

**EMCON**

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ENVIRONMENTAL
PROTECTION
97 JUL -3 PM 3:19July 2, 1997
Project 20805-121.004

Mr. Scott O. Seery
Alameda County Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: Results of Subgrade Utility Line Investigation and Workplan for additional investigation, ARCO service station 601, 712 Lewelling Boulevard, San Leandro, California.

Dear Mr. Seery:

EMCON, on behalf of ARCO Products Company (ARCO), has prepared this letter regarding the recent utility line investigation performed at ARCO service station 601, located at 712 Lewelling Boulevard, San Leandro, California (Figure 1). **The purpose of this investigation is to determine the location of utility lines north and west of the site that may be acting as pathways for the migration of petroleum hydrocarbons in groundwater or in vapor.** EMCON is aware that ACHCSA is concerned that hydrocarbon-impacted groundwater identified at the site may come in contact with the backfill material in the utility line trenches present west and southwest (downgradient) of the site. **The average depth to groundwater (1st Quarter, 1997) at this site is approximately 7.7 feet below ground surface (BGS) and has previously been observed as high as 5.1 feet BGS in well MW-5 (1st Quarter, 1996).** The following report documents the location of the utility lines and presents a workplan to investigate if they are acting as preferential pathways.

EMCON has also recently completed a risk based corrective action (RBCA) evaluation at the site which addressed potential on and off-site exposures to current and future workers. The RBCA evaluation results indicate that the potential risks from exposure of humans to petroleum hydrocarbons in soils and groundwater at the site is below acceptable levels of risks for the complete pathways evaluated.

SUBGRADE UTILITIES

The locations of subsurface utility lines identified in this review are presented with available line depth and diameter information on Figure 1. The following sections include specific information provided by each individual utility company on the subgrade utilities they maintain in the vicinity of the ARCO site.

Storm Sewer

Based on information from the City of San Leandro, a 36-inch-diameter storm sewer line is present along the south side of Lewelling Boulevard. The storm sewer line is concrete-capped and the top of the line is approximately 2 feet below ground surface (BGS). According to information provided by the City, backfill material typically used around their storm sewer lines is a Class II aggregate base (AB) rock and sand mix.

Sewer

Information from the Oro Loma Sanitary District (OLSD) indicates that there are two sanitary sewer lines that run parallel to each other down the center of Lewelling Boulevard. One line is 8 inches in diameter and the top of the line is at approximately 6 to 7 feet BGS. The other sewer line is 24 inches in diameter with the top of the line at approximately 9.5 to 10.5 feet BGS. No information was available from the OLSD on the type of backfill material used around these lines.

Water

Information provided by the East Bay Water Company shows that a 12-inch-diameter asbestos-cement water main is present near the center of Lewelling Boulevard. No information was available on the depth, or backfill material used on the line. A water meter box present within the sidewalk indicates that a lateral line feeding the service station property is likely to connect with the water main, but a lateral does not appear on East Bay Water Company records.

Treated Wastewater

Based on information supplied by the Livermore-Amador Valley Water Management Agency, a 6-inch-diameter line containing treated wastewater is located on the northern side of Lewelling Boulevard. The top of the line is at approximately 5 feet BGS, and reportedly Class II AB rock and sand mix was used as for the backfill material around the line.

Natural Gas

Information provided by Pacific Gas and Electric Company (PG&E) indicates that electrical lines in the area are all overhead, but there are several gas lines adjacent to the site property boundary. A 6-inch-diameter line which connects to a 24-inch-diameter distribution main runs along the east side of the site beneath the sidewalk and along

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Washington Avenue. A 36-inch-diameter line runs down the southern side of Lewelling Boulevard with a 1-1/4-inch-diameter lateral that runs along the southwest side of the site. PG & E estimates that the depth of their underground utilities is generally 2 to 3 feet BGS, but advises that the depths may have changed due to street reconstruction or other improvements.

Telephone and Television

No information was provided by telephone or television service providers on the depth or size of their utilities.

SUMMARY

Of the subsurface utility lines identified in this survey, the storm sewer, the sanitary sewer, and gas lines (and associated trenches) that are greater than 4 to 5 feet BGS and located near the northwestern and southwestern site boundaries along Lewelling Boulevard may be in contact with groundwater. Although information on the type of backfill present in each of the trenches is incomplete, the backfill material present in the trenches may allow them to act as preferential pathways for the downgradient migration of petroleum hydrocarbons in groundwater.

WORKPLAN

To determine whether petroleum hydrocarbon-impacted groundwater from the site is migrating along the above-identified utility trenches, EMCON recommends collecting soil or groundwater samples for petroleum hydrocarbon analysis at up-, mid- and down-gradient locations in the vicinity of these utility trenches as described below and as shown on Figure 1.

Based on the groundwater flow direction (west-southwest), the depth of the utilities, and the proximity of the gas and storm sewer lines to the site, the first set of samples will be collected at borings USB-1, USB-2, and USB-3 as shown on Figure 1. Samples will be collected by hand augering or hand-excavating the boring to the base of the utility pipes (to the backfill material) in the immediate vicinity of the utility trenches. Backfill material at the base of utility pipes based on our experience at other sites is typically 6 to 12 inches thick. If groundwater is encountered in the backfill, then a hydropunch or other groundwater sampling equipment will be used to collect a groundwater sample for benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons-as-gasoline (TPHG) analysis. If groundwater is not encountered, then the boring will be

*bottom of
SD trench
~ 5' BGS*

advanced further to native soil (beneath the backfill) using geoprobe or other soil sampling equipment and a native soil sample will be collected for BTEX/TPHG analysis.

If analytical results from mid- and downgradient sampling locations (USB-2 and USB-3) indicate the presence of BTEX/TPHG then additional soil or groundwater samples using similar procedures as described above will be collected at borings USB-4, USB-5, and USB-6 along the sanitary sewer lines at the center of Lewelling Boulevard and USB-7 (Figure 1). If analytical results for samples from these borings (USB-5 and USB-6 or USB-7) indicate the presence of petroleum hydrocarbons then additional samples will be collected from borings USB-8 and USB-9, respectively, further west and southwest of the site as shown on Figure 1. If analytical results for samples from borings USB-8 and USB-9 indicate the presence of petroleum hydrocarbons, then additional samples will be collected 60 feet further downgradient from these locations along the same utility trenches.

The majority of the utilities are located in Lewelling Boulevard which is a major thoroughfare. Because of this, field investigation activities will be conducted at periods of low traffic flow and with the aid of appropriate traffic controls (i.e. flag men, traffic signs, etc.). Prior to the start of field activities, EMCON will obtain necessary permits and easement agreements from the City of San Leandro. All utility companies and underground service alert (USA) will also be contacted to ensure that all known utilities in the vicinity of the sampling locations are accurately identified and if necessary service to the utilities are temporarily shut off or the utility company is present while working is being performed. The exact location of these borings, the set back from the utility centerlines, and the depth of the boring would be determined based on field observations.

Field work will start upon receipt of your approval of this workplan, after all permits and easement agreements have been obtained, all utility companies have been notified and their utilities clearly marked and identified, and if necessary service to some of the utilities have been temporarily shut off or the utility company has agreed to be present at the time of the field work.

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Please call if you have questions.

Sincerely,

EMCON



Rob Davis
Staff Geologist

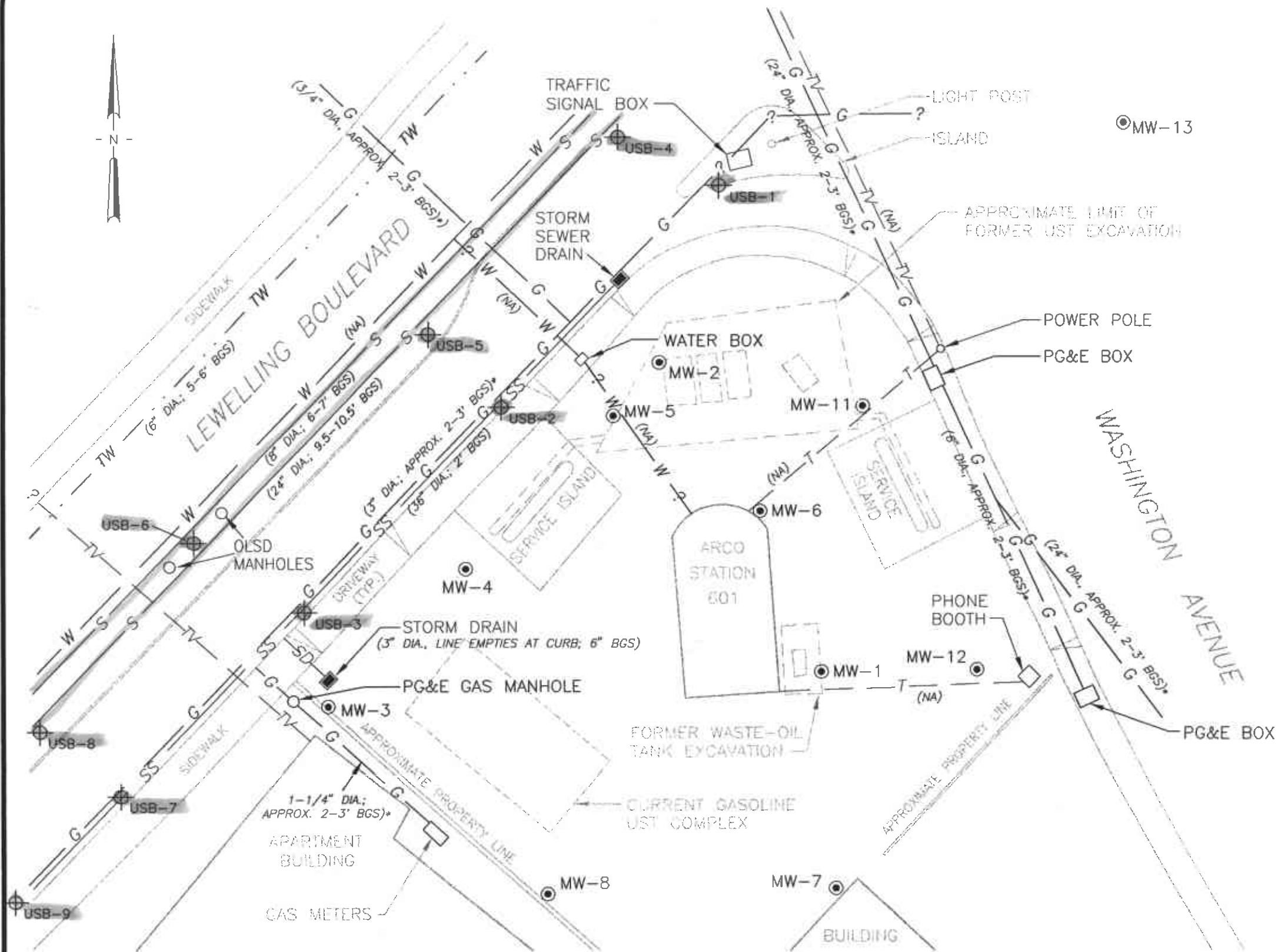


Valli Voruganti M. P.E.
Project Manager

Attachments: Figure 1 - Site Utilities Location Plan and Proposed Boring Locations

cc: Paul Supple, ARCO Products Company

EA-SANJOSE-CAD/DRAWINGS: G:\805-121\SUUTL.dwg Xrefs: <NONE>
 Scale: 1" = 30.00' Date: 6/30/97 Time: 10:03 AM Operator: KAJ



EXPLANATION

- Proposed utility soil boring
- Groundwater monitoring well
- Former product line
- Gas
- Sewer
- Storm drain
- Storm sewer
- Telephone
- Television
- Treated wastewater
- Water
- (36" DIA., 2' BGS)
- (NA)

* PG&E did not provide depths of individual lines. Generally, PG&E estimates their lines are 2 to 3 feet deep.



0 30 60
 SCALE IN FEET

DATE JUN. 1997
 DWN KLT
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FIGURE 1
 ARCO PRODUCTS COMPANY
 SERVICE STATION 601, 712 LEWELLING BLVD.
 SAN LEANDRO, CALIFORNIA
**SITE UTILITIES LOCATION PLAN
 AND PROPOSED BORING LOCATIONS**