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FAX TRANSMITTAL COVER SHEET

DATE 10/26/98

PLEASE DELIVER THE FOLLOWING PAGE(S) TO:

NAME	COMPANY	FAX #
<u>Mr. Scott Seery</u>	<u>ACHCSA</u>	<u>(510)337-9335</u>

Total Number of Page(s), including cover page: 8

Message:

Dear Mr. Seery:

Attached please find for your review the Workplan for Limited Soil and Groundwater Investigation for the property located at 5054 Havens Place, Dublin, California. SECOR plans to implement this scope of work on Wednesday, October 28, 1998. This document is sent to you on behalf of Mr. Howe Gates, of SECOR's office in Portland, Oregon. Please contact Mr. Seth Stiles at (650)691-0131, extension 26, to discuss your review and approval of this workplan.

Thank you for your consideration in this matter.

FROM: Seth Stiles, R.G.

795 (415) 719-0184

IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL US ASAP



Via Facsimile and U.S. Mail

October 26, 1998

Mr. Scott Seery
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

WORKPLAN FOR LIMITED SOIL AND GROUNDWATER INVESTIGATION ASSOCIATED WITH A LEAKING UNDERGROUND STORAGE TANK LOCATED AT 5054 HAVENS PLACE, DUBLIN, CALIFORNIA

Dear Mr. Seery:

SECOR International Incorporated (SECOR) is pleased to submit this workplan on behalf of Archstone Communities (Archstone) to conduct a limited soil and groundwater investigation associated with a Leaking Underground Storage Tank (LUST) recently discovered at 5054 Havens Place, in Dublin, California (the subject property). This workplan presents a summary of background information, the objectives of the planned investigation, and the scope of the planned investigation, including sampling and analytical methods.

BACKGROUND

Archstone recently purchased the subject property from the County of Alameda. During the development of the property in early August 1998, Archstone encountered a previously unidentified underground storage tank (UST) near the south boundary of the subject property. The UST was struck by excavating equipment and severely damaged. On August 4, 1998, a representative of the Alameda County Health Care Services Agency (ACHCSA) was called to the subject property to observe removal of the UST and excavation of impacted soil. An estimated 30 gallons of diesel fuel were pumped from the damaged UST prior to removal. Impacted soil was excavated to a depth of approximately 10 feet below ground surface (bgs). One soil sample was collected from the base of the excavation, approximately 10 feet bgs, and from the stockpile of excavated impacted soil. Each of the samples was submitted for total petroleum hydrocarbons as diesel (TPH-d) and BTEX (benzene, toluene, ethylbenzene and xylenes) analysis using EPA Methods 8015 Modified and 8020, respectively. Laboratory data indicated the presence of TPH-d, toluene and xylenes in the soil samples.

On August 21, 1998, additional excavation was conducted at the site to a depth of approximately 15 feet bgs. Groundwater appeared in the UST excavation at approximately 15 feet bgs and reportedly rose to approximately 14 feet bgs. One soil sample was collected from a sidewall approximately 14 feet bgs, and a sample of the water which had accumulated in the UST excavation was collected. Groundwater sampling from the UST excavation was facilitated using the backhoe bucket and

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transferring water from the backhoe bucket into sampling containers. A representative from ACDEH was present and noted the apparent presence of free phase product floating on the surface of the water. Water from the excavation was then pumped out in an attempt to remove the free product, and appropriately disposed of off-site.

Laboratory analysis of the soil sample revealed the following concentrations: 420 milligrams per kilogram (mg/Kg) of TPH-d, 29 micrograms per kilogram ($\mu\text{g}/\text{Kg}$) of toluene, 18 $\mu\text{g}/\text{Kg}$ of ethylbenzene, and 30 $\mu\text{g}/\text{Kg}$ of xylene.

Laboratory analysis of the groundwater sample revealed a concentration of 11,000,000 micrograms per liter ($\mu\text{g}/\text{L}$) TPH-d, 11 $\mu\text{g}/\text{L}$ benzene, 9.5 $\mu\text{g}/\text{L}$ toluene, 2.1 $\mu\text{g}/\text{L}$ ethylbenzene, and 71 $\mu\text{g}/\text{L}$ xylenes. The laboratory report noted the presence of gasoline range compounds in the water sample, and the presence of an immiscible sheen (free product). According to information provided in a previous phase I environmental site assessment (ESA) groundwater in the vicinity of the subject property is expected to flow to the southwest.

Based on these data and discussions with the ACHCSA, SECOR has developed this workplan to further investigate the nature and extent of impacts to soil and groundwater on behalf of Archstone. The workplan will be implemented pursuant to ACHCSA approval.

OBJECTIVES

The objectives of the planned investigation activities are:

- Assess the vertical and lateral extent of residual diesel-impacted soil in the vicinity of the former UST;
- Determine shallow groundwater flow direction in the vicinity of the former UST; and
- Assess the nature and lateral extent of petroleum compound impacted groundwater in the vicinity of the former UST.

SCOPE OF INVESTIGATION

The scope of the investigation will consist of installing up to eight Geoprobe borings, collecting soil and/or groundwater samples from each boring for laboratory analysis, measuring groundwater elevations in four of the borings for the purpose of determining groundwater flow direction, and performing a limited geophysical study to further assess

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whether other USTs are present on the subject property. The following tasks will be completed.

Task 1. Field Work Preparations

Prior to initiating sampling activities, SECOR will prepare a site-specific Health and Safety Plan (HASP), obtain necessary permits, and conduct a subsurface utility clearance. The HASP will address potential environmental and physical hazards associated with the proposed sampling. The HASP will be reviewed by SECOR sampling personnel and subcontractors prior to initiating field sampling activities. The HASP will establish personnel protection standards and mandatory safety practices and procedures for use during the field investigation. A copy of the HASP will be presented to SECOR field personnel and subcontractors and kept on-site during field operations.

SECOR will notify Underground Service Alert (USA) regarding the upcoming investigations. Additionally a private utility locating service will be contracted to identify buried utilities in the area of the former UST and the proposed boring locations.

A soil boring permit has been obtained from Alameda County Flood Control and Water Conservation District, Zone 7.

Task 3. Limited Geophysical Survey

As requested by the ACHCSA, a limited geophysical survey will be conducted in the vicinity of the former UST to assess whether other USTs are present on the subject property. Electromagnetic (EM) and ground penetrating radar (GPR) techniques will be used to complete the survey. The geophysical survey will be performed at the locations where buildings are planned for construction. SECOR understands that the subject property consists of two to three building pads.

The EM method is most applicable for screening large areas for buried objects, whereas the GPR method is better suited for surveying restricted areas in greater detail. The highest confidence level in the detection of buried objects is obtained when both methods are applied on a site in a complementary fashion.

The EM method will be used initially. Should subsurface anomalies which are suspected of being a UST be detected, then GPR will be used to obtain a detailed confirmation profile.

Task 2. Limited Soil and Groundwater Investigation

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The soil and groundwater investigation will consist of the installation of up to eight borings (borings B1 through B8) to a depth of approximately 15 feet bgs, using truck-mounted Geoprobe drilling equipment. Boring locations are shown on the attached figure. Borings B1 through B4 will be located approximately five feet from the UST excavation. Borings B5 through B8 will be positioned approximately 10 feet beyond borings B1 through B4, in a similar orientation.

Soil samples from each borehole will be collected at 5-foot intervals, field-screened for the presence of volatile organic compounds (VOCs), logged, and placed on ice in a cooler for transport to the laboratory for possible analysis. Soil samples will be field-screened for evidence of petroleum hydrocarbons impact using visual examination and organic vapor headspace screening techniques. An organic vapor monitor (OVM) will be used to monitor for the presence of VOCs. In addition to the visual and OVM observations, soil lithology will be classified according to the Unified Soil Classification System, including indications of soil moisture content and surficial water table conditions.

SECOR proposes to initially submit ~~a total~~ ^{minimum} of four soil sample for analysis: one per boring from borings B1 through B4 (closest to the UST excavation). Field-screening results will be used to determine the soil sample with the highest potential to contain petroleum hydrocarbons. If evidence of petroleum hydrocarbon impact is not detected by field-screening observations, soil samples collected from the maximum unsaturated depth of the borehole will be submitted for laboratory analysis. Soil samples collected from borings B5 through B8 (further from the UST excavation) will be archived pending review of the laboratory analytical results for the samples from borings B1 through B4.

- all samples
 w/ subsequent
 field evidence
 to be sub-
 mitted to
 laboratory

Immediately following collection, samples will be placed on ice in an insulated cooler for transport to an analytical laboratory under chain-of-custody control. Selected soil samples will be analyzed for TPH-d using EPA Method 8015 Modified.

One groundwater sample will be collected from each Geoprobe borehole, if encountered. Groundwater samples will be analyzed for TPH-d and gasoline range total petroleum hydrocarbons (TPH-g) using EPA Method 8015 Modified; and BTEX, and methyl tert-butyl ether (MTBE) using EPA Method 8020. Groundwater samples will also be analyzed for dissolved lead using EPA 6010B/7000 Series Methods.

Reusable sampling equipment will be decontaminated prior to collection of each sample using a non-phosphate detergent wash, tap water rinse, and a triple distilled water rinse to avoid cross-contamination between samples. Sampler gloves will also be changed prior to collecting each sample to minimize the risk of cross-contamination between samples.

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Following sample collection, temporary piezometers will be placed in four of the boreholes for determination of groundwater flow direction. Temporary piezometers will consist of 5 feet of 0.010-inch machine-slotted, 1-inch diameter polyvinyl chloride (PVC) well screen with a flush-threaded end cap and 10 feet of blank PVC. The elevation of each piezometer will be surveyed relative to an arbitrary benchmark with an assumed elevation using a survey transit. Static groundwater levels will be subsequently measured using an electronic water level indicator to determine the groundwater elevations.

Each borehole, except those in which a temporary piezometer is installed, will be abandoned following sampling by filling with a cement-bentonite grout. Temporary piezometers will be extracted after depth to groundwater and survey data have been collected, and each of the boreholes will be abandoned as previously described.

Task 4. Reporting

A summary report will be prepared and submitted. The report will document sampling and analytical methods, investigation findings and conclusions. The report will include tabulated analytical results, and a site map showing sampling locations, and a groundwater elevation contour map.

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PROJECT SCHEDULE

Archstone would like to begin the work described herein as soon as practical, and respectfully requests your prompt review and written approval to implement this workplan. Field preparation activities have been initiated, and field work is scheduled to be conducted on October 28, 1998, contingent upon workplan approval by ACHCSA. Laboratory analyses will be conducted on a 24-hour turnaround basis. A written report is expected to be submitted within three weeks following completion of the field work.

If you have any questions or need additional information, please contact Howe Gates at (503) 691-2030. We appreciate your responsiveness and look forward to working with you on this project.

Sincerely,

SECOR International Incorporated



D. Howe Gates, R.E.A.
Senior Project Manager



Seth Stiles, R.G.
Project Geologist

cc: Mr. Michael R. Verman, Archstone Communities

Attachment

Via Facsimile and U.S. Mail

November 5, 1998

ENVIRONMENTAL
PROTECTION

SECOR
International Incorporated

98 NOV -6 PM 3:13

Mr. Scott Seery
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

TRANSMITTAL OF ANALYTICAL RESULTS FROM THE LIMITED SOIL AND GROUNDWATER INVESTIGATION ASSOCIATED WITH A LEAKING UNDERGROUND STORAGE TANK LOCATED AT 5054 HAVENS PLACE, DUBLIN, CALIFORNIA

Dear Mr. Seery:

SECOR International Incorporated (SECOR) is pleased to submit this letter on behalf of Archstone Communities (Archstone) presenting the results of the limited soil and groundwater investigation (LSI) associated with a leaking underground storage tank (LUST) recently discovered at 5054 Havens Place, in Dublin, California (the subject property). This letter is being presented as a preliminary data transmittal to gain your concurrence that no further subsurface investigation is necessary at the subject property and that Archstone may continue with site development work. A formal closure report will be submitted at a later date. The LSI was conducted pursuant to your October 27, 1998 oral concurrence with the SECOR workplan dated October 26, 1998, as amended based on discussions with you in the field (specifically, elimination of boring location B4 in lieu of moving boring B5 closer to the excavation limit).

The laboratory analytical results for the soil and groundwater samples collected are summarized in the attached tables (Tables 1 and 2) and illustrated in Figure 2. Review of the soil analytical results indicates that only low residual concentrations of diesel-range petroleum hydrocarbons (TPH-d) were detected, ranging between less than 50 milligrams per kilogram (mg/kg) and 130 mg/kg. Of the constituents analyzed in groundwater, TPH-d, TPH-g, benzene, ethylbenzene, and total xylenes were variously detected in the samples. TPH-d was detected in samples B-3 and B-8 at 58,000 and 1,400 micrograms per liter ($\mu\text{g/L}$). While TPH-g was detected in samples B-1, B-2, B-3, and B-8 at concentrations ranging from 3,300 to 7,700 $\mu\text{g/L}$, the laboratory report qualified the chromatographic pattern as a heavier hydrocarbon such as diesel. No primary drinking water standard maximum contaminant level (MCL) under the California Department of Toxic Substances Control currently exists for either TPH-g or TPH-d in groundwater.

Benzene, ethylbenzene, and total xylene were detected in one or more groundwater samples: B-2 and B-8 (benzene), B-8 (ethylbenzene), and B-1 through B-8 (total xylene). None of these analytes occurred above their respective MCL's. In addition, neither MTBE or dissolved lead were not detected at or above the laboratory method reporting limit.

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With regards to the hydraulic regime at the site, groundwater flow direction in the vicinity of the UST excavation trends to the south-southeast at a shallow gradient. Groundwater was encountered at a depth of approximately 17 feet below ground surface during the subsurface investigation.

Based on the LSI soil sample results, the UST removal remedial excavation work completed by Archstone appears to have removed the majority of the source of petroleum hydrocarbons to groundwater (i.e., the UST and impacted soil). Despite the occurrence of TPH-d and TPH-g in groundwater at up gradient and down gradient locations with respect to the former UST excavation, no other analytes were detected at levels above the respective MCL's. As such, on behalf of Archstone, SECOR respectfully requests that you review the attached laboratory analytical results in consideration of site closure and granting a continuance to proceed with site development activities.

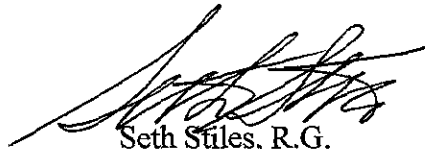
Feel free to contact Howe Gates at (503) 691-2030 or Mark Becker at (650) 691- 0131, extension 31 to discuss these findings.

Sincerely,

SECOR International Incorporated



Mark Becker
Senior Scientist



Seth Stiles, R.G.
Project Geologist

Attachments

cc: Michael Berman, Archstone
Howe Gates, SECOR

Table 1
Summary of Groundwater Analytical Results
for Samples Collected at 5054 Havens Place
in Dublin, California

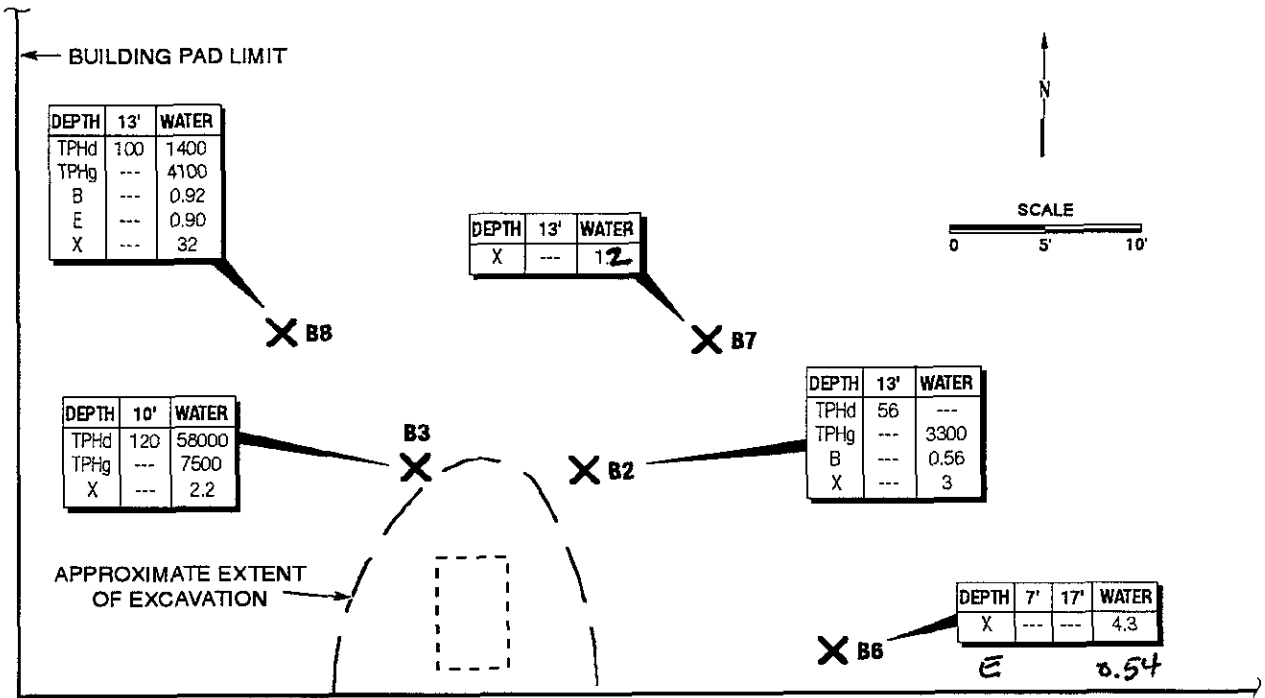
Sample ID	Sample Date	Analytical Results ($\mu\text{g/L}$) ^a							
		TPH-a ^b	TPH-g ^c	MTBE ^d	Dissolved Lead ^e	Benzene ^f	Toluene ^f	Ethylbenzene ^f	Xylene ^f
B-1	10-30-98	no sample	7.700 ^x	<100	<0.015	<10	<10	<10	52
B-2	10-30-98	no sample	3.300 ^x	<5.0	no sample	0.56	<0.50	<0.50	3
B-3	10-28-98	58.000	7.500 ^x	<5.0	<0.015	<0.50	<0.50	<0.50	2.2
B-5	10-28-98	<50	<50	<5.0	<0.015	<0.50	<0.50	<0.50	1.1
B-6	10-28,30-98	<50	<50	<5.0	<0.015	<0.50	<0.50	<0.54	4.3
B-7	10-28-98	<50	<50	<5.0	<0.015	<0.50	<0.50	<0.50	1.1
B-8	10-28-98	1.400	4.100 ^x	<5.0	<0.015	0.92	<0.50	0.90	32
MCL ^g		NE ^h	NE	35 ⁱ	50	1	150	680	1750

- a Laboratory analytical results, reported as micrograms per liter ($\mu\text{g/L}$).
- b Total diesel-range petroleum hydrocarbons, by EPA Method 8015 Modified
- c Total gasoline-range petroleum hydrocarbons, by EPA Method 8015 Modified
- d Methyl tertiary butyl ether, by EPA Method 8020
- e Dissolved lead (i.e., sample was filtered by the laboratory and the filtrate analyzed), by EPA Method 6010
- f BTEX (benzene, toluene, ethylbenzene and xylene), by EPA Method 8020
- g California Department of Toxic Substances Control (DTSC) Primary Drinking Water Standard Maximum Contaminant Level
- h NE = Not established
- i This value is an interim Action Level established by the DTSC
- x Results within quantitation range; chromatographic pattern not typical of fuel

Table 2
Summary of Soil Analytical Results
for Samples Collected at 5054 Havens Place
in Dublin, California

Sample ID	Sample Date	Sample Depth (feet)	TPH-d ^a (mg/Kg) ^b
B1-16	10-28-98	16	120
B2-13	10-28-98	13	56
B3-10	10-28-98	10	120
B5-16	10-28-98	16	130
B6-7	10-28-98	7	<1.0
B6-17	10-28-98	16	<1.0
B7-13	10-28-98	13	<1.0
B8-13	10-28-98	13	100

- a Total diesel-range petroleum hydrocarbons, by EPA Method 8015 Modified
b Laboratory analytical results, reported as milligrams per kilogram (mg/kg).



CHAIN LINK FENCE

HYDROCARBON DATA		
DEPTH	13'	WATER
TPHd	100	120.5
TPHg	---	NA
B	---	---
E	---	---
X	---	---

• TPHd = DIESEL RANGE HYDROCARBONS
 • TPHg = GASOLINE RANGE HYDROCARBONS
 • B = BENZENE
 • E = ETHYLBENZENE
 • X = XYLENE
 • NA = NOT ANALYZED
 • --- = DATA NOT COLLECTED

SOIL RESULTS IN mg/Kg, WATER RESULTS IN µg/L

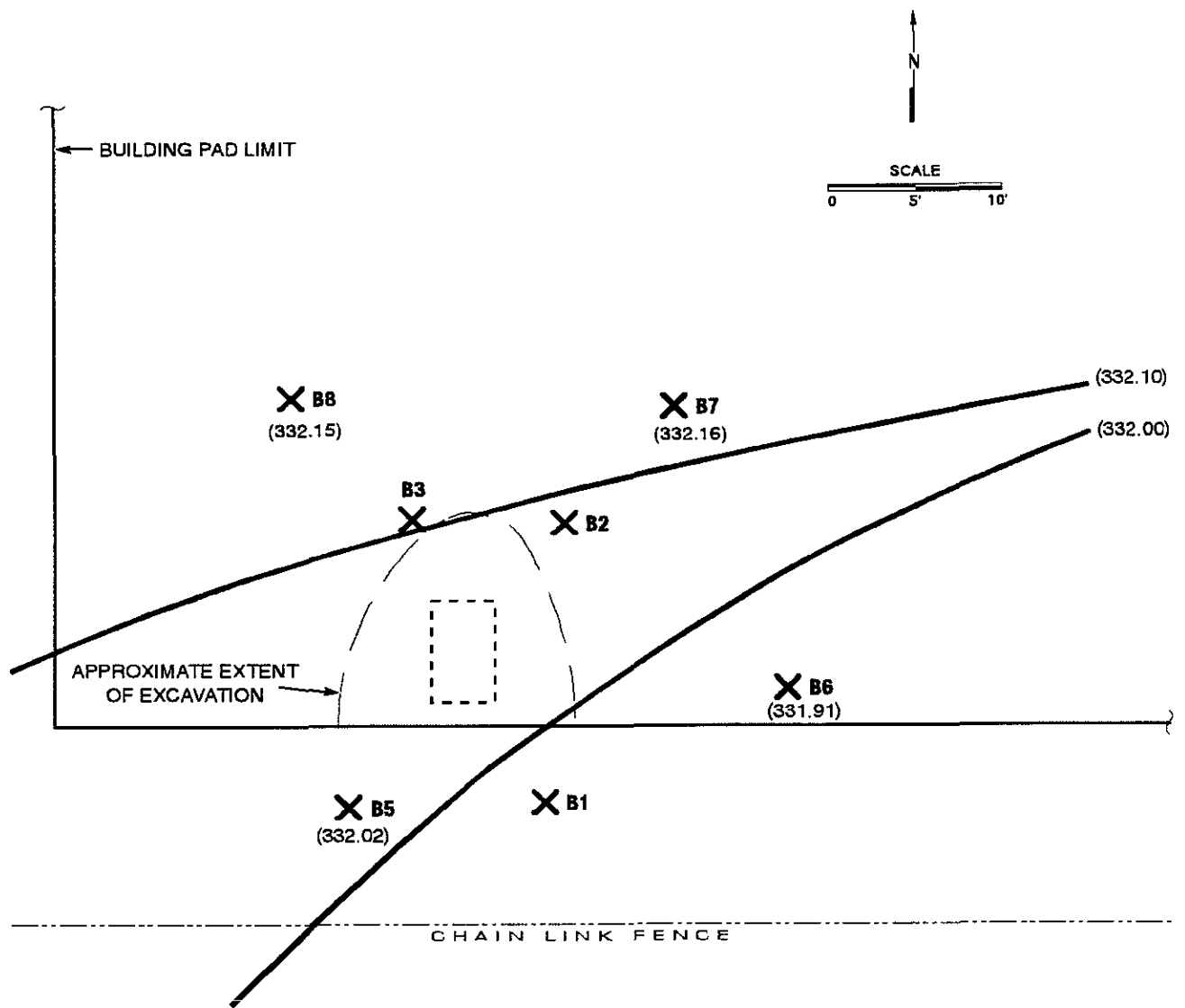
LEGEND

- X B8** GEOPROBE BORING LOCATION
- APPROXIMATE LOCATION OF FORMER UST

DRAFTED BY PEM	CHECKED BY MB	PROJECT NUMBER F0803-041-01
DWG DATE 11/3/98	REV DATE	CLIENT ARCHSTONE COMMUNITIES
FILE NAME ScrARC5054DubInSt2		

FIGURE NUMBER 2
TITLE SITE PLAN WITH COMPOUNDS DETECTED IN SOIL AND GROUNDWATER SAMPLES 5054 HAVENS PLACE DUBLIN, CA

SECOR
1225 Pear Avenue
Suite 110
Mountain View CA
94043



LEGEND

- X B8** GEOPROBE BORING LOCATION
- (332.02)** GROUNDWATER ELEVATION (FT-MSL)
- GROUNDWATER ELEVATION CONTOUR
- APPROXIMATE LOCATION OF FORMER UST

DRAFTED BY PEM	CHECKED BY MB	PROJECT NUMBER F0803-041-01
DWG DATE 11/3/98	REV DATE	CLIENT ARCHSTONE COMMUNITIES
FILE NAME ScrARC5054DubInSt3		

FIGURE NUMBER 3
TITLE GROUNDWATER ELEVATION CONTOUR MAP 5054 HAVENS PLACE DUBLIN, CA

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