ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment

March 23, 1990

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, California 94025

Attention: Mr. Gary Zaccor

The following documentation concerns the initial tank removal sampling and assessment performed by Environmental Bio-Systems, Inc. for Zaccor Corporation, on February 26, 1990 at:

DUTRO COMPANY
1333 62ND STREET
EMERYVILLE, CALIFORNIA

On this date one 1,000 gallon gasoline tank and one 1,000 gallon diesel tank were removed. Subsequent sampling of surrounding soil within the tank pit excavation was performed in the presence of Inspector Dennis Byrne of the Alameda County Department of Environmental Health.

FIELD OBSERVATIONS

A visual inspection of tank A, (1,000 gallon gasoline tank constructed of single walled steel) revealed that the tar wrap was mostly intact and that approximately 30% of the tank was rusted. No holes were observed in the tank and no staining or hydrocarbon odor was noted in the backfill material or soil underlying the tank.

Tank B, the 1,000 gallon diesel tank constructed of single walled steel, had an almost completely intact tar wrap. Approximately 30% of the tank was slightly rusted, however no holes were observed in the tank and no staining or hydrocarbon odor was noted in the backfill material or soil underlying the tank.

Water was present in the tank pit excavation at a depth of approximately 6.5 feet below grade upon removal of the tanks.

90 APR -9 PM 2:40

RECEIVED 3/30/90

30028 Industrial Pkwy., S.W., Suite C Hayward, CA 94544 (415) 429-9988 Fax (415) 429-9189

SAMPLING

At the direction of Inspector Byrne four side wall soil samples and one water sample were collected from the tank pit excavation (refer to the attached diagram illustrating sample locations and depths).

Soil sample #1 was collected from the eastern side wall of the tank pit near the end of tank B at a depth of 4.5 feet below grade. Soil sample #2 was also collected from the eastern side wall at a depth of 6.0 feet. Soil sample #3 was collected from the western side wall of the pit near the end of tank B at a depth of 6.0 feet below grade. Soil sample #4 was collected from a depth of 4.5 feet below grade near the end of tank A, in the western side wall of the pit.

Water sample #5 was collected from the standing water in the tank pit at a depth of 6.75 feet below grade.

A single composite soil sample was collected from the stockpiled material generated during tank removal operations.

SAMPLE ANALYSIS

Samples #1 and #3 were analyzed for total petroleum hydrocarbons (TPH) as diesel and benzene, toluene, xylenes, and ethylbenzene (BTX&E).

Samples #2 and #4 were analyzed for TPH as gasoline and BTX&E.

Samples #5 and #6A-D were analyzed for TPH as diesel, TPH as gasoline, and BTX&E.

SAMPLING METHODOLOGY

Soil was removed from the pit in a backhoe bucket. After removing the first 3 to 4 inches of soil just above the teeth of the bucket, presumably slough, samples were contained by driving clean brass tubes (1.92" x 6") into the exposed layer of soil. Soil was packed into the tubes to eliminate the possibility of headspace. Thus prepared, the ends of the tubes were wrapped with aluminum foil and sealed with plastic caps. After removing excess foil, electrical tape was applied to the seams between cap and tube in an effort to reduce the evaporative loss of volatile constituents.

Water sample #5 was collected using a subsurface water sampling apparatus. Using this device, a clean one liter sample collection bottle was lowered below the surface of the standing water in the pit and then opened, allowing water to fill the bottle. Using this methodology water was collected from the pit and transferred into a clean one liter bottle and three clean 40 ml volatile organic analysis vials (VOA's) with plastic screw caps containing Teflon septa.

The samples were placed in cooler on ice and transported under chain of custody documentation to Mobile Chem Labs, Inc., a certified hazardous materials testing laboratory (HMTL #289).

Analytical methods used by Mobile Chem Labs, Inc. were consistent with procedures presented in EPA document SW-846.

RESULTS

The certified analytical report documenting the findings of analyses has been attached to this report.

Sample #1 did not show concentrations of TPH as diesel or BTX&E above the respective detection limits for each of these constituents.

Sample #2 did not show concentrations of TPH as gasoline or BTX&E above the respective detection limits for each of these constituents.

Sample #3 did not show concentrations of TPH as diesel or BTX&E above the respective detection limits for each of these constituents.

Sample #4 did not show concentrations of TPH as gasoline or BTX&E above the respective detection limits for each of these constituents.

Water sample #5 contained TPH as diesel at a concentration of 85 parts per billion (ppb),TPH as gasoline at 110 ppb, benzene at 21 ppb, toluene, at 2.6 ppb, xylenes at 5.6 ppb, and ethylbenzene at 0.9 ppb.

Composite soil sample #6A-D contained TPH as diesel at a concentration of 9.5 ppm. TPH as gasoline and BTX&E were not detected above the respective detection limits for each of these constituents.

RECOMMENDATIONS

The State Water Resources Control Board document, Leaking Underground Fuel Tank Field Manual (LUFT), supported by the San Francisco Regional Water Quality Control Board (SFRWQCB), defines acceptable limits and appropriate actions in dealing with tank removal and associated contamination.

Because of the presence of contaminants in water sample #5, further investigatory actions aimed at determining the impact (if any) to the shallow water bearing zone is suggested, subject to the appropriate regulatory approvals.

In accordance with the LUFT manual, investigatory actions would include the installation of at least one groundwater monitoring well within ten feet of the former tank pit for the collection of groundwater quality data. Also in accordance with LUFT guidelines, a minimum of three groundwater reference points are necessary in order to determine groundwater flow direction beneath the site. This requirement may be satisfied by the installation of two additional groundwater reference points, either peizometers or wells. The three reference points will allow triangulation and subsequent determination of groundwater gradient. Properly installed and screened wells located on adjacent properties (if any) may qualify as eligible reference points.

Based on the results of composite sample analyses, the stockpiled material is eligible for disposal at an accepting class III landfill.

REPORTAGE

Copies of the sampling report, the chain of custody, and the certified analytical report should be submitted to the SFRWQCB, the Alameda County Water District, and the Alameda County Department of Environmental Health.

The following addresses have been listed for your convenience:

Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Room 700
Oakland, CA 94612
ATTN: Fuel Leaks Division

Alameda County Water District
P.O. Box 5110
43885 S. Grimmer Blvd.
Fremont, CA 94537
ATTN: Linda Spencer

County of Alameda
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621
ATTN: Mr. Dennis Byrne

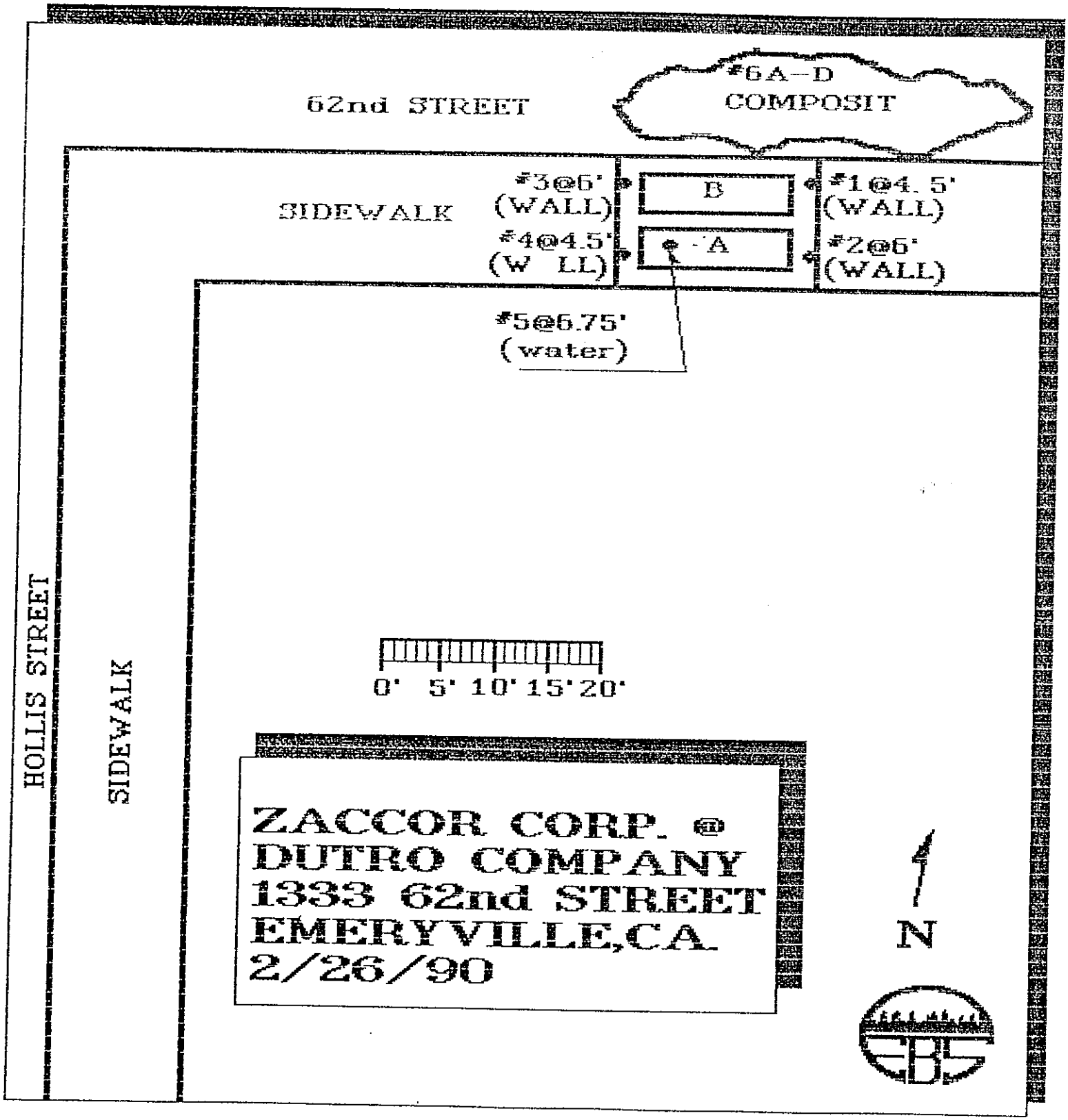
If you have any questions, or if I may be of service please contact me at (415) 429-9988.

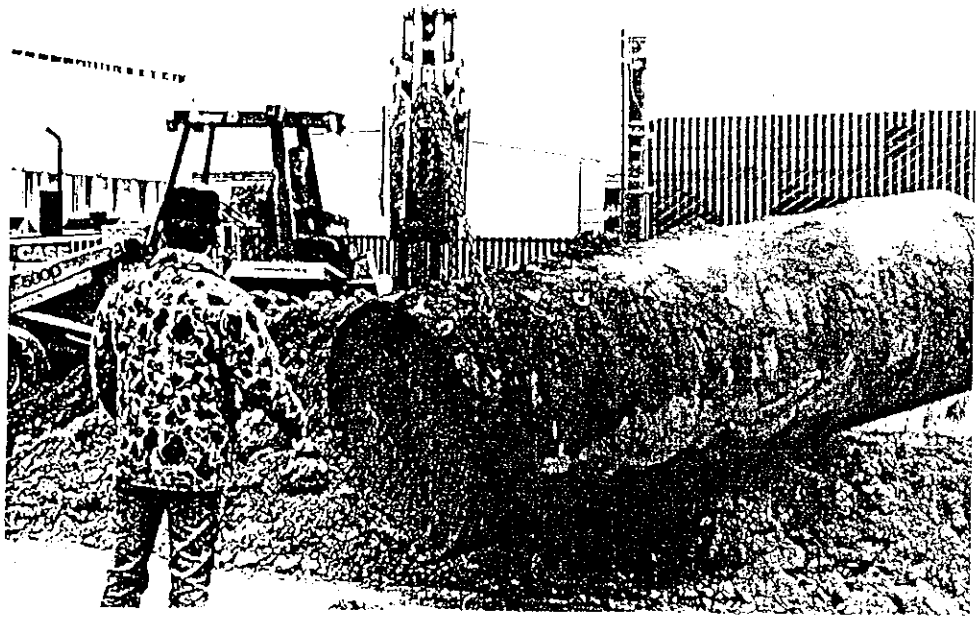
Sincerely,
ENVIRONMENTAL BIO-SYSTEMS, INC.

Brenda D. McNabb
Project Manager

Timothy M. Babcock
Environmental Scientist

BDM


62nd STREET
#6A-D
COMPOSIT
SIDEWALK
#3@6'
(WALL)
#4@4.5'
(W LL)
B
A
#1@4.5'
(WALL)
#2@6'
(WALL)
#5@6.75'
(water)
HOLLIS STREET
SIDEWALK
0' 5' 10' 15' 20'
ZACCOR CORP. @
DUTRO COMPANY
1333 62nd STREET
EMERYVILLE,CA.
2/26/90
N



MOBILE CHEM LABS INC.

1678 Rellez Valley Road
Lafayette, CA 94549 • (415) 945-1266

Zaccor Corporation
791 Hamilton Avenue
Menlo Park, CA 94025
Attn: Gary Zaccor

Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description	Detection Limit	SOIL Total Petroleum Hydrocarbons as Diesel
		ppm	ppm
	EBS # 003-100 - Emeryville Dutro Co., 1333 62nd		
B020108	# 1	5	<5
B020110	# 3	5	<5
B020113	# 6 A-D	5	9.5

Note: Analysis was performed using EPA methods 3550 and TPH LUFT

MOBILE CHEM LABS

Joyce A. V. Dishman

for Ronald G. Evans
Lab Director

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Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description
B020108	EBS # 003-101 - Emeryville 1333 62nd, Dutro Co. # 1 SOIL

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Benzene	0.1	<0.1
Toluene	0.1	<0.1
Xylenes	0.1	<0.1
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5030 and 8015 with method 8020 used for BTX distinction.

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Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description
B020109	EBS # 003-101 - Emeryville 1333 62nd, Dutro Co. # 2 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.1	<0.1
Toluene	0.1	<0.1
Xylenes	0.1	<0.1
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5030 and 8015 with method 8020 used for BTX distinction.

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Zaccor Corporation
791 Hamilton Avenue
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Attn: Gary Zaccor

Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description
B020110	EBS # 003-101 - Emeryville 1333 62nd, Dutso Co. # 3 SOIL

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Benzene	0.1	<0.1
Toluene	0.1	<0.1
Xylenes	0.1	<0.1
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5030 and 8015 with method 8020 used for BTX distinction.

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Zaccor Corporation
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Menlo Park, Ca. 94025
Attn: Gary Zaccor

Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description
B020111	EBS # 003-101 - Emeryville 1333 62nd, Dutro Co. # 4 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.1	<0.1
Toluene	0.1	<0.1
Xylenes	0.1	<0.1
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5030 and 8015 with method 8020 used for BTX distinction.

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for Ronald G. Evans
Lab Director

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791 Hamilton Avenue
Menlow Park, CA 94025
Attn: Gary Zaccor

Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description	Detection Limit	WATER Total Petroleum Hydrocarbons as Diesel
		ppb	ppb
	EBS # 003-100 - Emeryville Dutro Co., 1333 62nd		
B020112	# 5	50	85

Note: Analysis was performed using EPA methods 3510 and TPH LUFT

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Zaccor Corporation
791 Hamilton Ave.
Menlo Park, CA 94025
Attn: Gary Zaccor

Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-27-90

Sample Number	Sample Description
B020112	EBS # 003-100 - Emeryville Dutro Co., 1333 62nd # 5 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	110
Benzene	0.5	21
Toluene	0.5	2.6
Xylenes	0.5	5.6
Ethylbenzene	0.5	0.9

Note: Analysis was performed using EPA methods 5030 and 602.

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Zaccor Corporation
791 Hamilton Avenue
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Attn: Gary Zaccor

Date Sampled:02-26-90
Date Received:02-26-90
Date Reported:02-26-90

Sample Number	Sample Description
B020113	EBS # 003-101 - Emeryville 1333 62nd, Dutro Co. # 6 A-D SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.1	<0.1
Toluene	0.1	<0.1
Xylenes	0.1	<0.1
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5030 and 8015 with method 8020 used for BTX distinction.

MOBILE CHEM LABS

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Ronald G. Evans
Lab Director

ENVIRONMENTAL BIO-SYSTEMS, INC.
30028 INDUSTRIAL PKWY., S.W.
HAYWARD, CA. 94544
(415) 429-9988

CHAIN OF CUSTODY

SITE ADDRESS: Dutra Co. 1333 62nd Emeryville, CA

CLIENT: Zaccor Corp.

EBS #: 003-100

DATE SAMPLED: 2/26/90

LABORATORY: Mobile Chem HMTL#:

SAMPLE #	MATRIX	ANALYSIS	TURNAROUND
#1	Soil	Diesel, BTEX	Immediate Rush
2	Soil	Gasoline, BTEX	↓
3	Soil	Diesel, BTEX	
4	Soil	Gasoline BTEX	
5	Water	TPH Gasoline, BTEX, Diesel	48 HR.
6A-D	Soil	" " "	Immediate Rush

Sampling Performed By Brenda D. McNabb

Sampling Completed At 10:45 (AM)/PM

Released By:	Accepted By:	Time/Date
[signature]	[signature]	11:45 AM 2/26/90
		___/___/__
		___/___/__