



GAVIN NEWSOM  
GOVERNOR



JARED BLUMENFELD  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## Los Angeles Regional Water Quality Control Board

August 13, 2019

Mr. Ronald Lyons  
Camino Investments, LLC  
P.O. Box 3254  
Manhattan Beach, CA 90266

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
CLAIM NO. 7017 1450 0002 1559 0911

**REVISED MONITORING AND REPORTING PROGRAM NO. 10180, FOR FULL-SCALE ENHANCED IN-SITU BIOREMEDIATION – CAMINO CENTER (FORMERLY CAMINO DRY CLEANERS), 16120 – 16210 CRENSHAW BOULEVARD, GARDENA, CALIFORNIA 90249 (FILE NO. 15-100, CI NO. 10180, ORDER NO. R4-2014-0187, SERIES NO. 043, GLOBAL ID WDR100026164)**

Dear Mr. Lyons:

On March 7, 2016, the Los Angeles Regional Water Quality Control Board (Regional Water Board), enrolled Camino Investments, LLC (Discharger) under General Waste Discharge Requirements for In-Situ Groundwater Remediation and Groundwater Re-injection, Order No. R4-2014-0187 (WDR) with Monitoring and Reporting Program (MRP) No. CI-10180, for the injection of potassium bicarbonate buffered lecithin (an amphiphilic fat), and *Dehalococcoides* (DHC) mixture as part of an enhanced in-situ bioremediation (EISB) pilot test at the site referenced above (Site). The pilot test injection of lecithin and DHC mixture occurred on August 20-21, 2018. The primary chemicals of concern were perchloroethene (PCE), trichloroethene (TCE), and dichloroethene (DCE).

On April 22, 2019, Partner Engineering and Science, Inc., on behalf of the Discharger, submitted an Amended Report of Waste Discharge (AROWD) for full-scale EISB to the Regional Water Board. The AROWD included the March 12, 2019, Enhanced In-Situ Bioremediation Pilot Test Report (Report) which includes the proposed scope of work for the full-scale EISB. In an April 26, 2019 letter, the County of Los Angeles Fire Department, Site Mitigation Unit approved the remedial actions proposed in the AROWD.

The full-scale EISB project includes injection of approximately 59,103 gallons of 2.5% by volume lecithin (as PeroxyChem ELS®) solution, buffered with 1,350 pounds of potassium bicarbonate. Approximately 4.8 gallons (18 liters) of KB-1 (DHC) concentrate, with 10 times the DHC concentration of regular KB-1 will also be injected. These amendments are approved for use under the WDR.

IRMA MUÑOZ, CHAIR | RENEE PURDY, EXECUTIVE OFFICER

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

The planned injection will use 83 direct push locations at the approximate locations shown in Figure 3 of the MRP. The treatment area is approximately 31,355 square feet. The lecithin product and the DHC will be uniformly distributed among the locations in an interval between approximately 25 and 45 feet below grade (bg). The injection will occur as the tool moves downward and will be at a flowrate between 2 and 7 gallons per minute. Initial injection pressure is expected to be between 60 and 200 pounds per square inch (psi) and sustained injection pressure is expected to be between 30 and 150 psi.

Regional Water Board staff has reviewed the AROWD, the Report, information in our files, and related emails, and has determined that the proposed discharge modification meets the conditions specified in the WDR. For the injection proposed in the AROWD and the Report, you shall implement the revised MRP No. CI-10180 (attached), with a maximum discharge (injection volume) of approximately 60,000 gallons of amendment solutions. Should changes to the discharge be needed, revised calculations and/or engineering drawings showing the changes must be filed with the Regional Water Board a minimum of 30 days prior to the proposed implementation date for the changes. The Discharger must receive approval from the Regional Water Board for such changes prior to implementation.

MRP No. CI-10180 requires you to implement the monitoring program on the effective date of this enrollment (August 13, 2019) under Regional Water Board Order No. R4-2014-0187.

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 portable document format (PDF) electronic copies of monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID **WDR100026164**. Please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.


For all parties who upload electronic documents to GeoTracker, it is no longer necessary to email a copy of these documents to [losangeles@waterboards.ca.gov](mailto:losangeles@waterboards.ca.gov) or submit hard copies to our office. The Regional Water Board will no longer accept documents (submitted by either hard copy or email) already uploaded to GeoTracker. Please see Electronic Submittal to the Los Angeles Regional Water Board for GeoTracker Users dated December 12, 2011 for further details at:

<http://www.waterboards.ca.gov/losangeles/resources/Paperless/Paperless%20Office%20for%20OGT%20Users.pdf>

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 (July 1).

If you have any questions, please contact the Project Manager, Mr. Peter Raftery at (213) 620-6156 ([Peter.Raftery@waterboards.ca.gov](mailto:Peter.Raftery@waterboards.ca.gov)), or the Chief of the Groundwater Permitting Unit, Dr. Eric Wu at (213) 576-6683 ([Eric.Wu@waterboards.ca.gov](mailto:Eric.Wu@waterboards.ca.gov)).

Sincerely,



Renee Purdy  
Executive Officer

Attachment: Revised Monitoring and Reporting Program No. CI-10180

cc (via email): Richard Clark, County of Los Angeles Fire Department  
Rodolfo Nardes, Partner Engineering and Science, Inc.  
Robert Trayler, Partner Engineering and Science, Inc.

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

REVISED MONITORING AND REPORTING PROGRAM NO. CI-10180  
FOR  
CAMINO CENTER (FORMER CAMINO DRY CLEANERS)  
16120-16210 CRENSHAW BOULEVARD  
GARDENA, CA 90249

ENROLLMENT UNDER REGIONAL WATER BOARD  
ORDER NO. R4-2014-0187 (SERIES NO. 043)  
FILE NO. 15-100

I. REPORTING REQUIREMENTS

- A. Camino Investments, LLC (hereinafter Discharger) shall implement this Monitoring and Reporting Program (MRP) at the Camino Center (Former Camino Dry Cleaners) property at 16120-16210 Crenshaw Boulevard, Gardena, California (Figures 1, 2, and 3), on the effective date of this enrollment (**August 13, 2019**) under Los Angeles Regional Water Quality Control Board (Regional Water Board) Order No. R4-2014-0187. The first monitoring report under this monitoring program is due by **October 30, 2019**.

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 30
April – June	July 30
July – September	October 30
October – December	January 30

- B. If there is no discharge (injection) during any reporting period, the report shall so state.
- C. By January 31<sup>st</sup> of each year, beginning January 31, 2020, the Discharger shall submit an annual summary report to the Regional Water 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.
- D. Laboratory analyses – all chemical, bacteriological, and/or toxicity analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW) Environmental Laboratory Accreditation Program (ELAP). The only exceptions include *Dehalococcoides*, which is currently not subject to certification by ELAP or the National Environmental Laboratory Accreditation Program (NELAP), and water temperature, specific conductivity, dissolved oxygen, pH, and oxidation-

reduction potential, which will be measured in the field with calibrated field instruments. A copy of the laboratory certifications shall be provided each time a new analysis is used and/or renewal is obtained from ELAP and/or NELAP.

- E. The method limits (MLs) employed for 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 Water Board staff.
- G. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the SWRCB-DDW ELAP, 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 3 years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Water 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 Waste Discharge Requirements (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. R4-2014-0187 "*Monitoring and Reporting Requirements*" in addition to the aforementioned requirements.

## II. INJECTION MONITORING REQUIREMENTS

The monitoring requirements assume implementation of the proposed full-scale enhanced in-situ bioremediation (EISB) project as described in the April 22, 2019, Amended Report of Waste Discharge (AROWD), and the March 12, 2019, Enhanced In-Situ Bioremediation Pilot Test Report (Report) therein, which includes the proposed scope of work for the full-scale EISB.

The AROWD and Report indicate a lecithin microemulsion (ELS™) will be used as the organic carbon substrate and potassium bicarbonate will be used as a pH buffer. The buffered organic carbon substrate with KB-1™ (a *Dehalococcoides* mixture) will be injected into groundwater at 83 direct push locations (Figure 3) during a single injection event lasting approximately 2 to 3 weeks.

The quarterly reports shall contain the following information regarding the injection activities:

1. Location map showing injection points and monitoring wells.
2. Written summary providing:
  - Injection period (date and time)
  - Injection depths (each direct push location)
  - Injected volume (daily and total)
  - Injection flow rates (daily minimum and maximum), and
  - Injection pressures (daily minimum and maximum)
3. Visual inspection at each active injection location shall be conducted daily (at minimum) during injection to evaluate the annular seal integrity. The reports shall include a written summary of the visual inspection and include photographs of the injection area taken during the inspection.

## 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 a baseline sampling event before injection begins, one month after injection begins, and quarterly beginning three months after injection begins.

The monitoring program shall assess: (i) performance of the EISB by sampling monitoring wells upgradient of the treatment area and within the treatment area, and (ii) potential

downgradient impacts of the EISB by sampling downgradient monitoring wells. Given these monitoring objectives, the following groundwater monitoring wells (figure 3) shall be included in the monitoring program:

Upgradient of the treatment area: MW-10 (screened 13 - 38 feet)

Within the test area: MW-12 (screened 20 - 40 feet) and MW-13 (screened 20 - 40 feet)

Down gradient of test area: MW-15 (screened 21 - 36 feet) and MW-19 (screened 20 - 30 feet)

The monitoring locations shall not be changed, and any proposed changes shall be provided to and approved by the Regional Water Board Executive Officer (Executive Officer) prior to implementation.

**TABLE 1 – GROUNDWATER MONITORING CONSTITUENTS**

<u>CONSTITUENT</u>	<u>UNITS</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Water Temperature <sup>(1)</sup>	°C	Grab	Baseline, daily during injection, one month following injection, and quarterly thereafter
Specific Conductivity <sup>(1)</sup>	µS/cm	Grab	Baseline, daily during injection, one month following injection, and quarterly thereafter
Dissolved Oxygen <sup>(1)</sup>	mg/L	Grab	Baseline, daily during injection, one month following injection, and quarterly thereafter
pH <sup>(1)</sup>	pH units	Grab	Baseline, daily during injection, one month following injection, and quarterly thereafter
Oxidation-Reduction Potential <sup>(1)</sup>	mV	Grab	Baseline, daily during injection, one month following injection, and quarterly thereafter
Volatile Organic Compounds (VOCs) – complete suite (EPA Method 8260B)	µg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Dissolved Gases (ethene, ethane, methane) (EPA Method RSK-175)	µg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Sulfate (SM 4500)	mg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Chloride (EPA Method 300)	mg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Nitrate (EPA Method 300)	mg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Total Dissolved Solids (SM 2540C)	mg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Boron (EPA Method 6010B)	mg/L	Grab	Baseline, one month following injection, and quarterly thereafter
Manganese (EPA Method 6010B)	mg/L	Grab	Baseline, one month following injection, and



			quarterly thereafter
Total Organic Carbon (SM 5310B)	mg/L	Grab	Baseline, one month following injection, and quarterly thereafter
<i>Dehalococcoides</i> species	gene copies/mL	Grab	Baseline, one month following injection, and quarterly thereafter

**Notes:**

EPA - Environmental Protection Agency

SM - Standard Method

°C - degrees Celsius

µS/cm - microsiemens per centimeter

mg/L - milligrams per liter

mV - millivolts

µg/L - micrograms per liter

mL - milliliter

(1) Measured in the field with calibrated field instruments

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. 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 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)

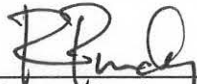
\_\_\_\_\_(Title)

VI. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

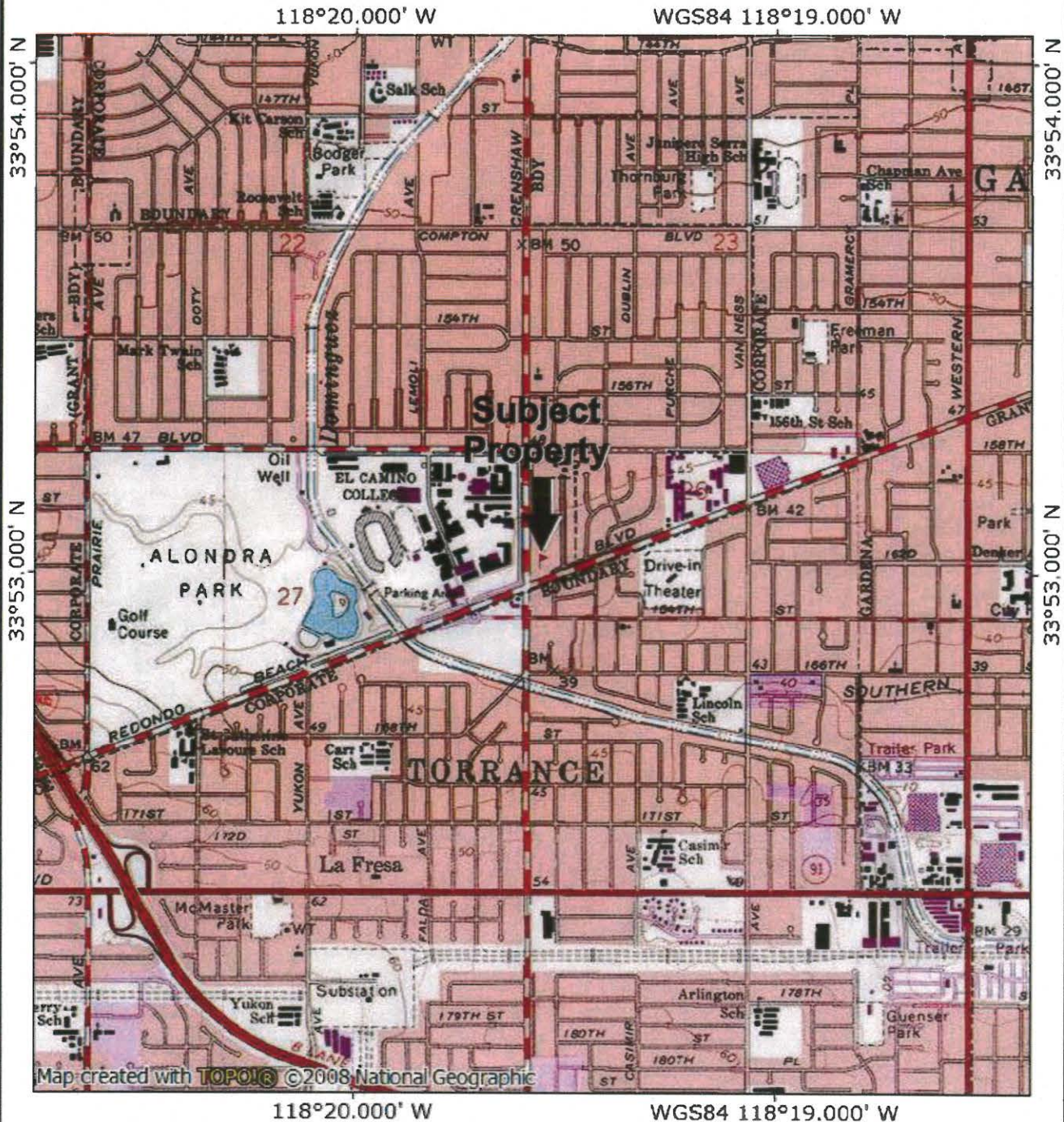
The Discharger shall comply with the Electronic Submittal of information (ESI) requirements by submitting all reports required under the MRP, including groundwater monitoring data, discharge location data, correspondence, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100026164.

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.

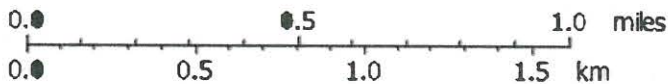
Ordered by:

  
\_\_\_\_\_  
Renee Purdy  
Executive Officer

Date: August 13, 2019



Map created with TOPOIG ©2008 National Geographic



TN★/MN  
12 1/2  
12/10/14

USGS INGLEWOOD, CA QUADRANGLE  
VERSION: 1978 CURRENT AS OF: 1981

TITLE: SITE VICINITY MAP			
FIGURE: 1	PREPARED BY: CS	DATE: MARCH 2019	PROJECT NUMBER: SM13-107014

ADDRESS:  
CAMINO CENTER  
16120-16210 CRENSHAW BOULEVARD  
GARDENA, CALIFORNIA 90249

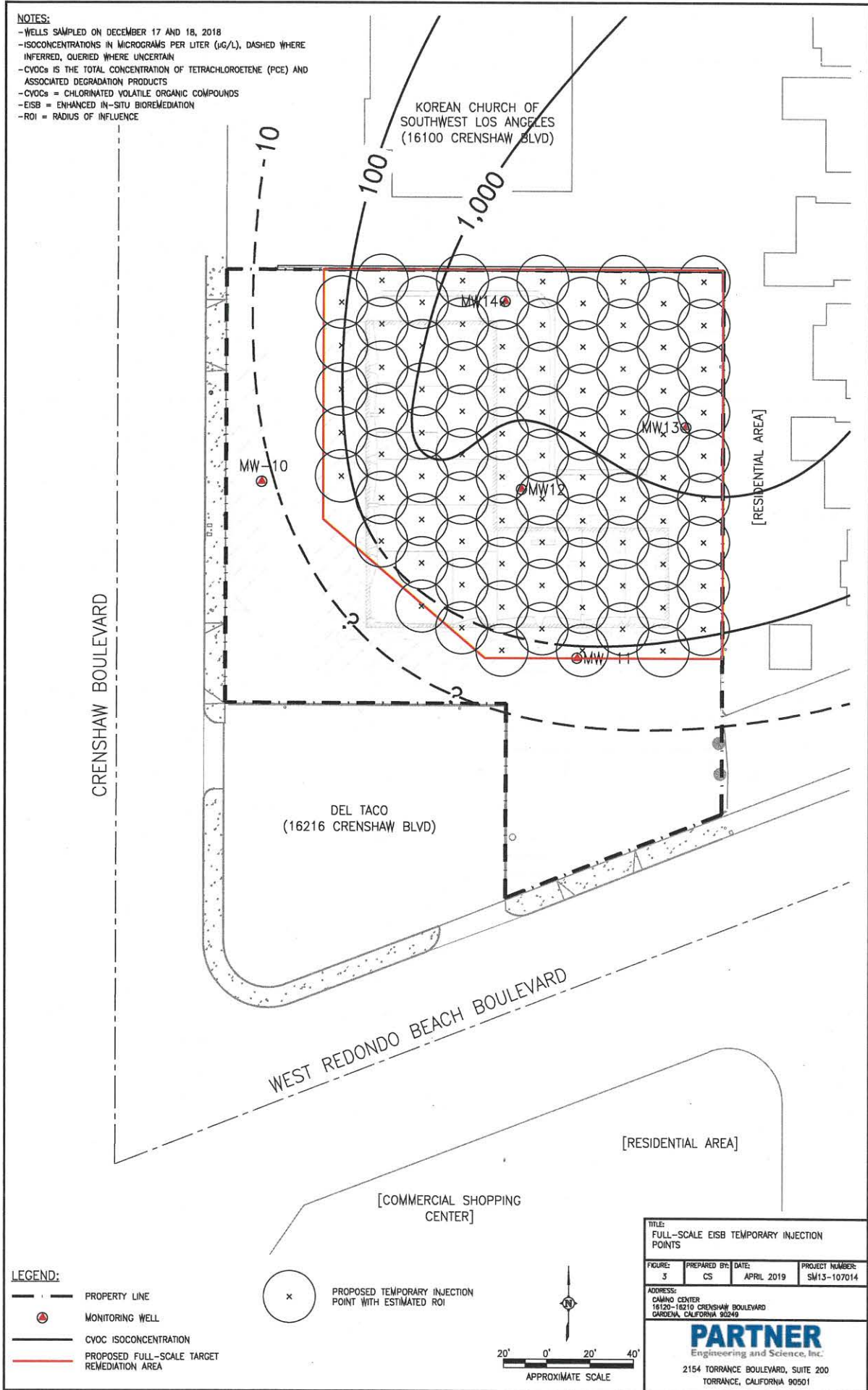
**PARTNER**  
Engineering and Science, Inc.

2154 TORRANCE BOULEVARD, SUITE 200  
TORRANCE, CALIFORNIA 90501



**NOTES:**

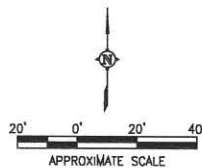
- WELLS SAMPLED ON DECEMBER 17 AND 18, 2018
- ISOCONCENTRATIONS IN MICROGRAMS PER LITER (µG/L), DASHED WHERE INFERRRED, QUERIED WHERE UNCERTAIN
- CVOCs IS THE TOTAL CONCENTRATION OF TETRACHLOROETENE (PCE) AND ASSOCIATED DEGRADATION PRODUCTS
- CVOCs = CHLORINATED VOLATILE ORGANIC COMPOUNDS
- EISB = ENHANCED IN-SITU BIOREMEDIATION
- ROI = RADIUS OF INFLUENCE



**LEGEND:**

- PROPERTY LINE
- MONITORING WELL
- CVOC ISOCONCENTRATION
- PROPOSED FULL-SCALE TARGET REMEDIATION AREA

PROPOSED TEMPORARY INJECTION POINT WITH ESTIMATED ROI



TITLE: FULL-SCALE EISB TEMPORARY INJECTION POINTS			
FIGURE: 3	PREPARED BY: CS	DATE: APRIL 2019	PROJECT NUMBER: SM13-107014
ADDRESS: CAMINO CENTER 16120-16210 CRENSHAW BOULEVARD GARDENA, CALIFORNIA 90249			
 Engineering and Science, Inc. 2154 TORRANCE BOULEVARD, SUITE 200 TORRANCE, CALIFORNIA 90501			