



Los Angeles Regional Water Quality Control Board

May 19, 2022

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

Certified Mail
Return Receipt Requested
Claim No. 7021 0950 0000 7275 6070

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

Certified Mail
Return Receipt Requested
Claim No. 7021 0950 0000 7275 6087

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

Certified Mail
Return Receipt Requested
Claim No. 7021 0950 0000 7275 6094

Corporate Secretary
Esterline Technologies Corporation
1301 East 9th Street, Suite 3000
Cleveland, Ohio 44114

Certified Mail
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Claim No. 7021 0950 0000 7275 6100

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

Certified Mail
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Claim No. 7021 0950 0000 7275 6117

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

Certified Mail
Return Receipt Requested
Claim No. 7021 0950 0000 7275 6124

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

Certified Mail
Return Receipt Requested
Claim No. 7021 0950 0000 7275 6131

LAWRENCE YEE, CHAIR | RENEE PURDY, EXECUTIVE OFFICER

SUBJECT: REVIEW OF INTERIM REMEDIAL ACTION PLAN FOR EAST ADJACENT PROPERTIES, PURSUANT TO CALIFORNIA WATER CODE SECTION 13304 CLEANUP AND ABATEMENT ORDER NO. R4-2021-0079

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. Darville, et al.:

The California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) is the state agency with primary responsibility for the protection of groundwater and surface water quality within major portions of Los Angeles and Ventura counties, including the above referenced site (Site). To accomplish this, the Los Angeles Water Board oversees the investigation and cleanup of discharges of waste that may affect the quality of waters of the state as authorized by the Porter-Cologne Water Quality Control Act (California Water Code [CWC], Division 7).

On February 28, 2022, the Los Angeles Water Board staff received the *Removal Action Workplan for the East Adjacent Properties* (EAP IRAP), submitted on behalf of the City of Torrance by Terraphase Engineering Inc. (Terraphase) for review.

A summary of the EAP IRAP followed by Los Angeles Water Board comments are included below.

SUMMARY OF EAP IRAP

The EAP IRAP includes investigative and remedial components. The objectives of the EAP IRAP are to:

1. Further delineate volatile organic compound (VOC) sources on properties located at 24701, 24707, 24747, 24751, and 24777 Crenshaw Boulevard, and 2530 and 2540 Skypark Drive (collectively referred to as EA Properties)
2. Reduce the potential for vapor intrusion (VI) risk on the EA Properties by addressing the VOC-impacted regional groundwater
3. Reduce the potential for VI risk on the EA Properties by addressing the soil vapor and perched groundwater contamination beneath the EA Properties (particularly the property addressed at 24751 and 24777 Crenshaw Boulevard [Property 1])
4. Achieve water quality objectives (i.e., maximum contaminant levels [MCLs]) in the regional groundwater and perched groundwater within a reasonable time frame

Investigative Component

The investigative component of the EAP IRAP identifies data gaps and proposes investigation activities at the EA Properties. The scope of work is generally, although not exclusively, associated with the former degreasers and sewer line on Property 1.

The investigative component of the EAP IRAP proposes the following:

1. Advance 11 borings on Property 1 using direct-push equipment with membrane interface probes (MIP) until perched or regional groundwater is encountered, as shown in Attachment 1, *Figure 19 – Proposed Additional Soil Vapor Sampling*.
 - a. Collect soil samples at approximately 10-foot intervals or where evidence of impacts is identified by the MIP for confirmation
 - b. Install soil vapor probes at 5, 15, 30, 45, 65, and 85 feet below ground surface (ft-bgs). Soil vapor probes will be adjusted according to the groundwater depth encountered.
 - c. Soil and soil vapor samples will be analyzed for VOCs using United States Environmental Protection Agency (USEPA) Method 8260B and TO-15, respectively.
2. Advance five soil borings to perched groundwater or to 70 ft-bgs in an area south of the unoccupied building on Property 1 and on the former Nike Missile Base to confirm the extent of and further characterize perched groundwater, as shown in Attachment 2, *Figure 20 – Proposed Groundwater Sampling Locations* (Figure 20).
 - a. Collect grab groundwater samples if perched groundwater is encountered and analyze for VOCs using USEPA Method 8260B
 - b. Terminate soil boring if perched groundwater is not encountered by 70 ft-bgs.
3. Install three groundwater monitoring wells in the perched groundwater zone
 - a. Total depth will be between 45 and 65 ft-bgs
 - b. Constructed with 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing with 10-foot screened interval
4. Advance 20 borings using direct-push equipment to regional groundwater, as shown in Figure 20.
 - a. 15 borings will be used to create two transects along the western and eastern boundaries of the EA Properties to better characterize the distribution and mass flux of contaminants through the EA Properties

- b. Five borings will be advanced with MIP in the vicinity of the former degreasers and the sewer line extending to Crenshaw Boulevard to further define and determine the source area(s)
 - i. Soil samples may be collected for laboratory analysis based on MIP readings
 - c. Collect groundwater samples and analyze for VOCs using USEPA Method 8260B
5. Install five groundwater monitoring wells in the regional groundwater zone
- a. Three groundwater monitoring wells on Property 1; one on the property located at 24701, 24707, and 24747 Crenshaw Boulevard (Property 2 [depicted as “Dasco Engineering 24747 Crenshaw Boulevard” in Figure 20]); and one on the former Nike Missile Base
 - b. Total depth will be approximately 95 to 100 ft-bgs
 - c. Constructed with 2-inch diameter Schedule 40 PVC casing with 10-foot screened interval
 - d. Include the new wells in the current groundwater monitoring program

Remedial Component

The EAP IRAP evaluated the remedy alternatives to address the contamination by media (i.e., vadose zone [soil and soil vapor], perched groundwater, and regional groundwater) at the EA Properties.

1. Vadose zone remedy alternatives evaluated include no action, monitored natural attenuation (MNA), soil vapor extraction (SVE), and thermal technologies with SVE.
2. Perched groundwater remedy alternatives evaluated include no action, MNA, SVE, in-situ chemical oxidation (ISCO), and enhanced in-situ bioremediation (EISB).
3. Regional groundwater remedy alternatives evaluated include no action, MNA, and EISB.

Terraphase proposes to retain the following remedy alternatives to address the VOC-impacted vadose zone, perched groundwater, and regional groundwater at the EA Properties:

1. SVE to address the vadose zone, as shown in Attachment 4, *Figure 22 – Proposed Vadose Zone and Perched Groundwater Remediation Areas* (Figure 22)
 - a. Install the system in the vicinity of former degreasers at Property 1

- i. Install 24 SVE wells screened as follows:
 1. Twelve SVE wells screened between approximately 5 and 25 ft-bgs
 2. Twelve SVE wells screened between approximately 25 and 45 ft-bgs
 - b. Operate the SVE system for approximately 4 years followed by a rebound assessment
2. EISB to address the regional groundwater, as shown in Attachment 3 – *Figure 21 – Proposed Regional Groundwater Remediation Area* (Figure 21)
 - a. Install 20 dual-nested injection wells in the vicinity of groundwater monitoring well MW-12.
 - i. Screened approximately 85 to 95 ft-bgs and 100 to 110 ft-bgs
 - b. EISB amendment concoction includes soybean oil, emulsifiers, nutrients, and other soluble organic carbon substrates
 - c. Implement four injection events performed on average every 3 years
 - i. Quarterly performance groundwater monitoring for the first year
 - ii. Bi-annual performance groundwater monitoring for two years
 - iii. Annual performance groundwater monitoring beginning the fourth year
3. ISCO to address the perched groundwater, as shown in Attachment 4, *Figure 22 – Proposed Vadose Zone and Perched Groundwater Remediation Areas* (Figure 22)
 - a. Install 10 injection wells to target areas where concentrations of VOCs in groundwater exceed 5,000 micrograms per liter ($\mu\text{g/L}$)
 - b. Administer injections over 3 years

LOS ANGELES WATER BOARD COMMENTS

The Los Angeles Water Board has the following comments on the EAP IRAP:

1. The Los Angeles Water Board concurs with the proposed investigative component of the EAP IRAP; however, the investigative activities proposed should not be performed sequentially but rather concurrently with selected interim remedial activities, upon approval. The investigative component proposed in the EAP IRAP

does not completely delineate the Site and additional investigative and assessment activities may be warranted following its implementation.

- a. Soil samples should be collected at 5 ft-bgs at 5-foot intervals to groundwater during the perched and regional groundwater investigations (i.e., advancement of five soil borings to perched groundwater or 70 ft-bgs, advancement of 20 soil borings to regional groundwater, installation of three perched and five regional groundwater monitoring wells) and submitted for laboratory analysis of VOCs.
2. The proposed 24 SVE well locations are not shown on Figure 22. Provide a figure showing the proposed SVE well locations with additional details and justifications on the locations and the depths of the screened intervals.
 - a. SVE wells should be located and screened to address the current known lateral and vertical extent of VOC contamination at the EA Properties. At a minimum, the SVE wells should address areas in the vicinity of soil vapor probe locations VP-25, VP-26, VP-31, VP-46, VP-47, VP-48, VP-49, VP-50, VP-107, VP-108, VP-113, VP-114, VP-132 and VP-133.
 - b. The SVE well screened intervals should not be limited to the proposed screened intervals of 5 to 25 ft-bgs and 25 to 45 ft-bgs. Soil vapor data indicate impacts extend beyond 45 ft-bgs down to 85 ft-bgs. Additional SVE wells and/or screened intervals should be proposed to address the impacts at these depths.
 3. The EAP IRAP should include an assessment of whether a pilot test is warranted for the selected remedial alternative for perched groundwater (i.e., ISCO) prior to the full-scale implementation.
 4. Data reported in the *Third Tri-Annual 2021 Groundwater Monitoring Report*, dated February 25, 2022, submitted on behalf of Hamrick & Evans, LLP (attorney representative for Hi-Shear Corporation) by Genesis Engineering & Redevelopment, Inc., indicate elevated concentrations of VOCs detected in well MW-8. Concentrations of tetrachloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethene (1,1-DCE) in groundwater at MW-8 were 527 µg/L, 16,600 µg/L, and 93.2 µg/L, respectively. These recent concentrations of PCE, TCE, and 1,1-DCE in groundwater at MW-8 are 15 times greater than their respective State Water Resources Control Board Division of Drinking Water's MCLs of 5 µg/L, 5 µg/L, and 6 µg/L, respectively, and have historically been elevated and have recently increased. Therefore, the selected remedial alternative for regional groundwater (i.e., EISB) should also include injection points in the vicinity of groundwater monitoring well MW-8.
 5. The proposed injection locations for ISCO and EISB are not included in the Figure 21 and Figure 22 of the EAP IRAP. Provide figure(s) showing the proposed injection locations with additional details and justifications on the locations, depths of injections, and injectate volumes in the text of the EAP IRAP.

6. ISCO and EISB performance groundwater monitoring wells should be identified for the performance monitoring.
7. Ensure that the text, tables, and figures for the investigative and remedial components are consistent throughout the EAP IRAP. The following are discrepancies identified:
 - a. *Table 2 – Data Gap Investigation Cost Estimate* does not budget for the soil borings advanced with MIP.
 - b. *Table 2 – Data Gap Investigation Cost Estimate* in the EAP IRAP shows two perched groundwater monitoring wells are budgeted for installation. However, the text of the IRAP proposes the installation of three perched groundwater monitoring wells and Figure 20 depicts three perched groundwater monitoring wells.
 - c. *Table 2 – Data Gap Investigation Cost Estimate* show four regional groundwater monitoring wells are budgeted for installation and Figure 20 depicts four regional groundwater monitoring wells. However, the text of the EAP IRAP proposes the installation of five regional groundwater monitoring wells. The proposed groundwater monitoring well on Property 2 is not included in Figure 20 and Figure 21 of the EAP IRAP.
 - d. *Table 3 – Soil Vapor Extraction Cost Estimate* shows 10 SVE wells are budgeted for installation; however, the text of the EAP IRAP proposes the installation of 24 SVE wells.
8. Submit a revised EAP IRAP addressing the comments No. 1 to 7 above by **June 24, 2022**.

The due date for submittal of the report listed constitutes an amendment to the requirements of the Cleanup and Abatement Order (Order) No. R4-2021-0079 originally dated June 18, 2021. All other aspects of the Order No. R4-2021-0079 originally dated June 18, 2021, and the amendments thereto, remain in full force and effect. Pursuant to section 13350 of the California Water Code, failure to comply with the requirements of the Order No. R4-2021-0079 by the specified due date, including date(s) in this amendment, may result in civil liability administratively imposed by the Los Angeles Water Board in an amount up to five thousand dollars (\$5,000) for each day of failure to comply.

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, Unit IV Supervisor, at (213) 576-6664 or via email at jillian.ly@waterboards.ca.gov.

Sincerely,

 Digitally signed by R
Purdy
Date: 2022.05.18
22:28:40 -07'00'
Water Boards

Renee Purdy
Executive Officer

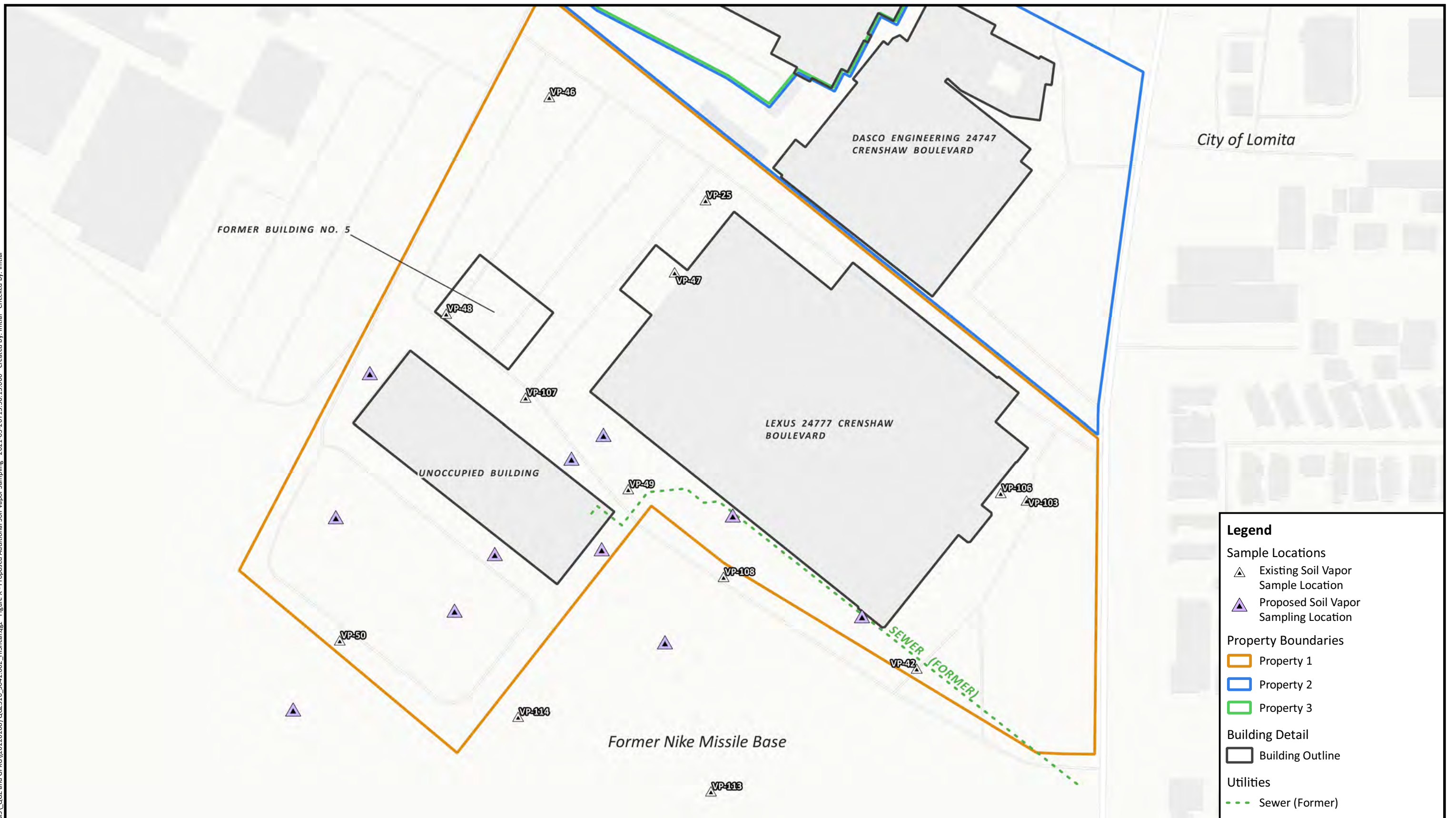
Attachments:

1. Figure 19 – Proposed Additional Soil Vapor Sampling
2. Figure 20 – Proposed Groundwater Sampling Locations
3. Figure 21 – Proposed Regional Groundwater Remediation Area
4. Figure 22 – Proposed Vadose Zone and Perched Groundwater Remediation Areas

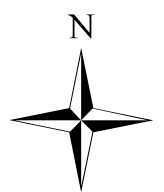
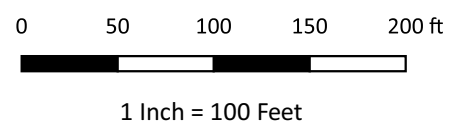
cc:

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David L. Evans, Hamrick & Evans, LLP
Jeff W. Poole, Hamrick & Evans, LLP
Steve Van der Hoven, Genesis Engineering & Redevelopment

Attachment 1 - Figure 19 – Proposed Additional Soil Vapor Sampling



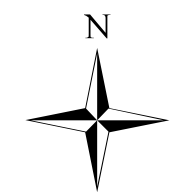
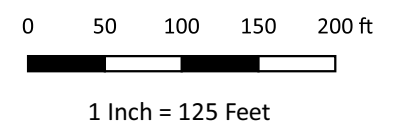
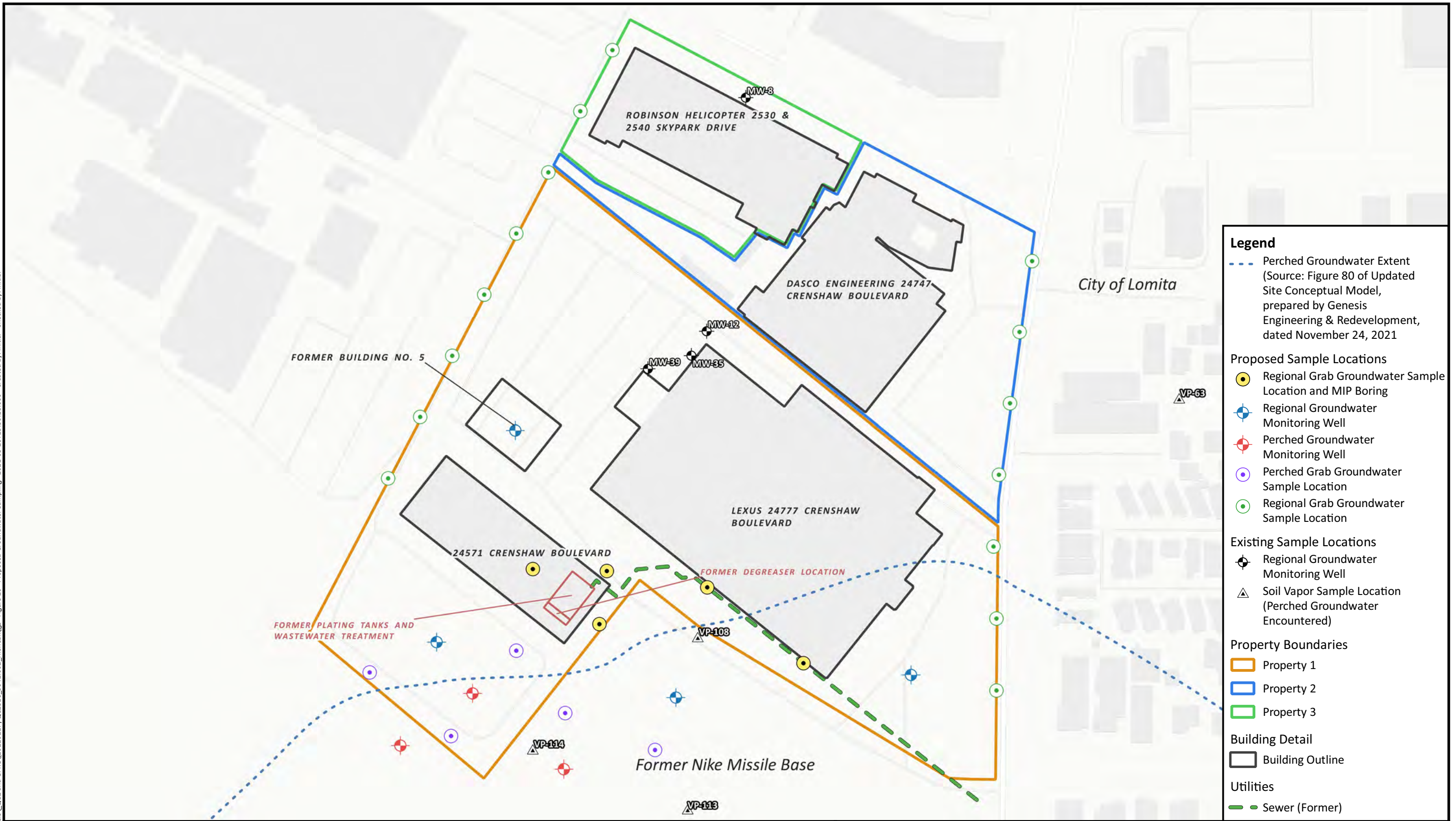
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SAFETY FIRST 	CLIENT:	Rutan & Tucker	Proposed Additional Soil Vapor Sampling FIGURE 19
	PROJECT:	Hi-Shear	
	PROJECT NUMBER:	S042.002.002	

Attachment 2 - Figure 20 – Proposed Groundwater Sampling Locations

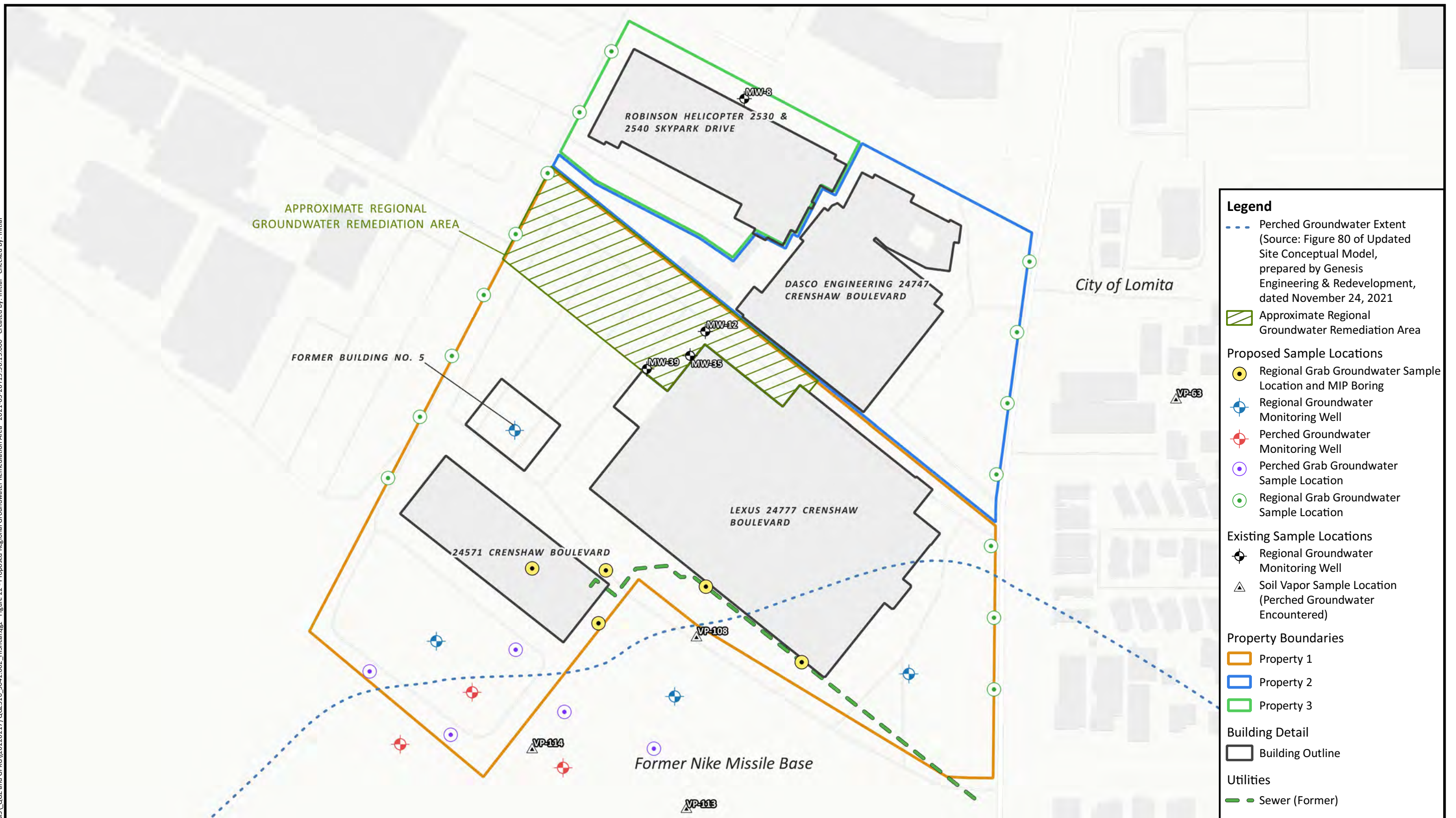
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SAFETY FIRST 	CLIENT: Rutan & Tucker	Proposed Groundwater Sampling Locations FIGURE 20
	PROJECT: Hi-Shear	
	PROJECT NUMBER: S042.002.002	

Attachment 3 - Figure 21 – Proposed Regional Groundwater Remediation Area

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Legend

- - - Perched Groundwater Extent
(Source: Figure 80 of Updated Site Conceptual Model, prepared by Genesis Engineering & Redevelopment, dated November 24, 2021)
- Approximate Regional Groundwater Remediation Area

Proposed Sample Locations

- Regional Grab Groundwater Sample Location and MIP Boring
- ⊕ Regional Groundwater Monitoring Well
- ⊕ Perched Groundwater Monitoring Well
- ⊕ Perched Grab Groundwater Sample Location
- ⊕ Regional Grab Groundwater Sample Location

Existing Sample Locations

- ⊕ Regional Groundwater Monitoring Well
- △ Soil Vapor Sample Location (Perched Groundwater Encountered)

Property Boundaries

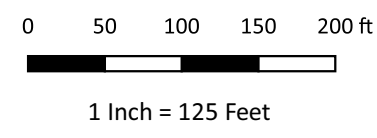
- Property 1
- Property 2
- Property 3

Building Detail

- Building Outline

Utilities

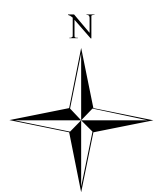
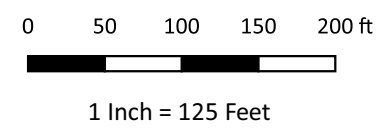
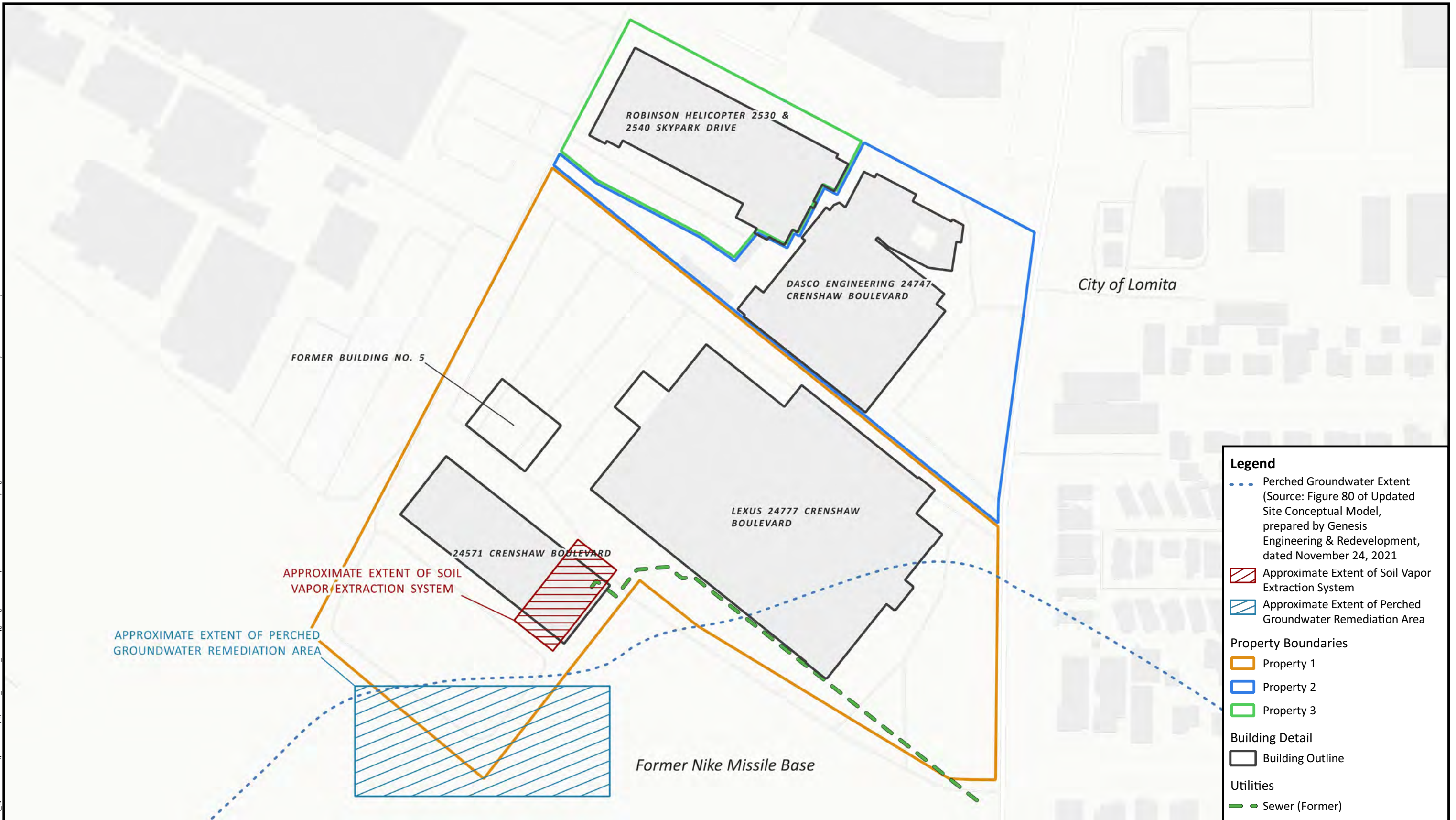
- - - Sewer (Former)



	CLIENT:	Rutan & Tucker	Proposed Regional Groundwater Remediation Area FIGURE 21
	PROJECT:	Hi-Shear	
	PROJECT NUMBER:	S042.002.002	

Attachment 4 - Figure 22 – Proposed Vadose Zone and Perched Groundwater Remediation Areas

N:\GIS\Proj\S042.002_HiShear\OGIS\OGZ and GPKG\20220217\OGZ316_S042.002_HiShear\ogz - Figure 21 - Proposed Groundwater Sampling - 2021-03-26T15:56:13.000 - Created by: initial - Checked by: initial



SAFETY FIRST 	CLIENT:	Rutan & Tucker	Proposed Vadose Zone and Perched Groundwater Remediation Areas FIGURE 22
	PROJECT:	Hi-Shear	
	PROJECT NUMBER:	S042.002.002	