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WORK PLAN FOR ENVIRONMENTAL INVESTIGATION
PIEDMONT AUTO CARE
29 WILDWOOD AVENUE
PIEDMONT, CALIFORNIA

PREPARED FOR:
Mr. Jeff Hansen
Piedmont Auto Care
29 Wildwood Avenue
Piedmont, California 94610

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
1956 Webster Street, Suite 400
Oakland, California 94612

July 29, 2015
Project No. 402605001

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Mr. Jerry Wickham, PG, CEG, CHG
Senior Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 945202

Subject: Work Plan for Environmental Investigation
Piedmont Auto Care
29 Wildwood Avenue
Piedmont, California 94610

Dear Mr. Wickham:

On behalf of Piedmont Auto Care, Ninyo & Moore is submitting to Alameda County Environmental Health (ACEH) this Work Plan to conduct an environmental investigation of the subject site. The objective of this Work Plan is to assess the Site's current environmental conditions and evaluate whether contamination may be present that could affect its planned redevelopment into a mixed-use residential property. The investigation activities included in this Work Plan were developed to address the areas of potential environmental concern as discussed with ACEH during our July 16, 2015, meeting.

Ninyo & Moore looks forward to working with ACEH in performing the environmental investigation of the Site. Please contact us at (510) 343-3000 should you have any questions.

Respectfully submitted,
NINYO & MOORE,

PROFESSIONAL GEOLOGIST
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Attachments: Figure 1 – Site Location
Figure 2 – Site Plan with Boring Locations

Distribution: Addressee (via e-mail)
Kris Larson, Ninyo & Moore (via e-mail)
Jeff Hansen, Piedmont Auto Care (via e-mail)
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1. INTRODUCTION

Ninyo & Moore has prepared this Work Plan to conduct an environmental investigation of the Piedmont Auto Care property located at 29 Wildwood Avenue, Piedmont, California (the site; Figure 1).

1.1. Purpose and Objective

On July 16, 2015, representatives of Piedmont Auto Care and Ninyo & Moore met with Alameda County Environmental Health (ACEH) to discuss the planned redevelopment of the site, which would change the use of this property from an existing gasoline service station and auto care facility to mixed-use residential. The purpose of this Work Plan is to present the sampling locations, methodologies and rationale for assessing the site's current environmental conditions. The objective of the environmental investigation activities included in this Work Plan is to evaluate the current subsurface soil and groundwater conditions and determine whether remedial measures would be necessary to restore the site to conditions that will be acceptable to ACEH for residential development.

1.2. Background

Background information for the site was obtained from the following documents:

- ACEH's August 6, 2010, letter, Subject: Case Closure for Fuel Leak Case No. RO0000495 and GeoTracker Global ID T0600101246, Shell #13-5755, 29 Wildwood Avenue, Piedmont, California 94610;
- Cambria Environmental Technology's November 10, 2005, *Site Conceptual Model*; and,
- Conestoga-Rovers & Associates' February 19, 2010, *Closure Request Shell-Branded Service Station, 29 Wildwood Avenue, Piedmont, California*.

The site is currently an operating gasoline service station and auto care repair facility, located in a mixed commercial/residential neighborhood. The site is triangular-shaped, and is located at the former confluence of Pleasant Valley Creek and Bushy Dell Creek. Both creeks are presently channeled in underground culverts beneath Grand Avenue (Pleasant Valley Creek) and Wildwood Avenue (Bushy Dell Creek). Drainage flows southward

through the culverts and discharges into Lake Merritt approximately 4,000 feet south of the site.

Presented below is a summary of previous environmental investigation activities conducted at the site.

- In August 1984, following the removal of three steel fuel underground storage tanks (USTs), Emcon Associates of San Jose advanced four borings at the site and converted one boring to groundwater monitoring well E-4. TPH was detected in soil samples collected at approximately 5 feet below ground surface (bgs) within the former UST backfill. Three fiberglass USTs and new fuel product lines were installed.

- In June 1987, a 550-gallon waste oil UST was replaced with a double-walled UST. Soil and groundwater samples were collected by Blaine Tech Services following the UST removal. Sample analysis did not detect any petroleum hydrocarbon or volatile organic compound (VOC) concentrations greater than laboratory reporting limits.

- In August 1988, ENSCO Environmental Services advanced five soil borings to 15.5 feet bgs at locations adjacent to the USTs. Elevated concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in two borings.

- In July 1989, six soil borings were advanced by Weiss Associates (Weiss) and three groundwater monitoring wells were installed (MW-1 through MW-3). Elevated concentrations of TPHg were detected in soil samples collected from four of the borings. Petroleum hydrocarbons were detected in the initial groundwater samples collected from wells MW-2 and MW-3.

- In January 1990, three soil borings were advanced by Weiss and two off-site groundwater monitoring wells were installed (MW-4 and MW-5). Petroleum hydrocarbons were not detected at concentration greater than laboratory reporting limits in soil samples collected from the three soil borings or in groundwater samples from the two new wells.

- In June, 1995, monitoring well MW-4, which was a flowing artesian well installed in a lower water-bearing zone, was decommissioned by Weiss.

- In March 1998, the fuel dispensers and piping were upgraded. Soil samples were collected by Cambria Environmental Technology Inc. (Cambria) from beneath the former dispensers. Elevated concentrations of petroleum hydrocarbons were detected in the soil sample collected at 2 feet below ground surface (bgs) from a location beneath the northwestern dispenser.

- In April 2005, the dispensers and piping were again upgraded. Cambria collected soil samples from beneath the former dispensers, with these samples containing elevated concentrations of TPHg and TPH as diesel (TPHd).

- In May 2007, the 550-gallon waste oil UST was removed from the site. CRA observed the UST removal and collected soil and groundwater samples. Concentrations of petroleum constituents and metals were detected above reporting limits, but below San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs) in soil samples. Elevated concentrations of petroleum constituents and VOCs were detected in groundwater above the RWQCB ESLs.

- Quarterly groundwater monitoring has been conducted at the site starting in July 1989 and extending through March 2010. The primary chemicals of concern identified were TPHg, benzene, methyl-tertiary butyl ether (MTBE) and tertiary butyl alcohol (TBA), with the groundwater samples collected from monitoring well MW-3 consistently contained the highest concentrations. Halogenated VOCs were detected in groundwater from off-site wells MW-4 and MW-5, but were not detected in the on-site monitoring wells, and therefore, were associated with an off-site source.

- On August 6, 2010, the ACEH granted site closure to the former Fuel Leak Case No. RO0000495. The case was conditionally closed with Site Management Requirements that limited future land use to commercial land use only (ACEH, 2010). Following this closure, the site's groundwater monitoring wells were properly decommissioned.

2. ENVIRONMENTAL INVESTIGATION ACTIVITIES

Presented below is a description of the environmental investigation activities to be performed following this Work Plan. These environmental investigation activities have been designed to assess the soil and groundwater conditions outside the site's UST pit. Piedmont Auto Care will be removing the site's three USTs, fuel dispenser islands and product piping, and will separately coordinate these activities with ACEH.

2.1. Health and Safety Plan

A site specific Health & Safety Plan (HSP) will be prepared for use on site during Ninyo & Moore investigation activities. The HSP will be in the possession of Ninyo & Moore field personnel at all time during field activities. The HSP will include, but not be limited to, a discussion of physical and chemical hazards, action levels relating to chemical hazards, personal protective equipment (PPE) use, and describe a route to the nearest hospital or clinic. A mandatory sign in sheet will be included as an appendix and will be

signed by all Ninyo & Moore employees and Ninyo & Moore subcontractors involved with the field activities. A site safety meeting, to be attended by all field personnel working for Ninyo & Moore, will be conducted prior to the commencement of field activities.

2.2. Permitting

A 2015 Drilling Permit Application Form and associated permit fee will be submitted to the Alameda County Public Works Agency (ACPWA) for the advancement of soil borings at the site. Ninyo & Moore will provide the ACPWA a copy of this Work Plan and a minimum of 5 days' notice of drilling activities so that an ACPWA grout inspector can be scheduled. ACPWA will require up to 10 days to review/approve the drilling permit application.

2.3. Utility Locating

Prior to conducting field activities, Ninyo & Moore personnel will mark out the drilling area and stake or mark the locations of the proposed soil borings. Underground Service Alert will be notified of the proposed drilling at least 48 hours in advance, including location and date, and will mark utility locations surrounding and/or entering the property. Additionally, Ninyo & Moore will retain the services of a private utility locator to identify the presence of subsurface utilities in the immediate vicinity of the proposed boring locations.

2.4. Boring Advancement

The environmental investigation of the site will be performed through advancing soil borings at locations where subsurface contamination is suspected to be potentially present. A total of five soil borings (NMB-1 through NMB-5) will be advanced within the site boundaries to depths of approximately 15 feet below ground surface (bgs). The proposed soil borings will be advanced by using a hand auger to a depth of 5 feet bgs, and then by a truck or track-mounted Geoprobe® type direct-push technology drill rig at depths below 5 feet bgs. The five proposed boring locations are indicated on Figure 2, with these locations potentially changing slightly in the event utility lines are located at or near the proposed locations, or where access is a problem. The boring locations were selected as follows:

- NMB-1: situated at the location of the former 550 gallon waste oil UST;
- NBM-2 and NMB-4: situated adjacent to the site's two fuel dispenser islands;

- NMB-3: situated adjacent to the former location of MW-3; and,
- NBM-5: situated within the site's garage at a location adjacent to a hydraulic lift.

A Ninyo & Moore geologist will log the observed soil lithology encountered in each boring following the Unified Soil Classification System (USCS). At a minimum, for every soil sample collected, a corresponding soil headspace sample will also be collected. Soil headspace samples will be screened for organic vapor measurements by placing a small amount of soil in a re-sealable plastic bag, and allowing samples to equilibrate for at least 15 minutes before screening using a photo-ionization detection meter (PID). PID readings of headspace samples will be recorded on soil boring logs.

All re-usable downhole soil boring equipment will be decontaminated before and between sample locations using a high pressure water steam cleaner or by using Liquinox© and a triple rinse methodology. The used decontamination water will be contained in a labeled 55 gallon drum. In addition, the soil cuttings generated by the drilling will be contained in a labeled 55 gallon drum. These drums containing the investigation-derived waste (IDW) will be securely stored on the site pending waste characterization for proper offsite transportation and disposal.

2.5. Soil and Groundwater Sampling Methodology

Two soil samples and one grab groundwater sample will be collected from each boring location. One vadose zone soil sample will be collected from 0.5 to 1.0 feet above the first encountered groundwater, which is anticipated to be contacted at 5 to 10 feet bgs, or where signs of chemical impact are observed. The second saturated soil sample will be collected from 12 to 12.5 feet bgs, which is the planned excavation depth for the underground garage included in the site's redevelopment plans, and therefore, will characterize the soil conditions remaining following the excavations activities.

The soil samples will be collected from either the hand auger cuttings, or directly from the Geoprobe® acetate sleeve. If collected from cuttings, the soil sample will be placed in laboratory-supplied glass jars. If collected from the acetate sleeve, the soil sample section will be sealed with Teflon tape and plastic end caps. Soil samples for TPHg and VOC analysis will

be collected in either Encore© samplers or by using Terracore© samplers. The soil samples will be labeled with the boring identification and sample depth, placed in re-sealable plastic bags and stored in a cooler on ice immediately following collection.

The grab groundwater samples will be collected following the temporary installation of new screened PVC casings into each boring. Groundwater samples will be collected using either a peristaltic pump or polyethylene tubing combined with a bottom check-valve to receive the sample. If a peristaltic pump is used, it will be operated at a low speed to minimize disturbance of groundwater. Groundwater samples will be collected in the appropriate laboratory-supplied containers, which will be labeled with the boring identification, and stored in a cooler on ice immediately following collection.

In addition to the primary samples described above, one field equipment rinsate blank will be collected for project quality assurance/quality control measures, and will be submitted for the same analyses as the submitted soil samples.

Subsequent to the completion of sampling activities, the borings will be grouted from their bottom depth to 3 inches below the surface following ACPWA permit guidelines. The ground surface at each boring location will be finished to match the existing ground surface. The borings will not be left open longer than 24 hours.

2.6. Laboratory Analysis

The soil and groundwater samples will be submitted to a California-certified analytical laboratory under chain-of-custody documentation. Samples obtained from the four boring locations NMB-1 through NMB-4 will be submitted for the following analysis:

- VOCs and TPHg using United States Environmental Protection Agency (USEPA) Method 8260B and collected using USEPA Method 5035;
- TPHd and TPH as motor oil (TPHmo) using USEPA Method 8015B, with the samples prepared with silica-gel cleanup using USEPA Method 3530C; and,
- California Title 22 Metals using USEPA Method 6010B/7471A, with the groundwater samples analyzed for dissolved metals.

- The soil samples will be analyzed on a dry weight basis.

The soil and groundwater samples collected from boring NMB-5 will be submitted for the following analysis:

- TPH as hydraulic oil (TPHho) using USEPA Method 8015B, and
- California Title 22 metals using USEPA Method 6010B/7471A, with the groundwater sample analyzed for dissolved metals.
- The soil samples will be analyzed on a dry weight basis.

2.7. Reporting

Ninyo & Moore will prepare a report documenting the findings of the site's environmental investigation activities. This report will describe the completed investigation activities, tabulate the results, and provide copies of the boring logs and the analytical laboratory reports. Ninyo & Moore will evaluate the analytical results against the RWQCB ESLs dated December 2013, for residential sites where groundwater is a current or potential source of drinking water. Depending on this evaluation, recommendations will be made as to whether remedial measures would be necessary to restore the site to conditions that will be acceptable to the ACEH for residential development.

2.8. Schedule

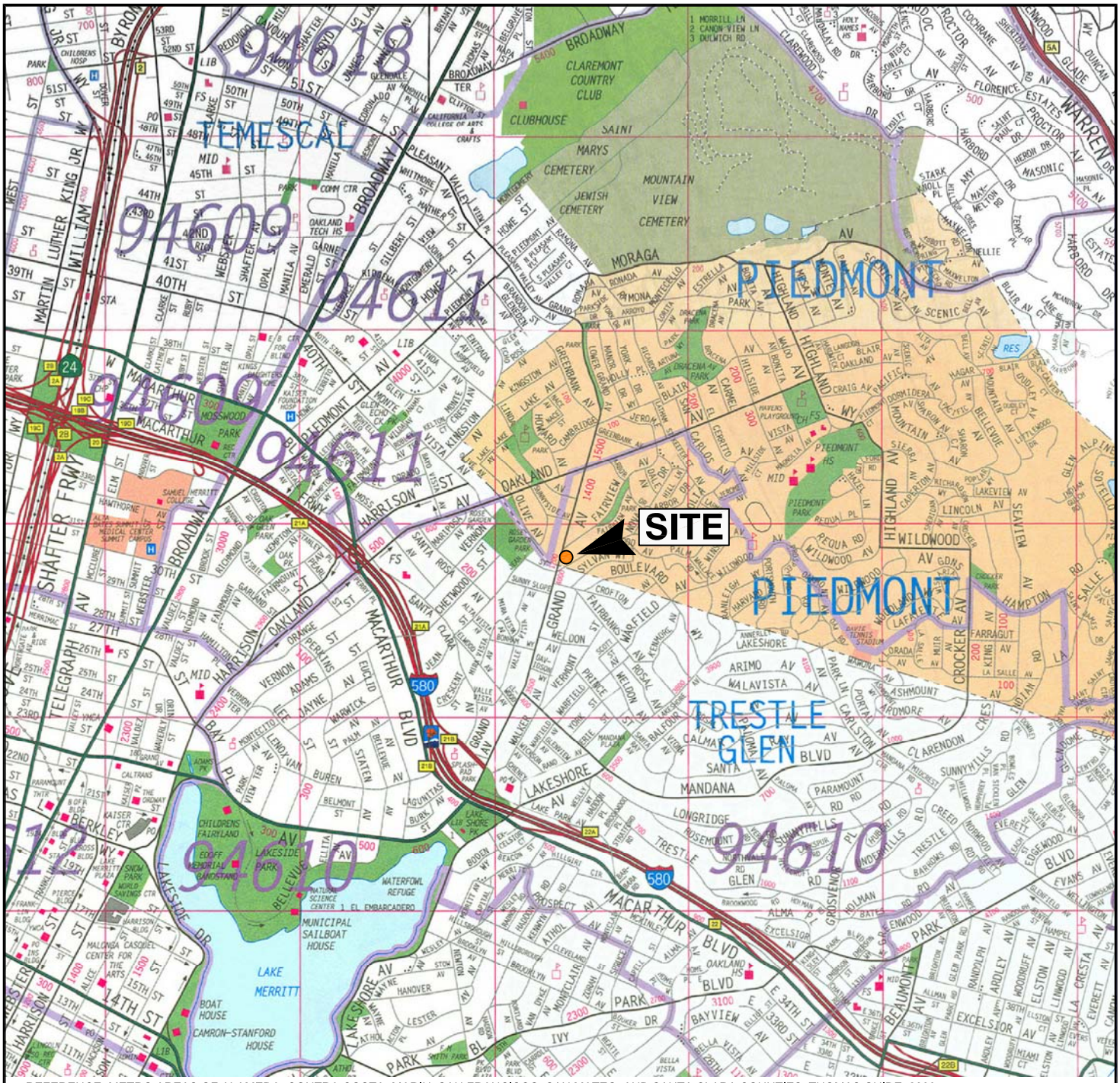
Ninyo & Moore will schedule the field investigation activities following ACEH review and approval of this Work Plan. We anticipate requiring between 2 and 3 weeks to obtain the ACPWA permit and schedule the driller. The report documenting the investigation findings will be submitted to ACEH within 2 weeks following receipt of the final analytical laboratory reports.

3. REFERENCES

ACEH, 2010, Alameda County Environmental Health Services Letter; Subject: Case Closure for Fuel Leak Case No. RO0000495and GeoTracker Global ID T0600101246, Shell #13-5755, 29 Wildwood Avenue, Piedmont, California 94610; dated August 6.

Cambria, 2005, Cambria Environmental Technology, Inc. *Site Conceptual Model;* Dated November 10.

CRA, 2010, Conestoga-Rovers & Associates; Closure Request Shell-Branded Service Station, 29 Wildwood Avenue, Piedmont, California, dated February, 19.



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

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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	SITE LOCATION	FIGURE
PROJECT NO. 402605001 / DATE 7/15	PIEDMONT AUTO CARE 29 WILDWOOD AVENUE PIEDMONT, CALIFORNIA	1

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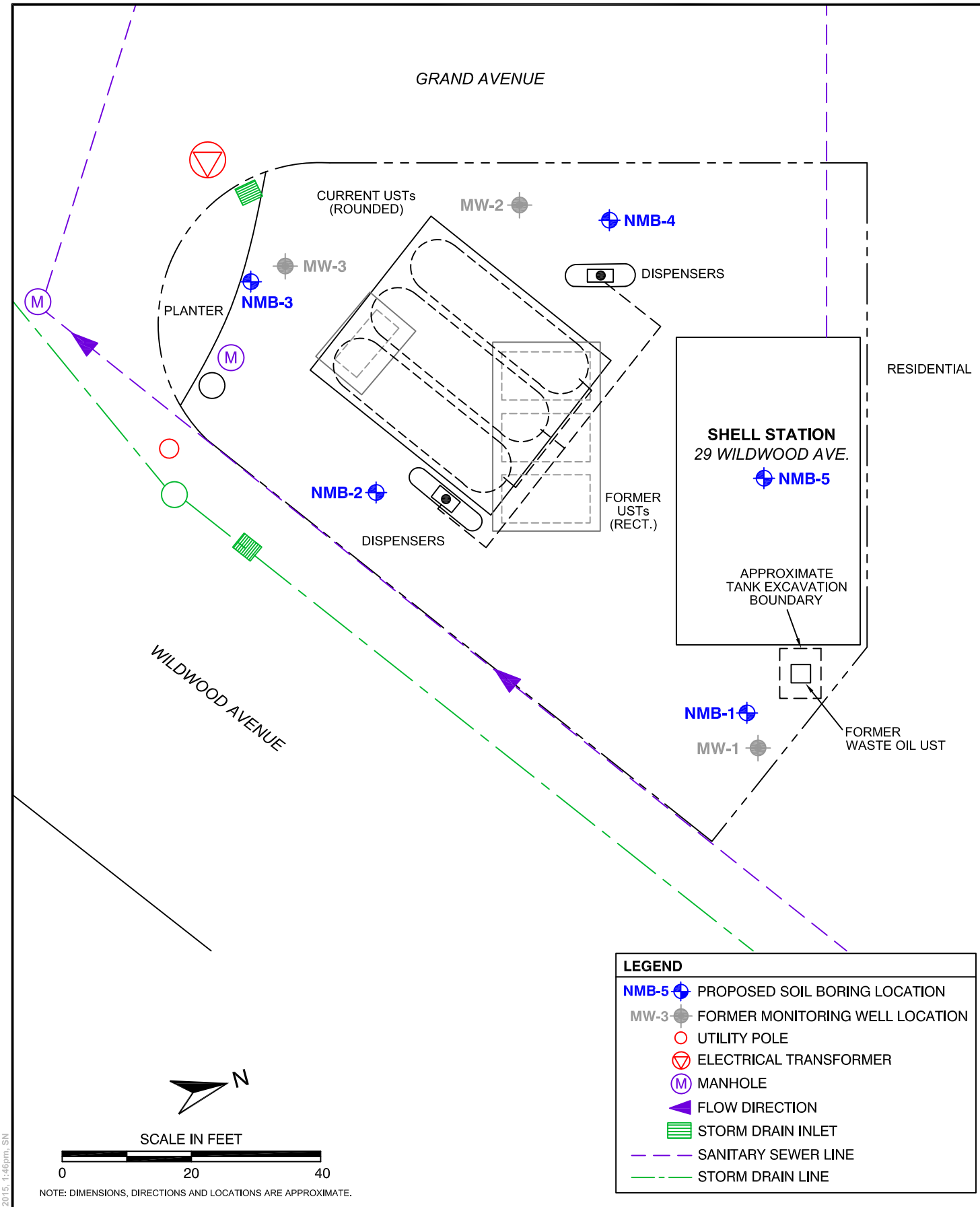

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	SITE PLAN WITH BORING LOCATIONS	FIGURE
PROJECT NO. 402605001 / DATE 7/15	PIEDMONT AUTO CARE 29 WILDWOOD AVENUE PIEDMONT, CALIFORNIA	2

402605001-SP.dwg, Jul 28, 2015, 1:46pm, SN