



California Regional Water Quality Control Board Los Angeles Region



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Matthew Rodriguez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

January 3, 2012

Mr. Brian Mastin
CEMEX, Inc.
3990 East Concourse Street, Suite 200
Ontario, CA 91764-7971

BOARD RESOLUTION, WASTE DISCHARGE REQUIREMENTS AND MONITORING AND REPORTING PROGRAM FOR CEMEX, INC. (RHO-CHEM FACILITY), 425 ISIS AVENUE, INGLEWOOD, CA (FILE NO. 11-065, BOARD RESOLUTION NO. R11-012, ORDER NO. R4-2011-0192, CI-9782, GLOBAL ID WDR 100000985)

Dear Mr. Mastin:

Our letter of October 17, 2011, transmitted tentative Board Resolution, Waste Discharge Requirements (WDRs) and a Monitoring and Reporting Program (MRP) for CEMEX, Inc.

Pursuant to Division 7 of the California Water Code, this Regional Board at a public meeting held on December 8, 2011, reviewed the tentative Board Resolution, WDRs and MRP, considered all factors in the case, and adopted Board Resolution No. R11-012; WDRs Order No. R4-2011-0192 and MRP No. CI-9782 (copies enclosed) relative to this discharge. Standard Provisions, which are a part of the WDRs, are also enclosed.

You are required to implement the new Monitoring and Reporting Program No. CI-9782 on the effective date of Order No. R4-2011-0192. Your first monitoring report under these requirements is due to this Regional Board by April 15, 2012.

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP, including groundwater monitoring data, discharge location data, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100000985. Please see Paperless Office Notice dated October 20, 2011 for further details at:

[http://www.waterboards.ca.gov/losangeles/resources/Paperless/R4%20Paperless%20Office%20Notice%20\(10-20-11\).pdf](http://www.waterboards.ca.gov/losangeles/resources/Paperless/R4%20Paperless%20Office%20Notice%20(10-20-11).pdf)

ESI training video is available at:

<https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44145287&rKey=7dad4352c990334b>

We are sending the WDRs and MRP to the discharger (CEMEX, Inc.) only. For recipients on the mailing list, an electronic copy will be available at:

http://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/

California Environmental Protection Agency

Mr. Brian Mastin
CEMEX, Inc.

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Hard copies of the Board Resolution, WDRs and MRP will also be furnished upon request.

If you have any questions concerning this letter, please contact Mr. David Koo at (213) 620-6155 or me at (213) 576-6683.

Sincerely,



Eric Wu, Ph.D., P.E.
Chief of Groundwater Permitting Unit

Enclosures:

1. Board Resolution No. R11-012
2. Waste Discharge Requirements Order No. R4-2011-0192
3. Monitoring and Reporting Program No. CI-9782
4. Standard Provisions
5. Paperless Office Notice, October 20, 2011

cc: United States Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
Department of Fish and Game, Region 5
Richard Allen, California Department of Toxic Substance Control, Chatsworth
Chi Diep, California Department of Public Health, Drinking Water Program
Brian Hooper, Los Angeles County Department of Public Works, Waste Management Division
Carl G. Brooks, South Coast Air Quality Management District
Ted Johnson, Water Replenishment District of Southern California
Ramon Robles, Rho-Chem LLC
Linda Conlan, AMEC

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

RESOLUTION NO. R11-012

APPROVING THE ENVIRONMENTAL CHECKLIST AND
ADOPTING A MITIGATED NEGATIVE DECLARATION FOR
ENHANCED IN SITU BIOREMEDIATION OF VOLATILE ORGANIC COMPOUNDS IN
GROUNDWATER, RHO-CHEM FACILITY, INGLEWOOD, CALIFORNIA
(FILE NO. 11-065)

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region finds that:

1. California Water Code (CWC) section 13260(a)(1) requires that any person discharging wastes, or proposing to discharge wastes other than into a community wastewater collection system, which could affect the quality of the waters of the State, shall file a report of waste discharge (ROWD) with the Regional Water Quality Control Board (Regional Board) exercising jurisdiction in the area, and that Regional Board shall then prescribe requirements for the discharge or proposed discharge of wastes.
2. In 2002, CEMEX, Inc. and Rho-Chem, LLC (formerly known as Rho-Chem Corporation; collectively the Respondents) entered into a Corrective Action Consent Agreement¹ (Consent Agreement) executed by the California Department of Toxic Substance Control (DTSC) in reference to the Rho-Chem facility (Rho-Chem or site). The Consent Agreement was drafted following the discovery of impacted soil and groundwater at the site.
3. The facility is 1.1 acres and has been in operation since the early 1950's, with the initial owner identified as American Better Chemicals (American). In 1974 American merged with ABCO Industries and changed the facility name to Rho-Chem Corporation. The facility began recycling waste solvents in 1964. In 1989 Browning Ferris Industries, Inc. acquired the site, which was then later acquired in 1990 by Southdown, Inc. (Southdown) retaining the Rho-Chem name. The operations and the site were then purchased by Phillip Services Corporation (PSC) in 1995 and Southdown was acquired by CEMEX in 2000. Based on the most recent acquisitions, CEMEX and Rho-Chem LLC remain involved with respect to the assessment and remediation work at the site as the Respondents. Although Rho-Chem LLC is the legal facility owner, operator, and land owner of record, CEMEX is implementing the proposed Pilot Study. Consequently, CEMEX is listed as the facility operator only with respect to the implementation of the pilot study. For the purposes of this waste discharge permit, CEMEX is the Discharger.

¹ Department of Toxic Substance Control (DTSC), 2002, HWCA P3-01/02-005, Corrective Action Consent Agreement, Rho-Chem Corporation, 425 Isis Avenue, Inglewood, California, EPA ID No. CAD008354432, issued to Rho-Chem Corporation (A Subsidiary of Philip Services Corporation) and CEMEX, Inc., executed November 25, 2002.

December 8, 2011

4. Soil and groundwater beneath the site is polluted with volatile organic compounds (VOCs), including mainly tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2,-DCE).
5. The Discharger proposed to conduct a pilot test at the Facility to evaluate the remediation of chlorinated VOCs in shallow groundwater by enhanced in-situ bioremediation with bioaugmentation to remediate selected source areas. In-situ bioremediation involves the addition of carbon source amendments (i.e. sodium lactate, etc.) to the shallow groundwater. Bioaugmentation involves the addition of selected non-pathogenic (naturally derived, not genetically engineered) chlorinated ethene-degrading *Dehalococcoides ethenogenes* cultures, referred to as KB-1™, in selected areas to facilitate reductive dechlorination. Details of the remediation and methods are included in the pilot test work plan, "Pilot Study Work Plan for Evaluation of Enhanced in Situ Bioremediation of Volatile Organic Compounds in Groundwater" dated August 9, 2010., prepared by AMEC and reviewed and acknowledged by DTSC on December 27, 2010. Although DTSC does not formally approve voluntary pilot tests, the acknowledgement letter noted that, "DTSC believes this is a prudent course of action to conduct this pilot test."
6. The use of carbon substrates to induce in-situ bioremediation is covered in the General Waste Discharge Requirements (WDR), Order No. R4-2002-0030 adopted by this Regional Board on January 24, 2002, for the groundwater remediation at petroleum hydrocarbon fuel and/or volatile organic compound impacted sites. Subsequently, this General WDR was amended on March 1, 2007 to cover more applications and become Order No. R4-2007-0019.
7. The General WDR allows the injection of carbon substrate and sodium bromide, but does not specifically provide for the addition of KB-1. The Discharger has filed a Report of Waste Discharge and applied for Site-specific Waste Discharge Requirements (WDR) to add KB-1 to the shallow groundwater. Site-specific WDR have been developed for the addition of KB-1 in conjunction with the injection of carbon substrate at this site.
8. Groundwater beneath the Facility is unconfined and the direction of flow is undefined at the water table and generally toward the southeast within the Gage aquifer. The Discharger shall monitor presence and concentration of injection solution and waste constituents and evaluate flow conditions and any potential for migration of waste constituents outside the remediation areas. Monitoring of groundwater quality and flow conditions across the entire Facility is required by a comprehensive separate Facility-wide groundwater monitoring program pursuant to the Consent Agreement.
9. The injection of the carbon substrate with KB-1 to the groundwater is a discharge of waste pursuant to section 13260 of the California Water Code. However, the discharge of the carbon substrate with KB-1 is intended to provide more efficient remediation of VOC-contaminated groundwater and is anticipated to reduce cleanup time and costs.
10. The Water Quality Control Plan (Basin Plan) for the Los Angeles Region designates the beneficial uses of groundwater in the Central Basin for municipal and domestic supply, industrial process supply, industrial service supply, and agricultural supply.

11. State Water Resources Control Board Resolution 68-16 ("*Statement of Policy With Respect to Maintaining High Quality of Waters in California*") requires the Regional Board in regulating discharges of waste to maintain the high quality of waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and potential beneficial uses, and will not result in water quality less than that described in plans and policies (e.g., quality that exceeds water quality objectives). As stated in the Waste Discharge Requirements, the permitted discharge is consistent with Resolution No. 68-16. The discharge may result in some localized exceedance of background concentrations of constituents such as total organic carbon, and total dissolved solids (TDS), but this is not anticipated to result in any long-term groundwater degradation and if effective the discharge will cleanup the VOCs in groundwater
12. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit written comments. The Regional Board, in a public meeting on December 8, 2011, heard and considered all comments pertaining to the discharge and to the tentative Waste Discharge Requirements.
13. This Regional Board has assumed lead agency role for the WDR under the California Environmental Quality Act (Public Resources Code section 21000 et seq.) (CEQA) and has conducted an Initial Study (in the format of an expanded Environmental Checklist) in accordance with title 14, California Code of Regulations, section 15063, titled Guidelines for Implementation of the California Environmental Quality Act. Based on the Initial Study, Regional Board prepared a Mitigated Negative Declaration that the project will not have a significant adverse effect on the environment.
14. Copies of the Environmental Checklist and proposed Mitigated Negative Declaration were transmitted to the State Clearing House, all agencies and interested persons and was circulated for public comment. All comments received have been addressed by Regional Board. The Regional Board considered all comments and evidence at a public hearing held on December 8, 2011, at the Metropolitan Water District of Southern California, Board Room, 700 North Alameda, Los Angeles, California, and good cause was found to approve the Environmental Checklist and adopt a Mitigated Negative Declaration.

THEREFORE, BE IT RESOLVED that the Regional Board:

1. Adopts the Initial Study and Mitigated Negative Declaration and directs the Executive Officer to file a Notice of Determination with the State Clearinghouse within 30 days consistent with the CEQA Guidelines.
2. Directs that a copy of this Resolution shall be forwarded to the State Water Resources Control Board and all interested persons.

CERTIFICATION

I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region on December 8, 2011.

Samuel Unger
Samuel Unger, P.E.
Executive Officer

1-3-12
Date

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

ORDER NO. R4-2011-0192

**WASTE DISCHARGE REQUIREMENTS
FOR
CEMEX, INC.
ENHANCED IN-SITU BIOREMEDIATION OF VOLATILE ORGANIC COMPOUNDS (VOCs) IN
GROUNDWATER IN THE RHO-CHEM FACILITY
(FILE NO. 11-065)**

The California Regional Water Quality Control Board, Los Angeles Region, (hereafter Regional Board) herein finds that:

1. CEMEX, Inc. (CEMEX; hereafter Discharger) has filed a Report of Waste Discharge and applied for Waste Discharge Requirements to use carbon substrates (sodium lactate and food grade emulsified soybean oil) and a non-pathogenic (naturally derived, not genetically engineered) chlorinated-ethene degrading microbial consortium containing *Dehalococcoides ethenogenes* culture, (SiREM's KB-1), to bioremediate chlorinated volatile organic compounds (VOCs) in shallow groundwater through reductive dechlorination to environmentally acceptable, non-toxic ethene in groundwater at the Rho-Chem facility (site). The Discharger will implement a Pilot Study and if effective and after approval by the Executive Officer may proceed to a full-scale project.
2. The Rho-Chem facility has been in operation since the early 1950s, with the initial owner identified as American Better Chemicals (American). In 1974 American merged with ABCO Industries and changed the facility name to Rho-Chem Corporation. The facility began recycling waste solvents in 1964. In 1989 Browning Ferris Industries, Inc. acquired the site, which was then later acquired in 1990 by Southdown, Inc. (Southdown) retaining the Rho-Chem name. The operations and the site were then purchased by Phillip Services Corporation (PSC) in 1995 and Southdown was acquired by CEMEX in 2000. Based on the most recent acquisitions, CEMEX and Rho-Chem, LLC (formerly known as Rho-Chem Corporation) remain involved with respect to the assessment and remediation work at the site as the Respondents under a Corrective Action Consent Agreement (Consent Agreement) executed by the DTSC in reference to the Rho-Chem facility. Although Rho-Chem LLC is the legal facility owner, operator, and land owner of record, CEMEX is implementing the proposed remediation project. Consequently, CEMEX is listed as the Discharger only with respect the implementation of the remediation project as described herein.
3. The site encompasses approximately 1.1 acres and is located at 425 Isis Avenue in Inglewood, California (Latitude 33° 57' 28" North, Longitude 118° 22' 32" West, see Figure 1). The site is located in a predominantly industrial and commercial area and is a Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Facility permitted to store, treat, transfer, and recycle hazardous wastes. Rho-Chem's current operations and services include liquid fuel blending, solvent recycling (fractionation column, batch distillation, and thin film development), and solvent distribution. The facility also provides hazardous waste transfer, storage, and consolidation services. In addition, the facility receives corrosives and waste water material for consolidation and off-site treatment. The pilot study area (subject treatment area) covers a small portion of the southwest corner of the site. Figure 2 shows the site boundary and location of the subject treatment area. The term "off-site" refers to off-site groundwater monitoring wells MW-7, MW-8, and MW-10. Figure 3 depicts the well network for the site.
4. In response to a request from this Regional Board, Rho-Chem, through its environmental contractor, J.H. Kleinfelder and Associates, conducted a site investigation in 1985 to undertake a

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leak detection program for the underground storage tanks (USTs) at the site. This site investigation involved drilling soil borings and collecting soil samples.

5. In 1988, Rho-Chem, through its environmental contractor, Ecology and Environment, Inc., performed a United States Environmental Protection Agency (U.S. EPA)-mandated RCRA Facility Assessment (RFA). The RFA included a site inspection, interviews with facility personnel, and review of facility files.
6. From 1991 to 1994, Southdown, through its environmental contractor, Radian Corporation, conducted three phases of RFAs to characterize the presence of constituents of concern (COCs) in soil and groundwater at the site.
7. Since 2002, CEMEX, through its environmental contractor, AMEC Geomatrix, Inc. (AMEC; formerly known as Geomatrix Consultants, Inc.), conducted various phases of site characterization to further assess the distribution of COCs in soil and groundwater under the direction of the Department of Toxic Substances Control (DTSC).
8. In 2002, CEMEX and Rho-Chem, LLC (formerly known as Rho-Chem Corporation; collectively the Respondents) entered into a Consent Agreement executed by the DTSC in reference to the Rho-Chem facility addressing investigation and remediation of the facility. The Consent Agreement was drafted following the discovery of impacted soil and groundwater at the site.
9. The site-wide investigations show that the primary wastes detected in soil and groundwater are VOCs. Maximum historical VOC concentrations in groundwater samples collected from on-site groundwater monitoring wells include 76,300 micrograms per liter ($\mu\text{g/L}$) of tetrachloroethene (PCE), 118,000 $\mu\text{g/L}$ of trichloroethene (TCE), 86,200 $\mu\text{g/L}$ of 1,1,1-trichloroethane (1,1,1-TCA), 27,300 $\mu\text{g/L}$ of 1,1-dichloroethene (1,1-DCE), 47,800 $\mu\text{g/L}$ of cis-1,2-dichloroethene (c-1,2-DCE), 4,700 $\mu\text{g/L}$ of carbon tetrachloride, 4,490 $\mu\text{g/L}$ of 1,1-dichloroethane (1,1-DCA), 2,170 $\mu\text{g/L}$ of 1,2-dichloroethane (1,2-DCA), 302,000 $\mu\text{g/L}$ of methylene chloride, and 800 $\mu\text{g/L}$ 1,4-dioxane.
10. Shallow groundwater beneath the site is first encountered at a depth of approximately 92 feet below ground surface. Shallow groundwater is unconfined and occurs within the semiperched aquifer. The semiperched aquifer yields very small quantities of water, suggesting low productivity for groundwater extraction. Underlying the semiperched aquifer is the Bellflower aquitard which limits the percolation of groundwater from the semiperched aquifer to the underlying aquifers. Underlying the Bellflower aquitard is the Gage aquifer which occurs at approximately 150 to 210 feet below ground surface.
11. There are no water supply wells located within an approximate two-mile radius of the site.
12. A soil vapor extraction system began operation in late July 2011 to remediate VOC impacted soil at the site.
13. Between April 2008 and March 2009, CEMEX, through AMEC, conducted a laboratory biodegradation bench-scale study using site groundwater and aquifer sediments. The bench-scale study demonstrated evidence of complete reductive dechlorination of the chlorinated VOCs present in site groundwater through the production of ethene.
14. A Pilot Study Work Plan presents the rationale and procedures for pilot-scale implementation of enhanced in-situ bioremediation at the subject treatment area to remediate VOCs in shallow groundwater (semiperched aquifer) using carbon substrate amendments and bioaugmentation with

KB-1. Two kinds of carbon substrate amendments will be used during the pilot test (a Quick Release Carbon Substrate [QRCS] and a Slow Release Carbon Substrate [SRCS]). Wilclear Plus Sodium Lactate with Accelerite will be used as the QRCS, which contains 29 percent lactate, 11 percent other volatile fatty acids (propionate, acetate, butyrate), and 21 percent Accelerite (a blend of vitamins, growth factors, and nutrients), and other fermentables. The SRCS will contain an emulsified oil substrate (EOS) and a pH buffer (AquaBupH). EOS contains 60 percent food grade soybean oil, 4 percent fast release soluble substrate, 10 percent emulsifiers/food additives/preservatives, and 26 percent water. AquaBupH contains soybean oil with a suspension of a particulate alkaline pH buffering material. KB-1 is a naturally derived non-pathogenic chlorinated-ethene degrading microbial consortium. A conservative tracer, sodium bromide (NaBr), will also be injected to evaluate the fate and transport of the injection solution.

15. During the Pilot Study, both carbon substrate amendments and microbial consortium KB-1 will be injected through a temporary groundwater recirculation system to evaluate the effectiveness of delivery and biologic reduction of chlorinated VOCs.
16. A temporary groundwater recirculation system will be set up to facilitate and control the delivery of carbon substrates and KB-1. Groundwater will be extracted from a downgradient well GCW-2 (Figure 2), treated in an above-ground treatment system, amended with carbon substrates and/or KB-1, and reinjected into an upgradient well GCW-1.
17. A groundwater sampling and analysis program will be conducted prior to, during, and after the Pilot Study to closely monitor groundwater conditions. Groundwater monitoring will be conducted from five on-site wells. Analysis will include (1) field parameters (e.g., temperature, conductivity, pH, dissolved oxygen [DO], and oxidation-reduction potential [ORP]), (2) VOCs, (3) electron donor parameters (e.g., total organic carbon [TOC] and volatile fatty acids [VFAs]), (4) redox sensitive parameters (e.g., ferrous iron, sulfate, nitrate, nitrite, and methane), (5) bioactivity parameters (e.g., alkalinity, ammonium, total Kjeldahl nitrogen [TKN], and total phosphorous), (6) microbial parameters (e.g., Phospholipid Fatty Acids [PLFA], *Dehalococcoids* [DHC], and Compound Specific Isotope Analysis [CSIA]), and (7) dissolved metals (such as arsenic).
18. Progressive changes in local groundwater quality will occur over a relatively short period of time, leading to an overall groundwater quality improvement. The bacterial population added to promote complete reduction of PCE daughter products will only grow in the area where amendments (food source) are added. The spread of the bacterial population will be limited to anaerobic areas near and between groundwater recirculation points during and from a period of time after amendment addition, and will be controlled by areas where the groundwater system is aerobic.
19. Control measures will be implemented if carbon substrate solutions and DHC associated with the bioaugmentation culture are detected in monitoring points at the property boundary (Monitoring Well MW-3) during the groundwater monitoring events. These measures would involve stopping further addition of amendments to the groundwater. After this control measure has been implemented, it is expected that the remaining amendments in the groundwater will naturally break down, effectively removing food source and allowing the groundwater system to return to more aerobic conditions. The bioaugmentation culture (KB-1) requires an electron donor/carbon substrate amendment (food), VOCs, and anaerobic conditions to survive. Given these growth requirements, the bioaugmentation culture will not survive due to the loss of the food source and anaerobic conditions.
20. California Water Code section 13260 requires any person who discharges waste or proposes to discharge waste that could affect the quality of the waters of the state is required to submit a report

of waste discharge. California Water Code section 13263 authorizes the Regional Board to issue waste discharge requirements that implement the water quality control plan (Basin Plan). The injection of the substrate solutions into groundwater is a discharge of waste as defined in section 13050 of the California Water Code and is subject to Water Code sections 13260 and 13263. In this case, the discharge of carbohydrate solution with chlorinated-ethene degrading consortium KB-1 is intended to improve water quality by providing a more effective remediation of chlorinated VOC-impacted groundwater and is expected to significantly reduce the anticipated groundwater cleanup time as compared to traditional pump-and-treat technology or enhanced in-situ bioremediation without addition of KB-1.

21. The application of carbon substrate amendments with the addition of KB-1 to groundwater may result in temporary adverse impacts to groundwater quality, but impacts that may result will be localized, of short-term duration, and will not impact any existing or prospective uses of groundwater. The addition of a carbohydrate solution with KB-1 will improve groundwater conditions by promoting complete degradation of VOCs.
22. On January 24, 2002, this Regional Board adopted General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites (Order No. R4-2002-0030). This Order permits the injection of selected carbon substrate amendments (i.e. lactate, edible oils, ethanol, etc.) and conservative tracers (such as NaBr) proposed for use at this site. Subsequent to adoption of the initial General WDR, Order No. R4-2002-0030 has been revised six times to apply to the use of additional materials. The latest revision of the Order (Order No. R4-2007-0019) was adopted on March 1, 2007, and supersedes the previous version.
23. The General WDR does not cover the use of KB-1. Therefore, these site-specific waste discharge requirements have been developed for the addition of KB-1 at this site and will also apply to the injection of the carbohydrate solution. If the enhanced in-situ bioremediation Pilot Study at the selected treatment area proves successful, the application may be expanded to additional locations on-site as a full-scale remedy at which time, the Discharger shall submit a Work Plan Addendum for the use of enhanced in-situ bioremediation with KB-1 at any other areas within the site and the aerial extent of new treatment area. Once the Work Plan Addendum is authorized by the DTSC, the Regional Board Executive Officer may approve the expanded use of enhanced in-situ bioremediation with KB-1, including increased volume, areal extent, and length of time for the project. Prior to Executive Officer's approval for full-scale remediation, the Discharger shall demonstrate to Executive Officer's satisfaction that (1) the Pilot Study is effectively treating the waste, (2) that carbon substrate amendment and *Dehalococcoides* (DHC) associated with KB-1 are not observed to be detected at off-site observed monitoring wells MW-7 (east), MW-8 (southeast), and MW-10 (west), (3) that the Pilot Study has not resulted in groundwater containing concentrations of chemical substances or its by-products, including KB-1 in amounts that adversely affect any designated beneficial use as a result of the injection of solution.
24. The Regional Board adopted a revised Water Quality Control Plan for the Los Angeles Region (Basin Plan) on June 13, 1994. The Basin Plan designates beneficial uses for the West Coast Groundwater Basin, establishes water quality objectives to protect those uses, and contains implementation programs. The requirements contained in this Order, as they are met, will be in conformance with the Basin Plan.
25. The designated beneficial uses for the West Coast Groundwater Basin are municipal and domestic water supply (MUN), and industrial service (IND) and industrial process supply (PROC). The water

quality objectives for the West Coast Groundwater Basin to protect these uses are 800 mg/L for total dissolved solids (TDS), 250 mg/L for sulfate, 250 mg/L for chloride, and 1.5 mg/L for boron.

26. State Water Resources Control Board (State Water Board) Resolution 68-16 ("Statement of Policy With Respect to Maintaining High Quality of Waters in California") requires the Regional Board in regulating discharges of waste to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and potential beneficial uses, and will not result in water quality less than that described in plans and policies (e.g., quality that exceeds water quality objectives). The discharge of substrate solution may result in some localized temporary exceedances of background concentrations of TOC, iron, manganese, arsenic, TDS, and certain microorganisms. However, after the injection of amendments and selected bacteria culture, these parameters are not anticipated to exceed the water quality objectives beyond background water quality. The temporary degradation allowed by this Order is consistent with Resolution No. 68-16 since (1) the purpose is to accelerate and enhance remediation of groundwater pollution and such remediation will benefit the people of the State; (2) the degradation is limited in scope and duration; (3) best practicable treatment and control, including adequate monitoring and control to assure protection of water quality, are required; and (4) the discharge will not cause water quality objectives to be exceeded beyond the treatment zone.
27. The Regional Board is the lead agency for this project under the California Environmental Quality Act (Public Resources Code section 21000 et seq.) and has conducted an Initial Study in accordance with section 15063 of the "State CEQA Guidelines" at California Code of Regulations, title 14, section 15000 et seq. Based upon the Initial Study, the Regional Board prepared a Mitigated Negative Declaration that the project will not have a significant adverse effect on the environment and in Resolution No. R11-012, the Regional Board adopted the Mitigated Declaration and approved the Initial Study. This Order includes a mitigation requirement in Provision C.12 to require removal of waste if the discharge causes pollution. This Order includes a monitoring and reporting program to assure protection of water quality.
28. In accordance with regulations adopted by the State Board in September 2004 regarding electronic submittal of information (ESI), the Discharger has been electronically submitting monitoring reports required under the WDRs to the State Board GeoTracker system in addition to submitting copies of the reports to the Regional Board. The requirements in this Order, as they are met, are in conformance with the ESI regulations.
29. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit written comments and to present oral comments at a public hearing. The Regional Board has considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED that CEMEX, Inc., in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted here under, shall comply with the following:

A. Discharge Limits

1. The Discharger shall not cause off-site groundwater to exceed background concentration of TDS established prior to start of remediation.

2. The discharge of carbohydrate solution with chlorinated-ethene degrading consortium, referred to as KB-1, into the groundwater shall be only performed while this Order is in force. The proposed approach of using extracted groundwater for seeding solution shall meet the Maximum Contaminant Levels (MCLs) before being reinjected back to the aquifer.
3. During this Pilot Study, the injection volume of carbohydrate solution and KB-1 shall not exceed 30,000 gallons, unless an increased volume is approved by the Executive Officer based on a determination as set forth in Finding 23. If the enhanced in-situ bioremediation pilot study at the subject treatment area proves successful, the application may be expanded to additional locations on-site as an expansion of the pilot study or conversion to an on-site full-scale remedy upon approval of the Executive Officer based on a determination as set forth in Finding 23. If expansion is feasible or conversion to full-scale is appropriate, the injection shall not exceed 435,000 gallons of carbohydrate solutions and 24 gallons of KB-1 and consistent with full-scale workplan approval by DTSC.
4. Discharge duration for the pilot study shall not exceed three years, unless approved by the Executive Officer. Discharge duration for the full-scale remedy shall not exceed six years. The actual discharge duration during the implementation of the full-scale system shall be adjusted based on the remedial progress and monitoring results and approved by the Executive Officer based on a determination as set forth in Finding 23.

B. Discharge Specifications

1. The Discharger shall stop further addition of amendments to the groundwater if carbon substrate amendment and *Dehalococcoides* (DHC) associated with KB-1 are observed to be detected at off-site observed monitoring wells MW-7 (east), MW-8 (southeast), and MW-10 (west). The off-site monitoring wells will be analyzed for DHC if; 1) there is a detection of DHC in MW-3, or 2) measurements of dissolved oxygen reach <1.0 milligrams per liter and the oxygen reduction potential reduces to a negative range.
2. The Discharger shall not cause KB-1, the amendment, and the by-products of the bioremediation process to migrate off-site during the pilot study.
3. The discharge of carbohydrate solution with KB-1 or any by-products into any surface water or surface water drainage course is prohibited.
4. The Discharger shall not cause groundwater to contain taste or odor producing substances in concentrations that cause nuisance.
5. The Discharger shall not cause groundwater to contain concentrations of chemical substances or its by-products, including KB-1 in amounts that adversely affect any designated beneficial use as a result of the injection of solution.
6. Prior to implementation of full-scale remediation, the Discharger shall demonstrate to Executive Officer's satisfaction and approval that (1) the Pilot Study is effectively treating the waste, (2) that carbon substrate amendment and *Dehalococcoides* (DHC) associated with KB-1 are not observed to be detected at off-site observed monitoring wells MW-7 (east), MW-8 (southeast), and MW-10 (west), (3) that the Pilot Study has not resulted in groundwater containing concentrations of chemical substances or its by-products, including KB-1 in amounts that adversely affect any designated beneficial use as a result of the injection of solution.

C. Provisions

1. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements," which are incorporated herein by reference. If there is any conflict between provisions stated herein before and the attached "Standard Provisions," then the provisions stated herein shall prevail over the Standard Provisions.
2. Discharge of wastes to any point other than specifically described in this Order is prohibited.
3. In the event of any change in name, ownership, or control of the site, the Discharger shall notify this Regional Board in writing and shall notify any succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Regional Board.
4. A copy of this Order shall be maintained at an on-site office and be available at all times to operating personnel.
5. In accordance with section 13260 of the Water Code, the Discharger shall file a report of any material change or proposed change in the character, location or volume of discharge.
6. The Discharger shall notify the Regional Board immediately by telephone of any adverse condition resulting from this discharge or from operations producing this waste discharge, such notifications to be affirmed in writing within one week from the date of such occurrence.
7. This Regional Board considers the Discharger and Rho-Chem (Respondents under the Corrective Action Consent Agreement) to have continuing responsibility of correcting any problem that may arise in the future as a result of this discharge.
8. All work must be performed by or under the direction of a civil engineer, professional geologist, or certified engineering geologist. A statement is required in all technical reports that the qualified professional in direct responsible charge actually supervised or personally conducted all the work associated with the project.
9. The use of carbon substrate amendments with KB-1 shall not cause a condition of pollution as defined by California Water Code, Section 13050.
10. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as specified in the attached Monitoring and Reporting Program No. CI-9782. Violation of any conditions may result in enforcement action, including Regional Board or Court Order requiring corrective action or imposition of civil monetary liability, or revision, or rescission of the Order.
11. This Order does not exempt the Discharger from compliance with any other laws, regulations, or ordinances, which may be applicable. This Order does not legalize the waste treatment site, and leaves unaffected any further restraints on the site that may be contained in other statutes or required by other agencies.
12. The Discharger shall cleanup and abate the effects of injecting amendment solution as specified in this Order, including extraction of any by-products which adversely affect beneficial uses, and shall provide an alternate water supply source for municipal, domestic or other water use wells that become polluted in exceedance of water quality objectives as a result of this discharge.

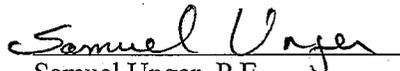
13. In accordance with section 13263 of the California Water Code, this Order is subject to periodic review and revision by this Regional Board.
14. After notice and opportunity for a hearing, this Order may be terminated or modified for cause including, but not limited to:
 - a. Violation of any term or condition contained in this Order.
 - b. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts.
 - c. A change in any condition that requires either a temporary or permanent reduction or elimination of authorized discharge.
15. The Regional Board, through its Executive Officer, will modify the Monitoring and Reporting Program, as necessary.

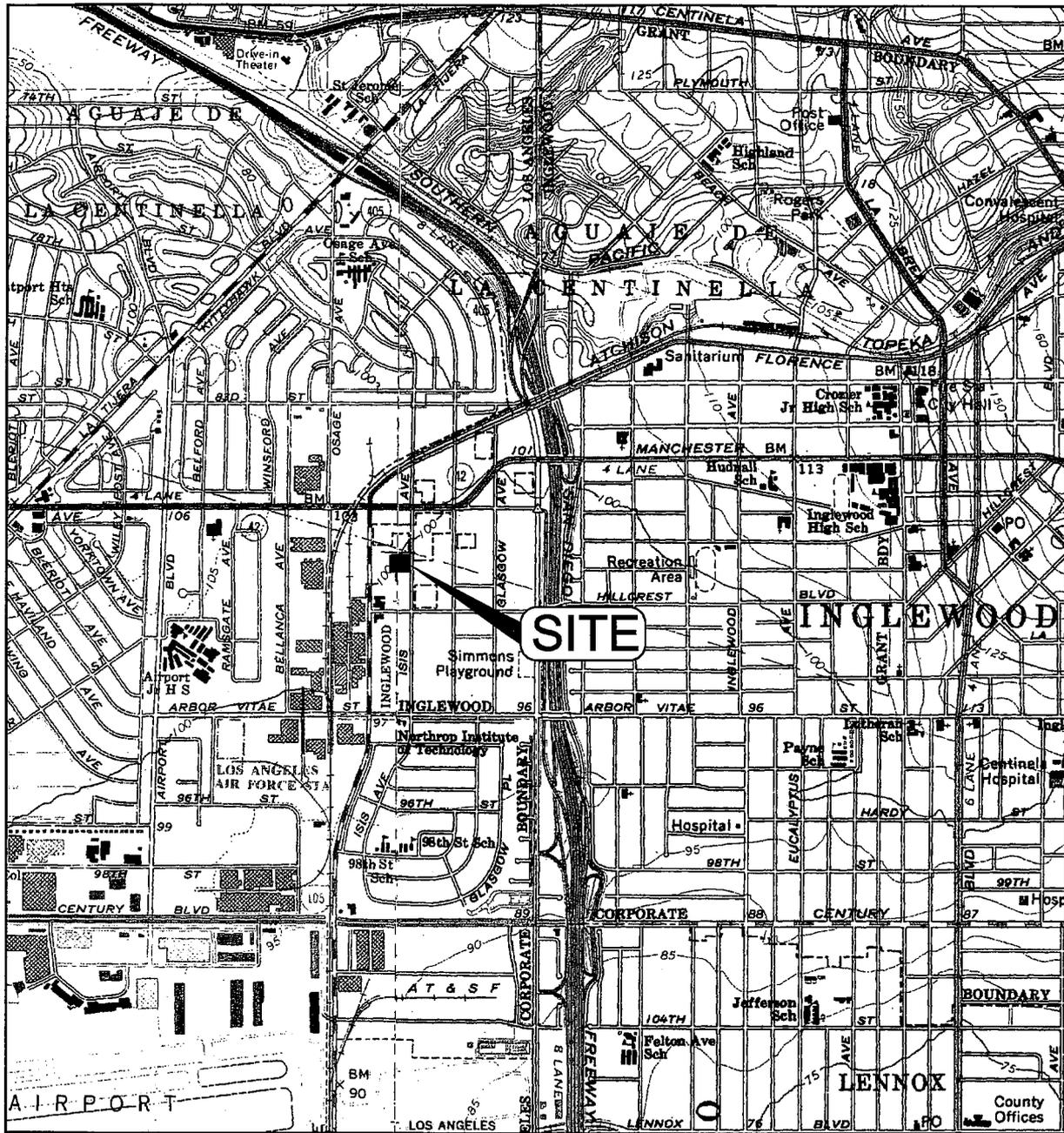
D. Waste Discharge Requirements Review Date

This Order will be reviewed by December 8, 2016.

The Discharger must file a Report of Waste Discharge in accordance with California Water Code, Section 13263(e), not later than 120 days in advance of December 8, 2016, as application for issuance of new waste discharge requirements.

I, Samuel Unger, 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, Los Angeles Region on December 8, 2011.


Samuel Unger, P.E.
Executive Officer



SITE



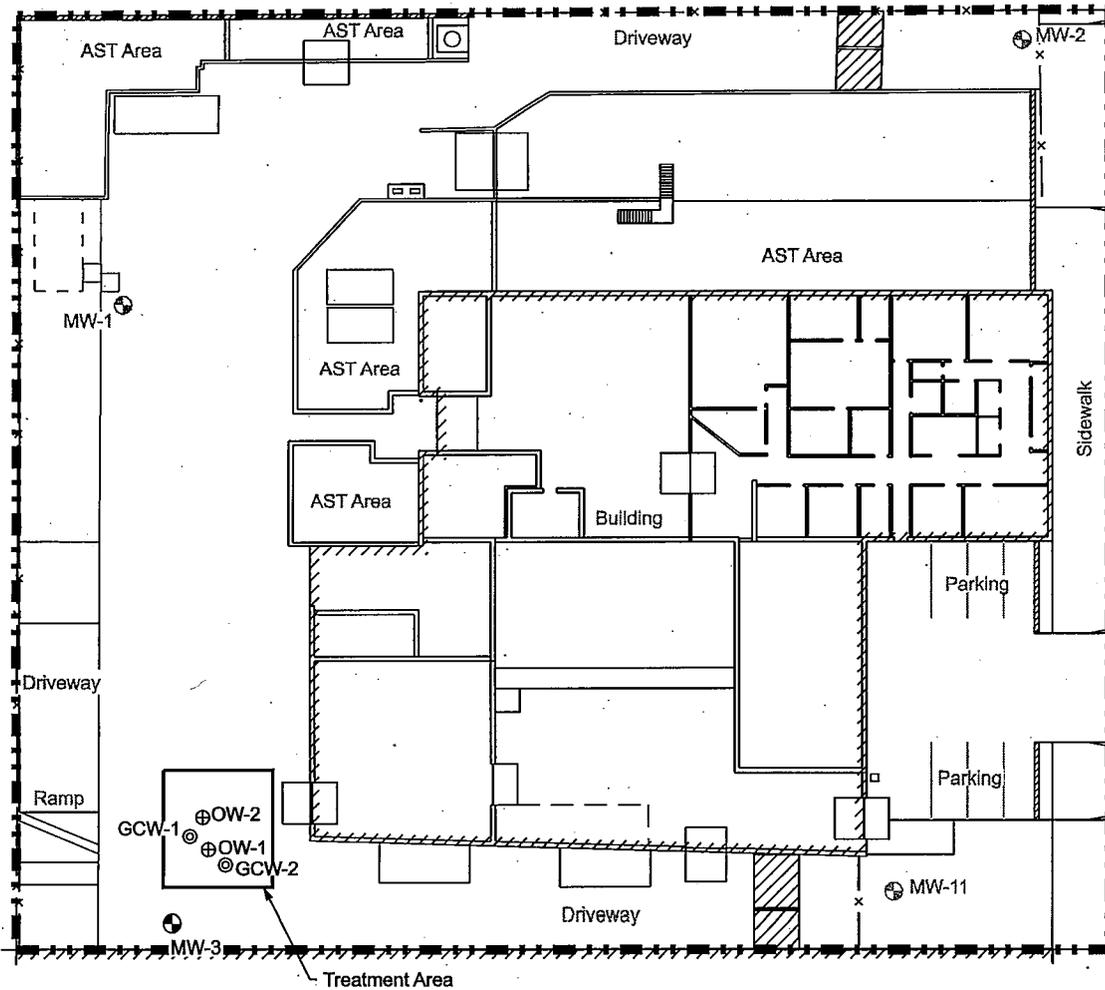
0 1000 2000
Approximate Scale in Feet

Basemap modified from U.S.G.S. 7.5 minute quadrangle maps
Inglewood, 1954, and Venice, 1964, California.
Photo-revised 1981.

SITE LOCATION MAP
Rho-Chem Facility
Inglewood, California

By: pah	Date: 08/09/10	Project No: 3704003
AMEC Geomatrix		Figure 1

Y:\3704-003B\03B.dgn\Plot Study 2010.plot_study_sp.tb.dgn



Explanation

- GCW-2 ⊕ Proposed pilot test injection well location
- OW-2 ⊕ Proposed pilot test observation well location
- MW-3 ⊕ Groundwater monitoring well location included in pilot test discussion
- ⊕ Groundwater monitoring well location
- AST Aboveground storage tank
- ▨ Building line
- x - Chain link fence
- ▬ Site boundary

Note:

All locations are approximate.

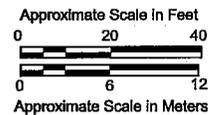
Basemap modified from Rattray and Associate, Inc.
 Survey dated November 11, 1999 and Dullin & Boynton survey maps
 dated February 19, 2008; May 6, 2008; December 14, 2009; and May 24, 2010.

**PROPOSED PILOT TEST INJECTION
 AND MONITORING WELL LOCATIONS
 Rho-Chem Facility
 Inglewood, California**

By: pah Date: 03/09/11 Project No: 3704003

AMEC Geomatrix

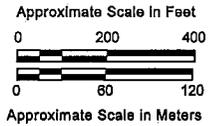
Figure **2**





Explanation

- MW-11 ● Water table groundwater monitoring well location and designation
- MW-9G ● Gage aquifer groundwater monitoring well location and designation
- MW-5 ⊕ Abandoned water table groundwater monitoring well location and designation



Basemap modified from Dulin & Boynton survey maps dated February 19, 2008; May 6, 2008; December 12, 2009; and May 19, 2010.

**GROUNDWATER MONITORING WELL LOCATIONS
Rho-Chem Facility
Inglewood, California**

By: pah Date: 01/12/11 Project No: 3704003

AMEC Geomatrix

Figure **3**

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-9782
FOR
CEMEX, INC.
RHO-CHEM FACILITY
425 ISIS AVENUE, INGELWOOD, CALIFORNIA
(ENHANCED IN-SITU BIOREMEDIATION OF VOLATILE ORGANIC COMPOUNDS IN
GROUNDWATER)

FILE NO. 11-065
ORDER NO. R4-2011-0192

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code section 13267 to Cemex, Inc. (Discharger). This Order is issued to the Discharger because Cemex, Inc. is the person implementing the remediation program. The Order is necessary to assure that the remedial action is implemented properly and operating effectively. This MRP sets forth monitoring and reporting requirements associated with the enhanced in situ bioremediation pilot study (Pilot Study) activities to be performed to treat groundwater impacted with volatile organic compounds (VOCs) associated with the site located at 425 Isis Avenue, Inglewood, California (Figure 1) in accordance with Regional Board Order No. R4-2011-0192.

I. REPORTING REQUIREMENTS

- A. The Discharger shall implement this MRP beginning on the effective date (December 8, 2011) of Regional Board Order No. R4-2011-0192. The Discharger shall submit reports detailing the results of the in situ bioremediation. The Discharger shall submit the following reports pursuant to the respective due dates:

<u>Report</u>	<u>Report Due</u>
Implementation Report	90 days following the initial injection of KB-1
Final Report	90 days following the completion of the Pilot Study or full-scale remediation

- B. The Discharger shall submit Quarterly monitoring reports under this MRP the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 15
April – May	June 15
June – August	October 15
September – December	January 15

- C. If there is no discharge or injection during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.

December 8, 2011

- D. The reports shall contain both tabular and graphical summaries of the monitoring data obtained during the monitoring period. In addition, the Discharger shall explain the compliance record and the corrective actions taken, or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements (WDRs).
- E. Laboratory analyses – all groundwater chemical laboratory analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.
- F. Groundwater samples shall be analyzed within allowable holding time limits as specified in 40 CFR Part 136. Quality assurance/quality control (QA/QC) samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.
- G. Each monitoring report must affirm in writing that “All chemical analyses were conducted at a laboratory certified for such analyses by the California Department of Public Health, and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program.” Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- H. Each monitoring report shall contain a separate section titled “Summary of Non-Compliance” which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs.
- I. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years.
- J. 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 to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.

II. ENHANCED IN SITU BIOREMEDIATION INJECTION REPORTING REQUIREMENTS

The Discharger is required to submit an implementation report following the completion of the

initial injection phase of the Pilot Study. The implementation report shall include baseline laboratory data, as well as the injection data and the following information regarding injection activities:

1. Location map showing injection wells,
2. Depths of injection(s), and
3. Total amounts of amendments and bacteria culture (KB-1) injected and dates injected in the reporting period.

III. GROUNDWATER MONITORING PROGRAM

The monitoring well network for the Pilot Study (Pilot Study well network) includes on-site wells MW-3, OW-1, OW-2, GCW-1 and GCW-2 (Figure 2). MW-3 is an existing on-site groundwater monitoring well; OW-1 and OW-2 shall be installed as observation wells; GCW-1 and GCW-2 shall be installed as injection/groundwater recirculation wells. In addition, off-site groundwater monitoring wells MW-7, MW-8 and MW-10 (Figure 3) will be used to support the Pilot Study.

Baseline groundwater samples shall be collected from the Pilot Study well network (MW-3, OW-1, OW-2, GCW-1 and GCW-2) and off-site wells (MW-7, MW-8 and MW-10) prior to carbon substrate injection.

During the first month following the carbon substrate addition, the Pilot Study well network shall be sampled bi-weekly for the characterization of general water quality indicators (dissolved oxygen [DO], pH, specific conductance, temperature, oxidation-reduction potential [ORP], and ferrous iron). Bi-weekly monitoring of the Pilot Study well network shall continue through the third month or until the DO concentration is less than 0.5 milligram per liter (mg/L) and ORP is less than -100 millivolts (mV) at GCW-1. Once physical parameter monitoring indicates that DO is less than 0.5 mg/L and ORP is less than -100 mV, KB-1 shall be added to the injection/groundwater recirculation well GCW-1. Following the addition of KB-1, monthly monitoring events shall be conducted over the duration of the Pilot Study. Additional mid-point and final monitoring events shall be conducted and results shall be compared to the baseline monitoring results. Mid-point monitoring shall be conducted six months after the initial KB-1 injection. Final monitoring will be conducted 12 months after the initial KB-1 injection, or longer if additional injections are necessary during the Pilot Study.

In addition, Bio-Traps shall be installed in wells MW-3, OW-1 and OW-2 to monitor microbial parameters. The Bio-Traps shall be retrieved from the monitoring wells at various time intervals to analyze microbial population via phospholipid fatty acid (PLFA) analysis, *Dehalococoides spp.* (DHC) analysis, and biodegradation rates for tetrachloroethene and its daughter products by compound specific isotope analysis (CSIA).

Groundwater samples from Pilot Study wells and MW-7, MW-8 and MW-10 shall be monitored for the duration of the Pilot Study in accordance with the following monitoring program:

Sample Parameter	Units	Sample Location	Sampling Frequency (see Notes)
Field Meter Groundwater Testing			
DO	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly ¹ , monthly ² , mid-point ³ and final ⁴
ORP	mV	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly, monthly, mid-point and final
pH	standard units	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly, monthly, mid-point and final
Temperature	Degrees Celsius (°C)	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly, monthly, mid-point and final
Electrical Specific Conductance	µs/cm	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly, monthly, mid-point and final
Laboratory Groundwater Analysis			
Alkalinity	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Chloride	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
TDS	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Boron	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
VOCs	µg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly and monthly
Total Organic Carbon (TOC)	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, bi-weekly and monthly
Volatile Fatty Acids (VFA)	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Total Kjeldahl Nitrogen (TKN)	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Ammonia	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Total Phosphorus or Ortho-Phosphate	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Dissolved antimony and arsenic	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
Carbon Dioxide	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final

Sample Parameter	Units	Sample Location	Sampling Frequency
Nitrate and Nitrite	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Ferrous Iron (Fe ²⁺)	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Ferric Iron (Fe ³⁺)	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Manganese	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Sulfate	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Methane	µg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Ethene/Ethane	µg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline and monthly
Bromide	mg/L	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline
Bio-Trap⁵ Analysis (Bio-Traps shall be analyzed by Microbial Insights)			
PLFA	unit less	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
DHC	cells/bead	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final
		MW-7, MW-8 and MW-10	Baseline
CSIA	ratio (unit less)	MW-3, GCW-1, GCW-2, OW-1 and OW-2	Baseline, mid-point and final

Notes:

1. Bi-weekly monitoring will begin after the injection of the carbon substrate.
2. Bi-weekly monitoring will be converted to monthly monitoring after three months from the carbon substrate injection or when DO is less than (<) 0.5 mg/L, and ORP < -100mV.
3. Mid-point monitoring will be conducted six months after the initial KB-1 injection.
4. Final monitoring will be conducted 12 months after the initial KB-1 injection, or longer if additional injections are necessary during the Pilot Study.
5. Bio-Trap is a registered trade name.

Groundwater from monitoring well MW-3 shall be used to evaluate the potential changes in groundwater chemistry outside the localized treatment zone (Contingency Monitoring). Groundwater data from well MW-3 shall be compared to the baseline samples collected prior to injection of the carbon substrate to determine whether the bromide tracer, vinyl chloride (VC), and/or specific dissolved metals (ferrous iron, manganese, arsenic and antimony) have migrated to this well. In addition, groundwater at off-site monitoring wells MW-7, MW-8 and MW-10 shall be analyzed for DHC if 1) there is a detection of DHC in groundwater at MW-3, or 2) the measurements of DO are

less than 1.0 mg/L and the ORP reduces to a negative range in groundwater at MW-3. Groundwater from monitoring wells MW-3, MW-7, MW-8 and MW-10 shall be monitored for the duration of the Pilot Study in accordance with the following monitoring program:

Sample Parameter	Units	Sample Location	Sampling Frequency
VOCs	µg/L	MW-3	Mid-point and final
Dissolved antimony and arsenic	mg/L	MW-3	Mid-point and final
Ferrous Iron (Fe ²⁺)	mg/L	MW-3	Mid-point and final
Manganese	mg/L	MW-3	Mid-point and final
Bromide	mg/L	MW-3	Mid-point and final
DHC (Bio-Traps)	cells/bead	MW-7, MW-8 and MW-10	Mid-point and final

All groundwater monitoring reports shall include, at a minimum, the following:

- a. Well identification, date and time of sampling.
- b. Sampler identification and laboratory identification.
- c. Quarterly observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

IV. MONITORING FREQUENCY

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations removed by the Executive Officer if the Discharger makes a request and the request is supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant

penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the _____ day of _____ at _____
_____(Signature) _____(Title)"

VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

VII. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

The Discharger shall submit all reports required under this MRP, including groundwater monitoring data and discharge location data (latitude and longitude), to the State Water Resources Control Board GeoTracker database, in addition to submitting copies to the Regional Board office. Once the Discharger demonstrates mastery of electronic submittal of reports to GeoTracker for the Site, it may request that the Regional Board waive the requirement of submitting hard copies of reports.

Ordered by: Samuel Unger
Samuel Unger, P.E.
Executive Officer

Date: 1-3-12



SITE

Basemap modified from U.S.G.S. 7.5 minute quadrangle maps
 Inglewood, 1954, and Venice, 1964, California.
 Photo-revised 1981.

SITE LOCATION MAP
 Rho-Chem Facility
 Inglewood, California

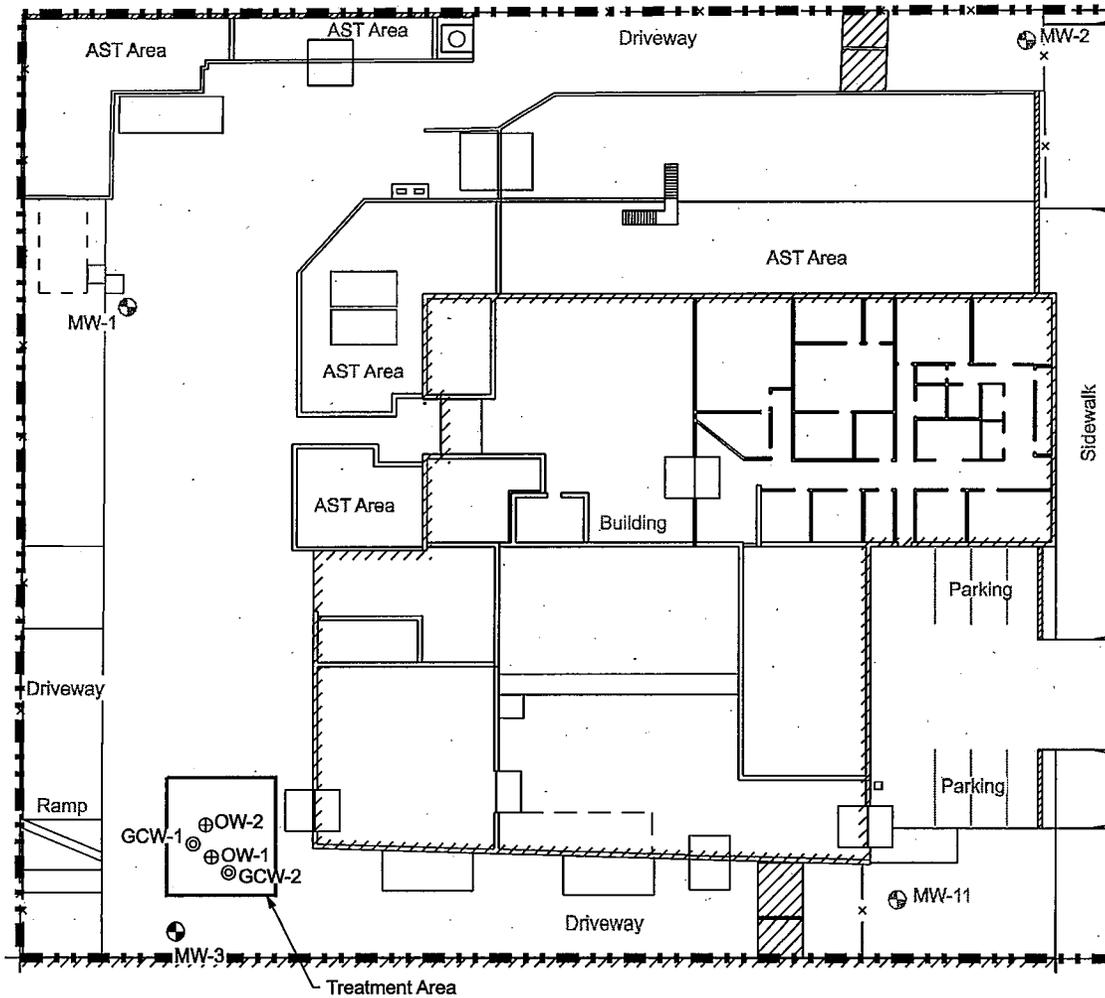
By: pah	Date: 08/09/10	Project No: 3704003
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AMEC Geomatrix

Figure 1



0 1000 2000
 Approximate Scale in Feet



Explanation

- GCW-2 ⊕ Proposed pilot test injection well location
- OW-2 ⊕ Proposed pilot test observation well location
- MW-3 ⊕ Groundwater monitoring well location included in pilot test discussion
- ⊕ Groundwater monitoring well location
- AST Aboveground storage tank
- ////// Building line
- x - Chain link fence
- - - - Site boundary

Note:

All locations are approximate.

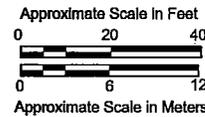
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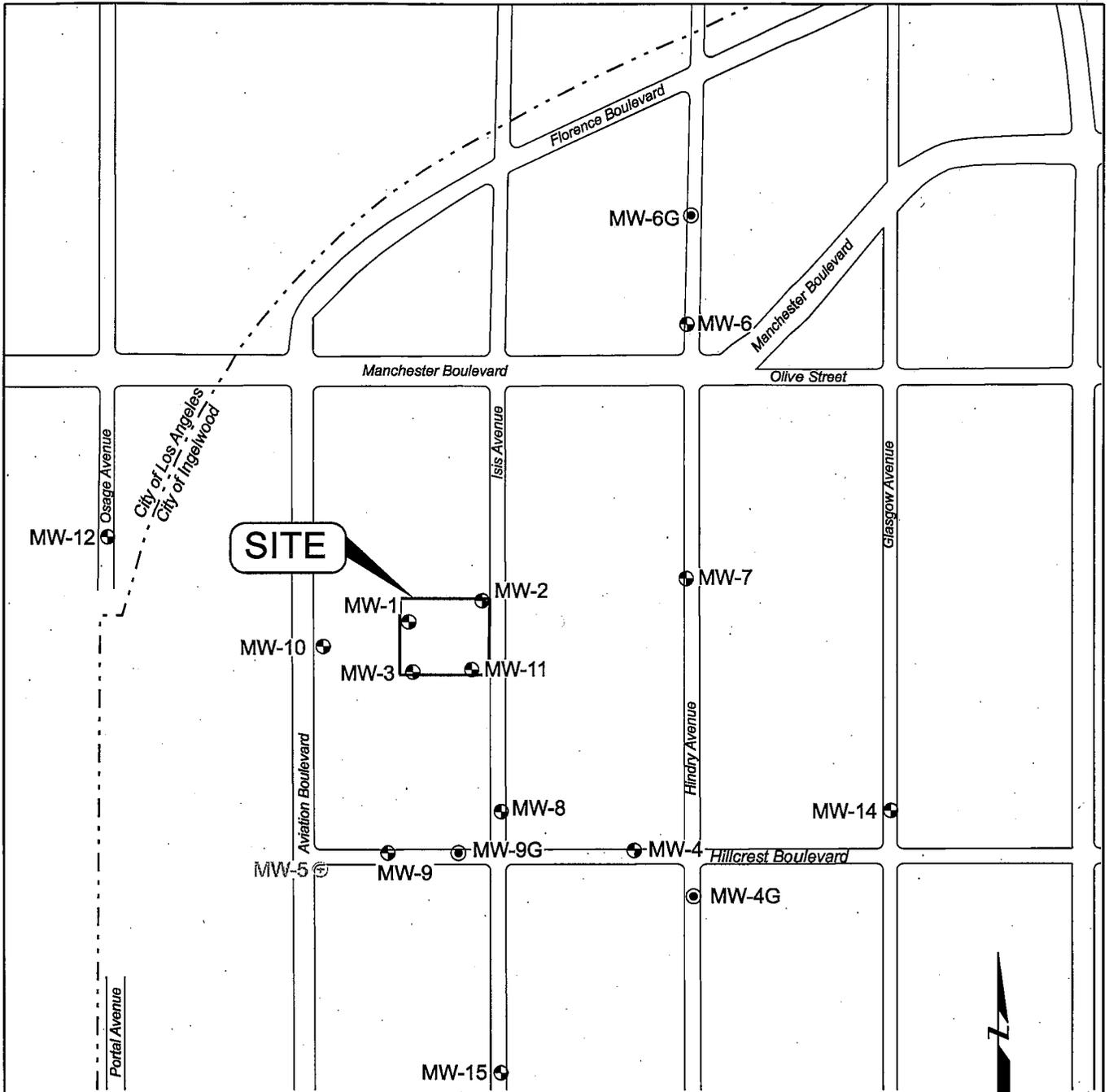
**PROPOSED PILOT TEST INJECTION
 AND MONITORING WELL LOCATIONS
 Rho-Chem Facility
 Inglewood, California**

By: pah Date: 03/09/11 Project No: 3704003

AMEC Geomatrix

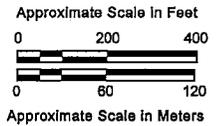
Figure 2





Explanation

- MW-11 ● Water table groundwater monitoring well location and designation
- MW-9G ● Gage aquifer groundwater monitoring well location and designation
- MW-5 ⊕ Abandoned water table groundwater monitoring well location and designation



Basemap modified from Dulin & Boynton survey maps dated February 19, 2008; May 6, 2008; December 12, 2009; and May 19, 2010.

**GROUNDWATER MONITORING WELL LOCATIONS
Rho-Chem Facility
Inglewood, California**

By: pah Date: 01/12/11 Project No: 3704003

AMEC Geomatrix

Figure **3**

STANDARD PROVISIONS
APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

1. DUTY TO COMPLY

The discharger must comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project, and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350]

2. GENERAL PROHIBITION

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). [H&SC Section 5411, CWC Section 13263]

3. AVAILABILITY

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. [CWC Section 13263]

4. CHANGE IN OWNERSHIP

The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]

5. CHANGE IN DISCHARGE

In the event of a material change in the character, location, or volume of a discharge, the discharger shall file with this Regional Board a new Report of Waste Discharge. [CWC Section 13260(c)]. A material change includes, but is not limited to, the following:

- (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the Waste.

November 7, 1990
WDR

Standard Provisions Applicable to
Waste Discharge Requirements

- (b) Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
- (c) Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
- (d) Increase in flow beyond that specified in the waste discharge requirements.
- (e) Increase in the area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements. [CCR Title 23 Section 2210]

6. REVISION

These waste discharge requirements are subject to review and revision by the Regional Board. [CCR Section 13263]

7. TERMINATION

Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information. [CWC Sections 13260 and 13267]

8. VESTED RIGHTS

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge. [CWC Section 13263(g)]

9. SEVERABILITY

Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of the requirements shall not be affected. [CWC Section 921]

Standard Provisions Applicable to
Waste Discharge Requirements

10. OPERATION AND MAINTENANCE

The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order. [CWC Section 13263(f)]

11. HAZARDOUS RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable Water Quality Control plan. [CWC Section 1327(a)]

12. PETROLEUM RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. [CWC Section 13272]

Standard Provisions Applicable to
Waste Discharge Requirements

13. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]

14. MONITORING PROGRAM AND DEVICES

The discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted. [CWC Section 13267]

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Office a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40CFR Part 136] promulgated by the U.S. Environmental Protection Agency. [CCR Title 23, Section 2230]

Standard Provisions Applicable to
Waste Discharge Requirements

15. TREATMENT FAILURE

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. [CWC Section 13263(f)]

16. DISCHARGE TO NAVIGABLE WATERS

Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Regional Board. [CCR Title 2 Section 22357]

17. ENDANGERMENT TO HEALTH AND ENVIRONMENT

The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Office within 24 hours:

- (a) Any bypass from any portion of the treatment facility.
- (b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.
- (c) Any treatment plan upset which causes the effluent limitation of this Order to be exceeded. [CWC Sections 13263 and 13267]

18. MAINTENANCE OF RECORDS

The discharger shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and record of all data used

Standard Provisions Applicable to
Waste Discharge Requirements

to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Records of monitoring information shall include:

- (a) The date, exact place, and time of sampling or measurement;
 - (b) The individual(s) who performed the sampling or measurement;
 - (c) The date(s) analyses were performed;
 - (d) The individual(s) who performed the analyses;
 - (e) The analytical techniques or method used; and
 - (f) The results of such analyses.
19. (a) All application reports or information to be submitted to the Executive Office shall be signed and certified as follows:
- (1) For a corporation – by a principal executive officer or at least the level of vice president.
 - (2) For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.
 - (3) For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official.
- (b) A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:
- (1) The authorization is made in writing by a person described in paragraph (a) of this provision.
 - (2) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
 - (3) The written authorization is submitted to the Executive Officer.

Any person signing a document under this Section shall make the following certification:

Standard Provisions Applicable to
Waste Discharge Requirements

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. [CWC Sections 13263, 13267, and 13268]"

20. OPERATOR CERTIFICATION

Supervisors and operators of municipal wastewater treatment plants and privately owned facilities regulated by the PUC, used in the treatment or reclamation of sewage and industrial waste shall possess a certificate of appropriate grade in accordance with Title 23, California Code of Regulations Section 3680. State Boards may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment plant operator, the State Board may approve use of a water treatment plant operator of appropriate grade certified by the State Department of Health Services where reclamation is involved.

Each plan shall be operated and maintained in accordance with the operation and maintenance manual prepared by the municipality through the Clean Water Grant Program [CWC Title 23, Section 2233(d)]

ADDITIONAL PROVISIONS APPLICABLE TO
PUBLICLY OWNED TREATMENT WORKS' ADEQUATE CAPACITY

21. Whenever a publicly owned wastewater treatment plant will reach capacity within four years the discharger shall notify the Regional Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies and the press. The discharger must demonstrate that adequate steps are being taken to address the capacity problem. The discharger shall submit a technical report to the Regional Board showing flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Board, or within 120 days after receipt of notification from the Regional Board, of a finding that the treatment plant will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Board itself. [CCR Title 23, Section 2232]



Matthew Rodriguez
Secretary for
Environmental Protection

California Regional Water Quality Control Board Los Angeles Region

320 W. 4th Street, Suite 200, Los Angeles, California 90013
(213) 576-6600 • FAX (213) 576-6640
<http://www.waterboards.ca.gov/losangeles>



Edmund G. Brown Jr.
Governor

October 20, 2011

Electronic Submittal Required for Correspondence and Reports to the Regional Board

Dear Interested Party:

The Los Angeles Regional Water Quality Control Board (Regional Board) is implementing a Paperless Office system to reduce our paper use, increase efficiency, and provide a more effective way for our staff, the public and interested parties to view water quality documents in electronic form.

Effective November 1, 2011, please convert all regulatory documents, submissions, materials, data, and correspondence that you would normally submit to us as hard copies to a searchable Portable Document Format (PDF). Documents that are less than 10 MB should be emailed to losangeles@waterboards.ca.gov. Documents that are 10 MB or larger should be transferred to a disk and mailed to the address listed above. Please see the attached document titled "**Guidelines for Electronic Submittal of Documents**" for more information.

However, staff may request some documents be submitted on paper, particularly drawings or maps that require a large size to be readable, or in other electronic formats where evaluation of data is required.

Dischargers who currently submit electronic documents to CIWQS, GeoTracker, or SMARTS should continue submitting as previously required.

If you need additional information regarding Electronic Submittal of Documents please visit the Regional Board's website above and navigate to Paperless Office.

If you have questions regarding this matter, please contact the appropriate staff assigned to your program or project. You may refer to the Regional Boards' Departmental Listing for contact information.

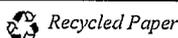
Thank you for your cooperation and assistance in protecting California's natural resources.

Sincerely,

Samuel Unger, P.E.
Executive Officer

Enclosure: Guidelines for Electronic Submittal of Documents

California Environmental Protection Agency





Matthew Rodriguez
Secretary for
Environmental Protection

California Regional Water Quality Control Board Los Angeles Region

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Edmund G. Brown Jr.
Governor

Guidelines for Electronic Submittal of Documents

The Los Angeles Regional Water Quality Control Board (Regional Board) implemented an electronic records management system, aka Paperless Office, to reduce paper consumption, anticipate future records management solutions, and improve overall accessibility to Regional Board records and documents. Effective immediately please provide all regulatory documents, submissions, materials, data, and correspondence via email or on disk (CD-ROM or CD) in a Portable Document Format (PDF) file *in lieu of paper-sourced documents*.

The format guidelines below will provide an accurate substitute of an original paper-sourced document suitable for inspection, review, and copying:

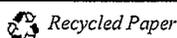
Please verify that the PDF file(s):

1. Contains the entire document, maintaining organization and layout, including page orientations, size, margins, fonts, table formats, page numbers, and appendices.
 - a. Appendix cover pages must be in the same order as they would appear in a paper-sourced document, followed by the information assigned to that appendix; and
 - b. Each subsection of an appendix must also have its own cover page (i.e. Appendix D.1 or Appendix E.4) followed by the information assigned to that subsection.
2. Allows the reviewer to copy text and images into common word processing documents (OCR – Optical Character Recognition). If you do not have this technology we will attempt to convert the PDF into OCR as deemed necessary.
3. Enables review of the document clearly and legibly. Include a well-structured table of contents that allows the reviewer to identify key components of the document is helpful. Generally, bookmarks are useful, and hypertext linking improves navigation through the document. However, in order to minimize loss of functionality, if hypertext links are provided, use only relative paths which do not reference specific drives or root directories, and make the bookmark hierarchy identical to the table of contents (avoid using more than 2-3 levels which will increase the need for space to read the bookmarks).

Submitting via email (documents <10 MB):

1. Convert documents less than 10 MB (<10 MB) into a PDF file as it would normally appear in a paper-sourced document.
2. Attach the PDF(s) to an email and send to losangeles@waterboards.ca.gov with information in the email to include: Document title; Discharger/Project name; Program type (Land Disposal, NPDES, Site Cleanup, Storm Water, TMDL, UST, WQC, etc.);

California Environmental Protection Agency



Project identifiers such as (CI, CIWQS, File, Global ID, NPDES, Order, SCP, WDID Numbers, etc.); and Regional Board staff name.

3. See additional information regarding original certifications and other original signature requirements below.

Submitting via CD-ROM or CD (documents >10 MB):

1. Convert documents greater than 10 MB (>10 MB) into a PDF file as it would normally appear in a paper-sourced document. Please limit the size of the PDF file to less than 150 MB (<150 MB); if more than 150 MB, please break the document into volumes.
2. Transfer onto a CD-ROM. Remember to label the CD-ROM and jewel case or envelope with similar information which appears in the 'subject' line of the cover page (i.e. title of the document, property name and location, submission date, and project identifier such as NPDES, CIWQS, Order Numbers, etc.).
3. Submit/mail to the address listed above with a paper copy of a cover letter, transmittal page, and/or report cover page. See additional information regarding original certifications and other original signature requirements below.

Submitting Checks

The Regional Board does not accept electronic transfer of funds. Please continue to **mail** all checks to the address listed above along with a paper cover letter and an electronic copy of your application/renewal/waiver/etc. on CD-ROM following the guidelines above.

We are developing policy and procedure requirements for the submission of digital signatures (electronic signatures). In the meantime, if documents for which regulations, orders, permits, etc., require an original hand-written signature, such as professional certifications or penalty of perjury oaths, please also convert and insert into the PDF file where appropriate and easily identified. If you are unable to provide an electronic duplicate of the original hand-written signature please indicate on your cover letter when submitting the CD-sourced document.

Regional Board guidance on electronic submissions will be updated periodically to reflect the evolving nature of the technology involved and the experience of those using this technology. Be advised that failure to comply with formatting guidelines for CD-sourced documents may cause a delay in the review of the submission, and you may be requested to perform necessary re-conversion changes. Additionally, we may request that some documents and materials continue to be submitted on paper, particularly large drawings or maps.

If you need additional information regarding Electronic Submittal of Documents please visit the Regional Board's website above and navigate to [Paperless Office](#).