Delta
Environmental
Consultants, Inc.

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SDD 744 ✓

November 1, 2001

Mr. Amir Gholami, REHS
Hazardous Materials Specialist
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

11/14/01

Subject: *Response to Alameda County Health Care Services' Letters dated October 2 and 16, 2001*
Proposed Plan to Address Petroleum Hydrocarbon Constituents On and off-Site
ARCO Station No. 2111
1156 Davis Street
San Leandro, California
Delta Project No. D000-306

Dear Mr. Gholami:

On behalf of ARCO, Delta Environmental Consultants, Inc. (Delta) is submitting this letter in response to your letters dated October 2 and 16, 2001 (attached). This letter presents a plan to address petroleum constituents on and off-site. The site map is shown on Figure 1.

In an effort to evaluate an effective remedial method of reducing petroleum constituents in the groundwater and soils on and off-site, Delta proposes to perform an extended 5 day high vacuum dual phase extraction (HVDPE) test at the site utilizing the existing underground remediation piping (Figure 2). After evaluating the data from the previous HVDPE test performed on MW-2, it appeared that the test was not as successful as it could have been largely due to a sandy gravel lens that exists near the bottom of the test well. Most of the test vacuum appeared to be used to produce groundwater with minimal vapor extraction coverage. Delta believes that this technology may still be useful for this site by using alternative wells such as V-1, V-2, and MW-7. These wells are located closer than MW-2 to the presumed source area and are completed at shallower depths in a less permeable lithology. By using these wells for the HVDPE test, we should be able to effectively address the impacted soils in the source area and at the same time extract impacted groundwater in the source area without extracting a large quantity of groundwater from the deeper more permeable sandy gravel lens. The additional testing will be used to assess the need for either a permanent HVDPE remediation system or an interim-remediation approach such as semi-annual HVPDE activities or quarterly well pump-out events. If the additional HVDPE testing plan is acceptable to you, the HVDPE test can be performed in early to mid-December 2001.

Based on the evaluation of dissolved petroleum constituents reported in groundwater on and off-site, Delta recommends that an oxygen release compound (ORC® by Renesis Inc.) be used in MW-1 and MW-5 to increase natural attenuation by adding dissolved oxygen to the groundwater. MW-2 and MW-7 would not be proposed for ORC® due to the occasional presence of liquid phase hydrocarbons (LPH). Impacted groundwater in MW-2 and MW-7 will continue to be addressed by quarterly pump-outs and monthly LPH checks until the additional HVDPE testing has been evaluated.

Please inform us if this plan is acceptable to you. Once we have received your approval, scheduling of the proposed activities can begin.

If you have any questions concerning this project, please contact me at (916) 536-2613.

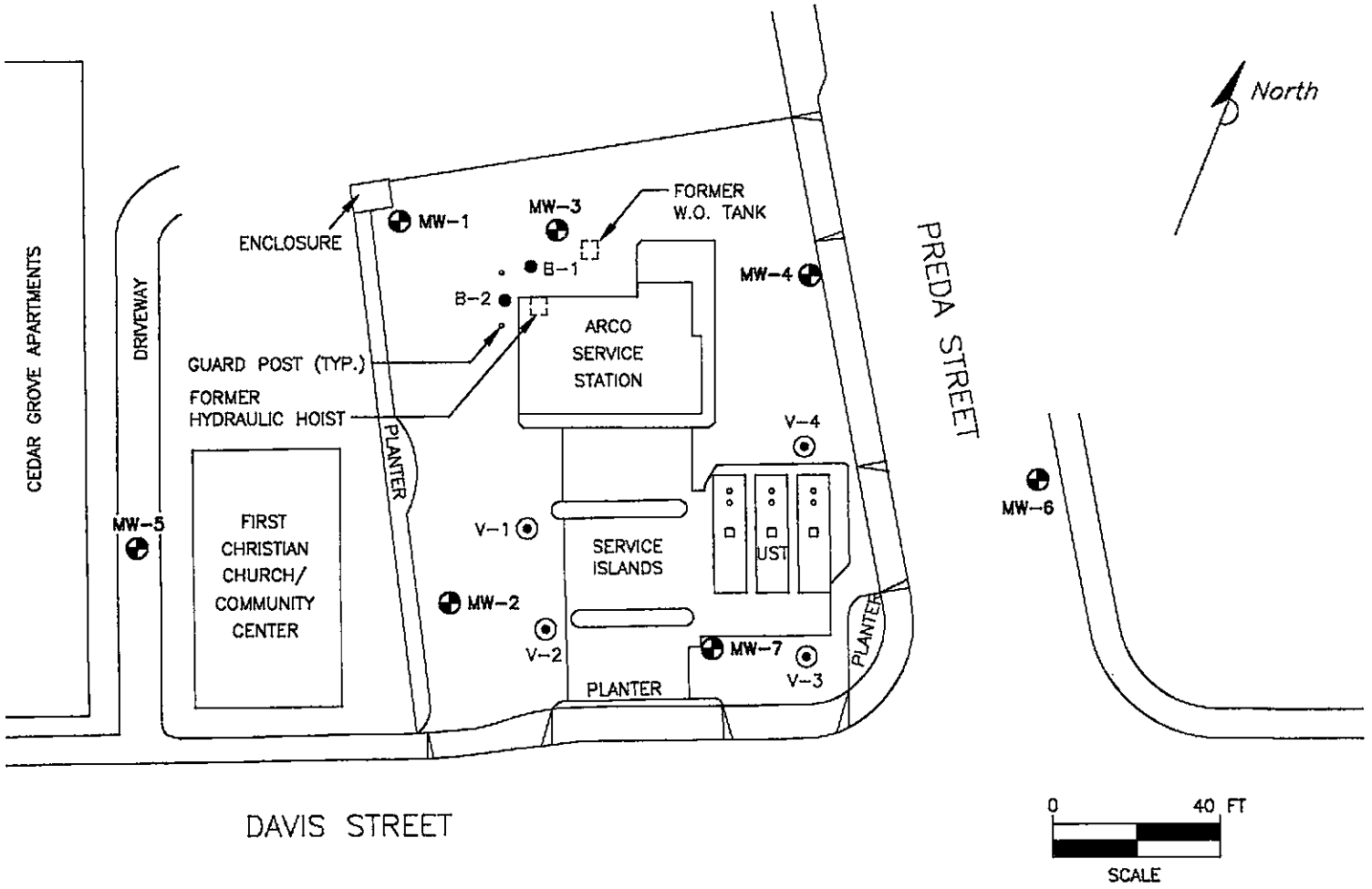
Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Steven W. Meeks, P.E.
Project Manager

SWM (CL008.306.doc)
Attachments

cc: Mr. Paul Supple – ARCO
Mr. Mike Bakaldin – San Leandro Fire Department - HAZMAT Division



LEGEND:

- MW-1 MONITORING WELL LOCATION
- V-1 VAPOR EXTRACTION WELL LOCATION
- B-1 SOIL BORING LOCATION

FIGURE 1

SITE MAP

ARCO SERVICE STATION NO. 2111

1156 DAVIS STREET

SAN LEANDRO, CALIFORNIA

PROJECT NO. D000-306	DRAWN BY TLA 8/31/00
FILE NO. 2111-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

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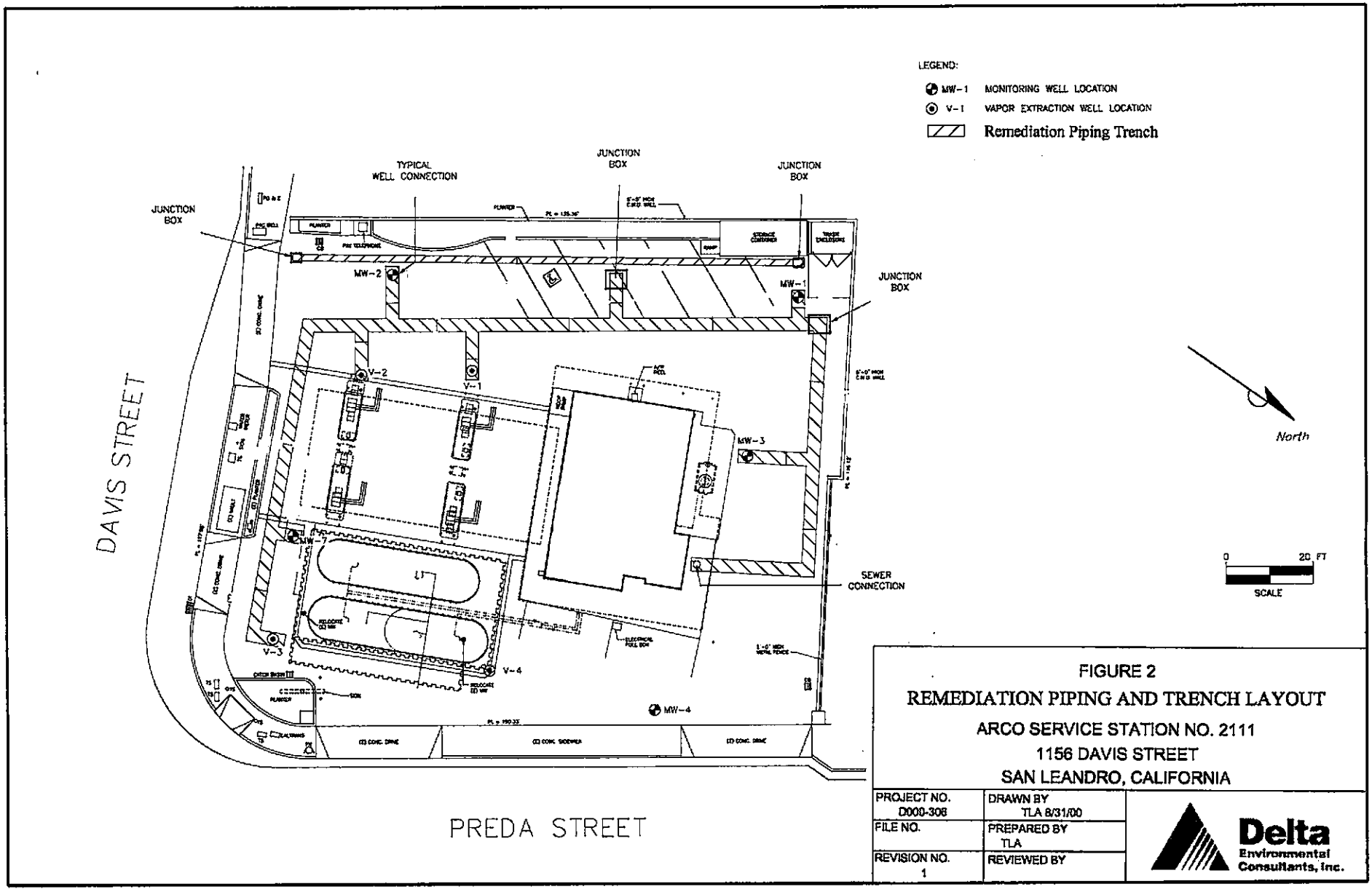

FIGURE 2

REMEDIATION PIPING AND TRENCH LAYOUT

ARCO SERVICE STATION NO. 2111

1156 DAVIS STREET

SAN LEANDRO, CALIFORNIA

PROJECT NO. 0000-308	DRAWN BY TLA 8/31/00
FILE NO.	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY

Delta Environmental Consultants, Inc.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

STID 744

October 2, 2001

OCT 0 9 2001

Mr. Paul Supple
Arco Product Company
PO Box 6549
Moraga, CA 94570

RE: Arco Station # 2111 located at 1156 Davis Street, San Leandro, CA

Dear Mr. Supple:

I have received and reviewed the "Quarterly Groundwater Monitoring Report, Second Quarter 2001 ", dated September 18, 2001, submitted by Mr. Steven Meeks of Delta Environmental Consultants, Inc. regarding the above referenced site.
I would like to make the following comments concerning this document:

- According to this report, free product was not present in any of the wells. However, the most significant concentration was that of MTBE at MW-7 at 170,000ppb by EPA method 8260. You must address the increase in the concentrations of the constituents by providing some possible appropriate active remediation plan.

- The concentration of chemical constituents in MW-1, MW-2, and MW-5 wells are still significant at up to 500ppb, up to 24ppb, and up to 1,200ppb of TPHG, Benzene, and MTBE respectively in MW-1 well.

- MW-2 well revealed up to 10,000ppb, up to 100ppb, and 4,500ppb of TPHG, Benzene and MTBE respectively.

- MW-5 well revealed up to 500ppb, up to 5ppb, and 9,400ppb of TPHG, Benzene and MTBE respectively. Some wells indicate an increase in concentrations of some of the constituents while revealing a decrease in the concentration of some others simultaneously.

- The groundwater flow gradient is mostly to the northwest at 0.004 ft/ft per figure 2.

I concur with the work proposed for the next quarter by Mr. Trevor Atkinson of Delta Environmental Consultants, Inc. Furthermore, please submit a plan, to address the increase in the concentrations of constituent as indicated above, within 30 days or by November 2, 2001.

Should you have any questions and or concerns, please call me at (510) 567-6876.

Sincerely,

Amir K. Gholami, REHS
Hazardous Materials Specialist

C: Mr. Mr. Trevor Atkinson of Delta Environmental Consultants, Inc., 3164 Gold Camp Drive, Suite 200, Rancho Cordova, CA 95670-6021
Mr. Mike Bakaldin, City of San Leandro, Environmental Services Division, 835 East 14th Street, San Leandro, CA 94577
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STID 744

October 16, 2001

Mr. Paul Supple
Arco Product Company
PO Box 6549
Moraga, CA 94570

RE: Arco Station # 2111 located at 1156 Davis Street, San Leandro, CA

Dear Mr. Supple:

I am in receipt of "Sump Sampling Results", dated August 9, 2001, submitted by Mr. Steven Meeks of Delta Environmental Consultants, Inc. regarding the above referenced site. This report was generated during the sump removal and upgrade activities at the above referenced site. I have reviewed this document, discussed it with Mr. Meek, and would like to make the following comments:

Per this report, the soil sample was taken at two feet after removal of the sump. Various heavy metals, BTEX, MTBE, among other pollutants were analyzed for. The concentrations of the constituents were compared to those guidelines found in California Regional Water Quality Control Board San Francisco Bay Region's Table D. However, the soil at this depth below sump did not detect significant concentration of the pollutant per table 1 within this report.

However, monitoring well analysis, per previous report, indicated significant concentrations of pollutants in the groundwater. There was <0.01" thick sheen observed in the MW-2 and MW-7 wells. Additionally, the concentration of chemical constituents in MW-1, MW-2, and MW-5 wells were significant at 257ppb, 64ppb, and 1,080ppb of TPHG, Benzene, and MTBE respectively in MW-1 well. There were 45,900ppb, 1,090ppb, and 22,400ppb of TPHG, Benzene and MTBE respectively in MW-2 well while MW-5 well revealed 72.9ppb, 2.51ppb, and 19,200ppb of TPHG, Benzene and MTBE respectively.

Per my previous correspondence, please submit a plan, to address the increase in the concentrations of constituent as indicated above by November 2, 2001.

If you have any questions, please call me at (510) 567-6876.

Sincerely,

Amir K. Gholami, REHS
Hazardous Materials Specialist

C: Mr. Mr. Trevor Atkinson of Delta Environmental Consultants, Inc., 3164 Gold Camp Drive, Suite 200, Rancho Cordova, CA 95670-6021
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