

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

INVESTIGATIVE ORDER NO. R9-2007-0094

**SAN DIEGO UNIFIED SCHOOL DISTRICT MAINTENANCE
1826 IRVING AVENUE
SAN DIEGO, CA**

The California Regional Water Quality Control Board, San Diego Region (herein after Regional Board) finds:

- 1. Unauthorized Discharge of Waste:** In 1989, an unauthorized discharge of petroleum hydrocarbon waste to soil was discovered at the San Diego Unified School District Maintenance Yard, located at 1826 Irving Avenue, San Diego County, California. The waste was discharged from the SDUSD leaking underground storage tank (LUST) system. In 2002, petroleum fuel related constituents were detected by analysis of groundwater beneath the site, and creating a threatened condition of pollution and/or nuisance to the nearby surface water.

- 2. Parties Responsible for the Discharge:** The San Diego Unified School District or "SDUSD" (hereinafter the Discharger) is the party responsible for the discharge. At the time of the unauthorized discharge of waste, SDUSD owned and operated the underground storage tank system on the property. As the owner and operator of the underground storage tank system, the Discharger caused the initial discharge of petroleum waste to soil at the maintenance yard discovered in 1989, and discharge of petroleum waste to groundwater determined through subsequent investigation in 2002.

- 3. Waste Discharges:** Petroleum fuel related constituents have been detected in the soil and groundwater beneath the site. Dissolved phase petroleum hydrocarbons in groundwater are summarized as follows:

Constituent	Maximum Groundwater Concentration ($\mu\text{g/L}$)¹
Benzene	5,700
Toluene	11,000
Ethylbenzene	1,800
Xylenes	12,200

¹ Groundwater Monitoring Report, prepared by Ninyo and Moore, 2002.

Other constituents detected in groundwater are naphthalene, n-propylbenzene, 1,2,4 trimethylbenzene and 1,3,5 trimethylbenzene.

4. Condition of Pollution: The site is located in the Chollas Creek hydrologic area (HA 908.22) of the San Diego Mesa Hydrologic Unit of the Pueblo San Diego watershed. The surface waters in this subarea, Chollas Creek and San Diego Bay, have designated beneficial uses:

- Chollas Creek:
 - a) Non-Contact water recreation,
 - b) Warm freshwater habitat,
 - c) Wildlife habitat, and
 - d) Potential water contact recreation,

- San Diego Bay:
 - a) Industrial service supply,
 - b) Navigation,
 - c) Water contact recreation,
 - d) Non-Contact water recreation,
 - e) Commercial and sport fishing,
 - f) Estuarine habitat,
 - g) Wildlife habitat,
 - h) Rare, threatened or endangered species,
 - i) Marine habitat,
 - j) Migration of aquatic organisms, and
 - k) Shellfish harvesting.

The groundwater resources are excepted from municipal beneficial uses, and do not have any designated beneficial uses.

The discharge of petroleum hydrocarbon constituents degrade the quality of ground water resources, and threaten to impair the designated beneficial uses of the waters as identified in the Basin Plan, thereby creating a condition of pollution or nuisance in water resources.

5. Regulatory Authority and Necessity: California Water Code section 13267 authorizes the Regional Board to investigate the quality of any water of the state within its region. The Regional Board may require Discharger to submit technical and monitoring program reports. These findings provide the Discharger with a written explanation with regard to the need for the reports and identify the evidence that supports the requirement to submit the

reports. The associated costs bear a reasonable relationship to the need for the actions, specifically the protection of water quality and beneficial uses.

6. **Legal and Regulatory Authority:** This Order is based on (1) section 13267 of the Porter-Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with Section 13000); (2) applicable state and federal regulations; (3) all applicable provisions of statewide Water Quality Control Plans adopted by the State Water Resources Control Board and the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) adopted by the Regional Board including beneficial uses, water quality objectives, and implementation plans; (4) State Water Board policies and regulations, including State Water Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*) Resolution No. 88-63 (*Sources of Drinking Water*); California Code of Regulations (CCR) Title 23, Chapter 16, Article 11; CCR Title 23, section 3890 *et. seq.*, and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies.
7. **California Environmental Quality Act (CEQA):** This action is an order to enforce the laws and regulations administered by the Regional Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act pursuant to section 15308 of the California Public Resources Code.

IT IS HEREBY ORDERED, pursuant to section 13267 of the California Water Code, that the Discharger must report results from field investigations on the effects of the discharge and comply with the following directives:

A. TASKS

1. **Ground Water Monitoring:** The Discharger must implement a quarterly ground water monitoring program at the site, as specified in Enclosure 1. Results must be reported commencing with a quarterly report due on **December 30, 2007**.
2. **Site Conceptual Model:** The Discharger must submit a site conceptual model (SCM) no later than **November 3, 2007**. The SCM is a written or pictorial representation of the release scenario and the likely distribution of waste at the site, as well as potential pathways and receptors. The SCM must identify and describe the types of wastes present including their

distribution in space and time, and how the wastes are changing in space and time.

The SCM also must identify the potential, current and future receptors in the area; link potential sources to potential receptors through transport of wastes in the air, soil and water; and identify the fate and transport characteristics of the site. It must adequately describe or show the physical characteristics and properties of the subsurface and identify the environmental issues that need to be investigated (and those issues that do not need to be addressed). The initial SCM must include data interpretations, a discussion of the level of uncertainty of conclusions, outline data gaps remaining in the conceptual model, and describe the additional work needed to fill identified data gaps and make recommendations for the next phase of the cleanup.

The SCM must be refined and updated as site characterization data becomes available. Updates to the SCM should be included, as necessary, in future technical and quarterly status reports submitted.

3. **Workplan for Soil and Ground Water Investigation:** A workplan is due no later than **November 3, 2007**. A complete soil and ground water investigation must be performed to fully delineate the extent of fuel wastes in soil and the ground water. The performance goals in the workplan should address the data gaps identified in the SCM (see Task A.2 above) including:
 - a. Identify all wastes associated with the discharge and the horizontal and vertical extent of the wastes both on and off site to background levels in both the ground water and soil.
 - b. Characterize the geology and hydrogeology of the site with respect to their affects on the environmental transport and mobility of the wastes and waste constituents.
 - c. Determine the source(s), and nature of the discharge in the subsurface, and evaluate the impacts of the wastes on all existing and future sensitive receptors that could be affected by the wastes.

Based on the SCM, submit an adequate workplan and schedule for the next phase of this investigation. The workplan must propose tasks needed to obtain data to fill the data gaps identified in the SCM. An adequate

workplan must be submitted to the Regional Board no later than **November 3, 2007.**

The Discharger shall provide a technical report with the results from full implementation of the workplan. Implementation of the workplan will commence no later than 60 days after submission of the workplan. Within 60 days of the conclusion of the investigation, the Discharger must submit a technical report including an adequate characterization of the source(s), nature and extent (both laterally and vertically) of the discharge, and addresses any waste constituents that have migrated off-site. The information in the report must provide an adequate basis for determining subsequent cleanup and abatement actions.

4. **Corrective Action Plan:** The Discharger must prepare a Corrective Action Plan (CAP) and submit it to the Regional Board no later than **March 30, 2008.** The CAP must satisfy the provisions of section 2725 of the regulations governing underground storage tanks (CCR, Title 23, Chapter 16, Article 11). The CAP must identify and discuss a range of remedial action alternatives that may be implemented to cleanup petroleum fuel wastes and include a schedule for implementing the preferred remediation alternative. The CAP must consider mitigation of the following constituents in the affected ground water zones: benzene, toluene, total xylenes, ethylbenzene, methyl tertiary butyl ether, tertiary butyl alcohol and any other wastes which may have been released by the Discharger. The CAP must include a plan to remove free phase petroleum hydrocarbon product (*i.e.*, light non-aqueous phase liquid or "LNAPL") to the extent practicable, and remove/mitigate any sources of petroleum hydrocarbon wastes.
5. **Interim Remedial Actions:** The Discharger shall implement interim remedial actions to abate or correct the actual or potential effects of the unauthorized release pursuant to California Code of Regulations (CCR) Title 23, Chapter 16, Article 11, section 2722(b) as necessary. Interim remedial actions may include but are not limited to: activities that remove all free product (or LNAPL), removal of petroleum hydrocarbon sources (*e.g.* soil saturated with petroleum hydrocarbons) and/or mitigation of pollution of all surface and ground waters affected by the waste discharge. The Discharger must notify the Regional Board of interim remedial actions, as follows:
 - a. Interim Remedial Actions to mitigate emergency conditions. In writing with a technical report documenting any work performed to mitigate emergency conditions or pollution or nuisance created by the

discharge of petroleum hydrocarbons at the site. The Discharger must submit the technical report to the Regional Board **within 15-days** after completing the work to mitigate emergency conditions under this directive. Or,

- b. Interim Remedial Actions to mitigate non-emergency conditions. In writing with a proposed workplan to mitigation non-emergency conditions and schedule **at least thirty (30) calendar days** prior to initiating any interim remedial actions. The Discharger must implement their interim remedial actions **within 30 calendar days** of submitting the workplan to the Regional Board.

B. PROVISIONS

1. **No Pollution, Contamination or Nuisance:** The storage, handling, treatment, or disposal of soil containing petroleum hydrocarbon waste or polluted ground water must not create conditions of nuisance as defined in California Water Code section 13050(m). The Discharger must properly manage, treat and dispose of wastes and polluted ground water in accordance with applicable federal, state and local regulations.
2. **Good Operation and Maintenance:** The Discharger must maintain in good working order and operate as efficiently as possible any monitoring system, facility or control system installed to achieve compliance with the requirements of this Order.
3. **Ground Water Monitoring Program:** The Discharger must comply with the Ground Water Monitoring Program specified in Enclosure 1 of this Order.
4. **Contractor/Consultant Qualifications:** All technical documents must be signed by and stamped with the seal of a California licensed professional geologist, or a California licensed civil engineer.
5. **Lab Qualifications:** All samples must be analyzed by California State-certified laboratories using approved EPA methods for the type of analysis to be performed. All laboratories must maintain quality assurance/quality control (QA/QC) records for Regional Board review.
6. **Reporting of Changed Owner or Operator:** The Discharger must notify the Regional Board **within 30-days** of any changes in site occupancy or ownership associated with the property described in this Order.


- 7. Penalty of Perjury Statement.** All reports must be signed by the Dischargers' principal executive officer or their duly authorized representative, and must include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
- 8. Electronic Data Submittals:** All information submitted to the Regional Board in compliance with this Order in paper copy format is also required to be submitted electronically via the Internet into the Geotracker database. To comply with section 3893, Title 23, CCR; your update to the Geotracker database must include the following minimum information:
- a. Data generated after the effective date of the regulations by chemical analysis of soil, vapor, or water samples (including surface water, groundwater and influent/effluent water samples from remediation systems), shall be submitted in Electronic Data File (EDF) format.
 - b. The latitude and longitude of any permanent monitoring well for which data is reported in EDF format, accurate to within 1 meter and referenced to a minimum of two reference points from the California Spatial Reference System (CSRS-H), if available.
 - c. The surveyed elevation relative to a geodetic datum of any permanent monitoring well.
 - d. The elevation of groundwater in any permanent monitoring well relative to the surveyed elevation.
 - e. A site map or maps showing the location of all sampling points referred to in the report.
 - f. The depth to the screened interval and the length of screened interval for any permanent monitoring well.
 - g. Boring logs, in PDF format.
 - h. A complete copy of the report, in PDF format, which includes the signed transmittal letter and professional certification.

The Geotracker website address is
<http://www.geotracker.waterboards.ca.gov>. Deadlines for electronic
submittals coincide with deadlines for paper copy submittals

9. **Regulations:** All corrective actions must be in accordance with the provisions of California Code of Regulations Title 23, Chapter 16, section 2600 *et seq.*, and the Cleanup and Abatement Policy in the *Water Quality Control Plan for the San Diego Basin (9)*.

C. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect the water quality needed to sustain beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup, which will cause significant adverse migration of wastes or hazardous substances, are prohibited.



JOHN H. ROBERTUS
Executive Officer
June 18, 2007

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY
SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED
TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE
SECTION 13268 OR REFERRAL TO THE ATTORNEY GENERAL FOR
INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY
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Enclosure 1: Semi-Annual Ground Water Monitoring Program and Quarterly Status Updates

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

**ENCLOSURE 1 of R9-2007-0094
SEMI-ANNUAL GROUND WATER MONITORING PROGRAM
QUARTERLY STATUS UPDATES**

**SAN DIEGO UNIFIED SCHOOL DISTRICT MAINTENANCE
1826 IRVING AVENUE
SAN DIEGO, CA**

- 1. Authority and Purpose:** The Discharger is directed to submit the technical reports required in this Ground Water Monitoring Program (GMP) pursuant to California Water Code section 13267. This GMP is intended to document compliance with Investigative Order No. R9-2007-0094.
- 2. Monitoring:** The Discharger must measure ground water elevations semi-annually in all monitoring wells. Ground water samples from wells must be collected and analyzed using EPA methods 8015 for total petroleum hydrocarbons quantifying gasoline and diesel and EPA method 8260b for all volatile organic compounds including benzene, toluene, ethylbenzene, xylenes, methyl tertiary butyl ether (MTBE), tertiary butyl alcohol (TBA) and all other fuel oxygenates.

Ground water samples shall be collected and analyzed on a semiannual basis in from all groundwater monitoring wells.

The Discharger must sample any new groundwater monitoring or extraction wells semi-annually and analyze ground water samples for fuel related constituents and oxygenates, including the constituents identified in Finding 3 of this Order. The Discharger may provide a written proposal to change the sampling requirements in this Order; any proposed changes are subject to Regional Board approval.

- 3. Semi-annual Ground Water Monitoring Reports:** The Discharger must submit semi-annual ground water monitoring reports to the Regional Board commencing with **January 30, 2008**. Subsequent reports shall be submitted **no later than 30 days** following the end of the reporting period according to the following schedule:

Monitoring Period	Due Date for Report
First Reporting Period (Jan-Jun)	Due no later than July 30
Second Reporting Period (Jul-Dec)	Due no later than January 30

The semi-annual ground water monitoring reports must include:

- A. Transmittal Letter with Penalty of Perjury Statement.** The transmittal letter must discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter must be signed by the Discharger's principal executive officer or their duly authorized representative, and must include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

- B. Ground Water Elevations.** Ground water elevation data must be presented in tabular format with: depth to ground water (in feet below ground surface), top of casing elevations, depths to the top of well screens, length of well screens and total depth for each well included in the monitoring program. For all wells containing floating "free petroleum product" (A.K.A. light non-aqueous phase liquid or LNAPL) include the measured thickness of LNAPL in a tabular format. A ground water elevation map must be prepared for each monitored water-bearing zone with the ground water flow direction and calculated hydrologic gradients(s) clearly indicated in the figures(s). A complete tabulation of historical ground water elevations must be included in the final semi-annual report each year.

- C. Reporting Ground Water Results:** All monitoring reports must:
 - i. Present all ground water sampling data in tabular format. Isoconcentration map(s) must be prepared for constituents of concern (COCs) for each monitored water-bearing zone, as appropriate. Time versus concentration plots and distance versus concentration plots that also show ground water elevations must be prepared for constituents of concern for appropriate wells.

 - ii. Provide a site plot plan which clearly illustrates the locations of monitoring wells, former/current underground storage tank systems (and product piping) and buildings located on the property and immediately adjacent to the property lines of the site.

- iii. Provide a site plot plan with the most recent concentrations of total petroleum hydrocarbons and volatile aromatic hydrocarbons (*e.g.* benzene, toluene, ethylbenzene, total xylenes, MTBE, TBA and other fuel oxygenates).
- iv. The report must provide clear technical interpretations of the ground water data, and describe any significant increases in pollutant concentrations since the last report, any measures proposed to address the increases, any changes to the site conceptual model, any conclusions and recommendations for future action with each report.
- v. The report must describe analytical methods used, detection limits obtained for each reported constituent, and a summary of QA/QC data.
- vi. The report must describe sample collection protocol(s), describe how investigation derived wastes are managed at the site, and include documentation of proper disposal of contaminated well purge water and/or soil cuttings removed from the site.
- vii. Historical ground water sampling results must be listed in tabular form and included in the final semi-annual report each year.

D. Paper Copy and Electronic Data Submittals: All data and reports must be submitted in electronic formats; and the transmittal letter and oversized figures (greater than 8.5 x 11 inches) in paper, and the entire report on a CD attached to the transmittal letter. Deadlines for paper copy submittals also extend to electronic copy submittals. As of January 1, 2005, the applicable electronic reporting requirements include well location data, survey data, sampling data, ground water elevation data, boring logs, well screen information, site maps, and copies of reports in PDF format. All required information must be submitted electronically via the Internet into the Geotracker database in the appropriate electronic deliverable format according to the schedule in Directive No. 3 above. The Geotracker website address is <http://www.geotracker.waterboards.ca.gov>.

E. Ground Water Extraction: If applicable, the report must include ground water extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total ground water volume for the reporting period. The report must also include an estimate of amount of contaminant mass removal, from operation of ground water extraction wells and from other cleanup and abatement systems (*e.g.* soil

vapor extraction), expressed in units of chemical mass per day and mass for the reporting period. Historical total annual mass removal results must be tabulated in the final semi-annual report each year.

4. **Violation Reports:** If the Discharger violates any requirement of this Order, then the Discharger must notify the Regional Board office by telephone as soon as practicable once the Discharger has knowledge of the violation. Regional Board staff may, depending on violation severity, require the Discharger to submit a separate technical report on the violation within five (5) working days of telephone notification.
5. **Quarterly Status Update Reports:** A quarterly status report must be submitted according to the following schedule:

Reporting Period	Due Date for Report
First Quarter (Jan-Mar)	Due no later than April 30
Second Quarter (Apr-Jun)	Due no later than July 30
Third Quarter (Jul-Sep)	Due no later than October 30
Fourth Quarter (Oct-Dec)	Due no later than January 30

The report must describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures), work planned for the following quarter, and SCM update. The report must include a transmittal letter with penalty of perjury statement. All paper copy and electronic submittal requirements of Directive 3.D. above apply to quarterly status reports.


6. **Other Reports:** The Discharger must notify the Regional Board in writing prior to any site activities, such as construction or removal of an underground tank, which have the potential to cause further migration of wastes or waste constituents or which would provide new opportunities for site investigation.
7. **Record Keeping:** The Discharger or their agent must retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six (6) years after origination and must make them available to the Regional Board upon request.

Mr James Bray
Order No. R9-2007-0094 for
RWQCB Case No. 9UT432:
SDUSD Maintenance

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June 18 2007

8. **Ground Water Monitoring Program (GMP) Revisions:** Revisions to the GMP may be ordered by the Regional Board, or at the request of the Discharger. Prior to making GMP revisions, the Regional Board will consider the burden, including costs, of the ground water monitoring reports relative to the benefits to be obtained from these reports.



JOHN H. ROBERTUS
Executive Officer
June 18, 2007