Response to
Meeting Items - Environmental Site
Restoration
South Shore Shopping Center
Alameda, California

October 10, 1994
93-1185002.16

ALAM COV

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

October 10, 1994
93-1185002.16

Alameda County Health Agency
Division of Hazardous Materials
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Attention: Ms. Juliet Shin, Hazardous Materials Specialist

Subject: RESPONSE TO MEETING ITEMS - Environmental Site Restoration
South Shore Shopping Center
Alameda, California

Dear Ms. Shin:

The MARK Group, Inc., (MARK) has prepared this letter in response to the items raised during the August 31, 1994 meeting between yourself and representatives of Harsch, MARK and Texaco. During this meeting, you requested additional information regarding the South Shore Shopping Center site restoration project. In response to your request, MARK has provided you with the following:

Item No. 1 Provide a Site Utility Plan

Response: Several utility plans of the site have been included in Attachment A, which are excerpts from Clayton's report, "Work Plan for Remedial Action," dated June 11, 1992.

Item No. 2 Properly Abandon Monitoring Wells MW-4 and MW-13

Response: MARK has submitted a proposal to Texaco and Kamur to abandon Monitoring Wells MW-4 and MW-13. Upon authorization, Monitoring Wells MW-4 and MW-13 will be abandoned in accordance with Alameda County Flood Control District (Zone 7) requirements.

Item No. 3 Analysis for Oil and Grease in MW-12 Has Not Been Performed

Response: As stated in the letter submitted to you dated September 16, 1994, groundwater Monitoring Well MW-12 will be sampled for Oil and Grease constituents during the next quarterly monitoring event.

Item No. 4 — Provide Documentation of the Disposal of Soil from the Kamur and Dry Cleaner Sites

Response: A report dated June 28, 1991 prepared by Soil Tech Engineering documents the disposal of approximately 994 cubic yards of soil excavation at Kamur Industries Car Wash. This report has been included in Attachment B.

Clayton's report, "Update on Subsurface Investigative Work Completed at the Former Texaco Station," dated September 14, 1990, documents the sampling and analysis of the 150 cubic yards of soil excavated from the former dry cleaning site. Soils were approved by the regulatory agencies for material on site.

Item No. 5 — Provide Documentation of the Waste Oil Tank Removal

Texaco removed their underground storage tanks (USTs) in 1981. According to Mr. Tom Hargett, Texaco Environmental Geologist, they have no documentation of the removal or disposal of the USTs.

However, McLaren Hart's letter report, "Results of Excavation and Soil Sampling at the Former Texaco Station," dated January 16, 1991, does document the location of additional excavation and sampling conducted at the former UST locations. Specifically, hand-auger boring and a trench were placed through the former waste oil UST location, as documented on their location map. The soil sample collected by McLaren Hart in the former waste oil UST location was nondetect for chemical constituents analyzed.

Item No. 6 — Observe Monitoring Wells MW-17, MW-18, and MW-19 for Chlorinated Hydrocarbons

Response: Laboratory analyses of groundwater samples collected in April 1994 indicate tetrachloroethene (PCE) concentrations ranging from 0.0011 to 0.0024 milligrams per liter (mg/L). These concentrations are below the 0.005 mg/L primary maximum contaminant level. This area will continue to be monitored quarterly.

Item No. 7 — Provide Well Construction Details for Wells MW-16, MW-17, and MW-18

Response: In February 1992, Clayton installed seven new monitoring wells at the subject site (MW-15 through MW-21). A copy of these well logs were mailed by Clayton to the Alameda Water Control and Water Conservation District on May 1, 1992 (Attachment C).

Monitoring Wells MW-16, MW-17, and MW-18 were constructed with 2-inch diameter polyvinyl chloride (PVC). Monitoring Well MW-16 was screened from 25 to 30 feet below ground surface (bgs). Monitoring Wells MW-17 and MW-18 were screened from 20 to 25 feet bgs. The wells were apparently drilled to a clay unit encountered at depths of 25 to 30 feet bgs at these locations.

Item No. 8 — Revise Schedule of Work

Response: A revised schedule of remedial activities is currently being prepared and will be mailed under separate cover.

Item No. 9 — Provide a Diagram of the Remediation Plumbing

Response: Texaco provided an as-built to ACHA at our meeting. MARK is currently revising the existing plumbing to accommodate the remedial activities at the subject site. We will forward a revised map showing plumbing details to you when the remedial design is completed.

Item No. 10 — Prepare a Proposal for Modifications to the Quarterly Groundwater Monitoring

Response: MARK recommended revisions to the existing groundwater monitoring plan in a letter to your office dated September 16, 1994. As you requested in your response letter of September 20, 1994, MARK has now added Monitoring Well MW-23 to the list. The next quarterly sampling event is currently scheduled for October 12, 1994.

October 10, 1994
93-1185002.16
Alameda County Health Agency
Division of Hazardous Materials
Attention: Ms. Juliet Shin, Hazardous Materials Specialist
Subject: RESPONSE TO MEETING ITEMS - Environmental Site Restoration
South Shore Shopping Center
Alameda, California

Item No. 11 Address Risk of Chlorinated Hydrocarbons in MW-22

Response: Laboratory analysis of groundwater samples collected from Monitoring Well MW-22 in April 1994 indicated 0.015 mg/L 1,2 Dichloroethane. MARK will continue to sample Well MW-22 on a quarterly basis. In addition, MARK is currently preparing a proposal for Texaco to conduct a limited risk assessment addressing this point of compliance. At this time, MARK anticipates including this with our next quarterly report.

If you require any additional information, please contact Mr. Robert S. Spare, Project Manager or the undersigned at (510) 946-1055.
Sincerely,

The MARK Group, Inc.

Alan D. Gibbs, R.G.
Associate

ADG:crh
RSPMTG.LTR

Attachments: A - As Built Drawings
B - Soil Disposal Report
C - Boring Logs

cc: Mr. Greg Baum, Harsch
Mr. Tom Hargett, Texaco
Mr. Murray Stevens, Kamur
Mr. Frank Hamedi, Soil Tech
Mr. Robert Leste, Harsch

Appendix A

66

59

ROOSEVELT DR.

PRIVATE RD.

PRIVATE RD.

PRIVATE RD.

PARK RD. SHOPPING CENTER

PARK ST.

REGENT ST.

DELWAR AVE.

BROADWAY

SHORE DRIVE

LAGOON

STATE BEACH APPROX.

LOCATION OF + RESTRM

TO BE ABANDONED

TO RESTRM.

Ft -0.34

Ft -0.29 Rim 8.45

Ft -8.75

Ft -0.52 Rim 5.96

Ft -8.70

Ft -0.35 Rim 7.15

Ft -0.87 Rim 7.65

Ft -7.44 Rim 5.00

Ft -8.63 Rim 5.80

Ft -8.55

Ft -7.66

Ft -7.94

Ft -6.03 Rim 6.90

Ft -4.67 Rim 6.65

Ft -5

Plugged

Ft -2.26 Rim 2.02

Ft -2.44 Rim 2.97

Ft -0.56 C.O.

Ft -0.37 LH

Mean ... MSC ... datum

ϕ = -3.41 Al. datum

~6 on ...

Δ (TO BE VERIFIED IN FIELD)

Ft -2.67 Rim 5.20

Ft -1.79 Rim 4.80

Ft -1.00 Rim 6.20

Ft -1.06 Rim 4.29

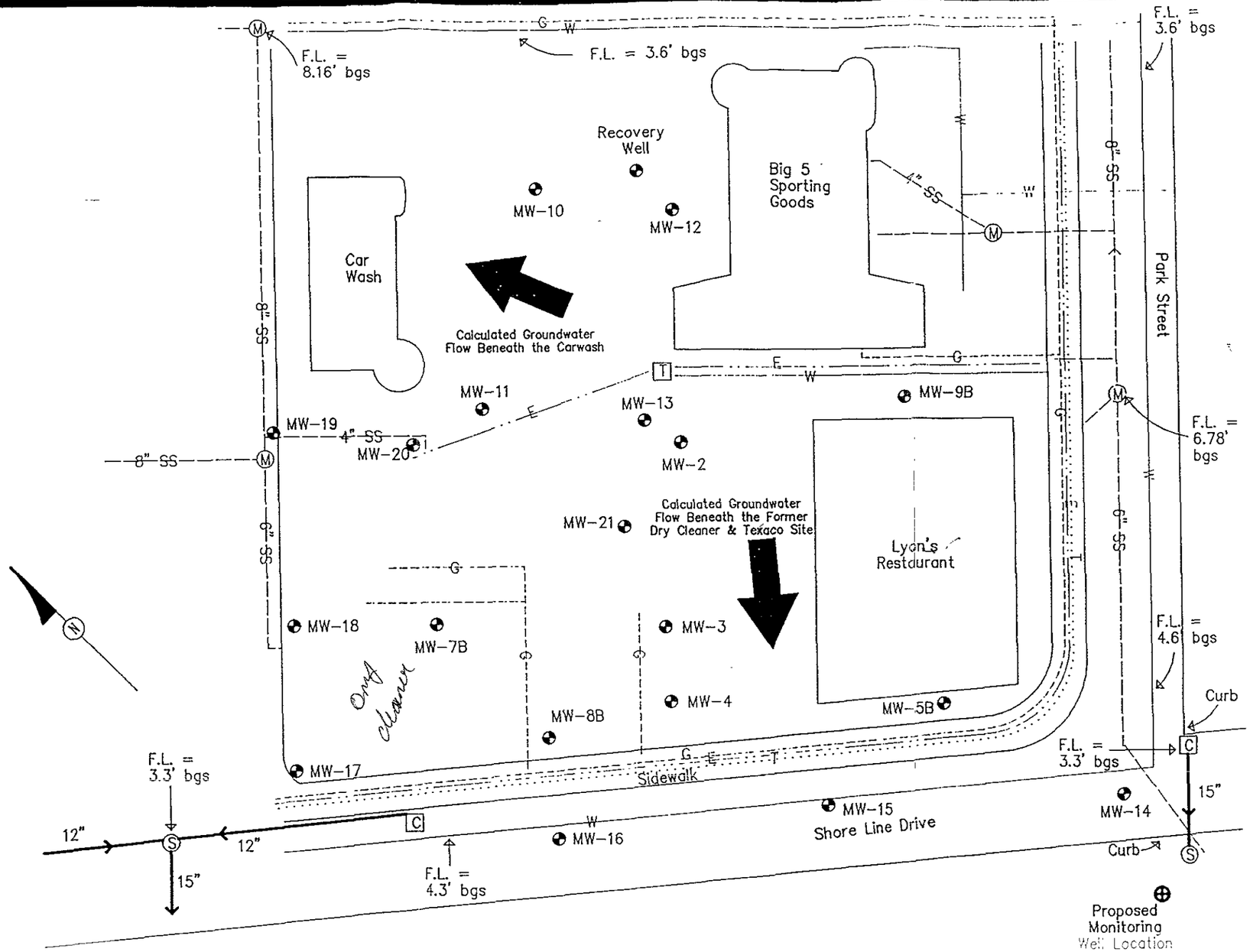
SANITARY SEWER BLOCK BOOK

LOCATIONS ARE APPROXIMATE

1" = 100'

LEGEND

- G — Gas
- T — Telephone
- E — Electric
- W — Water
- Reinforced concrete pipe
- SS — Sanitary sewer
- T — Transformer
- M — Manhole
- S — Storm drain
- C — Catch basin
- Monitoring well
- F.L. — Flow line (bottom of pipe)
- bgs — Below ground surface



Utility Trenches
HARSCH INVESTMENT CORPORATION
Shore Line Drive and Park Stree
Alameda, California

Clayton Project No. 42864.02

42864-03-16

Clayton
ENVIRONMENTAL CONSULTANTS

SHOPPING CENTER

PARK ST.

LAGOON

ROOSEVELT

REGENT ST

DELMAR AVE.

BROADWAY

SHORE LINE DR.

STATE BEACH

APPROXIMATE SHORELINE

CB INLET 1.47
R. 0.12

CB INLET 1.49
R. 0.23
CB INLET 1.47
R. 0.02

MHRIM
R. 2.43

REF. 3817-31

CB INLET 5.62
R. 2.34

CB INLET 3.74
R. 1.16

CB INLET 3.73
R. 1.98
SE 2.86

OUTFALL
R. 3.20

OUTFALL
R. 2.03

OUTFALL
R. 0.12

OUTFALL
R. -1.35

R. 0.87
RIM 3.87

REF DWG
4650-21

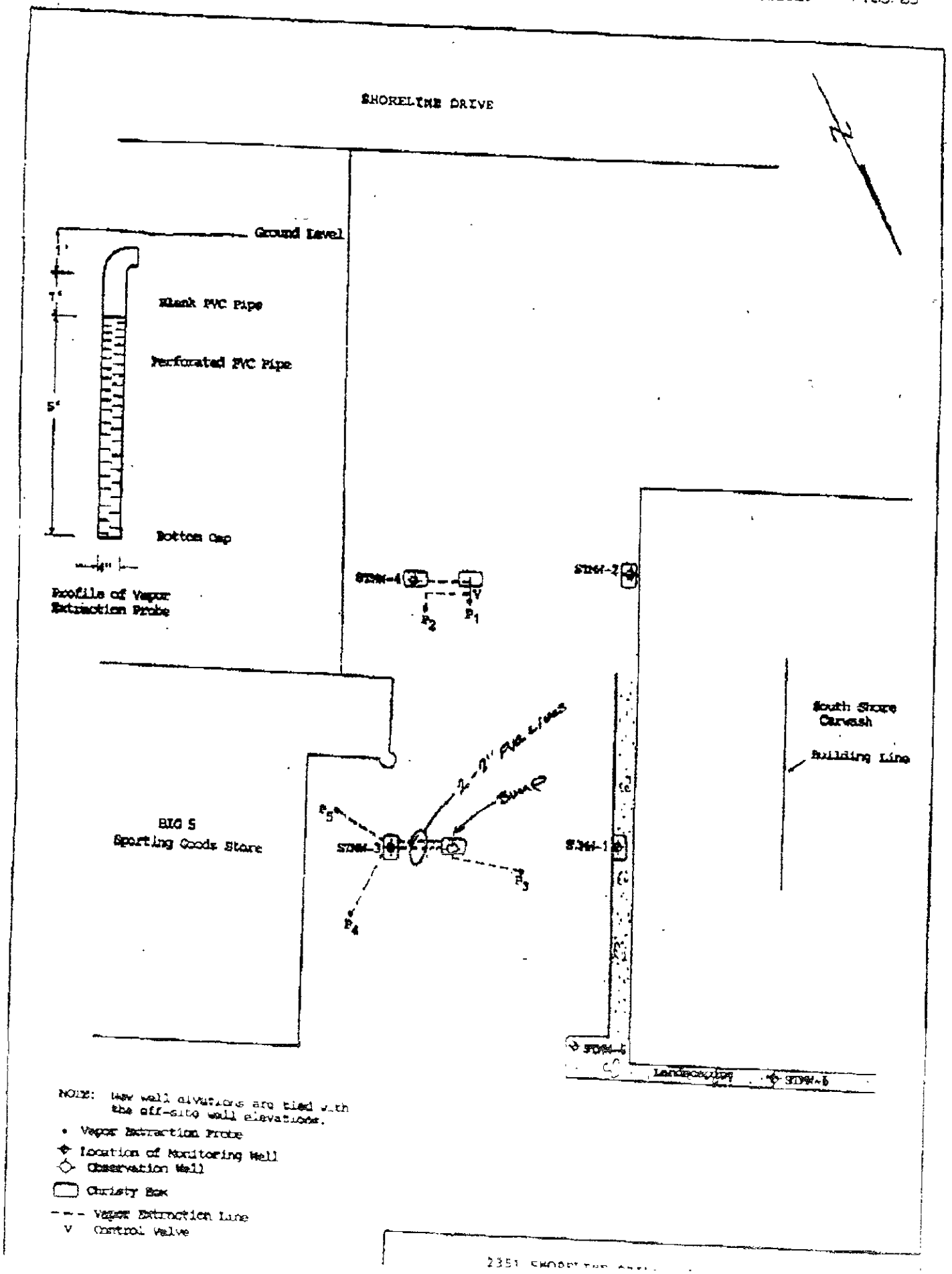
59

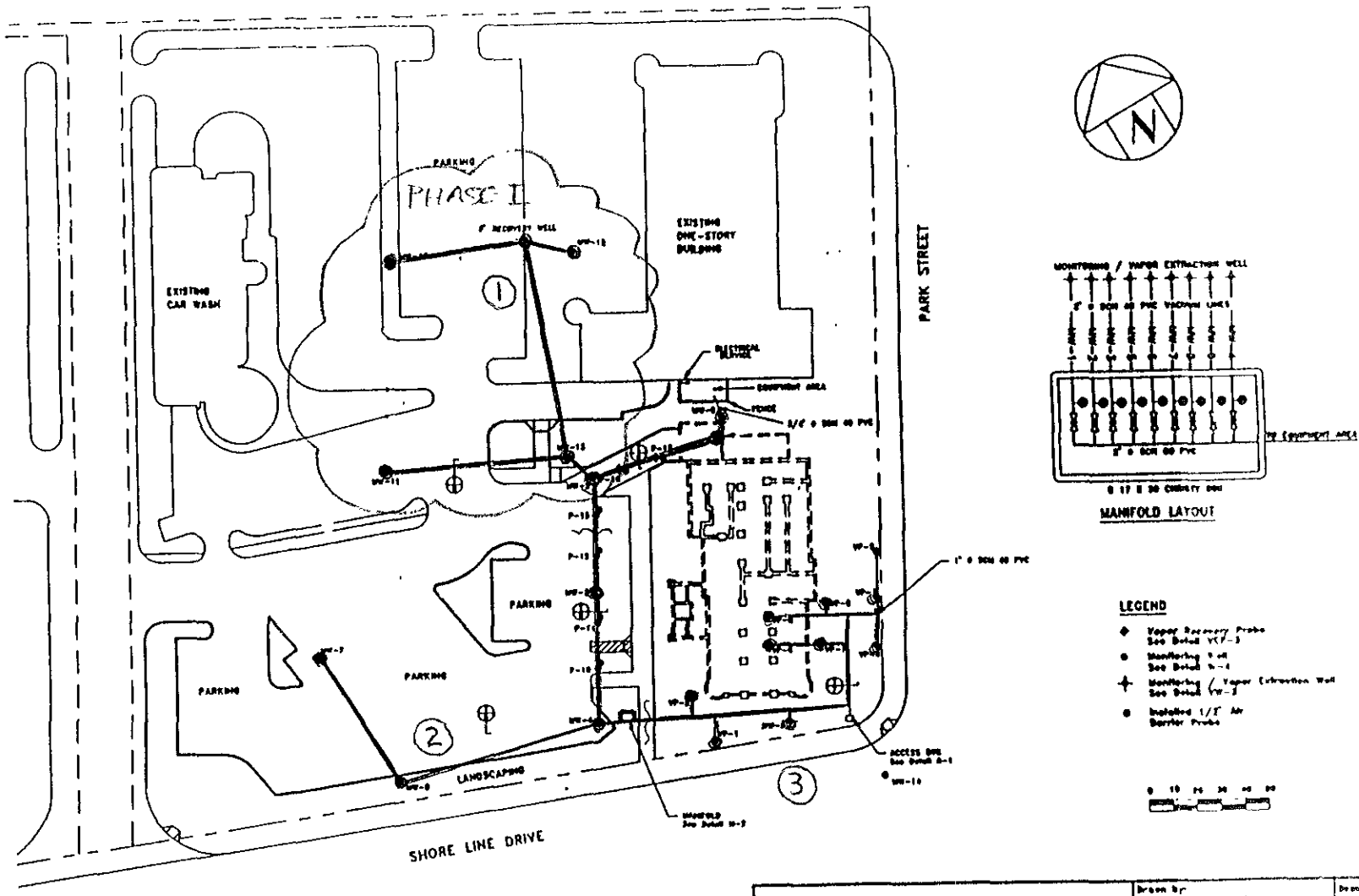
66

STORM DRAIN BLOCK BOOK

1" = 100'

LOCATIONS ARE APPROXIMATE


SHORELINE DRIVE
Ground Level
1'
7'
5'
Blank PVC Pipe
Perforated PVC Pipe
Bottom Cap
4"
Profile of Vapor Extraction Probe
STDW-4
V
P2
P1
STDW-2
South Store Carwash
Building Line
BIG 5
Sporting Goods Store
2 - 2" PVC Lines
Sump
P5
STDW-3
P3
P4
STDW-1
STDW-5
Landscaping
STDW-6
NOTE: New well elevations are tied with the off-site well elevations.
Vapor Extraction Probe
Location of Monitoring Well
Observation Well
Christy Box
Vapor Extraction Line
V Control Valve



AS-BUILT SITE MAP
2375 SHORE LINE DRIVE
ALAMEDA, CALIFORNIA

EVAX TECHNOLOGIES, INC.
269 MOUNT HERMON RD, SUITE 101
SCOTTS VALLEY, CA 95066
PHONE (408)438-7511 FAX (408)438-7515

Drawn by:	J. DUNCH
File name:	83010012
File date:	06-13-91
Scale:	1" = 20' (if not orig.)
Designed by:	C.P.
Job Number:	83010.01
Date:	06-13-91
Figure Number:	
Sheet 1 of	

SHORELINE DRIVE

N

Approximate Direction
of Groundwater Flow
as of 2/08/93

2.50

C. EL. 7.01
W. EL. 2.11

2.25

2.00

SIMW-2

SIMW-4

1.75

C. EL. 7.45
W. EL. 2.52

South Shore
Carwash

Building Line

Excavation
Area

BIG 5
Sporting Goods Store

SIMW-1

SIMW-3

C. EL. 8.33
W. EL. 2.37

C. EL. 8.10
W. EL. 1.87

SIMW-6

Landscaping

SIMW-5

NOTE: New well elvations are tied with
the off-site well elevations.

2351 SHORELINE DRIVE, ALAMEDA, CALIFORNIA		
SCALE: 1"=30'	PROJECT NO. 8-90-418-SI	FIGURE - 2
DRAWN BY N.A.		2/08/93
SOIL TECH ENGINEERING, INC. 298 BROKAW ROAD, SANTA CLARA, CALIFORNIA 95050		

M2

Appendix B

SOIL DISPOSAL FROM THE EXCAVATION AT KAMUR INDUSTRIES CAR WASH 2351 SHORE LINE DRIVE ALAMEDA, CALIFORNIA JUNE 28, 1991

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers

298 BROKAW ROAD ■ SANTA CLARA, CA 95050 ■ (408) 496-0265 ■ (415) 791-6406

File No. 8-90-418-SI

SOIL DISPOSAL FROM THE EXCAVATION AT KAMUR INDUSTRIES CAR WASH 2351 SHORE LINE DRIVE ALAMEDA, CALIFORNIA JUNE 28, 1991

PREPARED FOR:
MR. MURRAY STEVENS
KAMUR INDUSTRIES, INC.
2351 SHORE LINE DRIVE
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

June 28, 1991

File No. 8-90-418-SI

Kamur Industries
2351 Shore Line Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

REFERENCE: SOIL DISPOSAL FROM THE EXCAVATION AT KAMUR INDUSTRIES CAR WASH Located at 2351 Shore Line Drive, in Alameda, California

Dear Mr. Stevens:

This letter describes soil disposal from the excavation at the Kamur Industries Car Wash, located at 2351 Shore Line Drive, in Alameda, California.

SOIL DISPOSAL:

The excavated contaminated soil from the former tank areas was stockpiled on-site on a plastic sheet and covered. The quantification of the contaminated levels of TPH as gasoline and BTEX was carried out in separate phases due to the restricted area in which to spread out the soil. Samples were taken from the segregated stockpiled soil at different depths ranging from 2 to 3 feet below the surface of the segregated stockpile. The samples were collected by hand auger in a brass tube. The tube was capped with aluminum foil, a plastic cap, and tape, and then logged and placed in a cold ice chest for delivery to a certified laboratory.

File No. 8-90-418-SI

Two to four samples were taken from approximately 50-100 yards of soil, composited in the laboratory, and analyzed according to EPA method 5030 for TPHg and modified EPA method 8020 for BTEX. Selected soil samples were analyzed according to EPA methods 8010, 6010/700, 9045, 1010, 9010, and 9030. One soil sample was tested for Aquatic Toxicity. See the attached laboratory reports for details.

The stockpiled soil samples that showed TPHg to exceed 100 parts per million (ppm) were disposed of at Gibson Oil & Refining Co, Inc., located in Bakersfield, California. The stockpiled soil that contained TPHg levels of less than 100 ppm were disposed of at Mountain View Landfill and Redwood Landfill, which are approved class III landfills.

706.88 tons of soil were disposed of at Gibson Oil & Refining Co., Inc., and the volume disposed of at class III landfills was 994 cubic yards (652 cubic yards to Mountain View and 342 cubic yards to Redwood).

All soil analytical results, manifest forms and correspondence with the landfills are attached.

If you have any questions or need additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORODDIN AMELI
PROJECT ENGINEER

LAWRENCE KOO, P. E.
C. E. #34928

FRANK HAMEDI-FARD
GENERAL MANAGER

SOIL DISPOSAL FROM THE EXCAVATION AT KAMUR INDUSTRIES CAR WASH 2351 SHORE LINE DRIVE ALAMEDA, CALIFORNIA JUNE 28, 1991

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD ■ SANTA CLARA, CA 95050 ■ (408) 496-0285 ■ 415-[illegible]

File No. 8-90-418-SI

SOIL DISPOSAL FROM THE EXCAVATION AT KAMUR INDUSTRIES CAR WASH 2351 SHORE LINE DRIVE ALAMEDA, CALIFORNIA JUNE 28, 1991

PREPARED FOR:
MR. MURRAY STEVENS
KAMUR INDUSTRIES, INC.
2351 SHORE LINE DRIVE
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

June 28, 1991

File No. 8-90-418-SI

Kamur Industries
2351 Shore Line Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

REFERENCE: SOIL DISPOSAL FROM THE EXCAVATION AT KAMUR INDUSTRIES CAR WASH
Located at 2351 Shore Line Drive, in Alameda, California

Dear Mr. Stevens:

This letter describes soil disposal from the excavation at the Kamur Industries Car Wash, located at 2351 Shore Line Drive, in Alameda, California.

SOIL DISPOSAL:

The excavated contaminated soil from the former tank areas was stockpiled on-site on a plastic sheet and covered. The quantification of the contaminated levels of TPH as gasoline and BTEX was carried out in separate phases due to the restricted area in which to spread out the soil. Samples were taken from the segregated stockpiled soil at different depths ranging from 2 to 3 feet below the surface of the segregated stockpile. The samples were collected by hand auger in a brass tube. The tube was capped with aluminum foil, a plastic cap, and tape, and then logged and placed in a cold ice chest for delivery to a certified laboratory.

File No. 8-90-418-SI

Two to four samples were taken from approximately 50-100 yards of soil, composited in the laboratory, and analyzed according to EPA method 5030 for TPHg and modified EPA method 8020 for BTEX. Selected soil samples were analyzed according to EPA methods 8010, 6010/700, 9045, 1010, 9010, and 9030. One soil sample was tested for Aquatic Toxicity. See the attached laboratory reports for details.

The stockpiled soil samples that showed TPHg to exceed 100 parts per million (ppm) were disposed of at Gibson Oil & Refining Co, Inc., located in Bakersfield, California. The stockpiled soil that contained TPHg levels of less than 100 ppm were disposed of at Mountain View Landfill and Redwood Landfill, which are approved class III landfills.

706.88 tons of soil were disposed of at Gibson Oil & Refining Co., Inc., and the volume disposed of at class III landfills was 994 cubic yards (652 cubic yards to Mountain View and 342 cubic yards to Redwood).

All soil analytical results, manifest forms and correspondence with the landfills are attached.

If you have any questions or need additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORODDIN AMELI
PROJECT ENGINEER

LAWRENCE KOO, P. E.
C. E. #34928

FRANK HAMEDI-FARD
GENERAL MANAGER

SOIL TECH ENGINEERING, INC.

Appendix C

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

May 1, 1992

Clayton Project No. 39744.00

Mr. Craig Mayfield
Water Resources Engineer
ALAMEDA WATER CONTROL AND WATER CONSERVATION DISTRICT
5997 Parkside Drive
Pleasanton, California 94588

Dear Mr. Mayfield:

Clayton Environmental Consultants, Inc. is pleased to submit our drilling completion logs for monitoring wells MW-15 through MW-21.

These monitoring wells were installed on February 24 and 25, 1992, under permit number 92083 (attached). We have also included a location sketch indicating each monitoring well location.

If you have any questions, please contact me at (510) 426-2609 or Mr. Alan Gibbs at (510) 426-2676.

Sincerely,

Dariush Dastmalchi

Dariush Dastmalchi
Geologist

DD/cmh

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT South Shore Shopping Center
Park Street and Shore Line Drive
Alameda, California

CLIENT
Name Harsch Investment Corporation
Address 235 MacArthur Blvd Phone
City Oakland Zip 94611

APPLICANT
Name Alan Gibbs
Clayton Environmental Consultants
Address 1252 Quarry Lane Phone 510-426-2676
City Pleasanton Zip 94566

TYPE OF PROJECT

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

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

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 519428

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 6 ft. Number 7

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

ESTIMATED STARTING DATE 2-24-92
ESTIMATED COMPLETION DATE 2-25-92

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

APPLICANT'S SIGNATURE [signature] Date 2-19-92

FOR OFFICE USE

PERMIT NUMBER 92083
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal industrial wells or 20 feet for domestic irrigation wells unless a lesser depth specially approved. Minimum seal depth monitoring wells is the maximum depth practica or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted c tings or heavy bentonite and upper two feet with c pacted material. In areas of known or suspec contamination, tremied cement grout shall be used place of compacted cuttings.

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 20 Feb
Wyman Hong

121

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 Date: 2/24/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi Driller: B&F

BORING NO. MW-15
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 2" casing, 15' of 0.01 Schedule 40 PVC screen, 5' of blank, 16' sand, 1' bentonite, 3' concrete

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
						Asphalt & packing material
	0	1				Reddish-yellow sand (5 YR 6/6), little to no silt, well rounded, poorly sorted, moist
		2				
		3				
		4				
	0	5			▽	
						Shell fragments wet
		6				
		7				
				SP		
		8				
		9				Grayish sand (2.5 YR 5/0), wet
		10				
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				

Clayton
ENVIRONMENTAL
CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/24/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-15
Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 2" casing, 15' of 0.01 Schedule 40 PVC screen, 5' of blank, 16' sand, 1' bentonite, 3' cement

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19				
		20				Gray, clayey sand (2.5 YR 5/0), sulfur smell (bay mud)
		21		CL		TD = 20'
		22				
		23				
		24				
		25				
		26				
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/24/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-16
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' of 0.01 Schedule 40 PVC screen, 25' of blank, 6' sand, 1' bentonite, 23' concrete (2" casing)

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		1				Asphalt & packing
						Reddish-yellow (5 YR 6/6), clayey sand
		2				
						Reddish-yellow (5 YR 6/6) sand with little to no silt or clay
		3				Sample refusal
		4				
					▽	
		5				
		6				
		7				
		8		SP		
		9				
		10				Gray (2.5 YR 5/0) sand with shell fragments
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/24/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-16
Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' of 0.01 Schedule 40 PVC screen, 25' of blank, 6' sand, 1' bentonite, 23' concrete (2" casing)

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19		SP		
		20				
		21				
		22				
		23				
		24				
		25				
		26				
		27				
		28				
		29				
		30				Grayish (2.5 YR 5/0) clay, no sand, sulfur odor, shell fragments
		31		CL		TD = 30'
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/25/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-17
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' 0.01 Schedule 40 PVC screen, 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
		1		SP		Reddish yellow (5 YR 6/6) sand, well rounded, poorly sorted, little to no silt, moist
		2				
		3				
		4				
		5				
		6			▽	Wet
		7				
		8				
		9				
		10				
		11				
		12				
		13				
		14				
		15				Gray (2.5 YR 5/0) silty sand with little clay
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/25/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-17
Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' 0.01 Schedule 40 PVC screen, 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Lithographic Symbol	DESCRIPTION
		19				
		20				Gray (2.5 YR 5/0) silty sand, very fine with little clay, sulfur odor
		21				
		22		SP		
		23				
		24				
		25				TD = 25'
		26		CL		Gray (2.5 YR 5/0) silty clay with little sand
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/25/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-18
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' screen, 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (USCS)	Litho-graphic Symbol	DESCRIPTION
		1		SP		Reddish-yellow (5 YR 6/6) sand, well rounded, poorly sorted, moist
		2				
		3				
		4				
		5				
		6			▽	
		7				
		8				
		9				
		10				Grayish (2.5 YR 5/0) sand with some silt
		11				
		12				
		13				
		14				
		15				Grayish (2.5 YR 5.0) sand with little s.l.
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/25/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-18
Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' screen, 20' blank, 6' sand, 1' bentonite, 18' grout

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19		SP		
		20				
		21				
		22				
		23				
		24				
		25				TD = 25'
		26		CL		Grayish green silty clay with little sand
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.:	39744.00	**Date:** 2/25/92	**BORING NO.** MW-19
Client:	Harsch Investment Corporation		
Location:	Park & Shore Line Drive		Sheet 1 of 2
Logged By:	D. Dastmalchi	**Driller:** B&F	

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' 0.01 Schedule 40 PVC screen, 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level	- -					- -
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		1				Reddish-yellow (5 YR 6/6) sand, well rounded, poorly sorted, moist.
	0	2				
		3				
		4				
		5				
	0	6			▽	
		7				
		8		SP		
		9				
		10				Grayish (2.5 YR 5/0) sand with very little to no silt
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/25/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-19
Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' 0.01 Schedule 40 PVC screen, 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uses)	Litho-graphic Symbol	DESCRIPTION
		19		SP		
		20				
		21				
		22				
		23				
		24				
		25				TD = 25'
		26		CL		Silty clay with little to no sand
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/26/92
Client: Harsh Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-20
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 2" casing, 5' screen (0.01 Schedule 40 PVC), 15' blank, 6' sand, 1' bentonite, 18' grout

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (usce)	Litho-graphic Symbol	DESCRIPTION
		1				Reddish yellow (5 YR 6/6) sand
		2				Asphalt and packing material
		3				Light brown sand
		4				
		5				
		6			▽	
		7				
		8		SP		
		9				
		10				Grayish green silty sand with shell fragments
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/26/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-20
Sheet 2 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 2" casing, 5' screen (0.01 Schedule 40 PVC), 15' blank, 6' sand, 1' bentonite, 18' grout

Water Level					
Time					
Date					

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19				
		20				
		21				
		22				
		23				
		24				
		25				TD = 25'
		26		CL		Sandy clay to silty clay Silty clay
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.: 39744.00 **Date:** 2/25/92
Client: Harsch Investment Corporation
Location: Park & Shore Line Drive
Logged By: D. Dastmalchi **Driller:** B&F

BORING NO. MW-21
Sheet 1 of 2

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' screen (0.01 Schedule 40), 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level						
Time						
Date						

Blow Count	PID — OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		1				Reddish-yellow (5 YR 6/6) sand, moist, well rounded, poorly sorted
		2				
		3				
		4				
		5			▽	
		6				
		7				
		8		SP		
		9				
		10				Grayish (2.5 YR 5/0) sand with some silt
		11				
		12				
		13				
		14				
		15				
		16				
		17				
		18				

Clayton
ENVIRONMENTAL CONSULTANTS

LOG OF EXPLORATORY BORING

Project No.:	39744.00	**Date:** 2/25/92	**BORING NO.** MW-21
Client:	Harsch Investment Corporation		
Location:	Park & Shore Line Drive		Sheet 2 of 2
Logged By:	D. Dastmalchi	**Driller:** B&F	

Field Location of Boring:

Ground Elevation: **Datum:**

Drilling Method: Hollow stem
Hole Diameter: 8"
Casing Installation Data: 5' screen (0.01 Schedule 40), 20' blank, 6' sand, 1' bentonite, 18' grout (2" casing)

Water Level					
Time					
Date					

Blow Count	PID / OVA (ppm)	DEPTH	SAMPLE	Soil Group Symbol (uscs)	Litho-graphic Symbol	DESCRIPTION
		19				
		20				Grayish (2.5 YR 5/0) silty sand
		21				
		22				
		23				
		24				
		25				TD = 25'
		26		CL		Silty clay
		27				
		28				
		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				