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1.0 INTRODUCTION

Clayton Environmental Consultants, Inc. was retained by Harsch Investment Corporation to sample surface soils at the former South Shore Car Wash site at 2351 Shore Line Drive in Alameda, California (Figure 1). Mr. Michael Dosen, vice president for Harsch, authorized this work by accepting Clayton's Proposal No. 91-B-032. This report provides details of sampling methods, rationale, and results of work conducted at the subject site.

2.0 BACKGROUND

The underground storage tanks at the South Shore Car Wash/Chevron service station were removed on July 12, 1990, by Zacor Corporation. Soil sampling was conducted by Environmental Bio-System, Inc. In the vicinity of the USTs, concentrations of gasoline in the soil ranged from 360 to 9,500 parts per million (ppm).

The environmental consultant for the car wash, Soil Tech Engineering (STE), excavated approximately 1,200 cubic yards of soil from the former location of the USTs and dispenser island and stockpiled them at the former location of the car wash. STE removed the stockpiled soil from the site on February 16, 1991. On March 5, 1991, Clayton collected soil samples from the area formerly covered by stockpiled soils.

3.0 PURPOSE

Harsch owns the subject site and is in the process of redeveloping it. Clayton performed this work to determine if soils remaining after removal of stockpiled soil contain residual gasoline hydrocarbon concentrations that pose an environmental concern.

4.0 SAMPLING

4.1 INITIAL SCREENING OF SURFACE SOILS

Clayton screened surface soil for volatile hydrocarbon contamination with an organic vapor meter (OVM). We selected twenty screening locations in a grid pattern across the site (Figure 2). We used the ambient temperature headspace method. A soil sample from each location was placed in a sealable plastic bag so that headspace was left in the bag. The sample was then allowed to reach ambient temperature (usually for 10 to 15 minutes), which caused any hydrocarbon vapors to volatilize into the headspace. We monitored the concentration of hydrocarbon vapors in headspace by piercing the bag with the OVM probe. This initial screening was used to identify areas of potential contamination from which soil samples would be collected for laboratory analysis.

4.2 SAMPLE COLLECTION FOR LABORATORY ANALYSIS

On March 5, 1991, Clayton collected 4 soil samples for laboratory analysis from areas that registered OVM readings ranging from 6 to 201 ppm, and appeared to contain residual gasoline based on visual and olfactory senses. Figure 2 shows the locations of the soil samples collected for analysis.

Soil samples were collected from approximately 3 to 6 inches below the ground surface for laboratory analysis. The samples were collected in 1.5-inch brass tubes, each measuring 6 inches long. The tube ends were covered with aluminum foil, capped with plastic caps, and sealed with tape, and the samples were labeled, and placed into a pre-cooled ice chest chilled to 4°C for shipment to Clayton's laboratory in Pleasanton, California. Upon delivery to the laboratory, a chain-of-custody form was completed listing analyses required.

5.0 LABORATORY RESULTS

Soil samples collected on March 5, 1991, were analyzed by Environmental Protection Agency (EPA) Method 8015/8020 for total petroleum hydrocarbons as gasoline and BTEX. In the following table, we summarize the results of laboratory analyses. Only low levels of gasoline and BTEX were detected in the samples. The laboratory analyses and chain-of-custody are included in Appendix A.

ANALYTICAL RESULTS OF SOIL SAMPLES COLLECTED ON MARCH 5, 1991 FROM SOUTH SHORE CAR WASH

Constituent	Concentrations reported in mg/kg*			
	Area 3A	Area 10	Area 13	Area 18
Gasoline	32	23	26	13
Benzene	<0.005	<0.005	0.006	<0.005
Toluene	0.14	0.041	0.11	0.036
Ethylbenzene	0.032	0.006	0.024	<0.005
Xylenes	1.1	0.68	0.92	0.13

* mg/kg is equal to parts per million (ppm)

6.0 CONCLUSIONS AND RECOMMENDATIONS


Soil from twenty areas across the entire site were screened for volatile hydrocarbons with an OVM. We collected soil samples from areas that appeared to have the highest potential for containing gasoline contamination based on OVM readings, and visual and olfactory observations.

The gasoline and BTEX concentrations detected in these samples are low and will continue to aerate and biodegrade onsite. Therefore we do not recommend any further soil investigation or remediation at this site.

Limitations

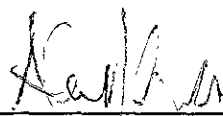
The information and opinions rendered in this report are exclusively for use by Client. Clayton Environmental Consultants, Inc. will not distribute this report without your consent except as may be required by law or court order. The information and opinions expressed in this report are given in response to our limited assignment and should be evaluated and implemented only in light of that assignment. We accept responsibility for the competent performance of our duties in executing the assignment and preparing this report in accordance with the normal standards of our profession but disclaim any responsibility for consequential damages.

This report prepared by:



Laurene Compton
Geologist

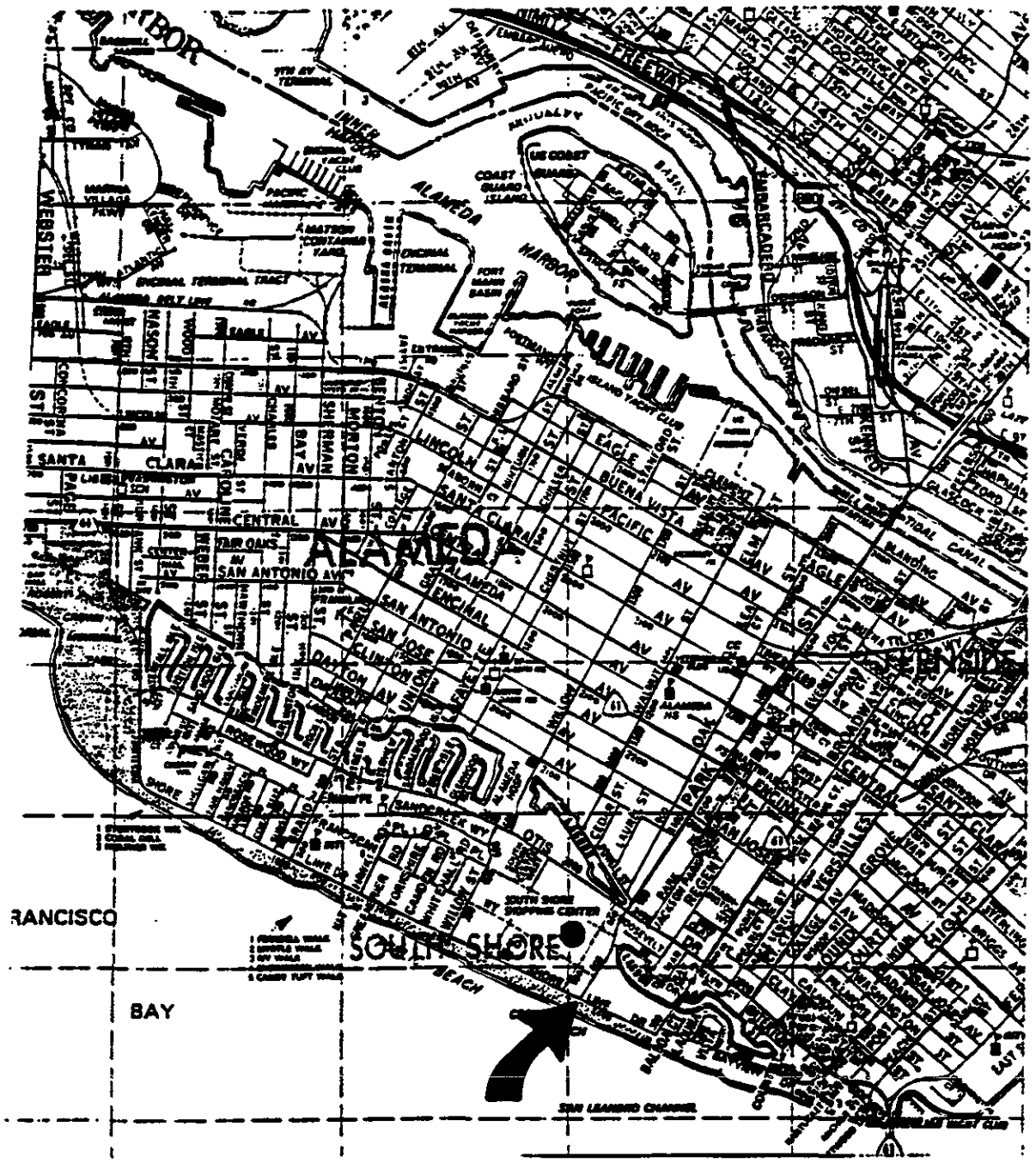
This report reviewed by:



Alan D. Gibbs, R.G.
Supervisor, Geology
Western Operations

March 20, 1991

FIGURES



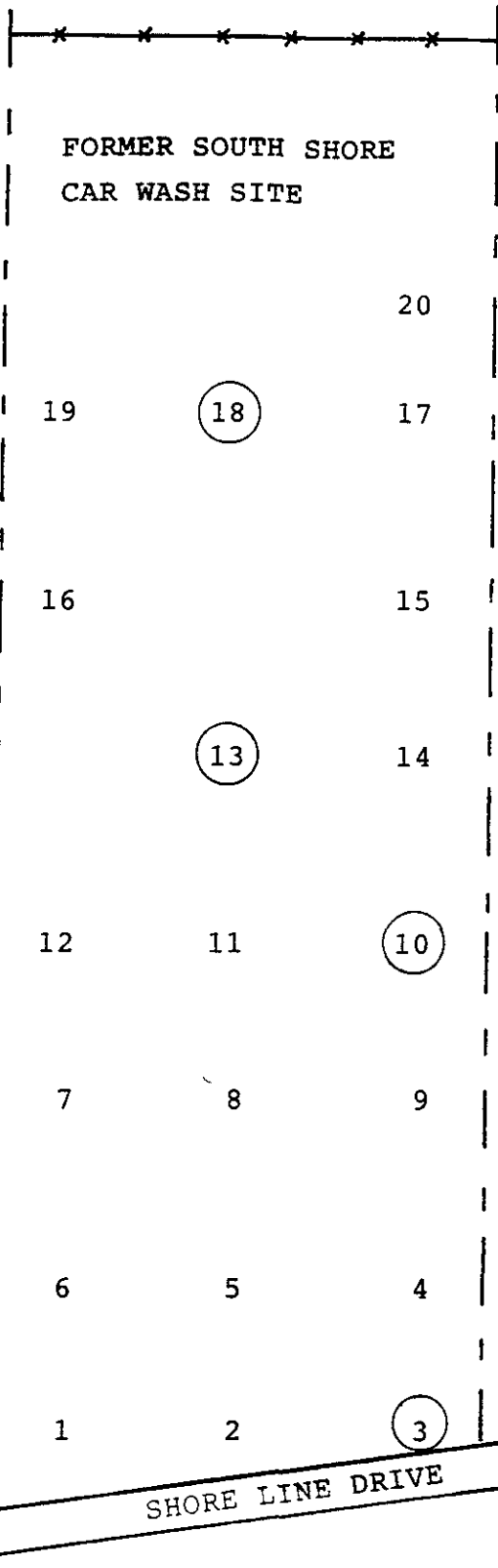
Site Location Map
 Harsch Investment Corporation
 Park Street and Shore Line Drive
 Alameda, California

Clayton Project No. 29196.00

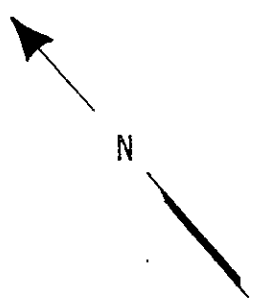
Figure
1

29196-01-17

Clayton
 ENVIRONMENTAL
 CONSULTANTS



BIG FIVE BUILDING



LEGEND

12 AREA WHERE SOIL WAS SCREENED WITH OVM

13 SOIL SAMPLE COLLECTED FOR LABORATORY ANALYSIS

- - - PROPERTY BOUNDARY

* * * FENCE

NOT TO SCALE



SHORE LINE DRIVE

FORMER TEXACO SITE

SOIL SAMPLING PLAN, MARCH 5, 1991
 South Shore Car Wash
 2351 Shore Line Drive
 Alameda, California

Figure
 2

Clayton
 ENVIRONMENTAL
 CONSULTANTS

APPENDIX A
LABORATORY RESULTS AND
CHAIN-OF-CUSTODY

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
415) 426-2600
Fax (415) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

March 8, 1991

Ms. Laurene Compton
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, Ca. 94566

Client Ref. 34063.00
Clayton Project No. 91030.51

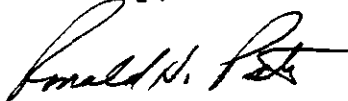
Dear Ms. Compton:

Attached is our analytical laboratory report for the samples received on March 6, 1991. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (415) 426-2657.

Sincerely,



Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/dt
Attachments

Results of Analysis
 for
 Harsch Investments

Client Reference: 34063.00
 Clayton Project No. 91030.51

Sample Identification:	AREA 3A	Date Sampled:	03/05/91
Lab Number:	9103051-01A	Date Received:	03/06/91
Sample Matrix/Media:	SOIL	Date Prepared:	03/06/91
Preparation Method:	EPA 5030	Date Analyzed:	03/07/91
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
<u>BTEX/Gasoline</u>			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.14	0.005
Ethylbenzene	100-41-4	0.032	0.005
Xylenes	1330-20-7	1.1	0.005
Gasoline	-----	32	0.3

ND Not detected at or above limit of detection
 -- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 34063.00
Clayton Project No. 91030.51

Sample Identification:	AREA 10	Date Sampled:	03/05/91
Lab Number:	9103051-02A	Date Received:	03/06/91
Sample Matrix/Media:	SOIL	Date Prepared:	03/06/91
Preparation Method:	EPA 5030	Date Analyzed:	03/07/91
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
<u>BTEX/Gasoline</u>			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.041	0.005
Ethylbenzene	100-41-4	0.006	0.005
Xylenes	1330-20-7	0.68	0.005
Gasoline	-----	23	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 34063.00
Clayton Project No. 91030.51

Sample Identification:	AREA 13	Date Sampled:	03/05/91
Lab Number:	9103051-03A	Date Received:	03/06/91
Sample Matrix/Media:	SOIL	Date Prepared:	03/06/91
Preparation Method:	EPA 5030	Date Analyzed:	03/07/91
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
<u>BTEX/Gasoline</u>			
Benzene	71-43-2	0.006	0.005
Toluene	108-88-3	0.11	0.005
Ethylbenzene	100-41-4	0.024	0.005
Xylenes	1330-20-7	0.92	0.005
Gasoline	-----	26	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 34063.00
Clayton Project No. 91030.51

Sample Identification:	AREA 18	Date Sampled:	03/05/91
Lab Number:	9103051-04A	Date Received:	03/06/91
Sample Matrix/Media:	SOIL	Date Prepared:	03/06/91
Preparation Method:	EPA 5030	Date Analyzed:	03/07/91
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
<u>BTEX/Gasoline</u>			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	0.036	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	0.13	0.005
Gasoline	-----	13	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Harsch Investments

Client Reference: 34063.00
Clayton Project No. 91030.51

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9103051-04A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Prepared:	03/06/91
Preparation Method:	EPA 5030	Date Analyzed:	03/07/91
Analytical Method:	EPA 8015/8020		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
<u>BTEX/Gasoline</u>			
Benzene	71-43-2	ND	0.005
Toluene	108-88-3	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Xylenes	1330-20-7	ND	0.005
Gasoline	-----	ND	0.3

ND Not detected at or above limit of detection
-- Information not available or not applicable

