

Harding Lawson Associates



Transmittal/Memorandum

89

To: California Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street
Oakland, California 94607
Attention: Mr. Peter Johnson

From: David F. Leland *David Leland*
Date: February 19, 1988
Subject: Chinatown Redevelopment Project Area, Priority Pollutant Analysis
Job No.: 9382,018.02

Remarks: Please attach the enclosed analytical results for priority pollutant metals to the organic priority pollutant analyses submitted to you with our letter of February 18, 1988.

RECEIVED
FEB 22 1988
HARDING LAWSON ASSOCIATES
WASHINGTON PROGRAM

cc: Peter Chen, City of Oakland
Storm Goranson, Alameda County Environmental Health Department
Peter Mote

Engineers
and
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Harding Lawson Associates



February 18, 1988

9382,018.02

California Regional Water Quality
Control Board
San Francisco Bay Region
1111 Jackson Street, Suite 600
Oakland, California 94607

Attention: Mr. Peter Johnson

Gentlemen:

**Analysis of Ground-Water Sample for Priority Pollutants
Dewatering Effluent Treatment System
Chinatown Redevelopment Project Area
Oakland, California**

Enclosed please find the results of priority pollutant analysis of a ground-water sample collected from the Chinatown Redevelopment Project Area. The sample was collected from Monitoring Well MW-4, which is within the block bounded by 10th, 11th, Franklin, and Webster Streets. The sample was collected and analyzed to provide background data on possible occurrence and levels of priority pollutants for the purposes of assessing the adequacy of the dewatering effluent treatment to meet discharge water quality standards. The results of this analysis indicate the presence of several volatile organic compounds, naphthalene, and phenol.

We have reviewed these results from the perspective of treatability of these compounds by the granular activated carbon system proposed for dewatering effluent treatment. Based on this review, the treatment system as proposed is considered adequate to meet discharge water quality standards and to meet design basis assumptions.

Please call if there are any questions regarding these results or other matters associated with the City of Oakland NPDES permit application.

Yours very truly,

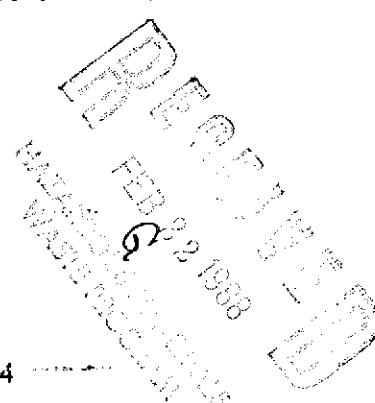
HARDING LAWSON ASSOCIATES

David F. Leland
Senior Hydrologist

DFL/PAM/ere/F3159-CT

Attachments: Laboratory Analytical Results: Well MW-4

cc: Peter Chen - City of Oakland
Storm Goranson - Alameda County Environmental Health Department
Peter Mote



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WESCO Laboratories

Report Date: 03-Feb-88 Client Contract/PO: 9382.018.02
 Client: Harding Lawson Associates Date Sampled: 22-Jan-88
 Attn: David Leland Site: Oakland, Chinatown
 Sampled by: David Montague Date Received: 22-Jan-88
 Submitted by: David Montague Extract/Digest/Purge
 Preservatives: none Date: 27-Jan-88
 Analyst: Siegmund Analysis Completion
 WESCO JOB #: HLA 8807-L Date: 27-Jan-88
 Analytical Method: EPA 624 Hold Time: 5 days

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 LAB # 8-1287* MATRIX: WATER
 CLIENT'S ID 88012201
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	68	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	41	0.5
1,2-Dichloropropane	1.5	0.5
Trichloroethene	3.0	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	2.2	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	2.1	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	7.7	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	134 %
Toluene-d8	88 %
4-Bromofluorobenzene	82 %

* : Sample contained gasoline.

N. D.: Not Detected

14 Gull Drive, Suite 200 Analytical Supervisor
 Novato, California 94949 415 883-6425

Report Date: 03-Feb-88 Client Contract/PO: 9382.018.02
 Client: Harding Lawson Associates Date Sampled: 22-Jan-88
 Attn: David Leland Site: Oakland, Chinatown
 Sampled by: David Montague Date Received: 22-Jan-88
 Submitted by: David Montague Extract/Digest/Purge
 Preservatives: none Date: 27-Jan-88
 Analyst: Siegmund Analysis Completion
 WESCO JOB #: HLA 8807-L Date: 27-Jan-88
 Analytical Method: EPA 624 Hold Time: 5 days

LAB # 8-1290
 CLIENT'S ID 88012202

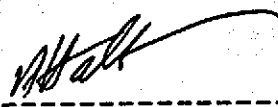
MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	109 %
Toluene-d8	125 %
4-Bromofluorobenzene	105 %

N. D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 624

HLA 8807-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation 8-1290	Spike % recovery 8-1290
Dichlorodifluoromethane	N.D.	-	N.S.
Methyl Chloride	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Methyl Bromide	N.D.	-	N.S.
Ethyl Chloride	N.D.	-	N.S.
Trichlorofluoromethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Methylene Chloride	N.D.	-	N.S.
trans-1,2-dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane (M.S.)	N.D.	8	80
Chloroform	N.D.	-	N.S.
1,1,1-trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
Benzene (M.S.)	N.D.	1	103
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene (M.S.)	N.D.	6	108
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
Toluene (M.S.)	N.D.	2	114
cis-1,3-dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene (M.S.)	N.D.	7	102
Ethylbenzene	N.D.	-	N.S.
Bromoform	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.

QUALITY CONTROL DATA

Surrogate Spike % Recovery

1,2-Dichloroethane-d4	106 %	93 %	104%
Toluene-d8	100 %	104 %	102%
4-Bromofluorobenzene	98 %	90 %	110%

N.D.: Not Detected

N.S.: Not Spiked

M.S.: Matrix Spike

Analytical Supervisor

Report Date:	01-Feb-88	Client Contract/PO:	9382.018.02
Client:	Harding Lawson Associates	Date Sampled:	22-Jan-88
Attn:	David Leland	Site:	Oakland, Chinatown
Sampled by:	David Montague	Date Received:	22-Jan-88
Submitted by:	David Montague	Extract/Digest/Purge	
Preservatives:	none	Date:	26-Jan-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 8807-L	Date:	26-Jan-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	8-1288	MATRIX:	WATER
CLIENT'S ID	88012201		

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BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	10.9	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	01-Feb-88	Client Contract/PO:	9382.018.02
Client:	Harding Lawson Associates	Date Sampled:	22-Jan-88
Attn:	David Leland	Site:	Oakland, Chinatown
Sampled by:	David Montague	Date Received:	22-Jan-88
Submitted by:	David Montague	Extract/Digest/Furge	
Preservatives:	none	Date:	26-Jan-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 8807-L	Date:	26-Jan-88
Analytical Method:	EPA 625	Holding Time, Days:	4

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LAB #	8-1288	MATRIX:	WATER
CLIENT'S ID	88012201		

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BASE/NEUTRALS Cont'd	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike Recovery	
Nitrobenzene-d5	93 %
2-Fluorobiphenyl	65 %
Terphenyl-d14	67 %

Report Date:	01-Feb-88	Client Contract/PO:	9382.018.02
Client:	Harding Lawson Associates	Date Sampled:	22-Jan-88
Attn:	David Leland	Site:	Oakland, Chinatown
Sampled by:	David Montague	Date Received:	22-Jan-88
Submitted by:	David Montague	Extract/Digest/Purge	
Preservatives:	none	Date:	26-Jan-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 8807-L	Date:	26-Jan-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====
 LAB # 8-1288 MATRIX: WATER
 CLIENT'S ID 88012201
 =====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	5.1	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

QUALITY CONTROL DATA	percent
Acid Surrogate Spike Recovery	
2-Fluorophenol	39 %
Phenol-d5	52 %
2,4,6-Tribromophenol	60 %

Report Date:	01-Feb-88	Client Contract/PO:	9382.01B.02
Client:	Harding Lawson Associates	Date Sampled:	22-Jan-88
Attn:	David Leland	Site:	Oakland, Chinatown
Sampled by:	David Montague	Date Received:	22-Jan-88
Submitted by:	David Montague	Extract/Digest/Purge	
Preservatives:	none	Date:	26-Jan-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 8807-L	Date:	26-Jan-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	8-1288	MATRIX:	WATER
CLIENT'S ID	88012201		

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PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike Recovery	percent
Nitrobenzene-d5	93 %
2-Fluorobiphenyl	65 %
Terphenyl-d14	67 %

N.D.: Not Detected
n.d.: not determined
N.A.: Not Applicable



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 8807-L
 METHOD: EPA 625

COMPOUND	Blank ug/L	Spike Duplicate % Deviation	% Spike Recover

Sample #			

BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	6	73
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl) ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	10	72
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy) methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	9	81
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	10	70
2,4-Dinitrotoluene (MS)	N.D.	4	43
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzydine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	6	72
Terphenyl-d12 (SS)	N.D.	13	105
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 8807-L
 METHOD: EPA 625

COMPOUND	Blank ug/L	Spike Duplicate % Deviation	% Spike Recover
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Sample #

QUALITY CONTROL DATA

Base/Neutral Blank Surrogate	Spike Recovery	percent
Nitrobenzene-d5		40 %
2-Fluorobiphenyl		75 %
Terphenyl-d14		105 %

ACID COMPOUNDS

Compound	Blank	Spike Duplicate % Deviation	% Spike Recover
2-Fluorophenol (SS)	N.D.	3	49
Phenol-d5 (SS)	N.D.	22	28
Phenol (MS)	N.D.	21	27
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	15	71
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	3	49
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	9	77
Pentachlorophenol	N.D.	n.s.	n.s.

QUALITY CONTROL DATA

Acid Surrogate	Blank Spike Recovery	percent
2-Fluorophenol		36 %
Phenol-d5		4 %
2,4,6-Tribromophenol		0 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 8807-L
 METHOD: EPA 625

COMPOUND	Blank ug/L	Spike Duplicate % Deviation	% Spike Recover
Sample #			
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	13	105
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
 n.s.: not spiked
 N.A.: Not Applicable

(SS): Surrogate Spike
 (MS): Matrix Spike
 N.R.: Not Recovered


 Analytical Supervisor



Harding Lawson Associates
7655 Redwood Blvd.
P.O. Box 578
Novato, CA 94948
(415) 892-0821

CHAIN OF CUSTODY FORM

VERBAL RESULTS BY W&B, 01/27/88, DAVE LELAND
Samplers: DAVID C. MONTAGUE

Job Number: 9382, 018.02

Name/Location: CITY OF OAKLAND CHINATOWN

Project Manager: DAVID LELAND

Recorder: *David C. Montague*
(Signature Required)

ANALYSIS REQUESTED										
EPA 601/8010	X									
EPA 602/8020	X									
EPA 624/8240	X									
EPA 625/8270	X									
Priority Pllnt. Metals		X								
Benzene/Toluene/Xylene										
Total Petrol. Hydrocarb.										

STATION DESCRIPTION/ NOTES	DATE			
	Yr	Mo	Dy	Time
TRAVEL BLANK	88	01	22	
	88	01	22	
	88	01	22	

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.	SAMPLE NUMBER OR LAB NUMBER				DATE	
	Water	Sediment	Soil	Oil		Yr	Mo	Dy	Time		
23	X				5	88	01	22			
23	X				2	88	01	22			
23	X				2	88	01	22			

CHAIN OF CUSTODY RECORD					RECEIVED BY: (Signature) <i>Michelle Cassey</i> / 1/25/88	DATE/TIME		
RELINQUISHED BY: (Signature) <i>David C. Montague</i>							RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)							RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)							RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature)					DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME	
METHOD OF SHIPMENT					<i>David C. Montague</i> / 1/22/88			
LAB NUMBER			MISCELLANEOUS			QA CODE		
Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD				

0533

Report Date: 04-Feb-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: David Montague
 Submitted by: David Montague
 Preservatives: none
 Analyst: Libby/Staggs/Costigan
 WESCO JOB #: HLA 8807-L
 Analytical Method: Metals

Client Contract/PO:9382.018.02
 Date Sampled: 22-Jan-88
 Site: Oakland, Chinatown
 Date Received: 22-Jan-88
 Extract/Digest/Purge
 Date: 29-Jan-88
 Analysis Completion
 Date: 29-Jan-88
 Hold Time: 7 days

LAB #: 8-1289
 CLIENT ID: 88012201

MATRIX: WATER

COMPOUND	RESULT (mg/l)	Detection limit(mg/l)	Method number
Aluminum (Al)	0.12	0.10	EPA 7020
Antimony (Sb)	N.D.	0.001	EPA 7041
Arsenic (As)	0.001	0.001	EPA 7060
Beryllium (Be)	N.D.	0.001	EPA 7091
Cadmium (Cd)	N.D.	0.02	EPA 7130
Chromium (Cr)	N.D.	0.02	EPA 7190
Copper (Cu)	N.D.	0.05	EPA 7210
Lead (Pb)	N.D.	0.1	EPA 7420
Mercury (Hg)	N.D.	0.005	EPA 7470
Nickel (Ni)	0.07	0.05	EPA 7520
Selenium (Se)	0.003	0.001	EPA 7741
Silver (Ag)	N.D.	0.02	EPA 7760
Thallium (Tl)	N.D.	0.005	EPA 7841
Zinc (Zn)	0.54	0.04	EPA 7950
Cyanide	N.D.	0.04	Note 1

Note 1: APHA 1985, 412 A, B, C (colorimetric method)
 N.D.: Not Detected

Susan Libby
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD: Metals

HLA 8807-L

COMPOUND	Blank (mg/l) Sample #	Spike Duplicate % deviation 8-1289	Spike % recovery 8-1289
Aluminum (Al)	N.D.	-	89
Antimony (Sb)	N.D.	61	48
Arsenic (As)	N.D.	0	108
Beryllium (Be)	N.D.	6	122
Cadmium (Cd)	N.D.	5	95
Chromium (Cr)	N.D.	2	83
Copper (Cu)	N.D.	5	99
Lead (Pb)	N.D.	4	101
Mercury (Hg)	N.D.	0	104
Nickel (Ni)	N.D.	3	106
Selenium (Se)	0.003	4	91
Silver (Ag)	N.D.	3	98
Thallium (Tl)	N.D.	0	48
Zinc (Zn)	0.14	1	90
Cyanide	N.D.	0	101

N.D.: Not Detected

Susan Libby
Analytical Supervisor