



Los Angeles Regional Water Quality Control Board

March 26, 2014

Mr. Hamid Hashemian
California Department of Toxic Substances Control
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630

REVISED MONITORING AND REPORTING PROGRAM – IN SITU CHEMICAL OXIDATION FOR GROUNDWATER REMEDIATION AT FORMER CHARLES CAINE FACILITY, INC., 8325 HINDRY AVENUE, LOS ANGELES, CALIFORNIA (FILE NO. 13-007, WDR ORDER NO. R4-2007-0019, SERIES NO. 212, CI-9914, GLOBAL ID WDR100009871)

Dear Mr. Hashemian:

On February 28, 2013, California Department of Toxic Substances Control (DTSC, hereinafter Discharger) was enrolled under the Los Angeles Regional Water Quality Control Board (Regional Board) Order No. R4-2007-0019, "General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound And/Or Hexavalent Chromium Impacted Sites," adopted by this Regional Board on March 1, 2007, for In-Situ Chemical Oxidation (ISCO) by injecting sodium permanganate (NaMnO_4) into shallow impacted groundwater. Upon enrollment of the Waste Discharge Requirements (WDRs), DTSC was required to implement Monitoring and Reporting Program (MRP) No. CI-9914.

On January 28, 2013, DTSC approved the "*Feasibility Study and Remedial Action Plan*" (FS/RAP) dated January 23, 2013 to implement full-scale injection of NaMnO_4 with the following details:

- 1) A total of approximately 4,000,000 gallons of groundwater will be extracted from well CC EW-2 at an approximate flow rate of 13 gallons per minute (gpm) and treated using two 50-micron filters and two 1,000-pound liquid-phase granular activated carbon vessels. The treated groundwater will then be mixed with approximately 142,000 pounds of NaMnO_4 solution (40% by weight) and re-injected to the subsurface using injection wells CC IW-1 through CC IW-4 at an approximate flow rate of 11 gpm. The duration of the full-scale injection project will be approximately one year.
- 2) The Discharger also requested to amend the list of constituents and monitoring frequencies to correspond with the approved FS/RAP.

Following approval of FS/RAP, Regional Board staff concurs with the request, and MRP No. CI-9914 is therefore modified as follows:

1. Revise the sampling frequency to baseline, monthly for the first quarter, and quarterly thereafter for the full scale remediation well network. Existing sampling frequency (bi-weekly in the first

month and monthly in the first quarter) was provided to collect data to evaluate the performance of the pilot test. The revised sampling frequency is sufficient to monitor the full scale remediation at this site.

2. Add monitoring wells CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-12 and EM-18-LEN-MW-14 to the monitoring well network to cover a greater area for the full scale application. Remove CC IW-1 from the monitoring well network as it will be used as an injection well for the full scale application.
3. Remove alkalinity from the list of constituents to be analyzed. Pilot test results indicated that alkalinity has not changed significantly relative to its baseline level following the pilot test. Therefore, further analysis for alkalinity is not necessary.

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports and correspondence 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 WDR100009871. ESI training video is available at:
<https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44145287&rKey=7dad4352c990334b>

Please see Electronic Submittal for GeoTracker Users, dated December 12, 2011 at:
<http://www.waterboards.ca.gov/losangeles/resources/Paperless/Paperless%20Office%20for%20GT%20Users.pdf>

If you have any additional questions, please contact the Project Manager, Mr. David Koo at (213) 620-6155 (dkoo@waterboards.ca.gov) or the Chief of Groundwater Permitting Unit, Dr. Eric Wu at (213) 576-6683 (ewu@waterboards.ca.gov) regarding this matter.

Sincerely,


Samuel Unger, P.E.
Executive Officer

Enclosures: Monitoring and Reporting Program No. CI-9914 revised on March 26, 2014

cc: Mr. Zhong Xiong, AMEC

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

**REVISED MONITORING AND REPORTING PROGRAM NO. CI-9914
FOR
FORMER CHARLES CAINE FACILITY
8325 HINDRY AVENUE,
LOS ANGELES, CALIFORNIA**

**ENROLLMENT UNDER REGIONAL BOARD
ORDER NO. R4-2007-0019
FILE NO. 13-007**

I. REPORTING REQUIREMENTS

- A. The Department of Toxic Substances Control (DTSC) (hereinafter Discharger) shall implement this Monitoring and Reporting Program (MRP) at the Former Charles Caine Facility, Los Angeles, California, the location of which is shown on Figure 1, on the effective date of this enrollment (March 26, 2014) under Regional Board Order No. R4-2007-0019. The first monitoring report under this monitoring program is due by April 15, 2014.

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

- B. If there is no discharge or injection during any reporting period, the report shall so state.
- C. By January 30th of each year, beginning January 30, 2015, 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 discuss 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. Laboratory analyses – all chemical, bacteriological, and toxicity 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 certifications shall be provided each time a new and/or renewal is obtained from ELAP.

- E. The method limits (MLs) employed for effluent 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 Executive Officer. At least once a year, 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.
- F. All 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. Proper chain of custody procedures must be followed and a copy of the chain of custody documentation shall be submitted with the report.
- G. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services 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. For every item where the requirements are not met, the Discharger shall submit a statement of the cause(s), and actions undertaken or proposed which will bring the discharge into full compliance with waste discharge requirements at the earliest possible time, including a timetable for implementation of those actions.
- I. The Discharger shall maintain all sampling and analytical results, including strip charts, 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.
- 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.
- K. Any mitigation/remedial activity including any pre-discharge treatment conducted at the site must be reported in the quarterly monitoring report.
- L. 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.

- M. The Discharger shall comply with requirements contained in Section G of Order No. R4-2007-0019 "*Monitoring and Reporting Requirements*" in addition to the aforementioned requirements.

II. INJECTION MONITORING REQUIREMENTS

Reagent Injections – In-Situ Chemical Oxidation (ISCO) injections shall be performed at the site using sodium permanganate (NaMnO_4) solution at a concentration of approximately 2 grams per liter (g/L). The quarterly reports shall contain the following information regarding the injection activities:

1. Location map showing injection wells for the NaMnO_4 injection.
2. Written summary defining:
 - Depth of injection;
 - Total volume and concentration of the reagent solution injected;
 - Reagent injection flow rate; and
 - Reagent injection pressures.

III. GROUNDWATER MONITORING PROGRAM FOR THE REMEDIATION PROJECT

A groundwater monitoring program shall be designed to detect and evaluate impacts associated with the injection activities. Table 1, below, identifies the constituents that will be analyzed during the baseline sampling event prior to the injection date and subsequent groundwater monitoring events during the monitoring period for the purpose of evaluating the effectiveness of the injection.

The following shall constitute the Monitoring and Reporting Program for groundwater monitoring wells: CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14. The locations of the monitoring wells are shown on Figure 2, attached. 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.

TABLE 1
 Groundwater Monitoring Constituents

<u>CONSTITUENT</u>	<u>UNITS</u> ¹	<u>SAMPLE LOCATION</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Water Temperature ²	°C	CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Specific Conductance ²	µS/cm	CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Dissolved Oxygen ²	mg/L	CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
pH ²	pH units	CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Oxidation Reduction Potential ²	mV	CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter

<u>CONSTITUENT</u>	<u>UNITS</u> ¹	<u>SAMPLE LOCATION</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Permanganate (Colorimetry via Photospectrometer [SM4500] and visual observation) ²	mg/L	CC MW-1, CC MW-2, CC MW-4, CC MW-5, CC MW-11, CC MW-12, CC EW-1	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Total Dissolved Solids (EPA 160.1, SM 2540C)	mg/L	CC EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12 and EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Boron (EPA Method 6010B)	mg/L	CC MW-3, CC MW-8, CC MW-4, CC MW-11	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Sulfate (EPA Method 300)	mg/L	CC MW-3, CC MW-8, CC MW-4, CC MW-11	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Chloride (EPA Method 300)	mg/L	CC MW-1, CC MW-2, CC MW-4, CC MW-5, CC MW-11, CC MW-12, CC EW-1	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Dissolved Metals (EPA Method 6010B/7000/7470A)	mg/L	CC MW-1, CC MW-2, CC MW-4, CC MW-5, CC MW-11, CC MW-12, CC EW-1	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter
Hexavalent Chromium (EPA Method 218.6)	mg/L	CC MW-1, CC MW-2, CC MW-4, CC MW-5, CC MW-11, CC MW-12, CC EW-1	Low-flow sample	Baseline and annual thereafter
Chlorinated VOCs (EPA Method 8260B)	mg/L	EW-1, CC MW-1, CC MW-2, CC MW-3, CC MW-4, CC MW-5, CC MW-6, CC MW-8, CC MW-11, CC MW-12, EM-18-LEN-MW-14	Low-flow sample	Baseline, monthly for the first quarter, and quarterly thereafter

¹ mg/L: milligrams per liter; µg/L: micrograms per liter; µS/cm: microsiemens per centimeter; mV: millivolts; °C: degree Celsius.

² Field instrument can be used to test for this constituent.

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)"

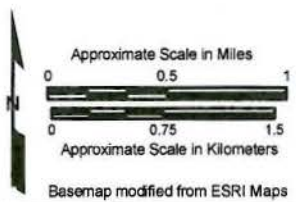
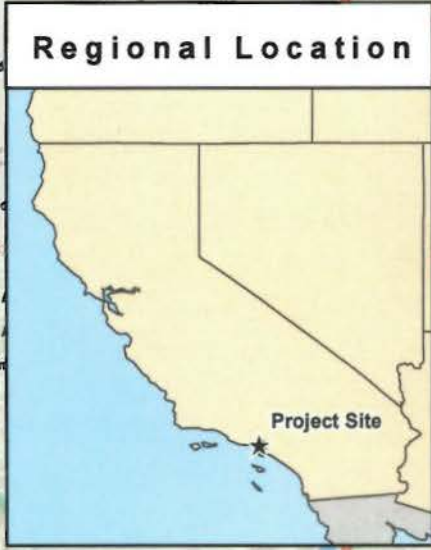
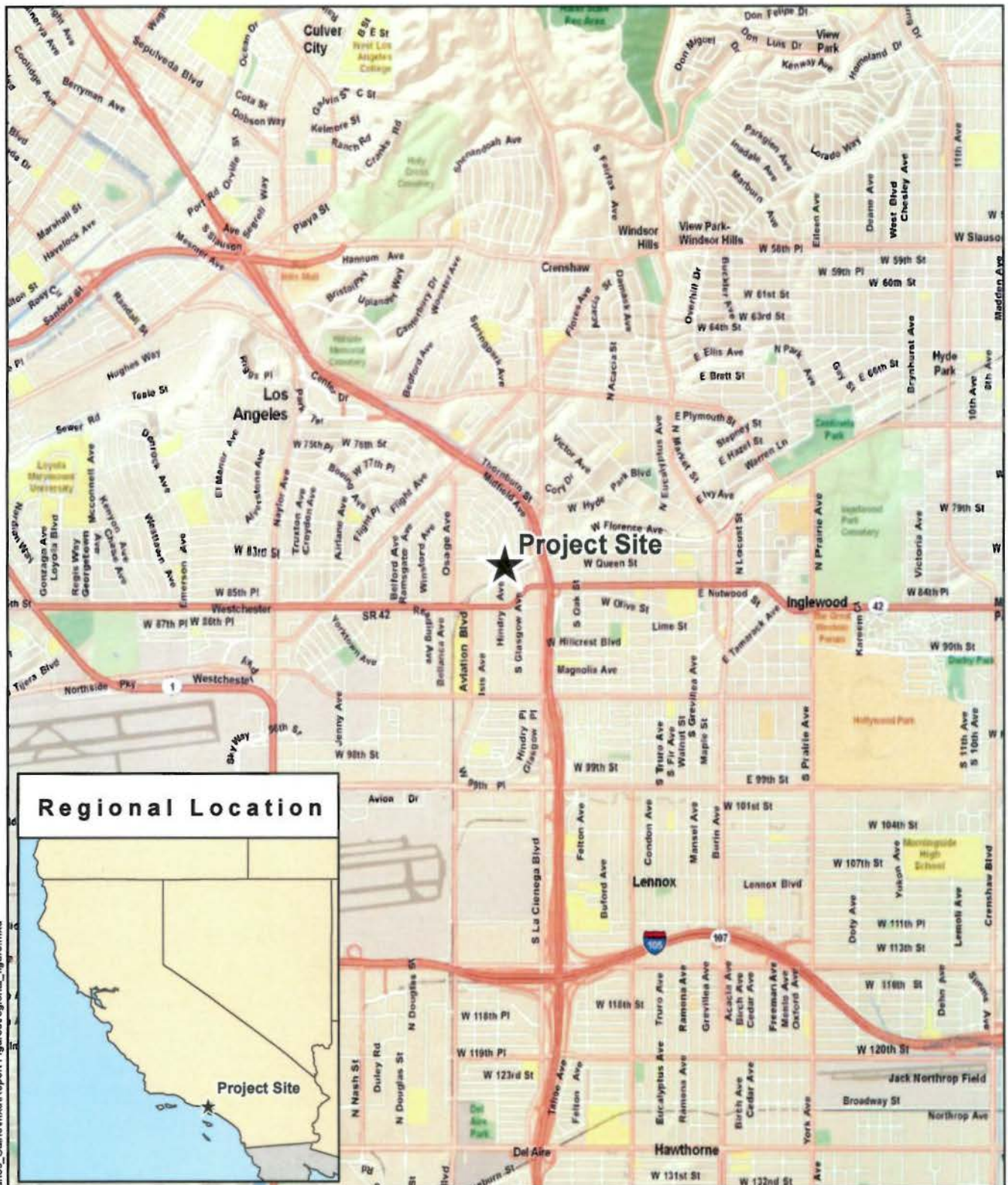
VI. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

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, correspondence, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100009871.

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

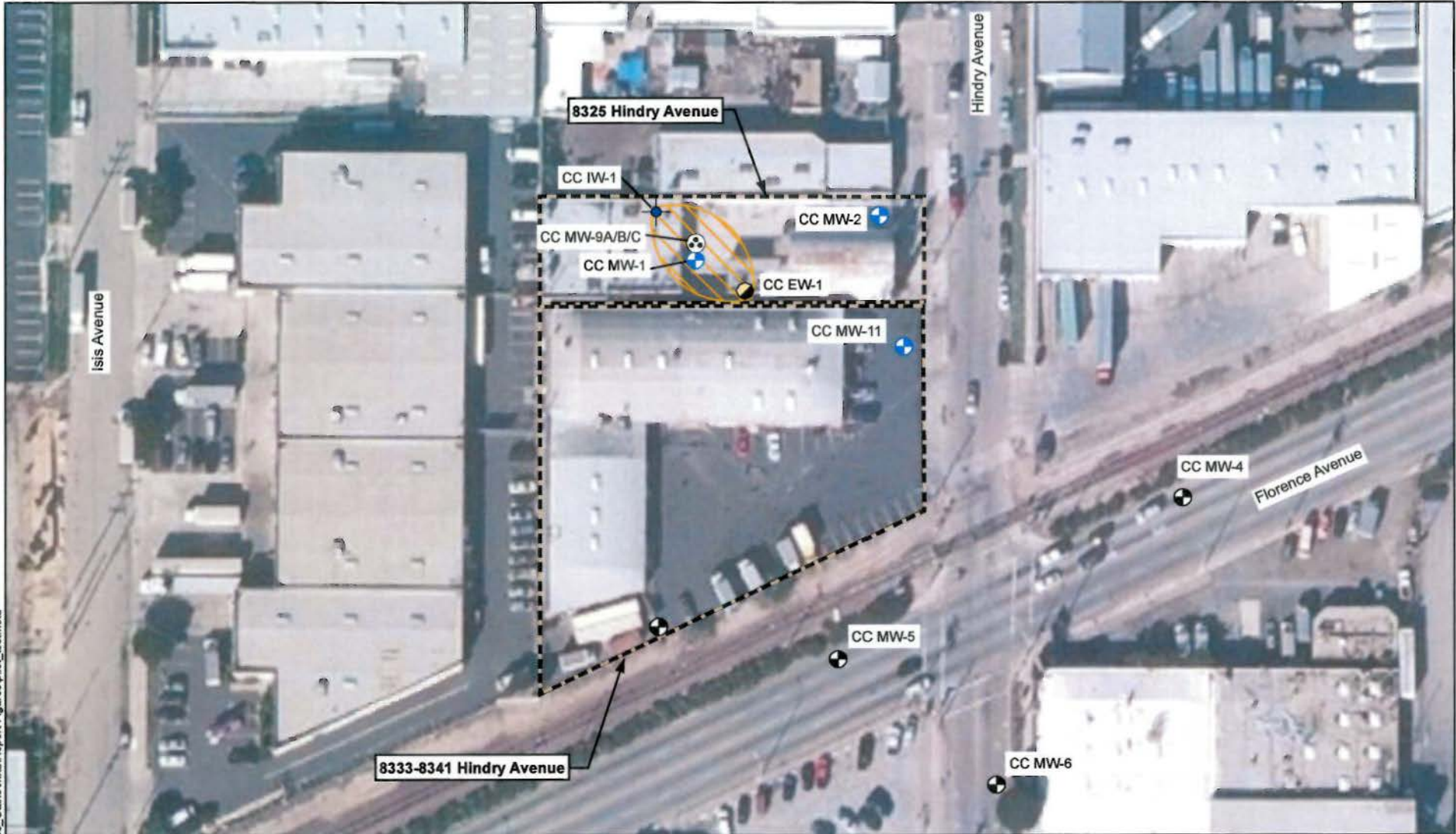
Date: March 26, 2014



SITE LOCATION MAP
 Former Charles Caine Company, Inc.
 8325 Hindry Ave
 Los Angeles, California








By: MAC	Date: 9/21/2012	Project No: NB11161060
		Figure 1

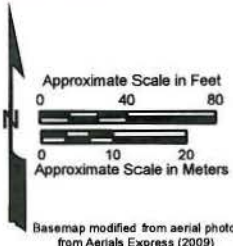
Path: R:\sd11\Environmental\CCJ_Charles_Caine\mxd\Report Figures\regional_figure.mxd



Path: R:\ed11\Environmental\CCI_Charles_Caine\mxd\Report_Figures\pilot_test.mxd

Explanation

-  Performance groundwater monitoring well location
-  Groundwater monitoring well location
-  Triple nested groundwater monitoring well location
-  Proposed extraction well
-  Proposed injection well
-  Proposed approximate area of groundwater treatment zone
-  Property boundary



**PILOT TEST MONITORING WELL NETWORK
 AND TREATMENT ZONE**
 Former Charles Caine Company, Inc.
 8325 Hindry Avenue
 Los Angeles, California

By: mac	Date: 02/12/2013	Project No: NB11161060
---------	------------------	------------------------



Figure 2