REPORT OF WELL INSTALLATION

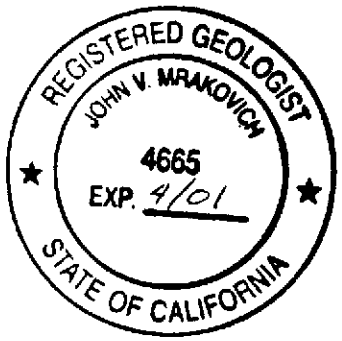
PALACE GARAGE
14336 WASHINGTON AVENUE
SAN LEANDRO, CA 94577

June 23, 2000

Prepared By:

ALLCAL Environmental
27973 High Country Drive
Hayward, CA 94542

John V. Mrakovich, Ph.D., R.G.



CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

ALLCAL Environmental (ALLCAL) has been contracted by Messrs. Morris F. Donnelly and Jeffrey W. Kerry (Client) to write this report of installation of three groundwater monitoring wells at the former Palace Garage, located in Alameda County at 14336 Washington Avenue, San Leandro, California (Figure 1). Installation of the wells was conducted under a December 10, 1999, work plan written by John V. Mrakovich, a California registered geologist (Number 4665) for ALLCAL, and approved by the Alameda County Health Care Services Agency (ACHCSA) in a December 29, 1999, letter (APPENDIX A).

The Palace Garage property is owned by the Client who used the facility for automotive repair and a towing service from April 1967 through January 1990. In late 1967, a 550-gallon, gasoline, underground storage tank (UST) was installed for fueling tow trucks. After January 1990, the Client leased the property to another towing service for about a year. The tank was removed in February 1991, at which time gasoline contamination was detected in the soil and groundwater. In 1999, ALLCAL conducted three phases of soil and groundwater assessment using the Geoprobe system.

The site is currently used for automotive body repair and painting.

2.0 HYDROGEOLOGIC SETTING

The following discussion of regional hydrogeology is taken in part from *GEOHYDROLOGY AND GROUNDWATER-QUALITY OVERVIEW, EAST BAY PLAIN AREA, ALAMEDA COUNTY, CALIFORNIA*, 205 (j) Report, Kelvin Hickenbottom and Kenneth Muir, June 1988, and *HYDROGEOLOGY OF CENTRAL SAN LEANDRO*, Woodward-Clyde Consultants, December, 1993.

2.1 Regional Hydrogeology

The site is located in the East Bay Plain of the Coast Ranges physiographic province. The East Bay Plain is an area of flat alluvial lowlands and bay and tidal marshes lying between the bedrock hills of the Diablo Range to the east and San Francisco Bay to the west. Near the site area, the eastern boundary of the plain is located along the Hayward fault, which is at the base of the Diablo Range escarpment, about a mile to the northeast.

The East Bay Plain and San Francisco Bay are the result of a structural downwarp that received sediments for much of Pleistocene time, a period that extends from about 2 million years ago until about 10,000 years ago. The degree of downwarping has varied considerably across the two areas. Consequently, some local areas have a thin sedimentary fill and others have relatively thick sedimentary fills. In San Leandro, significant downwarping has occurred and sedimentary fill may exceed about 1,000 feet in thickness in some areas.

Beneath the sediments are consolidated bedrock whose upper surface is the floor of the structural downwarp. The bedrock is Jurassic, Cretaceous, and Tertiary in age and consists of sandstone,

conglomerate, shale, chert, and serpentine with some volcanic rocks. This bedrock also comprises the hills (East Bay Hills) east of the Hayward fault that are part of the Diablo Range.

Sedimentary fill in the San Leandro area was mostly derived from the East Bay Hills. Toward the bay, some fill consists of estuarine and marine deposits. Based on well drillers' logs, the sedimentary fill has been divided into "older alluvium" and "younger alluvium." "Younger alluvium" in this report will include the Merritt Sand, bay mud, interfluvial basin deposits, and fluvial deposits.

In general, the "older alluvium" is present beneath all of the East Bay Plain and extends under San Francisco Bay. The "older alluvium" is Pleistocene in age and consists of clay, silt, sand, and gravel that was deposited as alluvial fans extending from the East Bay Hills. This sediment is a major groundwater reservoir in the East Bay Plain and may locally reach a thickness of about 1,000 feet. Wells in the "older alluvium" produce sufficient amounts of groundwater for irrigation, industrial, and municipal use.

The "younger alluvium" overlies the "older alluvium" and, with the exception of the Merritt Sand, is still being deposited. These sediments are Pleistocene, Holocene, and Recent in age and have been deposited as beach and near-shore sediments, peat beds, bay and estuarine deposits, and fluvial and flood plain deposits. They may locally reach a thickness of about 150 feet. These sediments are a minor source of groundwater, mostly sufficient for domestic use (lawn and garden irrigation and other non-potable uses) because much of the permeable "younger alluvium" lies above the zone of saturation.

Groundwater flow in aquifers of both the "older and younger alluvium" is generally westerly toward San Francisco Bay; the gradient may vary locally.

2.2 Site Hydrogeology

The site is located at an elevation of about 37 feet above mean sea level (MSL) in Township 3 South, Range 3 West, Section 1 of the San Leandro, California 7.5-Minute Series, Topographic Quadrangle Map (Figure 1). Surface sediments are "younger alluvium" and Holocene in age. Topographic gradient in the vicinity of the site slopes southwesterly at a gradient of about .0036 feet per foot. San Leandro Creek is about 8,500 feet north-northwest of the site and San Francisco Bay, the nearest topographically down-gradient surface water, is about 13,000 feet southwest of the site. No other significant bodies of surface water are nearby.

Based on 15 shallow soil borings and installation of 3 groundwater monitoring wells conducted by ALLCAL, the site is underlain by clay to a depth of 14 to 16 feet. Beneath the clay, a one to two-foot silt may be present. The above clay or silt is underlain by a gravelly sand and/or gravel to the depth of about 19.5 to 20.5 feet. The above sand and/or gravel is underlain by clay to the total depth explored. The gravelly sand or gravel is the first saturated sediment beneath the site. **Groundwater is encountered at a depth of about 15 to 16 feet, and in the monitoring wells stabilizes at a depth of about 12.25 feet; indicating the aquifer is confined.** Direction of groundwater flow is south-southwesterly with a gradient of 0.0031 ft/ft.

3.0 BACKGROUND

The following discussion of tank closure and soil remediation is summarized from information provided by the Client.

The following discussion of results of soil and groundwater assessments is summarized from the following ALLCAL reports:

- *REPORT OF SOIL AND GROUNDWATER ASSESSMENT AND PROPOSED WORK PLAN FOR FURTHER ASSESSMENT*, February 17, 1999.
- *REPORT OF PHASE II SOIL AND GROUNDWATER ASSESSMENT AND PROPOSED WORK PLAN FOR PHASE III FURTHER ASSESSMENT*, April 9, 1999.
- *REPORT OF PHASE III SOIL AND GROUNDWATER ASSESSMENT*, August 25, 1999.

3.1 Tank Closure and Soil Remediation

On February 11, 1991, a 550-gallon, gasoline, single-walled steel UST was removed by Verl's Construction, Inc. (Verl). The UST and its associated dispenser and piping were located at the northeast corner of the Palace Garage building (Figure 2). Examination of the UST, after its removal, revealed four small holes at the top of the southerly end of the tank. Two holes were pin-size and the other two were about .25 and .5 inches in diameter. The piping appeared in good condition. Based on visual observations, the presence of odor, and head-space analysis using a photo-ionization detector (PID), soil in the tank excavation contained gasoline contamination. A discrete soil sample was collected for chemical analysis from native soil directly below the tank at a depth of about 10 feet below grade. Results of chemical analyses detected total petroleum hydrocarbons as gasoline (TPHG) at a concentration of 19 parts per million (ppm). Benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected at concentrations of .21 ppm, .41 ppm, .043 ppm, and .14 ppm, respectively. Organic lead was detected at a concentration of 7 ppm.

On the day of the UST removal, additional soil excavation (over-excavation) was conducted to remove contaminated soil. The Client reports that additional soil was removed to the depth that the on-site backhoe could reach, about 18 to 20 feet. A March 7, 1991, UST closure report prepared by Century West Engineering Corporation (Century West) included PID head-space measurements, from 5 to 12.5 feet deep, that were recorded during over-excavation activities. The head-space measurements showed increasing field vapors, from 170 ppm at 5 feet below grade to 880 ppm at 12.5 feet below grade. A February 25, 1991, letter from Verl indicates that soil samples from the bottom of the final excavation had vapor concentrations "substantially" lower than those shallower in the excavation; however, there is no documentation of these lower concentrations. A composite soil sample was collected for chemical analysis from the stockpiled soil (resulting from tank removal and over-excavation activities) to assess disposal options.

Results of chemical analyses detected concentrations of TPHG at 1,900 ppm. BTEX were detected at concentrations of 1.2 ppm, 14 ppm, 11 ppm, and 67 ppm, respectively. Organic lead was detected at a concentration of 9.9 ppm.

No groundwater was encountered during the tank removal or over-excavation activities.

After conducting remedial over-excavation, the hole was lined with plastic and backfilled with pea gravel.

The excavated soil was spread and aerated on site. After aeration, Century West sampled and characterized the soil for offsite disposal. Verl hauled and disposed of the soil to a landfill in Richmond, California.

3.2 Soil and Groundwater Assessments

The following is a summary of the results of three phases of soil and groundwater assessment conducted by ALLCAL. The reader is referred to TABLE 1 in APPENDIX B which documents the analytical results for all soil and "grab" groundwater samples analyzed, and to Figures 3 and 4 which present graphical interpretations of the TPHG and benzene groundwater plumes.

3.2.1 Phase I Soil and Groundwater Assessment - 2/1/99

On February 1, 1999, ALLCAL supervised the drilling of four soil borings (SB-1 through SB-4; Figure 2) to assess gasoline contamination in the soil and groundwater in the area of the former UST. Chemical analytical results were evaluated with respect to the American Society of Testing and Materials' (ASTM) Standard for Risked Based Corrective Action (RBCA) ASTM E-1739-95. Analytical results suggested that soil contamination by benzene may pose a cancer risk as leachate in the area of the former dispenser (SB-1), and groundwater contamination by benzene may pose a cancer risk in terms of vapor intrusion into the onsite building, near SB-1, and into the neighboring building across the driveway, near SB-2 (Figures 3 and 4).

Based on the above results, ALLCAL conducted a Phase II soil and groundwater assessment.

3.2.2 Phase II Soil and Groundwater Assessment - 3/23/99

On March 23, 1999, ALLCAL supervised the drilling of three additional soil borings (SB-5, SB-6, and SB-7; Figure 2) to further assess gasoline contamination in the soil and groundwater in the area of the former UST. Field observations indicated that no contamination was present in the soil, however, analytical results suggested that groundwater contamination by benzene may pose a cancer risk, in terms of vapor intrusion into buildings, in the area of borings SB-5 and SB-6 (Figures 3 and 4).

Based on the above results, ALLCAL conducted a Phase III soil and groundwater assessment which included both on-site and off-site borings.

3.2.3 Phase III Soil and Groundwater Assessment - 7/29/99

On July 29, 1999, ALLCAL supervised the drilling of eight additional soil borings (SB-8 through SB-15; Figure 2) to assess the limits of the gasoline contamination. These borings appear to have adequately assessed the aerial extent of the soil and groundwater contaminant plumes. The soil plume appears to be limited in aerial and vertical extent (the areas of SB-1 and SB-6) and of low concentrations. The groundwater plume appears to mostly underlie the driveway and adjacent northerly property and is elongated in the direction of the driveway (Figures 3 and 4).

Based on the above results, the ACHCSA requested a work plan for installation of groundwater monitoring wells which will better characterize dissolved gasoline concentrations and establish groundwater gradient.

4.0 GROUNDWATER MONITORING WELL INSTALLATIONS

For installation of groundwater monitoring wells, ALLCAL conducted the following work:

- Obtained a well installation permit from the Alameda County Public Works Agency (ACPWA) and an encroachment permit from the City of San Leandro (CSL).
- Marked the location of each well on the ground and notified Underground Service Alert (USA).
- Drilled 3 soil borings for installing groundwater monitoring wells.
- Collected soil samples from each boring at approximately 5-foot depth intervals for construction of boring logs. Collected additional samples in the aquifer to assist in designing the construction of the wells.
- Converted each boring into a 2-inch diameter casing, polyvinyl chloride (PVC), groundwater monitoring well.
- Surveyed the elevation of top-of-casing (TOC) of each well relative to MSL.
- Developed, purged, and sampled groundwater from each well.
- Analyzed the groundwater samples and 1 trip blank sample for TPHG, BTEX, and MTBE.
- Prepared well completion reports (DWR 188's) for the California Department of Water Resources and this Report of Well Installation.

Details of the above work are presented below.

4.1 Pre-drilling Activities

Before commencing drilling activities, ALLCAL: (1) obtained a drilling permit from the ACPWA and an encroachment permit from the CSL (APPENDIX C), (2) visited the site to mark the groundwater monitoring well locations, (3) contacted USA, and (4) notified the ACHCSA.

4.2 Rationale for Well Locations

Well locations were based on the interpreted horizontal extent of the TPHG and benzene plumes (Figures 3 and 4). Well MW-1 is located onsite between borings SB-5 and SB-6, which appeared to be the area of highest dissolved TPHG concentration. This well will monitor for changes in the heart of the dissolved plume. Well MW-2 is located onsite within the fringe of the apparent down-gradient edge of the dissolved plume. This well will aid in evaluating the stability of the plume. Well MW-3 was proposed to be located offsite in the northerly sidewalk area of Washington Avenue, and northwesterly of well MW-2. Due to physical constraints and nearness to high power electrical lines, the well location was moved to the parking lane of Washington Avenue (about 10 feet southwest of the originally proposed location). This well will aid in evaluating the stability of the plume and provide a triangulation point for measuring groundwater gradient.

4.3 Soil Boring and Sampling Procedures

The monitoring wells were installed on May 10, 2000, by State of California licensed PC Exploration, Inc. (C-57 Water Well Driller contractor's license no. 265556) located in Union City, California. The exploratory boring for each well was drilled by using 8-inch O.D., hollow-stem, auger drilling equipment. The augers were steam-cleaned before drilling each boring to minimize the potential of cross-contamination between borings or introducing offsite contamination to the initial boring. Representative soil samples were collected at approximately 5-foot depth intervals by advancing a Standard Penetration Sampler into the undisturbed soil beyond the tip of the augers. The sampling equipment was cleaned before each sampling event by washing with a non-phosphate solution and rinsing in tap water. Some continuous sampling was conducted in initially drilled borings (MW-3 and MW-1) in the aquifer material to assist in designing the well constructions.

Drill cuttings are stored on site, contained in 55-gallon steel drums. The stored cuttings are labeled to show contents, date stored, suspected contaminant, date of removal, company name, contact person, and telephone number.

Due to adequate characterization of the vadose zone contaminant plume by previous investigations, no soil samples were collected for chemical analyses:

4.4 Occurrence of Groundwater, Aquifer Thickness, and Well Installation Procedures

Groundwater was encountered at a depth of 15 feet in wells MW-1 and MW-3 and at a depth of 16.5 feet in well MW-2. The aquifer in wells MW-1 and MW-3 appears to be located at the depth intervals of 15 to 20.5 feet and 15 to 19.5 feet, respectively. The aquifer in well MW-2 appears to

be located at the depth interval of 16.5 to 20.5 feet. The exploratory borings for wells MW-1, MW-2, and MW-3 were drilled to total depths of 24.5, 25, and 24 feet, respectively. Each boring was converted into a groundwater monitoring well by installing 2-inch diameter, flush-threaded, schedule 40, PVC casing and 0.010-inch machine-slotted screen. All wells were constructed with the same design. The length of screen extends from total depth to a depth of 14 feet. A sand pack of Number 2/12 filter sand was placed in the annular space from total depth of the borings to 2 feet above the top of the screened interval. Approximately 2 feet of bentonite was placed above the sand pack followed by a neat cement slurry seal. A traffic rated, bolt-locked, vault box was set in concrete to protect the wells. A water tight locking well cap with lock was installed on each well casing.

See APPENDIX D for well construction details.

A California licensed professional engineer or land surveyor of Greenwood & Moore, Inc. surveyed the elevation of each well's TOC relative to MSL. The elevations were surveyed relative to a City of San Leandro benchmark located at the top of curb at the drop inlet at the northwest return of 139th Avenue and Washington Avenue (see documentation in APPENDIX C).

4.5 Soil Profile

Detailed boring logs were prepared from auger return cuttings and the soil contained in the Standard Penetration Sampler. The soil was logged according to the Unified Soil Classification System by a California Registered Geologist. See APPENDIX D for exploratory boring logs.

All borings had similar soil profiles. Beginning at ground surface, clay was observed ranging to a depth of 15 to 16 feet (well MW-3 had one foot of sand from 1 to 2 feet in depth). The clay was dark brown to black for the first 2 to 5 feet, then became brown in color and green where apparently contaminated. Beneath the clay was an aquifer of medium-grained sand with some gravelly layers. The aquifer ranged in thickness from 5.5 feet in well MW-1 to 4 feet in well MW-2. Beneath the aquifer, to the total depth explored, was a sandy clay mottled brown and orange or brown and black.

4.6 Well Development Procedure

The monitoring wells were developed on May 17, 2000. Before development, depth-to-water was measured from the TOC to the nearest .01 foot using an electronic water level meter. Each well was checked for floating product using a dedicated polyethylene bailer. No floating product was observed in any of the wells.

Each well was developed by bailing with a PVC bailer until free of sand and silt. Then, each well was further developed by using a development pump until no further improvement in visible turbidity could be achieved. Forty gallons of water were developed from wells MW-1 and MW-2; 65 gallons of water were developed from well MW-3.

Development water is stored onsite in 55-gallon steel drums labeled to show contents, date filled, contaminant, company name, contact person, and telephone number. See APPENDIX E for **RECORDS OF WELL DEVELOPMENT**.

4.7 Groundwater Sampling Procedure

The monitoring wells were sampled on May 19, 2000. Prior to sampling, depth to stabilized water was measured in each well and recorded as discussed above under **4.6 Well Development Procedure**.

Each well was purged a minimum of 3 wetted well volumes with a dedicated polyethylene bailer. Temperature, pH, and electrical conductivity were monitored and purging continued until they were stabilized. In wells MW-1, MW-2, and MW-3; 21 liters, 20 liters, and 28 liters of groundwater were purged, respectively. After purging was completed, water samples were collected in dedicated polyethylene bailers and decanted into laboratory provided, sterilized glass vials having Teflon-lined screw caps. The vials were immediately sealed and labeled to include: date, time, sample location, project number, and sampler name. The samples were immediately stored in an iced-cooler for transport to Department of Health Services certified McCampbell Analytical Inc. laboratory, located in Pacheco, California, accompanied by chain-of-custody documentation.

As a test for cross-contamination during sampling and analytical activities, a trip blank sample was handled as above and included for chemical analyses.

Purge water is stored on site in labeled 55-gallon drums. See APPENDIX E for **RECORDS OF WATER SAMPLING**.

4.8 Groundwater Gradient

The groundwater gradient was evaluated by triangulation. The stabilized depth-to-water in the wells on May 19, 2000, when subtracted from their respective TOC's, provided the groundwater elevations relative to MSL. From this information, the groundwater flow direction and gradient was calculated. Groundwater flow direction was south-southwest at a gradient of 0.0031 ft/ft (Figure 5).

The following table summarizes groundwater elevation and gradient data.

Well Name	TOC Elevation (ft. MSL)	Date	Depth to Groundwater (ft.)	Groundwater Elevation (ft. MSL)	Groundwater Flow Direction	Gradient
MW-1	37.47	5/19/00	12.47	25.00	SSW	0.0031
MW-2	36.99	5/19/00	12.30	24.69		
MW-3	36.88	5/19/00	12.23	24.65		

4.9 Results of Groundwater Chemical Analyses

The water samples and trip blank sample were analyzed for TPHG by GCFID EPA method 5030/modified 8015 and for BTEX and MTBE by EPA method 8020.

The following table summarizes results of chemical analyses.

SUMMARY OF GROUNDWATER CHEMICAL ANALYSES
(ppb)

Well	Date	Depth to Water(ft)	TPHG	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes
MW-1	5/19/00	12.47	52000,a	<200	1600	3300	1600	7900
MW-2	5/19/00	12.30	7500,a	<20	1400	55	440	270
MW-3	5/19/00	12.23	<50	<5.0	<0.5	<0.5	<0.5	<0.5
Trip Blank	5/19/00	---------	<50	<5.0	<0.5	<0.5	<0.5	0.78

a = The laboratory interprets the TPH chromatogram to indicate that unmodified or weakly modified gasoline is significant.

See the certified analytical report and chain-of-custody in APPENDIX F for detailed analytical results and quality assurance and quality control documentation.

5.0 SUMMARY AND COMMENTS

Two onsite and one offsite groundwater monitoring wells were installed to investigate the limits of gasoline groundwater contamination and direction of groundwater flow at the subject property (Figure 5). Results of groundwater chemical analyses from the wells are lower in concentration than those obtained from earlier "grab" groundwater samples from soil borings.

Groundwater chemical analyses detected TPHG and benzene concentrations at 52,000 ppb and 1,600 ppb, respectively, in well MW-1. This well is believed to be located in the area of the groundwater plume having the highest concentrations of contamination. In this area, these concentrations are lower than those previously detected in boring SB-6 (which is near well MW-1 and had the highest detected groundwater contamination of all borings) in which TPHG and benzene were detected at concentrations of 94,000 ppb and 5,900 ppb, respectively, in March 1999.

Similarly, well MW-2 (which is near previous boring SB-12) detected TPHG and benzene concentrations at 7,500 ppb and 1,400 ppb, respectively, in the groundwater. These concentrations are lower than those detected in boring SB-12 in which TPHG and benzene were detected at concentrations of 59,000 ppb and 6,000 ppb, respectively, in July 1999.

The lower TPHG and benzene concentrations detected in the groundwater monitoring wells may be the result of higher quality groundwater samples as compared to "grab" groundwater samples obtained from soil borings which may be cross-contaminated from vadose zone soil contamination.

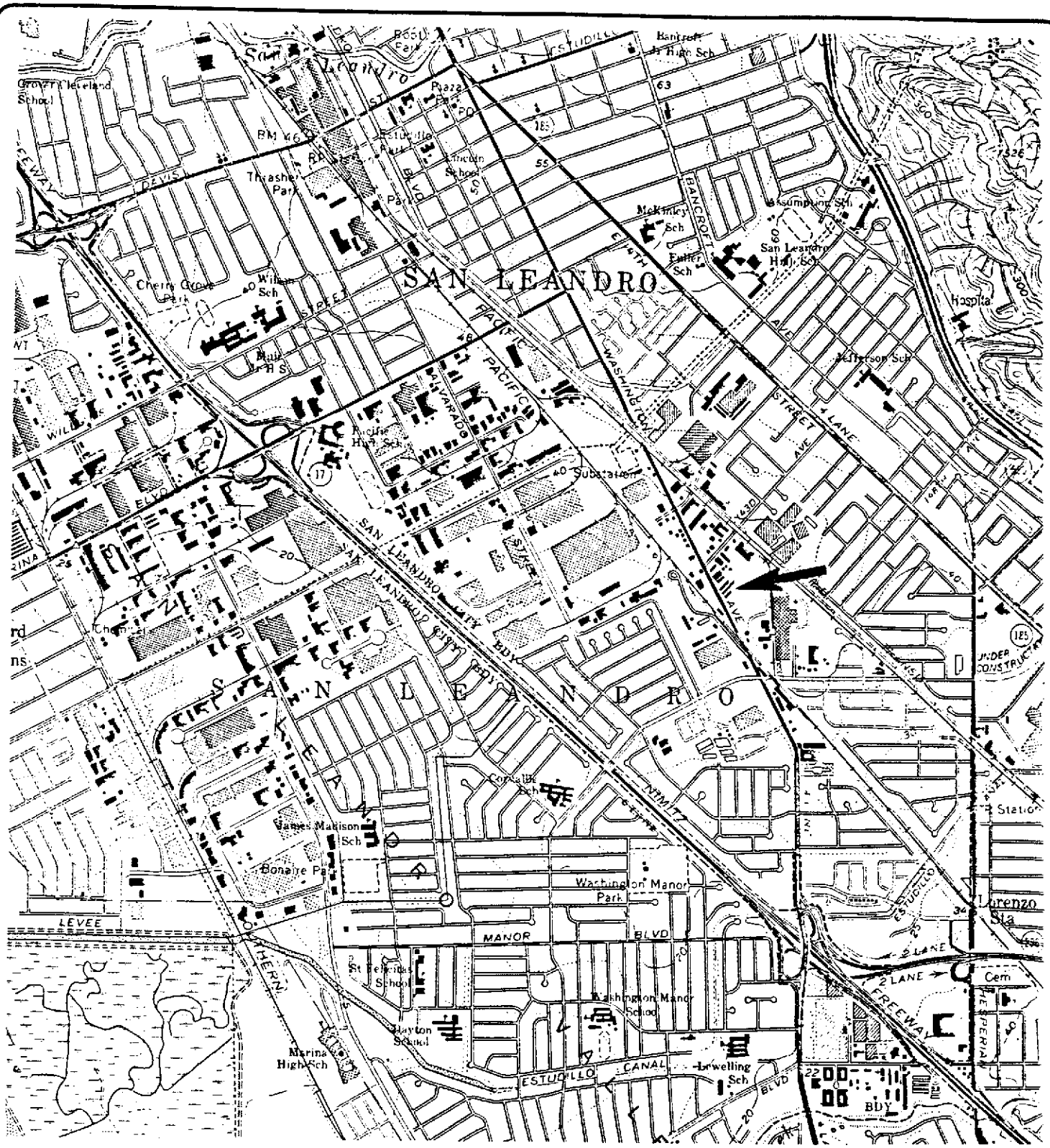
Direction of groundwater flow on May 19, 2000, was south-southwest with a gradient of 0.0031 ft/ft.

6.0 LIMITATIONS

This report is based on results of drilling activities, observations of soil types, and laboratory analyses of groundwater samples. The results of drilling activities, observations of soil types, and chemical analyses are considered applicable to that horizontal and vertical location from which they were observed and/or collected. The conclusions contained herein are based on field observations, analytical data, and professional judgment which is in accordance with current standards of professional practice.

Representations made of soil and groundwater conditions between sample locations are extrapolations based on professional opinions and judgments and accepted industry practice. No warranty is expressed or implied. The extent of testing and data collection directly affects the statistical confidence level of all work performed. As a practical matter, to reach or even approach a 100 percent statistical level would be prohibitively expensive.

The findings and conclusions of this report are valid as of the present time; however, the passing of time could change the conditions of the subsurface due to natural processes or the influence of man. Accordingly, the findings of this report may be invalidated, wholly or partly, by changes beyond ALLCAL's control. Therefore, this report should not be relied upon after an extended period of time without being reviewed by a Civil Engineer or Registered Geologist.



Legend

U.S.G.S. 7.5 Minute Series Topographic Map, San Leandro, California, 1959, Photorevised 1980

N

0 2000

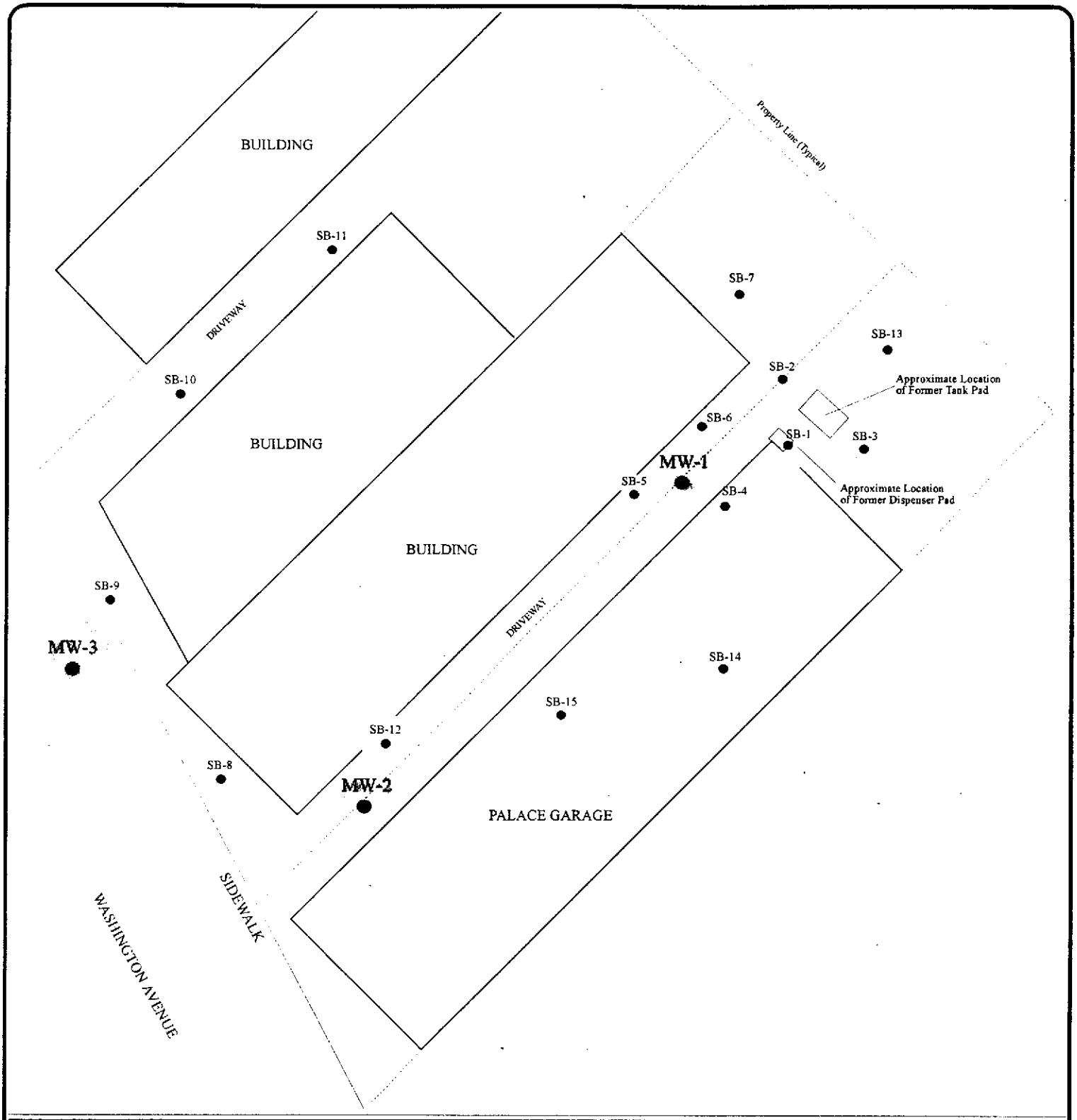
Approximate Scale (ft)

ALLCAL **PROPERTY SERVICES**

FIGURE 1

SITE LOCATION MAP-PALACE GARAGE TOPOGRAPHIC MAP

14336 WASHINGTON AVENUE
SAN LEANDRO, CA 94577



Legend

SB-1 ● Name and Location of Soil Boring

MW-1 ● Name and Location of Groundwater Monitoring Well

0 30

Approximate Scale (ft)

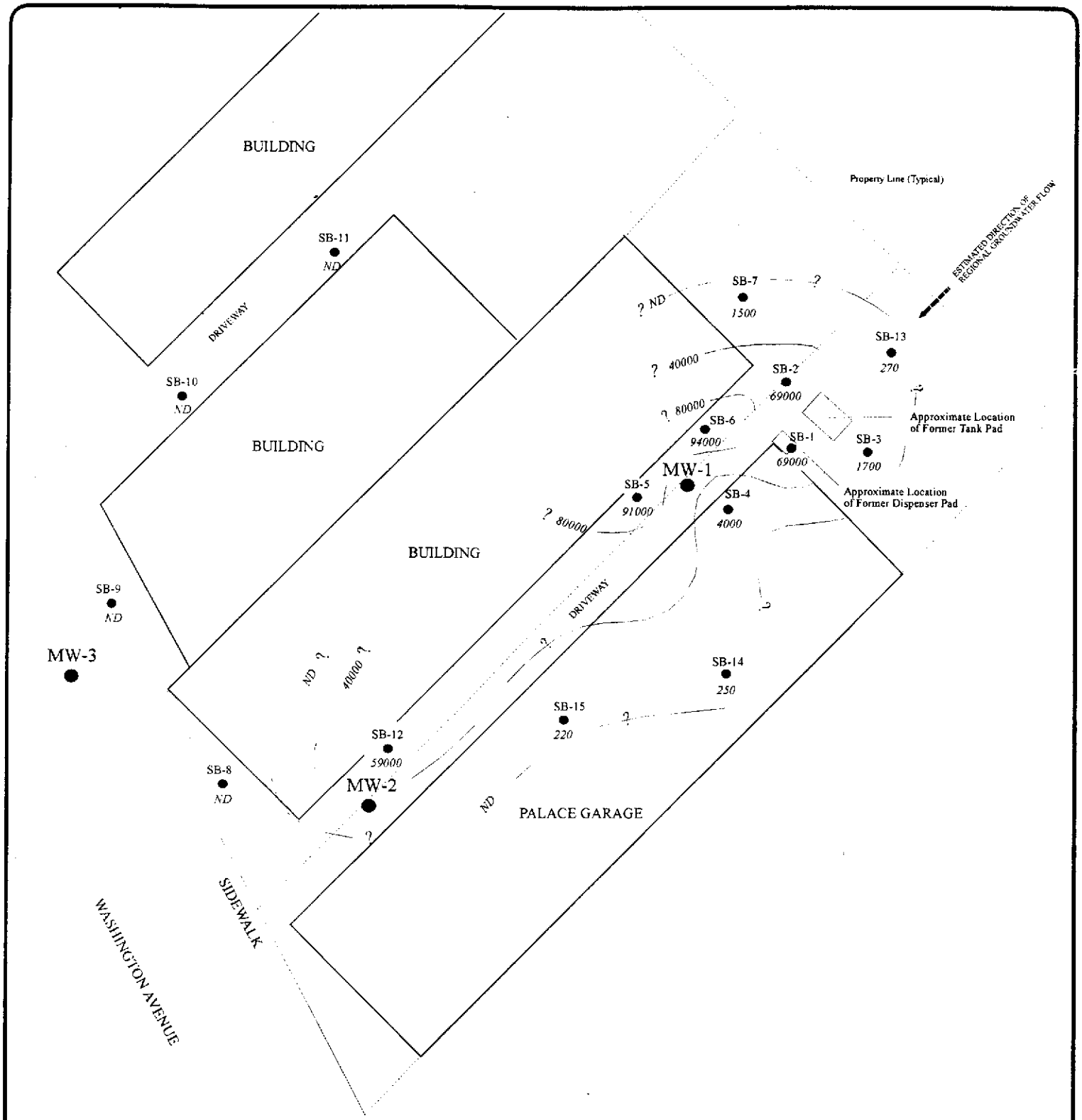
N

ALLCAL **PROPERTY SERVICES**

FIGURE 2

SITE PLAN - PALACE GARAGE

14336 WASHINGTON AVENUE
SAN LEANDRO, CA 94577



Legend

SB-1 ● 69000 — Name and Location of Soil Boring with TPHG Concentration in ppb

MW-1 ● — Name and Location of Groundwater Monitoring Well

ND = Nondetectable

40000 — TPHG Isoconcentration Contour (ppb). Data Spans From 2/1/99 to 7/29/99.

Contour Interval = 40000 ppb

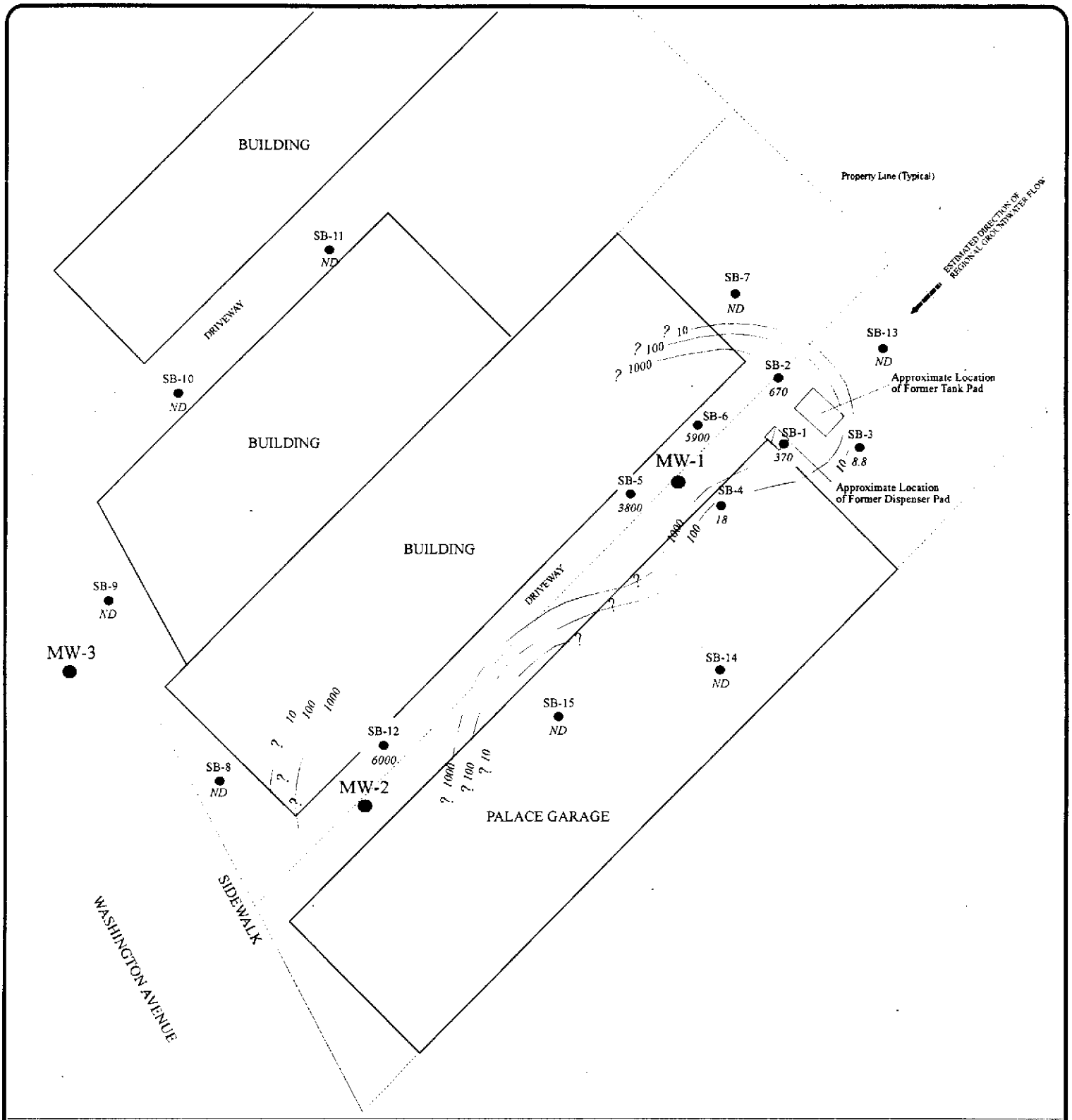
0 — 30

Approximate Scale (ft)

N

ALLCAL **PROPERTY SERVICES**

FIGURE 3
SITE PLAN - PALACE GARAGE
ESTIMATED TPHG ISOCONCENTRATION MAP
GROUNDWATER (2/1/99-7/29/99)
14336 WASHINGTON AVENUE
SAN LEANDRO, CA 94577



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SB-1 ● 1500 — Name and Location of Soil Boring with Benzene Concentration in ppb

MW-1 ● — Name and Location of Groundwater Monitoring Well

1000 — Benzene Isoconcentration Contour (ppb). Data Spans From 2/1/99 to 7/29/99.

Logarithmic Contour Interval Beginning with 10 ppb

ND = Nondetectable

0 30

Approximate Scale (ft)

N

ALLCAL **PROPERTY SERVICES**

FIGURE 4

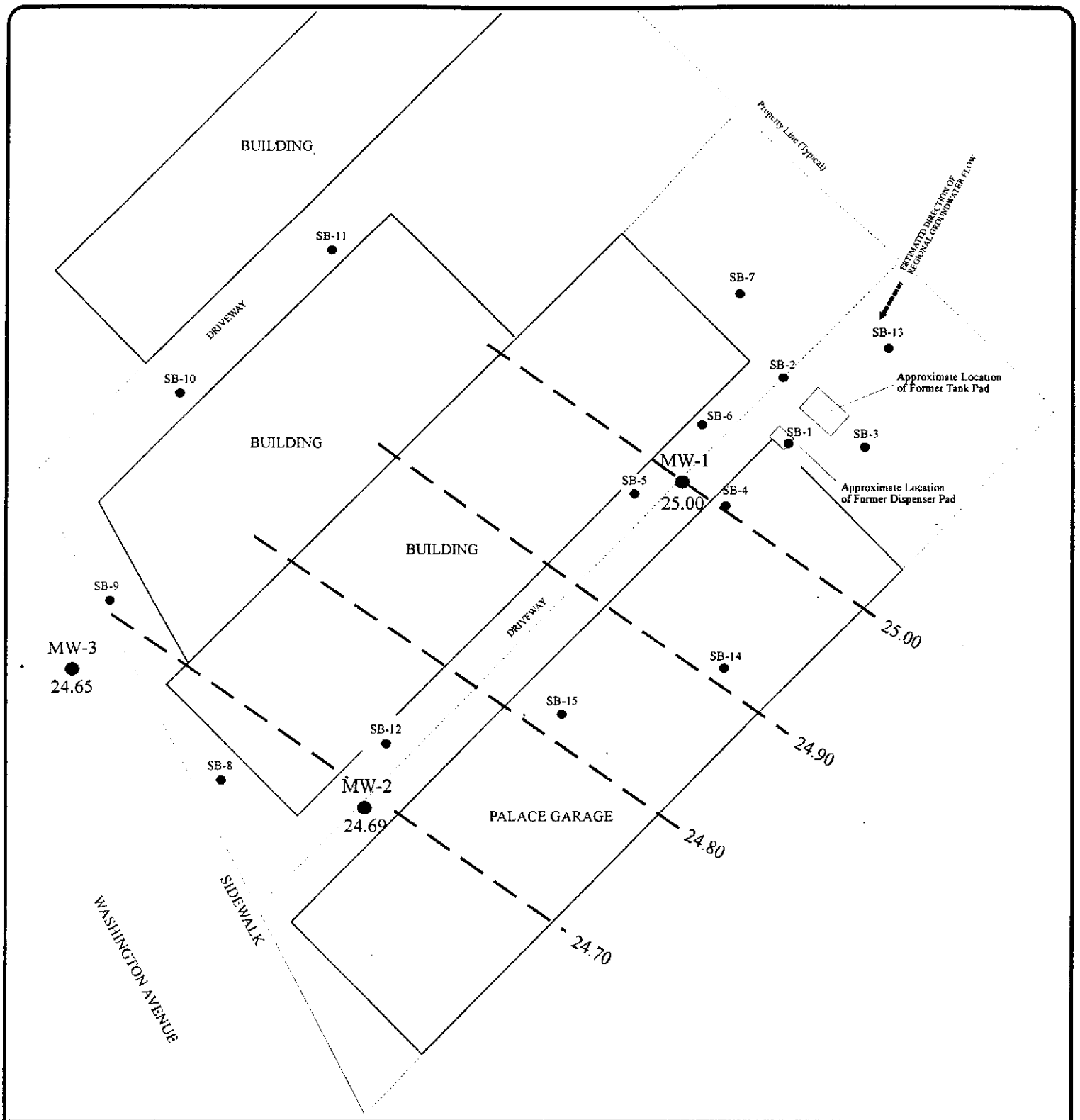
SITE PLAN - PALACE GARAGE

ESTIMATED BENZENE ISOCONCENTRATION MAP

GROUNDWATER (2/1/99-7/29/99)

14336 WASHINGTON AVENUE

SAN LEANDRO, CA 94577



Legend

SB-1 ● Name and Location of Soil Boring

MW-1 ● Name and Location of Groundwater Monitoring Well

24.70 Potentiometric Contour-Feet Above Mean Sea Level

0 30

Approximate Scale (ft)

N

ALLCAL **PROPERTY SERVICES**

FIGURE 5
SITE PLAN - PALACE GARAGE

GROUNDWATER GRADIENT-5/19/00

14336 WASHINGTON AVENUE
SAN LEANDRO, CA 94577

APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES LETTER

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

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9432

December 29, 1999

STID 2355

Morris F. Donnelly
Jeffrey W. Kerry
Kerry & Associates
151 Callahan Avenue, Ste. 202
San Leandro, CA 94577

RE: Palace Garage, 14336 Washington Avenue, San Leandro

Dear Messrs. Donnelly and Kerry:

Thank you for our receipt of the December 10, 1999 All Cal Property Service, Inc. (All Cal) well installation workplan for the pending third stage of the environmental investigation at your site. This All Cal workplan calls for the construction of three (3) permanent monitoring wells in locations that reflect the apparent gasoline plume geometry mapped during the previous two Geoprobe® investigations completed earlier this year at this site.

The current All Cal well installation workplan is accepted as submitted.

Please call me at (510) 567-6783 when fieldwork has been scheduled or should you have any questions.

Sincerely,

Scott O. Seery, CHMM
Hazardous Materials Specialist

cc: Chuck Headlee, RWQCB
Mike Bakaldin, San Leandro Hazardous Materials Program
John Mrakovich, All Cal Property Services, Inc.
27973 High Country Dr., Hayward, CA 94542-2530

APPENDIX B

TABLE 1

SUMMARY OF SOIL AND GROUNDWATER CHEMICAL ANALYSES

Soil Boring	Matrix	Depth (ft)	TPHG	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
SB-1	soil[1]	10-10.5	440b	0.51	2.6	8.1	47	<0.5
SB-1	soil	15-15.5	4700a	12	21	88	480	<10
SB-2	soil	10-10.5	<1.0	0.016	0.012	<0.005	0.016	<0.05
SB-2	soil	15-15.5	790a	0.64	4.8	5.3	18	<0.5
SB-3	soil	10-10.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-3	soil	15-15.5	<1.0	<0.005	0.021	<0.005	0.010	<0.05
SB-4	soil	11.5-12	<1.0	<0.005	0.010	<0.005	0.007	<0.05
SB-4	soil	15-15.5	35bj	0.029	0.32	0.13	0.22	<0.05
SB-5	soil	11.5-12	2.8a	0.092	0.023	0.064	0.11	<0.05
SB-5	soil	15-15.5	1900a	4.3	14	35	170	<10
SB-6	soil	10-10.5	880a	3.5	16	18	89	<1
SB-6	soil	15-15.5	3200a	22	160	89	460	<10
SB-7	soil	10-10.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-7	soil	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-8	soil	14-14.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-9	soil	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-10	soil	14.5-15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-11	soil	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-12	soil	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-13	soil	7.5-8	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-13	soil	15-15.5	460a	6.3	3.3	13	42	<0.50
SB-14	soil	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05

SB-15	soil	15-15.5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-1	water[2]	17-21	69000ah	370	6200	3500	15000	<200
SB-2	water	17-21	69000ah	670	760	2700	8600	<400
SB-3	water	17-21	1700a	8.8	28	52	160	<5.0
SB-4	water	17-21	4000a	18	170	120	480	<10.0
SB-5	water	16-20	91000ahi	3800	4300	4600	21000	<200
SB-6	water	16-20	94000ah	5900	10000	5000	25000	<900
SB-7	water	16-20	1500bji	<0.5	0.89	3.6	1.1	<10
SB-8	water	16-20	<50	<0.5	<0.5	<0.5	<0.5	<5.0
SB-9	water	16-20	<50	<0.5	<0.5	<0.5	<0.5	<5.0
SB-10	water	16-20	<50	<0.5	<0.5	<0.5	<0.5	<5.0
SB-11	water	16-20	<50	<0.5	<0.5	<0.5	<0.5	<5.0
SB-12	water	16-20	59000ah	6000	560	4500	10000	<200
SB-13	water	16-20	270bj	<0.5	0.53	5.4	15	<5.0
SB-14	water	16-20	250j	<0.5	8.0	<0.5	<0.5	<5.0
SB-15	water	16-20	220j	<0.5	6.5	<0.5	<0.5	<5.0

[1] Contaminant concentrations for soil reported in parts per million (ppm). [2] Contaminant concentrations for water reported in parts per billion (ppb). a) Unmodified or weakly modified gasoline is significant. b) Heavier gasoline range compounds are significant (aged gasoline?). h) Higher than water immiscible sheen is present. i) liquid sample contains greater than~5 vol.% sediment. j) No recognizable pattern.

APPENDIX C

- ALAMEDA COUNTY PUBLIC WORKS AGENCY DRILLING PERMIT
- CITY OF SAN LEANDRO ENCROACHMENT PERMIT
- GREENWOOD AND MOORE, INC. SURVEY MAP

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
455 ELMHURST ST. HAYWARD CA. 94544
PHONE (510) 670-5554 FAX (510) 782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 14336 WASHINGTON AVE. SAN LEANDRO, CA

California Coordinates Source ___ ft. Accuracy ___ ft.
CCN ___ ft. CCE ___ ft.
APN ___

CLIENT
Name MORRIS DONNELLY & JEFFERY KERRY
Address 151 CALLAN AVE STE 207 Phone 510 483 4211
City SAN LEANDRO, CA Zip 94577

APPLICANT
Name JOHN MEARONCK/ALLCAL ENVIRONMENTAL
Fax 510 581 8400
Address 27973 HIGH COUNTRY DR Phone 510 581 2320
City HAYWARD, CA Zip 94542

TYPE OF PROJECT
Well Construction
- Cathodic Protection ☐
- Water Supply ☐
- Monitoring ☒

Geotechnical Investigation
- General ☐
- Contamination ☐
- Well Destruction ☐

PROPOSED WATER SUPPLY WELL USE
- New Domestic ☐
- Municipal ☐
- Industrial ☐
- Replacement Domestic ☐
- Irrigation ☐
- Other ___ ☐

DRILLING METHOD:
- Mud Rotary ☐
- Air Rotary ☐
- Auger ☒
- Cable ☐
- Other ☐

DRILLER'S LICENSE NO. C57 265556

WELL PROJECTS
Drill Hole Diameter 8 in.
Casing Diameter 2 in.
Surface Seal Depth 14 ft.
Maximum Depth 30 ft.
Number 3

GEOTECHNICAL PROJECTS
Number of Borings ___
Hole Diameter ___ in.
Maximum Depth ___ ft.

ESTIMATED STARTING DATE 5/10/00
ESTIMATED COMPLETION DATE 5/10/00

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE J. Mearonck DATE 4/26/00

FOR OFFICE USE

PERMIT NUMBER W00-193
WELL NUMBER ___
APN ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A) GENERAL
(1) A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources — WELL COMPLETION REPORT —
(3) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper 2-3 ft. replace in kind or compacted cuttings

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED Frank L Codd DATE 4-25-00

Service No. _____

CITY OF SAN LEANDRO
APPLICATION TO PERFORM WORK IN THE PUBLIC RIGHT-OF-WAY

251
Permit Number

4-20-00
Date Approved

Work Site: 14336 WASHINGTON AVENUE

Applicant: Name ALLIED ENVIRONMENTAL Address 27913 HESH COURT, HAYWARD CA Tel. 510 581 2320

Owner: Name HIGGINS DONNELLY & DEFFLEY KEARNY Address 151 CALLAN AVE, STE 202, SAN LEANDRO, CA 94577 Tel. 510 483 4211

Purpose of Permit:

☐ Utility ☐ Street Excavation ☒ Curb, Gutter Sidewalk, Driveway ☐ Other _____

Detailed Description and Dimensions of Work: INSTALL 8-INCH DIAMETER, GROUNDWATER MONITORING WELL IN SIDEWALK

Plan Submitted: Yes X No _____

Profile Submitted Yes X No _____

Date Work to be Started: 5/10/00

Date Work to be Completed by: 90 DAYS

Building Permit No. _____

State Encroachment Permit No. _____

Oro Loma Permit No. _____

Alameda County Flood Control Permit No. _____

Compliance with State Labor Code: In accordance with Section 3800

☐ Applicant has on file, with the City of San Leandro, evidence that workman's compensation insurance is carried.

☐ Applicant will not employ anyone so as to become subject to the workman's compensation laws of California.

Statement of State Contractor's License: In accordance with Section 7031.5 of the State Business and Professions Code.

☐ Applicant has State License No. _____, Class _____ in full force and effect.

☐ Applicant is exempt from the State Contractor's License Law for the following reason(s):

CONTRACTOR IS PSC EXEMPTION

By the application and acceptance of this permit, the undersigned intending to be legally bound does hereby agree that all work performed will be in accordance with all applicable provisions of this permit and all regulations, provisions, and specifications as adopted by the City. Further, the undersigned agrees that this permit is to serve as a guaranty for payment of all permit and/or inspection charges as billed by the City. Any misrepresentation of information requested from the applicant on this form shall make this permit null and void.

Signature: _____ Date: 4/20/00

PLEASE CALL 577-3308 FOR INSPECTIONS

SPECIAL PROVISIONS

Backfill Required PER CITY OF SAN LEANDRO STD.

Pavement Section Required / DETAIL & SPECIFICATION

Minimum Depth of Cover /

Police & Fire Dept. to be notified 24 hours prior to start: YES ____ NO ____

SEE REVERSE SIDE FOR GENERAL PROVISIONS APPLICABLE TO ALL PERMIT WORK

PERMIT IS VALID WHEN SIGNED

Any omission on the part of the City to specify on this permit any rule, regulation, provision, or specification shall not excuse the permittee from complying with all requirements of law and appropriate ordinances and all applicable regulations, provisions, and specifications adopted by the City.

ISSUE FOR CITY ENGINEER

_____

INSPECTION RECORD

Date	Comments	Insp.	Hrs. Charged

NOTE: 1 hr. Minimum charge per inspection stop

Hours forwarded from reverse side: _____

TOTAL HOURS CHARGED: _____

FEES

RECEIVED
CITY OF SAN LEANDRO
APR 20 2000
ENGG./TRANS.

PERMIT FEE: To Acct #3306

RESTORE/ INSPECT DEPOSIT: 20 - To CN # _____

STREET CUT FEE: To ACCT #3304

TOTAL: # 250 -

☐ All charges collected at permit insurance

☐ All charges to be billed to

CN # _____

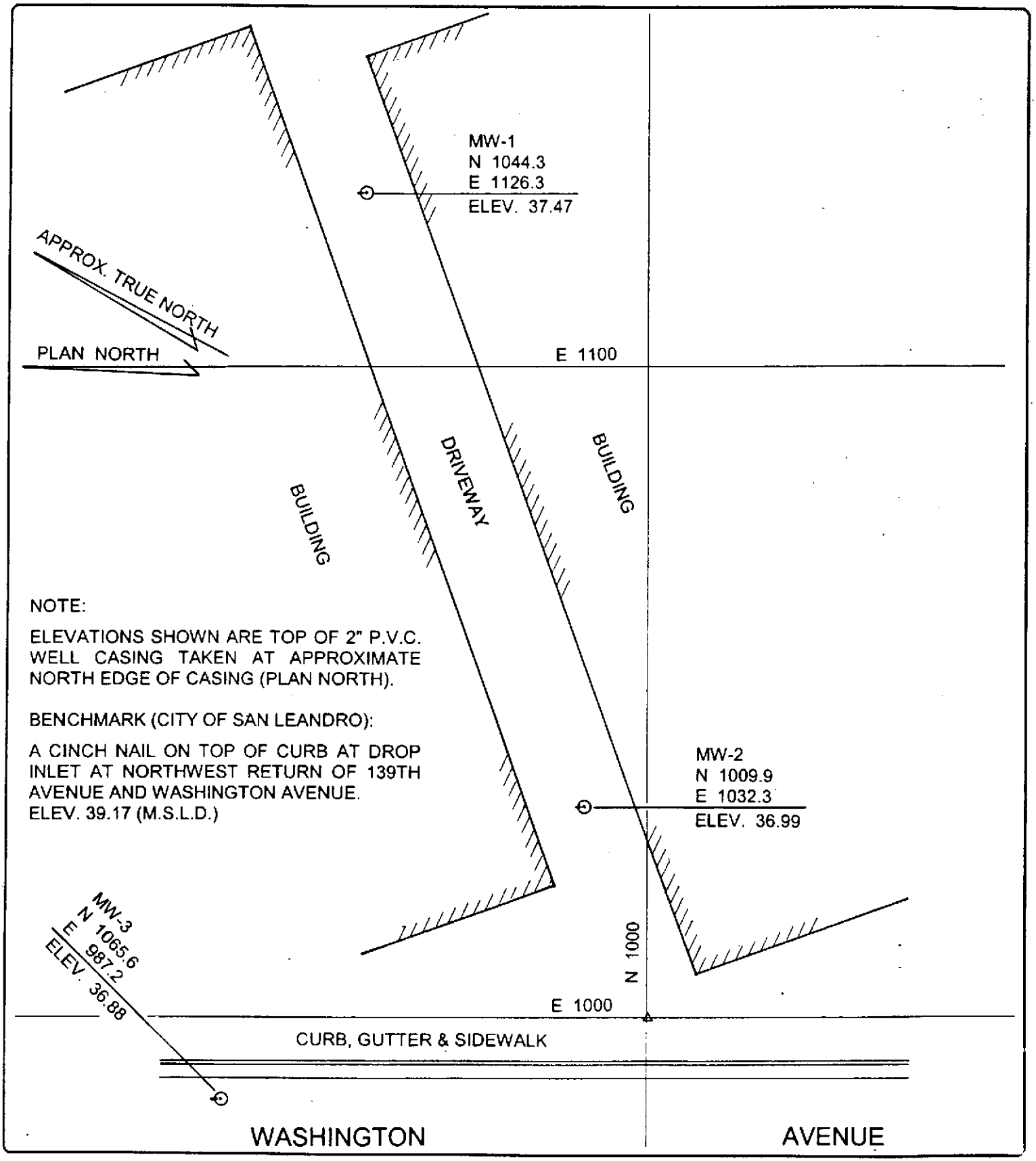
REV. Date 3/98

Greenwood & Moore, Inc.

19131 REDWOOD ROAD, CASTRO VALLEY, CA 94546

OFFICE: 510-581-2772 FAX: 510-581-6913

PROJECT: ALL-CAL PROPERTY SERV. 14332 WASHINGTON AVE. SAN LEANDRO, CA		JOB NO. 00080
BY: DJR	DATE: 6/19/00	SHEET 1 OF 1
SCALE: 1" = 20'	REVISED:	



NOTE:

ELEVATIONS SHOWN ARE TOP OF 2" P.V.C. WELL CASING TAKEN AT APPROXIMATE NORTH EDGE OF CASING (PLAN NORTH).

BENCHMARK (CITY OF SAN LEANDRO):

A CINCH NAIL ON TOP OF CURB AT DROP INLET AT NORTHWEST RETURN OF 139TH AVENUE AND WASHINGTON AVENUE. ELEV. 39.17 (M.S.L.D.)

APPENDIX D

- EXPLORATORY BORING LOGS AND WELL CONSTRUCTION DETAILS
- STATE OF CALIFORNIA WELL COMPLETION REPORTS

EXPLORATORY BORING LOG/ WELL CONSTRUCTION DETAIL

Project Number: 135
Project Name: 14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

Boring Number: MW-1
Page Number: 1 OF 1

By: ALLCAL ENVIRONMENTAL Date: 5/10/00

Top of Casing Elevation: 37.47

RECOVERY (ft./ft.)	VAPORS (ppm)	PENETRATION (blows/ft.)	GROUND-WATER LEVEL	DEPTH (ft.)	SAMPLES	SOIL TYPE	DESCRIPTION	WELL DETAIL
							0 - .5 ft. Asphalt underlain by aggregate base rock.	Cover Vault Box
						CL	.5 - 6.0 ft. CLAY (CL): dark brown to black, silty, sandy, firm, damp, no odor.	
				5				
1.5/1.5		20						Portland Cement
							6.0 - 15.0 ft. CLAY (CL): brown, silty, sandy, trace of gravel, soft to firm, damp, no odor.	
				10		CL	@ 10.0 ft. green with hydrocarbon odor.	Bentonite
1.5/1.5		14						2-Inch O.D. PVC Blank Casing With Locking Cap
			▼	15				
1.5/1.5		5				SP	15.0 - 21.0 ft. SAND (SP): green, alternating fine and medium-grained, saturated, hydrocarbon odor.	No. 2/12 Sand Pack
				20				
1.5/1.5		10						
1.5/1.5		9				CL	21.0 - 24.5 ft. CLAY (CL): mottled brown and orange, sandy, soft, damp, no odor.	.010-Slotted, 2-Inch, O.D., PVC Screen With End Cap
1.5/1.5		9						
				25			Total depth of boring 24.5 feet.	
							Total depth of well 24 feet.	
				30				
				35				

BORING DETAIL: Drilled with continuous-flight, 8-inch O.D., hollow-stem auger. Samples collected in a standard penetration sampler.

2-inch O.D. diameter well constructed inside boring.

EXPLORATORY BORING LOG/ WELL CONSTRUCTION DETAIL

Project Number: 135
Project Name: 14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

Boring Number: MW-2
Page Number: 1 OF 1

By: ALLCAL ENVIRONMENTAL
Date: 5/10/00
Top of Casing Elevation: 36.99

RECOVERY (ft./ft.)	VAPORS (ppm)	PENETRATION (blows/ft.)	GROUND-WATER LEVEL	DEPTH (ft.)	SAMPLES	SOIL TYPE	DESCRIPTION	WELL DETAIL
							0 - .83 ft. Asphalt underlain by aggregate base rock.	Locking Valve Box
						CL	.83 - 2.5 ft. CLAY (CL): dark brown to black, silty, sandy, firm, damp, no odor.	
1.5/1.5		27		5		CL	2.5 - 13.0 ft. CLAY (CL): brown, silty, sandy,soft to firm, damp, no odor.	Portland Cement
1.5/1.5		18		10			@ 10.0 ft. very sandy.	Bentonite 2-Inch O.D. PVC Blank Casing With Locking Cap
1.5/1.5		4	▼	15		CL	13.0 - 16.5 ft. CLAY (CL): green, very silty, damp to wet, hydrocarbon odor. Sand in shoe.	
						SP	16.5 - 20.5 ft. SAND (SP): grey, medium-grained, saturated, hydrocarbon odor.	No. 2/12 Sand Pack
1.5/1.5		3		20				
						CL	20.5 - 25.0 ft. CLAY (CL): mottled brown and black, sandy, soft to firm, damp, no odor.	.010-Slotted, 2-Inch, O.D., PVC Screen With End Cap
1.5/1.5		5		25				
							Total depth of boring 25 feet.	
							Total depth of well 24 feet.	
				30				
				35				

BORING DETAIL: Drilled with continuous-flight, 8-inch O.D., hollow-stem auger. Samples collected in a standard penetration sampler.

2-inch O.D. diameter well constructed inside boring.

EXPLORATORY BORING LOG/ WELL CONSTRUCTION DETAIL

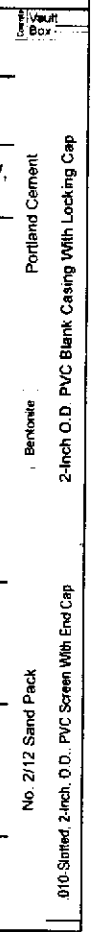
Project Number: 135
Project Name: 14336 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA

Boring Number: MW-3
Page Number: 1 OF 1

By: ALLCAL ENVIRONMENTAL
Date: 5/10/00
Top of Casing Elevation: 36.88

RECOVERY (ft./ft.)	VAPORS (ppm)	PENETRATION (blows/ft.)	GROUND-WATER LEVEL	DEPTH (ft.)	SAMPLES	SOIL TYPE	DESCRIPTION
						SP	0 - 1.0 ft. Street Surface: 8 inches asphalt underlain by aggregate base rock.
						CL	1.0 - 2.0 ft. SAND (SP): grey, fine to medium-grained, gravelly, damp, no odor.
				5			2.0 - 5.0 ft. CLAY (CL): dark brown to black, silty, sandy, medium-firm, damp, no odor.
1.5/1.5		25					5.0 - 15.0 ft. CLAY (CL): brown, silty, sandy, medium-firm, damp, no odor.
				10		CL	@ 10.0 ft. Light brown, very sandy, soft.
1.5/1.5		14					
			▼	15			
1.5/1.5		6				SP/GP	15.0 - 16.5 ft. SAND (SP) AND GRAVEL (GP): alternating layers 2-3 inches thick, brown, sand: fine to medium-grained, gravel: medium-grained, saturated, no odor.
1.5/1.5		10				SP	16.5 - 19.5 ft. SAND (SP): brown, fine to medium-grained, saturated, no odor.
1.5/1.5		6		20			@ 19.0 ft. Fine-grained, very clayey.
1.5/1.5		4				CL	19.5 - 24.0 ft. CLAY (CL): mottled brown and orange, very sandy, soft, damp, no odor.
1.5/1.5		5					
1.5/1.5		8		25			Total depth of boring and well is 24 feet.
				30			
				35			

WELL DETAIL



BORING DETAIL: Drilled with continuous-flight, 8-inch O.D., hollow-stem auger. Samples collected in a standard penetration sampler.

2-inch O.D. diameter well constructed inside boring.

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

APPENDIX E

- RECORDS OF WELL DEVELOPMENT
- RECORDS OF WATER SAMPLING

RECORD OF WELL DEVELOPMENT

PROJECT NO.: 135 DATE: 5/17/00

WELL NO.: MW-1

PROJECT NAME: PAINE GARAGE

WELL DIAMETER: 2"

PROJECT LOCATION: 14376 WEST AVE., SAN LEANDRO

TOC ELEV: 37.47

DEVELOPER: ALISAL ENVIRONMENTAL

LOCK NO.: DOLPHIN

WELL DEPTH (from construction detail):

WELL DEPTH (measured): SOFT BOTTOM?:

DEPTH TO WATER: 12.42 TIME: 1235

PRESSURE (circle one)?: YES OR NO

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL:

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78L]

LOCATION MAP

DEVELOPMENT METHOD: BAILER & PUMP

FLOATING PRODUCT PRESENT: YES ☐ NO ☑

SHEEN PRESENT: YES ☑ NO ☐

ODOR PRESENT: YES ☑ NO ☐

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (Gal)	Clarity (NTU'S)	Remarks
1245		5		VERY TURBID - GREY/BROWN COLOR
1300		20		" " " "
1312		30		SLIGHTLY TURBID - BROWN COLOR
1320		40		CLOUDY - APPARENT SEDIMENT FREE

TOTAL VOLUME DEVELOPED (GAL): 40 (L): WATER VOL. IN DRUM:

SIGNATURE: J. Murdock

NEED NEW DRUM?:

RECORD OF WELL DEVELOPMENT

PROJECT NO.: 135 DATE: 5/17/00

PROJECT NAME: PALACE GARAGE

PROJECT LOCATION: 14336 WASH. AVE, SAN LEANDRO

DEVELOPER: ALLCAL ENVIRONMENTAL

WELL DEPTH (from construction detail): ____

WELL DEPTH (measured): 23.70 SOFT BOTTOM?: YES

DEPTH TO WATER: 12.24 TIME: 11:15

PRESSURE (circle one)?: YES OR NO

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.83

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78L]

WELL NO.: MW-2

WELL DIAMETER: 2"

TOC ELEV: 26.99

LOCK NO.: DOLPHIN

LOCATION MAP

DEVELOPMENT METHOD: BAILER & PURGE PUMP

FLOATING PRODUCT PRESENT: YES ☐ NO ☑

SHEEN PRESENT: YES ☑ NO ☐

ODOR PRESENT: YES ☑ NO ☐

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (Gal)	Clarity (NTU'S)	Remarks
1130		5		VERY TURBID - GREY COLOR
1145		10		" " " "
1153		25		SLIGHTLY TURBID · GREY COLOR
1200		35		" " " "
1215		40		CLOUDY · ALMOST SEDIMENT FREE

TOTAL VOLUME DEVELOPED (GAL): 40 (L): ____

WATER VOL. IN DRUM: ____

SIGNATURE: J Markwood

NEED NEW DRUM?: ____

RECORD OF WELL DEVELOPMENT

PROJECT NO.: 135 DATE: 5/17/00

WELL NO.: MW-3

PROJECT NAME: [illegible]

WELL DIAMETER: 2"

PROJECT LOCATION: [illegible]

TOC ELEV: 36.97

DEVELOPER: [illegible]

LOCK NO.: DOLPHIN

WELL DEPTH (from construction detail):

WELL DEPTH (measured): 23.83 SOFT BOTTOM?: YES

DEPTH TO WATER: 12.22 TIME: 9:15

PRESSURE (circle one)?: YES OR NO

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.84 GAL

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78L]

LOCATION MAP

DEVELOPMENT METHOD: BAILER & PURGE PUMP

FLOATING PRODUCT PRESENT: YES ☐ NO ☐

SHEEN PRESENT: YES ☐ NO ☐

ODOR PRESENT: YES ☐ NO ☑

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (Gal)	Clarity (NTU'S)	Remarks
9:30		5		VERY TURBID - BROWN COLOR
10:00		25		" " " "
10:45		50		SLIGHTLY TURBID
11:45		65		CLOUDY - APPARENT SEDIMENT EFFECT

TOTAL VOLUME DEVELOPED (GAL): 65 (L): WATER VOL. IN DRUM:

SIGNATURE: [signature]

NEED NEW DRUM?:

RECORD OF WATER SAMPLING

PROJECT NO.: 135 DATE: 5/19/00

PROJECT NAME: 14336 WASHINGTON AVE

PROJECT LOCATION: SAN LEANDRO, CA

SAMPLER: ALISA ENVIRONMENTAL/JVM

ANALYSES: TPH G, BTEX, MTBE

WELL NO.: MW-1

WELL DIAMETER: 2"

TOC ELEV: 37.47

LOCK NO.: DOLPHIN

WELL DEPTH (from construction detail): _____

WELL DEPTH (measured): 23.25 TOC SOFT BOTTOM?: NO

DEPTH TO WATER: 12.47 TIME: 825

PRESSURE (circle one)?: YES OR (NO)

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.72 G

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]

LOCATION MAP

CALCULATED PURGE VOL. (GAL): 5.17 (L): 20 ACTUAL PURGE VOL. (GAL): _____ (L): 21

PURGE METHOD: DISPOSABLE BAILER SAMPLE METHOD: DISPOSABLE BAILER

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (L)	Temp (Deg. F)	pH	EC x1000	Clarity	Turbidity (NTU)	Remarks
1016		4	64.6	7.11	.85			CLOUDY (GREY), ODOR, SHEEN
1020		8	64.7	7.26	.86			
1033		12	64.7	7.09	.84			
1035		16	64.6	6.97	.84			
1040		21	64.6	6.83	.84			
1045	Sa...	...						

SIGNATURE: J. Mulholland

WATER VOL. IN DRUM: _____

NEED NEW DRUM?: YES

RECORD OF WATER SAMPLING

PROJECT NO.: 135 DATE: 5/19/00

WELL NO.: MW-2

PROJECT NAME: 14336 WASHINGTON AVE

WELL DIAMETER: 2"

PROJECT LOCATION: SAN LEANDRO, CA

TOC ELEV: 36.99

SAMPLER: ALLCAL ENVIRONMENTAL / JVM

LOCK NO.: DOLPHIN

ANALYSES: TPHG, BTEX, MTBE

WELL DEPTH (from construction detail):

WELL DEPTH (measured): 23.46 TOC SOFT BOTTOM?: N

DEPTH TO WATER: 12.30 TIME: 8:30

PRESSURE (circle one)?: YES OR NO (circled: NO)

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.79 G

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]

LOCATION MAP

CALCULATED PURGE VOL. (GAL): 5.36 (L): 20 ACTUAL PURGE VOL. (GAL): (L): 20

PURGE METHOD: DISPOSABLE BAILER SAMPLE METHOD: DISPOSABLE BAILER

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (L)	Temp (Deg. F)	pH	EC X/1000	Clarity	Turbidity (NTU)	Remarks
9:10		4	65.8	7.28	1.27			CLOUDY (GREY), ODOR, SHEEN
943		8	65.5	7.12	1.24			↓
946		12	65.5	6.99	1.22			↓
950		16	65.6	6.87	1.22			↓
955		20	65.5	6.79	1.22			↓
1000	Sample							

SIGNATURE: J. Meakwel

WATER VOL. IN DRUM:

NEED NEW DRUM?: YES

RECORD OF WATER SAMPLING

PROJECT NO.: 135 DATE: 5/19/00

PROJECT NAME: 14336 WASHINGTON AVE.

PROJECT LOCATION: SAN LEANDRO, CA

SAMPLER: ALCAL ENVIRONMENTAL / JVM

ANALYSES: TPHG, BTEX, MTBE

WELL DEPTH (from construction detail): _____

WELL DEPTH (measured): 23.83 TOC SOFT BOTTOM?: NO

DEPTH TO WATER: 12.53 TIME: 8:30

PRESSURE (circle one)?: YES OR (NO)

IF YES, WAS PRESSURE (circle one): POSITIVE OR NEGATIVE?

WATER VOLUME IN WELL: 1.86

[2-INCH CASING = 0.16 GAL/FT] [4-INCH CASING = 0.65 GAL/FT]

[6-INCH CASING = 1.47 GAL/FT] [1 GAL = 3.78 L]

WELL NO.: MW-3

WELL DIAMETER: 2"

TOC ELEV: 36.89

LOCK NO.: DOLPHIN

LOCATION MAP

CALCULATED PURGE VOL. (GAL): 5.57 (L): 21 ACTUAL PURGE VOL. (GAL): _____ (L): 28

PURGE METHOD: DISPOSABLE BAILER SAMPLE METHOD: DISPOSABLE BAILER

FIELD MEASUREMENTS

Time	Depth to Water (FT)	Vol (L)	Temp (Deg. F)	pH	EC X 10.33	Clarity	Turbidity (NTU)	Remarks
850		4	65.2	8.36	.84			SLIGHTLY CLOUDY NO ODOR
855		8	64.6	7.95	.77			"
900		12	64.5	7.64	.74			"
903		16	64.2	7.50	.73			"
905		20	64.3	7.32	.71			"
907		24	64.4	7.20	.71			"
909		28	64.3	7.10	.71			"
915	50 ft							

SIGNATURE: J. Muldoon

WATER VOL. IN DRUM: _____

NEED NEW DRUM?: YES

APPENDIX F

CERTIFIED ANALYTICAL REPORT AND CHAIN-OF-CUSTODY

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

ALLCAL Environmental 27973 High Country Drive Hayward, CA 94542-2530	Client Project ID: #135	Date Sampled: 05/19/2000
		Date Received: 05/19/2000
	Client Contact: John Mrakovich	Date Extracted: 05/19/2000
	Client P.O:	Date Analyzed: 05/19/2000

05/26/2000

Dear John:

Enclosed are:

1). the results of **4** samples from your **#135** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
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ALLCAL Environmental	Client Project ID: #135	Date Sampled: 05/19/2000
27973 High Country Drive		Date Received: 05/19/2000
Hayward, CA 94542-2530	Client Contact: John Mrakovich	Date Extracted: 05/20-05/26/2000
	Client P.O:	Date Analyzed: 05/20-05/26/2000

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
38459	Trip Blank	W	ND	ND	ND	ND	ND	0.78	97
38460	MW-3	W	ND	ND	ND	ND	ND	ND	---#
38461	MW-2	W	52,000,a	ND<200	1600	3300	1600	7900	97
38462	MW-3	W	7500,a	ND<20	1400	55	440	270	103
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date: 05/19/00-05/20/00 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 38090				Instrument: GC-3			
Surrogate1	0.000	96.0	95.0	100.00	96	95	1.0
Xylenes	0.000	269.0	271.0	300.00	90	90	0.7
Ethyl Benzene	0.000	90.0	91.0	100.00	90	91	1.1
Toluene	0.000	92.0	93.0	100.00	92	93	1.1
Benzene	0.000	95.0	95.0	100.00	95	95	0.0
MTBE	0.000	116.0	111.0	100.00	116	111	4.4
GAS	0.000	893.2	897.9	1000.00	89	90	0.5
SampleID: 51900				Instrument: GC-6 A			
Surrogate1	0.000	112.0	107.0	100.00	112	107	4.6
TPH (diesel)	0.000	342.0	321.0	300.00	114	107	6.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

20306 zac20.doc

McCAMBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (510) 798-1620 Fax: (510) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: JOHN MRAKOVICH Bill To: SAME
Company: ALLCAL ENVIRONMENTAL
27973 HIGH COUNTRY DRIVE
HAYWARD, CA 94542
Tele: (510) 581 2320 Fax: (510) 581 8490
Project #: 135 Project Name:
Project Location: 14336 WASHINGTON AVE, SAN LEANDRO, CA
Sampler Signature: J. Mrakovich

SAMPLE ID	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Soil	Air	Sludge	Other	Method Preserved: Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other				Comments
TRIP BLANK	—	5/19/00	830	1	VOA	X					X				X																			38459
MW-3	MW-3	↓	915	2	↓	↓					↓	X			↓																			38460
MW-1	MW-1	↓	1045	2	↓	↓					↓	↓			↓																			38461
MW-2	MW-2	↓	1000	2	↓	↓					↓	↓			↓																			38462

Relinquished By:	Date:	Time:	Received By:
J. Mrakovich	5/19	13:00	B. Butts
B. Butts	5/19	14:40	[signature]

Remarks:

ICE/t° ✓ PRESERVATION ✓ VOAS | O&G | METALS | OTHER
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓