



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## Los Angeles Regional Water Quality Control Board

February 2, 2016

Mr. Daniel Monson  
Tesoro Environmental Resources Company  
400 OceanGate, Suite 600  
Long Beach, CA 90802

Certified Mail with Return Receipt  
7002 0860 0004 5295 4570

### **UNDERGROUND STORAGE TANK PROGRAM—GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER CLEANUP AT PETROLEUM HYDROCARBON FUEL, VOLATILE ORGANIC COMPOUND AND/OR HEXAVALENT CHROMIUM IMPACTED SITES**

**FORMER KING/KARE AUTO CTR (PRIORITY B-1 SITE)  
15045 EAST IMPERIAL HIGHWAY, LA MIRADA  
(FILE NO. I-20811; ORDER NO. R4-2014-0187; CI NO.10206)**

Dear Mr. Monson:

We have received the letter dated June 16, 2015, from your consultant, Orion Environmental Inc. containing the application for the coverage of the General Waste Discharge Requirements (R4-2014-0187) for your proposed pilot test to monitor and evaluate the effectiveness of Klozur activated persulfate, an in-situ chemical oxidation technology (ISCO) injection at the subject site.

The site is a former service station that has been out of service since the early 1990s. The underground storage tanks, cashier's booth, and fuel dispenser islands were removed between 1993 and 1995. The site has been repaved with asphalt and is used for additional parking for nearby service and retail businesses.

Between 1992 and 2012, numerous activities have been conducted including (1) soil and groundwater assessments, (2) groundwater monitoring program, (3) source removal activities, (4) soil remediation, (5) offsite groundwater remediation using an oxygen release compound in La Mirada Creek Park, (6) free product removal, (7) groundwater extraction, (8) dual-phase extraction, and (9) oxygen injection. Site investigation activities have identified impacts in the subsurface, including total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and xylenes (BTEX); methyl tert butyl ether (MTBE); and tert-butyl alcohol (TBA). Maximum concentrations of TPH-g, benzene, MTBE and TBA detected on April 29, 2015, were 3,800 µg/L, 32 µg/L, 39 µg/L and 9,030 µg/L respectively.

The site groundwater pump-and-treat system was shut down in 2009 and decommissioned. In 2011, site groundwater continued to be remediated using oxygen injection. The oxygen injection system is operated onsite to enhance aerobic degradation of petroleum hydrocarbons and oxygenates in groundwater within and immediately down-gradient of the source area. Concentrations of petroleum hydrocarbon have been reduced up to 99 percent from peak concentrations during remediation activities.

CHARLES STRINGER, CHAIR | SAMUEL UNGER, EXECUTIVE OFFICER

320 West 4th St., Suite 200, Los Angeles, CA 90013 | [www.waterboards.ca.gov/losangeles](http://www.waterboards.ca.gov/losangeles)

A total of 19 groundwater monitoring wells (MW-1 through MW-19), one extraction well (EW-1) and three offsite piezometers wells (PZ1 to PZ-3) have been installed onsite to determine the extent of the petroleum hydrocarbon plume in soil and groundwater beneath the subject site. However, there are currently sixteen groundwater monitoring wells onsite and offsite since MW-8, MW-10 and MW-13 were abandoned in August 2015. Extraction well EW-1 was also abandoned. Based on analysis of current and historical groundwater analytical data, concentrations of tert-butyl alcohol (TBA) are increasing in offsite down-gradient wells MW-6 (1,830 µg/L) and MW-17 (9,030 µg/L). Offsite groundwater monitoring well MW-17 reported the highest TBA concentrations in groundwater at the site. TBA concentrations were also reported to be increasing at groundwater monitoring well MW-6, located approximately 120 feet down-gradient of well MW-17. Historical sampling results indicate that the dissolved-phase TBA plume may be travelling towards southeast.

Your consultant is proposing to conduct a pilot test to evaluate the effectiveness of in situ chemical oxidation (ISCO) at the subject site to remediate oxygenates near offsite groundwater monitoring well MW-17 and decrease mass flux down-gradient. During the pilot test, your consultant will conduct directional injections of Klozur® activated persulfate, an ISCO technology, and determine field injection conditions.

We completed our review and approval of the Remedial Action Plan (RAP) on July 10, 2015, and concurred with the proposed, provided all the conditions required to implement the RAP dated June 2, 2015, continue to be met.

We have reviewed your application and determined that the proposed discharge meets the conditions specified in Order No. R4-2014-0187, "Revised General Waste Discharge Requirements for Groundwater Remediation At Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Chromium Impacted Sites (General WDRs)," adopted by the Los Angeles Regional Water Quality Control Board on September 11, 2014.

Enclosed are your Waste Discharge Requirements, consisting of the General WDRs R4-2014-0187 and Monitoring and Reporting Program No. CI-10206.

When submitting technical monitoring reports to the Regional Board per these requirements, please include a reference to Compliance File No. CI-10206, 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.

In accordance with regulations adopted by the State Board in September 2004, regarding electronic submittal of information, UST monitoring reports have been electronically submitted to the State Board GeoTracker system under the UST Global ID T0603704459. To comply with the Monitoring and Reporting Program under this WDRs, you shall upload the WDRs monitoring reports to the Geotracker under the two Global ID T0603704459 (continuing) and WDR100024522 (new). For more information regarding the new Global ID under WDRs, please see ESI training video available at:

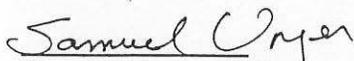
<https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44145287&rKey=7dad4352c990334b>.

February 2, 2016

To avoid paying future annual fees, please submit a written request for termination of your enrollment under the general permit in a separate letter when your project has been completed and the permit is no longer needed. Be aware that the annual fee covers the fiscal year billing period beginning July 1 and ending June 30, the following year. You will pay the full annual fee if your request for termination is made after the beginning of the new fiscal year beginning July 1.

If you have any questions, please contact Mr. Gregg Kwey at (213) 576-6702 or [kwey@waterboards.ca.gov](mailto:kwey@waterboards.ca.gov) for issues regarding underground storage tanks, or Dr. Eric Wu at (213) 576-6683 or [ewu@waterboards.ca.gov](mailto:ewu@waterboards.ca.gov) for issues regarding the WDRs.

Sincerely,

  
Samuel Unger, P.E.  
Executive Officer

Enclosures:

1. General WDRs Order No. R4-2014-0187
2. Monitoring and Reporting Program No. CI-10206

cc: Micah Reich, SWRCB, Underground Tank Cleanup Fund  
Brian Partington, Water Replenishment District of Southern California  
Lusi Mkhitarian, Los Angeles County, Department of Public Health, Environmental Health Division-Water and Sewage  
Tim Smith, Los Angeles County Department of Public Works  
Alex Santini, Orion Environmental Inc.

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

MONITORING AND REPORTING PROGRAM NO. CI-10206

FOR

FORMER KING KARE AUTO CENTER  
15045 EAST IMPERIAL HIGHWAY, LA MIRADA  
(SODIUM PERSULFATE INJECTION FOR GROUNDWATER CLEANUP)  
(ORDER NO. R4-2014-0187, SERIES NO. 055)

I. REPORTING REQUIREMENTS

- A. Tesoro Environmental Resources Company (hereinafter Discharger) shall implement this monitoring program on the effective date of this Monitoring and Reporting Program (MRP). The first monitoring report under this program, for the period from the effective date of this MRP to June 30, 2016, shall be received at the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) by July 15, 2016. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – June	July 15
July – December	January 15

Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.

- B. Laboratory analyses—all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California 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.
- C. The method limits (MLs) employed for analytical analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request from the Regional Board.

Monitoring and Reporting Program CI-10206

- D. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 Code of Federal Regulation Part 136. All QA/QC samples must be run on the dates when samples are actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request from the Regional Board.
- E. Each monitoring report must affirm in writing that "All analyses are conducted at a laboratory certified for such analyses by the State Board, Division of Drinking Water, and in accordance with current United States Environmental Protection Agency guideline procedures, or as specified in this MRP." Proper chain of custody procedure must be followed and a copy of the completed chain of custody form shall be submitted with the report.
- F. Each monitoring report shall contain a separate section entitled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that are needed to bring the discharge into full compliance with Waste Discharge Requirements (WDRs). This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all excursions of effluent limitations.
- G. 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. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- H. If the Discharger performs analyses on groundwater samples more frequently than required by this MRP using approved analytical methods, the results of those analyses shall be included in the report.
- I. 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.
- J. The Discharger should not implement any changes to the MRP prior to receiving Executive Officer's written approval.

- K. In accordance with regulations adopted by the State Board in September 2004 regarding electronic submittal of information, Underground Storage Tank Program (UST) monitoring reports have been electronically submitted to the State Board GeoTracker system under the UST Global ID T0603704459. To comply with the MRP under this WDRs, the Discharger shall upload the WDRs monitoring reports to the Geotracker under the two Global ID T0603704459 (continuing) and WDR100024522 (new).

## II. ISCO NJECTION MONITORING REQUIREMENTS

The reports shall contain the following information regarding injection activities:

1. Written and tabular summary defining the quantity of sodium persulfate injected and a summary describing the days on which the injection system was in operation.
2. Ten injection points are proposed for sodium persulfate injection in the vicinity of monitoring well MW-17 located down-gradient of the site (see Figure 2). Additional locations are to be permitted with Regional Board staff concurrence. Proposal for additional injection points shall be reviewed and approved by the Regional Board. Please note groundwater wells shall not be used as injection points to avoid reduction of groundwater monitoring network, data bias, screening clogging and alteration.

## III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. Groundwater samples shall be collected from up-gradient monitoring well (MW-14), down-gradient monitoring well (MW-6) and cross gradient monitoring wells (MW-5 and MW-18) on a semi-annual basis (see Figure 3 for groundwater flow direction and monitoring wells locations and Figure 4 for representative groundwater TBA plume). Groundwater shall be monitored for the duration of the MRP in accordance with the following discharge monitoring program:

Monitoring and Reporting Program CI-10206

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS <sup>1</sup>
Total petroleum hydrocarbons as gasoline (TPH-g) and as diesel (TPH-d)	µg/L	Grab	• Semi-Annually
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	• Semi-Annually
Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), ether (ETBE), Naphthalene	µg/L	Grab	• Semi-Annually
Ethanol Formaldehyde Acetone	µg/L	Grab	• Semi-Annually
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L	Grab	• Semi-Annually
Oxidation-reduction potential	milivolts	Grab	• Semi-Annually
Dissolved Oxygen	µg/L	Grab	• Semi-Annually
Dissolved ferrous iron	µg/L	Grab	• Semi-Annually
Total Chromium and hexavalent chromium <sup>2</sup>	µg/L	Grab	• Semi-Annually
pH	pH units	Grab	• Semi-Annually
Temperature	<sup>0</sup> F/ <sup>0</sup> C	Grab	• Semi-Annually
Groundwater Elevation	Feet, mean sea level and below ground surface	In situ	• Semi-Annually

<sup>1</sup>. One week before injection and semi-annually thereafter.

<sup>2</sup>. The Discharger is required to monitor for total chromium and hexavalent chromium in the baseline, second and fourth semi-annually sampling. If detected at any of these sampling events, the total chromium and chromium six must be monitored semi-annually thereafter.

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

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

IV. MONITORING FREQUENCIES

Monitoring frequencies may be adjusted to a less frequent basis or parameters dropped by the Executive Officer if the Discharger makes a request and the Executive Officer determines that the request is adequately 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)"

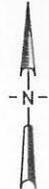
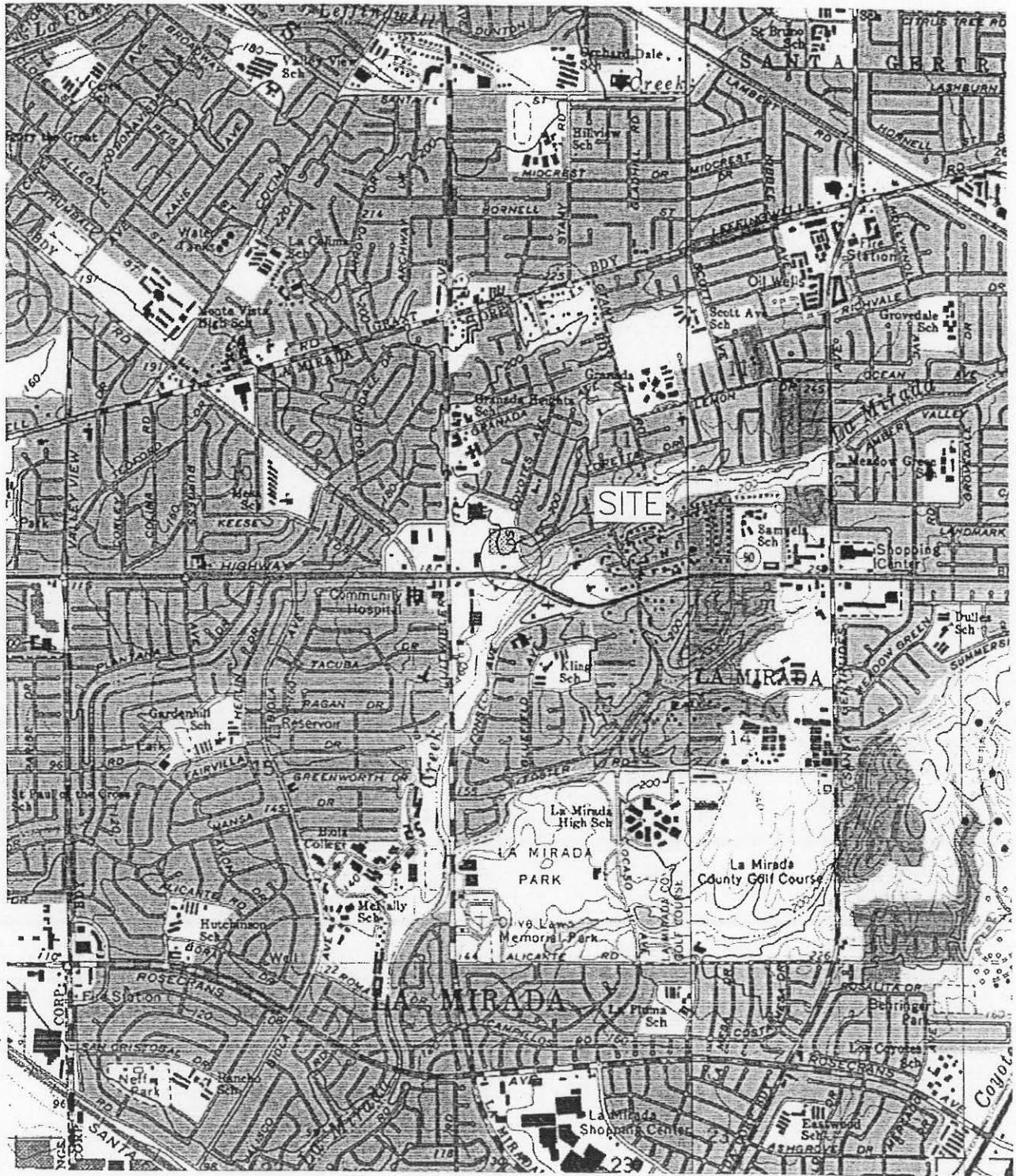
VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the Regional Board.

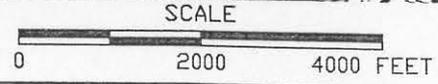
Ordered by: Samuel Unger  
Samuel Unger, P.E.  
Executive Officer

Date: February 2, 2016

12/29/2003 6:38 PM SITELOCATION.dwg

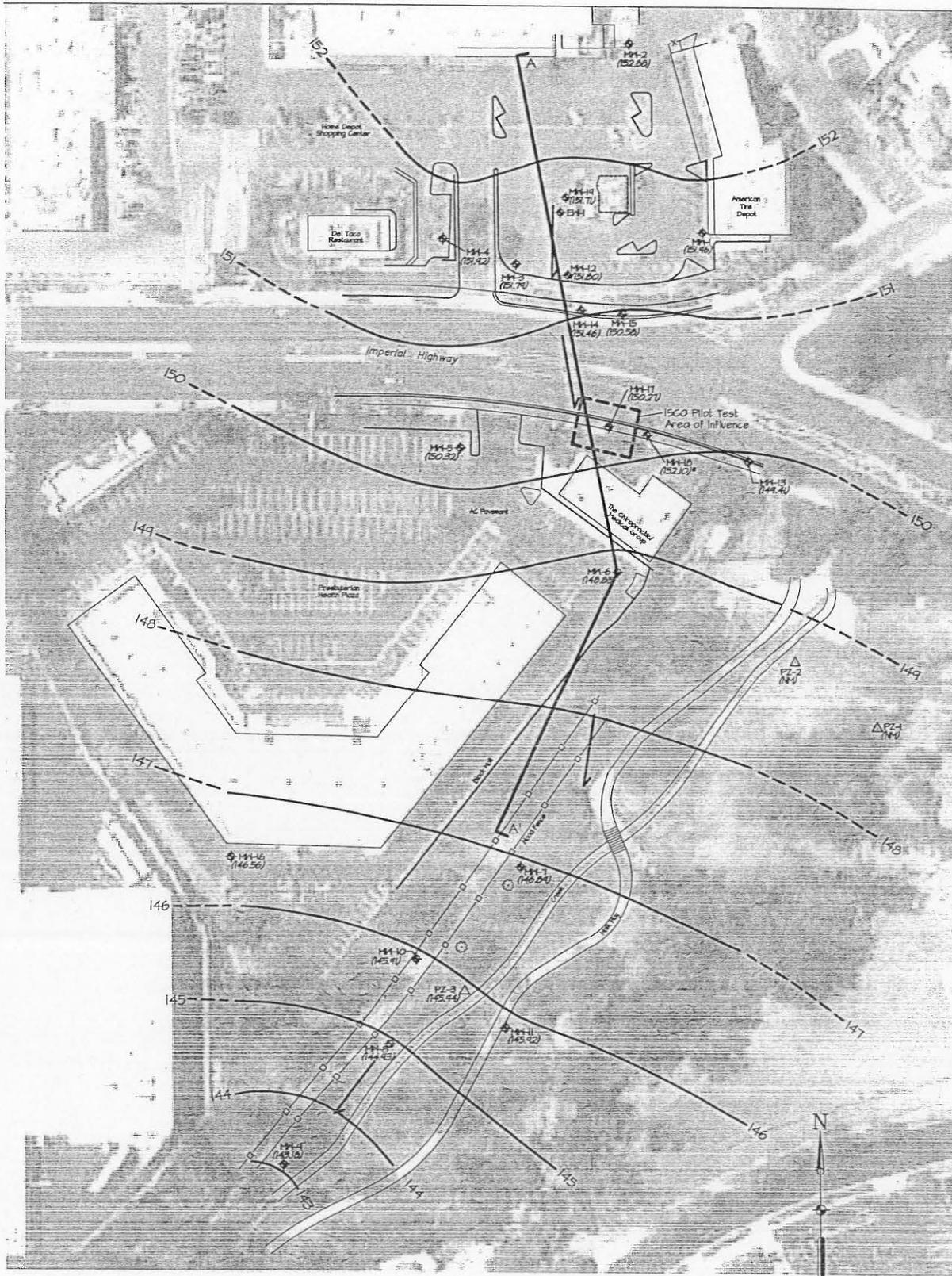


Reference  
 7.5 Minute USGS Topographic Maps of La Habra and Whittier, California Quadrangles  
 Date: 1964 and 1965 Respectively  
 Photorevised 1981 Scale 1:24,000



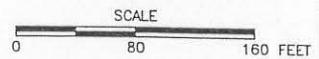
ORION ENVIRONMENTAL INC.			
TESORO - LA MIRADA			
<b>SITE LOCATION MAP</b>			
PROJECT NO. OILM	DRAWN BY MY	CHECKED BY MP	APPROVED BY HJT
FILE NO. SITELOCATION.DWG		FIGURE 1	





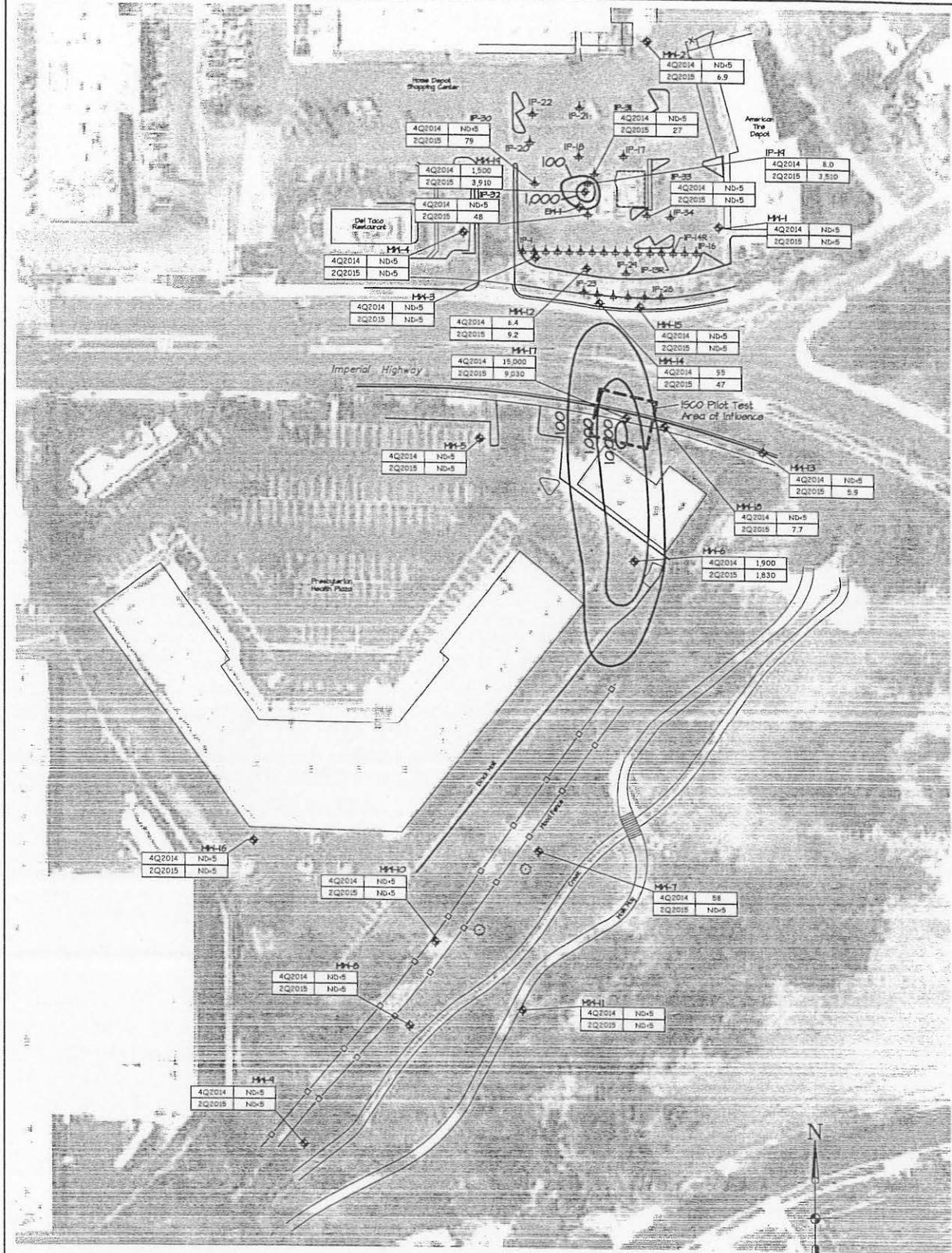
**Legend**

- MH-5 (148.05) ◆ Groundwater Monitoring Well and Groundwater Elevation on 7 April 2015
- PZ-1 (144) △ Piezometer and Groundwater Elevation on 7 April 2015
- NM Not Measured
- Groundwater Flow Direction
- Groundwater Contour, Dashed Where Inferred
- Data Point Not Used When Contouring



REVISION	NO.	BY	DATE	DESCRIPTION
	41	MY	10/5/12	Fourth Quarter 2011 GHI Monitoring
	42	MY	7/5/13	Second Quarter 2012 GHI Monitoring
	43	MY	10/5/13	Fourth Quarter 2012 GHI Monitoring
	44	MY	7/5/13	Second Quarter 2013 GHI Monitoring
	45	MY	10/5/14	Fourth Quarter 2013 GHI Monitoring
	46	MY	7/5/14	Second Quarter 2014 GHI Monitoring
	47	MY	10/5/14	Fourth Quarter 2014 GHI Monitoring
	48	MY	5/1/15	Second Quarter 2015 GHI Monitoring
	49	MY	5/25/15	ISCO Work Plan

ORION ENVIRONMENTAL INC.			
TESORO - LA MIRADA			
<b>GROUNDWATER GRADIENT APRIL 2015</b>			
PROJECT NO. OILM	DRAWN BY MY	CHECKED BY MC	APPROVED BY JPG
FILE NO. OILM11749.DWG	FIGURE 3		



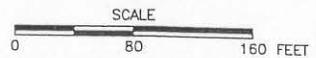
**Legend**

- MH-6 Groundwater Monitoring Well
- IP-20 Oxygen Injection Well

4Q2014	Nd-5	Tert-Butyl Alcohol (TBA) in µg/l as Analyzed Using EPA Method 826-0B
2Q2015	Nd-5	

ND Not Detected at the Reporting Limit Listed

1000 TBA Concentration Contour (µg/l), 2Q 2015



NO.	BY	DATE	DESCRIPTION
4	HY	11/1/11	Fourth Quarter 2011 6M Monitoring
5	HY	1/5/12	Second Quarter 2012 6M Monitoring
6	HY	1/5/13	Fourth Quarter 2012 6M Monitoring
7	HY	7/5/13	Second Quarter 2013 6M Monitoring
8	HY	1/5/14	Fourth Quarter 2013 6M Monitoring
9	HY	7/5/14	Second Quarter 2014 6M Monitoring
10	HY	1/5/15	Fourth Quarter 2014 6M Monitoring
11	HY	5/1/15	Second Quarter 2015 6M Monitoring
12	HY	5/15/15	ISCO Mark Plan

ORION ENVIRONMENTAL INC.			
TESORO - LA MIRADA			
TBA ISOCONCENTRATION CONTOURS 2Q 2015			
PROJECT NO.	DRAWN BY	CHECKED BY	APPROVED BY
OILM	HY	AS	JFG
FILE NO.	OILMIC1612.DWG		FIGURE 4