

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 AEROVISTA PLACE, SUITE 101
SAN LUIS OBISPO, CALIFORNIA 93401-7906**

DRAFT ORDER NO. R3-2005-0140

**CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS
For
GROUNDWATER CLEANUP WITH
INJECTION OF POTASSIUM PERMANGANATE INTO GROUNDWATER
AT
MADONNA PLAZA SHOPPING CENTER
227 MADONNA ROAD, SAN LUIS OBISPO, SAN LUIS OBISPO COUNTY**

The California Regional Water Quality Control Board, Central Coast Region (hereinafter Water Board) finds that:

1. California Water Code Section 13260(a) requires that any person discharging waste, or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate Water Board a report of the discharge ("report of waste discharge" or "ROWD") or other report containing such information and data as may be required by the Water Board.
2. The Water Board prescribes waste discharge requirements except where the Water Board finds that a waiver of waste discharge requirements is consistent with applicable water quality control plans, will not pose a significant threat to water quality, and is in the public interest pursuant to California Water Code Section 13269.
3. California Water Code Section 13269 provides that all waivers of waste discharge requirements must be conditional, may not exceed five years in duration, and may be terminated at any time by the Water Board.
4. The subject site, known as the Madonna Plaza Shopping Center, consists of multiple single-story retail buildings and is situated on 27 acres of land in San Luis Obispo (hereafter Property). Mr. Charles Pasquini, Jr. owns the Property in fee. In 1989, MRP Institutional Associates acquired the Property ground lease. From 1969 to 1988, a series of dry cleaners operated in Building F, Suite 1010 at the Property. Prior to the retail shop demolition and shopping center renovation in 2001, the responsible parties performed a site investigation and discovered the dry cleaning solvent, tetrachloroethylene (PCE), in soil and groundwater at the Property. Mr. Pasquini, Jr. and MRP Institutional Associates are considered "Dischargers" for this Order.
5. The Property overlies the San Luis Obispo South (SLO South) PCE groundwater plume, discovered in the mid-1980's during the Water Board's Well Investigation Program. The SLO South PCE plume is thought to originate at one or more dry cleaning facilities located near the intersections of Archer and Carmel Streets with Higuera Street, San Luis Obispo. The PCE plume, with concentrations up to 250 milligrams per liter (ppb), encompasses an area approximately two miles long and on-half mile wide along the length of the San Luis

Obispo Creek valley. To determine if the PCE release from the Property co-mingled with the deeper SLO South PCE plume, the responsible parties collected soil samples from one deep soil boring in the source area (surface to 52 feet below ground surface (bgs). Saturated soil sample data suggests a separation of PCE impacts between the shallow (27 feet bgs) and deeper (52 ft bgs) zones. Groundwater monitoring performed on February 23, 2005, indicates that MW-2R the highest levels of PCE at 24.2 ppb. Historically, the highest concentration of PCE was detected in well MW-2R at 56 ppb during the August 27, 2003 groundwater sampling event. Other PCE chlorinated solvent breakdown products have not been detected at the Property.

6. In February 2004, depth to groundwater at the Property is approximately ten to thirteen feet bgs, which corresponds with a ground water elevation of about 131 to 123 feet above mean sea level. The groundwater flow direction is estimated to be from the north to the south at 0.0008 feet per foot.
7. The Dischargers have submitted a Report of Waste Discharge to inject potassium permanganate (KMnO_4) into the vadose zone and shallow groundwater to clean up chlorinated solvent groundwater contamination at the Property. In 2002, the responsible parties excavated and disposed of approximately 4,500 cubic yards of soil and have performed semiannual groundwater monitoring and reporting thereafter. The proposed chemical oxidation treatment is expected to substantially speed up groundwater cleanup compared to many years of groundwater monitoring for natural attenuation of the chlorinated solvents.
8. On July 6, 2005, the Discharger's consultant, QORE Property Sciences, submitted a report titled "*Workplan for Groundwater Treatment*" (Work Plan). The Work Plan proposes a grid of injection points to deliver 45,000 gallons of potassium permanganate to the vadose and saturated zone in the treatment areas. In the former excavation area (Area 1), QORE will inject 3,000 gallons of potassium permanganate between 15 and 25 feet bgs, in a 15-foot square grid pattern (30 points). In Area 2, the area where PCE concentrations in soil are estimated to be above 100 ppb, QORE will inject 30,000 gallons of potassium permanganate from the surface to 25 feet bgs via 170 points installed on a 12-foot square grid pattern. In Area 3, the remaining area with PCE groundwater impacts, QORE will inject 12,000 gallons of potassium permanganate from ten to 25 feet bgs via 90 injection points installed on a rectangular grid.
9. After the injection or infiltration begins, chlorinated solvents will be mineralized into potassium and manganese dioxide and other soluble ion salts (potassium, sodium, chloride), and carbon dioxide by means of a chemical oxidation process. The oxidation destroys the organic double bonds of the chlorinated ethene compounds, reducing them ultimately to oxygen and carbon dioxide. The chemical reaction is rapid and is will not adversely affect beneficial uses. In addition, the Dischargers will be required to install at least two groundwater monitoring wells to monitor the effects of the discharge on the deeper water bearing zone (greater than 25 feet bgs). The Dischargers will be required to evaluate the chemical reaction effect on groundwater quality using Monitoring and Reporting Program No. R3-2005-0141.

10. Pursuant to Chapter 2 of the Water Quality Control Plan, Central Coast Region (Basin Plan), present and potential beneficial uses of groundwater (both shallow and deeper water-bearing zones) underlying the Property include domestic and municipal water supply, agricultural water supply, and industrial water supply.
11. The Basin Plan contains water quality objectives for manganese and chlorine. The Basin Plan does not contain a water quality objective for potassium. The Maximum Contaminant Levels for manganese and chlorine are 50 µg/L and 4,000 µg/L, respectively. In addition, the Basin Plan states that groundwaters shall not contain taste or odor producing substances in concentrations that adversely affect beneficial uses. The taste and odor objective for sodium is 30,000 µg/L.
12. The injection of potassium permanganate into the vadose zone and shallow groundwater will significantly improve groundwater quality and is proposed in a manner that will not pose a significant threat to human health and the environment; a conditional waiver of waste discharge requirements is not against the public interest and is consistent with applicable water quality control plans, including the Basin Plan.
13. Relevant factors in determining whether a waiver is in the public interest include the following:
 - a) Whether the discharge is already regulated by another governmental entity;
 - b) Whether the Dischargers will observe reasonable practices to minimize the deleterious effects of the discharge;
 - c) Whether a feasible treatment method exists to control the pollutants in the discharge; and
 - d) Whether conditionally waiving Reports of Waste Discharge and/or waste discharge requirements will adequately protect beneficial uses while allowing the Water Board to utilize more of its resources to conduct field oversight, public outreach and, where necessary, enforcement.
14. The conditions of this waiver protect beneficial uses by:
 - a) Prohibiting pollution, contamination or nuisance;
 - b) Requiring monitoring and compliance with applicable water quality control plans; and
 - c) Requiring the Dischargers to grant access to Water Board staff to perform inspections.
15. Individual groundwater remediation systems are categorically exempt from California Environmental Quality Act (CEQA), California Code of Regulations, Title 14, Section 15303.
16. Pursuant to California Water Code Section 13269, this action waiving the issuance of waste discharge requirements for injection of potassium permanganate: (a) is conditional, (b) may be terminated at any time, (c) does not permit an illegal activity, (d) does not preclude the need for permits which may be required by other local or governmental agencies, and (e) does not preclude the Water Board from administering enforcement remedies (including civil liability) pursuant to the California Water Code.

17. Application of potassium permanganate to the vadose zone and shallow groundwater and operation of the groundwater extraction system are consistent with this Order and will not significantly degrade groundwater quality and are consistent with State Water Resources Control Board (State Board) Resolution No. 68-16. State Board Resolution No. 68-16 provides if there is degradation of water quality it must not "unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed [by the water quality control] policies." In short, the degradation may not violate water quality objectives or in the absence of objectives, must not unreasonably affect existing and designated beneficial uses. Also, if there is degradation the Water Board must determine that it has been demonstrated the change "will be consistent with the maximum benefit to the people of the State."
18. In the event that the potassium permanganate injection fails to completely degrade chlorinated solvents in groundwater, the Executive Officer may require the Discharger to re-apply and monitor potassium permanganate or other chemical treatment injections in the treatment area.
19. In the event that the potassium permanganate injection or its effects significantly degrade water quality, the Executive Officer will require the Dischargers to prevent offsite migration of the discharge or effects of the discharge.
20. The monitoring and reporting requirements of this Order are imposed pursuant to California Water Code Section 13267. The monitoring and reporting are necessary to ensure compliance with the conditions of this Order and to verify the adequacy and effectiveness of the conditions.
21. The Water Board conducted a public hearing on December 2, 2005, in San Luis Obispo, California, and considered all evidence concerning this matter.

THEREFORE BE IT RESOLVED:

1. In accordance with California Water Code Sections 13267 and 13269, waste discharge requirements for the potassium permanganate injection are hereby waived subject to the following conditions:
 - a) The injection of potassium permanganate into the vadose zone and shallow groundwater shall not create a condition of pollution, contamination, or condition of nuisance, as defined by California Water Code Section 13050.
 - b) The Water Board shall be immediately notified of any proposed change(s) in discharge volume, nature, or location.
 - c) The Water Board shall be immediately notified of any discharges threatening water quality or public health.
 - d) The Water Board may inspect the chemical oxidation cleanup and groundwater treatment system at any time to evaluate compliance with this Region's Basin Plan and this waiver.

- e) Waste discharged shall not cause groundwater to contain concentrations of chemical substances or its by-products in amounts that adversely affect any designated beneficial use, outside the application area or treatment zone.
 - f) The discharge of wastes shall not cause the pH of the receiving groundwater downgradient of the application area beyond the range of 6.5 and 8.5.
 - g) Pursuant to California Water Code Section 13267, the Discharger shall comply with Monitoring and Reporting Program No. R3-2005-0141. Water Board staff needs this information to verify that a conditional waiver of waste discharge requirements is the appropriate regulatory tool.
2. This Waiver shall not create a vested right and all such discharges shall be considered a privilege, as provided for in California Water Code Section 13263.
 3. The Executive Officer or Water Board may terminate the applicability of the Waiver described herein at any time if the Discharger violates the conditions of this waiver, if such termination is in the public interest, or if the discharge could adversely affect the quality or beneficial uses of the waters of the State.
 4. This Waiver shall become effective on **December 2, 2005**, and shall expire on **December 1, 2010**.
 5. As provided by California Water Code Section 13350(a), any person may be civilly liable if that person is in violation of a waiver condition or waste discharge requirements, intentionally or negligently discharges waste, or causes waste to be deposited where it is discharged, into the waters of the State and creates a condition of pollution or nuisance.
 6. Any person affected by this action of the Water Board may petition the State Water Board to review the action in accordance with section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The State Water Board must receive the petition within 30 days of the date of this Resolution. Copies of the law and regulations applicable to filing petitions will be provided upon request.

I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Water Quality Control Board, Central Coast Region, on December 2, 2005.

DRAFT

Roger W. Briggs
Executive Officer