Soil Samples

Analyte	*Container*	*Number of Samples*	*Containers per Sample*	*Additional Containers for Lab QC*	*Total Containers*	
VOCs	EnCore Sampler	44	3	2	134	4
SVOCs	4-oz glass jar	88	1	-	88	2 - 3 x 2
Metals	4-oz glass jar	88	1	-	88	2 - 3
PCBs	4-oz glass jar	88	1	-	88	
TPH-diesel	4-oz glass jar	27	1	-	27	1 - 2
TCLP	4-oz glass jar	11	2	-	22	
Dioxins	4-oz glass jar	5	1	-	5	

Soil Sample Containers - Summary

Container	*Total # Containers*	Min. # Coolers	
EnCore Sampler	134	4	(1-shipment / day)
4-oz glass jar	318	14	(excludes TCLP & dioxins)
Total Coolers		**31**	(minimum estimate)

27 samples

4 - VOC
5
2

samples PCB + SVOC

176/5 days = 35.2 / day

113405

Table 1. Estimated Sample Containers
Kakaako Brownfield Site Characterization - Field Investigation

Water Samples

Analyte	*Container*	*Number of Samples*	*Containers per Sample*	*Additional Containers for Lab QC*	*Total Containers*
VOCs	40 mL VOA (HCL)	14	3	3	45
SVOCs	1L Amber glass	11	2	2	24
Metals	1L Poly (HNO_3)	11	1	1	12
PCBs	1L Amber glass	9	2	2	20
SVOCs	1L Amber glass	9	2	2	20
Metals	1L Poly (HNO_3)	9	1	1	10
Mercury	1L Poly (HNO_3)	9	1	1	10
TPH-diesel	1L Amber glass (HCL)	14	2	2	30
Dioxins	1L Amber glass	7	2	2	16

Water Sample Containers - Summary

Container	*Total # Containers*	Min. # Coolers
40 mL VOA	45	2
1L Amber glass	94	9
1L Poly	32	2

Rich 415 972-3804

amec

Fax

To	Laura Young	**From**	Jamie Anderson
Company	DOH HEER office	**Direct Tel**	808-545-2462 ext: 155
Fax	586-7537	**Fax**	808-528-5379
		Pages	15 (inc. this page)
		Date	1/29/02
		cc	Rich Freitas

Subject Kaka'ako Brownfield COCs

Laura,

Here are all of the COCs containing all of the missing samples. The missing samples are depicted by an arrow or brackets in the left-hand margins. I am faxing the same package to Rich Freitas at the EPA Region 9 Lab, by request of Cherilyn. Call or email me if you have any questions or comments.

Jamie

H:\Reproduction\Amec Fax Cover.doc

AMEC Earth & Environmental, Inc.
680 Iwilei Road, Ste 660
Honolulu, HI 96817
Tel +808-545-2462
Fax +808-528-5379
www.amec.com

Kakaako Brownfield - Field Sampling Schedule

AMEC Earth and Environmental Project Contacts:
Field Managers: Mike Kamaka, 545-2462 ext. 110
Jan Kotoshirodo, 545-2462 ext. 155
Project Manager: Eric Wetzstein, 545-2462 ext. 128

THURSDAY June 21, 2001 - FRIDAY June 22, 2001
- Identify and mark sample locations at the site using survey flags, stakes, or marking paint.
- Conduct toning survey at the site to identify possible subsurface utilities near proposed sampling locations.

MONDAY June 25, 2001
- Begin field sampling activities
- Collect surface and subsurface soil samples in Zone A located in the northeast corner of the site. Install monitoring well MW08 (surface soil location SS24) also located in Zone A.
- Continue with soil sampling in Zone E if time permits and driveway is accessible.

TUESDAY June 26, 2001
- Continue with surface and subsurface soil sampling activities in Zone B located in the southeast corner of the site.
- Install monitoring well MW07 (surface soil location SS04) in Zone D, and/or continue soil sampling in Zone E if time permits and driveway is accessible.

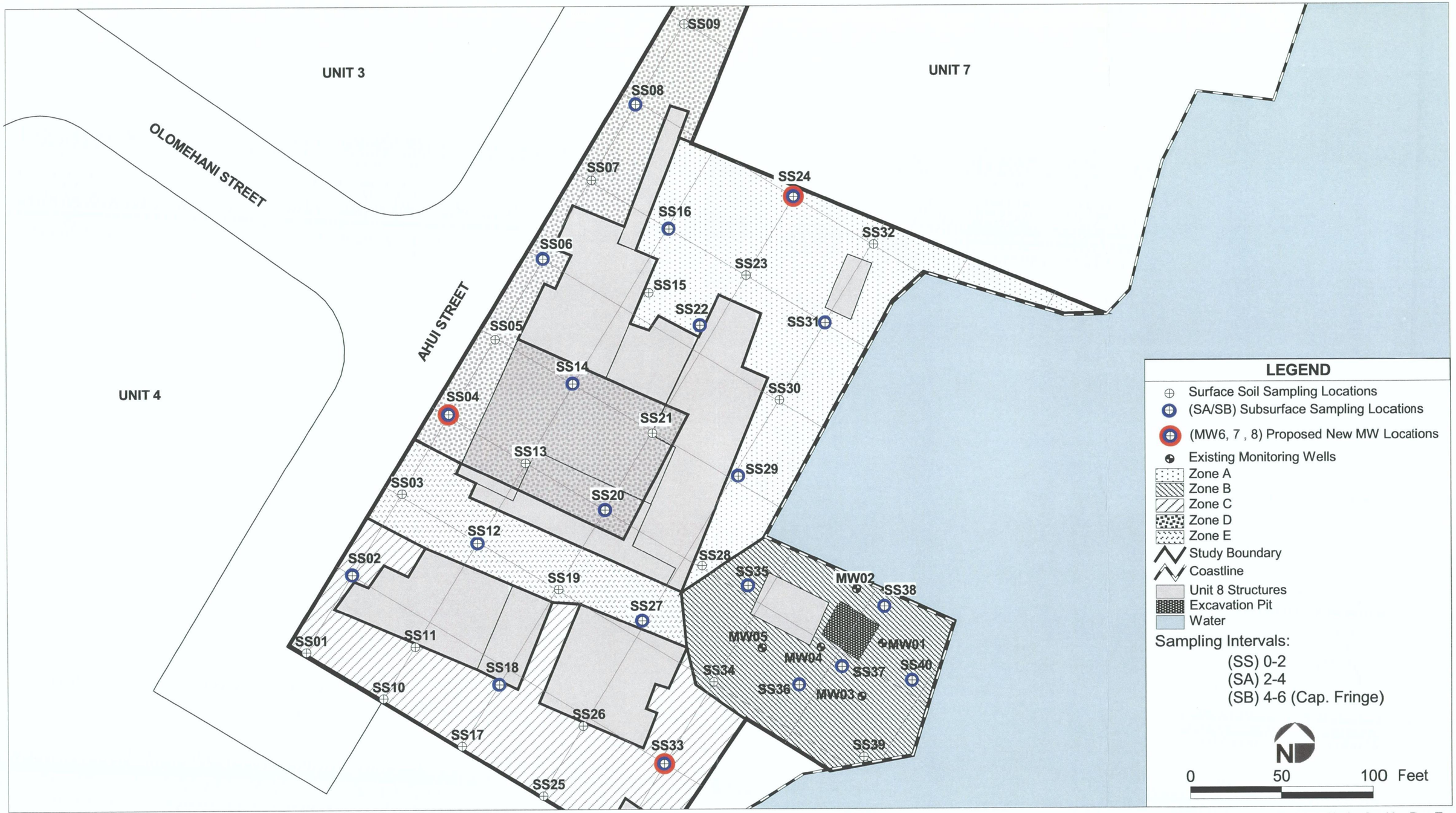
WEDNESDAY June 27, 2001
- Continue with surface and subsurface soil sampling activities in Zone C located in the southwest corner of the site.
- Install monitoring well MW06 (surface soil location SS33) also located in Zone C.
- Concrete coring is scheduled at 1400 by National Concrete Sawing (839-7406) for sample locations inside building located in Zone D (United Fishing Agency Ltd.). Four cores with a diameter of 6-inches.
- Begin soil sampling inside building (Zone D) if time permits.

THURSDAY June 28, 2001
- Continue with surface and subsurface soil sampling activities in Zone D located in the northwest corner of the site.
- Continue with soil sampling in Zone E if time permits and driveway is accessible.
- Develop newly installed monitoring wells MW06 (SS33), MW07 (SS03), and MW08 (SS24).

MONDAY July 2, 2001
- Complete soil sampling if neccessary
- Collect groundwater samples from monitoring wells MW01, MW02, MW03, MW04, and MW05 located in Zone B.

TUESDAY July 3, 2001
- Collect groundwater samples from monitoring well MW06 (SS33), MW07 (SS03), and MW08 (SS24) located in Zones C, D, and A respectively.

THURSDAY July 5, 2001
- Complete groundwater sampling if necessary.



OGDEN

KAKAAKO BROWNFIELD SAMPLING LOCATIONS

FIGURE

A

COOLER 1

JAN 29 '02 12:42PM AMEC INC (808)528 5379

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No. 29448

1. Project Code:
2. Account Code:
3. Region No.: 9
Sampling Co.: AMEC
5. Date Shipped: 06/29/01
Carrier: FEDEX
Regional Information:
Sampler (Name): Steffany Toma
Airbill Number: 8755 0128 3501
Non-Superfund Program:
Sampler Signature: Steffany M Toma
6. Ship To: Sentinel Inc. (SENTIN) 116 Washington St. NE Huntsville, AL 35801 ATTN: Kimberly Hayes
Site Name: Kakaako Brownfield Unit 8
City, State: Honolulu, HI
Site Spill ID:
4. Purpose* — Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

7. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

8. Preservative (Enter in Column D): 1. HCl 2. HNO_3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not Preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 7) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 8) Other:	E — RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low Only: NO_2/NO_3	Fluoride	High Only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform Eval. — = Not a QC Sample)
MY05Y2	2	L	G	2	X							0.45 µm FILTER-DIGESTION REQ'D	MW02	06/28/01/0820	Y0802	ST	—
MY05Y3	2	↓	↓	2	X							↓	MW02	/0835	Y0803	ST	D
MY05Y4	2			2	X								MW01	/0905	Y0804	ST	—
MY05Y7	2			2	X								MW03	/0915	Y0807	ST	—
MY0531	2			2	X								MW04	/0945	Y0811	ST	—
MY0604	2			2	X								MW06	/1050	Y0821	ST	—
MY0605	2			2	X								MW08	/1220	Y0825	ST	—
MY0614	2			2	X								MW07	/1415	Y0834	ST	—
MY0617	4	↓	↓	2		X							QW4	↓ /1545	Y0837	ST	R

9 ea

Shipment for Case Complete? (Y/N): Y
Page 1 of 1
Sample(s) to be Used for Laboratory QC: MY05Y7
Additional Sampler Signatures:
Chain of Custody Seal Number(s):

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Steffany M Toma	6/29/01 1930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Distribution: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1 (8/99)

See Reverse for Additional Standard Instructions
*See Reverse for Purpose Code Definitions

A21-012-13 REV

392436

COOLER 1

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 29448

1. Project Code	2. Account Code	3. Region No.	Sampling Co.	5. Date Shipped	Carrier
		9	AMEC	06/29/01	FEDEX

Regional Information

Sampler (Name): Steffany Toma

Airbill Number: 8755 0128 3501

Non-Superfund Program

Sampler Signature: Steffany M Toma

6. Ship To: Sentinel Inc. (SENTINE)
116 Washington St. NE
Huntsville, AL 35801
ATTN: Kimberly Hayes

Site Name: Kakaako Brownfield Unit 8

City, State: Honolulu, HI

Site Spill ID

4. Purpose*: Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

7. Matrix (Enter in Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Field, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (specify in Column A)

8. Preservative (Enter in Column D): 1. HCl, 2. HNO_3, 3. NaOH, 4. H_2SO_4, 5. $K_2CR_2O_7$, 6. Ice only, 7. Other (specify in Column D), N. Not Preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 7) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 8) Other:	E — RAS Analysis: Diss. Metals	Total Metals	Cyanide	NO_2/NO_3 (Low Only)	Fluoride (Low Only)	pH (High Only)	Conduct. (High Only)	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform Eval, — = Not a QC Sample)
MY05Y2	2	L	G	2	X							0.45 µm FILTER-DIGESTION REQD	MW02	06/28/01/0820	Y0802	[initials]	—
MY05Y3	2	↓	↓	2	X							↓	MW02	/0825	Y0803	[initials]	D
MY05Y4	2	↓	↓	2	X							↓	MW01	/0905	Y0804	[initials]	—
MY05Y7	2	↓	↓	2	X							↓	MW03	/0915	Y0807	[initials]	—
MY05Z1	2	↓	↓	2	X							↓	MW04	/0945	Y0811	[initials]	—
MY0604	2	↓	↓	2	X							↓	MW06	/1050	Y0821	[initials]	—
MY0605	2	↓	↓	2	X							↓	MW08	/1220	Y0825	[initials]	—
MY0614	2	↓	↓	2	X							↓	MW07	/1415	Y0834	[initials]	—
MY0617	4	↓	N	2		X							QW4	↓ /1525	Y0837	[initials]	R

All 11 (bracketed)

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
N	1 of 1	MY05Y7		

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Steffany M Toma	6/29/01 0930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none

Distribution: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1 (8/99)

See Reverse for Additional Standard Instructions
*See Reverse for Purpose Code Definitions

392436

CCLLK 2

United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 29448

1. Project Code	2. Account Code	3. Region No.	Sampling Co.	5. Date Shipped	Carrier
		9	AMEC 06/29/01	6/28/01	FEDEX

Regional Information

Sampler (Name): Steffany Toma

Airbill Number: 8255 0128 3501

Non-Superfund Program

Sampler Signature: Steffany M Toma

6. Ship To: Sentinel Inc. (SENTIN)
116 Washington St. NE
Huntsville, AL 35801
ATTN: Kimberly Hayes

Site Name: Kakaako Brownfield Unit 8

City, State: Honolulu, HI

Site Spill ID

4. Purpose*: Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

7. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)

8. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (specify in Column D) N. Not Preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 7) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 8) Other:	E — RAS Analysis: Dis. Metals / Total Metals / Cyanide / Low Only: NO2/NO3, Fluoride / High Only: pH, Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform Eval. — = Not a QC Sample)
MY0602	5	L	G	6	X (Total Metals)		SA22	06/28/01/0950	Y0819	ST	—
MY0603	↓	↓	↓	↓	↓		SB22	/1000	Y0820	ST	—
MY0529							SS02	/1100	Y0822	ST	—
MY0600							SA02	/1105	Y0823	ST	—
MY0601							SB02	/1110	Y0824	ST	—
MY0606							SS09	/1225	Y0826	ST	—
MY0607							SS07	/1230	Y0827	ST	—
MY0608							SS08	/1235	Y0828	ST	—
MY0609							SA08	/1240	Y0829	ST	—
MY0610	↓	↓	↓	↓	↓		SB08	↓ /1245	Y0830	ST	—

all (MY0602–MY0608 bracketed)

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
N	1 of 2	—		

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Steffany M Toma	6/28/01 1930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Distribution: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1 (8/99)

See Reverse for Additional Standard Instructions
*See Reverse for Purpose Code Definitions

392435

JAN 29 '02 02:46PM AMEC INC (808)528 5379

A29.312-13 REV

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 29448

1. Project Code	2. Account Code	3. Region No.	Sampling Co.	5. Date Shipped	Carrier
		9	AMEC	6/26/01	DHL

Regional Information:

Non-Superfund Program:

Site Name: KAKAAKO BROWNFIELD, UNIT 8

City, State: HONOLULU, HI

Site Spill ID:

Sampler (Name): CHERILYN DOMINGO

Sampler Signature: [signature]

4. Purpose* — Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

Airbill Number: 875 9719 5OD

6. Ship To: SENTINEL, INC. (SENTIN)
116 WASHINGTON ST, NE
HUNTSVILLE AL 35801

ATTN: KIMBERLY HAYES

7. Matrix (Enter in Column A):
1. Surface Water
2. Ground Water
3. Leachate
4. Field
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

8. Preservative (Enter in Column D):
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not Preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 7) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 8) Other:	E — RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low Only: NO_2/NO_3	Low Only: Fluoride	High Only: pH	High Only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
MY05T8	5	L	G	6		X							SS34	6/26/01 1400	Y07X8	CD	—
MY05T9	↓	↓	↓	↓		↓							SS04	1500	Y07X9	CD	—
MY05W0	↓	↓	↓	↓		↓							SA04	1510	Y07Y0	CD	—
MY05W1	↓	↓	↓	↓		↓							SB14 ~~SS03~~	1520	Y07Y1	CD	—
MY05W2	↓	↓	↓	↓		↓							SS03 ~~SG12~~	1530	Y07Y2	CD	—
MY05W3	↓	↓	↓	↓		↓							SS12 ~~SA12~~	1540	Y07Y3	CD	—
MY05W4	↓	↓	↓	↓		↓							SA12 ~~SB12~~	1545	Y07Y4	CD	—
MY05W5	↓	↓	↓	↓		↓							SB12 ~~SS27~~	1555	Y07Y5	CD	—
MY05W6	↓	↓	↓	↓		↓							SS27	1615	Y07Y6	CD	—
MY05W7	V	V	V	V		X							SA27	1620	Y07Y7	CD	—

= 11

Shipment for Case Complete? (Y/N): N

Page 3 of 4

Sample(s) to be Used for Laboratory QC:

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/26/01 1930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Distribution: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1 (8/99)

See Reverse for Additional Standard Instructions
*See Reverse for Purpose Code Definitions

202431

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 29448

1. Project Code
2. Account Code
3. Region No. 9 | Sampling Co. AMEC
5. Date Shipped 6/26/01 | Carrier DHL
Regional Information
Sampler (Name) Steffany Toma
Airbill Number 875 9719 500
Non-Superfund Program
Sampler Signature Steffany M Toma
6. Ship To: SENTINEL INC (SENTINEL)
116 Washington St. NE
Huntsville, AL 35801
ATTN: Kimberly Hayes
Site Name Kakaako Brownfield Unit 8
City/State Honolulu, HI
Site Spill ID
4. Purpose — Lead: SF, PRP, ST, FED; Early Action: CLEM, A, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

7. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

8. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not Preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 7) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 8) Other:	E — RAS Analysis	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform Eval. — = Not a QC Sample
MY05W8	5	L	G	6	X		SB28	6/26/01/1000	Y07Y8	ST	—
MY05W9	5	L	G	6	X		SS19	1200	Y07Y9	ST	—

Shipment for Case Complete? (Y/N) Y
Page 4 of 4
Sample(s) to be Used for Laboratory QC:
Additional Sampler Signatures
Chain of Custody Seal Number(s)

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Steffany M Toma	6/26/01 1930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none

Distribution: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1 (8/99)

*See Reverse for Additional Standard Instructions
*See Reverse for Purpose Code Definitions

EPA Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 29448

1. Project Code	2. Region No. 9 / Sampling Co: AMEC	4. Date Shipped 6/25/01 / Carrier DHL	6. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. PE-water 7. PE-soil 8. Other (specify in Column A)
Account Code	Sampler (Name) Steffany Toma	Airbill Number 848331013	7. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. CH3OH 7. Other (specify in Column D) N. Not Preserved
Site Name Kakaako Brownfield Unit 8	Sampler Signature Steffany M Toma	5. Ship To: CEIMIC Corp. (CEIMIC) 10 Dean Knauss Dr. Narragansett, RI 02882 ATTN: Susan Wright	
City, State Honolulu, HI / Site Spill ID / Op Unit	3. Purpose** Lead: SF PRP ST FED SU; Early Action: SA PA REM RI SI ESI; Long-Term Action: RIFS RD RA Other		

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med	C Sample Type: Comp/ Grab	D Preservative (from Box 7) Other:	E RAS Analysis: TA (circle one) PR* 7 14 (2) VOA	TA (circle one) PR* 7 14 (2) BNA	TA (circle one) PR* 7 14 (2) Pest/ PCB	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier: B = Blank S = Field Spike D = Field Duplicate R = Rinsate PE = Performance Eval.
Y07D1	5	low	G	5		X	X		SS31	6-25-01 / 1520	MY05Q7	SMB	—
Y07D2	5			5		X	X		SS31	1525	MY05Q8		D
Y07D3	5			5		X	X		SA31	1527	MY05Q9		—
Y07D4	5			5		X	X		SB31	1530	MY05R0		—
Y07D5	5			5		X	X		SS30	1625	MY05R1		—
Y07D6	4			5		X	X		QW1	1640	MY05R2		B
Y07D7	5			5		X	X		SS22	1645	MY05R3		—
→ Y07D8	5			5		X	X		SS29	1700	MY05R4		—
Y07D9	5			5		X	X		SA29	1710	MY05R3		—
Y07B06	4	↓	↓	1	X				QW1	1640	MY05R2	↓	B

Shipment for Case Complete? (Y/N)	Page 1 of 2	VOA MS/MSD Required? Y/N Sample #: / BNA MS/MSD Required? Y/N Sample #: / Pest/PCB MS/MSD Required? Y/N Sample #:	Additional Sampler Signatures / Chain of Custody Seal Number(s)

*PR provides 7-day data turnaround in addition to preliminary results. Requests for preliminary results will increase analytical costs.

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Steffany M Toma	6/25/01 1930				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Distribution: Blue - Region Copy; White - Lab Copy for Return to SMO; Pink - SMO Copy; Yellow - Lab Copy for Return to Region

See Reverse for Additional Standard Instructions
**See Reverse for Purpose Code Definitions

EPA Form 9110-2 (2/99)

CLASS-99-001

400977

DHL Airbill # [illegible]

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: ____________

CLIENT: AMEC EARTH & ENVIRONMENTAL	DATE: 06/25/01 PAGE 1 OF 1
ADDRESS:	~~TEG PROJECT #~~:
PHONE: (808) 545-2462 FAX: (808) 528 5379	LOCATION: KAKAAKO BROWNFIELD
CLIENT PROJECT #: CASE #B01544 PROJECT MANAGER:	COLLECTOR: DATE OF COLLECTION: 6/25

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES 8021B HVOC	CLP VOCs	8021B BTEX	8021B MBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB001	SS04	0945	S							X										
KB002	SA24	0955				X														
KB004	SB24	1015				X														
KB006	SS16	1145								X								LAB QC		
KB007	SA16	1150				X												LAB QC		
KB008	SB16	1205				X														
KB010	SS31	1520								X										
KB011	SA31	1527				X														
KB012	SB31	1530	↓			X														
KB013	GW1	1640	W							X										
KB015	SS22	1645	S							X										
KB016	SS29	1700								X										
KB019	SA29	1710				X														
KB020	SB29	1712				X														
				LAST ENTRY																

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	06/25/01 / 1935		
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Cooler @ Reg 9

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: _____

DHL AIRBILL #: 8759719485

JAN 29 '02 02:52PM AMEC INC (808)528 5379 P.8

CLIENT: AMEC EARTH & ENVIRONMENTAL

ADDRESS:

PHONE: (808) 245-2462 **FAX:**

CLIENT PROJECT # Case # R01514 **PROJECT MANAGER:**

DATE: 06/26/01 **PAGE** 1 **OF** 1

TEG PROJECT #:

LOCATION: KAKAAKO BROWNFIELD

COLLECTOR: **DATE OF COLLECTION:**

Sample Number	Depth	Time	Sample Type	Container Type	8021B HVOC (CLP VOCs)	8021B BTEX	8021B MTBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB044	SA36	1210	SOIL		X														
KB045	SB36	1215			X														
KB046	SB36	1215						X											
KB047	DW2	1330	WATER					X									RINSATE		
KB050	SS04	1500	SOIL					X											
KB053	SB04	1520			X														
KB055	SS12	1540						X											
KB056	SA12	1545			X														
KB057	SB12	1555			X														
KB058	SS27	1615						X											
KB059	SA27	1620			X														
KB060	SB27	1630			X														
			LAST ENTRY																

RELINQUISHED BY: (Signature) **DATE/TIME** **RECEIVED BY (Signature)** **DATE/TIME**

Jan [illegible] 06/26/01 1920

RELINQUISHED BY: (Signature) **DATE/TIME** **RECEIVED BY (Signature)** **DATE/TIME**

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD

NOTES:

LABORATORY NOTES:

COOLER 1 Rg9

CHAIN-OF-CUSTODY RECORD

DHL AIRBILL #: 8759719485

TURNAROUND TIME: _____

CLIENT: AMEC EARTH & ENVIRONMENTAL

ADDRESS:

PHONE: (808) 545-2462 FAX:

CLIENT PROJECT #: CASE #B01544 PROJECT MANAGER:

DATE: 06/26/01 PAGE 1 OF 2

~~TEG PROJECT #~~:

LOCATION: KALAAKO BROWNFIELD

COLLECTOR: DATE OF COLLECTION:

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: 8021B HVOC	CLP VOCs	8021B BTEX	8021B MTBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB021	SS35	0855	SOIL						X											
KB022	SA35	0910				X														
KB023	SB35	0915				X														
KB024	SS38	1020							X											
KB026	SA38	1025				X														
KB027	SB38	1028				X														
KB028	SB38	1028							X											
KB029	SS37	1040							X											
KB030	SA37	1045				X														
KB032	SB37	1055				X														
KB033	SB37	1055							X											
KB035	SS40	1120							X											
KB036	SS40	1125							X											
KB037	SA40	1130				X														
KB038	SA40	1135				X														
KB039	SB40	1140				X														
KB040	SB40	1140							X											
KB041	SB40	1145	↓			X														

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	06/26/01 1920		
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

COOLER Pg 9 ①

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: _____

DHL AIRBILL #: 87597194

JAN 29 '02 02:54PM AMEC INC (808)528 5379 P.10

CLIENT: AMEC EARTH & ENVIRONMENTAL

ADDRESS: _____

PHONE: (808) 545-2462 FAX: _____

CLIENT PROJECT #: Case # R01544 PROJECT MANAGER: _____

DATE: 06/26/01 PAGE # 2 OF 2

TEG PROJECT #: _____

LOCATION: KAKAAKO BROWNFIELD

COLLECTOR: _____ DATE OF COLLECTION: _____

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES 8260B HVOC	8260B BTEX	8260B MTBE	8015 GASOLINE	8015 DIESEL	8015 OR	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB042	SB40	1145	SOIL					X											
KB043	SB36	1200						X											

RELINQUISHED BY: (Signature) DATE/TIME: 06/26/01 1920 RECEIVED BY (Signature) DATE/TIME

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD

NOTES:

LABORATORY NOTES:

COOLER (1) Rig 9

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: ____________

DHL AIRBILL No. : 8759719511

CLIENT: AMEC EARTH : ENVIRONMENTAL
ADDRESS:
PHONE: (808) 545-2462 FAX: (808) 528-5379
CLIENT PROJECT #: Case # R01544 PROJECT MANAGER:

DATE: 06/27/01 PAGE 1 OF 1
TEG PROJECT #:
LOCATION: KAKAAKO BROWNFIELD
COLLECTOR: DATE OF COLLECTION:

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: 8021B HVOC	CLP VOCs	8021B BTEX	8021B MBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB063	SS18	1010	SOIL							X										
KB064	SS18	1015	SOIL							X										
KB065	SA18	1018	SOIL			X														
KB066	SA18	1020	SOIL			X														
KB067	SB18	1022	SOIL			X														
KB068	SB18	1025	SOIL			X														
~~KB069~~	~~MW02~~	~~0945~~	~~GW~~							X										
~~KB070~~	~~MW02~~	~~0955~~	~~GW~~							X										
~~KB071~~	~~MW01~~	~~1130~~	~~GW~~							X										
~~KB072~~	~~MW03~~	~~1245~~	~~GW~~							X										
KB074	MW3	1300	GW							X								LAB QC		
KB075	SS33	1320	SOIL							X								LAB QC		
KB076	SA33	1325	SOIL			X												LAB QC		
KB077	SB33	1330	SOIL			X														
KB082	[illegible]	1605	SOIL			X														
KB083	SS14	1620	SOIL							X										
KB084	SA14	1625	SOIL			X														
KB085	SB14	1630	SOIL			X														

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	06/27/01 / 1920		

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: _____

DHL AIRBILL #: 8759719415

JAN 29 '02 02:57PM AMEC INC (808)528 5379 P.12

CLIENT: AMEC EARTH & ENVIRONMENTAL

ADDRESS:

PHONE: (808) 545-2462 **FAX:**

CLIENT PROJECT #: Case #R01544 **PROJECT MANAGER:**

DATE: 06/28/01 **PAGE** 1 **OF** 1

TEG PROJECT #:

LOCATION: KAKAAKO BROWNFIELD

COLLECTOR: **DATE OF COLLECTION:**

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: 8021B HVOC	8021B BTEX	8021B MTBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB088	MW06	1050	GW					X											
KB094	MW08	1220	GW					X											
KB102	MW07	1415	GW					X											
KB105	QW4	1545	W					X									Rinsate		

RELINQUISHED BY: (Signature) 06/28/01 1800 **DATE/TIME** **RECEIVED BY (Signature)** **DATE/TIME**

RELINQUISHED BY: (Signature) **DATE/TIME** **RECEIVED BY (Signature)** **DATE/TIME**

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Cooler (2) Pg 9

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: ______

DHL AIRBILL #: 8759719511

CLIENT: AMEC EARTH & ENVIRONMENTAL

ADDRESS:

PHONE: (808) 545-2462 FAX: (808) 528-5379

CLIENT PROJECT #: Case# R01S04 PROJECT MANAGER:

DATE: 06/27/01 PAGE 1 OF 1

TEG PROJECT #:

LOCATION: KAKAAKO BROWNFIELD

COLLECTOR: DATE OF COLLECTION: 06/27

Sample Number	Depth	Time	Sample Type	Container Type	8021B HVOC	8021B BTEX	8021B MtBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB069	MW02	0945	GW						X										
KB070	MW02	0955	GW						X										
KB071	MW01	1130	GW						X										
KB072	RW03	1245	W						X								Rinsate		
KB078	MW04	1415	GW						X										

all

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	06/27/01 / 1920		
RELINQUISHED BY (Signature)	**DATE/TIME**	**RECEIVED BY (Signature)**	**DATE/TIME**

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

CHAIN-OF-CUSTODY RECORD

TURNAROUND TIME: ____________

DHL AIRBILL #: 8759719415

CLIENT: AMEC EARTH & ENVIRONMENTAL

ADDRESS:

PHONE: (808) 945-2462 FAX:

CLIENT PROJECT #: Case# R015.14 PROJECT MANAGER:

DATE: 06/28/01 PAGE 1 OF 1

TEG PROJECT #:

LOCATION: KAKAAKO BROWNFIELD

COLLECTOR: DATE OF COLLECTION:

Sample Number	Depth	Time	Sample Type	Container Type	8021B HVOC	CLP VOCs	8021B BTEX	8021B MtBE	8015 GASOLINE	8015 DIESEL	8015 OIL	418.1 TRPH	8082 PCB	8100 PAH	TOTAL LEAD	TOTAL CADMIUM	TOTAL CHROMIUM	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
KB086	SA22	0950	SOIL			X														
KB087	SB22	1000				X														
~~KB088~~	~~MW06~~	~~1050~~	~~GW~~							X										
KB090	SS02	1100								X										
KB092	SA02	1105				X														
KB093	SB02	1110				X														
~~KB094~~	~~MW08~~	~~1220~~	~~GW~~							X										
KB095	SS09	1225								X										
KB096	SS08	1235								X										
KB097	SA08	1240				X														
KB098	SB08	1245				X														
KB099	SS06	1350								X										
KB100	SA06	1355				X														
KB101	SB06	1405				X														
~~KB102~~	~~MW07~~	~~1415~~								X										
KB103	SB42	1510				X														
~~KB105~~	~~[illegible]~~	~~1545~~								X										

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
[signature]	06/28/01 / 1800		
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

JAN 29 '02 02:59PM AMEC INC (808)528 5379 P.14

U.S EPA Region 9 Laboratory
1337 South 46th St. Bldg 20
Richmond, CA 94804
~~APPL, Inc.~~ (510) 412-2323
~~4203 W. Swift Avenue, Fresno, CA 93722~~
~~Phone: (209) 275-2175~~
~~Fax: (209) 275-4422~~

CHAIN OF CUSTODY RECORD

Project Name/Number	Sampler (Print)
KAKAAKO BROWNFIELD	JAN KOTOSHIRODO
Purchase Order Number	**Sampler (Signature)**
CASE # R01544	

Sample Identification	Date Collected	Time Collected	Matrix	Number of containers	CLP VOCs	Analysis Requested/Method Number	
Y0821	6/28/01	1050	W	3	X		MW06
Y0825	↓	1220	W	3	X		MW08
Y0834		1415	W	3	X		MW07
Y0837	↓	1545	W	3	X		RW4
——— LAST	ENTRY	—	—	—	—		

Date Shipped: 07/02/01
Carrier: FEDEX
Waybill No.: 855012831 00
Comments:

Shuttle Temperature:

Turnaround Requested:
☐ Standard (2-3 week) ☐ One week ☐ 24-48 hour

Sample Disposal:
☐ Return to client ☐ Disposal by Lab (30-day retention)

Relinquished by sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
Jan Kotoshirodo	07/02/01	0935					
Relinquished by:	**Date**	**Time**	**Received by:**	**Relinquished by:**	**Date**	**Time**	**Received at lab by:**

Report to:	Bill to:
Phone#: FAX#:	

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler

C.O.C. № 5077

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX LABORATORY
1337 S. 46TH STREET
BLDG. 201
RICHMOND, CA 94804-4698

JUL 2 0 2001

MEMORANDUM

SUBJECT: Case R01S44
Results for Volatile Organic Compounds Analysis

FROM: Brenda Bettencourt, Director
EPA Region 9 Laboratory (PMD-2)

TO: Tom Mix, Special Assistant for Superfund
Superfund Office (SFD-1)

Attached are the report narrative and results spreadsheet from analysis of samples from the Kaka'ako Brownfields project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy. Summary information for the data included in this report is as follows:

SITE/PROJECT:	Kaka'ako Brownfields
CASE:	R01S44
LABORATORY:	U. S. EPA Region 9 Laboratory
SAMPLE DELIVERY GROUP(S):	01184A
ANALYSIS:	Volatile Organic Compounds (EPA method 524.2)

A full documentation package for these data, including raw data and sample custody documentation, has been prepared and is on file at the Region 9 Laboratory. Please contact Vance Fong of the Quality Assurance Program (PMD-3) to request further review and/or validation of the data.

If you have any questions please contact Rich Bauer at (510) 412-2312, or Ken Hendrix at (510) 412-2321.

ATTACHMENT: Analytical Report

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

CASE NUMBER:	**R01S44**
SAMPLE DELIVERY GROUP:	**01184A**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**B0101024-0323**
ANALYSIS PERFORMED:	**524.2**
DATE:	**July 13, 2001**

SAMPLE NUMBERS:

Client Sample No.	Laboratory Sample ID
Y0821	AB31840
Y0825	AB31841
Y0834	AB31842
Y0837	AB31843

GENERAL COMMENTS

Four (4) water samples from the Kaka'ako Brownfields Superfund site were received at the EPA Region 9 Laboratory on 07/03/01

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 354, Volatile Organic Analysis (Reference Method 524.2).

SAMPLE RECEIPT AND PRESERVATION

No shipping or preservation issues were encountered with these samples.
Air bubbles were observed in all VOA vials.

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A Results detected at concentrations below the quantitation limit (QL) but greater than or equal to one-half the QL are reported with a "J" flag to indicate the uncertainty of quantitation at these levels.

B The reported values for the QC sample (Y0821, AB31840) should be considered estimates because QC limits were exceeded in the matrix spike /matrix spike duplicate sample for the following compounds. Matrix effects may be present in samples of similar composition to the spiked sample.

Sample ID	Laboratory Sample ID	Analyte	MS %Rec	MSD % Rec	QC Limit
Y0821	AB31840	1,2-Dichloro3-chloropropane	66	72	70-130

C The QC limits (50 - 150 % recovery) were exceeded in the Quantitation Limit Standard (QLS) for the following compound. Since the value is biased low, the reported values should be considered as estimates.

Filename	Instrument	Date	Analyte	%Recovery	QC Limit
QWH0705	HP5973H	07/05/01	Bromoform	34	50 - 150

No target analytes were detected in the method blanks associated with these samples.

No target analytes were detected in the storage blank associated with these samples.

All surrogate recoveries were within QC limits.

All MS/MSD results were within QC limits except as stated in comment B.

All internal standard areas and retention times were within QC limits.

All LCS results were within QC limits.

All samples were analyzed within the holding time of 14 days.

RESULTS SUMMARY

The results can be found on the Summary of Results report.

Any questions in reference to this data package may be addressed to Nicholas Kish at (510) 412-2375.

Glossary

Method Blanks

A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks

A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis

Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards

Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples

Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'akoBrownfields
SDG: 01184A
Date: 07/13/01

Analysis: 524.2
Matrix: Water

Sample No.	NA			NA			NA			NA			Method Blank		
Sample ID	Y0821			Y0825			Y0834			Y0837			MWH0705		
Lab Sample ID	AB31840			AB31841			AB31842			AB31843			NA		
Date of Collection	06/28/01			06/28/01			06/28/01			06/28/01			NA		
Units	ug/L			ug/L			ug/L			ug/L			ug/L		
Analyte	Result	Q	Cmt	Result	Q	Cmt	Result	Q	Cmt	Result	Q	Cmt	Result	Q	Cmt
Dichlorodifluoromethane	1 U			1 U			1 U			1 U			1 U		
Chloromethane	1 U			1 U			1 U			1 U			1 U		
Vinyl chloride	0.5 U			0.5 U			0.5 U			0.5 U			0.5 U		
Bromomethane	1 U			1 U			1 U			1 U			1 U		
Chloroethane	1 U			1 U			1 U			1 U			1 U		
Trichlorofluoromethane	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Methylene chloride	1 U			1 U			1 U			1 U			1 U		
trans-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Methyl t-butyl ether (MTBE)	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloroethane	1 U			1 U			1 U			1 U			1 U		
2,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
cis-1,2-Dichloroethene	1 U			1 U			1 U			1 U			1 U		
Bromochloromethane	1 U			1 U			1 U			1 U			1 U		
Chloroform	1 U			1 U			1 U			1 U			1 U		
1,1,1-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
1,1-Dichloropropene	1 U			1 U			1 U			1 U			1 U		
Benzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloroethane	0.5 U			0.5 U			0.5 U			0.5 U			0.5 U		
Carbon tetrachloride	0.5 U			0.5 U			0.5 U			0.5 U			0.5 U		
Trichloroethene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
Dibromomethane	1 U			1 U			1 U			1 U			1 U		
Bromodichloromethane	1 U			1 U			1 U			1 U			1 U		
cis-1,3-Dichloropropene	0.5 U			0.5 U			0.5 U			0.5 U			0.5 U		
trans-1,3-Dichloropropene	0.5 U			0.5 U			0.5 U			0.5 U			0.5 U		
1,1,2-Trichloroethane	1 U			1 U			1 U			1 U			1 U		
Toluene	1 U			1 U			1 U			1 U			1 U		
Tetrachloroethene	1 U			1 U			1 U			1 U			1 U		
1,3-Dichloropropane	1 U			1 U			1 U			1 U			1 U		
Dibromochloromethane	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromoethane (EDB)	1 U			1 U			1 U			1 U			1 U		
Chlorobenzene	1 U			1 U			1 U			0.5	J	A	1 U		
1,1,1,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
Ethylbenzene	1 U			1 U			1 U			1 U			1 U		
m & p-Xylene	1 U			1 U			1 U			1 U			1 U		
o-Xylene	1 U			1 U			1 U			1 U			1 U		
Styrene	1 U			1 U			1 U			1 U			1 U		
Bromoform	1 U	J	C	1 U	J	C	1 U	J	C	1 U	J	C	1 U	J	C
Isopropylbenzene	1 U			1 U			1 U			1 U			1 U		
Bromobenzene	1 U			1 U			1 U			1 U			1 U		
1,1,2,2-Tetrachloroethane	1 U			1 U			1 U			1 U			1 U		
1,2,3-Trichloropropane	1 U			1 U			1 U			1 U			1 U		
n-Propylbenzene	1 U			1 U			1 U			1 U			1 U		
2-Chlorotoluene	1 U			1 U			1 U			1 U			1 U		
4-Chlorotoluene	1 U			1 U			1 U			1 U			1 U		
1,3,5-Trimethylbenzene	1 U			1 U			1 U			1 U			1 U		
tert-Butylbenzene	1 U			1 U			1 U			1 U			1 U		
1,2,4-Trimethylbenzene	1 U			1 U			1 U			1 U			1 U		
sec-Butylbenzene	1 U			1 U			1 U			1 U			1 U		
1,3-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
1,4-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
p-Isopropyltoluene	1 U			1 U			1 U			1 U			1 U		
1,2-Dichlorobenzene	1 U			1 U			1 U			1 U			1 U		
n- Butylbenzene	1 U			1 U			1 U			1 U			1 U		
1,2-Dibromo-3-chloropropane	2 U	J	B	2 U			2 U			2 U			2 U		
1,2,4-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		
Hexachlorobutadiene	1 U			1 U			1 U			1 U			1 U		
Naphthalene	1 U			1 U			0.7	J	A	1 U			1 U		
1,2,3-Trichlorobenzene	1 U			1 U			1 U			1 U			1 U		

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment

MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'akoBrownfields
SDG: 01184A
Date: 07/13/01

Analysis: 524.2
Matrix: Water

Sample No.	Storge Blank			Quantitation		
Sample ID	SBH0705			Limit		
Lab Sample ID	VHBLK0629			NA		
Date of Collection	06/29/01			NA		
Units	ug/L			ug/L		
Analyte	Result	Q	Cmt	Result	Q	Cmt
Dichlorodifluoromethane	1 U			1		
Chloromethane	1 U			1		
Vinyl chloride	0.5 U			0.5		
Bromomethane	1 U			1		
Chloroethane	1 U			1		
Trichlorofluoromethane	1 U			1		
1,1-Dichloroethene	1 U			1		
Methylene chloride	1 U			1		
trans-1,2-Dichloroethene	1 U			1		
Methyl t-butyl ether (MTBE)	1 U			1		
1,1-Dichloroethane	1 U			1		
2,2-Dichloropropane	1 U			1		
cis-1,2-Dichloroethene	1 U			1		
Bromochloromethane	1 U			1		
Chloroform	1 U			1		
1,1,1-Trichloroethane	1 U			1		
1,1-Dichloropropene	1 U			1		
Benzene	1 U			1		
1,2-Dichloroethane	0.5 U			0.5		
Carbon tetrachloride	0.5 U			0.5		
Trichloroethene	1 U			1		
1,2-Dichloropropane	1 U			1		
Dibromomethane	1 U			1		
Bromodichloromethane	1 U			1		
cis-1,3-Dichloropropene	0.5 U			0.5		
trans-1,3-Dichloropropene	0.5 U			0.5		
1,1,2-Trichloroethane	1 U			1		
Toluene	1 U			1		
Tetrachloroethene	1 U			1		
1,3-Dichloropropane	1 U			1		
Dibromochloromethane	1 U			1		
1,2-Dibromoethane (EDB)	1 U			1		
Chlorobenzene	1 U			1		
1,1,1,2-Tetrachloroethane	1 U			1		
Ethylbenzene	1 U			1		
m & p-Xylene	1 U			1		
o-Xylene	1 U			1		
Styrene	1 U			1		
Bromoform	1 U	J	C	1		
Isopropylbenzene	1 U			1		
Bromobenzene	1 U			1		
1,1,2,2-Tetrachloroethane	1 U			1		
1,2,3-Trichloropropane	1 U			1		
n-Propylbenzene	1 U			1		
2-Chlorotoluene	1 U			1		
4-Chlorotoluene	1 U			1		
1,3,5-Trimethylbenzene	1 U			1		
tert-Butylbenzene	1 U			1		
1,2,4-Trimethylbenzene	1 U			1		
sec-Butylbenzene	1 U			1		
1,3-Dichlorobenzene	1 U			1		
1,4-Dichlorobenzene	1 U			1		
p-Isopropyltoluene	1 U			1		
1,2-Dichlorobenzene	1 U			1		
n- Butylbenzene	1 U			1		
1,2-Dibromo-3-chloropropane	2 U			2		
1,2,4-Trichlorobenzene	1 U			1		
Hexachlorobutadiene	1 U			1		
Naphthalene	1 U			1		
1,2,3-Trichlorobenzene	1 U			1		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment

MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX LABORATORY
1337 S. 46TH STREET
BLDG. 201
RICHMOND, CA 94804-4698

SEP 4 2001

MEMORANDUM

SUBJECT: Case R01S44
Results for Diesel and Motor Oil Range Organics Analyses

FROM: Brenda Bettencourt, Director
EPA Region 9 Laboratory (PMD-2)

TO: Tom Mix, Special Assistant for Superfund
Superfund Office (SFD-1)

Attached are the report narrative and results spreadsheet from analysis of samples from the Kaka'ako Brownfields project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy. Summary information for the data included in this report is as follows:

SITE/PROJECT:	Kaka'ako Brownfields
CASE:	R01S44
LABORATORY:	U. S. EPA Region 9 Laboratory
SAMPLE DELIVERY GROUP(S):	01177A, 01179D
ANALYSIS:	TPH-Diesel and Motor Oil Range Organics (EPA method 8015B)

A full documentation package for these data, including raw data and sample custody documentation, has been prepared and is on file at the Region 9 Laboratory. Please contact Vance Fong of the Quality Assurance Program (PMD-3) to request further review and/or validation of the data.

If you have any questions please contact Rich Bauer at (510) 412-2312, or Ken Hendrix at (510) 412-2321.

ATTACHMENT: Analytical Reports

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

CASE NUMBER:	**R01S44**
SAMPLE DELIVERY GROUP (SDG):	**01179D**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**B0101024-0420**
ANALYSIS PERFORMED:	**Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO)**
DATE:	**August 15, 2001**

SAMPLE NUMBERS:

Client Sample No.	Laboratory Sample ID	Client Sample No.	Laboratory Sample ID
KB064	AB31805	KB095	AB31824
KB075	AB31806	KB096	AB31825
KB083	AB31807	KB099	AB31826
KB090	AB31823		

GENERAL COMMENTS

Seven (7) soil samples were received at the EPA Region 9 Laboratory on 06/28/01 and 06/29/01 from the Kaka'ako Brownfields site for determination of TPH-DRO.

These samples were analyzed for TPH-DRO in accordance with the Region 9 Laboratory SOP 385, *Extractable Petroleum Hydrocarbons by GC FID* based on EPA SW-846 Method 8015B, *Nonhalogenated Organics Using GC/FID*, Revision 2, December 1996 and Region 9 Laboratory SOP 275, *Extraction of Petroleum Hydrocarbons from Water Using Continuous Liquid-Liquid Extraction* based on EPA SW-846 Method 3520C, *Continuous Liquid-Liquid Extraction*, Revision 3, December 1996.

These samples turned out to be primarily contaminated with oil range components; the sample chromatograms do not display any discernable diesel hydrocarbon pattern. The oil range components in these samples contribute to the diesel range quantitation area, interfering with accurate quantitation of diesel range organics. Therefore, results are reported as "TPH as Motor Oil".

Soil sample results are reported on a dry-weight basis.

SAMPLE RECEIPT AND PRESERVATION

No shipping or preservation issues were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A. The samples listed below were extracted beyond holding time. Detected results and quantitation limits for the samples listed below are estimated and "J" flagged.

Sample ID	Lab ID	Date Collected	Holding Time Date	Date Extracted	Days Beyond
KB064	AB31805	06/27/01	07/11/01	07/26/01	15
KB075	AB31806	06/27/01	07/11/01	07/26/01	15
KB083	AB31807	06/27/01	07/11/01	07/26/01	15

B. The RPD and % recovery of the LFM/LFMD spiking compounds listed below do not meet the QC limits. Result and quantitation limit for the analyte listed below in the QC sample is estimated and "J" flagged.

Sample ID	Lab ID	Analyte	LFM %Rec	LFMD % Rec	QC Limit	RPD	QC Limit
KB075	AB31806	Diesel	30	19	70 - 130	47	15
KB090	AB31823	Diesel	46	48	70 - 130	4	15

Note: Some oil range components present in the matrix spike sample elute in the diesel range interfering with quantitation of diesel range hydrocarbons. Small variations in oil content in subsamples taken for LFM/LFMD samples from the matrix spike sample can have a significant impact on diesel range spike recoveries.

C. The accuracy of the LFB spiking compound listed below does not meet the QC limits. Detected results for the analyte listed below in the samples and LRB extracted with the LFB listed below are estimated and "J" flagged.

LFB Filename	Date Analyzed	Compound	% Rec	QC Limit
214F007	08/02/01	Diesel	60	70 - 130

D. The surrogate recoveries for the samples listed below do not meet QC limits. Detected result for the analyte in the samples are estimated and "J" flagged.

Sample ID	Lab ID	Surrogate	% Rec	QC Limit
KB064	AB31805	n-Hexacosane	64	70 - 130
KB083	AB31807	n-Hexacosane	63	70 - 130

Additionally, the following QC results are associated with the sample(s) in this SDG:

QC limits were met for all initial calibrations, CVs, QCS percent differences, QLS percent differences, LFB percent recoveries and surrogate recoveries, except as noted above.

All samples were analyzed within the 40 day extract holding time.

No target analytes were detected in the LRB associated with these samples.

Any questions in reference to this data package may be addressed to Nick Kish at (510) 412-2375.

GLOSSARY

Initial Calibration
The initial calibration demonstrates that the instrument has a linear calibration curve described by percent relative standard deviation (%RSD). The average calibration factors (CFs) determined in the initial calibration are used to quantitate analytes and surrogates.

Quality Control Standard (QCS)
The quality control standard is a mid-point calibration standard prepared from a source different than the calibration standards. The QCS is used to check the accuracy of the initial calibration standards.

Calibration Verification (CV)
The calibration verification checks the instrument performance daily by ensuring the instrument continues to meet the linear calibration curve as demonstrated by percent difference (%D).

Quantitation Limit Standard (QLS)
The quantitation limit standard is used to demonstrate low level quantitation performance for all target compounds.

Laboratory Reagent Blanks (LRBs)
A laboratory reagent blank is laboratory reagent water or baked sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The LRB is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

Surrogates
Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to extraction. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Fortified Sample Matrix and Duplicate (LFM and LFMD) Analysis
Laboratory fortified sample matrix and duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Laboratory Fortified Blank (LFB) Analysis
A laboratory fortified blank is laboratory reagent water or baked sand with all reagents, surrogates, internal standards and representative target compounds added and carried through the same sample preparation and analytical procedures as the field samples. The LFB analyses provide information about the laboratory and method performance. Poor percent recovery (%R) results may indicate poor laboratory technique or poor method performance for a particular class of compounds.

Suffixes to Sample ID and Lab ID
The following suffixes may be attached to sample ID's and lab ID's to distinguish between different extraction samples or analytical runs: RE for reextraction, RA for reanalysis, and DL for dilution analysis.

EPA REGION 9 LABORATORY-RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka' ako Brownfields
SDG: 01179D
Date: 08/15/01

Analysis: TPH-DRO/OIL-RANGE
Matrix: Soil

Sample No.	—				—				—				—			
Sample I.D.	KB064				KB075				KB083				KB090			
Lab Sample ID	AB31805				AB31806				AB31807				AB31823			
Date of Collection	06/27/01				06/27/01				06/27/01				06/28/01			
% Solids	99				93				84				85			
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	50	U			50	U			50	U			6	U		
TPH as Motor Oil	430		J	ACD	770		J	ABC	64		J	ACD	760		J	B

Sample No.	—				—				—				NA			
Sample I.D.	KB095				KB096				KB099				Method Blank			
Lab Sample ID	AB31824				AB31825				AB31826				TBLK183			
Date of Collection	06/28/01				06/28/01				06/28/01				NA			
% Solids	90				87				84							
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	50	U			6	U			6	U			5	U		
TPH as Motor Oil	900				170				610				10	U		

Sample No.	NA				
Sample I.D.	Method Blank				Quantitation Limit
Lab Sample ID	TBLK207				
Date of Collection	NA				
% Solids					
Units	mg/Kg				mg/Kg
Analyte	Result		Q	Com	Result
TPH-Diesel Range	5	U			5
TPH as Motor Oil	10	U			10

Sample chromatogram does not displayed any discernable diesel hydrocarbon pattern.
NOTES; The results are reported dry weight corrected.
Com - Comments refer to the corresponding section in the report narrative for each letter.
Q - Refer to data qualifiers:
U - The analyte was analyzed for but not detected. The associated value is the sample quantitation limit, adjusted for dilution, if any.
J - The associated value is an estimated quantity.

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

CASE NUMBER:	**R01S44**
SAMPLE DELIVERY GROUP (SDG):	**01177A**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**B0101024-0404**
ANALYSIS PERFORMED:	**Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO)**
DATE:	**August 13 2001**

SAMPLE NUMBERS:

Client Sample No.	Laboratory Sample ID	Client Sample No.	Laboratory Sample ID
KB001	AB31726	KB035	AB31749
KB006	AB31727	KB036	AB31750
KB010	AB31728	KB040	AB31751
KB015	AB31729	KB042	AB31752
KB016	AB31730	KB043	AB31753
KB021	AB31744	KB046	AB31754
KB024	AB31745	KB050	AB31755
KB028	AB31746	KB055	AB31756
KB029	AB31747	KB058	AB31757
KB033	AB31748	KB063	AB31804

GENERAL COMMENTS

Twenty (20) soil samples were received at the EPA Region 9 Laboratory on 06/26/01, 06/27/01, and 06/28/01 from the Kaka'ako Brownfields site for determination of TPH-DRO.

These samples were analyzed for TPH-DRO in accordance with the Region 9 Laboratory SOP 385, *Extractable Petroleum Hydrocarbons by GC FID* based on EPA SW-846 Method 8015B, *Nonhalogenated Organics Using GC/FID*, Revision 2, December 1996 and Region 9 Laboratory SOP 275, *Extraction of Petroleum Hydrocarbons from Water Using Continuous Liquid-Liquid Extraction* based on EPA SW-846 Method 3520C, *Continuous Liquid-Liquid Extraction*, Revision 3, December 1996.

Soil sample results are reported on a dry-weight basis.

SAMPLE RECEIPT AND PRESERVATION

No shipping or preservation issues were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A. The sample listed below was extracted beyond holding time. Detected results and quantitation limits for the sample listed below are estimated and "J" flagged.

Sample ID	Lab ID	Date Collected	Holding Time Date	Date Extracted	Days Beyond
KB063	AB31804	06/27/01	07/11/01	07/26/01	15

B. Results detected at concentrations below the quantitation limit (QL) but greater than or equal to one half the QL are reported with a "J" flag to indicate the uncertainty of quantitation at these levels.

C. The accuracy of the LFB spiking compound listed below does not meet the QC limits. Detected results for the analyte listed below in samples and LRB extracted with the LFB listed below is estimated and "J" flagged.

LFB Filename	Date Analyzed	Compound	% Rec	QC Limit
214F007	08/02/01	Diesel	60	70 - 130

D. The surrogate recoveries for the samples listed below do not meet QC limits. Detected results for the samples listed below are estimated and "J" flagged. Quantitation limits for the samples listed below with low surrogate recoveries are estimated and "J" flagged.

Sample ID	Lab ID	Surrogate	% Rec	QC Limit
KB043	AB31753	n-Hexacosane	58	70 - 130
KB058	AB31757	n-Hexacosane	62	70 - 130

E. The sample contains material in the diesel range that does not resemble the chromatographic pattern of diesel.

F. The sample contains material in the diesel range that has a discernable hydrocarbon pattern which resembles the chromatographic pattern of diesel.

Additionally, the following QC results are associated with the samples in this SDG:

QC limits were met for all initial calibration, CVs, QCS percent differences, QLS percent differences, LFB percent recoveries, surrogate recoveries, except as noted above.

All samples were analyzed within the 40 day extract holding time.

No target analytes were detected above the quantitation limit in the LRBs associated with these samples.

Any questions in reference to this data package may be addressed to Nick Kish at (510) 412-2375.

GLOSSARY

Initial Calibration
The initial calibration demonstrates that the instrument has a linear calibration curve described by percent relative standard deviation (%RSD). The average calibration factors (CFs) determined in the initial calibration are used to quantitate analytes and surrogates.

Quality Control Standard (QCS)
The quality control standard is a mid-point calibration standard prepared from a source different than the calibration standards. The QCS is used to check the accuracy of the initial calibration standards.

Calibration Verification (CV)
The calibration verification checks the instrument performance daily by ensuring the instrument continues to meet the linear calibration curve as demonstrated by percent difference (%D).

Quantitation Limit Standard (QLS)
The quantitation limit standard is used to demonstrate low level quantitation performance for all target compounds.

Laboratory Reagent Blanks (LRBs)
A laboratory reagent blank is laboratory reagent water or baked sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The LRB is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

Surrogates
Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to extraction. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Fortified Sample Matrix and Duplicate (LFM and LFMD) Analysis
Laboratory fortified sample matrix and duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Laboratory Fortified Blank (LFB) Analysis
A laboratory fortified blank is laboratory reagent water or baked sand with all reagents, surrogates, internal standards and representative target compounds added and carried through the same sample preparation and analytical procedures as the field samples. The LFB analyses provide information about the laboratory and method performance. Poor percent recovery (%R) results may indicate poor laboratory technique or poor method performance for a particular class of compounds.

Suffixes to Sample ID and Lab ID
The following suffixes may be attached to sample ID's and lab ID's to distinguish between different extraction samples or analytical runs: RE for reextraction, RA for reanalysis, and DL for dilution analysis.

EPA REGION 9 LABORATORY-RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka' ako Brownfieled
SDG: 01177A
Date: 08/13/01

Analysis: TPH-DRO/OIL-RANGE
Matrix: Soil

Sample No.	—				—				—				—			
Sample I.D.	KB001				KB006				KB010				KB015			
Lab Sample ID	AB31726				AB31727				AB31728				AB31729			
Date of Collection	06/25/01				06/25/01				06/25/01				06/25/01			
% Solids	83				87				91				83			
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	100	U			6	U			6	U			5		J	BF
TPH-Oil Range	7,600				440				240				340			

Sample No.	—				—				—				—			
Sample I.D.	KB016				KB021				KB024				KB028			
Lab Sample ID	AB31730				AB31744				AB31745				AB31746			
Date of Collection	06/25/01				06/26/01				06/26/01				06/26/01			
% Solids	88				93				86				84			
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	8			F	5	U			90			E	6	U		
TPH-Oil Range	200				60				600				120			

Sample No.	—				—				—				—			
Sample I.D.	KB029				KB033				KB035				KB036			
Lab Sample ID	AB31747				AB31748				AB31749				AB31750			
Date of Collection	06/26/01				06/26/01				06/26/01				06/26/01			
% Solids	87				86				89				89			
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	60	U			120			E	60	U			60	U		
TPH-Oil Range	700				90				600				500			

Sample No.	—				—				—				—			
Sample I.D.	KB040				KB042				KB043				KB046			
Lab Sample ID	AB31751				AB31752				AB31753				AB31754			
Date of Collection	06/26/01				06/26/01				06/26/01				06/26/01			
% Solids	73				87				87				87			
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	7	U			6	U			6	U	J	D	140			E
TPH-Oil Range	30				50				400		J	D	300			

Sample No.	—				—				—				—			
Sample I.D.	KB050				KB055				KB058				KB063			
Lab Sample ID	AB31755				AB31756				AB31757				AB31804			
Date of Collection	06/26/01				06/26/01				06/26/01				06/27/01			
% Solids	87				82				83				99			
Units	mg/Kg				mg/Kg				mg/Kg				mg/Kg			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	60	U			60	U			6	U	J	D	50	U	J	AC
TPH-Oil Range	1,100				900				510		J	D	400		J	AC

Sample No.	NA				NA				
Sample I.D.	Method Blank				Method Blank				Quantitation Limit
Lab Sample ID	TBLK179				TBLK207				
Date of Collection	NA				NA				
% Solids									
Units	mg/Kg				mg/Kg				mg/Kg
Analyte	Result		Q	Com	Result		Q	Com	Result
TPH-Diesel Range	5	U			5	U			5
TPH-Oil Range	7		J	B	10	U			10

NOTES: The results are reported dry weight corrected.
Com - Comments refer to the corresponding section in the report narrative for each letter.
Q - Refer to data qualifiers:
U - The analyte was analyzed for but not detected. The associated value is the sample quantitation limit, adjusted for dilution, if any.
J - The associated value is an estimated quantity.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX LABORATORY
1337 S. 46TH STREET
BLDG. 201
RICHMOND, CA 94804-4698

AUG 2 4 2001

MEMORANDUM

SUBJECT: Case R01S44
Results for Volatile Organic Compounds and Diesel Range Organics Analyses

FROM: Brenda Bettencourt, Director
EPA Region 9 Laboratory (PMD-2)

TO: Tom Mix, Special Assistant for Superfund
Superfund Office (SFD-1)

Attached are the report narrative and results spreadsheet from analysis of samples from the Kaka'ako Brownfields project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy. Summary information for the data included in this report is as follows:

SITE/PROJECT:	Kaka'ako Brownfields
CASE:	R01S44
LABORATORY:	U. S. EPA Region 9 Laboratory
SAMPLE DELIVERY GROUP(S):	01180A, 01177B, 01177C, 01178A
ANALYSIS:	Volatile Organic Compounds (R9 Lab SOP 305)
	TPH-Diesel Range Organics (EPA method 8015B)

A full documentation package for these data, including raw data and sample custody documentation, has been prepared and is on file at the Region 9 Laboratory. Please contact Vance Fong of the Quality Assurance Program (PMD-3) to request further review and/or validation of the data.

If you have any questions please contact Rich Bauer at (510) 412-2312, or Ken Hendrix at (510) 412-2321.

ATTACHMENT: Analytical Reports

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

CASE NUMBER:	**R01S44**
SAMPLE DELIVERY GROUP:	**01180A**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**B0101024-0342**
ANALYSIS PERFORMED:	**GC/MS VOA**
DATE:	**July 24, 2001**

SAMPLE NUMBERS:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
KB098	AB31832	KB100	AB31833
KB101	AB31834	KB103	AB31835

GENERAL COMMENTS

Four (4) soil samples were received at the EPA Region 9 Laboratory on 06/29/01 from the Kaka'ako Brownfields site.

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 305, Volatile Organic Analysis for soil.

SAMPLE RECEIPT AND PRESERVATION

No issues related to shipping and preservation were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A The following LCS analytes failed to meet criteria. Since these values are biased low, the reported values should be considered as estimated (J).

LCS File ID	Date	Analyte	% Rec	QC Limit
LSJ0629	6/29/01	Dichlorodifluoromethane	40	60 - 140

Accurate spiking of dichlorodifluoromethane is difficult because it is a gas at room temperature.

No target analytes were detected in the method blanks associated with these samples.

All surrogate recoveries were within QC limits.

Inadvertently, no MS/MSD QC analyses were performed for this SDG.

All internal standard areas and retention times were within QC limits.

All LCS results were within QC limits except as stated in comment A..

All samples were analyzed within the holding time.

RESULTS SUMMARY

The results can be found on the Summary of Results report.

Any questions in reference to this data package may be addressed to Nicholas Kish at (510) 412-2375.

Glossary

Method Blanks
A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks
A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates
Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis
Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards
Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples
Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01180A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB098				KB100				KB101				KB103				Method Blank			
Lab Sample ID	AB31832				AB31833				AB31834				AB31835				MWJ0629			
Date of Collection	06/28/01				06/28/01				06/28/01				06/28/01				NA			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	20	U	J	A	20	U	J	A	20	U	J	A	10	U	J	A	10	U	J	A
Chloromethane	20	U			20	U			20	U			10	U			10	U		
Vinyl Chloride	20	U			20	U			20	U			10	U			10	U		
Bromomethane	20	U			20	U			20	U			10	U			10	U		
Chloroethane	20	U			20	U			20	U			10	U			10	U		
Trichlorofluoromethane	20	U			20	U			20	U			10	U			10	U		
1,1-Dichloroethene	20	U			20	U			20	U			10	U			10	U		
Carbon Disulfide	20	U			20	U			20	U			10	U			10	U		
Acetone	20	U			20	U			20	U			20				10	U		
Methylene Chloride	20	U			20	U			20	U			10	U			10	U		
trans-1,2-Dichloroethene	20	U			20	U			20	U			10	U			10	U		
Methyl-t-Butyl Ether	20	U			20	U			20	U			10	U			10	U		
1,1-Dichloroethane	20	U			20	U			20	U			10	U			10	U		
Ethyl-t-butyl ether	20	U			20	U			20	U			10	U			10	U		
cis-1,2-Dichloroethene	20	U			20	U			20	U			10	U			10	U		
2-Butanone	20	U			20	U			20	U			10	U			10	U		
Chloroform	20	U			20	U			20	U			10	U			10	U		
1,2-Dichloroethane	20	U			20	U			20	U			10	U			10	U		
tert-Amyl-methyl ether	20	U			20	U			20	U			10	U			10	U		
1,1,1-Trichloroethane	20	U			20	U			20	U			10	U			10	U		
Carbon Tetrachloride	20	U			20	U			20	U			10	U			10	U		
Benzene	20	U			20	U			20	U			10	U			10	U		
Trichloroethene	20	U			20	U			20	U			10	U			10	U		
1,2-Dichloropropane	20	U			20	U			20	U			10	U			10	U		
Bromodichloromethane	20	U			20	U			20	U			10	U			10	U		
cis-1,3-Dichloropropene	20	U			20	U			20	U			10	U			10	U		
trans-1,3-Dichloropropene	20	U			20	U			20	U			10	U			10	U		
1,1,2-Trichloroethane	20	U			20	U			20	U			10	U			10	U		
Dibromochloromethane	20	U			20	U			20	U			10	U			10	U		
4-Methyl-2-pentanone	20	U			20	U			20	U			10	U			10	U		
Toluene	20	U			20	U			20	U			10	U			10	U		
1,3-Dichloropropane	20	U			20	U			20	U			10	U			10	U		
2-Hexanone	20	U			20	U			20	U			10	U			10	U		
Tetrachloroethene	20	U			20	U			20	U			10	U			10	U		
1,2-Dibromoethane	20	U			20	U			20	U			10	U			10	U		
Chlorobenzene	20	U			20	U			20	U			10	U			10	U		
Ethyl Benzene	20	U			20	U			20	U			10	U			10	U		
Xylene (para & meta-)	20	U			20	U			20	U			10	U			10	U		
Xylene (ortho-)	20	U			20	U			20	U			10	U			10	U		
Styrene	20	U			20	U			20	U			10	U			10	U		
Bromoform	20	U			20	U			20	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	20	U			20	U			20	U			10	U			10	U		
1,2,3-Trichloropropane	20	U			20	U			20	U			10	U			10	U		
1,3-Dichlorobenzene	20	U			20	U			20	U			10	U			10	U		
1,4-Dichlorobenzene	20	U			20	U			20	U			10	U			10	U		
1,2-Dichlorobenzene	20	U			20	U			20	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	20	U			20	U			20	U			10	U			10	U		
% Solid	84				85				84				85				NA			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
Results reported on a dry-weight basis
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01180A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	Quantitation Limits		
Sample ID	NA		
Lab Sample ID	NA		
Date of Collection	NA		
Units	ug/kg		
Analyte	Result	Q	Cmt
Dichlorodifluoromethane	10		
Chloromethane	10		
Vinyl Chloride	10		
Bromomethane	10		
Chloroethane	10		
Trichlorofluoromethane	10		
1,1-Dichloroethene	10		
Carbon Disulfide	10		
Acetone	10		
Methylene Chloride	10		
trans-1,2-Dichloroethene	10		
Methyl-t-Butyl Ether	10		
1,1-Dichloroethane	10		
Ethyl-t-butyl ether	10		
cis-1,2-Dichloroethene	10		
2-Butanone	10		
Chloroform	10		
1,2-Dichloroethane	10		
tert-Amyl-methyl ether	10		
1,1,1-Trichloroethane	10		
Carbon Tetrachloride	10		
Benzene	10		
Trichloroethene	10		
1,2-Dichloropropane	10		
Bromodichloromethane	10		
cis-1,3-Dichloropropene	10		
trans-1,3-Dichloropropene	10		
1,1,2-Trichloroethane	10		
Dibromochloromethane	10		
4-Methyl-2-pentanone	10		
Toluene	10		
1,3-Dichloropropane	10		
2-Hexanone	10		
Tetrachloroethene	10		
1,2-Dibromoethane	10		
Chlorobenzene	10		
Ethyl Benzene	10		
Xylene (para & meta-)	10		
Xylene (ortho-)	10		
Styrene	10		
Bromoform	10		
1,1,2,2-Tetrachloroethane	10		
1,2,3-Trichloropropane	10		
1,3-Dichlorobenzene	10		
1,4-Dichlorobenzene	10		
1,2-Dichlorobenzene	10		
1,2-Dibromo-3-chloropropane	10		
% Solid	NA		

Q-Laboratory Data Qualifiers

U-This compound was analyzed for, but not detected.

MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

CASE NUMBER: R01S44
SAMPLE DELIVERY GROUP (SDG): 01177C
PROGRAM: Superfund
DOCUMENT CONTROL #: B0101024-0340
ANALYSIS PERFORMED: Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO)
DATE: August 2, 2001

SAMPLE NUMBERS:

Client Sample No.	Laboratory Sample ID	Client Sample No.	Laboratory Sample ID
KB013	AB31739	KB072	AB31821
KB047	AB31776	KB078	AB31822
KB074	AB31817	KB088	AB31836
KB069	AB31818	KB094	AB31837
KB070	AB31819	KB102	AB31838
KB071	AB31820	KB105	AB31839

GENERAL COMMENTS

Twelve (12) water samples were received at the EPA Region 9 Laboratory on 06/26/01, 06/27/01, 06/28/01 and 06/29/01 from the Kaka'ako Brownfields site for determination of TPH-DRO.

These samples were analyzed for TPH-DRO in accordance with the Region 9 Laboratory SOP 385, *Extractable Petroleum Hydrocarbons by GC FID* based on EPA SW-846 Method 8015B, *Nonhalogenated Organics Using GC/FID*, Revision 2, December 1996 and Region 9 Laboratory SOP 275, *Extraction of Petroleum Hydrocarbons from Water Using Continuous Liquid-Liquid Extraction* based on EPA SW-846 Method 3520C, *Continuous Liquid-Liquid Extraction*, Revision 3, December 1996.

SAMPLE RECEIPT AND PRESERVATION

No shipping or preservation issues were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comment(s) appear on the Summary of Analytical Results:

A. The samples listed below were extracted beyond holding time. Results and quantitation limits for the samples listed below are estimated and "J" flagged.

Sample ID	Lab ID	Date Collected	Holding Time Date	Date Extracted	Days Beyond
KB074	AB31817	06/27/01	07/04/01	07/26/01	22
KB069	AB31818	06/27/01	07/04/01	07/26/01	22
KB070	AB31819	06/27/01	07/04/01	07/26/01	22
KB071	AB31820	06/27/01	07/04/01	07/26/01	22
KB072	AB31821	06/27/01	07/04/01	07/26/01	22
KB078	AB31822	06/27/01	07/04/01	07/26/01	22

B. The RPD and % recovery of the LFM/LFMD spiking compounds listed below do not meet the QC limits. The result and quantitation limit for the analyte listed below in the QC sample is estimated and "J" flagged.

Sample ID	Lab ID	Analyte	LFM %Rec	LFMD % Rec	QC Limit	RPD	QC Limit
KB074	AB31817	Diesel	50	112	70 - 130	77	15

White particles were present in the matrix spike sample and LFMD sample extracts, which were yellow after concentration. The matrix spike sample and LFMD samples contain material in the diesel range that does not resemble the chromatographic pattern of diesel but rather that of a light oil. Percent recovery of the diesel spike in the LFMD sample may be enhanced since this material contributed to the Diesel Range quantitation. These samples were re-analyzed (data files: 211M034, 211M035 and 211M036) with the similar results.

C. The following samples contain material in the diesel range that does not resemble the chromatographic pattern of diesel but rather that of a light oil; this material contributed to the Diesel Range quantitation. Sample chromatograms do not display any discernable diesel fuel pattern.

Client Sample No.	Lab sample ID
KB074	AB31817
KB071	AB31820
KB078	AB31822

Additionally, the following QC results are associated with the sample(s) in this SDG:

The surrogate recovery for the sample listed below does not meet QC limits. According to the extraction data sheet, this sample was spiked twice with surrogate.

Sample ID	Lab ID	Surrogate	% Rec	QC Limit
KB072	AB31821	n-Hexacosane	168	70 - 130

This sample was re-analyzed (data file 211L038) with surrogate recoveries at 182 %.

QC limits were met for all initial calibration, CVs, QCS percent differences, QLS percent differences, LFB percent recoveries, surrogate recoveries, except as noted above, and percent recoveries and RPDs for LFM/LFMD QC sample KB013.

All samples were analyzed within the 40 day extract holding time.

No target analytes were detected in the LRB associated with these samples.

Since only two sample containers were provided for sample KB013, one sample container was divided to extract the LFM/LFMD QC samples.

Any questions in reference to this data package may be addressed to Nick Kish at (510) 412-2375.

GLOSSARY

Initial Calibration
The initial calibration demonstrates that the instrument has a linear calibration curve described by percent relative standard deviation (%RSD). The average calibration factors (CFs) determined in the initial calibration are used to quantitate analytes and surrogates.

Quality Control Standard (QCS)
The quality control standard is a mid-point calibration standard prepared from a source different than the calibration standards. The QCS is used to check the accuracy of the initial calibration standards.

Calibration Verification (CV)
The calibration verification checks the instrument performance daily by ensuring the instrument continues to meet the linear calibration curve as demonstrated by percent difference (%D).

Quantitation Limit Standard (QLS)
The quantitation limit standard is used to demonstrate low level quantitation performance for all target compounds.

Laboratory Reagent Blanks (LRBs)
A laboratory reagent blank is laboratory reagent water or baked sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The LRB is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

Surrogates
Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to extraction. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Fortified Sample Matrix and Duplicate (LFM and LFMD) Analysis
Laboratory fortified sample matrix and duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Laboratory Fortified Blank (LFB) Analysis
A laboratory fortified blank is laboratory reagent water or baked sand with all reagents, surrogates, internal standards and representative target compounds added and carried through the same sample preparation and analytical procedures as the field samples. The LFB analyses provide information about the laboratory and method performance. Poor percent recovery (%R) results may indicate poor laboratory technique or poor method performance for a particular class of compounds.

Suffixes to Sample ID and Lab ID
The following suffixes may be attached to sample ID's and lab ID's to distinguish between different extraction samples or analytical runs: RE for re-extraction, RA for re-analysis, and DL for dilution analysis.

EPA REGION 9 LABORATORY-RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako Brownfields
SDG: 01177C
Date: 08/02/01

Analysis: TPH-DRO
Matrix: Water

Sample No.	-				-				-				-			
Sample I.D.	KB013				KB047				KB074				KB069			
Lab Sample ID	AB31739				AB31776				AB31817				AB31818			
Date of Collection	06/25/01				06/26/01				06/27/01				06/27/01			
Units	ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	200	U			200	U			1,000		J	ABC	200		J	A

Sample No.	-				-				-				-			
Sample I.D.	KB070				KB071				KB072				KB078			
Lab Sample ID	AB31819				AB31820				AB31821				AB31822			
Date of Collection	06/27/01				06/27/01				06/27/01				06/27/01			
Units	ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	200		J	A	200		J	A	200		J	A	2,800		J	AC

Sample No.	-				-				-				-			
Sample I.D.	KB088				KB094				KB102				KB105			
Lab Sample ID	AB31836				AB31837				AB31838				AB31839			
Date of Collection	06/28/01				06/28/01				06/28/01				06/28/01			
Units	ug/L				ug/L				ug/L				ug/L			
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result		Q	Com
TPH-Diesel Range	200	U			200	U			200	U			200	U		

Sample No.	NA				NA				NA				
Sample I.D.	Method Blank				Method Blank				Method Blank				Quantitation Limit
Lab Sample ID	TBLK178				TBLK183				TBLK207				
Date of Collection	NA				NA				NA				
Units	ug/L				ug/L				ug/L				ug/L
Analyte	Result		Q	Com	Result		Q	Com	Result		Q	Com	Result
TPH-Diesel Range	200	U			200	U			200	U			200

Com - Comments refer to the corresponding section in the report narrative for each letter.
Q - Refer to data qualifiers:
U - The analyte was analyzed for but not detected. The associated value is the sample quantitation limit, adjusted for dilution, if any.
J - The associated value is an estimated quantity.

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

CASE NUMBER: R01S44
SAMPLE DELIVERY GROUP: 01178A
PROGRAM: Superfund
DOCUMENT CONTROL #: B0101024-0329
ANALYSIS PERFORMED: GC/MS VOA
DATE: July 23, 2001
SAMPLE NUMBERS:

Sample ID	Laboratory Sample ID	Sample ID	Laboratory Sample ID
KB053	AB31770	KB056	AB31771
KB057	AB31772	KB059	AB31773
KB060	AB31774	KB051	AB31775
KB065	AB31808	KB066	AB31809
KB067	AB31810	KB068	AB31811
KB076	AB31812	KB077	AB31813
KB082	AB31814	KB084	AB31815
KB085	AB31816	KB086	AB31827
KB087	AB31828	KB092	AB31829
KB093	AB31830	KB097	AB31831

GENERAL COMMENTS

Twenty (20) soil samples were received at the EPA Region 9 Laboratory between 06/27/01 and 06/29/01 from the Kaka'ako Brownfields site.

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 305, Volatile Organic Analysis for soil.

SAMPLE RECEIPT AND PRESERVATION

No issues related to shipping and preservation were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A The amount detected is less than the quantitation limit, and is an estimated value.

B The Continuing Calibration for the following analyte exceeded QC limits. Since the value is biased low, the reported values for the compound in samples and associated method blank should be considered as estimates in the summary of results spreadsheet.

Instrument	Date	Analyte	Filename	Criteria	QC Limit	Result
HP5973H	6/29/01	Acetone	CSH0629	%D	25%	-32
HP5973H	6/29/01	4-Methyl-2-pentanone	CSH0629	%D	25%	-38
HP5973H	6/29/01	2-Hexanone	CWH0629	%D	25%	-39

C The following LCS analytes failed to meet criteria. Since these values are biased low, the reported values should be considered as estimated (J).

LCS File ID	Date	Analyte	% Rec	QC Limit
LSJ0629	6/29/01	Dichlorodifluoromethane	40	60 - 140
LSH0629	6/29/01	Dichlorodifluoromethane	53	60 - 140

Accurate spiking of dichlorodifluoromethane is difficult because it is a gas at room temperature.

D The reported values for the QC sample (KB076, AB31812) should be considered estimates because QC limits were exceeded in the matrix spike /matrix spike duplicate samples for the following compounds. Matrix effects may be present in samples of similar composition to the spiked sample.

Sample ID	Laboratory Sample ID	Analyte	MS %Rec	MSD % Rec	QC Limit	RPD	QC Limit
KB076	AB31812	1,1-Dichloroethene	44	66	59-172	39	22
KB076	AB31812	Benzene	39	57	66-142	38	21
KB076	AB31812	Trichloroethene	37	46	62-137	NA	NA
KB076	AB31812	Toluene	37	56	59-139	41	21
KB076	AB31812	1,3-Dichloropropane	36	65	50-150	58	50
KB076	AB31812	1,2-Dibromoethane	31	54	50-150	55	50
KB076	AB31812	Chlorobenzene	30	39	60-133	26	21
KB076	AB31812	1,2,3-Trichloropropane	30	52	50-150	52	50
KB076	AB31812	1,2-Dibromo-3-Chloropropane	19	28	50-150	NA	NA

The color and texture of the sample matrix for the MS and MSD samples were different. New sample plugs were analyzed on 06/29/01 with similar results for the MS (data file 01J0998).

The laboratory randomly performed MS/MSD analysis for homogenous samples (KB086, AB31827) on 06/29/01. The spike recovery and RPD are within QC limits (01H0925 and 01H0926).

No target analytes were detected in the method blanks associated with these samples.

All surrogate recoveries were within QC limits.

All MS/MSD results were within QC limits except as stated in comment D.

All internal standard areas and retention times were within QC limits.

All LCS results were within QC limits except as stated in comment C.

All samples were analyzed within the holding time.

RESULTS SUMMARY

The results can be found on the Summary of Results report.

Any questions in reference to this data package may be addressed to Nicholas Kish at (510) 412-2375.

Glossary

Method Blanks

A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks

A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis

Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards

Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples

Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01178A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB053				KB056				KB057				KB059				KB060			
Lab Sample ID	AB31770				AB31771				AB31772				AB31773				AB31774			
Date of Collection	06/26/01				06/26/01				06/26/01				06/26/01				06/26/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	20	U	J	C	10	U	J	C	10	U	J	C	10	U	J	C	10	U	J	C
Chloromethane	20	U			10	U			10	U			10	U			10	U		
Vinyl Chloride	20	U			10	U			10	U			10	U			10	U		
Bromomethane	20	U			10	U			10	U			10	U			10	U		
Chloroethane	20	U			10	U			10	U			10	U			10	U		
Trichlorofluoromethane	20	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethene	20	U			10	U			10	U			10	U			10	U		
Carbon Disulfide	20	U			10	U			10	U			10	U			10	U		
Acetone	20	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Methylene Chloride	20	U			10	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	20	U			10	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	20	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethane	20	U			10	U			10	U			10	U			10	U		
Ethyl-t-butyl ether	20	U			10	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	20	U			10	U			10	U			10	U			10	U		
2-Butanone	20	U			10	U			10	U			10	U			10	U		
Chloroform	20	U			10	U			10	U			10	U			10	U		
1,2-Dichloroethane	20	U			10	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	20	U			10	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	20	U			10	U			10	U			10	U			10	U		
Carbon Tetrachloride	20	U			10	U			10	U			10	U			10	U		
Benzene	20	U			10	U			10	U			10	U			10	U		
Trichloroethene	20	U			10	U			10	U			10	U			10	U		
1,2-Dichloropropane	20	U			10	U			10	U			10	U			10	U		
Bromodichloromethane	20	U			10	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	20	U			10	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	20	U			10	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	20	U			10	U			10	U			10	U			10	U		
Dibromochloromethane	20	U			10	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	20	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Toluene	20	U			10	U			10	U			10	U			10	U		
1,3-Dichloropropane	20	U			10	U			10	U			10	U			10	U		
2-Hexanone	20	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Tetrachloroethene	20	U			10	U			10	U			10	U			10	U		
1,2-Dibromoethane	20	U			10	U			10	U			10	U			10	U		
Chlorobenzene	20	U			10	U			10	U			10	U			10	U		
Ethyl Benzene	20	U			10	U			10	U			10	U			10	U		
Xylene (para & meta-)	20	U			10	U			10	U			10	U			10	U		
Xylene (ortho-)	20	U			10	U			10	U			10	U			10	U		
Styrene	20	U			10	U			10	U			10	U			10	U		
Bromoform	20	U			10	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	20	U			10	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	20	U			10	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	20	U			10	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	20	U			10	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	20	U			10	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	20	U			10	U			10	U			10	U			10	U		
% Solid	83				88				81				87				81			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
Results reported on a dry weight basis
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01178A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB051				KB065				KB066				KB067				KB068			
Lab Sample ID	AB31775				AB31808				AB31809				AB31810				AB31811			
Date of Collection	06/26/01				06/27/01				06/27/01				06/27/01				06/27/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	20	U	J	C	20	U			10	U			10	U	J	C	10	U		
Chloromethane	20	U			20	U			10	U			10	U			10	U		
Vinyl Chloride	20	U			20	U			10	U			10	U			10	U		
Bromomethane	20	U			20	U			10	U			10	U			10	U		
Chloroethane	20	U			20	U			10	U			10	U			10	U		
Trichlorofluoromethane	20	U			20	U			10	U			10	U			10	U		
1,1-Dichloroethene	20	U			20	U			10	U			10	U			10	U		
Carbon Disulfide	20	U			20	U			10	U			8		J	A	10	U		
Acetone	20	U	J	B	20	U			10	U			160				10	U		
Methylene Chloride	20	U			20	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	20	U			20	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	20	U			20	U			10	U			10	U			10	U		
1,1-Dichloroethane	20	U			20	U			10	U			10	U			10	U		
Ethyl-t-butyl ether	20	U			20	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	20	U			20	U			10	U			10	U			10	U		
2-Butanone	20	U			20	U			10	U			40				10	U		
Chloroform	20	U			20	U			10	U			10	U			10	U		
1,2-Dichloroethane	20	U			20	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	20	U			20	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	20	U			20	U			10	U			10	U			10	U		
Carbon Tetrachloride	20	U			20	U			10	U			10	U			10	U		
Benzene	20	U			20	U			10	U			10	U			10	U		
Trichloroethene	20	U			20	U			10	U			10	U			10	U		
1,2-Dichloropropane	20	U			20	U			10	U			10	U			10	U		
Bromodichloromethane	20	U			20	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	20	U			20	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	20	U			20	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	20	U			20	U			10	U			10	U			10	U		
Dibromochloromethane	20	U			20	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	20	U	J	B	20	U			10	U			10	U			10	U		
Toluene	20	U			20	U			10	U			10	U			10	U		
1,3-Dichloropropane	20	U			20	U			10	U			10	U			10	U		
2-Hexanone	20	U	J	B	20	U			10	U			10	U			10	U		
Tetrachloroethene	20	U			20	U			10	U			10	U			10	U		
1,2-Dibromoethane	20	U			20	U			10	U			10	U			10	U		
Chlorobenzene	20	U			20	U			10	U			10	U			10	U		
Ethyl Benzene	20	U			20	U			10	U			10	U			10	U		
Xylene (para & meta-)	20	U			20	U			10	U			10	U			10	U		
Xylene (ortho-)	20	U			20	U			10	U			10	U			10	U		
Styrene	20	U			20	U			10	U			10	U			10	U		
Bromoform	20	U			20	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	20	U			20	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	20	U			20	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	20	U			20	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	20	U			20	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	20	U			20	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	20	U			20	U			10	U			10	U			10	U		
% Solid	86				74				79				78				79			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
Results reported on a dry weight basis
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01178A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB076				KB077				KIB082				KB084				KB085			
Lab Sample ID	AB31812				AB31813				AB31814				AB31815				AB31816			
Date of Collection	06/27/01				06/27/01				06/27/01				06/27/01				06/27/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U			20	U			10	U			10	U			10	U	J	C
Chloromethane	10	U			20	U			10	U			10	U			10	U		
Vinyl Chloride	10	U			20	U			10	U			10	U			10	U		
Bromomethane	10	U			20	U			10	U			10	U			10	U		
Chloroethane	10	U			20	U			10	U			10	U			10	U		
Trichlorofluoromethane	10	U			20	U			10	U			10	U			10	U		
1,1-Dichloroethene	10	U	J	D	20	U			10	U			10	U			10	U		
Carbon Disulfide	10	U			20	U			10	U			10	U			10	U		
Acetone	10	U			10	J	A		10	U			10	U			10	U	J	B
Methylene Chloride	10	U			20	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	10	U			20	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	10	U			20	U			10	U			10	U			10	U		
1,1-Dichloroethane	10	U			20	U			10	U			10	U			10	U		
Ethyl-t-butyl ether	10	U			20	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	10	U			20	U			10	U			10	U			10	U		
2-Butanone	10	U			20	U			10	U			10	U			10	U		
Chloroform	10	U			20	U			10	U			10	U			10	U		
1,2-Dichloroethane	10	U			20	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	10	U			20	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	10	U			20	U			10	U			10	U			10	U		
Carbon Tetrachloride	10	U			20	U			10	U			10	U			10	U		
Benzene	10	U	J	D	20	U			10	U			10	U			10	U		
Trichloroethene	10	U	J	D	20	U			10	U			10	U			10	U		
1,2-Dichloropropane	10	U			20	U			10	U			10	U			10	U		
Bromodichloromethane	10	U			20	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	10	U			20	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	10	U			20	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	10	U			20	U			10	U			10	U			10	U		
Dibromochloromethane	10	U			20	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	10	U			20	U			10	U			10	U			10	U	J	B
Toluene	10	U	J	D	20	U			10	U			10	U			10	U		
1,3-Dichloropropane	10	U	J	D	20	U			10	U			10	U			10	U		
2-Hexanone	10	U			20	U			10	U			10	U			10	U	J	B
Tetrachloroethene	10	U			20	U			10	U			10	U			10	U		
1,2-Dibromoethane	10	U	J	D	20	U			10	U			10	U			10	U		
Chlorobenzene	10	U	J	D	20	U			10	U			10	U			10	U		
Ethyl Benzene	10	U			20	U			10	U			10	U			10	U		
Xylene (para & meta-)	10	U			20	U			10	U			10	U			10	U		
Xylene (ortho-)	10	U			20	U			10	U			10	U			10	U		
Styrene	10	U			20	U			10	U			10	U			10	U		
Bromoform	10	U			20	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	10	U			20	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	10	U	J	D	20	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	10	U			20	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	10	U			20	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	10	U			20	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	10	U	J	D	20	U			10	U			10	U			10	U		
% Solid	84				82				80				83				81			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
Results reported on a dry weight basis
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01178A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB086				KB087				KB092				KB093				KB097			
Lab Sample ID	AB31827				AB31828				AB31829				AB31830				AB31831			
Date of Collection	06/28/01				06/28/01				06/28/01				06/28/01				06/28/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U	J	C	20	U	J	C	10	U	J	C	10	U	J	C	20	U	J	C
Chloromethane	10	U			20	U			10	U			10	U			20	U		
Vinyl Chloride	10	U			20	U			10	U			10	U			20	U		
Bromomethane	10	U			20	U			10	U			10	U			20	U		
Chloroethane	10	U			20	U			10	U			10	U			20	U		
Trichlorofluoromethane	10	U			20	U			10	U			10	U			20	U		
1,1-Dichloroethene	10	U			20	U			10	U			10	U			20	U		
Carbon Disulfide	10	U			20	U			10	U			10	U			20	U		
Acetone	10	U	J	B	20	U	J	B	10	U	J	B	10	U	J	B	20	U		
Methylene Chloride	10	U			20	U			10	U			10	U			20	U		
trans-1,2-Dichloroethene	10	U			20	U			10	U			10	U			20	U		
Methyl-t-Butyl Ether	10	U			20	U			10	U			10	U			20	U		
1,1-Dichloroethane	10	U			20	U			10	U			10	U			20	U		
Ethyl-t-butyl ether	10	U			20	U			10	U			10	U			20	U		
cis-1,2-Dichloroethene	10	U			20	U			10	U			10	U			20	U		
2-Butanone	10	U			20	U			10	U			10	U			20	U		
Chloroform	10	U			20	U			10	U			10	U			20	U		
1,2-Dichloroethane	10	U			20	U			10	U			10	U			20	U		
tert-Amyl-methyl ether	10	U			20	U			10	U			10	U			20	U		
1,1,1-Trichloroethane	10	U			20	U			10	U			10	U			20	U		
Carbon Tetrachloride	10	U			20	U			10	U			10	U			20	U		
Benzene	10	U			20	U			10	U			10	U			20	U		
Trichloroethene	10	U			20	U			10	U			10	U			20	U		
1,2-Dichloropropane	10	U			20	U			10	U			10	U			20	U		
Bromodichloromethane	10	U			20	U			10	U			10	U			20	U		
cis-1,3-Dichloropropene	10	U			20	U			10	U			10	U			20	U		
trans-1,3-Dichloropropene	10	U			20	U			10	U			10	U			20	U		
1,1,2-Trichloroethane	10	U			20	U			10	U			10	U			20	U		
Dibromochloromethane	10	U			20	U			10	U			10	U			20	U		
4-Methyl-2-pentanone	10	U	J	B	20	U	J	B	10	U	J	B	10	U	J	B	20	U		
Toluene	10	U			20	U			10	U			10	U			20	U		
1,3-Dichloropropane	10	U			20	U			10	U			10	U			20	U		
2-Hexanone	10	U	J	B	20	U	J	B	10	U	J	B	10	U	J	B	20	U		
Tetrachloroethene	10	U			20	U			10	U			10	U			20	U		
1,2-Dibromoethane	10	U			20	U			10	U			10	U			20	U		
Chlorobenzene	10	U			20	U			10	U			10	U			20	U		
Ethyl Benzene	10	U			20	U			10	U			10	U			20	U		
Xylene (para & meta-)	10	U			20	U			10	U			10	U			20	U		
Xylene (ortho-)	10	U			20	U			10	U			10	U			20	U		
Styrene	10	U			20	U			10	U			10	U			20	U		
Bromoform	10	U			20	U			10	U			10	U			20	U		
1,1,2,2-Tetrachloroethane	10	U			20	U			10	U			10	U			20	U		
1,2,3-Trichloropropane	10	U			20	U			10	U			10	U			20	U		
1,3-Dichlorobenzene	10	U			20	U			10	U			10	U			20	U		
1,4-Dichlorobenzene	10	U			20	U			10	U			10	U			20	U		
1,2-Dichlorobenzene	10	U			20	U			10	U			10	U			20	U		
1,2-Dibromo-3-chloropropane	10	U			20	U			10	U			10	U			20	U		
% Solid	91				80				86				83				92			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
Results reported on a dry weight basis
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: R01S44
Site: Kaka'ako
SDG: 01178A
Date: 07/23/01

Analysis: GC/MS Soil VOA
Matrix: Water

Sample No.	NA				NA				NA				Quantitation Limits		
Sample ID	Method Blank				Method Blank				Method Blank				NA		
Lab Sample ID	MWJ0628				MWH0629				MWJ0629				NA		
Date of Collection	NA				NA				NA				NA		
Units	ug/kg				ug/kg				ug/kg				ug/kg		
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result	Q	Cmt
Dichlorodifluoromethane	10	U			10	U	J	C	10	U	J	C	10		
Chloromethane	10	U			10	U			10	U			10		
Vinyl Chloride	10	U			10	U			10	U			10		
Bromomethane	10	U			10	U			10	U			10		
Chloroethane	10	U			10	U			10	U			10		
Trichlorofluoromethane	10	U			10	U			10	U			10		
1,1-Dichloroethene	10	U			10	U			10	U			10		
Carbon Disulfide	10	U			10	U			10	U			10		
Acetone	10	U			10	U	J	B	10	U			10		
Methylene Chloride	10	U			10	U			10	U			10		
trans-1,2-Dichloroethene	10	U			10	U			10	U			10		
Methyl-t-Butyl Ether	10	U			10	U			10	U			10		
1,1-Dichloroethane	10	U			10	U			10	U			10		
Ethyl-t-butyl ether	10	U			10	U			10	U			10		
cis-1,2-Dichloroethene	10	U			10	U			10	U			10		
2-Butanone	10	U			10	U			10	U			10		
Chloroform	10	U			10	U			10	U			10		
1,2-Dichloroethane	10	U			10	U			10	U			10		
tert-Amyl-methyl ether	10	U			10	U			10	U			10		
1,1,1-Trichloroethane	10	U			10	U			10	U			10		
Carbon Tetrachloride	10	U			10	U			10	U			10		
Benzene	10	U			10	U			10	U			10		
Trichloroethene	10	U			10	U			10	U			10		
1,2-Dichloropropane	10	U			10	U			10	U			10		
Bromodichloromethane	10	U			10	U			10	U			10		
cis-1,3-Dichloropropene	10	U			10	U			10	U			10		
trans-1,3-Dichloropropene	10	U			10	U			10	U			10		
1,1,2-Trichloroethane	10	U			10	U			10	U			10		
Dibromochloromethane	10	U			10	U			10	U			10		
4-Methyl-2-pentanone	10	U			10	U	J	B	10	U			10		
Toluene	10	U			10	U			10	U			10		
1,3-Dichloropropane	10	U			10	U			10	U			10		
2-Hexanone	10	U			10	U	J	B	10	U			10		
Tetrachloroethene	10	U			10	U			10	U			10		
1,2-Dibromoethane	10	U			10	U			10	U			10		
Chlorobenzene	10	U			10	U			10	U			10		
Ethyl Benzene	10	U			10	U			10	U			10		
Xylene (para & meta-)	10	U			10	U			10	U			10		
Xylene (ortho-)	10	U			10	U			10	U			10		
Styrene	10	U			10	U			10	U			10		
Bromoform	10	U			10	U			10	U			10		
1,1,2,2-Tetrachloroethane	10	U			10	U			10	U			10		
1,2,3-Trichloropropane	10	U			10	U			10	U			10		
1,3-Dichlorobenzene	10	U			10	U			10	U			10		
1,4-Dichlorobenzene	10	U			10	U			10	U			10		
1,2-Dichlorobenzene	10	U			10	U			10	U			10		
1,2-Dibromo-3-chloropropane	10	U			10	U			10	U			10		

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
Results reported on a dry weight basis

MASTER FILE: voa_h2oc.wk4, version 1.0, 04/04/00, Lotus 123 Release 5

USEPA REGION 9 LABORATORY REPORT NARRATIVE

CASE NUMBER:	**R01S44**
SAMPLE DELIVERY GROUP:	**01177B**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**B0101024-330**
ANALYSIS PERFORMED:	**GC/MS - Volatiles**
DATE:	**July 19, 2001**

SAMPLE NUMBERS:

Client Sample No.	Laboratory Sample ID	Client Sample No.	Laboratory Sample ID
KB002	AB31731	KB026	AB31760
KB004	AB31732	KB027	AB31761
KB007	AB31733	KB030	AB31762
KB008	AB31734	KB032	AB31763
KB011	AB31735	KB037	AB31764
KB012	AB31736	KB038	AB31765
KB019	AB31737	KB039	AB31766
KB020	AB31738	KB041	AB31767
KB022	AB31758	KB044	AB31768
KB023	AB31759	KB045	AB31769

GENERAL COMMENTS

Twenty (20) soil samples from the Kaka'ako Brownfields Superfund site were received at the EPA Region 9 Laboratory from 06/26/01 to 06/27/01.

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 305, Volatile Organic Analysis.

SAMPLE RECEIPT AND PRESERVATION

No shipping or preservation issues were encountered with these samples.

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A The following initial calibration analyte failed to meet criteria, The results and quantitation limits for the analyte should be considered as estimated and "J" flagged.

Instrument	Date	Analyte	Filename	Criteria	QC Limit	Result
HP5973H	06/26/01	1,2-Dibromo-3-chloropropane	ISH0626	%RSD	20%	21.9%

B The Continuing Calibration for the analytes listed below exceeded QC limits. The results and quantitation limits for the analyte with potential low bias are estimated and "J" flagged.

Instrument	Date	Analyte	Filename	Criteria	QC Limit	Result
HP5973H	06/27/01	Dichlorodifluoromethane	CSH0627	%D	25%	+27.4
HP5973H	06/27/01	Acetone	CSH0627	%D	25%	-35
HP5973H	06/27/01	4-Methyl-2-pentanone	CSH0627	%D	25%	-35.4
HP5973H	06/27/01	2-Hexanone	CSH0627	%D	25%	-34.5
HP5973H	06/28/01	Acetone	CSH0628	%D	25%	-32.7
HP5973H	06/28/01	4-Methyl-2-pentanone	CSH0628	%D	25%	-39.6
HP5973H	06/28/01	2-Hexanone	CSH0628	%D	25%	-39.6

Accurate spiking of dichlorodifluoromethane is difficult because it is a gas at room temperature.

No target analytes were detected in the method blanks associated with these samples.

All surrogate recoveries were within QC limits.

All MS/MSD results for the QC sample (KB007, AB31733) were within QC limits.

All internal standard areas and retention times were within QC limits.

All LCS results were within QC limits.

All samples were analyzed within the holding time of 14 days.

RESULTS SUMMARY

The results can be found on the Summary of Results report.

Any questions in reference to this data package may be addressed to Nicholas Kish at (510) 412-2375.

Glossary

Method Blanks

A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks

A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis

Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards

Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples

Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: RO1S44
Site: Kaka'ako Brownfields
SDG: 01177B
Date: 07/19/01

Analysis: GC/MS Volatiles
Matrix: Soil

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB002				KB004				KB007				KB008				KB011			
Lab Sample ID	AB31731				AB31732				AB31733				AB31734				AB31735			
Date of Collection	06/25/01				06/25/01				06/25/01				06/25/01				06/25/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U			10	U			10	U			10	U			10	U		
Chloromethane	10	U			10	U			10	U			10	U			10	U		
Vinyl Chloride	10	U			10	U			10	U			10	U			10	U		
Bromomethane	10	U			10	U			10	U			10	U			10	U		
Chloroethane	10	U			10	U			10	U			10	U			10	U		
Trichlorofluoromethane	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Carbon Disulfide	10	U			10	U			10	U			10	U			10	U		
Acetone	10	U	J	B	10	U	J	B	10	U			10	U	J	B	10	U	J	B
Methylene Chloride	10	U			10	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
Ethyl-t-butyl-ether	10	U			10	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
2-Butanone	10	U	J	B	10	U	J	B	10	U			10	U	J	B	10	U	J	B
Chloroform	10	U			10	U			10	U			10	U			10	U		
1,2-Diclhoroethane	10	U			10	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	10	U			10	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Carbon Tetrachloride	10	U			10	U			10	U			10	U			10	U		
Benzene	10	U			10	U			10	U			10	U			10	U		
Trichloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
Bromodichloromethane	10	U			10	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Dibromochloromethane	10	U			10	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	10	U	J	B	10	U	J	B	10	U			10	U	J	B	10	U	J	B
Toluene	10	U			10	U			10	U			10	U			10	U		
1,3-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
2-Hexanone	10	U	J	B	10	U	J	B	10	U			10	U	J	B	10	U	J	B
Tetrachloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromoethane	10	U			10	U			10	U			10	U			10	U		
Chlorobenzene	10	U			10	U			10	U			10	U			10	U		
Ethyl Benzene	10	U			10	U			10	U			10	U			10	U		
Xylene (para & meta-)	10	U			10	U			10	U			10	U			10	U		
Xylene (ortho-)	10	U			10	U			10	U			10	U			10	U		
Styrene	10	U			10	U			10	U			10	U			10	U		
Bromoform	10	U			10	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	10	U			10	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	10	U			10	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A
% Solid	88				87				86				85				83			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
Results are reported on a dry weight basis.
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: RO1S44
Site: Kaka'ako Brownfields
SDG: 01177B
Date: 07/19/01

Analysis: GC/MS Volatiles
Matrix: Soil

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB012				KB019				KB020				KB022				KB023			
Lab Sample ID	AB31736				AB31737				AB31738				AB31758				AB31759			
Date of Collection	06/25/01				06/25/01				06/25/01				06/26/01				06/26/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U			10	U			10	U			10	U			10	U		
Chloromethane	10	U			10	U			10	U			10	U			10	U		
Vinyl Chloride	10	U			10	U			10	U			10	U			10	U		
Bromomethane	10	U			10	U			10	U			10	U			10	U		
Chloroethane	10	U			10	U			10	U			10	U			10	U		
Trichlorofluoromethane	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Carbon Disulfide	10	U			10	U			10	U			10	U			10	U		
Acetone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Methylene Chloride	10	U			10	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
Ethyl-t-butyl ether	10	U			10	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
2-Butanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Chloroform	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	10	U			10	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Carbon Tetrachloride	10	U			10	U			10	U			10	U			10	U		
Benzene	10	U			10	U			10	U			10	U			10	U		
Trichloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
Bromodichloromethane	10	U			10	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Dibromochloromethane	10	U			10	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Toluene	10	U			10	U			10	U			10	U			10	U		
1,3-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
2-Hexanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Tetrachloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromoethane	10	U			10	U			10	U			10	U			10	U		
Chlorobenzene	10	U			10	U			10	U			10	U			10	U		
Ethyl Benzene	10	U			10	U			10	U			10	U			10	U		
Xylene (para & meta-)	10	U			10	U			10	U			10	U			10	U		
Xylene (ortho-)	10	U			10	U			10	U			10	U			10	U		
Styrene	10	U			10	U			10	U			10	U			10	U		
Bromoform	10	U			10	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	10	U			10	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	10	U			10	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A
% Solid	87				93				81				89				89			

Q-Laboratory Data Qualifiers
U-This compound was analyzed for, but not detected.
J-The amount detected is an estimated value.
Cmt-See Report Narrative for Comment
Results are reported on a dry weight basis.
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: RO1S44
Site: Kaka'ako Brownfields
SDG: 01177B
Date: 07/19/01

Analysis: GC/MS Volatiles
Matrix: Soil

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB026				KB027				KB030				KB032				KB037			
Lab Sample ID	AB31760				AB31761				AB31762				AB31763				AB31764			
Date of Collection	06/26/01				06/26/01				06/26/01				06/26/01				06/26/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U			10	U			10	U			10	U			10	U		
Chloromethane	10	U			10	U			10	U			10	U			10	U		
Vinyl Chloride	10	U			10	U			10	U			10	U			10	U		
Bromomethane	10	U			10	U			10	U			10	U			10	U		
Chloroethane	10	U			10	U			10	U			10	U			10	U		
Trichlorofluoromethane	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Carbon Disulfide	10	U			10	U			10	U			10	U			10	U		
Acetone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Methylene Chloride	10	U			10	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
Ethyl-t-butyl ether	10	U			10	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
2-Butanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Chloroform	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	10	U			10	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Carbon Tetrachloride	10	U			10	U			10	U			10	U			10	U		
Benzene	10	U			10	U			10	U			10	U			10	U		
Trichloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
Bromodichloromethane	10	U			10	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Dibromochloromethane	10	U			10	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Toluene	10	U			10	U			10	U			10	U			10	U		
1,3-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
2-Hexanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Tetrachloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromoethane	10	U			10	U			10	U			10	U			10	U		
Chlorobenzene	10	U			10	U			10	U			10	U			10	U		
Ethyl Benzene	10	U			10	U			10	U			10	U			10	U		
Xylene (para & meta-)	10	U			10	U			10	U			10	U			10	U		
Xylene (ortho-)	10	U			10	U			10	U			10	U			10	U		
Styrene	10	U			10	U			10	U			10	U			10	U		
Bromoform	10	U			10	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	10	U			10	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	10	U			10	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A
% Solid	88				84				86				87				84			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
Results are reported on a dry weight basis.
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: RO1S44
Site: Kaka'ako Brownfields
SDG: 01177B
Date: 07/19/01

Analysis: GC/MS Volatiles
Matrix: Soil

Sample No.	NA				NA				NA				NA				NA			
Sample ID	KB038				KB039				KB041				KB044				KB045			
Lab Sample ID	AB31765				AB31766				AB31767				AB31768				AB31769			
Date of Collection	06/26/01				06/26/01				06/26/01				06/26/01				06/26/01			
Units	ug/kg				ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U			10	U			10	U			10	U			10	U		
Chloromethane	10	U			10	U			10	U			10	U			10	U		
Vinyl Chloride	10	U			10	U			10	U			10	U			10	U		
Bromomethane	10	U			10	U			10	U			10	U			10	U		
Chloroethane	10	U			10	U			10	U			10	U			10	U		
Trichlorofluoromethane	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Carbon Disulfide	10	U			10	U			10	U			10	U			10	U		
Acetone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Methylene Chloride	10	U			10	U			10	U			10	U			10	U		
trans-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
Methyl-t-Butyl Ether	10	U			10	U			10	U			10	U			10	U		
1,1-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
Ethyl-t-butyl ether	10	U			10	U			10	U			10	U			10	U		
cis-1,2-Dichloroethene	10	U			10	U			10	U			10	U			10	U		
2-Butanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Chloroform	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloroethane	10	U			10	U			10	U			10	U			10	U		
tert-Amyl-methyl ether	10	U			10	U			10	U			10	U			10	U		
1,1,1-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Carbon Tetrachloride	10	U			10	U			10	U			10	U			10	U		
Benzene	10	U			10	U			10	U			10	U			10	U		
Trichloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
Bromodichloromethane	10	U			10	U			10	U			10	U			10	U		
cis-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
trans-1,3-Dichloropropene	10	U			10	U			10	U			10	U			10	U		
1,1,2-Trichloroethane	10	U			10	U			10	U			10	U			10	U		
Dibromochloromethane	10	U			10	U			10	U			10	U			10	U		
4-Methyl-2-pentanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Toluene	10	U			10	U			10	U			10	U			10	U		
1,3-Dichloropropane	10	U			10	U			10	U			10	U			10	U		
2-Hexanone	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B	10	U	J	B
Tetrachloroethene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromoethane	10	U			10	U			10	U			10	U			10	U		
Chlorobenzene	10	U			10	U			10	U			10	U			10	U		
Ethyl Benzene	10	U			10	U			10	U			10	U			10	U		
Xylene (para & meta-)	10	U			10	U			10	U			10	U			10	U		
Xylene (ortho-)	10	U			10	U			10	U			10	U			10	U		
Styrene	10	U			10	U			10	U			10	U			10	U		
Bromoform	10	U			10	U			10	U			10	U			10	U		
1,1,2,2-Tetrachloroethane	10	U			10	U			10	U			10	U			10	U		
1,2,3-Trichloropropane	10	U			10	U			10	U			10	U			10	U		
1,3-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,4-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dichlorobenzene	10	U			10	U			10	U			10	U			10	U		
1,2-Dibromo-3-chloropropane	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A	10	U	J	A
% Solid	86				87				86				90				87			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
Results are reported on a dry weight basis.
MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

EPA REGION 9 - LABORATORY - RICHMOND, CA
SUMMARY OF ANALYTICAL RESULTS

Case Number: RO1S44
Site: Kaka'ako Brownfields
SDG: 01177B
Date: 07/19/01

Analysis: GC/MS Volatiles
Matrix: Soil

Sample No.	Method Blank				Method Blank				Method Blank				Quantitation			
Sample ID	MSH0626				MSH0627				MSH0628				Limit			
Lab Sample ID	NA				NA				NA				NA			
Date of Collection	NA				NA				NA				NA			
Units	ug/kg				ug/kg				ug/kg				ug/kg			
Analyte	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt	Result		Q	Cmt
Dichlorodifluoromethane	10	U			10	U			10	U			10			
Chloromethane	10	U			10	U			10	U			10			
Vinyl Chloride	10	U			10	U			10	U			10			
Bromomethane	10	U			10	U			10	U			10			
Chloroethane	10	U			10	U			10	U			10			
Trichlorofluoromethane	10	U			10	U			10	U			10			
1,1-Dichloroethene	10	U			10	U			10	U			10			
Carbon Disulfide	10	U			10	U			10	U			10			
Acetone	10	U			10	U	J	B	10	U	J	B	10			
Methylene Chloride	10	U			10	U			10	U			10			
trans-1,2-Dichloroethene	10	U			10	U			10	U			10			
Methyl-t-Butyl Ether	10	U			10	U			10	U			10			
1,1-Dichloroethane	10	U			10	U			10	U			10			
Ethyl-t-butyl ether	10	U			10	U			10	U			10			
cis-1,2-Dichloroethene	10	U			10	U			10	U			10			
2-Butanone	10	U			10	U	J	B	10	U	J	B	10			
Chloroform	10	U			10	U			10	U			10			
1,2-Dichloroethane	10	U			10	U			10	U			10			
tert-Amyl-methyl ether	10	U			10	U			10	U			10			
1,1,1-Trichloroethane	10	U			10	U			10	U			10			
Carbon Tetrachloride	10	U			10	U			10	U			10			
Benzene	10	U			10	U			10	U			10			
Trichloroethene	10	U			10	U			10	U			10			
1,2-Dichloropropane	10	U			10	U			10	U			10			
Bromodichloromethane	10	U			10	U			10	U			10			
cis-1,3-Dichloropropene	10	U			10	U			10	U			10			
trans-1,3-Dichloropropene	10	U			10	U			10	U			10			
1,1,2-Trichloroethane	10	U			10	U			10	U			10			
Dibromochloromethane	10	U			10	U			10	U			10			
4-Methyl-2-pentanone	10	U			10	U	J	B	10	U	J	B	10			
Toluene	10	U			10	U			10	U			10			
1,3-Dichloropropane	10	U			10	U			10	U			10			
2-Hexanone	10	U			10	U	J	B	10	U	J	B	10			
Tetrachloroethene	10	U			10	U			10	U			10			
1,2-Dibromoethane	10	U			10	U			10	U			10			
Chlorobenzene	10	U			10	U			10	U			10			
Ethyl Benzene	10	U			10	U			10	U			10			
Xylene (para & meta-)	10	U			10	U			10	U			10			
Xylene (ortho-)	10	U			10	U			10	U			10			
Styrene	10	U			10	U			10	U			10			
Bromoform	10	U			10	U			10	U			10			
1,1,2,2-Tetrachloroethane	10	U			10	U			10	U			10			
1,2,3-Trichloropropane	10	U			10	U			10	U			10			
1,3-Dichlorobenzene	10	U			10	U			10	U			10			
1,4-Dichlorobenzene	10	U			10	U			10	U			10			
1,2-Dichlorobenzene	10	U			10	U			10	U			10			
1,2-Dibromo-3-chloropropane	10	U	J	A	10	U	J	A	10	U	J	A	10			

Q-Laboratory Data Qualifiers
J-The amount detected is an estimated value.
U-This compound was analyzed for, but not detected.
Cmt-See Report Narrative for Comment
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MASTER FILE: voa_h2oc.wk4, version 1.1, 12/03/99, Lotus 123 Release 5

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Tom Mix c/o Jim Hanson
Brownfields Project Officer
Brownfields Team, SFD-1-1

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105034 Amendment 1

DATE: November 14, 2001

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Kaka'ako BF
SITE ACCOUNT NO.:	09 00 LA00
CERCLIS ID NO.:	None
CASE NO.:	29448
SDG NO.:	MY05T8
LABORATORY:	Sentinel, Inc. (SENTIN)
ANALYSIS:	Total Metals
SAMPLES:	20 Soil Samples (see Case Summary)
COLLECTION DATE:	June 26 and 28, 2001
REVIEWER:	Calvin Tanaka, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ]FYI [ ]Attention [X]Action

SAMPLING ISSUES: [X]Yes [ ]No

Data Validation Report

Case No.: 29448 SDG No.: MY05T8
Site: Kaka'ako BF
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/ICF-LDC
Date: November 14, 2001

I. Case Summary

SAMPLE INFORMATION:

Samples:	MY05T8, MY05T9, MY05W0 through MY05W9, MY05Z9, MY0600 through MY0603, and MY0606 through MY0608
Concentration and Matrix:	Low Concentration Soils
Analysis:	Total Metals
SOW:	ILM04.1
Collection Date:	June 26 and 28, 2001
Sample Receipt Date:	June 29 and July 2, 2001
Preparation Date:	July 10 and 12, 2001
Analysis Date:	July 14 and 15, 2001

FIELD QC:

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	MY05T6 and MY0617 (See Additional Comments)
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

Method Blanks and Associated Samples :

PBS:	Samples listed above

LABORATORY QC:

Matrix Spike :	MY05T8S
Duplicates :	MY05T8D
ICP Serial Dilution :	MY05T8L

ANALYSIS : Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	July 10, 2001	July 14 and 15, 2001
Mercury	July 12, 2001	July 12, 2001
Percent Solids	July 10, 2001	

CLP PO ACTION:

The results for selenium in samples: all samples except MY05T8 are rejected (R) since less than 30% of the matrix spike was recovered.

CLP PO ATTENTION:

None.

SAMPLING ISSUES:

(1) The cooler containing samples MY05T8, MY05T9, MY05W0 through MY05W9 arrived at the laboratory with a temperature of 8.0°C. This temperature exceeds the 4±2°C temperature specified in the Statement of Work (SOW). Although the soil samples were received by the laboratory more than 24 hours after the last sample was collected, the cooler temperature did not exceed 20°C and no adverse effect on the quality of the data is expected. (2) The chain of custody (CoC) did not specify a sample to be used for laboratory quality control (QC).

ADDITIONAL COMMENTS:

The standards preparation data was not included in the data package. This information was requested from the laboratory but has not been received to date. Data quality is not likely to be affected and this report is considered final. Refer to the attached telephone record log (TRL) for details.

The results for equipment blanks MY05T6 and MY0617, collected with the samples of this sample delivery group (SDG), on June 26 and 28, 2001, respectively, are located in Case 29448, SDG MY05R8 and SDG MY05Y2, respectively. No qualification of data due to equipment blank contamination is warranted.

CRDL Standard recovery is outside the EPA Region 9 Advisory Limits of 65-135%. A low recovery of 60% was obtained for lead in the ICP analysis of the CRDL standard CRI. While there are no criteria established for CRDL standard recoveries, low recoveries indicate uncertainty for sample results near the CRDL. It should be noted that low recoveries may indicate low bias for lead in sample MY05W1.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) have been met.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund* (ILM04.1); and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	No	C
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	A,D
8. Laboratory Duplicate Sample Analysis	No	E
9. Field Duplicate Sample Analysis	Yes	
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	No	F
12. Sample Quantitation	Yes	B
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following nondetected results are rejected because of a matrix spike recovery result outside method QC limits and flagged "R" in Table 1A.

- Selenium in samples MY05T9, MY05W0 through MY05W9, MY05Z9, MY0600, through MY0603, and MY0606 through MY0608

The matrix spike recovery result for selenium in QC sample MY05T8S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for selenium is presented below and is based on an ideal recovery of 100%.

Analyte	MY05T8S % Recovery	MY05T8S % Bias
Selenium	29	-71

The results reported for selenium in samples listed above are below the method detection limit (MDL) and are considered unacceptable as less than 30% of the matrix spike was recovered. The low matrix spike recovery indicates an analytical deficiency and false negatives may exist.

According to the Inorganic SOW when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. A post-digestion spike recovery result of 55% was obtained for selenium in QC sample MY05T8A. Since both the post- and pre-digestion spikes did not meet the QC criteria, matrix effects may be present in the sample digestate which may depress the analyte signal during analysis.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement methodology.

B. The following results are estimated and flagged "J" in Table 1A.

- All results above the MDL, but below the contract required detection limit (denoted with an "L" qualifier)

Results above the MDL for soils but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

C. The following results are estimated because of ICP interference check sample (ICS) results outside method QC limits and flagged "J" in Table 1A.

- Cadmium, selenium, silver, and thallium in samples MY05T8, MY05W0, MY05W5, MY05W7, MY05W8, and MY05Z9

Results for the above listed analytes were reported from undiluted analyses that contained an iron concentration above that stated for the ICP interference check sample (ICS). Therefore, the applied interelement correction (IEC) factors may not compensate sufficiently for the interference. The results for cadmium may be biased high and false positives may exist. The results for selenium, silver, and thallium may be biased low and false negatives may exist.

The ICP ICS solutions A and AB are analyzed to determine the effects of high concentrations of interfering elements on each analyte determined by ICP. Solution A consists of the interferents (Al, Ca, Fe, and Mg), and Solution AB consists of the analytes mixed with the interferents.

When the estimated concentration produced by the interfering element is greater than twice the CRDL and also is greater than 10% of the reported concentration of the affected element, the results of the affected elements are estimated.

D. The following results are estimated because of matrix spike recovery results outside method QC limits and flagged "J" in Table 1A.

- Antimony, arsenic, chromium, copper, manganese, nickel, and zinc in all samples
- Selenium in sample MY05T8

The matrix spike recovery results for antimony, arsenic, chromium, copper, manganese, nickel, selenium, and zinc in QC sample MY05T8S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MY05T8S % Recovery	MY05T8S % Bias
Antimony	42	-58
Arsenic	5	-95
Chromium	61	-39
Copper	227	+127
Manganese	-28	-128
Nickel	224	+124
Selenium	29	-71
Zinc	12	-88

Results above the MDL are considered quantitatively uncertain. The results reported for antimony, arsenic, chromium, manganese, and zinc in all samples may be biased low and, where nondetected, false negatives may exist. The results reported for selenium in sample MY05T8 may be biased low. The results reported for copper and nickel in all samples may be biased high.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery results were obtained.

Analyte	MY05T8A Post-Digestion Spike % Recovery
Antimony	91
Arsenic	98
Chromium	89
Copper	100
Manganese	77
Nickel	102
Selenium	55
Zinc	92

Since the post-digestion spike recovery was acceptable for all analytes except selenium, the low pre-digestion spike recovery results may indicate sample nonhomogeneity, poor laboratory technique or matrix effects which may interfere with accurate analysis, enhancing or depressing the analytical result. Since both the post- and pre-digestion spikes for selenium did not meet the QC criteria, matrix effects may be present in the sample digestate which may depress the analyte signal during analysis.

It should be noted that the results for selenium in all samples except MY05T8 were previously rejected. Please refer to Comment A.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

E. The following results are estimated because of laboratory duplicate results outside method QC limits and flagged "J" in Table 1A.

- Arsenic and copper in all samples

Laboratory duplicate results did not meet the ±35 relative percent difference (RPD) and ±2×CRDL criteria for precision as listed below.

Analyte	MY05T8D Lab. Dup. RPD / Difference
Arsenic	--- / 6.2 mg/Kg
Copper	55 / ---

The results reported for arsenic and copper in all samples are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to sample nonhomogeneity or poor laboratory technique.

F. The following results are estimated because of an ICP serial dilution result outside method QC limits and flagged "J" in Table 1A.

- Sodium in all samples

The percent difference of the ICP serial dilution analysis of sample MY05T8L did not meet the 10% criterion for sodium shown below.

Analyte	MY05T8L % Difference
Sodium	+17

The results reported for sodium in all samples are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The result for the diluted sample was higher than the original. Therefore, the sample results may be biased low.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05T8
Site: KAKA'AKO BROWNSFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/LDC
Date: November 14, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SS34			SS04			SA04			SB04			SS03			SS12			SA12		
Sample ID:	MY05T8			MY05T9			MY05W0			MY05W1			MY05W2			MY05W3			MY05W4		
Collection Date:	06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001		
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	21000			27500			28900			407			17000			8650			8280		
ANTIMONY	6.2L	J	BD	1.8L	J	BD	2.7L	J	BD	0.86L	J	BD	14.2L	J	BD	1.3L	J	BD	0.83L	J	BD
ARSENIC	12.8	J	DE	4.8	J	DE	9.4	J	DE	3.2	J	DE	7.0	J	DE	4.8	J	DE	3.2	J	DE
BARIUM	261			424			296			6.3L	J	B	302			108			135		
BERYLLIUM	0.35L	J	B	1.1L	J	B	0.96L	J	B	0.050U			0.79L	J	B	0.37L	J	B	0.43L	J	B
CADMIUM	0.45L	J	BC	0.53L	J	B	0.66L	J	BC	0.10L	J	B	1.6			0.24L	J	B	0.16L	J	B
CALCIUM	108000			88500			86700			344000			139000			250000			311000		
CHROMIUM	91.9	J	D	58.3	J	D	80.6	J	D	7.0	J	D	74.7	J	D	39.0	J	D	55.6	J	D
COBALT	12.9L	J	B	26.9			30.3			0.27L	J	B	24.8			11.2L	J	B	12.2		
COPPER	254	J	DE	80.6	J	DE	139	J	DE	1.6L	J	BDE	552	J	DE	33.1	J	DE	30.7	J	DE
IRON	68500			40300			60400			900			46800			14900			18200		
LEAD	672			191			242			0.75			463			79.2			18.9		
MAGNESIUM	9570			26600			22600			23100			20600			23200			10600		
MANGANESE	437	J	D	676	J	D	772	J	D	29.3	J	D	714	J	D	293	J	D	503	J	D
MERCURY	0.080L	J	B	0.18			0.14			0.060U			0.35			0.060U			0.060U		
NICKEL	89.5	J	D	130	J	D	147	J	D	1.6L	J	BD	113	J	D	44.7	J	D	40.4	J	D
POTASSIUM	959L	J	B	5500			2500			115L	J	B	2210			436L	J	B	1060L	J	B
SELENIUM	0.98L	J	BCD	0.77U	R	A	0.81U	R	AC	0.81U	R	A	0.84U	R	A	0.78U	R	A	0.81U	R	A
SILVER	3.1	J	C	1.1L	J	B	1.7L	J	BC	0.19U			1.3L	J	B	0.18U			0.20L	J	B
SODIUM	1900	J	F	10400	J	F	4900	J	F	3050	J	F	3910	J	F	1780	J	F	1920	J	F
THALLIUM	1.1U	J	C	0.89U			0.93U	J	C	0.93U			0.96U			0.90U			0.93U		
VANADIUM	92.5			81.2			110			4.2L	J	B	87.5			36.3			40.1		
ZINC	507	J	D	254	J	D	308	J	D	5.2	J	D	855	J	D	97.5	J	D	42.1	J	D
Percent Solids	70.4			87.9			83.9			83.6			81.2			87.1			83.8		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05T8
Site: KAKA'AKO BROWNSFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/LDC
Date: November 14, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SB12			SS27			SA27			SB27			SS19			SS02			SA02		
Sample ID:	MY05W5			MY05W6			MY05W7			MY05W8			MY05W9			MY05Z9			MY0600		
Collection Date:	06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/28/2001			06/28/2001		
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	26500			12400			18800			21300			8680			18700			15400		
ANTIMONY	1.8L	J	BD	3.0L	J	BD	10.3L	J	BD	35.7	J	D	5.9L	J	BD	5.1L	J	BD	0.94L	J	BD
ARSENIC	13.0	J	DE	7.9	J	DE	18.3	J	DE	40.8	J	DE	4.5	J	DE	9.3	J	DE	4.2	J	DE
BARIUM	491			175			382			765			127			422			216		
BERYLLIUM	1.7			0.39L	J	B	0.45L	J	B	0.38L	J	B	0.28L	J	B	0.55L	J	B	0.60L	J	B
CADMIUM	0.30L	J	BC	0.42L	J	B	2.0	J	C	1.0L	J	BC	0.87L	J	B	0.66L	J	BC	0.33L	J	B
CALCIUM	124000			266000			59400			46700			222000			156000			184000		
CHROMIUM	36.7	J	D	40.5	J	D	81.4	J	D	109	J	D	37.3	J	D	78.5	J	D	45.6	J	D
COBALT	35.7			13.4			25.7			30.1			9.0L	J	B	23.3			16.2		
COPPER	49.4	J	DE	106	J	DE	774	J	DE	3680	J	DE	101	J	DE	445	J	DE	55.6	J	DE
IRON	55000			29200			119000			136000			17000			51100			27100		
LEAD	77.1			144			1320			2380			279			566			111		
MAGNESIUM	46000			26400			12700			9420			19500			20300			19200		
MANGANESE	858	J	D	464	J	D	856	J	D	1240	J	D	286	J	D	693	J	D	464	J	D
MERCURY	0.21			0.070L	J	B	0.090L	J	B	0.080L	J	B	0.090L	J	B	0.10L	J	B	0.060U		
NICKEL	162	J	D	59.4	J	D	151	J	D	402	J	D	40.3	J	D	134	J	D	74.5	J	D
POTASSIUM	5310			2520			3450			2780			859L	J	B	1950			2370		
SELENIUM	0.82U	R	AC	0.82U	R	A	0.88U	R	AC	0.87U	R	AC	0.90U	R	A	0.80U	R	AC	0.78U	R	A
SILVER	1.1L	J	BC	0.62L	J	B	5.5	J	C	7.3	J	C	0.62L	J	B	1.5L	J	BC	0.58L	J	B
SODIUM	9300	J	F	4050	J	F	2950	J	F	3750	J	F	2600	J	F	4080	J	F	5420	J	F
THALLIUM	0.94U	J	C	0.94U			1.0U	J	C	1.0U	J	C	1.0U			0.92U	J	C	0.90U		
VANADIUM	105			41.2			50.5			72.0			35.7			84.7			54.6		
ZINC	145	J	D	241	J	D	1170	J	D	1950	J	D	240	J	D	887	J	D	143	J	D
Percent Solids	82.6			82.6			77.4			78.0			75.0			84.9			86.8		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05T8
Site: KAKA'AKO BROWNSFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/LDC
Date: November 14, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SB02			SA22			SB22			SS09			SS07			SS08			Lab Blank		
Sample ID:	MY0601			MY0602			MY0603			MY0606			MY0607			MY0608			PBS		
Collection Date:	06/28/2001			06/28/2001			06/28/2001			06/28/2001			06/28/2001			06/28/2001					
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	35500			13200			10300			21700			13600			11400			33.6U		
ANTIMONY	1.5L	J	BD	1.9L	J	BD	1.2L	J	BD	4.2L	J	BD	9.4L	J	BD	16.5	J	D	0.60U		
ARSENIC	3.9	J	DE	6.2	J	DE	2.6	J	DE	7.1	J	DE	7.7	J	DE	7.0	J	DE	0.80U		
BARIUM	510			117			99.9			494			758			951			0.34U		
BERYLLIUM	1.6			0.49L	J	B	0.38L	J	B	1.0L	J	B	0.66L	J	B	0.44L	J	B	0.040U		
CADMIUM	0.29L	J	B	0.37L	J	B	0.13L	J	B	0.69L	J	B	2.3			2.1			0.060U		
CALCIUM	58300			130000			213000			152000			205000			259000			27.3U		
CHROMIUM	48.8	J	D	52.6	J	D	31.4	J	D	29.6	J	D	37.1	J	D	26.6	J	D	0.14U		
COBALT	27.5			16.7			11.3L	J	B	20.1			16.6			11.6			0.22U		
COPPER	68.7	J	DE	132	J	DE	34.6	J	DE	179	J	DE	474	J	DE	225	J	DE	0.14U		
IRON	36600			25000			17300			29600			33700			16000			10.9U		
LEAD	122			107			37.7			1270			1540			14700			0.30U		
MAGNESIUM	26000			14800			23800			26600			25300			22100			26.4U		
MANGANESE	657	J	D	454	J	D	333	J	D	584	J	D	640	J	D	402	J	D	0.080U		
MERCURY	0.20			0.22			0.060U			0.75			0.070L	J	B	0.060U			0.050U		
NICKEL	115	J	D	70.7	J	D	44.8	J	D	87.3	J	D	96.5	J	D	58.8	J	D	0.30U		
POTASSIUM	9390			1060L	J	B	1250L	J	B	5370			3400			3460			3.6L	J	B
SELENIUM	0.85U	R	A	0.77U	R	A	0.85U	R	A	0.76U	R	A	0.78U	R	A	0.75U	R	A	0.68U		
SILVER	0.94L	J	B	0.56L	J	B	0.34L	J	B	1.7L	J	B	3.7			1.0L	J	B	0.16U		
SODIUM	22400	J	F	3170	J	F	5470	J	F	11200	J	F	4970	J	F	6620	J	F	63.2L	J	B
THALLIUM	0.98U			0.88U			0.97U			0.87U			0.89U			0.86U			0.78U		
VANADIUM	52.3			50.2			35.4			46.1			40.5			34.9			0.18U		
ZINC	162	J	D	202	J	D	55.1	J	D	617	J	D	1820	J	D	1560	J	D	0.35L	J	B
Percent Solids	79.8			88.5			80.1			89.7			87.6			90.2			N/A		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No. : 29448 SDG No. : MY05T8
Site : KAKA'AKO BROWNSFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Calvin Tanaka, ESAT/LDC
Date : November 14, 2001

Analysis Type : Low Concentration Soil Samples For Total Metals

Concentration in mg/kg

Sample ID :	MDL			CRDL																	
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	33.6			40																	
ANTIMONY	0.6			12																	
ARSENIC	0.8			2																	
BARIUM	0.34			40																	
BERYLLIUM	0.04			1																	
CADMIUM	0.06			1																	
CALCIUM	27.3			1000																	
CHROMIUM	0.14			2																	
COBALT	0.22			10																	
COPPER	0.14			5																	
IRON	10.9			20																	
LEAD	0.3			0.6																	
MAGNESIUM	26.4			1000																	
MANGANESE	0.08			3																	
MERCURY				0.04																	
NICKEL	0.3			8																	
POTASSIUM	3.1			1000																	
SELENIUM	0.68			1																	
SILVER	0.16			2																	
SODIUM	26.2			1000																	
THALLIUM	0.78			2																	
VANADIUM	0.18			10																	
ZINC	0.16			4																	

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

In Reference to
Case 29448 SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Contract Laboratory program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Sentinel, Inc. (SENTIN)

Lab Contact: Melvin Kilgore

Region: 9

Regional Contact: Steve Remaley, CLP PO

ESAT Reviewer: Stan Kott, ESAT/ICF-LDC

Call Initiated By: ___ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Summary of Questions/issues Discussed:

The following item was noted during the review of this sample delivery group (SDG). Please respond within 7 days as specified in Exhibit A, Section II, E. of the ILM04.0 Statement of Work (SOW). Send response and resubmissions to ICF Consulting, Inc./Laboratory Data Consultants, Inc., Environmental Services Assistance Team, Region 9, 1337 S. 46th Street, Building 201, Richmond, CA 94804, FAX 510 412-2304.

1. The cover pages for both ICP and CVAA analyses provide only reference numbers for the standard solutions used. However, Region 9 requests the following information for all standards (calibration and QC) used: expiration date of standard, preparation date, lot number, and standard sources. Please provide one copy of the above listed data for both ICP and CVAA.

Summary of Resolution: To be determined.

_____ _____
Regional Contact Signature Date of Resolution

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Tom Mix c/o Sue Hanson
Brownfields Project Officer
Brownfields Team, SFD-1-1

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105043 Amendment 1

DATE: November 9, 2001

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Kaka'ako BF
SITE ACCOUNT NO.:	09 00 LA00
CERCLIS ID NO.:	None Provided
CASE NO.:	29448
SDG NO.:	MY05Y2
LABORATORY:	Sentinel, Inc. (SENTIN)
ANALYSIS:	Dissolved & Total Metals
SAMPLES:	9 Water Samples (see Case Summary)
COLLECTION DATE:	June 28, 2001
REVIEWER:	Kendra DeSantolo, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [X]FYI [ ]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

Data Validation Report

Case No.: 29448 SDG No.: MY05Y2
Site: Kaka'ako BF
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: November 9, 2001

I. Case Summary

SAMPLE INFORMATION:

Samples:	MY05Y2, MY05Y3, MY05Y4, MY05Y7, MY05Z1, MY0604, MY0605, MY0614, and MY0617
Concentration and Matrix:	Low Concentration Water
Analysis:	Dissolved and Total Metals
SOW:	ILM04.1
Collection Date:	June 28, 2001
Sample Receipt Date:	July 2, 2001
Preparation Date:	July 6, 2001
Analysis Date:	July 6, 7, and 10, 2001

FIELD QC:

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	MY0617
Background Samples (BG):	Not Provided
Field Duplicates (D1):	MY05Y2 and MY05Y3

Method Blanks and Associated Samples :

PBW:	Samples listed above

LABORATORY QC:

Matrix Spike :	MY05Y7S
Duplicates :	MY05Y7D
ICP Serial Dilution :	MY05Y7L

ANALYSIS : Dissolved and Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	July 6, 2001	July 7 and 10, 2001
Mercury	July 6, 2001	July 6, 2001
Percent Solids	Not Applicable	

CLP PO ACTION:

None

CLP PO ATTENTION:

None

SAMPLING ISSUES:

(1) Sample MY05Z1 arrived at the laboratory with a measured pH of 4. (2) The field quality control (QC) samples were not sent blind to the laboratory. (3) Equipment blank sample MY0617 was not filtered in the field. The results for this unfiltered sample may not adequately reflect the results of the filtered samples of this SDG. The effect on data quality is not known.

ADDITIONAL COMMENTS:

The standards preparation data was not included in the data package. This information was requested from the laboratory but has not been received to date. Data quality is not likely to be affected and this report is considered final. Refer to the attached telephone record log (TRL) for details.

Sample MY05Z1 arrived at the laboratory with a measured pH of 4. The laboratory contacted the Region 9 office and was instructed to adjust the pH and proceed with analysis of the sample. Since the pH preservation of this sample did not meet the criterion stated in the statement of work (SOW), the sample results were qualified as estimated. Refer to Comment B in the Validity and Comments section below.

All samples (except MY0617) were filtered through a 0.45µm filter and preserved in the field.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic SOW have been met.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund* (ILM04.1); and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter		Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	No	B
3.	Calibration	Yes	
	a. Initial Calibration Verification		
	b. Continuing Calibration Verification		
	c. Calibration Blank		
	d. CRDL Standard		
4.	Blanks	Yes	
	a. Laboratory Preparation Blank		
	b. Field Blank		
	c. Equipment Blank		
5.	ICP Interference Check Sample Analysis	Yes	
6.	Laboratory Control Sample Analysis	Yes	
7.	Spiked Sample Analysis	No	C
8.	Laboratory Duplicate Sample Analysis	Yes	
9.	Field Duplicate Sample Analysis	No	E
10.	GFAA QC Analysis	N/A	
	a. Duplicate Injections		
	b. Analytical Spikes		
	c. Method of Standard Addition		
11.	ICP Serial Dilution Analysis	No	D
12.	Sample Quantitation	Yes	A
13.	Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and flagged "J" in Table 1A.

- All results above the instrument detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) for waters but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated due to inadequate sample preservation and flagged "J" in Table 1A.

- All analytes in sample MY05Z1

This water sample did not meet the SOW sample preservation criterion. The sample was not adequately preserved in the field to a pH of less than 2 as shown below.

Sample Number	pH
MY05Z1	4

Sample results may be biased low and, where nondetected, false negatives may exist.

C. The following results are estimated because of a matrix spike recovery result outside method QC limits and flagged "J" in Table 1A.

- Selenium in all samples (except MY0617)

The matrix spike recovery result for selenium in QC sample MY05Y7S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for selenium is presented below and is based on an ideal recovery of 100%.

Analyte	MY05Y7S % Recovery	MY05Y7S % Bias
Selenium	36	-64

Results above the IDL are considered quantitatively uncertain. The results reported for selenium in all samples (except MY0617) may be biased low and, where nondetected, false negatives may exist.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery result was obtained.

Analyte	MY05Y7A Post-Digestion Spike % Recovery
Selenium	78

Since the post-digestion spike recovery was acceptable, the low pre-digestion spike recovery result (36%) obtained for selenium may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis, depressing the analytical result.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

D. The following results are estimated because of an ICP serial dilution result outside method QC limits and flagged "J" in Table 1A.

- Potassium in all samples (except MY0617)

The percent difference of the ICP serial dilution analysis of sample MY05Y7L did not meet the 10% criterion for the analytes shown below.

Analyte	MY05Y7L % Difference
Potassium	+27

The results reported for potassium in all samples (except MY0617) are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The result for the diluted sample was higher than the original. Therefore, the sample results may be biased low.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

E. A difference of 44 μg/L was obtained for zinc in the analysis of field duplicate pair samples MY05Y2 and MY05Y3. The field duplicate results are expected to vary more than laboratory duplicates (±CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, high levels of solids in the sample, or poor sampling or laboratory technique.

ANALYTICAL RESULTS

Table 1A

Case No.: 29448 SDG No.: MY05Y2
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, LDC/ESAT
Date: November 9, 2001

Analysis Type: Low Concentration Water Samples For Dissolved Metals

Concentration in ug/L

Station Location:	MW02			MW02			MW01			MW03			MW04			MW06			MW08		
Sample ID:	MY05Y2 D1			MY05Y3 D1			MY05Y4			MY05Y7			MY05Z1			MY0604			MY0605		
Collection Date:	06/28/2001			06/28/2001			06/28/2001			06/28/2001			06/28/2001			06/28/2001			06/28/2001		
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	172L	J	A	168U			168U			168U			168U	J	B	168U			168U		
ANTIMONY	3.0U			3.0U			3.0U			3.0U			3.0U	J	B	4.0L	J	A	3.0U		
ARSENIC	4.1L	J	A	4.0U			4.0U			4.0U			4.0U	J	B	6.3L	J	A	4.0U		
BARIUM	292			130L	J	A	248			120L	J	A	317	J	B	134L	J	A	400		
BERYLLIUM	0.20U			0.20U			0.20U			0.20U			0.20U	J	B	0.20U			0.20U		
CADMIUM	0.30U			0.30U			0.30U			0.30U			0.30U	J	B	0.65L	J	A	0.30U		
CALCIUM	384000			379000			407000			473000			456000	J	B	372000			280000		
CHROMIUM	0.70U			0.70U			0.70U			0.70U			0.70U	J	B	0.70U			0.70U		
COBALT	1.1U			1.1U			1.1U			1.1U			1.1U	J	B	2.6L	J	A	1.1U		
COPPER	0.70U			0.70U			0.70U			0.70U			0.70U	J	B	22.3L	J	A	0.70U		
IRON	54.6U			54.6U			162			54.6U			54.6U	J	B	536			54.6U		
LEAD	1.5U			1.5U			1.5U			1.5U			1.5U	J	B	1.5U			1.5U		
MAGNESIUM	1190000			1230000			1210000			1280000			1200000	J	B	1210000			886000		
MANGANESE	0.40U			0.40U			0.40U			0.40U			0.40U	J	B	619			0.40U		
MERCURY	0.10U			0.10U			0.10U			0.10U			0.10U	J	B	0.10U			0.10U		
NICKEL	1.5U			1.5U			1.5U			1.5U			1.5U	J	B	15.6L	J	A	1.5U		
POTASSIUM	370000	J	D	369000	J	D	368000	J	D	380000	J	D	361000	J	BD	364000	J	D	310000	J	D
SELENIUM	3.4U	J	C	3.4U	J	C	3.4U	J	C	3.4U	J	C	3.4U	J	BC	3.4U	J	C	3.4U	J	C
SILVER	0.80U			0.80U			0.80U			0.80U			0.80U	J	B	0.80U			0.80U		
SODIUM	10500000			10900000			10700000			11200000			10500000	J	B	10700000			8090000		
THALLIUM	3.9U			3.9U			4.3L	J	A	3.9U			3.9U	J	B	3.9U			3.9U		
VANADIUM	2.1L	J	A	1.6L	J	A	2.9L	J	A	0.90U			0.90U	J	B	0.90U			5.8L	J	A
ZINC	62.5		E	18.2L	J	AE	37.7			4.1L	J	A	10.0L	J	AB	112			52.5		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL - Instrument Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS

Table 1A

Case No. : 29448 SDG No. : MY05Y2

Site : KAKA'AKO BROWNSFIELDS

Lab : SENTINEL, INC. (SENTIN)

Reviewer : Kendra DeSantolo, LDC/ESAT

Date : November 9, 2001

Analysis Type : Low Concentration Water Samples For Dissolved Metals

Concentration in ug/L

Station Location :	MW07			QW4			Lab Blank			IDL			CRDL								
Sample ID :	MY0614			MY0617 EB			PBW														
Collection Date :	06/28/2001			06/28/2001																	
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	168U			168U			168U			168			200								
ANTIMONY	3.0U			3.0U			3.0U			3.0			60.0								
ARSENIC	4.0U			4.0U			4.0U			4.0			10.0								
BARIUM	180L	J	A	1.7U			1.7U			1.7			200								
BERYLLIUM	0.20U			0.20U			0.20U			0.20			5.0								
CADMIUM	0.30U			0.30U			0.30U			0.30			5.0								
CALCIUM	241000			171L	J	A	136U			136			5000								
CHROMIUM	0.70U			0.70U			0.70U			0.70			10.0								
COBALT	1.3L	J	A	1.1U			1.1U			1.1			50.0								
COPPER	2.1L	J	A	0.70U			0.70U			0.70			25.0								
IRON	54.6U			54.6U			54.6U			54.6			100								
LEAD	1.5U			1.5U			1.5U			1.5			3.0								
MAGNESIUM	677000			230L	J	A	132U			132			5000								
MANGANESE	19.5			0.40U			0.40U			0.40			15.0								
MERCURY	0.10U			0.10U			0.10U			0.10			0.20								
NICKEL	5.5L	J	A	1.5U			1.5U			1.5			40.0								
POTASSIUM	248000	J	D	1360L	J	A	15.4U			15.4			5000								
SELENIUM	3.4U	J	C	3.4U			3.4U			3.4			5.0								
SILVER	0.80U			0.80U			0.80U			0.80			10.0								
SODIUM	6140000			2540L	J	A	139L	J	A	131			5000								
THALLIUM	3.9U			3.9U			3.9U			3.9			10.0								
VANADIUM	5.3L	J	A	0.90U			0.90U			0.90			50.0								
ZINC	37.6			7.9L	J	A	0.80U			0.80			20.0								

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

IDL - Instrument Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

CRDL - Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

In Reference to
Case 29448 SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Contract Laboratory program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Sentinel, Inc. (SENTIN)

Lab Contact: Melvin Kilgore

Region: 9

Regional Contact: Steve Remaley, CLP PO

ESAT Reviewer: Stan Kott, ESAT/LDC

Call Initiated By: ___ Laboratory _X_ Region

In reference to data for the following sample(s):
SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Summary of Questions/issues Discussed:

The following item was noted during the review of this sample delivery group (SDG). Please respond within 7 days as specified in Exhibit A, Section II, E. of the ILM04.0 Statement of Work (SOW). Send response and resubmissions to ICF Consulting, Inc./Laboratory Data Consultants, Inc., Environmental Services Assistance Team, Region 9, 1337 S. 46th Street, Building 201, Richmond, CA 94804, FAX 510 412-2304.

1. The cover pages for both ICP and CVAA analyses provide only reference numbers for the standard solutions used. However, Region 9 requests the following information for all standards (calibration and QC) used: expiration date of standard, preparation date, lot number, and standard sources. Please provide one copy of the above listed data for both ICP and CVAA.

Summary of Resolution: To be determined.

_____ _____
Regional Contact Signature Date of Resolution

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Tom Mix
Brownfields Project Officer
Brownfields Team, SFD-1-1

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105034 Amendment 1

DATE: October 17, 2001

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Kaka'ako BF
SITE ACCOUNT NO.:	09 00 LA00
CERCLIS ID NO.:	None
CASE NO.:	29448
SDG NO.:	MY05R8
LABORATORY:	Sentinel, Inc. (SENTIN)
ANALYSIS:	Total Metals
SAMPLES:	19 Soil and 1 Water Samples (see Case Summary)
COLLECTION DATE:	June 26, 2001
REVIEWER:	Calvin Tanaka, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Dawn Richmond (QA Program/EPA) at (415) 744-1494 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File
CLP PO: [X]FYI [ ]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

In Reference to
Case 29448 SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Contract Laboratory program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Sentinel, Inc. (SENTIN)

Lab Contact: Melvin Kilgore

Region: 9

Regional Contact: Steve Remaley, CLP PO

ESAT Reviewer: Stan Kott, ESAT/ICF-LDC

Call Initiated By: ___ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Summary of Questions/issues Discussed:

The following item was noted during the review of this sample delivery group (SDG). Please respond within 7 days as specified in Exhibit A, Section II, E. of the ILM04.0 Statement of Work (SOW). Send response and resubmissions to ICF Consulting, Inc./Laboratory Data Consultants, Inc., Environmental Services Assistance Team, Region 9, 1337 S. 46th Street, Building 201, Richmond, CA 94804, FAX 510 412-2304.

1. The cover pages for both ICP and CVAA analyses provide only reference numbers for the standard solutions used. However, Region 9 requests the following information for all standards (calibration and QC) used: expiration date of standard, preparation date, lot number, and standard sources. Please provide one copy of the above listed data for both ICP and CVAA.

Summary of Resolution: To be determined.

_____ _____
Regional Contact Signature Date of Resolution

Data Validation Report

Case No.: 29448 SDG No.:MY05R8
Site: Kaka'ako BF
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/ICF-LDC
Date: October 17, 2001

I. Case Summary

SAMPLE INFORMATION: Samples:

Soil:	MY05R8, MY05R9, MY05S0 through MY05S9, MY05T0 through MY05T5, and MY05T7
Water:	MY05T6
Concentration and Matrix:	Low Concentration Soil and Water
Analysis:	Total Metals
SOW:	ILM04.1
Collection Date:	June 26, 2001
Sample Receipt Date:	June 29, 2001
Preparation Date:	July 12 and 13, 2001
Analysis Date:	July 15, 16, and 17, 2001

FIELD QC:

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	MY05T6
Background Samples (BG):	Not Provided
Field Duplicates (D1):	MY05S7 and MY05S8
(D2):	MY05S9 and MY05T0
(D3):	MY05T1 and MY05T2

Method Blanks and Associated Samples :

PBS:	MY05R8, MY05R9, MY05S0 through MY05S9, MY05T0 through MY05T5, and MY05T7
PBW:	MY05T6

LABORATORY QC:

Matrix Spike :	MY05S4S
Duplicates :	MY05S4D
ICP Serial Dilution :	MY05S4L

ANALYSIS : Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	July 12, 2001	July 15, 16, and 17, 2001
Mercury	July 13, 2001	July 16, 2001
Percent Solids	July 11, 2001	

CLP PO ACTION:

None

CLP PO ATTENTION:

None

SAMPLING ISSUES:

The cooler containing all of the samples arrived at the laboratory with a temperature of 8.0°C. This temperature exceeds the temperature of 4±2°C specified in the Statement of Work (SOW). Since the water sample was preserved to a pH less than 2, no adverse effect on the quality of the data is expected. Although the soil samples were received by the laboratory more than 24 hours after the last sample was collected, the cooler temperature did not exceed 20°C and no adverse effect on the quality of the data is expected.

ADDITIONAL COMMENTS:

The standards preparation data was not included in the data package. This information was requested from the laboratory but has not been received to date. Data quality is not likely to be affected and this report is considered final. Refer to the attached telephone record log (TRL) for details.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) have been met.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund* (ILM04.1); and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter		Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial Calibration Verification		
	b. Continuing Calibration Verification		
	c. Calibration Blank		
	d. CRDL Standard		
4.	Blanks	Yes	
	a. Laboratory Preparation Blank		
	b. Field Blank		
	c. Equipment Blank		
5.	ICP Interference Check Sample Analysis	No	B
6.	Laboratory Control Sample Analysis	Yes	
7.	Spiked Sample Analysis	No	C
8.	Laboratory Duplicate Sample Analysis	No	D
9.	Field Duplicate Sample Analysis	No	F
10.	GFAA QC Analysis	N/A	
	a. Duplicate Injections		
	b. Analytical Spikes		
	c. Method of Standard Addition		
11.	ICP Serial Dilution Analysis	No	E
12.	Sample Quantitation	Yes	A
13.	Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and flagged "J" in Table 1A.

- All results above the instrument detection limit (IDL) for waters or the method detection limit (MDL) for soils, but below the contract required detection limit (CRDL) (denoted with an "L" qualifier)

Results above the IDL for waters or the MDL for soils, but below the CRDL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in analytical precision near the limit of detection.

B. The following results are estimated because of ICP interelement interference problems. The results are flagged "J" in Table 1A.

- Cadmium, selenium, silver, and thallium in sample MY05T7

Results for the above listed analytes and sample were reported from undiluted analysis that contained an iron concentration above that stated for the ICP interference check sample (ICS). Therefore, the applied interelement correction (IEC) factors may not compensate sufficiently for the interference. The results for the above listed analytes may be biased low and false negatives may exsist.

The ICP ICS solutions A and AB are analyzed to determine the effects of high concentrations of interfering elements on each analyte determined by ICP. Solution A consists of the interferents (Al, Ca, Fe, and Mg), and Solution AB consists of the analytes mixed with the interferents.

When the estimated concentration produced by the interfering element is greater than twice the CRDL and also greater than 10% of the reported concentration of the affected element, the results of the affected elements are estimated.

C. The following results are estimated because of matrix spike recovery results outside method QC limits and flagged "J" in Table 1A.

- Antimony, copper, and thallium in all samples except MY05T6

The matrix spike recovery results for antimony, copper and thallium in QC sample MY05S4S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MY05S4S % Recovery	MY05S4S % Bias
Antimony	58	-42
Copper	130	+30
Thallium	67	-33

Results above the MDL are considered quantitatively uncertain. The results reported for antimony and thallium in all samples except MY05T6 may be biased low and, where nondetected, false negatives may exist. The results reported for copper in all samples except MY05T6 may be biased high and false positives may exist.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery results were obtained.

Analyte	MY05S4S Post-Digestion Spike % Recovery
Antimony	104
Copper	104
Thallium	45

Since the post-digestion spike recoveries were acceptable for antimony and copper, the low pre-digestion spike recovery result obtained for antimony and the high pre-digestion spike recovery result obtained for copper may indicate sample nonhomogeneity, poor laboratory technique or matrix effects which may interfere with accurate analysis, enhancing or depressing the analytical result.

Since both the post- and pre-digestion spikes did not meet the QC criteria for thallium, matrix effects may be present in the sample digestate which may depress the analyte signal during analysis.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

D. The following results are estimated because of laboratory duplicate results outside method QC limits and flagged "J" in Table 1A.

- Calcium in all samples except MY05T6

Laboratory duplicate results did not meet the ±35 relative percent difference (RPD) criteria for precision as listed below.

Analyte	MY05S4D Lab. Dup. RPD
Calcium	36

The results reported for calcium in all of the samples except MY05T6 are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to sample nonhomogeneity or poor laboratory technique.

E. The following results are estimated because of ICP serial dilution results outside method QC limits and flagged "J" in Table 1A.

- Calcium, copper, and potassium in all samples except MY05T6

The percent difference of the ICP serial dilution analysis for sample MY05S4L did not meet the 10% criterion for the analytes shown below.

Analyte	MY05S4L % Difference
Calcium	-78
Copper	+16
Potassium	+11

The results reported for calcium in all samples except MY05T6 are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The serial dilution for calcium was performed on a 10x dilution of sample MY05S4L. The result for the diluted sample was lower than the original, but because of a problem analyzing this sample a bias for calcium could not be determined.

The results reported for copper and potassium in all samples except MY05T6 are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The results for the diluted sample were higher than the original. Therefore, the results may be biased low.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

F. In the analysis of the field duplicate pairs, the following RPD and differences were obtained for the analytes listed below.

Analyte	MY05S7 D1 MY05S8 D1 RPD	MY05S9 D2 MY05T0 D2 RPD	MY05T1 D2 MY05T2 D2 RPD/Result Difference
Copper	59	---	--- / 10.7
Lead	68	58	112 / ---
Manganese	---	---	65 / ---
Zinc	---	---	54 / ---

The field duplicate results are expected to vary more than laboratory duplicates (±35 RPD or ±2×CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample nonhomogeneity, or poor sampling or laboratory technique.

ANALYTICAL RESULTS
Table 1A

Case No. : 29448 SDG No. : MY05R8
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Calvin Tanaka, ESAT/LDC
Date : October 17, 2001

Analysis Type : Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location :	SS35			SA35			SB35			SS38			SA38			SB38			SS37		
Sample ID :	MY05R8			MY05R9			MY05S0			MY05S1			MY05S2			MY05S3			MY05S4		
Collection Date :	06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001		
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	14900			8180			10400			8280			11100			8860			6140		
ANTIMONY	1.2L	J	AC	0.65L	J	AC	1.4L	J	AC	0.92L	J	AC	0.75L	J	AC	2.5L	J	AC	0.58U	J	C
ARSENIC	0.64L	J	A	1.6L	J	A	2.0L	J	A	2.3			6.1			8.7			3.9		
BARIUM	8.3L	J	A	15.3L	J	A	7.1L	J	A	40.0L	J	A	85.0			126			77.3		
BERYLLIUM	0.060U			0.070U			0.070U			0.070U			0.070U			0.070U			0.070U		
CADMIUM	0.13U			0.13U			0.13U			0.14U			0.14U			0.14U			0.14U		
CALCIUM	56500	J	DE	146000	J	DE	135000	J	DE	174000	J	DE	184000	J	DE	281000	J	DE	278000	J	DE
CHROMIUM	58.5			36.2			43.0			32.4			35.8			27.0			17.5		
COBALT	21.6			13.3			14.4			9.0L	J	A	10.7L	J	A	11.6L	J	A	4.1L	J	A
COPPER	90.7	J	CE	55.5	J	CE	57.3	J	CE	27.4	J	CE	33.5	J	CE	227	J	CE	19.9	J	CE
IRON	29800			18300			21200			10900			17900			29100			8830		
LEAD	3.8			5.3			5.2			33.0			72.5			317			72.2		
MAGNESIUM	16600			17100			20000			18600			19100			24800			21800		
MANGANESE	364			243			235			316			241			258			167		
MERCURY	0.050U			0.060U			0.060U			0.060U			0.37			0.38			0.060U		
NICKEL	56.6			92.7			37.9			30.7			44.0			58.0			25.6		
POTASSIUM	162L	J	AE	353L	J	AE	385L	J	AE	295L	J	AE	1210	J	E	1270	J	E	481L	J	AE
SELENIUM	0.48L	J	A	0.44U			0.44U			0.45U			0.46U			0.48U			0.48L	J	A
SILVER	0.11U			0.11U			0.11U			0.11U			0.12U			0.12U			0.12U		
SODIUM	1120			1980			2610			2840			5330			6580			2890		
THALLIUM	0.72U	J	C	0.74U	J	C	0.75U	J	C	0.77U	J	C	0.78U	J	C	0.81U	J	C	0.79U	J	C
VANADIUM	61.2			35.8			48.2			23.0			37.1			33.1			21.9		
ZINC	58.9			38.3			36.3			38.1			78.2			251			57.6		
Percent Solids	92.4			90.8			88.7			87.2			86.7			84.1			86.4		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05R8
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/LDC
Date: October 17, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SA37			SB37			SS40			SS40			SA40			SA40			SB40		
Sample ID:	MY05S5			MY05S6			MY05S7 D1			MY05S8 D1			MY05S9 D2			MY05T0 D2			MY05T1 D3		
Collection Date:	06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001		
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	9290			4630			10700			9880			4890			4650			4300		
ANTIMONY	0.68L	J	AC	0.56U	J	C	1.6L	J	AC	1.4L	J	AC	0.74L	J	AC	0.65L	J	AC	1.1L	J	AC
ARSENIC	3.9			3.9			4.9			5.3			4.0			4.2			5.0		
BARIUM	123			77.8			189			226			183			110			12.2L	J	A
BERYLLIUM	0.070U			0.070U			0.070U			0.070U			0.070U			0.070U			0.080U		
CADMIUM	0.14U			0.13U			0.13U			0.13U			0.14U			0.13U			0.16U		
CALCIUM	274000	J	DE	302000	J	DE	197000	J	DE	181000	J	DE	271000	J	DE	293000	J	DE	320000	J	DE
CHROMIUM	20.3			12.8			35.5			37.8			17.2			16.5			21.8		
COBALT	9.8L	J	A	3.0L	J	A	15.5			20.1			4.3L	J	A	2.9L	J	A	0.27U		
COPPER	14.3	J	CE	8.8	J	CE	49.3	J	CEF	90.6	J	CEF	19.1	J	CE	13.2	J	CE	9.2	J	CEF
IRON	14800			7480			28000			21700			8480			7470			6140		
LEAD	13.7			17.3			190		F	384		F	48.6		F	26.7		F	13.6		F
MAGNESIUM	23800			23600			24100			22900			18900			22000			21700		
MANGANESE	239			131			347			362			153			137			89.0		F
MERCURY	0.060U			0.060U			0.12			0.19			0.060U			0.060U			0.10L	J	A
NICKEL	37.8			20.4			184			261			36.3			23.7			10.8		
POTASSIUM	925L	J	AE	366L	J	AE	994L	J	AE	1080L	J	AE	352L	J	AE	330L	J	AE	503L	J	AE
SELENIUM	0.45U			0.45U			0.45U			0.44U			0.46U			0.45U			0.54U		
SILVER	0.11U			0.11U			0.11U			0.11U			0.11U			0.11U			0.14U		
SODIUM	4160			3300			3270			3400			3490			3510			5900		
THALLIUM	0.77U	J	C	0.76U	J	C	0.76U	J	C	0.75U	J	C	0.78U	J	C	0.76U	J	C	0.92U	J	C
VANADIUM	30.1			16.2			214			284			20.7			17.6			17.0		
ZINC	34.1			23.8			239			300			57.1			41.2			27.5		F
Percent Solids	86.5			87.3			88.3			89.9			86.8			88.9			73.8		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No. : 29448 SDG No. : MY05R8
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Calvin Tanaka, ESAT/LDC
Date : October 17, 2001

Analysis Type : Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location :	SB40			SS36			SA36			SB36			SS39			Lab Blank			MDL		
Sample ID :	MY05T2 D3			MY05T3			MY05T4			MY05T5			MY05T7			PBS					
Collection Date :	06/26/2001			06/26/2001			06/26/2001			06/26/2001			06/26/2001								
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	4040			4220			2250			1260			10300			13.6U			34.1		
ANTIMONY	0.73L	J	AC	1.2L	J	AC	0.57U	J	C	0.57U	J	C	5.4L	J	AC	0.50U			0.50		
ARSENIC	6.5			6.1			2.1L	J	A	2.3L	J	A	14.2			0.52U			0.52		
BARIUM	23.0L	J	A	37.5L	J	A	33.7L	J	A	9.3L	J	A	331			0.14U			0.14		
BERYLLIUM	0.070U			0.070U			0.070U			0.070U			0.070U			0.060U			0.060		
CADMIUM	0.14U			1.7			0.14U			0.14U			1.9	J	B	0.12U			0.12		
CALCIUM	301000	J	DE	304000	J	DE	302000	J	DE	302000	J	DE	171000	J	DE	5.1U			5.12		
CHROMIUM	18.2			16.9			11.4			8.4			122			0.12U			0.12		
COBALT	3.1L	J	A	0.71L	J	A	0.23U			0.23U			19.1			0.20U			0.20		
COPPER	19.9	J	CEF	57.2	J	CE	8.9	J	CE	7.1	J	CE	3570	J	CE	0.20U			0.20		
IRON	8500			6030			3590			2350			42100			2.9U			2.92		
LEAD	48.4		F	49.4			8.1			28.7			729			0.56U			0.56		
MAGNESIUM	26800			25800			22700			22700			21100			5.4U			5.40		
MANGANESE	175		F	113			75.1			47.0			481			0.060U			0.060		
MERCURY	0.060U			0.060U			0.060U			0.060U			0.090L	J	A	0.050U			0.050		
NICKEL	25.0			19.0			12.2			6.4L	J	A	73.8			0.22U			0.22		
POTASSIUM	448L	J	AE	211L	J	AE	338L	J	AE	213L	J	AE	1760	J	E	7.2L	J	A	2.34		
SELENIUM	0.46U			0.45U			0.45U			0.46U			0.45U	J	B	0.40U			0.40		
SILVER	0.11U			0.11U			0.11U			0.11U			0.11U	J	B	0.10U			0.10		
SODIUM	4620			2690			3190			4010			5290			43.7L	J	A	95.0		
THALLIUM	0.77U	J	C	0.77U	J	C	0.77U	J	C	0.78U	J	C	0.76U	J	BC	0.68U			0.68		
VANADIUM	18.5			16.5			7.8L	J	A	7.1L	J	A	43.1			0.20U			0.20		
ZINC	48.1		F	109			12.3			17.4			1310			0.12U			0.12		
Percent Solids	86.1			86.4			86.4			87.5			87.2			N/A			N/A		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05R8
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Calvin Tanaka, ESAT/LDC
Date: October 17, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Sample ID:	CRDL																			
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	40.0																			
ANTIMONY	12.0																			
ARSENIC	2.0																			
BARIUM	40.0																			
BERYLLIUM	1.0																			
CADMIUM	1.0																			
CALCIUM	1000																			
CHROMIUM	2.0																			
COBALT	10.0																			
COPPER	5.0																			
IRON	20.0																			
LEAD	0.60																			
MAGNESIUM	1000																			
MANGANESE	3.0																			
MERCURY	0.10																			
NICKEL	8.0																			
POTASSIUM	1000																			
SELENIUM	1.0																			
SILVER	2.0																			
SODIUM	1000																			
THALLIUM	2.0																			
VANADIUM	10.0																			
ZINC	4.0																			

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS

Table 1A

Case No. : 29448 SDG No. : MY05R8
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Calvin Tanaka, ESAT/LDC
Date : October 17, 2001

Analysis Type : Low Concentration Water Samples For Total Metals

Concentration in ug/L

Station Location :	QW2			Lab Blank			IDL			CRDL											
Sample ID :	MY05T6	EB		PBW																	
Collection Date :	06/26/2001																				
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	135L	J	A	68.2U			68.2			200											
ANTIMONY	2.5U			2.5U			2.5			60.0											
ARSENIC	2.6U			2.6U			2.6			10.0											
BARIUM	0.84L	J	A	0.70U			0.70			200											
BERYLLIUM	0.30U			0.30U			0.30			5.0											
CADMIUM	0.60U			0.60U			0.60			5.0											
CALCIUM	213L	J	A	47.3L	J	A	25.6			5000											
CHROMIUM	0.60U			0.60U			0.60			10.0											
COBALT	1.0U			1.0U			1.0			50.0											
COPPER	1.0U			1.0U			1.0			25.0											
IRON	115			20.0L	J	A	14.6			100											
LEAD	2.8U			2.8U			2.8			3.0											
MAGNESIUM	32.4L	J	A	27.0U			27.0			5000											
MANGANESE	1.3L	J	A	0.30U			0.30			15.0											
MERCURY	0.10U			0.10U			0.10			0.20											
NICKEL	1.1U			1.1U			1.1			40.0											
POTASSIUM	1310L	J	A	11.7U			11.7			5000											
SELENIUM	2.0U			2.0U			2.0			5.0											
SILVER	0.50U			0.50U			0.50			10.0											
SODIUM	671L	J	A	226L	J	A	47.4			5000											
THALLIUM	3.4U			3.4U			3.4			10.0											
VANADIUM	1.0U			1.0U			1.0			50.0											
ZINC	2.9L	J	A	0.60U			0.60			20.0											

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL - Instrument Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Tom Mix
Brownfields Project Officer
Brownfields Team, SFD-1-1

THROUGH: Rose Fong
ESAT Region 9 Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105034 Amendment 1

DATE: October 17, 2001

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Kaka'ako BF
SITE ACCOUNT NO.:	09 00 LA00
CERCLIS ID NO.:	None
CASE NO.:	29448
SDG NO.:	MY05P8
LABORATORY:	Sentinel, Inc. (SENTIN)
ANALYSIS:	Total Metals
SAMPLES:	1 Water, 19 Soil Samples (See Case Summary)
COLLECTION DATE:	June 25, 2001
REVIEWER:	Kendra DeSantolo, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Dawn Richmond (QA Program/EPA) at (415) 744-1494 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File
CLP PO: [X]FYI [ ]Attention [ ]Action
SAMPLING ISSUES: [X]Yes [ ]No

Data Validation Report

Case No.: 29448 SDG No.: MY05P8
Site: Kaka'ako BF
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: October 17, 2001

I. Case Summary

SAMPLE INFORMATION:

Samples:	MY05P8, MY05P9, MY05Q0 through MY05Q9, MY05R0 through MY05R7
Concentration and Matrix:	Low Concentration Water (MY05R2), Low Concentration Soils (All others)
Analysis:	Total Metals
SOW:	ILM04.1
Collection Date:	June 25, 2001
Sample Receipt Date:	June 27, 2001
Preparation Date:	July 10, 2001
Analysis Date:	July 11, 2001 and July 13-16, 2001

FIELD QC:

Field Blanks (FB):	MY05R2
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	MY05Q7 and MY05Q8

Method Blanks and Associated Samples :

PBW:	MY05R2
PBS:	MY05P8, MY05P9, MY05Q0 through MY05Q9, MY05R0, MY05R1, MY05R3 through MY05R7

LABORATORY QC:

Matrix Spike :	MY05Q3S
Duplicates :	MY05Q3D
ICP Serial Dilution :	MY05Q3L

ANALYSIS : Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	July 10, 2001	July 13-16, 2001
Mercury	July 10, 2001	July 11, 2001
Percent Solids		July 6, 2001

CLP PO ACTION:

None.

CLP PO ATTENTION:

None.

SAMPLING ISSUES:

The laboratory noted the absence of Chain-of-Custody (CoC) seals on the cooler upon receipt.

ADDITIONAL COMMENTS:

The standards preparation data was not included in the data package. This information was requested from the laboratory but has not been received to date. Data quality is not likely to be affected and this report is considered final. Refer to the attached telephone record log (TRL) for details.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) have been met.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund* (ILM04.1); and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	No	B
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	C
8. Laboratory Duplicate Sample Analysis	No	D
9. Field Duplicate Sample Analysis	No	F
10. GFAA QC Analysis	N/A	
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	No	E
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and flagged "J" in Table 1A.

- All results above the instrument detection limit or the method detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) for waters or the method detection limit (MDL) for soils but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated because of ICP interelement interference problems. The results are flagged "J" in Table 1A.

- Cadmium, selenium, silver and thallium in sample MY05P8

Results for the listed target analytes were reported from undiluted analyses that contained iron concentrations above the level in the ICS solution. Therefore, the applied interelement correction (IEC) factors may not compensate sufficiently for the interference.

The results for the analytes listed above may be biased low and false negatives may exist.

The ICP ICS solutions A and AB are analyzed to determine the effects of high concentrations of interfering elements on each analyte determined by ICP. Solution A consists of the interferents (Al, Ca, Fe, and Mg), and Solution AB consists of the analytes mixed with the interferents.

When the estimated concentration produced by the interfering element is greater than twice the CRDL and also greater than 10% of the reported concentration of the affected element, the results of the affected elements are estimated.

C. The following results are estimated because of matrix spike recovery results outside method QC limits and flagged "J" in Table 1A.

- Antimony, silver, thallium, and zinc in all samples except MY05R2

The matrix spike recovery results for antimony, silver, thallium and zinc in QC sample MY05Q3S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MY05Q3S % Recovery	MY05Q3S % Bias
Antimony	44	-56
Silver	73	-27
Thallium	40	-60
Zinc	129	+29

Results above the IDL or MDL are considered quantitatively uncertain. The results reported for antimony, silver and thallium in all samples except MY05R2 may be biased low and, where nondetected, false negatives may exist. The results reported for zinc in all samples except MY05R2 may be biased high and false positives may exist.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery results were obtained.

Analyte	MY05Q3A Post-Digestion Spike % Recovery
Antimony	97
Thallium	0
Zinc	9

Since the post-digestion spike recovery was acceptable, the low pre-digestion spike recovery result (44%) obtained for antimony may indicate sample nonhomogeneity, poor laboratory technique or matrix effects which may interfere with accurate analysis, enhancing or depressing the analytical result. Since both the post- and pre-digestion spikes did not meet the QC criteria for thallium and zinc, matrix effects may be present in the sample digestate which may enhance or depress the analyte signal during analysis.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

D. The following results are estimated because of laboratory duplicate results outside method QC limits and flagged "J" in Table 1A.

- Copper in all of the samples except MY05R2

Laboratory duplicate results did not meet the ±35 relative percent difference (RPD) criterion for precision as listed below.

Analyte	MY05Q3 Lab. Dup. RPD
Copper	40

The results reported for copper in all of the samples except MY05R2 are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to sample nonhomogeneity or poor laboratory technique.

E. The following results are estimated because of ICP serial dilution results outside method QC limits and flagged "J" in Table 1A.

- Calcium and zinc in all of the samples except MY05R2

The percent difference of the ICP serial dilution analysis of sample MY05Q3 did not meet the 10% criterion for the analytes shown below.

Analyte	MY05Q3L % Difference
Calcium	+28
Zinc	+11

The results reported for calcium and zinc in all of the samples except MY05R2 are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The results for the diluted sample were higher than the original. Therefore, the results may be biased low.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte

concentration is sufficiently high (minimally a factor of 5 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

F. A RPD of 38 was obtained for chromium in the analysis of field duplicate pair samples MY05Q7 and MY05Q8. The field duplicate results are expected to vary more than laboratory duplicates (±35 RPD or ±2×CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample nonhomogeneity, or poor sampling or laboratory technique.

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05P8
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: October 17, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SS24			SA24			SB24			SS32			SS15			SS16			SA16		
Sample ID:	MY05P8			MY05P9			MY05Q0			MY05Q1			MY05Q2			MY05Q3			MY05Q4		
Collection Date:	06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001		
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	35800			1310			12700			13400			9570			16700			2140		
ANTIMONY	2.3L	J	AC	0.58U	J	C	0.91L	J	AG	4.0L	J	AG	2.6L	J	AC	1.5L	J	AC	0.56U	J	C
ARSENIC	4.5			4.1			3.7			14.6			14.1			4.2			3.0		
BARIUM	443			10.9L	J	A	181			149			103			329			27.4L	J	A
BERYLLIUM	0.070U			0.070U			0.070U			0.060U			0.070U			0.070U			0.070U		
CADMIUM	0.14U	J	B	0.14U			0.14U			0.13U			0.44L	J	A	0.14U			0.13U		
CALCIUM	92300	J	E	318000	J	E	189000	J	E	185000	J	E	183000	J	E	180000	J	E	325000	J	E
CHROMIUM	44.0			6.2			21.7			37.1			38.0			25.8			8.5		
COBALT	54.4			0.23U			13.3			17.1			9.7L	J	A	26.3			0.22U		
COPPER	77.4	J	D	3.9L	J	AD	49.2	J	D	107	J	D	283	J	D	46.1	J	D	14.4	J	D
IRON	66600			2570			22400			23800			28500			31700			3920		
LEAD	307			19.6			36.7			306			178			64.7			11.6		
MAGNESIUM	34400			24200			25800			19300			20000			32500			21400		
MANGANESE	1080			57.6			332			416			316			568			80.0		
MERCURY	0.21			0.060U			0.070L	J	A	0.60			0.27			0.12			0.060U		
NICKEL	168			6.5L	J	A	60.5			67.7			37.3			93.7			10.7		
POTASSIUM	4010			149L	J	A	2260			1400			1030L	J	A	1520			197L	J	A
SELENIUM	0.47U	J	B	0.46U			0.46U			0.42U			0.48U			0.47U			0.45U		
SILVER	0.12U	J	BC	0.12U	J	C	0.11U	J	C	0.11U	J	C	0.12U	J	C	0.12U	J	C	0.11U	J	C
SODIUM	8350			2790			6890			3750			3730			4620			2850		
THALLIUM	0.79U	J	BC	0.79U	J	C	0.78U	J	C	0.72U	J	C	0.82U	J	C	0.79U	J	C	0.76U	J	C
VANADIUM	117			6.7L	J	A	28.7			53.1			36.2			50.2			7.8L	J	A
ZINC	279	J	CE	11.8	J	CE	95.5	J	CE	125	J	CE	459	J	CE	110	J	CE	19.4	J	CE
Percent Solids	84.2			85.5			86.2			94.3			82.0			85.6			88.0		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No. : 29448 SDG No. : MY05P8
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Kendra DeSantolo, ESAT/LDC
Date : October 17, 2001

Analysis Type : Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location :	SB16			SS23			SS31			SS31			SA31			SB31			SS30		
Sample ID :	MY05Q5			MY05Q6			MY05Q7 D1			MY05Q8 D1			MY05Q9			MY05R0			MY05R1		
Collection Date :	06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001		
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	736			8550			9680			11900			16600			13100			24700		
ANTIMONY	0.59U	J	C	2.1L	J	AC	1.8L	J	AC	1.4L	J	AC	1.4L	J	AC	1.7L	J	AC	1.8L	J	AC
ARSENIC	2.8			9.9			7.7			8.3			1.7L	J	A	4.6			3.9		
BARIUM	5.5L	J	A	68.0			59.9			65.0			127			405			183		
BERYLLIUM	0.070U			0.070U			0.070U			0.070U			0.070U			0.070U			0.070U		
CADMIUM	0.14U			0.14U			0.13U			0.13U			0.14U			0.14U			0.15U		
CALCIUM	333000	J	E	179000	J	E	182000	J	E	175000	J	E	66400	J	E	160000	J	E	56700	J	E
CHROMIUM	7.5			42.2			34.0		F	49.9		F	52.7			39.5			58.4		
COBALT	0.24U			8.9L	J	A	8.4L	J	A	9.6L	J	A	22.3			18.9			34.3		
COPPER	2.0L	J	AD	131	J	D	104	J	D	118	J	D	62.2	J	D	66.7	J	D	95.1	J	D
IRON	1170			20100			17600			24800			27100			25400			44000		
LEAD	0.66U			121			56.3			66.1			57.8			337			49.4		
MAGNESIUM	27000			18600			19800			16300			12500			24200			11300		
MANGANESE	36.4			285			250			246			484			459			602		
MERCURY	0.050U			0.22			0.37			0.29			0.22			0.27			0.090L	J	A
NICKEL	2.1L	J	A	40.3			36.6			36.9			82.7			77.6			152		
POTASSIUM	115L	J	A	720L	J	A	726L	J	A	691L	J	A	1330			1910			878L	J	A
SELENIUM	0.47U			0.45U			0.44U			0.44U			0.48U			0.47U			0.48U		
SILVER	0.12U	J	C	0.11U	J	C	0.11U	J	C	0.11U	J	C	0.12U	J	C	0.12U	J	C	0.12U	J	C
SODIUM	2670			3070			4940			5280			6360			7340			2270		
THALLIUM	0.80U	J	C	0.77U	J	C	0.75U	J	C	0.75U	J	C	0.82U	J	C	0.80U	J	C	0.82U	J	C
VANADIUM	4.0L	J	A	31.0			38.3			52.6			55.0			65.2			110		
ZINC	5.4	J	CE	256	J	CE	162	J	CE	218	J	CE	110	J	CE	256	J	CE	230	J	CE
Percent Solids	83.8			86.3			90.7			91.2			82.0			82.9			81.0		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05P8
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: October 17, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SS22			SS29			SA29			SB29			SS28			Lab Blank			MDL		
Sample ID:	MY05R3			MY05R4			MY05R5			MY05R6			MY05R7			PBS					
Collection Date:	06/25/2001			06/25/2001			06/25/2001			06/25/2001			06/25/2001								
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	13000			10100			22100			23100			3790			33.6U			33.6		
ANTIMONY	1.3L	J	AC	0.71L	J	AC	3.3L	J	AC	3.7L	J	AC	1.4L	J	AC	0.50U			0.50		
ARSENIC	3.9			4.0			6.1			5.4			5.1			0.52U			0.52		
BARIUM	125			67.4			420			453			63.8			0.14U			0.14		
BERYLLIUM	0.070U			0.070U			0.070U			0.070U			0.070U			0.060U			0.06		
CADMIUM	0.14U			0.14U			0.14U			0.15U			0.13U			0.12U			0.12		
CALCIUM	149000	J	E	135000	J	E	107000	J	E	95300	J	E	300000	J	E	5.1U			5.1		
CHROMIUM	48.2			34.5			53.6			84.6			13.6			0.12U			0.12		
COBALT	18.4			12.9			30.1			39.4			2.5L	J	A	0.20U			0.20		
COPPER	93.7	J	D	47.5	J	D	214	J	D	172	J	D	60.6	J	D	0.20U			0.20		
IRON	23100			17600			42200			47800			7440			2.9U			2.92		
LEAD	76.0			36.1			390			320			141			0.56U			0.56		
MAGNESIUM	21500			17100			21200			26700			21800			5.4U			5.4		
MANGANESE	420			352			697			713			125			0.060U			0.06		
MERCURY	0.13			0.060U			0.49			0.30			0.060U			0.050U			0.05		
NICKEL	67.5			55.8			134			158			26.0			0.22U			0.22		
POTASSIUM	1300			718L	J	A	3390			3570			665L	J	A	2.3U			2.34		
SELENIUM	0.47U			0.45U			0.46U			0.50U			0.45U			0.40U			0.40		
SILVER	0.12U	J	C	0.11U	J	C	0.11U	J	C	0.12U	J	C	0.11U	J	C	0.10U			0.10		
SODIUM	3710			3350			9250			9230			3650			26.2U			26.2		
THALLIUM	0.79U	J	C	0.77U	J	C	0.78U	J	C	0.84U	J	C	0.76U	J	C	0.68U			0.68		
VANADIUM	47.2			35.2			81.7			91.8			16.6			0.20U			0.20		
ZINC	227	J	CE	72.1	J	CE	603	J	CE	538	J	CE	97.5	J	CE	0.12U			0.12		
Percent Solids	85.0			86.6			87.2			80.6			88.8								

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05P8
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: October 17, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Sample ID:	CRDL																				
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	40																				
ANTIMONY	12																				
ARSENIC	2.0																				
BARIUM	40																				
BERYLLIUM	1.0																				
CADMIUM	1.0																				
CALCIUM	1000																				
CHROMIUM	2.0																				
COBALT	10																				
COPPER	5.0																				
IRON	20																				
LEAD	0.6																				
MAGNESIUM	1000																				
MANGANESE	3.0																				
MERCURY	0.1																				
NICKEL	8.0																				
POTASSIUM	1000																				
SELENIUM	1.0																				
SILVER	2.0																				
SODIUM	1000																				
THALLIUM	2.0																				
VANADIUM	10																				
ZINC	4.0																				

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05P8
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: October 17, 2001

Analysis Type: Low Concentration Water Samples For Total Metals

Concentration in ug/L

Station Location:	QW1			Lab Blank			IDL			CRDL											
Sample ID:	MY05R2 FB			PBW																	
Collection Date:	06/25/2001																				
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	168U			168U			168			200											
ANTIMONY	2.5U			2.5U			2.5			60.0											
ARSENIC	2.6U			2.6U			2.6			10.0											
BARIUM	0.70U			0.70U			0.70			200											
BERYLLIUM	0.30U			0.30U			0.30			5.0											
CADMIUM	0.60U			0.60U			0.60			5.0											
CALCIUM	75.4L	J	A	25.6U			25.6			5000											
CHROMIUM	0.60U			0.60U			0.60			10.0											
COBALT	1.0U			1.0U			1.0			50.0											
COPPER	1.0U			1.0U			1.0			25.0											
IRON	14.6U			14.6U			14.6			100											
LEAD	2.6U			2.6U			2.6			3.0											
MAGNESIUM	27.0U			27.0U			27.0			5000											
MANGANESE	0.30U			0.30U			0.30			15.0											
MERCURY	0.10U			0.10U			0.10			0.20											
NICKEL	1.1U			1.1U			1.1			40.0											
POTASSIUM	1240L	J	A	11.7U			11.7			5000											
SELENIUM	2.0U			2.0U			2.0			5.0											
SILVER	0.55L	J	A	0.50U			0.50			10.0											
SODIUM	192L	J	A	131U			131			5000											
THALLIUM	3.4U			3.4U			3.4			10.0											
VANADIUM	1.0U			1.0U			1.0			50.0											
ZINC	2.1L	J	A	2.4L	J	A	0.60			20.0											

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL - Instrument Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

In Reference to
Case 29448 SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Contract Laboratory program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Sentinel, Inc. (SENTIN)

Lab Contact: Melvin Kilgore

Region: 9

Regional Contact: Steve Remaley, CLP PO

ESAT Reviewer: Stan Kott, ESAT/ICF-LDC

Call Initiated By: ___ Laboratory _X_ Region

In reference to data for the following sample(s):
SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Summary of Questions/issues Discussed:

The following item was noted during the review of this sample delivery group (SDG). Please respond within 7 days as specified in Exhibit A, Section II, E. of the ILM04.0 Statement of Work (SOW). Send response and resubmissions to ICF Consulting, Inc./Laboratory Data Consultants, Inc., Environmental Services Assistance Team, Region 9, 1337 S. 46th Street, Building 201, Richmond, CA 94804, FAX 510 412-2304.

1. The cover pages for both ICP and CVAA analyses provide only reference numbers for the standard solutions used. However, Region 9 requests the following information for all standards (calibration and QC) used: expiration date of standard, preparation date, lot number, and standard sources. Please provide one copy of the above listed data for both ICP and CVAA.

Summary of Resolution: To be determined.

_____ _____
Regional Contact Signature Date of Resolution

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Tom Mix
Brownfields Project Officer
Brownfields Team, SFD-1-1

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105034 Amendment 1

DATE: October 24, 2001

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Kaka'ako BF
SITE ACCOUNT NO.:	09 00 LA00
CERCLIS ID NO.:	None provided
CASE NO.:	29448
SDG NO.:	MY05X0
LABORATORY:	Sentinel, Inc. (SENTIN)
ANALYSIS:	Total Metals
SAMPLES:	1 Water, 19 Soil Samples (See Case Summary)
COLLECTION DATE:	June 27, 2001
REVIEWER:	Kendra DeSantolo, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Dawn Richmond (QA Program/EPA) at (415) 744-1494 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File
CLP PO: [X]FYI [ ]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

Data Validation Report

Case No.: 29448 SDG No.: MY05X0
Site: Kaka'ako BF
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Kendra DeSantolo, ESAT/LDC
Date: October 24, 2001

I. Case Summary

SAMPLE INFORMATION:

Samples:	MY05X0 through MY05X9, MY05Y0, MY05Y1, MY05Y5, MY05Y6, MY05Y9, MY05Z0, MY05Z2 through MY05Z5
Concentration and Matrix:	Low Concentration Water (MY05Y6), Low Concentration Soils (All others)
Analysis:	Total Metals
SOW:	ILM04.1
Collection Date:	June 27, 2001
Sample Receipt Date:	July 2, 2001
Preparation Date:	July 13 and 18, 2001
Analysis Date:	July 17 and 18, 2001

FIELD QC:

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	MY05Y6
Background Samples (BG):	Not Provided
Field Duplicates (D1):	MY05X1 and MY05X2
(D2):	MY05X5 and MY05X6
(D3):	MY05X7 and MY05X8
(D4):	MY05X9 and MY05Y0

Method Blanks and Associated Samples :

PBW:	MY05Y6
PBS:	MY05X0 through MY05X9, MY05Y0, MY05Y1, MY05Y5, MY05Y9, MY05Z0, MY05Z2 through MY05Z5

LABORATORY QC:

Matrix Spike :	MY0XY1S
Duplicates :	MY0XY1D
ICP Serial Dilution :	MY0XY1L

ANALYSIS : Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	July 13, 2001	July 17, 2001
Mercury	July 18, 2001	July 18, 2001
Percent Solids		July 13, 2001

CLP PO ACTION:

None

CLP PO ATTENTION:

None

SAMPLING ISSUES:

The cooler containing all of the samples arrived at the laboratory with a temperature of 10.0°C. This temperature exceeds the temperature of 4±2°C specified in the Statement of Work (SOW). Since the water sample was preserved to a pH less than 2, no adverse effect on the quality of the data is expected. Although the soil samples were received by the laboratory more than 24 hours after the last sample was collected, the cooler did not exceed 20°C and no adverse effect on the quality of the data is expected.

The chain of custody (CoC) did not specify a sample to be used for laboratory quality control (QC). However, the laboratory correctly assigned the QC sample based upon the additional sample quantity provided.

ADDITIONAL COMMENTS:

The standards preparation data was not included in the data package. This information was requested from the laboratory but has not been received to date. Data quality is not likely to be affected and this report is considered final. Refer to the attached telephone record log (TRL) for details.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) have been met.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund* (ILM04.1); and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter		Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial Calibration Verification		
	b. Continuing Calibration Verification		
	c. Calibration Blank		
	d. CRDL Standard		
4.	Blanks	Yes	
	a. Laboratory Preparation Blank		
	b. Field Blank		
	c. Equipment Blank		
5.	ICP Interference Check Sample Analysis	No	B
6.	Laboratory Control Sample Analysis	Yes	
7.	Spiked Sample Analysis	No	C
8.	Laboratory Duplicate Sample Analysis	No	D
9.	Field Duplicate Sample Analysis	No	F
10.	GFAA QC Analysis	N/A	
	a. Duplicate Injections		
	b. Analytical Spikes		
	c. Method of Standard Addition		
11.	ICP Serial Dilution Analysis	No	E
12.	Sample Quantitation	Yes	A
13.	Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and flagged "J" in Table 1A.

- All results above the instrument detection limit or the method detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) for waters or the method detection limit (MDL) for soils but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated because of ICP interference check sample (ICS) results outside method QC limits and flagged "J" in Table 1A.

- Cadmium, lead, selenium, silver, and thallium in sample MY05X7
- Cadmium, selenium, silver, and thallium in samples MY05X0, MY05X4, MY05X8, MY05X9, MY05Y0, MY05Y1, MY05Y5, MY05Y9, MY05Z0

Results for the above listed analytes and samples were reported from undiluted analyses that contained iron concentrations above that stated for the ICP interference check sample (ICS). Therefore, the applied interelement correction (IEC) factors may not compensate sufficiently for the interference. The results for the above listed analytes may be biased low and false negatives may exist.

The ICP ICS so[illegible]ns A and AB are analyzed to determine t[illegible]fects of high concentrations of interfering elements on each analyte determined by ICP. Solution A consists of the interferents (Al, Ca, Fe, and Mg), and Solution AB consists of the analytes mixed with the interferents.

When the estimated concentration produced by the interfering element is greater than twice the CRDL and also is greater than 10% of the reported concentration of the affected element, the results of the affected elements are estimated.

C. The following results are estimated because of matrix spike recovery results outside method QC limits and flagged "J" in Table 1A.

- Antimony and selenium in all soil samples

The matrix spike recovery results for antimony and selenium in QC sample MY05Y1S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MY05Y1S % Recovery	MY05Y1S % Bias
Antimony	43	-57
Selenium	62	-38

Results above the MDL are considered quantitatively uncertain. The results reported for antimony and selenium in all soil samples in this SDG may be biased low and, where nondetected, false negatives may exist.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery results were obtained.

Analyte	MY05Y1A Post-Digestion Spike % Recovery
Antimony	95
Selenium	109

Since the post-digestion spike recoveries were acceptable, the low pre-digestion spike recovery results (43% obtained for antimony and 62% for selenium) may indicate sample nonhomogeneity, poor laboratory technique or matrix effects, which may interfere with accurate analysis, enhancing or depressing the analytical result.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

D. The following result is estimated because the laboratory duplicate result is outside method QC limits and is flagged "J" in Table 1A.

- Copper in all soil samples

Laboratory duplicate results did not meet the ±35 relative percent difference (RPD) criteria for precision as listed below.

Analyte	MY05Y1D Lab. Dup. RPD
Copper	74

The results reported for copper in all soil samples are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to sample nonhomogeneity or poor laboratory technique.

E. The following results are estimated because of ICP serial dilution results outside method QC limits and flagged "J" in Table 1A.

- Silver and sodium in all soil samples

The percent difference of the ICP serial dilution analysis of sample MY05Y1L did not meet the 10% criterion for the analytes shown below.

Analyte	MY05Y1L % Difference
Silver	+22
Sodium	+29

The results reported for silver and sodium in all of the samples are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The results for the diluted sample were higher than the original. Therefore, the results may be biased low.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

F. In the analysis of the field duplicate pairs, the following RPDs or differences were obtained for the analytes listed below.

Analyte	MY05X1 D1 MY05X2 D1 RPD/Difference	MY05X5 D2 MY05X6 D2 RPD	MY05X7 D3 MY05X8 D3 RPD/Difference	MY05X9 D4 MY05Y0 D4 RPD
Barium	-- / 88	--	63 /--	--
Calcium	- /--	60	49 /--	--
Chromium	- /--	--	- /--	44
Cobalt	- /--	47	- /--	--
Copper	- /--	--	40 /--	75
Lead	80 /--	--	196 /--	73
Manganese	- /--	--	- /--	40
Potassium	- / 2240	--	- /--	--
Sodium	105 /--	--	- / 3057	--
Zinc	- /--	--	54 /--	--

The field duplicate results are expected to vary more than laboratory duplicates (±35 RPD or ±2×CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample nonhomogeneity, poor sampling or laboratory technique.

ANALYTICAL RESULTS
Table 1A

Case No. : 29448 SDG No. : MY05X0
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Kendra DeSantolo, LDC/ESAT
Date : October 24, 2001

Analysis Type : Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location :	SS01			SS10			SS10			SS11			SS17			SS18			SS18		
Sample ID :	MY05X0			MY05X1 D1			MY05X2 D1			MY05X3			MY05X4			MY05X5 D2			MY05X6 D2		
Collection Date :	06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001		
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	27600			17700			12900			14000			14000			20100			26800		
ANTIMONY	1.2L	J	AC	0.68U	J	C	1.1L	J	AC	1.4L	J	AC	12.9L	J	AC	1.3L	J	AC	1.4L	J	AC
ARSENIC	4.6			7.1			4.9			6.6			17.6			2.2L	J	A	1.5L	J	A
BARIUM	179			165		F	77.2		F	139			360			73.5			86.3		
BERYLLIUM	0.89L	J	A	0.67L	J	A	0.38L	J	A	0.49L	J	A	0.52L	J	A	0.57L	J	A	0.68L	J	A
CADMIUM	0.32L	J	AB	0.43L	J	A	0.30L	J	A	0.34L	J	A	0.72L	J	AB	0.050U			0.070L	J	A
CALCIUM	59600			183000			187000			209000			170000			70100		F	37800		F
CHROMIUM	152			59.6			66.7			57.2			48.7			117			161		
COBALT	36.3			18.1			18.0			15.7			20.7			65.5		F	40.5		F
COPPER	154	J	D	71.1	J	D	57.5	J	D	55.6	J	D	878	J	D	73.8	J	D	78.3	J	D
IRON	54100			23300			22400			22300			73600			34200			45000		
LEAD	215			118		F	50.5		F	56.2			670			45.0			56.6		
MAGNESIUM	10700			21300			19600			21500			28900			9200			8280		
MANGANESE	567			462			479			382			681			856			703		
MERCURY	0.22			0.060L	J	A	0.080L	J	A	0.090L	J	A	0.080L	J	A	0.060L	J	A	0.060U		
NICKEL	105			68.7			78.3			67.0			153			125			139		
POTASSIUM	1730			2920		F	680L	J	AF	1240			2180			828L	J	A	1080L	J	A
SELENIUM	0.89U	J	BC	0.80U	J	C	1.1L	J	AC	0.80U	J	C	0.78U	J	BC	0.82U	J	C	0.85U	J	C
SILVER	1.9L	J	ABE	0.41L	J	AE	0.46L	J	AE	0.49L	J	AE	3.2	J	BE	1.6L	J	AE	5.4	J	E
SODIUM	2590	J	E	6700	J	EF	2080	J	EF	3270	J	E	4280	J	E	1180L	J	AE	942L	J	AE
THALLIUM	1.3U		B	1.2U			1.2U			1.2U			1.2U	J	B	1.2U			1.3U		
VANADIUM	130			49.9			58.8			58.8			49.0			89.7			120		
ZINC	364			104			73.0			200			1010			124			153		
Percent Solids	75.9			84.3			83.4			84.2			85.6			81.3			78.8		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: Y05X0
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, LDC/ESAT
Date: October 24, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SA18			SA18			SB18			SB18			SS25			SS26			SA33		
Sample ID:	MY05X7 D3			MY05X8 D3			MY05X9 D4			MY05Y0 D4			MY05Y1			MY05Y5			MY05Y9		
Collection Date:	06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001		
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	30400			27800			27900			31100			17300			14700			22000		
ANTIMONY	0.76U	J	C	0.79U	J	C	1.9L	J	AC	4.1L	J	AC	8.6L	J	AC	4.7L	J	AC	7.9L	J	AC
ARSENIC	2.3L	J	A	1.4L	J	A	7.0			10.2			19.6			11.1			15.5		
BARIUM	247		F	129		F	507			442			267			380			462		
BERYLLIUM	1.0L	J	A	0.94L	J	A	1.3			0.98L	J	A	0.36L	J	A	0.45L	J	A	0.44L	J	A
CADMIUM	0.050U	J	B	0.060U	J	B	1.0L	J	AB	2.1	J	B	1.0L	J	AB	10.6	J	B	10.3	J	B
CALCIUM	35100		F	21200		F	48200			42000			115000			125000			56900		
CHROMIUM	152			156			76.0		F	119		F	98.3			117			89.1		
COBALT	58.0			65.1			41.2			36.7			26.0			28.1			22.4		
COPPER	206	J	DF	138	J	DF	199	J	DF	438	J	DF	568	J	D	783	J	D	5240	J	D
IRON	51900			49900			64000			64300			82900			99200			79500		
LEAD	18.4	J	BF	1990		F	309		F	665		F	678			1100			1440		
MAGNESIUM	15500			11900			28000			21800			13600			16700			9180		
MANGANESE	1080			1110			1150		F	768		F	867			997			987		
MERCURY	0.060U			0.060U			0.20			0.23			0.060U			0.15			0.070L	J	A
NICKEL	184			173			191			210			189			145			170		
POTASSIUM	2300			1290L	J	A	3390			2570			915L	J	A	1430			1540		
SELENIUM	1.5	J	BC	1.6	J	BC	0.85U	J	BC	0.98L	J	ABC	0.84U	J	BC	1.4	J	BC	0.76U	J	BC
SILVER	1.9L	J	ABE	1.9L	J	ABE	2.4L	J	ABE	2.7	J	BE	5.4	J	BE	3.7	J	BE	5.9	J	BE
SODIUM	4020	J	EF	963L	J	AEF	4500	J	E	2750	J	E	1870	J	E	2730	J	E	3320	J	E
THALLIUM	1.3U	J	B	1.4U	J	B	1.3U	J	B	1.2U	J	B	1.3U	J	B	1.2U	J	B	1.1U	J	B
VANADIUM	136			129			100			112			59.0			66.9			61.8		
ZINC	6740		F	3870		F	914			835			1160			5790			1500		
Percent Solids	75.2			73.2			79.7			82.5			81.1			82.4			87.3		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: Y05X0
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, LDC/ESAT
Date: October 24, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SB33			SS05			SS20			SA20			SS14			Lab Blank			MDL		
Sample ID:	MY05Z0			MY05Z2			MY05Z3			MY05Z4			MY05Z5			PBS					
Collection Date:	06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/27/2001								
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	14400			11300			4030			28400			7770			3.5U			3.54		
ANTIMONY	44.6	J	C	9.9L	J	AC	0.96L	J	AC	2.7L	J	AC	2.0L	J	AC	0.58U			0.58		
ARSENIC	57.0			7.6			5.0			4.4			6.4			0.92U			0.92		
BARIUM	714			351			33.4L	J	A	322			66.5			0.14U			0.14		
BERYLLIUM	0.25L	J	A	0.36L	J	A	0.10L	J	A	0.90L	J	A	0.20L	J	A	0.030L	J	A	0.02		
CADMIUM	6.0	J	B	0.63L	J	A	0.080L	J	A	0.18L	J	A	0.28L	J	A	0.040U			0.4		
CALCIUM	30700			193000			316000			115000			279000			8.1U			14.6		
CHROMIUM	87.4			32.9			20.0			74.7			37.9			0.080U			0.08		
COBALT	25.2			11.8			3.7L	J	A	26.7			8.4L	J	A	0.22U			0.22		
COPPER	1290	J	D	113	J	D	19.6	J	D	82.2	J	D	41.9	J	D	0.18U			0.18		
IRON	191000			22700			5560			41600			14900			2.0U			1.96		
LEAD	2040			653			21.5			171			121			0.36U			0.36		
MAGNESIUM	7100			20200			24700			22500			26100			2.7U			2.7		
MANGANESE	1200			363			145			619			249			0.060U			0.06		
MERCURY	0.12L	J	A	0.10L	J	A	0.060U			0.090L	J	A	0.050L	J	A	0.050U			0.05		
NICKEL	296			75.1			12.4			113			39.1			0.32U			0.32		
POTASSIUM	2430			1480			283L	J	A	3490			537L	J	A	5.0L	J	A	1.94		
SELENIUM	0.86U	J	BC	0.77U	J	C	0.76U	J	C	1.6	J	C	0.78U	J	C	0.68U			0.68		
SILVER	11.5	J	BE	1.9L	J	AE	0.070U	J	E	1.4L	J	AE	0.62L	J	AE	0.060U			0.06		
SODIUM	7610	J	E	4360	J	E	3100	J	E	7620	J	E	2550	J	E	31.0L	J	A	22.8		
THALLIUM	2.4L	J	AB	1.2U			1.1U			1.2U			1.2U			1.0U			1.02		
VANADIUM	52.9			37.8			16.5			87.1			30.7			0.14U			0.14		
ZINC	2180			456			40.5			248			130			0.18U			0.18		
Percent Solids	78.7			88.3			87.7			83.0			85.1								

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05X0
Site: KAKA'AKO BROWNFIELDS
Lab: SENTINEL, INC. (SENTIN)
Reviewer: Kendra DeSantolo, LDC/ESAT
Date: October 24, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:																					
Sample ID:	CRDL																				
Collection Date:																					
PARAMETER	Result	Val	Com							Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	40.0																				
ANTIMONY	12.0																				
ARSENIC	2.0																				
BARIUM	40.0																				
BERYLLIUM	1.0																				
CADMIUM	1.0																				
CALCIUM	1000																				
CHROMIUM	2.0																				
COBALT	10.0																				
COPPER	5.0																				
IRON	20																				
LEAD	0.60																				
MAGNESIUM	1000																				
MANGANESE	3.0																				
MERCURY	0.1																				
NICKEL	8.0																				
POTASSIUM	1000																				
SELENIUM	1.0																				
SILVER	2.0																				
SODIUM	1000																				
THALLIUM	2.0																				
VANADIUM	10.0																				
ZINC	4.0																				
Percent Solids																					

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS

Table 1A

Case No. : 29448 SDG No. : MY05X0
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Kendra DeSantolo, LDC/ESAT
Date : October 24, 2001

Analysis Type : Low Concentration Water Samples For Total Metals

Concentration in ug/L

Station Location :	QW3			Lab Blank			IDL			CRDL											
Sample ID :	MY05Y6 FB			PBW																	
Collection Date :	06/27/2001																				
PARAMETER	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
ALUMINUM	142L	J	A	18.1L	J	A	17.7			200											
ANTIMONY	2.9U			2.9U			2.9			60.0											
ARSENIC	4.6U			4.6U			4.6			10.0											
BARIUM	1.6L	J	A	0.73L	J	A	0.70			200											
BERYLLIUM	0.28L	J	A	0.10U			0.10			5.0											
CADMIUM	0.20U			0.20U			0.20			5.0											
CALCIUM	165L	J	A	40.4U			40.4			5000											
CHROMIUM	0.80L	J	A	0.40U			0.40			10.0											
COBALT	1.1U			1.1U			1.1			50.0											
COPPER	0.98L	J	A	0.90U			0.90			25.0											
IRON	17.0L	J	A	9.8U			9.8			100											
LEAD	1.6U			1.6U			1.6			3.0											
MAGNESIUM	26.0L	J	A	13.5U			13.5			5000											
MANGANESE	0.66L	J	A	0.33L	J	A	0.30			15.0											
MERCURY	0.10U			0.10U			0.10			0.20											
NICKEL	1.6U			1.6U			1.6			40.0											
POTASSIUM	1280L	J	A	19.9L	J	A	9.7			5000											
SELENIUM	3.4U			3.4U			3.4			5.0											
SILVER	0.31L	J	A	0.34L	J	A	0.30			10.0											
SODIUM	935L	J	A	214L	J	A	114			5000											
THALLIUM	5.1U			5.1U			5.1			10.0											
VANADIUM	0.70U			0.70U			0.70			50.0											
ZINC	4.6L	J	A	1.1L	J	A	0.90			20.0											

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL - Instrument Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

In Reference to
Case 29448 SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Contract Laboratory program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Sentinel, Inc. (SENTIN)

Lab Contact: Melvin Kilgore

Region: 9

Regional Contact: Steve Remaley, CLP PO

ESAT Reviewer: Stan Kott, ESAT/ICF-LDC

Call Initiated By: ___ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Summary of Questions/issues Discussed:

The following item was noted during the review of this sample delivery group (SDG). Please respond within 7 days as specified in Exhibit A, Section II, E. of the ILM04.0 Statement of Work (SOW). Send response and resubmissions to ICF Consulting, Inc./Laboratory Data Consultants, Inc., Environmental Services Assistance Team, Region 9, 1337 S. 46th Street, Building 201, Richmond, CA 94804, FAX 510 412-2304.

1. The cover pages for both ICP and CVAA analyses provide only reference numbers for the standard solutions used. However, Region 9 requests the following information for all standards (calibration and QC) used: expiration date of standard, preparation date, lot number, and standard sources. Please provide one copy of the above listed data for both ICP and CVAA.

Summary of Resolution: To be determined.

_____ _____
Regional Contact Signature Date of Resolution

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Tom Mix
Brownfields Project Officer
Brownfields Team, SFD-1-1

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105034 Amendment 1

DATE: October 17, 2001

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Kaka'ako BF
SITE ACCOUNT NO.:	09 00 LA00
CERCLIS ID NO.:	None
CASE NO.:	29448
SDG NO.:	MY05Y8
LABORATORY:	Sentinel, Inc. (SENTIN)
ANALYSIS:	Total Metals
SAMPLES:	11 Soil Samples (see Case Summary)
COLLECTION DATE:	June 27 and 28, 2001
REVIEWER:	Stan Kott, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Dawn Richmond (QA Program/EPA) at (415) 744-1494 or Rose Fong (QA Program/EPA) at (415) 744-1534.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File
CLP PO: [X]FYI [ ]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

Data Validation Report

Case No.: 29448 SDG No.: MY05Y8
Site: Kaka'ako BF
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Stan Kott, ESAT/LDC
Date: October 17, 2001

I. Case Summary

SAMPLE INFORMATION:

Samples:	MY05Y8, MY05Z6 through MY05Z8, MY0609 through MY0613, MY0615, and MY0616
Concentration and Matrix:	Low Concentration Soil
Analysis:	Total Metals
SOW:	ILM04.1
Collection Date:	June 27 and 28, 2001
Sample Receipt Date:	July 2, 2001
Preparation Date:	July 12, 2001
Analysis Date:	July 14 through 16, 2001

FIELD QC:

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	MY05Y6 and MY0617
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

Method Blanks and Associated Samples :

PBS:	Samples listed above

LABORATORY QC:

Matrix Spike :	MY058S
Duplicates :	MY058D
ICP Serial Dilution :	MY058L

ANALYSIS : Total Metals

Analyte	Sample Preparation and Digestion Date	Analysis Date
ICP Metals	July 12, 2001	July 14 and 15, 2001
Mercury	July 12, 2001	July 16, 2001
Percent Solids	July 12, 2001	

CLP PO ACTION:

None.

CLP PO ATTENTION:

None.

SAMPLING ISSUES:

The cooler containing samples MY05Y8, MY05Z6 through MY05Z8 arrived at the laboratory with a temperature of 10.0°C. This temperature exceeds the temperature of 4±2°C specified in the Statement of Work (SOW). Although the soil samples were received by the laboratory more than 24 hours after the last sample was collected, the cooler temperature did not exceed 20°C and no adverse effect on the quality of the data is expected.

ADDITIONAL COMMENTS

The standards preparation data was not included in the data package. This information was requested from the laboratory but has not been received to date. Data quality is not likely to be affected and this report is considered final. Refer to the attached telephone record log (TRL) for details.

The results for equipment blanks MY05Y6 and MY0617, collected with the samples of this sample delivery group (SDG), on June 27 and 28, 2001, respectively, are located in Case 29448, SDG Nos.: MY05X0 and MY05Y2, respectively. No qualification of data due to equipment blank contamination is warranted.

CRDL Standard Recovery is outside the EPA Region 9 Advisory Limits of 65-135%. A high recovery of 166% was obtained for lead in the ICP analysis of the CRDL standard (CRI). While there are no criteria established for CRDL standard recoveries, high recoveries may indicate high bias for sample results near the CRDL. It should be noted that high recoveries may indicate high bias for lead in sample MY0613.

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW) have been met.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund* (ILM04.1); and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter		Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial Calibration Verification		
	b. Continuing Calibration Verification		
	c. Calibration Blank		
	d. CRDL Standard		
4.	Blanks	Yes	
	a. Laboratory Preparation Blank		
	b. Field Blank		
	c. Equipment Blank		
5.	ICP Interference Check Sample Analysis	No	B
6.	Laboratory Control Sample Analysis	Yes	
7.	Spiked Sample Analysis	No	C
8.	Laboratory Duplicate Sample Analysis	No	D
9.	Field Duplicate Sample Analysis	N/A	
10.	GFAA QC Analysis	N/A	
	a. Duplicate Injections		
	b. Analytical Spikes		
	c. Method of Standard Addition		
11.	ICP Serial Dilution Analysis	No	E
12.	Sample Quantitation	Yes	A
13.	Sample Result Verification	Yes	

N/A = Not Applicable

III. Validity and Comments

A. The following results are estimated and flagged "J" in Table 1A.

- All results above the method detection limit (MDL) but below the contract required detection limit (CRDL) (denoted with an "L" qualifier)

Results above the MDL but below the CRDL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated because of ICP interelement interference problems and are flagged "J" in Table 1A.

- Cadmium and selenium in samples MY05Y8 and MY0616
- Cadmium, selenium, silver, and thallium in sample MY0615

Results for the above listed analytes and samples were reported from undiluted analysis that contained an iron concentration above that stated for the ICP interference check sample (ICS). Therefore, the applied interelement correction (IEC) factors may not compensate sufficiently for the interference. The results for the above listed analytes may be biased low and false negatives may exsist.

The ICP ICS solutions A and AB are analyzed to determine the effects of high concentrations of interfering elements on each analyte determined by ICP. Solution A consists of the interferents (Al, Ca, Fe, and Mg), and Solution AB consists of the analytes mixed with the interferents.

When the estimated concentration produced by the interfering element is greater than twice the CRDL and also greater than 10% of the reported concentration of the affected element, the results of the affected elements are estimated.

C. The following results are estimated because of matrix spike recovery results outside method QC limits and flagged "J" in Table 1A.

- Antimony, arsenic, chromium, copper, mercury, silver, and thallium in all samples

The matrix spike recovery results for the above listed analytes in QC sample MY05Y8S did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MY05Y8S % Recovery	MY05Y8S % Bias
Antimony	45	-55
Arsenic	-50	-150
Chromium	141	+41
Copper	156	+56
Mercury	69	-31
Silver	74	-26
Thallium	58	-42

Results above the MDL are considered quantitatively uncertain. The results reported for antimony, arsenic, mercury, silver, and thallium in all of the samples may be biased low and, where nondetected, false negatives may exist. The results reported for chromium and copper in all of the samples may be biased high and false positives may exist.

According to the Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except mercury and silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. The following post-digestion spike recovery results were obtained.

Analyte	MY05Y8A Post-Digestion Spike % Recovery
Antimony	98
Arsenic	106
Chromium	104
Copper	104
Thallium	45

Since the post-digestion spike recoveries were acceptable, except for thallium, the pre-digestion spike recovery results obtained for the analytes listed above may indicate sample nonhomogeneity, poor laboratory technique or matrix effects which may interfere with accurate analysis, enhancing the analytical results for chromium and copper and depressing the analytical results for antimony and arsenic. Since both the post- and pre-digestion spikes for thallium did not meet the QC criteria, matrix effects may be present in the sample digestate which may depress the analyte signal during analysis.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

D. The following results are estimated because of laboratory duplicate results outside method QC limits and flagged "J" in Table 1A.

- Arsenic, chromium, copper, and lead in all samples

Laboratory duplicate results did not meet the±35 relative percent difference (RPD) criteria for precision as listed below.

Analyte	MY05Y8D Lab. Dup. RPD
Arsenic	69
Chromium	36
Copper	46
Lead	72

The results reported for the above listed analytes in all samples are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to sample nonhomogeneity or poor laboratory technique.

E. The following results are estimated because of ICP serial dilution results outside method QC limits and flagged "J" in Table 1A.

- Calcium in all samples

The percent difference of the ICP serial dilution analysis of sample MY05Y8L did not meet the 10% criterion for the analytes shown below.

Analyte	MY05Y8L % Difference
Calcium	19

The results reported for calcium in all samples are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The result for the diluted sample was higher than the original. Therefore, the results may be biased low.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

ANALYTICAL RESULTS
Table 1A

Case No. : 29448 SDG No. : MY05Y8
Site : KAKA'AKO BROWNFIELDS
Lab : SENTINEL, INC. (SENTIN)
Reviewer : Stan Kott, ESAT/ICF-LDC
Date : October 17, 2001

Analysis Type : Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location :	SS33			SA14			SS13			SS21			SA08			SB08			SS06		
Sample ID :	MY05Y8			MY05Z6			MY05Z7			MY05Z8			MY0609			MY0610			MY0611		
Collection Date :	06/27/2001			06/27/2001			06/27/2001			06/27/2001			06/28/2001			06/28/2001			06/28/2001		
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	16700			20800			2410			6260			4090			501			16500		
ANTIMONY	3.5L	J	AC	3.7L	J	AC	0.68L	J	AC	1.1L	J	AC	0.98L	J	AC	0.59U	J	C	11.1L	J	AC
ARSENIC	20.3	J	CD	5.9	J	CD	5.0	J	CD	5.5	J	CD	6.2	J	CD	6.7	J	CD	14.3	J	CD
BARIUM	171			290			14.9L	J	A	49.1			55.5			6.1L	J	A	1690		
BERYLLIUM	0.070U			0.070U			0.070U			0.070U			0.070U			0.070U			0.070U		
CADMIUM	0.21L	J	AB	2.0			0.14U			0.14U			0.13U			0.14U			6.1		
CALCIUM	125000	J	E	151000	J	E	331000	J	E	305000	J	E	260000	J	E	347000	J	E	149000	J	E
CHROMIUM	73.9	J	CD	67.8	J	CD	12.6	J	CD	21.7	J	CD	12.3	J	CD	2.8	J	CD	47.9	J	CD
COBALT	24.4			28.4			0.23U			8.3L	J	A	3.4L	J	A	0.24U			23.0		
COPPER	151	J	CD	113	J	CD	7.7	J	CD	25.9	J	CD	53.1	J	CD	1.4L	J	ACD	19000	J	CD
IRON	55000			38300			3840			10900			8190			1850			42400		
LEAD	228	J	D	1190	J	D	20.9	J	D	73.8	J	D	62.4	J	D	1.2	J	D	2540	J	D
MAGNESIUM	14400			17100			23200			18600			14900			17100			22500		
MANGANESE	620			707			106			215			145			50.3			1100		
MERCURY	0.060U	J	C	0.10L	J	AC	0.060U	J	C	0.060U	J	C	0.060L	J	AC	0.060U	J	C	0.10L	J	AC
NICKEL	93.9			105			8.5L	J	A	25.1			18.3			4.0L	J	A	333		
POTASSIUM	760L	J	A	1850			200L	J	A	338L	J	A	734L	J	A	138L	J	A	4620		
SELENIUM	0.47U	J	B	0.48U			0.46U			0.46U			0.43U			0.47U			0.47U		
SILVER	0.12U	J	C	0.12U	J	C	0.11U	J	C	0.12U	J	C	0.11U	J	C	0.12U	J	C	0.12U	J	C
SODIUM	1880			3920			2490			2490			3490			3590			11800		
THALLIUM	0.80U	J	C	0.82U	J	C	0.78U	J	C	0.79U	J	C	0.73U	J	C	0.80U	J	C	0.79U	J	C
VANADIUM	57.4			70.2			11.9			26.8			18.5			5.4L	J	A	48.5		
ZINC	352			591			23.5			130			104			4.7L	J	A	12100		
Percent Solids	85.4			83.1			87.2			86.3			91.9			84.9			85.7		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

ANALYTICAL RESULTS
Table 1A

Case No.: 29448 SDG No.: MY05Y8
Site: KAKA'AKO BROWNSFIELDS
Lab: SENTINEL, INC.
Reviewer: Stan Kott, ESAT/ICF-LDC
Date: October 17, 2001

Analysis Type: Low Concentration Soil Samples For Total Metals

Concentration in mg/Kg

Station Location:	SA06			SB06			SB41			SB42			Lab Blank			MDL			CRDL		
Sample ID:	MY0612			MY0613			MY0615			MY0616			PBS								
Collection Date:	06/28/2001			06/28/2001			06/28/2001			06/28/2001											
PARAMETER	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
ALUMINUM	7700			1390			9630			16700			13.6U			13.6			40		
ANTIMONY	6.5L	J	AC	0.62U	J	C	2020	J	C	15.1	J	C	0.50U			0.50			12.0		
ARSENIC	7.3	J	CD	2.6	J	CD	35.8	J	CD	33.3	J	CD	0.52U			0.52			2.0		
BARIUM	394			9.8L	J	A	391			698			0.14U			0.14			40		
BERYLLIUM	0.070U			0.070U			0.070U			0.070U			0.060U			0.06			1.0		
CADMIUM	0.36L	J	A	0.15U			0.14U	J	B	0.14U	J	B	0.12U			0.12			1.0		
CALCIUM	202000	J	E	338000	J	E	32700	J	E	128000	J	E	8.1L	J	A	5.1			1000		
CHROMIUM	30.0	J	CD	20.1	J	CD	56.7	J	CD	76.5	J	CD	0.12U			0.12			2.0		
COBALT	8.4L	J	A	0.25U			20.6			23.8			0.20U			0.20			10.0		
COPPER	139	J	CD	2.7L	J	ACD	4950	J	CD	720	J	CD	0.20U			0.20			5.0		
IRON	17800			1400			157000			99800			2.9U			2.9			20		
LEAD	820	J	D	1.3	J	D	21000	J	D	1440	J	D	0.56U			0.56			0.60		
MAGNESIUM	21700			29000			5820			13400			5.4U			5.4			1000		
MANGANESE	513			39.1			710			833			0.060U			0.06			3.0		
MERCURY	0.060U	J	C	0.060U	J	C	0.33	J	C	0.060U	J	C	0.050U			0.05			0.10		
NICKEL	68.2			4.1L	J	A	210			426			0.22U			0.22			8.0		
POTASSIUM	1660			219L	J	A	1980			2500			2.3U			2.3			1000		
SELENIUM	0.47U			0.49U			0.59L	J	AB	0.47U	J	B	0.40U			0.40			1.0		
SILVER	0.12U	J	C	0.12U	J	C	1.4L	J	ABC	5.1	J	C	0.10U			0.10			2.0		
SODIUM	4420			3070			5580			5720			94.9U			94.9			1000		
THALLIUM	0.80U	J	C	0.84U	J	C	2.0L	J	ABC	0.81U	J	C	0.68U			0.68			2.0		
VANADIUM	26.6			3.3L	J	A	25.6			33.2			0.20U			0.20			10.0		
ZINC	795			6.1			3610			2850			0.15L	J	A	0.12			4.0		
Percent Solids	84.6			81.3			83.8			84.4			N/A			N/A			N/A		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL - Method Detection Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample
CRDL - Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

In Reference to
Case 29448 SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Contract Laboratory program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: _____

Laboratory Name: Sentinel, Inc. (SENTIN)

Lab Contact: Melvin Kilgore

Region: 9

Regional Contact: Steve Remaley, CLP PO

ESAT Reviewer: Stan Kott, ESAT/LDC

Call Initiated By: ___ Laboratory __X__ Region

In reference to data for the following sample(s):
SDG No.: MY05P8, MY05R8, MY05T8, MY05X0, MY05Y2, and MY05Y8

Summary of Questions/issues Discussed:

The following item was noted during the review of this sample delivery group (SDG). Please respond within 7 days as specified in Exhibit A, Section II, E. of the ILM04.0 Statement of Work (SOW). Send response and resubmissions to ICF Consulting, Inc./Laboratory Data Consultants, Inc., Environmental Services Assistance Team, Region 9, 1337 S. 46th Street, Building 201, Richmond, CA 94804, FAX 510 412-2304.

1. The cover pages for both ICP and CVAA analyses provide only reference numbers for the standard solutions used. However, Region 9 requests the following information for all standards (calibration and QC) used: expiration date of standard, preparation date, lot number, and standard sources. Please provide one copy of the above listed data for both ICP and CVAA.

Summary of Resolution: To be determined.

_____ _____
Regional Contact Signature Date of Resolution

Accounting - Kakaako Unit 1

ASO Log # 98-418

Ogden's Project # 3-1962-0005

Initials	Date
Prepared By	
Approved By	

COPY

Date	Invoice Date	Amt.	Note(s)	Curr. Balance	
1/3/00				99,966.00	
3/1/00	2/15/00	15326.87	Invoice # 01214	84639.13	85%
3/20/00	3/14/00	8420.45	Invoice # 012255 OK'd 3/29 by CL, CM	76218.68	76%
6/15/00	6/13/00	4005.83	Invoice # 012672	72212.85	72%
3/31/00 (approx)	3/31/00	907.59	Invoice # 012486	71305	— Stan to request transfer of funds from VRF grant to ERRF - final clearing
7/18/00	6/30/00	590.74	Invoice # 012962	70714.52	71%
	12/12/00	348	013771 13819	62931	

4806 (84806) — Buff
8806 (88806) — Green

CM ___
PC ___
BH ___

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

PAGE:

INVOICE NO. : 013819
INVOICE DATE: 12/12/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

FOR SERVICES PERFORMED THROUGH 11/17/00.

CURRENT PROJECT CHARGES	$	334.83
STATE OF HAWAII EXCISE TAX (PRIME)	$	13.95
TOTAL DUE THIS INVOICE	$	348.78

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT............$	99,966.00
TOTAL INVOICED THRU 11/17/00.....$	37,034.75
CONTRACT AMOUNT REMAINING........$	62,931.25

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By: ___
Date Goods/Svs. Rec'd NOV 17 2000
Date Invoice Rec'd. DEC 15 2000

Remittance Address:
Ogden EESC
P.O. Box [illegible]
[illegible]

Wire Transfers:
Ogden EESC
Account Number: 1290910[illegible]
NationsBank ABA Number: [illegible]

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013819
INVOICE DATE: 12/12/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING INSIDE HAWAQII

EXPENSES

		Cost/Qty	Rate	Amount
PHONE				
SPRINT				
748OCT	10/15/00	.12		
	***	.12	1.2000	.14
		** Total		.14
				.14

FIELD INVESTIGATION INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
FIELD TECHNICIAN				
KOTOSHIRODO, JAN H	11/16/00	1.00		
	***	1.00	50.00	50.00
		1.00		50.00

EXPENSES

	Cost/Qty	Rate	Amount
MATERIALS & SUPPLIES			

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

Wire Transfers:
Ogden EESC
Account Number: 1290918696
NationsBank ABA Number: 111000012

ORIGINAL

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

PAGE

INVOICE NO. : 013819
INVOICE DATE: 12/12/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

FIELD INVESTIGATION INSIDE HAWAII (Con't)

		Cost/Qty	Rate	Amount
MATERIALS & SUPPLIES				
TEG - TRANSGLOBAL ENVIRONMENTAL				
R01012	10/12/00	237.24		
	***	237.24	1.2000	284.69
		** Total		284.69
				284.69
		** Total Project 3-1962-0005		334.83

Remittance Address:
Ogden EESC
P.O. Box 840467
Dallas, TX 75284-0467

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290916696
NationsBank ABA Number: 111000012

From: **Self <EHANVL1/DCOSGROVE>**
To: **cmorita**
Subject: **Ogden's budget**
Copies to: **bhataoka**
Date sent: **Mon, 20 Nov 2000 11:39:51 -1000**

Hi, Clyde-

As you recall, Ogden submitted a letter a couple of months ago outlining costs incurred that were not anticipated in their proposal (e.g. Encore samplers, jars/bottles). Based on Ogden's November 2000 invoice, there could be an overrun of over $12,000. I calculated this estimate based on the assumption that Tasks 1 and 2 (project planning & planning docs) are complete and that Tasks 3 through 6 (field investigation through reporting) have not been conducted yet. Note that $3000 of that projected overrun is for purchase of Encore samplers and bottles/jars.

Just a heads up. Eric indicated earlier that they are overbudget on the earlier tasks (in part at least because of the unanticipated expenses such as Encore samplers) and that they hope that underruns in subsequent tasks will make up for overruns on earlier tasks. I do not know what the contract allows regarding overruns, if the project ends up going overbudget; we can deal with that if the time comes, but be aware that the possibility exists. If there is anything we should be making sure that Ogden knows about in the event that the project goes over budget, we should inform them now instead of waiting to see if it happens. Its good if everyone knows the rules up front.

- Dawn

From: **"Wetzstein, Eric, E." <eewetzstein@oees.com>**
To: **'Dawn Cosgrove - HEER' <dcosgrove@eha.health.state.hi.us>**
Subject: **RE: invoices, Kakaako Unit 8**
Date sent: **Mon, 20 Nov 2000 10:08:13 -1000**

Hi Dawn,

En Novative Technologies supplies the Encore VOC samplers because the VOC method was changed during review of the SAP. TEG supplied the necessary bottles and sample containers since we have learned the EPA will not be providing them. Portions of these cost are detailed in that "out of scope cost memo" I sent you.

Eric

-----Original Message-----
From: Dawn Cosgrove - HEER [SMTP:dcosgrove@eha.health.state.hi.us]
Sent: Monday, November 20, 2000 8:56 AM
To: eewetzstein@oees.com
Subject: invoices, Kakaako Unit 8

Hi, Eric -
A couple of questions on Ogden's invoices for Kakaako Unit 8:

- 10/13/00 invoice (invoice no. 013469): What is the "materials and supplies" to En Novative Technologies, Inc. on 9/7/00 for $2023.22?
- 11/14/00 invoice (invoice no. 013777): What is "materials and supplies" to TEG on 9/29/00 for $976.25?

- - - Dawn
Dawn Cosgrove
Hawaii Department of Health - HEER
Voluntary Response Program
Remedial Project Manager

CBM
DC DMC 11/20/00

Initial + return to Stan for payment

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
FAX 858 458 0943

PAGE

INVOICE NO. : 013777
INVOICE DATE: 11/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

FOR SERVICES PERFORMED THROUGH 10/27/00.

CURRENT PROJECT CHARGES	$	1,715.17
STATE OF HAWAII EXCISE TAX (PRIME)	$	71.46
TOTAL DUE THIS INVOICE	$	1,786.63

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 10/27/00.....	$	36,685.97
CONTRACT AMOUNT REMAINING.....	$	63,280.03

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By:_____
Date Goods/Svs. Rec'd_____
Date Invoice Rec'd. 11-17-00

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013777
INVOICE DATE: 11/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING INSIDE HAWAQII

EXPENSES

		Cost/Qty	Rate	Amount
PHONE				
SPRINT				
748SEP	09/16/00	5.74		
	***	5.74	1.2000	6.89
		** Total		6.89
				6.89

PROJECT DOCUMENTS INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
FIELD TECHNICIAN				
KOTOSHIRODO, JAN H	10/17/00	.50		
	***	.50	50.00	25.00
		.50		25.00

FIELD INVESTIGATION INSIDE HAWAII

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

PAGE 1

INVOICE NO. : 013777
INVOICE DATE: 11/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

FIELD INVESTIGATION INSIDE HAWAII (Con't)

PROFESSIONAL SERVICES

		Hours	RATE		Amount
TECHNICIAN CATEGORY 32					
YAMASATO, REID K	10/05/00	1.00			
	***	1.00	8.5000	8.50	27.03
		1.00		8.50	27.03

EXPENSES

		Cost/Qty		Rate	Amount
MATERIALS & SUPPLIES					
TEG - TRANSGLOBAL ENVIRONMENTAL					
R00929	09/29/00	813.54			
	***	813.54		1.2000	976.25
			** Total		976.25

PROJECT DOCUMENTS - OUTSIDE HI

PROFESSIONAL SERVICES

		Hours	RATE	Amount
STAFF TOXICOLOGIST				
VALENZIA, JENNIFER R	08/03/00	4.00		

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013777
INVOICE DATE: 11/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT DOCUMENTS - OUTSIDE HI (Con't)

PROFESSIONAL SERVICES

		Hours	RATE	Amount
STAFF TOXICOLOGIST				
VALENZIA, JENNIFER R 08/04/00		4.00		
	***	8.00	85.00	680.00
		8.00		680.00
** Total Project 3-1962-0005				1,715.17

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

Initial for Payment → Sta

COPY

AH —
CSM —
DC plc
11/20/00

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013469
INVOICE DATE: 10/13/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814-4912

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8 98-418

FOR SERVICES PERFORMED THROUGH 09/29/00.

CURRENT PROJECT CHARGES	$	2,992.62
STATE OF HAWAII EXCISE TAX (PRIME)	$	124.70
TOTAL DUE THIS INVOICE	$	3,117.32

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 09/29/00.....	$	34,899.34
CONTRACT AMOUNT REMAINING.....	$	65,066.66

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By: [signature]
Date Goods/Svs. Rec'd 9-29-00
Date Invoice Rec'd. 10-19-00

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013469
INVOICE DATE: 10/13/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING INSIDE HAWAQII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
CONTRACTS ADMINISTRATOR				
RUSSELL, DENISE K	09/29/00	.50		
	***	.50	60.00	30.00
		.50		30.00

EXPENSES

		Cost/Qty	Rate	Amount
REPRODUCTION/GRAPHICS				
PHOTOCOPY LOG - HAWAII				
09XER2	09/08/00	333.52		
	***	333.52	1.2000	400.22
		** Total		400.22
				400.22

PROJECT DOCUMENTS INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
FIELD TECHNICIAN				
KOTOSHIRODO, JAN H	08/30/00	1.00		

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013469
INVOICE DATE: 10/13/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT DOCUMENTS INSIDE HAWAII (Con't)

PROFESSIONAL SERVICES

		Hours	RATE	Amount
FIELD TECHNICIAN				
KOTOSHIRODO, JAN H	08/31/00	.50		
KOTOSHIRODO, JAN H	09/06/00	.50		
KOTOSHIRODO, JAN H	09/07/00	.50		
KOTOSHIRODO, JAN H	09/08/00	1.00		
KOTOSHIRODO, JAN H	09/11/00	3.50		
KOTOSHIRODO, JAN H	09/14/00	2.50		
KOTOSHIRODO, JAN H	09/15/00	.50		
	***	10.00	50.00	500.00
		10.00		500.00

EXPENSES

		Cost/Qty	Rate	Amount
POSTAGE/DELIVERY				
DHL WORLDWIDE EXPRESS				
674199	09/02/00	32.32		
	***	32.32	1.2000	38.78
POSTAGE LOG - HAWAII				
SEP00	09/08/00	.33		
	***	.33	1.2000	.40
		** Total		39.18

Remittance Address:
Ogden EESC
P.O. Box 840427
Dallas, TX 75284-0427

ORIGINAL

Wire Transfers:
Ogden EESC
Account Number: 1290918896
NationsBank ABA Number: 111000012

39.18

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013469
INVOICE DATE: 10/13/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

FIELD INVESTIGATION INSIDE HAWAII

EXPENSES		Cost/Qty	Rate	Amount
MATERIALS & SUPPLIES				
EN NOVATIVE TECHNOLOGIES, INC				
07019	09/07/00	1,686.02		
	***	1,686.02	1.2000	2,023.22
	** Total			2,023.22
				2,023.22
	** Total Project	3-1962-0005		2,992.62

CBM
DC Rec 11/20/02
Initial + return to
Stan for Payment

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013245
INVOICE DATE: 08/15/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

FOR SERVICES PERFORMED THROUGH 07/28/00.

CURRENT PROJECT CHARGES	$	983.72
STATE OF HAWAII EXCISE TAX (PRIME)	$	30.99
TOTAL DUE THIS INVOICE	$	1,014.71

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 07/28/00.....	$	30,266.19
CONTRACT AMOUNT REMAINING.....	$	69,699.81

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By:_____
Date Goods/Svs. Rec'd_____
Date Invoice Rec'd. 8-21-00

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013245
INVOICE DATE: 08/15/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING INSIDE HAWAQII

EXPENSES

		Cost/Qty	Rate	Amount
PHONE				
SPRINT				
748JUN	06/16/00	3.10		
	***	3.10	1.2000	3.72
		** Total		3.72
				3.72

PROJECT DOCUMENTS INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	Rate	Amount
FIELD TECHNICIAN				
KOTOSHIRODO, JAN H	07/10/00	2.00		
KOTOSHIRODO, JAN H	07/13/00	2.50		
KOTOSHIRODO, JAN H	07/14/00	1.00		
KOTOSHIRODO, JAN H	07/20/00	2.50		
KOTOSHIRODO, JAN H	07/21/00	2.50		
KOTOSHIRODO, JAN H	07/24/00	3.00		
KOTOSHIRODO, JAN H	07/26/00	1.00		
	***	14.50	50.00	725.00
		14.50		725.00

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 013245
INVOICE DATE: 08/15/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

REPORTING HAWAII

PROFESSIONAL SERVICES

		Hours	Rate	Amount
CONTRACTS ADMINISTRATOR				
RUSSELL, DENISE K	07/25/00	.25		
	***	.25	60.00	15.00
		.25		15.00

PURCHASING OUTSIDE HI

PROFESSIONAL SERVICES

		Hours	Rate	Amount
CONTRACTS ADMINISTRATOR				
CRIDER, LISA J	06/12/00	4.00		
	***	4.00	60.00	240.00
		4.00		240.00
	** Total Project 3-1962-0005			983.72

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

CM
BH

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012962
INVOICE DATE: 06/30/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

ASO LOG NO 98418

FOR SERVICES PERFORMED THROUGH 06/30/00.

CURRENT PROJECT CHARGES	$	578.38
STATE OF HAWAII EXCISE TAX (PRIME)	$	12.36
TOTAL DUE THIS INVOICE	$	590.74

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 06/30/00.....	$	29,251.48
CONTRACT AMOUNT REMAINING.....	$	70,714.52

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012962
INVOICE DATE: 06/30/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING INSIDE HAWAQII

EXPENSES

			Cost/Qty	Rate	Amount
PHONE					
SPRINT					
	748MAY	05/16/00	6.05		
		***	6.05	1.2000	7.26
			** Total		7.26
REPRODUCTION/GRAPHICS					
PHOTOCOPY LOG - HAWAII					
	06XER2	06/05/00	352.80		
	06XER5	06/05/00	7.52		
		***	360.32	1.2000	432.38
			** Total		432.38
					439.64

PROJECT PLANNING OUTSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
PROJECT MGR. - GEOLOGY/HYDROGEOLOGY				
WETZSTEIN, ERIC E	06/13/00	.50		

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 8943

INVOICE NO. : 012962
INVOICE DATE: 06/30/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING OUTSIDE HAWAII (Con't)

PROFESSIONAL SERVICES

		Hours	RATE	Amount
PROJECT MGR. - GEOLOGY/HYDROGEOLOGY				
WETZSTEIN, ERIC E	06/13/00	.50		
WETZSTEIN, ERIC E	06/16/00	.50-		
	***	.50	110.00	55.00
		.50		55.00

PROJECT DOCUMENTS INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
GEOLOGIST				
DOMINGO, CHERILYN M	05/12/00	1.50		
	***	1.50	50.00	75.00
		1.50		75.00

EXPENSES

		Cost/Qty	Rate	Amount
POSTAGE/DELIVERY				
UNITED COURIER SERVICES, INC.				
012877	05/07/00	7.28		
	***	7.28	1.2000	8.74
		** Total		8.74

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012962
INVOICE DATE: 06/30/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT DOCUMENTS INSIDE HAWAII (CON'T)

	Cost/Qty	Rate	Amount
POSTAGE/DELIVERY			8.74
** Total Project 3-1962-0005			578.38

4th Kakaako Unit 8 Invoice

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

COPY

INVOICE NO. : 012672
INVOICE DATE: 06/13/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

FOR SERVICES PERFORMED THROUGH 05/26/00.

CURRENT PROJECT CHARGES	$	3,850.00
STATE OF HAWAII EXCISE TAX (PRIME)	$	155.83
TOTAL DUE THIS INVOICE	$	4,005.83

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 05/26/00.....	$	28,660.74
CONTRACT AMOUNT REMAINING.....	$	71,305.26

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By: [signature] MAY 26 2000
Date Goods/Svs. Rec'd
Date Invoice Rec'd. JUN 15 2000

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012672
INVOICE DATE: 06/13/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT DOCUMENTS INSIDE HAWAII (CON'T)

PROFESSIONAL SERVICES

		Hours	RATE	Amount
ADMINISTRATIVE CLERK				
YANAGI, GREG M	05/19/00	.50		
	***	.50	30.00	15.00
		75.00		3,740.00
	** Total Project 3-1962-0005			3,850.00

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

STATE OF HAWAII
REQUISITION & PURCHASE ORDER
DEPARTMENT OF HEALTH

HTH 849

PURCHASE ORDER NO. 00610648

Date 08 25 99

Deliver Before

Hazard Evaluation and Emergency Response Office

ORGANIZATION — FUNCTION AND ACTIVITY

NOTICE TO VENDORS

Conditions of purchase are listed on the back side of this purchase order. Please read carefully. Payments may be delayed if all steps are not followed.

DELIVERY ADDRESS

3rd Kakaako Unit 8
Invoice

OGDEN ENVIRONMENTAL AND ENERGY SERVICES CO., INC.
680 Iwilei Road, Suite 660
Honolulu, HI 96817

COPY

BILLING ADDRESS

919 Ala Moana Blvd., Room 206
Honolulu, HI 96814

The State of Hawaii is an EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION employer. We encourage the participation of women and minorities in all phases of employment.

QUAN.	UNIT	DESCRIPTION	OBJECT	UNIT PRICE	AMOUNT
		To provide non-emergency environmental response actions during incidents where a release of known and unknown hazardous substances presents a threat to the public health and/or the environments, for the period July 1, 1999 to June 30, 2000.	7190		101,000.00
		# 98-418-m1 Posted 11/23/99			+ 220,000
					321,000
		ASO LOG NO. 98-418-m1			

RECEIVED ADMIN SVS '99 AUG 31 A8:15 DEPT. OF HEALTH HONOLULU HAWAII

cm

REQUISITIONER — TELEPHONE

VOUCHER NUMBER

AUTHENTICATED BY: Lynn E. Okamura

AUTHORIZED SIGNATURE

GOODS/SERVICES RECEIVED IN GOOD ORDER AND CONDITION BY [signature] DATE 4-24-00

REQUISITION NO. ER CR 99-018

FOR DEPARTMENT USE ONLY

Inv. 012486 — $ 907.59

VENDOR NUMBER	SFX
XXXXXXXXXX	XX
233141	~~01~~ 02

SFX	TC	F	YR	APP	D	OBJECT	CC	PROJ NO.	PH	ACT	ESTIMATED COST		ACTUAL COST		DATA
XX	XXX	X	XX	XXX	XX	XXXX	XXXX	XXXXXX	XX	XXX	XXXXXXXXXXX	XX	XXXXXXXXXXX	XX	XXXX
01	621	S	00	236	H	7190		000249	99	371	3,000	00	-0-		
02	621	S	00	342	H	7190		000322	00	371	43,000	00	4,640.	34	
03	621	S	00	342	H	7190		000323	00	371	55,000	00	-0-		
04		S	00	323	H	7190		000000	00	371	220,000	00	-0-		

Only $907.59 ← was billed to Unit #8

COPY #2 - ENCUMBRANCE COPY

STATE ACCOUNTING FORM C-03
JULY 1, 1983 (REVISED)

BH BH

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

PAGE: 1

INVOICE NO. : 012486
INVOICE DATE: 04/03/00
CONTRACT NO.: ASO LOG # 98 4/8
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

FOR SERVICES PERFORMED THROUGH 03/31/00.

CURRENT PROJECT CHARGES	$	871.29
STATE OF HAWAII EXCISE TAX (PRIME)	$	36.30
TOTAL DUE THIS INVOICE	$	907.59

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 03/31/00.....	$	24,654.91
CONTRACT AMOUNT REMAINING.....	$	75,311.09

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By:_____
Date Goods/Svs. Rec'd_____
Date Invoice Rec'd. 4-24-00

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012486
INVOICE DATE: 04/03/00
CONTRACT NO.: ASO LOG # 9848
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING OUTSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	Rate	Amount
PROJECT MGR. - GEOLOGY/HYDROGEOLOGY				
WETZSTEIN, ERIC E	03/17/00	2.00		
WETZSTEIN, ERIC E	03/24/00	3.50		
	***	5.50	110.00	605.00
SR. CERTIFIED INDUSTRICAL HYGIENIST				
DAGGETT, DENISE L	03/24/00	1.50		
	***	1.50	130.00	195.00
		7.00		800.00
	** Total Project 3-1962-0005			871.29

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

STATE OF HAWAII
REQUISITION & PURCHASE ORDER
DEPARTMENT OF HEALTH HTH 849

Hazard Evaluation and Emergency Response Office
ORGANIZATION — FUNCTION AND ACTIVITY

PURCHASE ORDER NO. 00610648

Date 08 25 99

Deliver Before

DELIVERY ADDRESS

2nd Kakaako Unit 8
Invoice

NOTICE TO VENDORS

Conditions of purchase are listed on the back side of this purchase order. Please read carefully. Payments may be delayed if all steps are not followed.

OGDEN ENVIRONMENTAL AND ENERGY SERVICES CO., INC.
680 Iwilei Road, Suite 660
Honolulu, HI 96817

BILLING ADDRESS

919 Ala Moana Blvd., Room 206
Honolulu, HI 96814

COPY

The State of Hawaii is an EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION employer. We encourage the participation of women and minorities in all phases of employment.

QUAN.	UNIT	DESCRIPTION	OBJECT	UNIT PRICE	AMOUNT
		To provide non-emergency environmental response actions during incidents where a release of known and unknown hazardous substances presents a threat to the public health and/or the environment, for the period July 1, 1999 to June 30, 2000.	7190		101,000.0
		# 98-418-m(Posted 11/23/99			+ 220,000 321,000
		ASO LOG NO. 98-418 - m1			

DEPT OF HEALTH
HONOLULU, HAWAII
'99 AUG 31 A8:15
RECEIVED
ADMIN SVS II

cm
REQUISITIONER — TELEPHONE

3-30-00
GOODS/SERVICES RECEIVED IN GOOD ORDER AND CONDITION BY — DATE

VOUCHER NUMBER

AUTHENTICATED BY: Lynn E. Okamura
AUTHORIZED SIGNATURE

REQUISITION NO.: ER CR 99-018

VENDOR NUMBER: XXXXXXXXXX SFX: XX
233141 SFX: 02 01

FOR DEPARTMENT USE ONLY

SFX	TC	F	YR	APP	D	OBJECT	CC	PROJ NO.	PH	ACT	ESTIMATED COST		ACTUAL COST		M	R	OPT DEPT DATA
XX	XXX	X	XX	XXX	XX	XXXX	XXXX	XXXXXX	XX	XXX	XXXXXXXXXX	XX	XXXXXXXXXX	XX	X	X	XXXXXXXXXX
01	621	S	00	236	H	7190		000249	99	371	3,000	00					
02	621	S	00	342	H	7190		000322	00	371	43,000	00	8420.	45			
03	621	S	00	342	H	7190		000323	00	371	55,000	00					
24		S	DD	323	H	7190		000000	00	371	220,000	00					

COPY #2 - ENCUMBRANCE COPY

STATE ACCOUNTING FORM C-03
JULY 1, 1983 (REVISED)

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012255
INVOICE DATE: 03/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

Payment Approved:
Goods/Svs. Satisfactorily Received:
By: _____
Date Goods/Svs. Rec'd 2-25-00
Date Invoice Rec'd. MAR 20 2000

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

ASO LOG NO 98418

FOR SERVICES PERFORMED THROUGH 02/25/00.

CURRENT PROJECT CHARGES	$	8,115.23
STATE OF HAWAII EXCISE TAX (PRIME)	$	305.22
TOTAL DUE THIS INVOICE	$	8,420.45

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 02/25/00.....	$	23,747.32
CONTRACT AMOUNT REMAINING.....	$	76,218.68

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012255
INVOICE DATE: 03/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT PLANNING OUTSIDE HAWAII (Con't)

PROFESSIONAL SERVICES

		Hours	RATE	Amount
ECOLOGICAL RISK				
SCATOLINI, SUSAN R	02/04/00	1.00		
	***	1.00	75.00	75.00
PROJECT MGR. - GEOLOGY/HYDROGEOLOGY				
WETZSTEIN, ERIC E	02/04/00	2.50		
WETZSTEIN, ERIC E	02/04/00	.50		
	***	3.00	110.00	330.00
SCHOTTLE, ROLF G	02/04/00	3.50		
	***	3.50	110.00	385.00
		7.50		790.00

PROJECT DOCUMENTS INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
WORD PROCESSING				
MONTGOMERY, WILLIAM	02/04/00	9.50		
	***	9.50	45.00	427.50
FIELD TECHNICIAN				
TOMA, STEFFANY M	02/04/00	25.00		
	***	25.00	50.00	1,250.00
KOTOSHIRODO, JAN H	02/04/00	14.00		
	***	14.00	50.00	700.00

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012255
INVOICE DATE: 03/14/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

DATA EVALUATION/ANALYSIS IN HAWAII (Con't)

PROFESSIONAL SERVICES

		Hours	RATE	Amount
CADD / DRAFTING				
RUBIN, DAVID N	02/04/00	5.25		
	***	5.25	50.00	262.50
		5.25		262.50
	** Total Project 3-1962-0005			8,115.23

Remittance Address:
Ogden EESC
PO Box 84027
Dallas, TX 85284-0427

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

STATE OF HAWAII
REQUISITION & PURCHASE ORDER
DEPARTMENT OF HEALTH

HTH 849

azard Evaluation and Emergency Response Office

ORGANIZATION — FUNCTION AND ACTIVITY

PURCHASE ORDER NO. 00610648

Date 08 25 99

Deliver Before

DELIVERY ADDRESS

1st Kakaako Unit F
Invoice

NOTICE TO VENDORS

Conditions of purchase are listed on the back side of this purchase order. Please read carefully. Payments may be delayed if all steps are not followed.

OGDEN ENVIRONMENTAL AND ENERGY SERVICES CO., INC.
680 Iwilei Road, Suite 660
Honolulu, HI 96817

COPY

BILLING ADDRESS

919 Ala Moana Blvd., Room 206
Honolulu, HI 96814

The State of Hawaii is an EQUAL EMPLOYMENT OPPORTUNITY and AFFIRMATIVE ACTION employer. We encourage the participation of women and minorities in all phases of employment.

QUAN.	UNIT	DESCRIPTION	OBJECT	UNIT PRICE	AMOUNT
		To provide non-emergency environmental response actions during incidents where a release of known and unknown hazardous substances presents a threat to the public health and/or the environments, for the period July 1, 1999 to June 30, 2000.	7190		101,000.00
		# 98-418-m1 Posted 11/23/99			+ 220,000 / 321,000
		ASO LOG NO. 98-418-m1			

RECEIVED ADMIN SVS O
'99 AUG 31 A8:15
DEPT. OF HEALTH HONOLULU, HAWAII

m

REQUISITIONER — TELEPHONE

GOODS/SERVICES RECEIVED IN GOOD ORDER AND CONDITION BY — DATE 3-16-00

VOUCHER NUMBER

AUTHENTICATED BY: Lynn E. Okamura

AUTHORIZED SIGNATURE

REQUISITION NO.: CR CR 99-018

FOR DEPARTMENT USE ONLY

VENDOR

NUMBER	SFX
XXXXXXXXX	XX
33141	~~01~~ 02

X	TC	F	YR	APP	D	OBJECT	CC	PROJ NO.	PH	ACT	ESTIMATED COST	XX	ACTUAL COST	XX	M	R	OPT DEPT DATA
X	XXX	X	XX	XXX	XX	XXXX	XXXX	XXXXXX	XX	XXX	XXXXXXXXXXX	XX	XXXXXXXXXXX	XX	X	X	XXXXXXXXXXX
1	621	S	00	236	H	7190		000249	99	371	3,000	00	-0-				
2	621	S	00	342	H	7190		000322	00	371	43,000	00	15,326.	87			
3	621	S	00	342	H	7190		000323	00	371	55,000	00	-0-				
4		S	00	323	H	7190		000000	00	371	220,000	00	-0-				
													-0-				

COPY #2 - ENCUMBRANCE COPY

STATE ACCOUNTING FORM C-03
JULY 1, 1983 (REVISED)

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012114
INVOICE DATE: 02/15/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE
919 ALA MOANA BLVD.
ROOM 206
HONOLULU, HI 96814

PROJECT TITLE: DOH KAKAAKO BROWNFIELD UNIT 8

ATTN: STAN DEUZ
ASO LOG #98-418

FOR SERVICES PERFORMED THROUGH 01/28/00.

CURRENT PROJECT CHARGES	$	14,755.00
STATE OF HAWAII EXCISE TAX (PRIME)	$	571.87
TOTAL DUE THIS INVOICE	$	15,326.87

CONTRACT STATUS:

TOTAL CONTRACT AMOUNT.....	$	99,966.00
TOTAL INVOICED THRU 01/28/00.....	$	15,326.87
CONTRACT AMOUNT REMAINING.....	$	84,639.13

1.5% INTEREST DUE ON BALANCES OVER 30 DAYS

Payment Approved:
Goods/Svs. Satisfactorily Received:
By: [signature]
Date Goods/Svs. Rec'd 1-28-00
Date Invoice Rec'd. 2-28-00

Remittance Address:
Ogden EESC
PO Box 84027

Wire Transfer:
Ogden EESC
Account Number 1290918896
NationsBank ABA #111000012

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

INVOICE NO. : 012114
INVOICE DATE: 02/15/00
CONTRACT NO.: ASO LOG # 98
PROJECT NO. : 3-1962-0005

HAWAII DEPARTMENT OF HEALTH
ATTN ACCOUNTS PAYABLE

S A L A R Y A N D E X P E N S E D E T A I L

PROJECT DOCUMENTS INSIDE HAWAII

PROFESSIONAL SERVICES

		Hours	RATE	Amount
WORD PROCESSING				
MONTGOMERY, WILLIAM	01/28/00	18.00		
	***	18.00	45.00	810.00
CADD / DRAFTING				
NAKAAHIKI, UILANI B	01/28/00	5.00		
	***	5.00	50.00	250.00
TOMA, STEFFANY M	01/21/00	14.00		
TOMA, STEFFANY M	01/28/00	30.00		
TOMA, STEFFANY M	01/28/00	3.00		
	***	47.00	50.00	2,350.00
KOTOSHIRODO, JAN H	01/14/00	14.50		
KOTOSHIRODO, JAN H	01/21/00	11.00		
KOTOSHIRODO, JAN H	01/28/00	26.50		
	***	52.00	50.00	2,600.00
DOMINGO, CHERILYN M	01/14/00	24.00		
DOMINGO, CHERILYN M	01/21/00	4.00		
DOMINGO, CHERILYN M	01/28/00	19.00		
	***	47.00	50.00	2,350.00
RUBIN, DAVID N	01/28/00	16.00		
	***	16.00	50.00	800.00
GEOLOGIST				
KAMAKA, MICHAEL H	01/14/00	6.00		
KAMAKA, MICHAEL H	01/28/00	28.50		
	***	34.50	70.00	2,415.00

Remittance Address:
Ogden EESC
PO Box 84027

Wire Transfer:
Ogden EESC
Account Number 1290918896

7/11/00 -
Per Nicolette - will follow up again with San Diego office. & said if not in w/i next couple of days they'll need to send new invoice.
[illegible]

545-2462 x118

COPY

The Health State

HAWAII STATE DEPARTMENT OF HEALTH

P. O. BOX 3378
HONOLULU, HAWAII 96801

STATE OF HAWAII
DEPARTMENT OF HEALTH

HAZARD EVALUATION
AND
EMERGENCY RESPONSE OFFICE

DATE: 6/15/00 **NO. OF PAGES:** 4

TO: Ogden Environmental (attn: Nicolette)

COMPANY: Ogden Environmental

TELEPHONE: — **FAX:** 528-5379

FROM: Clyde Morita - VRP & Brownfields Coordinator

TELEPHONE: (808) 586-4249 **FAX:** (808) 586-7537

COMMENTS:

attached is the 3rd Invoice which I have a copy of. The previous invoices were Invoice # 012114 (2/15/00) and # 012255 (3/14/00). After payment of the attached invoice, my records show balance of $72,212.85 versus $71,305.26 shown on your invoice - Please Check

OGDEN ENVIRONMENTAL AND ENERGY SERVICES, INC.
TASK ORDER AUTHORIZATION

NON-EMERGENCY ENVIRONMENTAL RESPONSE CONTRACT
ASO LOG NO: 98-418

Case Number:_____ Date: December 23, 1999
Site Name: Kakaako Brownfield – Unit 8
Address:_____
PROVIDE A QUOTATION for the following goods and/or services:

Perform site investigation and risk evaluation in accordance with EPA guidelines for Brownfields studies and DOH scope of work dated October 18, 1999.

QUOTATION REQUESTED BY: December 10, 1999 to the following:

Contact Person: Charlie Langer Phone/FAX No: 586-4251/586-7537

----------CONTRACTOR TO COMPLETE THE SECTION BELOW----------
Please submit a work plan, including costs, required to accomplish the task order:

Ogden will provide full services for the implementation of site investigation, risk evaluation and reporting in accordance with the attached proposal, revised December 23, 1999.

Costs are estimated to be $99,966.00 per the cost estimate included in the attached proposal. Actual costs will be invoiced per the rates contained in Ogden's contract with the DOH, not to exceed the estimated total cost.

Post-it™ Fax Note 7671	Date 1/27	# of pages ▶ 10
To Arnold Lim	From Charley Langer	
Co./Dept.	Co.	
Phone #	Phone # 586-4249	
Fax # 7-2504	Fax #	

----------SIGNATURES IN AGREEMENT----------

STATE:
By: Keith E. Kawaoka
Print Name: Keith E. Kawaoka, D.Env.
Title: Manager
Date: January 3, 2000

CONTRACTOR:
By: Stephen D. Clarke
Print Name: for Douglas Hazelwood
Title: General Manager, Honolulu Office
Date: December 23, 1999

PROPOSAL TO PERFORM A SITE CHARACTERIZATION STUDY FOR THE KAKA'AKO BROWNFIELD UNIT 8 SITE, HONOLULU, OAHU, HAWAII

1. BACKGROUND

The Department of Health (DOH) plans to conduct a site characterization study at the Kaka'ako Brownfield Unit 8 Site. The 2-acre project site is the former GRG Enterprises site at 115 Ahui Street, Honolulu, Hawaii. The Hawaii Community Development Authority (HCDA) is the property owner and the State of Hawaii, Department of Transportation-Harbors Division manages the site. Current site use includes a variety of fish brokering, processing, and suppliers as well as marine fueling facility.

The site has been the subject of previous environmental reports that include the following:

Phase I Environmental Site Assessment, Kaka'ako Brownfield Project, Edward K. Noda & Associates and Cotton Consulting, for HCDA , October 1997

Phase II Field Investigation, Kaka'ako Brownfield Project, Edward K. Noda & Associates and Cotton Consulting, for HCDA , July 1999

Underground Storage Tank Closure, Former GRG Enterprises Site, WMF Hawaii for Neil Nakai, Inc., November 23, 1998

Phase II Environmental Site Characterization, Former GRG Enterprises Site, WMF Hawaii for Neil Nakai, Inc., July 26, 1999

Information from the above reports indicate that the site may be impacted as follows:

- Borings indicate that incinerator ash may have been used as fill
- Ash samples contain elevated lead and cadmium concentrations
- Structures containing lead-based paint and asbestos materials
- Former hydraulic lift area may have been site of oil release that may contain PCBs
- 4 former underground storage tank (USTs) sites (now removed) that included two 1000-gallon gasoline and two 6000 gallon diesel USTs clustered in an area near the bay
- Impacted groundwater beneath UST area with total petroleum hydrocarbon (TPH) as diesel above tier 1 DOH levels

- General stained areas around the project site

In addition to the above referenced reports, additional background information indicates that an incinerator may have existed at the site. Consequently, the DOH has requested that a site characterization study be conducted at the site to assess the extent and nature of the impacted soils, groundwater, and lead-based paint and asbestos materials contained in the existing structures and the corresponding risk to human health and the environment. The study methods and strategies should focus strongly on site remediation and closure.

This proposal has been prepared by Ogden Environmental and Energy Services Company, Inc. (Ogden) to support the DOH in planning and performing a site characterization study at the Kaka'ako Brownfield Unit 8 Site. Ogden and the DOH executed an Agreement for Professional Services on July 1, 1998 (ASO Log No. 98-418), under which this work is to be performed.

2. OGDEN SCOPE OF WORK

Ogden has developed this proposed Scope of Work (SOW) to support the DOH in fulfilling its responsibilities for a site characterization study at the Kaka'ako Brownfield Unit 8 Site. This SOW describes the work to be completed by Ogden in five separate tasks:

- Task 1 - Project Planning
- Task 2 - Planning Documents
- Task 3 - Field Investigation
- Task 4 - Data Evaluation and Analysis
- Task 5 - Risk Evaluation
- Task 6 - Reporting

Each task description includes a statement of the task's goals as well as significant challenges anticipated. Assumptions that affect costing also are identified.

Task 1 - Project Planning

This initial task will include identification of project participants, coordination of labor effort, procurement and management of subcontracts such as utility clearance, and drilling. The project manager will coordinate lines of communication with the DOH and other agencies. For costing purposes it is assumed there will be one initial project startup meeting with the DOH, and one internal meeting with all the project participants to discuss project objectives, strategies, logistics, and work schedule. It is also assumed that a total of five progress meetings with DOH and other appropriate agencies that includes the project manager and a key staff member will be held throughout the project.

Task 2 – Planning Documents

Ogden will prepare a detailed Sampling Analysis Plan (SAP) incorporating elements of a Work Plan (WP), Field Sampling Plan (FSP), and Quality Assurance Project Plan (QAPP). A site specific Health and Safety Plan will also be prepared.

The SAP will contain information typically included in a WP, (including, but not limited to, background information about the project area and a summary of previous investigations) and discussions of each task in the SOW. It will explain the methodology and rationale used to perform each task, including the identification of sampling methods, COPCs, and sampling locations.

The FSP component of the SAP will identify the types and locations of samples to be collected, the analyses to be performed, and the procedures to be followed in collecting and analyzing samples. The FSP will also specify background sampling locations and samples collected to fulfill quality assurance/quality control (QA/QC) objectives. An essential part of the FSP will be the development of Data Quality Objectives (DQOs) in accordance with EPA region IX guidance. The guidance involves a seven step process that includes the following: 1) state the problem, 2) identify the decision, 3) identify the inputs to the decision, 4) define the boundaries of the study, 5) develop a decision rule, 6) specify limits on decision errors, and 7) optimize the design.

The QAPP component of the SAP will identify the factors that may affect the quality of the study results, together with measures that will be employed by Ogden to control quality. Other components will include, but are not limited to, a list of target analytes, associated detection limits, and QA/QC criteria.

The Draft SAP will be prepared and submitted to DOH and EPA for review and comment. Comments will be addressed and a Final SAP will be delivered addressing those comments. It is assumed that five copies each of the Draft and Final SAP will be delivered.

In developing the SAP, Ogden will evaluate and select sampling strategies best suited to meeting the DQOs for the project. Special consideration will be given to meeting the needs of the risk assessment and the presumptive remedial alternatives. These considerations will be evaluated, in cooperation with DOH, with the goal of adopting a SAP that is acceptable to all involved parties and incorporates sound scientific QC principles.

Ogden will prepare a Health and Safety Plan (HSP) for use by its staff in conducting field portions of the work. The HSP will identify those measures that will be used by Ogden personnel to ensure safe working conditions throughout the field operations. A copy of the HSP will be provided to DOH prior to the start of field activities.

Ogden will be responsible for coordinating necessary access to sampling locations with the site tenant. The State of Hawaii Department of Transportation, Harbors Division will ensure access is granted to Ogden in a timely manner.

Task 3 – Field Investigation

The field investigation task will consist of the following subtasks:

Subtask 3A- Utility/Borehole Clearance
Subtask 3B- Surface Soil Sampling
Subtask 3C- Subsurface soil Sampling
Subtask 3D- Monitoring well Installation
Subtask 3E- Groundwater Sampling

Ogden will arrange contractors for the drilling, well installation, and utility clearance. The EPA CLP and Region IX laboratories will be contacted in advance of sampling activities to arrange for analysis of collected soil and groundwater samples and ensure that the laboratory is able to meet the established QA/QC criteria presented in the QAPP. The following is a description of each of the field subtasks.

Subtask 3A- Utility/Borehole Clearance

A utility location survey will be conducted prior to the commencement of field activities. The purpose of the survey will be to delineate to the extent practicable the location of subsurface utilities and other features that may present a hazard to drilling and other field activities. Ogden will contract with an experienced underground utility location service that will clear areas that have been marked in advance for subsurface field activities using a variety of geophysical methods. A search for any maps that show the locations of utilities will be conducted to supplement the survey.

Subtask 3B- Surface Soil Sampling

Surface soil samples will be collected at the site to assess surfacial contamination around areas of concern including the hoist area, observed stained soil areas, or around former transformer pads. Samples may be collected within the 0 to 3-foot range using a hand trowel, hand-held spoon sampler with a stainless steel sleeve, or other device depending on the location and type of analysis. Some concrete coring may be required to sample in selected locations (underneath cracks or joints). Actual locations and number of surface soil samples will be selected during development of the SAP and will be located on a pre-surveyed grid or by tape and compass. The surface soil samples plus QA/QC samples and trip blanks (VOA only) will be collected and analyzed using contract laboratory program (CLP) methods for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), CLP metals, and CLP PCB/pesticides. Fifty percent of the samples will be analyzed for total Petroleum hydrocarbons (TPH) by method 8015, and 25% of the samples will be run for the toxic characteristic leaching procedure (TCLP) for CLP metals, CLP SVOCs, and CLP

PCB/pesticides to help facilitate ultimate remediation and disposal. For costing purposes, Ogden estimates that sampling will require two full-time personnel for a period of 3 days in the field.

Subtask 3C- Subsurface soil Sampling

Ogden proposes to conduct a subsurface soil investigation to assess the vertical and lateral extent of soil contamination at the site, particularly the burn ash layer noted in the previous Phase I and II reports by Edward K. Noda and Associates (October 1997 and July 1999). It is proposed that direct push borings be advanced to the water table (approximately 6 to 8 feet below grade) to assess the extent of the burn ash layer. The borings will be advanced to assess the presence or absence of the ash layer by observation and careful logging of the soil properties using the Unified Soil Classification (USC) and other field screening methods such as PID readings. Selected environmental samples will be collected between the ground surface and water table from a pre-selected number of the borings to document the nature of the contamination. The locations of the borings including those chosen for environmental sampling will be selected during the development of the SAP and surveyed upon completion by a licensed surveyor.

Soil samples, QA/QC samples, and trip blanks (VOA only) will be collected and analyzed using contract laboratory program (CLP) methods for VOCs, SVOCs, metals, and PCB/pesticides. Several samples located within the burn ash units will be analyzed for dioxin using method 8290. A small number of samples (approximately 10%) will be analyzed for total Petroleum hydrocarbons (TPH) by method 8015, and 25% of the samples will be run for the toxic characteristic leaching procedure (TCLP) for CLP metals, CLP SVOCs, and CLP PCB/pesticides to help facilitate ultimate remediation and disposal. Ogden estimates that sampling will require two full-time personnel for a period of 3 days in the field.

Subtask 3D- Monitoring well Installation

Ogden proposes to convert 3 of the borings into groundwater monitoring wells. Each well will be screened across the water table with 2-inch schedule 40 PVC. Use of the 2-inch PVC will be the most cost effective since they are easier to install, require less materials cost, require less time to sample, and water volume to purge for sampling. The purpose of the wells will be to assess water quality, and provide a site-wide groundwater gradient map when used in conjunction with the existing site wells. Details of screen size, filter pack, annular seal, surface completion, and well development will be described in the SAP and will be in conformance with state and EPA region IX guidelines. Each well will be survey within 0.01 inch by a licensed surveyor at a designated mark at the top of the PVC casing to serve as a reference for water level measurements. The monitoring wells will be installed concurrently with the soil borings and will not require additional field time.

Subtask 3E- Groundwater Sampling

Ogden proposes to sample the 3 newly installed and 5 existing monitoring wells after at least 24 hours have passed since well installation and development. The purpose of the groundwater sampling will be to assess the site-wide water quality and support the screening risk assessments. It is assumed 8 groundwater samples plus 2 QA/QC samples and 2 trip blanks (VOC only) will be collected and analyzed using EPA CLP methods for VOCs, SVOCs , metals, and PCB/pesticides. Three wells located in close proximity to the bay will be selected to be analyzed for low ecological risk-based detection limits. All eight monitoring wells will be analyzed for TPH (8015), and 2 samples will be run for dioxin (8290). Ogden estimates that sampling will require two full-time personnel a period of 3 days in the field.

Ogden will collect, label, preserve, and ship groundwater and soil samples to the designated laboratory for analysis. It is assumed that approximately 50 samples will be collected and shipped for analysis, including equipment rinsate, trip blank, field blank, and duplicate samples.

It is assumed that disposable sampling equipment will be used when possible, allowing all Investigation-Derived Waste (IDW) to be bagged and disposed of as municipal solid waste, without confirmatory sampling. All other equipment will be decontaminated. Decontamination water and groundwater purge water will be held onsite in DOT approved drums (one drum per well for purge and one drum for decontamination) pending analysis. It is assumed for costing purposes that the decontamination and purge water will prove to be non-hazardous and can be disposed into the storm drain with proper approval.

Task 4 - Data Evaluation and Analysis

Ogden will begin evaluating and collating data as soon as Task 3 is completed. Analytical chemical data compilation under this task will begin when preliminary laboratory results are received. Hydrogeologic data will be evaluated for tidal analysis and groundwater flow. Evaluation of the hydrogeological and chemical data will include 1) setup up the initial database, 2) assessing the nature and extent of any contamination, 3) evaluation fate and transport properties, and 4) compiling and graphic presentations (contour maps, conceptual models) and tables.

Data will be validated using the EPA Region IX option 2 protocol at Ogden's Denver-based data validation group. Specific compounds that exceed set action levels or are presumed risk drivers will be targeted for more rigorous validation. It is assumed this more rigorous validation will be required in approximately 5% of the data.

Task 5 - Risk Evaluation

Ogden proposes to conduct a preliminary screening risk assessment (SRE) for both human health and ecological risk. The SRE methodology used to assess potential health risks will be developed following the EPA (1991) *Risk Assessment Guidance for Superfund: Volume I – Human Health Evaluation Manual (Part B)* guidance for application of Preliminary Remediation Goals (PRGs) in deriving screening-level risk estimates.

A screening ecological risk assessment (SERA) will identify potential receptors of concern in the marine environment adjacent to the site. The ecological risk to marine receptors will be evaluated by comparing groundwater chemical concentrations to federal and state ambient water quality criteria (AWQC) for chronic effects to saltwater species multiplied by 10. The AWQC will be multiplied by 10 to account for some dilution upon discharge of groundwater to surface water per guidance in the *National Oceanic and Atmospheric Administration (NOAA) Screening, Quick Reference Tables, NOAA HAZMAT Report 97-2, Seattle WA, Hazardous Response and Assessment Division by M.F. Buchman 1998.*

Task 6 – Reporting

Ogden will prepare and deliver to DOH a Draft Site Characterization Report describing the methods and results of the field investigation. A Final Report will be prepared addressing any comments provided by DOH or other agencies on the draft submittal. Written responses to DOH or other agency comments to the Draft Report will be provided with the final submittal. It is estimated that five copies of the Draft Report and ten copies of the Final Report will be provided by Ogden.

The reporting document will include brief descriptions of the methodologies employed. The SAP and QAPP will be referenced in the report and included as appendices. Any deviations from the planned procedures will be explained in the report.

The report will include an Executive Summary that is written to allow ready interpretation by the general public. Appendices to the report will include, but are not limited to, photograph documentation, field sampling logs, well construction logs, boring logs, field notes, and chain-of-custody forms.

The report will present the results of the sampling efforts in both tabular and graphical formats. Results will be compared to established threshold criteria selected for use in this project (e.g., the Environmental Protection Agency's Preliminary Remediation Goals [PRGs]).

Ogden will identify those locations (if any) where threshold values for human health or environmental protection are exceeded. The report will recommend further actions and remedial strategies as appropriate.

The report will be submitted with a tabulated data table of all sampling results in electronic data disk format. A list of all sample point coordinates capable of incorporation into Geographic Information System (GIS) format will also be included.

3.0 SCHEDULE

The expected duration of this project as presented herein is 215 days from the acceptance of this proposal. This duration is based on a 10 day document review time from DOH and other agencies, and a 30 laboratory turn-around time for analytical data from the EPA Region 9 and CLP laboratories. The following is a summary in calendar days form the notice to proceed for each task.

Task 1 - Project Planning	0 -10 days after notice to proceed (NTP)
Task 2 - Planning Documents	
Draft SAP, FSP, QAPP, and HSP	Due 30 days after NTP
Final SAP, FSP, QAPP, and HSP	Due 15 days after receipt of comments
Task 3 – Field Investigation	Begin 5 days after submittal of Final Planning Documents: expected duration 20 days
Task 4- Data Evaluation and Analysis	Begin 3 days following receipt of data from the EPA region IX and CLP laboratories: The task will be completed 30 days after the receipt of all data from the EPA region IX and CLP laboratories (includes 30 days data validation)
Task 5 – Risk Evaluation	Completed 60 days following the receipt of all data from the EPA region IX and CLP laboratories (30 days following receipt of validated data)
Task 6 – Reporting	
Draft Site Characterization Report	Submitted 80 days following the receipt of all data from the EPA region IX and CLP laboratories
Final Draft Site Characterization Report	Submitted 15 days after receipt of comments

Assume done Task 3 by Sept. 30

Task	Days Cum.
4	(30 lab TA) 33 Data Val
5	30 days
6	Draft 5 [illegible] days
	173
	March 22, 2001

4.0 STAFFING

The following key Ogden staff are proposed for this study:

Program Manager: Doug Hazelwood
Project Manager: Eric Wetzstein
Field Manager: Mike Kamaka
Field QA/QC: Steffany Toma
Geologist: Cherilyn Domingo
Health & Safety Manager: Cathi Seto

Additional Ogden and subcontractor staff will be used on the project as required.

5.0 COST ESTIMATE

Table 1 provides a detailed breakdown of the estimated cost for performing the study. It is assumed that a 2-person field crew will be required for 10 days in the field for drilling, sampling, and all other field activities. It is also assumed that the direct push drilling crew will be required for 3 days including monitoring well installation. It is assumed that all required laboratory analyses will be performed at the EPA Region IX and CLP laboratories at no cost to Ogden.

TABLE 1

Cost Estimate for a Site Characterization Study at the Kakaaka Brownfield Site, Unit 8

LABOR

Role	PL	Rate	Task 1 Hours	Task 1 Cost	Task 2 Hours	Task 2 Cost	Task 3 Hours	Task 3 Cost	Task 4 Hours	Task 4 Cost	Task 5 Hours	Task 5 Cost	Task 6 Hours	Task 6 Cost	Total Hours	Total Cost
Program Manager	18	$ 156.25	10	$ 1,563	0	$ -	0	$ -	0	$ -	0	$ -	2	$ 313	12	$ 1,875
Project Manager	14	$ 120.84	20	$ 2,417	25	$ 3,021	8	$ 967	10	$ 1,208	2	$ 242	20	$ 2,417	85	$ 10,271
Staff Toxicologist	11	$ 88.54	4	$ 354	0	$ -	0	$ -	0	$ -	40	$ 3,542	20	$ 1,771	64	$ 5,667
Hydrogeologist	14	$ 114.58	10	$ 1,146	30	$ 3,437	0	$ -	3	$ 344	3	$ 344	20	$ 2,292	66	$ 7,562
Ecologist	11	$ 88.54	3	$ 266	10	$ 885	0	$ -	0	$ -	0	$ -	10	$ 885	23	$ 2,036
Field Manager	8	$ 72.92	10	$ 729	50	$ 3,646	100	$ 7,292	10	$ 729	0	$ -	60	$ 4,375	230	$ 16,772
QA/QC Field Scienist	6	$ 62.50	3	$ 188	10	$ 625	90	$ 5,625	0	$ -	0	$ -	20	$ 1,250	123	$ 7,688
Health & Safety Manager	11	$ 88.54	3	$ 266	20	$ 1,771	0	$ -	0	$ -	0	$ -	0	$ -	23	$ 2,036
Geologist	4	$ 52.08	3	$ 156	10	$ 521	30	$ 1,562	15	$ 781	0	$ -	20	$ 1,042	78	$ 4,062
Data/Lab Manager	11	$ 88.54	1	$ 89	0	$ -	0	$ -	20	$ 1,771	10	$ 885	10	$ 885	41	$ 3,630
CADD/Drafting	-	$ 50.00	0	$ -	20	$ 1,000	0	$ -	0	$ -	0	$ -	20	$ 1,000	40	$ 2,000
Word Processing	-	$ 45.00	0	$ -	20	$ 900	0	$ -	0	$ -	0	$ -	20	$ 900	40	$ 1,800
Senior Data Validator	11	$ 88.54	0	$ -	0	$ -	0	$ -	10	$ 885	0	$ -	0	$ -	10	$ 885
Data Validator 1	8	$ 72.92	0	$ -	0	$ -	0	$ -	11	$ 802	0	$ -	0	$ -	11	$ 802
Data Validator 2	6	$ 62.50	0	$ -	0	$ -	0	$ -	70	$ 4,375	0	$ -	0	$ -	70	$ 4,375
Data Validator 3	4	$ 52.08	0	$ -	0	$ -	0	$ -	140	$ 7,291	0	$ -	0	$ -	140	$ 7,291
Data technican	2	$ 50.00	0	$ -	0	$ -	0	$ -	6	$ 300	0	$ -	0	$ -	6	$ 300
Contract Administrator	6	$ 62.50	10	$ 625	3	$ 188	0	$ -	0	$ -	0	$ -	0	$ -	13	$ 813
Totals			77	$ 7,797	198	$ 15,994	228	$ 15,446	295	$ 18,487	55	$ 5,012	222	$ 17,129	1,075	$ 79,866

OTHER DIRECT COSTS

Description	Unit	Unit Cost	Task 1 Quantity	Task 1 Cost	Task 2 Quantity	Task 2 Cost	Task 3 Quantity	Task 3 Cost	Task 4 Quantity	Task 4 Cost	Task 5 Quantity	Task 5 Cost	Task 6 Quantity	Task 6 Cost	Total Quantity	Total Cost
Local Mileage	mile	$ 0.31	300	$ 93	0	$ -	60	$ 19	0	$ -	0	$ -	0	$ -	360	$ 112
Telephone/Fax	min	$ 0.25	300	$ 75	25	$ 6	75	$ 19	0	$ -	0	$ -	0	$ -	400	$ 100
Direct Push Driller	day	$ 2,309	0	$ -	0	$ -	3	$ 6,927	0	$ -	0	$ -	0	$ -	3	$ 6,927
Well Installation Materials	ea	$ 531	0	$ -	0	$ -	1	$ 531	0	$ -	0	$ -	0	$ -	1	$ 531
Surveyor	hr	$ 150	0	$ -	0	$ -	8	$ 1,200	0	$ -	0	$ -	0	$ -	8	$ 1,200
Utility Location	hr	$ 120.00	0	$ -	0	$ -	8	$ 960	0	$ -	0	$ -	0	$ -	8	$ 960
Drums	ea	$ 50.00	0	$ -	0	$ -	10	$ 500	0	$ -	0	$ -	0	$ -	10	$ 500
Parking, Tolls & Gas	day	$ 5.00	6	$ 30	0	$ -	6	$ 30	0	$ -	0	$ -	0	$ -	12	$ 60
Reproduction (B&W)	page	$ 0.08	100	$ 8	2000	$ 160	50	$ 4	10	$ 1	0	$ -	2000	$ 160	4,160	$ 333
Reproduction (color)	page	$ 0.85	0	$ -	50	$ 43	0	$ -	0	$ -	0	$ -	40	$ 34	90	$ 77
Express Mail	pkg	$ 5.00	3	$ 15	0	$ -	0	$ -	0	$ -	2	$ 10	5	$ 25	10	$ 50
PPE - Level D	p/wk	$ 150.00	0	$ -	0	$ -	10	$ 1,500	0	$ -	0	$ -	0	$ -	10	$ 1,500
Sample Shipping to Lab	cooler	$ 125.00	0	$ -	0	$ -	8	$ 1,000	0	$ -	0	$ -	0	$ -	8	$ 1,000
Bailers	ea	$ 12.00	0	$ -	0	$ -	10	$ 120	0	$ -	0	$ -	0	$ -	10	$ 120
Concrete Coring	day	$ 936.00	0	$ -	0	$ -	1	$ 936	0	$ -	0	$ -	0	$ -	1	$ 936
Generator	day	$ 40.00	0	$ -	0	$ -	4	$ 160	0	$ -	0	$ -	0	$ -	4	$ 160
Sampling Equipment	day	$ 60.00	0	$ -	0	$ -	9	$ 540	0	$ -	0	$ -	0	$ -	9	$ 540
Field Vehicle	day	$ 30.00	0	$ -	0	$ -	10	$ 300	0	$ -	0	$ -	0	$ -	10	$ 300
PID	day	$ 75.00	0	$ -	0	$ -	9	$ 675	0	$ -	0	$ -	0	$ -	9	$ 675
Subtotal ODCs				$ 221		$ 209		$ 15,420		$ 1		$ 10		$ 219		$ 16,080
G&A Cost		20%		$ 44		$ 42		$ 3,084		$ 0		$ 2		$ 44		$ 3,216
HI Excise Tax		4.17%		$ 11		$ 10		$ 771		$ 0		$ 1		$ 11		$ 804
Total ODCs				$ 276		$ 261		$ 19,275		$ 1		$ 13		$ 274		$ 20,100

COST SUMMARY

Cost Category	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Total
Labor	$ 7,797	$ 15,994	$ 15,446	$ 18,487	$ 5,012	$ 17,129	$ 79,866
Other Direct Costs	$ 276	$ 261	$ 19,275	$ 1	$ 13	$ 274	$ 20,100
Total Project Cost	$ 8,073	$ 16,255	$ 34,722	$ 18,488	$ 5,025	$ 17,403	$ 99,966

WORK TASKING			
Task 1	Project Planning	Task 4	Data Evaluation & Analysis
Task 2	Project Documents	Task 5	Risk Evaluation
Task 3	Field Investigation	Task 6	Reporting

From:	"Clyde Morita - HEER" <EHANVL1/CMORITA>
Organization:	Environmental Health Administration
To:	"Bryce Hataoka - HEER" <EHANVL1/BHATAOKA>
Date sent:	Tue, 19 Oct 1999 15:34:32 GMT-10
Subject:	DOT Kakaako BF project
Copies to:	"Charley Langer - HEER" <EHANVL1/CLANGER>

Bryce and Charley,

To keep you updated on the project, the Scope of Work letter and the four documents were picked up yesterday by Ogden Env. (Mike Kamaka).

Doug Hazelwood is out-of-country this week and should be back on Mon, Oct. 25. Eric Wetzstein, who's in the process of moving to Hawaii to head up the Environmental Group, is back in San Diego for a couple of weeks. Mike Kamaka will forward the materials to Eric so he can start his review.

I've talked to Arnold Liu, DOT, a couple of times so he's aware of where we are.

Clyde.

From: **"Wetzstein, Eric, E." <eewetzstein@oees.com>**
To: **'Charley Langer - HEER' <clanger@eha.health.state.hi.us>**
Copies to: **"Kamaka, Michael, H." <MHKamaka@oees.com>, "Hazelwood, <dlhazelwood@oees.com>**
Subject: **EPA Region 9 Sampling Plans**
Date sent: **Mon, 18 Oct 1999 13:18:23 -0700**

Charley,

Could you please forward the background materials and scope of work for the brownfield project to Mike Kamaka at the Honolulu office rather than to Doug as we had discussed. Doug may be out of town and Mike can forward them to me. I will be in San Diego for a few weeks and can be reached at 619-458-9111 ext. 339 or by email.

Thanks
Eric

Note to the Kakaako Brownfields Unit 8 Site File

June 26, 2000

Characterization of lead-based paint and asbestos at the Unit 8 structures was eliminated from Ogden's scope of work because these constituents can not be addressed using Brownfields program funds. Ogden's proposal, the official signed contractual document, does not include characterization of lead-based paint and asbestos at the site.

Dawn Cosgrove
Voluntary Cleanup Program Specialist

Forward to EPA

Example lab SOW for Unit 8

STATEMENT OF WORK FOR ANALYTICAL SERVICES

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STATEMENT OF WORK FOR ANALYTICAL SERVICES
Kaka'aka Brownfield Unit 8 , Honolulu, HI

1.0 GENERAL INFORMATION

This statement of work (SOW) details requirements for a Subcontractor performing analytical services at the Kaka'aka Brownfield Unit 8 site, Honolulu, HI. This SOW includes a brief description of the site history and background, presents the technical approach for the analytical sampling program, and outlines the reporting procedures and data evaluation requirements for this project.

1.1 Project Background

The Department of Health (DOH) is planning to conduct a site characterization study at the Kaka'aka Brownfield Unit 8 Site. The 2-acre project site is the former GRG Enterprises site at 115 Ahui Street, Honolulu, Hawaii. The Hawaii Community Development Authority (HCDA) is the property owner and the State of Hawaii, Department of Transportation-Harbors Division manages the site. Current site use includes a variety of fish brokering, processing, and suppliers as well as marine fueling facility.

The purpose of the site characterization study is to evaluate if chemical impacts are present at the Kaka'aka site and if present, whether they pose an imminent and substantial threat to human health and safety. The specific objectives of the project are to: 1) assess the nature of any chemical impacts at the site; 2) evaluate the potential threats to human health due to any significant chemical impacts identified; 3) provide recommendations for any necessary remedial actions.

1.3 Anticipated Period of Work

Field activities are scheduled to begin March 6, 2000 and take approximately 25 days. The first shipment of samples is anticipated to arrive at the laboratory approximately two days after commencement of field work.

The exact dates for fieldwork are subject to change.

2.0 SITE BACKGROUND

The types of hazardous constituents associated with materials identified at the site would require analysis for VOCs, SVOCs, Pesticides/PCBs, heavy metals and dioxins. Existing structures would require confirmation analysis for asbestos and lead based paint. For purposes of potential remediation and disposal, RCRA criteria for hazardous waste determination using Toxic Characteristic Leaching Procedure (TCLP) may be performed on select samples or sample composites. Soil test results will be screened at 20 x TCLP regulatory criteria for TCLP extracts. If concentration(s) of any contaminate(s) in the select site characterization samples exceed the 20x's criteria, these sample will be considered potentially hazardous and will be require subsequent testing using TCLP (EPA Method 1311) for the identified contaminates of concern. These analyses are included in the analytical program.

3.0 TECHNICAL SPECIFICATIONS

Deliverables for all analytical services for the project will be EPA Level III. The quantity and matrix of each parameter is outlined in Enclosure 1. CLP deliverables will be validated using EPA Level III data validation criteria.

3.1 Permitting

The analytical laboratory must be Hawaii State certified.

The analytical laboratory must obtain a USDA soil permit to receive soil samples from Hawaii.

3.2 Required Meetings

A pre-work teleconference will be conducted prior to sample collection. The project coordinator at the Ogden Honolulu Office will initiate the call.

3.3 Analytical Program

The analytical sampling program will consist of the collection and analysis of both soil and groundwater samples. The analytical sampling program has been divided into two different phases of work, including the soil sampling phase and the ground-water monitoring phase. Both sampling phases will be conducted during one field mobilization event.

Soil and ground water samples will be collected and analyzed by the methods listed in Enclosure 1. Data will be reported in both electronic and hardcopy formats.

3.3.1 Description of Analytical Program

The required supplies, sample storage and sample disposal are listed in Enclosure 2.

3.3.2 Technical Specifications

All analytes and surrogates identified on Enclosure 4 will be analyzed in accordance with the procedures and methods described in the following documents:

U.S. EPA Contract Laboratory Program (CLP) Statement of Work for Organics Analysis Multi-Media, Multi-Concentration Document number OLM03.2 (August 1991).

U.S. EPA Contract Laboratory Program (CLP) Statement of Work for Inorganics Analysis Multi-Media, Multi-Concentration Document number ILM04.1.

Test Methods for Evaluating Solid Waste, EPA SW-846

The required sample matrices, and number of samples per sampling round are listed in Enclosure 1. The requested sample quantity information (for the seller to determine) is included on Enclosure 5.

Concentrations for all analytes in soil/sediment will be reported on a dryweight basis. Concentrations for all analytes in water/ground-water samples will be reported on a "per liter volume" basis.

3.3.3 Deliverables

3.3.3.1 Turnaround Time (TAT)

The laboratory(ies) will report data in as follows:

35-day TAT for hardcopy forms and EDDs. Data may be electronically transferred in order to comply with delivery schedules.

3.3.3.2 Delivery Format

All CLP and non-CLP data analyses shall be reported on CLP or CLP-like Forms and provided in "Agency Standard" Data Packages and Sample Results Packages (SRPs).

3.3.3.3 Electronic Deliverables (EDDs)

All non-CLP data will be reported electronically using Ogden Format "OG794" unless otherwise specified and upon prior approval from Ogden. All file names must be compliant with those specified in the "OG794" document.

All Contract Laboratory Program data for OLM03.2 and ILM04.1 (or most current CLP methodology) will be reported electronically in "Agency Standard" format found in Exhibit H of the CLP Statement of Work. The names, CAS numbers, and units must be used in reporting, exactly as specified for the method specified analyte list.

The content of the EDD shall exactly match the data contained in the Forms of the hard copy deliverables. This shall include all data relating to tentatively identified compounds (TICs), all Aroclors and toxaphene, and all metals results that appear on the Form 1s. Any discrepancies between the hard copy and electronic data deliverables must be specifically stated in the case narrative of the agency standard data packages after receiving prior written approval by Ogden project manager.

3.3.3.4 Additional Reporting Requirements

For all analyses, deliverables for each SDG, including agency standard DPs, SRPs (copy of Form ls or equivalent), and EDDs shall be submitted within 35 days of receipt of the last sample of that SDG. All re-prep, dilutions and reanalyses will be reported in the same SDG as the original sample. All resubmitted data will be accompanied with a memo listing the changes or updates. When data is sent via modem a fax will be sent identifying the files and size of each file. When Ogden submits "COC change form (s)"

the lab must re-issue the check-in paperwork to verify that the changes have been made at the laboratory.

4.0 RECORDKEEPING AND REPORTING

Required reports, information, and addresses for receipt of reports are listed in Enclosure 6.

5.0 LIQUIDATED DAMAGES

Any subsequent subcontract issue as a result of this solicitation will be subject to Liquidated Damages Without limiting any of Buyer's rights or remedies under this subcontract or applicable law, Buyer and Seller agree that if the Seller fails to complete the work by the completion date specified in this subcontract the actual damages incurred by Buyer as a result of the delay may be difficult or impossible to determine. Therefore, Seller agrees in place of actual damages, to pay to the Buyer liquidated damages in the sum of $200 for each calendar day of delay beyond the completion date specified in this subcontract, including any extension.

Delivery of defective EDDs (i.e. blank disk or the format is not as agreed upon in the contract, or is not compliant with the reportable analytes, surrogates, units and flags) is considered the same as no delivery of data.

6.0 INVOICING

Invoices shall include item descriptions consistent with the nomenclature of Enclosure (3), Price Schedule.

All charges associated with one sample delivery group shall appear on the same invoice, and Ogden sample identification numbers associated with the SDG will be itemized. The charges will be listed separately for each SDG and will be accompanied by a copy of the chain of custody's associated with that SDG.

ENCLOSURE 1

Summary of Sample Numbers, Analytical Methods, and Matrices

EPA Level III (Level C)

Test	Analytical Method	Soil Samples	Water Samples	Water Samples Low-level meth
Volatile Organics	OLM03.2V	34	24	-
Total Fuel Hydrocarbons	EPA 8015B/OG	25	20	-
Semi-volatile Organics	OLM03.2B	25	20	-
Pesticide/ PCBs	OLM03.2P	25	20	-
Metals	ILM04.1	25	20	-
TCLP- (40CFR- § 261.24)	EPA 1311	8	-	-
Dioxins	EPA 8290	3	2	-
Asbestos	EPA 600 R 93	30	-	-
Lead-paint	EPA 6010 for Pb	10	-	-
Metals	EPA 6010/7470	-	-	3
Poly Aromatic Hydrocarbons	EPA 8270-SIM	-	-	3
Pesticide/PCBs	EPA 8082	-	-	3

Note: Water Samples include groundwater samples, duplicates, trip blanks (soil and water), Field Blanks (soil) and Equipment Rinsates (soil). Low level water samples to be reported to MDL. Method modifications to achieve lower detection limits for the indicated water samples should be included in the laboratories RFP response.

ENCLOSURE 2

Required Supplies, Sample Storage, and Sample Disposal

Samples for analytical measurements should arrive at the laboratory approximately 2 to 3 days after sample collection. Samples may be shipped by Federal Express or equivalent. The holding times for all samples will start on the day of field collection.

Ogden expects that the laboratory will provide the following supplies and assistance in preparation for the required analytical efforts:

- Provide all required sample containers and associated materials/chemicals (e.g., preservatives) for samples. Provide copy of soil importation permit. The laboratory will ship the containers directly to a Ogden designated location near the project site. Shipments are to be sent via Federal Express or equivalent.

- Provide COC forms, adhesive sample labels, and custody seals.

- Provide sample containers for water samples as listed in Enclosure (1), plus two extra containers per method as backup. Provide preservatives with instructions that detail volumes to be added along with which container to use for the appropriate test. Provide an inventory of all the materials sent to the field team, which is to include all items discussed above. Ogden will supply sleeves for soil samples.

- Provide all sample storage at laboratory facilities as well as final disposal of analysis extracts and unused sample materials. Sample extracts shall be stored for 180 days after delivery of the full data package to Ogden, and samples shall be stored for 60 days after data package delivery. Sample storage shall be refrigeration or freezing as appropriate and include appropriate cataloguing and documentation that allows samples and extracts to be easily located and retrieved as necessary.

- Timing and requirements for all "container kit" shipments must be done in close coordination with the Ogden Project Coordinator or designee.

ENCLOSURE 3A

Price Schedule-Soils/Sediments

EPA Level III –**35 Day TAT Deliverables**

Test	Analytical Method	Quantity Soil Samples	Unit Price $	Extended Price $
Volatile Organics	OLM03.2V	34		
Fuel Hydrocarbons	8015B/OG	25		
Semi-volatile Organics	OLM03.2B	25		
PCBs	OLM03.2P	25		
Metals	ILM04.1	25		
TCLP-(40CFR- § 261.24)	EPA 1311	8		
Dioxins	EPA 8290	3		
Asbestos	EPA 600 R 93	30		
Lead-paint	EPA 6010 for Pb	10		

GRAND TOTAL_____

ENCLOSURE 3B

Price Schedule –Ground waters

EPA Level III –35 Day TAT Deliverables

Test	Analytical Method	Quantity Water Samples	Unit Price $	Extended Price $
Volatile Organics	OLM03.2V	12		
Fuel Hydrocarbons	8015B/OG	10		
Semi-volatile Organics	OLM03.2B	10		
PCBs	OLM03.2P	10		
Metals	ILM04.1	10		
Dioxins	EPA 8290	1		

GRAND TOTAL_____

EPA Level III –35 Day TAT Deliverables

Test	Analytical Method	Quantity Water Samples	Unit Price $	Extended Price $
Metals-low level	EPA 6010/7470	3		
PAHs-low level	EPA 8270-SIM	3		
Pesticide/PCBs-low level	EPA 8082	3		

GRANDTOTAL_____

ENCLOSURE 4

Ogden Control Library

The attached information is the Ogden control library which lists analytes, CAS numbers, and units used in reporting. In the space provided, the laboratory must provide responses to the five requests for information (see below) which enable Ogden to evaluate the laboratory method detection limits, spiking levels, and acceptance ranges, in addition to other information required for quality control and efficient electronic transfer of data.

1) The laboratory must enter the MDL in the second column of the control library for each of the methods.

2) The laboratory needs to examine the control library analyte order, between the keyword "TARGETS" and "END METHOD". If the lab is going to deliver hard copy reports of the analytes in any other order than provided in the control library, the order in which the laboratory chooses to report their data must be entered on the control library in that order immediately before the analyte name. This insures continuity between hard copy and electronic data, simplifying data verification and validation.

3) On the control chart the laboratory must fill in the outlined boxes for the following information: "SURR SPIKE AMOUNT", "SURR LOW% LIMIT", and "SURR HIGH% LIMIT" for all organic analysis method surrogates. One copy of each sheet must be completed for each matrix.

4) On the control chart the laboratory must fill in the outlined boxes for the following information: "MS/MSD AMOUNT", "/MSD LOW% LIMIT" and "MS/MSD HIGH% LIMIT" for appropriate matrix spike analytes for organic analysis methods, and spike samples for inorganic analysis methods. One copy of each sheet must be completed for each matrix.

5) On the control chart the laboratory must fill in the outlined boxes for the following information: "MBS SPIKE AMT", "MBS LOW% LIMIT" and "MBS HIGH% LIMIT" for appropriate method blank spike analytes for organic analysis methods, and laboratory control samples for inorganic analysis methods. One copy of each sheet must be completed for each matrix.

ENCLOSURE 5

Requested Sample Quantity

Test	Analytical Method	Soil Volume (g)	Water Volume (mL)
Volatile Organics	OLM03.2V		
Total Fuel Hydrocarbons	EPA 8015B/OG		
Semi-volatile Organics	OLM03.2B		
Pesticide/ PCBs	OLM03.2P		
Metals	ILM04.1		
TCLP- (40CFR- § 261.24)	EPA 1311		
Dioxins	EPA 8290		
Asbestos	EPA 600 R 93		N/A
Lead-paint	EPA 6010 for Pb		N/A
Metals- low level	EPA 6010/7470	N/A	
PAHs- low level	EPA 8270-SIM	N/A	
Pesticide/PCBs- low level	EPA 8082	N/A	

ENCLOSURE 6

Deliverables and Addresses

Deliverables

1. Data Submittal Letter
   1 copy to San Diego Purchasing Department, Attention Shari Simon

2. Summary Data Package
   1 copy to Project Manager, Ogden Honolulu
   1 copy to Laboratory Coordinator, Ogden San Diego
   1 copy to Validation Coordinator, Ogden Denver

3. Full Data Package
   1 copy to Laboratory Coordinator, Ogden San Diego
   1 copy to Validation Coordinator, Ogden Denver

4. Electronic Data Deliverables
   1 copy to Information Systems Manager, Ogden San Diego
   1 copy to <EDD@oees.com>

5. Completed COC forms, laboratory check-in paperwork (including sample condition upon receipt), and SDG designation sheet to be sent by fax and mail as sample SDG is completed.
   1 copy to Laboratory Coordinator, Ogden San Diego

6. Non-conformance reports or Corrective Action Reports to be sent within 12 hours of occurrence
   1 copy to Project Manager, Ogden Honolulu
   1 copy to Laboratory Coordinator, Ogden San Diego

Ogden Addresses

Ogden Environmental and Energy Services-Honolulu
680 Iwellei Road, Suite 660, Honolulu, Hawaii 96817

Ogden Environmental and Energy Services-SD
5510 Morehouse Drive
San Diego, CA 92121-1709

Ogden Environmental and Energy Services-Denver
550 South Wadsworth Blvd, Suite 500
Lakewood, CO 80226

ENCLOSURE 7

Ogden Electronic Data Deliverable Format, "OG794"