L-F
K-C7
4-A

DRAFT

10 W 1)

SITE MANAGEMENT PLAN
8000 SOUTH COLISEUM WAY
Oakland, California

Submitted by:
Science & Engineering Analysis Corporation
(*SEACOR*)

for:

Coliseum Way 8000, Inc.
1411 Harbor Bay Parkway, Suite 2008
Oakland, California

July 6, 1994

Prepared by:

Xiaoxia Zhu
Project Manager

Reviewed by:

PH: (415) 882-1548
Jonathon C. Goldman, P.E.
Principal Civil Engineer
C42165 Expires: 31 March 1996

FAX. 415 882-4406

DRAFT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Site Management Plan
8000 Coliseum Way
July 6, 1994

DRAFT

EXECUTIVE SUMMARY

This is a management plan for a site in Oakland, California affected by small volumes of a potentially hazardous tar-like substance. The tar-like substance is commingled with fill materials used historically to raise the grade at the site. The tar-like substance was encountered randomly in fill soil located in the northeastern portion of the Site. Conditions onsite are consistent with those occurring in the Project Area with respect to the presence of tar or similar materials in imported fill materials. The chemicals of primary concern, the metal lead, and the organic semi-volatiles phenanthrene, pyrene and naphthalene, have not affected the Bay Mud underlying locations onsite where the tar-like substance is present in the fill. Similarly, shallow groundwater downgradient has not been affected by chemicals of concern from the tar-like substance. In addition, shallow groundwater at properties in the Project Area with similar fill characteristics and elevated lead concentrations in soil has not been affected by those conditions. The primary pathway of potential human or environmental exposure to hazardous materials is through direct contact. This condition is of short-term concern for workers and the community during demolition and construction activities to take place as the Site is developed as a parking lot.

Given the random occurrence of a small volume of the tar-like substance in a large volume of fill materials, and the planned development and maintenance of the Site as a parking lot, excavation and disposal is not an economically feasible alternative remedial action. Development and maintenance of the Site as a parking lot **will not** disturb the tar-like substance as it occurs and **will** provide a continuing barrier to human and environmental contact with the substance. Therefore, the following actions will provide an effective remedy for the presence of the tar-like substance onsite:

(1) development and maintenance of the Site as a parking lot,
(2) appropriate worker and community health and safety plans to be put into effect immediately and during any subsequent onsite construction,
(3) appropriate limitations on excavation in areas where the fill includes the tar-like substance, and
(4) a deed notice providing for future notice of Site conditions and precautions.

1.0 INTRODUCTION

This is a management plan for a site in Oakland, California affected by small volumes of a potentially hazardous tar-like substance. The tar-like substance is commingled with fill materials used historically to raise the grade at the site. The plan includes a description of the procedures used for and the results of: (1) identification and characterization of potentially hazardous components of the substance, (2) evaluation of its extent onsite and in the vicinity, and (3) assessment of the fate and mobility of the potentially hazardous constituents identified. The plan also includes preliminary assessment of the public health and environmental risks associated with the conditions identified, and conclusions regarding the feasibility of management of the substance.

1.1 Project Area and Site Location and Description

The Site is located at 8000 South Coliseum Way in Oakland, California and consists of an approximately 8.5 acre triangularly-shaped parcel of continuous real property. The Site is currently occupied by the Malibu Grand Prix and Fun Center. The Site is bounded by South Coliseum Way to the southwest, Elmhurst Creek and the Oakland-Alameda County Coliseum Complex (the Coliseum) to the northwest, and commercial properties (625-675 Hegenberger Road) to the east. The vicinity of the Site within an approximate radius of 1 mile constitutes the Project Area for purposes of this plan.

1.2 Background

The Site is of interest to the Coliseum for use as a parking lot. The Coliseum and Coliseum Way 8000, Inc. (the present owner of the Site) are in contract for transfer of ownership. During the course of due diligence for its acquisition by the Coliseum's consultant, a tar-like substance was noted on the ground surface in certain portions of the Site. Limited sampling and laboratory analysis of the tar-like substance was performed. Certain constituents of the tar-like substance, specifically phenanthrene, naphthalene, pyrene and the metal lead were detected at elevated concentrations. On the basis of a preliminary conversation with Dr. Ravi Arulanantham (at that time a Toxicologist with the Alameda County Department of Environmental Health, now employed by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB)), the following general criteria for evaluating the presence of the substance onsite were identified:

(1) characterization of the lateral and vertical extent of the substance onsite,
(2) evaluation of historic Site land uses to assess whether the substance was released as a result of Site activities,
(3) evaluation of available information regarding similar properties in the Project Area to determine whether the substance is or appears to be a regional characteristic,

(4) evaluation of the mobility of identified hazardous constituents in environmental media (soil, soil gas, groundwater, surface water, and air), and investigation of shallow groundwater quality downgradient of soils affected by the substance, and

(5) evaluation of the potential public health and environmental risks associated with the conditions identified.

1.3 Objective

Acquisition of the Site by the Coliseum for use as a parking lot is contingent on the technical and regulatory feasibility of managing the substance in place. Therefore, this document summarizes the information developed subject to the criteria listed above for the purpose of evaluating the feasibility of implementing a plan for management of the substance in place.

1.4 Development and Maintenance Plans

Assuming that appropriate approvals can be acquired for management of the tar-like substance onsite, the Coliseum is committed to careful demolition of the existing structures and development and maintenance of the Site as a parking lot. The existing Site topography will allow for no excavation in the areas of the Site where the tar-like substance has been encountered as discussed below.

2.0 SUMMARY OF AVAILABLE INFORMATION

Available information was reviewed from: (1) regulatory agency files, (2) historical aerial photography archives, and (3) reports prepared by others to establish the context for evaluation of Site conditions.

2.1 Historical Aerial Photographs

The following available historical aerial photographs of the Project Area were reviewed at Pacific Aerial Surveys in Oakland, California:

Flight Line No. (Negative No.)	Date Photographed
AV 253 (11-35 and 11-36)	May 4, 1957
AV 337 (07-38 and 07-39)	July 7, 1959
AV 550 (09-23 and 09-24)	July 25, 1963
AV 710 (10-30 and 10-31)	April 20, 1966
AV 858 (03-33 and 03-34)	July 2, 1968

Flight Line No. (Negative No.)	Date Photographed
AV 902 (06-29 and 06-30)	May 2, 1969
AV 995 (04-28 and 04-29)	May 19, 1971
AV 1100 (06-31 and 06-32)	April 24, 1973
AV 1193 (06-27 and 06-28)	May 19, 1975
AV 1235 (04-07 and 04-08)	March 9, 1976
AV 1377 (06-30 and 06-31)	July 19, 1977
AV 1750 (06-30)	September 14, 1979
AV 2040 (06-30 and 06-31)	June 22, 1981
AV 2640 (06-31 and 06-32)	May 15, 1985
AV 2655 (05-18 and 05-19)	June 9, 1985
AV 3268 (06-32 and 06-33)	March 30, 1988
AV 3292 (05-09 and 05-10)	May 3, 1988
AV 3817 (03-08 and 03-09)	April 30, 1990
AV 3845 (11-38 and 11-39)	June 12, 1990

On the basis of the aerial photographs reviewed, it is clear that the Site and the Project Area were historically filled (*i.e.*. soil and other non-biodegradable debris was deposited in low-lying areas to raise the ground surface) in a series of stages. Initial filling of the Site apparently occurred prior to 1960. A review of aerial photographs was cited in the report, *"Phase I Environmental Site Assessment, Malibu Grand Prix Site, 8000 S. Coliseum Way, Oakland, California"* (Woodward-Clyde Consultants (WCC), March 1994). WCC reported that Site filling began in 1959 (WCC, March 1994).

2.2 Regulatory Agency Files and Other Reports

Leaking Underground Storage Tank (LUST) and North Bay Toxic (NBT) files were reviewed at the RWQCB on June 21, 1994 regarding properties in the vicinity of the Site vicinity (the Project Area). Files were reviewed regarding properties reported within a 1-mile radius of the Site in *"Phase I Environmental Site Assessment, Malibu Grand Prix Site, 8000 S. Coliseum Way, Oakland, California"* (WCC, March 1994). The purpose of the file review was to compare the characteristics of properties in the vicinity of the Site with respect to imported fill and the possible presence of tar-like substance similar to that found onsite. The following summaries of selected files describe available information

including proximity to the Site, hazardous materials history, shallow subsurface conditions, and chemical type and concentration in soils and groundwater. A summary of the information derived from all of the files reviewed is included in Appendix A. The files summarized below were selected on the basis of the presence of lead as a chemical of concern at the subject properties.

Fundamentally, the properties within the Project Area with similar natural elevation characteristics all appear to have been filled at approximately the same times and with similar materials (brown colored sands and gravels intermixed with small volumes of miscellaneous debris including asphalt, wood, bricks, *etc.*). Regulatory agency files exist primarily for properties with existing or former USTs. Therefore the testing results are most often petroleum-related rather than being focused on the constituents of the tar-like substance. Nonetheless, elevated lead concentrations have been reported in soil samples from five of the properties, four of which are to the east (upgradient) of the Site.

II. Alameda County Flood Control Canal, Elmhurst Creek, Oakland.

The Alameda County Elmhurst Creek Flood Control Canal at Elmhurst Business Park is located approximately 1/4-mile northeast of the Site at the intersection of 85th Avenue and San Leandro Street. WCC (March 1994) states that the canal is utilized for storm water drainage. The canal drains west to the San Leandro Bay and is adjacent to the north Site boundary. Infomation contained in the RWQCB NBT file indicates that elevated lead and TPH as motor oil (TPHmo) were detected in canal soils in September 1988 at concentrations ranging from 3.4 to 359 mg/kg and 1,500 mg/kg, respectively. Soil containing lead and TPHmo was subsequently removed from the canal at this location. No other information was contained in this file.

III. ARCO, 566 Hegenberger Road, Oakland.

ARCO Service Station Number 4494 is located approximately 1/4-mile southeast of the Site. Information contained in the RWQCB LUST file indicates that one waste oil UST was removed from the property in 1989. The removed UST was reportedly in good condition and there was no evidence of a product leak, but soil in the UST excavation had a strong product odor. Analytical results of soil samples collected from seven feet below ground surface (bgs) revealed concentrations of 4,500 mg/kg total oil and grease (TOG), 4,800 mg/kg high boiling point hydrocarbons as oil (HBPHoil), and 370 mg/kg HBPH as diesel (HBPHd). No odor was reportedly detected in soil samples collected from 10 feet bgs in the UST excavation.

Samples of imported fill soils were collected from depths of five, ten, and twenty feet bgs in the vicinity of the former waste oil UST in 1990. Analytical results included elevated lead at five, ten, and twenty feet bgs at concentrations ranging from 19.9 to 179 mg/kg, less than 1 to 88 mg/kg, and

less than 1 to 94 mg/kg, respectively. A record search was reportedly perfomed in 1990 to identify the source of fill at the property, but the effort was apparently unsuccessful.

An UST replacement assessment was perfomed at the property in May 1991. The resulting report states that "...heterogeneous fill..." at the property ranges in depth from two to eleven feet bgs and native clay was encountered at depths ranging from five to eleven feet bgs. Soil boring logs contained in the report describe black, silty clay fill at the property that contains, "...concrete, asphalt, glass and metallic slag from an undetermined source, and a noticeable odor even at a depth of one foot bgs." Soil samples from depths of five feet were collected in several locations near the station building and subsequently analyzed. Analytical results indicated TOG concentrations ranging from 280 to 570 mg/kg. TPHg and TPHd were not detected in these soil samples. The report concluded that, "...artificial fill of the former drainage ditch that crossed the site prior to development may be a potential source of the TOG encountered."

WCC (March 1994) states that, "A black hydrocarbon material seeped out of an old storm drain pipe (no longer in use) from off-site, during tank removal. It was not investigated, but a slurry wall was installed. Soils and groundwater are contaminated, but most of contamination appears to be localized." B. Chan, Alameda County Department of Environmental Health (ACDEH) Hazardous Material Officer, was quoted as writing in the reviewed file, "Potentially, one of the more contaminated sites in the area" (WCC March 1994).

XIII. Dwyr Construction, 8401 Baldwin Street, Oakland.

Dwyr Construction is located between 1/4 and 1/2-mile southeast of the Site. Information contained in the RWQCB LUST file documented the removal of one 1,000-gallon leaded gasoline UST from the property in 1989. Soil sample analyses detected TPHg concentrations ranging to 7.6 mg/kg. Benzene and toluene were not detected in the soil samples tested. Ethylbenzene and xylenes concentrations in soil ranged to 0.014 and 0.022 mg/kg, respectively. Analysis of groundwater samples detected TPHg, and BTEX at 63, 2.4, 5.1, 1.4, and 12 mg/l, respectively. One analysis for total lead was perfomed on a soil sample collected from 15 feet bgs. The total lead concentration detected in this sample was 39 mg/kg. The soil sample report suggests that the lead was probably generated from a source other than the UST, since it only appeared in one soil boring and was not detected in groundwater. Property fill was described to depths of 10 feet bgs as a clayey silt, and did not exhibit odor.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XXI. PG&E, 4930 Coliseum Way, Oakland.

The PG&E property is located approximately 1/8-mile west of the Site. Information contained in the RWQCB NBT file is related to lead concentrations in property soils. Laboratory analysis of soil samples from the property detected lead at concentrations up to 3,287 mg/kg. Lead was not detected in samples of groundwater from beneath the property. A former aboveground gas tank was installed on the property in 1939. Lead-containing paint on the gas tank is the reported source of elevated lead concentrations in property soil. Property fill is described as a seven inch thick layer of coarse gravel. Seven groundwater monitoring wells are located on the property. No soil boring logs or soil descriptions were documented in the file. A file review summary for this property was not performed by WCC.

qualitatively

3.0 SITE AND SUBSTANCE CHARACTERIZATION

3.1 Soil and Substance Sampling

Between April 5 and April 8, 1994, a total of thirty shallow continuously-cored soil borings (SB-1 to SB-30) were advanced to a maximum depth of 14 feet below ground surface (bgs) at the locations shown on Figure 2. Soil boring locations were selected with the intent to characterize the lateral and vertical extent of the tar-like substance in soil at the Site above the Bay Mud layer underlying the imported fill. The soil cores were collected using a small-diameter split spoon sampler advanced by a hydraulically-driven hammer. Logs for each boring are presented in Appendix B. Each soil sample core was visually inspected and screened in the field for the presence of volatile organic compounds (VOC's) using a Thermo-Analytic Organic Vapor Meter (OVM) photoionization detector (PID) calibrated to isobutylene. As indicated on the boring logs, PID readings for soil samples ranged from not detected to the 4,500 parts per million (ppm). The logs also identify the soils encountered as classified using the Unified Soil Classification System, and note the presence of non-soil inclusions (*e.g.*, tar, asphalt, bricks, *etc.*) where encountered. In addition, the boring logs note the presence of hydrocarbon or other distinct odors.

In conformance with the permits received for their installation from Alameda County Zone 7, each soil boring was backfilled to the surface with cement grout following collection of the core. A copy of the permit for boring installation is Appendix C to this Plan.

Two samples of the tar-like substance were collected previously onsite by WCC and analyzed. The results of these analyses are discussed below. The results of analysis of samples of soil and

groundwater sample from properties with similar fill characteristics identified in the Project Area are also discussed below.

3.2 Groundwater Sampling

Monitoring of shallow groundwater onsite is performed in conformance with Alameda County Department of Environmental Health requirements regarding release(s) associated with underground storage tanks operated by Malibu Grand Prix. Sampling of three of these shallow groundwater monitoring wells (Wells MW-2, MW-3, and MW-10) located along the downgradient boundary of the Site was conducted on February 11, 1994 by the Coliseum's consultant (WCC, March 1994). In addition, the results of groundwater monitoring performed at properties in the Project Area were reviewed to augment information available from groundwater onsite.

3.3 Shallow Site Lithology and Extent of Tar-Like Substance

By inspection of the borings logs in Appendix B, the thickness of fill materials overlying the Bay Mud onsite ranges from less than three to more than ten feet. In general, the thickness of the fill increases from northeast to west and southwest. In addition to the small volumes of tar-like substance encountered at random depths in the northeastern portion of the Site, the fill materials logged in the soil cores collected include gray and brown sands and gravels, wood chips, asphalt, cardboard, and other debris. The fill is underlain at each soil boring location onsite by green and gray organic clay Bay Mud.

The tar-like substance was encountered randomly throughout the northeastern portion of the Site. The tar-like substance was logged specifically in borings no. SB-5, SB-6, SB-11, SB-12, SB-13, SB-15, and SB-22 in limited quantities. On this basis it is estimated that perhaps 2 percent of the volume of fill onsite consists of the tar-like substance. The substance has been encountered at the ground surface onsite only in an area of approximately 3 square feet in the vicinity of soil borings SB-6 and SB-13.

3.4 Shallow Groundwater Conditions

Shallow groundwater onsite generally occurs at depths of between 6 and 11 feet below ground surface ("*Groundwater Monitoring Report, Fourth Quarter 1993, Malibu Grand Prix, 8000 South Coliseum Way, Oakland, California,*" RESNA, March 1994). These depths correspond with water surface elevations near mean sea level and are consistent with the reported tidal influence on water levels (RESNA, March 1994). These depths are also generally consistent with those measured in shallow groundwater monitoring wells in the Project Area. Despite the tidal influence, the aggregate direction

of the shallow groundwater hydraulic gradient onsite and in the Project is from the east to the west with local variations in direction toward or away from tidally-influenced surface water channels.

3.5 Analytical Results

Soil and Substance

Five samples selected from cores SB-22, SB-15, and SB-6 were submitted with a completed chain-of-custody record to Superior Precision Analytical, Inc., a state-certified hazardous waste analysis laboratory. Samples of the substance and of soils immediately beneath were selected for analysis to: (1) confirm the reported elevated concentrations of hazardous constituents of the substance (WCC, March 1994), and (2) evaluate whether those constituents affected underlying native soils. The soil samples were selected because of the presence of tar-like substance at those locations. The substance and soil samples selected were analyzed by EPA Method 6010 for total lead by atomic absorption (AA), and semi-volatile organic chemicals by EPA Method 8270 by gas chromatography and mass spectroscopy (GC/MS). The analytical results are summarized in Table 1 and the laboratory analytical reports are included in Appendix D. Note that (1) the soil and substance samples were collected using a technique which could have reduced the concentrations of any semi-volatile chemicals present by exposure to the atmosphere, and (2) in some instances the samples were held well beyond the holding times established for the analysis methods.

Total lead was detected at a reported concentration of 22,000 milligrams per kilogram (mg/kg) (a concentration of 2.2 percent by weight) in substance sample SB-22-6 (logged as "tar-like substance", refer to Appendix B), and 11 mg/kg in soil sample SB-22-10 (logged as gray green clay -- Bay Mud), collected from four feet underneath sample SB-22-6. Total lead was detected in substance-containing sample SB-6-1 (logged as sand with a "tar odor") and in soil sample SB-6-4.5 (logged as gray clay -- Bay Mud) at respective concentrations of 5,800 mg/kg (0.6 percent by weight) and 57 mg/kg. In sample SB-15-12 (logged as gray green clay -- Bay Mud), a total lead concentration of 7 mg/kg was detected. Soil sample SB-15-12 underlies by four feet soils logged as sandy clay with "tar-like substance mixed with wood chips." It is unlikely that either the sample collection technique or the holding time significantly affected the total lead results.

These lead results are consistent with previous laboratory analyses of samples of the tar-like substance reported by WCC. Two samples of the substance collected from the ground surface in the vicinity of soil borings SB-6 and SB-13 were analyzed and total lead concentrations of 5,710 mg/kg (0.6 percent by weight) and 11,000 mg/kg (1.1 percent by weight) were detected (WCC, March 1994).

WCC also reported the detection of naphthalene, phenanthrene and pyrene at concentrations ranging from 770 mg/kg to 990 mg/kg in the two substance samples collected (WCC, March 1994). No semi-volatile organic chemicals were detected at concentrations above the reported detection limits in the soil and substance samples collected by ***SEACOR*** and analyzed. Note however that (as indicated in part in Appendix D) significant matrix interference from heavy hydrocarbons was noted in analysis of the apparently substance-affected samples (SB-22-6 and SB-6-1). Percent concentrations (more than 30 percent by weight) of oil and grease were reported in the substance samples collected previously (WCC, March 1994). Taking into account the unusual technique of sample collection employed, balanced against the high Method 8270 detection limits for the substance samples resulting from matrix interference effects, it is possible that concentrations of semi-volatile compounds equal to those reported by WCC may have been present in the substance samples at the time they were collected. Were elevated concentrations of these semi-volatile compounds to have been present in the soil samples collected by ***SEACOR***, it is unlikely that the sample handling and storage procedures employed would have reduced them to below the low (0.3 to 3 mg/kg) detection limits achieved in the EPA Method 8270 analyses performed (*see* Appendix D). Further, as discussed below, no EPA Method 8270 compounds were detected in the shallow groundwater samples analyzed (WCC, March 1994).

Clearly the presence of elevated lead concentrations in the tar-like substance is of potential public health and environmental health concern. The fact that the substance appears to have been in place since the late 1950's or early 1960's and yet manifests such elevated lead concentrations in the absence of having affected underlying soil indicates that the lead is not particularly mobile in the soil- and aqueous environment which exists at the Site and in the Project Area. This conclusion is supported by the groundwater analytical results discussed below. Therefore, given the tar-like characteristic of the substance and its resulting lack of aerosol mobility, the exposure pathway of most significant potential concern would be that of direct contact.

Groundwater

Groundwater samples were collected for purposes of evaluating the potential impact of the tar-like substance from three existing shallow monitoring wells (MW-2, MW-3, and MW-10) aligned (as indicated on Figure 2) along the downgradient boundary of the Site. These well locations are considered representative of shallow groundwater under the chemical influence (if any) of the fill materials (WCC, March 1994, Appendix B). Shallow groundwater monitoring wells MW-2, MW-3, and MW-10 are tested quarterly in compliance with ACDEH requirements because of the former use of USTs onsite by Malibu Grand Prix. Shallow groundwater samples from these (and other onsite) monitoring wells are analyzed by EPA Method 5030/8015/602 for total purgeable petroleum hydrocarbons as gasoline (TPHg) with benzene, toluene, ethylbenzene, and xylenes (BTEX)

distinction by GC (RESNA, March 1994). Historical analytical results for samples from those wells indicate low levels of impact from the USTs (*e.g.*, toluene, ethylbenzene and xylenes in samples from MW-2 at concentrations less than 2 micrograms per liter (µg/ℓ or parts per billion); BTEX and TPHg in samples from MW-3 at concentrations of less than 10 µg/ℓ (BTEX) and 111 µg/ℓ (TPHg); and BTEX and TPHg in samples from MW-10 at concentrations less than 25 µg/ℓ (BTEX) and 1000 µg/ℓ (TPHg) (RESNA, March 1994).

The groundwater samples collected by WCC were analyzed using EPA 8240 (volatile organics by GC/MS), 8270, 8080 (organochlorine pesticides and PCBs by GC), 6010 and 7000 (inductively-coupled argon plasma (ICAP) series methods by Anametrix, Inc., a state-certified hazardous waste analysis laboratory (WCC, March 1994). These groundwater analyses did not detect any volatile organic, semi-volatile organic, lead, pesticides or PCBs at concentrations above the respective method detection limits (WCC, March 1994). The analytical results of these groundwater samples are presented in Appendix E.

No lead is reported as having been detected in the groundwater samples from properties with fill characteristics similar to those of the Site in the Project Area, including those where elevated lead has been reported in soil sample results both upgradient and downgradient of the Site. It is concluded on the basis of the information available that none of the potentially hazardous constituents of the tar-like substance identified have affected shallow groundwater onsite, and that the elevated lead concentrations measured in samples of soils collected at similar properties in the Project Area have not affected shallow groundwater regionally

4.0 CONCLUSIONS

Using the criteria provided by Dr. Arulanantham, and those generally applied in similar situations under the National Oil and Hazardous Substances Contingency Plan (NCP), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)[1], the California Bond

[1] *see Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, EPA 540/G-89/004 October 1988; *The Superfund Public Health Evaluation Manual*, EPA 540/1-86-060 October 1986; and *Risk Assessment Guidance for Superfund*, EPA 540/1-90/002, 1989.

Expenditure Plan,[2,3] federal and state Occupational Safety and Health Administration criteria,[4] and applicable RWQCB guidance [citation], the following key conclusions are made:

- The tar-like substance present at the Site was likely imported with fill material in phases of construction activity which took place between 1955 and 1975. Development of the Malibu Grand Prix and Fun Park facilities has been the only apparent historic use of the Site (*see* Section 2.1).

- The tar-like substance was encountered randomly in small volumes of fill soil located in the northeastern portion of the Site (*see* Section 3.3).

- Site conditions are consistent with those occurring in the Project Area with respect to the presence of tar or similar materials in imported fill materials (*see* Section 2.2).

- The chemicals of primary concern, the metal lead, and the organic semi-volatiles phenanthrene, pyrene and naphthalene, have not affected the Bay Mud underlying locations onsite where the tar-like substance is present in the fill (*see* Section 3.5).

- Shallow groundwater downgradient has not been affected by chemicals of concern from the tar-like substance (*see* Section 3.5). In addition, shallow groundwater at properties in the Project Area with similar fill characteristics and elevated lead concentrations in soil has not been affected by those conditions (*see* Section 3.5).

- The primary pathway of potential human or environmental exposure to hazardous materials is through direct contact (*see* Section 3.5). This condition is of short-term concern for workers and the community during demolition and construction activities to take place as the Site is developed as a parking lot.

- Given the random occurrence of a small volume of the tar-like substance in a large volume of fill materials, and the planned development and maintenance of the Site as

---

[2] *see Scientific and Technical Standards for Hazardous Waste Sites*, California Department of health Services, 1990.

[3] *see The California Site Mitigation Decision Tree Manual*, California Department of Health Services, 1986.

[4] *see* 29 CFR 1910, for example.

a parking lot, excavation and disposal is not an economically feasible alternative remedial action.

- Development and maintenance of the Site as a parking lot **will not** disturb the tar-like substance as it occurs and **will** provide a continuing barrier to human and environmental contact with the substance.

Therefore, consistent with the applicable criteria identified, the following actions will provide an effective remedy for the presence of the tar-like substance onsite:

(1) development and maintenance of the Site as a parking lot,
(2) appropriate worker and community health and safety plans to be put into effect immediately and during any subsequent onsite construction,
(3) appropriate limitations on excavation in areas where the fill includes the tar-like substance, and
(4) a deed notice providing for future notice of Site conditions and precautions.
(5) Regular inspections of asphalt lot particularly over areas of known tar expression

DRAFT

TABLE 1

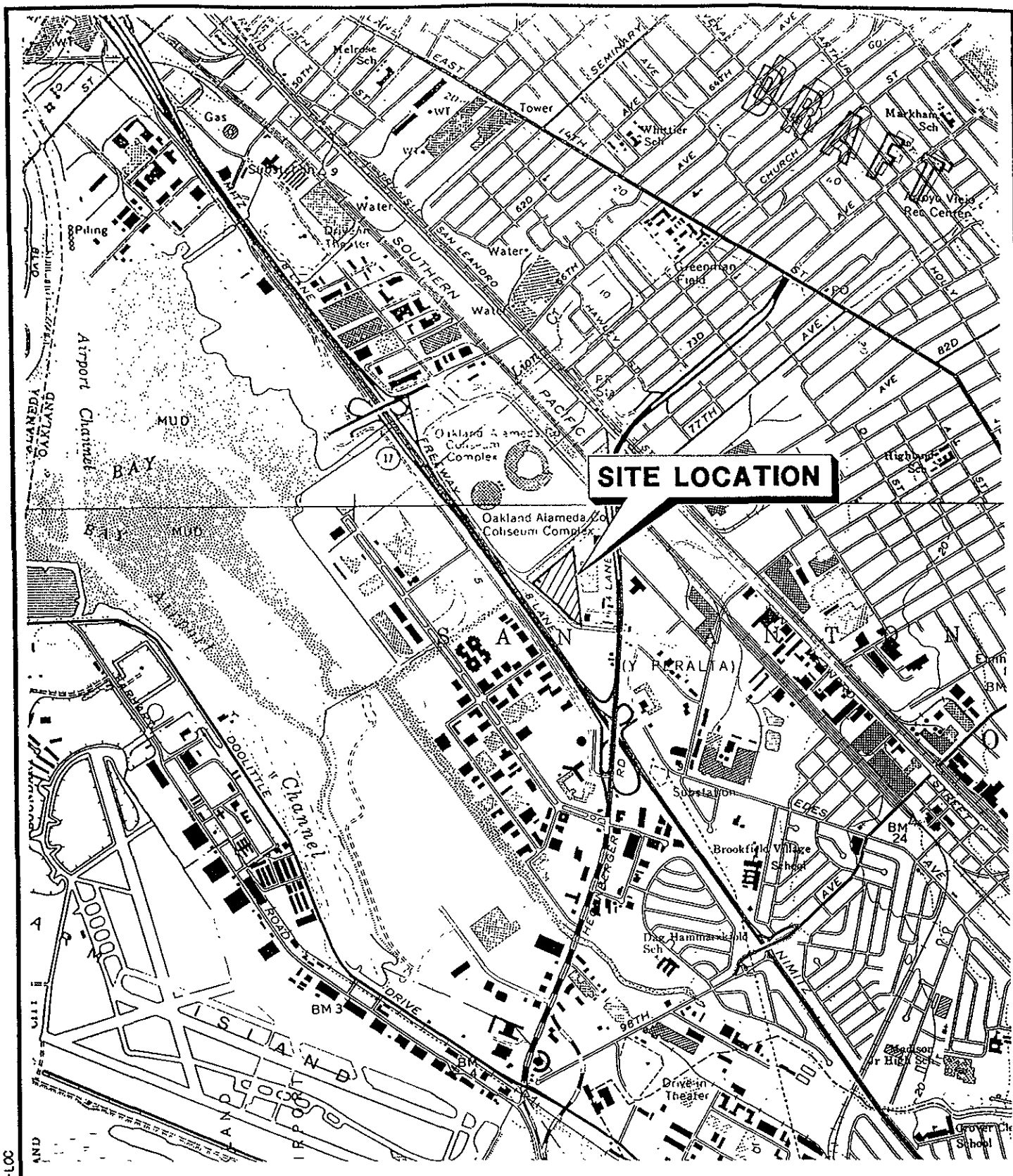
SUMMARY OF ANALYTICAL RESULTS FOR SOIL SAMPLES

8000 S. Coliseum Way, Oakland, California

Sample I.D.	Soil Boring Location	Depth Below Ground Surface (feet)	Total Lead EPA 6010 (mg/kg)	Semi-Volatiles EAP 8270
SB-22-6	SB-22	6	22,000	ND
SB-22-10	SB-22	10	11	ND
SB-15-12	SB-15	12	7	ND
SB-6-1	SB-6	1	5,800	ND
SB-6-4.5	SB-6	4.5	57	ND

Notes: (1) Laboratory Analytical Reports are Appendix A to this document

(2) ND = Not-Detected



SOURCE: BASE MAP FROM U.S.G.S. SAN LEANDRO AND OAKLAND, EAST CA QUADRANGLES. 7.5 MINUTE SERIES TOPOGRAPHIC. PHOTOREVISED 1980.

NORTH

0 2000 4000

SCALE FEET

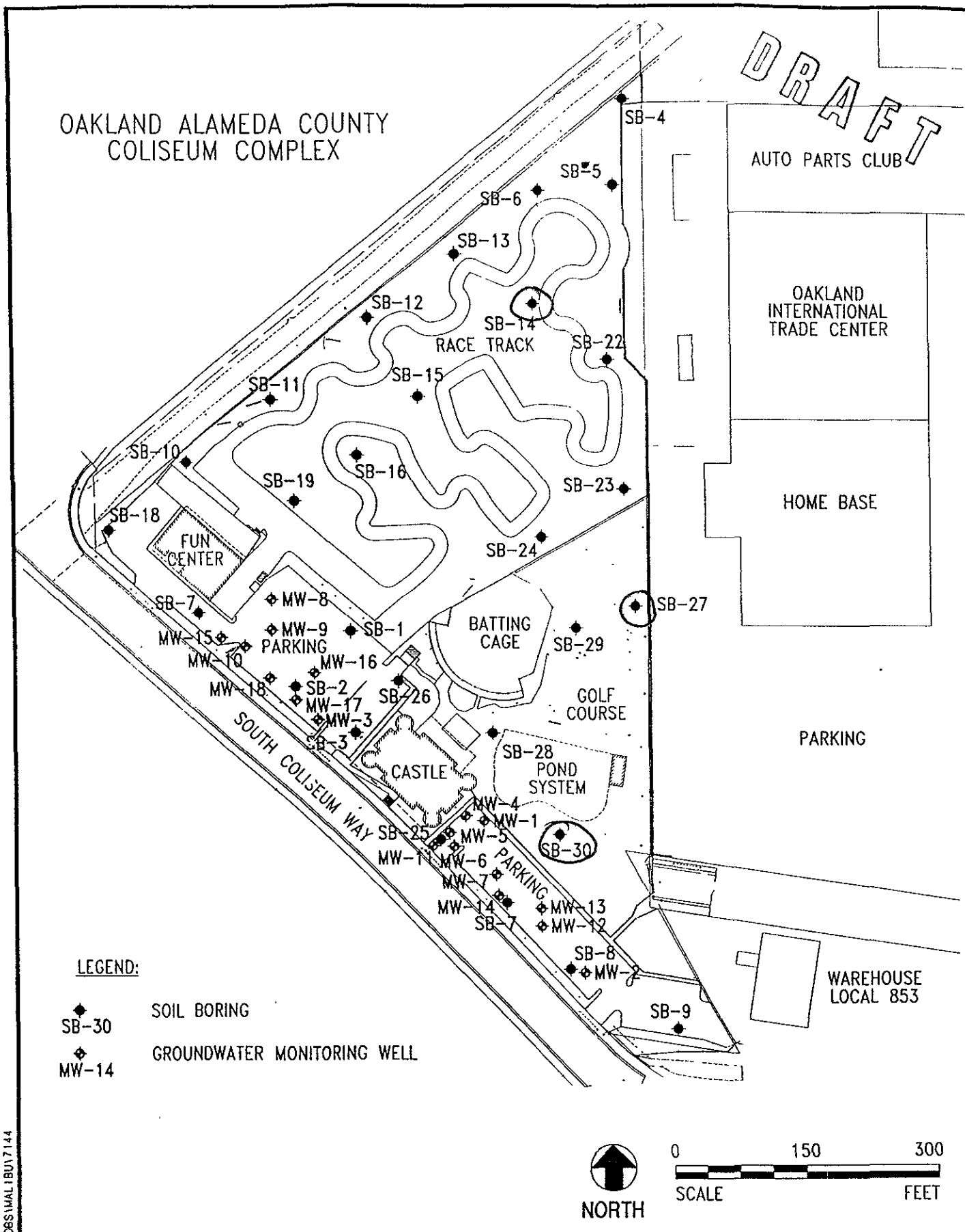
SEACOR
ENVIRONMENTAL ENGINEERING

DRAWN	CCR
APPR	JG
DATE	30JUN94
JOB NO.	50102-001-02

FIGURE 1
MALIBU GRAND PRIX
8000 SOUTH COLISEUM WAY
OAKLAND, CALIFORNIA

SITE LOCATION MAP

\JOBS\MALIBU\SITE-LOC
193406.301347



SEACOR ENVIRONMENTAL ENGINEERING	DRAWN CCR APPR JG DATE 23JUN94 JOB NO. 50102-001-02

FIGURE 2
MALIBU GRAND PRIX
8000 SOUTH COLISEUM WAY
OAKLAND, CALIFORNIA

SOIL BORING AND GROUNDWATER MONITORING WELL LOCATIONS

199406.231459 C:\JOBS\MALIBU\7144

APPENDIX A
SUMMARY OF AVAILABLE INFORMATION REGARDING NEIGHBORING PROPERTIES

I. Oakland International Trade, 625 Hegenberger Road, Oakland.

Oakland International Trade is located approximately 1/4-mile northeast of the Site. No information regarding this property was contained in the RWQCB LUST file. WCC (March 1994) states that three underground storage tanks (UST's) and one sump were abandoned at this property for an undetermined amount of time. An assessment of the property was conducted in 1988 and included the installation of monitoring wells and 23 soil borings. WCC states that groundwater sampled from beneath this property in December 1993 contained total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd), and benzene, toluene, ethylbenzene, and xylenes (BTEX). Lead was not detected in samples of groundwater collected on this property. Free petroleum product was observed in one soil boring.

II. Alameda County Flood Control Canal, Elmhurst Creek, Oakland.

The Alameda County Elmhurst Creek Flood Control Canal at Elmhurst Business Park is located approximately 1/4-mile northeast of the Site at the intersection of 85th Avenue and San Leandro Street. WCC (March 1994) states that the canal is utilized for storm water drainage. The canal drains west to the San Leandro Bay and is adjacent to the north Site boundary. Information contained in the RWQCB NBT file indicates that elevated lead and TPH as motor oil (TPHmo) were detected in canal soils in September 1988 at concentrations ranging from 3.4 to 359 mg/kg and 1,500 mg/kg, respectively. Soil containing lead and TPHmo was subsequently removed from the canal at this location. No other information was contained in this file.

III. ARCO, 566 Hegenberger Road, Oakland.

ARCO Service Station Number 4494 is located approximately 1/4-mile southeast of the Site. Information contained in the RWQCB LUST file indicates that one waste oil UST was removed from the property in 1989. The removed UST was reportedly in good condition and there was no evidence of a product leak, but soil in the UST excavation had a strong product odor. Analytical results of soil samples collected from seven feet below ground surface (bgs) revealed concentrations of 4,500 mg/kg total oil and grease (TOG), 4,800 mg/kg high boiling point hydrocarbons as oil (HBPHoil), and 370 mg/kg HBPH as diesel (HBPHd). No odor was reportedly detected in soil samples collected from 10 feet bgs in the UST excavation.

Samples of imported fill soils were collected from depths of five, ten, and twenty feet bgs in the vicinity of the former waste oil UST in 1990. Analytical results included elevated lead at five, ten, and twenty feet bgs at concentrations ranging from 19.9 to 179 mg/kg, less than 1 to 88 mg/kg, and less than 1 to 94 mg/kg, respectively. A record search was reportedly perfomed in 1990 to identify the source of fill at the property, but the effort was apparently unsuccessful.

An UST replacement assessment was perfomed at the property in May 1991. The resulting report states that "...heterogeneous fill..." at the property ranges in depth from two to eleven feet bgs and native clay was encountered at depths ranging from five to eleven feet bgs. Soil boring logs contained in the report describe black, silty clay fill at the property that contains, "...concrete, asphalt, glass and metallic slag from an undetermined source, and a noticeable odor even at a depth of one foot bgs." Soil samples from depths of five feet were collected in several locations near the station building and subsequently analyzed. Analytical results indicated TOG concentrations ranging from 280 to 570 mg/kg. TPHg and TPHd were not detected in these soil samples. The report concluded that, "...artificial fill of the former drainage ditch that crossed the site prior to development may be a potential source of the TOG encountered."

WCC (March 1994) states that, "A black hydrocarbon material seeped out of an old storm drain pipe (no longer in use) from off-site, during tank removal. It was not investigated, but a slurry wall was installed. Soils and groundwater are contaminated, but most of contamination appears to be localized." B. Chan, Alameda County Department of Environmental Health (ACDEH) Hazardous Material Officer, was quoted as writing in the reviewed file, "Potentially, one of the more contaminated sites in the area" (WCC March 1994).

IV. Aero Quality Plating, 710 73rd Avenue, Oakland.

The former Aero Quality Plating property is located approximately 1/4 to 1/2-mile north of the Site. Information contained in the RWQCB NBT file indicates a plating facility operated at this location from 1958 until 1985 when it was abandoned. Soil was removed from the property in 1981, but removal procedures were not documented. The United States Environmental Protection Agency (EPA) and the National Coast Guard (NCG) perfomed a preliminary site assessment of the property and determined that heavy metals, acids, caustics, and sludges were spilled and improperly stored at the facility, and had the potential to leak into Arroyo Viejo Creek. ACDEH removed the hazardous materials from the facility and installed monitoring wells at the property in 1990. No other information regarding this property was contained in the file.

WCC (March 1994) states the most recent report contained in the ACDEH NBT file for this property was dated 1987. WCC summarized the information as, "Historical problems related to storage and containment of hazardous and chemicals and wastes."

V. GMC Truck Center, 8099 South Coliseum Way, Oakland.

The GMC Truck Center property is located approximately 1/8-mile southwest of the Site. Information regarding this property in the RWQCB LUST file was limited to indicating that UST excavation was initiated in August 1993.

WCC's 1994 REPORT states that four UST's containing gasoline, diesel, waste oil, and hydraulic fluid were removed from the property in 1993. Property soil and groundwater is affected by elevated TPH concentrations and property characterization is on-going.

VI. Former Caltrans Facility, 555 Hegenberger Road, Oakland.

The former Caltrans facility property is located approximately 1/8-mile southeast of the Site. Information regarding this property in the RWQCB LUST file was limited to indicating that UST excavation was initiated in December 1992.

WCC's 1994 REPORT states that four 1,000-gallon UST's containing gasoline and diesel were removed from the property in 1990. Soil and groundwater samples collected from adjacent GMC Truck Center property, approximately fifteen feet west of former Caltrans facility UST excavation, indicate elevated TPH concentrations. A revised closure plan is required by ACDEH.

VII. Superior Tile, 7801 Oakland Street, Oakland.

Superior Tile is located approximately 1/4-mile south of the Site. Information contained in the RWQCB LUST file for this property indicated that a leaking gasoline UST was removed in February 1990. TPHg and BTEX constituents were detected in groundwater samples from the property, but were not detected in soil. ACDEH required a subsurface investigation at the property in a letter dated May 30, 1990. No other information regarding this property was contained in the file.

WCC's 1994 report states that soil and groundwater samples collected from the former UST excavation contained TPHg and BTEX. Three groundwater monitoring wells were installed at the property and quarterly groundwater monitoring is on-going.

VIII. Ryder Truck Rental, 8001 Hegenberger Road, Oakland.

Ryder Truck Rental is located approximately 1/4-mile south of the Site. Information contained in the RWQCB LUST file indicates that one 550-gallon waste oil UST was removed from the property in January 1992. Analytical results from soil samples collected from depths of 3.5 to 5 feet bgs in the former UST excavation ranged up to 11 mg/kg TPHg, 400 mg/kg TPHd, 0.062 mg/kg BTEX, and 284

mg/kg TOG. One soil sample collected from 4.5 feet bgs was tested, but lead was not detected. Samples of groundwater from the property contained up to 97 milligrams per liter (mg/l) TPHg, 2,000 mg/l, and 20 mg/l BTEX. TOG was not detected in groundwater samples tested. Fill at the property extends to approximately seven feet bgs. The fill is described as tan gravel and baserock containing cobbles and boulders. WCC's 1994 report states that nine groundwater monitoring wells have been installed at the property and are monitored quarterly.

IX. County Recycling Services, 800 77th Avenue, Oakland.

County Recycling is located approximately 1/2-mile northeast of the Site. Information contained in the RWQCB LUST file indicates one 1,000-gallon gasoline UST was removed and replaced at the property in December 1988 due to a piping leak. Soil samples were reportedly collected from depths of five and ten feet bgs in the former UST excavation. Analytical results of the soil sample collected from five feet bgs revealed 2,200 mg/kg TPHg and 21 mg/kg total BTEX. Analysis of soil samples collected from ten feet bgs and a groundwater sample did not detect TPHg or BTEX.

Fill at this property reportedly ranges in depth to 5 feet bgs. The fill is dark brown sandy silt containing concrete, brick, and asphalt. Soil boring logs indicate the fill in some locations exhibited a hydrocarbon odor. Native, grayish-black, silty clay was logged at depths between 5 and 9.5 feet bgs. This native clay exhibited a hydrocarbon odor.

WCC's 1994 report states that the gasoline UST removed from the property in 1988 caused limited soil contamination. Chemical constituents were not detected in soil upon further investigation. One 10,000-gallon UST and one 1,000-gallon UST were removed from the property in May 1992. No other information regarding this property was provided in WCC's 1994 report.

X. American Brass & Iron Foundry, 7825 San Leandro Street, Oakland.

American Brass & Iron Foundry is located approximately 1/4-mile northeast of the Site. Information contained in the RWQCB LUST file included an UST closure report dated September 1992 provided details of the removal of a 12,000-gallon diesel UST. Groundwater was encountered beneath the property at approximately 9 to 10 feet bgs, and stabilized between 10 and 13 feet bgs. Soil samples collected from 8 to 9.5 feet bgs did not contain TPHd or BTEX. A groundwater sample collected contained 6.8 mg/l TPHd, but did not contain BTEX. No soil boring logs or soil descriptions were provided in file documentation.

WCC's 1994 report states that one petroleum product UST was removed from the property in 1977, and two petroleum product UST's and one waste solvent UST were removed from the property in

1991. A property assessment performed in 1993 identified soil and groundwater impacted by TPH and volatile organic compounds (VOC's). Four monitoring wells exist on the property.

XI. Unocal, Larkins Truck Shop, 8255 San Leandro Street, Oakland.

Larkins Truck Shop and Unocal is located approximately 1/2-mile east of the Site. Information contained in the RWQCB LUST file included an October 1992 quarterly groundwater monitoring report (QMR) for the property. The QMR reviewed describes fill to depths ranging between 7.5 and 10 feet bgs. and containing large concrete slabs at depths of 8.5 to 10 feet bgs. The property fill is described as, "...assorted refuse from the pre-1967 version of the site service station." October 1990 soil boring logs describe property fill as black to orange brown and green-gray, clayey gravel.

WCC's 1994 report states that a soil and groundwater investigation was performed in September 1993 after the removal of one 10,000-gallon UST. Laboratory analyses did not detect TPH in soils, but did detect limited TPH concentrations in samples of groundwater from beneath the property. Quarterly groundwater monitoring will continue for at least three successive quarters.

XII. West Coast Wire, Rope, & Rig, 608 McClary Avenue, Oakland.

West Coast Wire, Rope, & Rig is located between 1/4 and 1/2-mile southeast of the Site. Information contained in the RWQCB LUST file documented the removal of one 8,000-gallon diesel UST from the property in June 1990. A hydrocarbon odor was reported to have emanated from the UST backfill. Analyses of soil samples collected from the UST excavation detected up to 1,700 mg/kg TPHd. No soil boring logs or soil descriptions were documented in the file. A file review summary for this property was not performed by WCC.

XIII. Dwyr Construction, 8401 Baldwin Street, Oakland.

Dwyr Construction is located between 1/4 and 1/2-mile southeast of the Site. Information contained in the RWQCB LUST file documented the removal of one 1,000-gallon leaded gasoline UST from the property in 1989. Soil sample analyses detected TPHg concentrations ranging to 7.6 mg/kg. Benzene and toluene were not detected in the soil samples tested. Ethylbenzene and xylenes concentrations in soil ranged to 0.014 and 0.022 mg/kg, respectively. Analysis of groundwater samples detected TPHg, and BTEX at 63, 2.4, 5.1, 1.4, and 12 mg/*l*, respectively. One analysis for total lead was performed on a soil sample collected from 15 feet bgs. The total lead concentration detected in this sample was 39 mg/kg. The soil sample report suggests that the lead was probably generated from a source other than the UST, since it only appeared in one soil boring and was not

detected in groundwater. Property fill was described to depths of 10 feet bgs as a clayey silt, and did not exhibit odor.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XIV. Morris Transportation, Inc., 8300 Baldwin Street, Oakland.

Morris Transportation is located approximately 1/2-mile east of the Site. Information contained in the RWQCB LUST file was limited to an ACDEH letter dated June 1992 requested a property investigation report or a workplan for a property investigation be submitted to their agency. No other information regarding this property was contained in the file.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XV. Monterey Mechanical, 8275 San Leandro Street, Oakland.

Monterey Mechanical is located approximately 1/2-mile east of the Site. Information contained in the RWQCB LUST file included documentation of an assessment and groundwater investigation of the property performed in 1989. One 1,000-gallon gasoline UST was removed from the property in March 1988. Soil and groundwater analytical results indicated elevated TPHg concentrations. Soil boring logs describe black, sandy clay fill to a depth of one foot bgs. Black, native clay is described to a depth of 14 feet bgs.

WCC's 1994 report states that two groundwater monitoring wells were monitored at the property. No other information regarding the property is presented in the WCC report.

XVI. Lockup Self Storage/A&B Auto, 8451 San Leandro Street, Oakland.

The Lockup Self Storage and A & B Auto property is located approximately 1/2 to 1-mile east-southeast of the Site. Information contained in the RWQCB LUST file was limited to indicating an UST was removed from the property in July 1991 and that soil and groundwater were impacted by the former UST contents.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XVII. Ran-Rob Tool & Die, 631 85th Avenue, Oakland.

Ran-Rob Tool & Die is located approximately 1/2-mile southeast of the Site. Information contained in the RWQCB NBT file documented a February 1991 soil investigation in response to the discharge of 1,1,1-trichloroethane (TCA) to the property in 1978 or 1979. Orange-brown, sandy gravel fill was described to three feet bgs.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XVIII. West Coast Wire, Rope & Rig, 597 85th Avenue, Oakland.

West Coast Wire, Rope & Rig is located approximately 1/2-mile southeast of the Site. Information contained in the RWQCB LUST file was limited to an ACDEH letter dated December 1990 indicating that four, 8,000-gallon diesel UST's were removed from the property in 1988, and requesting a subsurface investigation to determine the extent of soil contamination and assess the potential for impact to groundwater.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XIX. Union Bank, 460 Hegenberger Road, Oakland.

Union Bank is located approximately 3/4-mile southeast of the Site. Information contained in the RWQCB LUST file includes a workplan for subsurface investigation of the property dated June 1992. One 10,000-gallon gasoline and one 10,000-gallon diesel UST were removed from the property in October 1990. Analytic results of soil and groundwater samples collected from the former UST excavation indicated TPHg and BTEX concentrations. Analytical results of soil samples collected from the former UST piping excavation indicated TPHd and TPHo concentrations. Concentrations of TPHo in soil on this property are reportedly the result of background concentrations of TPHo in the property fill. No soil boring logs or soil descriptions were documented in the file.

WCC's 1994 report did not provide information summarizing regulatory agency file documentation regarding this property.

XX. Goodyear Tire & Rubber, 7727 Oakland Street, Oakland.

Goodyear Tire & Rubber is located 3/4-mile northwest of the Site. Information contained in the RWQCB LUST file for this property is limited to an ACDEH letter dated October 1991 requesting a workplan for a subsurface investigation. Concentrations of TPHd and TOG in soil are listed, and range from 550 mg/kg to 1,600 mg/kg, and 130 mg/kg to 380 mg/kg, respectively.

WCC's 1994 report states that one 1,000-gallon UST was removed from the property. No other information regarding this property is presented in the WCC report.

XXI. PG&E, 4930 Coliseum Way, Oakland.

The PG&E property is located approximately 1/8-mile west of the Site. Information contained in the RWQCB NBT file is related to lead concentrations in property soils. Laboratory analysis of soil samples from the property detected lead at concentrations up to 3,287 mg/kg. Lead was not detected in samples of groundwater from beneath the property. A former aboveground gas tank was installed on the property in 1939. Lead-containing paint on the gas tank is the reported source of elevated lead concentrations in property soil. Property fill is described as a seven inch thick layer of coarse gravel. Seven groundwater monitoring wells are located on the property. No soil boring logs or soil descriptions were documented in the file. A file review summary for this property was not performed by WCC.

XXII. Chevron Training Center, 7616 San Leandro Street, Oakland.

The Chevron Training Center is located approximately 1/2-mile northeast of the Site. Information contained in the RWQCB LUST file indicated one waste oil UST was removed from the property in March 1993. Soil sample analyses detected TOG concentrations ranging to 67 mg/kg and lead concentrations ranging from 5 mg/kg to 33 mg/kg. TPHg was not detected in the samples of property soil tested.

WCC's 1994 report lists the Chevron Training Center at the same address as County Recycling Services, therefore, WCC did not provide information summarizing regulatory agency file documentation regarding this property.

APPENDIX B

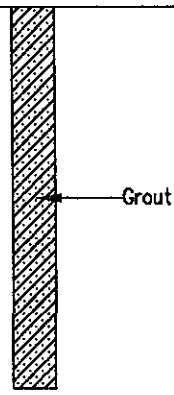
Soil Boring logs

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-1**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/5/94//0800	Finish Date/Time: 4/5/94//0820		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		700	0–2				BROWN GRAVELLY DRY (FILL)
			2				GREEN FINE SAND (SP)
		24	3–5				DARK GRAY GRAVEL (GW)
			4				black "sooty material"
		130	6				GREEN CLAY (OH) moist (BAYMUD)
			7				Bottom of boring @ 8 feet
		47	8				

Boring Abandonment/ Well Construction Details



199406.211322 C:\LOGS\MALIBU\SB-1

SEACOR

Reviewed By: _____ Date: _____

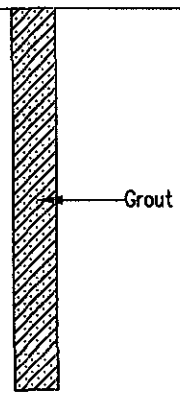
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: SB-2
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/5/94//0830	Finish Date/Time: 4/5/94//0850		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		25	0–1				LIGHT BROWN, FINE SAND (SP) slightly moist (FILL)
		148	2–5				DARK GRAY, FINE SAND (SP) slightly moist increasing clay
		21	6–7				DARK GRAY (OH) soft, wet (BAYMUD)
		1000	8				Bottom of boring @ 8 feet

Boring Abandonment/ Well Construction Details



199406.211418 C:\LOGS\MALIBU\SB-2

SEACOR

Reviewed By: _____ Date: _____

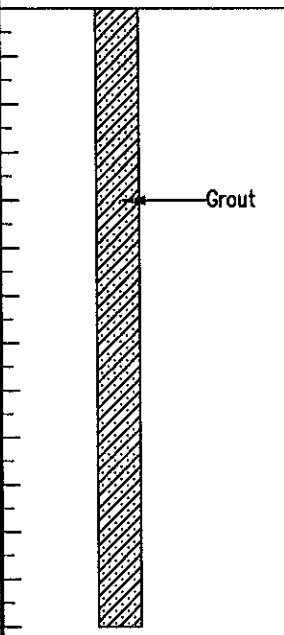
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102–001–01	Log of Boring/Monitoring Well: **SB-3**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/5/94//0900	Finish Date/Time: 4/5/94//0930		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		774	0–2				GREEN FINE SAND (SP) moist (FILL)
		1000	2–6				DARK GRAY GRAVEL (GW) dry to slightly moist
		662	6–9				oily sheen, strong odor
		601	9–12				GRAYISH GREEN, CLAY (OH) wet, sheen
			12–13				Bottom of boring @ 13 feet

Boring Abandonment/ Well Construction Details



199406.211451 C:\LOGS\MALIBU\SB-3

SEACOR

Reviewed By: _____ Date: _____

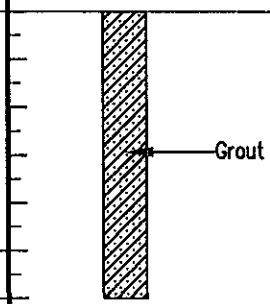
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-4**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/5/94//1035	Finish Date/Time: 4/5/94//1100		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		800	0–5				BROWN, GRAVEL (GW) slightly moist, no odor (FILL)
		767					
		4029	5–6				BAY MUD (OH)
			6				Bottom of boring @ 6 feet

Boring Abandonment/ Well Construction Details



199406.211532 C:\LOGS\MALIBU\SB-4

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

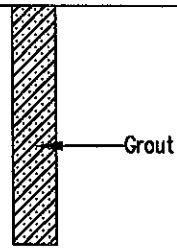
SEACOR

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: SB-5
Boring Location: MALIBU GRAND PRIX		
Subcontractor and Equipment: POWERCORE	Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/5/94//1115	Finish Date/Time: 4/5/94//1125	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		1252	0–1				DARK BROWN, GRAVEL (GW) slightly moist (FILL)
		403	1–2				BLACK "GREASY" COARSE SAND (SP)
			2–3				LIGHT BROWN, GRAVELLY SAND (SW)
		0	3–4				BLACK "GREASY" GRAVEL (SW)
			4–5				BAY MUD (OH) wet
			5				Bottom of boring @ 5 feet

Boring Abandonment/ Well Construction Details



199406.211605 C:\LOGS\MALIBU\SB-5

SEACOR

Reviewed By: _____ Date: _____

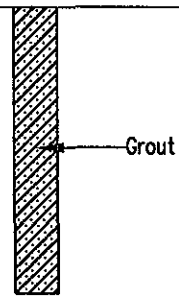
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102–001–01	Log of Boring/Monitoring Well: **SB-6**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS	Comments: DRAFT
Sampling Method: CONTINUOUS CORE		Monitoring Device: OVM 580B	
Start Date/Time: 4/5/94//1135		Finish Date/Time: 4/5/94//1155	
First Water (bgs): NA		Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
SB-6-1		741	0–1		GW		BROWN, GRAVEL (GW) slightly moist (FILL)
			1–2		SW		GRAY, GRAVELLY SAND (SW) slightly moist, with tan, tar odor
		0	2–3		SW		becomes almost pure tar, sticky, oily near top, strong odor
SB-6-4.5			3–4		OH		GRAY CLAY (OH) soft, moist (BAYMUD)
			4–5				Bottom of boring @ 6 feet
			5–6				

Boring Abandonment/ Well Construction Details



199406.211614 C:\LOGS\MALIBU\SB-6

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

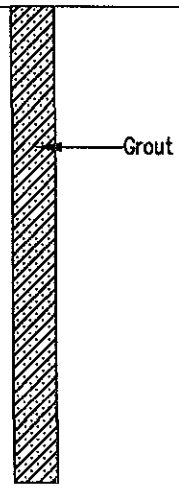
SEACOR

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: DRAFT SB-7	
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE	Logged By: SRS		
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments:	
Start Date/Time: 4/5/94//1400	Finish Date/Time: 4/5/94//1420	Refusal at surface, move over 2'	
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		741	0–1				BROWN AND GREEN, GRAVEL (GW) slightly moist to dry, dense (FILL)
		22	2–5				becomes green and dark gray
		24	5–6				becomes wet and soft
		10	6–7				wet zone with black gravel
		810	7–9				GREEN AND BROWN, GRAVELLY CLAY (CL) dry to slightly moist grades with less clay, increasing gravel
		39	9–10				GRAYISH GREEN, CLAY (OH) soft (BAYMUD)
			10				Bottom of boring @ 10 feet

Boring Abandonment/ Well Construction Details



199406.211614 C:\LOGS\MALIBU\SB-6

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

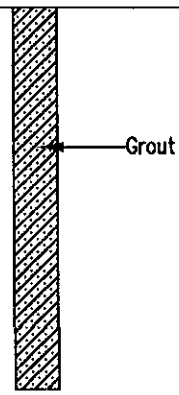
SEACOR

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-8**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/5/94//1430	Finish Date/Time: 4/5/94//1450		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		42	0–1				BROWN AND GREEN, GRAVEL (GW) slightly moist to dry in places (FILL)
		2778	2–3				thin green clay layer 2.5 to 3 feet
		167	4–5				becomes moist with increasing clay
		57	6–7				GRAYISH GREEN, CLAY (OH) soft, moist, abundant organic material (plant) (BAYMUD)
			8				Bottom of boring @ 8 feet

Boring Abandonment/ Well Construction Details



199406.220921 C:\LOGS\MALIBU\SB-8

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

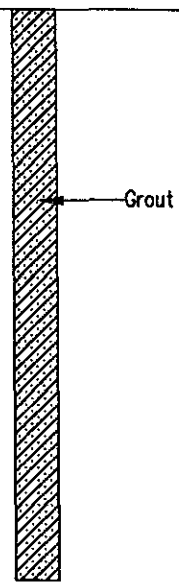
SEACOR

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-9**
Boring Location: MALIBU GRAND PRIX		
Subcontractor and Equipment: POWERCORE	Logged By: SRS	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/5/94//1455	Finish Date/Time: 4/5/94//1520	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0				BROWN, GRAVEL (GW) (FILL)
		95	1				BROWN, FINE SAND (SP) moist, medium dense
			2				GREEN, FINE SAND (SP) moist, medium dense
		48	3				GREEN AND BROWN, GRAVEL (SW) dense, slightly moist to dry
			4				
			5				
			6				
			7				becoming tan with cobbles
		42	8				GRAYISH GREEN, CLAY (OH) soft (BAYMUD)
			9				
			10				
			11				Bottom of boring @ 12 feet
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				

Boring Abandonment/ Well Construction Details



199406.220933 C:\LOGS\MALIBU\SB-9

SEACOR

Reviewed By: _____ Date: _____

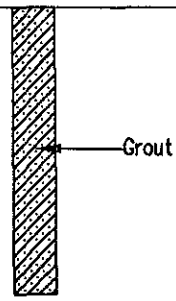
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-10**
Boring Location: MALIBU GRAND PRIX		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/6/94//0735	Finish Date/Time: 4/6/94//0750	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		0	0–2				BROWN, SOIL moist
		2	2–5				GRAYISH GREEN, CLAY (OH) soft, moist (BAYMUD)
		16	5–6				Bottom of boring @ 6 feet

Boring Abandonment/ Well Construction Details



199406.220954 C:\LOGS\MALIBU\SB-10

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

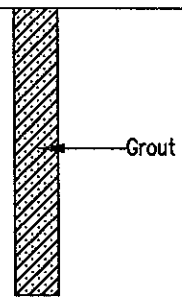
SEACOR

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102–001–01	Log of Boring/Monitoring Well: **SB-11**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: ~~SRS~~ KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/6/94//0758	Finish Date/Time: 4/6/94//0815		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0				BROWN, SOIL moist
		0	1–2				DARK BROWN, CLAY (CL) with black organic material, asphalt–like odor
			3				
		20	4				black flaky material with asphalt–like odor
			5				
			6				BAYMUD (OH)
							Bottom of boring @ 6 feet

Boring Abandonment/ Well Construction Details



199406.221003 C:\LOGS\MALIBU\SB-11

SEACOR

Reviewed By: _____ Date: _____

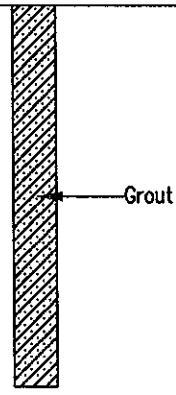
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102–001–01	Log of Boring/Monitoring Well:	
Boring Location: MALIBU GRAND PRIX		SB-12	
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ KEC	Comments: DRAFT	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		
Start Date/Time: 4/6/94//0820	Finish Date/Time: 4/6/94//0830		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		8	0–1				BROWN, TOP SOIL
		120	1–6				REDDISH BROWN, CLAY (CL) with sand and gravel, asphalt–like odor in sand and gravel from 3' to 4' encountered rock @ 4.3' asphalt–like odor–fiberous, brown black material
		1000	6–8				BAYMUD (OH) with asphalt–like odor Bottom of boring @ 8 feet

Boring Abandonment/ Well Construction Details



199406.221038 C:\LOGS\MALIBU\SB-12

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102–001–01	Log of Boring/Monitoring Well: **SB-13**
Boring Location: MALIBU GRAND PRIX		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/6/94//0840	Finish Date/Time: 4/6/94//0855	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
		500	0–1				BROWN, TOPSOIL, moist	Grout
		110	1–2				BROWN, GRAVEL (GW) with asphalt–like material (FILL)	
			2–3				dark brown to black fibrous material with asphalt–like odor, H2S odor	
		140	3–4					
		170	4–5				GRAY GREEN, CLAY (OH) with gravel, asphalt–like odor (BAYMUD)	
			5–6				Bottom of boring @ 6 feet	
			6–30					

199406.221056 C:\LOGS\MALIBU\SB-13

SEACOR

Reviewed By: _____ Date: _____

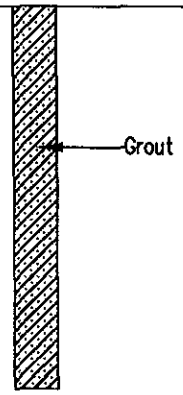
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102–001–01	Log of Boring/Monitoring Well:	
Boring Location: MALIBU GRAND PRIX		**SB-14**	
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ KEC		
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT	
Start Date/Time: 4/6/94//0910	Finish Date/Time: 4/6/94//0935		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0–1				BROWN, TOPSOIL, moist
		250	1–2				
			2–3				BROWN, SANDY GRAVEL (GW) moist to very moist (FILL)
		150	3–4				
			4–5				
			5–6				
		48	6–7				black fibrous material mix with clay, asphalt–like odor
		70	7–8				GRAY, CLAY (OH) asphalt–like dodr (BAYMUD)
			8				Bottom of boring @ 8 feet
			9–30				

Boring Abandonment/ Well Construction Details



199406.221117 C:\LOGS\MALIBU\SB-14

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

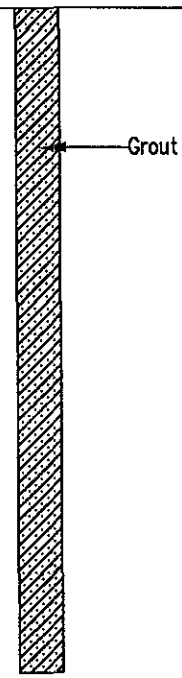
SEACOR

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102–001–01	Log of Boring/Monitoring Well:	
Boring Location: MALIBU GRAND PRIX		**SB-15**	
Subcontractor and Equipment: POWERCORE	Logged By: SRS KEC	DRAFT	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments:	
Start Date/Time: 4/6/94//1035	Finish Date/Time: 4/6/94//1106		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0–1				BROWN, TOPSOIL, moist
		18	1–2				
			2–3				DARK BROWN, CLAYEY SANDY GRAVEL (GW) with wood chips, moist (FILL)
		0	3–4				
			4–5				
		0	5–6				DARK GRAY, SANDY CLAY (CL) with wood chips, very moist
			6–7				
		0	7–8				black tar–like substance mixed with woodchips
			8–9				
		0	9–10				black fibrous material (CARDBOARD) very moist
			10–11				
		2	11–12				
SB-15-12			12–13				GRAY GREEN, CLY (OH) very moist (BAYMUD)
			13–14				Bottom of boring @ 14 feet
			14–15				
			15–16				
			16–17				
			17–18				
			18–19				
			19–20				
			20–21				
			21–22				
			22–23				
			23–24				
			24–25				
			25–26				
			26–27				
			27–28				
			28–29				
			29–30				

Boring Abandonment/ Well Construction Details



199406.221215 C:\LOGS\MALIBU\SB-15

SEACOR

Reviewed By: _____ Date: _____

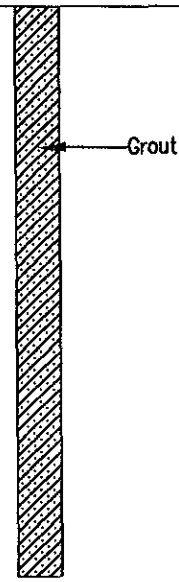
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-16**
Boring Location: MALIBU GRAND PRIX			
Subcontractor and Equipment: POWERCORE		Logged By: SRS KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/6/94//1035	Finish Date/Time: 4/6/94//1106		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		0	0–2				BROWN, TOPSOIL, slightly moist
		8	2–4				DARK BROWN, GRAVELLY SAND (SW) with concrete debris, moist (FILL)
		2	7–8				becomes black and very moist
		3	9–10				BLACK SAND, very moist
		17	11–12				GRAY GREEN, CLAY (OH) very moist (BAYMUD)
			12				Bottom of boring @ 12 feet

Boring Abandonment/ Well Construction Details



199406.221237 C:\LOGS\MALIBU\SB-16

SEACOR

Reviewed By: _____ Date: _____

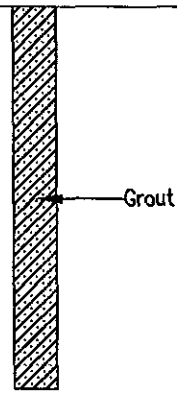
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-17A**
Boring Location: MALIBU GRAND PRIX		
Subcontractor and Equipment: POWERCORE	Logged By: SRS KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments:
Start Date/Time: 4/6/94//1345	Finish Date/Time: 4/6/94//1410	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		20	0–2				BROWN, SAND AND GRAVEL (SW/GW) moist (FILL)
		22	2–4				DARK GRAY, CLAY (CL) with some gravel, very moist (FILL)
		665	4–5				becomes greenish
			5–8				Bottom of boring @ 8 feet (appears to be blocked by piece of wood

Boring Abandonment/ Well Construction Details



199406.221305 C:\LOGS\MALIBU\SB-17A

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-17B**
Boring Location: ADJACENT TO GARAGE AT MGP		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/6/94//1455	Finish Date/Time: 4/6/94//1520	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
		15	0–2		SW/GW		BROWN, SAND AND GRAVEL (SW/GW) moist	Grout
		400	2–6		CL		DARK GRAY, SANDY CLAY (CL) with gravel, moist (FILL)	
		105	6–7		CL			
		72	7–11		CL		becomes medium gray	
		30						
		80	11–12		CL		GRAY GREEN, CLAY (OH) (BAYMUD)	
			12				Bottom of boring @ 12 feet	

199406.221337 C:\LOGS\MALIBU\SB-17B

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-18A**
Boring Location: ADJACENT TO GARAGE AT MGP		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/6/94//1530	Finish Date/Time: 4/6/94//1550	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
		100	0–2		GW		BROWN, GRAVEL (GW) with sand and clay, moist	Grout
		250	2–7		CL		MEDIUM GRAY, SANDY CLAY (CL) moist becomes greenish gray	
			7				Bottom of boring @ 7 feet	

199406.221350 C:\LOGS\MALIBU\SB-18A

SEACOR

Reviewed By: _____ Date: _____

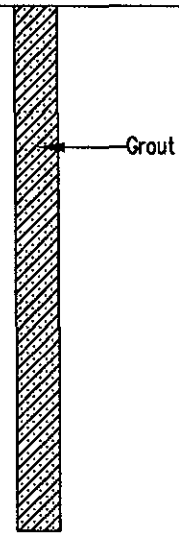
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-18B**
Boring Location: FUN CENTER PARKING LOT		
Subcontractor and Equipment: POWERCORE	Logged By: SRS KEC	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/6/94//1555	Finish Date/Time: 4/6/94//1620	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0				BROWNISH TAN, CLAY (CL) with sand and gravel, moist
		50	1				RUST SAND (SP) poorly graded, moist (FILL)
			2				
		125	3				GRAY GREEN, CLAY (CL) moist (FILL)
			4				
			5				
			6				
		128	7				
			8				increasing sand and gravel
		80	9				
			10				
			11				Bottom of boring @ 11 feet
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				

Boring Abandonment/ Well Construction Details



199406.221404 C:\LOGS\MALIBU\SB-18B

SEACOR

Reviewed By: _____ Date: _____

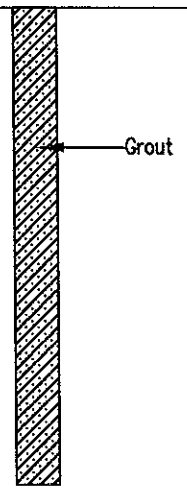
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-19**
Boring Location: INFIELD AT MGP			
Subcontractor and Equipment: POWERCORE		Logged By: SRS ~~REC~~ GOL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/7/94//0725	Finish Date/Time: 4/7/94//07		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		0	0–1				DARK BROWN, CLAY (CL) slightly moist
			1–2				LIGHT BROWN, CLAY (CL) with sand and gravel (FILL)
		0	2–3				
			3–4				dark brown color with sand lenses
		0	4–5				
			5–6				GREEN, SANDY GRAVEL (GW) with clay, moist (FILL)
			6–7				wet at 6 feet
			7–8				
			8–9				DARK BROWN, CLAY (OH) moist
			9–10				Bottom of boring @ 10 feet
			10–30				

Boring Abandonment/ Well Construction Details



1994062221442 C:\LOGS\MALIBU\SB-19

SEACOR

Reviewed By: _____ Date: _____

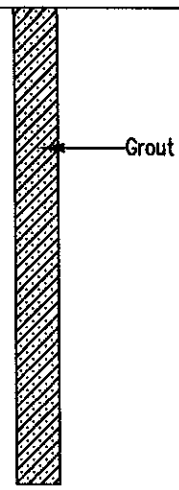
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well:	
Boring Location: INFIELD AT MGP		**SB-20**	
Subcontractor and Equipment: POWERCORE	Logged By: SRS ~~REC~~ GOL		
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT	
Start Date/Time: 4/7/94//0725	Finish Date/Time: 4/7/94//07		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0				DARK BROWN, CLAYEY SAND (SC) dry
		12	1				GRAY, SAND (SP) with some clay, hard, dry
			2				DARK BROWN, CLAYEY SAND (SC) moist, petroleum-like odor
		61	3				
		9	4				
			5				oily sheen on soil
			6				DARK BROWN, CLAY (CL) moist
		2	7				GREEN, SAND (SP) moist
			8				becomes CLAYEY SAND (SC) with brick debris, wet
		550	9				GREEN GRAY, CLAY (OH) (BAYMUD)
			10				Bottom of boring @ 10 feet
			11				
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				

Boring Abandonment/ Well Construction Details



199406.221502 C:\LOGS\MALIBU\SB-20

SEACOR

Reviewed By: _____ Date: _____

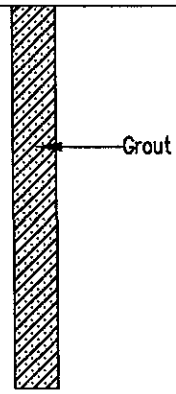
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-21**
Boring Location: INFIELD AT MGP		
Subcontractor and Equipment: POWERCORE	Logged By: SRS ~~TEC~~ GOL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: LOGAS
Start Date/Time: 4/7/94//0830	Finish Date/Time: 4/7/94//0855	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		124	0–2				LIGHT BROWN, CLAYEY SAND (SC) with gravel, dry (FILL) becomes brown
		7.3	2–3				DARK BROWN CLAY (CL) moist
		360	3–4				DARK BROWN, CLAYEY SAND (SC) moist
			4–5				GRAY, SAND (SP) coarse, wet
			5–6				DARK GREEN, GRAY SANDY CLAY (CL) moist
		8	6–7				GREEN GRAY, CLAY (OH) (BAYMUD)
			7–8				Bottom of boring @ 8 feet

Boring Abandonment/ Well Construction Details



199406.221533 C:\LOGS\MALIBU\SB-21

SEACOR

Reviewed By: _____ Date: _____

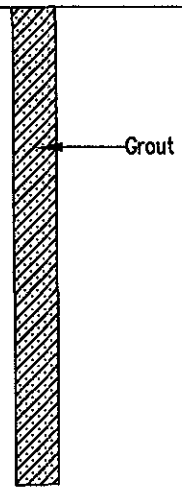
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well:	
Boring Location: INFIELD AT MGP		**SB-22**	
Subcontractor and Equipment: POWERCORE	Logged By: SRS ~~KGE~~ GOL		
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments:	
Start Date/Time: 4/7/94//0910	Finish Date/Time: 4/7/94//0930		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0–1		SP		LIGHT BROWN, SAND (SP) dry
		26	1–2		CL		BROWN, SANDY CLAY (CL) with brick fragments, moist becomes dark brown
			2–3		CL		
		24	3–4		SC		DARK BROWN, CLAYEY SAND (SC) with gray rock fragments
			4–5		SC		grades darker brown with more sand, and tar-like substance with degraded cardboard
SB-22-6		24	5–6		SC		
		73	6–7		CL		DARK BROWN, CLAY (CL) with sand, wet, petroleum odor
			7–8		CL		
			8–9		CL		GRAY GREEN, CLAY (CL) (BAYMUD)
			9–10		CL		Bottom of boring @ 10 feet
SB-22-10			10–30				

Boring Abandonment/ Well Construction Details



199406.221550 C:\LOGS\MALIBU\SB-22

SEACOR

Reviewed By: _____ Date: _____

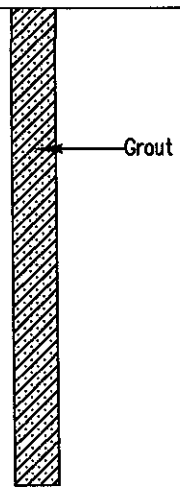
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-23**
Boring Location: INFIELD AT MGP		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ GOL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/7/94//0940	Finish Date/Time: 4/7/94//1010	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		6	0–1		SC		BROWN, CLAYEY SAND (SC) with rock and glass fragments, dry (FILL)
		52	1–2				
			2–3				becomes tan
		1860	3–4				
			4–5				becomes dark brown
		33	5–6		CL		DARK BROWN, SANDY CLAY (CL) slight petroleum odor, moist
		80	6–7				
			7–8				increasing moisture
			8–9		OH		DARK GRAY, SANDY CLAY (OH) moist
			9–10				Bottom of boring @ 10 feet
			10–30				

Boring Abandonment/ Well Construction Details



199406.230751 C:\LOGS\MALIBU\SB-23

SEACOR

Reviewed By: _____ Date: _____

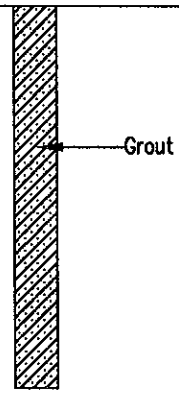
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-24**
Boring Location: INFIELD AT MGP		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ GOL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: AFT
Start Date/Time: 4/7/94//1020	Finish Date/Time: 4/7/94//1040	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		6	0–1				TAN, CLAYEY SAND (SC) with gravel, dry (FILL)
			1–2				BROWN, SANDY CLAY (CL) dry
		3.2	2–4				becomes dark brown, moist
			4–5				
			5–6				BROWN, CLAYEY SAND (SC) moist, loose
		0.7	6–7				GREEN, SAND (SP) coarse, red staining, wet
			7–8				GREEN GRAY, CLAY (OH) (BAYMUD)
							Bottom of boring @ 8 feet

Boring Abandonment/ Well Construction Details



199406.230759 C:\LOGS\MALIBU\SB-24

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-25**
Boring Location: EAST SIDE OF CASTLE INN DRIVE		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ GOL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT
Start Date/Time: 4/7/94//1410	Finish Date/Time: 4/7/94//1445	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
			0				ASPHALT	
			1				LIGHT BROWN, CLAYEY SAND (SC) dry	
		1	2				DARK GRAY, SANDY CLAY (CL) moist occasional clayey sand pockets	
		37	3					
			4					
		27	5					
			6					
			7				GRAY, CLAY (OH) (BAYMUD)	
		3.5	8					
			9				GRAY, CLAYEY SAND (SC) with abundant organic plant matter (BAYMUD)	
		0	10					
			11					
		0	12					
			13				Bottom of boring @ 13 feet	
			14					
			15					
			16					
			17					
			18					
			19					
			20					
			21					
			22					
			23					
			24					
			25					
			26					
			27					
			28					
			29					
			30					

Grout

199406.230810 C:\LOGS\MALIBU\SB-25

SEACOR

Reviewed By: _____ Date: _____

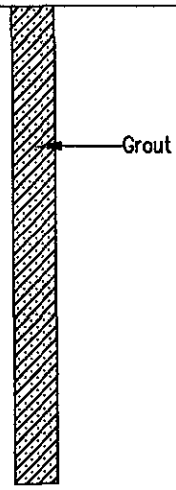
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well:	
Boring Location: GOLF PARKING LOT		**SB-26**	
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ GOL		
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments: DRAFT	
Start Date/Time: 4/7/94//1520	Finish Date/Time: 4/7/94//15		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		0	0–1				ASPHALT BROWN, CLAYEY SAND (SC) coarse, dry
			1–2				becomes moist
			2–3				becomes dark gray to green
		0.3	3–4				
			4–5				
		0	5–6				
			6–7				GRAY AND BROWN SAND (SP) with fine white material, moist
		0	7–8				GRAY, CLAY (CL) moist
			8–9				DARK BROWN, CLAYEY SAND (SC) with leaves and copper wire, very moist
		0	9–10				GRAY GREEN, CLAY (OH) (BAYMUD) Bottom of boring @ 10 feet
			10–30				

Boring Abandonment/ Well Construction Details



199406.230824 C:\LOGS\MALIBU\SB-26

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well:	
Boring Location: GOLF PARKING LOT		SB-27	
Subcontractor and Equipment: POWERCORE	Logged By: ~~SBS~~ X Z		
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments:	
Start Date/Time: 4/8/94//	Finish Date/Time: 4/8/94//		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
		0	0–2		SP		BROWN, SAND (SP) (FILL) becomes dark brown	Grout
		80	2–6		SC		DARK BROWN, CLAYEY SAND (SC)	
		70	6–8		CL		BLACK, CLAY (CL) grease	
		190	8–10		OH		BLACK, CLAY (OH) (BAYMUD) Bottom of boring @ 10 feet	
		*						
		~~#~~						

* ~~OVM Reading was wet due to rain~~
~~# Reading was not~~
OVM could not be calibrated due to ~~rain~~ high moistrue by rain, ~~There was no OVM PID reading~~

199406.230857 C:\LOGS\MALIBU\SB-27

SEACOR

Reviewed By: _____ Date: _____

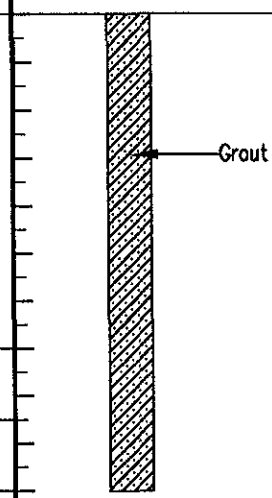
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY	Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-28**
Boring Location: GOLF PARKING LOT		
Subcontractor and Equipment: POWERCORE	Logged By: ~~SRS~~ XZ	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B	Comments:
Start Date/Time: 4/8/94//	Finish Date/Time: 4/8/94//	
First Water (bgs): NA	Stabilized Water Level (bgs): NA	

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		5	0–5				BROWN, SAND (SP) (FILL)
		10	5–6				becomes yellow brown
		8	6–7				
			7–8				BLACK, CLAY (CL) with concrete
			8–9				GRAY GREEN, CLAY (OH) moist (BAYMUD)
			9–10				Bottom of boring @ 10 feet

Boring Abandonment/ Well Construction Details



199406.230925 C:\LOGS\MALIBU\SB-28

SEACOR

Reviewed By: _____ Date: _____

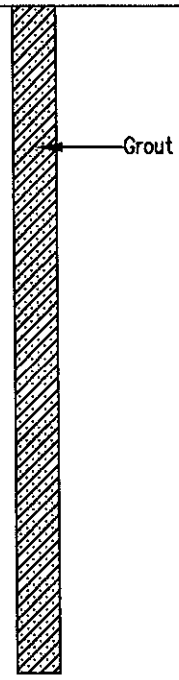
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-29**
Boring Location: GOLF PARKING LOT			
Subcontractor and Equipment: POWERCORE		Logged By: ~~SRS~~ GAL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments:
Start Date/Time: 4/8/94//1340	Finish Date/Time: 4/8/94//1400		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
		52	0–6		SC		LIGHT BROWN, CLAYEY SAND (SC) slightly moist
			6–9		SC		DARK BROWN, CLAYEY SAND (SC) with gray and green rock fragments, moist
			9–10		SC		GREENISH GRAY, CLAYEY SAND (SC) with abundant glass fragments
			10–11		CL		BROWN, CLAY (CL) dry
			11–13		SP		DARK GRAY, SAND (SP) with rock and brick fragments, wet
			13–14		OH		GRAY GREEN, CLAY (OH)
			14				Bottom of boring @ 14 feet

Boring Abandonment/ Well Construction Details



199406.230932 C:\LOGS\MALIBU\SB-29

SEACOR

Reviewed By: _____ Date: _____

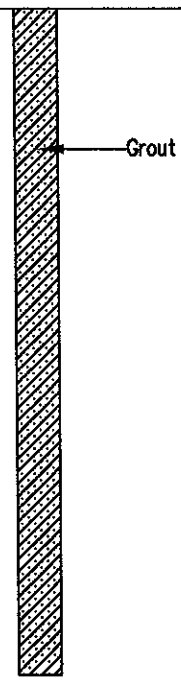
Revised By: _____ Date: _____

Project: MALIBU GRAND PRIX – 8000 SOUTH COLISEUM WAY		Project No.: 50102-001-01	Log of Boring/Monitoring Well: **SB-30**
Boring Location: NEXT TO HOLE 3			
Subcontractor and Equipment: POWERCORE		Logged By: ~~SRS~~ GOL	
Sampling Method: CONTINUOUS CORE	Monitoring Device: OVM 580B		Comments: DRAFT
Start Date/Time: 4/7/94//1445	Finish Date/Time: 4/7/94//1510		
First Water (bgs): NA	Stabilized Water Level (bgs): NA		

Surface Elevation: NA Casing Top Elevation: NA

Sample Number	Blows/Foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0–8		SC		BROWN, CLAYEY SAND (SC) becomes greenish gray sand contains oil–like staining with layer of oil and tar–like material
			8–9		SP		GREENISH GRAY, SAND (SP) with some clay, moist
			9–13		GP		GREENISH CLAY, GRAVEL (GP) petroleum–like odor becomes wet becomes dark gray to black
			13–14		OH		GREENISH GRAY, CLAY (OH) (BAYMUD)
			14				Bottom of boring @ 14 feet

Boring Abandonment/ Well Construction Details



199406.230944 C:\LOGS\MALIBU\SB-30

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

APPENDIX C

Soil Boring Permit

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 8000 South Coliseum Way
Oakland, California

CLIENT
Name Coliseum Way 8000, [illegible] Inc.
Address 1411 Harbor Bay Pkwy, Suite 2008 Voice 510-748-6120
City Alameda Zip 94501

APPLICANT
Name Kelly Cook
SEACOR Fax (415) 691-9837
Address 4984 El Camino Real #101 Voice (415) 813-3450
City Los Altos, CA Zip 94022

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	
Water Supply	___	Contamination	X
Monitoring	___	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other Hydraulic Sampler

DRILLER'S LICENSE NO. ___

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 32
Hole Diameter 2-3 in. Maximum Depth 15 ft. (or to top of Bay Mud)

ESTIMATED STARTING DATE 4/1/94
ESTIMATED COMPLETION DATE 4/7/94

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

APPLICANT'S [signature]

FOR OFFICE USE

PERMIT NUMBER 94215
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
(1.) A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
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. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 6 Apr 94
Wyman Hong

DRAFT

APPENDIX D

Analytical Laboratory Reports

and Chain-of-Custody Records

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

SEACOR
Attn: XIAOXIA ZHU

Project 50102-001-02
Reported 13-June-1994

ANALYSIS FOR TOTAL LEAD
by EPA Method SW-846 6010

Chronology

Laboratory Number 58207

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
SB-22-6	04/07/94	06/08/94	06/10/94	06/13/94		1
SB-22-10	04/07/94	06/08/94	06/10/94	06/13/94		2
SB-15-12	04/06/94	06/08/94	06/10/94	06/13/94		3
SB-6-1	04/05/94	06/08/94	06/10/94	06/13/94		4
SB-6-4.5	04/05/94	06/08/94	06/10/94	06/13/94		5

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

SEACOR
Attn: XIAOXIA ZHU

Project 50102-001-02
Reported 13-June-1994

ANALYSIS FOR TOTAL LEAD

Laboratory Number	Sample Identification	Matrix
58207- 1	SB-22-6	Soil
58207- 2	SB-22-10	Soil
58207- 3	SB-15-12	Soil
58207- 4	SB-6-1	Soil
58207- 5	SB-6-4.5	Soil

RESULTS OF ANALYSIS

Laboratory Number:	58207- 1	58207- 2	58207- 3	58207- 4	58207- 5
TOTAL LEAD:	22000	11	7	5800	57
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

ANALYSIS FOR TOTAL LEAD
Quality Assurance and Control Data - Soil

Laboratory Number 58207

›mpound	Method Blank (mg/Kg)	RL (mg/Kg)	Spike Recovery (%)	Limits (%)	RPD (%)
)TAL LEAD:	ND<5	5	88/84	75-125	5%

)efinitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
mg/Kg = Parts per million (ppm)
QC File No. 58207

Senior Chemist
Account Manager

LAB JOB# 58207 Chain of Custody and Analysis Request

Superior Precision Analytical
1555 Burke Street, Unit I
San Francisco, CA 94124
Phone: (415) 647-2081 Fax: (415) 821-7123
Contact:

Project No.: P.O. No.

TURN AROUND TIME
Same Day 72 Hrs.
24 Hrs. 48 Hrs.
(5 Day) (circled) 10 Day

Bill To:
Superior Precision Analytical Inc.
P.O. Box 1545
Martinez, California 94553

Analysis Request

Work Subcontracted to: Martinez

Laboratory Sample ID	Client Sample ID	Matrix (S=Soil A=Air W=Water)	Reactivity	CAM 17	Metals	COD	Ammonia	TOC		8010	Total Pb (6010)				Date Sampled	# of Containers	Preservatives
58207-1	SB-22-6	S									X				4/08/94	1	
-2	SB-22-10	S									X				4/07/94	1	
-3	SB-15-12	S									X				4/06/94	1	
-4	SB-6-1	S									X				4/05/94	1	
-5	SB-6-4.5	S									X				4/05/94	1	

COMMENTS
- ☐ Please fax invoice or quote ASAP
- ☒ Please fax results to Superior, San Francisco
- ☒ Please fax results to our client (see attached COC)

Relinquished By: Organization:	Date 4/8/94 Time 8:10 am/pm (pm)	Received By: Organization:	Date / / Time : am/pm	
Reliquished By: Organization:	Date / / Time : am/pm	Received By: Organization:	Date / / Time : am/pm	
Relinquished By: Organization:	Date / / Time : am/pm	Received By: K. Carlyon Laboratory: SPA MTZ	Date 4/9/94 Time 9:00 (am)	

Lab - Please initial the following:
Samples Stored in Ice: KC 6°C
Appropriate Containers:
Samples Preserved:
VOAs without headspace:
Comments:
5 CONT.

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

SEACOR
Attn: Xiaoxia Zhu

Project 50102-001-02
Reported 11-June-1994

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS

Chronology

Laboratory Number 58207

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
SB-22-6	04/07/94	06/08/94	06/09/94	06/10/94		1
SB-22-10	04/07/94	06/08/94	06/09/94	06/10/94		2
SB-15-12	04/06/94	06/08/94	06/09/94	06/10/94		3
SB-6-1	04/05/94	06/08/94	06/09/94	06/10/94		4
SB-6-4.5	04/05/94	06/08/94	06/09/94	06/10/94		5

Certified Laboratories
1555 Burke St. Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

SEACOR
Attn: Xiaoxia Zhu

Project 50102-001-02
Reported 11-June-1994

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS

Laboratory Number	Sample Identification	Matrix
58207- 1	SB-22-6	Soil
58207- 2	SB-22-10	Soil
58207- 3	SB-15-12	Soil
58207- 4	SB-6-1	Soil
58207- 5	SB-6-4.5	Soil

RESULTS OF ANALYSIS

Laboratory Number:	58207- 1	58207- 2	58207- 3	58207- 4	58207- 5
bis(2-chloroethyl)ethe:	ND<500	ND<3000	ND<300	ND<500	ND<3000
aniline:	ND<500	ND<3000	ND<300	ND<500	ND<3000
phenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2-chlorophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
1,3-dichlorobenzene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
1,4-dichlorobenzene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
1,2-dichlorobenzene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzyl alcohol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
bis-(2-chloroisopropyl:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2-methylphenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
hexachloroethane:	ND<500	ND<3000	ND<300	ND<500	ND<3000
n-nitroso-di-n-propyla:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-methylphenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
nitrobenzene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
isophorone:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2-nitrophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,4-dimethylphenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
bis(2-chloroethoxy)met:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,4-dichlorophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
1,2,4-trichlorobenzene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
naphthalene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzoic acid:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-chloroaniline:	ND<500	ND<3000	ND<300	ND<500	ND<3000
hexachlorobutadiene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-chloro-3-methylpheno:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2-methyl-naphthalene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
hexaclorocyclopentadie:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,4,6-trichlorophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,4,5-trichlorophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
Concentration:	mg/kg	ug/kg	ug/kg	mg/kg	ug/kg

Certified Laboratories
1555 Burke St., Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

SEACOR
Attn: Xiaoxia Zhu

Project 50102-001-02
Reported 11-June-1994

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS

Laboratory Number	Sample Identification	Matrix
58207- 1	SB-22-6	Soil
58207- 2	SB-22-10	Soil
58207- 3	SB-15-12	Soil
58207- 4	SB-6-1	Soil
58207- 5	SB-6-4.5	Soil

RESULTS OF ANALYSIS

Laboratory Number:	58207- 1	58207- 2	58207- 3	58207- 4	58207- 5
2-chloronaphthalene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2-nitroaniline:	ND<500	ND<3000	ND<300	ND<500	ND<3000
acenaphthylene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
dimethylphthlate:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,6-dinitrotoluene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
acenaphthene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
3-nitroaniline:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,4-dinitrophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
dibenzofuran:	ND<500	ND<3000	ND<300	ND<500	ND<3000
2,4-dinitrotoluene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-nitrophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
fluorene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-chlorophenyl-phenyle:	ND<500	ND<3000	ND<300	ND<500	ND<3000
diethylphthlate:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-nitroaniline:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4,6-dinitro-2-methylph:	ND<500	ND<3000	ND<300	ND<500	ND<3000
n-nitrosodiphenylamine:	ND<500	ND<3000	ND<300	ND<500	ND<3000
4-bromo-phenyl-phenyle:	ND<500	ND<3000	ND<300	ND<500	ND<3000
hexachlorobenzene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
pentachlorophenol:	ND<500	ND<3000	ND<300	ND<500	ND<3000
phenanthrene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
anthracene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
di-n-butylphthlate:	ND<500	ND<3000	ND<300	ND<500	ND<3000
fluoranthene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzidine:	ND<500	ND<3000	ND<300	ND<500	ND<3000
pyrene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
butylbenzylphthlate:	ND<500	ND<3000	ND<300	ND<500	ND<3000
3,3'-dichlorobenzidine:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzo[a]anthracene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
Concentration:	mg/kg	ug/kg	ug/kg	mg/kg	ug/kg

Certified Laboratories
1555 Burke St. Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

SEACOR
Attn: Xiaoxia Zhu

Project 50102-001-02
Reported 11-June-1994

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS

Laboratory Number	Sample Identification	Matrix
58207- 1	SB-22-6	Soil
58207- 2	SB-22-10	Soil
58207- 3	SB-15-12	Soil
58207- 4	SB-6-1	Soil
58207- 5	SB-6-4.5	Soil

RESULTS OF ANALYSIS

Laboratory Number:	58207- 1	58207- 2	58207- 3	58207- 4	58207- 5
chrysene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
bis(2-ethylhexyl)phtha:	ND<500	ND<3000	ND<300	ND<500	ND<3000
di-n-octylphthalate:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzo(b,k)fluoranthene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzo[a]pyrene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
indeno[1,2,3-cd]pyrene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
dibenzo[a,h]anthracene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
benzo[g,h,i]perylene:	ND<500	ND<3000	ND<300	ND<500	ND<3000
Concentration:	mg/kg	ug/kg	ug/kg	mg/kg	ug/kg
-- Surrogate % Recoveries --					
2-fluorophenol:	101	83	66	53	89
phenol-d6:	100	88	74	52	94
nitrobenzene-d5:	100	76	69	52	73
2-fluorobiphenyl:	111	92	78	77	88
2,4,6-tribromophenol:	130*	105	84	58	91
terphenyl-d14:	142*	101	80	89	108

*=Matrix Interference

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS
Quality Assurance and Control Data - Soil

Laboratory Number 58207

Compound	Method Blank (ug/kg)	RL (ug/kg)	Spike Recovery (%)	Limits (%)	RPD (%)
bis(2-chloroethyl)ethe:	ND<300	300			
aniline:	ND<300	300			
phenol:	ND<300	300	73/76	44-107	4%
2-chlorophenol:	ND<300	300	77/80	44-107	4%
1,3-dichlorobenzene:	ND<300	300			
1,4-dichlorobenzene:	ND<300	300	71/73	32-115	3%
1,2-dichlorobenzene:	ND<300	300			
benzyl alcohol:	ND<300	300			
bis-(2-chloroisopropyl:	ND<300	300			
2-methylphenol:	ND<300	300			
hexachloroethane:	ND<300	300			
n-nitroso-di-n-propyla:	ND<300	300	78/85	40-123	9%
4-methylphenol:	ND<300	300			
nitrobenzene:	ND<300	300			
isophorone:	ND<300	300			
2-nitrophenol:	ND<300	300			
2,4-dimethylphenol:	ND<300	300			
bis(2-chloroethoxy)met:	ND<300	300			
2,4-dichlorophenol:	ND<300	300			
1,2,4-trichlorobenzene:	ND<300	300	77/80	40-104	4%
naphthalene:	ND<300	300			
benzoic acid:	ND<300	300			
4-chloroaniline:	ND<300	300			
hexachlorobutadiene:	ND<300	300			
4-chloro-3-methylpheno:	ND<300	300	81/86	47-113	6%
2-methyl-naphthalene:	ND<300	300			
hexaclorocyclopentadie:	ND<300	300			
2,4,6-trichlorophenol:	ND<300	300			
2,4,5-trichlorophenol:	ND<300	300			

Certified Laboratories

1555 Burke St. Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS
Quality Assurance and Control Data - Soil

Laboratory Number 58207

Compound	Method Blank (ug/kg)	RL (ug/kg)	Spike Recovery (%)	Limits (%)	RPD (%)
2-chloronaphthalene:	ND<300	300			
2-nitroaniline:	ND<300	300			
acenaphthylene:	ND<300	300			
dimethylphthlate:	ND<300	300			
2,6-dinitrotoluene:	ND<300	300			
acenaphthene:	ND<300	300	81/85	43-110	5%
3-nitroaniline:	ND<300	300			
2,4-dinitrophenol:	ND<300	300			
dibenzofuran:	ND<300	300			
2,4-dinitrotoluene:	ND<300	300	60/68	35-100	13%
4-nitrophenol:	ND<300	300	74/85	36-117	14%
fluorene:	ND<300	300			
4-chlorophenyl-phenyle:	ND<300	300			
diethylphthlate:	ND<300	300			
4-nitroaniline:	ND<300	300			
4,6-dinitro-2-methylph:	ND<300	300			
n-nitrosodiphenylamine:	ND<300	300			
4-bromo-phenyl-phenyle:	ND<300	300			
hexachlorobenzene:	ND<300	300			
pentachlorophenol:	ND<300	300	85/94	20-122	10%
phenanthrene:	ND<300	300			
anthracene:	ND<300	300			
di-n-butylphthlate:	ND<300	300			
fluoranthene:	ND<300	300			
benzidine:	ND<300	300			
pyrene:	ND<300	300	87/94	62-117	8%
butylbenzylphthlate:	ND<300	300			
3.3'-dichlorobenzidine:	ND<300	300			
benzo[a]anthracene:	ND<300	300			

Certified Laboratories
1555 Burke St., Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

EPA SW-846 METHOD 8270 SEMIVOLATILE ORGANICS BY GC/MS
Quality Assurance and Control Data - Soil

Laboratory Number 58207

Compound	Method Blank (ug/kg)	RL (ug/kg)	Spike Recovery (%)	Limits (%)	RPD (%)
chrysene:	ND<300	300			
bis(2-ethylhexyl)phtha:	ND<300	300			
di-n-octylphthalate:	ND<300	300			
benzo(b,k)fluoranthene:	ND<300	300			
benzo[a]pyrene:	ND<300	300			
indeno[1,2,3-cd]pyrene:	ND<300	300			
dibenzo[a,h]anthracene:	ND<300	300			
benzo[g,h,i]perylene:	ND<300	300			
2-fluorophenol:	59			25-121	
phenol-d6:	67			24-113	
nitrobenzene-d5:	52			23-120	
2-fluorobiphenyl:	62			30-115	
2,4,6-tribromophenol:	71			19-122	
terphenyl-d14:	74			18-137	

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
ug/kg = Parts per billion (ppb)
QC File No. 58207

6/16/94
Senior Chemist
Account Manager

Certified Laboratories
1555 Burke St., Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

5820T

Chain-of-Custody Number: A

SEACOR Chain-of-Custody Record

Address
SEACOR
90 New Montgomery, #620
San Francisco, CA 94105

Project # 5012-001-02 Task # —
Project Manager Xiaoxia Zhu
Laboratory Superior
Turn-around time: 5 days
Sampler's Name: SEACOR
Sampler's Signature:

Analysis Request

Sample ID	Date	Time	Matrix	TPHg/BTEX 8015 (modified)/8020	TPHd 8015 (modified)	TPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCB's 608/8080	Total Lead 6010	Priority Pollutant Metals (13)	TCLP Metals					Comments/ Instructions	Number of Containers
SB-22-6	4/1/94		S							X		X								1
SB-22-10	4/1/94		S							X		X								1
SB-15-12	4/6/94		S							X		X								1
SB-6-1	4/5/94		S							X		X								1
SB-6-4.5	4/5/94		S							X		X								1
SB-6-2.5	4/5/94		S																	
SB-22-8	4/7/94		S																	
SB-3-7.5	4/5/94		S																	
SB-3-10.5	4/5/94		S																	

Please initial:
Sample
DW
NO
YES
N/A
NO
Samples out of hold time for 8240
20°C
hold

Special Instructions/Comments:

Relinquished by:
Sign Xiaoxia Zhu
Print Xiaoxia Zhu
Company SEACOR
Time ____ Date 6/8/94

Received by:
Sign Virginia Bravo
Print Virginia Bravo
Company AERO
Time 3:58 Date 6-8-94

Relinquished by:
Sign Dorothy Kersman
Print Dorothy Kersman
Company SEACOR
Time 3:58 Date 6/8/94

Received by:
Sign Dorothy A Nwogu
Print DOROTHY A NWOGU
Company SUPERIOR
Time 4:45 Date 6/8/94

Relinquished: Virginia Bravo 445 6 8 94

Sample Receipt

Total no. of containers
Chain of custody seals:
Rec'd good condition/cold:
Conforms to record:

Client: SEACOR
Client Contact: Xiaoxia Zhu
Client Phone Number: (415) 882-1548

Date 6/8/94 Page 1 of 1

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

Xiaoxia Zhu
Seacor
90 New Montgomery St. #620
San Francisco, CA. 94105

July 1, 1994

Dear Xiaoxia,

This is in regards to our conversation about 8270 analyses for Seacor's project 50102-001-02. The detection limits were increased significantly for samples designated as SB-22-6 and SB-6-1. This was due to matrix interferences resulting from large concentrations of heavy hydrocarbons (oil and grease) in the samples.

Xiaoxia, if you have any questions please give me a call at (415)647-2081.

Best regards,

7/1/94

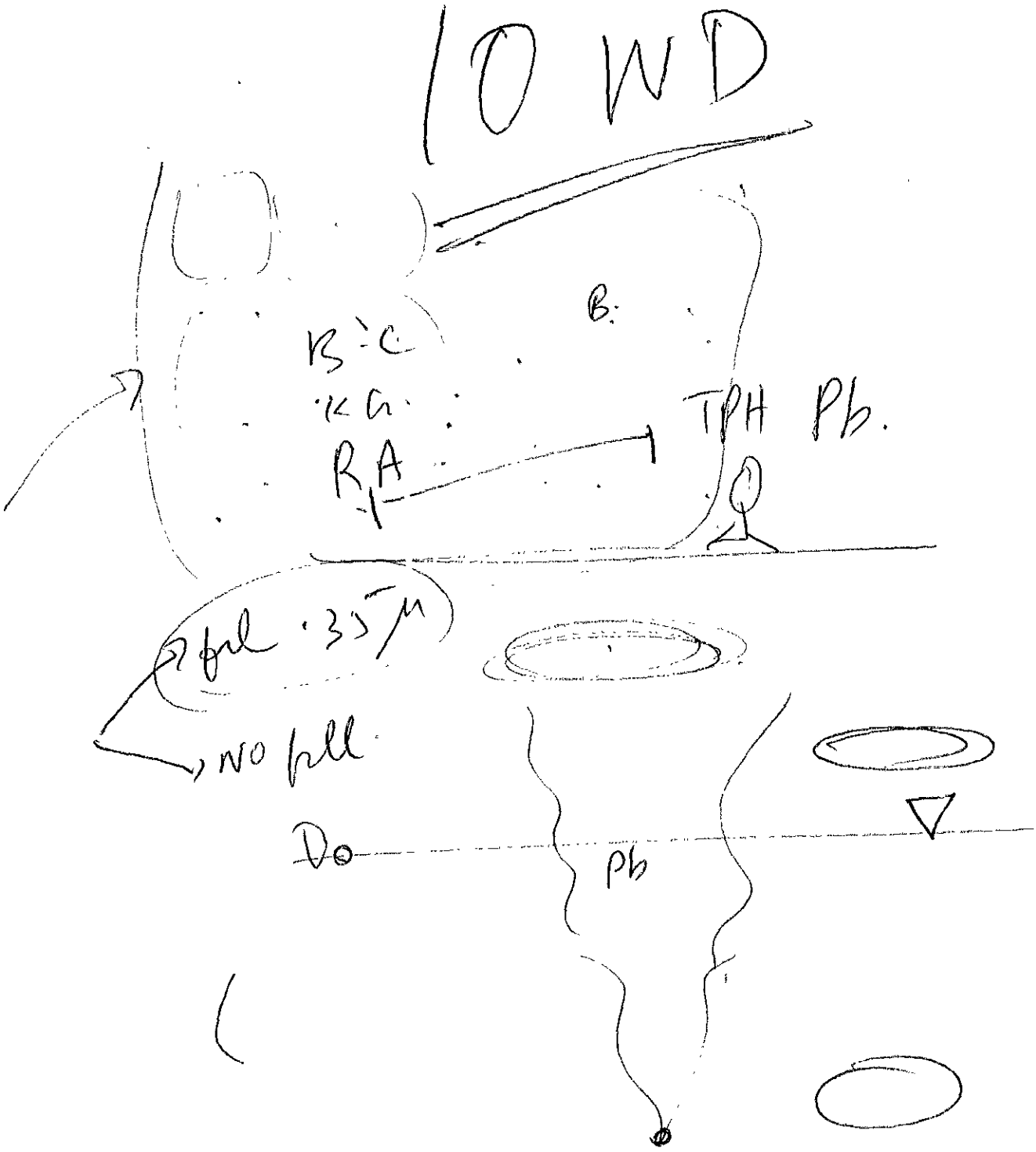
Richard Phaler
Senior Chemist
Account Manager

APPENDIX E

Groundwater Analytical Results

TABLE 2
WATER ANALYTICAL RESULTS

SAMPLE	TPH-extractable modified EPA 8015 (µg/L)	Volatiles EPA 8240 (µg/L)	Semi-Volatiles EPA 8270 (µg/L)	PCBs EPA 8080 (µg/L)	Metals EPA 6010/7000 (µg/L)	
MW-2	410 (motor oil)	no target analytes detected	no target analytes detected	no target analytes detected	antimony	<60
					arsenic	19.4
					beryllium	<5.0
					cadmium	<5.0
					chromium	<10
					cobalt	<50
					copper	<25
					lead	<3.0
					mercury	<0.5
					nickel	<40
					silver	<10
					selenium	<5.0
					thallium	<10
					zinc	<20
MW-3	3200 (motor oil)	no target analytes detected	no target analytes detected	no target analytes detected	antimony	<60
					arsenic	<10
					beryllium	<5.0
					cadmium	<5.0
					chromium	<10
					cobalt	<50
					copper	<25
					lead	<3.0
					mercury	<0.5
					nickel	51
					silver	<10
					selenium	<5.0
					thallium	<10
					zinc	24.5
MW-10	530 (motor oil)	no target analytes detected	no target analytes detected	no target analytes detected	antimony	<60
					arsenic	<10
					beryllium	<5.0
					cadmium	<5.0
					chromium	<10
					cobalt	<50
					copper	<25
					lead	<3.0
					mercury	<0.5
					nickel	<40
					silver	<10
					selenium	<5.0
					thallium	<10
					zinc	<20


10 WD
B.
TPH Pb.
RA
Pb
Do