Los Angeles Regional Water Quality Control Board

November 30, 2020

Mr. Aram Chaparyan
City Manager
City of Torrance
3031 Torrance Boulevard
Torrance, California 90503

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 5011

Mr. Christian Darville
Lisi Aerospace/Hi-Shear Corporation
2600 Skypark Drive
Torrance, California 90509-2975

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 2492

Mr. Richard Doyle
Magellan Aerospace, Middletown, Inc.
2320 Wedekind Drive
Middletown, Ohio 45042-2390

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 2508

Mr. Bailey Su
Excellon Technologies, LLC
20001 S. Rancho Way
Rancho Dominguez, California 90220

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 2485

CT Corporation System
c/o Esterline Technologies Corporation
500 – 108th Avenue NE,
Suite 1500
Bellevue, Washington 98004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 2478

Mr. Tim A. Goetz
Robinson Helicopter Company
2901 Airport Drive
Torrance, California 90505

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 2461

Mr. Ward Olson
Dasco Engineering Corporation
24747 Crenshaw Boulevard
Torrance, California 90505

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO.: 7018 2290 0001 8504 2454

SUBJECT: DRAFT CLEANUP AND ABATEMENT ORDER NO. R4-20XX-XXXX

SITE: SKYPARK COMMERCIAL PROPERTIES (ASSESSOR PARCEL NO. 7377-006-906), 24701 – 24777 CRENSHAW BOULEVARD AND 2530, 2540, AND 2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA (SCP NO. 1499)

Dear Mr. Chaparyan et al.:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency with primary responsibility under the Porter-Cologne Water Quality Control Act (Cal. Water Code §§13000 et seq.) for the protection of the quality of the waters of the state, including ground water and surface water within major portions of Los Angeles County and Ventura counties. The above-referenced site (Site) is situated within the jurisdiction of the Regional Board.

The City of Torrance owns the Site and has leased the Site to aviation or aerospace-related manufacturing operators since the 1950s. The operations have resulted in the discharge of waste or suspected discharge of waste that has created, and continues to threaten to create, a condition of pollution or nuisance. The subsurface on-Site and off-Site has been contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), trichlorethylene (TCE) and their associated daughter products, perchlorate, 1,4-dioxane. The discharge extends off-Site beneath residential properties.

Enclosed please find draft Cleanup and Abatement Order No. R4-20XX-XXXX (Draft CAO), directing you to assess, monitor, and cleanup wastes and/or abate the effects of discharges of wastes, including VOCs, primarily PCE and TCE and their daughter products, that have been discharged to soil, soil vapor, and groundwater at 24701 – 24777 Crenshaw Boulevard and 2530, 2540, and 2600 Skypark Drive in Torrance, California.

You are hereby invited to submit written comments and/or evidence regarding this Draft CAO. **Written submissions pertaining to this Draft CAO must be received by the Regional Board staff no later than 5:00 p.m. January 4, 2021.** Thereafter, staff will prepare a response to comments, recommend appropriate modifications to the Draft CAO, and submit the materials to the Executive Officer of this Regional Board for her consideration. Oral hearings are rarely convened to consider CAOs. Therefore, please ensure that all evidence and comments that you wish staff and/or the Executive Officer to consider are included in your timely submittal.

If you have any questions regarding this letter, please contact Mr. Kevin Lin at (213) 576-6781 or via email at kevin.lin@waterboards.ca.gov or contact Ms. Jillian Ly at (213) 576-6664 or via email at jillian.ly@waterboards.ca.gov.

Sincerely,

Hugh Marley
Digitally signed by Hugh Marley
Date: 2020.11.30 07:56:15 -08'00'
Water Boards

Hugh Marley
Assistant Executive Officer

Enclosure: Draft CAO R4-20XX-XXXX

cc: Dmitriy Ginzburg, State Water Board Division of Drinking Water
Joseph Liles, Water Replenishment District
Carla Dillon, City of Lomita
Ryan Smoot, City of Lomita
Travis Van Ligten, Rutan & Tucker, LLP
Richard Montevideo, Rutan & Tucker, LLP
Sonja A. Inglin, Cermak & Inglin, LLC
Patrick L. Rendon, Lamb and Kawakami, LLP
William J. Beverly, Law Offices of William J. Beverly
Brian M. Ledger, Gordon Rees Scully Mansukhani, LLP
Thomas Schmidt, Hamrick & Evans, LLP
David L. Evans, Hamrick & Evans, LLP

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

CLEANUP AND ABATEMENT ORDER NO. R4-20XX-XXXX
REQUIRING

THE CITY OF TORRANCE
MAGELLAN AEROSPACE, MIDDLETOWN, INC. (FORMERLY KNOWN AS AERONCA, INC., FORMERLY KNOWN AS AERONCA MANUFACTURING CORPORATION)
EXCELLON INDUSTRIES, AN ESTERLINE COMPANY (ALSO KNOWN AS EXCELLON INDUSTRIES, INC., EXCELLON AUTOMATION COMPANY, AND EA TECHNOLOGIES CORPORATION)
EXCELLON ACQUISITION LLC
EXCELLON TECHNOLOGIES, LLC
ESTERLINE TECHNOLOGIES CORPORATION
ROBINSON HELICOPTER COMPANY
DASCO ENGINEERING CORPORATION
HI-SHEAR CORPORATION (ALSO KNOWN AS LISI AEROSPACE)

TO ASSESS, CLEANUP, AND ABATE
WASTE DISCHARGED TO WATERS OF THE STATE PURSUANT TO CALIFORNIA WATER CODE SECTIONS 13304 AND 13267

AT

SKYPARK COMMERCIAL PROPERTIES

NORTHEAST PORTION OF CITY OF TORRANCE PARCEL
ASSESSOR PARCEL NO. 7377-006-906
24751 CRENSHAW BOULEVARD, TORRANCE, CALIFORNIA
24777 CRENSHAW BOULEVARD, TORRANCE, CALIFORNIA
24707 CRENSHAW BOULEVARD, TORRANCE, CALIFORNIA
24747 CRENSHAW BOULEVARD, TORRANCE, CALIFORNIA
24701 CRENSHAW BOULEVARD, TORRANCE, CALIFORNIA
2530 SKYPARK DRIVE, TORRANCE, CALIFORNIA
2540 SKYPARK DRIVE, TORRANCE, CALIFORNIA
2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA

(SITE CLEANUP PROGRAM NO. 1499)

This Cleanup and Abatement Order No. **R4-20XX-XXXX** (Order) is issued to City of Torrance; Magellan Aerospace, Middletown, Inc. (formerly known as Aeronca, Inc. formerly known as Aeronca Manufacturing Corporation); Excellon Industries, an Esterline

Company (also known as Excellon Industries, Inc., Excellon Automation Company, and EA Technologies Corporation); Excellon Acquisitions, LLC; Excellon Technologies, LLC; Esterline Technologies Corporation; Robinson Helicopter Company; Dasco Engineering Corporation; and Hi-Shear Corporation (also known as Lisi Aerospace) (hereinafter collectively referred to as Dischargers) based on provisions of Water Code sections 13304 and 13267, which authorize the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) to issue this Cleanup and Abatement Order and require the submittal of technical and monitoring reports.

The Regional Board finds that:

BACKGROUND

1. **Discharger(s):** Dischargers are responsible for the cleanup and abatement of discharges due to their:

   a. Current or prior ownership of properties located at 24751, 24777, 24707, 24747, and 24701 Crenshaw Boulevard and 2530, 2540, and 2600 Skypark Drive in the City of Torrance (hereinafter collectively referred to as the "Site"), and/or

   b. Current or prior operations at the Site that resulted in the discharge of wastes, including volatile organic compounds (VOCs), primarily trichloroethene (TCE) and tetrachloroethene (PCE), perchlorate, 1.4-dioxane, metals, and total petroleum hydrocarbons, which are constituents of concern (COCs) to the environment and human health.

      As detailed in this Order, the Dischargers have caused or permitted waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the State, which creates, or threatens to create, a condition of pollution or nuisance.

2. **Location:** The Site is located at 24751, 24777, 24707, 24747, and 24701 Crenshaw Boulevard and 2530, 2540, and 2600 Skypark Drive in the City of Torrance, California. The Site is approximately 27 acres in size and is located on the northeast portion of assessor parcel number (APN) 7377-006-906 in Torrance, California shown in Attachment A, Figure 1 and Figure 2. The Site includes existing Regional Board cases Hi-Shear Corporation (Hi-Shear; Global ID No. SL204231523; File SCP No. 0218) and East Adjacent Properties of Hi-Shear Corporation (EA Properties; Global ID No. T10000013835; File SCP No. 1481). The entire parcel APN 7377-006-906, including the Site, is owned by the City of Torrance and has been primarily leased to aviation or aerospace-related companies since 1954. Attachment A, Figure 1, Site Location Map, attached hereto and incorporated herein by reference, depicts the location of the Site. Additionally, Figure 2, Site Map, of Attachment A, also attached hereto and incorporated herein, depicts the buildings occupying the Site and the surrounding area. Land use setting in the vicinity of the Site is commercial/industrial, but the discharge extends offsite beneath residential properties.

SITE HISTORY

3. **Site Description and Activities Involving Constituents of Concern:**

The following is a summary of the current and former occupants and the historical property use for the Hi-Shear Corporation property and the EA Properties.

a. Hi-Shear Corporation (Hi-Shear) is located at 2600 Skypark Drive and occupies the western half of the Site. Hi-Shear has been an occupant as early as 1954. Activities performed on the property include the manufacture, production, assembly, and cleaning of fasteners for the aerospace industry. Wastes generated as part of the activities contained COCs, including TCE and PCE, perchlorate, 1.4-dioxane, metals, and total petroleum hydrocarbons.

b. EA Properties are located at 24751, 24777, 24707, 24747, and 24701 Crenshaw Boulevard, and at 2530 and 2540 Skypark Drive and occupy the eastern half of the Site. EA Properties consist of Property 1 (24751 and 24777 Crenshaw Boulevard), Property 2 (24707, 24747 and 24701 Crenshaw Boulevard), and Property 3 (2530 and 2540 Skypark Drive). The EA Properties Dischargers are as follows:

i. Property 1 occupants include:

1. Aeronca, Inc. (Aeronca), a manufacturer of aircraft, missiles and their components, occupied Property 1 from 1954 to 1987. Aeronca operated degreasers with PCE and 1,1,1-trichloroethane (1,1,1-TCA), and operated a spray booth for paint and solvent usage on the property. Aeronca also has stored and/or used 1,1,1-TCA and toluene.

2. Prior to 1966, Aeronca was formerly known as Aeronca Manufacturing Company. In 2012, Aeronca changed its name to Magellan Aerospace, Middletown, Inc.

3. Excellon Industries, an Esterline Company, also known as Excellon Industries, Inc., Excellon Automation Company, and EA Technologies Corporation (Excellon), was a manufacturer of printed circuit board fabrication equipment and occupied Property 1 from 1979 to 2003. Excellon operated degreasers, and used 1,1,1-TCA and trichlorotrifluoroethane on the property. Excellon also has generated alkaline and solvent mixtures, waste oil mixtures, polychlorinated biphenyl waste, and other organic waste mixtures. Excellon Acquisitions, LLC, and Excellon Technologies, LLC, each continued the

Excellon business, creating and servicing the same products using the same manufacturing techniques, and employing many of the same employees.

4. Esterline Corporation changed its name to Esterline Technologies Corporation in 1987 (subsequent to a merger with Criton Technologies). A 2003 asset purchase indicates that Excellon Acquisitions, LLC and Esterline retained liabilities related to actions or conditions in connection with the operation of the business including environmental health and safety liabilities.

5. South Bay Lexus (SBL), a vehicle dealership, has occupied Property 1 since 2006. On April 18, 2016, the Regional Board issued Investigative Order No. R4-2016-0075 to SBL and the City of Torrance requiring the completion of a chemical storage and use questionnaire and the submittal of a site assessment work plan to investigate the vertical and lateral extent of discharges. This Investigative Order No. R4-2016-0075 was amended on October 5, 2016 to remove SBL but continues to require the City of Torrance to submit a site assessment work plan. To date, the City of Torrance has not submitted the required site assessment work plan.

ii. Property 2 includes: 24707, 24747, and 24701 Crenshaw Boulevard, Torrance, California. Site documents and available case files have identified the following occupants at the property:

1. Aeronca occupied Property 2 from 1966 to 1973. Aeronca operated a spray booth on the property during this period.

2. Robinson Helicopter Company (RHC), a manufacturer of rotorcraft and related components, occupied Property 2 from 1978 to 1996. RHC has used halogenated solvents, liquid with cadmium, 1,1,1-TCA, methyl ethyl ketone (MEK), and methyl chloride on the property. RHC has had violations for MEK and “excess solvent usage” on the property. RHC has also indicated that there has been soil, wastewater, and/or groundwater investigations conducted on the property for internal use. RHC included the “Evaluation of Subsurface VOCs – 24701-24747 Crenshaw Boulevard & 2530-22540 Skypark Drive,” prepared by Frey Environmental, Inc. (Frey), dated February 23, 2018, as Exhibit B in their June 11, 2020

petition of Investigation Order No. R4-2020-0035; the report is discussed in Section 4 of the Order.

3. Dasco Engineering Corporation (Dasco), a manufacturer of precision mechanical aircraft and space components, has occupied Property 2 since 1995. Pooled hydrocarbon liquids and metal cuttings were observed throughout the machine shop during a 2004 site reconnaissance performed as part of an environmental site assessment. A 2018 report titled *Environmental Evaluation of Subsurface VOCs* prepared by Frey noted elevated PCE and TCE soil vapor and soil concentrations were detected near areas identified as *Approximate Machining Gantry Location with Subsurface Pit and Tank* on Property 2.

iii. Property 3 includes: 2530 and 2540 Skypark Drive, Torrance, California. Site documents and available case files have identified the following occupant at the property:

1. RHC has occupied Property 3 since 1978. RHC has operated spray booths for paint and solvent usage on the property.

Documents supporting each of the above descriptions of the Dischargers' chemical use and storage are available in public files maintained by the Regional Board.

EVIDENCE OF WASTE DISCHARGE AND BASIS FOR SECTION 13304 ORDER

4. **History of Environmental Investigations, Remediation and Board Orders:**

a. Under the oversight of this Regional Board, Hi-Shear has performed remediation and been implementing onsite and offsite investigations and interim mitigation measures under a Water Code section 13267 Order dated October 29, 2009. These activities are documented in following technical reports:

i. *Interim Offsite Assessment Report* (IOAR), prepared by Alta Environmental LP (Alta) dated September 9, 2016. The IOAR documented the offsite, with respect to the Hi-Shear property, VOC soil vapor and groundwater plume evaluation efforts with the installation of groundwater monitoring wells and nested soil vapor probes on the EA Properties and eastward to approximately Pennsylvania Avenue in the City of Lomita.

ii. *Groundwater Remedial Implementation Report* (GWRIR), prepared by Alta dated September 7, 2017. The GWRIR documented the implementation of

enhanced in-situ bioremediation (EISB) technology to treat chlorinated VOCs in the regional water table aquifer at the Hi-Shear property.

iii. *Catalytic Oxidizer Soil Vapor Extraction System Remedial Progress Report (January 2018 – March 2018)* (SVE Progress Report), prepared by Geosyntec Consultants (Geosyntec) dated April 30, 2018. The SVE Progress Report documented the remedial activities associated with operating the remediation technology from January 1, 2018 through March 31, 2018.

iv. *Soil, Soil Vapor, and Groundwater Delineation – Module I* (Module I), prepared by Genesis Engineering & Redevelopment (Genesis) dated March 13, 2020. The Module I report documented the soil vapor assessment conducted east of Crenshaw Boulevard in the City of Torrance and City of Lomita.

v. *Soil, Soil Vapor, and Groundwater Delineation Report – Module II* (Module II), prepared by Genesis dated March 16, 2020. The Module II report documented the additional onsite soil and soil vapor conditions at the Hi-Shear property.

vi. *Vapor Intrusion Response Plan* (VIRP), prepared by Genesis dated March 20, 2020. The VIRP presented response actions to further investigate and assess vapor intrusion potential in residential and commercial properties east of Crenshaw Boulevard.

vii. *Soil, Soil Vapor, and Groundwater Delineation Report – Module III – Interim Report* (Interim Module III), prepared by Genesis dated July 3, 2020. The Interim Module III presented soil and soil vapor data collected on the EA Properties and the Home Depot property located north of the Site.

viii. *Soil, Soil Vapor, and Groundwater Delineation Report* – Module V (Module V), prepared by Genesis dated April 3, 2020 and *Hi-Shear Module V Addendum -MW-39 Installation and Sampling* dated June 15, 2020 (Module V Addendum). The Module V report and Module V Addendum documented the groundwater assessment of VOCs, metals, 1,4-dioxane, hexavalent chromium and perchlorate impacts downgradient (east) of the Hi-Shear site.

b. In addition, we have reviewed the following report and data, which provide additional evidence of discharges at or near the Site:

i. *Evaluation of Subsurface VOCs – 24701-24747 Crenshaw Boulevard & 2530-22540 Skypark Drive* (Evaluation Report) dated February 23, 2018

prepared by Frey. The Evaluation Report summarized soil and soil vapor data at Property 2 and Property 3 of the EA Properties.

c. A summary of the IOAR, GWRIR, SVE Progress Report, Module I, Module II, VIRP, Interim Module III, Module V, and Evaluation Report, is provided below.

   i. The IOAR documented the activities associated with evaluating the offsite, with respect to the Hi-Shear property, extent of the VOC soil vapor and groundwater plume between April 2016 and June 2016. The IOAR identified elevated VOC soil vapor concentrations on the Site with concentrations up to five orders of magnitude greater than the applicable regulatory screening levels on Property 1 of the EA Properties. The IOAR identified VOC groundwater concentrations greater than their respective maximum contaminant levels (MCLs) in some of the installed groundwater monitoring wells. The findings from IOAR warranted additional investigation of potential sources on the EA Properties and further delineation of the soil, soil vapor, and groundwater plume offsite, with respect to the Hi-Shear property.

   ii. The GWRIR documented the activities associated with application of EISB through 75 dual-nested injection wells from January 2017 to April 2017. Groundwater monitoring wells on the Hi-Shear property observed decreases in VOC concentrations following the application. The GWRIR recommended ongoing monitoring and assessment of results of the EISB injections. Most recently, VOC concentrations remain above their respective MCLs in groundwater.

   iii. The SVE Progress Report documented extraction of approximately 1,721 pounds of VOCs during the first quarter of 2018. Since operation in March 1999, the SVE system has removed approximately 100,155 pounds of total VOCs. Due to operational issues, the SVE system has been off. Modifications and upgrades to the SVE system are in progress with a restart of the remediation technology targeted for the fourth quarter of 2020.

   iv. The Module I report documented the results of the soil vapor assessment east of Crenshaw Boulevard (i.e., off-Site into the City of Torrance and City of Lomita neighborhoods) conducted between September 2019 and January 2020. Soil vapor sample results indicated elevated concentrations of VOCs in the area between Crenshaw Boulevard and Pennsylvania Avenue, and the area between Amsler Avenue and in the vicinity of 247th Street. Additional delineation and the implementation of the VIRP are warranted to fully assess and address potential threats to human health and the environment.

v. The Module II report documented the results of the soil and soil vapor assessment on the Hi-Shear property between September 2019 and December 2019. Soil vapor sample results indicated elevated concentrations of VOCs on the eastern and western portions of the Hi-Shear property, converging towards the center of the property. The restart of the soil vapor extraction system and an indoor air assessment are necessary to protect human health and prevent additional migration of the chemicals of concern.

vi. The VIRP provides the criteria and sequence for vapor intrusion response actions and proposed further soil vapor, sub-slab vapor, crawl space air, and indoor air sampling for VOCs at residential and commercial properties east of Crenshaw Boulevard. The Regional Board conditionally approved the VIRP on June 1, 2020. The activities of the VIRP commenced on September 14, 2020 and are ongoing. The Regional Board conditionally approved maps that identified properties for testing and decision flow charts that provided soil vapor and indoor air response actions on November 20, 2020.

vii. The Interim Module III report documented the results of soil and soil vapor assessment conducted between November 2019 and April 2020 on the EA Properties and the offsite Home Depot property that refined the distribution of VOCs in soil and soil vapor at the Site. The refined dataset confirmed elevated VOC soil vapor concentrations across the Site with distinct areas of high concentrations along the western portion of the Hi-Shear property and Property 1. The PCE concentrations detected during the assessment were up to six orders of magnitudes greater than applicable screening levels; the TCE concentrations detected during the assessment were up to five orders of magnitude greater than applicable screening levels. The results of the Interim Module III report warranted assessing the vapor intrusion risk to indoor air at the EA Properties and remediating the soil and soil vapor beneath the Site. The Interim Module III report is an interim report, and the remaining scope of work for Module III includes delineation of perched groundwater south of the EA Properties and delineation of VOC in soil vapor east, west, and south of the Site.

viii. The Module V and Module V Addendum report documented the installation of groundwater monitoring wells and results of the delineation of the extent of numerous COCs, including VOCs, metals, 1,4-dioxane, hexavalent chromium, and perchlorate in groundwater downgradient of the Hi-Shear property in the shallow (approximately 100 ft-below ground surface [bgs]), intermediate (approximately 150 ft-bgs), and deep (approximately 250 ft-bgs groundwater zones. This assessment work was completed between November 2019 and May 2020. The network of wells extends east of the

Site to Cypress Street. The lateral downgradient extent of VOCs in groundwater has been delineated southeast of the Site between Pennsylvania Avenue and Cypress Street. The vertical extent of VOCs in groundwater has been delineated to approximately 250 ft-bgs. The results of the Module V and Module V Addendum report indicated that lateral and vertical delineation of the regional water table aquifer upgradient and south of the Site are incomplete.

ix. The Evaluation Report summarized environmental investigations conducted on Property 2 and Property 3 in 2015 and 2016 to address recognized environmental conditions. The investigations conducted did not extend to depths greater than approximately 25 ft-bgs. PCE was detected in all soil vapor samples and in the majority of soil samples analyzed; TCE was detected in a majority of the soil vapor samples and in some of the soil samples analyzed. Elevated PCE and TCE soil vapor and soil concentrations detected near areas identified as *Approximate Machining Gantry Location with Subsurface Pit and Tank* on Property 2 and *"Covered Hazardous Materials Storage* on Property 3 indicate potential sources that warrant further evaluation.

d. On January 13, 2020, the Regional Board issued a Water Code section 13267 Order to the EA Properties Dischargers to submit a technical work plan for the complete delineation of the vertical and lateral extent of VOCs impacts to soil, soil vapor, and groundwater onsite and offsite. On August 21, 2020, two technical work plans were submitted for Property 1, one on behalf of Magellan Aerospace, Middletown, Inc. and the other on behalf of Esterline Technologies Corporation. Both work plans for Property 1 were accompanied by cover letters stating that Magellan and Esterline are not agreeing or undertaking to implement the work. The Regional Board is in the process of reviewing the work plans

e. On March 6, 2020, the Regional Board issued an amendment to a Water Code section 13267 Order, requiring Hi-Shear to submit an indoor air sampling and analysis plan to assess the vapor intrusion risk for occupants on the Hi-Shear property. On April 28, 2020, the Regional Board received the *Onsite Indoor Assessment Workplan*. The Regional Board conditionally approved the work plan on June 24, 2020; the technical report was submitted by Genesis, on behalf of Hi-Shear, on November 15, 2020.

f. On May 12, 2020, the Regional Board issued a Water Code section 13267 Order to the Dischargers to submit a technical work plan to assess the vapor intrusion risk to indoor air at the EA Properties. On August 25, 2020, work plans were submitted for Property 1, Property 2, and Property 3; however, each work plan was accompanied by a cover letter stating that in submitting the work plans, the Dischargers are not agreeing or undertaking to implement the work. The Regional

Board conditionally approved the work plans on October 6, 2020 and a technical report for the indoor air assessment is due on January 20, 2021.

g. The site assessments and remediation activities indicate that the soil, soil vapor, and groundwater are impacted with COCs, including VOCs (primarily TCE and PCE), perchlorate, 1.4-dioxane, metals, and total petroleum hydrocarbons. The detection of these constituents are consistent with contamination known to occur from the types of operations describe in the above Site History.

5. **Summary of Findings from Investigations:**

The Regional Board has reviewed and evaluated the technical reports and records pertaining to the discharge, detection, and distribution of wastes at the Site and the Site vicinity. Elevated levels of VOCs, including PCE and TCE have been detected in soil vapor, soil matrix, and groundwater beneath the Site and downgradient of the Site. Attachment A, Figure 3, attached hereto and incorporated herein by reference, depicts the levels of PCE and TCE in the soil matrix detected beneath the Site and downgradient of the Site. Attachment A, Figure 4 through Figure 9, attached hereto and incorporated herein by reference, depicts the levels of VOCs, primarily PCE and TCE, in soil vapor detected at multiple depths beneath the Site and downgradient of the Site. Attachment A, Figure 10 and Figure 11, attached hereto and incorporated herein by reference, depicts the levels of PCE and TCE in groundwater detected in the shallow groundwater zone, approximately 100 ft-bgs.

The sections below summarize the maximum concentrations of the COCs of concern detected in soil, soil vapor, and groundwater.

a. Soil

i. The maximum PCE and TCE soil concentrations detected beneath the Hi-Shear property are 7,200,000 micrograms per kilogram (µg/kg) [detected in sample BH-4 at 50 ft-bgs] and 5,500,000 µg/kg (detected in sample HS3 at 50 ft-bgs), respectively.

ii. The maximum PCE and TCE soil concentrations detected beneath Property 1 of the EA Properties are 3,390 µg/kg (detected in sample VP-50 at 55 ft-bgs) and 223 µg/kg (detected at VP-25 at 40 ft-bgs), respectively.

iii. The maximum PCE and TCE soil concentrations detected at Property 2 of the EA Properties are 280 µg/kg (detected in sample A17 at 5 ft-bgs) and 37 µg/kg (detected in sample A16 at 5 ft-bgs), respectively. Samples A16 and A17 are both located near features described as *Approximate Machining Gantry Location with Subsurface Pit and Tank* on Property 2.

iv. The maximum PCE and TCE soil concentrations detected at Property 3 of the EA Properties are 120 µg/kg (detected in sample D11 at 5 ft-bgs) and 24 µg/kg (detected in sample A3 at 5 ft-bgs), respectively. Sample D11 is located on the southeast-central portion of *Building D (2540 Skypark Drive)* of Property 3.

v. The maximum PCE and TCE soil concentrations on each property are at least one order of magnitude greater than the May 2020 United States Environmental Protection Agency (USEPA) Region IX MCL-based soil screening levels for the protection of groundwater, thereby posing a threat to groundwater quality. Some concentrations of PCE and TCE in the soil matrix also exceed the USEPA Region IX's direct contact exposure pathways Regional Screening Levels (RSLs) for residential and commercial/industrial land uses.

b. Soil Vapor

i. The maximum PCE and TCE soil vapor concentrations at the Hi-Shear property are 12,000,000 micrograms per cubic meter (µg/m^3) [detected in sample VP-1 at 45 ft-bgs in 2019] and 16,000,000 µg/m^3 (detected in sample VP-3 at 25 ft-bgs in 2019), respectively.

ii. The maximum PCE and TCE soil vapor concentrations at Property 1 of the EA Properties are 71,500,000 µg/m^3 (detected in sample VP-50 at 53 ft-bgs in 2020) and 4,100,000 µg/m^3 (detected in sample VP-50 at 53 ft-bgs in 2020), respectively.

iii. The maximum PCE and TCE soil vapor concentrations at Property 2 of the EA properties are 250,000 µg/m^3 (detected in sample VP-133 at 65 ft-bgs in 2019) and 280,000 µg/m^3 (detected in sample VP-133 at 85 ft-bgs in 2019), respectively.

iv. The maximum PCE and TCE soil vapor concentrations at Property 3 of the EA properties are 881,000 µg/m^3 (detected in sample VP-132 at 80 ft-bgs in 2020) and 450,000 µg/m^3 (detected in sample VP-26 at 85 ft-bgs in 2020), respectively.

v. The soil vapor concentrations reported in the Module I report indicated elevated PCE and TCE concentrations along Crenshaw Boulevard, and eastward to between Pennsylvania Avenue and Cypress Street in the City of Lomita. The elevated concentrations observed off-Site and east of Crenshaw Boulevard warranted the implementation of a vapor intrusion response plan.

vi. The maximum concentrations of PCE and TCE detected in soil vapor exceed the June 2020 Human Health Risk Assessment (HHRA) Note Number 3, Department of Toxic Substances Control (DTSC) modified soil vapor screening

levels (DTSC-SLs)1 of 15 µg/m^3 and 16 µg/m^3 for cancer endpoint for residential land use, respectively. The maximum concentrations of PCE and TCE in soil vapor exceed the DTSC-SLs of 67 µg/m^3 and 100 µg/m^3 for cancer endpoint for commercial/industrial land use, respectively. Additionally, the maximum concentrations of TCE in soil vapor exceed the short-term exposure soil vapor screening level of 67 µg/m^3 and 267 µg/m^3 for residential land use and commercial/industrial land use, respectively.

vii. Additional measures, including vapor mitigation systems and an interim remedial action plan may be necessary to address potential threats to human health, based on additional data that will be gathered in response to this and other orders.

c. Groundwater

i. The onsite PCE concentrations in the shallow groundwater zone (estimated to be approximately 100 ft-bgs) were detected up to 40 times greater than its MCL; onsite TCE concentrations in the shallow groundwater zone were detected up to three order of magnitudes greater than its MCL. Onsite PCE concentrations in the intermediate groundwater zone (estimated to be approximately 150 ft-bgs) were detected up to 20 times greater than its MCL; onsite TCE concentrations in the intermediate groundwater zone were detected up to three order of magnitudes greater than its MCL. These concentrations of PCE and TCE in the groundwater exceed the USEPA's and the State Water Resource Control Board (SWRCB) Division of Drinking Water's (DDW) MCL of 5 µg/L, respectively.

ii. The offsite PCE concentrations in the shallow groundwater zone were detected up to 40 times greater than its MCL (220 µg/L at MW-20); maximum offsite TCE concentrations in the shallow groundwater zone were detected more than two orders of magnitudes greater than its MCL (1,600 µg/L at MW-20, 990 µg/L at MW-28, 840 µg/L at MW-9) in the commercial and residential areas of City of Torrance and City of Lomita. These concentrations of PCE and TCE in the groundwater exceed the USEPA's and SWRCB DDW's MCL of 5 µg/L, respectively.

iii. The depth to groundwater ranges approximately from 80 to 90 ft-bgs and groundwater data and soil vapor data indicates the groundwater plume is off gassing into the soil vapor and the presence of the TCE and PCE beneath the Site threatens to cause vapor intrusion into buildings, including nearby residences.

[1] Per HHRA Note 3 Guidance and OSWER *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air* (EPA, 2015); α (attenuation factor) = 0.03

Detections of concentrations of VOCs in the soil column all the way to groundwater indicate that the Hi-Shear property and Property 1 of the EA Properties on the Site has contributed to a commingled plume of groundwater contamination that begins at the Hi-Shear property, spans the EA Properties, and extends downgradient beneath nearby residential areas. Detections of concentrations of VOCs in shallow soil (upper 25 feet) above the May 2020 USEPA Region IX MCL-based soil screening levels for the protection of groundwater indicate that Property 2 and Property 3 of EA Properties on the Site threatens groundwater and has likely contributed to the commingled groundwater plume.

Detections of concentrations of VOCs in soil vapor collected at depth to 85 ft-bgs indicate the Site lies above a commingled plume of soil vapor contamination that begins at the Hi-Shear property, spans the EA Properties, and extends downgradient beneath nearby residential areas. Investigations performed to date confirm that soil vapor and groundwater have not been fully delineated.

6. **Sources of Information:** The sources for the evidence summarized above include but are not limited to: reports and other documentation in Regional Board files, including meeting and telephone calls documentation, and e-mail communication with Dischargers, their attorneys, and/or consultants, and site visits.

AUTHORITY – LEGAL REQUIREMENTS

7. Water Code section 13304, subdivision (a) provides that:

   "(a) Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

8. Water Code section 13304, subdivision (c)(1) provides that:

   ". . . the person or persons who discharged the waste, discharges the waste, or threatened to cause or permit the discharge of the waste within the meaning of

subdivision (a), are liable to that government agency to the extent of the reasonable costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising cleanup or abatement activities, or taking other remedial actions. . .”

9. Water Code section 13267, subdivision (b)(1) provides that:

“In conducting an investigation . . ., the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region . . .shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.”

10. **Public Participation:** The Regional Board may require the Dischargers to submit a Public Participation Plan or engage in other activities to disseminate information and gather community input regarding the Site, as authorized or required by Water Code sections 13307.1, 13307.5 and 13307.6.

11. The State Water Resources Control Board (hereafter State Water Board) has adopted Resolution No. 92-49, the Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304 (Resolution 92-49). This Policy sets forth the policies and procedures to be used during an investigation or cleanup of a polluted site and requires that cleanup levels be consistent with State Water Board Resolution 68-16, the Statement of Policy With Respect to Maintaining High Quality of Waters in California (Resolution 68-16). Resolution 92-49 and the Basin Plan establish the cleanup levels to be achieved. Resolution 92-49 requires the waste to be cleaned up to background, or if that is not reasonable, to an alternative level that is the most stringent level that is economically and technologically feasible in accordance with California Code of Regulations, title 23, section 2550.4. Any alternative cleanup level to background must (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Water Resources Control Board (State Water Board).

12. The Regional Board’s *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan), which was initially adopted on June 13, 1994, and amended from time-to-time, identifies beneficial uses and establishes water quality objectives to protect those uses. The Site overlies groundwater within the Coastal Plain of Los Angeles (West Coast - Dominguez Channel Watershed). The designated beneficial uses of the groundwater beneath the Site are: municipal and domestic supply (MUN), industrial service supply (IND), industrial process supply (PROC), and agricultural supply (AGR). Water quality objectives to protect the

beneficial use of MUN that apply to the groundwater at the Site include the "Chemical Constituents and Radioactivity", which incorporates by reference state maximum contaminant levels set forth in Title 22 of the California Code of Regulations. The MCLs for the primary COCs, TCE and PCE, are 5 µg/L. As set forth in the above Findings, the concentrations of COCs in groundwater at and downgradient of the Site exceed the water quality objectives applicable to the wastes.

13. The exceedance of applicable narrative or numeric water quality objectives in the Basin Plan constitutes "pollution," as defined in Water Code section 13050, subdivision (l)(1).

14. The threat of vapor intrusion into buildings at and near the Site has caused or threatens to cause nuisance as defined in Water Code section 13050, subdivision (m). The presence of COCs, including VOCs (primarily TCE and PCE), at the known levels is potentially injurious to health, indecent or offensive to the senses, and/or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property and affects at the same time an entire community and occurs during or as a result of the treatment or disposal of waste. The wastes detected in groundwater, soil matrix, and vapor at the Site continue to migrate and have caused and threaten to continue to cause pollution, including contamination, and nuisance.

DISCHARGER LIABILITY

15. COCs, including TCE and PCE and other waste constituents discharged at the Site constituted "waste" as defined in Water Code section 13050, subdivision (d).

16. As described in Findings of this Order, Dischargers identified in this Order are the current owner of the property and/or occupants, and each of them has caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution or nuisance.[2]

[2] Under precedential Orders issued by the State Water Resources Control Board (State Water Board), the City of Torrance is liable for the cleanup of wastes at the Site regardless of its involvement in the activities that initially caused the pollution. The discharge of chemicals continues today, as the plume of groundwater contamination continues to migrate, unabated. This is the subject of a recent Court of Appeals case, *Tesoro Refining & Marketing Company LLC v. Los Angeles Regional Water Quality Control Board*, 42 Cal.App.5th 453, 457 (2019), which held "the term 'discharge' must be read to include not only the initial occurrence [of a discharge], but also the passive migration of the contamination into the soil." The Court affirmatively cited State Board precedent: "State Board held that a continuous and ongoing movement of contamination from a source through the soil and into the groundwater is a discharge to waters of the state and subject to regulation." (*Ibid*., citing State Water Board Order WQ 86-2 (*Zoecon Corp*), WQ74-13 (*Atchison, Topeka, et al*), and WQ 89-8 (*Spitzer*) ("[D]ischarge continues as long as pollutants are being emitted at the site"]. See also State Water Board Order WQ 89-1 (*Schmidl*).) Under California law, courts have historically held, and modern courts maintain, that possessors of land may be liable for a nuisance on that land even if the possessor did not create the nuisance. (See *Leslie Salt Co. v. San Francisco Bay Conservation and Dev. Comm'n* (1984) 153 Cal.App.3d 605, 619–620).

17. The City of Torrance is a Discharger because, as the current owner of all of the Site, the City of Torrance was aware of the activities that resulted in the discharges of waste and had the ability to control those discharges through contractual relationships with entities who discharged as a result of their operations. Despite being aware of the contamination present on and under its property, the City of Torrance has not performed any investigation or remediation to stop the migration of contamination.

18. Hi-Shear and the remaining EA Properties Dischargers (other than the City of Torrance) are Dischargers because, as a current or former operator of properties making up the Site, each entity caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution or nuisance. Findings 3 describe each entities use of COCs on the Site and Findings 4.c, and 5 describe the investigations that provide data demonstrating discharges of wastes at each respective property that make up the Site. Decades of Regional Board staff experience with industries that use, store and transfer chemicals such as petroleum products and solvents (e.g., total petroleum hydrocarbons, VOCs, etc.), provide evidence that small amounts of spilled chemicals discharge during routine operations, seep through concrete and other intended containment, leading to the type of contamination found at the Site. The Regional Board is currently overseeing numerous cleanup operations resulting from improper and inadequate handling of hazardous materials. Standard chemical handling practices often unknowingly allow adverse environmental impacts, like the ones observed at the Site, to occur. These factors, taken as a whole, lead to the conclusion that the Dischargers have discharged high concentrations of COCs which must be cleaned up and abated to protect the environment and human health.[3]

19. Due to the activities described in this Order, the Dischargers have caused or permitted or threatened to cause or permit wastes to be discharged or deposited where the wastes are, or probably will be discharged into the waters of the State which creates a condition of pollution or nuisance. The Dischargers have caused or permitted or threatened to cause or permit wastes to be discharged or deposited where the wastes are or probably will pose a potential human health threat to occupants of the building onsite through direct contact exposure to contaminated soil and/or groundwater or through vapor intrusion into indoor air. The Dischargers knew or should have known of the discharge of waste and had the legal ability to control it. The relevant facts and weight of the evidence indicates that the Dischargers are appropriately identified in this Order.

[3] State Board Order WQ 86-16 (*Stinnes-Western*) supports the use of evidence of chemical use, standard chemical handling practices, and detections of that chemicals in the environment as reasonable bases supporting a cleanup and abatement order. "As we noted earlier, given the very low action levels for these chemicals, today we are concerned with any discharge." (*Ibid.* at n. 4.)

20. This Order requires investigation and cleanup of the Site in compliance with the Water Code, the applicable Basin Plan, State Water Board Resolutions 92-49 and 68-16, and other applicable plans, policies, and regulations.

    As described in the Findings in this Order, the Dischargers are subject to orders pursuant to Water Code section 13267 to submit technical reports because existing data and information about the Site indicate that waste has been discharged, is discharging, or is suspected of discharging, at the property, which is or was owned and/or operated by the Dischargers named in this Order. The technical reports required by this Order are necessary to assure compliance with Water Code section 13304 and State Water Board Resolution 92-49, including to adequately investigate and cleanup the Site to protect the beneficial uses of waters of the state, to protect against nuisance, and to protect human health and the environment. As required by Water Code section 13267, the Regional Board has considered the burden and benefits of requiring these reports and has determine that the benefit to water quality and public health outweighs the costs of generating the required reports. Soil, soil vapor, and groundwater concentrations on- and off-Site are detected above their applicable screening levels that are protective of water quality and public health and have not been fully delineated. Regional Board staff, in reliance on best professional judgement and State Water Board data, estimates that compliance with Water Code section 13267 in this Order will cost approximately $2,000,000 to $5,000,000, depending upon the extent of the investigation needed. The benefits to be obtained of the required reports include protection of human health, drinking water, and elimination of soil, soil vapor, and groundwater contamination which currently impacts an entire community.

OTHER CONSIDERATIONS

21. Issuance of this Order is being taken for the protection of the environment and as such is exempt from provisions of the California Environmental Quality Act (CEQA) (Pubic Resources Code §§ 21000 et seq.) in accordance with title 14, California Code of Regulations, sections 15061, subdivision (b)(3), 15306, 15307, 15308, and 15321. This Order generally requires the Dischargers to submit plans for approval prior to implementation of cleanup activities at the Site. Mere submittal of plans is exempt from CEQA as submittal will not cause a direct or indirect physical change in the environment and/or is an activity that cannot possibly have a significant effect on the environment. CEQA review at this time would be premature and speculative, as there is not enough information concerning the Dischargers' proposed remedial activities and possible associated environmental impacts. If the Regional Board determines that implementation of any plan required by this Order will have a significant effect on the environment, the Regional Board will conduct the necessary and appropriate environmental review prior to Executive Officer's approval of the applicable plan.

22. Pursuant to Water Code section 13304, the Regional Board may seek reimbursement for all reasonable costs to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action.

23. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring the Dischargers to clean up the groundwater to meet drinking water standards.

24. Any person aggrieved by this action of the Regional Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and title 23, California Code of Regulations, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions will be provided upon request or may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

REQUIRED ACTIONS

THEREFORE, IT IS HEREBY ORDERED, pursuant to Water Code sections 13304 and 13267 that the Dischargers shall investigate, cleanup the waste and abate the effects of waste forthwith discharging at and from the Site. “Forthwith” means as soon as reasonably possible, but in any event no later than the compliance dates below. More specifically, the Dischargers shall:

1. **Develop and Submit a Site Conceptual Model:** The Site Conceptual Model (SCM) should include a written presentation with graphic illustrations of discharge scenario, geology and hydrogeology, waste fate and transport in soil matrix, soil vapor and groundwater, distribution of wastes, exposure pathways, sensitive receptors and other relevant information. The SCM shall be based upon the actual data already collected from the Site and shall identify data gaps, i.e., areas where further investigation is necessary.

   If information presented in the SCM suggests that assessment, characterization and delineation of waste constituents is incomplete, you shall prepare and submit a work plan to complete assessment and characterization of COCs and other potential waste constituents in soil vapor, soil matrix and groundwater and to fully delineate the vertical and lateral extent of wastes in the soil and groundwater onsite and offsite as set forth in Order Number 2 below.

   The SCM shall also be updated as new information becomes available. New information may include, but not be limited to, technical reports required by CWC section 13267 investigative orders issued on October 29, 2009 to Hi-Shear, January

13, 2020 to EA Properties, and May 12, 2020 to Skypark Commercial Properties. The SCM shall be updated and submitted upon request by the Regional Board.

2. **Develop, Submit, and Implement a Site Assessment Work Plan(s) to Assess, Characterize and Delineate the Extent of Wastes in Soil, Soil Vapor and Groundwater:**

   a. For each Property, the dischargers identified with the Property in the above Site History shall fully assess, characterize, and delineate the vertical and lateral extent of wastes onsite and offsite in the soil matrix, soil vapor, and groundwater.

   b. For each Property, the dischargers identified with the Property in the above Site History shall identify the locations of all waste sources at the Site such as USTs, clarifiers, sumps, and other sources to allow for full assessment of the extent of waste discharged at the Site.

   c. Update the current concentrations of waste constituents in the soil vapor by conducting a site-wide soil vapor survey.

   d. Include a schedule for implementation of the Site Assessment Work Plan within the Plan.

   e. Upon Executive Officer approval of the Site Assessment Work Plan(s), you shall implement the Site Assessment Work Plan in accordance with the approved schedule.

   f. Completion of the Site Assessment may require multiple approved work plans.

   Work plan(s) submitted to the Regional Board shall consider new information provided by, but not be limited to, technical reports required by CWC section 13267 investigative orders issued October 29, 2009, January 13, 2020, and May 12, 2020. Outstanding technical reports required in these investigative orders, and their amendments thereto, include:

   a. Soil, Soil Vapor and Groundwater Delineation Report – Module III, (as required by October 29, 2009 Investigative Order)

   b. Soil, Soil Vapor, and Groundwater Delineation Report – Module IV, (as required by October 29, 2009 Investigative Order)

   c. Onsite Vertical Groundwater Investigation Report, Hi-Shear property (as required by October 29, 2009 Investigative Order)

   d. Installation of MW-9 Replacement Well Work Plan, (as required by October 29, 2009 Investigative Order)

e. Flow and transport groundwater modeling for onsite and offsite groundwater contaminant plumes (as required by October 29, 2009 Investigative Order)

f. Complete assessment of remaining onsite source areas, Hi-Shear property (as required by October 29, 2009 Investigative Order)

g. Complete Data Gap Work Plan, EA Properties (as required by January 13, 2020 Investigative Order)

3. **Prepare and submit a Human Health Risk Assessment:** Prepare and submit a HHRA, and if applicable an ecological risk assessment, considering all waste constituents in the soil matrix, soil vapor and groundwater, all exposure pathways and sensitive receptors and applying existing regulatory human health and ecological screening levels and/or acceptable risk assessment models to the Regional Board for review and approval. The preparation of the HHRA shall consider new information provided by, but not be limited to, technical reports required by CWC section 13267 investigative orders issued October 29, 2009, January 13, 2020, and May 12, 2020. Outstanding technical reports required in these investigative orders, and their amendments thereto, include:

   a. Additional Onsite Indoor Air Sampling Work Plan, Hi-Shear property (as required by October 29, 2009 Investigative Order)

   b. Vapor Intrusion Investigation, Property 1 of EA Properties (as required by May 12, 2020 Investigative Order)

   c. Vapor Intrusion Investigation, Property 2 of EA Properties (as required by May 12, 2020 Investigative Order)

   d. Vapor Intrusion Investigation, Property 3 of EA Properties (as required by May 12, 2020 Investigative Order)

   e. Vapor Intrusion Response Plan implementation report, (as required by October 29, 2009 Investigative Order)

4. **Conduct Remedial Action:** Implement a cleanup and abatement program for the cleanup of wastes in the soil matrix, soil vapor, and groundwater and the abatement of the effects of the discharges of waste on beneficial uses of water. Specifically, you shall:

   a. Develop an Interim Remedial Action Plan (IRAP) for cleanup of wastes in soil, soil vapor, and groundwater originating from the Site based on current available environmental data. The IRAP shall include and/or expand existing system(s) and activities as required by CWC section 13267 investigative order issued October 29, 2009.

The preparation of the IRAP shall consider new information provided by, but not be limited to, technical reports required by CWC section 13267 investigative orders issued October 29, 2009, January 13, 2020, and May 12, 2020. Outstanding technical reports required in these investigative orders, and their amendments thereto, include:

i. SVE System Restart Report, Hi-Shear property (as required by the October 29, 2009 Investigative Order)

ii. Sub-Slab Depressurization System Restart Work Plan, (as required by the October 29, 2009 Investigative Order)

iii. Additional Onsite SVE Well Installation Work Plan, Hi-Shear Property (as required by the October 29, 2009 Investigative Order)

The IRAP shall also include vapor mitigation systems for on- and off-Site properties that have confirmed vapor intrusion risks through indoor air and vapor intrusion assessments as required by the existing investigative orders.

b. Develop a comprehensive Remedial Action Plan(s) (RAP) for cleanup of wastes in the soil matrix, soil vapor, and groundwater originating from the Site and submit it to the Regional Board for review and approval. The RAP shall include, at a minimum:

i. Evaluation of the technology(ies) proposed for remediation of soil matrix, soil vapor, and groundwater

ii. Description of the selection criteria for choosing the proposed method over other potential remedial options. Discuss the technical merit, suitability of the selected method under the given Site conditions and waste constituents present, economic and temporal feasibility, and immediate and/or future beneficial results

iii. Description of any pilot projects intended to be implemented

iv. Estimation of cumulative mass of wastes to be removed with the selected method. Include all calculations and methodology used to obtain this estimate

v. A proposed schedule for completion of the RAP

The following information shall be considered when establishing preliminary cleanup goals:

i. Groundwater cleanup goals that do not exceed applicable water quality objectives or criteria necessary to protect the beneficial uses, including the Regional Board's Basin Plan water quality objectives (e.g., California's MCLs) and Notification Levels for drinking water as established by the SWRCB DDW,

State Water Board Ocean Plan water quality objectives, and the California Toxic Rule water quality criteria, at a point of compliance approved by the Regional Board.

ii. Human health protection levels set forth in the current USEPA Region IX's RSLs.

iii. Protection from vapor intrusion and protection of indoor air quality based on the DTSC's September 2018 (or later version) *Toxic Criteria for Human Health Risk Assessments, Screening Levels, and Remediation Goals* and DTSC and California Water Resources Control Boards' February 2020 (or later version) *Public Draft – Supplemental Guidance: Screening and Evaluating Vapor Intrusion.* Soil vapor sampling requirements are stated in USEPA's 2015 *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air*, the DTSC and Los Angeles Water Board's July 2015 *Advisory – Active Soil Gas Investigations*, the DTSC October 2011 (or latest version) *Guidance for Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*, and the October 2014 San Francisco Bay Regional Water Quality Control Board's *Interim Framework for Assessment of Vapor Intrusion at TCE Contaminated Sites in the San Francisco Bay Region*.

Revisions to or additional RAPs may be needed to comply with State Board Resolution 92-49.

b. Upon Regional Board approval of the Remedial Action Plan(s), you shall implement the RAP in accordance with the approved schedule.

c. You shall submit quarterly remediation progress reports to this Regional Board. The quarterly remediation progress reports shall document all performance data associated with the operating systems.

5. **Conduct Groundwater Monitoring:** Implement a tri-annual groundwater monitoring program as set forth in **Attachment C**. The tri-annually groundwater monitoring reports shall be submitted according to the following schedule, with the next report due by **January 15, 2021**:

Monitoring Trimester	Monitoring Period	Report Due Date
First Trimester	January – April	May 15
Second Trimester	May – August	September 15
Third Trimester	September – December	January 15

6. **Time Schedule:** The Dischargers shall submit all required work plans and reports and complete work within the schedule in any approved work plan or RAP and the time

schedule set forth in Attachment B attached hereto and incorporated herein by reference, which may be revised by the Executive Officer at his/her discretion.

7. The Regional Board's authorized representative(s) shall be allowed:

   a. Entry upon premises where a regulated facility or activity is located, conducted, or where records are stored, under the conditions of this Order;

   b. Access to copy any records that are stored under the conditions of this Order;

   c. Access to inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

   d. The right to photograph, sample, and monitor the Site for the purpose of ensuring compliance with this Order, or as otherwise authorized by the California Water Code.

8. **Contractor/Consultant Qualification:** As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all reports shall be prepared by, or under the supervision of, a California registered professional engineer or geologist and signed by the registered professional. All technical reports submitted by the Dischargers shall include a statement signed by the authorized representative certifying under penalty of law that the representative has examined and is familiar with the report and that to his/her knowledge, the report is true, complete, and accurate. All technical documents shall be signed by and stamped with the seal of the above-mentioned qualified professionals that reflects a license expiration date.

9. This Order is not intended to permit or allow the Dischargers to cease any work required by any other Order issued by the Regional Board, nor shall it be used as a reason to stop or redirect any investigation or cleanup or remediation programs ordered by the Regional Board or any other agency. Furthermore, this Order does not exempt the Dischargers from compliance with any other laws, regulations, or ordinances which may be applicable, nor does it legalize these waste treatment and disposal facilities, and it leaves unaffected any further restrictions on those facilities which may be contained in other statutes or required by other agencies.

10. The Dischargers shall submit a notice to the Regional Board 30-days in advance of any planned changes in name, ownership, or control of the Site and shall submit a notice to the Regional Board 30-days in advance of any planned physical changes to the Site that may affect compliance with this Order. In the event of a change in ownership or operator, the Dischargers also shall provide a notice 30-days in advance, by letter, to the succeeding owner/operator of the existence of this Order, and shall submit a copy of this advance notice to the Regional Board.

11. Abandonment of any groundwater well(s) at the Site must be approved by and reported to the Regional Board at least 30 days in advance. Any groundwater wells removed must be replaced within a reasonable time, at a location approved by the

Regional Board. With written justification, the Regional Board may approve the abandonment of groundwater wells without replacement. When a well is removed, all work shall be completed in accordance with California Department of Water Resources Bulletin 74-90, *California Well Standards*, Monitoring Well Standards Chapter, Part III, Sections 16-19.

12. In the event compliance cannot be achieved within the terms of this Order, the Dischargers has the opportunity to request, in writing, an extension of the time specified. The extension request shall include an explanation why the specified date could not or will not be met and justification for the requested period of extension. Any extension request shall be submitted as soon as the situation is recognized and no later than the compliance date. Extension requests not approved in writing with reference to this Order are denied.

13. Reference herein to determinations and considerations to be made by the Regional Board regarding the terms of the Order shall be made by the Executive Officer or his/her designee. Decisions and directives made by the Executive Officer in regard to this Order shall be as if made by the Regional Board.

14. The Regional Board, through its Executive Officer, may revise this Order as additional information becomes available. Upon request by the Dischargers, and for good cause shown, the Executive Officer may defer, delete, or extend the date of compliance for any action required of the Dischargers under this Order. The authority of the Regional Board, as contained in the California Water Code, to order investigation and cleanup, in addition to that described herein, is in no way limited by this Order.

15. Continue any remediation or monitoring activities until such time as the Executive Officer determines that sufficient cleanup has been accomplished and this Order has been rescinded.

16. Reimburse the Regional Board for reasonable costs associated with oversight of the investigation and cleanup of the waste at or emanating from the Site. Provide the Regional Board with the name or names and contact information for the person to be provided billing statements from the State Water Resources Control Board.

17. The Dischargers shall submit information and take actions addressing public participation requirements of Water Code sections 13307.5 and 13307.6 when directed by the Executive Officer.

18. As necessary to assure compliance with the California Environmental Quality Act, provide information to the Regional Board as directed by the Executive Officer.

19. The Regional Board, under the authority given by Water Code section 13267, subdivision (b)(1), requires you to include a perjury statement in all reports submitted under this Order. The perjury statement shall be signed by a senior authorized representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or 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 fine and imprisonment for knowing violations."

20. The State Water Board adopted regulations requiring the electronic submittals of information over the internet using the State Water Board GeoTracker data management system. You are required to comply by uploading all reports and correspondence prepared to date on to the GeoTracker data management system. The text of the regulations can be found at the URL:

https://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/

21. Failure to comply with the terms or conditions of this Order may result in imposition of civil liabilities, imposed either administratively by the Regional Board or judicially by the Superior Court in accordance with Water Code sections 13268, 13304, 13308, and/or 13350, and/or referral to the Attorney General of the State of California.

22. None of the obligations imposed by this Order on the Dischargers are intended to constitute a debt, damage claim, penalty or other civil action which should be limited or discharged in a bankruptcy proceeding. All obligations are imposed pursuant to the police powers of the State of California intended to protect the public health, safety, welfare, and environment.

Ordered by: _____ Date: _____

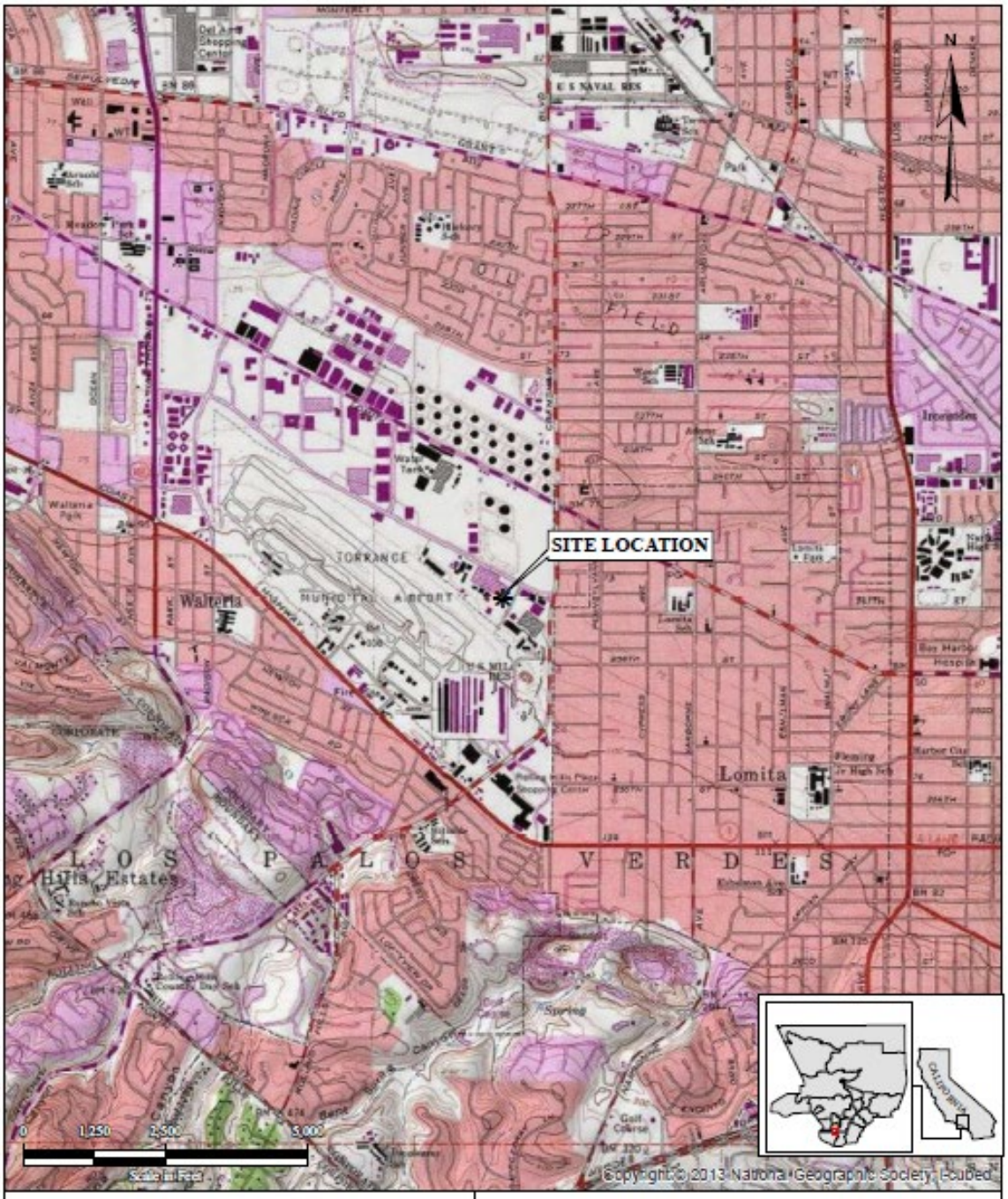
Renee Purdy

Executive Officer

ATTACHMENT A

FIGURES

FIGURE 1: SITE VICINITY MAP



GEER
GENESIS ENGINEERING & REDEVELOPMENT
115 S. School Street · Lodi, CA 95240
Tel: 209.599.2004 · Fax: 209.433.3990
www.gercorp.com

SITE LOCATION MAP
Soil, Soil Vapor, and Groundwater Delineation Report - Module V
Hi-Shear Corporation
2600 Skypark Drive, Torrance, California

Designed:	CH	Project Number:	237-H-13	Figure 1
Drawn:	DH	File:	237H13_1	
Checked:	SV	Revision:	xxxxx	Date: 03/17/20

FIGURE 2: SITE MAP

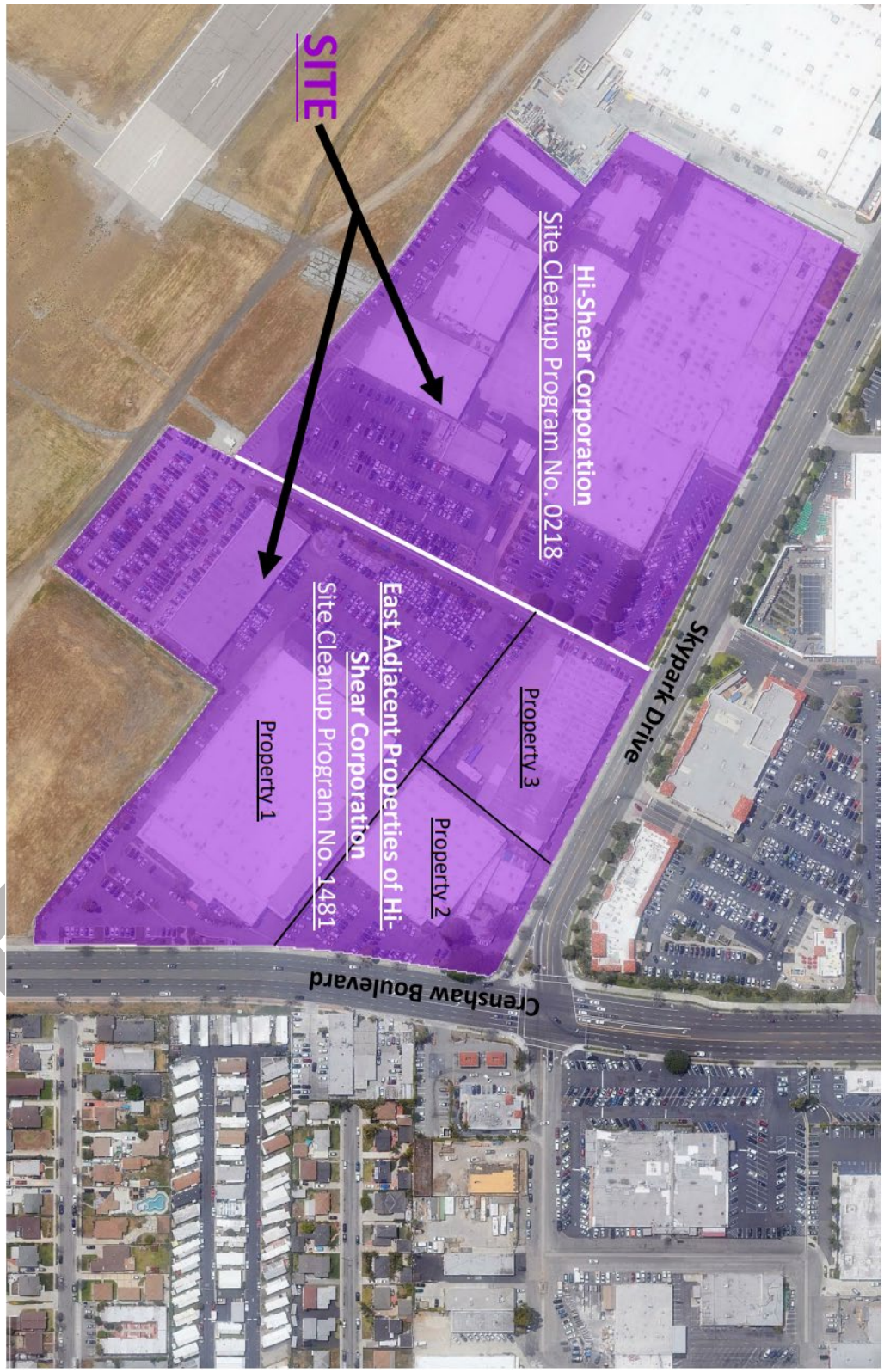


FIGURE 3: PCE and TCE Concentration in Soil Matrix

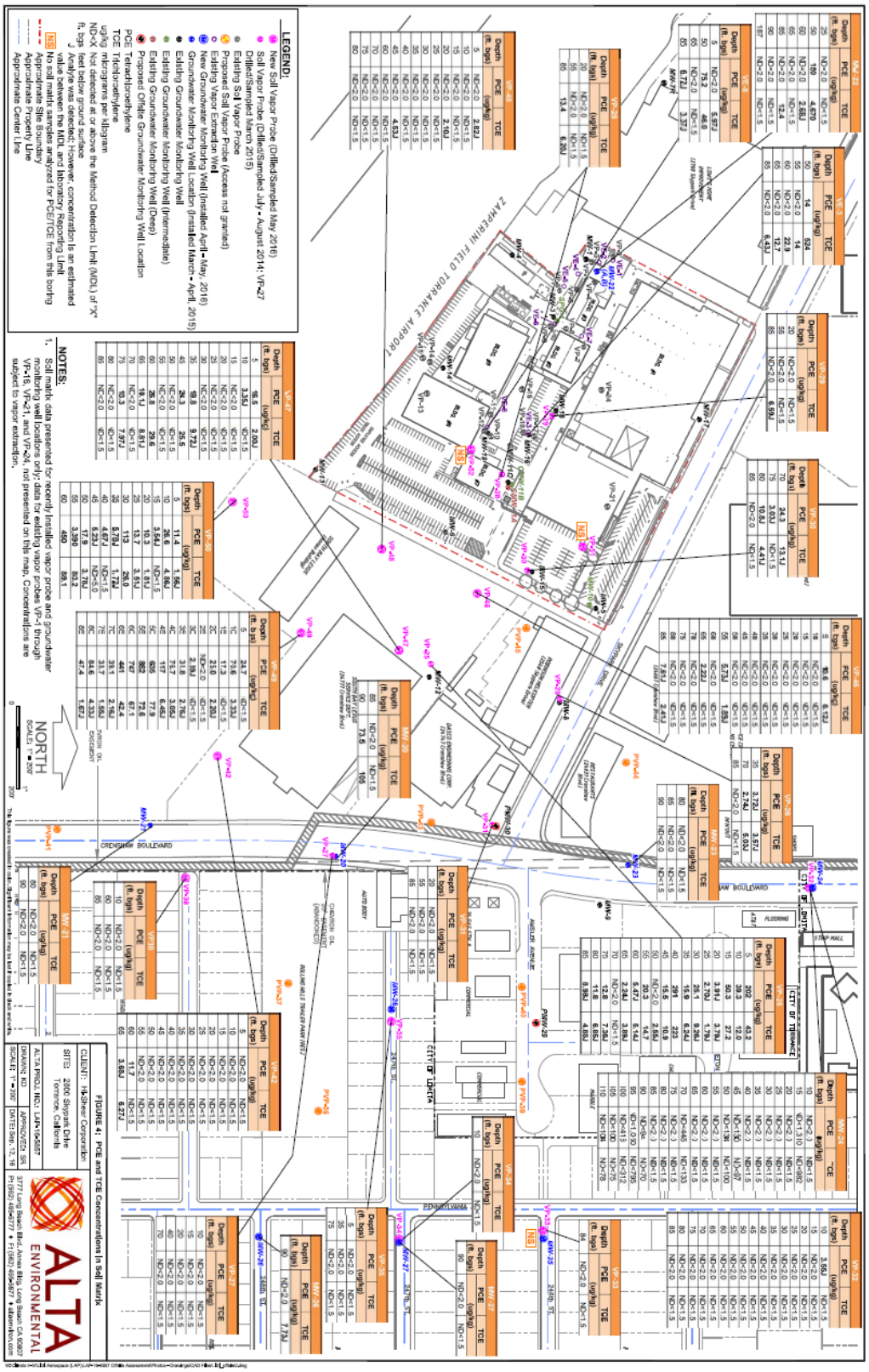


FIGURE 4: PCE Concentration in Soil Vapor at a Depth of 5 Feet

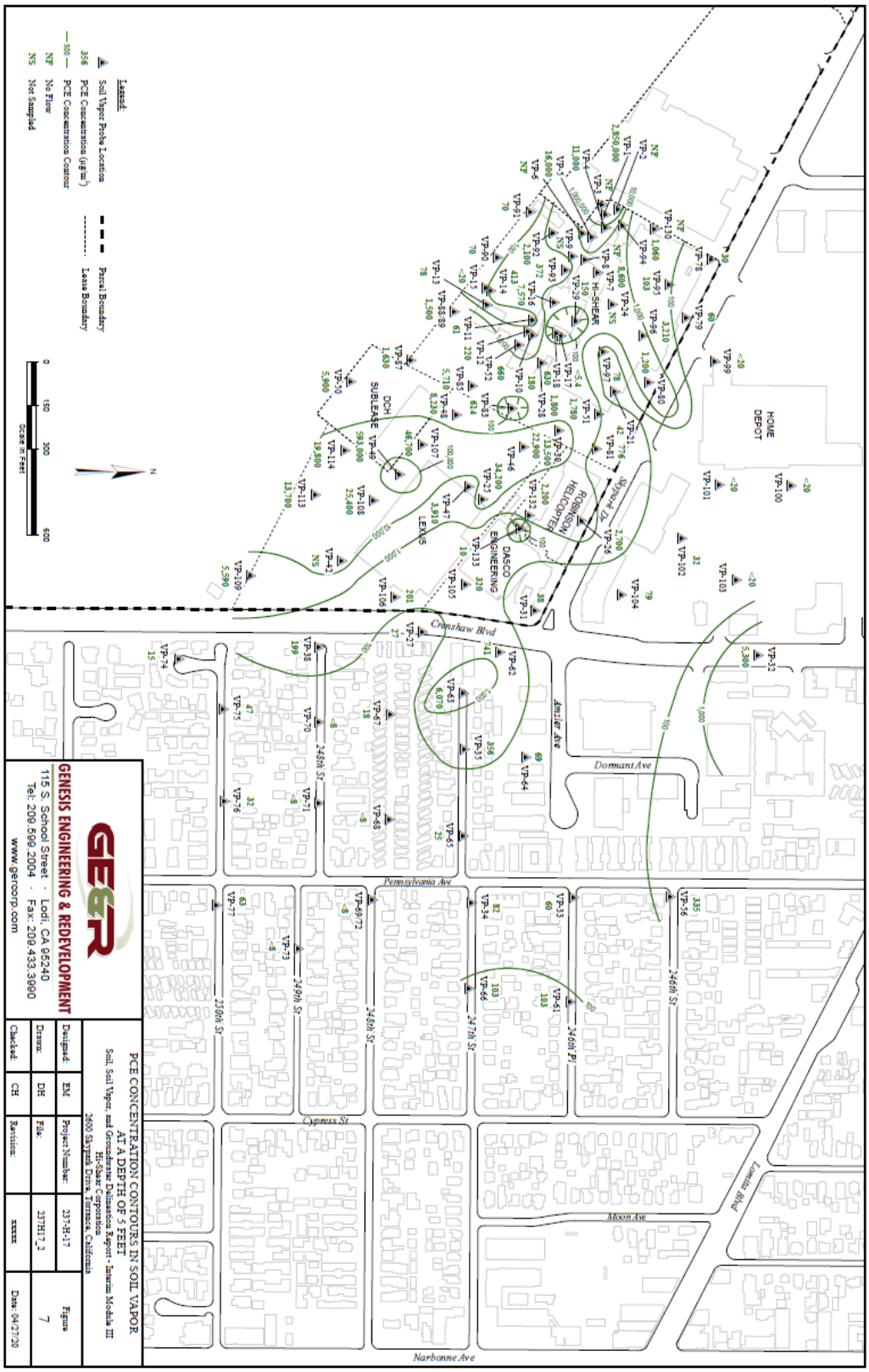


FIGURE 5: PCE Concentration in Soil Vapor at a Depth of 45 Feet

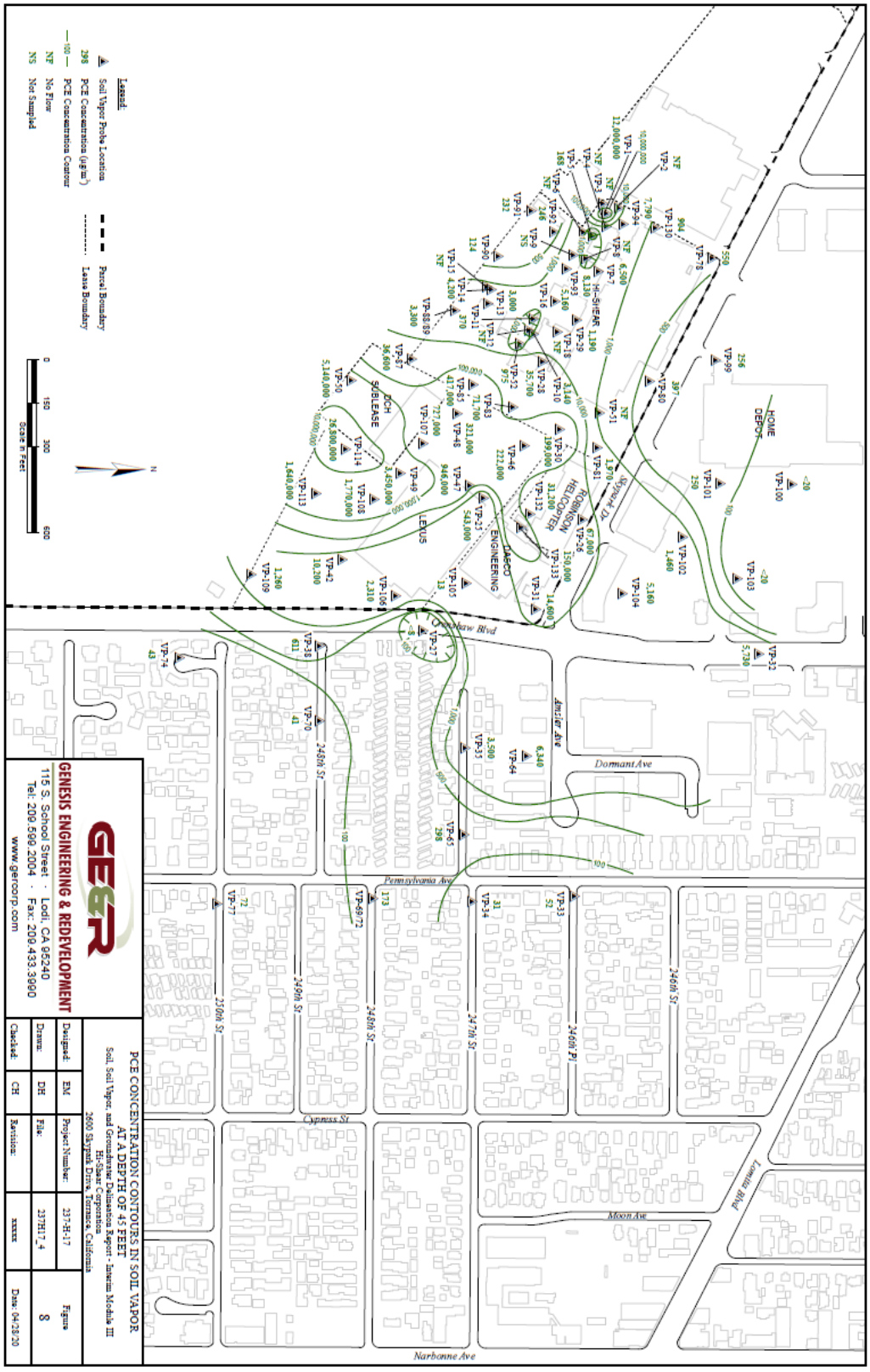


FIGURE 6: PCE Concentration in Soil Vapor at a Depth of 85 Feet

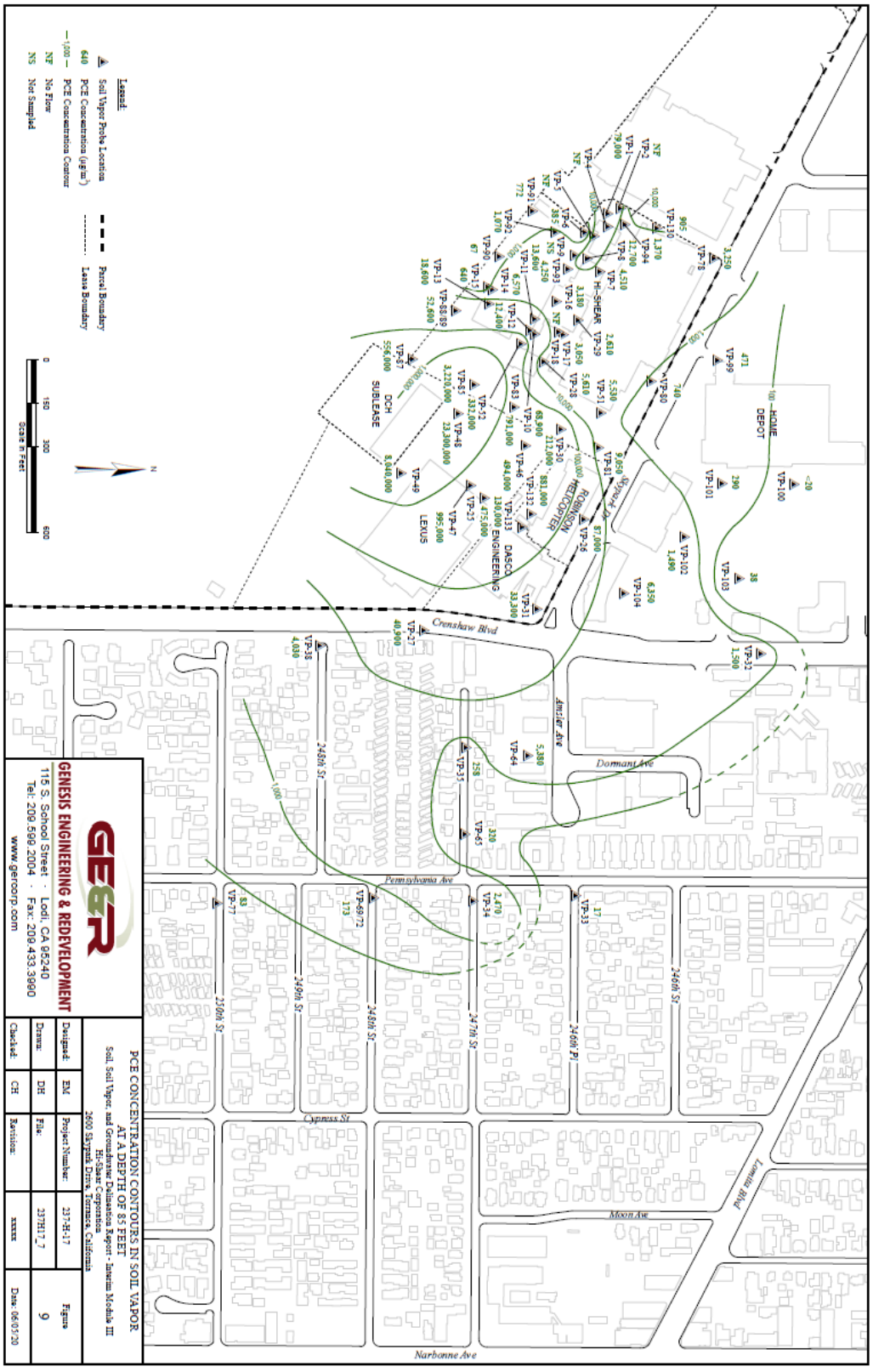


FIGURE 7: TCE Concentration in Soil Vapor at a Depth of 5 Feet

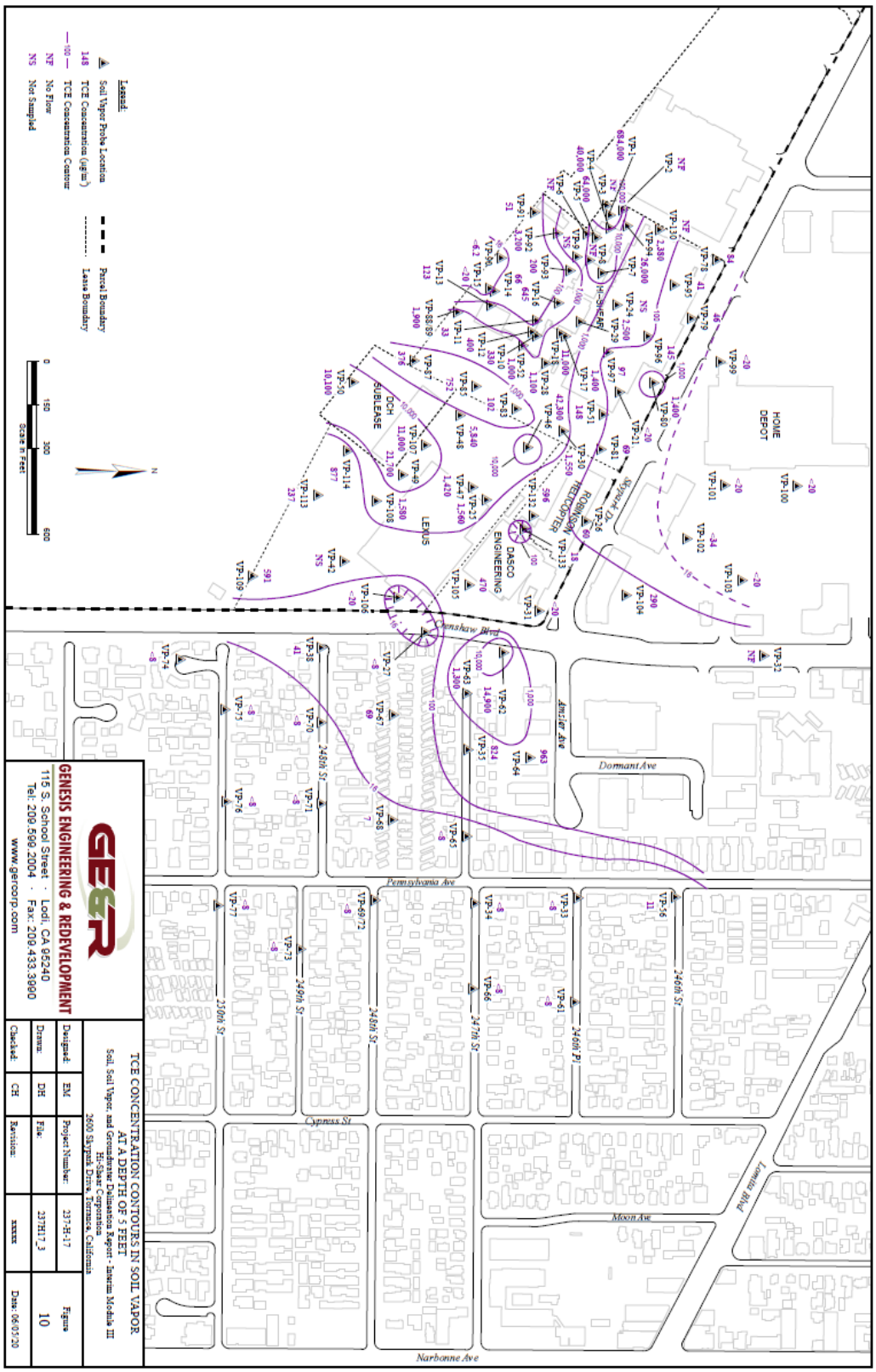


FIGURE 8: TCE Concentration in Soil Vapor at a Depth of 45 Feet

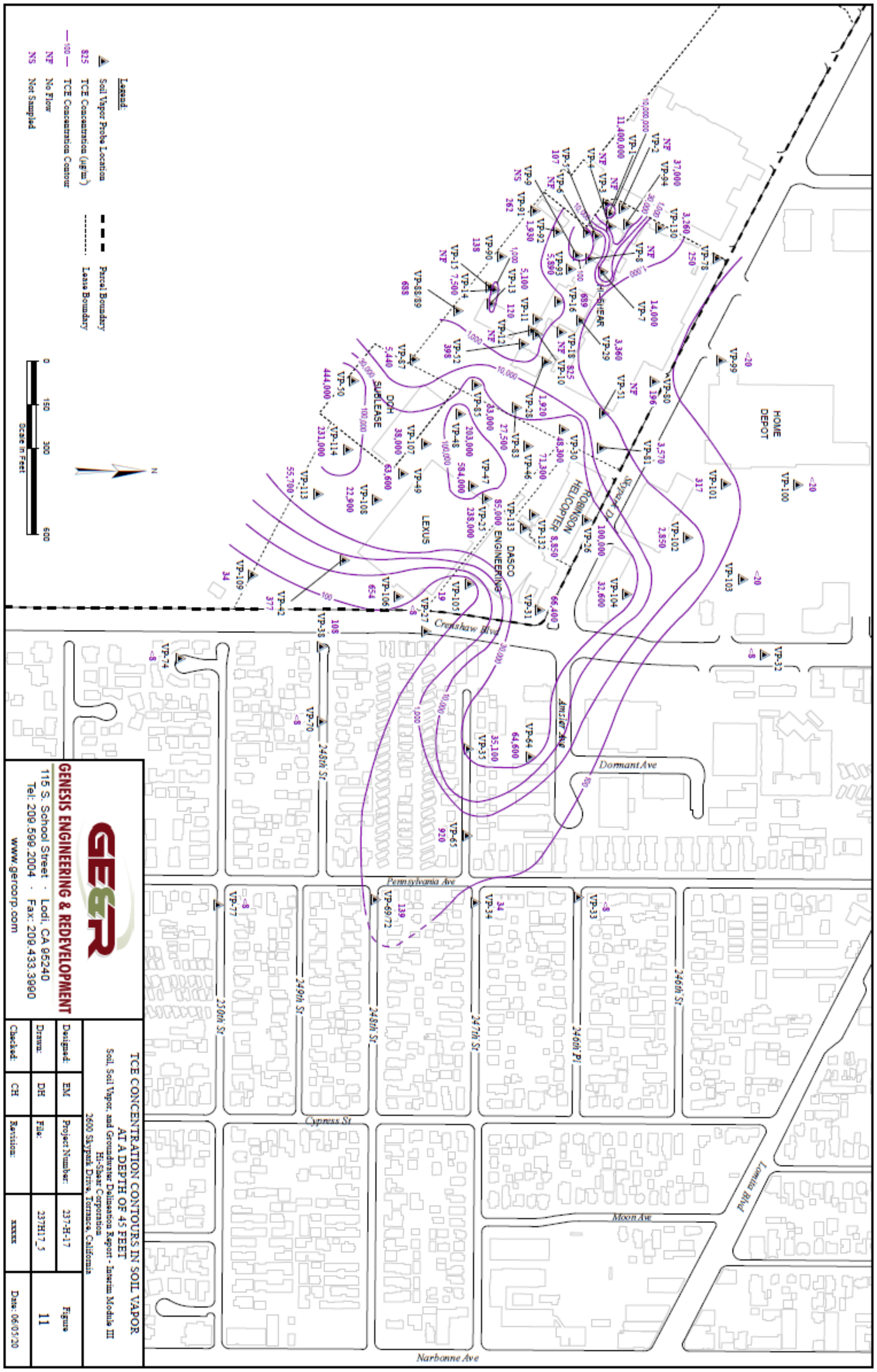


FIGURE 9: TCE Concentration in Soil Vapor at a Depth of 85 Feet

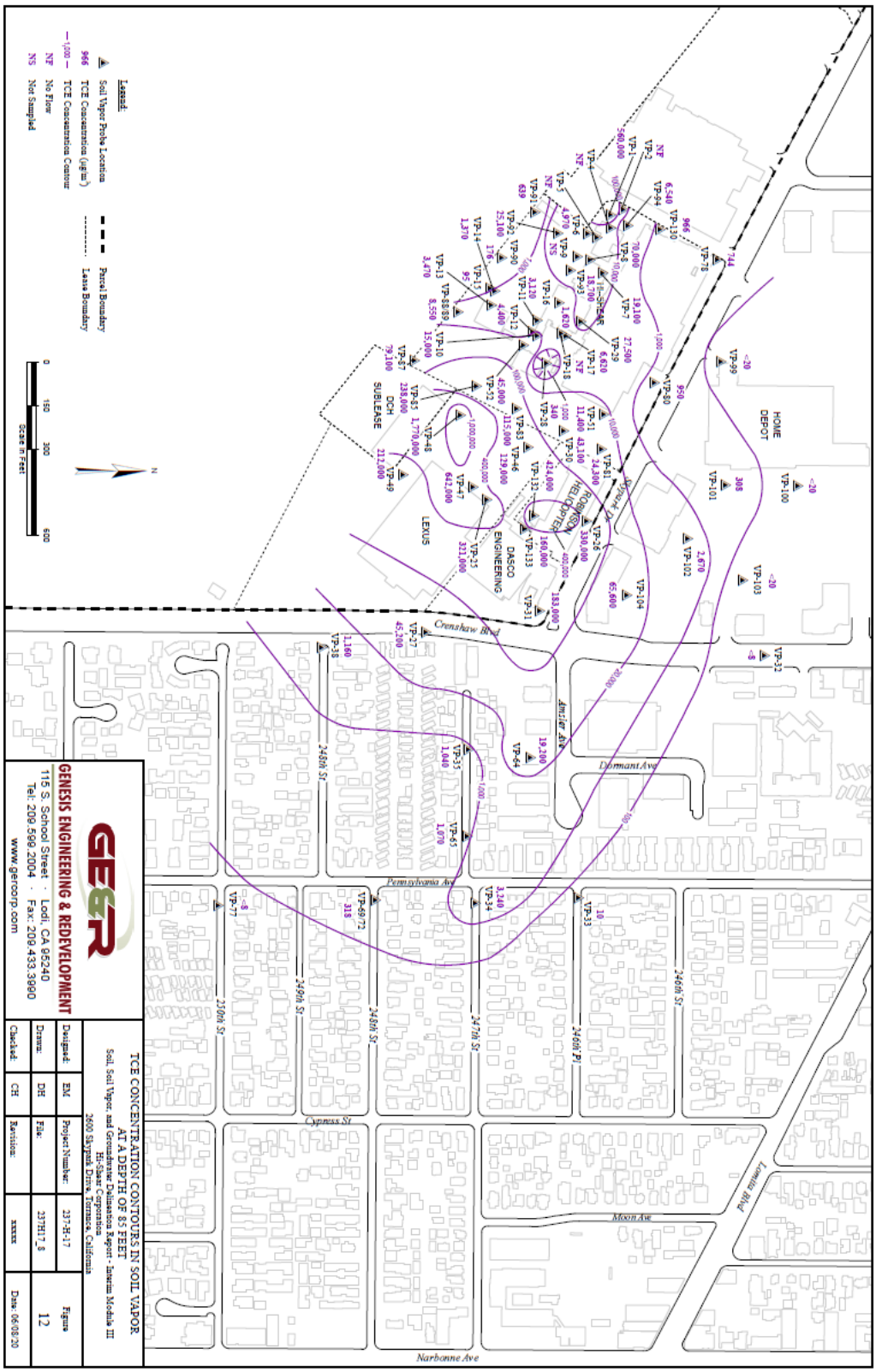


FIGURE 10: PCE Concentration Contours in Shallow Groundwater

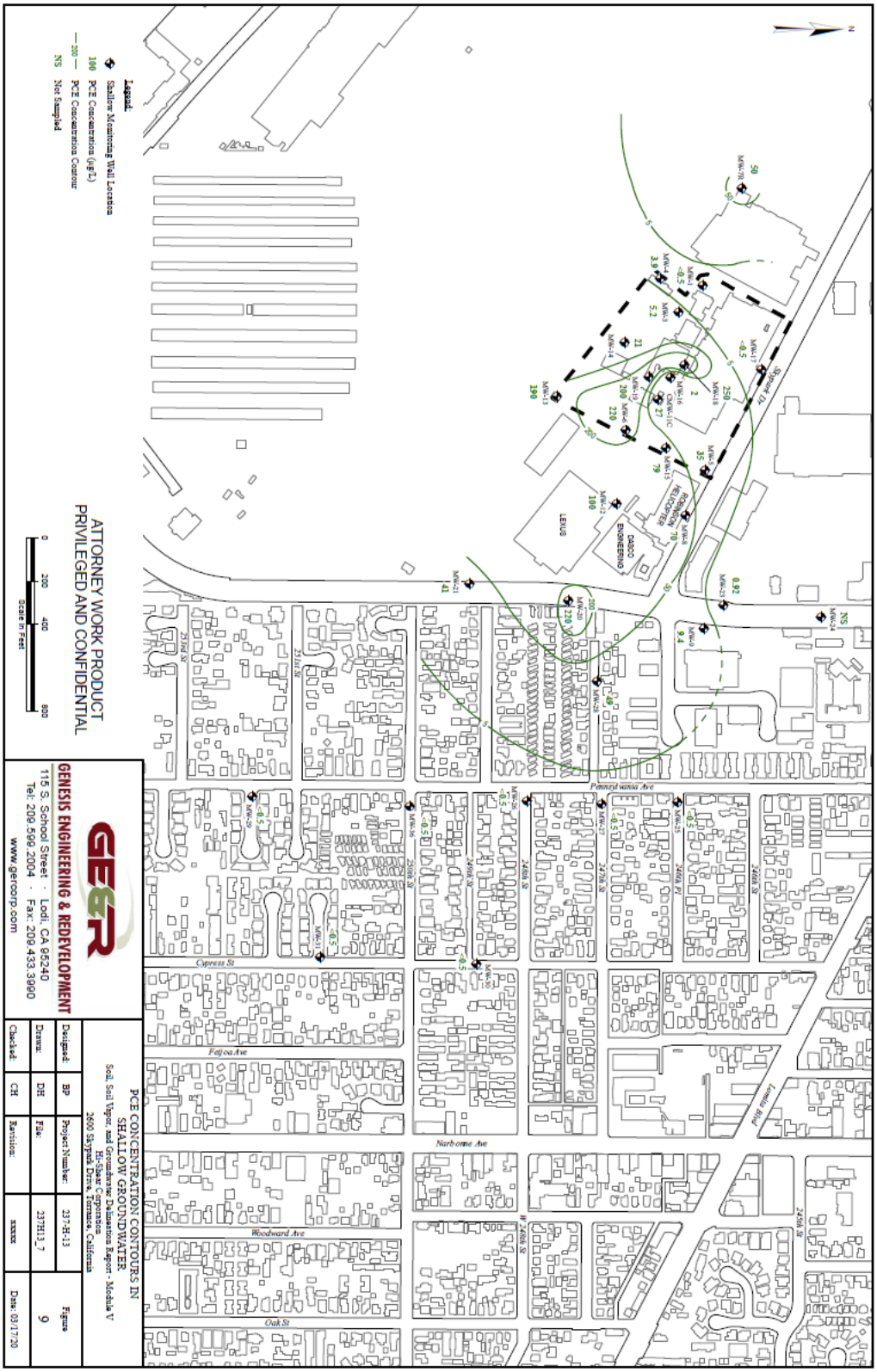
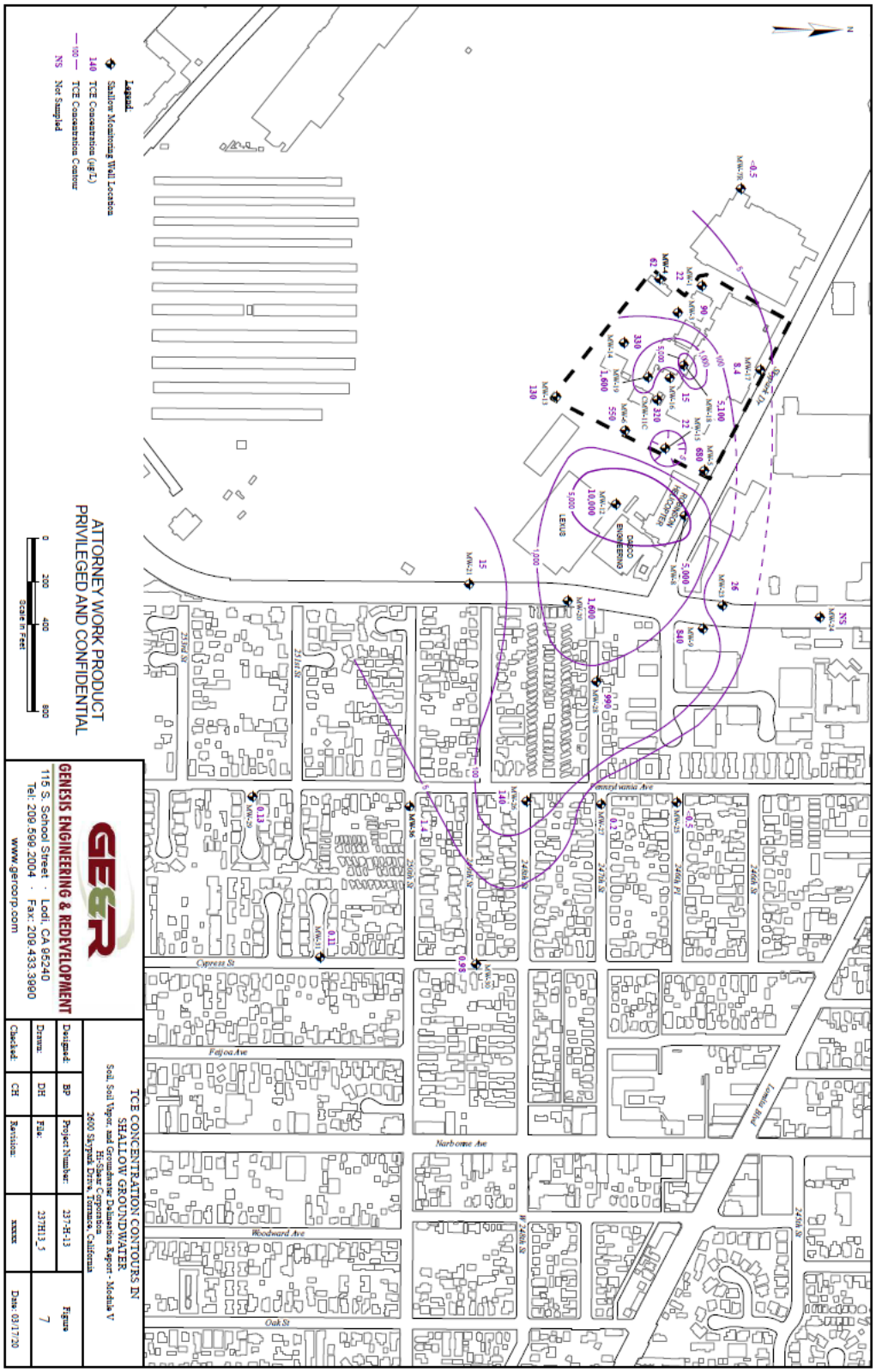


FIGURE 11: TCE Concentration Contours in Shallow Groundwater



ATTACHMENT B: TIME SCHEDULE

DIRECTIVE	DUE DATE
1. Site Conceptual Model:	
a. Prepare and submit to the Regional Board a Site Conceptual Model which provides details on and illustrates waste discharge scenario, geology and hydrogeology, waste constituent fate and transport in soil, soil vapor and groundwater, distribution of waste constituents, exposure pathways, sensitive receptors and other relevant information.	Site Conceptual Model due **March 12, 2021.**
[Note that the Regional Board may require revisions to the Site Conceptual Model as necessary to complete the Model.]	Revisions due within 60 days of receiving directive from the Regional Board.
b. **Risk Assessment:** Prepare and submit to the Regional Board a comprehensive HHRA, and if applicable ecological risk assessment considering all waste constituents in the soil matrix, soil vapor and groundwater, all exposure pathways and sensitive receptors and applying existing regulatory human health and ecological screening levels and/or acceptable risk assessment models.	**February 15, 2021**
Submit revised "Mobile Home Decision Flow Chart," "Residential (Slab-on-Grade Foundation), Commercial Soil Vapor Decision Flow Chart," and "Accelerated and Urgent Response for TCE in Indoor Air Residential and Commercial Decision Flow Chart" (as required by the October 29, 2009 and May 12, 2020 Investigative Orders)	**December 7, 2020**
Submit a plan, sequence, and schedule for access request for the current Evaluate Need for Action zone (as required by the October 29, 2009 and May 12, 2020 Investigative Orders)	**December 21, 2020**
Prepare and submit Evaluate Need for Action zone status reports for the investigation implementation (as required by the October 29, 2009 and May 12, 2020 Investigative Orders)	Tri-annually beginning January 15 of the year of implementation of the Evaluate Need for Action zone investigation

DIRECTIVE	DUE DATE
Submit the vapor intrusion response plan implementation report for the Urgent Response/Accelerated Response Zone (as required by the October 29, 2009 and May 12, 2020 Investigative Orders)	**December 18, 2020**
Submit Additional Onsite Indoor Air Sampling Work Plan (as required by the October 29, 2009 Investigative Order)	**December 21, 2020**
Submit Vapor Intrusion Investigation report (Property 1 of EA Properties, as required by the May 12, 2020 Investigative Order)	**January 20, 2021**
Submit Vapor Intrusion Investigation report (Property 2 of EA Properties, as required by the May 12, 2020 Investigative Order)	**January 20, 2021**
Submit Vapor Intrusion Investigation report (Property 3 of EA Properties, as required by the May 12, 2020 Investigative Order)	**January 20, 2021**
2. Site Assessment Work Plan: Prepare and submit to the Regional Board a Site Assessment Work Plan including a schedule for completing delineation of the lateral and vertical extent of wastes (including VOCs, perchlorate, 1.4-dioxane, hexavalent chromium, total petroleum hydrocarbons, and metals) and other waste constituents in the soil matrix, soil vapor, and groundwater onsite and offsite.	**January 29, 2021**
Implement the Site Assessment Work Plan according to the approved schedule.	According to the schedule approved by the Executive Officer. Vertical and lateral delineation must be complete no later than **June 30, 2021**
Upon completion of implementation of the Site Assessment Work Plan, submit a Site Assessment Completion Report.	According to the schedule approved by Executive Officer.

DIRECTIVE	DUE DATE
Submit the Installation of MW-9 Replacement Well Work Plan (as required by the October 29, 2009 Investigative Order)	**December 1, 2020**
Submit the Onsite Source Areas Work Plan for the Hi-Shear property (as required by the October 29, 2009 Investigative Order)	**December 18, 2020**
Submit the Onsite Vertical Groundwater Investigation report for the Hi-Shear property (as required by the October 29, 2009 Investigative Order)	**January 4, 2021**
Submit Data Gap Report (Property 1 of EA Properties, as required by the January 13, 2020 Investigative Order)	**March 5, 2021**
Submit the Soil, Soil Vapor, and Groundwater Delineation Report – Module III report (as required by the October 29, 2009 Investigative Order)	**April 2, 2021**
Submit the Soil, Soil Vapor, and Groundwater Delineation Report – Module IV report (as required by the October 29, 2009 Investigative Order)	**August 2, 2021**
Submit a work plan for flow and transport groundwater modeling for onsite and offsite groundwater contaminant plumes (as required by the October 29, 2009 Investigative Order)	According to the schedule approved by the Executive Officer
3. Conduct Remedial Action: a. Submit an Interim Remedial Action Plan (IRAP) for cleanup of wastes in soil, soil vapor, and groundwater. The IRAP shall include mitigation measures to address onsite and offsite vapor intrusion risks.	**January 29, 2021**
Implement the IRAP	According to the schedule approved by the Executive Officer
Prepare and submit Remediation Progress Reports for the interim remediation system (s) implemented	Quarterly beginning July 15 of the year implementation of the IRAP begins.

DIRECTIVE	DUE DATE
Submit the Additional Onsite SVE Wells Installation work plan for the Hi-Shear property (as required by the October 29, 2009 Investigative Order)	**December 18, 2020** With additional onsite SVE wells to begin operation no later than **March 1, 2021.**
Submit the Sub-Slab Depressurization System Restart work plan (as required by the October 29, 2009 Investigative Order)	**January 25, 2021**
Submit the SVE System Restart report (as required by the October 29, 2009 Investigative Order)	**January 29, 2021**
b. Prepare and submit a comprehensive Remedial Action Plan(s) (RAP) for cleanup of remaining wastes in soil, soil vapor and groundwater that includes a schedule for implementation.	**February 26, 2021**
Implement the RAP	According to the schedule in the RAP approved by the Regional Board. RAP implementation must be complete and cleanup achieved by **February 27, 2026.**
Prepare and submit Remediation Progress Reports for the remediation system(s) implemented	Quarterly beginning July 15 of the year implementation of the RAP begins.
Upon completion of implementation of the RAP, submit a Remedial Action Completion Report.	60 days after implementation of the RAP.
4. Groundwater Monitoring: Conduct tri-annual groundwater monitoring according to Attachment C (Monitoring and Reporting Program) and the following schedule.	The next groundwater monitoring report is due on **January 15, 2021**.
Monitoring Period January – April May – August September – December	**Report Due Date** May 15th September 15th January 15th

DIRECTIVE	DUE DATE
5. Public Participation: The Dischargers shall submit information and take actions addressing public participation requirements of CWC sections 13307.5 and 13307.6, including, but not limited to:	
a. Submit a baseline community assessment	According to the schedule approved by Executive Officer.
b. Submit an interested persons contact list	According to the schedule approved by Executive Officer.
c. Submit a draft fact sheet	According to the schedule approved by Executive Officer.

ATTACHMENT C:

MONITORING AND REPORTING PROGRAM FOR CLEANUP AND ABATEMENT ORDER NO. R4-20XX-XXXX

This Monitoring and Reporting Program is part of Cleanup and Abatement Order No. R4-20XX-XXXX (CAO). Failure to comply with this program constitutes noncompliance with the CAO and California Water Code, which can result in the imposition of civil monetary liability. All sampling and analyses shall be by USEPA approved methods. The test methods chosen for detection of the constituents of concern shall be subject to review and concurrence by the Regional Board.

Laboratory analytical reports to be included in technical reports shall contain a complete list of chemical constituents, which are tested for and reported on by the testing laboratory. In addition, the reports shall include both the method detection limit and the practical quantification limit for the testing methods. All samples shall be analyzed within the allowable holding time. All quality assurance/quality control (QA/QC) samples must be run on the same dates when samples were actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by a State Water Resources Control Board Division of Drinking Water accredited laboratory.

The Regional Board's *Quality Assurance Project Plan, Updated February 15, 2015*, can be used as a reference and guidance for project activities involving sample collection, handling, analysis, and data reporting. The guidance is available on the Regional Board's website at:

https://www.waterboards.ca.gov/rwqcb4/water_issues/programs/remediation/DocAndInfo/RWQCB_QAPP_2015_FINAL_03-05-15.pdf

GROUNDWATER MONITORING

The Dischargers shall collect groundwater samples from groundwater monitoring wells installed for the purpose of site investigation and monitoring. Any monitoring wells installed in the future shall be added to the groundwater monitoring program and sampled tri-annually. The groundwater surface elevation (in feet above mean sea level [MSL]) in all monitoring wells shall be measured and used to determine the gradient and direction of groundwater flow.

The following shall constitute the monitoring program for groundwater.

Constituent	EPA Method
Volatile Organic Compounds (full scan)	EPA 8260B
Total petroleum hydrocarbons as gasoline	EPA 8015 modified
Metals	EPA 6010B
Hexavalent Chromium	EPA 7199
Ammonium Perchlorate	EPA 314.0
1,4-dioxane	EPA 8270C
N-Nitrosodimethylamine	EPA 1625C
Temperature	Field*
pH	Field*
Electrical Conductivity	Field*
Dissolved oxygen	Field*
Oxidation-Reduction Potential (ORP)	Field*
Turbidity	Field*

* Field – To be measured in the field.

REMEDIATION SYSTEMS

Reports on remediation systems shall contain the following information regarding the site remediation systems:

1. Maps showing location of all remediation wells and groundwater monitoring wells, if applicable;

2. Status of each remediation system including amount of time operating and down time for maintenance and/or repair;

3. Air sparge well operating records including status of each well and volume and pressure of air being injected;

4. Soil vapor extraction well records including status of each well and photo ionization detector (PID) readings of other acceptable methods of determining relative volatile concentrations taken at a minimum quarterly. Readings of volatile concentrations drawn from SVE wells need to be taken at a frequency that allows the efficient operation and evaluation of the SVE system;

5. The report shall include tables summarizing the operating and performance parameters for the remediation systems; and

6. System inspection sheets shall document field activities conducted during each Site visit and shall be included in quarterly monitoring reports.

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, or parameters and locations removed or added by the Executive Officer if Site conditions indicate that the changes are necessary.

REPORTING REQUIREMENTS

1. The Dischargers shall report all monitoring data and information as specified herein. Reports that do not comply with the required format will be REJECTED and the Dischargers shall be deemed to be in noncompliance with the Monitoring and Reporting Program.

2. Tri-annual groundwater monitoring reports shall be submitted to the Regional Board according to the schedule below.

Monitoring Period	Report Due
January – April	May 15
May – August	September 15
September – December	January 15

Groundwater monitoring reports shall include a contour map showing groundwater elevations at the Site and the groundwater flow direction and figures showing iso-concentration curves for the constituents of concern such as PCE, and TCE. The tri-annual groundwater monitoring reports shall include a table with monitoring well construction specifications such as well identification date constructed, total depth of borehole, total depth of casing, screen interval, gravel pack interval, land surface elevation, and elevation of PVC casing and tables summarizing the historical depth-to-water, groundwater elevations, and historical analytical results for each monitoring well. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board. Field monitoring well sampling sheets shall be completed for each monitoring well sampled and included in the report.

Quarterly remediation progress reports shall be submitted to the Regional Board according to the schedule below.

Monitoring Period	Report Due
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15

3. Remediation progress reports shall include an estimate of the cumulative mass of contaminant removed from the subsurface, system operating time, the effectiveness of the remediation system, any field notes pertaining to the operation and maintenance of the system, and, if applicable, the reasons for and duration of all interruptions in the operation of any remediation system and actions planned or taken to correct and prevent interruptions.

4. In reporting the monitoring data, the Dischargers 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. All data shall be submitted in electronic form in a form acceptable to the Regional Board.