

October 2, 2014

Wen Yang, Ph.D., C.E.G.
Chief, Land Disposal Unit
California Regional Water Quality Control Board, Site Cleanup Unit IV
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Subject: Submission of Application to Conduct Land Treatment of Soils
Defense Fuel Support Point (DFSP) Norwalk
General Permit; Order No. 90-148
General Waste Discharge Requirements for Land Treatment of Petroleum
Hydrocarbon Contaminated Soil in Los Angeles and Santa Clara River Basins

Dear Mr. Wang:

The Source Group, Inc. (SGI), on behalf of the Defense Logistics Agency – Energy (DLA Energy), submits the enclosed application Form 200 to initiate the process for issuance of a Waste Discharge Requirement (WDR) under General WDR, Order No. 90-148. Accordingly we are providing this narrative and the enclosed materials, is to provide the RWQCB with the necessary information about the project, site conditions, and means of bioremediation of soil at the DFSP Norwalk Site.

Within Order No. 90-148; section A, the criteria necessary to make the determination of suitability to conduct land treatment under this general order require that the discharge:

- 1) Involves less than 100,000 cubic yards or less of contaminated soil to be land treated,
- 2) Involves a process that will bioremediate the contaminated soil to acceptable levels as determined by the Executive Officer,
- 3) Will be completed within 365 days, and
- 4) Is covered by adequate site assessment data that characterizes the nature and extent of soil contamination including sufficient water quality data, collected under the direction of an appropriate regulatory agency to determine the impact on ground water resulting from such soil contamination.

This letter is organized by summarizing the background leading to the proposed remedial action and then describing the technical approach. With respect to Item 4 above; as the previously submitted Conceptual Site Model (CSM) developed by Parsons *Conceptual Site Model and Remedial Action Evaluation for Soil, Groundwater, and LNAPL* (Parsons, 2013), please reference that document for the requisite characterization information.

Background

Defense Fuel Support Point Norwalk is located at 15306 Norwalk Boulevard, in Norwalk, California. The real property is owned by the Air Force and controlled through the offices of March Air Reserve Base. The DLA Energy is responsible for environmental site restoration. The facility was previously used to receive, store, and distribute military grade jet fuel. Active

operations ceased in the 1990s and the tanks and above ground infrastructure were removed in 2012. As a result of fuel handling operations, soil and groundwater at the site have been contaminated with petroleum hydrocarbons.

In addition to soils contaminated by site fuel handling operations, an area of buried "oily sands" is present in the southwestern portion of the site. Previously, DLA-Energy successively petitioned the RWQCB for no-further action status of this material. At the time, it was demonstrated that in spite of high concentrations of petroleum hydrocarbons present in the oily sands (with concentrations in excess of 50,000 milligrams per kilogram – mg/kg), the hydrocarbons were neither mobile nor volatile and thus did not represent a risk to site users or groundwater. However, the presence of the approximately 6,000 cubic yards of the material, at a depth as shallow as 3 feet below the surface, covering nearly an acre, will limit future site use and thus remediation of the oily sands is warranted and included in the DLA Energy's plans for site restoration.

The remediation of soil and groundwater and the removal of light non-aqueous phase liquids (LNAPL, also referred to as free phase hydrocarbons or free product) has been on-going since 1994 and has resulted in the removal of the majority of the LNAPL from the shallow aquifer and the removal and destruction of thousands of pounds of hydrocarbons present in soil and groundwater using extractive and *in situ* treatment methods.

However, a significant mass of hydrocarbons remains present in shallow and deep soil. The presence of the hydrocarbons in the shallow soil limits the reuse of the site. The presence of hydrocarbons in the deeper soils remains a source of potential further groundwater contamination. To achieve the short-term goal of readying the site for redevelopment and reuse and to reach the ultimate goal of obtaining closure from the Regional Water Quality Control Board (RWQCB), Parsons prepared a *Conceptual Site Model and Remedial Action Evaluation for Soil, Groundwater, and LNAPL* (Remedial Plan; Parsons, 2013). In Parson's Conceptual Site Model plans were described to excavate the upper 10 feet of contaminated soil from the site. The contaminated soil would be removed from the site and replaced with clean fill. Parsons proposed soil cleanup goals in their report; these goals were subsequently approved by the RWQCB (attachment A). The current remediation follows the Parson's Remedial Plan, with the addition that deeper soil will also be excavated, and that excavated soil will be treated on site.

Technical Approach

The attached map (Figure 1) shows those areas identified to contain shallow soil (0 to 5 feet, 5-10 feet, 10-15 feet, and 15-25 feet below grade) with contaminant concentrations in excess of cleanup goals and the location of deeper contaminated soils that are affecting groundwater quality. The Source Group, Inc. (SGI) has reviewed the site data and Parson's Conceptual Site Model and concurs with the proposed approach, with modifications. SGI has developed the following approach to remediation of the Site with the goal of readying the site for transfer and redevelopment while shortening the overall time to reach the final objective of site closure, and lessening the impacts to the community and the environment:

- Soil from the surface to a depth of 10 feet containing contaminants in excess of cleanup goals issued by the RWQCB will be excavated and treated on-site.
- Contaminated soil present at depths greater than 10 feet and with high hydrocarbon concentrations in accessible areas that are affecting the underlying groundwater will be excavated and treated on-site.

SGI has reviewed historical site assessment data to evaluate those areas where shallow soil contains contaminants in excess of site cleanup goals and those areas where deeper soil contamination represents an on-going source of groundwater contamination. We have also included the volume of oily sands that will require treatment:

As a result of our evaluation we have developed an estimate of 75,000 cubic yards or 98,000 tons to be excavated and treated on site. Although some soil may be hauled off-site for treatment or disposal, the selected principal remedy is on-site bio-treatment. This technology entails excavation of the soil, processing of the soil to add surfactants, which reduce volatility and desorb hydrocarbons from the soil matrix, followed by addition of bacteria to facilitate bio-treatment. Once treated with the surfactants and bacteria, the soil will be placed into bio-treatment soil piles to provide adequate time (several weeks) for the bacteria to destroy the hydrocarbons.

A pilot study of soil obtained from the central portion of the site (near the truck track and "water tank" area) and the oily sands was started on June 24, 2014. Progress sample results indicated a nearly 100% reduction in GRO concentrations (from 1,350 mg/kg to 1.1 mg/kg) and over 97% reduction of TPH (from 11,600 to 310 mg/kg) in the truck rack/water tank soils and a 65% concentration reduction in the oily sands, after 70 days of treatment.

The initial excavation and processing of the soil for biologic treatment can be done rapidly and up to 1,000 tons of soil can be treated and placed into bio-cells in a single day. Based on the production rate for treatment in conjunction with anticipated volumes, we have developed a construction schedule. Excavation, treatment and final replacement can be completed in the course of twelve (12) months.

Figure 2 provides the design for each of the treatment cells to be established on site. The cells will be located in the basins where the tanks were previously located. The former tank basins provide an ideal setting as each basin is surrounded by berms. Each bio-pile will be approximately 20 feet wide, 8 feet tall and 210 feet long. As can be seen in the bio-pile detail, plastic sheeting will be placed below and covering each pile. Sand bags will be used to secure the plastic. It is anticipated that four of the tank basins will be established as bio-treatment cells. Vapor extraction piping will also be installed in the bio-pile to ensure vapor control, and the extracted flow will be treated under an Air Quality Management District (AQMD) site-specific permit.

Soil Management

Parsons prepared the Soil Management Plan (SMP), *Onsite Soil Management Plan* (Parsons, 2012). The RWQCB in correspondence dated April 10, 2012, commented on the plan and specified the sampling protocol and frequency for all soils intended for reuse. Parsons, on

May 17, 2012, concurred and the SMP was approved by the RWQCB on February 26, 2014. Soils excavated will be managed as delineated in that plan and in conjunction with the provisions as identified in the April 10, 2012, LARWQCB correspondence.

During the excavation process field screening, including the use of a photoionization detector (PID), will be used to segregate clean soil from contaminated soil. Clean soil will be segregated, stockpiled, and sampled per the requirements of SMP and will only be designated as reuse soil upon receipt of analytical results that indicate the soil meets site clean-up goals. Should analytical results exceed clean-up goals, the soil will be routed for treatment in the bio-pile designated areas. Contaminated soil will be treated in bio-piles for an estimated period of 6-12 weeks, then sampled at a rate of 1 sample per 250 cubic yards. If sampling results indicate that the treatment is not complete, additional treatment will be performed, or the soil will be transported off-site for treatment.

The soil removal will be conducted in successive subareas, generally corresponding to the former AST basins. SGI will prepare data reports for each subarea excavated and treated, and the reports will include tabulated chemical data on each treatment pile, and the data reports will be submitted to LARWQCB. Soil treatment will be reported in quarterly reports as currently required by the RWQCB and in accordance with WDR requirements.

We appreciate the LARWQCB reviewing the application and supplemental information and we await your response to this submittal confirming that we can execute the excavation and treatment per the general WDR Order No. 90-148. If you have any questions, please call me at (562) 597-1055.

Sincerely,

The Source Group



Ken E. Wall
Senior Project Engineer

Ec: Mr. Paul Cho, P.E., LARWQCB
Mr. Everett Bole, DLA Energy
Mr. Neil F. Irish, P.G., SGI
File: DFSP Norwalk – 04-NDLA-007

Enclosures:

Attachment A – DFSP Norwalk Cleanup Goals
Figure 1 – Soil Excavation Areas – DFSP Norwalk
Figure 2 – Bio-Pile Design Details – DFSP Norwalk
Form 200 w/ 7.5 Minute Topographic Map

ATTACHMENT A

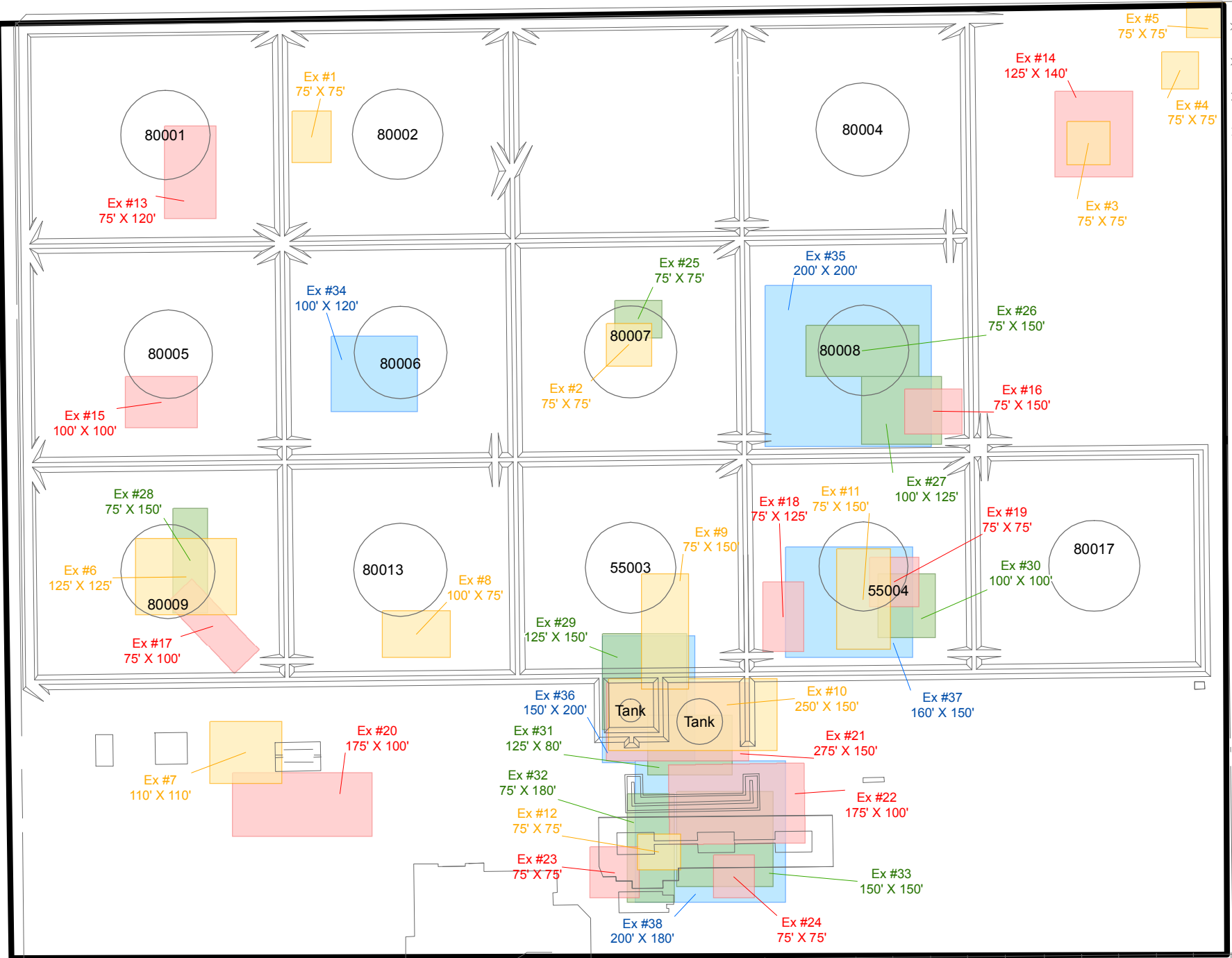
TABLE 5-2
Soil Cleanup Goals
DFSP Norwalk Site, Norwalk California

Depth Below Ground Surface	(feet below ground surface)					
	0.5	5	10	15	20	25
Depth to Groundwater	25.5	21	16	11	6	1
Constituent	Soil Cleanup Goal (mg/kg)					
TPH as Gasoline (C4-C12)	500	500	100	100	100	100
TPH as JP-5 (C8-C17)	500	500	100	100	100	100
TPH as Diesel (C5-C25)	1,000	1,000	100	100	100	100
Benzene	0.015	0.013	0.012	0.013	0.011	0.012
Toluene	0.614	0.440	0.391	0.423	0.356	0.367
Ethylbenzene	2.07	1.44	1.19	1.33	1.07	1.10
Xylenes	5.55	3.77	3.09	3.47	2.76	2.84
1,1,2,2-Tetrachloroethane	0.0023	0.0020	0.0015	0.0012	0.0006	0.0002
1,1,2-Trichloroethane	0.0032	0.0029	0.0023	0.0020	0.0012	0.0008
1,2,3-Trichlorobenzene	0.0740	0.0634	0.0467	0.0356	0.0162	0.0034
1,2,3-Trichloropropane	8.74E-07	7.66E-07	5.87E-07	4.79E-07	2.56E-07	1.23E-07
1,2,4-Trimethylbenzene	2.10	1.80	1.34	1.03	0.478	0.120
1,2-Dibromo-3-chloropropane	2.50E-04	2.19E-04	1.68E-04	1.37E-04	7.31E-05	3.52E-05
1,2-Dibromoethane	3.05E-06	2.78E-06	2.27E-06	2.04E-06	1.30E-06	9.60E-07
1,2-Dichloroethane	1.06E-04	1.04E-04	9.37E-05	9.60E-05	7.29E-05	6.92E-05
1,3,5-Trimethylbenzene	2.06	1.77	1.31	1.01	0.470	0.118
2-Butanone	0.557	0.607	0.617	0.713	0.612	0.661
2-Chlorotoluene	0.558	0.481	0.358	0.278	0.132	0.039
2-Hexanone	0.0073	0.0072	0.0065	0.0066	0.0050	0.0047
4-Chlorotoluene	0.547	0.472	0.351	0.273	0.130	0.038
Acetone	0.994	1.17	1.28	1.57	1.42	1.60
Bromomethane	0.0015	0.0014	0.0013	0.0013	0.0010	0.0010
Carbon disulfide	0.049	0.046	0.039	0.038	0.026	0.023
Chlorobenzene	0.119	0.104	0.079	0.063	0.032	0.013
Chloroethane (Ethyl Chloride)	2.23	2.47	2.55	2.98	2.59	2.83
Chloroform	7.38E-05	6.82E-05	5.67E-05	5.25E-05	3.48E-05	2.75E-05
Dichlorodifluoromethane	0.984	0.868	0.672	0.559	0.309	0.167
Diisopropyl Ether (DIPE)	0.449	0.424	0.364	0.350	0.246	0.212
Isopropylbenzene	5.56	4.78	3.53	2.71	1.26	0.303
Methylene Chloride	7.78E-04	7.99E-04	7.61E-04	8.27E-04	6.69E-04	6.82E-04
Methyl-t-Butyl Ether (MTBE)	9.07E-04	9.10E-04	8.43E-04	8.89E-04	6.97E-04	6.86E-04
Naphthalene	0.270	0.231	0.170	0.130	0.059	0.012
n-Butylbenzene	3.97	3.40	2.50	1.91	0.867	0.179
n-Propylbenzene	2.18	1.87	1.39	1.06	0.489	0.114
p-Isopropyltoluene	2.82	2.42	1.79	1.37	0.636	0.154
sec-Butylbenzene	2.59	2.22	1.64	1.26	0.576	0.129
Styrene	0.463	0.399	0.296	0.229	0.108	0.030
Tert-Butyl Alcohol (TBA)	0.0010	0.0012	0.0013	0.0016	0.0014	0.0016
tert-Butylbenzene	2.07	1.78	1.32	1.01	0.465	0.110
Trichloroethene	0.0070	0.0061	0.0047	0.0038	0.0020	0.0009

Notes:

mg/kg = milligram per kilogram

NA = not applicable



Legend

- Former Above Ground Storage Tanks
- DFSP Norwalk Border
- Excavations 0-5ft bgs
- Excavation 5-10ft bgs
- Excavation 10-15ft bgs
- Excavation 15-25ft bgs

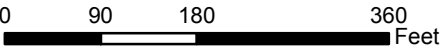
Notes:

Ex # 14 = Excavation # 14

125' X 140' = 125 Feet by 140 Feet
(Approximate Dimensions of Excavation)



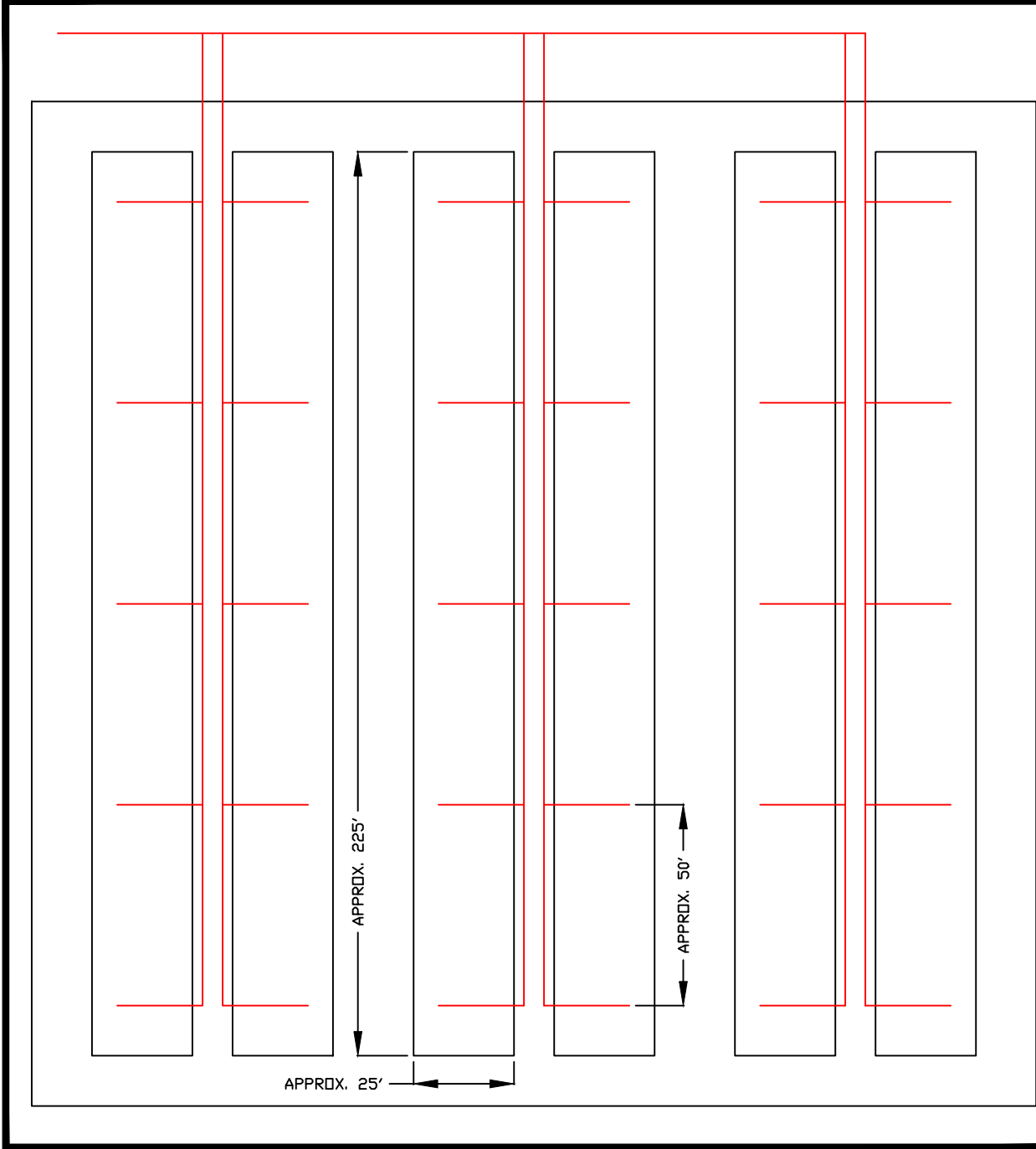
DFSP Norwalk			
15306 Norwalk Boulevard			
Norwalk, California			
Project Number:	Date:	Drawn By:	Approved By:
04-NDLA-002	10/1/2014	A. Czuba	K. Wall



2014 Proposed Excavations Map

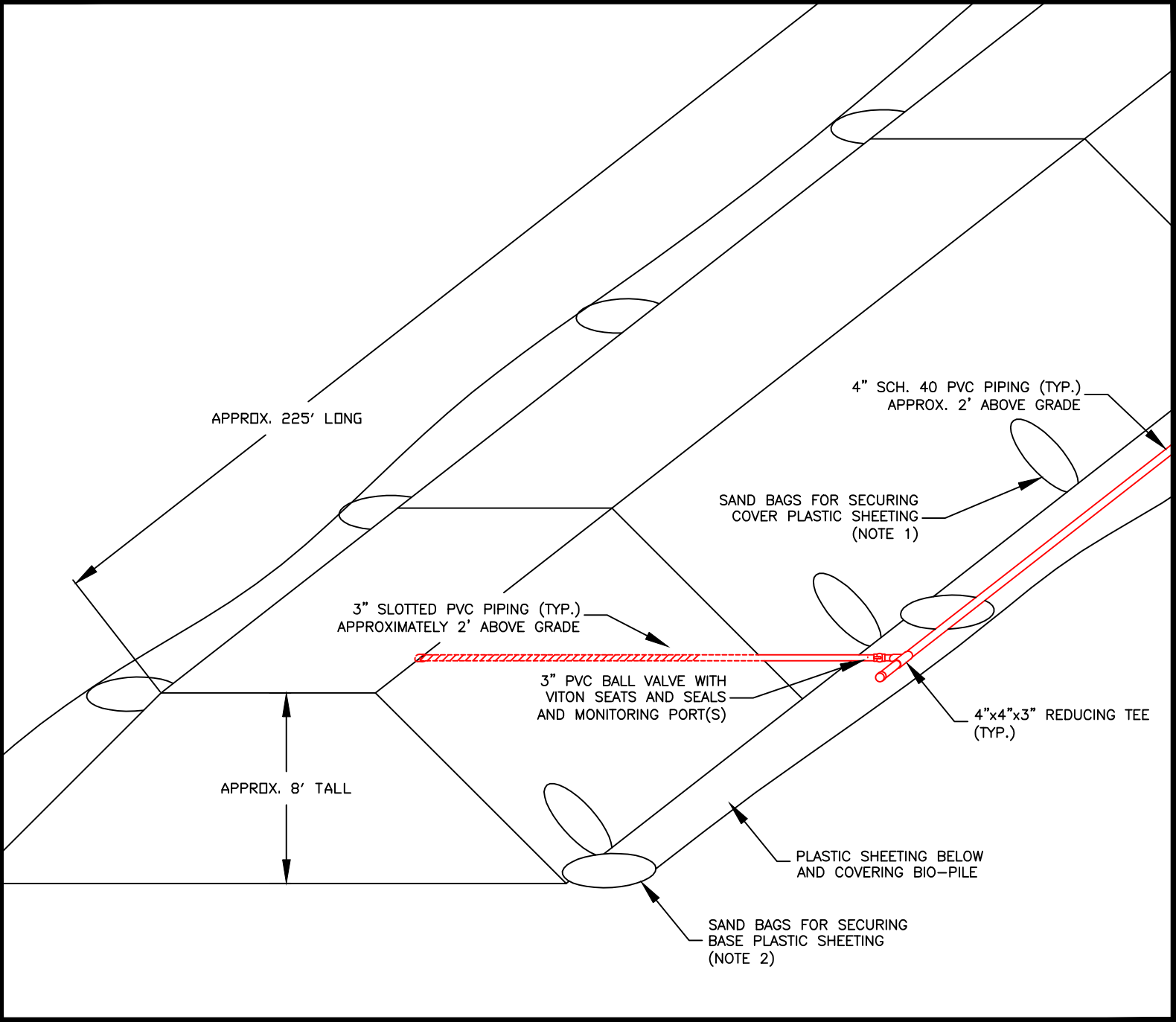


1962 Freeman Avenue
Signal Hill, CA 90755
(562) 597-1055



PLAN VIEW
SINGLE BASIN BIO-PILE LAYOUT
TYPICAL

0 40 80
HORIZONTAL SCALE IN FEET



ISOMETRIC VIEW
BIO-PILE CONSTRUCTION DETAIL
TYPICAL - NOT ALL LATERALS SHOWN

0 6 12
HORIZONTAL SCALE IN FEET

LEGEND

- APPROXIMATE LOCATION OF PROPOSED VES CONVEYANCE PIPING (50' SPACING BETWEEN LATERALS)
1. PLASTIC SHEETING TO BE PLACED BENEATH BIO-PILE, WRAPPING OVER TOP OF SAND BAGS TO PROVIDE A CONTAINED AREA FOR SOIL.
 2. BIO-PILE COVER PLASTIC SHEETING TO BE SECURED BETWEEN AND BAGS.

DFSP NORWALK
15306 NORWALK BLVD
NORWALK, CA

PROJECT NO.	DATE	DRAWN BY:	APP. BY:
04-NDLA-002	09/19/14	AD	NI

BIO-PILE DESIGN DETAILS

SGI THE SOURCE GROUP, INC.
environmental
1962 FREEMAN AVENUE
SIGNAL HILL, CA 90755



FIGURE
2



APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

**A. Facility:****I. FACILITY INFORMATION**

Name: Defense Fuel Support Point Norwalk			
Address: 15306 Norwalk Boulevard			
City: Norwalk	County: Los Angeles	State: CA	Zip Code: 90650
Contact Person: Stuart Strum		Telephone Number: (310) 241-2833	

B. Facility Owner:

Name: Defense Logistics Agency - Energy			Owner Type (Check One) 1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation 3. <input checked="" type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership 5. <input type="checkbox"/> Other: _____	
Address: 8725 John J. Kingman Road				
City: Fort Belvoir	State: VA	Zip Code: 22060		
Contact Person: Everett I. Bole, CHMM		Telephone Number: (703) 767-4520	Federal Tax ID:	

C. Facility Operator (The agency or business, not the person):

Name: Defense Logistics Agency - Energy			Operator Type (Check One) 1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation 3. <input checked="" type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership 5. <input type="checkbox"/> Other: _____	
Address: 3171 N. Gaffey Street				
City: San Pedro	State: CA	Zip Code: 90731		
Contact Person: Stuart Strum		Telephone Number: (310) 241-2833		

D. Owner of the Land:

Name: Air Force Real Property Agency			Owner Type (Check One) 1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation 3. <input checked="" type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership 5. <input type="checkbox"/> Other: _____	
Address: 485 Quentin Roosevelt Road				
City: San Antonio	State: TX	Zip Code: 78226		
Contact Person: Michael Wilson		Telephone Number: (210) 395-9515		

E. Address Where Legal Notice May Be Served:

Address: 8725 John J. Kingman Road		
City: Fort Belvoir	State: VA	Zip Code: 22060
Contact Person: Everett I. Bole, Chmm		Telephone Number: (703) 767-4520

F. Billing Address:

Address: 1962 Freeman Ave.		
City: Signal Hill	State: CA	Zip Code: 90755
Contact Person: Neil Irish, PG		Telephone Number: (562) 597-1055



APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application (A or B):

☒ **A. WASTE DISCHARGE TO LAND**

☐ **B. WASTE DISCHARGE TO SURFACE WATER**

Check all that apply:

- ☐ Domestic/Municipal Wastewater Treatment and Disposal
- ☐ Cooling Water
- ☐ Mining
- ☐ Waste Pile
- ☐ Wastewater Reclamation
- ☐ Other, please describe: _____

- ☐ Animal Waste Solids
- ☒ Land Treatment Unit
- ☐ Dredge Material Disposal
- ☐ Surface Impoundment
- ☐ Industrial Process Wastewater

- ☐ Animal or Aquacultural Wastewater
- ☐ Biosolids/Residual
- ☐ Hazardous Waste (see instructions)
- ☐ Landfill (see instructions)
- ☐ Storm Water

III. LOCATION OF THE FACILITY

Describe the physical location of the facility.

1. Assessor's Parcel Number(s)
Facility: 8082-13-905
Discharge Point: 8082-13-905

2. Latitude
Facility: 33°53'41"
Discharge Point: 33°53'41"

3. Longitude
Facility: 118°04'11"
Discharge Point: 118°04'11"

IV. REASON FOR FILING

- ☒ New Discharge or Facility ☐ Changes in Ownership/Operator (see instructions)
- ☐ Change in Design or Operation ☐ Waste Discharge Requirements Update or NPDES Permit Reissuance
- ☐ Change in Quantity/Type of Discharge ☐ Other: _____

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency: Los Angeles Regional Water Quality Control Board

Has a public agency determined that the proposed project is exempt from CEQA? ☒ Yes ☐ No

If Yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below.

Basis for Exemption/Agency: Per LARWQCB the project is exempt if suitable to execute under general WDR 90-148

Has a "Notice of Determination" been filed under CEQA? ☐ Yes ☒ No

If Yes, enclose a copy of the CEQA document, Environmental Impact Report, or Negative Declaration. If no, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents:

☐ EIR ☐ Negative Declaration

Expected CEQA Completion Date: N/A



APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



VI. OTHER REQUIRED INFORMATION

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

VII. OTHER

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code.

VIII. CERTIFICATION

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and 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."

Print Name: Stuart Strum

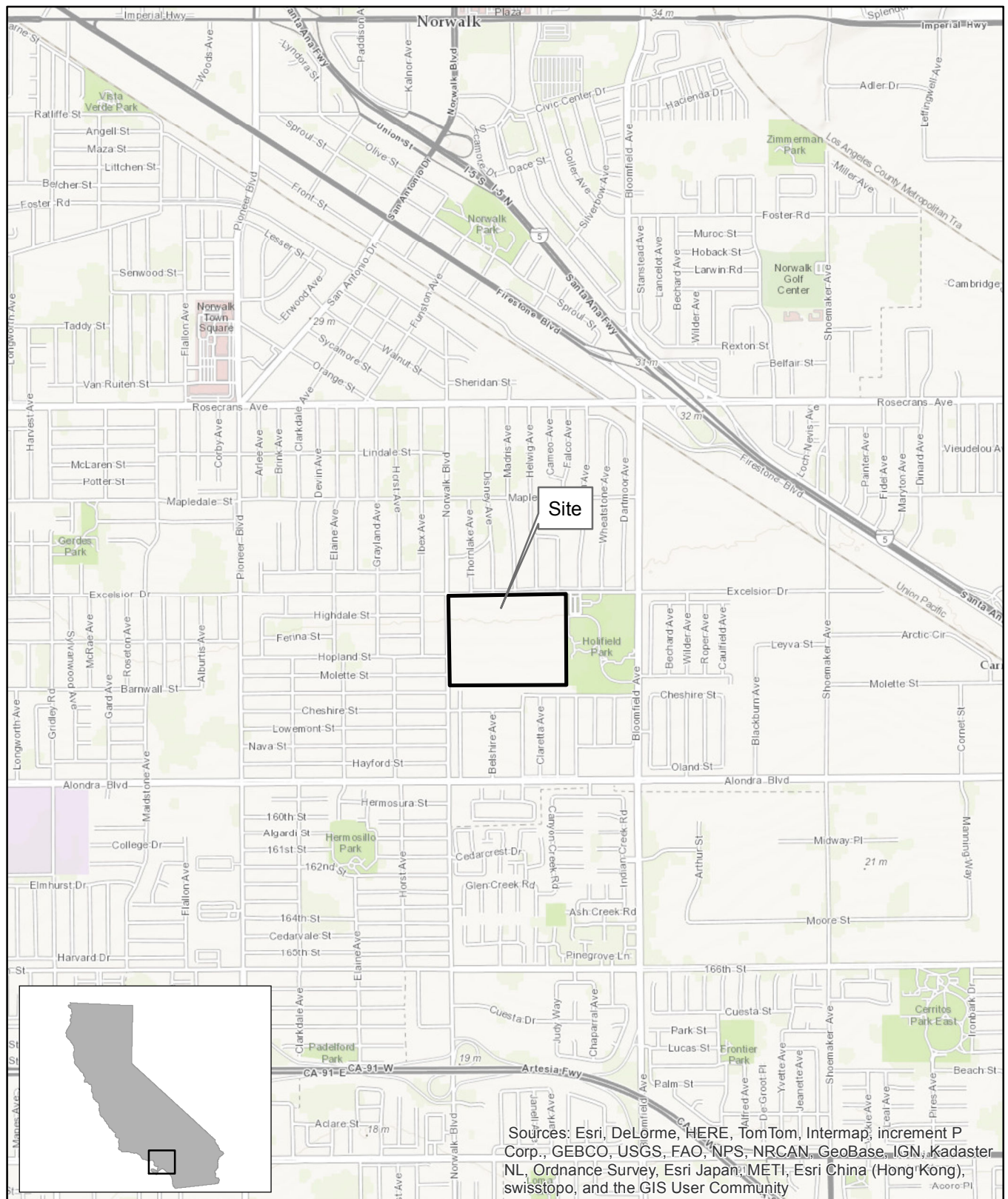
Title: Environmental Protection Specialist

Signature: *Stuart Strum*

Date: October 2, 2014

FOR OFFICE USE ONLY

Date Form 200 Received:	Letter to Discharger:	Fee Amount Received:	Check #:
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SOURCE:
ESRI 7.5 MINUTE TOPOGRAPHIC MAP.
<http://resources.esri.com/arcgisonline/services>

PROJECT NO.:	DATE:	DR.BY:	APP.BY:
04-NDLA-001	5/28/2014	JK	PP

SCALE= 1:24,000

0 1,000 2,000 4,000 Feet

N

FIGURE
1

SGI THE SOURCE GROUP, INC.
environmental
1962 FREEMAN AVENUE
SIGNAL HILL, CA 90755
(562) 597-1055

**DEFENSE FUEL SUPPORT POINT
NORWALK**
15306 NORWALK BOULEVARD
NORWALK, CALIFORNIA

SITE LOCATION MAP