California Regional Water Quality Control Board

Los Angeles Region

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Linda S. Adams
Acting Agency Secretary

Arnold Schwarzenegger
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013
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February 24, 2010

Mr. Patrick Schanen
Deputy Director of Office of Environmental Health and Safety
Los Angeles Unified School District
1055 West 7th Street, 9th Floor
Los Angeles, California 90017

GENERAL WASTE DISCHARGE REQUIREMENTS (ORDER NO. R4-2007-0019), PROPOSED IN-SITU CHEMICAL OXIDATION USING OXYGEN RELEASE COMPOUND AND HYDROGEN RELEASE COMPOUND IN SELECT AREAS – PROPOSED CENTRAL REGION ELEMENTARY SCHOOL NO. 20, SITE 11, 3600 WEST COUNCIL STREET, LOS ANGELES, CA (FILE NO. 09-176, CI-9543)

Dear Mr. Schanen:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) staff have completed the review of your application for coverage under the General Waste Discharge Requirements (WDR) to use a Oxygen Release Compound (ORC) product and/or a Hydrogen Release Compound (HRC) product for the in-situ chemical oxidation (ISCO) to remediate volatile organic compounds (VOCs) and total petroleum hydrocarbon (TPH) impacts to the subsurface in select areas at the above referenced site (Site). We have determined that the proposed discharge meets the conditions specified in Regional Board Order No R4-2007-0019, "*Revised General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Chromium Impacted Sites*," adopted by this Regional Board on March 1, 2007.

The Los Angeles Unified School District (LAUSD) is considering construction of the proposed Central Region Elementary School No. 20, Site 11 (Site) located at 3600 West Council Street in Los Angeles. The Site encompasses 8.06 acres and consists of 15 parcels subdivided into three land areas: the Southern Area (no remedial action proposed), the Central Area, and the Northern Area. The results of site assessments indicated that releases of total petroleum hydrocarbons (TPH), arsenic and lead in shallow soils, and volatile organic compounds (VOCs) have impacted soil, soil vapor, and groundwater at the Site. The Department of Toxic Substances Control (DTSC) is currently the lead agency overseeing cleanup at the Site.

The Third Quarter 2009 groundwater monitoring was conducted with results for TPH-gasoline, TPH-diesel, fuel oxygenates, chlorinated VOCs, and for benzene, toluene, ethylbenzene, and xylenes (BTEX). TPH-gasoline and TPH-diesel are found in soil and groundwater at the Site in two

locations, with TPH-gasoline in soil was detected up to 260 milligrams per kilogram (mg/kg). Methyl tert-butyl ether (MTBE) was the detected in groundwater at 17 micrograms per liter (µg/L), tertiary butyl alcohol (TBA) detected at 150 µg/L, and benzene detected at 61 µg/L. Chlorinated VOCs impacts to groundwater detected included trichloroethene (TCE) at 240 µg/L and cis-1,2-dichloroethene (cis-1,2-DCE) at 610 µg/L.

LAUSD submitted a *Remedial Action Workplan* (RAP), revised May 27, 2009, to DTSC. In the RAP, the selected remedial actions include excavation and soil vapor extraction (SVE) for soil, and for groundwater using in-situ chemical oxidation for cleanup at the Site. DTSC approved the proposals in the RAP in their letter dated November 30, 2009. The RAP proposes to remediate areas in the Northern and Central Areas of the Site for impacts to soil, soil vapor, and groundwater by TPH, VOCs, metals, methane and hydrogen sulfides. Within the Central Area of the Site, the source areas identified are underground storage tanks (UST) that are to be removed. Potential offsite source areas of impacts to groundwater remain to the north and to the northeast of the Site.

The LAUSD proposed excavation of soils contaminated with TPH for two areas at the Site to remove the bulk of TPH contamination of soils. This soil excavation will not remove the entire mass of contamination and residual dissolved phase contaminants will remain in the excavation area after backfilling. The discharger therefore proposes the application of ORC product along with clean backfill material to treat residual dissolved phase contaminants in the former excavation. In addition, the discharger proposes the excavation of soils contaminated with chlorinated VOCs for two areas at the Site to remove the bulk of chlorinated VOCs contamination of soils. The discharger therefore proposes the application of HRC product along with clean backfill material to treat residual dissolved phase contaminants in the former excavation. This proposal requires this application for WDR for the Site including the application of ORC to the subsurface, the application of HRC to the subsurface, a groundwater monitoring program, and performance goals for these remedial actions. This Regional Board received a *Form 200, Application/Report of Waste Discharge, and General Information Form for Waste Discharge Requirements or NPDES Permit* on September 16, 2009, and documented the "Form 200" as incomplete in an October 19, 2009 response letter.

Based on our review of the application and subsequently submitted documents, the Regional Board concurs with the application as submitted.

You may begin the application of ORC (a formulation of phosphate-intercalated magnesium peroxide) which can be mixed with water to form a slurry to be injected into the subsurface or applied as a soil amendment to the backfill material as proposed. Also, you may begin the application of HRC (a formulation of a proprietary polylactate ester) which can be mixed with water to form a slurry to be injected into the subsurface or applied as a soil amendment to the backfill

material as proposed. The geographic coordinates of the Site are approximately Latitude 34° 4′ 25.3″ (34.073700) North, Longitude 118°, 17′ 24.0″ (118.290000) West.
Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2007-0019 (Series No. 103) and Monitoring and Reporting Program No. CI-9543.

The "Monitoring and Reporting Program" requires you to implement the monitoring program on the effective date of this enrollment under Regional Board Order No. R4-2007-0019. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit. When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-9543", which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

If you have any questions, please contact Dr. Kwang-il Lee at (213) 576-6734 or Mr. Robert Ehe at (213) 576-6740.

Sincerely,

Tracy J. Egoscue
Executive Officer

Attachments: Attachment A – Metals in Priority pollutant scan

Enclosures:

1) General Waste Discharge Requirements, Order No. R4-2007-0019 and Standard Provisions
2) Monitoring and Reporting Program, CI No. 9543
3) Fact Sheet
4) Figures 1, 1A, 2, and 3

cc: Mr. Amit Pathak, Project Manager, Department of Toxic Substance Control, Cypress Office
APathak@dtsc.ca.gov
Mr. Andrew Fowler, Project Manager Los Angeles Unified School District

ATTACHMENT A

PRIORITY POLLUTANTS

Metals

Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc

Miscellaneous

Cyanide
Asbestos (only if specifically required)

Pesticides & PCBs

Aldrin
Chlordane
Dieldrin
4,4'-DDT
4,4'-DDE
4,4'-DDD
Alpha-endosulfan
Beta-endosulfan
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Alpha-BHC
Beta-BHC
Gamma-BHC
Delta-BHC
Toxaphene
PCB 1016
PCB 1221
PCB 1232
PCB 1242
PCB 1248
PCB 1254
PCB 1260

Base/Neutral Extractibles

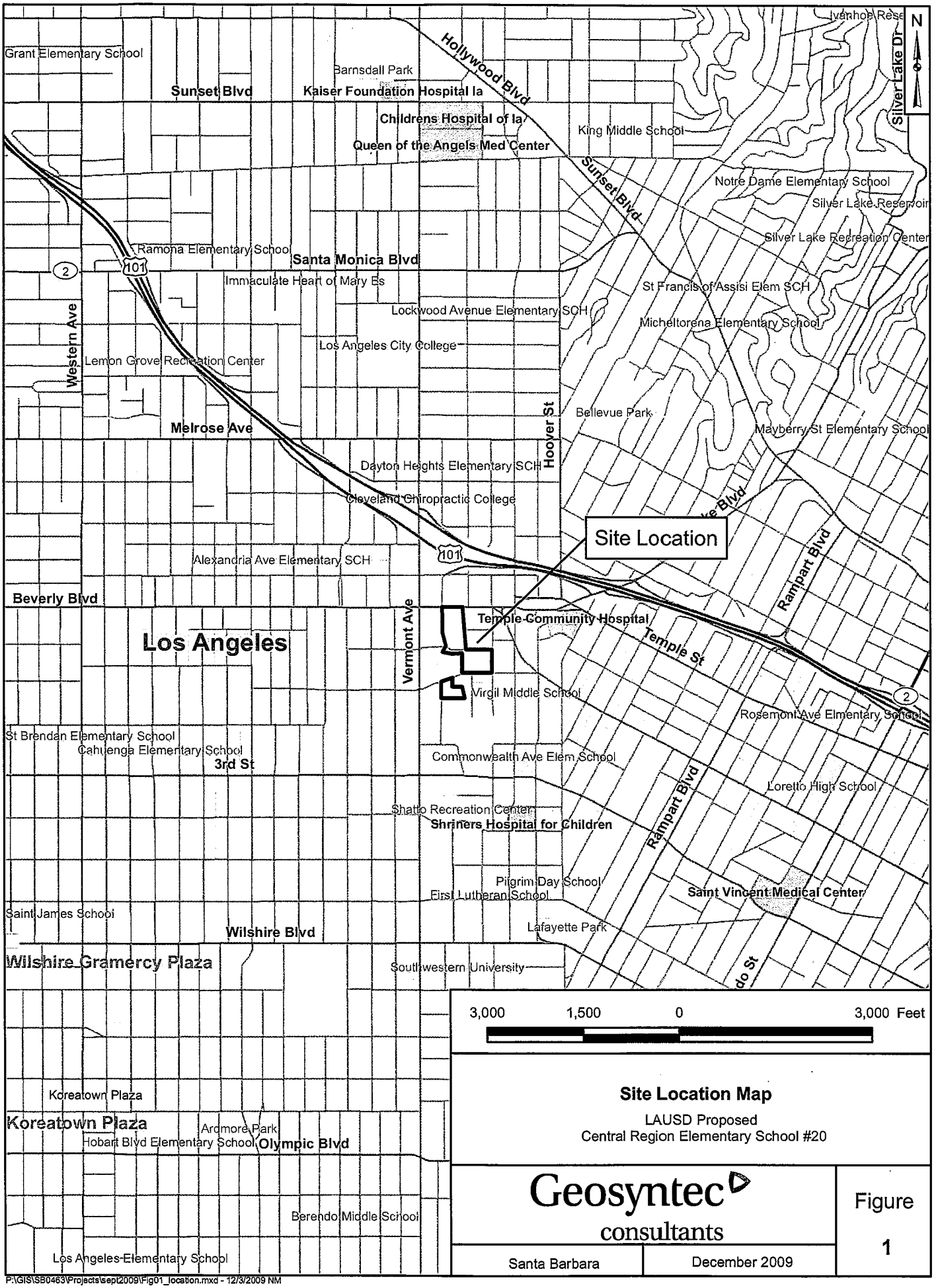
Acenaphthene
Benzidine
1,2,4-trichlorobenzene
Hexachlorobenzene
Hexachloroethane
Bis(2-chloroethyl) ether
2-chloronaphthalene
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3'-dichlorobenzidine
2,4-dinitrotoluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
Fluoranthene
4-chlorophenyl phenyl ether
4-bromophenyl phenyl ether
Bis(2-chloroisopropyl) ether
Bis(2-chloroethoxy) methane
Hexachlorobutadiene
Hexachlorocyclopentadiene
Isophorone
Naphthalene
Nitrobenzene
N-nitrosodimethylamine
N-nitrosodi-n-propylamine
N-nitrosodiphenylamine
Bis (2-ethylhexyl) phthalate
Butyl benzyl phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Diethyl phthalate
Dimethyl phthalate
Benzo(a) anthracene
Benzo(a) pyrene
Benzo(b) fluoranthene
Benzo(k) fluoranthene
Chrysene
Acenaphthylene
Anthracene
1,12-benzoperylene
Fluorene
Phenanthrene
1,2,5,6-dibenzanthracene
Indeno (1,2,3-cd) pyrene
Pyrene
TCDD

Acid Extractibles

2,4,6-trichlorophenol
P-chloro-m-cresol
2-chlorophenol
2,4-dichlorophenol
2,4-dimethylphenol
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dinitro-o-cresol
Pentachlorophenol
Phenol

Volatile Organics

Acrolein
Acrylonitrile
Benzene
Carbon tetrachloride
Chlorobenzene
1,2-dichloroethane
1,1,1-trichloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
Chloroethane
Chloroform
1,1-dichloroethylene
1,2-trans-dichloroethylene
1,2-dichloropropane
1,3-dichloropropylene
Ethylbenzene
Methylene chloride
Methyl chloride
Methyl bromide
Bromoform
Dichlorobromomethane
Chlorodibromomethane
Tetrachloroethylene
Toluene
Trichloroethylene
Vinyl chloride
2-chloroethyl vinyl ether
Xylene



Site Location Map

LAUSD Proposed
Central Region Elementary School #20

Geosyntec consultants

Santa Barbara | December 2009

Figure 1

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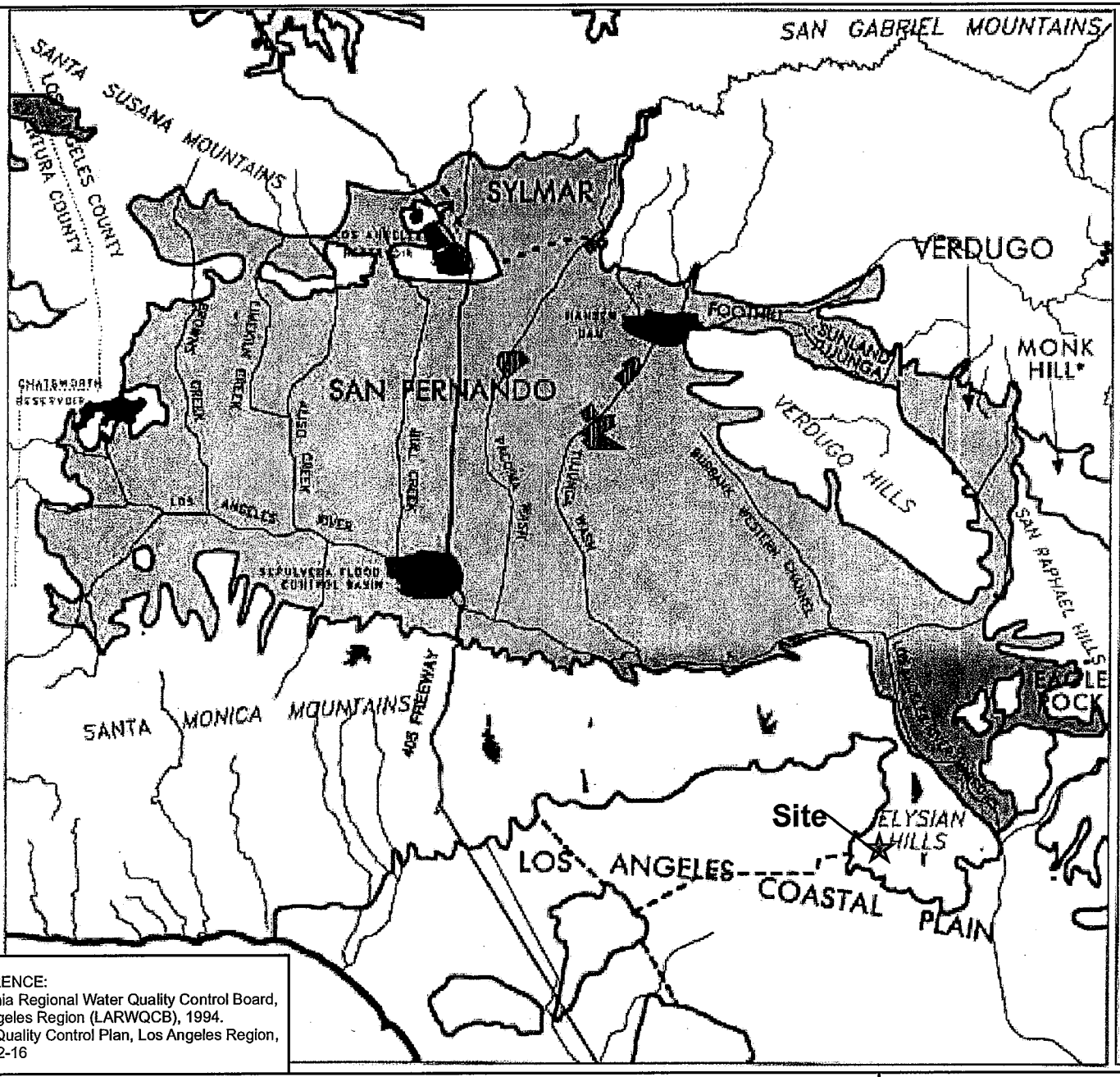

FIGURE 2-16

REFERENCE:
California Regional Water Quality Control Board, Los Angeles Region (LARWQCB), 1994. Water Quality Control Plan, Los Angeles Region, Figure 2-16

Geosyntec consultants

LAUSD Proposed
Central Region Elementary School #20

San Fernando Valley Groundwater Basins

Santa Barbara | December 2009

Figure 1A

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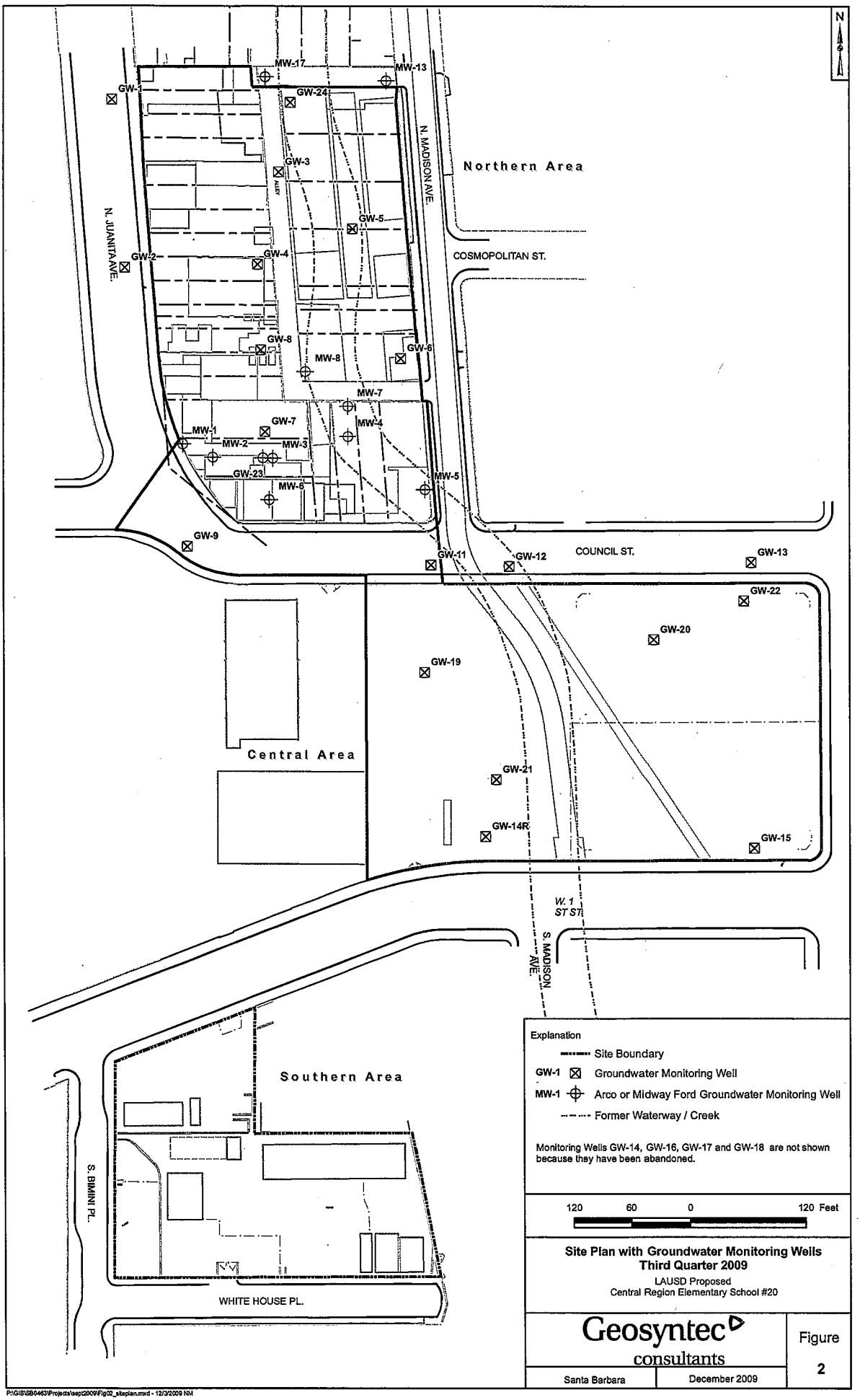

Site Plan with Groundwater Monitoring Wells
Third Quarter 2009

LAUSD Proposed
Central Region Elementary School #20

Geosyntec consultants

Santa Barbara | December 2009

Figure 2

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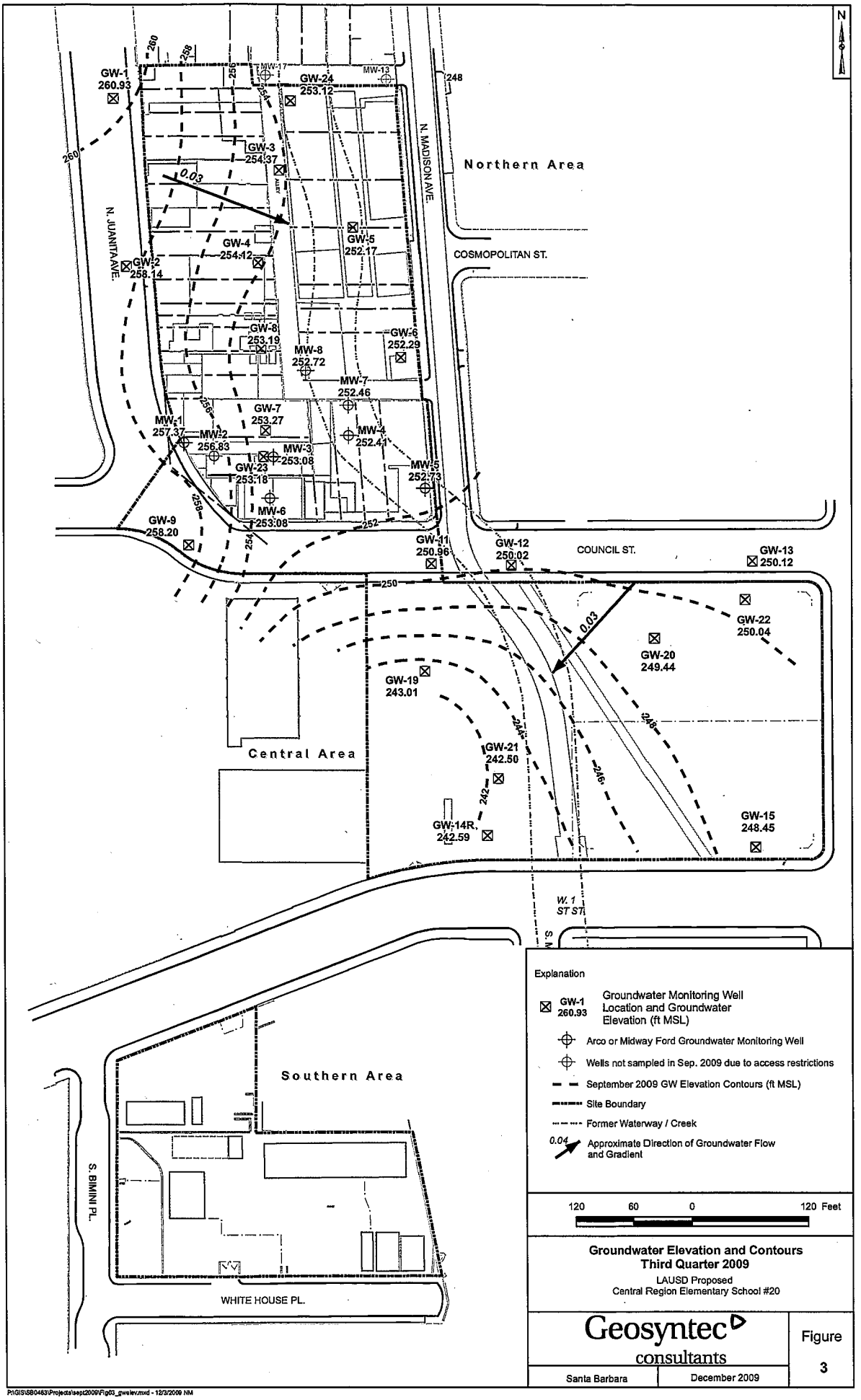

Groundwater Elevation and Contours
Third Quarter 2009

LAUSD Proposed
Central Region Elementary School #20

Geosyntec consultants

Santa Barbara | December 2009

Figure 3

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

MONITORING AND REPORTING PROGRAM NO. CI-9543
FOR
LOS ANGELES UNIFIED SCHOOL DISTRICT - PROPOSED CENTRAL REGION ELEMENTARY SCHOOL NO. 20, SITE 11, 3600 WEST COUNCIL STREET LOS ANGELES, CALIFORNIA
(ORDER NO. R4-2007-0019) (Series No. 103)
(FILE NO. NO. 09-176)

I. MONITORING AND REPORTING REQUIREMENTS

A. Los Angeles Unified School District (hereinafter Discharger) shall implement this monitoring program on the effective date of this enrollment (February 24, 2010) under Regional Board Order No. R4-2007-0019. The first monitoring report under this program, for April – June 2010, shall be received at the Regional Board by July 15, 2010. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

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

B. If there is no discharge or injection, during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, attention: Information Technology Unit.

C. The Discharger shall comply with requirements contained in Section G. of Order No. R4-2007-0019 "*Monitoring and Reporting Requirements*" in addition to the aforementioned requirements.

II. OXYGEN RELEASE COMPOUND / HYDROGEN RELEASE COMPOUND APPLICATION MONITORING REQUIREMENTS

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

1. Location map showing application locations used for the oxygen release compound (ORC) / hydrogen release compound (HRC).

2. Written and tabular summary defining the quantity of ORC (formulation of phosphate-intercalated magnesium peroxide) applied to the groundwater at each point per day in which it has occurred.

3. Written and tabular summary defining the quantity of HRC (formulation of a proprietary polylactate ester) applied to the groundwater at each point per day in which it has occurred.

4. Visual inspection at each injection well shall be conducted and recorded during the injection. The quarterly report shall include a summary of the visual inspection.

Within 90 days following the completion of field study of ORC / HRC application, the Discharger shall submit the results of the field study to the Regional Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the field test, conclusions regarding the effectiveness of the in-situ chemical oxidation (ISCO), and a plan for full-scale implementation of groundwater remediation activities.

III. GROUNDWATER MONITORING PROGRAM DURING FIELD TESTING

The Discharger shall sample groundwater monitoring wells GW-1, GW-2, GW-3, GW-4, GW-5, GW-12, GW-20, GW-22, MW-1, MW-4, MW-5, MW-6, MW-7, MW-8, and MW-13, assess the groundwater quality related to the ISCO. Groundwater from the wells noted above shall be monitored for the duration of the remediation in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Chlorinated Volatile Organic Compounds (EPA Method 8260B)	µg/l	Grab	• Baseline, prior to application • One time following the completion of injection • Monthly for the next 3 months • Quarterly thereafter
Total Petroleum Hydrocarbons (EPA Method 8015B (M))	µg/l	Grab	• Baseline, prior to application • One time following the completion of injection • Monthly for the next 3 months • Quarterly thereafter
Methyl tert-butyl ether (MTBE) (EPA Method 8260B/5030B)	µg/l	Grab	• Baseline, prior to application • One time following the completion of injection • Monthly for the next 3 months • Quarterly thereafter
pH	pH units	grab	• Baseline, prior to application • One time following the completion of application • Biweekly for the first month • Monthly for the next 3 months

			• Quarterly thereafter
Temperature	°F/°C	grab	• Baseline, prior to application • One time following the completion of application • Biweekly for the first month • Monthly for the next 3 months • Quarterly thereafter
Dissolved Oxygen	µg/l	grab	• Baseline, prior to application • One time following the completion of application • Biweekly for the first month • Monthly for the next 3 months • Quarterly thereafter
Oxidation-reduction potential	millivolts	grab	• Baseline, prior to injection • One time following the completion of injection • Biweekly for the first month following injection • Monthly for the next 3 months • Quarterly thereafter
Total Organic Carbon (EPA Method 9060 Modified)	µg/l	grab	• Baseline, prior to injection • One time following the completion of injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Total dissolved solids and Total suspended solids	mg/l	grab	• Baseline, prior to injection • One time following the completion of injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Specific Conductance	µmhos/cm	grab	• Baseline, prior to injection • One time following the completion of injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Turbidity	NTU	grab	• Baseline, prior to injection • One time following the completion of injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Groundwater Elevation	Feet, above mean see level (msl) and below ground	In situ	• Baseline, prior to injection • One time following the

	surface (bgs)		completion of injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Major Anions (bromide, chloride, sulfate, nitrate, nitrite, O-phosphate, and sulfide)	µg/l	grab	• Baseline, prior to injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Major Cations (barium, calcium, magnesium, manganese, potassium and sodium)	µg/l	grab	• Baseline, prior to injection • Monthly for the first 3 months following the injection • Quarterly thereafter
Metals in Priority pollutant scan as listed in Attachment A, plus hexavalent chromium	µg/L	grab	• Baseline, prior to injection • Monthly for the first 3 months following the injection [1] • Quarterly thereafter [1]

1. The monitoring is required only for the metal detected during the baseline monitoring.

All groundwater monitoring reports must include, at minimum, the following:

a. Well identification, date and time of sampling;
b. Sampler identification, and laboratory identification;
c. Observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction for **all** site monitoring wells.

IV. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the _____day of _____

at _____

_____(Signature)

_____(Title)"

V. MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger will be treated as confidential.

Ordered by: _____ Date: February 24, 2010

Tracy J. Egoscue
Executive Officer

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles, California 90013

FACT SHEET
WASTE DISCHARGE REQUIREMENTS FOR PROPOSED CENTRAL REGION ELEMENTARY SCHOOL NO. 20, SITE 11 3600 WEST COUNCIL STREET, LOS ANGELES, CALIFORNIA

IN-SITU CHEMICAL TREATMENT USING ORC OR HRC IN SELECT AREAS

ORDER NO. R4-2007-0019 (SERIES NO. 103)
CI-9543, FILE NO. 09-176

FACILITY ADDRESS
3600 West Council Street
Los Angeles, CA 90004

FACILITY MAILING ADDRESS
Mr. Patrick Schanen
Office of Environmental Health and Safety
Los Angeles Unified School District
1055 West 7TH Street, 9TH Floor
Los Angeles, CA 90017

PROJECT DESCRIPTION

The Los Angeles Unified School District (LAUSD) plans construction of the proposed Central Region Elementary School No. 20, Site 11 (Site) located at 3600 West Council Street in Los Angeles. The approximately 8-acre Site consists of 15 parcels subdivided into three land areas: the Southern Area, the Central Area, and the Northern Area (Attached URS Figures 15 and 16). Site cleanup is proposed in the Central Area and the Northern Area only. There are three areas for treatment proposed in the Northern Area, and one area for treatment proposed in the Central Area. The Central Area of the Site was used for industrial/commercial activities prior to the existing playfield use. The current and historical use of the Site is commercial/industrial.

The Department of Toxic Substances Control (DTSC) is the lead agency overseeing site investigation and cleanup for the Site. The results of historical site assessments indicate that total petroleum hydrocarbon (TPH), arsenic and lead in shallow soils, and volatile organic compounds (VOCs) in soil and soil gas are the chemicals of concern (COCs) for the Site. LAUSD submitted a Remedial Action Plan (RAP) to DTSC. The RAP selected excavation, soil vapor extraction (SVE), and in situ chemical oxidation for the Site cleanup. DTSC approved the RAP in a letter dated November 30, 2009. The RAP proposes to remediate the Northern and Central Areas of the Site for impacts by TPHs, VOCs, metals, methane and hydrogen sulfides.

The Site is underlain by shallow, localized, discontinuous perched zones in the Elysian Hills area; these aquifers are located up gradient of the Central Basin. The Elysian Hills are composed of the marine Puente Formation, which consists predominantly of sandstones and siltstones. Measurements at groundwater monitoring wells GW-14R, GW-19 and GW-21 at the Site suggest that there is shallow bedrock (Puente Formation). Soils beneath the Site are comprised of unconsolidated clay and silt, sand, and gravel. Measurements of the depth to groundwater in monitoring wells at the Site have ranged from 9.70 to 21.03 feet below ground surface (bgs) (242.42 to 249.47 feet MSL), with an approximate groundwater gradient to the east.

In both the Northern Area and the Central Area at the Site there are soils with elevated concentrations of TPH, arsenic, lead and VOCs (including benzene, tetrachloroethene (PCE), trichloroethene (TCE)) which above the remedial action objectives for proposed for excavation and SVE. Within the Central Area, the source areas identified are underground storage tanks (UST) are to be removed.

The analytical results indicated that the shallow groundwater at the Site is impacted by VOCs, namely benzene, 1,2-dichloroethane (1,2-DCA), cis-1,2-dichloroethene (c-1,2-DCE), PCE, TCE, Methyl tert-butyl ether (MTBE), and vinyl chloride, at concentrations that exceed the California and the federal primary MCLs for drinking water. Dissolved-phase impacts to groundwater were generally localized to their respective source area. Potential offsite source areas to the north including the former ARCO station, a Unocal located on the northeast corner of Vermont Avenue and Beverly Boulevard, and two automobile repair shops to the west along Juanita Avenue and the north along Beverly Boulevard.

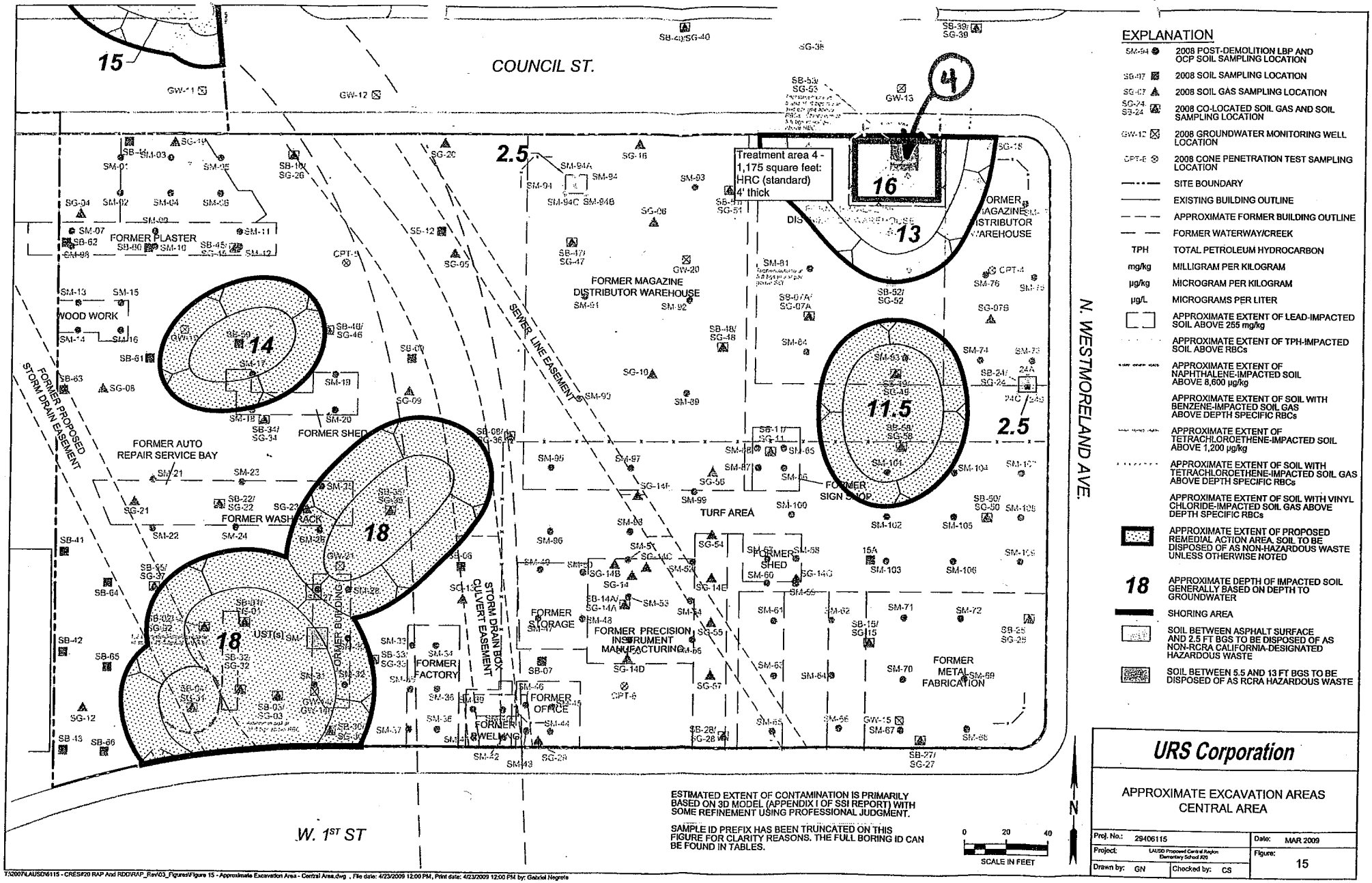
VOLUME AND DESCRIPTION OF APPLICATION OF ORC AND HRC

The discharger proposes excavation of soils contaminated with petroleum hydrocarbons for two areas at the Site to remove the bulk of petroleum hydrocarbon contamination of soils. This soil excavation will not remove the entire mass of contamination and residual dissolved phase contaminants will remain in the excavation area after backfilling. The discharger therefore proposes the application of Oxygen Release Compound (ORC) product along with clean backfill material to treat residual dissolved phase contaminants in the former excavation. In addition, the discharger proposes the excavation of soils contaminated with chlorinated VOCs for two areas at the Site to remove the bulk of chlorinated VOCs contamination of soils. This soil excavation will not remove the entire mass of contamination and residual dissolved phase contaminants will remain the excavation area after backfilling. The discharger therefore proposes the application of Hydrogen Release Compound (HRC) product along with clean backfill material to treat residual dissolved phase contaminants in the former excavation.

The discharger proposes to use an ORC formulation of phosphate-intercalated magnesium peroxide that is a timed-released source of oxygen. The ORC is manufactured as a fine powder that can be installed in the subsurface in the following ways: (1) mixed with water to form slurry that can be injected into both the saturated and unsaturated zones, and (2) added as a soil amendment to the backfill material used in excavation applications.

The application of ORC at the Site will be made in two different excavated areas. The first excavation is in a 9,030 square-foot area at approximately 10 feet in depth. The second excavation is in a 2,500 square-foot area at approximately 7 feet in depth. ORC will be used to treat residual contaminants that rebound in the former excavation area. Also ORC will be used to protect the clean backfill material from contaminants that may rebound from residual soil contamination left behind after the excavation. The 9,030 square foot excavation requires 2,880 lbs of ORC, and the 2,500 square foot excavation requires 840 pounds of ORC. This is a total of 3,720 lbs. of ORC product to be used at the Site. A 20% ORC slurry will used for this application. The ORC slurry can be added simultaneously with the backfill material or can be placed into standing water prior to backfilling.

The discharger also proposes to use an HRC formulation of a proprietary polylactate ester that is manufactured as a viscous gel and has a consistency similar to that of cold honey. The application of HRC at the Site will be made in two different excavated areas (a total of four different excavated areas at the Site). The first excavation is in a 3,750 square-foot area at approximately 7 feet in depth. The second excavation is in a 1,175 square-foot area at approximately 4 feet in depth. HRC will be used to treat residual contaminants that rebound in the former excavation area. Also HRC will be used to protect the clean backfill material from contaminants that may rebound from residual soil contamination left behind after the excavation. The 3,750 square foot excavation requires 1,680 lbs of HRC, and the 1,175 square foot excavation requires 480 pounds of HRC. This is a total of 2,160 lbs. of HRC product to be used at the Site. The HRC will be added directly to the excavation when the excavation is dug to a depth below the water table, and the HRC will be evenly distributed across the saturated zone by mixing the HRC with backfill material throughout the saturated interval. However, if the excavated area is above the groundwater table then the HRC will be evenly distributed throughout the excavated bottom.



EXPLANATION

- SM-94 — 2008 POST-DEMOLITION LBP AND OCP SOIL SAMPLING LOCATION
- SG-07 — 2008 SOIL SAMPLING LOCATION
- SG-07 — 2008 SOIL GAS SAMPLING LOCATION
- SG-24 SB-24 — 2008 CO-LOCATED SOIL GAS AND SOIL SAMPLING LOCATION
- GW-12 — 2008 GROUNDWATER MONITORING WELL LOCATION
- CPT-6 — 2008 CONE PENETRATION TEST SAMPLING LOCATION
- SITE BOUNDARY
- EXISTING BUILDING OUTLINE
- APPROXIMATE FORMER BUILDING OUTLINE
- FORMER WATERWAY/CREEK
- TPH — TOTAL PETROLEUM HYDROCARBON
- mg/kg — MILLIGRAM PER KILOGRAM
- µg/kg — MICROGRAM PER KILOGRAM
- µg/L — MICROGRAMS PER LITER
- APPROXIMATE EXTENT OF LEAD-IMPACTED SOIL ABOVE 255 mg/kg
- APPROXIMATE EXTENT OF TPH-IMPACTED SOIL ABOVE RBCs
- APPROXIMATE EXTENT OF NAPHTHALENE-IMPACTED SOIL ABOVE 8,600 µg/kg
- APPROXIMATE EXTENT OF SOIL WITH BENZENE-IMPACTED SOIL GAS ABOVE DEPTH SPECIFIC RBCs
- APPROXIMATE EXTENT OF TETRACHLOROETHENE-IMPACTED SOIL ABOVE 1,200 µg/kg
- APPROXIMATE EXTENT OF SOIL WITH TETRACHLOROETHENE-IMPACTED SOIL GAS ABOVE DEPTH SPECIFIC RBCs
- APPROXIMATE EXTENT OF SOIL WITH VINYL CHLORIDE-IMPACTED SOIL GAS ABOVE DEPTH SPECIFIC RBCs
- APPROXIMATE EXTENT OF PROPOSED REMEDIAL ACTION AREA. SOIL TO BE DISPOSED OF AS NON-HAZARDOUS WASTE UNLESS OTHERWISE NOTED
- 18 — APPROXIMATE DEPTH OF IMPACTED SOIL GENERALLY BASED ON DEPTH TO GROUNDWATER
- SHORING AREA
- SOIL BETWEEN ASPHALT SURFACE AND 2.5 FT BGS TO BE DISPOSED OF AS NON-RCRA CALIFORNIA-DESIGNATED HAZARDOUS WASTE
- SOIL BETWEEN 5.5 AND 13 FT BGS TO BE DISPOSED OF AS RCRA HAZARDOUS WASTE

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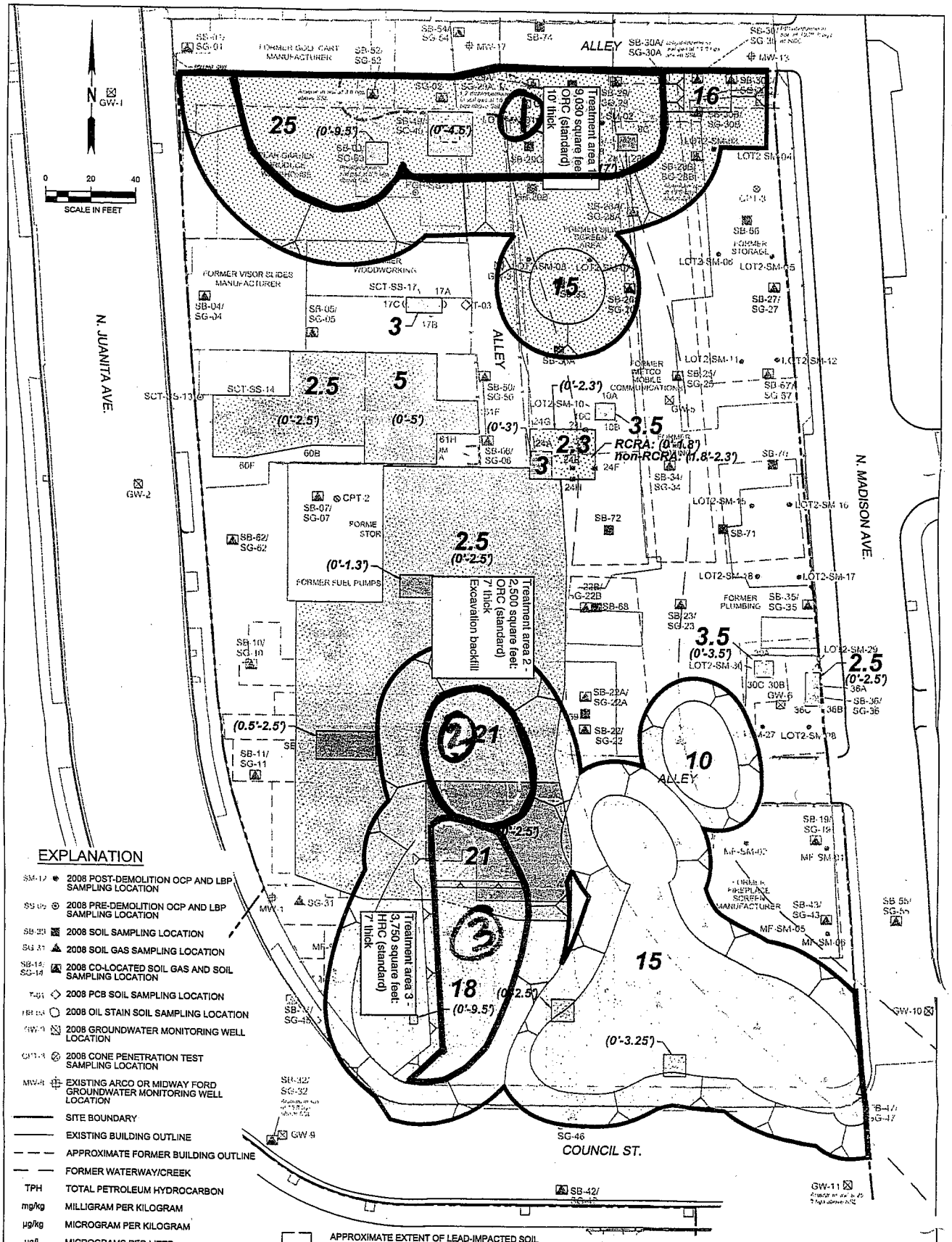
APPROXIMATE EXCAVATION AREAS
CENTRAL AREA

Proj. No.:	29406115	Date:	MAR 2009
Project:	LAUSD Proposed Central Region Elementary School #20	Figure:	15
Drawn by:	GN	Checked by:	CS

T:\2007\LAUSD\6115 - CRES#20 RAP And RDD\RAP_Rev03_Figures\Figure 15 - Approximate Excavation Area - Central Area.dwg , File date: 4/23/2009 12:00 PM, Print date: 4/23/2009 12:00 PM by: Gabriel Negrete



URS Corporation

APPROXIMATE EXCAVATION AREAS
NORTHERN AREA

Proj. No.: 29406115		Date: DEC 2008	
Project: LAUSD Proposed Central Region Elementary School #20		Figure: 16	
Drawn by: GN	Checked by: CS		

T:\2007\LAUSD\6115 - CRES#20 RAP And RDD\RAP_Rev03_Figures\Figure 16 - Approximate Excavation Area - Northern Area.dwg , File date: 4/23/2009 3:56 PM Print date: 4/23/2009 3:58 PM by: Gabriel Noronha