August 27, 2012
Project No. 4018969004

Mr. Jerry Wickham
Senior Hazardous Materials Specialist
Alameda County Environmental Health
Health Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Soil, Soil Gas, and Indoor Air Sampling; Monthly Liquid Phase Petroleum Hydrocarbon Monitoring; and Semi-Annual Groundwater Monitoring Work Plan
Bill Chun Service Station
2301 Santa Clara Avenue
Alameda, California 94501
SLIC # RO0000382
Geotracker Global ID # T0600100980

Reference: Alameda County Environmental Health, 2012, Case File Review for Fuel LeakCase No. RO0000382 and GeoTracker Global ID T0600100980, Bill Chun Service Station, 2301 Santa Clara Avenue, Alameda California 94501, dated July 23.

Ninyo & Moore, 2012, Well Installation and Groundwater Sampling Report, Bill Chun Service Station, 2301 Santa Clara Avenue, Alameda, California, dated June 30.

Dear Mr. Wickham:

On behalf of the Lily A. Chun Trust, Ninyo & Moore is pleased to submit this Work Plan for Environmental Services, including Soil, Soil Gas, and Indoor Air Sampling; Monthly Liquid Phase Petroleum Hydrocarbon (LPH) Monitoring; and Semi-Annual Groundwater Monitoring to Alameda County Environmental Health (ACEH), for the above-referenced property (site).

SITE BACKGROUND

The site is located at 2301 Santa Clara Avenue, in Alameda, County of Alameda, California, as presented on **Figure 1.** The site is a former gasoline service station, and has been the subject of numerous subsurface assessments, remedial action plans, groundwater monitoring and closure petitions since 1993, when three underground storage tanks (USTs) were removed from the site.

The project site is located in a mostly commercial area, however an apartment building is located adjacent to the northeast of the site. A Site Vicinity map is presented on **Figure 2**.

Ninyo & Moore prepared a *Well Installation and Groundwater Sampling Report* for the site in June 2012 (Ninyo and Moore, 2012). The report discussed environmental tasks performed in May 2012, including abandoning or replacing groundwater monitoring wells that were incorrectly screened, blocked, or damaged, and conducting a groundwater monitoring event for new (replacement) and existing site wells. Groundwater monitoring results included reported concentrations of TPHg ranging from less than the laboratory detection limit in wells MW-9, MW-10, and MW-14 to 160,000 micrograms per liter (ug/l) in well MW-7R. Reported concentrations of benzene in groundwater ranged from less than the laboratory detection limit in wells MW-9, MW-10, MW-13, MW-14, and MW-16 to 14,000 (ug/l) in well MW-7R. The area with the highest concentrations of TPHg and benzene were reported in wells surrounding the former USTs, with the highest results detected in well ME-7R. The report recommendations included performing soil, soil gas, and indoor air sampling; monthly liquid petroleum hydrocarbon (LPH) monitoring and removal; and semi-annual groundwater monitoring.

Based on recommendations included in the June 2012 Ninyo & Moore report, the ACEH issued a Directive letter in July 2012 requested a Work Plan for the additional environmental services discussed in the Ninyo & Moore report.

PRE-FIELD ACTIVITIES

Prior to conducting any field activities at the site, Ninyo & Moore will secure a drilling permit in accordance with Alameda County Public Works Agency requirements, and will locate and mark (with white paint) fifteen proposed boring locations. Underground Service Alert (USA) will be alerted of the planned excavation and drilling activities at least 48-hours prior to the start of subsurface work so that utilities in the work areas may be marked. In addition, a private utility locating subcontractor will clear the boring locations. The locations of the borings may change slightly in the event utility lines are located at or near the proposed locations.

Ninyo & Moore will update the Site Health and Safety Plan (HASP) previously prepared for the site as required in 29CFRPart1910.120. The HASP will specifically address health and safety concerns with respect to the activities proposed by Ninyo & Moore and contaminants of concern at the site.

PROPOSED SOIL, SOIL GAS, AND INDOOR AIR SAMPLING

Soil and Soil Gas Sampling

Borings NMB-1 through NMB-12 will be advanced in order to evaluate soil and soil gas concentrations in areas where the highest groundwater concentrations of fuel related compounds have been reported on site. The approximate locations of the borings are presented in **Figure 3**. The proposed borings located in areas paved with concrete will be cored prior to drilling. Borings will be advanced to approximately 10 feet below ground surface (bgs) or first encountered groundwater using a direct push drill rig and soil cores will be screened for VOCs using a photo-ionization detection (PID) meter. PID readings and the observed lithology will be recorded on boring logs and soil will be classified in accordance with the Unified Soil Classification System (USCS). If physical signs of impacts such as staining, odors, or PID readings are observed in the soil cores, soil samples will be collected from the depth where physical signs of impacts are most pronounced, and from the depth where physical signs of impacts are no longer observed or have attenuated significantly. The maximum number of soil samples that would be collected is two samples per boring for a total of 24 samples. If no physical signs of impacts are observed in soil borings, one soil sample will be collected from the approximate depth of the soil/groundwater interface (between 6 and 9 feet bgs) in borings NMB-4, NMB-5, NMB-6, NMB-8, NMB-10, and NMB-11 which are located in the area of highest concentrations of the TPHg and benzene groundwater plume. The soil samples will also be collected below any fill material encountered in borings located within the former UST pit. Because the remaining boring locations are located outside the highest TPHg and benzene groundwater concentrations, soil samples will not be collected from the remaining borings (NMB-1, NMB-2, NMB-3, NMB-7, NMB-9, and NMB-12) if soil contamination is not observed in the boring. Soil samples will be collected by transferring

soil from the acetate sleeves of the drill rods into Encore sample containers. The samples will be analyzed for TPHg by EPA Method 8015M, and VOCs plus oxygenates by EPA Method 8260B.

Soil gas probes will be installed in borings NMB1, NMB3, NMB6, NMB9, NMB11, and NMB-12 at 5 feet bgs located adjacent to the buildings north and east of the site to evaluate potential soil gas concerns. Sub-slab soil gas probes will be installed at the locations NMSS1, NMSS2, and NMSS3 in the buildings to the north and east of the site at the interface between the engineered slab or fill and native soil. A soil gas probe attached to ¼-inch Teflon sample tubing extending to the surface, will be installed in each soil gas sample location in general accordance with California Department of Toxic Substances Control's (DTSC's) "Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air," dated April 2012. Soil gas samples will be collected in summa canisters and analyzed for VOCs and TPHg by EPA Methods TO-15 and TO-3, respectively.

Down-hole equipment will be decontaminated between each sample location using a steam cleaner or triple-rinse method. Soil cuttings and decontamination rinsate water will be collected in 55-gallon drums that will be stored on-site pending review of laboratory analytical data. The soil and water will be hauled off-site by a licensed waste hauler for disposal following review of analytical data.

Indoor Air and Ambient Air Sampling

Indoor air and ambient air sampling will be conducted to evaluate the potential indoor air concern from the TPHg and benzene groundwater plume beneath the buildings north and east of the site. The proposed indoor air sampling activities will include a pre-sampling site visit and an indoor air sampling event. During the pre-sampling site visit, a Building Survey Form will be completed and a screening of the building will be conducted. During the pre-sampling site screening, an evaluation of the ventilation systems in the buildings north and east of the site will also will be conducted. A PID meter will be used to evaluate potential contaminant sources that might impact indoor air quality, such as chemicals in common consumer products. During the pre-sampling site visit, these sources will be identified and either sealed or removed prior to

indoor air sampling. Sealed containers will be tested with the PID meter to evaluate if the seal is leaking. Products that contain VOCs will be listed on a Household Products Inventory Form along with the PID measurements obtained near the containers. Ventilation may be performed before sampling to eliminate residual vapors.

Indoor air samples will be collected from four locations (NMIA-1, NMIA-2, NMIA-3, and NMIA-4) within the buildings north and east of the site to evaluate potential impacts to indoor air from the TPHg and benzene groundwater plume. The canisters will be positioned approximately 4 feet above the ground. Two ambient air samples (NMIA-5 and NMIA-6) will also be collected to evaluate indoor air versus ambient air conditions; one from an upwind location and one from a downwind location outside the warehouse. The ambient air samples will be collected in discrete locations to minimize the likelihood that they will be tampered with. Both the indoor air and ambient air canisters will be left open over an approximately 8-hour period. Samples will be analyzed in general accordance with EPA Method TO-15 with low level reporting limits.

Soil, Soil Gas, and Indoor Air Sampling Report

Following the completion of all sampling activities and receipt of final laboratory reports, the sampling results will be presented in a Soil, Soil Gas, and Indoor Air Sampling Report. The report will compare concentrations of VOCs detected in soil, soil gas, and indoor air to the DTSC California Human Health Screening Levels (CHHSL). The report will also compare concentrations of VOCs and TPHg detected in soil to San Francisco Regional Water Control Board (RWQCB) Environmental Screening Levels (ESLs) established for soil. The report will also present findings on the potential source for the TPHg and benzene groundwater plume.

GROUNDWATER MONITORING WORK PLAN

Twelve Monthly Liquid Phase Hydrocarbon (LPH) Monitoring Events

Twelve monthly events of LPH measurements will be conducted from the three groundwater monitoring wells MW-2R, MW-5R, and MW-7R and the three groundwater extraction wells EW-14, EW-15, EW-16, and EW-17. These wells are located within the area of highest

concentration of the TPHg and benzene groundwater plume, have historically had measurable LPH, and/or are located near areas where LPH was historically measured. Liquid phase petroleum hydrocarbons will be removed from those wells where it is observed. Two of the monthly LPH monitoring events will be conducted concurrently with the semi-annual groundwater monitoring.

The methodology for LPH measurement and removal will include lowering a LPH detector into the wells to evaluate if LPH is present, and what the depth and thickness is. The LPH detector will be decontaminated between wells using a triple rinse wash with a non-phosphate detergent and distilled water. If LPH is detected in the wells, then the LPH will be removed with a disposable bailer and contained in a 55-gallon drum. The drum will be sampled and analyzed for petroleum hydrocarbon compounds and VOCs when full, and will be removed pending receipt of laboratory analytical data.

Findings of the monthly LPH monitoring will be presented in the Semi-Annual Groundwater Monitoring Reports. If a well is observed to have no LPH for three consecutive monthly monitoring events, then it will be excluded from future monthly monitoring. If LPH is observed in a well for three consecutive monthly monitoring events, then an LPH absorbent sock will be introduced to the well.

Two Semi-Annual Groundwater Monitoring Events

Two events of groundwater monitoring and sampling will be conducted from ten 2-inch groundwater monitoring wells (MW-4R, MW-5R, MW-6R, MW-7R, MW-8, MW-10, MW-11R, MW-12, MW-14, and MW-16) to monitor the location and dissolved concentrations of the TPHg and benzene groundwater plume. If LPH is observed within any of these wells during either of the groundwater monitoring events, no groundwater sample will be collected. The two semi-annual groundwater monitoring events will be conducted concurrently with two of the monthly LPH monitoring events.

Groundwater sampling methodology will include first measuring the depth to groundwater from the top of the well casing using a water-level meter with an accuracy of 0.01 feet. Once the

groundwater measurements are recorded, groundwater monitoring wells will be purged of three well casing volumes while recording temperature, pH, and conductivity of the purge water. Groundwater samples will be collected using disposable bailers to minimize cross contamination.

The groundwater samples will be analyzed for TPHg by EPA Method 8015M and VOCs including oxygenates by EPA Method 8260B.

Investigation derived waste, consisting of purge water, will be temporarily staged in 55-gallon drums and stored on site, pending receipt of analytical laboratory results for waste characterization. Based on the assumption that the purge water can be classified as non-hazardous, the 55-gallon drums will be removed from the site by a licensed waste hauler and transported to a permitted recycling for proper disposal.

Semi-Annual Groundwater Monitoring Reports

Following the completion of field activities and receipt of laboratory analytical results, a Groundwater Monitoring Report will be prepared for each semi-annual groundwater monitoring event and include the following:

- Documentation of pre-field activities;
- Field and laboratory QA/QC procedures;
- A series of figures showing laboratory analytical results;
- A tabular presentation of groundwater analytical data;
- Laboratory Analytical Reports; and
- A discussion of Findings, Conclusions and Recommendations.

Ninyo & Moore will submit all reports to the ACEH and upload the reports to the ACEH and Geotracker databases.

Laboratory QA/QC

Laboratory QA/QC will include the preparation of method blanks, surrogates, lab control samples, and matrix spike and matrix spike duplicate samples. Ninyo & Moore will perform Level II Data Validation on all chemical analysis, as a check of overall quality. The data quality check process will include a review of change-of-custody forms, holding times, laboratory analytical reports, method blanks, surrogate recoveries, matrix spike, matrix spike duplicates, lab control

viewed for accuracy. A laboratory QA/QC section will be included in the final report discussing general comments in the laboratory analytical report.

Disposal of Drill Cuttings, Decon Water, and Purge Water

Drill cuttings, decon water, and purge water will be placed in 55-gallon drums for temporary on-site storage, pending laboratory analysis.

SCHEDULE

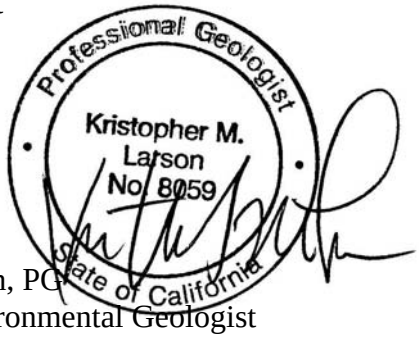
Ninyo & Moore anticipates that field work will begin within 2 to 3 weeks of approval of this Work Plan, depending upon subcontractor availability. A Soil, Soil Gas, and Groundwater Sampling Report will be submitted to the ACEH approximately 4 weeks following the receipt of final laboratory reports.

Should you have any questions regarding this Work Plan, please conduct us at your convenience.

Sincerely,
NINYO & MOORE

Jake J. Wilson
Staff Geologist

Peter D. Sims
Project Environmental Geologist



Kris M. Larson, PG
Principal Environmental Geologist

JJW/PDS/KML/csj

Attachments: Figure 1 – Site Location
Figure 2 – Site Vicinity
Figure 3 – Proposed Sampling Locations

Distribution: (1) Addressee (uploaded to ACEH and Geotracker websites)
(1) Ms. Carolyn Fong (hard copy)

August 27, 2012

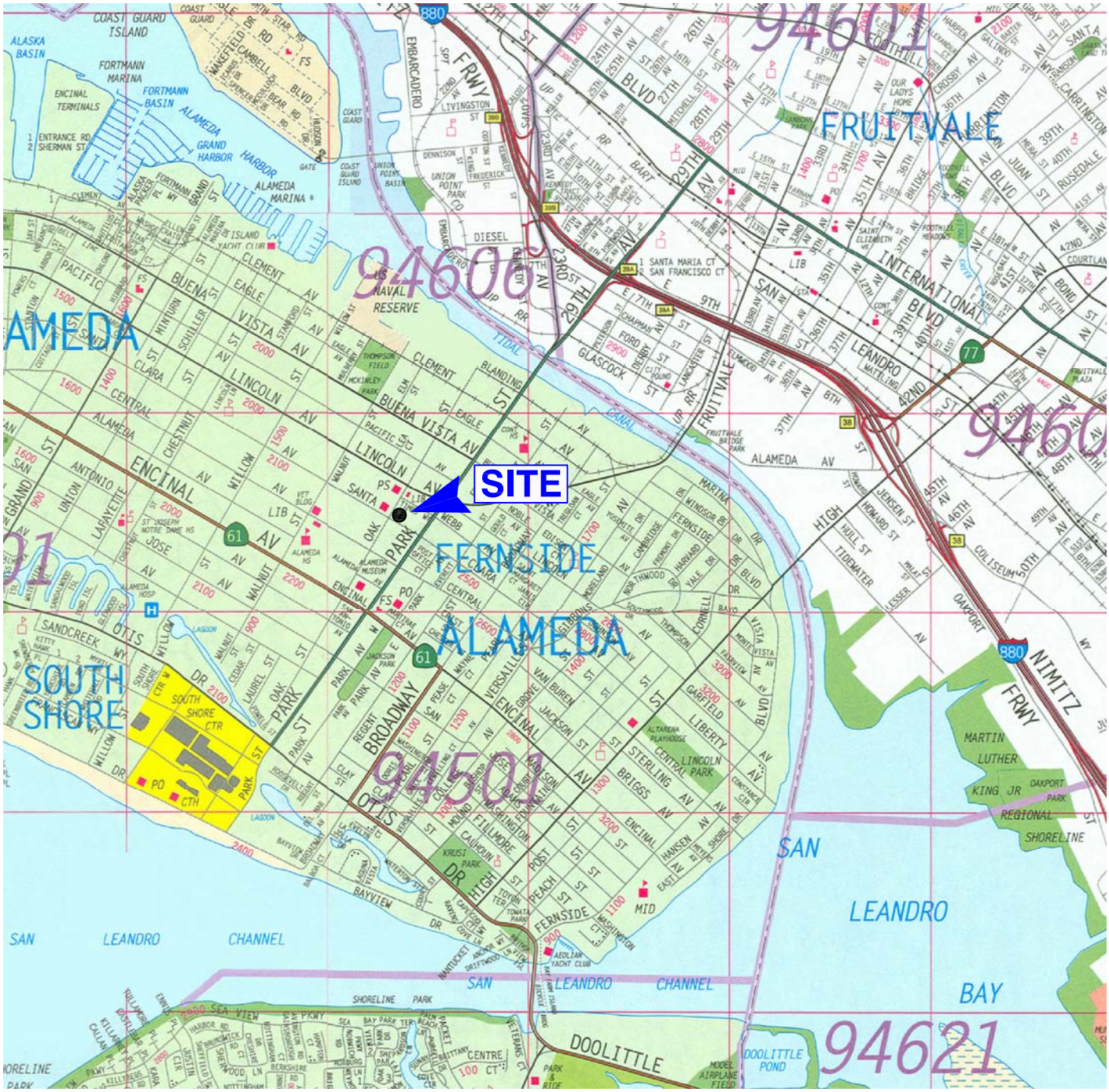
To: Mr. Jerry Wickham
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
Health Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Perjury Statement
Soil, Soil Gas, and Indoor Air Sampling; Monthly Liquid Phase Petroleum Hydrocarbon Monitoring; and Semi-Annual Groundwater Monitoring Work Plan
Bill Chun Service Station
2301 Santa Clara Avenue
Alameda, California 94501
SLIC # RO0000382
Geotracker Global ID # T0600100980

I declare, under penalty of perjury, that the information or recommendations contained in the attached letter are true and correct to best of my knowledge.

Carolyn C. Fong, Trustee

Ms. Carolyn Fong
Trustee for Lily A. Chun 1991 Trust
711 E. Hermosa Drive
San Gabriel, California 91775



REFERENCE: METRO AREAS OF ALAMEDA, CONTRA COSTA, MARIN, SAN FRANCISCO, SAN MATEO, AND SANTA CLARA COUNTIES, THOMAS GUIDE, 2008.

N

SCALE IN FEET

0 2000 4000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	SITE LOCATION	FIGURE
PROJECT NO. 401896004 / DATE 8/12	2301 SANTA CLARA AVENUE ALAMEDA, CALIFORNIA	1

401896003-FIG1.dwg, Aug 08, 2012, 4:26pm, syq4ever

REFERENCE: GOOGLE EARTH, 2012.

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SCALE IN FEET

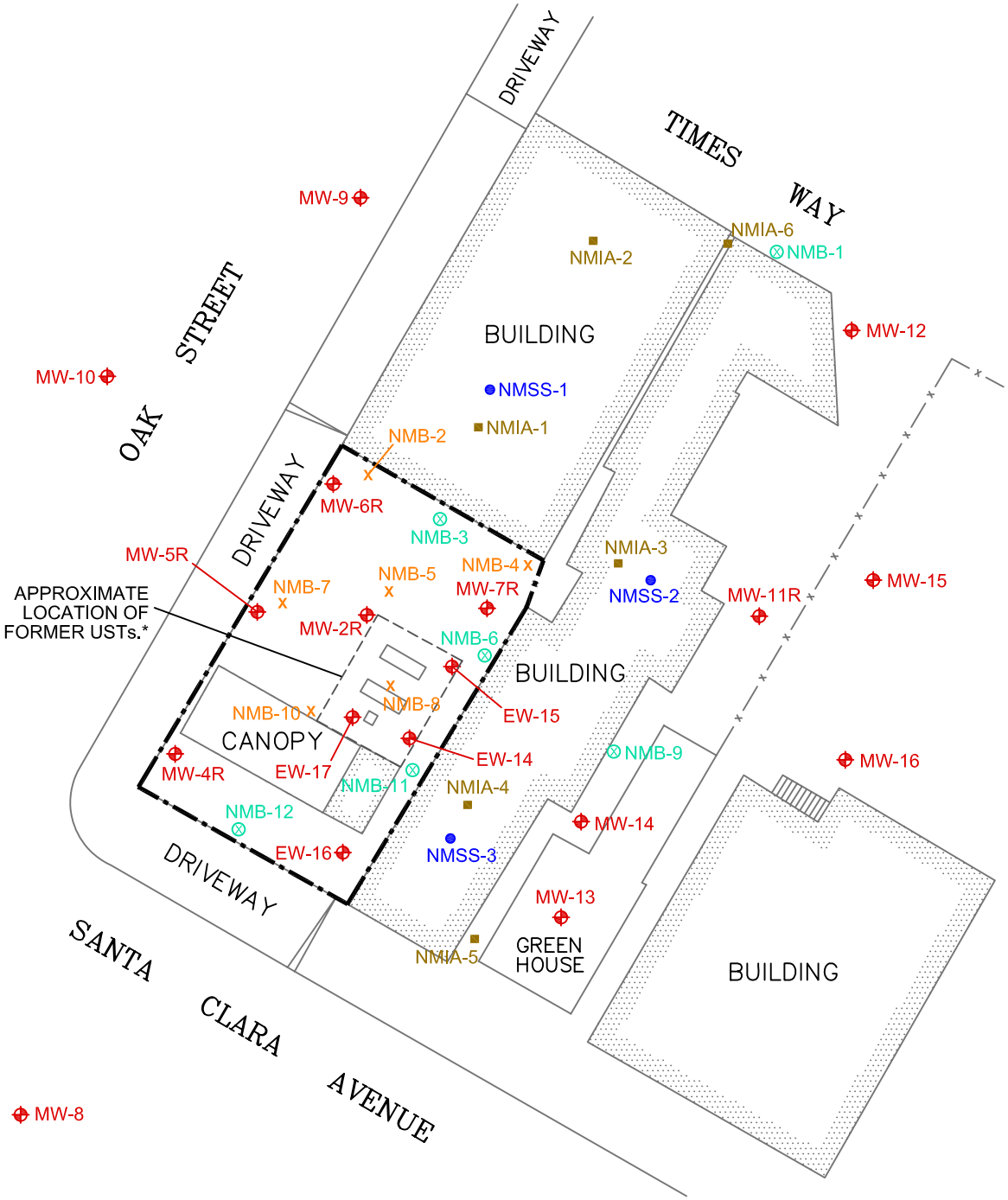
0 40 80

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND
APPROXIMATE SITE BOUNDARY

Ninyo & Moore	SITE VICINITY	FIGURE
PROJECT NO. 401896004 / DATE 8/12	2301 SANTA CLARA AVENUE ALAMEDA, CALIFORNIA	2

401896004-FIG2.dwg, Aug 08, 2012, 4:27pm, syq4ever



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SCALE IN FEET

0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND	
	APPROXIMATE SITE BOUNDARY
MW-12	GROUNDWATER MONITORING WELL
x	FENCE
*	BASED ON ENSR DOCUMENT DATED JUNE 1998
NMB-12	PROPOSED COMBINED SOIL AND SOIL GAS SAMPLE LOCATION
NMB-10	PROPOSED SOIL BORING LOCATION
NMSS-3	PROPOSED SUB-SLAB SOIL GAS SAMPLE LOCATION
NMIA-6	PROPOSED INDOOR AIR SAMPLE LOCATION

REFERENCE: VIRGIL CHAVEZ LAND SURVEYING, 2012.

Ninyo & Moore

PROPOSED SAMPLING LOCATIONS

FIGURE 3

PROJECT NO.	DATE
401896004	8/12

2301 SANTA CLARA AVENUE
ALAMEDA, CALIFORNIA

401896004-FIG3.dwg, Aug 22, 2012, 8:47am snguyen