to the canal will be blended with treated groundwater so that the EC of blended wastewater does not exceed the agricultural water quality goal of 700 µmhos/cm. This dilution protocol ensures that beneficial uses of the Hartley Lateral Irrigation Canal will not be adversely affected. In 2000, the Discharger used approximately 350 pounds of sodium hydroxide to neutralize the sulfamic acid. The Discharger anticipates cleaning the air-stripper no more than every four years.

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11. The Discharger has used treated wastewater for installing extraction and monitoring wells and for washing equipment associated with such activities. Typically, the volume of wastewater used for these activities is about 1,000 gallons per use. The Discharger anticipates future need for similar periodic uses of treated wastewater from the GWCS.
12. On 25 March 2002, the San Joaquin Valley Air Pollution Control District issued an "Authority to Construct," (No. 1183-1-1) which allows for the operation of the air-stripper.
13. As the Discharger conducts required groundwater monitoring, it generates approximately 7,000 to 8,000 gallons of purged well water each quarter. The concentration of VOCs in the purge water may exceed the limits prescribed by Effluent Limitation B.4. In the past, the Discharger treated the purge water with a portable GAC adsorber and disposed to land near the well and/or transported to the GWCS for subsequent treatment and disposal.
14. If other constituents of concern are identified as being present or potentially being present in groundwater discharged under this Order, then this Order may be reopened and effluent limits and receiving water limitations may be established for those constituents.
15. The GWCS is within the San Joaquin Valley Floor Hydrological Unit, Merced Hydrologic Area (No. 535.80).
16. The Hartley Lateral Irrigation Canal traverses in a north-south direction upstream of Discharge Nos. 001 and 003 until it intersects Childs Avenue. At Childs Avenue, the Hartley Lateral Irrigation Canal traverses in an east-west direction. The Doane Lateral Irrigation Canal intersects the Hartley Lateral Irrigation Canal at Childs Avenue on the north-south Hartley Lateral Irrigation Canal alignment. Depending on the agricultural supply demands, water can flow both directions in the Doane Lateral Irrigation Canal. Between November 1 and March 1 both canals sometimes function as effluent dominated water bodies (EDW). Both canals are owned and operated by the Merced Irrigation District and flow from the Merced River via Yosemite Lake and terminate at Miles Creek, a tributary to the San Joaquin River, a water of the United States.
17. The Discharger and Merced Irrigation District have a signed agreement that defines the terms and conditions under which Merced Irrigation District allows the discharges into the Hartley Lateral Irrigation Canal.
18. Waste from livestock that are known to occasionally be present in the Hartley Lateral Irrigation Canal may impact some water quality characteristics. However, the presence of livestock in the receiving water should not affect the ability to determine if the proposed discharge impacts the receiving water quality.

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19. According to the RWD, quarterly monitoring submitted by the Discharger, and data from other Regional Board sources, the following conditions are typical for groundwater and the Hartley Lateral Irrigation Canal, respectively:

<u>Constituent</u>	<u>Groundwater</u>	<u>Hartley Lateral Irrigation Canal</u>	<u>Units</u>
Temperature	61-75	67.0	°F
pH	7.0 – 8.0	6.6 - 7.7	pH Units
Conductivity	300-1,100	80 – 90*	µmhos/cm

* Calculated on the empirical assumption that Conductivity $\approx 1.8 \times \text{TDS (mg/L)}$

20. Groundwater extraction from water supply wells results in lower than normal water level elevations and cones of depression near the site. According to quarterly monitoring reports, groundwater beneath the site generally occurs at 27 to 41 feet bgs and moves to the west and southwest. The operation of a nearby supply well (CW-10B) induced a southwest and downward migration of TCE from shallower depth intervals into deeper depth intervals. In order to halt the southwest and downward migration of pollutants induced by CW-10B, the City of Merced agreed to discontinue the use of CW-10B and agreed to abandon and relocate CW-10B where it will not influence pollutant migration.
21. The Regional Board adopted a *Water Quality Control Plan for the Sacramento and San Joaquin River Basin, Fourth Edition* (hereafter Basin Plan), which designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. The Basin Plan includes plans and policies of the State Water Resources Control Board (SWRCB) incorporated by reference, including SWRCB Resolution No. 68-16, “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (hereafter Resolution No. 68-16). Pursuant to Section 13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.
22. As described above, Hartley Lateral Irrigation Canal (Hartley Canal) discharges to Miles Creek, a tributary of the San Joaquin River from Sack Dam to the mouth of the Merced River. The Basin Plan identifies the beneficial uses of the San Joaquin River from Sack Dam to the mouth of the Merced River as municipal and domestic supply; irrigation and stock watering agricultural supply; industrial process supply; water contact and non-contact water recreation; warm freshwater habitat; warm and cold migration; warm and cold spawning; and wildlife habitat. The Basin Plan states, “The beneficial uses of any specifically identified water body generally apply to its tributary streams.” Upon review of the flow conditions, habitat value, and beneficial uses of Miles Creek, the Regional Board finds that, by the tributary rule, the beneficial uses identified in the Basin Plan for the San Joaquin River from Sack Dam to the Mouth of the Merced River are applicable to Miles Creek. Waters not specifically identified in the Basin Plan are designated as

potential municipal and domestic supply, therefore this designation applies to the Hartley Canal. Further, discharges from the groundwater cleanup system to the Hartley Canal must be protective of the beneficial uses of Miles Creek. Therefore, for purposes of this permit the beneficial uses of Miles Creek are considered applicable to the Hartley Canal.

23. The Basin Plan designates the following beneficial uses of groundwater in the San Joaquin Valley Basin: municipal and domestic supply, industrial service and process supply, and agricultural supply.
24. Chapter 4 of the Basin Plan contains a policy for application of water quality objectives that specifies a method for evaluating the cumulative cancer risk from multiple chemicals found together in water. As of 28 June 2002, the following pollutants described by Finding Nos. 2 and 8 are considered to be carcinogens as defined by The Safe Drinking Water and Toxic Enforcement Act of 1986:

Carbon Tetrachloride
Chloroform

Tetrachloroethylene (Perchloroethylene)
Trichloroethylene

According to the Basin Plan, for carcinogenic constituents, the additive toxicity of the sum of the constituents is determined by dividing the concentration of each carcinogen in the discharge by its toxicological limit. The Basin Plan assumes an additive toxicity problem does not exist if the summation of the ratios is less than 1.0. If the summation of the ratios is equal to or greater than 1.0, the combination of constituents is assumed to present an unacceptable level of toxicologic risk. The Basin Plan describes additive toxicity by the following formula:

$$\sum_{i=1}^n \frac{[\text{Concentration of Toxic Substance}]_i}{[\text{Toxicological Limit for Substance in Water}]_i} < 1.0$$

25. The U.S. Environmental Protection Agency (USEPA) adopted the National Toxics Rule (NTR) on 5 February 1993 and the California Toxics Rule (CTR) on 18 May 2000. When combined with the beneficial use designations in the Basin Plan (Finding No. 22) these Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board, on 26 April 2000 adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereafter referred to as the Implementation Policy) that contains requirements for implementation of the NTR and the CTR.
26. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard.

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27. In accordance with the Implementation Policy, on 31 August 2001 and 8 November 2001 the Discharger reported the analytical results of the discharge and the receiving water for 126 priority pollutants, pH, hardness, and flow for low and high flow conditions, respectively. The Discharger also submitted analytical results of the discharge for each of the 17 TCDD congeners listed in Table 4 of the Implementation Policy.
28. The Implementation Policy requires the Regional Board to use all available, valid, relevant, representative information to determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective.
29. In order to implement the applicable water quality objectives the most stringent numerical criteria available should be used to determine water quality based effluent limits for each of the six pollutants. The criteria used for each pollutant are as follows:

<u>Constituent</u>	<u>Criteria</u>	<u>Source</u>
Carbon Tetrachloride	0.25 µg/L	Human Health ¹
Chloroform	1.1 µg/L	Cal/EPA ²
cis-1,2-Dichloroethylene	6 µg/L	Primary MCL ³
trans-1,2-Dichloroethylene	10 µg/L	Primary MCL ³
Tetrachloroethylene	0.8 µg/L	Human Health ¹
Trichloroethylene	2.7 µg/L	Human Health ¹

- 1 USEPA California Toxics Rule criteria, Human Health Protection standard (30-day average) for drinking water sources (water and fish consumption).
- 2 Cal/EPA Cancer Potency Factor as a Drinking Water Level.
- 3 California Dept. of Health Services, drinking water standards, primary maximum contaminant level (MCL).

30. Analyses of the discharge, as shown in Attachments C and D, indicate carbon tetrachloride, tetrachloroethylene, and trichloroethylene are present in groundwater (i.e. influent to the GWCS) at concentrations that exceed the criteria presented in Finding No. 29. Although the Discharger's GWCS has performed reliably, similar systems have experienced failures or operational errors that have resulted in pass through of untreated or partially treated effluent resulting in exceedances of permit limits. A failure of the GWCS or operational errors could result in a similar discharge of partially treated or untreated effluent exceeding applicable water quality criteria. Thus, each of these constituents has a reasonable potential to cause or contribute to an excursion above each respective applicable priority pollutant criterion or objective. Water quality-based effluent limitations developed for each of these pollutants in accordance with the Implementation Policy are shown in Table 2 of the Information Sheet.

31. The Implementation Policy defines Minimum Level (ML) as the concentration at which the entire analytical system must give recognizable signal and calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all method specified sample weights, volumes, and processing steps have been followed. MLs are synonymous to practical quantitation limits (PQLs).
32. The Implementation Policy defines Method Detection Limit (MDL) as the concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of 14 May 1999. MDLs are synonymous to detection limits.
33. The Implementation Policy requires the Discharger to report with each sample result the corresponding applicable ML and the laboratory's current MDL.
34. According to the Implementation Policy, if no ML value is below the effluent limitation, the applicable ML value shall be the lowest ML value listed in Appendix 4 of the Implementation Policy. VOC concentrations below the MLs are generally considered unquantifiable. Therefore, application of WQBELs for these constituents requires effluent to meet MLs.
35. Water Quality objectives applicable to protecting the municipal and domestic supply beneficial use (MUN) include the narrative water quality objective for toxicity, which states, in part, "[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life." The narrative toxicity objective and the MUN beneficial use designation comprise a water quality standard applicable to pollutants in the receiving stream.
36. Chapter IV of the Basin Plan contains the *Policy for Application of Water Quality Objectives*, which provides that "[w]here compliance with narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Regional Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." The policy further provides that to evaluate compliance with narrative water quality objectives the Regional Board considers, among other things, "relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g.,... California Office of Environmental Health Hazard Assessment, ...)."

37. The Office of Environmental Health Hazard Assessment (OEHHA) has published and maintains the Toxicity Criteria Database, which contains cancer potency factors for chemicals, including chloroform, that have been used as a basis for regulatory actions by the boards, departments and offices within the California Environmental Protection Agency (Cal/EPA). The cancer potency factor for oral exposure to chloroform in this database is 0.031 milligrams per kilogram body weight per day (mg/kg-day). By applying standard toxicologic assumptions used by OEHHA, USEPA and other environmental agencies in evaluating health risks via drinking water exposure (i.e., 70 kg body weight and 2 liters per day water consumption), this cancer potency factor is equivalent to a concentrations in drinking water of 1.1 ug/L (ppb) at the 1-in-a-million cancer risk level. The 1-in-a-million risk level is consistent with that used by the Department of Health Services (DHS) to set *de minimis* risks from involuntary exposure to carcinogens in drinking water in the development of drinking water MCLs and Action Levels and by OEHHA to set negligible cancer risks in the development of Public Health Goals for drinking water. The one-in-a-million cancer risk level is also mandated by USEPA in applying human health protective criteria contained in the National Toxics Rule and the California Toxics Rule for priority toxic pollutants in California surface waters.
38. Based on information included in analytical laboratory results submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the water quality standard for chloroform. Therefore, a WQBEL for chloroform of 1.1 µg/L could be included in this Order based on the Basin Plan toxicity objective and OEHHA Toxicity Criteria for the protection of human health.
39. The Implementation Policy Section 1.4 states, in part, “...*calculated water quality based effluent limitations shall be compared to the technology based effluent limitations for the pollutant, and the most protective of the two types of limitations shall be included in the permit.*”
40. Clean Water Act section 301(b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include the Basin Plan’s beneficial uses and narrative and numeric water quality objectives, State Board adopted standards and federal standards including NTR and CTR. These standards include the Basin Plan’s toxicity objective and Resolution 68-16. Under the Clean Water Act, the applicable technology based standard is “best available technology economically achievable/best conventional pollutant control technology” or BAT/BCT. Because there are no promulgated effluent limitations for VOCs in groundwater extracted for cleanup, technology-based effluent limitations are established based upon consideration of the Regional Board staff’s best professional judgment (BPJ). This Regional Board has a long history of regulating cleanup of VOCs in groundwater and has consistently imposed

effluent limits at less than MLs for VOCs in groundwater. With respect to the specific discharges permitted herein, and particularly the air stripper, the following have been considered:

- Appropriate technology for category or class of discharges
- Unique factors relating to the applicant
- Age of equipment
- Processes employed
- Engineering aspects of various control techniques
- Non-water quality environmental impacts, including energy requirements
- Cost of achieving proposed effluent reduction
- Influent, effluent, and receiving water data

Air stripping and GAC systems are appropriate technologies for complete VOC removal from extracted groundwater, and these types of systems are currently in place. The SMR data provided by the Discharger indicates that its air stripper and GACs consistently meet the effluent limits, which supports a conclusion that the limits reflect BPTC/BAT.

Additionally, the Discharger must properly operate and maintain its treatment systems. As the Discharger is already meeting the effluent limitations with the technology the Discharger currently employs, continued proper operation and maintenance will achieve these effluent limits and not impose additional costs on the Discharger. A summary of self-monitoring data submitted by the Discharger over the last three years is shown in Attachment D, a part of this Order.

41. In addition, Clean Water Act Section 301 requires implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state law. Applicable state water quality standards include Resolution 68-16.
42. Resolution No. 68-18 requires implementation of Best Practicable Treatment and Control (BPTC) to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the State. BPTC is equivalent to BAT and for VOCs subject to this Order requires meeting effluent limits set at less than MLs. BPTC for groundwater cleanup of VOCs provides that the pollutants should be discharged at concentrations no higher than quantifiable levels for each pollutant. Several dischargers in the Central Valley region, including General Electric Company, have implemented BPTC groundwater treatment systems and have been able to consistently treat VOCs in the wastewater to concentrations below the MLs. The MLs for VOC constituents of concern are listed below:

<u>Constituent</u>	<u>Units</u>	<u>ML</u>
Carbon Tetrachloride	µg/L	0.5
Chloroform	µg/L	0.5
trans-1,2-Dichloroethylene	µg/L	0.5
Tetrachloroethylene	µg/L	0.5

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Trichloroethylene µg/L 0.5

43. Cis-1,2-dichloroethylene is not a priority pollutant, however it has been detected in groundwater at the cleanup site. California Department of Health Services lists the Detection Limits for purposes of Reporting (DLRs) for numerous organic chemicals, including cis-1,2-dichloroethylene. These DLRs are codified in Title 22, California Code of Regulations, §64445.1. The DLR for cis-1,2-dichloroethylene is 0.5 µg/L. Concentrations below this DLR are considered unquantifiable. BPTC is capable of removing cis-1,2-dichloroethylene to a concentration below the DLR of 0.5 µg/L. Thus, a technology-based limit of 0.5 µg/L is appropriate.

44. The most stringent limits for each VOC constituent are as follows:

<u>Constituent</u>	<u>Units</u>	<u>Limit</u>	<u>Type</u>
Carbon Tetrachloride	µg/L	<0.5 ² /.20	TBEL ² /WQBEL ¹
Chloroform	µg/L	<0.5	TBEL ²
cis-1,2-Dichloroethylene	µg/L	<0.5	TBEL ²
trans-1,2-Dichloroethylene	µg/L	<0.5	TBEL ²
Tetrachloroethylene	µg/L	<0.5	TBEL ²
Trichloroethylene	µg/L	<0.5	TBEL ²

¹ Water Quality Based Effluent Limit. This limit is applied as the monthly average effluent limit for Carbon Tetrachloride. Calculation of the WQBEL is shown in Attachment E.

² Technology Based Effluent Limit. These limits are applied as the daily maximum effluent limits for all of the VOC constituents.

45. Over the past several years, both GAC units and the air-stripper have consistently removed the pollutants to the proposed effluent limits. The proposed effluent limitations consider the BPJ factors in Finding 40, above, historical performance of the on-site BAT/BPTC systems, receiving water conditions, USEPA method detection limits, and are less than or equal to California Primary Maximum Contaminant Levels, California Toxics Rule and National Toxics Rule criteria, and limits which implement applicable water quality objectives.

46. Application of BAT/BCT to achieve the effluent limits will also result in compliance with WQBELs and that is consistent with the requirement of Resolution 68-16 that discharges meet BPTC. A possible exception is the monthly average WQBEL limit for carbon tetrachloride. However, given that the limit for this constituent is below the applicable ML, it is appropriate to assume that a result of <0.5 µg/L also represents compliance with the WQBEL and BPTC. The permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and Resolution No. 68-16. BPTC for cleanup of groundwater polluted by volatile organic constituents is removal of VOCs to a level at or below corresponding analytical quantitation limits. Some resulting degradation of the receiving water could occur if VOCs were present at concentrations below the

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limit, but such degradation would not be quantifiable. The Discharger has not submitted an analysis to the Regional Board demonstrating that degradation resulting from discharges of VOCs at concentrations in excess of quantifiable levels would be consistent with the maximum benefit of the people of the state and Resolution No. 68-18. Due to the relatively low conductivity and TDS values of the receiving water, during periods of limited or no dilution, some degradation of the receiving water may occur from these pollutants, however, the discharge will not cause an exceedance of water quality objectives or cause a significant impact on the beneficial uses of groundwater and surface water. The continued remediation of polluted groundwater, and the use of the treated groundwater for irrigation via the Hartley Lateral Irrigation Canal, both benefit the people of the state.

47. The USEPA and this Board have classified this discharge as a minor discharge.
48. Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines, and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
49. Review of policy relative to Effluent Dominated Water Bodies (EDWs) is underway. A Basin Plan amendment or policy issuance regarding EDWs may affect future conditions of discharge.
50. The action to adopt an NPDES permit is exempt from the provisions of California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.), in accordance with Section 13389 of the California Water Code.
51. The Discharger and interested agencies and persons were notified of intent to prescribe waste discharge requirements for this discharge and provided with an opportunity for a public hearing and an opportunity to submit written views and recommendations.
52. All the above and the supplemental data and information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing conditions of discharge.
53. In a public meeting, all comments pertaining to the discharge were heard and considered.
54. This Order shall serve as an NPDES permit pursuant to Section 402 of the Clean Water Act, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that WDRs Order Nos. 94-166 and 95-109 are rescinded and that,

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pursuant to CWC Sections 13263, 13267, 13377, and 13383, General Electric Company and Well Made Products Company, their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following when discharging from the above described groundwater cleanup system:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions:

1. Discharge of material other than treated groundwater from the investigation and cleanup of groundwater pollution, or discharge of treated groundwater from the investigation of groundwater where other pollutants exist in the groundwater, or in a manner different from that described in Finding Nos. 2, 4, 5, 10, 11, and 13, is prohibited.
2. The by-pass or overflow of untreated or partially treated groundwater; including polluted purge water is prohibited.
3. Discharge of waste classified as 'hazardous' as defined in Section 2521(a) of Title 23, CCR, Section 2510, et seq., or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.

B. Effluent Limitations:

1. The maximum daily flow of Discharge No. 001 shall not exceed 0.15 mgd.
2. The maximum daily flow of Discharge No. 002 shall not exceed 1.0 mgd.
3. The maximum daily flow of Discharge No. 003 shall not exceed 1.6 mgd
4. The discharges shall not exceed the following limits for Discharge Nos. 001, 002, and 003:

<u>Constituent</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>
Carbon Tetrachloride	µg/L	<0.5	0.20 ¹
Chloroform	µg/L	<0.5	--
cis-1,2-Dichloroethylene	µg/L	<0.5	--
trans-1,2-Dichloroethylene	µg/L	<0.5	--

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Tetrachloroethylene	µg/L	<0.5	--
Trichloroethylene	µg/L	<0.5	--
<u>Other VOCs²</u>	<u>µg/L</u>	<u><0.5</u>	<u>--</u>

¹ If approved Minimum Level (ML) is greater than Monthly Average Limit, then compliance is met if concentration is below the ML.

² Other typical Volatile Organic Compounds listed in Appendix 4 of the Implementation Policy.

5. The additive toxicity of the constituents in the discharge from the GWCS described by Finding No. 24 shall not equal or exceed 1.0. The calculation shall be based on the maximum limits and applicable MLs prescribed by Effluent Limitations B.4, and the formula described by Finding No. 24.
6. All purge water shall be treated and disposed of by a method approved by the Executive Officer or shall be contained or treated until laboratory analytical results confirm that concentrations of all VOCs comply with the Effluent Limitations B.4.
7. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 - (a) Minimum for any one bioassay ----- 70%
 - (b) Median for any three or more consecutive bioassays ----- 90%

C. Filter Waste and Solids Disposal:

1. Spent carbon, and other residual solids removed from liquid wastes or used to treat liquid wastes, except as described by Provision F.7 and approved by the Executive Officer, shall be recycled or disposed of in a manner that is consistent with Division 3, Title 27; Chapter 15, Division 3, Title 23; and Division 4.5, Title 22 of the CCR and approved by the Executive Officer.
2. Any proposed change in filter waste use or solids disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.

D. Receiving Water Limitations:

Receiving water limitations for the Hartley Lateral Irrigation Canal are based on maintaining water quality objectives contained in the Basin Plan for Miles Creek and the San Joaquin River. As such, they are a required part of this permit.

The discharge, alone or in combination with other sources, shall not cause the following in the Hartley Lateral Irrigation Canal:

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1. Monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration to fall below 75 percent of saturation, or concentrations of dissolved oxygen to fall below 7.0 mg/L.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on objects in the water.
3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
4. Aesthetically undesirable discoloration.
5. Fungi, slimes, or other objectionable growths.
6. The monthly average increase for turbidity to exceed the following:
 - a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTU.
 - b. More than 20 percent where natural turbidity is between 5 and 50 NTU.
 - c. More than 10 NTU where natural turbidity is between 50 and 100 NTU.
 - d. More than 10 percent where natural turbidity is greater than 100 NTU.
7. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.
8. The monthly average ambient temperature to increase more than 5 °F, and shall not be altered to a degree that adversely affects beneficial uses.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in Title 22, CCR; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
11. Toxic pollutants to be present in concentrations that produce detrimental physiological response in human, plant, animal, or aquatic life.
12. Violation of any applicable water quality objective for receiving waters adopted by the Board or the State Water Resources Control Board or the US Environmental Protection Agency pursuant to the CWA and regulations adopted thereunder.
13. Taste or odor-producing substances to impart undesirable tastes or odors to water

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supplies, to fish flesh or other edible products of aquatic origin or which cause nuisance or adversely affect beneficial uses.

E. Groundwater Quality Limitations:

The discharge shall not cause underlying groundwater to contain concentrations of waste constituents that exceed background water quality.

F. Provisions:

1. This Order merely sets conditions for discharge to the Hartley Lateral Irrigation Canal. This Order does not grant privilege to use the subject canal.
2. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)*, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as *Standard Provisions(s)*.
3. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2004-0065, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

4. The Discharger must utilize USEPA approved test methods and detection limits to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with Monitoring Requirements for these constituents as outlined in Section 2.3 and 2.4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by the test methods shall be reported.
5. The Discharger shall conduct the chronic toxicity testing specified in MRP No. R5-2004-0065. If the testing indicates that the discharge causes, contributes to, or has the reasonable potential to cause or contribute to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon implementation of the TIE, the Discharger shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE) and upon Executive Officer approval conduct the TRE. If necessary, this Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included.

The results shall conform to Provision F.16. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened to include an effluent limitation based on that objective.

6. By **5 July 2004**, the Discharger shall submit a technical work plan for the treatment of polluted purge water prior to discharge for review and approval by the Executive Officer. The technical work plan shall conform to Provision F.16.
7. By **4 August 2004**, the Discharger shall submit an operation and maintenance plan (O&M Plan) for review and approval by the Executive Officer. The O&M Plan shall instruct operating personnel on how to manage the day-to-day discharge operation to comply with the terms and conditions of this order. The O&M Plan shall also detail how frequently each GAC unit is serviced and also describe how valves and plumbing are clearly labeled to ensure proper operation of the GWCS by operating personnel. The O&M Plan shall also include details for the following aspects of the proposed sampling process for monitoring influent, effluent, mid-treatment, and groundwater:
 - a. Method Summary (must be USEPA approved method and capable of quantifying analytes to levels at or below those specified in Effluent Limitations and Receiving Water Limitations, above);
 - b. Proposed list of analytes;
 - c. Sample preservation, containers, handling, and storage;
 - d. Interferences and potential problems;
 - e. Sampling and analysis equipment/apparatus;
 - f. Reagents;
 - g. Preparation and sample collection procedures;
 - h. Quality assurance and quality control;
 - i. Well purging;
 - j. Filtering; and
 - k. Health and Safety.

A copy of the O&M Plan shall be kept at the GWCS office for reference by operating personnel. Key operating personnel shall be familiar with its contents. The O&M Plan shall conform to Provision F.16.

8. By **4 September 2004**, the Discharger shall submit a technical work plan for treatment and disposal of waste generated by the periodic scale removal and cleaning of the air-stripper tower for review and approval by the Executive Officer. The work plan shall conform to Provision F.16.
9. EC of blended maintenance water discharged to the Hartley Lateral Irrigation Canal,

as described in Finding No. 10, shall not exceed 700 $\mu\text{mhos/cm}$.

10. Prior to making a significant change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of or clearance from the State Water Resources Control Board (Division of Water Rights).
11. If it is determined that specific pollutants in the discharge have a reasonable potential to cause or contribute to an exceedance of a water quality objective or promulgated water quality criterion, this Order will be reopened for consideration of additional or revision of appropriate numerical effluent or receiving water limitations for the problem constituents.
12. This permit may be reopened and modified to make it consistent with any Basin Plan amendments that are adopted regarding the Regional Board's policy on Effluent Dominated Water Bodies (EDWs).
13. The Discharger shall employ best practicable treatment and control (BPTC) of the discharge, including proper operation and maintenance, to comply with this Order.
14. This permit may be reopened, and effluent limits may be added, deleted, or modified if new regulations or information becomes available. The Regional Board may consider inclusion of a compliance time schedule within the bounds of the applicable regulation if the Discharger is not able to meet a new more stringent discharge requirement immediately.
15. This Order does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control the discharge of groundwater cleanup wastewater subject to their control. Discharges allowed by this order to local irrigation or storm water collection and conveyance facilities must obtain approval from the agency responsible for operation and maintenance of the facilities.
16. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

17. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded immediately to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with the Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.

18. Exceedances of monthly average, seven-sample median, and daily maximum effluent limitations based on results of a single sampling event may be considered violations of the requirements of this Order. The Discharger may sample more frequently than required by the attached MRP No. R5-2004-0065 to provide a more representative data base and possibly lower reported average and median constituent values to demonstrate compliance with effluent limitations.
19. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
20. A copy of this Order shall be kept at the site for reference by personnel operating the GWCS. Key operating personnel shall be familiar with its contents.
21. This Order expires on 1 June 2009, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 1 January 2009, 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

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I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region on 4 June 2004.

THOMAS R. PINKOS, Executive Officer

JRL:GEA: 6/04/04

CALIFORNIA REGIONAL WATER QUALITY CONTROL REGIONAL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0065

NPDES NO. CA0081833

FOR
GENERAL ELECTRIC COMPANY
AND
WELL MADE PRODUCTS COMPANY
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Specific sample station locations shall be established with concurrence of the Regional Board's staff, and the Discharger shall attach a description of the stations to this Monitoring and Reporting Program. All analyses shall be performed using methods approved by USEPA and the Regional Board. In reporting data, the Discharger shall indicate whether any analysis was performed using a method not in conformance with USEPA's Guidelines.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge the Discharger shall monitor and record influent, mid-treatment, and effluent data for all of the constituents listed below, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. For this Order, the Regional Board considers an intermittent discharge, any period of no discharge prolonged more than seven days. In no event shall the Discharger be required to monitor and record the data more often than twice the frequencies listed in the schedule.

INFLUENT MONITORING

Samples shall be collected prior to entering the GWCS for each outfall (Discharge Nos. 001, 002, and 003) at approximately the same time as effluent samples. Influent samples shall be representative of the volume and quality of extracted groundwater. The time of collection of samples shall be recorded. Influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Carbon Tetrachloride ¹	µg/L	Grab	Quarterly
Chloroform ¹	µg/L	Grab	Quarterly
trans-1,2-Dichloroethylene ¹	µg/L	Grab	Quarterly
cis-1,2-Dichloroethylene ²	µg/L	Grab	Quarterly
Tetrachloroethylene (PCE) ¹	µg/L	Grab	Quarterly
Trichloroethylene (TCE) ¹	µg/L	Grab	Quarterly
Other VOCs ^{1,3,4}	µg/L	Grab	Quarterly

See footnotes next page

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- ¹ Test Method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
- ² Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260 or an equivalent method with a PQL no greater than 0.5 µg/L.
- ³ All typical volatile organic constituents listed in Appendix 4 of the Implementation Policy.
- ⁴ VOCs = Volatile Organic Compounds.

MID-TREATMENT MONITORING

In order to detect breakthrough of the GAC units (Discharge Nos. 001 and 002), samples shall be collected between each GAC unit. Mid-Treatment samples shall be representative of the volume and quality of the discharge from the GAC unit. Time of collection of samples shall be recorded. Mid-Treatment monitoring shall include at least the following:

<u>Constituents</u>	<u>Sampling Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Carbon Tetrachloride ¹	µg/L	Grab	Quarterly
Chloroform ¹	µg/L	Grab	Quarterly
trans-1,2-Dichloroethylene ¹	µg/L	Grab	Quarterly
cis-1,2-Dichloroethylene ²	µg/L	Grab	Quarterly
Tetrachloroethylene (PCE) ¹	µg/L	Grab	Quarterly
Trichloroethylene (TCE) ¹	µg/L	Grab	Quarterly
Other VOCs ^{1,3,4}	µg/L	Grab	Quarterly

- ¹ Test Method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
- ² Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260 or an equivalent method with a PQL no greater than 0.5 µg/L.
- ³ All typical volatile organic constituents listed in Appendix 4 of the Implementation Policy.
- ⁴ VOCs = Volatile Organic Compounds.

EFFLUENT MONITORING

Effluent samples shall be collected for each outfall (Discharge Nos. 001, 002, and 003) just prior to discharge. Effluent samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

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<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Metered	Continuous ¹
Conductivity @ 25°C	µmhos/cm	Grab	Quarterly
Dissolved Oxygen	mg/L	Grab	Quarterly
pH	pH Units	Grab	Quarterly
Acute Toxicity	% survival	Grab	Annual
General Minerals ²	mg/L	Grab	Quarterly ³
Carbon tetrachloride ⁴	µg/L	Grab	Quarterly
Chloroform ⁴	µg/L	Grab	Quarterly
cis-1,2-Dichloroethylene ⁵	µg/L	Grab	Quarterly
trans-1,2-Dichloroethylene ⁴	µg/L	Grab	Quarterly
Tetrachloroethylene (PCE) ⁴	µg/L	Grab	Quarterly
Trichloroethylene (TCE) ⁴	µg/L	Grab	Quarterly
Other VOCs ^{4,6,7}	µg/L	Grab	Quarterly

¹ The Discharger may substitute daily average flow when continuous flow meter is non-operational. The Discharger must clearly indicate when the flow is measured as daily average, and describe when the continuous flow meter is non-operational.

² General Minerals as referred to in this program shall include alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete.

³ After one year of monitoring and reporting, the Discharger may request the Executive Officer reduce the monitoring frequency.

⁴ Test Method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

⁵ Test method used shall be Standard Method (20th edition) 6200B, EPA Method 8260 or an equivalent method with a PQL no greater than 0.5 µg/L.

⁶ All typical volatile organic constituents listed in Appendix 4 of the Implementation Policy.

⁷ VOCs= Volatile Organic Compounds.

If results of monitoring a pollutant appear to violate monthly average limitations, the frequency of sampling should be increased to daily until compliance is verified. If effluent monitoring detects a pollutant at concentrations greater than a daily maximum limitation, the Discharger should resample and reanalyze the discharge immediately after receiving knowledge of the exceedance. If the Discharger does not increase monitoring frequency for instances of apparent violation, compliance with Daily Maximum and Monthly Average limitations will be determined with available monitoring data in accordance with Provision F.18.

CALIFORNIA TOXICS RULE MONITORING

A. Priority Pollutants

The Discharger shall monitor the effluent and receiving water for Metals, Volatile Organic, and Semi-Volatile Organic priority pollutants once at least **one year prior** to the expiration of this Order. Priority pollutants are defined as USEPA priority toxic pollutants, and consist of the constituents listed in the most recent National Toxics Rule and California Toxics Rule. Volatile Organic priority pollutants are listed in Tables 2a and 2b in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Bays, and Estuaries of California* (Implementation Policy). Results of sampling shall be submitted by the **first day of the second month** following sampling. Reporting shall conform with Implementation Policy Reporting Requirements, Section 2.4 et seq. In particular, the reported Minimum Levels (MLs) shall be at least as low as the lowest ML for each priority pollutant specified in Appendix 4 of the Implementation Policy. Effluent samples must be analyzed for pH and hardness in order to calculate translators, which are needed for pollutants that are hardness and/or pH dependent. All analyses shall be performed at a laboratory certified by the California Department of Health Services.

<u>Constituent</u> ^{1,2}	<u>Units</u>	<u>Type of Sample</u>
Mercury	µg/L	Grab
Arsenic	µg/L	Grab
Chromium VI	µg/L	Grab
Metals	µg/L	Grab
Volatile Organics	µg/L	Grab
Semi-Volatile Organics	µg/L	Grab
Pesticides	µg/L	Grab

¹ Constituents shall be analyzed using a method approved by USEPA. The chosen analytical method must be able to achieve the required quantitation limit for the given constituent, as specified by the MLs listed in Appendix 4 of the Implementation Policy.

² Report all detected peaks.

B. Dioxin

The Discharger shall test effluent and receiving water for each of the 17 TCDD congeners listed in Table 4, *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Implementation Policy). The Discharger shall report the analytical results of the effluent monitoring for each congener, including the minimum quantifiable level (ML) and the minimum detection level (MDL), and the measured or estimated concentration. The Discharger shall multiply each measured or estimated congener concentration by its respective toxicity equivalence factor (TEF) value and report the sum of these values. The Discharger must

monitor for the presence of the 17 congeners once at least **one year prior** to the expiration of this Order. Results of sampling shall be submitted by the **first day of the second month** following sampling. Reporting shall conform with Implementation Policy Reporting Requirements Section 2.4 et seq.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Samples shall be collected at approximately the same time as the collection of effluent samples. Receiving water monitoring is not required when the discharge represents the entire flow in the receiving waters. Receiving water monitoring shall include at least the following and be performed at the sample stations associated with the approved discharge point in use:

Station	Description
R - 1	50-100 feet upstream from Discharge Nos. 001 and 003.
R - 2	50-100 feet downstream from Discharge No. 002.
R - 3	50-100 feet south of the intersection of the Doane Lateral Canal and Childs Avenue.

Constituents	Units	Station	Sampling Frequency
Estimated flow	cfs	R-1, R-2, R-3	Quarterly
Dissolved Oxygen	mg/L	R-1, R-2, R-3	Quarterly
pH	pH Units	R-1, R-2, R-3	Quarterly
Temperature	°F	R-1, R-2, R-3	Quarterly
Conductivity @ 25 °C	µmhos/cm	R-1, R-2, R-3	Quarterly
General Minerals ^{1,2}	mg/L	R-1, R-3 ³	Quarterly

¹ General Minerals as referred to in this program shall include alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete.

² After one year of monitoring and reporting, the Discharger may request the Executive Officer reduce the monitoring frequency.

³ When water is flowing from the Doane Lateral Canal into the Hartley Lateral Canal.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1, R-2, and R-3. Attention shall be given to the presence or absence of:

- | | |
|---|---|
| a. Floating or suspended matter | b. Discoloration |
| c. Bottom deposits | d. Aquatic life |
| e. Visible films, sheens, or coatings | f. Fungi, slimes or objectionable growths |
| g. Potential nuisance conditions | h. Occurrence and direction of flow in the Doane Lateral Irrigation Canal |
| i. Livestock in or near receiving water | |

Notes on receiving water conditions shall be summarized in the monitoring report.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA/821/R-02/013, or later amendment. Chronic toxicity samples shall be collected at the last point of discharge prior to its entering the receiving water. 24-hour composite samples shall be representative of the volume and quality of the discharge. Time of sample collection shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Monthly laboratory reference toxicant tests may be substituted upon approval. Both the reference toxicant and effluent tests must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum
 Frequency: Once per year
 Dilution Series:

	<u>Dilutions (%)</u>					<u>Controls</u>	
	100	50	25	12.5	6.25	Receiving Water	Lab Water
% Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water*	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	100	

* Dilution water may be uncontaminated receiving water, a standard synthetic (reconstituted) water, or another acceptable dilution water as defined in Section 7 of EPA/821/R-02/013.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **1st day of the second month** following sample collection. Quarterly monitoring results shall be submitted by the **1st day of the second month** following the end of each calendar quarter (i.e., by 1 February, 1 May, 1 August, and 1 November) following each calendar quarter. Annual monitoring results shall be submitted by 1 February of each year.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the discharge complies with waste discharge requirements.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and

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reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring form.

By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
- b. A statement certifying when monitoring instruments and devices were last calibrated (for purposes of assuring compliance with this Order), including identification of who performed the calibration (Standard Provision C.6).
- c. A statement certifying whether the current operation and maintenance manual and contingency plan reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The report shall also include a quarterly evaluation of the groundwater cleanup progress, trends, and monitoring well analyses and an annual evaluation of plume containment. If this evaluation is already submitted to the Regional Board in a separate report, then the Discharger may reference the date and title of the most recent report in lieu of including it with the NPDES monitoring report.

The Discharger shall also submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Monitoring data shall also be submitted in electronic format acceptable to the Executive Officer (e.g. Microsoft Excel). The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

4 June 2004
(Date)

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INFORMATION SHEET

ORDER NO. 5-2004-0065
GENERAL ELECTRIC COMPANY
AND WELL MADE PRODUCTS COMPANY
GROUNDWATER CLEANUP SYSTEM
MERCED COUNTY

The General Electric Company and Well Made Products Company (WLMD) (jointly referred to as Discharger) propose to continue to discharge treated groundwater from a groundwater cleanup system (GWCS) in Merced County. Prior to 1972, the Discharger owned and operated the property which included an unlined pond that was used for disposal of wastewater from cleaning residential-type transformers. WLMD acquired the property in 1989. The site is in an industrial park and occupies 24.9 acres. The Discharger's disposal practices eventually resulted in trichloroethylene (TCE) pollution of nearby industrial, domestic, municipal, water supply wells. The GWCS includes up to fourteen extraction wells, an equalization tank, two Granular Activated Carbon (GAC) groundwater treatment systems (Discharge Nos. 001, and 002), an air stripper (Discharge No. 003), 16 monitoring wells on property owned by WLMD, nineteen additional monitoring wells that are outside of WLMD's property boundary, and three discharge points.

Waste Discharge Requirements (WDRs) Order Nos. 94-166 and 95-109 (NPDES Nos. CA0081833 and CA0083739) were adopted on 24 June 1994 and 26 May 1995 respectively. WDRs Order No. 94-166 regulates the discharge from an on-site air-stripping unit of treated groundwater and WDRs Order No. 95-109 regulates the discharge of treated groundwater from two off-site GAC groundwater treatment systems. Trichloroethylene (TCE) is the primary groundwater pollutant. The Discharger proposes to continue to discharge treated groundwater from the air-stripper and the two GAC groundwater treatment systems. In a 25 April 2002 letter, because the primary pollutant, TCE, exists in one plume from one source, with one responsible party, the Discharger requested that WDRs Order Nos. 94-166 and 95-109 be combined into one WDRs order. Because this Order prescribes requirements for discharges previously referenced by two NPDES permits, this Order considers NPDES Permit No. CA0083739 discontinued from use and the discharge represented by NPDES Permit No. CA0081833.

The proposed Order prescribes maximum daily discharge limits of 0.15 mgd for Discharge No. 001, 1.0 mgd for Discharge No. 002, and 1.6 mgd for Discharge No. 003. The total groundwater discharge from all three of the treatment units is 2.75 mgd.

Polluted groundwater is treated in either one of two GAC groundwater treatment systems (2-2,000 lbs or 2-10,000 lbs carbon vessels in series) or in the on-site air-stripper. The GAC groundwater treatment systems have a carbon breakthrough time of approximately six to seven months.

Discharge from the air-stripper is created by polluted groundwater that is pumped from on-site extraction wells and collected in an equalization tank where it is mixed with a scale inhibitor (Nalco 8357) and emptied into a distributor at the top of the air-stripper. The

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polluted groundwater then flows down through the air stripper packing where it is contacted by air that is being forced upward by a blower. As the water flows downward, TCE in the water is volatilized and transferred to the air stream.

The Hartley Lateral Irrigation Canal traverses in a north-south direction upstream of Discharge Nos. 001 and 003 until it intersects Childs Avenue. At Childs Avenue, the Hartley Lateral Irrigation Canal traverses in an east-west direction. The Doane Lateral Irrigation Canal intersects the Hartley Lateral Irrigation Canal at Childs Avenue on the north-south Hartley Lateral Irrigation Canal alignment. The discharge to Hartley Lateral Irrigation Canal is currently distributed by the Merced Irrigation District for irrigation. Depending on the agricultural supply demands, water can flow both directions in the Doane Lateral Canal. Often both canals function as effluent dominated water bodies (EDW). Both canals are owned and operated by the Merced Irrigation District and flow from the Merced River via Yosemite Lake and terminate at Miles Creek, a tributary to the San Joaquin River, a water of the United States.

The Basin Plan designates the following beneficial uses of the San Joaquin River from Sack Dam to the mouth of the Merced River: municipal and domestic supply; irrigation and stock watering agricultural supply; industrial process supply; contact and non-contact water recreation; warm freshwater habitat; warm and cold migration; warm and cold spawning; and wildlife habitat. These beneficial uses apply to Miles Creek via the Basin Plan's tributary rule. The Basin Plan designates the beneficial uses of municipal and domestic supply to unidentified waters. Discharges from the groundwater cleanup system to the Hartley Canal must be protective of the beneficial uses of Miles Creek. Therefore, protection of beneficial uses of Miles Creek in the Hartley Canal is appropriate in establishing discharge requirements.

The general direction of groundwater movement is west to southwest. The general gradient is approximately 7 feet per mile. Background area water varies, with a conductivity at 25 °C typically in the range of 300-1,100 $\mu\text{mhos/cm}$. The beneficial uses of underlying groundwater are municipal and domestic supply, industrial service and process supply, and agricultural supply.

Concentrations of TCE in the groundwater fluctuate depending on the depth below ground surface (bgs). In 2002 and 2003, concentrations of TCE in the Shallow Zone (<100 feet bgs) were typically about 4.0 $\mu\text{g/L}$. Whereas, concentrations at 100-150 feet bgs were as high as 680 $\mu\text{g/L}$. In 2003, the Discharger did not detect TCE at depths greater than 250 feet bgs. Cis-1,2-dichloroethylene was detected at concentrations ranging from 0.5-0.8 $\mu\text{g/L}$ in samples collected from four groundwater monitoring wells in 2003.

During March 1994 sampling, carbon tetrachloride was found in one monitoring well at concentrations of 2.5 - 20 $\mu\text{g/L}$ and 1.1 $\mu\text{g/L}$, respectively. Carbon tetrachloride was detected again in July 2003 sampling at concentrations of 1.2 $\mu\text{g/L}$ and 2.2 $\mu\text{g/L}$. Other halogenated volatile organics were not detected in the March 1994 sampling. Although 1,1,1-trichloroethane

(TCA) was found in several monitoring wells during 1986, 1987, and 1988 sampling events at concentrations of 0.8 - 1.5 µg/L, it has not been detected since. Chloroform was found in two monitoring wells during 1993 sampling events at concentrations of 0.5 - 4.4 µg/L. Tetrachloroethylene (PCE) was found in several monitoring wells during 1992 and 1993 sampling events at concentrations of 1.2 - 96 µg/L, and again in July 2001 at a concentration of 14 µg/L. Significant groundwater cleanup has been achieved from operation of the GWCS on a continuous basis since 1986.

Effluent Limitations and Monitoring

Federal regulations, 40 CFR Part 122.44 (d)(1)(i), require that NPDES permit effluent limitations must control all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above any State water quality standard, including any narrative criteria for water quality. Beneficial uses, together with their corresponding water quality objectives or federally promulgated water quality criteria, are defined per federal regulations as water quality standards.

State Water Resources Control Board Resolution No. 68-18 requires implementation of Best Practicable Treatment and Control (BPTC) to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the State. Federal Regulations require effluent limits representing best available technology economically feasible (BAT) for all toxic pollutants. For treatment of VOCs in groundwater, BAT is consistent with BPTC. BAT based on Regional Board staff's best professional judgement, and BPTC for groundwater cleanup of VOCs provides that the pollutants should be discharged at concentrations no higher than quantifiable levels for each pollutant.

The effluent limitations consider BPTC for VOC removal, the historical performance of the on-site treatment system, receiving water conditions, and USEPA Method quantitation limits and are less than California Primary Maximum Contaminant Levels.

Due to the increased complexity of the three separate discharge points, and the need to monitor the impact of the discharge to the receiving water, receiving water monitoring is included in this permit. The attached Monitoring and Reporting Program also requires the Discharger to sample for all priority pollutants at least once prior to the expiration of this Order, as set forth in the Implementation Policy. Monitoring and Reporting Program (MRP) No. R5-2004-0065 requires the Discharger to monitor the flow continuously from the GWCS but allows the Discharger to report the flow as a daily average when the continuous flow metering equipment is non-operational. Currently, the combined design flow capacity of the extraction wells cannot physically exceed the flow limitations prescribed by this Order.

Reasonable Potential Analysis

In accordance with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (hereafter referred to as the Implementation Policy), on 31 August 2001 and 8 November 2001 the Discharger reported the analytical results of the discharge and the receiving water for 126 priority pollutants, pH, hardness, and flow for low and high flow conditions, respectively. The Discharger also submitted analytical results of the discharge for each of the 17 TCDD congeners listed in Table 4 of the Implementation Policy. If future chronic toxicity tests indicate that there is a reasonable potential for the discharge to cause or contribute to chronic toxicity in the receiving water, the permit may be reopened and amended to include a numeric limit for whole effluent toxicity.

A reasonable potential analysis of all the priority pollutants was conducted using data submitted by the Discharger. Three constituents (carbon tetrachloride, tetrachloroethylene, and trichloroethylene) were found to have a reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. Chloroform, which does not have a CTR criterion, was considered as described in the following section. Although all of the effluent samples for these constituents were non-detect, the constituents are all present in detectable quantities in underlying groundwater. They have been detected in groundwater at concentrations exceeding water quality criteria. Therefore, reasonable potential exists for these three constituents due to possibility that the treatment system can malfunction and discharge inadequately treated effluent to surface waters. These findings are summarized in Attachment D and in the following Table 1. Note that a reasonable potential analysis is not performed for cis-1,2-dichloroethylene because it is not a priority pollutant.

Table 1: Reasonable Potential

Constituent	Highest Concentration in Effluent	Highest Concentration in Groundwater	Most Restrictive Water Quality Objective	RP
Carbon Tetrachloride	ND	20 µg/L	0.25 µg/L	Y
Chloroform	ND	4.4 µg/L	1.1 µg/L	-- ¹
trans-1,2-Dichloroethylene	ND	ND	10 µg/L	N
Tetrachloroethylene	ND	96 µg/L	0.8 µg/L	Y
Trichloroethylene	ND	680 µg/L	2.7 µg/L	Y

¹ See discussion in next section.

Water quality based effluent limitations (WQBELs) calculated for these constituents, based on the most restrictive water quality objectives and the methodology presented in the Implementation Policy, are summarized below in Table 2. A detailed derivation of the WQBELs is shown in Attachment E.

Table 2: WQBELs

<u>Constituent</u>	<u>WQBEL</u>
Carbon Tetrachloride	0.20 µg/L
Tetrachloroethylene	0.65 µg/L
Trichloroethylene	2.21 µg/L

WQBEL for Chloroform

Water quality objectives applicable to protecting the beneficial use MUN include the narrative water quality objective for toxicity, which states, in part, “[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life.” The narrative toxicity objective and the MUN beneficial use designation comprise a water quality standard applicable to pollutants in the receiving stream.

Chapter IV of the Basin Plan contains the *Policy for Application of Water Quality Objectives*, which provides that “[w]here compliance with narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Regional Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.” The policy further provides that to evaluate compliance with narrative water quality objectives the Regional Board considers, among other things, “relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., ... California Office of Environmental Health Hazard Assessment, ...).”

The Office of Environmental Health Hazard Assessment (OEHHA) has published and maintains the Toxicity Criteria Database, which contains cancer potency factors for chemicals, including chloroform, that have been used as a basis for regulatory actions by the boards, departments and offices within the California Environmental Protection Agency (Cal/EPA). The cancer potency factor for oral exposure to chloroform in this database is 0.031 milligrams per kilogram body weight per day (mg/kg-day). By applying standard toxicologic assumptions used by OEHHA, USEPA and other environmental agencies in evaluating health risks via drinking water exposure (i.e., 70 kg body weight and 2 liters per day water consumption), this cancer potency factor is equivalent to a concentration in drinking water of 1.1 ug/L (ppb) at the 1-in-a-million cancer risk level. The 1-in-a-million risk level is consistent with that used by the Department of Health Services (DHS) to set *de minimis* risks from involuntary exposure to carcinogens in drinking water in the development of drinking water MCLs and Action Levels and by OEHHA to set negligible cancer risks in the development of Public Health Goals for drinking water. The one-in-a-million cancer risk level is also mandated by USEPA in applying human health protective criteria contained in the National Toxics Rule and the California Toxics Rule for priority toxic pollutants in California surface waters.

Based on information included in analytical laboratory results submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the

water quality standard for chloroform. Therefore, a WQBEL for chloroform of 1.1 µg/L could be included in this Order based on the Basin Plan toxicity objective and OEHHA Toxicity Criteria for the protection of human health.

Technology Based Effluent Limits

Section 1.4 of the Implementation Policy requires that water quality based effluent limits be compared to technology based effluent limits and that the more protective limit be applied in the permit. Therefore, technology based effluent limits must be developed for each constituent. For establishing BAT based upon BPJ, 40 CFR 125 requires consideration of several specific factors. The following factors were considered:

Appropriate Technology for Category or Class of Discharges, Processes Employed, Engineering Aspects of Various Control Techniques. Air Stripping and GAC treatment systems are commonly used to remove VOCs from extracted groundwater at cleanup sites. Systems are designed to remove VOCs to nondetectable concentrations. Properly operated and maintained systems perform reliably and ensure essentially complete removal of VOCs. GE employs GAC systems and an air stripper. The air stripper is 48 feet high with 35 feet of packing material. The permitted flow is 1.6 mgd. Current flows are on the order of 660,000 gpd.

Age of Equipment. The air stripper was installed in 1986, and upgraded in 1994. GAC units were installed in 1996 and have not been upgraded.

Influent, Effluent, and Receiving Water Data. Air stripper influent concentrations of TCE have declined from 4,700 µmhos/cm in 1986 to about 60 µmhos/cm in 2003. The SMR data provided by the Discharger indicates that its air stripper and GACs effluent VOC concentrations are consistently below detection limits of 0.5 µg/L, and thus will meet the proposed effluent limits.

Unique Factors Relating To The Applicant. GE has not identified any unique factors that would justify discharges equaling or exceeding quantifiable concentrations of VOCs.

Non-Water Quality Environmental Impacts, Including Energy Requirements; Cost Of Achieving Proposed Effluent Reduction. The systems currently in place reliably remove VOCs to nondetectable concentrations of <0.5 µg/L, therefore, implementation of the proposed limits would not create additional non-water quality impacts, or financial costs for GE.

The above supports a conclusion that the limits of <0.5 µg/L as a daily maximum reflect BPTC/BAT.

The technology based standard for cleanup of VOCs in groundwater with an airstripper, GAC, or combination treatment system is that all effluent should be discharged with unquantifiable levels of VOCs in the effluent. For priority pollutants (carbon tetrachloride, chloroform, trans-1,2-

dichloroethylene, tetrachloroethylene, and trichloroethylene) the MLs listed in Appendix 4 of the Implementation Policy represent the minimum quantifiable levels of these constituents and serve as the technology based effluent limits. For non-priority pollutants (cis-1,2-dichloroethylene), California Department of Health Services publishes Detection Limits for purposes of Reporting (DLRs) which establish minimum quantifiable levels for numerous organic chemicals. The DLR for cis-1,2-dichloroethylene serves as the technology based effluent limitation (TBEL). A summary of the TBELs is listed below in Table 3:

Table 3: TBELs

Constituent	Source	TBEL
Carbon Tetrachloride	Implementation Policy MLs	0.5 µg/L
Chloroform	Implementation Policy MLs	0.5 µg/L
cis-1,2-Dichloroethylene	CA Health Services DLRs	0.5 µg/L
trans-1,2-Dichloroethylene	Implementation Policy MLs	0.5 µg/L
Tetrachloroethylene	Implementation Policy MLs	0.5 µg/L
Trichloroethylene	Implementation Policy MLs	0.5 µg/L

The more stringent of the technology based or water quality based effluent limits is applied as the effluent limit for each constituent. Table 4 compares the TBEL and WQBEL for each constituent:

Table 4: WQBEL/TBEL Comparison

Constituent	WQBEL	TBEL
Carbon Tetrachloride	0.20 µg/L	0.5 µg/L
Chloroform	1.1 µg/L	0.5 µg/L
cis-1,2-Dichloroethylene	--	0.5 µg/L
trans-1,2-Dichloroethylene	--	0.5 µg/L
Tetrachloroethylene	0.65 µg/L	0.5 µg/L
Trichloroethylene	2.21 µg/L	0.5 µg/L

Carbon Tetrachloride:

Table 4 shows that the WQBEL (0.20 µg/L) is more restrictive than the TBEL (0.5 µg/L) for carbon tetrachloride. Therefore, the WQBEL is established as the monthly average effluent limitation for this constituent. The TBEL is applied as the daily maximum effluent limitation.

Chloroform:

Table 4 shows that the TBEL (0.5 µg/L) for chloroform is more restrictive than the WQBEL (1.1 µg/L) for chloroform, therefore the TBEL (0.5 mg/L) is applied as the daily maximum effluent limitation.

cis-1,2-Dichloroethylene:

Table 4 shows that because no reasonable potential was found, no WQBEL was calculated for cis-1,2-dichloroethylene, therefore the TBEL (0.5 µg/L) is applied as the daily maximum effluent limitation.

trans-1,2-Dichloroethylene:

Table 4 shows that because no reasonable potential was found, no WQBEL was calculated for trans-1,2-dichloroethylene, therefore the TBEL (0.5 mg/L) is applied as the daily maximum effluent limitation.

Tetrachloroethylene:

Table 4 shows that the TBEL (0.5 µg/L) for tetrachloroethylene is more restrictive than the WQBEL (0.65 µg/L). Therefore, the TBEL is applied as the daily maximum effluent limitation.

Trichloroethylene:

Table 4 shows that the TBEL (0.5 µg/L) for trichloroethylene is more restrictive than the WQBEL (2.21 µg/L). Therefore, the TBEL is applied as the daily maximum effluent limitation.

Antidegradation and CEQA Considerations

The permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution No. 68-16. Best practicable treatment and control for cleanup of groundwater polluted by volatile organic compounds is to remove all pollutants to below applicable detection limits. All VOCs are required to be removed to a level below corresponding analytical quantitation limits. Some resulting degradation of the receiving water could occur if constituents were present below the quantitation limit, but such degradation would not be quantifiable. Due to the relatively low conductivity and TDS values of the receiving water, during periods of unusually limited dilution, some degradation of the receiving water may occur from these pollutants, however, the discharge will not cause an exceedance of water quality objectives or cause a significant impact on the beneficial uses of groundwater and surface water. The continued remediation of polluted groundwater, and the use of the treated groundwater for irrigation, both benefit the people of the state.

The action to adopt waste discharge requirements (NPDES permit) for this facility is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Code of Regulations (CCR), Section 15308, which allows regulatory agencies to exempt actions taken to protect the environment.

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