



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

November 29, 2016

Mr. David Curnock
United Technologies Corporation
EH&S 9FS – MS101
9 Farm Springs Road
Farmington, CT 06032

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO. 7016 1370 0001 2479 7544

REVISED MONITORING AND REPORTING PROGRAM NO. 9535 – UNITED TECHNOLOGIES CORPORATION CANOGA AVENUE FACILITY (FORMERLY PRATT & WHITNEY – ROCKETDYNE FACILITY), 6633 CANOGA AVENUE, CANOGA PARK, CALIFORNIA 91303 (FILE NO. 83-008, CI-9535, ORDER NO. R4-2014-0187, SERIES NO. 041, GLOBAL ID WDR100024520)

Dear Mr. Curnock:

On September 10, 2015, the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), enrolled you under general Waste Discharge Requirements Order No. R4-2014-0187 (WDR Order No. R4-2014-0187) with Monitoring and Reporting Program (MRP) No. CI-9535 for the injection of emulsified vegetable oil (EVO) and Dehalococccoides (DHC) to remediate volatile organic compounds (VOCs), primarily trichloroethene (TCE), in soil and groundwater at the referenced site.

On November 15, 2016, Haley & Aldrich, Inc., submitted the *Revised Request for Modification of WDR Monitoring and Reporting Program* (Request), on behalf of United Technologies Corporation (UTI), in which they requested a reduction of the number of wells monitored, a reduction of the sampling frequency, and a reduction of the analytical testing requirements.

Injection of EVO and DHC into the site's three target aquifer zones ended in December 2015. Since that time, under the MRP, groundwater in the three aquifer zones has been monitored four times (January, March, June, and September 2016), using the following wells:

- Upper Sand Zone: B-81U, B-83U (upgradient), and B-99U
- Intermediate Sand Zone: B-81I, B-83I (upgradient), B-99I, B-102I, B-104I, B-105I, and B-106I
- Deep Sand Zone: B-81D, B-83D (upgradient), B-84D1, B-99D, B-102D1, B-104D, B-105D, and B-106D

The Request proposes limiting sampling to the following wells:

- Upper Sand Zone: B-81U, B-83U (upgradient), and B-99U
- Intermediate Sand Zone: B-83I (upgradient), B-99I, B-102I, and B-104I
- Deep Sand Zone: B-83D (upgradient), B-84D1, B-99D, and B-102D1

The Request proposes reducing the monitoring frequency for the non upgradient wells from quarterly to semi-annually (twice per year), and the upgradient wells from quarterly to annually (in the second half of year).

The Request proposes reducing the analyte list to VOCs, total organic carbon, chloride, nitrate, sulfate, pH, oxidation-reduction potential, and DHC (for non-upgradient wells). The upgradient wells would be excluded from the DHC analyses requirement.

The Request indicates the reductions are justified because no significant groundwater degradation has been observed as a result of EVO and DHC injection at the site. Based on the review of information provided in the Request and the review of related site groundwater monitoring data, the reductions in monitoring wells, monitoring frequency, and analytes indicated in the Request are approved for post-injection monitoring, with the condition that water temperature, turbidity, specific conductance, boron, alkalinity and total dissolved solids are also measured and recorded for each sample, and that an annual summary report is prepared and submitted to the Regional Board. If additional future injection is necessary, you are required to submit a work plan for that activity, receive written approval of that work plan from the Regional Board, and implement the modified MRP provided by the Regional Board for that injection.

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 pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100024520.

Please see Electronic Submittal for GeoTracker Users, dated December 12, 2011 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 beginning July 1.


Mr. David Curnock
United Technologies Corporation

- 3 -

November 29, 2016

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

Sincerely,


Samuel Unger, P.E.
Executive Officer

Enclosure:

- 1) Revised Monitoring and Reporting Program No. CI-9535

cc: Ms. Ana Townsend, Regional Water Quality Control Board, Los Angeles
Mr. Tom Tatnall, Haley & Aldrich, Inc.
Dr. John Xiong, Haley & Aldrich, Inc.

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

REVISED MONITORING AND REPORTING PROGRAM NO. CI-9535
FOR
UNITED TECHNOLOGIES CORPORATION
CANOGA AVENUE FACILITY
6633 CANOGA AVENUE
CANOGA PARK, CALIFORNIA

ENROLLMENT UNDER REGIONAL BOARD
ORDER NO. R4-2014-0187 (SERIES NO. 041)
FILE NO. 83-008

I. REPORTING REQUIREMENTS

- A. United Technologies Corporation (hereinafter Discharger) shall implement this revised Monitoring and Reporting Program (MRP) at the Canoga Avenue Facility located at 6633 Canoga Avenue, Canoga Park, California, the location of which is shown on Figure 1, on the effective date of this enrollment (November 29, 2016) under Regional Board Order No. R4-2014-0187. The first semi-annual monitoring report under this monitoring program is due by April 30, 2017. The first annual summary report under this monitoring program is due by January 31, 2017.

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

- B. If there is no discharge of emulsified vegetable oil (EVO) or *Dehalococcoides* during any reporting period, the report shall so state.
- C. By January 31st of each year, beginning January 31, 2017, 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.
- 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). A copy of the

laboratory certifications shall be provided each time a new analysis is used and/or renewal is obtained from ELAP.

- 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 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 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 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. POST-INJECTION GROUNDWATER MONITORING PROGRAM FOR THE REMEDIATION PROJECT

The most recent phase of emulsified vegetable oil (EVO) and *Dehalococcoides* (DHC) injection ended in December 2015. Post-injection monitoring shall be implemented to detect and evaluate impacts associated with the injection. Table 1 below identifies the constituents to be analyzed. The locations of the monitoring wells are shown on Figures 2 through 4. Groundwater samples shall be collected at:

- Upper Sand Zone wells: B-81U, B-83U (upgradient), and B-99U
- Intermediate Sand Zone wells: B-83I (upgradient), B-99I, B-102I, and B-104I
- Deep Sand Zone wells: B-83D (upgradient), B-84D1, B-99D, and B-102D1

The semi-annual reports shall contain the following information regarding the injection activities:

1. Location map showing injection wells and monitoring wells.
2. Visual inspection at each injection and monitoring well shall be conducted (during regularly scheduled monitoring) to evaluate the integrity of the well casing and street box. The progress report shall include a summary of the visual inspection.

These monitoring locations shall not be changed. Any proposed change of monitoring locations shall be identified and approved by the Regional Board Executive Officer (Executive Officer) prior to use.

TABLE 1 – GROUNDWATER MONITORING CONSTITUENTS

<u>CONSTITUENT</u>	<u>UNITS</u> ¹	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u> ³
Water Temperature ²	°C	Grab	Semiannually ³
Specific Conductance ²	µS/cm	Grab	Semiannually ³
pH ²	pH units	Grab	Semiannually ³
Oxidation-Reduction Potential ²	mV	Grab	Semiannually ³
Turbidity ²	NTU	Grab	Semiannually ³
Volatile Organic Compounds (VOCs) – complete suite (EPA Method 8260B)	µg/L	Grab	Semiannually ³

Sulfate (EPA Method 300)	mg/L	Grab	Semiannually ³
Chloride (EPA Method 300)	mg/L	Grab	Semiannually ³
Total Dissolved Solids (Standard Method 2540C)	mg/L	Grab	Semiannually ³
Boron (EPA Method 200.7)	mg/L	Grab	Semiannually ³
Nitrate (EPA Method 300)	mg/L	Grab	Semiannually ³
Alkalinity (SM2320B)	mg/L	Grab	Semiannually ³
Total Organic Carbon (EPA Method 9060)	mg/L	Grab	Semiannually ³
<i>Dehalococcoides</i> species ⁴	cells/mL	Grab	Semiannually ³

¹ mg/L: milligrams per liter; µg/L: micrograms per liter; µS/cm: microsiemens per centimeter; mV: milivolts; °C: degrees Celsius; mL: milliliter

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

³ Upgradient wells (B-83U, B-83I, and B-83D) are to be sampled annually, during the January to March interval only

⁴ Upgradient wells (B-83U, B-83I, and B-83D) are exempt from *Dehalococcoides* analyses

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.

III. 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.

IV. 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)

V. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

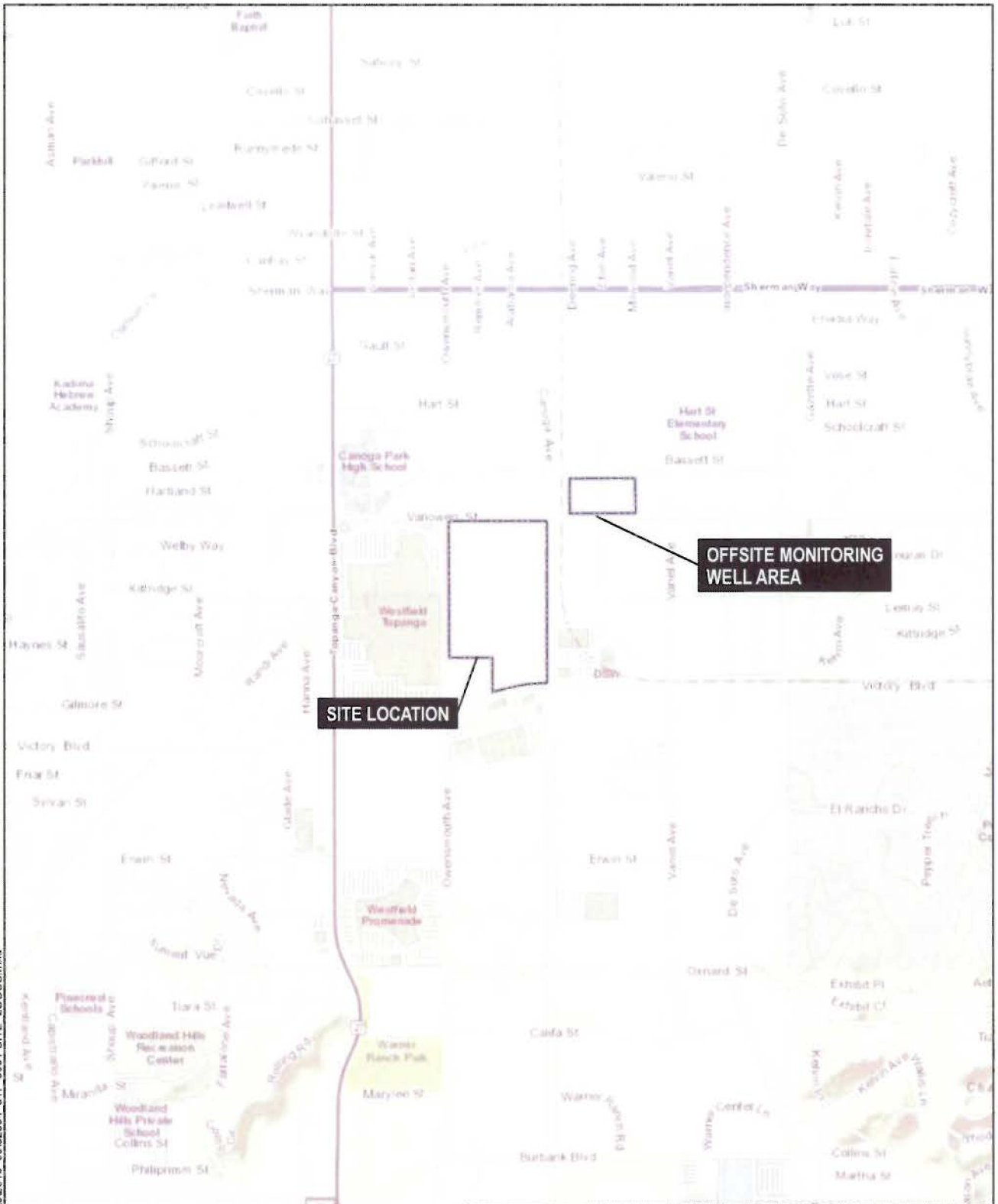
The Discharger shall comply with the Electronic Submittal of information (ESI) requirements by submitting all reports required under the MRP, including groundwater monitoring data, discharge location data, correspondence, and pdf monitoring reports to the State Water Resources Control Board GeoTracker database under Global ID WDR100024520.

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: November 29, 2016

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MAP SOURCE: ESRI

SITE COORDINATES 34°11'28.65"N 118°35'58.12"W

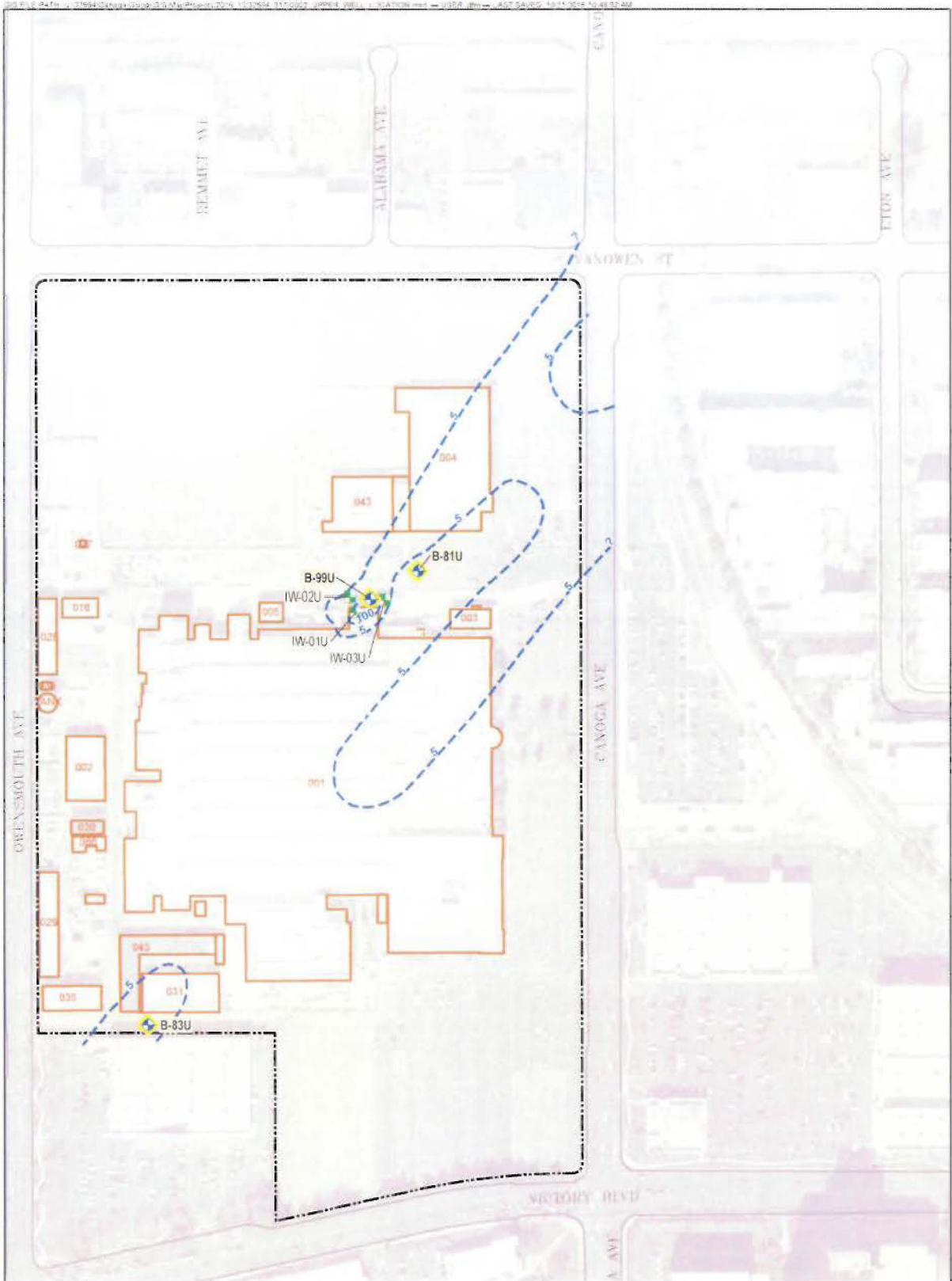


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
SITE LOCUS

APPROXIMATE SCALE 1 IN = 2,000 FT
 NOVEMBER 2016

FIGURE 1



LEGEND

-  CURRENT WDR MONITORING WELL LOCATION
-  INJECTION WELL LOCATION
-  PROPOSED WDR MONITORING WELL LOCATION
-  TRICHLOROETHENE (TCE) CONCENTRATION CONTOURS IN MICROGRAMS PER LITER (µg/L)
-  BUILDING FOOTPRINT
-  SITE BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2. WELLS ARE PROPOSED TO BE SAMPLED SEMI-ANNUALLY WITH THE EXCEPTION OF B-83U TO BE SAMPLED ANNUALLY



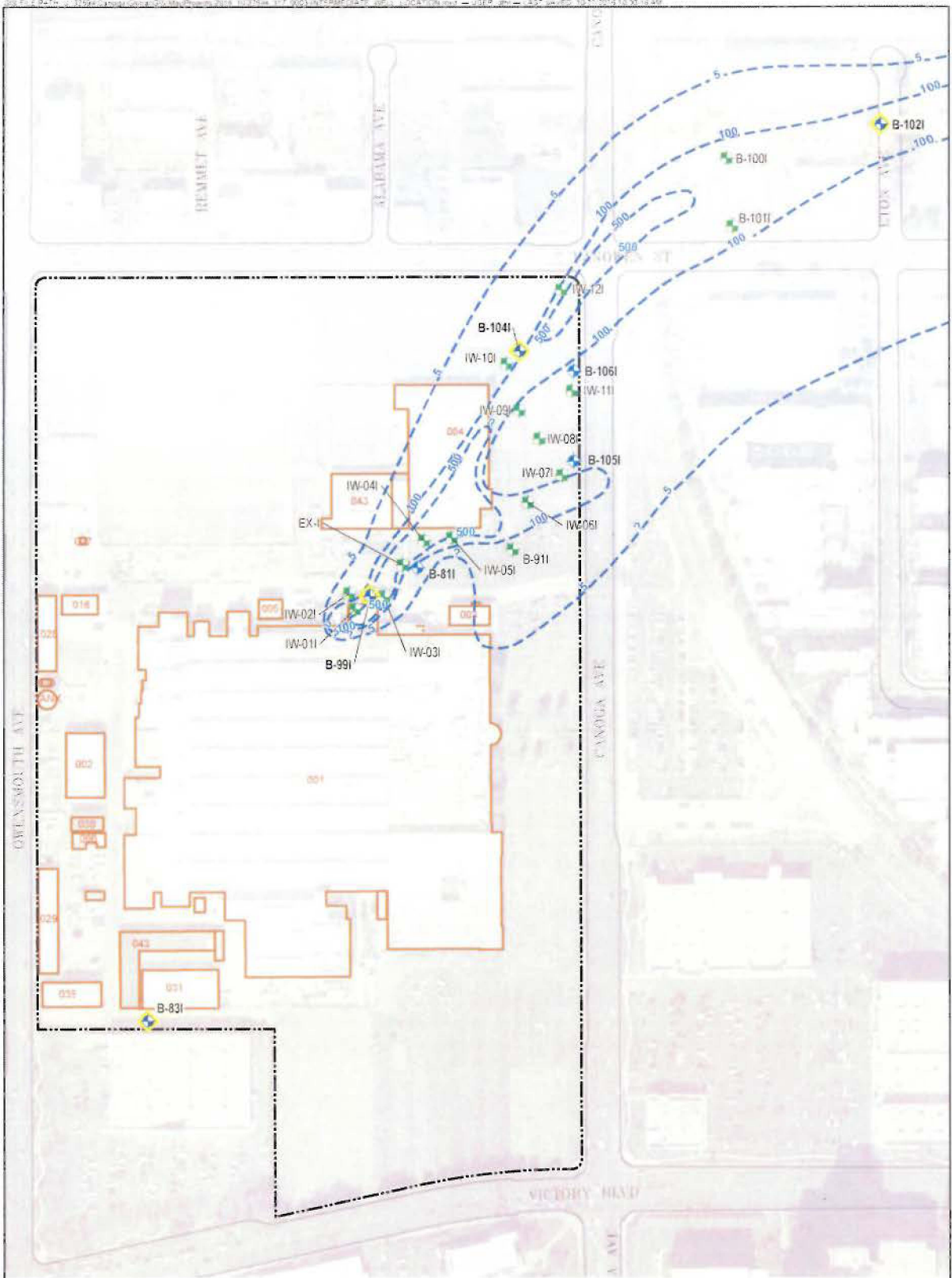
HALEY ALDRICH

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UPPER SAND ZONE INJECTION WELL AND PROPOSED WDR MONITORING WELL LOCATIONS

NOVEMBER 2016

FIGURE 2



LEGEND

- CURRENT WDR MONITORING WELL LOCATION
- INJECTION WELL LOCATION
- PROPOSED WDR MONITORING WELL LOCATION
- TRICHLOROETHENE (TCE) CONCENTRATION CONTOURS IN MICROGRAMS PER LITER (µg/L)
- BUILDING FOOTPRINT
- SITE BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS AREA APPROXIMATE
2. WELLS ARE PROPOSED TO BE SAMPLED SEMI-ANNUALLY WITH THE EXCEPTION OF B-831 TO BE SAMPLED ANNUALLY



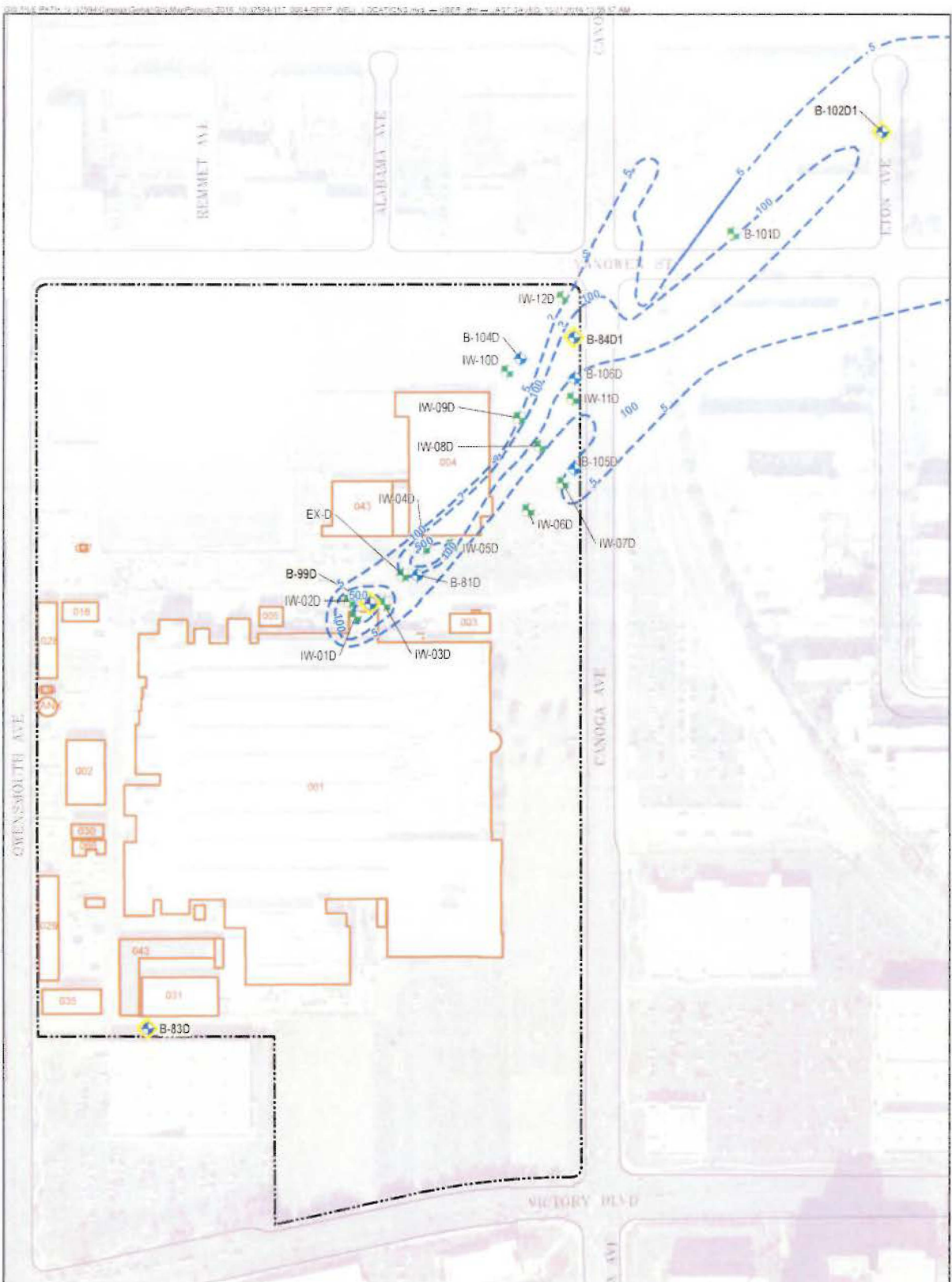
HALEY ALDRICH

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CANOGA PARK, CALIFORNIA

INTERMEDIATE SAND ZONE INJECTION WELL AND PROPOSED WDR MONITORING WELL LOCATIONS

NOVEMBER 2016

FIGURE 3



- LEGEND**
- PROPOSED WDR MONITORING WELL LOCATION
 - CURRENT WDR MONITORING WELL LOCATION
 - INJECTION WELL LOCATION
 - TRICHLOROETHENE (TCE) CONCENTRATION CONTOURS IN MICROGRAMS PER LITER (µg/L)
 - BUILDING FOOTPRINT
 - SITE BOUNDARY

- NOTES**
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
 2. WELLS ARE PROPOSED TO BE SAMPLED SEMI-ANNUALLY WITH THE EXCEPTION OF B-83D TO BE SAMPLED ANNUALLY



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DEEP SAND ZONE INJECTION WELL AND PROPOSED WDR MONITORING WELL LOCATIONS