



California Regional Water Quality Control Board

Los Angeles Region



Dan Skopec
Acting Agency Secretary

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

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

Arnold Schwarzenegger
Governor

May 12, 2006

Mr. Anthony Yumori
OTY Incorporated
16820 S. Figueroa St.
Gardena, CA 90248

GENERAL WASTE DISCHARGE REQUIREMENTS FOR INJECTION OF OZONE INTO GROUNDWATER – OTY INCORPORATED, 16820 SOUTH FIGUEROA STREET, LOS ANGELES, CA (FILE NO. R-11706) (ORDER NO. R4-2005-0030, SERIES NO. 038; CI NO. 9049)

Dear Mr. Yumori:

On July 26, 2005, you submitted an application for waste discharge requirements for the injection of ozone into groundwater. The injection of ozone is for remediation of petroleum hydrocarbon impacted groundwater at the subject site.

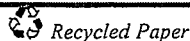
OTY Incorporated (hereinafter Discharger) owns the site located at 16820 South Figueroa Street, Gardena, in the West Coast Groundwater Basin. The site is a commercial topsoil blending facility. The site is located on the east side of South Figueroa Street and West 168th Street and West 170th Street. The surrounding land uses are primarily commercial. Groundwater was encountered in all existing 15 monitoring wells at approximately 30 to 33 feet below ground surface. The nearest water well to this site is well No. 03S13W29F11S, located approximately 4,268 feet away.

In April 1999, two USTs were removed from the site. Between April 1999 – May 2004, 15 groundwater monitoring wells were installed and numerous soil borings advanced to define the extent of petroleum hydrocarbons and to characterize soil and groundwater beneath the site. Historically free product has been detected in wells AEI-MW2, AEI-MW3, AEI-MW5, and AEI-MW7. Last groundwater sampling event in December 2005 did not detect free product in any wells. The highest concentrations of TPHg, benzene, and MTBE detected in soil during these investigations were 6,640; 75; and 306 mg/kg; respectively. Periodic groundwater monitoring also recorded TPHg, TPHd, benzene, and MTBE at concentrations up to 395,000; 370,000; 20,900; and 735 µg/L; respectively.

To remediate the petroleum hydrocarbon impacted groundwater beneath the site, you submitted a remedial action plan dated May 26, 2004, in which you proposed to utilize a C-Sparge system. The proposed C-Sparge system includes installation/construction of six single sparge wells, three nested dual nested sparge wells, control panel, compressor, and ozone generator. The Regional Board approved the remedial action plan on February 9, 2005.

The C-Sparge technology combines low-flow air sparging with ozonation. Ozone will be introduced below water table through sparge points to oxidize contaminants into benign

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Anthony Yumori
OTY Incorporated

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byproducts. These byproducts and residual compounds include acetate, butyrate, formate, propionate, carboxylic acids, tertiary butyl formate, formaldehyde, carbon dioxide, hydrogen peroxide, and oxygen. The release of oxygen with hydrogen peroxide to groundwater promotes aerobic bacterial growth that will consume the byproducts.

We have reviewed the information provided and have determined that the proposed discharge meets the conditions specified in Order No. R4-2005-0030, "*General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites*," adopted by this Regional Board on May 5, 2005.

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2005-0030, Monitoring and Reporting Program No. CI-9049, and Standard Provisions.

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment (May 12, 2006) under Regional Board Order No. R4-2005-0030. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-9049, which will assure that the reports are directed to the appropriate file and staff. Do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of Order No. R4-2005-0030 only to the applicant. A copy of the Order can be download from www.waterboards.ca.gov/losangeles or will be furnished upon request.

If you have any questions, please contact Mr. Rodney Nelson at (213) 620-6119.

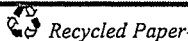
Sincerely,

fw *David A. Bachowski, AEO*
Jonathan S. Bishop
Executive Officer

Enclosures: 1. Board Order No. R4-2005-0030
2. Monitoring and Reporting Program No. CI-9049

cc: Yvonne Shanks, SWRCB, Underground Storage Tank Cleanup Fund
Nancy Matsumoto, Water Replenishment District of Southern California
Tim Smith, Los Angeles County Department of Public Works, Environmental Programs
Division
Joseph Derhake, AEI Consultants, Incorporated
Herman Fuetter, Interinsurance Exchange Auto Club of Southern California
3333 Fairview Road, Costa Mesa, CA 92626
Ross Wright, 426 West 168th Street, Gardena, CA 90248

California Environmental Protection Agency



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

MONITORING AND REPORTING PROGRAM NO. CI-9049
FOR
OTY INCORPORATED
(FILE NO. R-11706)(ORDER NO. R4-2005-0030, SERIES NO. 038; CI NO. 9049)

I. REPORTING REQUIREMENTS

- A. OTY Incorporated (hereinafter Discharger) shall implement this monitoring program on the effective date of this enrollment (May 12, 2006) under Regional Board Order No. R4-2005-0030.

Monitoring reports shall be received by the dates in the following schedule:

<u>Reporting Period</u>	<u>Report Due</u>
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15

The first monitoring report under this Program is due by October 15, 2006.

- B. If there is no discharge or injection during any reporting period, the report shall so state.
- C. By January 30 of each year, beginning January 30, 2007, the Discharger shall submit an annual summary report to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. 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).
- D. 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 discharge requirements, as well as all excursions of effluent limitations.
- E. The Discharger shall comply with requirements contained in Section G of Order No. R4-2005-0030 "Monitoring and Reporting Requirements" in addition to the aforementioned requirements.

II. INJECTION MONITORING REQUIREMENTS

The quarterly reports shall contain the following information regarding the injection activities. If there is no injection, during any reporting period, the report shall so state:

1. Location Map showing injection points.
2. Written summary defining:
 - Depth of injection points and depth to groundwater;
 - Quantity of ozone solutions injected per injection point; and
 - Total amount of ozone injected at site.
3. Monthly visual inspection at each injection well shall be conducted to evaluate the well casing integrity for a period of three months after each injection. The quarterly report shall include a summary of the visual inspection.

III. GROUNDWATER MONITORING PROGRAM

A groundwater-monitoring program shall be designed to detect and evaluate impacts associated with the injection activities. The following shall constitute the monitoring program for upgradient well AEI-MW4 and AEI-MW11, source wells AEI-MW2 and AEI-MW5, downgradient wells AEI-MW7 and AEI-MW10 (See Figure 3.2-1). These sampling stations shall not be changed and any proposed change of monitoring locations shall be identified and approved by the Regional Board Executive Officer (Executive Officer) prior to their use.

The Discharger shall conduct baseline sampling from wells AEI-MW2, AEI-MW4, AEI-MW5, AEI-MW7, AEI-MW10, and AEI-MW11 one or two weeks prior to injection of ozone and regular samplings for the duration of remediation in accordance with the following monitoring program:

<u>CONSTITUENT</u>	<u>UNITS</u> ¹	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
pH ⁵	pH units	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Temperature ⁵	°F	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Oxidation-reduction potential ⁵	millivolts	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Specific conductivity ⁵	µmhos/cm	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Ferrous iron	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Dissolved Oxygen ⁵	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Total petroleum hydrocarbons (as gasoline and as diesel)	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Benzene	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Ethylbenzene	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Toluene	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Total xylenes	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴

MTBE	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
TBA	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
TAME	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
DIPE	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
ETBE	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Ethanol	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Methane	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Formaldehyde	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Acetone	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Total organic carbon	µg/L	grab	Bi-weekly ² /Monthly ³ /Quarterly ⁴
Total dissolved solids	mg/L	grab	Quarterly
Sulfate	mg/l	grab	Quarterly
Chloride	mg/L	grab	Quarterly
Boron	mg/L	grab	Quarterly
Sodium	mg/L	grab	Quarterly
Carbon dioxide	mg/L	grab	Quarterly
Manganese	µg/L	grab	Quarterly
Total iron	µg/L	grab	Quarterly
Alkalinity	µg/L	grab	Quarterly
Total chromium	µg/L	grab	Quarterly ⁶
Chromium six	µg/L	grab	Quarterly ⁶

¹ mg/L: milligrams per liter; µg/L: micrograms per liter; µmhos/cm: microohms per centimeter; °F: degree Fahrenheit.

² Bi-weekly sampling for the first month of injection.

³ Monthly sampling is required for the next two months of injection.

⁴ Quarterly sampling thereafter.

⁵ Field instrument may be used to measure this parameter.

⁶ Monitoring is required only for the well(s) that this constituent is detected in the baseline samples(s).

All groundwater monitoring reports must include, at 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 FREQUENCIES

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 dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following completed 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)

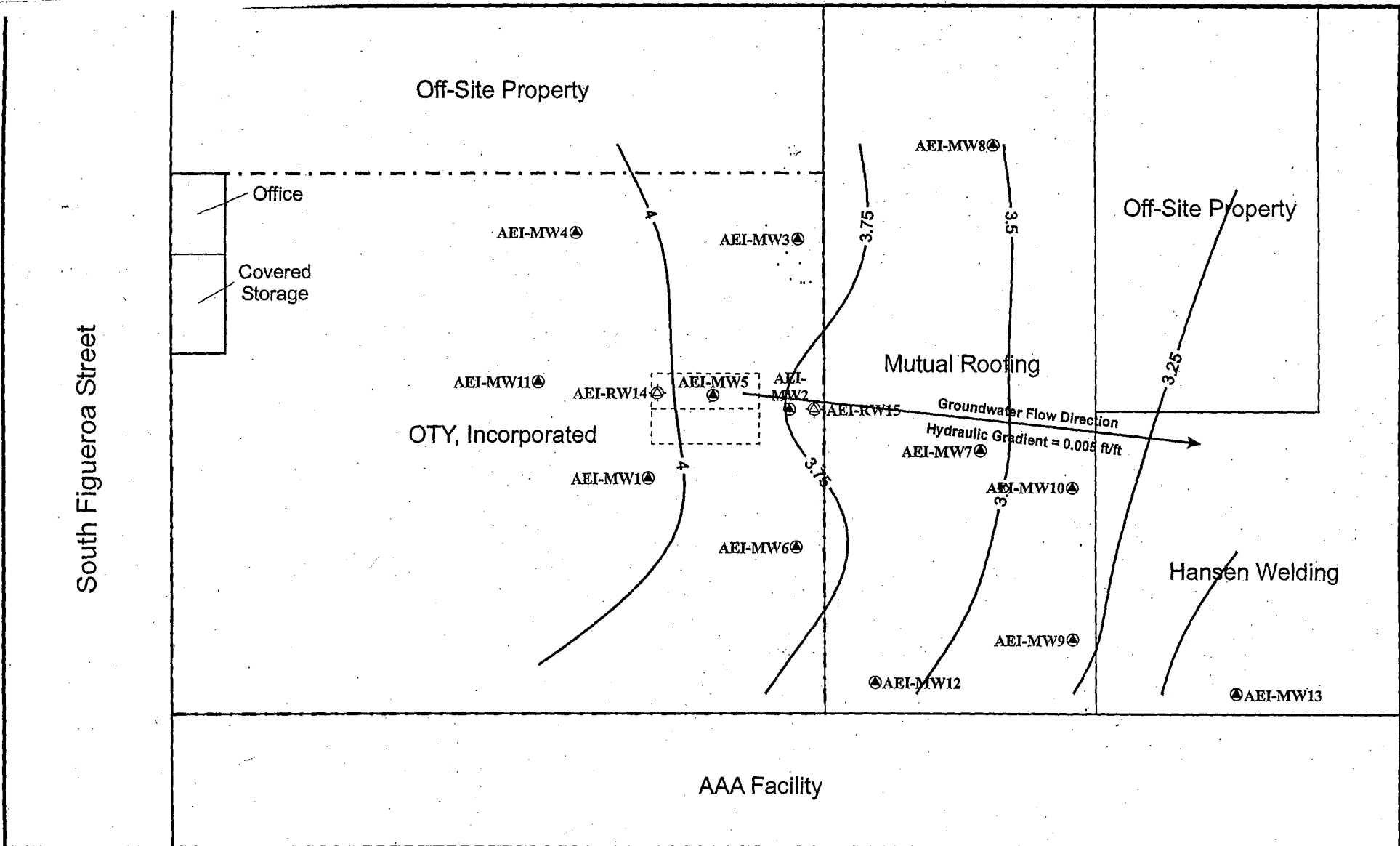
(Title)"

All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger, will be treated as confidential.

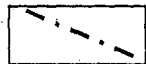
Ordered by:

for David A. Bucherowski, CEO
Jonathan S. Bishop
Executive Officer

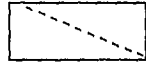
Date: May 9, 2006



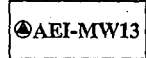
LEGEND



Subject Property Line



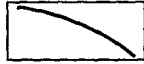
Former Tankhold



Monitoring Well



Remediation Well



Water Table Elevation Contour

Contour Interval = 0.25 feet amsl
 amsl = above mean sea level
 ft/ft = feet per foot

AEI CONSULTANTS

2447 Pacific Coast Highway, Suite 101, Hermosa Beach, CA

May 2005

Approximate Scale

Drawn by: JGS, RN

1" = 50'

FIGURE 3.2-1

Water Table Elevations

16820 South Figueroa Street
 Gardena, California 90248

Job # 22024

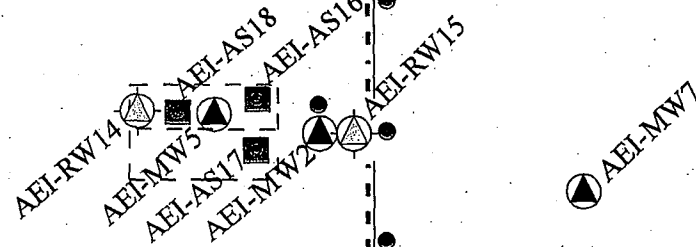
South Figueroa Street

Packing Facility

Roofing Contractor

Covered Office
Storage

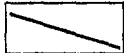
AAA Facility



LEGEND



Subject Site Property Line



Subject Site Improvements



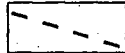
AEI-MW1
Monitoring Well



Combination air sparge and dual ozone injection wells



AEI-RW1
Remediation Well



Former Tank hold



Single Ozone Injection Well

AEI CONSULTANTS

2447 Pacific Coast Highway, Suite 101, Hermosa Beach, CA

Approximate Scale:

Drawn by: Ed Wallick

1" = 50'

FIGURE 2.2-1

Locations of Air Sparge Wells

16820 South Figueroa Street
Gardena, California 90248

Job # 26509