

April 19, 1996
92CB040

STD 3928

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

**Subject: Interstate Brands Company, 1010 46th Street, Oakland, CA
Quarterly Groundwater Monitoring Report**

Dear Ms. Hugo:

Woodward-Clyde Consultants (WCC) has prepared this letter report discussing the March 1996 quarterly groundwater monitoring results for the Interstate Brands Company (IBC) Site at 1010 46th Street, Oakland, California shown on Figure 1. This site is a former Continental Baking Company (CBC) facility.

GROUNDWATER ELEVATION

Water levels were measured on March 6, 1996 by WCC personnel in monitoring wells MW-1, 2 and 3, shown on Figure 2, with an electronic water level sounder and recorded to the nearest 0.01 foot. Table 1 summarizes the current and previous groundwater elevation measurements in the three monitoring wells. Groundwater elevations vary in the three monitoring wells from 51.73 feet above mean sea level (MSL) to 55.87 feet above MSL. The groundwater flow direction is approximately southwest as shown on Figure 2.

ANALYTICAL RESULTS

Sampling activities were also performed in March 1996 by WCC personnel. Copies of the field water sample logs are attached.

The wetted casing volume was calculated for each well and approximately four casing volumes were removed from each well prior to sampling. In addition to the groundwater samples collected from the three monitoring wells, one duplicate sample was collected from well MW-1 and labeled MW-4. Samples were submitted for analysis for Total Petroleum Hydrocarbons (TPH) and quantified as diesel (TPHd, modified EPA Method 8015) and gasoline (TPHg); benzene, toluene, ethylbenzene, and xylenes (BTEX, EPA Method 8020); and Total Recoverable Petroleum

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ENVIRONMENTAL
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Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, California 94607-4014
(510) 893-3600 Fax (510) 874-3268

STID 3928

Transmittal

To: Susan Hugo Date: April 19, 1995
Firm: Alameda County Department of Environmental Health

From: Bill Copeland, phone 510-874-3192

Subject: **Quarterly Monitoring Report, IBC, Oakland Site**

Hi Susan

Enclosed is the quarterly report for IBC's Oakland site. As you'll see, we unfortunately had an increase in concentrations, probably due to a rise in groundwater elevations because of all the rain. We had previously spoken about preparing a document justifying closure of this case. I don't know how the current situation affects that. Following your review of this report, please call me to discuss what we should do next. Thank you.

ENVIRONMENTAL
PROTECTION
96 APR 22 PM 2:31

Ms. Susan Hugo
April 19, 1996
Page 2

Hydrocarbons by Standard Method 5520BF. Sample analyses were performed by Anametrix Laboratories, San Jose, California. Copies of the laboratory data sheets and the chain-of-custody form are attached.

A quality assurance/quality control review of the analytical data was performed by a WCC chemist. The results of the review indicated that the data are of acceptable quality.

The reported results from the March 1996 sampling, summarized in Table 2, are as follows:

- TPHg was detected in MW-1 only at a concentration of 39,000 µg/l;
- TPHd was detected in MW-1, 2, and 3 at concentrations of 2,500 µg/l, 68 µg/l, and 140 µg/l, respectively;
- BTEX was detected in MW-1 only at concentrations ranging from 1000 µg/l benzene to 15,000 µg/l xylenes; and
- Oil and Grease was reported at a concentration of 5.9 mg/l in MW-1. The detection limit for total oil and grease is 5.0 mg/l.

The reported TPHg and BTEX results in monitoring well MW-1, and TPHd results in all monitoring wells, are higher than have been reported previously. Total oil and grease was reported for the first time on site in MW-1. TPHg and BTEX remain below their respective detection limits in MW-2 and MW-3. The reason for the slightly elevated concentrations may be attributable to the relatively high groundwater level. The elevation of groundwater is higher than previously recorded, except during Spring 1995.

If you have any questions, please feel free to call me at (510) 874-3192.

Sincerely,

William B. Copeland
Assistant Project Geologist

cc: Fred Dannecker, IBC-San Francisco
Travis Bryant, IBC-Kansas City, MO
Jim Hummert, WCC-SL

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
INTERSTATE BRANDS CORPORATION, OAKLAND, CA

Well Identification	Date	Top of Casing Elevation (feet above MSL)	Depth to Water (feet below top of casing)	Water Surface Elevation (feet above MSL)
MW1	5/26/94	61.84	9.27	52.57
	7/29/94	61.84	9.81	52.03
	8/26/94	61.84	9.87	51.97
	10/4/94	61.84	9.89	51.95
	10/27/94	61.84	9.94	51.90
	11/30/94	61.84	8.92	52.92
	1/3/95	61.84	8.79	53.05
	1/31/95	61.84	8.33	53.51
	3/16/95	61.84	8.07	53.77
	6/25/95	61.84	9.02	52.82
	8/30/95	61.84	9.44	52.40
	11/29/95	61.84	9.93	51.91
	3/6/96	61.84	8.37	53.47
MW-2	5/26/94	53.10	9.30	53.80
	7/29/94	63.10	9.70	53.40
	8/26/94	63.10	9.89	53.21
	10/4/94	63.10	9.86	53.24
	10/27/94	63.10	9.96	53.14
	11/30/94	63.10	8.95	54.15
	1/3/95	63.10	8.15	54.95
	1/31/95	63.10	6.96*	56.14
	3/16/95	63.10	6.37*	56.73
	6/12/95	63.10	9.07	54.03
	8/30/95	63.10	9.53	53.57
	11/29/95	63.10	9.74	53.36
	3/6/96	63.10	7.23	55.87
MW-3	5/26/94	62.51	12.88	49.63
	7/29/94	62.51	13.61	48.90
	8/26/94	62.51	13.71	48.80
	10/4/94	62.51	13.74	48.77
	10/27/94	62.51	13.77	48.74
	11/30/94	62.51	11.85	50.66
	1/3/95	62.51	12.09	50.42
	1/31/95	62.51	10.64	51.87
	3/16/95	62.51	10.79	51.72
	6/12/95	62.51	12.05	50.46
	8/30/95	62.51	13.54	48.97
	11/29/95	62.51	13.72	48.79
	3/6/96	62.51	10.78	51.73

* Noted to be under pressure when opened.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
INTERSTATE BRANDS CORPORATION, OAKLAND, CALIFORNIA

Parameters		TPH diesel	TPH gasoline	TPH BTEX				total oil & grease
				benzene	toluene	ethylbenzene	total xylenes	
EPA Method		8015	8015	8020				5520 BF
Units		(µg/L)	(µg/L)	(µg/L)				(mg/L)
Well Number	Date							
MW-1	5/26/94	1300	12000	57	340	370	3100	<5.0
	8/26/94	510 ¹ /650 ¹	6700/8400	22/35	71/97	310/410	1000/1400	<5.0/<5.0
	11/30/94	1300	29000	480	1100	1200	5300	<5.0
	3/16/95	1900	29000	140	1400	1800	9700	<5.0
	6/12/95	810 ¹ /540 ¹	3900/11000	23/280	57/610	200/400	680/2000	<5.0/<5.0
	8/30/95	350 ¹	3300	26	36	250	490	<5.0
	11/29/95	270	1700	20	21	110	210	<5.0
	3/6/96	2500/2400 ¹	39000/38000	690/1000	1800/2000	2300/2300	14000/15000	5.9
MW-2	5/26/94	<50/<50	<50/<50	0.50/<0.50	0.50/<0.50	0.50/<0.50	0.50/<0.50	<5.0
	8/26/94	<50	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	11/30/94	<50	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	3/16/95	<50/<50	<50/<50	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<5.0
	6/12/95	<50	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	8/30/95	52 ³	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	11/29/95	<50	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	3/6/96	68 ⁴	<50	<0.50	<0.50	<0.50	<0.50	<5.0
MW-3	5/26/94	99	<50	<0.50	<0.50	<0.50	1.7	<5.0
	8/26/94	66 ²	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	11/30/94	78/85	100/100	<0.50/1.9	<0.50/0.50	<0.50/1.0	2.1/4.3	<5.0
	3/16/95	<50	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	6/12/95	120 ²	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	8/30/95	88 ³ /57 ³	<50/<50	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<0.50/<0.50	<5.0/<5.0
	11/29/95	<50	<50	<0.50	<0.50	<0.50	<0.50	<5.0
	3/6/96	140 ³	<50	<0.50	<0.50	<0.50	<0.50	<5.0

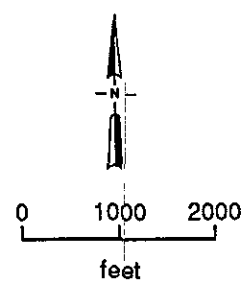
Results of duplicate sample analyses are shown by a dash ("")

⁽¹⁾ Primarily due to lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline.

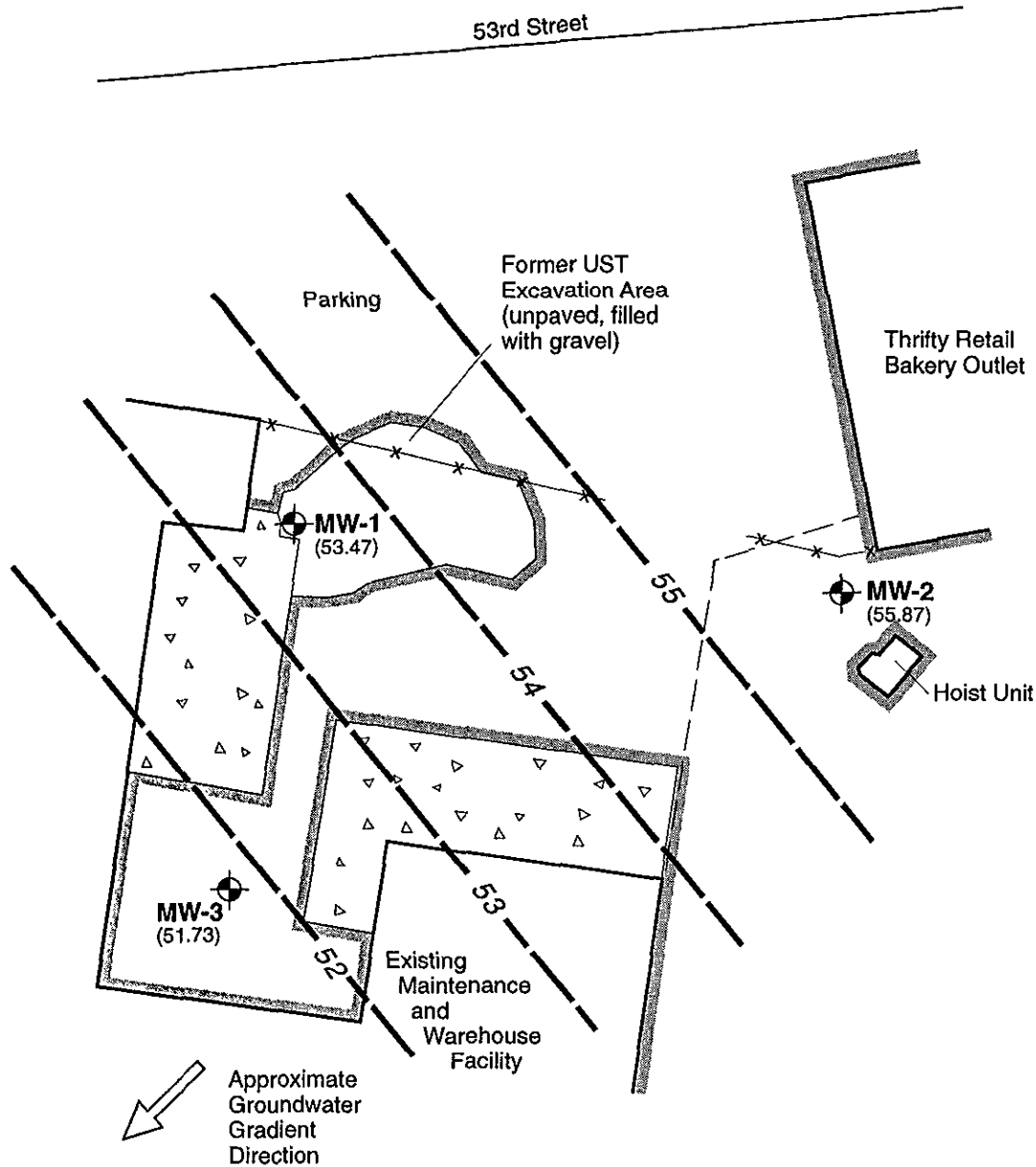
⁽²⁾ Primarily due to heavier petroleum product of hydrocarbon range C18-C36.

⁽³⁾ Due to a combination of diesel and a discrete peak not indicative of diesel fuel.



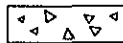
⁽⁴⁾ Due to the presence of discrete peaks not indicative of diesel fuel.

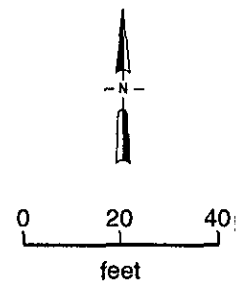


Project No. 92CB040	Interstate Brands Corporation 1010 46th St., Oakland, CA	SITE LOCATION	Figure 1
Woodward-Clyde Consultants			



LEGEND

- MW-1  Approximate Well Location
-  Asphalt
-  Concrete
- (51.73) Groundwater Elevation



Project No.
92CB040

Interstate Brands Corporation
1010 46th Street, Oakland, CA

Woodward-Clyde Consultants

MONITORING WELL LOCATIONS
MARCH 6, 1996

Figure
2

Sample No.

3-6-96

MW-1 = 8.37

MW-2 = 7.23

MW-3 = 10.78

WATER SAMPLE LOG

Sample No. MW-1

Project No.: 92 CB040 Date: 3-6-96

Project Name: CBC-Oakland

Sample Location: MW-1

Well Description: 4" sch 40 PVC w/orange locking cap

Weather Conditions: clear

Observations / Comments: Duplicate labeled MW-4 @ 14:40

Quality Assurance

Sampling Method: Disposable bailers
Method to Measure Water Level: 200' Solinst

Pump Lines: New / Cleaned Bailer Lines: New / Cleaned

Method of cleaning Pump / Bailer: N/A

pH Meter No.: 0230977 Calibrated 4.00/7.00

Specific Conductance Meter No.: 13749 Calibrated red-lined

Comments: $20.2 - 8.37 = 11.83 \times .653 = 7.7 \times 4 = 30.8$ gallons

Sampling Measurements

Water Level (below MP) at Start: 8.37 End: 8.42

Measuring Point (MP): Top of Casing

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos/cm)	Turbidity	Color	Odor	Comments
11:51	10	6.89	19.2	415	MOD.	GREY	ND	
12:00	20	6.94	19.0	410	"	"	"	
12:30	25	7.01	19.0	407	"	"	"	
12:35	30.5	6.93	19.0	410	"	"	"	

Total Discharge: 31.5 gallons Casing Volumes Removed: 4.1

Method of disposal of discharged water: 55 gallon drum

Number and size of sample containers filled: @1340, Full Sweep; No duplicate on 5520BF, lab forgot two of the preserved bottles.

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 863-3600

Collected by: J. H.

Sample No.

WATER SAMPLE LOG

Sample No. MW-2

Project No.: 92CB040 Date: 3-6-96
 Project Name: CBC-Oakland
 Sample Location: MW-2
 Well Description: 4" sch. 40 PVC w/orange locking cap
 Weather Conditions: clear
 Observations / Comments:

Quality Assurance
 Sampling Method: Disposable bailer
 Method to Measure Water Level: 200' Solinst
 Pump Lines: New / Cleaned Bailer Lines: New / Cleaned
 Method of cleaning Pump / Bailer: N/A
 pH Meter No.: 0230977 Calibrated 4.00/7.00
 Specific Conductance Meter No.: 13749 Calibrated red-lined
 Comments: 19.55 - 7.23 = 12.32 x .653 = 8.04 x 4 = 32.2 gal.

Sampling Measurements
 Water Level (below MP) at Start: 7.23 End: 7.30
 Measuring Point (MP): Top of Casing

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
11:22	10	6.84	18.8	465	MOD.	TAN	ND	
11:27	18	6.79	18.7	472	"	"	"	
12:07	26	6.90	19.7	460	"	"	"	
12:42	33	6.85	19.8	460	"	"	"	

Total Discharge: 34 gallons Casing Volumes Removed: 4.2
 Method of disposal of discharged water: 55 gallon drum
 Number and size of sample containers filled: @ 14:00; 3-40ml. VOA's (TPH, BTEX); 2-1L. amber (TPH); and 2-1L. amber (w/HCL) 55208F

Collected by: J.H.
Woodward-Clyde Consultants
 500 12th Street, Suite 100, Oakland, CA 94607-4014
 (415) 893-3600

Sample No.

WATER SAMPLE LOG

Sample No. MW-3

Project No.: 92CB040 Date: 3-6-96

Project Name: CBC -Oakland

Sample Location: MW-3

Well Description: 4" sch 40 PVC w/orange locking cap

Weather Conditions: clear

Observations / Comments:

Quality Assurance

Sampling Method: Disposable bailer

Method to Measure Water Level: 200' Solinst

Pump Lines: New / Cleaned Bailer Lines: New / Cleaned

Method of cleaning Pump / Bailer: N/A

pH Meter No.: 0230977 Calibrated 4.00/7.00

Specific Conductance Meter No.: 13749 Calibrated red-lined

Comments: 19.44 - 10.78 = 8.66 x .653 = 5.7 x 4 = 22.8 gal.

Sampling Measurements

Water Level (below MP) at Start: 10.78 End: 10.77

Measuring Point (MP): Top of Casing

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
11:00	5	6.78	19.5	850	Mod-HIGH	(GRE)	ND	
11:07	10	7.01	19.0	910	"	"	"	
11:35	14.5	6.93	18.8	920	"	"	"	
12:20	19	6.91	18.9	910	"	"	"	
12:53	23	6.95	18.9	920	"	"	"	

Total Discharge: 23.5 gallons Casing Volumes Removed: 4.1

Method of disposal of discharged water: 55 gallon drum

Number and size of sample containers filled: @ 14:20; 3-40ml. VOA's (TPHs/BTEX), 2-1L. amber's (TPHd); and 2-1L. amber's (w/HCL) (5320 BF)

Collected by: J.H.

Woodward-Clyde Consultants
 500 12th Street, Suite 100, Oakland, CA 94607-4014
 (415) 863-3600



Inchcape Testing Services

Anamatrix Laboratories

1961 Concourse Drive
 Suite E
 San Jose, CA 95131
 Tel: 408-432-8192
 Fax: 408-432-8198

MR. BILL COPELAND
 WOODWARD-CLYDE CONSULTANTS
 500 12TH STREET, SUITE 100
 OAKLAND, CA 94607-4014

Workorder # : 9603039
 Date Received : 03/06/96
 Project ID : 92CB040
 Purchase Order: N/A

The following samples were received at Inchcape for analysis :

ANAMATRIX ID	CLIENT SAMPLE ID
9603039- 1	TRIP.B.
9603039- 2	MW-1
9603039- 3	MW-2
9603039- 4	MW-3
9603039- 5	MW-4

This report is organized in sections according to the specific Inchcape laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Inchcape cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Inchcape is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call your project manager as soon as possible. Thank you for using Inchcape Testing Services.

Gene Weikler

Project Manager

3-18-96

Date

This report consists of 24 pages.

REPORT SUMMARY
INCHCAPE, INC. (408)432-8192

MR. BILL COPELAND
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9603039
Date Received : 03/06/96
Project ID : 92CB040
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

INCHCAPE SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9603039- 2	MW-1	WATER	03/06/96	TPHd
9603039- 3	MW-2	WATER	03/06/96	TPHd
9603039- 4	MW-3	WATER	03/06/96	TPHd
9603039- 5	MW-4	WATER	03/06/96	TPHd
9603039- 1	TRIP.B.	WATER	02/29/96	TPHgBTEX
9603039- 2	MW-1	WATER	03/06/96	TPHgBTEX
9603039- 3	MW-2	WATER	03/06/96	TPHgBTEX
9603039- 4	MW-3	WATER	03/06/96	TPHgBTEX
9603039- 5	MW-4	WATER	03/06/96	TPHgBTEX

REPORT SUMMARY
INCHCAPE, INC. (408)432-8192

MR. BILL COPELAND
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9603039
Date Received : 03/06/96
Project ID : 92CB040
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- The concentration reported as diesel for sample MW-1 is due to the presence of a combination of diesel and a lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline.
- The concentration reported as diesel for sample MW-4 is due to the presence of a combination of diesel, discrete peaks not indicative of diesel fuel, and a lighter petroleum product of hydrocarbon range C6-C12 (possibly gasoline).
- The concentration reported as diesel for sample MW-2 is due to the presence of discrete peaks not indicative of diesel fuel.
- The concentration reported as diesel for sample MW-3 is due to the presence of a combination of diesel and discrete peaks not indicative of diesel fuel.

Cheryl Bealmer
Department Supervisor

3/13/96
Date

CR Patel
Chemist

3/13/96
Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix ID:	9603039-01	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	TRIP.B.
Date Sampled:	2/29/96	Instrument ID:	HP4
Date Analyzed:	3/8/96	Surrogate Recovery:	97%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution</u> <u>Factor</u>	<u>Reporting</u> <u>Limit</u>	<u>Amount</u> <u>Found</u>
MtBE	1	5.0	ND
Benzene	1	0.5	ND
Toluene	1	0.5	ND
Ethylbenzene	1	0.5	ND
Total Xylenes	1	0.5	ND
Gasoline	1	50	ND

ND: Not detected at or above the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total Xylenes is determined by GC/PID (modified EPA Method 8021) following sample purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

[Signature] 03/13/96.
Analyst Date

Cheryl Salmer 3/13/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix ID:	9603039-02	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	MW-1
Date Sampled:	3/6/96	Instrument ID:	HP4
Date Analyzed:	3/8/96	Surrogate Recovery:	95%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution</u> <u>Factor</u>	<u>Reporting</u> <u>Limit</u>	<u>Amount</u> <u>Found</u>
MtBE	500	2500	ND
Benzene	500	250	690
Toluene	500	250	1800
Ethylbenzene	500	250	2300
Total Xylenes	500	250	14000
Gasoline	500	25000	39000

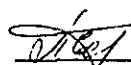
ND: Not detected at or above the reporting limit for the method.


TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total Xylenes is determined by GC/PID (modified EPA Method 8021) following sample purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

 03/13/96
Analyst Date

 3/13/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix ID:	9603039-03	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	MW-2
Date Sampled:	3/6/96	Instrument ID:	HP4
Date Analyzed:	3/8/96	Surrogate Recovery:	99%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution Factor</u>	<u>Reporting Limit</u>	<u>Amount Found</u>
MtBE	1	5.0	ND
Benzene	1	0.5	ND
Toluene	1	0.5	ND
Ethylbenzene	1	0.5	ND
Total Xylenes	1	0.5	ND
Gasoline	1	50	ND

ND: Not detected at or above the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID
(modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total
Xylenes is determined by GC/PID (modified EPA Method 8021) following sample
purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services
approved methods.

Steve 03/13/96.
Analyst Date

Cheryl Balmer 3/12/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anametrix ID:	9603039-04	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	MW-3
Date Sampled:	3/6/96	Instrument ID:	HP4
Date Analyzed:	3/8/96	Surrogate Recovery:	103%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution Factor</u>	<u>Reporting Limit</u>	<u>Amount Found</u>
MtBE	1	5.0	ND
Benzene	1	0.5	ND
Toluene	1	0.5	ND
Ethylbenzene	1	0.5	ND
Total Xylenes	1	0.5	ND
Gasoline	1	50	ND

ND: Not detected at or above the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total Xylenes is determined by GC/PID (modified EPA Method 8021) following sample purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

[Signature] 03/13/96
Analyst Date

Cheryl Baerman 3/13/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anamatrix ID:	9603039-05	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	MW-4
Date Sampled:	3/6/96	Instrument ID:	HP4
Date Analyzed:	3/11/96	Surrogate Recovery:	107%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution</u> <u>Factor</u>	<u>Reporting</u> <u>Limit</u>	<u>Amount</u> <u>Found</u>
MtBE	500	2500	ND
Benzene	500	250	1000
Toluene	500	250	2000
Ethylbenzene	500	250	2300
Total Xylenes	500	250	15000
Gasoline	500	25000	38000

ND: Not detected at or above the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total Xylenes is determined by GC/PID (modified EPA Method 8021) following sample purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

[Signature] 03/13/96
Analyst Date

Cheryl Balmer 3/13/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anamatrix ID:	BM0801E1	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	Method Blank
Date Sampled:	N/A	Instrument ID:	HP4
Date Analyzed:	3/8/96	Surrogate Recovery:	97%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution</u> <u>Factor</u>	<u>Reporting</u> <u>Limit</u>	<u>Amount</u> <u>Found</u>
MtBE	1	5.0	ND
Benzene	1	0.5	ND
Toluene	1	0.5	ND
Ethylbenzene	1	0.5	ND
Total Xylenes	1	0.5	ND
Gasoline	1	50	ND

ND: Not detected at or above the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total Xylenes is determined by GC/PID (modified EPA Method 8021) following sample purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

[Signature] 3/13/96
Analyst Date

Cheryl Balmer 3/13/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE WITH BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anamatrix ID:	BM1101E1	Client Project ID:	92CB040
Matrix:	WATER	Client Sample ID:	Method Blank
Date Sampled:	N/A	Instrument ID:	HP4
Date Analyzed:	3/11/96	Surrogate Recovery:	105%
Date Released:	3/12/96	Concentration Units:	ug/L

<u>COMPOUND</u>	<u>Dilution</u> <u>Factor</u>	<u>Reporting</u> <u>Limit</u>	<u>Amount</u> <u>Found</u>
MtBE	1	5.0	ND
Benzene	1	0.5	ND
Toluene	1	0.5	ND
Ethylbenzene	1	0.5	ND
Total Xylenes	1	0.5	ND
Gasoline	1	50	ND

ND: Not detected at or above the reporting limit for the method.

TPHg: Total Petroleum Hydrocarbons as gasoline is determined by GC/FID (modified EPA Method 8015) following sample purge and trap by EPA Method 5030

BTEX: BTEX as Methyl tert-Butyl Ether, Benzene, Toluene, Ethylbenzene, and Total Xylenes is determined by GC/PID (modified EPA Method 8021) following sample purge and trap by EPA Method 5030.

Surrogate recovery quality control limits for p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services approved methods.

Stef
Analyst

03/13/96
Date

Cheryl Balmer 3/13/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

MATRIX SPIKE RECOVERY REPORT

Client Project ID:	92CB040	Anametrix ID:	9603039-03
Client Sample ID:	MW-2	Date Released:	3/12/96
Date Sampled:	3/6/96	Instrument ID:	HP4
Date Analyzed:	3/8/96	Matrix:	WATER
		Concentration Units:	ug/L

<u>COMPOUND</u> <u>NAME</u>	<u>SPIKE</u> <u>AMT</u>	<u>SAMPLE</u> <u>CONC</u>	<u>MS</u> <u>CONC</u>	<u>% REC</u> <u>MS</u>	<u>MSD</u> <u>CONC</u>	<u>%REC</u> <u>MSD</u>	<u>RPD</u>
Gasoline	500	0	430	86%	420	84%	-2%
p-Bromofluorobenzene				98%		95%	

Quality control limits for MS/MSD recovery are 48-149%

Quality control limits for RPD(relative percent difference) are +/- 30%

Quality control limits for p-Bromofluorobenzene recovery are 61-139%.

**TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
INCHCAPE TESTING SERVICES - ANAMETRIX**

(408) 432-8192

MATRIX SPIKE RECOVERY REPORT

Client Project ID:	92CB040	Anametrix ID:	9603039-05
Client Sample ID:	MW-4	Date Released:	3/12/96
Date Sampled:	3/6/96	Instrument ID:	HP4
Date Analyzed:	3/11/96	Matrix:	WATER
		Concentration Units:	ug/L

<u>COMPOUND</u> <u>NAME</u>	<u>SPIKE</u> <u>AMT</u>	<u>SAMPLE</u> <u>CONC</u>	<u>MS</u> <u>CONC</u>	<u>% REC</u> <u>MS</u>	<u>MSD</u> <u>CONC</u>	<u>%REC</u> <u>MSD</u>	<u>RPD</u>
Gasoline	250000	38000	230000	77%	249000	84%	8%
p-Bromofluorobenzene				99%		100%	

Quality control limits for MS/MSD recovery are 48-149%

Quality control limits for RPD(relative percent difference) are +/- 30%

Quality control limits for p-Bromofluorobenzene recovery are 61-139%.

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

LABORATORY CONTROL SAMPLE REPORT

Client Project ID:	92CB040	Anamatrix ID:	MM0801E1
Matrix:	WATER	Date Released:	3/12/96
Date Analyzed:	3/8/96	Instrument ID:	HP4
		Concentration Units:	ug/L

<u>COMPOUND</u> <u>NAME</u>	<u>SPIKE</u> <u>AMT</u>	<u>LCS</u> <u>CONC</u>	<u>%REC</u> <u>LCS</u>
Gasoline	500	410	82%
p-Bromofluorobenzene			101%

Quality control limits for LCS recovery are 67-127%.

Quality control limits for p-Bromofluorobenzene recovery are 61-139%.

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

INCHCAPE TESTING SERVICES - ANAMETRIX

(408) 432-8192

LABORATORY CONTROL SAMPLE REPORT

Client Project ID:	92CB040	Anametrix ID:	MM1102E1
Matrix:	WATER	Date Released:	3/12/96
Date Analyzed:	3/11/96	Instrument ID:	HP4
		Concentration Units:	ug/L

<u>COMPOUND</u> <u>NAME</u>	<u>SPIKE</u> <u>AMT</u>	<u>LCS</u> <u>CONC</u>	<u>%REC</u> <u>LCS</u>
Gasoline	500	430	86%
p-Bromofluorobenzene			97%

Quality control limits for LCS recovery are 67-127%.

Quality control limits for p-Bromofluorobenzene recovery are 61-139%.

TOTAL PETROLEUM HYDROCARBONS AS BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

LABORATORY CONTROL SAMPLE REPORT

Client Project ID:	92CB040	Anamatrix ID:	MM0802E1
Matrix:	WATER	Date Released:	3/12/96
Date Analyzed:	3/8/96	Instrument ID:	HP4
		Concentration Units:	ug/L

<u>COMPOUND</u> <u>NAME</u>	<u>SPIKE</u> <u>AMT</u>	<u>LCS</u> <u>CONC</u>	<u>%REC</u> <u>LCS</u>
MtBE	10.0	11.3	113%
Benzene	10.0	10.7	107%
Toluene	10.0	11.4	114%
Ethylbenzene	10.0	11.5	115%
Total Xylenes	10.0	12.0	120%
p-Bromofluorobenzene			105%

Quality control limits for LCS recovery are 50-150% for MTBE, 52-133% for benzene, 57-136% for toluene, 56-139% for ethylbenzene, and 56-141% for total xylenes.

Quality control limits for p-Bromofluorobenzene recovery are 61-139%.

TOTAL PETROLEUM HYDROCARBONS AS BTEX
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

LABORATORY CONTROL SAMPLE REPORT

Client Project ID:	92CB040	Anametrix ID:	MM1101E1
Matrix:	WATER	Date Released:	3/12/96
Date Analyzed:	3/11/96	Instrument ID:	HP4
		Concentration Units:	ug/L

<u>COMPOUND</u> <u>NAME</u>	<u>SPIKE</u> <u>AMT</u>	<u>LCS</u> <u>CONC</u>	<u>%REC</u> <u>LCS</u>
MtBE	10.0	11.5	115%
Benzene	10.0	9.98	100%
Toluene	10.0	11.1	111%
Ethylbenzene	10.0	11.2	112%
Total Xylenes	10.0	12.1	121%
p-Bromofluorobenzene			102%

Quality control limits for LCS recovery are 50-150% for MTBE, 52-133% for benzene, 57-136% for toluene, 56-139% for ethylbenzene, and 56-141% for total xylenes.

Quality control limits for p-Bromofluorobenzene recovery are 61-139%.

TOTAL PETROLEUM HYDROCARBONS AS DIESEL
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

DATA SUMMARY FORM

Anamatrix Workorder:	9603039	Client Project ID:	92CB040
Matrix:	WATER	Date Released:	3/12/96
Date Extracted:	3/8/96	Concentration Units:	ug/L
Instrument ID:	HP23		

<u>Anamatrix ID</u>	<u>Client ID</u>	<u>Date Sampled</u>	<u>Date Analyzed</u>	<u>Dilution Factor</u>	<u>Reporting Limit</u>	<u>Amount Found</u>	<u>Surrogate Recovery</u>
9603039-02	MW-1	3/6/96	3/10/96	1	50	2500	104%
9603039-03	MW-2	3/6/96	3/10/96	1	50	68	94%
9603039-04	MW-3	3/6/96	3/10/96	1	50	140	95%
9603039-05	MW-4	3/6/96	3/10/96	1	50	2400	99%
BM0811F9	Method Blank	-----	3/9/96	1	50	ND	101%

ND: Not detected at or above the reporting limit for the method.
TPHd: Total Petroleum Hydrocarbons as C10-C28 is determined by GC/FID (modified EPA Method 8015) following sample extraction by EPA Method 3510. Surrogate recovery quality control limits for o-terphenyl are 65-122%. All testing procedures follow California Department of Health Services approved methods.

CR Patch 3/13/96
Analyst Date

Cheyl Baena 3/12/96
Supervisor Date

TOTAL PETROLEUM HYDROCARBONS AS DIESEL
INCHCAPE TESTING SERVICES - ANAMETRIX
(408) 432-8192

LABORATORY CONTROL SAMPLE REPORT

Client Project ID:	92CB040	Anametrix ID:	M/NM0811F9
Matrix:	WATER	Date Released:	3/12/96
Date Extracted:	3/8/96	Instrument ID:	HP23
Date Analyzed:	3/9/96	Concentration Units:	ug/L

COMPOUND <u>NAME</u>	SPIKE <u>AMT</u>	LCS <u>CONC</u>	% REC <u>LCS</u>	LCSD <u>CONC</u>	%REC <u>LCSD</u>	<u>RPD</u>
Diesel	1250	1280	102%	1270	102%	-1%
o-Terphenyl			104%		99%	

Quality control limits for LCS/LCSD recovery are 34-111%.

Quality control limits for RPD(relative percent difference) are +/- 18%.

Quality control limits for o-terphenyl recovery are 65-122%.

REPORT SUMMARY
INCHCAPE, INC. (408)432-8192

MR. BILL COPELAND
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9603039
Date Received : 03/06/96
Project ID : 92CB040
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

INCHCAPE SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9603039- 2	MW-1	WATER	03/06/96	5520BF
9603039- 3	MW-2	WATER	03/06/96	5520BF
9603039- 4	MW-3	WATER	03/06/96	5520BF

REPORT SUMMARY
INCHCAPE, INC. (408)432-8192

MR. BILL COPELAND
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9603039
Date Received : 03/06/96
Project ID : 92CB040
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- Insufficient water sample was received for a Matrix Spike and Matrix Spike Duplicate analysis for Method 5520BF. A Laboratory Control Sample and Laboratory Control Sample Duplicate were extracted and analyzed instead.

Patricia M. ... 3/14/96
Department Supervisor Date

Roslyn A. Hagan 3/14/96
Chemist Date

**ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
INCHCAPE TESTING SERVICES - ANAMETRIX LABORATORY (408) 432-8192**

PROJECT I.D.	: 92CB040	ANAMETRIX I.D. :	9603039
MATRIX	: WATER	ANALYST	: <i>AK</i>
DATE SAMPLED	: 03/06/96	SUPERVISOR	: <i>Chv</i>
DATE EXTRACTED	: 03/12/96	DATE RELEASED	: 03/15/96
DATE ANALYZED	: 03/13/96		

WORKORDER #	SAMPLE I.D.	REPORTING LIMIT (mg/L)	AMOUNT FOUND (mg/L)
9603039-02	MW-1	5.0	5.9
9603039-03	MW-2	5.0	ND
9603039-04	MW-3	5.0	ND
BM1211W4	METHOD BLANK	5.0	ND

ND - Not detected above the reporting limit for the method.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
 INCHCAPE TESTING SERVICES - ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
 Matrix : WATER
 Date Extracted : 03/12/96
 Date Analyzed : 03/13/96

Anamatrix I.D. : M/NM1211W4
 Analyst : *fsl*
 Supervisor : *On*
 Date Released : 03/14/96

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	% RPD	REC LIMITS
MOTOR OIL	50	48	96	49	98	2	44-128

* Quality control limits established by Anamatrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520BF.

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

965439 (10/09) 16

PROJECT NO.

92CB040

SAMPLERS: (Signature)

[Signature]

ANALYSES

DATE	TIME	SAMPLE NUMBER	Sample Matrix (Soil, Water, Air)	ANALYSES				Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
				EPA Method	EPA Method	EPA Method	EPA Method		
① 2/2/96	—	Top Bank	W				X	3	Standard T.A.T. Results to: Bill Copeland
② 3/6/96	1340	MW-1	W				3 2 2	7	
③	1400	MW-2	W				3 2 2	7	
④	1420	MW-3	W				3 2 2	7	
⑤ 3/6/96	1440	MW-4	W				3 2	5	

TOTAL NUMBER OF CONTAINERS 29

RELINQUISHED BY (Signature)
[Signature]

DATE/TIME
3/4/96 1455

RECEIVED BY (Signature)
[Signature]

RELINQUISHED BY (Signature)
[Signature]

DATE/TIME
3/6/96 1750

RECEIVED BY (Signature)
[Signature]

METHOD OF SHIPMENT

SHIPPED BY (Signature)

COURIER (Signature)

RECEIVED FOR LAB BY (Signature)
[Signature]

DATE/TIME
3-06-96
1750



SAMPLE RECEIVING CHECKLIST

Workorder Number: 9603039

Client Project ID: 92CB/240

Cooler

Shipping documentation present? If YES, enter Carrier and Airbill #:	YES	NO	<u>N/A</u>
Custody Seal on the outside of cooler? Condition: Intact _____ Broken _____	YES	NO	<u>N/A</u>
Temperature of sample(s) within range? List temperatures of cooler(s): _____ <u>12°C</u> Note: If all samples taken within previous 4 hr, circle N/A and place in sample storage area as soon as possible.	YES	NO	<u>N/A</u>

Samples

Chain of custody seal present for each container? Condition: Intact _____ Broken _____	YES	NO	<u>N/A</u>
Samples arrived within holding time?	<u>YES</u>	NO	<u>N/A</u>
Samples in proper containers for methods requested? Condition of containers: Intact <u>0</u> Broken _____ If NO, were samples transferred to proper container(s)?	<u>YES</u>	NO	
Were VOA containers received with zero headspace? If NO, was it noted on the chain of custody? <u>YES (1 VOA only)</u>	YES	<u>NO</u>	<u>N/A</u>
Were container labels complete? (ID, date, time, preservative)	<u>YES</u>	NO	<u>N/A</u>
Were samples properly preserved? If NO, was the preservative added at time of receipt?	<u>YES</u>	NO	<u>N/A</u>
pH check of samples required at time of receipt? If YES, pH checked and recorded by: <u>J</u>	<u>YES</u>	NO	
Sufficient amount of sample received for methods requested? If NO, has the client or PM been notified?	<u>YES</u>	NO	
Field blanks received with sample batch?	YES	NO	<u>N/A</u>
Trip blanks received with sample batch?	<u>YES</u>	NO	<u>N/A</u>

Chain of Custody

Chain of custody form received with samples?	<u>YES</u>	NO
Has it been filled out completely and in ink?	<u>YES</u>	NO
Sample IDs on chain of custody form agree with labels?	<u>YES</u>	NO
Number of containers on chain agree with number received?	<u>YES</u>	NO
Analysis methods specified?	<u>YES</u>	NO
Sampling date and time indicated?	<u>YES</u>	NO
Proper signatures of sampler, courier and custodian in appropriate spaces? With time and date?	<u>YES</u>	NO
Turnaround time? Standard <u>X</u> Rush		

Any NO responses and/or any BROKEN that was checked must be detailed in a Corrective Action Form.

Sample Custodian: J Date: 02/18/96 Project Manager: W Date: 3/7/96