MONITORING PROGRAM ANNUAL REPORT

JANUARY - DECEMBER 2001

ANCHORAGE WATER AND WASTEWATER UTILITY
JOHN M. ASPLUND WATER POLLUTION CONTROL FACILITY
AT POINT WORONZOF

APPENDICES

Prepared for:

Prepared by:

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February 2002

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APPENDIX A

Toxic Pollutant and Pesticide Monitoring, June Sampling

A1 Anchorage Waste Water Utility

Metals, Oil & Grease, and Cyanide

KINNETIC LABORATORIES INCORPORATED

George P. Wuerch,
Mayor

ANCHORAGE WATER AND WASTEWATER UTILITY
LABORATORY SERVICES SECTION

ANALYTICAL RESULTS

Date of the Report: 01/28/02

Owned by the
Municipality of Anchorage

Sample ID			AA27715	AA27716	AA27720	AA27721	AA27722	AA27723
Sample Location			Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	Point Woronzof WWTF Influent	Pt. Woronzof WWTF - F.Effluent
Collection Date			06/19-20/01	06/19-20/01	06/20-21/01	06/20-21/01	06/21-22/01	06/21-22/01
Collection Type			24HC-FP	24HC-FP	24HC-FP	24HC-FP	24HC-FP	24HC-FP
Project Code			WW-PW	WW-PW	WW-PW	WW-PW	WW-PW	WW-PW
Analysis	**Method**	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Arsenic, Dissolved	EPA 206.2	mg/L	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)
Arsenic, Total	EPA 206.2	mg/L	0.003	ND (<0.003)	ND (<0.003)	0.003	0.005	0.003
Beryllium, Dissolved	EPA 210.2	mg/L	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)
Beryllium, Total	EPA 210.2	mg/L	0.00006	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)	ND (<0.00003)
Cadmium, Dissolved	EPA 213.2	mg/L	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)
Cadmium, Total	EPA 213.2	mg/L	0.0005	0.0003	0.0005	0.0002	0.0004	0.0003
Chromium, Dissolved	EPA 218.2	mg/L	0.0017	0.0006	0.0011	0.0008	0.0012	0.0029
Chromium, Total	EPA 218.2	mg/L	0.0056	0.0041	0.0044	0.0030	0.0056	0.0037
Copper, Dissolved	SM18 3111B	mg/L	0.012	0.028	0.020	0.040	0.020	0.042
Copper, Total	SM18 3111 B	mg/L	0.088	0.056	0.084	0.054	0.084	0.054
Cyanide, Total	4500CN C,E	mg/L	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Lead, Dissolved	EPA 239.2	mg/L	0.006	0.003	0.004	0.004	0.006	0.007
Lead, Total	EPA 239.2	mg/L	0.010	0.006	0.013	0.005	0.027	0.019
Mercury, Dissolved	EPA 245.1	mg/L	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)	ND (<0.0001)
Mercury, Total	EPA 245.1	mg/L	0.0004	0.0002	0.0003	0.0002	0.0003	0.0001
Nickel, Dissolved	EPA 249.2	mg/L	0.004	0.004	0.003	0.003	ND (<0.001)	ND (<0.001)
Nickel, Total	EPA 249.2	mg/L	0.006	0.003	0.006	0.003	0.004	0.003
Silver, Dissolved	EPA 272.2	mg/L	0.0031	0.0015	0.0032	0.0015	0.0033	0.0020
Silver, Total	EPA 272.2	mg/L	0.0128	0.0107	0.0106	0.0073	0.0129	0.0070
Zinc, Dissolved	SM18 3111B	mg/L	0.02	0.02	ND (<0.02)	0.05	ND (<0.02)	0.02
Zinc, Total	SM18 3111B	mg/L	0.13	0.07	0.15	0.08	0.13	0.08

QA/QC data available upon request. ND = Not Detected (Method Detection Limit in parentheses), PQL = Practical Quantitative Limit, C = contract lab

Reported by: Mark Spano Date: 1/28/02

Mark Spano, Laboratory Supervisor

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George P. Wuerch,
Mayor

ANCHORAGE WATER AND WASTEWATER UTILITY
LABORATORY SERVICES SECTION

Owned by the
Municipality of Anchorage

ANALYTICAL RESULTS

Date of the Report: 12/12/01

Sample ID			AA27717	AA27718
Sample Location			Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent
Collection Date			06/19/01	06/19/01
Collection Type			grab	grab
Project Code			WW-PW	WW-PW
Analysis	**Method**	**Unit**	**Result**	**Result**
Oil and Grease	EPA 1664	mg/L	58.1	21.2

QA/QC data available upon request.
ND = Not Detected (Method Detection Limit in parentheses), PQL = Practical Quantitative Limit, C = contract lab

Reported by: Mark Spano Date: Dec. 13, 2001
Mark Spano, Laboratory Supervisor

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George P. Wuerch,
Mayor

ANCHORAGE WATER AND WASTEWATER UTILITY
LABORATORY SERVICES SECTION

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ANALYTICAL RESULTS

Date of the Report: 12/27/01

Sample ID			AA27719
Sample Location			Pt. Woronzof Cake Sludge
Collection Date			06/19-20/01
Collection Type			8 grabs/day
Project Code			WW-PW
Analysis	**Method**	**Unit**	**Result**
Arsenic, Total	EPA 7060	mg/kg	2.9
Beryllium, Total	EPA 7091	mg/kg	0.12
Cadmium, Total	EPA 7131	mg/kg	2.0
Chromium, Total	EPA 7191	mg/kg	21.6
Copper, Total	EPA 7210	mg/kg	280
Lead, Total	EPA 7421	mg/kg	26.1
Mercury, Total	EPA 7470	mg/kg	1.0
Nickel, Total	EPA 7521	mg/kg	15.3
Silver, Total	EPA 7761	mg/kg	25.3
Zinc, Total	EPA 7950	mg/kg	569
Percent Total Solids	18SM 2540G	%	32.4
Cyanide, Total	4500CN C,E	mg/kg	ND (<0.2)

QA/QC data available upon request.
ND = Not Detected (Method Detection Limit in parentheses), PQL = Practical Quantitative Limit, C = contract lab

Reported by: Mark Spano Date: 12/27/01
Mark Spano, Laboratory Supervisor

APPENDIX A

Toxic Pollutant and Pesticide Monitoring, June Sampling

A2 Toxscan

Metals, Pesticides, Hydrocarbons

JUNE SAMPLING, METALS, PESTICIDES, HYDROCARBONS, TOXSCAN SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01PES001	INFLUENT	SAMPLE
MOA01PES002	EFFLUENT-1	SAMPLE
MOA01PES003	EFFLUENT-2	FIELD/LAB DUPLICATE
MOA01PES004	SLUDGE	SAMPLE
MOA01MET001	INFLUENT	SAMPLE
MOA01MET002	EFFLUENT	SAMPLE
MOA01MET003	SLUDGE	SAMPLE
MOA01VOA001	INFLUENT	SAMPLE
MOA01VOA002	EFFLUENT-1	SAMPLE (LAB DUPE)
MOA01VOA003	EFFLUENT-2	FIELD DUPLICATE
MOA01VOA004	C-STATION	FIELD BLANK
MOA01VOA005	TRIP BLANK	TRIP BLANK

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

August 16, 2001 ToxScan Number: T-19553

Kinnetic Laboratories Incorporated
403 West Eighth Avenue
Anchorage, AK 99501

Attn: Mark Savoie

Project Name:	None
Project Number:	514.01
Date Sampled:	June 19, 1901 - June 20, 2001
Date Received:	June 22, 1901
Matrix:	Water

Please find the enclosed test results for the parameters requested for analyses. The samples were analyzed within holding time using the following methods:

Aromatic Volatile Organics by EPA Method 602
Demeton, Guthion, Malathion, Parathion by EPA Method 614
Dissolved Metals by ICP/MS(Sb, Tl) by EPA Method 200.8
Dissolved Metals by ICP/MS(Sb,Tl) by EPA Method 200.8
Dissolved Selenium by hydride AA by EPA Method 270.3
Pesticides & PCBs plus Mirex by EPA Method 608
Total Metals by ICP/MS (Sb,Tl) by EPA Method 200.8
Total Selenium by hydride AA, by EPA Method 270.3

The samples were received intact and were handled with the proper chain-of-custody procedures. Appropriate QA/QC guidelines were employed during the analyses on a minimum of a 5% basis. QC results were within limits and are reported with or following the data for each analysis.

If you have any questions or require any additional information, please feel free to call.

Sincerely,

Philip D. Carpenter

Philip D. Carpenter, Ph.D.
President

Enclosures

This cover letter is an integral part of the report.

EXPLANATION OF ACRONYMS FOR PROJECT # T-19553

The following is a glossary for acronyms that may be used in this report.

Abbreviation	Definition
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	None Detected
REP	Replicate
RPD	Relative Percent Difference
SRM	Standard Reference Material
TOC	Total Organic Carbon

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: 19553
Method:	EPA 602	
Date Analyzed:	June 27, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA001	MOA01VOA002	
Site ID:	Influent	Effluent-1	Reporting
Toxscan Lab ID:	19553-01-A	19553-02-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	3.8	4.2	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	1.4	ND	0.50
1,2 Dichlorobenzene	7.1	6.2	0.50
1,3 Dichlorobenzene	1.3	4.5	0.50
1,4 Dichlorobenzene	1.1	1.1	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	106	103	65-142
1,1,1-Trifluorotoluene	104	102	77-143
1,4-Bromofluorobenzene	113	96	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: 19553
Method:	EPA 602	
Date Analyzed:	June 27, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA003	MOA01VOA004	
Site ID:	Effluent-2	C-Station	Reporting
Toxscan Lab ID:	19553-03-A	19553-04-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	4.2	ND	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	6.0	ND	0.50
1,3 Dichlorobenzene	4.6	ND	0.50
1,4 Dichlorobenzene	1.1	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	103	100	65-142
1,1,1-Trifluorotoluene	101	99	77-143
1,4-Bromofluorobenzene	98	98	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: 19553
Method:	EPA 602	
Date Analyzed:	June 27, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA005	MOA01VOA002	
Site ID:	Trip Blank	Effluent-1	Reporting
Toxscan Lab ID:	19553-05-A	19553-02-B DUP	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	ND	4.0	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	ND	5.6	0.50
1,3 Dichlorobenzene	ND	4.4	0.50
1,4 Dichlorobenzene	ND	1.1	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	100	100	65-142
1,1,1-Trifluorotoluene	99	98	77-143
1,4-Bromofluorobenzene	97	112	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: 19553
Method:	EPA 602	
Date Analyzed:	June 26, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID: Toxscan Lab ID: Analyte	Method Blank	Reporting Limit
Benzene	ND	0.50
Toluene	ND	0.50
Chlorobenzene	ND	0.50
Ethylbenzene	ND	0.50
Xylenes	ND	0.50
1,2 Dichlorobenzene	ND	0.50
1,3 Dichlorobenzene	ND	0.50
1,4 Dichlorobenzene	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	103	65-142
1,1,1-Trifluorotoluene	102	77-143
1,4-Bromofluorobenzene	102	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19553
Method:	EPA 602	
Date Analyzed:	June 26, 2001	
Matrix:	Water	

Quality Control Report:
Spike recoveries expressed as percentages

Spiked compound	LCS %Rec	QC Limits %Rec
Benzene	86	76-127
Toluene	89	76-125
Chlorobenzene	86	75-130

Quality Control Report :
Surrogate recovery expressed as percentages

Surrogate	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	109	65-142
1,1,1-Trifluorotoluene	108	77-143
1,4-Bromofluorobenzene	105	86-115

LCS = Laboratory Control Sample

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19553
Method:	EPA 602	
Date Analyzed:	July 3, 2001	
Matrix:	Water	

Quality Control Report:
Spike recoveries expressed as percentages

Client Sample ID:	MOA01VOA002
Site ID:	Effluent-1
ToxScan Lab ID:	19553-02-C,D

Spiked compound	MS %Rec	MSD %Rec	%RPD	QC Limits %Rec	QC Limits %RPD
Benzene	90	86	5	76-127	21
Toluene	87	83	5	76-125	21
Chlorobenzene	90	86	5	75-130	21

Quality Control Report :
Surrogate recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	110	107	65-142
1,1,1-Trifluorotoluene	110	108	77-143
1,4-Bromofluorobenzene	102	97	59-132

MS = Matrix Spike
MSD=Matrix Spike Duplicate
RPD=Releative Percent Difference

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 614	
Date Extracted:	June 25, 2001	
Date Analyzed:	June 29 & July 06, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES001
Site ID:	Influent
ToxScan Lab ID:	19553-06

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 614	
Date Extracted:	June 25, 2001	
Date Analyzed:	June 29 & July 06, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES002
Site ID:	Effluent-1
ToxScan Lab ID:	19553-07

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 614	
Date Extracted:	June 25, 2001	
Date Analyzed:	June 29 & July 06, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES003
Site ID:	Effluent-2
ToxScan Lab ID:	19553-08

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 614	
Date Extracted:	June 25, 2001	
Date Analyzed:	June 29 & July 06, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES003
Site ID:	Effluent-2
ToxScan Lab ID:	19553-08 Duplicate

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 614	
Date Extracted:	June 25, 2001	
Date Analyzed:	June 29 & July 06, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID: Method Blank
ToxScan Lab ID: MB062501

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 614	
Date Extracted:	June 25, 2001	
Date Analyzed:	June 29, 2001	
Matrix:	Water	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Triphenylphosphate	QC Limits
Method Blank	92	50-150
Lab Control Sample	80	50-150
MOA01PES001	79	50-150
MOA01PES002	92	50-150
MOA01PES003	90	50-150
MOA01PES003 Duplicate	90	50-150
		50-150

Client: Kinnetic Laboratories, Inc.
Method: EPA 614
Date Extracted: June 25, 2001
Date Analyzed: June 29, 2001
Matrix: Water

ToxScan Number: T-19553

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Diazinon	64	50-150
Disulfoton	60	50-150
Ethion	66	50-150
Azinphos methyl	61	50-150

*Outside of QC limits

LCS = Laboratory Control Sample

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 608	
Date Extracted:	June 25, 2001	
Date Analyzed:	July 04, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES001
Site ID:	Influent
ToxScan Lab ID:	19553-06

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.05
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
delta-BHC	ND	0.05
gamma-BHC	ND	0.05
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.02
4,4'-DDE	0.06	0.02
4,4'-DDT	ND	0.02
Dieldrin	ND	0.10
Endosulfan I	ND	0.05
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.05
Heptachlor Epoxide	ND	0.05
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.2

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 608	
Date Extracted:	June 25, 2001	
Date Analyzed:	July 04, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES002
Site ID:	Effluent-1
ToxScan Lab ID:	19553-07

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.05
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
delta-BHC	ND	0.05
gamma-BHC	ND	0.05
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.02
4,4'-DDE	0.04	0.02
4,4'-DDT	ND	0.02
Dieldrin	ND	0.10
Endosulfan I	ND	0.05
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.05
Heptachlor Epoxide	ND	0.05
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.2

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 608	
Date Extracted:	June 25, 2001	
Date Analyzed:	July 04, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES003
Site ID:	Effluent-2
ToxScan Lab ID:	19553-08

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.05
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
delta-BHC	ND	0.05
gamma-BHC	ND	0.05
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.02
4,4'-DDE	ND	0.02
4,4'-DDT	ND	0.02
Dieldrin	ND	0.10
Endosulfan I	ND	0.05
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.05
Heptachlor Epoxide	ND	0.05
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.2

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 608	
Date Extracted:	June 25, 2001	
Date Analyzed:	July 04, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES003(DUP)
Site ID:	Effluent-2
ToxScan Lab ID:	DUP19553-08

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.05
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
delta-BHC	ND	0.05
gamma-BHC	ND	0.05
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.02
4,4'-DDE	ND	0.02
4,4'-DDT	ND	0.02
Dieldrin	ND	0.10
Endosulfan I	ND	0.05
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.05
Heptachlor Epoxide	ND	0.05
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.2

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 608	
Date Extracted:	June 25, 2001	
Date Analyzed:	July 04, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID: Method Blank
ToxScan Lab ID: MB062501

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.050
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
delta-BHC	ND	0.05
gamma-BHC	ND	0.05
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.020
4,4'-DDE	ND	0.02
4,4'-DDT	ND	0.02
Dieldrin	ND	0.10
Endosulfan I	ND	0.050
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.050
Heptachlor Epoxide	ND	0.05
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.2

ND = Not Detected

Client: Kinnetic Laboratories, Inc.
Method: EPA 608
Date Extracted: June 25, 2001
Date Analyzed: July 04, 2001
Matrix: Water

ToxScan Number: T-19553

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Lindane	93	56-123
Heptachlor	95	40-131
Aldrin	98	40-120
Dieldrin	94	52-126
Endrin	94	56-121
4,4'-DDT	91	38-127

LCS = Laboratory Control Sample

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19553
Method:	EPA 608	
Date Extracted:	June 25, 2001	
Date Analyzed:	July 04, 2001	
Matrix:	Water	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Tetrachloro-m-xylene	QC Limits
Method Blank	54	50-150
Lab Control Sample	60	50-150
MOA01PES001	52	50-150
MOA01PES002	68	50-150
MOA01PES003	64	50-150
MOA01PES003(DUP)	59	50-150

Client: Kinnetic Laboratories Incorporated

ToxScan Number: T-19553

Method: EPA Method(s) 200.8 270.3

Date Completed: 7/18/2001 - 8/2/2001

Matrix: Water

Units: ug/L

Total Metals

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01MET001 (Total)	Influent	19553-09	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10
MOA01MET002 (Total)	Effluent	19553-10	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10

Client: Kinnetic Laboratories Incorporated

ToxScan Number: T-19553

Method: EPA Method(s) 200.8 270.3

Date Completed: 7/18/2001 - 8/2/2001

Matrix: Water

Units: ug/L

Dissolved Metals

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01MET001 (Dissolved)	Influent	19553-11	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10
MOA01MET002 (Dissolved)	Effluent	19553-12	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10

QC FOR PROJECT # 19553

Concentrations of the following are in ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY:

Matrix: Water

Total Metals

Analyte	Sample Amount	Amount of Spike	Matrix Spike	MS % Rec	Matrix Spike Dup	MSD % Rec	RPD
Antimony 19526-07	ND	50	40.1	80	41.8	84	5
Thallium 19526-07	ND	50	54.2	108	53.9	108	0

QC FOR PROJECT # T-19553

LABORATORY METHOD BLANK SUMMARY

Applicable Matrix: Water

Total Metals

Analyte	Amount	Reporting Limit ug/L	EPA Method Number
Antimony	ND	10	200.8
Selenium	ND	10	270.3
Thallium	ND	10	200.8

QC FOR PROJECT # 19553

Concentrations of the following are in ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY:

Matrix: Water

Dissolved Metals

Analyte	Sample Amount	Amount of Spike	Matrix Spike	MS % Rec	Matrix Spike Dup	MSD % Rec	RPD
Selenium							
19553-11	4.66	5.0	4.66	93	4.67	93	0

QC FOR PROJECT # T-19553

LABORATORY FILTER BLANK SUMMARY

Applicable Matrix: Water

Dissolved Metals

Analyte	Amount	Reporting Limit ug/L	EPA Method Number
Antimony	ND	10	200.8
Selenium	ND	10	270.3
Thallium	ND	10	200.8

QC FOR PROJECT # T-19553

Concentrations of the following are in ug/L

SRM SUMMARY:

Matrix: Water

Total Metals

Analyte	Amount Found	Dilution	Corrected Value	SRM	Certified Value	% Recovery
Antimony	25.7	10	257	ERA 9991	226	114
Selenium	10.1	100	1010	ERA 9991	1060	95
Thallium	43.2	10	432	ERA 9991	459	94

ERA 9991 = Environmental Resource Associates, WasteWatR Lot No. 9991

HCID-4

T-19553

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

Pg. 1 of 3

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1008	**KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 602 with xylenes. Detection limit 0.5 µg/L.

MATRIX: Water	**Preservative:** HCl, 4°C Effluent samples contain $Na_2S_2O_3$	**Type of Container:** 40-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01VOA001	Influent	3	6/19/01	1405	INTACT	T-19553-01-A,B,C
MOA01VOA002	Effluent-1	6	6/19/01	1420		-02-A,B,C D,E,F
MOA01VOA003	Effluent-2	3	6/19/01	1420		-03-A,B,C
MOA01VOA004	C-Station	3	N/R	N/R		-04-A,B,C
MOA01VOA005	Trip Blank	3	N/A JMS	N/A JMS	all 3 vials w/ Bubbles JMS	-05-A,B,C

JMS

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	A.A. [signature]	6/20 1155
RELINQUISHED BY:	**DATE AND TIME**	**TRANSPORTED BY:**	**RECEIVED BY:**	**DATE AND TIME**
Janet M. Savoie	6/21/01 / 1230	FED EX	Kate Kins	22JUN01/1000
RELINQUISHED BY:	**DATE AND TIME**	**TRANSPORTED BY:**	**RECEIVED BY:**	**DATE AND TIME**

SAMPLED BY (NAME/SIGNATURE): _____

N/R Not recorded on label

N/A Not applicable

FRIG. 0 SHELF 20 ~~T-19553~~ T-19553

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

pg 2 of 3

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1008 | **KLI Proj. #:** 514.01

ANALYSIS TYPE: Pesticides: EPA 608 plus Mirex and EPA 614 for Demeton, Guthion, Malathion, and Parathion only. Detection limits 0.05 - 1.0 µg/L (Guthion ~15 µg/L).

MATRIX: Water | **Preservative:** None, 4°C | **Type of Container:** 1-L amber glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01PES001	Influent	only two filled ~~4~~ 2 ✓	6/19-20/01	0900-0900	INTACT	T-19553-06-A,B
MOA01PES002	Effluent-1	2	6/19-20/01	0900-0900	↓	↓ -07-A,B
MOA01PES003	Effluent-2	2 ✓	6/19-20/01	0900-0900	↓	↓ -08-A,B

JMS

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	[signature]	6/20 1155
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 1230	FED EX	Kati King	22 Jun 01 1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

FRIG. SHELF 20 T.19553

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

Pg 3 of 3

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1008 | **KLI Proj. #:** 514.01

ANALYSIS TYPE: **Total and Dissolved Metals**: Antimony and thallium (EPA 200.8) and selenium (EPA 270.3). Detection limit 10 µg/L.

MATRIX: Water | **Preservative:** HNO3, 4°C | **Type of Container:** 1-L HDPE

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01MET001	Influent	1	6/19-20/01	0900-0900	INTACT	T.19553-09-A
MOA01MET002	Effluent	1	6/19-20/01	0900-0900	↓	↓ -10-A
						JMS

Please filter and then preserve samples with HNO_3 upon receipt at laboratory.

						JMS

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	A A Landy 1153	6/20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 / JMS 1230	FED Ex	Kati King	22 Jun 01 / 1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

August 16, 2001

ToxScan Number: T-19555

Kinnetic Laboratories Incorporated
403 West Eighth Avenue
Anchorage, AK 99501

Attn: Mark Savoie

Project Name:	None
Project Number:	514.01
Date Sampled:	June 19, 1901 - June 20, 2001
Date Received:	June 22, 1901
Matrix:	Sludge

Please find the enclosed test results for the parameters requested for analyses. The samples were analyzed within holding time using the following methods:

Demeton, Guthion, Malathion, Parathion by EPA Method 8141A
Organochlorine Pesticides & PCBs plus Mirex by EPA Method 8081A
Percent Solids by EPA Method 160.3
Total Metals by ICP/MS (Sb,Tl) by EPA Method 6020
Total Selenium by hydride AA by EPA Method 7741

The samples were received intact and were handled with the proper chain-of-custody procedures. Appropriate QA/QC guidelines were employed during the analyses on a minimum of a 5% basis. QC results were within limits and are reported with or following the data for each analysis.

If you have any questions or require any additional information, please feel free to call.

Sincerely,

Philip D. Carpenter

Philip D. Carpenter, Ph.D.
President

Enclosures

This cover letter is an integral part of the report.

EXPLANATION OF ACRONYMS FOR PROJECT # T-19555

The following is a glossary for acronyms that may be used in this report.

Abbreviation	Definition
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	None Detected
REP	Replicate
RPD	Relative Percent Difference
SRM	Standard Reference Material
TOC	Total Organic Carbon

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19555
Method:	EPA 8141A	
Date Extracted:	July 03, 2001	
Date Analyzed:	July 07, 2001	
Matrix:	Sludge	
Units:	ug/Kg (ppb)	

Client Sample ID:	MOA01PES004
Site ID:	Sludge
ToxScan Lab ID:	19555-02

Analyte	Wet Wt. Sample Value	Wet Wt. Reporting Limit	Dry Wt. Sample Value	Dry Wt. Reporting Limit
Demeton	ND	20	ND	63
Guthion	ND	1500	ND	4800
Malathion	ND	20	ND	63
Parathion	ND	20	ND	63

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19555
Method:	EPA 8141A	
Date Extracted:	July 03, 2001	
Date Analyzed:	July 07, 2001	
Matrix:	Sludge	
Units:	ug/Kg (ppb)	

Client Sample ID: Method Blank
ToxScan Lab ID: MB070301

Analyte	Sample Value	Reporting Limit
Demeton	ND	20
Guthion	ND	1500
Malathion	ND	20
Parathion	ND	20

ND = Not Detected

Client: Kinnetic Laboratories, Inc.
Method: EPA 8141A
Date Extracted: July 03, 2001
Date Analyzed: July 06, 2001
Matrix: Sludge

ToxScan Number: T-19555

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Diazinon	75	50-150
Disulfoton	69	50-150
Ethion	76	50-150
Azinphos methyl	129	50-150

*Outside of QC limits

LCS = Laboratory Control Sample

Client: Kinnetic Laboratories, Inc.
Method: EPA 8141A
Date Extracted: July 03, 2001
Date Analyzed: July 07, 2001
Matrix: Sludge

ToxScan Number: T-19555

Quality Control Report
QA/QC on sample MOA01PES004
Spike recoveries expressed as percentages:

Spiked Compound	MS % REC	MSD %REC	% RPD	QC LIMITS % REC	QC LIMITS %RPD
Diazinon	72	71	1	50-150	50
Disulfoton	107	80	29	50-150	50
Ethion	66	73	10	50-150	50
Azinphos methyl	69	74	7	50-150	50

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19555
Method:	EPA 8141A	
Date Extracted:	July 03, 2001	
Date Analyzed:	July 06, 2001	
Matrix:	Sludge	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Triphenylphosphate	QC Limits
Method Blank	70	50-150
Lab Control Sample	70	50-150
MOA01PES004	117	50-150
MOA01PES004 (MS)	135	50-150
MOA01PES004 (MSD)	144	50-150

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19555
Method:	EPA 8081A	
Date Extracted:	July 03, 2001	
Date Analyzed:	July 10, 2001	
Matrix:	Sludge	
Units:	ug/Kg (ppb)	

Client Sample ID:	MOA01PES004
Site ID:	Sludge
ToxScan Lab ID:	19555-02

Analyte	Wet Wt. Sample Value	Wet Wt. Reporting Limit	Dry Wt. Sample Value	Dry Wt. Reporting Limit
Aldrin	ND	8.0	ND	25
alpha-BHC	ND	8.0	ND	25
beta-BHC	12	8.0	38	25
delta-BHC	ND	8.0	ND	25
gamma-BHC	ND	8.0	ND	25
alpha-Chlordane	ND	8.0	ND	25
gamma-Chlordane	ND	8.0	ND	25
4,4'-DDD	ND	3.0	ND	9.5
4,4'-DDE	ND	3.0	ND	9.5
4,4'-DDT	6.0	3.0	19	9.5
Dieldrin	ND	16	ND	51
Endosulfan I	ND	8.0	ND	25
Endosulfan II	ND	16	ND	51
Endosulfan Sulfate	ND	16	ND	51
Endrin	ND	16	ND	51
Endrin Aldehyde	ND	16	ND	51
Endrin Ketone	ND	16	ND	51
Heptachlor	ND	8.0	ND	25
Heptachlor Epoxide	ND	8.0	ND	25
Methoxychlor	ND	80	ND	250
Toxaphene	ND	160	ND	510
Aroclor-1016	ND	160	ND	510
Aroclor-1221	ND	160	ND	510
Aroclor-1232	ND	160	ND	510
Aroclor-1242	ND	160	ND	510
Aroclor-1248	ND	160	ND	510
Aroclor-1254	ND	160	ND	510
Aroclor-1260	ND	160	ND	510
Total PCB'S	ND	160	ND	510
Mirex	ND	20	ND	63

Client: Kinnetic Laboratories, Inc.
Method: EPA 8081A
Date Extracted: July 03, 2001
Date Analyzed: July 10, 2001
Matrix: Sludge
Units: ug/Kg (ppb)

ToxScan Number: T-19555

Client Sample ID: Method Blank
Site ID:
ToxScan Lab ID: MB070301

Analyte	Wet Wt. Sample Value	Wet Wt. Reporting Limit	Dry Wt. Sample Value	Dry Wt. Reporting Limit
Aldrin	ND	8.0	ND	8.0
alpha-BHC	ND	8.0	ND	8.0
beta-BHC	ND	8.0	ND	8.0
delta-BHC	ND	8.0	ND	8.0
gamma-BHC	ND	8.0	ND	8.0
alpha-Chlordane	ND	8.0	ND	8.0
gamma-Chlordane	ND	8.0	ND	8.0
4,4'-DDD	ND	3.0	ND	3.0
4,4'-DDE	ND	3.0	ND	3.0
4,4'-DDT	ND	3.0	ND	3.0
Dieldrin	ND	16	ND	16
Endosulfan I	ND	8.0	ND	8.0
Endosulfan II	ND	16	ND	16
Endosulfan Sulfate	ND	16	ND	16
Endrin	ND	16	ND	16
Endrin Aldehyde	ND	16	ND	16
Endrin Ketone	ND	16	ND	16
Heptachlor	ND	8.0	ND	8.0
Heptachlor Epoxide	ND	8.0	ND	8.0
Methoxychlor	ND	80	ND	80
Toxaphene	ND	160	ND	160
Aroclor-1016	ND	160	ND	160
Aroclor-1221	ND	160	ND	160
Aroclor-1232	ND	160	ND	160
Aroclor-1242	ND	160	ND	160
Aroclor-1248	ND	160	ND	160
Aroclor-1254	ND	160	ND	160
Aroclor-1260	ND	160	ND	160
Total PCB'S	ND	160	ND	160
Mirex	ND	20	ND	20

Client: Kinnetic Laboratories, Inc.
Method: EPA 8081A
Date Extracted: July 03, 2001
Date Analyzed: July 10, 2001
Matrix: Sediment

ToxScan Number: T-19555

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Lindane	68	46-127
Heptachlor	70	35-130
Aldrin	75	34-132
Dieldrin	77	31-134
Endrin	74	42-139
4,4'-DDT	74	23-134

LCS = Laboratory Control Sample

Client: Kinnetic Laboratories, Inc.
Method: EPA 8081A
Date Extracted: July 03, 2001
Date Analyzed: July 10, 2001
Matrix: Sludge

ToxScan Number: T-19555

Quality Control Report
QA/QC on sample MOA01PES004
Spike recoveries expressed as percentages:

Spiked Compound	MS % REC	MSD %REC	% RPD	QC LIMITS % REC	QC LIMITS %RPD
Lindane	78	75	10	46-127	50
Heptachlor	123	125	13	35-130	31
Aldrin	100	98	12	34-132	43
Dieldrin	83	84	1	31-134	38
Endrin	74	77	4	42-139	45
4,4'-DDT	63	66	5	23-134	50

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19555
Method:	EPA 8081A	
Date Extracted:	July 03, 2001	
Date Analyzed:	July 10, 2001	
Matrix:	Sludge	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Tetrachloro-m-xylene	Decachlorobiphenyl	QC Limits
Method Blank	73	72	50-150
Lab Control Sample	76	73	50-150
MOA01PES004	105	85	50-150
MOA01PES004 (MS)	71	129	50-150
MOA01PES004 (MSD)	69	136	50-150

Client: Kinnetic Laboratories Incorporated

ToxScan Number: T-19555

Method: EPA Method(s) 6020 7741

Date Completed: 7/26/2001 - 8/14/2001

Matrix: Sludge

Units: mg/kg

Total Metals

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Dry Wt. Sample Value	Dry Reporting Limit
MOA01MET003	Sludge	19555-01	Antimony	1.8	0.30
			Selenium	0.77	0.30
			Thallium	ND	0.30

QC FOR PROJECT # T-19555

LABORATORY METHOD BLANK SUMMARY

Applicable Matrix: Sediment

Total Metals

Analyte	Amount	Reporting Limit mg/L	EPA Method Number
Antimony	ND	0.30	6020
Selenium	ND	0.30	7741
Thallium	ND	0.30	6020

QC FOR PROJECT # 19555

MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY:
Matrix: Sludge

Analyte	Sample	Spike Amount ppm	MS % Rec	MSD % Rec	RPD
Antimony	19555-01	2.9	109	111	2
Selenium	19555-01	10	103	124	19
Thallium	19555-01	2.9	113	112	1

QC FOR PROJECT # T-19555

SRM SUMMARY:

Matrix: Sediment

Total Metals

Analyte	SRM Value Found mg/Kg	Certified SRM Value mg/Kg	% Recovery	SRM
Antimony	0.963	1.02	94	MESS-3
Selenium	0.534	0.720	74	MESS-3
Thallium	0.348	0.900	39	MESS-3

MESS-3 = National Research Council Canada, marine sediment.

QC FOR PROJECT # T-19555

Concentrations of the following are in ug/L

SRM SUMMARY:

Matrix: Water

Total Metals

Analyte	Amount Found	Dilution	Corrected Value	SRM	Certified Value	% Recovery
Antimony	27.2	10	272	ERA 9991	226	120
Selenium	10.4	100	1040	ERA 9991	1060	98
Thallium	50.2	10	502	ERA 9991	459	109

ERA 9991 = Environmental Resource Associates, WasteWatR Lot No. 9991

Client: Kinnetic Laboratories Incorporated

ToxScan Number: T-19555

Method: EPA Method(s) 160.3

Date Completed: 7/16/2001

Matrix: Sludge

Units: Percent

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01MET003	Sludge	19555-01	Percent Solids	31	0.10
MOA01PES004	Sludge	19555-02	Percent Solids	32	0.10

QC FOR PROJECT # T-19555

LABORATORY PRECISION SUMMARY:

Matrix: Sludge

Analyte	REP 1	REP 2	Units	RPD
Percent Solids				
19555-02	31.5	32.6	Percent	3

T-19555

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

Pg 2 of 2

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

FRIG 11
SHELF 40

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1008	**KLI Proj. #:** 514.01

ANALYSIS TYPE: Pesticides: EPA 8080 plus Mirex, and EPA 8140 for Demeton, Guthion, Malathion, and Parathion only. Detection limits 0.01 - 0.06 µg/g (dry weight; Guthion ~5 µg/g). Please report in dry weight.

MATRIX: Sludge	**Preservative:** None, 4°C	**Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01PES004	Sludge	1	6/19-20/01	0900 - 0900	INTACT	T-19555-02-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	6/20/01 1150	[illegible]	[illegible] 1155	6/20/01 1200
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 1230	FED EX	Katie King	22 Jun 01 1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

T. 19555

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

Pg 1 of 2

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522 FRIG. 1 SHELF 40	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1008 | **KLI Proj. #:** 514.01

ANALYSIS TYPE: Metals: Antimony and thallium (EPA 6020) and selenium (EPA 7741). Detection limit 0.3 µg/g (dry weight). Please report in dry weight.

MATRIX: Sludge | **Preservative:** None, 4°C | **Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01MET003	Sludge	1 ✓	6/19-20/01	0900-0900	INTACT	T·19555-01-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	A A [signature]	6/20 1155
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 1230	FED EX	Kate King	22 Jun 01 1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

APPENDIX A

Toxic Pollutant and Pesticide Monitoring, June Sampling

A3 Northern Testing Labs, Inc.

Priority Pollutants

JUNE SAMPLING, PRIORITY POLLUTANTS, NTL SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01VOP001 - 008	INFLUENT	SAMPLE (COMPOSITE)
MOA01VOP009 - 016	EFFLUENT	SAMPLE (COMPOSITE)
MOA01VOP017	C-STATION	FIELD BLANK
MOA01VOP018	TRIP BLANK	TRIP BLANK
MOA01SVL001	INFLUENT	SAMPLE
MOA01SVL002	EFFLUENT	SAMPLE
MOA01SVL003	SLUDGE	SAMPLE

NORTHERN TESTING LABORATORIES, INC.

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ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

February 6, 2002

Kinnetic Laboratories, Inc.
403 West 8th Avenue
Anchorage, AK 99501-3515

Attn: Janet Savoie

Subject: MOA Inlet Monitoring Project

Dear Ms. Savoie;

Over the period of June 20, 2001 through June 22, 2001, Northern Testing Laboratories, Inc.-Anchorage received samples from Kinnetic Laboratories, Inc. in support of the 2001 MOA Inlet Monitoring Project. The following analyses and methods were performed:

- Volatile Organics – according to methods EPA 624 and 8260B
- Semi-Volatile Organics – according to methods EPA 625 and 8270C

Individual data reports for all methods have been submitted. CCV, LCS, MS and Method Blank data was submitted for the semi-volatile and volatile organics data. If you have any questions concerning these reports, please contact me at (907) 349-1000.

Sincerely,
Northern Testing Laboratories, Inc.

Wendy Mitchell

Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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February 14, 2002

Kinnetic Laboratories, Inc.
403 West 8th Avenue
Anchorage, AK 99501

Client Project#: 514.01

Case Narrative

On June 21, 2001, Northern Testing Laboratories, Inc.- Anchorage received several samples to be analyzed by EPA Methods 624 and 8260B for volatile organic compounds, and EPA Methods 625 and 8270C for semi-volatile organic compounds. In all analyses reported for this group, the following quality control samples were analyzed: a continuing calibration verification (CCV), a laboratory control sample (LCS), a laboratory control sample duplicate (LCSD), and a Method Blank.

NTL Sample ID # A173506 and A173514 are 8-part composite samples, composited at the laboratory using an airtight syringe prior to analysis. Samples A173504, A173505 A300687 (originally reported as A173524) are composite samples collected over a 24 hour time period at the sample source site.

The CCV in the EPA Method 624 analysis dated 6/25/01 recovered outside of quality control acceptance limits, high for bromomethane and low for 2-CEVE. These compounds were not found in any of the associated samples, and all other quality control criteria for this analysis were within method acceptance limits. Sample A173506, a composite sample, yielded a major early eluting interference peak, and a low level of chloroform was detected in the trip blank. The method blank did not contain any target analytes at levels above the reporting limit.

The CCV for the EPA Method 8260B (624 list) analysis dated 6/26/01 recovered high for bromomethane and chloroethane, and low for methylene chloride. By EPA Method 8260B criteria, the LCS and LCSD both recovered high for vinyl chloride and chlorethane and low for bromomethane. Also by 8260B criteria, the LCS recovered low for methylene chloride, trans-1,2-Dichloroethene, and 1,1-Dichloroethane. However, the LCS and LCSD were within EPA Method 624 acceptance criteria for all compounds. The method blank did not contain any target analytes at levels above the reporting limit.

The CCV, LCS, and LCSD from the EPA Method 8270C (625 list) analysis dated 6/26/01 yielded high recoveries for benzoic acid, however this compound was not found in the associated sample. The CCV also recovered low for hexachlorocyclopentadiene and 4-nitrophenol, although these compounds recovered within QC criteria in the LCS and LCSD. The surrogate recovery for 2-fluorobiphenyl recovered slightly low outside of QC limits in the method blank. Sample A300687 (originally reported as A173524), was analyzed at a 1:10 dilution, which diluted out the surrogates. However, with a dilution factor applied all surrogates within this sample recovered within laboratory established control chart limits. All other quality control criteria for this analysis were within method acceptance limits, and the method blank did not contain any target analytes at levels above the reporting limit.

In the EPA Method 625 analysis dated 6/27/01, the CCV recovered high, outside of method QC criteria for benzoic acid. The LCS and LCSD recovered at 180% and 206% respectively; however, this compound has no established method acceptance limits for LCS recovery, and these results are within laboratory established control chart limits. Although the LCS and LCSD recoveries for 4-nitrophenol are flagged on the summary sheets previously provided, they both did indeed recover within EPA Method 625 QC parameters. All other quality control criteria for this analysis were within method acceptance limits, and the method blank did not contain any target analytes at levels above the reporting limit.

Northern Testing Laboratories, Inc. - Anchorage performs modified analyses for EPA Methods 624 and 625. Please contact the Quality Control Chemist for the specifics of the method modifications.

NORTHERN TESTING LABORATORIES, INC.

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(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP001-P008
Client Project #: KLI #514.01
Source: INF CMP #1-#8
NTL Lab#: A173506
Sample Matrix: Water
Comments: Composite of 06/19/01 @ 0900 AM thru 06/20/01

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 624						
	Benzene	ug/L	<MRL	0.20		6/25/01
	Bromodichloromethane	ug/L	<MRL	0.20		
	Bromoform	ug/L	<MRL	0.50		
	Bromomethane	ug/L	<MRL	1.00		
	Carbon Tetrachloride	ug/L	<MRL	0.20		
	Chlorobenzene	ug/L	<MRL	0.20		
	Chloroethane	ug/L	<MRL	1.00		
	2-Chloroethyl Vinyl Ether	ug/L	<MRL	0.50		
	Chloroform	ug/L	3.17	0.20		
	Chloromethane	ug/L	<MRL	0.50		
	Dibromochloromethane	ug/L	<MRL	0.20		
	1,2-Dichlorobenzene	ug/L	<MRL	2.00		
	1,3-Dichlorobenzene	ug/L	<MRL	2.00		
	1,4-Dichlorobenzene	ug/L	<MRL	2.00		
	1,1-Dichloroethane	ug/L	<MRL	0.20		
	1,2-Dichloroethane	ug/L	<MRL	0.20		
	1,1-Dichloroethene	ug/L	<MRL	2.00		
	cis-1,2-Dichloroethene	ug/L	<MRL	0.20		
	trans-1,2-Dichloroethene	ug/L	<MRL	2.00		
	1,2-Dichloropropane	ug/L	<MRL	0.20		
	cis-1,3-Dichloropropene	ug/L	<MRL	0.20		
	trans-1,3-Dichloropropene	ug/L	<MRL	0.20		
	Ethylbenzene	ug/L	0.55	0.20		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP001-P008
Client Project #: KLI #514.01
Source: INF CMP #1-#8
NTL Lab#: A173506
Sample Matrix: Water
Comments: Composite of 06/19/01 @ 0900 AM thru 06/20/01

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	Methylene Chloride	ug/L	<MRL	2.00		6/25/01
	1,1,2,2-Tetrachloroethane	ug/L	<MRL	0.20		
	Tetrachloroethene	ug/L	2.91	0.20		
	Toluene	ug/L	6.41	0.20		
	1,1,1-Trichloroethane	ug/L	<MRL	0.20		
	1,1,2-Trichloroethane	ug/L	<MRL	0.20		
	Trichloroethene	ug/L	<MRL	0.20		
	Trichlorofluoromethane	ug/L	<MRL	0.50		
	m,p-Xylene	ug/L	1.91	0.40		
	o-Xylene	ug/L	0.95	0.40		
	Vinyl Chloride	ug/L	<MRL	0.50		
	DBFM (Surr)	% Recovery	98			
	Toluene-d8 (Surr)	% Recovery	100			
	4-Bromofluorobenzene	% Recovery	97			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP009-P016
Client Project #: KLI #514.01
Source: EFF CMP #1-#8
NTL Lab#: A173514
Sample Matrix: Water
Comments: Composite of 06/19/01 @ 0915 AM thru 06/20/01 @ 0600 AM

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 6:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 624						
	Benzene	ug/L	1.62	0.20		6/25/01
	Bromodichloromethane	ug/L	<MRL	0.20		
	Bromoform	ug/L	<MRL	0.50		
	Bromomethane	ug/L	<MRL	1.00		
	Carbon Tetrachloride	ug/L	<MRL	0.20		
	Chlorobenzene	ug/L	<MRL	0.20		
	Chloroethane	ug/L	<MRL	1.00		
	2-Chloroethyl Vinyl Ether	ug/L	<MRL	0.50		
	Chloroform	ug/L	2.98	0.20		
	Chloromethane	ug/L	<MRL	0.50		
	Dibromochloromethane	ug/L	<MRL	0.20		
	1,2-Dichlorobenzene	ug/L	<MRL	2.00		
	1,3-Dichlorobenzene	ug/L	<MRL	2.00		
	1,4-Dichlorobenzene	ug/L	<MRL	2.00		
	1,1-Dichloroethane	ug/L	<MRL	0.20		
	1,2-Dichloroethane	ug/L	<MRL	0.20		
	1,1-Dichloroethene	ug/L	<MRL	2.00		
	cis-1,2-Dichloroethene	ug/L	<MRL	0.20		
	trans-1,2-Dichloroethene	ug/L	<MRL	2.00		
	1,2-Dichloropropane	ug/L	<MRL	0.20		
	cis-1,3-Dichloropropene	ug/L	<MRL	0.20		
	trans-1,3-Dichloropropene	ug/L	<MRL	0.20		
	Ethylbenzene	ug/L	<MRL	0.20		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP009-P016
Client Project #: KLI #514.01
Source: EFF CMP #1-#8
NTL Lab#: A173514
Sample Matrix: Water
Comments: Composite of 06/19/01 @ 0915 AM thru 06/20/01 @ 0600 AM

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 6:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	Methylene Chloride	ug/L	<MRL	2.00		6/25/01
	1,1,2,2-Tetrachloroethane	ug/L	<MRL	0.20		
	Tetrachloroethene	ug/L	2.16	0.20		
	Toluene	ug/L	9.37	0.20		
	1,1,1-Trichloroethane	ug/L	<MRL	0.20		
	1,1,2-Trichloroethane	ug/L	<MRL	0.20		
	Trichloroethene	ug/L	<MRL	0.20		
	Trichlorofluoromethane	ug/L	<MRL	0.50		
	m,p-Xylene	ug/L	1.67	0.40		
	o-Xylene	ug/L	0.75	0.40		
	Vinyl Chloride	ug/L	<MRL	0.50		
	DBFM (Surr)	% Recovery	95			
	Toluene-d8 (Surr)	% Recovery	96			
	4-Bromofluorobenzene	% Recovery	98			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP017
Client Project #: KLI #514.01
Source: C-Station
NTL Lab#: A173522
Sample Matrix: Water
Comments:

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date:
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 624						
	Benzene	ug/L	<MRL	0.20		6/25/01
	Bromodichloromethane	ug/L	<MRL	0.20		
	Bromoform	ug/L	<MRL	0.50		
	Bromomethane	ug/L	<MRL	1.00		
	Carbon Tetrachloride	ug/L	<MRL	0.20		
	Chlorobenzene	ug/L	<MRL	0.20		
	Chloroethane	ug/L	<MRL	1.00		
	2-Chloroethyl Vinyl Ether	ug/L	<MRL	0.50		
	Chloroform	ug/L	<MRL	0.20		
	Chloromethane	ug/L	<MRL	0.50		
	Dibromochloromethane	ug/L	<MRL	0.20		
	1,2-Dichlorobenzene	ug/L	<MRL	2.00		
	1,3-Dichlorobenzene	ug/L	<MRL	2.00		
	1,4-Dichlorobenzene	ug/L	<MRL	2.00		
	1,1-Dichloroethane	ug/L	<MRL	0.20		
	1,2-Dichloroethane	ug/L	<MRL	0.20		
	1,1-Dichloroethene	ug/L	<MRL	2.00		
	cis-1,2-Dichloroethene	ug/L	<MRL	0.20		
	trans-1,2-Dichloroethene	ug/L	<MRL	2.00		
	1,2-Dichloropropane	ug/L	<MRL	0.20		
	cis-1,3-Dichloropropene	ug/L	<MRL	0.20		
	trans-1,3-Dichloropropene	ug/L	<MRL	0.20		
	Ethylbenzene	ug/L	<MRL	0.20		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP017
Client Project #: KLI #514.01
Source: C-Station
NTL Lab#: A173522
Sample Matrix: Water
Comments:

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date:
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	Methylene Chloride	ug/L	<MRL	2.00		6/25/01
	1,1,2,2-Tetrachloroethane	ug/L	<MRL	0.20		
	Tetrachloroethene	ug/L	<MRL	0.20		
	Toluene	ug/L	<MRL	0.20		
	1,1,1-Trichloroethane	ug/L	<MRL	0.20		
	1,1,2-Trichloroethane	ug/L	<MRL	0.20		
	Trichloroethene	ug/L	<MRL	0.20		
	Trichlorofluoromethane	ug/L	<MRL	0.50		
	m,p-Xylene	ug/L	<MRL	0.40		
	o-Xylene	ug/L	<MRL	0.40		
	Vinyl Chloride	ug/L	<MRL	0.50		
	DBFM (Surr)	% Recovery	102			
	Toluene-d8 (Surr)	% Recovery	95			
	4-Bromofluorobenzene	% Recovery	95			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
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PRUDHOE BAY, ALASKA 99734

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP018
Client Project #: KLI #514.01
Source: Trip Blank
NTL Lab#: A173523
Sample Matrix: Water
Comments:

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date:
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 624						
	Benzene	ug/L	<MRL	0.20		6/25/01
	Bromodichloromethane	ug/L	<MRL	0.20		
	Bromoform	ug/L	<MRL	0.50		
	Bromomethane	ug/L	<MRL	1.00		
	Carbon Tetrachloride	ug/L	<MRL	0.20		
	Chlorobenzene	ug/L	<MRL	0.20		
	Chloroethane	ug/L	<MRL	1.00		
	2-Chloroethyl Vinyl Ether	ug/L	<MRL	0.50		
	Chloroform	ug/L	1.48	0.20		
	Chloromethane	ug/L	<MRL	0.50		
	Dibromochloromethane	ug/L	<MRL	0.20		
	1,2-Dichlorobenzene	ug/L	<MRL	2.00		
	1,3-Dichlorobenzene	ug/L	<MRL	2.00		
	1,4-Dichlorobenzene	ug/L	<MRL	2.00		
	1,1-Dichloroethane	ug/L	<MRL	0.20		
	1,2-Dichloroethane	ug/L	<MRL	0.20		
	1,1-Dichloroethene	ug/L	<MRL	2.00		
	cis-1,2-Dichloroethene	ug/L	<MRL	0.20		
	trans-1,2-Dichloroethene	ug/L	<MRL	2.00		
	1,2-Dichloropropane	ug/L	<MRL	0.20		
	cis-1,3-Dichloropropene	ug/L	<MRL	0.20		
	trans-1,3-Dichloropropene	ug/L	<MRL	0.20		
	Ethylbenzene	ug/L	<MRL	0.20		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP018
Client Project #: KLI #514.01
Source: Trip Blank
NTL Lab#: A173523
Sample Matrix: Water
Comments:

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date:
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	Methylene Chloride	ug/L	<MRL	2.00		6/25/01
	1,1,2,2-Tetrachloroethane	ug/L	<MRL	0.20		
	Tetrachloroethene	ug/L	<MRL	0.20		
	Toluene	ug/L	<MRL	0.20		
	1,1,1-Trichloroethane	ug/L	<MRL	0.20		
	1,1,2-Trichloroethane	ug/L	<MRL	0.20		
	Trichloroethene	ug/L	<MRL	0.20		
	Trichlorofluoromethane	ug/L	<MRL	0.50		
	m,p-Xylene	ug/L	<MRL	0.40		
	o-Xylene	ug/L	<MRL	0.40		
	Vinyl Chloride	ug/L	<MRL	0.50		
	DBFM (Surr)	% Recovery	97			
	Toluene-d8 (Surr)	% Recovery	93			
	4-Bromofluorobenzene	% Recovery	95			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Influent
Client Project #: KLI #514.01
Source: Composite of 06/19/01 and 06/20/01
NTL Lab#: A173504
Sample Matrix: Water
Comments: MOA01SVL001

Report Date: 6/29/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 9:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 625						
	Acenaphthene	ug/L	<MRL	10.8	6/26/01	6/27/01
	Acenaphthylene	ug/L	<MRL	10.8		
	Anthracene	ug/L	<MRL	10.8		
	Benzidine	ug/l	<MRL	10.8		
	Benzoic Acid	ug/L	121 E	53.8		
	Benzo(a)anthracene	ug/L	<MRL	10.8		
	Benzo(b)fluoranthene	ug/L	<MRL	10.8		
	Benzo(k)fluoranthene	ug/L	<MRL	10.8		
	Benzo(a)pyrene	ug/L	<MRL	10.8		
	Benzo(g,h,i)perylene	ug/L	<MRL	10.8		
	Butyl Benzyl phthalate	ug/L	<MRL	10.8		
	Bis (2-chloroethyl) ether	ug/L	<MRL	10.8		
	Bis (2-ethylhexyl) phthalate	ug/L	34.0	10.8		
	Bis (2-chloroisopropyl) ether	ug/L	<MRL	10.8		
	4-Bromophenyl phenyl ether	ug/L	<MRL	10.8		
	2-Chloronaphthalene	ug/L	<MRL	10.8		
	4-Chloro-3-methyl phenol	ug/L	<MRL	10.8		
	2-Chlorophenol	ug/L	<MRL	10.8		
	4-Chlorophenyl phenyl ether	ug/L	<MRL	10.8		
	Chrysene	ug/L	<MRL	10.8		
	Dibenzo(a,h)anthracene	ug/L	<MRL	10.8		
	Di-n-butyl phthalate	ug/L	<MRL	10.8		
	1,2-Dichlorobenzene	ug/L	<MRL	10.8		

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Influent
Client Project #: KLI #514.01
Source: Composite of 06/19/01 and 06/20/01
NTL Lab#: A173504
Sample Matrix: Water
Comments: MOA01SVL001

Report Date: 6/29/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 9:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	1,3-Dichlorobenzene	ug/L	<MRL	10.8	6/26/01	6/27/01
	1,4-Dichlorobenzene	ug/L	<MRL	10.8		
	3,3'-Dichlorobenzidine	ug/L	<MRL	10.8		
	2,4-Dichlorophenol	ug/L	<MRL	10.8		
	Diethylphthalate	ug/L	<MRL	10.8		
	Dimethylphthalate	ug/L	<MRL	10.8		
	2,4-Dimethylphenol	ug/L	<MRL	10.8		
	2,4-Dinitrophenol	ug/L	<MRL	10.8		
	2,4-Dinitrotoluene	ug/L	<MRL	10.8		
	2,6-Dinitrotoluene	ug/L	<MRL	10.8		
	Di-n-Octylphthalate	ug/L	<MRL	10.8		
	Fluoranthene	ug/L	<MRL	10.8		
	Fluorene	ug/L	<MRL	10.8		
	Hexachlorobenzene	ug/L	<MRL	10.8		
	Hexachlorobutadiene	ug/L	<MRL	10.8		
	Hexachlorocyclopentadiene	ug/L	<MRL	10.8		
	Hexachloroethane	ug/L	<MRL	10.8		
	Indeno(1,2,3-cd)pyrene	ug/L	<MRL	10.8		
	Isophorone	ug/L	<MRL	10.8		
	2-Methyl-4,6-Dinitrophenol	ug/L	<MRL	10.8		
	Naphthalene	ug/L	<MRL	10.8		
	Nitrobenzene	ug/L	<MRL	10.8		
	2-Nitrophenol	ug/L	<MRL	10.8		
	4-Nitrophenol	ug/L	<MRL	10.8		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Influent
Client Project #: KLI #514.01
Source: Composite of 06/19/01 and 06/20/01
NTL Lab#: A173504
Sample Matrix: Water
Comments: MOA01SVL001

Report Date: 6/29/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 9:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	N-Nitrosodimethylamine	ug/L	<MRL	10.8	6/26/01	6/27/01
	N-Nitroso-di-n-propylamine	ug/L	<MRL	10.8		
	N-Nitrosodiphenylamine	ug/L	<MRL	10.8		
	Pentachlorophenol	ug/L	<MRL	10.8		
	Phenanthrene	ug/L	<MRL	10.8		
	Phenol	ug/L	42.0	10.8		
	Pyrene	ug/L	<MRL	10.8		
	1,2,4-Trichlorobenzene	ug/L	<MRL	10.8		
	2,4,6-Trichlorophenol	ug/L	<MRL	10.8		
	2-Fluorobiphenyl (Surr)	% Recovery	77			
	2-Fluorophenol (Surr)	% Recovery	47			
	Nitrobenzene-d5 (Surr)	% Recovery	75			
	Phenol-d6 (Surr)	% Recovery	34			
	p-Terphenyl-d14 (Surr)	% Recovery	93			
	2,4,6-Tribromophenol (Surr)	% Recovery	78			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent
Client Project #: KLI #514.01
Source: Composite of 06/19/01 and 06/20/01
NTL Lab#: A173505
Sample Matrix: Water
Comments: MOA01SVL002

Report Date: 6/29/01
Date Arrived: 6/21/01
Sample Date: 6/19/01
Sample Time: 9:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 625						
	Acenaphthene	ug/L	<MRL	10.5	6/26/01	6/27/01
	Acenaphthylene	ug/L	<MRL	10.5		
	Anthracene	ug/L	<MRL	10.5		
	Benzidine	ug/l	<MRL	10.5		
	Benzoic Acid	ug/L	<MRL	52.6		
	Benzo(a)anthracene	ug/L	<MRL	10.5		
	Benzo(b)fluoranthene	ug/L	<MRL	10.5		
	Benzo(k)fluoranthene	ug/L	<MRL	10.5		
	Benzo(a)pyrene	ug/L	<MRL	10.5		
	Benzo(g,h,i)perylene	ug/L	<MRL	10.5		
	Butyl Benzyl phthalate	ug/L	<MRL	10.5		
	Bis (2-chloroethyl) ether	ug/L	<MRL	10.5		
	Bis (2-ethylhexyl) phthalate	ug/L	22.9	10.5		
	Bis (2-chloroisopropyl) ether	ug/L	<MRL	10.5		
	4-Bromophenyl phenyl ether	ug/L	<MRL	10.5		
	2-Chloronaphthalene	ug/L	<MRL	10.5		
	4-Chloro-3-methyl phenol	ug/L	<MRL	10.5		
	2-Chlorophenol	ug/L	<MRL	10.5		
	4-Chlorophenyl phenyl ether	ug/L	<MRL	10.5		
	Chrysene	ug/L	<MRL	10.5		
	Dibenzo(a,h)anthracene	ug/L	<MRL	10.5		
	Di-n-butyl phthalate	ug/L	<MRL	10.5		
	1,2-Dichlorobenzene	ug/L	<MRL	10.5		

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent
Client Project #: KLI #514.01
Source: Composite of 06/19/01 and 06/20/01
NTL Lab#: A173505
Sample Matrix: Water
Comments: MOA01SVL002

Report Date: 6/29/01
Date Arrived: 6/21/01
Sample Date: 6/19/01
Sample Time: 9:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	1,3-Dichlorobenzene	ug/L	<MRL	10.5	6/26/01	6/27/01
	1,4-Dichlorobenzene	ug/L	<MRL	10.5		
	3,3'-Dichlorobenzidine	ug/L	<MRL	10.5		
	2,4-Dichlorophenol	ug/L	<MRL	10.5		
	Diethylphthalate	ug/L	<MRL	10.5		
	Dimethylphthalate	ug/L	<MRL	10.5		
	2,4-Dimethylphenol	ug/L	<MRL	10.5		
	2,4-Dinitrophenol	ug/L	<MRL	10.5		
	2,4-Dinitrotoluene	ug/L	<MRL	10.5		
	2,6-Dinitrotoluene	ug/L	<MRL	10.5		
	Di-n-Octylphthalate	ug/L	<MRL	10.5		
	Fluoranthene	ug/L	<MRL	10.5		
	Fluorene	ug/L	<MRL	10.5		
	Hexachlorobenzene	ug/L	<MRL	10.5		
	Hexachlorobutadiene	ug/L	<MRL	10.5		
	Hexachlorocyclopentadiene	ug/L	<MRL	10.5		
	Hexachloroethane	ug/L	<MRL	10.5		
	Indeno(1,2,3-cd)pyrene	ug/L	<MRL	10.5		
	Isophorone	ug/L	<MRL	10.5		
	2-Methyl-4,6-Dinitrophenol	ug/L	<MRL	10.5		
	Naphthalene	ug/L	<MRL	10.5		
	Nitrobenzene	ug/L	<MRL	10.5		
	2-Nitrophenol	ug/L	<MRL	10.5		
	4-Nitrophenol	ug/L	<MRL	10.5		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent
Client Project #: KLI #514.01
Source: Composite of 06/19/01 and 06/20/01
NTL Lab#: A173505
Sample Matrix: Water
Comments: MOA01SVL002

Report Date: 6/29/01
Date Arrived: 6/21/01
Sample Date: 6/19/01
Sample Time: 9:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	N-Nitrosodimethylamine	ug/L	<MRL	10.5	6/26/01	6/27/01
	N-Nitroso-di-n-propylamine	ug/L	<MRL	10.5		
	N-Nitrosodiphenylamine	ug/L	<MRL	10.5		
	Pentachlorophenol	ug/L	<MRL	10.5		
	Phenanthrene	ug/L	<MRL	10.5		
	Phenol	ug/L	<MRL	10.5		
	Pyrene	ug/L	<MRL	10.5		
	1,2,4-Trichlorobenzene	ug/L	<MRL	10.5		
	2,4,6-Trichlorophenol	ug/L	<MRL	10.5		
	2-Fluorobiphenyl (Surr)	% Recovery	69			
	2-Fluorophenol (Surr)	% Recovery	37			
	Nitrobenzene-d5 (Surr)	% Recovery	59			
	Phenol-d6 (Surr)	% Recovery	24			
	p-Terphenyl-d14 (Surr)	% Recovery	94			
	2,4,6-Tribromophenol (Surr)	% Recovery	79			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/17/02
Date Arrived: 6/21/01
Date Sampled: 6/20/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300687
Client Sample ID: MOA01SVL003
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Flag Definitions
MRL = Method Reporting Limit
MCL = Maximum Contaminant Level
B = Below Regulatory Minimum
H = Above Regulatory Maximum
M = Matrix Interference
J = Best Available Estimate
U = Less Than Detection Limit
D = Lost To Dilution

Comments: Composite of 06/19/01 @ 0900AM through 06/20/01 @ 0900AM; revised transmittal to report by 600 series lists; replaces A173524

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8260B									
Benzene	< MRL	mg/dry Kg	U	0.134		EPA 8260B	6/27/01	EPA 8260B	6/27/01
Bromodichloromethane	< MRL	mg/dry Kg	U	0.134					
Bromoform	< MRL	mg/dry Kg	U	0.134					
Bromomethane	< MRL	mg/dry Kg	U	0.268					
Carbon Tetrachloride	< MRL	mg/dry Kg	U	0.134					
Chlorobenzene	< MRL	mg/dry Kg	U	0.134					
Chloroethane	< MRL	mg/dry Kg	U	0.134					
2-Chloroethylvinyl ether	< MRL	mg/dry Kg	U	1.34					
Chloroform	< MRL	mg/dry Kg	U	0.134					
Chloromethane	< MRL	mg/dry Kg	U	0.268					
Dibromochloromethane	< MRL	mg/dry Kg	U	0.134					
1,2-Dichlorobenzene	< MRL	mg/dry Kg	U	0.134					
1,3-Dichlorobenzene	< MRL	mg/dry Kg	U	0.134					
1,4-Dichlorobenzene	0.303	mg/dry Kg		0.134					
1,1-Dichloroethane	< MRL	mg/dry Kg	U	0.134					
1,2-Dichloroethane	< MRL	mg/dry Kg	U	0.134					
1,1-Dichloroethene	< MRL	mg/dry Kg	U	0.134					
cis-1,2-Dichloroethene	< MRL	mg/dry Kg	U	0.134					
trans-1,2-Dichloroethene	< MRL	mg/dry Kg	U	0.134					
1,2-Dichloropropane	< MRL	mg/dry Kg	U	0.134					
cis-1,3-Dichloropropene	< MRL	mg/dry Kg	U	0.134					
trans-1,3-Dichloropropene	< MRL	mg/dry Kg	U	0.134					

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
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Anchorage, AK 99501

Report Date: 1/17/02
Date Arrived: 6/21/01
Date Sampled: 6/20/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300687
Client Sample ID: MOA01SVL003
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Flag Definitions
MRL = Method Reporting Limit
MCL = Maximum Contaminant Level
B = Below Regulatory Minimum
H = Above Regulatory Maximum
M = Matrix Interference
J = Best Available Estimate
U = Less Than Detection Limit
D = Lost To Dilution

Comments: Composite of 06/19/01 @ 0900AM through 06/20/01 @ 0900AM; revised transmittal to report by 600 series lists; replaces A173524

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8260B									
Ethylbenzene	< MRL	mg/dry Kg	U	0.134		EPA 8260B	6/27/01	EPA 8260B	6/27/01
Methylene Chloride	< MRL	mg/dry Kg	U	0.134					
1,1,2,2-Tetrachloroethane	< MRL	mg/dry Kg	U	0.134					
Tetrachloroethene	0.233	mg/dry Kg		0.134					
Toluene	0.741	mg/dry Kg		0.134					
1,1,1-Trichloroethane	< MRL	mg/dry Kg	U	0.134					
1,1,2-Trichloroethane	< MRL	mg/dry Kg	U	0.134					
Trichloroethene	< MRL	mg/dry Kg	U	0.134					
Trichlorofluoromethane	< MRL	mg/dry Kg	U	0.537					
m,p-Xylene	0.333	mg/dry Kg		0.268					
o-Xylene	0.137	mg/dry Kg		0.134					
Vinyl Chloride	< MRL	mg/dry Kg	U	0.268					
DBFM (Surr)	88	% Recovery							
Toluene-d8 (Surr)	85	% Recovery							
4-Bromofluorobenzene	89	% Recovery							
EPA 8270C									
Acenaphthene	< MRL	mg/dry Kg	U	11.9		EPA 3510	6/25/01	EPA 8270C	6/26/01
Acenaphthylene	< MRL	mg/dry Kg	U	11.9					
Anthracene	< MRL	mg/dry Kg	U	11.9					
Benzidine	< MRL	mg/dry Kg	U	11.9					
Benzoic Acid	< MRL	mg/dry Kg	U	59.4					

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
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POUCH 340043

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PRUDHOE BAY, ALASKA 99734

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/17/02
Date Arrived: 6/21/01
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Attn: Janet Savoie
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Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8270C									
Benzo(a)anthracene	< MRL	mg/dry Kg	U	11.9		EPA 3510	6/25/01	EPA 8270C	6/26/01
Benzo(b)fluoranthene	< MRL	mg/dry Kg	U	11.9					
Benzo(k)fluoranthene	< MRL	mg/dry Kg	U	11.9					
Benzo(a)pyrene	< MRL	mg/dry Kg	U	11.9					
Benzo(g,h,i)perylene	< MRL	mg/dry Kg	U	11.9					
Butylbenzylphthalate	< MRL	mg/dry Kg	U	23.7					
Bis(2-chloroethyl)ether	< MRL	mg/dry Kg	U	11.9					
Bis(2-chloroethoxy)methane	< MRL	mg/dry Kg	U	11.9					
Bis(2-ethylhexyl)phthalate	40.0	mg/dry Kg		23.7					
Bis(2-chloroisopropyl)ether	< MRL	mg/dry Kg	U	11.9					
4-Bromophenyl phenyl ether	< MRL	mg/dry Kg	U	11.9					
2-Chloronaphthalene	< MRL	mg/dry Kg	U	11.9					
4-Chloro-3-methylphenol	< MRL	mg/dry Kg	U	11.9					
2-Chlorophenol	< MRL	mg/dry Kg	U	11.9					
4-Chlorophenyl phenyl ether	< MRL	mg/dry Kg	U	11.9					
Chrysene	< MRL	mg/dry Kg	U	11.9					
Dibenz(a,h)anthracene	< MRL	mg/dry Kg	U	11.9					
Di-n-butylphthalate	< MRL	mg/dry Kg	U	23.7					

wendy mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8270C									
1,2-Dichlorobenzene	< MRL	mg/dry Kg	U	11.9		EPA 3510	6/25/01	EPA 8270C	6/26/01
1,3-Dichlorobenzene	< MRL	mg/dry Kg	U	11.9					
1,4-Dichlorobenzene	< MRL	mg/dry Kg	U	11.9					
3,3'-Dichlorobenzidine	< MRL	mg/dry Kg	U	11.9					
2,4-Dichlorophenol	< MRL	mg/dry Kg	U	11.9					
Diethylphthalate	< MRL	mg/dry Kg	U	11.9					
Dimethylphthalate	< MRL	mg/dry Kg	U	11.9					
2,4-Dimethylphenol	< MRL	mg/dry Kg	U	11.9					
2,4-Dinitrophenol	< MRL	mg/dry Kg	U	11.9					
2,4-Dinitrotoluene	< MRL	mg/dry Kg	U	11.9					
2,6-Dinitrotoluene	< MRL	mg/dry Kg	U	11.9					
Di-n-Octylphthalate	< MRL	mg/dry Kg	U	23.7					
Fluoranthene	< MRL	mg/dry Kg	U	11.9					
Fluorene	< MRL	mg/dry Kg	U	11.9					
Hexachlorobenzene	< MRL	mg/dry Kg	U	11.9					
Hexachlorobutadiene	< MRL	mg/dry Kg	U	11.9					
Hexachlorocyclopentadiene	< MRL	mg/dry Kg	U	11.9					
Hexachloroethane	< MRL	mg/dry Kg	U	11.9					
Indeno(1,2,3-cd)pyrene	< MRL	mg/dry Kg	U	11.9					
Isophorone	< MRL	mg/dry Kg	U	11.9					
2-Methyl-4,6-Dinitrophenol	< MRL	mg/dry Kg	U	11.9					

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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EPA 8270C									
Naphthalene	< MRL	mg/dry Kg	U	11.9		EPA 3510	6/25/01	EPA 8270C	6/26/01
Nitrobenzene	< MRL	mg/dry Kg	U	11.9					
2-Nitrophenol	< MRL	mg/dry Kg	U	11.9					
4-Nitrophenol	< MRL	mg/dry Kg	U	11.9					
N-Nitrosodimethylamine	< MRL	mg/dry Kg	U	11.9					
N-Nitroso-di-n-propylamine	< MRL	mg/dry Kg	U	11.9					
N-Nitrosodiphenylamine	< MRL	mg/dry Kg	U	11.9					
Pentachlorophenol	< MRL	mg/dry Kg	U	11.9					
Phenanthrene	< MRL	mg/dry Kg	U	11.9					
Phenol	< MRL	mg/dry Kg	U	11.9					
Pyrene	< MRL	mg/dry Kg	U	11.9					
1,2,4-Trichlorobenzene	< MRL	mg/dry Kg	U	11.9					
2,4,6-Trichlorophenol	< MRL	mg/dry Kg	U	11.9					
2-Fluorobiphenyl (Surr)	D	% Recovery							
2-Fluorophenol (Surr)	D	% Recovery							
Nitrobenzene-d5 (Surr)	D	% Recovery							
Phenol-d6 (Surr)	D	% Recovery							
p-Terphenyl-d14 (Surr)	D	% Recovery							
2,4,6-Tribromophenol (Surr)	D	% Recovery							

Wendy Mitchell
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Anchorage Laboratory Manager

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Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
SM 2540 G									
Total Solids, Percent	33.6	%					6/21/01	SM 2540 G	6/22/01

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

WATER VOLATILE LABORATORY CONTROL SAMPLE\DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Spiked Sample Laboratory ID : LCS0627A
Spiked Sample Duplicate Laboratory ID : LCS0627B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	22.1	110	70-130
Benzene	20.0	< 0.5	22.8	114	70-130
Trichloroethylene	20.0	< 0.5	20.4	102	70-130
Toluene	20.0	< 0.5	21.0	105	70-130
Chlorobenzene	20.0	< 0.5	21.1	105	70-130

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethylene	20.0	22.6	113	2	20	70-130
Benzene	20.0	23.2	116	2	20	70-130
Trichloroethylene	20.0	21.2	106	4	20	70-130
Toluene	20.0	22.1	110	5	20	70-130
Chlorobenzene	20.0	22.3	112	6	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Sample Laboratory ID : A173524
Spiked Sample Laboratory ID : A173524M
Spiked Sample Duplicate Laboratory ID : A173524S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	16.5	82	70-130
Benzene	20.0	< 0.5	19.2	96	70-130
Trichloroethylene	20.0	< 0.5	17.0	85	70-130
Toluene	20.0	2.8	19.7	85	70-130
Chlorobenzene	20.0	< 0.5	17.8	89	70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethylene	20.0	15.4	77	6	20	70-130
Benzene	20.0	17.6	88	8	20	70-130
Trichloroethylene	20.0	17.3	87	2	20	70-130
Toluene	20.0	20.2	87	3	20	70-130
Chlorobenzene	20.0	17.8	89	0	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER VOLATILE LABORATORY CONTROL SAMPLE\DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Spiked Sample Laboratory ID : LCS0625A
Spiked Sample Duplicate Laboratory ID : LCS0625B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	19.8	99	70-130
Benzene	20.0	< 0.5	20.1	101	70-130
Trichloroethylene	20.0	< 0.5	19.1	95	70-130
Toluene	20.0	< 0.5	18.5	93	70-130
Chlorobenzene	20.0	< 0.5	19.5	98	70-130

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethylene	20.0	23.7	118	18	20	70-130
Benzene	20.0	18.6	93	8	20	70-130
Trichloroethylene	20.0	19.1	95	0	20	70-130
Toluene	20.0	18.0	90	3	20	70-130
Chlorobenzene	20.0	19.2	96	1	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Sample Laboratory ID : A173481
Spiked Sample Laboratory ID : A173481M
Spiked Sample Duplicate Laboratory ID : A173481S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	24.8	124	70-130
Benzene	20.0	< 0.5	18.9	94	70-130
Trichloroethylene	20.0	< 0.5	18.7	94	70-130
Toluene	20.0	< 0.5	18.3	92	70-130
Chlorobenzene	20.0	< 0.5	19.4	97	70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethylene	20.0	24.6	123	1	20	70-130
Benzene	20.0	19.2	96	2	20	70-130
Trichloroethylene	20.0	19.0	95	2	20	70-130
Toluene	20.0	19.1	96	4	20	70-130
Chlorobenzene	20.0	18.8	94	3	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

QUANT REPORT EPA 8260/624

Operator ID: XM
Output File: MB062701.1A2
Data File: MB062701.MS
Name: MB062701
Sample: 5 ML PURGE

Quant Time: 06/28/01 08:42
Injected at: 06/27/01 20:11
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC061801.QCI
Comment: 2UL/5ML VOC9-3 100uL EXT
Last Calibration: 06/19/01

Last Qcal Time: 06/19/01 10:29

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*Pentafluorobenzene	10.21	875	168	97702	20.00	ug/L	440	1.000
2)	*1,4-Difluorobenzene	11.45	981	114	854750	20.00	ug/L	999	1.000
3)	*d5-Chlorobenzene	16.23	1391	117	783663	20.00	ug/L	996	1.000
4)	*d4-1,4-Dichlorobenzene	20.11	1724	152	349442	20.00	ug/L	994	1.000
5)	Dibromofluoromethane(ss)	10.23	877	111	160199	99.75	%	430	0.329
6)	d8-Toluene (ss)	13.83	1185	98	581436	103.87	%	993	0.131
7)	4-Bromofluorobenzene(ss)	18.17	1557	95	249074	98.61	%	996	0.065
8)	Dichlorodifluoromethane	0.00	256	85	0	Not Found	ug/L	888	0.000
9)	Chloromethane	0.00	288	47	0	Not Found	ug/L	460	0.000
10)	Vinyl Chloride	0.00	309	62	0	Not Found	ug/L	490	0.000
11)	Bromomethane	4.22	362	94	284	3.21	ug/L	0	0.019
12)	Chloroethane	4.51	387	49	9564	48.27	ug/L	330	0.041
13)	Trichlorofluoromethane	0.00	425	101	0	Not Found	ug/L	610	0.000
14)	Diethyl Ether	5.73	491	59	114	Below MDL	ug/L	437	0.386
15)	1,1-Dichloroethylene	0.00	520	96	0	Not Found	ug/L	0	0.000
16)	Acetone	6.37	546	43	2149	Below MDL	ug/L	379	1.215
17)	Iodomethane	0.00	550	142	0	Not Found	ug/L	793	0.000
18)	Carbon Disulfide	0.00	557	76	0	Not Found	ug/L	792	0.000
19)	Allyl Chloride	0.00	585	39	0	Not Found	ug/L	406	0.000
20)	Methylene Chloride	7.11	609	49	1258	Below MDL	ug/L	23	4.866
21)	Methyl-Tert-Butylether	0.00	654	73	0	Not Found	ug/L	794	0.000
22)	Trans-1,2-Dichloroethene	0.00	649	61	0	Not Found	ug/L	731	0.000
23)	Acrylonitrile	7.67	657	52	729	Below MDL	ug/L	558	0.914
24)	1,1-Dichloroethane	0.00	721	63	0	Not Found	ug/L	795	0.000
25)	Vinyl Acetate	8.47	726	43	450	Below MDL	ug/L	373	4.166
26)	2,2-Dichloropropane	9.40	806	77	1084	Below MDL	ug/L	773	5.106
27)	Cis-1,2-Dichloroethene	0.00	806	61	0	Not Found	ug/L	651	0.000
28)	Methyl-Ethyl-Ketone	9.50	814	43	3163	Below MDL	ug/L	738	1.482
29)	Methyl Acrylate	9.59	822	55	292	Below MDL	ug/L	144	1.345
30)	Methacrylonitrile	9.78	838	41	333	Below MDL	ug/L	487	1.651

* Compound is ISTD

Operator ID: XM
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Data File: MB062701.MS
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Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC061801.QCI
Comment: 2UL/5ML VOC9-3 100uL EXT
Last Calibration: 06/19/01

Last Qcal Time: 06/19/01 10:29

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	Bromochloromethane	0.00	842	49	0	Not Found	ug/L	288	0.000
32)	Tetrahydrofuran	9.97	854	71	2019	Below MDL	ug/L	696	0.513
33)	Chloroform	9.95	853	83	2289	Below MDL	ug/L	808	5.766
34)	1,1,1-Trichloroethane	0.00	872	97	0	Not Found	ug/L	509	0.000
35)	1-Chlorobutane	0.00	898	56	0	Not Found	ug/L	417	0.000
36)	1,1-Dichloropropene	0.00	896	75	0	Not Found	ug/L	723	0.000
37)	Carbon Tetrachloride	0.00	897	117	0	Not Found	ug/L	722	0.000
38)	Benzene	0.00	930	78	0	Not Found	ug/L	945	0.000
39)	1,2-Dichloroethane	0.00	936	62	0	Not Found	ug/L	526	0.000
40)	Trichloroethylene	0.00	1018	130	0	Not Found	ug/L	725	0.000
41)	1,2-Dichloropropane	0.00	1055	63	0	Not Found	ug/L	173	0.000
42)	Methylmethacrylate	12.46	1068	39	2066	Below MDL	ug/L	511	0.314
43)	Dibromomethane	0.00	1074	93	0	Not Found	ug/L	886	0.000
44)	Bromodichloromethane	0.00	1092	83	0	Not Found	ug/L	652	0.000
45)	2-Chloroethylvinylether	13.14	1126	63	143	Below MDL	ug/L	790	0.092
46)	Cis-1,3-Dichloropropene	0.00	1152	75	0	Not Found	ug/L	628	0.000
47)	4-Methyl-2-Pentanone	0.00	1170	43	0	Not Found	ug/L	551	0.000
48)	1,1-Dichloropropanone	13.71	1175	43	35	Below MDL	ug/L	726	0.100
49)	Toluene	0.00	1195	91	0	Not Found	ug/L	597	0.000
50)	Trans-1,3-Dichloropropene	14.34	1229	75	1683	Below MDL	ug/L	373	0.527
51)	Ethylmethacrylate	14.37	1232	69	693	Below MDL	ug/L	400	0.279
52)	1,1,2-Trichloroethane	0.00	1254	97	0	Not Found	ug/L	128	0.000
53)	Tetrachloroethylene	0.00	1270	129	0	Not Found	ug/L	776	0.000
54)	1,3-Dichloropropane	0.00	1284	76	0	Not Found	ug/L	250	0.000
55)	2-Hexanone	14.99	1285	43	918	Below MDL	ug/L	496	0.246
56)	Dibromochloromethane	15.31	1312	129	493	Below MDL	ug/L	475	0.387
57)	1,2-Dibromoethane	0.00	1330	107	0	Not Found	ug/L	464	0.000
58)	Chlorobenzene	16.28	1395	112	2406	Below MDL	ug/L	147	1.085
59)	Ethylbenzene	0.00	1404	91	0	Not Found	ug/L	727	0.000
60)	1,1,1,2-Tetrachloroethane	0.00	1406	131	0	Not Found	ug/L	710	0.000

* Compound is ISTD

Operator ID: XM
Output File: MB062701.1A2
Data File: MB062701.MS
Name: MB062701
Sample: 5 ML PURGE

Quant Time: 06/28/01 08:42
Injected at: 06/27/01 20:11
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC061801.QCI
Comment: 2UL/5ML VOC9-3 100uL EXT
Last Calibration: 06/19/01

Last Qcal Time: 06/19/01 10:29

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	p,m-Xylene	0.00	1420	91	0	Not Found	ug/L	938	0.000
62)	o-Xylene	0.00	1479	91	0	Not Found	ug/L	981	0.000
63)	Styrene	17.28	1481	104	3041	Below MDL	ug/L	956	1.016
64)	Bromoform	0.00	1518	171	0	Not Found	ug/L	795	0.000
65)	Isopropylbenzene	17.83	1528	105	4616	Below MDL	ug/L	969	1.709
66)	1,1,2,2-Tetrachloroethane	18.41	1578	83	1818	Below MDL	ug/L	673	1.348
67)	trans-1,4-Dichloro-2-Butene	18.50	1586	53	324	Below MDL	ug/L	940	0.132
68)	Bromobenzene	18.46	1582	156	1909	Below MDL	ug/L	875	0.560
69)	1,2,3-Trichloropropane	0.00	1587	75	0	Not Found	ug/L	967	0.000
70)	N-Propylbenzene	0.00	1587	91	0	Not Found	ug/L	976	0.000
71)	2-Chlorotoluene	18.75	1607	91	6396	Below MDL	ug/L	864	1.485
72)	1,3,5-Trimethylbenzene	18.78	1610	105	10630	Below MDL	ug/L	950	1.394
73)	4-Chlorotoluene	18.92	1622	91	4072	Below MDL	ug/L	923	1.317
74)	Tert-Butylbenzene	0.00	1659	91	0	Not Found	ug/L	977	0.000
75)	1,2,4-Trimethylbenzene	19.44	1666	105	11775	Below MDL	ug/L	988	1.293
76)	Pentachloroethane	19.48	1670	130	541	Below MDL	ug/L	780	0.105
77)	Sec-Butylbenzene	19.71	1689	105	10380	Below MDL	ug/L	882	1.635
78)	p-Isopropyltoluene	19.93	1708	119	9333	Below MDL	ug/L	954	1.374
79)	m-Dichlorobenzene	20.02	1716	146	4661	Below MDL	ug/L	956	0.715
80)	p-Dichlorobenzene	20.16	1728	146	4736	Below MDL	ug/L	366	1.664
81)	n-Butylbenzene	20.64	1769	91	12033	Below MDL	ug/L	974	2.626
82)	o-Dichlorobenzene	20.83	1785	146	4242	Below MDL	ug/L	947	1.514
83)	Hexachloroethane	21.23	1820	117	2312	Below MDL	ug/L	799	0.666
84)	1,2-Dibromo-3-Chloropropane	22.18	1901	75	622	Below MDL	ug/L	65	0.268
85)	Nitrobenzene	22.55	1933	77	1662	Below MDL	ug/L	710	0.042
86)	1,2,4-Trichlorobenzene	23.57	2020	180	8490	0.69	ug/L	924	0.700
87)	Hexachlorobutadiene	23.78	2038	225	3440	Below MDL	ug/L	880	0.715
88)	Naphthalene	24.07	2063	128	48132	1.53	ug/L	850	1.798
89)	1,2,3-Trichlorobenzene	24.55	2104	180	8985	Below MDL	ug/L	920	0.636

ND in Samp
ND in S.

* Compound is ISTD

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0625A

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
Phenol	10.0	0.0	8.0	79	5-112
2-Chlorophenol	10.0	0.0	8.1	81	23-134
1,4-Dichlorobenzene	10.0	0.0	7.9	79	20-124
N-Nitrosodi-n-propylam	10.0	0.2	8.8	86	1-230
1,2,4-Trichlorobenzene	10.0	0.0	8.4	84	44-142
4-Chloro-3-Methylpheno	10.0	0.0	8.7	87	22-147

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	10.0	6.4	64	21	30	5-112
2-Chlorophenol	10.0	6.7	66	20	30	23-134
1,4-Dichlorobenzene	10.0	7.0	70	12	30	20-124
N-Nitrosodi-n-propylam	10.0	7.8	76	12	30	1-230
1,2,4-Trichlorobenzene	10.0	8.4	84	0	30	44-142
4-Chloro-3-Methylpheno	10.0	9.7	97	11	30	22-147

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

Comment:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0625A

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	10.0	0.0	8.9	89	47-145
4-Nitrophenol	10.0	0.0	8.9	89	39-139
2,4-Dinitrotoluene	10.0	0.1	9.6	95	17-132
Pentachlorophenol	10.0	0.0	6.6	66	14-176
Pyrene	10.0	0.0	9.6	96	52-115

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	10.0	9.8	98	9	30	47-145
4-Nitrophenol	10.0	9.6	96	7	30	39-139
2,4-Dinitrotoluene	10.0	10.6	105	9	30	17-132
Pentachlorophenol	10.0	7.6	76	14	30	14-176
Pyrene	10.0	9.9	99	3	30	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0626A

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
Phenol	10.0	0.0	2.7	27	5-112
2-Chlorophenol	10.0	0.0	6.1	61	23-134
1,4-Dichlorobenzene	10.0	0.0	5.6	56	20-124
N-Nitrosodi-n-propylam	10.0	1.6	6.9	53	1-230
1,2,4-Trichlorobenzene	10.0	0.0	5.8	58	44-142
4-Chloro-3-Methylpheno	10.0	0.0	7.1	71	22-147

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Phenol	10.0	2.6	25	6	30	5-112
2-Chlorophenol	10.0	5.6	55	9	30	23-134
1,4-Dichlorobenzene	10.0	5.4	54	4	30	20-124
N-Nitrosodi-n-propylam	10.0	5.8	42	17	30	1-230
1,2,4-Trichlorobenzene	10.0	6.0	59	2	30	44-142
4-Chloro-3-Methylpheno	10.0	7.4	74	5	30	22-147

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

Comment:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0626A

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC	#	QC. LIMITS REC.
Acenaphthene	10.0	0.0	8.4	84		47-145
4-Nitrophenol	10.0	0.0	3.7	37	*	39-139
2,4-Dinitrotoluene	10.0	0.1	10.0	99		17-132
Pentachlorophenol	10.0	0.0	5.7	57		14-176
Pyrene	10.0	0.0	10.0	100		52-115

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	REC.
Acenaphthene	10.0	8.8	88		4		30	47-145
4-Nitrophenol	10.0	3.9	39	*	4		30	39-139
2,4-Dinitrotoluene	10.0	10.6	106		6		30	17-132
Pentachlorophenol	10.0	5.1	51		12		30	14-176
Pyrene	10.0	9.9	99		1		30	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

Comment:

Operator ID: LWM
Quant Time: 06/28/01 09:46
Output File: MB0626A.1B2
Injected at: 06/27/01 20:15
Data File: MB0626A.MS
Dilution Factor: 1.00
Name: MB0626A
Instrument ID: Saturn II
Sample: Injector Split 1:20 (2uL Inject)

ID File: IC06200A.QCI
Comment: 8270/625
Last Calibration: 06/20/01
Last Qcal Time: 06/20/01 10:26

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*d4-1,4-Dichlorobenzene (I.S.)	9.36	685	152	19678	10.00	mg/L	0	1.000
2)	*d8-Naphthalene (I.S.)	13.15	962	136	67371	10.00	mg/L	0	1.000
3)	*d10-Acenaphthene (I.S.)	19.72	1443	160	14020	10.00	mg/L	0	1.000
4)	*d10-Phenanthrene (I.S.)	25.75	1884	188	59762	10.00	mg/L	0	1.000
5)	*d12-Chrysene (I.S.)	34.32	2511	240	54504	10.00	mg/L	0	1.000
6)	*12-Perylene (I.S.)	37.02	2709	264	33773	10.00	mg/L	0	1.000
7)	2-Fluorophenol (Surr)	6.33	463	112	24229	47.24	%	0	0.261
8)	d6-Phenol (Surr)	8.69	636	99	15856	25.77	%	0	0.313
9)	d5-Nitrobenzene (Surr)	10.93	800	82	20496	75.44	%	0	0.041
10)	2-Fluorobiphenyl (Surr)	17.22	1260	172	19369	80.71	%	0	0.172
11)	Tribromophenol (Surr)	22.97	1681	330	7872	52.01	%	0	0.108
12)	d14-Terphenyl (Surr)	31.61	2313	244	35282	105.94	%	0	0.062
13)	Nitrosodimethylamine	3.62	265	74	18	0.02	mg/L	453	0.475
14)	Pyridine	3.50	256	79	121	0.03	mg/L	491	2.343
15)	N-Nitrosomethylethylamine	5.31	389	88	33	0.01	mg/L	205	1.331
16)	Methyl methanesulfonate	5.70	417	80	31	0.02	mg/L	562	0.913
17)	N-Nitrosodiethylamine	7.30	534	102	12	0.01	mg/L	310	0.626
18)	Ethyl methanesulfonate	7.80	571	79	43	0.01	mg/L	780	2.189
19)	Phenol	8.72	638	94	176	0.03	mg/L	443	3.514
20)	Aniline	8.51	623	93	100	0.01	mg/L	355	3.744
21)	Bis(2-Chloroethyl)ether	9.22	675	93	119	0.04	mg/L	396	1.452
22)	2-Chlorophenol	9.33	683	128	170	0.03	mg/L	156	3.128
23)	1,3-Dichlorobenzene	9.55	699	146	0	0.00	mg/L	78	1.600
24)	1,4-Dichlorobenzene	9.97	730	146	0	0.00	mg/L	223	1.545
25)	Benzyl Alcohol	10.37	759	108	16	0.01	mg/L	403	1.433
26)	1,2-Dichlorobenzene	9.97	730	146	0	0.00	mg/L	243	1.545
27)	2-Methylphenol	10.33	756	107	168	0.03	mg/L	846	2.719
28)	Bis(2-Chloroisopropyl)ether	10.48	767	45	143	0.24	mg/L	615	0.305
29)	N-Nitrosopyrrolidine	10.70	783	100	9	0.00	mg/L	150	1.206
30)	Acetophenone	10.52	770	105	154	0.01	mg/L	616	6.101

* Compound is ISTD

Operator ID: LWM
Output File: MB0626A.1B2
Data File: MB0626A.MS
Name: MB0626A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 06/28/01 09:46
Injected at: 06/27/01 20:15
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC06200A.QCI
Comment: 8270/625
Last Calibration: 06/20/01
Last Qcal Time: 06/20/01 10:26

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	N-Nitrosodi-n-propylamine	10.93	800	70	6984	1.56	mg/L	388	2.274
32)	3+4-Methylphenols	10.47	766	107	77	0.01	mg/L	565	4.998
33)	o-Toluidine	10.62	777	106	81	0.01	mg/L	723	5.380
34)	Hexachloroethane	10.77	788	117	193	0.08	mg/L	245	1.262
35)	Nitrobenzene	11.20	820	77	53	0.01	mg/L	666	0.876
36)	N-Nitrosopiperdine	11.51	842	114	0	0.00	mg/L	229	0.247
37)	Isophorone	11.45	838	82	103	0.01	mg/L	766	1.507
38)	2-Nitrophenol	11.75	860	139	10	0.01	mg/L	553	0.167
39)	2,4-Dimethylphenol	12.05	882	122	12	0.00	mg/L	560	0.786
40)	O,O,O-Triethylphosphorothioate	12.65	926	121	52	0.02	mg/L	626	0.500
41)	Benzoic Acid	12.83	939	122	21	0.35	mg/L	0	0.009
42)	Bis(2-Chloroethoxy)methane	12.73	932	93	55	0.01	mg/L	664	0.771
43)	2,4-Dichlorophenol	12.60	922	162	0	0.00	mg/L	222	0.333
44)	1,2,4-Trichlorobenzene	13.01	952	180	12	0.00	mg/L	246	0.379
45)	Naphthalene	13.20	966	128	228	0.01	mg/L	603	2.581
46)	2,6-Dichlorophenol	13.61	996	162	0	0.00	mg/L	373	0.317
47)	4-Chloroaniline	13.57	993	127	18	0.00	mg/L	808	1.157
48)	Hexachloropropene	13.61	996	213	0	0.00	mg/L	473	0.247
49)	Hexachlorobutadiene	13.81	1011	225	0	0.00	mg/L	358	0.300
50)	N-Nitrosodi-n-butylamine	15.12	1106	84	34	0.01	mg/L	475	0.545
51)	4-Chloro-3-Methylphenol	15.95	1167	107	28	0.00	mg/L	379	0.994
52)	Safrole	15.46	1131	162	0	0.00	mg/L	284	0.369
53)	2-Methylnaphthalene	15.71	1150	141	157	0.03	mg/L	697	0.809
54)	Hexachlorocyclopentadiene	16.44	1203	237	0	0.00	mg/L	228	1.674
55)	1,2,4,5-Tetrachlorobenzene	16.84	1232	216	0	0.00	mg/L	40	1.764
56)	2,4,6-Trichlorophenol	17.75	1299	196	0	0.00	mg/L	220	0.967
57)	2,4,5-Trichlorophenol	17.10	1251	196	0	0.00	mg/L	46	1.081
58)	Isosafrole	18.15	1328	162	0	0.00	mg/L	380	11.020
59)	2-Chloronaphthalene	18.11	1325	127	9	0.00	mg/L	380	4.475
60)	2-Nitroaniline	18.32	1341	138	0	0.00	mg/L	547	0.896

* Compound is ISTD

Operator ID: LWM
Quant Time: 06/28/01 09:46
Output File: MB0626A.1B2
Injected at: 06/27/01 20:15
Data File: MB0626A.MS
Dilution Factor: 1.00
Name: MB0626A
Instrument ID: Saturn II
Sample: Injector Split 1:20 (2uL Inject)

ID File: IC06200A.QCI
Comment: 8270/625
Last Calibration: 06/20/01
Last Qcal Time: 06/20/01 10:26

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	1,4-Naphthoquinone	19.01	1391	158	0	0.00	mg/L	347	0.561
62)	Dimethylphthalate	18.98	1389	163	172	0.02	mg/L	830	5.800
63)	1,3-Dinitrobenzene	19.47	1425	168	0	0.00	mg/L	645	0.077
64)	2,6-Dinitrotoluene	19.15	1401	165	51	0.07	mg/L	568	0.116
65)	Acenaphthylene	19.06	1395	152	11	0.00	mg/L	692	4.797

* Compound is ISTD

Operator ID: LWM
Quant Time: 06/28/01 11:23
Output File: MB0626A.1B2
Injected at: 06/27/01 20:15
Data File: MB0626A.MS
Dilution Factor: 1.00
Name: MB0626A
Instrument ID: Saturn II
Sample: Injector Split 1:20 (2uL Inject)

ID File: IC06200B.QCI
Comment: 8270/625
Last Calibration: 06/20/01
Last Qcal Time: 06/20/01 17:07

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*d4-1,4-Dichlorobenzene (I.S.)	9.36	685	152	19678	10.00	mg/L	0	1.000
2)	*d8-Naphthalene (I.S.)	13.15	962	136	67371	10.00	mg/L	0	1.000
3)	*d10-Acenaphthene (I.S.)	19.72	1443	160	14020	10.00	mg/L	0	1.000
4)	*d10-Phenanthrene (I.S.)	25.75	1884	188	59762	10.00	mg/L	0	1.000
5)	*d12-Chrysene (I.S.)	34.32	2511	240	54504	10.00	mg/L	0	1.000
6)	*12-Perylene (I.S.)	37.02	2709	264	33773	10.00	mg/L	0	1.000
7)	3-Nitroaniline	19.47	1425	138	0	0.00	mg/L	380	0.637
8)	Acenaphthene	20.66	1512	153	9	0.00	mg/L	387	3.393
9)	2,4-Dinitrophenol	20.98	1535	184	0	0.00	mg/L	386	0.022
10)	Pentachlorobenzene	20.64	1510	250	0	0.00	mg/L	326	1.712
11)	Dibenzofuran	20.70	1515	168	0	0.00	mg/L	107	4.999
12)	4-Nitrophenol	20.99	1536	109	48	0.02	mg/L	542	1.405
13)	2,4-Dinitrotoluene	20.43	1495	165	59	0.06	mg/L	835	0.725
14)	1-Naphthylamine	21.35	1562	143	12	0.00	mg/L	521	2.637
15)	2,3,4,6-Tetrachlorophenol	20.77	1520	232	0	0.00	mg/L	0	0.517
16)	2-Napthylamine	20.66	1512	143	24	0.01	mg/L	379	2.866
17)	Diethylphthalate	22.37	1637	149	22	0.00	mg/L	626	5.511
18)	Fluorene	21.95	1606	166	13	0.00	mg/L	813	3.067
19)	4-Chlorophenyl phenyl ether	21.77	1593	204	0	0.00	mg/L	483	2.757
20)	Thionazin	22.52	1648	97	78	0.02	mg/L	822	2.430
21)	5-Nitro-o-toluidide	22.85	1672	152	0	0.00	mg/L	696	0.315
22)	4-Nitroaniline	22.37	1637	138	0	0.00	mg/L	572	0.465
23)	2-Methyl-4,6-Dinitrophenol	22.44	1642	198	0	0.00	mg/L	844	0.022
24)	N-Nitrosodiphenylamine	22.44	1642	169	8	0.00	mg/L	286	0.686
25)	Diallate	24.05	1760	86	14	0.00	mg/L	173	0.500
26)	Phorate	24.39	1785	75	61	0.02	mg/L	539	0.512
27)	1,3,5-Trinitrobenzene	24.01	1757	74	50	0.25	mg/L	733	0.035
28)	Phenacetin	24.11	1764	179	13	0.01	mg/L	402	0.194
29)	4-Bromophenyl phenyl ether	24.41	1786	248	0	0.00	mg/L	340	0.481
30)	Hexachlorobenzene	24.46	1790	284	0	0.00	mg/L	225	0.361

* Compound is ISTD

Operator ID: LWM
Quant Time: 06/28/01 11:23
Output File: MB0626A.1B2
Injected at: 06/27/01 20:15
Data File: MB0626A.MS
Dilution Factor: 1.00
Name: MB0626A
Instrument ID: Saturn II
Sample: Injector Split 1:20 (2uL Inject)

ID File: IC06200B.QCI
Comment: 8270/625
Last Calibration: 06/20/01
Last Qcal Time: 06/20/01 17:07

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	Dimethoate	25.16	1841	87	23	0.01	mg/L	558	0.403
32)	Pentachlorophenol	25.38	1857	266	0	0.00	mg/L	335	0.096
33)	Pentachloronitrobenzene	24.78	1813	237	0	0.00	mg/L	339	0.083
34)	Diphenylamine	25.23	1846	169	71	0.02	mg/L	597	0.741
35)	Pronamide	25.95	1899	173	0	0.00	mg/L	322	0.478
36)	Phenanthrene	26.20	1917	178	12	0.00	mg/L	771	1.194
37)	Disulfoton	25.82	1889	89	73	0.02	mg/L	737	0.759
38)	Anthracene	26.20	1917	178	12	0.00	mg/L	860	1.179
39)	Methyl Parathion	27.82	2036	109	21	0.01	mg/L	562	0.244
40)	Di-n-Butylphthalate	28.51	2086	149	1401	0.12	mg/L	967	1.930
41)	Malathion	29.16	2134	127	12	0.00	mg/L	252	0.437
42)	Parathion	29.63	2168	109	102	0.17	mg/L	767	0.098
43)	Isodrin	29.90	2188	193	72	0.07	mg/L	829	0.176
44)	Fluoroanthene	30.26	2214	202	102	0.01	mg/L	866	1.223
45)	Benzidine	30.93	2263	184	17	0.01	mg/L	773	0.313
46)	Pyrene	30.95	2265	202	90	0.01	mg/L	711	1.364
47)	p-Dimethylamino-azobenzene	32.06	2346	225	9	0.01	mg/L	440	0.323
48)	Chlorobenzilate	32.25	2360	251	118	0.04	mg/L	917	0.503
49)	Famphur	32.99	2414	218	0	0.00	mg/L	139	1.235
50)	3,3-Dimethylbenzidine	33.09	2421	212	12	0.01	mg/L	139	0.379
51)	Butylbenzylphthalate	33.13	2424	149	225	0.07	mg/L	775	0.577
52)	Kepone	32.40	2371	272	0	0.00	mg/L	486	0.005
53)	Di-(2-ethylhexyl)adipate	33.39	2443	129	185	0.08	mg/L	682	0.445
54)	2-Acetylaminofluorene	33.60	2459	181	7	0.01	mg/L	668	0.114
55)	Benzo(a)anthracene	34.29	2509	228	84	0.01	mg/L	335	1.406
56)	3,3'-Dichlorobenzidine	34.40	2517	252	11	0.00	mg/L	554	0.494
57)	Methylene-bis(o-chloro aniline)	34.44	2520	231	0	0.00	mg/L	403	0.228
58)	Chrysene	34.37	2515	228	188	0.02	mg/L	653	1.384
59)	Di-(2-ethylhexyl)phthalate	35.05	2565	149	99	0.01	mg/L	729	1.229
60)	Tri-o-cresolphosphate	34.52	2526	165	208	0.21	mg/L	372	0.178

* Compound is ISTD

Operator ID: LWM
Output File: MB0626A.1B2
Data File: MB0626A.MS
Name: MB0626A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 06/28/01 11:23
Injected at: 06/27/01 20:15
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC06200B.QCI
Comment: 8270/625
Last Calibration: 06/20/01
Last Qcal Time: 06/20/01 17:07

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	Di-n-Octylphthalate	35.56	2602	149	112	0.01	mg/L	573	2.327
62)	7,12-Dimethylbenz(a)anthracene	36.30	2656	256	119	0.05	mg/L	350	0.656
63)	Benzo(b)Fluoroanthene	36.33	2658	252	1061	0.23	mg/L	526	1.362
64)	Benzo(k)Fluoranthene	35.97	2632	252	47	0.01	mg/L	449	1.933
65)	Benzo(a)Pyrene	36.82	2694	252	78	0.02	mg/L	825	1.430
66)	3-Methlycholanthrene	37.49	2743	268	263	0.09	mg/L	605	0.882
67)	Indeno(1,2,3,cd)pyrene	39.16	2865	276	0	0.00	mg/L	2	1.441
68)	Dibenzo(a,h)anthracene	39.71	2906	278	0	0.00	mg/L	2	1.498
69)	Benzo(g,h,i)perylene	40.07	2932	276	0	0.00	mg/L	2	1.543

* Compound is ISTD

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 (907)563-4800 Attn: Wendy Mitchell	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1010	**KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 624. Detection limits as per method.

MATRIX: Water	**Preservative:** HCl, 4°C	**Type of Container:** 40-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01VOP001	INF CMP #1	2	6/19/01	0900		A173506
MOA01VOP002	INF CMP #2	2	6/19/01	1200		~~A173507~~
MOA01VOP003	INF CMP #3	2	6/19/01	illegible		~~A173508~~
MOA01VOP004	INF CMP #4	2	6/19/01	illegible		~~A173509~~
MOA01VOP005	INF CMP #5	2	6/19/01	2045		~~A173510~~
MOA01VOP006	INF CMP #6	2	6/19/01	illegible		~~A173511~~
MOA01VOP007	INF CMP #7	2	6/20/01	↓		~~A173512~~
MOA01VOP008	INF CMP #8	2	6/20/01	↓		~~A173513~~

SAMPLES LISTED ON THIS COC SHOULD BE COMPOSITED IN AN EIGHT-PART COMPOSITE IN A VAPOR-TYPE SYRINGE PRIOR TO ANALYSIS.

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	[signature] 1153	6/20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/21/01 10:45		[signature]	6/21 1045
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**	
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 (907)563-4800 Attn: Wendy Mitchell	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178	
REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1010	**KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 624. Detection limits as per method.

MATRIX: Water	**Preservative:** HCl, 4°C Effluent samples contain $Na_2S_2O_3$	**Type of Container:** 40-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01VOP009	EFF CMP #1	2	6/19/01	0915		A173514
MOA01VOP010	EFF CMP #2	2	6/19/01	1210		A173515
MOA01VOP011	EFF CMP #3	2	6/19/01	1514		A173516
MOA01VOP012	EFF CMP #4	2	6/19/01	illegible		A173517
MOA01VOP013	EFF CMP #5	2	6/19/01	2120		A173518
MOA01VOP014	EFF CMP #6	2	6/20/01	0001		A173519
MOA01VOP015	EFF CMP #7	2	6/20/01	0300		A173520
MOA01VOP016	EFF CMP #8	2	6/20/01	0600		A173521

SAMPLES LISTED ON THIS COC SHOULD BE COMPOSITED IN AN EIGHT-PART COMPOSITE IN A VAPOR-TYPE SYRINGE PRIOR TO ANALYSIS.

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	6/20/01 1150	hand	[illegible]	6/20 1155
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	6/21/01 10:45		[illegible]	6/21 1045
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 (907)563-4800 Attn: Wendy Mitchell	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 Days | **P.O. #:** AK01-1010 | **KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 624. Detection limits as per method.

MATRIX: Water | **Preservative:** HCl, 4° C | Type of Container: 40-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01VOP017	C-Station	2	N/R (jms)	N/R (jms)		A173522
MOA01VOP018	Trip Blank	2	N/A	N/A		A173523

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	A.A. Landy	6/20 1155
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/21/01 10:45	hand	[signature]	6/21 1045
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

N/R - Not available (not recorded on label)

N/A - Not applicable

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 (907)563-4800 Attn: Wendy Mitchell	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1010 | **KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 625. Detection limits as per method.

MATRIX: Water | **Preservative:** None, 4°C Effluent samples contain $Na_2S_2O_3$ | **Type of Container:** 1-L amber glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01SVL001	Influent	2 ✓	6/19-20	0900-0900	n	A173504
MOA01SVL002	Effluent	1 ✓	6/19-20	0900-8900		A173505

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	H A Lamby	6/20 1155
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/21/01 10:45	hand	[signature]	6/21 1045
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**	
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 (907)563-4800 Attn: Wendy Mitchell	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178	
REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1010	**KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 8260/8270. **Report using EPA 624/625 analyte list.** Detection limits as per method. Please report in dry weight.

MATRIX: Sludge	**Preservative:** None, 4°C	**Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01SVL003	Sludge	1	6/19-20	0900 -0900		A173524

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	[signature]	6/20 1200
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 10:45	hand	[signature]	6/21 1045
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

APPENDIX A

Toxic Pollutant and Pesticide Monitoring, June Sampling

A4 Solar Enviromental Services

Asbestos

KINNETIC LABORATORIES INCORPORATED

JUNE SAMPLING, ASBESTOS, SES SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01ASB001	INFLUENT	SAMPLE
MOA01ASB002	EFFLUENT	SAMPLE
MOA01ASB003	SLUDGE	SAMPLE

Hygeia Laboratories Inc.
82 W. Sierra Madre Blvd
Sierra Madre, CA 91024-2434
(626) 355-4711 (626) 355-4497 Fax

California ELAP Certificate No. 1269

TEM Sample Analysis Report

Water EPA 600/4-83-043 (100.1)

July 18, 2001

Ms. Grace Torrijos
Solar Environmental Services
1131 E. 76th Avenue, Ste 102
Anchorage, AK 99518

1209 071001 Kinnetic - MOA Anchorage

Samples Submitted: 2
Samples Analyzed: 2
Sampler: Kinnetic

Hygeia Reference No.: **25579 01 0042**
Date Collected: June 19, 2001
Date Received: July 11, 2001
Date Analyzed: July 18, 2001

Client Sample ID: **MOA01ASB-001**
Hygeia Sample ID: 673162
Sample Description: Waste Water
Sample Location: n/a

Volume Filtered (ml): 1
Effective Filter Area (mm²): 1297
Area Analyzed (mm²): 0.196
Analytical Sens. (MFL): 6.6

		UCL*	LCL*	No. of Str.	chrysotile	amphibole
Total Structures:	**13**					
Million Fibers/Liter (MFL):	**86**	160	46	≤ 10 µm	10	1
MFL >10 µm in length:	**13**			>10 µm	2	0

SAED Neg #: 3344
EDXA File #: 163

Comments: Amphibole: Actinolite

Client Sample ID: **MOA01ASB-002**
Hygeia Sample ID: 673163
Sample Description: Waste Water
Sample Location: n/a

Volume Filtered (ml): 1
Effective Filter Area (mm²): 1297
Area Analyzed (mm²): 0.196
Analytical Sens. (MFL): 6.6

		UCL*	LCL*	No. of Str.	chrysotile	amphibole
Total Structures:	**3**					
Million Fibers/Liter (MFL):	**20**	58	1.9	≤ 10 µm	3	0
MFL >10 µm in length:	**<6.6**			>10 µm	0	0

SAED Neg #: n/a
EDXA File #: 163

* UCL: upper 95% confidence limit LCL: lower 95% confidence limit

Microscopist - Kyeong Corbin

Kyeong Corbin - Supervisor of Electron Microscopy

Hygeia Laboratories Inc.
82 W. Sierra Madre Blvd
Sierra Madre, CA 91024-2434
(626) 355-4711 (626) 355-4497 Fax

California ELAP Certificate No. 1269

TEM Sample Analysis Summary

Water EPA 600/4-83-043 (100.1)

July 18, 2001

Hygeia Reference No.: 25579 01 0042
1209 071001 Kinnetic - MOA Anchorage

Hygeia Sample ID	Client Sample ID	MFL
673162	MOA01ASB-001	86
673163	MOA01ASB-002	20

< - Less than Analytical Sensitivity

Microscopist - Kyeong Corbin

Kyeong Corbin - Supervisor of Electron Microscopy

25579 d 0042

Solar Environmental Services, Inc.

1131 E. 76Th Avenue, Ste. 102
Anchorage, AK 99518
Web site: http://www.alaska.net/~sesenvir/

Phone: (907) 349-7705
Fax : (907) 349-7944
E mail: sesenvir@alaska.net

CHAIN OF CUSTODY RECORD FORM

nvlap Accredited Laboratory AIHA - AAR - PAT Certified SES Form# 1004 Revised 10/01/98

CLIENT: SOLAR
CONTACT NAME: GRACE TOMLITS
ADDRESS:
PROJECT: KINNETIC - MOA SITE: MOA - Anchorage
REPORTS TO:
PHONE#: FAX#:
INVOICE TO: SOLAR P.O.# 1209 071001
SAMPLED BY: CLIENT - KINNETIC

ANALYSIS REQUESTED

Method #/Parameter

Asbestos Analysis
Bulk○ Air○ Dust○
PLM○ PCM○ TEM○
PLM w/ Point Count ○

Lead (Pb)Analysis-AAS
Paint○ Air○ Wipes○

☑ Other: TEM WATER

Lab#	Sample Identification	Date	Time	Sample Matrix	# Containers	TEM - WATER	REMARKS & Sample Condition
	MOA01ASB001	6/19/01		WATER	1	✓	
	002			WATER	1	✓	

1. Relinquished by: Date 07/10/01 Time 1000
Printed Name GRACE TOMLITS Company SOLAR
Received by: Date 07/11/01 Time 0900A
Printed Name TWEDELL Company HYGETA

2. Relinquished by: Date Time
Printed Name Company
Received by: Date Time
Printed Name Company

Number of Samples: 2
Report Requirements: ☑ROUTINE ☐OTHER: Specify QA/QC LEVEL
Sample Receipt:
COC Seals: ☑Yes ☐No ☐N/A
Temp: N/A
Good Condition: ☐Yes ☐No

Turnaround Time: ☐RUSH ____ HOURS ☑STD ____ DAYS
Shipment Method: ☐Hand ☐Courrier ☑Overnight
Special Instructions: FAX & E-MAIL

Test Results relate only to items tested and must not reproduced except in full without the approval of SES & subject to SES General Terms and Conditions.

TEM Asbestos Analysis

Hygeia Laboratories Inc.

Hygeia Ref No. 25579010042
Lab Sample ID 673162
Client Sample ID MOA01ASB-001
Method EPA 600/4-83-043 (Method 100.1)

Prepared by KC/QT
Lab Blank No. 4658B

Filter Type /EFA (mm2): MCE/ 1297
Pore Size (um): 0.8 0.45 (0.22)
Volume (mL) 1

Grid Opening Area (mm2) .0098
No of Grid Openings 20
Area Analyzed (mm2) .196

Microscope: H-600
Screen Mag (x) 15,200X
Camera Const (mmA) 28.74
Accerating Voltage (KeV): 100
Beam Current (uA): 15
Grid Quality ✓/✓/✓
Loading - Light (Moderate) Heavy

Grid#	GO	Type	(mm) L	(mm) W	SAED Observation C	A	NonA	No-P	EDS Na-Mg-Si-Ca-Fe	Structure ID chrys	amph	NonA	NSD
1751, A1	E4-1												✓
	E5-1	F	98	1.5	(✓)				Mg Si	(✓)			
	F5-2	F	42	1	✓				mg Si	✓			
	G4-3												✓
	F3-3												✓
	E3-2												✓
	C3-4	F	(380)	1	✓				mg Si	✓			
		F	40	1	✓				mg Si	✓			
A2	C4-2	F	23	2	✓				mg Si	✓			
	F4-1												✓
	G4-3	F	60	1	✓					✓			
		F	(152)	.5	✓					✓			
	G5-4	F	120	1	✓					✓			
	F5-1												✓
	C5-2	F	13	1	✓					✓			
		F	38	2.5		✓			mg Si Ca Fe		(✓)		
		F	12	1	✓					✓			
	G3-4												✓
A3	G4-2	F	13	.5	✓				mg Si	✓			
	F4-2	F	27.5	2	✓					✓			
	E4-2												✓
	C4-2												✓
	E5-1												✓
	F5-1												✓
									Subtotal	12	1		

Comments: 10 µm = 152 mm amph. - Actinolite

10 chrys < 10 µm
2 chrys ≥ 10 µm
1 amph < 10 µm
0 amph ≥ 10 µm

13 Total Str
86.6 MFL
6.6 MFL >10

3344 Neg # for Str # 1
163 EDS File # for Str # 1

Microscopist (s) [illegible] Date 7-18-01

Page 1 of 1

TEM Asbestos Analysis

Hygeia Laboratories Inc.

Hygeia Ref No. 25579010042
Lab Sample ID 673163
Client Sample ID MOA 01ASB-002
Method EPA600/4-83-043 (Method 100.1)

Prepared by KC/QT
Lab Blank No. 4658B

Filter Type /EFA (mm2): MCE/1297
Pore Size (um): 0.8 0.45 (0.22)
Volume (mL) 1

Grid Opening Area (mm2) .0098
No of Grid Openings 20
Area Analyzed (mm2) .196

Microscope: H-600
Screen Mag (x) 15,200X
Camera Const (mmA) 28.74
Accerating Voltage (KeV): 100
Beam Current (uA): 15
Grid Quality ✓/✓/✓
Loading - Light (Moderate) Heavy

Grid#	GO	Type	(mm) L	(mm) W	SAED Observation C	A	NonA	No-P	EDS Na-Mg-Si-Ca-Fe	Structure ID chrys	amph	NonA	NSD
1751, A4	E4-1												✓
	F4-1	F	18	1.5	✓				Mg Si	✓			
		F	43	1	✓				Mg Si	✓			
	G4-1												✓
	H4-1												✓
	H5-1												✓
	G5-1												✓
	F5-1												✓
A5	C5-2												✓
	E5-2	F	31	1	✓				Mg Si	✓			
	F5-2												✓
	G5-2												✓
	G3-3												✓
	F3-2												✓
	E4-1												✓
A6	E4-2												✓
	G4-1												✓
	H5-1												✓
	F5-1												✓
	C5-1												✓
	E3-1												✓

Comments:

Subtotal 3 0

3 chrys < 10 µm
0 chrys ≥ 10 µm
0 amph < 10 µm
0 amph ≥ 10 µm

3 Total Str
19.9 MFL
≤6.6 MFL >10

Neg # for Str #
163 EDS File # for Str # 1

Microscopist (s) [illegible] Date 7-18-01

18-Jul-2001 09:04:16

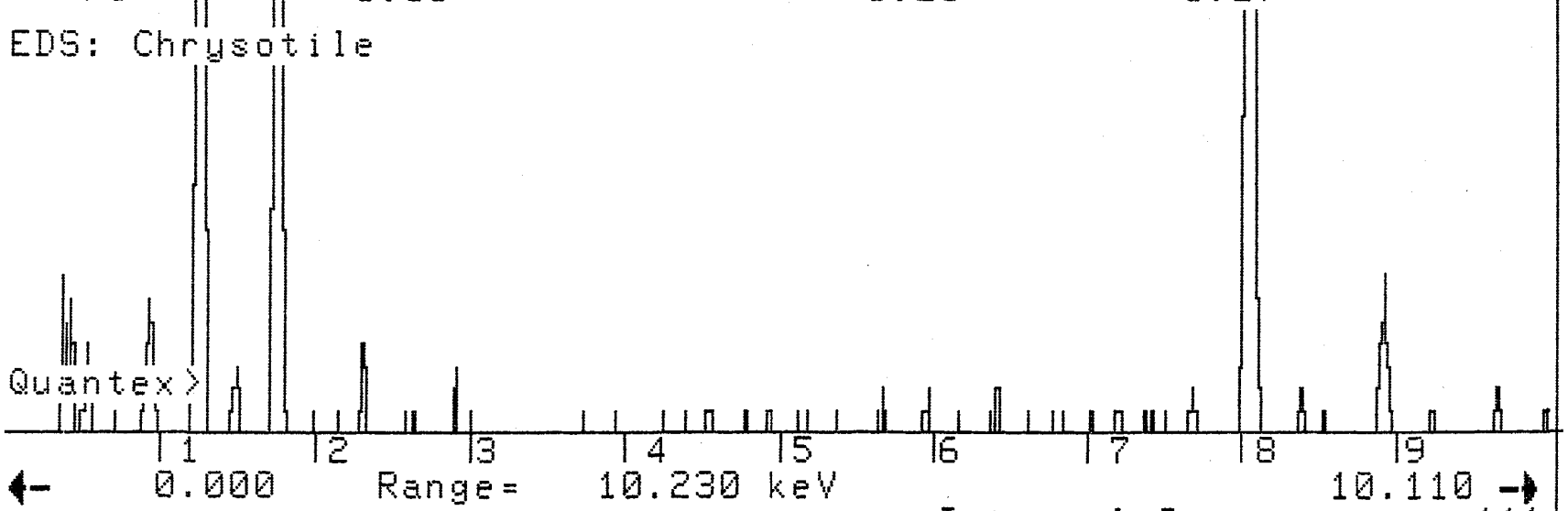
673162 Preset= Off

Vert= 43 counts Disp= 1 Elapsed= 31 secs

Client:G.A.H.S. Lab:Kevex Grid Open.: 12 Struct. #: 4

	Counts/Sec	Counts/Counts-Si	Window %
Na	0.00	0.00	0.00
Mg	6.16	9.90	48.48
Al	0.00	0.00	0.00
Si	6.23	10.00	48.98
K	0.00	0.00	0.00
Ca	0.06	0.10	0.51
Mn	0.10	0.16	0.76
Fe	0.16	0.26	1.27

EDS: Chrysotile



Integral 0 = 111

18-Jul-2001 09:40:12

673162-2

Vert= 141 counts Disp= 1

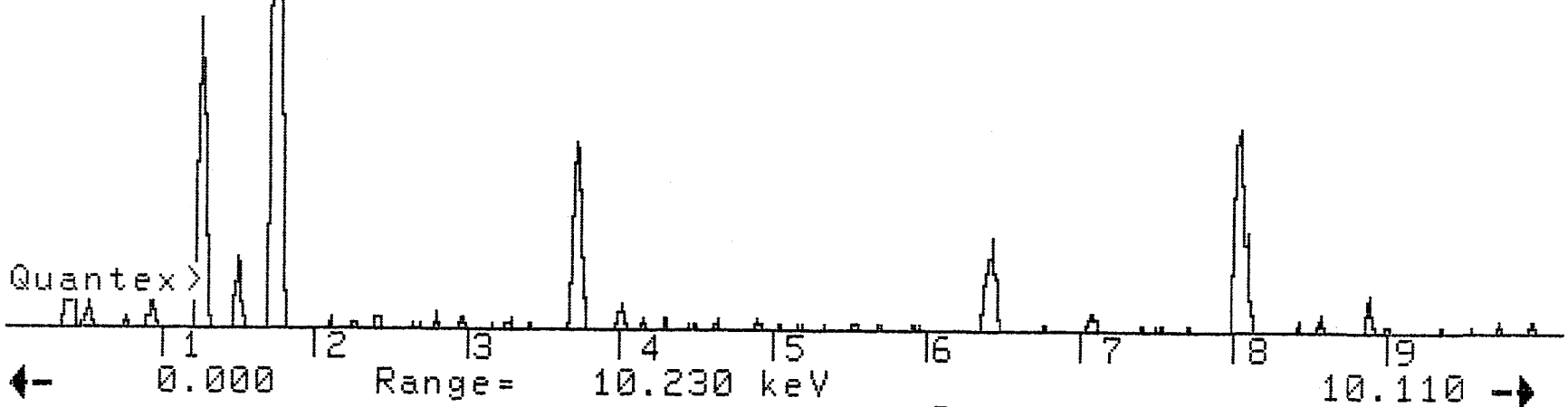
Preset= Off

Elapsed= 21 secs

Client:G.A.H.S. Lab:Kevex Grid Open.: 12 Struct. #: 4

	Counts/Sec	Counts/Counts-Si	Window %
Na	0.00	0.00	0.00
Mg	9.14	2.63	15.93
Al	0.00	0.00	0.00
Si	34.76	10.00	60.58
K	0.14	0.04	0.25
Ca	8.10	2.33	14.11
Mn	0.14	0.04	0.25
Fe	5.10	1.47	8.88

EDS: Actinolite



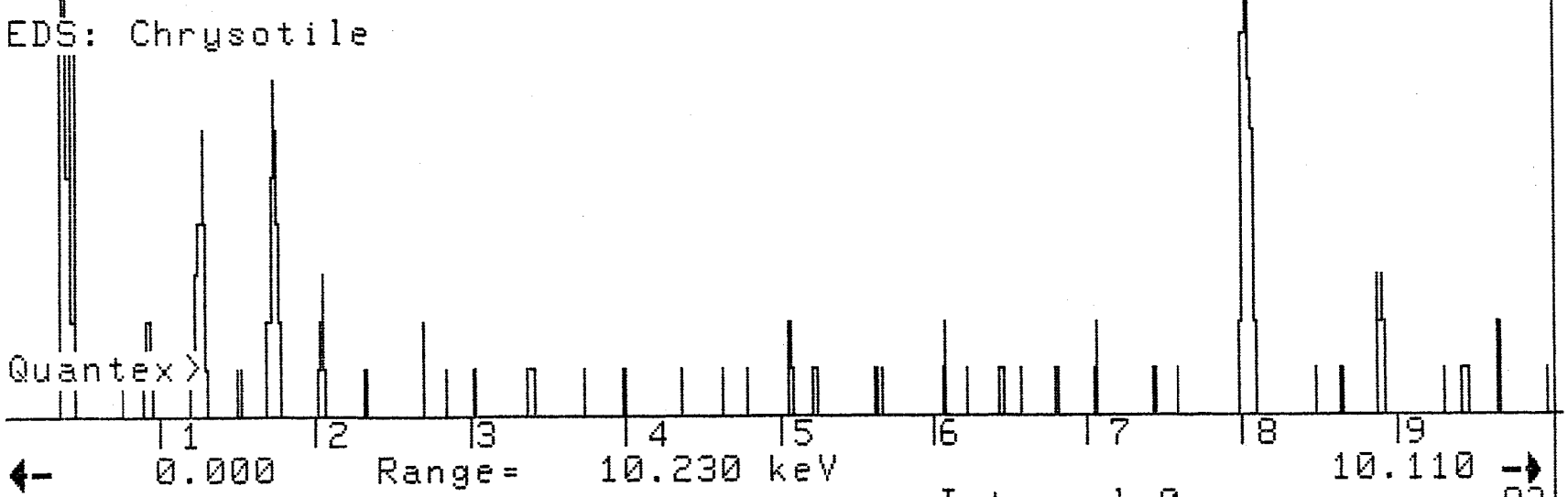
Integral 0 = 134

18-Jul-2001 10:37:01

673163 Preset= Off
Vert= 20 counts Disp= 1 Elapsed= 17 secs
Client:G.A.H.S. Lab:Kevex Grid Open.: 12 Struct. #: 4

	Counts/Sec	Counts/Counts-Si	Window %
Na	0.00	0.00	0.00
Mg	1.35	7.19	37.10
Al	0.00	0.00	0.00
Si	1.88	10.00	51.61
K	0.18	0.94	4.84
Ca	0.00	0.00	0.00
Mn	0.00	0.00	0.00
Fe	0.24	1.25	6.45

EDS: Chrysotile



0.000 Range= 10.230 keV 10.110

Integral 0 = 93

Solar Environmental Services, Inc.

1131 E. 76th Avenue, Suite 102
Anchorage, AK 99518
Home Page: www.alaska.net/~sesenvir/

Phone: (907) 349-7705
Fax: (907) 349-7944
E-mail: sesenvir@alaska.net

CERTIFICATE OF ANALYSIS

CLIENT: Kinnetic Laboratories, Inc.
ATTN: Janet Savoie
403 W. Eight Avenue
Anchorage, Alaska 99501

CLIENT ORDER #: 194019
PROJECT NAME: MOA
PROJECT #: 514.01
REPORT #: B2001-185
REPORT DATE: July 20, 2001
COLLECTED BY: Client
DATE SAMPLED: June 16-20, 2001
DATE RECEIVED: June 21, 2001
DATE ANALYZED: July 20, 2001
ANALYZED BY: J. Torrijos

ASBESTOS QUALITATIVE DUST ANALYSIS SUMMARY

POLARIZED LIGHT MICROSCOPY (PLM) WITH DISPERSION STAINING

Lab.#	Client#	Location/ Description (color)	Asbestos Present	Other Materials Present
2001531BO784	MOA01ASB003	Sludge (Brown)	None Detected	Cellulose Positive

End of Report

Test report relates only to the items tested and must not be used by client to claim product endorsement by NVLAP or any Agency of the U.S. Government. Test Report must not be reproduced except in full without the approval of SES and subject to SES general terms and conditions. Small fibers may be missed by PLM Method due to resolution limitations of the optical microscope. Therefore, None Detected results cannot be guaranteed. Electron Microscopy is recommended for confirmation. This is not covered by NVLAP.

REVIEWED AND APPROVED BY: Gracita O. Torrijos, Chemist – I.H.

Date: 7/20/01

FORM# SES 1031-REVISED 08/07/96

NVLAP Accredited Laboratory

AIHA – AAR – PAT Certified

APPENDIX A

Toxic Pollutant and Pesticide Monitoring, June Sampling

A5 Severn Trent Laboratories

Dioxin

JUNE SAMPLING, DIOXIN, STL SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01DXN001	INFLUENT	SAMPLE
MOA01DXN002	EFFLUENT	SAMPLE
MOA01DXN003	SLUDGE	SAMPLE

SEVERN TRENT SERVICES

STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605-1500

Tel: 916 373 5600
Fax: 916 371 8420
www.stl-inc.com

July 13, 2001

STL SACRAMENTO PROJECT NUMBER: G1F220270
PO/CONTRACT: AK01-1011

Mr. Mark Savoy
Kinnetics Laboratories, Inc.
403 W. Eighth Street
Anchorage, AK 99501

Dear Mr. Savoy,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on June 22, 2001. These samples are associated with your Water Monitoring project.

The results in this report meet all NELAC requirements for parameters in which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

Please feel free to contact me at (916) 374-4419.

Sincerely,

Ryan J. Hall
Project Manager

CASE NARRATIVE

STL SACRAMENTO PROJECT G1F220270

General Comments

Please note that your samples were received at five degrees Celsius.

There were no anomalies associated with your project.

STL SACRAMENTO
Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003

STL Sacramento Certifications:
Alaska (UST-055), Arizona (#AZ00616), Arkansas, California (#2166), Connecticut (#PH-0691), Florida (E87570), Hawaii, Louisiana (AI # 30612), New Jersey (Lab ID 44005), Nevada (#CA 044), New York (LAB ID 11666 serial # 107407), Oregon (LAB ID CA 044), South Carolina (LAB ID 87014, Cert. # 870140), Utah (E-168), Virginia (#00178), Washington (# C087), West Virginia (# 9930C), Wisconsin (Lab 998204680), USNAVY, USACE, USDA Foreign Plant (Permit # 37-82605), USDA Foreign Soil (Permit # S-46613).

SAMPLE SUMMARY

G1F220270

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EFEEH	001	MOA01DXN001	06/19/01	09:00
EFEEN	002	MOA01DXN002	06/19/01	09:00
EFEEP	003	MOA01DXN003	06/19/01	09:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Severn Trent Laboratories, Inc. 880 Riverside Parkway West Sacramento, CA 95605 (916)373-5600 Attn: Jill Killmann	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1011 | **KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 8280A for TCDD. Detection limits as per method.

MATRIX: Water | **Preservative:** None, 4°C Effluent samples contain $Na_2S_2O_3$ | **Type of Container:** 1-L amber glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01DXN001	Influent	Only one filled ~~2~~ 1 ✓	6/19-20/01	0900-0900		
MOA01DXN002	Effluent	2 ✓	6/19-20/01	0900-0900		

RECEIVED IN GOOD CONDITION UNDER COC
JUN 22 2001
INI: GC

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	[signature] 1154	6/20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/21/01 1100	FEDEX	[signature]	6-22-01 1245
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Severn Trent Laboratories, Inc. 880 Riverside Parkway West Sacramento, CA 95605 (916)373-5600 Attn: Jill Killmann	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1011	**KLI Proj. #:** 514.01

ANALYSIS TYPE: EPA 8280A for TCDD. Detection limits as per method. Please report in dry weight.

MATRIX: Sludge	**Preservative:** None, 4°C	**Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01DXN003	Sludge	1	6/19-20/01	0900-0900		

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	hand	[signature]	6/20 1200
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 1100	FED EX	[signature]	6-22-01 1245
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN001

Trace Level Organic Compounds

Lot-Sample #...: G1F220270-001 Work Order #...: EFEEH1AA Matrix.....: WATER
Date Sampled...: 06/19/01 Date Received..: 06/22/01
Prep Date.....: 06/28/01 Analysis Date..: 07/07/01
Prep Batch #...: 1179513

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.32	ng/L	SW846 8280A
2,3,7,8-TCDF	ND	0.31	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	70	(25 - 150)
13C-2,3,7,8-TCDF	70	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	83	(25 - 150)

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN002

Trace Level Organic Compounds

Lot-Sample #...: G1F220270-002 Work Order #...: EFEEN1AA Matrix.....: WATER
Date Sampled...: 06/19/01 Date Received..: 06/22/01
Prep Date.....: 06/28/01 Analysis Date..: 07/07/01
Prep Batch #...: 1179513

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.29	ng/L	SW846 8280A
2,3,7,8-TCDF	ND	0.13	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	85	(25 - 150)
13C-2,3,7,8-TCDF	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	92	(25 - 150)

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN003

Trace Level Organic Compounds

Lot-Sample #...: G1F220270-003 Work Order #...: EFEEP1AC Matrix.....: SOLID
Date Sampled...: 06/19/01 Date Received..: 06/22/01
Prep Date.....: 07/06/01 Analysis Date..: 07/12/01
Prep Batch #...: 1187481
% Moisture.....: 68

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.21	ng/g	SW846 8280A
2,3,7,8-TCDF	ND	0.092	ng/g	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	89	(25 - 150)
13C-2,3,7,8-TCDF	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	82	(25 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN003

Trace Level Organic Compounds

Lot-Sample #...: G1F220270-003 **Work Order #...:** EFEEP1AC **Matrix.....:** SOLID
Date Sampled...: 06/19/01 **Date Received..:** 06/22/01
Prep Date.....: 07/06/01 **Analysis Date..:** 07/12/01
Prep Batch #...: 1187481
% Moisture.....: 68

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.21	ng/g	SW846 8280A
2,3,7,8-TCDF	ND	0.092	ng/g	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	89	(25 - 150)
13C-2,3,7,8-TCDF	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	82	(25 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

QC DATA ASSOCIATION SUMMARY

G1F220270

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8280A		1179513	
002	WATER	SW846 8280A		1179513	
003	SOLID	SW846 8280A		1187481	1187251

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270 **Work Order #...:** EF4GT1AA **Matrix.....:** WATER
MB Lot-Sample #: G1F280000-513

Prep Date.....: 06/28/01
Analysis Date..: 07/06/01 **Prep Batch #...:** 1179513

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.38	ng/L	SW846 8280A
2,3,7,8-TCDF	ND	1.5	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	64	(25 - 150)
13C-2,3,7,8-TCDF	55	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	74	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270 **Work Order #...:** EF4GT1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1F280000-513
Prep Date.....: 06/28/01 **Analysis Date..:** 07/06/01
Prep Batch #...: 1179513

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**107**	**(79 - 125)**	**SW846 8280A**
2,3,7,8-TCDF	**108**	**(78 - 123)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	66	(25 - 150)
13C-2,3,7,8-TCDF	63	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	64	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270 **Work Order #...:** EF2511AA **Matrix.....:** SOLID
MB Lot-Sample #: G1G060000-481

Prep Date.....: 07/06/01
Analysis Date..: 07/11/01 **Prep Batch #...:** 1187481

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.15	ng/g	SW846 8280A
2,3,7,8-TCDF	ND	0.030	ng/g	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	63	(25 - 150)
13C-2,3,7,8-TCDF	80	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	68	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270 Work Order #...: EF2511AC Matrix.....: SOLID
LCS Lot-Sample#: G1G060000-481
Prep Date.....: 07/06/01 Analysis Date..: 07/11/01
Prep Batch #...: 1187481

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**2.50**	**2.32**	**ng/g**	**93**	**SW846 8280A**
2,3,7,8-TCDF	**2.50**	**2.38**	**ng/g**	**95**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	87	(25 - 150)
13C-2,3,7,8-TCDF	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270 Work Order #...: EF2511AC Matrix.....: SOLID
LCS Lot-Sample#: G1G060000-481
Prep Date.....: 07/06/01 Analysis Date..: 07/11/01
Prep Batch #...: 1187481

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**93**	**(66 - 139)**	**SW846 8280A**
2,3,7,8-TCDF	**95**	**(70 - 128)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	87	(25 - 150)
13C-2,3,7,8-TCDF	90	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	86	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270 **Work Order #...:** EF4GT1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1F280000-513
Prep Date.....: 06/28/01 **Analysis Date..:** 07/06/01
Prep Batch #...: 1179513

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**26.8**	**ng/L**	**107**	**SW846 8280A**
2,3,7,8-TCDF	**25.0**	**27.0**	**ng/L**	**108**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	66	(25 - 150)
13C-2,3,7,8-TCDF	63	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	64	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270
MS Lot-Sample #: G1F220270-003
Date Sampled...: 06/19/01
Prep Date.....: 07/06/01
Prep Batch #...: 1187481
% Moisture.....: 68

Work Order #...: EFEEP1AD-MS
EFEEP1AE-MSD
Date Received..: 06/22/01
Analysis Date..: 07/12/01

Matrix.....: SOLID

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
2,3,7,8-TCDD	ND	7.74	6.92	ng/g	89		SW846 8280A
	ND	7.71	7.16	ng/g	93	3.4	SW846 8280A
2,3,7,8-TCDF	ND	7.74	6.98	ng/g	90		SW846 8280A
	ND	7.71	7.12	ng/g	92	2.0	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	108	(25 - 150)
	80	(25 - 150)
13C-2,3,7,8-TCDF	109	(25 - 150)
	85	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)
	74	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1F220270
MS Lot-Sample #: G1F220270-003
Date Sampled...: 06/19/01
Prep Date.....: 07/06/01
Prep Batch #...: 1187481
% Moisture.....: 68

Work Order #...: EFEEP1AD-MS
EFEEP1AE-MSD
Date Received..: 06/22/01
Analysis Date..: 07/12/01

Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,3,7,8-TCDD	89	(66 - 139)			SW846 8280A
	93	(66 - 139)	3.4	(0-50)	SW846 8280A
2,3,7,8-TCDF	90	(28 - 146)			SW846 8280A
	92	(28 - 146)	2.0	(0-50)	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	108	(25 - 150)
	80	(25 - 150)
13C-2,3,7,8-TCDF	109	(25 - 150)
	85	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	99	(25 - 150)
	74	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

APPENDIX A

Toxic Pollutant and Pesticide Monitoring, June Sampling

A6 Northern Testing Labs, Inc.

Enterococci

JUNE SAMPLING, ENTEROCOCCI, NTL SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01ENT001	EFFLUENT REP-1	SAMPLE
MOA01ENT002	EFFLUENT REP-2	SAMPLE

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

June 29, 2001
Kinnetic Laboratories, Incorporated
403 West 8th Avenue
Anchorage, AK 99501-3515

Attn: Janet Savoie

Please find enclosed the results for the Point Woronzof/Inlet Monitoring samples per your request. This includes the individual data reports, a summary report, Quality Control specifications, and a disk containing an IBM formatted Excel file of the data. The sample analysis for Enterococci, MPN follows Standard Methods SM 9230 B specifications; sample analysis for Fecal Coliform, MPN follows Standard Methods SM 9221 E specifications; sample analysis for Color follows Standard Methods SM 2120 B. Total Residual Chlorine analysis took place in the field and followed Standard Methods SM 4500 E.

If you have any questions concerning these reports, please contact me at (907) 349-1000. It has been a pleasure working with you on this joint venture with the Municipality of Anchorage and I hope that next year you choose Northern Testing Laboratories as your laboratory of choice for the 2002 MOA Inlet Monitoring Project .

Sincerely,

Patience Prieksat
Patience Prieksat
Environmental Analyst

Wendy Mitchell
Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

QUALITY CONTROL
MOA/Inlet Monitoring Project 2001

SM 9221E

The Fecal Coliform Most Probable Number analysis includes two bacteriological controls: *Escherichia coli* (positive control) and *Pseudomonas aeruginosa* (negative control), and a Buffered Dilution Water blank.

SM 4500 E

Total Residual Chlorine analysis is a titrimetric method which includes a blank, and a Quality Control (QC). Percent Recovery of QC was 99%.

SM 2120 B

Visual Comparison Color analysis samples were pre-treated with paper filtration to remove turbidity, and reported as "True Color."

SM 9230 B

The Enterococci Most Probable Number analysis includes two bacteriological controls: *Streptococcus faecalis* (positive control) and *Escherichia coli* (negative control).

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent-1
Client Project #: KLI #514.01
Source:
NTL Lab#: A173392
Sample Matrix: Water
Comments: MOA01ENT001

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 13:07
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9230 B						
	Enterococci MPN	mpn/100mL	>2419.2	0.00		6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent-2
Client Project #: KLI #514.01
Source:
NTL Lab#: A173393
Sample Matrix: Water
Comments: MOA01ENT002

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 13:07
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9230 B						
	Enterococci MPN	mpn/100mL	>2419.2			6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**	
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 (907)563-4800 Attn: Wendy Mitchell	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178	
REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1010	**KLI Proj. #:** 514.01

ANALYSIS TYPE:

MATRIX: Water	**Preservative:** 4°C Effluent samples contain $Na_2S_2O_3$	**Type of Container:** 125-mL Bac-T bottles

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01ENT001	Effluent-1	1	6/19/01	1307		A173392
MOA01ENT002	Effluent-2	1	6/19/01	1307		A173393

Delete 173394

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
JA Savoie	6/19/01 1500	HAND	JH	6/19/01 1545
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B1 Anchorage Waste Water Utilities

Metals, Oil & Grease, and Cyanide

KINNETIC LABORATORIES INCORPORATED

George P. Wuerch,
Mayor

Owned by the
Municipality of Anchorage

ANCHORAGE WATER AND WASTEWATER UTILITY
LABORATORY SERVICES SECTION

TOXIC POLLUTANT ANALYTICAL RESULTS
Date of the Report: 12/13/01

Sample ID				AA28715	AA28716	AA28720	AA28721	AA28722	AA28723	
Sample Location				Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	
Collection Date				09/04/01	09/04/01	09/05/01	09/05/01	09/06/01	09/06/01	
Collection Type				24HC-FP	24HC-FP	24HC-FP	24HC-FP	24HC-FP	24HC-FP	
Project Code				WW-PW	WW-PW	WW-PW	WW-PW	WW-PW	WW-PW	
Analysis	**Method**	**MDL**	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Analyst**
Arsenic, Dissolved	EPA 206.2	0.003	mg/L	ND	0.007	ND	ND	0.003	0.003	SRL
Arsenic, Total	EPA 206.2	0.003	mg/L	0.004	ND	0.004	0.003	0.004	0.003	SRL
Beryllium, Dissolved	EPA 210.2	0.00003	mg/L	ND	ND	ND	ND	ND	ND	SRL
Beryllium, Total	EPA 210.2	0.00003	mg/L	ND	ND	ND	ND	ND	ND	SRL
Cadmium, Dissolved	EPA 213.2	0.0001	mg/L	ND	0.0003	0.0002	0.0002	0.0001	0.0002	SRL
Cadmium, Total	EPA 213.2	0.0001	mg/L	0.0005	0.0003	0.0007	0.0010	0.0007	0.0003	SRL
Chromium, Dissolved	EPA 218.2	0.0005	mg/L	ND	ND	ND	ND	ND	ND	SRL
Chromium, Total	EPA 218.2	0.0005	mg/L	0.0041	0.0032	0.0062	0.0035	0.0034	0.0034	SRL
Copper, Dissolved	SM18 3111B	0.005	mg/L	0.021	0.028	0.023	0.031	0.017	0.029	SRL
Copper, Total	SM18 3111B	0.005	mg/L	0.082	0.039	0.082	0.042	0.083	0.041	SRL
Lead, Dissolved	EPA 239.2	0.001	mg/L	0.004	0.003	0.010	0.004	0.017	0.001	SRL
Lead, Total	EPA 239.2	0.001	mg/L	0.013	0.006	0.013	0.006	0.008	0.004	SRL
Mercury, Dissolved	EPA 245.1	0.0001	mg/L	ND	ND	ND	ND	ND	ND	SRL
Mercury, Total	EPA 245.1	0.0001	mg/L	0.0004	0.0001	0.0002	ND	0.0002	ND	SRL
Nickel, Dissolved	EPA 249.2	0.001	mg/L	0.005	0.004	0.013	0.005	0.004	0.004	SRL
Nickel, Total	EPA 249.2	0.001	mg/L	0.007	0.004	0.008	0.006	0.010	0.005	SRL
Silver, Dissolved	EPA 272.2	0.0002	mg/L	0.0023	0.0009	0.0029	0.0009	0.0017	0.0006	SRL
Silver, Total	EPA 272.2	0.0002	mg/L	0.0109	0.0060	0.0109	0.0069	0.0102	0.0055	SRL
Zinc, Dissolved	SM18 3111B	0.02	mg/L	0.02	0.05	0.02	0.03	0.02	0.02	SRL
Zinc, Total	SM18 3111B	0.02	mg/L	0.14	0.06	0.15	0.07	0.14	0.06	SRL

Toxic pollutant samples for wet weather sampling. Original sample results (collected 9/4-6/2001) for cyanide did not meet QC guidelines and sampling was rescheduled (11/19-21/2001).

QA/QC data available upon request.
MDL = Method Detection Limit, PQL = Practical Quantitative Limit, ND = Not Detected
C = contract lab

Reported by: Mark Spano
Mark Spano, Laboratory Supervisor

Date: Dec. 13, 2001

George P. Wuerch,
Mayor

Owned by the
Municipality of Anchorage

ANCHORAGE WATER AND WASTEWATER UTILITY
LABORATORY SERVICES SECTION

TOXIC POLLUTANT ANALYTICAL RESULTS
Date of the Report: 12/13/01

Sample ID				AA28717	AA28718	
Sample Location				Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	
Collection Date				09/04/01	09/04/01	
Collection Time				14:15	14:05	
Sample Preservation				4C	4C	
Collection Type				grab	grab	
Project Code				WW-PW	WW-PW	
Analysis	**Method**	**MDL**	**Unit**	**Result**	**Result**	**Analyst**
Oil and Grease	EPA 1664	1.0	mg/L	38.6	20.4	MEK

Sample ID				AA28719	
Sample Location				Pt. Woronzof Cake Sludge	
Collection Date				09/04/01	
Collection Time				09:00	
Sample Preservation				4C	
Collection Type				8 grabs/day	
Project Code				WW-PW	
Analysis	**Method**	**MDL**	**Unit**	**Result**	**Analyst**
Arsenic, Total	EPA 7060	0.5	mg/kg	4.0	SRL
Beryllium, Total	EPA 7091	0.005	mg/kg	0.189	SRL
Cadmium, Total	EPA 7131	0.02	mg/kg	2.40	SRL
Chromium, Total	EPA 7191	0.1	mg/kg	16.5	SRL
Copper, Total	EPA 7210	1	mg/kg	277	SRL
Lead, Total	EPA 7421	0.2	mg/kg	36.2	SRL
Nickel, Total	EPA 7521	0.2	mg/kg	15.0	SRL
Mercury, Total	EPA 7470	0.1	mg/kg	0.7	SRL
Silver, Total	EPA 7761	0.03	mg/kg	32.1	SRL
Zinc, Total	EPA 7950	3	mg/kg	581	SRL
Percent Total Solids	18SM 2540G	0.1	%	35.9	PWS

Toxic pollutant samples for wet weather sampling. Original sample results (collected 9/4-6/2001) for cyanide did not meet QC guidelines and sampling was rescheduled (11/19-21/2001).

QA/QC data available upon request.

MDL = Method Detection Limit, PQL = Practical Quantitative Limit, ND = Not Detected

C = contract lab

Reported by: Mark Spano

Mark Spano, Laboratory Supervisor

Date: Dec. 13, 2001

George P. Wuerch,
Mayor

Owned by the
Municipality of Anchorage

ANCHORAGE WATER AND WASTEWATER UTILITY
LABORATORY SERVICES SECTION

ANALYTICAL RESULTS
Date of the Report: 12/12/01

Sample ID				AA29827	AA29828	AA29835	AA29836	AA29896	AA29897	
Sample Location				Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	Point Woronzof WWTF Influent	Point Woronzof WWTF F.Effluent	
Collection Date				11/19/01	11/19/01	11/20/01	11/20/01	11/21/01	11/21/01	
Collection Type				24 HR-FP	24 HR -FP	24 HR-FP	24 HR -FP	24 HR-FP	24 HR -FP	
Project Code				WW-PW	WW-PW	WW-PW	WW-PW	WW-PW	WW-PW	
Analysis	**Method**	**MDL**	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Analyst**
Cyanide, Total	4500CN C,E	0.01	mg/L	ND	ND	ND	ND	ND	ND	PWS

Sample ID				AA29926	
Sample Location				Pt. Woronzof Cake Sludge	
Collection Date				11/19/01	
Collection Type				24 HR – 8 grabs	
Project Code				WW-PW	
Analysis	**Method**	**MDL**	**Unit**	**Result**	**Analyst**
Percent Total Solids	18SM 2540G		%	32.9	PWS
Cyanide, Total	4500CN C,E	0.2	mg/kg	ND	PWS

Toxic pollutant samples for wet weather sampling. Original sample results (collected 9/4-6/2001) did not meet QC guidelines and sampling was rescheduled (11/19-21/2001).

QA/QC data available upon request.
ND = Not Detected (Method Detection Limit in parentheses), PQL = Practical Quantitative Limit, C = contract lab

Reported by: Mark Spano
Mark Spano, Laboratory Supervisor

Date: Dec. 13, 2001

W:\Wastewater\Asplund WWTF\Toxic Pollutants\2001\cyanide 11-01.dot

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B2 Toxscan

Metals, Pesticides, Hydrocarbons

KINNETIC LABORATORIES INCORPORATED

SEPT. SAMPLING, METALS, PESTICIDES, HYDROCARBONS, TOXSCAN SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01PES005	INFLUENT	SAMPLE
MOA01PES006	EFFLUENT	SAMPLE
MOA01PES007	SLUDGE	SAMPLE
MOA01MET004	INFLUENT	SAMPLE
MOA01MET005	EFFLUENT-1	SAMPLE
MOA01MET006	EFFLUENT-2	DUPLICATE
MOA01MET007	SLUDGE	SAMPLE
MOA01VOA006	INFLUENT	SAMPLE
MOA01VOA007	EFFLUENT-1	SAMPLE
MOA01VOA008	EFFLUENT-2	FIELD DUPLICATE
MOA01VOA009	C-STATION	FIELD BLANK
MOA01VOA0010	TRIP BLANK	TRIP BLANK

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

November 06, 2001

ToxScan Number: T-19701

Kinnetic Laboratories Incorporated
403 West Eighth Avenue
Anchorage, AK 99501

Attn: Mark Savoie

Project Name:	None
Project Number:	516.01
Date Sampled:	September 04, 2001 - September 05, 2001
Date Received:	September 06, 2001
Matrix:	Water

Please find the enclosed test results for the parameters requested for analyses. The samples were analyzed within holding time using the following methods:

Aromatic Volatile Organics by EPA Method 602
Demeton, Guthion, Malathion, Parathion by EPA Method 614
Dissolved Metals by ICP/MS (Sb,Se,Tl) by EPA Method 200.8
Pesticides & PCBs plus Mirex by EPA Method 608
Total Metals by ICP/MS (Sb,Se,Tl) by EPA Method 200.8

The samples were received intact and were handled with the proper chain-of-custody procedures. Appropriate QA/QC guidelines were employed during the analyses on a minimum of a 5% basis. QC results were within limits and are reported with or following the data for each analysis.

If you have any questions or require any additional information, please feel free to call.

Sincerely,

Philip D. Carpenter

Philip D. Carpenter, Ph.D.
President

Enclosures

This cover letter is an integral part of the report.

EXPLANATION OF ACRONYMS FOR PROJECT # T-19701

The following is a glossary for acronyms that may be used in this report.

Abbreviation	Definition
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	None Detected
REP	Replicate
RPD	Relative Percent Difference
SRM	Standard Reference Material
TOC	Total Organic Carbon

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19701
Method:	EPA 602	
Date Analyzed:	September 17, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA006	MOA01VOA007	
Site ID:	Influent	Effluent-1	Reporting
Toxscan Lab ID:	19701-04-F	19701-05-C	Limit
Analyte			
Benzene	ND	ND	1.0
Toluene	6.9	8.0	1.0
Chlorobenzene	ND	ND	1.0
Ethylbenzene	ND	ND	1.0
Xylenes	ND	ND	1.0
1,2 Dichlorobenzene	ND	ND	1.0
1,3 Dichlorobenzene	ND	ND	1.0
1,4 Dichlorobenzene	1.7	1.7	1.0

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	97	95	65-142
1,1,1-Trifluorotoluene	98	98	77-143
1,4-Bromofluorobenzene	104	98	86-115

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B2 Toxscan

Metals, Pesticides, Hydrocarbons

KINNETIC LABORATORIES INCORPORATED

SEPT. SAMPLING, METALS, PESTICIDES, HYDROCARBONS, TOXSCAN SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01PES005	INFLUENT	SAMPLE
MOA01PES006	EFFLUENT	SAMPLE
MOA01PES007	SLUDGE	SAMPLE
MOA01MET004	INFLUENT	SAMPLE
MOA01MET005	EFFLUENT-1	SAMPLE
MOA01MET006	EFFLUENT-2	DUPLICATE
MOA01MET007	SLUDGE	SAMPLE
MOA01VOA006	INFLUENT	SAMPLE
MOA01VOA007	EFFLUENT-1	SAMPLE
MOA01VOA008	EFFLUENT-2	FIELD DUPLICATE
MOA01VOA009	C-STATION	FIELD BLANK
MOA01VOA0010	TRIP BLANK	TRIP BLANK

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

November 06, 2001

ToxScan Number: T-19701

Kinnetic Laboratories Incorporated
403 West Eighth Avenue
Anchorage, AK 99501

Attn: Mark Savoie

Project Name:	None
Project Number:	516.01
Date Sampled:	September 04, 2001 - September 05, 2001
Date Received:	September 06, 2001
Matrix:	Water

Please find the enclosed test results for the parameters requested for analyses. The samples were analyzed within holding time using the following methods:

Aromatic Volatile Organics by EPA Method 602
Demeton, Guthion, Malathion, Parathion by EPA Method 614
Dissolved Metals by ICP/MS (Sb,Se,Tl) by EPA Method 200.8
Pesticides & PCBs plus Mirex by EPA Method 608
Total Metals by ICP/MS (Sb,Se,Tl) by EPA Method 200.8

The samples were received intact and were handled with the proper chain-of-custody procedures. Appropriate QA/QC guidelines were employed during the analyses on a minimum of a 5% basis. QC results were within limits and are reported with or following the data for each analysis.

If you have any questions or require any additional information, please feel free to call.

Sincerely,

Philip D. Carpenter

Philip D. Carpenter, Ph.D.
President

Enclosures

This cover letter is an integral part of the report.

EXPLANATION OF ACRONYMS FOR PROJECT # T-19701

The following is a glossary for acronyms that may be used in this report.

Abbreviation	Definition
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	None Detected
REP	Replicate
RPD	Relative Percent Difference
SRM	Standard Reference Material
TOC	Total Organic Carbon

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19701
Method:	EPA 602	
Date Analyzed:	September 17, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA006	MOA01VOA007	
Site ID:	Influent	Effluent-1	Reporting
Toxscan Lab ID:	19701-04-F	19701-05-C	Limit
Analyte			
Benzene	ND	ND	1.0
Toluene	6.9	8.0	1.0
Chlorobenzene	ND	ND	1.0
Ethylbenzene	ND	ND	1.0
Xylenes	ND	ND	1.0
1,2 Dichlorobenzene	ND	ND	1.0
1,3 Dichlorobenzene	ND	ND	1.0
1,4 Dichlorobenzene	1.7	1.7	1.0

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	97	95	65-142
1,1,1-Trifluorotoluene	98	98	77-143
1,4-Bromofluorobenzene	104	98	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19701
Method:	EPA 602	
Date Analyzed:	September 17, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA008	MOA01VOA009	
Site ID:	Effluent-2	C-Station	Reporting
Toxscan Lab ID:	19701-06-C	19701-07-C	Limit
Analyte			
Benzene	ND	ND	1.0
Toluene	7.7	ND	1.0
Chlorobenzene	ND	ND	1.0
Ethylbenzene	ND	ND	1.0
Xylenes	ND	ND	1.0
1,2 Dichlorobenzene	ND	ND	1.0
1,3 Dichlorobenzene	ND	ND	1.0
1,4 Dichlorobenzene	1.7	ND	1.0

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	93	92	65-142
1,1,1-Trifluorotoluene	96	95	77-143
1,4-Bromofluorobenzene	97	86	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19701
Method:	EPA 602	
Date Analyzed:	September 17, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA008	MOA01VOA009	
Site ID:	Effluent-2	C-Station	Reporting
Toxscan Lab ID:	19701-06-C	19701-07-C	Limit
Analyte			
Benzene	ND	ND	1.0
Toluene	7.7	ND	1.0
Chlorobenzene	ND	ND	1.0
Ethylbenzene	ND	ND	1.0
Xylenes	ND	ND	1.0
1,2 Dichlorobenzene	ND	ND	1.0
1,3 Dichlorobenzene	ND	ND	1.0
1,4 Dichlorobenzene	1.7	ND	1.0

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	93	92	65-142
1,1,1-Trifluorotoluene	96	95	77-143
1,4-Bromofluorobenzene	97	86	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19701
Method:	EPA 602	
Date Analyzed:	September 17, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA010		
Site ID:	Trip Blank	Method	Reporting
Toxscan Lab ID:	19701-08-C	Blank	Limit
Analyte			
Benzene	ND	ND	1.0
Toluene	ND	ND	1.0
Chlorobenzene	ND	ND	1.0
Ethylbenzene	ND	ND	1.0
Xylenes	ND	ND	1.0
1,2 Dichlorobenzene	ND	ND	1.0
1,3 Dichlorobenzene	ND	ND	1.0
1,4 Dichlorobenzene	ND	ND	1.0

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	92	102	65-142
1,1,1-Trifluorotoluene	95	105	77-143
1,4-Bromofluorobenzene	85	101	86-115

;

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19701
Method:	EPA 602	
Date Analyzed:	September 17, 2001	
Matrix:	Water	

Quality Control Report:
Spike recoveries expressed as percentages

Spiked compound	LCS %Rec	QC Limits %Rec
Benzene	80	76-127
Toluene	61	76-125
Chlorobenzene	58	75-130

Quality Control Report :
Surrogate recovery expressed as percentages

Surrogate	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	96	65-142
1,1,1-Trifluorotoluene	99	77-143
1,4-Bromofluorobenzene	96	86-115

LCS = Laboratory Control Sample

Client: Kinnetic Laboratories Incorporated ToxScan Number: T-19701
Method: EPA 602
Date Analyzed: 9/17/01
Matrix: Water

Quality Control Report:
Spike recoveries expressed as percentages

Client Sample ID:	MOA01VOA006				
Site ID:	Influent				
ToxScan Lab ID:	19701-04-D	19701-04-E			
	MS	MSD		QC Limits	
Spiked compound	%Rec	%Rec	%RPD	%Rec	%RPD
Benzene	70	97	32	76-127	21
Toluene	50	70	34	76-125	21
Chlorobenzene	53	69	27	75-130	21

Quality Control Report :
Surrogate recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	95	95	65-142
1,1,1-Trifluorotoluene	98	99	77-143
1,4-Bromofluorobenzene	101	102	59-132

MS = Matrix Spike
MSD=Matrix Spike Duplicate
RPD=Releative Percent Difference

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 614	
Date Extracted:	September 10, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES005
Site ID:	Influent
ToxScan Lab ID:	19701-09

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 614	
Date Extracted:	September 10, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES006
Site ID:	Effluent
ToxScan Lab ID:	19701-10

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 614	
Date Extracted:	September 10, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID: Method Blank
ToxScan Lab ID: MB091001

Analyte	Sample Value	Reporting Limit
Demeton	ND	0.20
Guthion	ND	15
Malathion	ND	0.20
Parathion	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 614	
Date Extracted:	September 10, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Water	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Triphenylphosphate	QC Limits
Method Blank	71	50-150
Lab Control Sample	74	50-150
MOA01PES005	51	50-150
MOA01PES006	35*	50-150

*Outside of QC limits.

Client: Kinnetic Laboratories, Inc.
Method: EPA 614
Date Extracted: September 10, 2001
Date Analyzed: October 13, 2001
Matrix: Water

ToxScan Number: T-19701

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Diazinon	83	50-150
Disulfoton	78	50-150
Parathion Methyl	83	50-150
Malathion	86	50-150
Parathion Ethyl	83	50-150
Ethion	87	50-150
Azinphos Methyl	112	50-150

LCS = Laboratory Control Sample

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 608	
Date Extracted:	September 11, 2001	
Date Analyzed:	October 23, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES005
Site ID:	Influent
ToxScan Lab ID:	19701-09

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.050
alpha-BHC	ND	0.050
beta-BHC	ND	0.050
delta-BHC	ND	0.050
gamma-BHC	ND	0.050
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.020
4,4'-DDE	ND	0.020
4,4'-DDT	ND	0.020
Dieldrin	ND	0.10
Endosulfan I	ND	0.050
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.050
Heptachlor Epoxide	ND	0.050
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 608	
Date Extracted:	September 11, 2001	
Date Analyzed:	October 23, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES006
Site ID:	Effluent
ToxScan Lab ID:	19701-10

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.050
alpha-BHC	ND	0.050
beta-BHC	ND	0.050
delta-BHC	ND	0.050
gamma-BHC	ND	0.050
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.020
4,4'-DDE	ND	0.020
4,4'-DDT	ND	0.020
Dieldrin	ND	0.10
Endosulfan I	ND	0.050
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.050
Heptachlor Epoxide	ND	0.050
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.20

ND = Not Detected

Client: Kinnetic Laboratories, Inc.
Method: EPA 608
Date Extracted: September 11, 2001
Date Analyzed: October 22, 2001
Matrix: Water
Units: ug/L (ppb)

ToxScan Number: T-19701

Client Sample ID: Method Blank
ToxScan Lab ID: MB091101

Analyte	Sample Value	Reporting Limit
Aldrin	ND	0.050
alpha-BHC	ND	0.050
beta-BHC	ND	0.050
delta-BHC	ND	0.050
gamma-BHC	ND	0.050
alpha-Chlordane	ND	0.50
gamma-Chlordane	ND	0.50
4,4'-DDD	ND	0.020
4,4'-DDE	ND	0.020
4,4'-DDT	ND	0.020
Dieldrin	ND	0.10
Endosulfan I	ND	0.050
Endosulfan II	ND	0.10
Endosulfan Sulfate	ND	0.10
Endrin	ND	0.10
Endrin Aldehyde	ND	0.10
Endrin Ketone	ND	0.10
Heptachlor	ND	0.050
Heptachlor Epoxide	ND	0.050
Methoxychlor	ND	0.50
Toxaphene	ND	1.0
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0
Total PCB'S	ND	1.0
Mirex	ND	0.20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 608	
Date Extracted:	September 11, 2001	
Date Analyzed:	October 22 & 23, 2001	
Matrix:	Water	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Tetrachloro-m-xylene	Decachlorobiphenyl	QC Limits
Method Blank	77	72	50-150
Lab Control Sample	67	82	50-150
MOA01PES005	71	75	50-150
MOA01PES006	69	58	50-150
MOA01PES006 (MS)	56	53	50-150
MOA01PES006 (MSD)	52	52	50-150

Client: Kinnetic Laboratories, Inc. ToxScan Number: T-19701
Method: EPA 608
Date Extracted: September 11, 2001
Date Analyzed: October 23, 2001
Matrix: Water

Quality Control Report
QA/QC on sample MOA01PES006
Spike recoveries expressed as percentages:

Spiked Compound	MS % REC	MSD %REC	% RPD	QC LIMITS % REC	%RPD
Lindane	80	120	40	56-123	15
Heptachlor	80	83	3	40-131	20
Aldrin	110	108	2	40-120	22
Dieldrin	90	92	2	52-126	18
Endrin	86	96	11	56-121	21
4,4'-DDT	89	89	0	38-127	27

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19701
Method:	EPA 608	
Date Extracted:	September 11, 2001	
Date Analyzed:	October 22, 2001	
Matrix:	Water	

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Lindane	88	56-123
Heptachlor	93	40-131
Aldrin	88	40-120
Dieldrin	95	52-126
Endrin	93	56-121
4,4'-DDT	86	38-127

LCS = Laboratory Control Sample

Client: Kinnetic Laboratories Incorporated
Method: EPA Method(s) 200.8
Date Completed: 10/12/2001
Matrix: Water
Units: ug/L

ToxScan Number: T-19701

Total Metals

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01MET004	Influent	19701-01	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10
MOA01MET005	Effluent-1	19701-02	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10
MOA01MET006	Effluent-2	19701-03	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10

Client: Kinnetic Laboratories Incorporated

ToxScan Number: T-19701

Method: EPA Method(s) 200.8

Date Completed: 10/12/2001

Matrix: Water

Units: ug/L

Dissolved Metals

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01MET004	Influent	19701-11	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10
MOA01MET005	Effluent-1	19701-12	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10
MOA01MET006	Effluent-2	19701-13	Antimony	ND	10
			Selenium	ND	10
			Thallium	ND	10

QC FOR PROJECT # T-19701

LABORATORY METHOD BLANK SUMMARY

Applicable Matrix: Water

Total Metals

Analyte	Amount	Reporting Limit ug/L	EPA Method Number
Antimony	ND	10	200.8
Selenium	ND	10	200.8
Thallium	ND	10	200.8

QC FOR PROJECT # T-19701

LABORATORY FILTER BLANK SUMMARY

Applicable Matrix: Water

Dissolved Metals

Analyte	Amount	Reporting Limit ug/L	EPA Method Number
Antimony	ND	10	200.8
Selenium	ND	10	200.8
Thallium	ND	10	200.8

QC FOR PROJECT # 19701

Concentrations of the following are in ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY:

Matrix: Water

Total Metals

Analyte	Sample Amount	Amount of Spike	Matrix Spike	MS % Rec	Matrix Spike Dup	MSD % Rec	RPD
Antimony							
19701-01	ND	200	174	87	193	96	10
Selenium							
19701-02	ND	100	103	103	99.7	100	3
Thallium							
19701-01	ND	200	170	85	165	83	2

QC FOR PROJECT # T-19701

Concentrations of the following are in ug/L

SRM SUMMARY:

Matrix: Water

Total Metals

Analyte	Amount Found	Dilution	Corrected Value	SRM	Certified Value	% Recovery
Antimony	52.2	5	261	ERA 9991	226	115
Selenium	240	5	1200	ERA 9991	1060	113
Thallium	78.6	5	393	ERA 9991	459	86

ERA 9991 = Environmental Resource Associates, WasteWatR Lot No. 9991

T·19701

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522 FOR 16. 86 ~~SHELF 32~~	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1028 | **KLI Proj. #:** 516.01

ANALYSIS TYPE: EPA 602 with xylenes. Detection limit 0.5 µg/L.

MATRIX: Water | **Preservative:** HCl, 4°C Effluent samples contain $Na_2S_2O_3$ | **Type of Container:** 40-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01VOA006	Influent	6	9-4-01	1415	#3 of 6 small bubble REST INTACT	T·19701-04 -A,-B-C D,-E,-F
MOA01VOA007	Effluent-1	3	↓	1405	✓ INTACT	-05-A,B-C
MOA01VOA008	Effluent-2	3	↓	1405	✓	-06-A-B,-C
MOA01VOA009	C-Station	3	9-4-01	1350	✓ ↓	-07-A,B,-C
MOA01VOA010	Trip Blank	3	NA	NA	✓ Bubbles in vials	-08-A,B,-C

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Long	9/5/01 / 1110	hand	G. LAWLEY	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1320	FEDX	Kati King	06SEP01/1020
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Long Susan Long

T-19701

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522 FRIG 8 SHELF 32	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1028 | **KLI Proj. #:** 516.01

ANALYSIS TYPE: Pesticides: EPA 608 plus Mirex and EPA 614 for Demeton, Guthion, Malathion, and Parathion only. Detection limits 0.05 - 1.0 µg/L (Guthion ~15 µg/L).

MATRIX: Water | **Preservative:** None, 4°C | **Type of Container:** 1-L amber glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01PES005	Influent	2	9-4/5-01	0945	* Lids cracked on ✓both containers	T-19701-09-A, B
MOA01PES006	Effluent	4	↓	1000	-10-A, -C intact ✓*-10-D *cracked lid	↓ -10-A, -C, -D
* LIDS RECEIVED CRACKED ON -09-A, -B + -10-D SAMPLE CONTENTS O.K.						
IN ALL CONTAINERS. KL						

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Lang	9/5/01 1110	hand	A A Landy	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1300	FEDX	Kati King	06SEP01/1020
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Lang / Susan Lang

T-19701

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522 FRIG. 8 SHELF 32	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1028 | **KLI Proj. #:** 516.01

ANALYSIS TYPE: **Total and Dissolved Metals**: Antimony and thallium (EPA 200.8) and selenium (EPA 270.3). Detection limit 10 µg/L.

MATRIX: Water | **Preservative:** Cool, 4°C | **Type of Container:** 1-L HDPE

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01MET004	Influent	1	9-4/5-01	0945	✓ INTACT	T-19701-01-A
MOA01MET005	Effluent-1	1	↓	1000	✓ ↓	↓ -02-A
MOA01MET006	Effluent-2	1	↓	1000	✓ ↓	↓ -03-A

Please filter and then preserve samples with HNO_3 upon receipt at laboratory.

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Lang	9/5/01 1110	hand	G. Lanley	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1300	Fedex	Katie King	06SEP01 1020
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Lang / Susan Lang

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

November 06, 2001

ToxScan Number: T-19702

Kinnetic Laboratories Incorporated
403 West Eighth Avenue
Anchorage, AK 99501

Attn: Mark Savoie

Project Name:	None
Project Number:	516.01
Date Sampled:	September 04, 2001 - September 05, 2001
Date Received:	September 06, 2001
Matrix:	Sludge

Please find the enclosed test results for the parameters requested for analyses. The samples were analyzed within holding time using the following methods:

Demeton, Guthion, Malathion, Parathion by EPA Method 8141A
Organochlorine Pesticides & PCBs plus Mirex by EPA Method 8081A
Percent Solids by EPA Method 160.3
Total Metals by ICP/MS (Sb,Tl) by EPA Method 6020
Total Selenium by hydride AA by EPA Method 7741

The samples were received intact and were handled with the proper chain-of-custody procedures. Appropriate QA/QC guidelines were employed during the analyses on a minimum of a 5% basis. QC results were within limits and are reported with or following the data for each analysis.

If you have any questions or require any additional information, please feel free to call.

Sincerely,

Philip D. Carpenter

Philip D. Carpenter, Ph.D.
President

Enclosures

This cover letter is an integral part of the report.

EXPLANATION OF ACRONYMS FOR PROJECT # T-19702

The following is a glossary for acronyms that may be used in this report.

Abbreviation	Definition
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	None Detected
REP	Replicate
RPD	Relative Percent Difference
SRM	Standard Reference Material
TOC	Total Organic Carbon

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8141A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Sludge	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01PES007
Site ID:	Sludge
ToxScan Lab ID:	19702-01

Analyte	Wet Wt. Sample Value	Wet Wt. Reporting Limit	Dry Wt. Sample Value	Dry Wt. Reporting Limit
Demeton	ND	20	ND	62
Guthion	ND	1500	ND	4600
Malathion	ND	20	ND	62
Parathion	ND	20	ND	62

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8141A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Sludge	
Units:	ug/L (ppb)	

Client Sample ID: Method Blank
ToxScan Lab ID: MB091001

Analyte	Sample Value	Reporting Limit
Demeton	ND	20
Guthion	ND	1500
Malathion	ND	20
Parathion	ND	20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8081A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 28, 2001	
Matrix:	Sludge	
Units:	ug/Kg (ppb)	

Client Sample ID: MOA01PES007
ToxScan Lab ID: 19702-01

Analyte	Wet Wt. Sample Value	Wet Wt. Reporting Limit	Dry Wt. Sample Value	Dry Wt. Reporting Limit
Aldrin	ND	8.0	ND	25
alpha-BHC	ND	8.0	ND	25
beta-BHC	ND	8.0	ND	25
delta-BHC	ND	8.0	ND	25
gamma-BHC	ND	8.0	ND	25
alpha-Chlordane	ND	8.0	ND	25
gamma-Chlordane	ND	8.0	ND	25
4,4'-DDD	ND	3.0	ND	9.2
4,4'-DDE	ND	3.0	ND	9.2
4,4'-DDT	ND	3.0	ND	9.2
Dieldrin	ND	16	ND	49
Endosulfan I	ND	8.0	ND	25
Endosulfan II	ND	16	ND	49
Endosulfan Sulfate	ND	16	ND	49
Endrin	ND	16	ND	49
Endrin Aldehyde	ND	16	ND	49
Endrin Ketone	ND	16	ND	49
Heptachlor	ND	8.0	ND	25
Heptachlor Epoxide	ND	8.0	ND	25
Methoxychlor	ND	80	ND	250
Toxaphene	ND	160	ND	490
Aroclor-1016	ND	160	ND	490
Aroclor-1221	ND	160	ND	490
Aroclor-1232	ND	160	ND	490
Aroclor-1242	ND	160	ND	490
Aroclor-1248	ND	160	ND	490
Aroclor-1254	ND	160	ND	490
Aroclor-1260	ND	160	ND	490
Total PCB'S	ND	160	ND	490
Mirex	ND	20	ND	62

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8081A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 27, 2001	
Matrix:	Sludge	
Units:	ug/Kg (ppb)	

Client Sample ID: Method Blank
ToxScan Lab ID: MB091801

Analyte	Sample Value	Reporting Limit
Aldrin	ND	8.0
alpha-BHC	ND	8.0
beta-BHC	ND	8.0
delta-BHC	ND	8.0
gamma-BHC	ND	8.0
alpha-Chlordane	ND	8.0
gamma-Chlordane	ND	8.0
4,4'-DDD	ND	3.0
4,4'-DDE	ND	3.0
4,4'-DDT	ND	3.0
Dieldrin	ND	16
Endosulfan I	ND	8.0
Endosulfan II	ND	16
Endosulfan Sulfate	ND	16
Endrin	ND	16
Endrin Aldehyde	ND	16
Endrin Ketone	ND	16
Heptachlor	ND	8.0
Heptachlor Epoxide	ND	8.0
Methoxychlor	ND	80
Toxaphene	ND	160
Aroclor-1016	ND	160
Aroclor-1221	ND	160
Aroclor-1232	ND	160
Aroclor-1242	ND	160
Aroclor-1248	ND	160
Aroclor-1254	ND	160
Aroclor-1260	ND	160
Total PCB'S	ND	160
Mirex	ND	20

ND = Not Detected

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8080A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 27 & 28, 2001	
Matrix:	Sludge	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Tetrachloro-m-xylene	Decachlorobiphenyl	QC Limits
Method Blank	63	92	50-150
Lab Control Sample	64	94	50-150
MOA01PES005(MS)	64	111	50-150
MOA01PES006(MSD)	65	105	50-150
MOA01PES007	68	113	50-150

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Client: Kinnetic Laboratories, Inc. ToxScan Number: T-19702
Method: EPA 8081A
Date Extracted: September 18, 2001
Date Analyzed: October 28, 2001
Matrix: Sludge

Quality Control Report
QA/QC on sample MOA01PES007
Spike recoveries expressed as percentages:

Spiked Compound	MS % REC	MSD %REC	% RPD	QC LIMITS % REC	%RPD
Lindane	75	73	3	46-127	50
Heptachlor	53	58	9	35-130	31
Aldrin	45	55	20	34-132	43
Dieldrin	69	72	4	31-134	38
Endrin	55	59	7	42-139	45
DDT	59	63	7	23-134	50

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8081A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 27, 2001	
Matrix:	Sludge	

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Lindane	75	46-127
Heptachlor	80	35-130
Aldrin	75	34-132
Dieldrin	87	31-134
Endrin	86	42-139
4,4'-DDT	84	23-134

LCS = Laboratory Control Sample

Client:	Kinnetic Laboratories, Inc.	ToxScan Number: T-19702
Method:	EPA 8141A	
Date Extracted:	September 18, 2001	
Date Analyzed:	October 13, 2001	
Matrix:	Sludge	

Quality Control Report

Surrogate recoveries expressed as percentages:

Sample ID	Triphenylphosphate	QC Limits
Method Blank	56	50-150
Lab Control Sample	56	50-150
MOA01PES007	73	50-150
MOA01PES007 (MS)	78	50-150

MS = Matrix Spike

Client: Kinnetic Laboratories, Inc.
Method: EPA 8141A
Date Extracted: September 18, 2001
Date Analyzed: October 13, 2001
Matrix: Sludge

ToxScan Number: T-19702

Quality Control Report
QA/QC on sample MOA01PES007
Spike recoveries expressed as percentages:

Spiked Compound	MS % REC	QC LIMITS % REC
Diazinon	58	50-150
Disulfoton	61	50-150
Parathion Methyl	84	50-150
Malathion	51	50-150
Parathion Ethyl	66	50-150
Ethion	70	50-150
Azinphos Methyl	90	50-150

MS = Matrix Spike

Client: Kinnetic Laboratories, Inc.
Method: EPA 8141A
Date Extracted: September 18, 2001
Date Analyzed: October 13, 2001
Matrix: Sludge

ToxScan Number: T-19702

Quality Control Report
Spike recoveries expressed as percentages:

Spiked Compound	LCS % REC	QC LIMITS % REC
Diazinon	52	50-150
Disulfoton	56	50-150
Parathion Methyl	50	50-150
Malathion	58	50-150
Parathion Ethyl	59	50-150
Ethion	63	50-150
Azinphos Methyl	52	50-150

LCS = Laboratory Control Sample

Client: Kinnetic Laboratories Incorporated
Method: EPA Method(s) 6020
Date Completed: 10/17/2001
Matrix: Sludge
Units: mg/kg

ToxScan Number: T-19702

Total Metals

Client Sample ID	ToxScan Lab ID	Analyte	Wet Wt. Sample Value	Dry Wt. Sample Value	Dry Reporting Limit
MOA01MET007	19702-02	Antimony	2.1	5.7	0.30
		Selenium	1.3	3.4	0.30
		Thallium	ND	ND	0.30

QC FOR PROJECT # T-19702

LABORATORY METHOD BLANK SUMMARY

Applicable Matrix: Sediment

Total Metals

Analyte	Amount	Reporting Limit mg/L	EPA Method Number
Antimony	ND	0.30	6020
Selenium	ND	0.30	6020
Thallium	ND	0.30	6020

QC FOR PROJECT # 19702

MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY:

Matrix: Sludge

Analyte	Sample	Spike Amount ppm	MS % Rec	MSD % Rec	RPD
Antimony	19733-11	2.9	91	90	1
Selenium	19733-11	0.14	107	108	1
Thallium	19733-11	2.9	123	118	4

QC FOR PROJECT # T-19702

SRM SUMMARY:

Matrix: Sediment

Total Metals

Analyte	SRM Value Found mg/Kg	Certified SRM Value mg/Kg	% Recovery	SRM
Antimony	0.509	1.02	50	MESS-3
Selenium	0.671	0.720	93	MESS-3
Thallium	0.428	0.900	48	MESS-3

MESS-3 = National Research Council Canada, marine sediment.

QC FOR PROJECT # T-19702

Concentrations of the following are in ug/L

SRM SUMMARY:

Matrix: Water

Total Metals

Analyte	Amount Found	Dilution	Corrected Value	SRM	Certified Value	% Recovery
Antimony	41.8	5	209	ERA 9991	226	93
Selenium	238	5	1190	ERA 9991	1060	112
Thallium	95.0	5	475	ERA 9991	459	103

ERA 9991 = Environmental Resource Associates, WasteWatR Lot No. 9991

Client: Kinnetic Laboratories Incorporated
Method: EPA Method(s) 160.3
Date Completed: 9/17/2001
Matrix: Sludge
Units: Percent

ToxScan Number: T-19702

Client Sample ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01PES007	19702-01	Percent Solids	32	0.10
MOA01MET007	19702-02	Percent Solids	37	0.10

QC FOR PROJECT # T-19702

LABORATORY PRECISION SUMMARY:

Matrix: Sludge

Analyte	REP 1	REP 2	Units	RPD
Percent Solids				
19702-02	37.0	33.7	Percent	9

T·19702

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

FRIG 11
SHELF 40

pg. 1 of 2

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1028	**KLI Proj. #:** 516.01

ANALYSIS TYPE: Pesticides: EPA 8080 plus Mirex, and EPA 8140 for Demeton, Guthion, Malathion, and Parathion only. Detection limits 0.01 - 0.06 µg/g (dry weight; Guthion ~5 µg/g). Please report in dry weight.

MATRIX: Sludge	**Preservative:** None, 4°C	**Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01PES007	Sludge	1	9-4/5-01	0900	✓ INTACT	T·19702-01A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Lang	9/5/01 1110		[illegible]	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1300	FED EX	Kati King	06SEP01/1020
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Lang / Susan Lang

T.19702

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clarke (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

FRIG. 11 SHELF 40

pg. 2 of 2

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1028	**KLI Proj. #:** 516.01

ANALYSIS TYPE: Metals: Antimony and thallium (EPA 6020) and selenium (EPA 7741). Detection limit 0.3 µg/g (dry weight). Please report in dry weight.

MATRIX: Sludge	**Preservative:** None, 4°C	**Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01MET007	Sludge	1	9-4/5-01	0900	INTACT	T.19702-02-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Long	9/5/01/1110	hand	G. LAWLEY	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1300	Fed Ex	Katie King	06SEP01/1020
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Long / Susan Long

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B3 Northern Testing Labs, Inc.

Priority Pollutants

SEPTEMBER SAMPLING, PRIORITY POLLUTANTS, NTL SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01VOP020 - 027	INFLUENT	SAMPLE (COMPOSITE)
MOA01VOP028 -035	EFFLUENT	SAMPLE (COMPOSITE)
MOA01VOP036	C-STATION	FIELD BLANK
MOA01VOP037	TRIP BLANK	TRIP BLANK
MOA01SVL004	INFLUENT	SAMPLE
MOA01SVL005	EFFLUENT	SAMPLE
MOA01SVL006	SLUDGE	SAMPLE

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

February 6, 2002

Kinnetic Laboratories, Inc.
403 West 8th Avenue
Anchorage, AK 99501-3515

Attn: Janet Savoie

Subject: MOA Inlet Monitoring Project

Dear Ms. Savoie;

On September 5, 2001, Northern Testing Laboratories, Inc.-Anchorage received samples from Kinnetic Laboratories, Inc. in support of the 2001 MOA Inlet Monitoring Project. The following analyses and methods were performed:

- Volatile Organics – according to methods EPA 624 and 8260B
- Semi-Volatile Organics – according to methods EPA 625 and 8270C

Individual data reports for all methods have been submitted. CCV, LCS, MS and Method Blank data was submitted for the semi-volatile and volatile organics data. If you have any questions concerning these reports, please contact me at (907) 349-1000.

Sincerely,
Northern Testing Laboratories, Inc.

Wendy Mitchell

Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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February 14, 2002

Kinnetic Laboratories, Inc.
403 West 8th Avenue
Anchorage, AK 99501

Client Project #: 516.01

Case Narrative

On September 05, 2001, Northern Testing Laboratories, Inc.- Anchorage received several samples to be analyzed by EPA Methods 624 and 8260B for volatile organic compounds, EPA Methods 625 and 8270C for semi-volatile organic compounds, and Standard Method 9230B for Enterococci MPN.

NTL Sample ID # A174954 and A174962 are 8-part composite samples, composited at the laboratory using an airtight syringe prior to analysis. Samples A174957, A174958 A300688 (originally reported as A174959) are composite samples collected from 9/4/01 to 9/5/01 at the sample source site.

The EPA Method 624 analysis dated 9/17/01 contained the following quality control parameters: a continuing calibration verification (CCV), a laboratory control sample (LCS), a laboratory control sample duplicate (LCSD), and a Method Blank. The CCV recovered low outside of quality control acceptance limits for bromomethane, 2-CEVE, bromoform, and 1,1,2,2-tetrachlorethane. These compounds were not found in any of the associated samples, and all other quality control criteria for this analysis were within method acceptance limits. The method blank did not contain any target analytes at concentrations above the reporting limit.

The EPA Method 8260B (624 list) analysis dated 9/18/01 contained the following quality control parameters: a continuing calibration verification (CCV), a laboratory control sample (LCS), a laboratory control sample duplicate (LCSD), and a Method Blank. All quality control criteria for this analysis were within method acceptance limits, and the method blank did not contain any target analytes at levels above the reporting limit.

The EPA Method 625 analysis dated 9/26/01 contained the following quality control parameters: a continuing calibration verification (CCV), a laboratory control sample (LCS), and a Method Blank. The CCV recovered low outside of method QC criteria for

benzoic acid. The LCS recovered low, outside of method criteria for 2,4-dinitrophenol and hexachloroethane. Although the LCS recovery for 4-nitrophenol is flagged on the summary sheets previously provided, this compound did recover within EPA Method 625 QC parameters. Although the method blank did not contain any target analytes at concentrations above the reporting limit, the method blank's surrogate d5-nitrobenzene recovery was slightly high. All other quality control criteria for this analysis were within method acceptance limits.

The EPA Method 8270C (625 list) analysis dated 9/29/01 contained the following quality control parameters: a continuing calibration verification (CCV), a laboratory control sample (LCS), a laboratory control sample duplicate (LCSD), and a Method Blank. The CCV recovered low for benzoic acid and hexachlorcyclopentadiene. The LCS and LCSD recoveries were within Method 8270C acceptance criteria and the method blank did not contain any target analytes at levels above the reporting limit.

The IDEXX media and quanti-tray used in the SM9230B analysis for Enterococci MPN was certified by the manufacturer to be sterile and free from interferences that may impact the analysis.

Northern Testing Laboratories, Inc. - Anchorage performs modified analyses for EPA Methods 624 and 625. Please contact the Quality Control Chemist for the specifics of the method modifications.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage AK 99501

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300931
Client Sample ID: MOA01VOP028 - 035
Location: EFF CMP #1 - #8
Client Project#: 516.01
COC#:
Sample Matrix: Water

Comments: Composite of 09/04/01 @ 09:15AM and 09/05/01 @ 06:00AM. This revised report replaces A174954; 1,4-DCB is reported rather than 1,3-DCB.

Report Date: 2/14/02
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 6:00
Collected By: SL

Flag Definitions

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present in Method Blank
H = Above Regulatory Maximum
M = Matrix Interference
J = Estimated Value Below MRL
D = Lost to Dilution
E = Estimated Value

Analysis Method Parameter	Result	Flag	MRL	MCL	Units	Prep Method	Prep Date	Analysis Date
EPA 624								
Benzene	1.99		1.00		ug/L	**EPA 624**		9/17/01
Bromodichloromethane	<MRL		1.00		ug/L			
Bromoform	<MRL		1.00		ug/L			
Bromomethane	<MRL		5.00		ug/L			
Carbon Tetrachloride	<MRL		1.00		ug/L			
Chlorobenzene	<MRL		1.00		ug/L			
Chloroethane	<MRL		2.00		ug/L			
2-Chloroethylvinyl ether	<MRL		1.00		ug/L			
Chloroform	3.60		1.00		ug/L			
Chloromethane	<MRL		1.00		ug/L			
Dibromochloromethane	<MRL		1.00		ug/L			
1,2-Dichlorobenzene	<MRL		1.00		ug/L			
1,3-Dichlorobenzene	<MRL		1.00		ug/L			
1,4-Dichlorobenzene	1.27		1.00		ug/L			
1,1-Dichloroethane	<MRL		1.00		ug/L			
1,2-Dichloroethane	<MRL		1.00		ug/L			

wendymitchell

Reported By: Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage AK 99501

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300931
Client Sample ID: MOA01VOP028 - 035
Location: EFF CMP #1 - #8
Client Project#: 516.01
COC#:
Sample Matrix: Water

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Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 6:00
Collected By: SL

Flag Definitions

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MCL = Max. Contaminant Level
B = Present in Method Blank
H = Above Regulatory Maximum
M = Matrix Interference
J = Estimated Value Below MRL
D = Lost to Dilution
E = Estimated Value

Analysis Method Parameter	Result	Flag	MRL	MCL	Units	Prep Method	Prep Date	Analysis Date
1,1-Dichloroethene	<MRL		1.00		ug/L	**EPA 624**		9/17/01
cis-1,2-Dichloroethene	<MRL		1.00		ug/L			
trans-1,2-Dichloroethene	<MRL		1.00		ug/L			
1,2-Dichloropropane	<MRL		1.00		ug/L			
cis-1,3-Dichloropropene	<MRL		1.00		ug/L			
trans-1,3-Dichloropropene	<MRL		1.00		ug/L			
Ethylbenzene	2.40		1.00		ug/L			
Methylene Chloride	<MRL		1.00		ug/L			
1,1,2,2-Tetrachloroethane	<MRL		1.00		ug/L			
Tetrachloroethene	2.34		1.00		ug/L			
Toluene	8.95		1.00		ug/L			
1,1,1-Trichloroethane	<MRL		1.00		ug/L			
1,1,2-Trichloroethane	<MRL		1.00		ug/L			
Trichloroethene	<MRL		1.00		ug/L			
Trichlorofluoromethane	<MRL		1.00		ug/L			
m,p-Xylene	9.25		1.00		ug/L			
o-Xylene	3.26		1.00		ug/L			
Vinyl Chloride	<MRL		1.00		ug/L			

Wendy Mitchell

Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie
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Report Date: 2/14/02
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 6:00
Collected By: SL

Flag Definitions

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present in Method Blank
H = Above Regulatory Maximum
M = Matrix Interference
J = Estimated Value Below MRL
D = Lost to Dilution
E = Estimated Value

Analysis Method Parameter	Result	Flag	MRL	MCL	Units	Prep Method	Prep Date	Analysis Date
DBFM (Surr)	98				% Recovery	**EPA 624**		9/17/01
Toluene-d8 (Surr)	103				% Recovery			
4-Bromofluorobenzene	109				% Recovery			

Wendy Mitchell

Reported By: Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage AK 99501

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300932
Client Sample ID: MOA01VOP020 - 027
Location: INF CMP #1 - #8
Client Project#: 516.01
COC#:
Sample Matrix: Water

Comments: Composite of 09/04/01 @ 09:11AM and 09/05/01 @ 06:11AM. This revised transmittal replaces A174962; 1,4-DCB is reported rather than 1,3-DCB.

Report Date: 2/14/02
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 6:11
Collected By: SL

Flag Definitions

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present in Method Blank
H = Above Regulatory Maximum
M = Matrix Interference
J = Estimated Value Below MRL
D = Lost to Dilution
E = Estimated Value

Analysis Method Parameter	Result	Flag	MRL	MCL	Units	Prep Method	Prep Date	Analysis Date
EPA 624								
Benzene	3.59		1.00		ug/L	**EPA 624**		9/17/01
Bromodichloromethane	<MRL		1.00		ug/L			
Bromoform	<MRL		1.00		ug/L			
Bromomethane	<MRL		5.00		ug/L			
Carbon Tetrachloride	<MRL		1.00		ug/L			
Chlorobenzene	<MRL		1.00		ug/L			
Chloroethane	<MRL		2.00		ug/L			
2-Chloroethylvinyl ether	<MRL		1.00		ug/L			
Chloroform	2.28		1.00		ug/L			
Chloromethane	<MRL		1.00		ug/L			
Dibromochloromethane	<MRL		1.00		ug/L			
1,2-Dichlorobenzene	<MRL		1.00		ug/L			
1,3-Dichlorobenzene	<MRL		1.00		ug/L			
1,4-Dichlorobenzene	1.51		1.00		ug/L			
1,1-Dichloroethane	<MRL		1.00		ug/L			
1,2-Dichloroethane	<MRL		1.00		ug/L			

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Anchorage Laboratory Manager

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NTL Lab#: A300932
Client Sample ID: MOA01VOP020 - 027
Location: INF CMP #1 - #8
Client Project#: 516.01
COC#:
Sample Matrix: Water

Comments: Composite of 09/04/01 @ 09:11AM and 09/05/01 @ 06:11AM. This revised transmittal replaces A174962; 1,4-DCB is reported rather than 1,3-DCB.

Report Date: 2/14/02
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 6:11
Collected By: SL

Flag Definitions

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D = Lost to Dilution
E = Estimated Value

Analysis Method Parameter	Result	Flag	MRL	MCL	Units	Prep Method	Prep Date	Analysis Date
1,1-Dichloroethene	<MRL		1.00		ug/L	EPA 624		9/17/01
cis-1,2-Dichloroethene	<MRL		1.00		ug/L			
trans-1,2-Dichloroethene	<MRL		1.00		ug/L			
1,2-Dichloropropane	<MRL		1.00		ug/L			
cis-1,3-Dichloropropene	<MRL		1.00		ug/L			
trans-1,3-Dichloropropene	<MRL		1.00		ug/L			
Ethylbenzene	1.50		1.00		ug/L			
Methylene Chloride	<MRL		1.00		ug/L			
1,1,2,2-Tetrachloroethane	<MRL		1.00		ug/L			
Tetrachloroethene	3.35		1.00		ug/L			
Toluene	10.3		1.00		ug/L			
1,1,1-Trichloroethane	<MRL		1.00		ug/L			
1,1,2-Trichloroethane	<MRL		1.00		ug/L			
Trichloroethene	<MRL		1.00		ug/L			
Trichlorofluoromethane	<MRL		1.00		ug/L			
m,p-Xylene	6.21		1.00		ug/L			
o-Xylene	2.10		1.00		ug/L			
Vinyl Chloride	<MRL		1.00		ug/L			

wendy mitchell

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Anchorage Laboratory Manager

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Phone: (907) 276-6178
Fax:

NTL Lab#: A300932
Client Sample ID: MOA01VOP020 - 027
Location: INF CMP #1 - #8
Client Project#: 516.01
COC#:
Sample Matrix: Water

Comments: Composite of 09/04/01 @ 09:11AM and 09/05/01 @ 06:11AM. This revised transmittal replaces A174962; 1,4-DCB is reported rather than 1,3-DCB.

Report Date: 2/14/02
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M = Matrix Interference
J = Estimated Value Below MRL
D = Lost to Dilution
E = Estimated Value

Analysis Method Parameter	Result	Flag	MRL	MCL	Units	Prep Method	Prep Date	Analysis Date
DBFM (Surr)	90				% Recovery	**EPA 624**		9/17/01
Toluene-d8 (Surr)	103				% Recovery			
4-Bromofluorobenzene	110				% Recovery			

Wendy Mitchell

Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP036
Client Project: 516.01
Source: C-Station
NTL Lab#: A174960
Sample Matrix: Water
Comments:

Report Date: 9/28/01
Date Arrived: 9/5/01
Sample Date: 9/4/01
Sample Time: 8:00
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 624						
	Benzene	ug/L	<MRL	1.00		9/17/01
	Bromodichloromethane	ug/L	<MRL	1.00		
	Bromoform	ug/L	<MRL	1.00		
	Bromomethane	ug/L	<MRL	5.00		
	Carbon Tetrachloride	ug/L	<MRL	1.00		
	Chlorobenzene	ug/L	<MRL	1.00		
	Chloroethane	ug/L	<MRL	2.00		
	2-Chloroethyl Vinyl Ether	ug/L	<MRL	1.00		
	Chloroform	ug/L	<MRL	1.00		
	Chloromethane	ug/L	<MRL	1.00		
	Dibromochloromethane	ug/L	<MRL	1.00		
	1,2-Dichlorobenzene	ug/L	<MRL	1.00		
	1,3-Dichlorobenzene	ug/L	<MRL	1.00		
	1,4-Dichlorobenzene	ug/L	<MRL	1.00		
	1,1-Dichloroethane	ug/L	<MRL	1.00		
	1,2-Dichloroethane	ug/L	<MRL	1.00		
	1,1-Dichloroethene	ug/L	<MRL	1.00		
	cis-1,2-Dichloroethene	ug/L	<MRL	1.00		
	trans-1,2-Dichloroethene	ug/L	<MRL	1.00		
	1,2-Dichloropropane	ug/L	<MRL	1.00		
	cis-1,3-Dichloropropene	ug/L	<MRL	1.00		
	trans-1,3-Dichloropropene	ug/L	<MRL	1.00		
	Ethylbenzene	ug/L	<MRL	1.00		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP036
Client Project: 516.01
Source: C-Station
NTL Lab#: A174960
Sample Matrix: Water
Comments:

Report Date: 9/28/01
Date Arrived: 9/5/01
Sample Date: 9/4/01
Sample Time: 8:00
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	Methylene Chloride	ug/L	7.41	1.00		9/17/01
	1,1,2,2-Tetrachloroethane	ug/L	<MRL	1.00		
	Tetrachloroethene	ug/L	<MRL	1.00		
	Toluene	ug/L	<MRL	1.00		
	1,1,1-Trichloroethane	ug/L	<MRL	1.00		
	1,1,2-Trichloroethane	ug/L	<MRL	1.00		
	Trichloroethene	ug/L	<MRL	1.00		
	Trichlorofluoromethane	ug/L	<MRL	1.00		
	m,p-Xylene	ug/L	<MRL	1.00		
	o-Xylene	ug/L	<MRL	1.00		
	Vinyl Chloride	ug/L	<MRL	1.00		
	DBFM (Surr)	% Recovery	91			
	Toluene-d8 (Surr)	% Recovery	106			
	4-Bromofluorobenzene	% Recovery	104			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP037 Trip Blank
Client Project: 516.01
Source: Trip Blank
NTL Lab#: A174961
Sample Matrix: Water
Comments:

Report Date: 9/28/01
Date Arrived: 9/5/01
Sample Date:
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 624						
	Benzene	ug/L	<MRL	1.00		9/17/01
	Bromodichloromethane	ug/L	<MRL	1.00		
	Bromoform	ug/L	<MRL	1.00		
	Bromomethane	ug/L	<MRL	5.00		
	Carbon Tetrachloride	ug/L	<MRL	1.00		
	Chlorobenzene	ug/L	<MRL	1.00		
	Chloroethane	ug/L	<MRL	2.00		
	2-Chloroethyl Vinyl Ether	ug/L	<MRL	1.00		
	Chloroform	ug/L	<MRL	1.00		
	Chloromethane	ug/L	<MRL	1.00		
	Dibromochloromethane	ug/L	<MRL	1.00		
	1,2-Dichlorobenzene	ug/L	<MRL	1.00		
	1,3-Dichlorobenzene	ug/L	<MRL	1.00		
	1,4-Dichlorobenzene	ug/L	<MRL	1.00		
	1,1-Dichloroethane	ug/L	<MRL	1.00		
	1,2-Dichloroethane	ug/L	<MRL	1.00		
	1,1-Dichloroethene	ug/L	<MRL	1.00		
	cis-1,2-Dichloroethene	ug/L	<MRL	1.00		
	trans-1,2-Dichloroethene	ug/L	<MRL	1.00		
	1,2-Dichloropropane	ug/L	<MRL	1.00		
	cis-1,3-Dichloropropene	ug/L	<MRL	1.00		
	trans-1,3-Dichloropropene	ug/L	<MRL	1.00		
	Ethylbenzene	ug/L	<MRL	1.00		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01VOP037 Trip Blank
Client Project: 516.01
Source: Trip Blank
NTL Lab#: A174961
Sample Matrix: Water
Comments:

Report Date: 9/28/01
Date Arrived: 9/5/01
Sample Date:
Sample Time:
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	Methylene Chloride	ug/L	<MRL	1.00		9/17/01
	1,1,2,2-Tetrachloroethane	ug/L	<MRL	1.00		
	Tetrachloroethene	ug/L	<MRL	1.00		
	Toluene	ug/L	<MRL	1.00		
	1,1,1-Trichloroethane	ug/L	<MRL	1.00		
	1,1,2-Trichloroethane	ug/L	<MRL	1.00		
	Trichloroethene	ug/L	<MRL	1.00		
	Trichlorofluoromethane	ug/L	<MRL	1.00		
	m,p-Xylene	ug/L	<MRL	1.00		
	o-Xylene	ug/L	<MRL	1.00		
	Vinyl Chloride	ug/L	<MRL	1.00		
	DBFM (Surr)	% Recovery	92			
	Toluene-d8 (Surr)	% Recovery	105			
	4-Bromofluorobenzene	% Recovery	106			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01SVL004
Client Project: 516.01
Source: Influent Composite
NTL Lab#: A174957
Sample Matrix: Water
Comments: Composite of 09/04/01 and 09/05/01

Report Date: 9/30/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 9:45
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
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E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 625						
	Acenaphthene	ug/L	<MRL	10.6	9/11/01	9/26/01
	Acenaphthylene	ug/L	<MRL	10.6		
	Anthracene	ug/L	<MRL	10.6		
	Benzidine	ug/l	<MRL	10.6		
	Benzoic Acid	ug/L	81.6	53.2		
	Benzo(a)anthracene	ug/L	<MRL	10.6		
	Benzo(b)fluoranthene	ug/L	<MRL	10.6		
	Benzo(k)fluoranthene	ug/L	<MRL	10.6		
	Benzo(a)pyrene	ug/L	<MRL	10.6		
	Benzo(g,h,i)perylene	ug/L	<MRL	10.6		
	Butyl Benzyl phthalate	ug/L	<MRL	10.6		
	Bis (2-chloroethyl) ether	ug/L	<MRL	10.6		
	Bis (2-ethylhexyl) phthalate	ug/L	123	10.6		
	Bis (2-chloroisopropyl) ether	ug/L	<MRL	10.6		
	4-Bromophenyl phenyl ether	ug/L	<MRL	10.6		
	2-Chloronaphthalene	ug/L	<MRL	10.6		
	4-Chloro-3-methyl phenol	ug/L	<MRL	10.6		
	2-Chlorophenol	ug/L	<MRL	10.6		
	4-Chlorophenyl phenyl ether	ug/L	<MRL	10.6		
	Chrysene	ug/L	<MRL	10.6		
	Dibenzo(a,h)anthracene	ug/L	<MRL	10.6		
	Di-n-butyl phthalate	ug/L	<MRL	10.6		
	1,2-Dichlorobenzene	ug/L	<MRL	10.6		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01SVL004
Client Project: 516.01
Source: Influent Composite
NTL Lab#: A174957
Sample Matrix: Water
Comments: Composite of 09/04/01 and 09/05/01

Report Date: 9/30/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 9:45
Collected By: SL

** Legend **

MRL = Method Report Level
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H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	1,3-Dichlorobenzene	ug/L	<MRL	10.6	9/11/01	9/26/01
	1,4-Dichlorobenzene	ug/L	<MRL	10.6		
	3,3'-Dichlorobenzidine	ug/L	<MRL	10.6		
	2,4-Dichlorophenol	ug/L	<MRL	10.6		
	Diethylphthalate	ug/L	11.6	10.6		
	Dimethylphthalate	ug/L	<MRL	10.6		
	2,4-Dimethylphenol	ug/L	<MRL	10.6		
	2,4-Dinitrophenol	ug/L	<MRL	10.6		
	2,4-Dinitrotoluene	ug/L	<MRL	10.6		
	2,6-Dinitrotoluene	ug/L	<MRL	10.6		
	Di-n-Octylphthalate	ug/L	<MRL	10.6		
	Fluoranthene	ug/L	<MRL	10.6		
	Fluorene	ug/L	<MRL	10.6		
	Hexachlorobenzene	ug/L	<MRL	10.6		
	Hexachlorobutadiene	ug/L	<MRL	10.6		
	Hexachlorocyclopentadiene	ug/L	<MRL	10.6		
	Hexachloroethane	ug/L	<MRL	10.6		
	Indeno(1,2,3-cd)pyrene	ug/L	<MRL	10.6		
	Isophorone	ug/L	<MRL	10.6		
	2-Methyl-4,6-Dinitrophenol	ug/L	<MRL	10.6		
	Naphthalene	ug/L	<MRL	10.6		
	Nitrobenzene	ug/L	<MRL	10.6		
	2-Nitrophenol	ug/L	<MRL	10.6		
	4-Nitrophenol	ug/L	<MRL	10.6		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01SVL004
Client Project: 516.01
Source: Influent Composite
NTL Lab#: A174957
Sample Matrix: Water
Comments: Composite of 09/04/01 and 09/05/01

Report Date: 9/30/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 9:45
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	N-Nitrosodimethylamine	ug/L	<MRL	10.6	9/11/01	9/26/01
	N-Nitroso-di-n-propylamine	ug/L	<MRL	10.6		
	N-Nitrosodiphenylamine	ug/L	<MRL	10.6		
	Pentachlorophenol	ug/L	<MRL	10.6		
	Phenanthrene	ug/L	<MRL	10.6		
	Phenol	ug/L	<MRL	10.6		
	Pyrene	ug/L	<MRL	10.6		
	1,2,4-Trichlorobenzene	ug/L	<MRL	10.6		
	2,4,6-Trichlorophenol	ug/L	<MRL	10.6		
	2-Fluorobiphenyl (Surr)	% Recovery	105			
	2-Fluorophenol (Surr)	% Recovery	37			
	Nitrobenzene-d5 (Surr)	% Recovery	61			
	Phenol-d6 (Surr)	% Recovery	56			
	p-Terphenyl-d14 (Surr)	% Recovery	121			
	2,4,6-Tribromophenol (Surr)	% Recovery	124			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
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PRUDHOE BAY, ALASKA 99734

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01SVL005
Client Project: 516.01
Source: Effluent Composite
NTL Lab#: A174958
Sample Matrix: Water
Comments: Composite of 09/04/01 and 09/05/01

Report Date: 9/30/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 10:00
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
EPA 625						
	Acenaphthene	ug/L	<MRL	10.1	9/11/01	9/26/01
	Acenaphthylene	ug/L	<MRL	10.1		
	Anthracene	ug/L	<MRL	10.1		
	Benzidine	ug/l	<MRL	10.1		
	Benzoic Acid	ug/L	109	50.5		
	Benzo(a)anthracene	ug/L	<MRL	10.1		
	Benzo(b)fluoranthene	ug/L	<MRL	10.1		
	Benzo(k)fluoranthene	ug/L	<MRL	10.1		
	Benzo(a)pyrene	ug/L	<MRL	10.1		
	Benzo(g,h,i)perylene	ug/L	<MRL	10.1		
	Butyl Benzyl phthalate	ug/L	<MRL	10.1		
	Bis (2-chloroethyl) ether	ug/L	<MRL	10.1		
	Bis (2-ethylhexyl) phthalate	ug/L	272	10.1		
	Bis (2-chloroisopropyl) ether	ug/L	<MRL	10.1		
	4-Bromophenyl phenyl ether	ug/L	<MRL	10.1		
	2-Chloronaphthalene	ug/L	<MRL	10.1		
	4-Chloro-3-methyl phenol	ug/L	<MRL	10.1		
	2-Chlorophenol	ug/L	<MRL	10.1		
	4-Chlorophenyl phenyl ether	ug/L	<MRL	10.1		
	Chrysene	ug/L	<MRL	10.1		
	Dibenzo(a,h)anthracene	ug/L	<MRL	10.1		
	Di-n-butyl phthalate	ug/L	<MRL	10.1		
	1,2-Dichlorobenzene	ug/L	<MRL	10.1		

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01SVL005
Client Project: 516.01
Source: Effluent Composite
NTL Lab#: A174958
Sample Matrix: Water
Comments: Composite of 09/04/01 and 09/05/01

Report Date: 9/30/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 10:00
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	1,3-Dichlorobenzene	ug/L	<MRL	10.1	9/11/01	9/26/01
	1,4-Dichlorobenzene	ug/L	<MRL	10.1		
	3,3'-Dichlorobenzidine	ug/L	<MRL	10.1		
	2,4-Dichlorophenol	ug/L	<MRL	10.1		
	Diethylphthalate	ug/L	12.6	10.1		
	Dimethylphthalate	ug/L	<MRL	10.1		
	2,4-Dimethylphenol	ug/L	<MRL	10.1		
	2,4-Dinitrophenol	ug/L	<MRL	10.1		
	2,4-Dinitrotoluene	ug/L	<MRL	10.1		
	2,6-Dinitrotoluene	ug/L	<MRL	10.1		
	Di-n-Octylphthalate	ug/L	<MRL	10.1		
	Fluoranthene	ug/L	<MRL	10.1		
	Fluorene	ug/L	<MRL	10.1		
	Hexachlorobenzene	ug/L	<MRL	10.1		
	Hexachlorobutadiene	ug/L	<MRL	10.1		
	Hexachlorocyclopentadiene	ug/L	<MRL	10.1		
	Hexachloroethane	ug/L	<MRL	10.1		
	Indeno(1,2,3-cd)pyrene	ug/L	<MRL	10.1		
	Isophorone	ug/L	<MRL	10.1		
	2-Methyl-4,6-Dinitrophenol	ug/L	<MRL	10.1		
	Naphthalene	ug/L	<MRL	10.1		
	Nitrobenzene	ug/L	<MRL	10.1		
	2-Nitrophenol	ug/L	<MRL	10.1		
	4-Nitrophenol	ug/L	<MRL	10.1		

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01SVL005
Client Project: 516.01
Source: Effluent Composite
NTL Lab#: A174958
Sample Matrix: Water
Comments: Composite of 09/04/01 and 09/05/01

Report Date: 9/30/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 10:00
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
	N-Nitrosodimethylamine	ug/L	<MRL	10.1	9/11/01	9/26/01
	N-Nitroso-di-n-propylamine	ug/L	<MRL	10.1		
	N-Nitrosodiphenylamine	ug/L	<MRL	10.1		
	Pentachlorophenol	ug/L	<MRL	10.1		
	Phenanthrene	ug/L	<MRL	10.1		
	Phenol	ug/L	<MRL	10.1		
	Pyrene	ug/L	<MRL	10.1		
	1,2,4-Trichlorobenzene	ug/L	<MRL	10.1		
	2,4,6-Trichlorophenol	ug/L	<MRL	10.1		
	2-Fluorobiphenyl (Surr)	% Recovery	92			
	2-Fluorophenol (Surr)	% Recovery	38			
	Nitrobenzene-d5 (Surr)	% Recovery	82			
	Phenol-d6 (Surr)	% Recovery	44			
	p-Terphenyl-d14 (Surr)	% Recovery	121			
	2,4,6-Tribromophenol (Surr)	% Recovery	123			

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/31/02
Date Arrived: 9/5/01
Date Sampled: 9/5/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

Flag Definitions
MRL = Method Reporting Limit
MCL = Maximum Contaminant Level
B = Below Regulatory Minimum
H = Above Regulatory Maximum
M = Matrix Interference
J = Best Available Estimate
U = Less Than Detection Limit
D = Lost To Dilution

NTL Lab#: A300688
Client Sample ID: MOA01SVL006
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Comments: Composite of 09/04/01 @ 0900AM through 09/05/01 @ 0900AM; revised transmittal to report 1,4-DCB rather than 1,3-DCB; A300688 replaces A174959

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8260B									
Benzene	< MRL	mg/dry Kg	U	0.207		EPA 8260B	9/17/01	EPA 8260B	9/18/01
Bromodichloromethane	< MRL	mg/dry Kg	U	0.207					
Bromoform	< MRL	mg/dry Kg	U	0.207					
Bromomethane	< MRL	mg/dry Kg	U	0.413					
Carbon Tetrachloride	< MRL	mg/dry Kg	U	0.207					
Chlorobenzene	< MRL	mg/dry Kg	U	0.207					
Chloroethane	< MRL	mg/dry Kg	U	0.207					
2-Chloroethylvinyl ether	< MRL	mg/dry Kg	U	2.07					
Chloroform	< MRL	mg/dry Kg	U	0.207					
Chloromethane	< MRL	mg/dry Kg	U	0.413					
Dibromochloromethane	< MRL	mg/dry Kg	U	0.207					
1,2-Dichlorobenzene	< MRL	mg/dry Kg	U	0.207					
1,3-Dichlorobenzene	< MRL	mg/dry Kg	U	0.207					
1,4-Dichlorobenzene	0.620	mg/dry Kg		0.207					
1,1-Dichloroethane	< MRL	mg/dry Kg	U	0.207					
1,2-Dichloroethane	< MRL	mg/dry Kg	U	0.207					
1,1-Dichloroethene	< MRL	mg/dry Kg	U	0.207					
cis-1,2-Dichloroethene	< MRL	mg/dry Kg	U	0.207					
trans-1,2-Dichloroethene	< MRL	mg/dry Kg	U	0.207					
1,2-Dichloropropane	< MRL	mg/dry Kg	U	0.207					
cis-1,3-Dichloropropene	< MRL	mg/dry Kg	U	0.207					
trans-1,3-Dichloropropene	< MRL	mg/dry Kg	U	0.207					

wendy mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/31/02
Date Arrived: 9/5/01
Date Sampled: 9/5/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

Flag Definitions
MRL = Method Reporting Limit
MCL = Maximum Contaminant Level
B = Below Regulatory Minimum
H = Above Regulatory Maximum
M = Matrix Interference
J = Best Available Estimate
U = Less Than Detection Limit
D = Lost To Dilution

NTL Lab#: A300688
Client Sample ID: MOA01SVL006
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Comments: Composite of 09/04/01 @ 0900AM through 09/05/01 @ 0900AM; revised transmittal to report 1,4-DCB rather than 1,3-DCB; A300688 replaces A174959

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8260B									
Ethylbenzene	0.298 J	mg/dry Kg		0.207		EPA 8260B	9/17/01	EPA 8260B	9/18/01
Methylene Chloride	< MRL	mg/dry Kg	U	0.207					
1,1,2,2-Tetrachloroethane	< MRL	mg/dry Kg	U	0.207					
Tetrachloroethene	0.314 J	mg/dry Kg		0.207					
Toluene	2.15	mg/dry Kg		0.207					
1,1,1-Trichloroethane	< MRL	mg/dry Kg	U	0.207					
1,1,2-Trichloroethane	< MRL	mg/dry Kg	U	0.207					
Trichloroethene	< MRL	mg/dry Kg	U	0.207					
Trichlorofluoromethane	< MRL	mg/dry Kg	U	0.827					
m,p-Xylene	1.06	mg/dry Kg		0.413					
o-Xylene	0.347 J	mg/dry Kg		0.207					
Vinyl Chloride	< MRL	mg/dry Kg	U	0.413					
DBFM (Surr)	78	% Recovery							
Toluene-d8 (Surr)	86	% Recovery							
4-Bromofluorobenzene	102	% Recovery							
EPA 8270C									
Acenaphthene	< MRL	mg/dry Kg	U	6.82		EPA 3510	9/18/01	EPA 8270C	9/29/01
Acenaphthylene	< MRL	mg/dry Kg	U	6.82					
Anthracene	< MRL	mg/dry Kg	U	6.82					
Benzidine	< MRL	mg/dry Kg	U	6.82					
Benzoic Acid	< MRL	mg/dry Kg	U	34.1					

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/31/02
Date Arrived: 9/5/01
Date Sampled: 9/5/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300688
Client Sample ID: MOA01SVL006
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Flag Definitions
MRL = Method Reporting Limit
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U = Less Than Detection Limit
D = Lost To Dilution

Comments: Composite of 09/04/01 @ 0900AM through 09/05/01 @ 0900AM; revised transmittal to report 1,4-DCB rather than 1,3-DCB; A300688 replaces A174959

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8270C									
Benzo(a)anthracene	< MRL	mg/dry Kg	U	6.82		EPA 3510	9/18/01	EPA 8270C	9/29/01
Benzo(b)fluoranthene	< MRL	mg/dry Kg	U	6.82					
Benzo(k)fluoranthene	< MRL	mg/dry Kg	U	6.82					
Benzo(a)pyrene	< MRL	mg/dry Kg	U	6.82					
Benzo(g,h,i)perylene	< MRL	mg/dry Kg	U	6.82					
Butylbenzylphthalate	< MRL	mg/dry Kg	U	13.6					
Bis(2-chloroethyl)ether	< MRL	mg/dry Kg	U	6.82					
Bis(2-chloroethoxy)methane	< MRL	mg/dry Kg	U	6.82					
Bis(2-ethylhexyl)phthalate	27.7	mg/dry Kg		13.6					
Bis(2-chloroisopropyl)ether	< MRL	mg/dry Kg	U	6.82					
4-Bromophenyl phenyl ether	< MRL	mg/dry Kg	U	6.82					
2-Chloronaphthalene	< MRL	mg/dry Kg	U	6.82					
4-Chloro-3-methylphenol	< MRL	mg/dry Kg	U	6.82					
2-Chlorophenol	< MRL	mg/dry Kg	U	6.82					
4-Chlorophenyl phenyl ether	< MRL	mg/dry Kg	U	6.82					
Chrysene	< MRL	mg/dry Kg	U	6.82					
Dibenz(a,h)anthracene	< MRL	mg/dry Kg	U	6.82					
Di-n-butylphthalate	< MRL	mg/dry Kg	U	13.6					

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/31/02
Date Arrived: 9/5/01
Date Sampled: 9/5/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

NTL Lab#: A300688
Client Sample ID: MOA01SVL006
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Flag Definitions
MRL = Method Reporting Limit
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Comments: Composite of 09/04/01 @ 0900AM through 09/05/01 @ 0900AM; revised transmittal to report 1,4-DCB rather than 1,3-DCB; A300688 replaces A174959

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8270C									
1,2-Dichlorobenzene	< MRL	mg/dry Kg	U	6.82		EPA 3510	9/18/01	EPA 8270C	9/29/01
1,3-Dichlorobenzene	< MRL	mg/dry Kg	U	6.82					
1,4-Dichlorobenzene	< MRL	mg/dry Kg	U	6.82					
3,3'-Dichlorobenzidine	< MRL	mg/dry Kg	U	6.82					
2,4-Dichlorophenol	< MRL	mg/dry Kg	U	6.82					
Diethylphthalate	< MRL	mg/dry Kg	U	6.82					
Dimethylphthalate	< MRL	mg/dry Kg	U	6.82					
2,4-Dimethylphenol	< MRL	mg/dry Kg	U	6.82					
2,4-Dinitrophenol	< MRL	mg/dry Kg	U	6.82					
2,4-Dinitrotoluene	< MRL	mg/dry Kg	U	6.82					
2,6-Dinitrotoluene	< MRL	mg/dry Kg	U	6.82					
Di-n-Octylphthalate	< MRL	mg/dry Kg	U	13.6					
Fluoranthene	< MRL	mg/dry Kg	U	6.82					
Fluorene	< MRL	mg/dry Kg	U	6.82					
Hexachlorobenzene	< MRL	mg/dry Kg	U	6.82					
Hexachlorobutadiene	< MRL	mg/dry Kg	U	6.82					
Hexachlorocyclopentadiene	< MRL	mg/dry Kg	U	6.82					
Hexachloroethane	< MRL	mg/dry Kg	U	6.82					
Indeno(1,2,3-cd)pyrene	< MRL	mg/dry Kg	U	6.82					
Isophorone	< MRL	mg/dry Kg	U	6.82					
2-Methyl-4,6-Dinitrophenol	< MRL	mg/dry Kg	U	6.82					

wendy mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
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Anchorage, AK 99501

Report Date: 1/31/02
Date Arrived: 9/5/01
Date Sampled: 9/5/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

Flag Definitions
MRL = Method Reporting Limit
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D = Lost To Dilution

NTL Lab#: A300688
Client Sample ID: MOA01SVL006
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Comments: Composite of 09/04/01 @ 0900AM through 09/05/01 @ 0900AM; revised transmittal to report 1,4-DCB rather than 1,3-DCB; A300688 replaces A174959

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
EPA 8270C									
Naphthalene	< MRL	mg/dry Kg	U	6.82		EPA 3510	9/18/01	EPA 8270C	9/29/01
Nitrobenzene	< MRL	mg/dry Kg	U	6.82					
2-Nitrophenol	< MRL	mg/dry Kg	U	6.82					
4-Nitrophenol	< MRL	mg/dry Kg	U	6.82					
N-Nitrosodimethylamine	< MRL	mg/dry Kg	U	6.82					
N-Nitroso-di-n-propylamine	< MRL	mg/dry Kg	U	6.82					
N-Nitrosodiphenylamine	< MRL	mg/dry Kg	U	6.82					
Pentachlorophenol	< MRL	mg/dry Kg	U	6.82					
Phenanthrene	< MRL	mg/dry Kg	U	6.82					
Phenol	< MRL	mg/dry Kg	U	6.82					
Pyrene	< MRL	mg/dry Kg	U	6.82					
1,2,4-Trichlorobenzene	< MRL	mg/dry Kg	U	6.82					
2,4,6-Trichlorophenol	< MRL	mg/dry Kg	U	6.82					
2-Fluorobiphenyl (Surr)	25	% Recovery							
2-Fluorophenol (Surr)	32	% Recovery							
Nitrobenzene-d5 (Surr)	55	% Recovery							
Phenol-d6 (Surr)	114	% Recovery							
p-Terphenyl-d14 (Surr)	71	% Recovery							
2,4,6-Tribromophenol (Surr)	55	% Recovery							

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Report Date: 1/31/02
Date Arrived: 9/5/01
Date Sampled: 9/5/01
Time Sampled: 9:00
Collected By:

Attn: Janet Savoie
Phone: (907) 276-6178
Fax:

Flag Definitions
MRL = Method Reporting Limit
MCL = Maximum Contaminant Level
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H = Above Regulatory Maximum
M = Matrix Interference
J = Best Available Estimate
U = Less Than Detection Limit
D = Lost To Dilution

NTL Lab#: A300688
Client Sample ID: MOA01SVL006
Location/Project: KLI #514.01; Sludge Composite
COC #:
Sample Matrix: Sludge

Comments: Composite of 09/04/01 @ 0900AM through 09/05/01 @ 0900AM; revised transmittal to report 1,4-DCB rather than 1,3-DCB; A300688 replaces A174959

Parameter	Result	Units	Flag	MRL	MCL	Prep Method	Prep Date	Analysis Method	Analysis Date
SM 2540 G									
Total Solids, Percent	35.1	%					9/10/01	SM 2540 G	9/11/01

Wendy Mitchell
Reported By: Wendy Mitchell
Anchorage Laboratory Manager

WATER VOLATILE LABORATORY CONTROL SAMPLE\DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Spiked Sample Laboratory ID : LCS0918A
Spiked Sample Duplicate Laboratory ID : LCS0918B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	20.8	104	70-130
Benzene	20.0	< 0.5	21.3	106	70-130
Trichloroethylene	20.0	< 0.5	20.8	104	70-130
Toluene	20.0	< 0.5	17.8	89	70-130
Chlorobenzene	20.0	< 0.5	19.8	99	70-130

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethylene	20.0	20.7	104	0	20	70-130
Benzene	20.0	21.6	108	2	20	70-130
Trichloroethylene	20.0	21.1	105	1	20	70-130
Toluene	20.0	18.4	92	3	20	70-130
Chlorobenzene	20.0	20.5	103	3	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Sample Laboratory ID : A174959R
Spiked Sample Laboratory ID : 174959M
Spiked Sample Duplicate Laboratory ID : 174959S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	16.9	84	70-130
Benzene	20.0	< 0.5	16.9	84	70-130
Trichloroethylene	20.0	< 0.5	15.9	80	70-130
Toluene	20.0	5.2	19.3	71	70-130
Chlorobenzene	20.0	< 0.5	15.7	78	70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethylene	20.0	18.7	94	11	20	70-130
Benzene	20.0	19.1	95	12	20	70-130
Trichloroethylene	20.0	17.4	87	9	20	70-130
Toluene	20.0	27.6	112	35 *	20	70-130
Chlorobenzene	20.0	17.1	85	9	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Sample Laboratory ID : A174959
Spiked Sample Laboratory ID : A174959M
Spiked Sample Duplicate Laboratory ID : A174959S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	20.5	103	70-130
Benzene	20.0	< 0.5	22.2	111	70-130
Trichloroethylene	20.0	< 0.5	20.4	102	70-130
Toluene	20.0	4.5	22.5	90	70-130
Chlorobenzene	20.0	< 0.5	19.7	98	70-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethylene	20.0	20.2	101	2	20	70-130
Benzene	20.0	20.7	103	7	20	70-130
Trichloroethylene	20.0	20.2	101	1	20	70-130
Toluene	20.0	21.9	87	3	20	70-130
Chlorobenzene	20.0	20.2	101	3	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER VOLATILE LABORATORY CONTROL SAMPLE\DUPLICATE RECOVERY

EPA Method 8260

Lab Name: NORTHERN TESTING LABORATORIES

Spiked Sample Laboratory ID : LCS0917A
Spiked Sample Duplicate Laboratory ID : LCS0917B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,1-Dichloroethylene	20.0	< 0.5	20.8	104	70-130
Benzene	20.0	< 0.5	21.3	107	70-130
Trichloroethylene	20.0	< 0.5	21.3	106	70-130
Toluene	20.0	< 0.5	18.2	91	70-130
Chlorobenzene	20.0	< 0.5	19.6	98	70-130

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethylene	20.0	20.1	101	3	20	70-130
Benzene	20.0	20.4	102	4	20	70-130
Trichloroethylene	20.0	20.7	103	3	20	70-130
Toluene	20.0	18.6	93	3	20	70-130
Chlorobenzene	20.0	20.2	101	3	20	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0911AR

LCS0911AR

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC	#	QC. LIMITS REC.
Phenol	10.0	0.0	2.3	23		5-112
2-Chlorophenol	10.0	0.0	4.7	47		23-134
1,4-Dichlorobenzene	10.0	0.0	3.6	36		20-124
N-Nitrosodi-n-propylam	10.0	2.0	7.2	52		1-230
1,2,4-Trichlorobenzene	10.0	0.0	4.2	42	*	44-142
4-Chloro-3-Methylpheno	10.0	0.0	6.5	65		22-147

→ 1 mL

LCS0911BR

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Phenol	10.0	3.2	32		33	*	30	5-112
2-Chlorophenol	10.0	7.4	73		44	*	30	23-134
1,4-Dichlorobenzene	10.0	6.4	64		55	*	30	20-124
N-Nitrosodi-n-propylam	10.0	10.4	84		36	*	30	1-230
1,2,4-Trichlorobenzene	10.0	6.5	65		43	*	30	44-142
4-Chloro-3-Methylpheno	10.0	8.6	86		28		30	22-147

→ 5 mL

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 5 out of 6 outside limits

Spike Recovery: 1 out of 12 outside limits

Comment:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0911AR

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC	#	QC. LIMITS REC.
Acenaphthene	10.0	0.0	6.5	65		47-145
4-Nitrophenol	10.0	0.0	2.7	27	*	39-139
2,4-Dinitrotoluene	10.0	0.0	7.5	75		17-132
Pentachlorophenol	10.0	0.0	4.2	42		14-176
Pyrene	10.0	0.0	10.0	100		52-115

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	REC.
Acenaphthene	10.0	9.7	97		39	*	30	47-145
4-Nitrophenol	10.0	3.8	38	*	32	*	30	39-139
2,4-Dinitrotoluene	10.0	9.5	94		23		30	17-132
Pentachlorophenol	10.0	3.8	38		8		30	14-176
Pyrene	10.0	11.2	112		11		30	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

Comment:

QUANT REPORT EPA 8260/624 Page 1

Operator ID: XM
Output File: MB091801.1A2
Data File: MB091801.MS
Name: MB091801
Sample: 5 ML PURGE

Quant Time: 09/19/01 08:40
Injected at: 09/18/01 20:13
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC082101.QCI
Comment: 2UL/5ML VOC38-5
Last Calibration: 08/22/01

Last Qcal Time: 08/22/01 08:39

Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1) *Pentafluorobenzene	10.23	877	168	41504	20.00	ug/L	592	1.000
2) *1,4-Difluorobenzene	11.48	984	114	373913	20.00	ug/L	1000	1.000
3) *d5-Chlorobenzene	16.24	1392	117	304818	20.00	ug/L	998	1.000
4) *d4-1,4-Dichlorobenzene	20.14	1726	152	144981	20.00	ug/L	996	1.000
5) Dibromofluoromethane(ss)	10.26	879	111	53409	92.13	%	381	0.280
6) d8-Toluene (ss)	13.85	1187	98	216998	100.19	%	1000	0.116
7) 4-Bromofluorobenzene(ss)	18.18	1558	95	90196	109.42	%	999	0.055
8) Dichlorodifluoromethane	0.00	257	85	0	Not Found	ug/L	374	0.000
9) Chloromethane	0.00	292	47	0	Not Found	ug/L	659	0.000
10) Vinyl Chloride	0.00	303	62	0	Not Found	ug/L	0	0.000
11) Bromomethane	4.39	376	94	114	Below MDL	ug/L	406	2.024
12) Chloroethane	4.62	396	49	49	Below MDL	ug/L	71	0.600
13) Trichlorofluoromethane	0.00	435	101	0	Not Found	ug/L	397	0.000
14) Diethyl Ether	5.62	482	59	8	Below MDL	ug/L	314	0.808
15) 1,1-Dichloroethylene	0.00	522	96	0	Not Found	ug/L	361	0.000
16) Acetone	6.36	545	43	1057	Below MDL	ug/L	677	0.555
17) Iodomethane	6.50	557	142	449	Below MDL	ug/L	790	1.845
18) Carbon Disulfide	0.00	564	76	0	Not Found	ug/L	952	0.000
19) Allyl Chloride	0.00	595	39	0	Not Found	ug/L	110	0.000
20) Methylene Chloride	7.15	613	49	417	Below MDL	ug/L	945	4.258
21) Methyl-Tert-Butylether	0.00	651	73	0	Not Found	ug/L	595	0.000
22) Trans-1,2-Dichloroethene	0.00	653	61	0	Not Found	ug/L	557	0.000
23) Acrylonitrile	7.69	659	52	195	Below MDL	ug/L	833	0.381
24) 1,1-Dichloroethane	0.00	727	63	0	Not Found	ug/L	498	0.000
25) Vinyl Acetate	8.54	732	43	25	Below MDL	ug/L	495	1.360
26) 2,2-Dichloropropane	9.45	810	77	117	Below MDL	ug/L	501	2.902
27) Cis-1,2-Dichloroethene	0.00	810	61	0	Not Found	ug/L	582	0.000
28) Methyl-Ethyl-Ketone	9.50	814	43	180	Below MDL	ug/L	563	0.508
29) Methyl Acrylate	9.65	827	55	37	Below MDL	ug/L	492	0.585
30) Methacrylonitrile	9.95	853	41	13774	7.55	ug/L	623	0.879

* Compound is ISTD

Operator ID: XM
Output File: MB091801.1A2
Data File: MB091801.MS
Name: MB091801
Sample: 5 ML PURGE

Quant Time: 09/19/01 08:40
Injected at: 09/18/01 20:13
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC082101.QCI
Comment: 2UL/5ML VOC38-5
Last Calibration: 08/22/01

Last Qcal Time: 08/22/01 08:39

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	Bromochloromethane	0.00	845	49	0	Not Found	ug/L	631	0.000
32)	Tetrahydrofuran	9.95	853	71	13256	Below MDL	ug/L	0	1.566
33)	Chloroform	0.00	848	83	0	Not Found	ug/L	0	0.000
34)	1,1,1-Trichloroethane	0.00	876	97	0	Not Found	ug/L	445	0.000
35)	1-Chlorobutane	0.00	896	56	0	Not Found	ug/L	347	0.000
36)	1,1-Dichloropropene	0.00	900	75	0	Not Found	ug/L	617	0.000
37)	Carbon Tetrachloride	0.00	900	117	0	Not Found	ug/L	629	0.000
38)	Benzene	0.00	933	78	0	Not Found	ug/L	847	0.000
39)	1,2-Dichloroethane	0.00	940	62	0	Not Found	ug/L	625	0.000
40)	Trichloroethylene	11.92	1022	130	56	Below MDL	ug/L	834	0.336
41)	1,2-Dichloropropane	0.00	1054	63	0	Not Found	ug/L	594	0.000
42)	Methylmethacrylate	12.43	1065	39	150	Below MDL	ug/L	591	0.145
43)	Dibromomethane	0.00	1076	93	0	Not Found	ug/L	300	0.000
44)	Bromodichloromethane	0.00	1094	83	0	Not Found	ug/L	525	0.000
45)	2-Chloroethylvinylether	13.09	1122	63	50	Below MDL	ug/L	605	0.005
46)	Cis-1,3-Dichloropropene	0.00	1153	75	0	Not Found	ug/L	679	0.000
47)	4-Methyl-2-Pentanone	0.00	1170	43	0	Not Found	ug/L	639	0.000
48)	1,1-Dichloropropanone	13.73	1177	43	41	Below MDL	ug/L	205	0.057
49)	Toluene	13.97	1197	91	11719	Below MDL	ug/L	998	1.750
50)	Trans-1,3-Dichloropropene	14.29	1225	75	42	Below MDL	ug/L	273	0.328
51)	Ethylmethacrylate	14.44	1238	69	93	Below MDL	ug/L	90	0.157
52)	1,1,2-Trichloroethane	0.00	1257	97	0	Not Found	ug/L	687	0.000
53)	Tetrachloroethylene	0.00	1273	129	0	Not Found	ug/L	822	0.000
54)	1,3-Dichloropropane	0.00	1280	76	0	Not Found	ug/L	586	0.000
55)	2-Hexanone	15.02	1287	43	287	Below MDL	ug/L	529	0.067
56)	Dibromochloromethane	15.33	1314	129	83	Below MDL	ug/L	675	0.218
57)	1,2-Dibromoethane	0.00	1332	107	0	Not Found	ug/L	778	0.000
58)	Chlorobenzene	0.00	1391	112	0	Not Found	ug/L	0	0.000
59)	Ethylbenzene	16.40	1406	91	3787	Below MDL	ug/L	699	1.821
60)	1,1,1,2-Tetrachloroethane	0.00	1407	131	0	Not Found	ug/L	649	0.000

* Compound is ISTD

Operator ID: XM
Output File: MB091801.1A2
Data File: MB091801.MS
Name: MB091801
Sample: 5 ML PURGE

Quant Time: 09/19/01 08:40
Injected at: 09/18/01 20:13
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC082101.QCI
Comment: 2UL/5ML VOC38-5
Last Calibration: 08/22/01

Last Qcal Time: 08/22/01 08:39

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	p,m-Xylene	16.59	1422	91	10027	Below MDL	ug/L	996	1.589
62)	o-Xylene	17.27	1480	91	2940	Below MDL	ug/L	957	1.559
63)	Styrene	0.00	1483	104	0	Not Found	ug/L	908	0.000
64)	Bromoform	17.71	1518	171	158	Below MDL	ug/L	790	0.260
65)	Isopropylbenzene	17.84	1529	105	1669	Below MDL	ug/L	944	1.675
66)	1,1,2,2-Tetrachloroethane	18.39	1576	83	387	Below MDL	ug/L	324	0.541
67)	trans-1,4-Dichloro-2-Butene	18.49	1585	53	83	Below MDL	ug/L	912	0.048
68)	Bromobenzene	0.00	1584	156	0	Not Found	ug/L	935	0.000
69)	1,2,3-Trichloropropane	0.00	1587	75	0	Not Found	ug/L	973	0.000
70)	N-Propylbenzene	0.00	1588	91	0	Not Found	ug/L	979	0.000
71)	2-Chlorotoluene	18.76	1608	91	2682	Below MDL	ug/L	784	1.455
72)	1,3,5-Trimethylbenzene	0.00	1611	105	0	Not Found	ug/L	911	0.000
73)	4-Chlorotoluene	18.92	1622	91	1556	Below MDL	ug/L	952	1.272
74)	Tert-Butylbenzene	0.00	1660	91	0	Not Found	ug/L	917	0.000
75)	1,2,4-Trimethylbenzene	19.45	1667	105	3528	Below MDL	ug/L	944	1.427
76)	Pentachloroethane	19.47	1669	130	8	Below MDL	ug/L	0	0.054
77)	Sec-Butylbenzene	0.00	1691	105	0	Not Found	ug/L	844	0.000
78)	p-Isopropyltoluene	19.94	1709	119	4058	Below MDL	ug/L	865	1.515
79)	m-Dichlorobenzene	20.03	1717	146	1351	Below MDL	ug/L	903	0.702
80)	p-Dichlorobenzene	20.17	1729	146	1438	Below MDL	ug/L	291	1.586
81)	n-Butylbenzene	20.65	1770	91	5015	Below MDL	ug/L	749	2.901
82)	o-Dichlorobenzene	0.00	1787	146	0	Not Found	ug/L	829	0.000
83)	Hexachloroethane	21.25	1821	117	391	Below MDL	ug/L	422	0.392
84)	1,2-Dibromo-3-Chloropropane	22.18	1901	75	194	Below MDL	ug/L	229	0.101
85)	Nitrobenzene	22.61	1938	77	827	Below MDL	ug/L	898	0.029
86)	1,2,4-Trichlorobenzene	23.59	2022	180	2250	Below MDL	ug/L	847	0.680
87)	Hexachlorobutadiene	23.79	2039	225	1071	Below MDL	ug/L	863	0.626
88)	Naphthalene	24.09	2065	128	9318	1.87	ug/L	971	0.688
89)	1,2,3-Trichlorobenzene	24.55	2104	180	2005	Below MDL	ug/L	900	0.495

* Compound is ISTD

carryover
XM
9/20/01

LMRV

QUANT REPORT EPA 8260/624

Operator ID: XM
Output File: MB091701.1A2
Data File: MB091701.MS
Name: MB091701
Sample: 5 ML PURGE

Quant Time: 09/18/01 09:01
Injected at: 09/17/01 18:54
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC082101.QCI
Comment: 2UL/5ML VOC38-5
Last Calibration: 08/22/01

Last Qcal Time: 08/22/01 08:39

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*Pentafluorobenzene	10.23	877	168	39689	20.00	ug/L	591	1.000
2)	*1,4-Difluorobenzene	11.47	983	114	348311	20.00	ug/L	1000	1.000
3)	*d5-Chlorobenzene	16.25	1393	117	289075	20.00	ug/L	999	1.000
4)	*d4-1,4-Dichlorobenzene	20.14	1726	152	135189	20.00	ug/L	997	1.000
5)	Dibromofluoromethane(ss)	10.26	879	111	52094	93.97	%	432	0.280
6)	d8-Toluene (ss)	13.85	1187	98	206076	102.14	%	1000	0.116
7)	4-Bromofluorobenzene(ss)	18.18	1558	95	81900	104.76	%	999	0.055
8)	Dichlorodifluoromethane	2.99	256	85	192	Below MDL	ug/L	892	2.732
9)	Chloromethane	0.00	292	47	0	Not Found	ug/L	764	0.000
10)	Vinyl Chloride	0.00	309	62	0	Not Found	ug/L	3	0.000
11)	Bromomethane	4.43	380	94	151	Below MDL	ug/L	380	2.024
12)	Chloroethane	4.54	389	49	175	Below MDL	ug/L	290	0.599
13)	Trichlorofluoromethane	5.03	431	101	329	Below MDL	ug/L	853	3.702
14)	Diethyl Ether	5.63	483	59	15	Below MDL	ug/L	282	0.808
15)	1,1-Dichloroethylene	0.00	524	96	0	Not Found	ug/L	497	0.000
16)	Acetone	6.36	545	43	2170	Below MDL	ug/L	846	0.543
17)	Iodomethane	6.53	560	142	232	Below MDL	ug/L	969	1.843
18)	Carbon Disulfide	6.56	562	76	1347	Below MDL	ug/L	823	6.889
19)	Allyl Chloride	0.00	589	39	0	Not Found	ug/L	653	0.000
20)	Methylene Chloride	7.13	611	49	1387	Below MDL	ug/L	954	4.258
21)	Methyl-Tert-Butylether	0.00	653	73	0	Not Found	ug/L	825	0.000
22)	Trans-1,2-Dichloroethene	0.00	652	61	0	Not Found	ug/L	860	0.000
23)	Acrylonitrile	7.69	659	52	162	Below MDL	ug/L	832	0.381
24)	1,1-Dichloroethane	0.00	720	63	0	Not Found	ug/L	619	0.000
25)	Vinyl Acetate	8.48	727	43	90	Below MDL	ug/L	214	1.361
26)	2,2-Dichloropropane	9.41	807	77	600	Below MDL	ug/L	834	2.904
27)	Cis-1,2-Dichloroethene	0.00	808	61	0	Not Found	ug/L	910	0.000
28)	Methyl-Ethyl-Ketone	9.51	815	43	682	Below MDL	ug/L	857	0.509
29)	Methyl Acrylate	9.66	828	55	209	Below MDL	ug/L	458	0.586
30)	Methacrylonitrile	9.96	854	41	15078	8.47	ug/L	710	0.898

X

* Compound is ISTD

Operator ID: XM
Output File: MB091701.1A2
Data File: MB091701.MS
Name: MB091701
Sample: 5 ML PURGE

Quant Time: 09/18/01 09:01
Injected at: 09/17/01 18:54
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC082101.QCI
Comment: 2UL/5ML VOC38-5
Last Calibration: 08/22/01

Last Qcal Time: 08/22/01 08:39

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	Bromochloromethane	0.00	847	49	0	Not Found	ug/L	542	0.000
32)	Tetrahydrofuran	9.96	854	71	14431	5.19	ug/L	40	1.401
33)	Chloroform	0.00	855	83	0	Not Found	ug/L	0	0.000
34)	1,1,1-Trichloroethane	0.00	878	97	0	Not Found	ug/L	444	0.000
35)	1-Chlorobutane	0.00	892	56	0	Not Found	ug/L	905	0.000
36)	1,1-Dichloropropene	0.00	900	75	0	Not Found	ug/L	881	0.000
37)	Carbon Tetrachloride	0.00	900	117	0	Not Found	ug/L	883	0.000
38)	Benzene	10.87	932	78	1346	Below MDL	ug/L	974	9.242
39)	1,2-Dichloroethane	0.00	938	62	0	Not Found	ug/L	752	0.000
40)	Trichloroethylene	11.91	1021	130	260	Below MDL	ug/L	935	0.336
41)	1,2-Dichloropropane	0.00	1054	63	0	Not Found	ug/L	839	0.000
42)	Methylmethacrylate	12.43	1065	39	435	Below MDL	ug/L	732	0.145
43)	Dibromomethane	0.00	1075	93	0	Not Found	ug/L	521	0.000
44)	Bromodichloromethane	0.00	1094	83	0	Not Found	ug/L	831	0.000
45)	2-Chloroethylvinylether	13.15	1127	63	54	Below MDL	ug/L	735	0.005
46)	Cis-1,3-Dichloropropene	0.00	1152	75	0	Not Found	ug/L	852	0.000
47)	4-Methyl-2-Pentanone	0.00	1171	43	0	Not Found	ug/L	674	0.000
48)	1,1-Dichloropropanone	13.85	1187	43	1202	1.22	ug/L	245	0.057
49)	Toluene	13.97	1197	91	10315	Below MDL	ug/L	997	1.750
50)	Trans-1,3-Dichloropropene	14.27	1223	75	22	Below MDL	ug/L	366	0.328
51)	Ethylmethacrylate	14.33	1228	69	31	Below MDL	ug/L	93	0.157
52)	1,1,2-Trichloroethane	0.00	1256	97	0	Not Found	ug/L	800	0.000
53)	Tetrachloroethylene	0.00	1272	129	0	Not Found	ug/L	832	0.000
54)	1,3-Dichloropropane	0.00	1281	76	0	Not Found	ug/L	870	0.000
55)	2-Hexanone	15.03	1288	43	426	Below MDL	ug/L	791	0.067
56)	Dibromochloromethane	15.34	1315	129	138	Below MDL	ug/L	782	0.218
57)	1,2-Dibromoethane	0.00	1332	107	0	Not Found	ug/L	740	0.000
58)	Chlorobenzene	16.29	1396	112	1000	Below MDL	ug/L	25	1.051
59)	Ethylbenzene	16.40	1406	91	3145	Below MDL	ug/L	821	1.821
60)	1,1,1,2-Tetrachloroethane	0.00	1406	131	0	Not Found	ug/L	774	0.000

* Compound is ISTD

perator ID: XM
utput File: MB091701.1A2
ata File: MB091701.MS
ame: MB091701
ample: 5 ML PURGE

Quant Time: 09/18/01 09:01
Injected at: 09/17/01 18:54
Dilution Factor: 1.00
Instrument ID: Saturn II

D File: IC082101.QCI
omment: 2UL/5ML VOC38-5
ast Calibration: 08/22/01

Last Qcal Time: 08/22/01 08:39

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	p,m-Xylene	16.59	1422	91	7754	Below MDL	ug/L	996	1.589
62)	o-Xylene	17.27	1480	91	2126	Below MDL	ug/L	976	1.559
63)	Styrene	0.00	1483	104	0	Not Found	ug/L	946	0.000
64)	Bromoform	0.00	1519	171	0	Not Found	ug/L	850	0.000
65)	Isopropylbenzene	0.00	1529	105	0	Not Found	ug/L	939	0.000
66)	1,1,2,2-Tetrachloroethane	18.42	1579	83	1167	Below MDL	ug/L	379	0.543
67)	trans-1,4-Dichloro-2-Butene	18.49	1585	53	33	Below MDL	ug/L	959	0.048
68)	Bromobenzene	0.00	1584	156	0	Not Found	ug/L	959	0.000
69)	1,2,3-Trichloropropane	0.00	1587	75	0	Not Found	ug/L	953	0.000
70)	N-Propylbenzene	0.00	1588	91	0	Not Found	ug/L	960	0.000
71)	2-Chlorotoluene	18.76	1608	91	1809	Below MDL	ug/L	970	1.455
72)	1,3,5-Trimethylbenzene	0.00	1610	105	0	Not Found	ug/L	974	0.000
73)	4-Chlorotoluene	18.94	1623	91	1270	Below MDL	ug/L	946	1.272
74)	Tert-Butylbenzene	0.00	1659	91	0	Not Found	ug/L	922	0.000
75)	1,2,4-Trimethylbenzene	0.00	1667	105	0	Not Found	ug/L	979	0.000
76)	Pentachloroethane	19.49	1671	130	84	Below MDL	ug/L	417	0.054
77)	Sec-Butylbenzene	0.00	1691	105	0	Not Found	ug/L	942	0.000
78)	p-Isopropyltoluene	19.95	1710	119	2619	Below MDL	ug/L	883	1.515
79)	m-Dichlorobenzene	20.03	1717	146	1093	Below MDL	ug/L	911	0.702
80)	p-Dichlorobenzene	0.00	1729	146	0	Not Found	ug/L	236	0.000
81)	n-Butylbenzene	20.64	1769	91	4167	Below MDL	ug/L	868	2.901
82)	o-Dichlorobenzene	20.84	1786	146	1507	Below MDL	ug/L	862	1.348
83)	Hexachloroethane	21.25	1821	117	321	Below MDL	ug/L	835	0.392
84)	1,2-Dibromo-3-Chloropropane	22.19	1902	75	154	Below MDL	ug/L	662	0.101
85)	Nitrobenzene	22.70	1946	77	398	Below MDL	ug/L	882	0.029
86)	1,2,4-Trichlorobenzene	23.59	2022	180	1919	Below MDL	ug/L	597	0.680
87)	Hexachlorobutadiene	23.79	2039	225	1311	Below MDL	ug/L	694	0.626
88)	Naphthalene	24.09	2065	128	10663	2.27	ug/L	983	0.695
89)	1,2,3-Trichlorobenzene	24.55	2104	180	1823	Below MDL	ug/L	939	0.495

* Compound is ISTD

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0918A

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
Phenol	10.0	0.0	8.3	83	5-112
2-Chlorophenol	10.0	0.0	8.0	80	23-134
1,4-Dichlorobenzene	10.0	0.0	8.9	89	20-124
N-Nitrosodi-n-propylam	10.0	1.5	9.9	84	1-230
1,2,4-Trichlorobenzene	10.0	0.0	9.4	94	44-142
4-Chloro-3-Methylpheno	10.0	0.0	9.1	91	22-147

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Phenol	10.0	8.6	86	3	30	5-112
2-Chlorophenol	10.0	8.2	82	2	30	23-134
1,4-Dichlorobenzene	10.0	8.4	84	6	30	20-124
N-Nitrosodi-n-propylam	10.0	10.5	90	5	30	1-230
1,2,4-Trichlorobenzene	10.0	9.9	99	5	30	44-142
4-Chloro-3-Methylpheno	10.0	9.2	92	1	30	22-147

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

Comment:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Method 8270c

Lab Name: NTL Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - EPA Sample No.: MB0918A

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	10.0	0.0	10.6	106	47-145
4-Nitrophenol	10.0	0.0	8.7	86	39-139
2,4-Dinitrotoluene	10.0	0.0	8.7	87	17-132
Pentachlorophenol	10.0	0.0	4.1	41	14-176
Pyrene	10.0	0.0	10.7	107	52-115

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	10.0	10.5	105	2	30	47-145
4-Nitrophenol	10.0	9.0	89	3	30	39-139
2,4-Dinitrotoluene	10.0	9.6	96	10	30	17-132
Pentachlorophenol	10.0	4.4	44	5	30	14-176
Pyrene	10.0	11.3	113	5	30	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

Comment:

QUANT REPORT

Operator ID: LWM
Output File: MB0918A.1B2
Data File: MB0918A.MS
Name: MB0918A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 10/02/01 10:44
Injected at: 09/29/01 21:57
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130A.QCI
Comment: 8270
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 14:23

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*d4-1,4-Dichlorobenzene (I.S.)	8.98	657	152	8027	10.00	mg/L	0	1.000
2)	*d8-Naphthalene (I.S.)	12.68	928	136	25844	10.00	mg/L	0	1.000
3)	*d10-Acenaphthene (I.S.)	19.17	1403	160	5317	10.00	mg/L	0	1.000
4)	*d10-Phenanthrene (I.S.)	25.16	1841	188	23306	10.00	mg/L	0	1.000
5)	*d12-Chrysene (I.S.)	33.92	2482	240	22102	10.00	mg/L	0	1.000
6)	*12-Perylene (I.S.)	36.60	2678	264	11585	10.00	mg/L	0	1.000
7)	2-Fluorophenol (Surr)	5.97	437	112	10898	55.67	%	0	0.244
8)	d6-Phenol (Surr)	8.32	609	99	14020	64.12	%	0	0.273
9)	d5-Nitrobenzene (Surr)	10.54	771	82	5409	52.96	%	0	0.040
10)	2-Fluorobiphenyl (Surr)	16.70	1222	172	9276	109.56	%	0	0.160
11)	Tribromophenol (Surr)	22.41	1640	330	3817	62.09	%	0	0.116
12)	d14-Terphenyl (Surr)	31.15	2279	244	17116	146.05	%	0	0.054
13)	Nitrosodimethylamine	3.47	254	74	0	0.00	mg/L	488	0.300
14)	Pyridine	3.57	261	79	91	0.05	mg/L	694	2.225
15)	N-Nitrosomethylethylamine	5.42	397	88	0	0.00	mg/L	96	1.726
16)	Methyl methanesulfonate	5.60	410	80	0	0.00	mg/L	311	0.778
17)	N-Nitrosodiethylamine	7.20	527	102	8	0.01	mg/L	235	0.728
18)	Ethyl methanesulfonate	7.63	558	79	104	0.07	mg/L	798	1.960
19)	Phenol	8.23	602	94	11	0.00	mg/L	490	3.345
20)	Aniline	8.09	592	93	36	0.01	mg/L	739	3.225
21)	Bis(2-Chloroethyl)ether	8.09	592	93	36	0.03	mg/L	459	1.670
22)	2-Chlorophenol	8.20	600	128	13	0.01	mg/L	837	2.972
23)	1,3-Dichlorobenzene	8.80	644	146	0	0.00	mg/L	330	1.529
24)	1,4-Dichlorobenzene	9.48	694	146	0	0.00	mg/L	153	1.560
25)	Benzyl Alcohol	9.76	714	108	0	0.00	mg/L	689	1.151
26)	1,2-Dichlorobenzene	9.48	694	146	0	0.00	mg/L	402	1.492
27)	2-Methylphenol	9.76	714	107	12	0.01	mg/L	612	2.382
28)	Bis(2-Chloroisopropyl)ether	9.59	702	45	57	0.07	mg/L	466	1.062
29)	N-Nitrosopyrrolidine	9.88	723	100	0	0.00	mg/L	411	1.127
30)	Acetophenone	10.47	766	105	66	0.01	mg/L	878	5.538

* Compound is ISTD

Operator ID: LWM
Output File: MB0918A.1B2
Data File: MB0918A.MS
Name: MB0918A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 10/02/01 10:44
Injected at: 09/29/01 21:57
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130A.QCI
Comment: 8270
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 14:23

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	N-Nitrosodi-n-propylamine	10.54	771	70	2397	1.50	mg/L	479	1.991
32)	3+4-Methylphenols	10.30	754	107	20	0.01	mg/L	608	3.296
33)	o-Toluidine	10.25	750	106	11	0.00	mg/L	611	4.716
34)	Hexachloroethane	10.29	753	117	26	0.03	mg/L	629	1.282
35)	Nitrobenzene	10.45	765	77	108	0.05	mg/L	749	0.775
36)	N-Nitrosopiperdine	11.22	821	114	0	0.00	mg/L	235	0.335
37)	Isophorone	11.33	829	82	25	0.01	mg/L	770	1.400
38)	2-Nitrophenol	11.29	826	139	0	0.00	mg/L	507	0.191
39)	2,4-Dimethylphenol	12.04	881	122	0	0.00	mg/L	601	0.480
40)	O,O,O-Triethylphosphorothioate	12.04	881	121	0	0.00	mg/L	586	0.297
41)	Benzoic Acid	12.83	939	122	0	0.00	mg/L	0	0.123
42)	Bis(2-Chloroethoxy)methane	12.61	923	93	14	0.01	mg/L	738	0.721
43)	2,4-Dichlorophenol	12.42	909	162	0	0.00	mg/L	63	0.333
44)	1,2,4-Trichlorobenzene	12.29	899	180	0	0.00	mg/L	273	0.361
45)	Naphthalene	13.01	952	128	12	0.00	mg/L	802	2.258
46)	2,6-Dichlorophenol	12.96	948	162	0	0.00	mg/L	811	0.342
47)	4-Chloroaniline	12.91	945	127	8	0.00	mg/L	834	1.161
48)	Hexachloropropene	13.52	989	213	0	0.00	mg/L	389	0.283
49)	Hexachlorobutadiene	13.00	951	225	0	0.00	mg/L	2	0.302
50)	N-Nitrosodi-n-butylamine	14.77	1081	84	13	0.01	mg/L	739	0.539
51)	4-Chloro-3-Methylphenol	15.13	1107	107	26	0.01	mg/L	807	1.028
52)	Safrole	15.44	1130	162	0	0.00	mg/L	382	0.337
53)	2-Methylnaphthalene	15.44	1130	141	10	0.00	mg/L	805	0.781
54)	Hexachlorocyclopentadiene	15.48	1133	237	0	0.00	mg/L	2	0.743
55)	1,2,4,5-Tetrachlorobenzene	15.87	1161	216	0	0.00	mg/L	61	1.669
56)	2,4,6-Trichlorophenol	17.07	1249	196	0	0.00	mg/L	439	1.072
57)	2,4,5-Trichlorophenol	17.10	1251	196	0	0.00	mg/L	350	1.327
58)	Isosafrole	17.01	1245	162	0	0.00	mg/L	2	10.276
59)	2-Chloronaphthalene	17.01	1245	127	0	0.00	mg/L	2	4.137
60)	2-Nitroaniline	18.27	1337	138	0	0.00	mg/L	270	1.075

* Compound is ISTD

Operator ID: LWM
Output File: MB0918A.1B2
Data File: MB0918A.MS
Name: MB0918A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 10/02/01 10:44
Injected at: 09/29/01 21:57
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130A.QCI
Comment: 8270
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 14:23

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	1,4-Naphthoquinone	17.59	1287	158	0	0.00	mg/L	116	1.332
62)	Dimethylphthalate	18.63	1363	163	11	0.00	mg/L	656	5.403
63)	1,3-Dinitrobenzene	19.16	1402	168	0	0.00	mg/L	503	0.080
64)	2,6-Dinitrotoluene	18.98	1389	165	9	0.02	mg/L	643	0.207
65)	Acenaphthylene	19.68	1440	152	0	0.00	mg/L	281	1.267

* Compound is ISTD

QUANT REPORT

Operator ID: LWM
Output File: MB0918A.1B2
Data File: MB0918A.MS
Name: MB0918A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 10/02/01 12:13
Injected at: 09/29/01 21:57
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130B.QCI
Comment: 8270
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 16:08

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*d4-1,4-Dichlorobenzene (I.S.)	8.98	657	152	8027	10.00	mg/L	0	1.000
2)	*d8-Naphthalene (I.S.)	12.68	928	136	25844	10.00	mg/L	0	1.000
3)	*d10-Acenaphthene (I.S.)	19.17	1403	160	5317	10.00	mg/L	0	1.000
4)	*d10-Phenanthrene (I.S.)	25.16	1841	188	23306	10.00	mg/L	0	1.000
5)	*d12-Chrysene (I.S.)	33.92	2482	240	22102	10.00	mg/L	0	1.000
6)	*12-Perylene (I.S.)	36.60	2678	264	11585	10.00	mg/L	0	1.000
7)	3-Nitroaniline	20.05	1467	138	0	0.00	mg/L	413	0.903
8)	Acenaphthene	19.68	1440	153	0	0.00	mg/L	299	3.191
9)	2,4-Dinitrophenol	19.68	1440	184	0	0.00	mg/L	455	0.066
10)	Pentachlorobenzene	20.03	1466	250	0	0.00	mg/L	45	1.622
11)	Dibenzofuran	20.02	1465	168	0	0.00	mg/L	2	4.674
12)	4-Nitrophenol	20.12	1472	109	45	0.03	mg/L	452	2.557
13)	2,4-Dinitrotoluene	20.70	1515	165	9	0.01	mg/L	383	1.524
14)	1-Naphthylamine	20.52	1502	143	0	0.00	mg/L	612	1.495
15)	2,3,4,6-Tetrachlorophenol	20.79	1521	232	0	0.00	mg/L	2	0.587
16)	2-Napthylamine	20.52	1502	143	0	0.00	mg/L	585	1.439
17)	Diethylphthalate	21.32	1560	149	186	0.06	mg/L	863	5.423
18)	Fluorene	22.26	1629	166	0	0.00	mg/L	339	2.900
19)	4-Chlorophenyl phenyl ether	21.33	1561	204	0	0.00	mg/L	205	2.443
20)	Thionazin	21.54	1576	97	11	0.01	mg/L	510	2.516
21)	5-Nitro-o-toluidide	22.96	1680	152	0	0.00	mg/L	827	0.316
22)	4-Nitroaniline	22.17	1622	138	0	0.00	mg/L	49	0.831
23)	2-Methyl-4,6-Dinitrophenol	22.73	1663	198	0	0.00	mg/L	506	0.040
24)	N-Nitrosodiphenylamine	22.40	1639	169	54	0.04	mg/L	63	0.598
25)	Diallate	23.81	1742	86	0	0.00	mg/L	59	0.388
26)	Phorate	23.64	1730	75	0	0.00	mg/L	616	0.449
27)	1,3,5-Trinitrobenzene	23.64	1730	74	0	0.00	mg/L	546	0.025
28)	Phenacetin	24.00	1756	179	9	0.01	mg/L	263	0.374
29)	4-Bromophenyl phenyl ether	23.79	1741	248	0	0.00	mg/L	377	0.443
30)	Hexachlorobenzene	23.81	1742	284	0	0.00	mg/L	362	0.308

* Compound is ISTD

Operator ID: LWM
Output File: MB0918A.1B2
Data File: MB0918A.MS
Name: MB0918A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 10/02/01 12:13
Injected at: 09/29/01 21:57
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130B.QCI
Comment: 8270
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 16:08

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	Dimethoate	23.91	1750	87	7	0.00	mg/L	563	0.939
32)	Pentachlorophenol	24.26	1775	266	0	0.00	mg/L	259	0.131
33)	Pentachloronitrobenzene	24.26	1775	237	0	0.00	mg/L	305	0.134
34)	Diphenylamine	24.42	1787	169	0	0.00	mg/L	154	0.721
35)	Pronamide	25.84	1891	173	0	0.00	mg/L	109	0.514
36)	Phenanthrene	25.53	1868	178	0	0.00	mg/L	98	1.095
37)	Disulfoton	25.31	1852	89	0	0.00	mg/L	413	0.436
38)	Anthracene	25.37	1856	178	0	0.00	mg/L	38	1.101
39)	Methyl Parathion	27.25	1994	109	13	0.01	mg/L	624	0.621
40)	Di-n-Butylphthalate	28.00	2049	149	1152	0.24	mg/L	950	2.050
41)	Malathion	28.32	2072	127	0	0.00	mg/L	250	1.049
42)	Parathion	28.70	2100	109	0	0.00	mg/L	315	0.805
43)	Isodrin	28.97	2120	193	56	0.14	mg/L	847	0.174
44)	Fluoroanthene	30.30	2217	202	0	0.00	mg/L	2	1.164
45)	Benzidine	30.07	2200	184	0	0.00	mg/L	2	0.441
46)	Pyrene	30.20	2210	202	0	0.00	mg/L	2	1.174
47)	p-Dimethylamino-azobenzene	31.85	2331	225	0	0.00	mg/L	342	0.639
48)	Chlorobenzilate	31.64	2315	251	9	0.01	mg/L	616	0.795
49)	Famphur	32.74	2396	218	0	0.00	mg/L	147	1.364
50)	3,3-Dimethylbenzidine	32.92	2409	212	0	0.00	mg/L	2	0.433
51)	Butylbenzylphthalate	32.72	2394	149	49	0.02	mg/L	805	1.051
52)	Kepone	32.88	2406	272	0	0.00	mg/L	186	0.067
53)	Di-(2-ethylhexyl)adipate	33.00	2415	129	41	0.01	mg/L	795	1.447
54)	2-Acetylaminofluorene	33.41	2445	181	9	0.01	mg/L	804	0.681
55)	Benzo(a)anthracene	34.14	2498	228	0	0.00	mg/L	371	1.257
56)	3,3'-Dichlorobenzidine	33.59	2458	252	0	0.00	mg/L	2	0.596
57)	Methylene-bis(o-chloro aniline)	33.69	2465	231	0	0.00	mg/L	2	0.449
58)	Chrysene	34.38	2516	228	0	0.00	mg/L	90	1.102
59)	Di-(2-ethylhexyl)phthalate	34.14	2498	149	1152	0.31	mg/L	953	1.659
60)	Tri-o-cresolphosphate	35.12	2570	165	79	0.08	mg/L	505	0.452

* Compound is ISTD

Operator ID: LWM
Output File: MB0918A.1B2
Data File: MB0918A.MS
Name: MB0918A
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 10/02/01 12:13
Injected at: 09/29/01 21:57
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130B.QCI
Comment: 8270
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 16:08

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	Di-n-Octylphthalate	35.39	2590	149	160	0.04	mg/L	782	3.398
62)	7,12-Dimethylbenz(a)anthracene	36.30	2656	256	0	0.00	mg/L	543	0.632
63)	Benzo(b)Fluoroanthene	36.26	2653	252	41	0.02	mg/L	760	1.696
64)	Benzo(k)Fluoranthene	35.66	2609	252	15	0.01	mg/L	439	2.024
65)	Benzo(a)Pyrene	37.20	2722	252	51	0.03	mg/L	887	1.676
66)	3-Methlycholanthrene	37.12	2716	268	114	0.08	mg/L	848	1.207
67)	Indeno(1,2,3,cd)pyrene	38.38	2808	276	0	0.00	mg/L	0	2.197
68)	Dibenzo(a,h)anthracene	38.53	2819	278	0	0.00	mg/L	106	1.848
69)	Benzo(g,h,i)perylene	39.11	2862	276	0	0.00	mg/L	2	1.820

* Compound is ISTD

QUANT REPORT

Operator ID: LWM
Output File: MB0911AR.1B2
Data File: MB0911AR.MS
Name: MB0911AR
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 09/27/01 11:08
Injected at: 09/26/01 19:09
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130A.QCI
Comment: 625
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 14:23

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*d4-1,4-Dichlorobenzene (I.S.)	8.96	656	152	6271	10.00	mg/L	0	1.000
2)	*d8-Naphthalene (I.S.)	12.65	926	136	22097	10.00	mg/L	0	1.000
3)	*d10-Acenaphthene (I.S.)	19.16	1402	160	4757	10.00	mg/L	0	1.000
4)	*d10-Phenanthrene (I.S.)	25.15	1840	188	20899	10.00	mg/L	0	1.000
5)	*d12-Chrysene (I.S.)	33.91	2481	240	18499	10.00	mg/L	0	1.000
6)	*12-Perylene (I.S.)	36.58	2677	264	11887	10.00	mg/L	0	1.000
7)	2-Fluorophenol (Surr)	5.97	437	112	5602	36.63	%	0	0.244
8)	d6-Phenol (Surr)	8.32	609	99	4047	23.69	%	0	0.273
9)	d5-Nitrobenzene (Surr)	10.51	769	82	5239	59.99	%	0	0.040
10)	2-Fluorobiphenyl (Surr)	16.69	1221	172	5590	73.80	%	0	0.160
11)	Tribromophenol (Surr)	22.40	1639	330	3720	67.64	%	0	0.116
12)	d14-Terphenyl (Surr)	31.13	2278	244	12439	126.81	%	0	0.054
13)	Nitrosodimethylamine	3.14	230	74	0	0.00	mg/L	305	0.300
14)	Pyridine	3.29	241	79	45	0.03	mg/L	608	2.225
15)	N-Nitrosomethylethylamine	5.45	399	88	0	0.00	mg/L	22	1.726
16)	Methyl methanesulfonate	6.37	466	80	8	0.02	mg/L	456	0.778
17)	N-Nitrosodiethylamine	7.24	530	102	0	0.00	mg/L	223	0.728
18)	Ethyl methanesulfonate	7.90	578	79	31	0.03	mg/L	735	1.960
19)	Phenol	8.32	609	94	12	0.01	mg/L	315	3.345
20)	Aniline	8.23	602	93	39	0.02	mg/L	915	3.225
21)	Bis(2-Chloroethyl)ether	8.81	645	93	56	0.05	mg/L	421	1.670
22)	2-Chlorophenol	8.91	652	128	12	0.01	mg/L	550	2.972
23)	1,3-Dichlorobenzene	8.79	643	146	0	0.00	mg/L	2	1.529
24)	1,4-Dichlorobenzene	9.44	691	146	0	0.00	mg/L	346	1.560
25)	Benzyl Alcohol	9.58	701	108	7	0.01	mg/L	586	1.151
26)	1,2-Dichlorobenzene	9.44	691	146	0	0.00	mg/L	192	1.492
27)	2-Methylphenol	10.00	732	107	35	0.02	mg/L	576	2.382
28)	Bis(2-Chloroisopropyl)ether	10.15	743	45	59	0.09	mg/L	581	1.062
29)	N-Nitrosopyrrolidine	10.19	746	100	8	0.01	mg/L	526	1.127
30)	Acetophenone	9.96	729	105	104	0.03	mg/L	812	5.538

* Compound is ISTD

Operator ID: LWM
Output File: MB0911AR.1B2
Data File: MB0911AR.MS
Name: MB0911AR
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 09/27/01 11:08
Injected at: 09/26/01 19:09
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130A.QCI
Comment: 625
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 14:23

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	N-Nitrosodi-n-propylamine	10.51	769	70	2472	1.98	mg/L	425	1.991
32)	3+4-Methylphenols	10.25	750	107	26	0.01	mg/L	711	3.296
33)	o-Toluidine	10.51	769	106	0	0.00	mg/L	469	4.716
34)	Hexachloroethane	10.19	746	117	33	0.04	mg/L	626	1.282
35)	Nitrobenzene	10.86	795	77	151	0.09	mg/L	508	0.775
36)	N-Nitrosopiperdine	11.52	843	114	0	0.00	mg/L	319	0.335
37)	Isophorone	11.38	833	82	31	0.01	mg/L	739	1.400
38)	2-Nitrophenol	11.40	834	139	0	0.00	mg/L	443	0.191
39)	2,4-Dimethylphenol	11.56	846	122	0	0.00	mg/L	545	0.480
40)	O,O,O-Triethylphosphorothioate	11.98	877	121	26	0.04	mg/L	316	0.297
41)	Benzoic Acid	12.83	939	122	0	0.00	mg/L	0	0.123
42)	Bis(2-Chloroethoxy)methane	12.50	915	93	57	0.04	mg/L	704	0.721
43)	2,4-Dichlorophenol	12.04	881	162	0	0.00	mg/L	2	0.333
44)	1,2,4-Trichlorobenzene	12.63	924	180	0	0.00	mg/L	146	0.361
45)	Naphthalene	12.48	913	128	15	0.00	mg/L	909	2.258
46)	2,6-Dichlorophenol	13.26	970	162	0	0.00	mg/L	811	0.342
47)	4-Chloroaniline	13.22	967	127	8	0.00	mg/L	834	1.161
48)	Hexachloropropene	13.20	966	213	0	0.00	mg/L	135	0.283
49)	Hexachlorobutadiene	13.52	989	225	0	0.00	mg/L	512	0.302
50)	N-Nitrosodi-n-butylamine	14.55	1065	84	0	0.00	mg/L	31	0.539
51)	4-Chloro-3-Methylphenol	15.50	1134	107	20	0.01	mg/L	562	1.028
52)	Safrole	15.52	1136	162	0	0.00	mg/L	255	0.337
53)	2-Methylnaphthalene	14.99	1097	141	13	0.01	mg/L	796	0.781
54)	Hexachlorocyclopentadiene	16.28	1191	237	0	0.00	mg/L	206	0.743
55)	1,2,4,5-Tetrachlorobenzene	16.00	1171	216	0	0.00	mg/L	61	1.669
56)	2,4,6-Trichlorophenol	17.03	1246	196	0	0.00	mg/L	87	1.072
57)	2,4,5-Trichlorophenol	16.86	1234	196	0	0.00	mg/L	150	1.327
58)	Isosafrole	17.41	1274	162	0	0.00	mg/L	221	10.276
59)	2-Chloronaphthalene	17.37	1271	127	8	0.00	mg/L	221	4.137
60)	2-Nitroaniline	18.12	1326	138	0	0.00	mg/L	362	1.075

* Compound is ISTD

Operator ID: LWM
Output File: MB0911AR.1B2
Data File: MB0911AR.MS
Name: MB0911AR
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 09/27/01 11:08
Injected at: 09/26/01 19:09
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130A.QCI
Comment: 625
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 14:23

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	1,4-Naphthoquinone	18.12	1326	158	0	0.00	mg/L	156	1.332
62)	Dimethylphthalate	18.95	1387	163	12	0.00	mg/L	847	5.403
63)	1,3-Dinitrobenzene	18.58	1360	168	0	0.00	mg/L	200	0.080
64)	2,6-Dinitrotoluene	18.42	1348	165	10	0.02	mg/L	684	0.207
65)	Acenaphthylene	19.05	1394	152	0	0.00	mg/L	2	1.267

* Compound is ISTD

QUANT REPORT

Operator ID: LWM
Output File: MB0911AR.1B2
Data File: MB0911AR.MS
Name: MB0911AR
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 09/27/01 14:01
Injected at: 09/26/01 19:09
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130B.QCI
Comment: 625
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 16:08

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
1)	*d4-1,4-Dichlorobenzene (I.S.)	8.96	656	152	6271	10.00	mg/L	0	1.000
2)	*d8-Naphthalene (I.S.)	12.65	926	136	22097	10.00	mg/L	0	1.000
3)	*d10-Acenaphthene (I.S.)	19.16	1402	160	4757	10.00	mg/L	0	1.000
4)	*d10-Phenanthrene (I.S.)	25.15	1840	188	20899	10.00	mg/L	0	1.000
5)	*d12-Chrysene (I.S.)	33.91	2481	240	18499	10.00	mg/L	0	1.000
6)	*12-Perylene (I.S.)	36.58	2677	264	11887	10.00	mg/L	0	1.000
7)	3-Nitroaniline	19.38	1418	138	0	0.00	mg/L	656	0.903
8)	Acenaphthene	20.08	1469	153	0	0.00	mg/L	530	3.191
9)	2,4-Dinitrophenol	20.08	1469	184	0	0.00	mg/L	494	0.066
10)	Pentachlorobenzene	19.87	1454	250	0	0.00	mg/L	2	1.622
11)	Dibenzofuran	20.08	1469	168	0	0.00	mg/L	78	4.674
12)	4-Nitrophenol	20.57	1505	109	0	0.00	mg/L	504	2.555
13)	2,4-Dinitrotoluene	20.44	1496	165	13	0.02	mg/L	347	1.524
14)	1-Naphthylamine	20.84	1525	143	11	0.02	mg/L	631	1.496
15)	2,3,4,6-Tetrachlorophenol	20.83	1524	232	0	0.00	mg/L	2	0.587
16)	2-Napthylamine	20.84	1525	143	11	0.02	mg/L	738	1.440
17)	Diethylphthalate	21.32	1560	149	413	0.16	mg/L	871	5.423
18)	Fluorene	22.00	1610	166	0	0.00	mg/L	709	2.900
19)	4-Chlorophenyl phenyl ether	21.95	1606	204	0	0.00	mg/L	489	2.443
20)	Thionazin	21.22	1553	97	11	0.01	mg/L	756	2.516
21)	5-Nitro-o-toluidide	22.89	1675	152	0	0.00	mg/L	753	0.316
22)	4-Nitroaniline	21.89	1602	138	0	0.00	mg/L	83	0.831
23)	2-Methyl-4,6-Dinitrophenol	22.40	1639	198	0	0.00	mg/L	506	0.040
24)	N-Nitrosodiphenylamine	22.13	1619	169	14	0.01	mg/L	661	0.598
25)	Diallate	23.41	1713	86	0	0.00	mg/L	223	0.388
26)	Phorate	23.53	1722	75	0	0.00	mg/L	579	0.449
27)	1,3,5-Trinitrobenzene	23.53	1722	74	0	0.00	mg/L	511	0.025
28)	Phenacetin	23.67	1732	179	11	0.01	mg/L	251	0.374
29)	4-Bromophenyl phenyl ether	23.27	1703	248	0	0.00	mg/L	285	0.443
30)	Hexachlorobenzene	23.41	1713	284	0	0.00	mg/L	459	0.308

* Compound is ISTD

Operator ID: LWM
Output File: MB0911AR.1B2
Data File: MB0911AR.MS
Name: MB0911AR
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 09/27/01 14:01
Injected at: 09/26/01 19:09
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130B.QCI
Comment: 625
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 16:08

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
31)	Dimethoate	23.83	1744	87	11	0.01	mg/L	713	0.939
32)	Pentachlorophenol	24.74	1810	266	0	0.00	mg/L	325	0.131
33)	Pentachloronitrobenzene	24.74	1810	237	0	0.00	mg/L	248	0.134
34)	Diphenylamine	24.45	1789	169	8	0.01	mg/L	571	0.721
35)	Pronamide	25.76	1885	173	0	0.00	mg/L	109	0.514
36)	Phenanthrene	25.30	1851	178	12	0.01	mg/L	915	1.095
37)	Disulfoton	25.45	1862	89	12	0.01	mg/L	596	0.436
38)	Anthracene	25.30	1851	178	12	0.01	mg/L	937	1.101
39)	Methyl Parathion	27.44	2008	109	12	0.01	mg/L	587	0.621
40)	Di-n-Butylphthalate	27.99	2048	149	1068	0.25	mg/L	939	2.050
41)	Malathion	28.07	2054	127	12	0.01	mg/L	584	1.049
42)	Parathion	28.28	2069	109	11	0.01	mg/L	632	0.805
43)	Isodrin	29.08	2128	193	100	0.28	mg/L	686	0.174
44)	Fluoroanthene	30.30	2217	202	0	0.00	mg/L	2	1.164
45)	Benzidine	30.50	2232	184	15	0.02	mg/L	682	0.441
46)	Pyrene	30.54	2235	202	0	0.00	mg/L	104	1.174
47)	p-Dimethylamino-azobenzene	31.56	2309	225	0	0.00	mg/L	193	0.639
48)	Chlorobenzilate	32.28	2362	251	13	0.01	mg/L	616	0.795
49)	Famphur	32.48	2377	218	0	0.00	mg/L	170	1.364
50)	3,3-Dimethylbenzidine	32.61	2386	212	9	0.01	mg/L	573	0.433
51)	Butylbenzylphthalate	33.06	2419	149	42	0.02	mg/L	880	1.051
52)	Kepone	32.18	2355	272	0	0.00	mg/L	178	0.067
53)	Di-(2-ethylhexyl)adipate	32.99	2414	129	269	0.10	mg/L	869	1.447
54)	2-Acetylaminofluorene	33.36	2441	181	0	0.00	mg/L	639	0.681
55)	Benzo(a)anthracene	33.92	2482	228	0	0.00	mg/L	233	1.257
56)	3,3'-Dichlorobenzidine	34.01	2489	252	11	0.01	mg/L	584	0.596
57)	Methylene-bis(o-chloro aniline)	34.06	2492	231	0	0.00	mg/L	387	0.449
58)	Chrysene	34.06	2492	228	0	0.00	mg/L	67	1.102
59)	Di-(2-ethylhexyl)phthalate	34.12	2497	149	4433	1.45	mg/L	998	1.659
60)	Tri-o-cresolphosphate	34.99	2560	165	65	0.08	mg/L	571	0.452

* Compound is ISTD

Operator ID: LWM
Output File: MB0911AR.1B2
Data File: MB0911AR.MS
Name: MB0911AR
Sample: Injector Split 1:20 (2uL Inject)

Quant Time: 09/27/01 14:01
Injected at: 09/26/01 19:09
Dilution Factor: 1.00
Instrument ID: Saturn II

ID File: IC09130B.QCI
Comment: 625
Last Calibration: 09/14/01

Last Qcal Time: 09/14/01 16:08

	Compound	R.T.	Scan#	Q ion	Area	Conc	Units	Fit	Rf
61)	Di-n-Octylphthalate	35.67	2610	149	537	0.13	mg/L	455	3.398
62)	7,12-Dimethylbenz(a)anthracene	35.91	2628	256	9	0.01	mg/L	694	0.632
63)	Benzo(b)Fluoroanthene	35.93	2629	252	57	0.03	mg/L	559	1.696
64)	Benzo(k)Fluoranthene	35.93	2629	252	57	0.02	mg/L	803	2.024
65)	Benzo(a)Pyrene	36.63	2680	252	23	0.01	mg/L	578	1.676
66)	3-Methlycholanthrene	37.25	2726	268	108	0.08	mg/L	764	1.207
67)	Indeno(1,2,3,cd)pyrene	38.99	2853	276	0	0.00	mg/L	2	2.197
68)	Dibenzo(a,h)anthracene	38.99	2853	278	0	0.00	mg/L	2	1.848
69)	Benzo(g,h,i)perylene	38.98	2852	276	0	0.00	mg/L	0	1.820

* Compound is ISTD

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B4 Solar Enviromental Services

Asbestos

KINNETIC LABORATORIES INCORPORATED

SEPTEMBER SAMPLING, ASBESTOS, SES SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01ASB004	INFLUENT	SAMPLE
MOA01ASB005	EFFLUENT	SAMPLE
MOA01ASB006	SLUDGE	SAMPLE

Hygeia Laboratories Inc.
82 W. Sierra Madre Blvd
Sierra Madre, CA 91024-2434
(626) 355-4711 (626) 355-4497 Fax

California ELAP Certificate No. 1269

TEM Sample Analysis Report

Water EPA 600/4-83-043 (100.1)

September 20, 2001

Ms. Grace Torrijos
Solar Environmental Services
1131 E. 76th Avenue, Ste 102
Anchorage, AK 99518

Kinnetic MOA 1225 091301

Samples Submitted: 2
Samples Analyzed: 2
Sampler: Kinnetic

Hygeia Reference No.: **25579 01 0051**
Date Collected: September 4, 2001
Date Received: September 17, 2001
Date Analyzed: September 19, 2001

Client Sample ID: **MOA01ASB004**
Hygeia Sample ID: 686814

Sample Description: Water
Sample Location: n/a

Volume Filtered (ml): 1
Effective Filter Area (mm²): 1297
Area Analyzed (mm²): 0.196
Analytical Sens. (MFL): 6.6

		UCL*	LCL*	No. of Str.	chrysotile	amphibole
Total Structures:	**17**					
Million Fibers/Liter (MFL):	**112**	204	65	≤ 10 µm	16	0
MFL >10 µm in length:	**6.6**			>10 µm	1	0

SAED Neg #: n/a
EDXA File #: 166

Client Sample ID: **MOA01ASB005**
Hygeia Sample ID: 686815

Sample Description: Water
Sample Location: n/a

Volume Filtered (ml): 1
Effective Filter Area (mm²): 1297
Area Analyzed (mm²): 0.196
Analytical Sens. (MFL): 6.6

		UCL*	LCL*	No. of Str.	chrysotile	amphibole
Total Structures:	**2**					
Million Fibers/Liter (MFL):	**13**	48	0	≤ 10 µm	2	0
MFL >10 µm in length:	**<6.6**			>10 µm	0	0

SAED Neg #: n/a
EDXA File #: 166

* UCL: upper 95% confidence limit LCL: lower 95% confidence limit

Microscopist - Quynh Trieu

Microscopist - Kyeong Corbin

Kyeong Corbin - Supervisor of Electron Microscopy

Hygeia Laboratories Inc.
82 W. Sierra Madre Blvd
Sierra Madre, CA 91024-2434
(626) 355-4711 (626) 355-4497 Fax

California ELAP Certificate No. 1269

TEM Sample Analysis Summary

Water EPA 600/4-83-043 (100.1)

September 20, 2001

Hygeia Reference No.: 25579 01 0051
Kinnetic MOA 1225 091301

Hygeia Sample ID	Client Sample ID	MFL
686814	MOA01ASB004	112
686815	MOA01ASB005	13

< - Less than Analytical Sensitivity

Microscopist - Quynh Trieu

Microscopist - Kyeong Corbin

Kyeong Corbin - Supervisor of Electron Microscopy

Solar Environmental Services, Inc.

1131 E. 76th Avenue, Suite 102
Anchorage, AK 99518
Home Page: www.alaska.net/~sesenvir/

Phone: (907) 349-7705
Fax: (907) 349-7944
E-mail: sesenvir@alaska.net

CERTIFICATE OF ANALYSIS

CLIENT: Kinnetic Laboratories, Inc.
ATTN: Janet Kennedy
403 West 8th Ave.
Anchorage, Alaska 99501

CLIENT ORDER #: 194019
PROJECT NAME: 516.01
PROJECT #: AK01-1026
REPORT #: B2001-242
REPORT DATE: September 21, 2001
COLLECTED BY: Client
DATE SAMPLED: September 5, 2001
DATE RECEIVED: September 12, 2001
DATE ANALYZED: September 24, 2001
ANALYZED BY: J. Torrijos– SES

BULK ASBESTOS ANALYSIS REPORT

POLARIZED LIGHT MICROSCOPY (PLM) EPA METHOD 600R93116

LAB. #	CLIENT#	DESCRIPTION/ LOCATION/ COLOR	% ASBESTOS PRESENT	% OTHER FIBROUS MATERIALS	%NONFIBROUS MATERIALS
2001531BO993	MOA01ASB006	Sludge (Black/Grey)	None Detected	Cellulose Positive	

End of Report

All quantitations are based on visual estimation unless point counting method, per NESHAP 40 CFR Part 61, is requested by client. Test report relates only to the items tested and must not be used by client to claim product endorsement by NVLAP or any Agency of the U.S. Government. Test report must not be reproduced except in full without the approval of SES and subject to SES general terms and conditions. Small asbestos fibers may be missed by PLM Method due to resolution limitations of the optical microscope. Therefore, None Detected and <1% PLM results cannot be guaranteed. Transmission Electron Microscopy (TEM) is recommended for confirmation.

REVIEWED AND APPROVED BY: _____ Date: 10/4/01
Gracita O. Torrijos, Chemist – I.H.

FORM# SES 1008 REVISED 6/17/98

NVLAP Accredited Laboratory

AIHA – AAR – PAT Certified

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B5 Severn Trent Laboratories

Dioxin

SEPTEMBER SAMPLING, DIOXIN, STL SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01DXN004	INFLUENT	SAMPLE
MOA01DXN005	EFFLUENT	SAMPLE
MOA01DXN006	SLUDGE	SAMPLE

SEVERN TRENT SERVICES

STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605-1500

Tel: 916 373 5600
Fax: 916 371 8420
www.stl-inc.com

September 21, 2001

STL SACRAMENTO PROJECT NUMBER: G1I060280
PO/CONTRACT: AK01-1029

Mark Savoie
Kinnetics Laboratories, Inc.
403 W. Eighth Street
Anchorage, AK 99501

Dear Mr. Savoie,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on September 6, 2001. These samples are associated with your 516.01 project.

The test results in this report meet all NELAC requirements for parameters in which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4402.

Sincerely,

Jill Kellmann

Jill Kellmann
Project Manager

CASE NARRATIVE

STL SACRAMENTO PROJECT NUMBER G1I060280

There were no anomalies associated with this project.

STL SACRAMENTO
Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003

STL Sacramento Certifications:
Alaska (UST-055), Arizona (#AZ00616), Arkansas, California (#2166), Connecticut (#PH-0691), Florida (E87570), Hawaii, Louisiana (AI # 30612), New Jersey (Lab ID 44005), Nevada (#CA 044), New York (LAB ID 11666 serial # 107407), Oregon (LAB ID CA 044), South Carolina (LAB ID 87014, Cert. # 870140), Utah (E-168), Virginia (#00178), Washington (# C087), West Virginia (# 9930C), Wisconsin (Lab 998204680), USNAVY, USACE, USDA Foreign Plant (Permit # 37-82605), USDA Foreign Soil (Permit # S-46613).

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Severn Trent Laboratories, Inc. 880 Riverside Parkway West Sacramento, CA 95605 (916)373-5600 Attn: Jill Killmann	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1029	**KLI Proj. #:** 516.01

ANALYSIS TYPE: EPA 8280A for TCDD. Detection limits as per method.

MATRIX: Water	**Preservative:** None, 4°C Effluent samples contain $Na_2S_2O_3$	**Type of Container:** 1-L amber glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01DXN004	Influent	2	9-4/5-01	0945	✓	
MOA01DXN005	Effluent	2	↓	1000	✓	
						LB

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Lang	9/5/01 1110	hand	G. Lawley	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1300	FEDX	Megan Burnard	1245 9-6-01
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Lang / Susan Lang

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Severn Trent Laboratories, Inc. 880 Riverside Parkway West Sacramento, CA 95605 (916)373-5600 Attn: Jill Killmann	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1029	**KLI Proj. #:** 516.01

ANALYSIS TYPE: EPA 8280A for TCDD. Detection limits as per method. Please report in dry weight.

MATRIX: Sludge	**Preservative:** None, 4°C	**Type of Container:** 250-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01DXN006	Sludge	1	9-4/5-01	0900		
					UB	

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Long	9/5/01/1110	hand	[illegible]	9/5/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	9/5/01 1300	FEDEX	Megan Burnett	1245 9.6.01
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Long / Susan Long

SAMPLE SUMMARY

G1I060280

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EJ5JA	001	MOA01DXN004	09/04/01	09:45
EJ5JG	002	MOA01DXN005	09/04/01	10:00
EJ5JK	003	MOA01DXN006	09/04/01	09:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN004

Trace Level Organic Compounds

Lot-Sample #...:	G1I060280-001	Work Order #...:	EJ5JA1AA	Matrix.....:	WATER
Date Sampled...:	09/04/01	Date Received..:	09/06/01		
Prep Date.....:	09/10/01	Analysis Date..:	09/13/01		
Prep Batch #...:	1253540				

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.67	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	68	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	84	(25 - 150)

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN005

Trace Level Organic Compounds

Lot-Sample #...: G1I060280-002 Work Order #...: EJ5JG1AA Matrix.....: WATER
Date Sampled...: 09/04/01 Date Received..: 09/06/01
Prep Date.....: 09/10/01 Analysis Date..: 09/13/01
Prep Batch #...: 1253540

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.20	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	82	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	88	(25 - 150)

KINNETICS LABORATORIES, INC.

Client Sample ID: MOA01DXN006

Trace Level Organic Compounds

Lot-Sample #...: G1I060280-003 Work Order #...: EJ5JK1AC Matrix.....: SOLID
Date Sampled...: 09/04/01 Date Received..: 09/06/01
Prep Date.....: 09/07/01 Analysis Date..: 09/12/01
Prep Batch #...: 1250503
% Moisture.....: 65

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.16	ng/g	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	75	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	72	(25 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

QC DATA ASSOCIATION SUMMARY

G1I060280

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8280A		1253540	
002	WATER	SW846 8280A		1253540	
003	SOLID	ASTM D 2216-90		1254317	
	SOLID	SW846 8280A		1250503	1250279

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1I060280 **Work Order #...:** EKAEH1AA **Matrix.....:** WATER
MB Lot-Sample #: G1I100000-540
Prep Date.....: 09/10/01
Analysis Date..: 09/13/01 **Prep Batch #...:** 1253540

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.25	ng/L	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	60	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	87	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

Trace Level Organic Compounds

Client Lot #...: G1I060280 **Work Order #...:** EJ8D91AA **Matrix.....:** SOLID
MB Lot-Sample #: G1I070000-503

Prep Date.....: 09/07/01
Analysis Date..: 09/11/01 **Prep Batch #...:** 1250503

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	0.036	ng/g	SW846 8280A

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	70	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	66	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1I060280 **Work Order #...:** EKAEH1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1I100000-540
Prep Date.....: 09/10/01 **Analysis Date..:** 09/13/01
Prep Batch #...: 1253540

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**25.0**	**24.3**	**ng/L**	**97**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	82	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	91	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1I060280 **Work Order #...:** EKAEH1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1I100000-540
Prep Date.....: 09/10/01 **Analysis Date..:** 09/13/01
Prep Batch #...: 1253540

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**97**	**(79 - 125)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	82	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	91	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: G1I060280 **Work Order #...:** EJ8D91AC **Matrix.....:** SOLID
LCS Lot-Sample#: G1I070000-503
Prep Date.....: 09/07/01 **Analysis Date..:** 09/11/01
Prep Batch #...: 1250503

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,3,7,8-TCDD	**2.50**	**2.49**	**ng/g**	**100**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	73	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	71	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: G1I060280 **Work Order #...:** EJ8D91AC **Matrix.....:** SOLID
LCS Lot-Sample#: G1I070000-503
Prep Date.....: 09/07/01 **Analysis Date..:** 09/11/01
Prep Batch #...: 1250503

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,3,7,8-TCDD	**100**	**(66 - 139)**	**SW846 8280A**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	73	(25 - 150)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	71	(25 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

APPENDIX B

Toxic Pollutant and Pesticide Monitoring, Sept. Sampling

B6 Northern Testing Labs, Inc.

Enterococci

SEPTEMBER SAMPLING, ENTEROCOCCI, NTL SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01ENT003	EFFLUENT REP-1	SAMPLE
MOA01ENT004	EFFLUENT REP-2	SAMPLE DUPLICATE

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01ENT003
Client Project: 516.01
Source: Effluent - 1
NTL Lab#: A174955
Sample Matrix: Water
Comments:

Report Date: 9/7/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 10:45
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9230 B						
	Enterococci MPN	mpn/100mL	>2419.2	0.00		9/5/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: MOA01ENT004
Client Project: 516.01
Source: Effluent - 2
NTL Lab#: A174956
Sample Matrix: Water
Comments:

Report Date: 9/7/01
Date Arrived: 9/5/01
Sample Date: 9/5/01
Sample Time: 10:45
Collected By: SL

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9230 B						
	Enterococci MPN	mpn/100mL	>2419.2			9/5/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

APPENDIX C

Whole Effluent Toxicity Testing

C1 Toxscan

First Quarter Test

KINNETIC LABORATORIES INCORPORATED

ToxScan, Inc. *42 Hangar Way • Watsonville, CA 95076-2404 • (408) 724-4522 • FAX (408) 724-3188*

Point Woronzof Wastewater Treatment Facility
Chronic Toxicity Testing - 1st Quarter 2001
NPDES Permit No. AK-002255-1

Three Species Chronic Bioassay Results:

SAMPLES RECEIVED 9, 23, 25 and 27 January 2001
(KLI Project 514.01)

Prepared for

KINNETIC LABORATORIES, INC.
Anchorage, Alaska

Prepared by

TOXSCAN, INC.
BIOASSAY DIVISION
Watsonville, California

March 2001

Introduction

Two separate series of effluent samples from the Municipality of Anchorage's John M. Asplund ("Point Woronzof") Water Pollution Control Facility were collected by Kinnetic Laboratories, Inc. personnel and shipped via overnight air courier to ToxScan's laboratory in Watsonville, CA for whole effluent toxicity (WET) testing. The samples were assigned the ToxScan laboratory numbers T-19162 and T-19189. Normally, only a single series of samples is needed for these tests. In this case, however, a laboratory quality control problem required repeating one of the toxicity tests. All samples were collected as 24-hr flow-based composite final effluent samples. The sea urchin fertilization bioassay and the mussel bioassay were performed on the T-19162 effluent sample collected on 1/7-1/8/2001, while the topsmelt bioassay was completed on the T-19189 effluent samples collected on 1/21-1/22, 1/23-1/24, and 1/25-1/26/2001.

Three short-term chronic toxicity tests were requested as required by the National Pollutant Discharge Elimination System (NPDES) permit for the facility; a fertilization test using the purple sea urchin (*Strongylocentrotus purpuratus*), a bivalve larvae survival and development test using the blue mussel (*Mytilus galloprovincialis*) and a larval survival and growth test using the topsmelt (*Atherinops affinis*). The first two tests are of short duration and require only a single effluent sample. The topsmelt test lasts seven days and requires three effluent samples for daily renewal of test solutions; this latter test requires three effluent samples, collected two days apart.

Five concentrations of effluent plus a control were tested. Following permit directions, the five concentrations were 0.175%, 0.35%, 0.7%, 1.4% and 2.8%. Dilutions of the effluent were made with natural seawater from our laboratory system, resulting in test solutions whose salinity was high enough to be compatible with the requirements of the test organisms.

Methods

All test methods followed those described in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. (EPA/600/R-95/136. August, 1995). These are briefly described below:

Sea Urchin Fertilization Test.

Eggs and sperm were obtained from gravid adult sea urchins by injection with 0.5M potassium chloride. Urchin broodstock was supplied by the Granite Canyon laboratory of UC Santa Cruz. Care was taken to avoid contact of eggs with sperm prior to test initiation. Sperm and eggs were diluted to appropriate concentrations with seawater, and aliquots of sperm were precisely pipetted into test chambers (test tubes) containing diluted effluent. After sperm had been in contact with the effluent for precisely 20 minutes, aliquots of unfertilized eggs were added to the test chambers and fertilization was allowed to proceed for a second 20-minute period. At the end of the 20-minute fertilization period, glutaraldehyde was added to each test chamber to stop all biological activity. Test chambers were then examined microscopically to score the numbers of fertilized and unfertilized eggs. Four replicate test chambers were used for control (seawater only) exposures and for each dilution of test effluent. Test temperature was 12±1°C. The test met acceptability criteria; seawater controls achieved greater than 70% egg fertilization, there was no fertilization in egg controls, %MSD was <25% relative to controls and final sperm stock density was <33,600,000 per ml.

Mussel Larvae Survival and Development Test.

Gravid mussels, supplied by Carlsbad Aquafarms, Carlsbad, CA, were induced to spawn by thermal stimulation. Eggs and sperm were collected in separate beakers filled with 0.45 µm-filtered seawater. After inspection, gametes from multiple individuals were screened and pooled. Egg density was determined by microscopically counting several 1-ml aliquots taken from the well-mixed egg beaker. Fertilization was accomplished by addition of an appropriate amount of sperm suspension. Tests were initiated when at least 90% fertilization was observed.

Larvae were tested at 16°C in 100 mm borosilicate glass test tubes containing 5 ml of test solution. After adequate fertilization was confirmed, an aliquot of embryos was pipetted into each test tube. Five extra test tubes were prepared in addition to those required for test and control replicates. These "extra" test containers were not incubated, but rather they were evaluated immediately after inoculation to provide the "initial recovery" data used to establish the mean number of embryos added to each test container.

At the end of the 48 hour exposure period the contents of each test tube were prepared for microscopic evaluation. Each tube was inverted at least five times to promote uniform mixing of contents, and then rapidly subsampled with a 1 ml Eppendorf pipette. The 1 ml subsample was placed onto a Sedgwick-Rafter counting slide and the total number of normal and abnormal larvae was determined. Larvae were scored for evidence of internal tissue inside a complete larval shell. Larvae which had a complete larval shell containing tissue were counted as normal, whereas empty shells and larvae with incomplete shells were scored as abnormal. On the assumption that abnormal larvae would not survive, abnormals were counted as mortalities. Data were reported as percent of initial embryos which survived, and percent of survivors which showed normal development.

Topsmelt Larval Survival and Growth Test.

Test organisms were 10-day old larvae, obtained from ABS, Ft. Collins, CO. Five larvae were used in each test container and there were five replicate containers per concentration. Laboratory control water was seawater from our laboratory system. The sample dilutions were prepared daily using laboratory sea water. Each larval container was fed twice daily with approximately 200 newly-hatched *Artemia nauplii*. Test temperature was 20±1°C, and photo period was 16:8 L:D. Daily renewal of approximately 75% of the test volume coincided with daily environmental monitoring and assessment of survival. After seven days of exposure, the test was terminated. Surviving larvae were dried and weighed.

Results

The results of the sea urchin fertilization bioassay are summarized in Attachment 1, a printout generated by TOXIS, a statistical software program. Statistical analysis of these data show that the 2.8% effluent concentration produced a significant decrease in egg fertilization when compared with the seawater-only controls. The NOEC for fertilization was 1.4%, the LOEC was 2.8% and the chronic toxicity units were 71.4 TUc. Attachment 1 also presents the results of the concurrent reference toxicant test in which copper was the toxicant to which the sperm were exposed. The EC_{50} for fertilization and copper was 34.5 ppb, which is within our laboratory control chart limits for this organism-toxicant combination and indicates that the test population was typically sensitive. All test validity criteria were met in both the effluent bioassay and the reference toxicant bioassay.

Table1 presents the results of the mussel larvae bioassay. Statistical analysis of these data show that no effluent concentration tested produced significantly reduced survival or normal development of the test organisms. The NOEC for both survival and normal development was 2.8% effluent and the LOEC for both endpoints was >2.8%. Chronic toxicity units were <35.7 TUc. Table 2 summarizes the results of the concurrent reference toxicant bioassay using copper as the toxicant. Tables 3 and 4 present the water quality monitoring data collected during the effluent and reference toxicant bioassays, respectively. The reference toxicant LC_{50} (for survival) was 9.76 ppb and the EC_{50} (for normal development) was 10.29 ppb. These are well within our laboratory control chart limits and indicate typical sensitivity of the test population. All test validity criteria were met in both the effluent and reference toxicant bioassays.

The data for the topsmelt bioassay are summarized in Attachment 2, another TOXIS printout. The statistical analysis shows that no concentration of effluent tested produced significant mortality or significantly decreased growth of topsmelt larvae when compared with seawater-only controls. The NOEC for both endpoints was 2.8%, the LOEC was >2.8% and the chronic toxicity units were <35.7 TUc. In the concurrent reference toxicant test using copper as the toxicant, the LC_{50} for survival was 115.3 ppb and the IC_{50} for growth was 114.4 ppb. These are within our laboratory control chart limits, and indicate typical sensitivity of the test population. All test validity criteria were met in both effluent and reference toxicant bioassays.

In summary, no chronic toxicity to either mussel larvae or topsmelt larvae was produced by the tested concentrations of Point Woronzof effluent. Significantly reduced fertilization of sea urchin eggs was produced by exposure of sperm to the highest concentration (2.8%) of effluent tested.

Discussion

It should be noted that the fertilization of sea urchin eggs in four replicate exposures to 2.8% effluent was 99%, 97%, 98% and 95% (mean = 97.25%), showing that the ability of sea urchin sperm to successfully fertilize eggs was reduced by only a **very** small amount after exposure to 2.8% effluent for 20 minutes.

The fact that all four replicates showed a similar (though small) reduction in fertilization, combined with the fact that fertilization was either 99% or 100% in all replicates of the lower effluent concentrations, resulted in the statistical significance of the results. In fact the test protocols allow control fertilizations to be as low as 80% for a successful bioassay test. **Therefore, we would characterize the effect of the effluent on fertilization success as statistically significant but not biologically significant.**

The results of this test event indicate that *Strongylocentrotus purpuratus* was the most sensitive of the three species to this effluent. Note that in the previous two test events with Point Woronzof effluent, mussel larvae development rather than sea urchin fertilization was the most sensitive test endpoint.

Monthly monitoring data for January 2001 that includes daily flow and laboratory test results that were conducted concurrently with the WET testing for the Point Woronzof Wastewater Treatment Facility are presented in Attachment 3. Plant flow, chemical concentrations, and other physical measurements were found to be typical for the Point Woronzof facility during the WET testing.

Table 1

KLI - Alaska - Pt. Woronzof Effluent - *Mytilus edulis* Bioassay

Initial Recovery AVG: 3382.0

Sample ID	Rep	Number Normal	Number Abnormal	Total Recovered per 1 mL	Resus-pended Volume	Total # Normal Larvae Recovered	% Survival	Mean % Survival + S.D.	% Normal Develop-ment	Mean % Normal Development + S.D.	Survival Abbotts Corrected Value	Survival Mean Corrected Value	Normal Development Abbotts Corrected Value	Normal Development Mean Corrected Value
LAB SW CONTROL	1	108	1	109	33	3564	105.4	111.9 + 11.2	99.1	99.5 + 0.5				
	2	106	1	107	32	3392	100.3		99.1					
	3	120	0	120	33	3960	117.1		100.0					
	4	132	0	132	32	4224	124.9		100.0					
0.175%	1	95	1	96	32	3040	89.9	113.1 + 17.6	99.0	99.6 + 0.5	80.3	101.1 + 15.7	99.4	100.0 + 0.5
	2	122	0	122	32	3904	115.4		100.0		103.1		100.5	
	3	119	0	119	32.5	3868	114.4		100.0		102.2		100.5	
	4	136	1	137	33	4488	132.7		99.3		118.6		99.7	
0.35%	1	121	0	121	32	3872	114.5	104.4 + 12.1	100.0	98.2 + 1.4	102.3	93.3 + 10.8	100.5	98.6 + 1.4
	2	117	4	121	33	3861	114.2		96.7		102.0		97.1	
	3	92	2	94	33	3036	89.8		97.9		80.2		98.3	
	4	105	2	107	32	3360	99.3		98.1		88.8		98.6	
0.70%	1	89	2	91	35	3115	92.1	100.7 + 9.4	97.8	99.0 + 1.2	82.3	90.0 + 8.4	98.3	99.5 + 1.2
	2	113	0	113	34	3842	113.6		100.0		101.5		100.5	
	3	109	2	111	31.5	3434	101.5		98.2		90.7		98.7	
	4	101	0	101	32	3232	95.6		100.0		85.4		100.5	
1.40%	1	109	2	111	33	3597	106.4	109.4 + 6.7	98.2	99.0 + 1.2	95.0	97.7 + 6.0	98.7	99.4 + 1.2
	2	110	0	110	32	3520	104.1		100.0		93.0		100.5	
	3	114	0	114	32	3648	107.9		100.0		96.4		100.5	
	4	130	3	133	31	4030	119.2		97.7		106.5		98.2	
2.80%	1	143	4	147	32.5	4648	137.4	118.0 + 15.5	97.3	96.8 + 1.3	122.8	105.4 + 13.8	97.7	97.3 + 1.3
	2	104	4	108	32.5	3380	99.9		96.3		89.3		96.7	
	3	123	2	125	33	4059	120.0		98.4		107.2		98.9	
	4	121	6	127	32	3872	114.5		95.3		102.3		95.7	

Table 2

KLI - Alaska Point Woronzof - Copper Reference Toxicant- *Mytilus edulis* Bioassay

RECOVERY AVG: 3381

Sample ID	Rep	Number Normal	Number Abnormal	Total Recovered per 1 mL	Resus-pended Volume	Total # Normal Larvae Recovered	% Survival	Mean % Survival + S.D.	% Normal Develop-ment	Mean % Normal evelopme + S.D.	Survival Abbotts Corrected Value	Normal Development Mean Corrected Value	Abbotts Corrected Value	Mean Corrected Value
	1	115	0	115	33	3795	112.2	113.4	100.0	99.2				
Control	2	117	1	118	32	3744	110.7	+	99.2	+				
	3	130	2	132	30.5	3965	117.3	3.4	98.5	0.8				
	1	130	3	133	32	4160	123.0	114.7	97.7	98.0	108.5	101.1	98.5	98.7
2 ppb	2	125	5	130	32	4000	118.3	+	96.2	+	104.3	+	96.9	+
	3	112	0	112	31	3472	102.7	10.6	100.0	1.9	90.5	9.4	100.8	1.9
	1	118	0	118	32.5	3835	113.4	109.8	100.0	99.7	100.0	96.8	100.8	100.5
4 ppb	2	117	1	118	32.5	3803	112.5	+	99.2	+	99.2	+	99.9	+
	3	113	0	113	31	3503	103.6	5.4	100.0	0.5	91.4	4.8	100.8	0.5
	1	83	14	97	34	2822	83.5	91.8	85.6	85.5	73.6	80.9	86.2	86.2
8 ppb	2	101	21	122	32	3232	95.6	+	82.8	+	84.3	+	83.4	+
	3	105	14	119	31	3255	96.3	7.2	88.2	2.7	84.9	6.4	88.9	2.7
	1	0	99	99	32	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 ppb	2	0	103	103	32.5	0	0.0	+	0.0	+	0.0	+	0.0	+
	3	0	84	84	32.5	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0	13	13	32.5	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 ppb	2	0	31	31	33	0	0.0	+	0.0	+	0.0	+	0.0	+
	3	0	20	20	33.5	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LC50 = 9.76 (9.58 - 9.94)

EC50 = 10.29 (10.13 - 10.45)

Table 3

Start Date: 1/9/01
End Date: 1/11/01
ToxScan Number: T-19161-2

Client: KLI Alaska - Point Woronzof effluent
Species: Mytilus edulis

Water Column Bioassay Monitoring

Sample ID	Parameter				MEAN	SD	MAX	MIN
	ph	8.2	8.2	8.2	8.2	0.00	8.2	8.2
Lab SW	temp.	15.1	15.2	15.1	15.1	0.06	15.2	15.1
Control	DO	8.1		7.8	8.0	0.21	8.1	7.8
	salinity	33.2		33.5	33.4	0.21	33.5	33.2
	ph	8.2	8.2	8.2	8.2	0.00	8.2	8.2
0.175%	temp.	15.1	15.1	15	15.1	0.06	15.1	15.0
	DO	8.1		7.8	8.0	0.21	8.1	7.8
	salinity	33.3		33.8	33.6	0.00	33.8	33.3
	ph	8.2	8.2	8.2	8.2	0.00	8.2	8.2
0.35%	temp.	15.1	15.2	15	15.1	0.10	15.2	15.0
	DO	8		7.9	8.0	0.07	8.0	7.9
	salinity	33.2		33.7	33.5	0.35	33.7	33.2
	ph	8.3	8.2	8.2	8.2	0.06	8.3	8.2
0.70%	temp.	15	15.1	15	15.0	0.06	15.1	15.0
	DO	8		7.9	8.0	0.07	8.0	7.9
	salinity	33.1		33.6	33.4	0.35	33.6	33.1
	ph	8.3	8.2	8.2	8.2	0.06	8.3	8.2
1.40%	temp.	15	15.1	15	15.0	0.06	15.1	15.0
	DO	8		7.8	7.9	0.14	8.0	7.8
	salinity	32.9		33.4	33.2	0.35	33.4	32.9
	ph	8.3	8.2	8.2	8.2	0.06	8.3	8.2
2.80%	temp.	15	15.1	15.1	15.1	0.06	15.1	15.0
	DO	7.9		7.8	7.9	0.07	7.9	7.8
	salinity	32.4		33	32.7	0.42	33.0	32.4

Table 4

Start Date: 1/9/01
End Date: 1/11/01
ToxScan Number: T-19161-2
COPPER

Client: KLI Alaska - Reference Toxicant
Species: Mytilus edulis

Reference Toxicant Monitoring

Sample ID	Parameter				MEAN	SD	MAX	MIN
	ph	8.3	8.2	8.2	8.2	0.06	8.3	8.2
Lab SW	temp.	15.2	15.1	14.9	15.1	0.15	15.2	14.9
Control	DO	8		8	8.0	0.00	8.0	8.0
	salinity	33.3		33.7	33.5	0.28	33.7	33.3
	ph	8.2	8.2	8.2	8.2	0.00	8.2	8.2
2 ppb	temp.	15.1	15.1	15	15.1	0.06	15.1	15.0
Cu	DO	8.1		8.1	8.1	0.00	8.1	8.1
	salinity	33.3		34.1	33.7	0.57	34.1	33.3
	ph	8.2	8.2	8.2	8.2	0.00	8.2	8.2
4 ppb	temp.	15.1	15.1	14.9	15.0	0.12	15.1	14.9
Cu	DO	8.2		8.2	8.2	0.00	8.2	8.2
	salinity	33.3	8.2	33.8	25.1	14.64	33.8	8.2
	ph	8.2	15.1	8.2	10.5	3.98	15.1	8.2
8 ppb	temp.	15.1	15.5	14.9	15.2	0.31	15.5	14.9
Cu	DO	8.2	8.2	8.2	8.2	0.00	8.2	8.2
	salinity	33.3	15	33.7	27.3	10.68	33.7	15.0
	ph	8.2	8.1	8.2	8.2	0.06	8.2	8.1
16 ppb	temp.	15.1	8.2	15	12.8	3.96	15.1	8.2
Cu	DO	8.2	15.1	8.3	10.5	3.96	15.1	8.2
	salinity	33.3		33.7	33.5	0.28	33.7	33.3
	ph	8.2	8.2	8.2	8.2	0.00	8.2	8.2
32 ppb	temp.	15.1	15	15	15.0	0.06	15.1	15.0
Cu	DO	8.2		8.2	8.2	0.00	8.2	8.2
	salinity	33.3		33.6	33.5	0.21	33.6	33.3

Attachment 1

Toxis Printouts
Sea Urchin Fertilization Bioassay

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
8-Jan-01	9-Jan-01	19162SP-A

SPECIES: Strongylocentrotus purpuratus

TEST MATERIAL: Effluent - POTW (%)

SOURCE: CA0000000 Generic NPDES permit

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

REFERENCE TOXICANT TEST: 19162SP-A

Jim Crowley — Bioassay Lab Manager

Analyst (print name) — Title

Signature — Date

Ray Markel — Bioassay Director

Supervisor (print name) — Title

Signature — Date

ToxScan, Inc.

ECHINODERM TEST DATA

Test Number: 19162SP-A (x) Chronic ( ) Acute hours

Test Date: 9-Jan-01

Source: CA0000000 Test Material: EFF1 (%)

Conc	Rep	Cont. No.	Fert.	Un-Fert.	Prop Fertilized
0.00 D	1		101	0	1.00
0.00 D	2		101	0	1.00
0.00 D	3		100	0	1.00
0.00 D	4		100	0	1.00
.18 D	1		99	1	.99
.18 D	2		99	1	.99
.18 D	3		100	0	1.00
.18 D	4		100	0	1.00
.35 D	1		99	1	.99
.35 D	2		100	0	1.00
.35 D	3		100	0	1.00
.35 D	4		100	0	1.00
.70 D	1		99	1	.99
.70 D	2		99	1	.99
.70 D	3		100	0	1.00
.70 D	4		100	0	1.00
1.40 D	1		99	1	.99
1.40 D	2		100	0	1.00
1.40 D	3		100	0	1.00
1.40 D	4		100	0	1.00
2.80 D	1		100	1	.99
2.80 D	2		94	3	.97
2.80 D	3		100	2	.98
2.80 D	4		95	5	.95

ToxScan, Inc.

Test Date: 1/09/01
Sample Date: 1/07/01
Species: Strongylocentrotus purpuratus
Test Type: Chronic

Test Number: 19162SP-A
Test Material: Effluent - POTW %
Source: CA0000000
Generic NPDES permit

SUMMARY

End Point	Day	Transformation		Conc		#Reps	Mean	StDev	% Surv
Proportion Fertilized		Arc sine sqrt w/out adj.							
			X	0.000	D	4	1.57	0.000	
			X	.175	D	4	1.52	.058	
			X	.350	D	4	1.55	.050	
			X	.700	D	4	1.52	.058	
			X	1.400	D	4	1.55	.050	
			X	2.800	D	4	1.41	.054	
Proportion Fertilized		No transformation							
				0.000	D	4	1.00	0.000	
				.175	D	4	1.00	.006	
				.350	D	4	1.00	.005	
				.700	D	4	1.00	.006	
				1.400	D	4	1.00	.005	
				2.800	D	4	.97	.017	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Fertilized		Arc sine sqrt w/out adj.					
		Steel many-one rank test	1.400	2.800	71.43	.002	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P		Conc	95% CI		TU
Proportion Fertilized		Probit						
			EC 10	>	2.800	8.60 - ******	<	35.71
			EC 25	>	2.800	29.10 - ******	<	35.71
			EC 50	>	2.800	109.90 - ******	<	35.71

ToxScan, Inc.

WATER QUALITY

Test Number: 19162SP-A Test Date: 9-Jan-1901 Source: CA0000000

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	8.20	7.7	32.40	12.0							
	Maximum	8.20	8.6	33.30	12.0							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.20	7.7	32.40	12.0							
	Maximum	8.20	8.6	33.30	12.0							

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
8-Jan-01	9-Jan-01	19162SP-R

SPECIES: Strongylocentrotus purpuratus

TEST MATERIAL: Copper sulfate (ug/l)

SOURCE: REF Reference Toxicant

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

Jim Crowley	Bioassay Lab Manager
Analyst (print name)	Title
Signature	Date
Ray Markel	Bioassay Director
Supervisor (print name)	Title
Signature	Date

ToxScan, Inc.

ECHINODERM TEST DATA

Test Number: 19162SP-R (x) Chronic ( ) Acute hours

Test Date: 9-Jan-01

Source: REF Test Material: CUSO (ug/l)

Conc	Rep	Cont. No.	Fert.	Un-Fert.	Prop Fertilized
0.00 D	1		75	25	.75
0.00 D	2		93	40	.70
0.00 D	3		79	44	.64
0.00 D	4		79	59	.57
9.00 D	1		112	6	.95
9.00 D	2		95	5	.95
9.00 D	3		102	13	.89
9.00 D	4		98	4	.96
18.00 D	1		77	23	.77
18.00 D	2		99	12	.89
18.00 D	3		81	34	.70
18.00 D	4		92	16	.85
36.00 D	1		23	87	.21
36.00 D	2		15	98	.13
36.00 D	3		42	69	.38
36.00 D	4		27	93	.23
72.00 D	1		0	100	0.00
72.00 D	2		0	102	0.00
72.00 D	3		0	100	0.00
72.00 D	4		0	100	0.00
144.00 D	1		0	100	0.00
144.00 D	2		0	100	0.00
144.00 D	3		0	100	0.00
144.00 D	4		0	100	0.00

ToxScan, Inc.

Test Date: 1/09/01
Sample Date: 1/07/01
Species: Strongylocentrotus purpuratus
Test Type: Chronic

Test Number: 19162SP-R
Test Material: Copper sulfate ug/l
Source: REF
Reference Toxicant

SUMMARY

End Point	Day	Transformation		Conc		#Reps	Mean	StDev	% Surv
Proportion Fertilized		Arc sine sqrt w/out adj.							
			X	0.000	D	4	.96	.081	
			X	9.000	D	4	1.32	.064	
			X	18.000	D	4	1.12	.107	
			X	36.000	D	4	.50	.120	
				72.000	D	4	0.00	0.000	
				144.000	D	4	0.00	0.000	
Proportion Fertilized		No transformation							
				0.000	D	4	.67	.076	
				9.000	D	4	.94	.034	
				18.000	D	4	.80	.084	
				36.000	D	4	.24	.103	
				72.000	D	4	0.00	0.000	
				144.000	D	4	0.00	0.000	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Fertilized		Arc sine sqrt w/out adj.					
		Steel many-one rank test	18.000	36.000		.006	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P	Conc	95% CI	TU
Proportion Fertilized		Spearman-Karber				
			EC 50	34.502	33.46 - 35.58	

ToxScan, Inc.

WATER QUALITY

Test Number: 19162SP-R Test Date: 9-Jan-1901 Source: REF

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	8.10	8.5	32.80	12.0							
	Maximum	8.10	8.6	33.20	12.0							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	8.5	32.80	12.0							
	Maximum	8.10	8.6	33.20	12.0							

Attachment 2

Toxis Printouts
Topsmelt Survival and Growth Bioassay

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
22-Jan-01	23-Jan-01	19189AA-A

SPECIES: Atherinops affinis

TEST MATERIAL: Effluent - Industrial (%)

SOURCE: CA0000000 Generic NPDES permit

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

REFERENCE TOXICANT TEST: 19189AA-R

Jim Crowley	Bioassay Lab Manager
Analyst (print name)	Title
Signature	Date
Ray Markel	Bioassay Director
Supervisor (print name)	Title
Ray Markel	7 March 2001
Signature	Date

ToxScan, Inc.

FISH TEST DATA

Test Number: 19189AA-A (x) Chronic ( ) Acute hours

Test Date: 23-Jan-01

Source: CA0000000 Test Material: EFF2 (%)

Conc		Rep	Cont. No.	Start	Daily Survival 1	2	3	4	5	6	End	Prop Alive	Weight /Fish
0.00	D	1		5	5	5	5	5	5	5	5	1.00	1.29200
0.00	D	2		5	5	5	5	5	5	5	5	1.00	1.21000
0.00	D	3		5	5	5	5	5	5	5	5	1.00	1.16600
0.00	D	4		5	5	5	5	5	5	5	5	1.00	1.28000
0.00	D	5		5	5	5	5	5	5	5	5	1.00	1.11800
.18	D	1		5	5	5	5	5	5	5	5	1.00	1.37400
.18	D	2		5	5	5	4	4	4	4	4	.80	1.04000
.18	D	3		5	5	5	5	5	5	5	5	1.00	1.08800
.18	D	4		5	5	5	5	5	5	5	5	1.00	1.34400
.18	D	5		5	5	5	5	5	5	5	5	1.00	1.22800
.35	D	1		5	5	5	5	5	5	5	5	1.00	1.09000
.35	D	2		5	5	5	5	5	5	5	5	1.00	1.12400
.35	D	3		5	5	5	5	5	5	5	5	1.00	1.35000
.35	D	4		5	5	5	5	5	5	5	5	1.00	1.37000
.35	D	5		5	5	5	5	5	5	5	5	1.00	1.42800
.70	D	1		5	5	5	5	5	5	5	5	1.00	1.14200
.70	D	2		5	5	5	5	5	5	4	4	.80	1.04600
.70	D	3		5	5	5	5	5	5	5	5	1.00	1.52600
.70	D	4		5	5	5	5	5	5	5	5	1.00	1.19000
.70	D	5		5	5	5	5	5	5	5	5	1.00	1.22800
1.40	D	1		5	5	5	5	5	5	5	5	1.00	1.33200
1.40	D	2		5	5	5	5	5	5	5	5	1.00	1.17600
1.40	D	3		5	5	5	5	5	5	5	5	1.00	1.29000
1.40	D	4		5	5	5	5	5	5	5	5	1.00	1.48600
1.40	D	5		5	5	5	5	5	5	5	3	.60	.81600
2.80	D	1		5	5	5	5	5	5	5	5	1.00	1.53400
2.80	D	2		5	5	5	5	5	4	4	4	.80	1.03800
2.80	D	3		5	5	5	5	5	5	5	5	1.00	1.30200
2.80	D	4		5	4	4	4	4	4	4	4	.80	1.28400
2.80	D	5		5	5	5	5	5	5	5	5	1.00	1.25600

ToxScan, Inc.

Test Date: 1/23/01
Sample Date: 1/22/01
Species: Atherinops affinis
Test Type: Chronic

Test Number: 19189AA-A
Test Material: Effluent - Industrial %
Source: CA0000000
Generic NPDES permit

SUMMARY

End Point	Day	Transformation		Conc		#Reps	Mean	StDev	% Surv
Proportion Alive	7	Arc sine sqrt w/ adj.							
			X	0.000	D	5	1.35	0.000	
			X	.175	D	5	1.30	.106	
			X	.350	D	5	1.35	0.000	
			X	.700	D	5	1.30	.106	
			X	1.400	D	5	1.25	.205	
			X	2.800	D	5	1.25	.130	
Proportion Alive	7	No transformation							
				0.000	D	5	1.00	0.000	
				.175	D	5	.96	.089	
				.350	D	5	1.00	0.000	
				.700	D	5	.96	.089	
				1.400	D	5	.92	.179	
				2.800	D	5	.92	.110	
Weight		No transformation							
			X	0.000	D	5	1.21	.074	
			X	.175	D	5	1.21	.149	
			X	.350	D	5	1.27	.154	
			X	.700	D	5	1.23	.181	
			X	1.400	D	5	1.22	.252	
			X	2.800	D	5	1.28	.176	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Alive	7	Arc sine sqrt w/ adj.					
		Steel many-one rank test	> 2.800	> 2.800	< 35.71	.014	
Weight		No transformation					
		Dunnett	> 2.800	> 2.800	< 35.71	.030	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P	Conc	95% CI	TU
Proportion Alive	7	Probit				
			EC 50	> 2.800	-	< 35.71

ToxScan, Inc.

WATER QUALITY

Test Number: 19189AA-A Test Date: 23-Jan-1901 Source: CA0000000

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	7.90	5.8	32.30	18.9							
	Maximum	8.10	7.3	33.60	20.4							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	7.3	32.30	19.9							
	Maximum	8.10	7.3	33.20	20.4							
Day: 1												
	Minimum	8.00	6.1		19.0							
	Maximum	8.10	7.0		19.1							
Day: 2												
	Minimum	7.90	6.5		18.9							
	Maximum	8.00	7.0		19.4							
Day: 3												
	Minimum	7.90	6.1		19.4							
	Maximum	8.00	6.9		19.7							
Day: 4												
	Minimum	7.90	6.5		19.3							
	Maximum	8.00	6.9		19.5							
Day: 5												
	Minimum	7.90	5.9		19.5							
	Maximum	8.00	6.6		19.8							
Day: 6												
	Minimum	7.90	5.8		19.7							
	Maximum	8.00	6.7		19.9							
Day: 7												
	Minimum	7.90	6.1	32.70	19.2							
	Maximum	8.00	6.8	33.60	19.3							

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
22-Jan-01	23-Jan-01	19189AA-R

SPECIES: Atherinops affinis

TEST MATERIAL: Copper sulfate (ug/l)

SOURCE: REF Reference Toxicant

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

Jim Crowley — Bioassay Lab Manager

Analyst (print name) — Title

Signature — Date

Ray Markel — Bioassay Director

Supervisor (print name) — Title

Ray Markel — 7 March 2001

Signature — Date

ToxScan, Inc.

FISH TEST DATA

Test Number: 19189AA-R (x) Chronic ( ) Acute hours

Test Date: 23-Jan-01

Source: CA0000000 Test Material: CUSO (ug/l)

Conc		Rep	Cont. No.	Start	Daily Survival 1	2	3	4	5	6	End	Prop Alive	Weight /Fish
0.00	D	1		5	5	5	5	5	5	5	5	1.00	1.25400
0.00	D	2		5	5	5	5	5	5	5	5	1.00	1.32800
0.00	D	3		5	5	5	4	4	4	4	4	.80	1.01000
0.00	D	4		5	5	5	5	5	5	5	5	1.00	1.26600
0.00	D	5		5	5	5	5	5	5	5	5	1.00	1.20600
56.00	D	1		5	5	5	5	5	5	5	4	.80	1.21000
56.00	D	2		5	5	5	5	5	5	5	5	1.00	1.39200
56.00	D	3		5	4	4	4	4	4	4	4	.80	1.06600
56.00	D	4		5	5	5	5	5	5	5	5	1.00	1.24000
56.00	D	5		5	5	5	5	5	5	5	5	1.00	1.38000
100.00	D	1		5	5	5	3	3	3	3	3	.60	.71400
100.00	D	2		5	5	5	3	3	3	3	3	.60	.95000
100.00	D	3		5	5	5	4	4	4	4	4	.80	.90600
100.00	D	4		5	5	5	2	2	1	1	1	.20	.13200
100.00	D	5		5	5	5	5	5	4	4	3	.60	.84000
180.00	D	1		5	3	2	1	1	1	1	0	0.00	0.00000
180.00	D	2		5	2	2	1	1	0	0	0	0.00	0.00000
180.00	D	3		5	5	4	3	3	2	2	2	.40	.48600
180.00	D	4		5	3	3	2	1	1	1	1	.20	.15000
180.00	D	5		5	5	5	5	5	4	4	2	.40	.37600
320.00	D	1		5	0	0	0	0	0	0	0	0.00	0.00000
320.00	D	2		5	0	0	0	0	0	0	0	0.00	0.00000
320.00	D	3		5	1	1	1	0	0	0	0	0.00	0.00000
320.00	D	4		5	4	1	1	0	0	0	0	0.00	0.00000
320.00	D	5		5	0	0	0	0	0	0	0	0.00	0.00000

ToxScan, Inc.

Test Date: 1/23/01
Sample Date: 1/21/01
Species: Atherinops affinis
Test Type: Chronic

Test Number: 19189AA-R
Test Material: Copper sulfate ug/l
Source: CA0000000
Generic NPDES permit

SUMMARY

End Point	Day	Transformation		Conc		#Reps	Mean	StDev	% Surv
Proportion Alive	7	Arc sine sqrt w/ adj.							
			X	0.000	D	5	1.30	.106	
			X	56.000	D	5	1.25	.130	
			X	100.000	D	5	.85	.234	
			X	180.000	D	5	.46	.230	
				320.000	D	5	.23	0.000	
Proportion Alive	7	No transformation							
				0.000	D	5	.96	.089	
				56.000	D	5	.92	.110	
				100.000	D	5	.56	.219	
				180.000	D	5	.20	.200	
				320.000	D	5	0.00	0.000	
Weight		No transformation							
			X	0.000	D	5	1.21	.121	
			X	56.000	D	5	1.26	.134	
				100.000	D	5	.71	.334	
				180.000	D	5	.20	.221	
				320.000	D	5	0.00	0.000	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Alive	7	Arc sine sqrt w/ adj.					
		Steel many-one rank test	56.000	100.000	1.79	.027	
Weight		No transformation					
		Wilcoxon test with Bonfe	> 56.000	> 56.000	< 1.79	.016	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P	Conc	95% CI	TU
Proportion Alive	7	Probit				
			EC 15	71.992	46.50 - 90.36	1.39
			EC 25	84.862	59.74 - 103.43	1.18
			EC 50	115.297	92.35 - 137.29	.87

- GROWTH POINT ESTIMATE -

End Point	P	IC	95% CI
Weight			
	IC 10	66.317	57.02 - 76.26
	IC 15	71.475	59.35 - 85.43
	IC 25	81.792	67.31 - 108.45
	IC 40	97.267	76.56 - 134.28
	IC 50	114.356	78.12 - 155.91

ToxScan, Inc.

WATER QUALITY

Test Number: 19189AA-R Test Date: 23-Jan-1901 Source: CA0000000

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	7.80	6.5	29.80	18.5							
	Maximum	8.10	7.5	31.80	20.2							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	7.4	29.80	19.5							
	Maximum	8.10	7.5	29.90	20.2							
Day: 1												
	Minimum	8.00	7.3		18.5							
	Maximum	8.10	7.5		18.7							
Day: 2												
	Minimum	7.90	7.0		18.7							
	Maximum	8.00	7.2		18.8							
Day: 3												
	Minimum	7.90	7.0		19.0							
	Maximum	8.00	7.4		19.1							
Day: 4												
	Minimum	7.90	6.8	31.50	19.1							
	Maximum	8.00	7.3	31.50	19.2							
Day: 5												
	Minimum	7.80	6.5		19.2							
	Maximum	8.00	7.1		19.3							
Day: 6												
	Minimum	7.80	6.6		19.4							
	Maximum	8.00	7.2		19.4							
Day: 7												
	Minimum	7.90	6.7	31.60	19.0							
	Maximum	8.00	7.4	31.80	19.0							

Attachment 3

Monthly Monitoring Report - January 2001
Point Woronzof Wastewater Treatment Facility

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

January 2001

		Flow	BOD5							TS		TVS		Suspended Solids (TSS)							VSS		TDS	
		MGD	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L
			24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	24 HC	24 HC	24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	CALC	CALC
Date	Day		I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE	I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE
1-Jan	Mon	27.745	257	138		46	59468	31932		642	482	328	162	258	42		84	59699	9719		200	30	384	440
2-Jan	Tue	28.125	318	171		46	74591	40110		712	512	370	166	272	38		86	63801	8913		232	29	440	474
3-Jan	Wed	27.782	416	171		59	96388	39621		772	510	396	162	288	34		88	66730	7878		248	26	484	476
4-Jan	Thu	28.044	298	159	160	47	69698	37188	37213	764	512	414	178	195	31	36	84	45608	7250	8440	182	25	569	481
5-Jan	Fri	28.024																						
6-Jan	Sat	28.477																						
7-Jan	Sun	30.145	216	162		25	54304	40728		634	530	328	186	212	75		65	53299	18856		202	50	422	455
8-Jan	Mon	28.547	238	149		37	56664	35474		560	478	282	174	168	39		77	39998	9285		142	28	392	439
9-Jan	Tue	27.833	247	174		30	57335	40390		608	550	288	178	220	75		66	51068	17410		190	54	388	475
10-Jan	Wed	28.613	274	170		38	65385	40568		656	552	324	168	225	35		84	53692	8352		185	25	431	517
11-Jan	Thu	28.542	287	141	159	51	68318	33564	38145	602	546	290	180	208	32	51	85	49512	7617	12304	168	22	394	514
12-Jan	Fri	28.035																						
13-Jan	Sat	28.038																						
14-Jan	Sun	28.687																						
15-Jan	Mon	35.074	225	122		46	65816	35687		772	590	322	172	252	42		83	73714	12286		175	24	520	548
16-Jan	Tue	29.068	369	161		56	89456	39031		778	550	404	174	362	41		89	87759	9940		300	29	416	509
17-Jan	Wed	27.850	268	NR		NR	62248	NR		664	528	328	178	238	40		83	55280	9291		198	25	426	488
18-Jan	Thu	29.241	391	166	150	58	95353	40482	38400	778	470	426	188	384	41	41	89	93646	9999	10379	290	30	394	429
19-Jan	Fri	36.830																						
20-Jan	Sat	28.771																						
21-Jan	Sun	28.816																						
22-Jan	Mon	28.632	225	146		35	53728	34863		578	524	266	146	190	32		83	45370	7641		162	25	388	492
23-Jan	Tue	28.301	252	161		36	59480	38001		558	336	274	160	220	42		81	51927	9913		220	42	338	294
24-Jan	Wed	28.271	265	157		41	62482	37017		620	542	306	174	212	29		86	49985	6838		190	20	408	513
25-Jan	Thu	28.150	259	163	157	37	60806	38268	37037	614	494	326	184	208	28	33	87	48832	6574	7741	184	21	406	466
26-Jan	Fri	27.730																						
27-Jan	Sat	28.350																						
28-Jan	Sun	28.157	NR	NR		NR	NR	NR																
29-Jan	Mon	28.617	NR	NR		NR	NR	NR		680	508	348	166	248	30		88	59189	7160		204	22	432	478
30-Jan	Tue	28.212	NR	NR		NR	NR	NR		692	514	344	164	264	38		86	62116	8941		210	26	428	476
31-Jan	Wed	27.880	315	144	144	54	73244	33483	33483	716	520	392	194	294	32	33	89	68361	7441	7847	232	22	422	488
MIN		27.730	216	122	144	25	53728	31932	33483	558	336	266	146	168	28	33	65	39998	6574	7741	142	20	338	294
MAX		36.830	416	174	160	59	96388	40728	38400	778	590	426	194	384	75	51	89	93646	18856	12304	300	54	569	548
AVE		28.858	284	156			68042	37436		670	512	338	173	246	40			58979	9565		206	29	424	473
%REM CALCTD						45											84							

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

January 2001

		Parameter	Temp		pH		D O	Total Ammonia NH3 - N	Chloride	Total Chlorine Residual			Fecal Coli	Sludge Cake		Filtrate
		Units	deg C	deg C	units	units	mg/L	mg/L	mg/L	mg/L	mg/L		FC/100 mL	% TS	% TVS	mg/L SS
		MDL						0.02					2			
		Sample Type	G	G	G	G	G	24 HC	24 HC	24G/DAY AVE	G		G	24 HC (3 G)		24 HC (3 G)
Date	Day	Sample Point	I	FE	I	FE	FE	FE	I	FE	FE		FE	Discharge Belt		Belt press
1-Jan	Mon		11.4	11.4	7.2	7.0	6.5		42	0.9				incinerator on standby		
2-Jan	Tue		12.0	12.5	7.3	7.1	6.1		72	0.8	1.0		11	32.2	84.9	920
3-Jan	Wed		12.3	12.5	7.3	7.1	6.6		69	0.8	1.0		130	31.6	83.2	1080
4-Jan	Thu		12.0	12.7	7.1	7.0	6.1		68	0.8	1.0		8	31.3	80.6	480
5-Jan	Fri									0.9				31.1	80.9	240
6-Jan	Sat									0.9				31.4	81.8	150
7-Jan	Sun		10.6	12.1	7.1	7.1	6.0	18.5	64	0.7				31.4	81.5	150
8-Jan	Mon		12.6	12.4	7.4	7.1	6.3		49	0.8	1.2		22	34.3	80.3	400
9-Jan	Tue		12.3	12.4	7.2	7.0	6.4		49	0.8	1.5		170	32.0	81.2	310
10-Jan	Wed		12.1	12.4	7.1	7.2	5.9		50	0.7	0.6		23	31.1	81.1	370
11-Jan	Thu									0.8				30.0	81.9	550
12-Jan	Fri									0.9				31.7	80.2	740
13-Jan	Sat									0.9				33.2	79.4	560
14-Jan	Sun		11.1	12.5	7.3	7.0	6.3			0.8				32.3	79.1	790
15-Jan	Mon		11.4	11.6	7.2	7.1	6.9		122	0.9				34.5	77.6	480
16-Jan	Tue		12.4	12.3	7.3	7.2	6.5		79	0.8				35.0	76.2	700
17-Jan	Wed		12.3	12.3	7.3	7.2	6.6		62	1.0				32.9	77.1	900
18-Jan	Thu								82	0.8	0.9		33	NT	NT	NT
19-Jan	Fri									0.9	1.0		20	31.2	75.8	1460
20-Jan	Sat									0.7	0.4		23	36.2	75.6	820
21-Jan	Sun		11.0	12.4	7.3	7.1	6.8			0.9	0.9		5	35.1	75.2	410
22-Jan	Mon								38	0.7	1.5		130	31.3	77.2	400
23-Jan	Tue		11.6	13.3	7.2	7.1	6.2		44	0.9	0.9		2	35.5	82.0	230
24-Jan	Wed		12.4	12.3	7.2	7.1	6.7		42	0.8				30.6	79.7	380
25-Jan	Thu		12.4	12.4	7.3	7.1	6.3		42	0.8				35.1	82.4	310
26-Jan	Fri									0.7				28.1	81.2	1470
27-Jan	Sat									1.0				30.3	82.9	1050
28-Jan	Sun		11.3	11.7	7.4	7.1	6.7			0.8				30.8	82.0	350
29-Jan	Mon		11.7	12.4	7.0	7.0	6.3		70	0.8	0.7		13	30.4	82.5	730
30-Jan	Tue								71	0.8	0.9		170	32.9	82.1	890
31-Jan	Wed		12.3	12.2	7.4	7.2	6.5		70	0.8	1.5		17	32.4	80.9	870
MIN	MIN		10.6	11.4	7.0	7.0	5.9	18.50	38	0.7	0.4		2	28.1	75.2	150
MAX	MAX		12.6	13.3	7.4	7.2	6.9	18.50	122	1.0	1.5		170	36.2	84.9	1470
AVE	AVE		11.9	12.3			6.4	18.50	62	0.8	1.0		25	32.3	80.2	627

January 2001

COMMENTS

Report Prepared By: Susan Lang

Report Checked By: Patty Nosslinger

Abbreviations

AVE	arithmetic average	ND	not detected	% REM	percent removal, calculated from daily concentrations
	(except Fecal Coli which is a geometric mean)	MGD	million gallons per day	%REM CALCTD	average percent removal, calculated from monthly
BOD5	biochemical oxygen demand, 5 day test	mg/L	milligrams per liter		average concentrations; reported on DMR per
CALCTD	calculated	mg/kg	milligrams per kilogram of dry weight		EPA guidelines
DO	dissolved oxygen	MPN	most probable number	S	sludge cake
deg C	degree(s) Celsius	NR	no analytical results or unusable data due	TDS	total dissolved solids
E	estimated result		to lab error or failure to meet quality control	TS	total solids
FE	final effluent		criteria	TSS	total suspended solids
G	grab	NT	not tested	TVS	total volatile solids
I	influent			VSS	volatile suspended solids
LWA	loading, weekly average			24 HC	24 hour flow composite
				24 HC (3G)	24 hour composite of one grab per each eight
					hour shift

Comments, Footnotes: P.1: The final effluent autosampler is normally taken off line on Saturdays, Mondays, and Wednesdays for line cleaning for approximately 1.5 hours each time; the composite samples for BODs, TSS, etc. are therefore slightly less than a 24HC on these days. High flow and high chlorides on Monday 1/15/01: Pat Bills went out to PS 2 first thing on Monday and saw that one pump was not working. The wet well was filled nearly to the top and millions of gallons of water were backed up probably as far back as the port. Pat got it working and got things back to normal. That accounts for all the extra water we got Monday. The high chlorides were due to inflow from the high tides during the weekend. We didn't see it until Monday because that water was backed up in the lines. FE BOD NR for 1/17-18 - seed correction not acceptable. BODs from January 28 - 30 reported as NR due to blank correction.

P.2.Sludge wasn't tested on 1/18 due to repairs that shut the burn down.

Wastewater metals, cyanide, and oil & grease analyses are conducted twice per year during toxic pollutant testing. Results are no longer reported on the MMR; they are filed in the toxic pollutant folders in the file room and reported in the annual report to EPA. Metals analyses on sludge for 40 CFR Part 503 are conducted periodically but are no longer reported on the MMR. Results are reported to EPA each year on February 19 on reports found in W:Wastewater\Asplund WWTF\Reports\Part503\.

T-19161, T-19162

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel 831.761.7277 Location: Bay 9	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178 **Chain of Custody No.** COC01AIA001

Required Completion Date: ASAP	P.O. #: AK01-1000	KLI Proj. #: 510.02

ANALYSIS TYPE: Static renewal chronic testing using (1) *Atherinops affinas* (Topsmelt), survival and growth test, (2) *Mytilus spp.*, survival and growth test, and (3) Stronglocentrus purpuratus (Purple urchin) fertilization test. Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms,* (EPA/600/4-87/028). Effluent and effluent + glycol testing: at least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above (1.4 and 2.8%) and two concentrations below (0.35 and 0.175). The maximum concentration of glycol to be tested will be 0.0854% (0.854 ml of glycol per 1 L of final effluent mixture) of the final effluent mixture, the new effluent + glycol will the be tested at the same dilutions as the final effluent. In addition new effluent will be made that contains: 50, 25, 12.5, 6.25, and 3.125% of the maximum glycol tested above and will be tested at the 0.70% ZID boundary concentration only. Reference toxicant testing must be performed concurrently. Results of the test will be reported in TUc, NOEC, EC_{50}, IC_{25}, and other endpoints that may be appropriate. Please see attached pages for further information, including reporting requirements. A separate report will be required for the effluent only test to satisfy Pt. Woronzof permit requirements. In addition a complete report that details all glycol and effluent testing will be prepared. BOD, COD, and refractometer tests will be performed as outlined.

MATRIX: Water (effluent)	**Preservative:** None (4° C)	**Container:** 1 Gallon Cubi-container * and ½ L HDPE **

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
AIA01TOX0001	1	1/7-1/8/01	06:00-06:00	Intact	T-19161-01-A *
AIA01GLY0001	1	N/A –		↓	T-19162-01-A**

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Mark Savoie	1/8/01 11:00	Fed-X	Doylen Clark	09Jan01/0945
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

T-19161 pg. 2 of 3

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel Location: Fig 9 831.761.7277	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178 **Chain of Custody No.** COC01AIA002
Required Completion Date: ASAP	P.O. #: AK01-1000 / KLI Proj. #: 510.02

ANALYSIS TYPE: Static renewal chronic testing using (1) *Atherinops affinas* (Topsmelt), survival and growth test, (2) *Mytilus spp.*, survival and growth test, and (3) Stronglocentrus purpuratus (Purple urchin) fertilization test. Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms,* (EPA/600/4-87/028). Effluent and effluent + glycol testing: at least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above (1.4 and 2.8%) and two concentrations below (0.35 and 0.175). The maximum concentration of glycol to be tested will be 0.0854% (0.854 ml of glycol per 1 L of final effluent mixture) of the final effluent mixture, the new effluent + glycol will the be tested at the same dilutions as the final effluent. In addition new effluent will be made that contains: 50, 25, 12.5, 6.25, and 3.125% of the maximum glycol tested above and will be tested at the 0.70% ZID boundary concentration only. Reference toxicant testing must be performed concurrently. Results of the test will be reported in TUc, NOEC, EC_{50}, IC_{25}, and other endpoints that may be appropriate. Please see attached pages for further information, including reporting requirements. A separate report will be required for the effluent only test to satisfy Pt. Woronzof permit requirements. In addition a complete report that details all glycol and effluent testing will be prepared. BOD, COD, and refractometer tests will be performed as outlined.

MATRIX: Water (effluent)	**Preservative:** None (4° C)	**Type of Container:** 1 Gallon Cubi-container

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
AIA01TOX0002	1	1/9-1/10/01	0600-0600	Intact	T-19161-01-13

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	1/10/01 10:21	hand	[signature]	1/10/01 10:20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	1/10/01 11:30	Fed-X	[signature]	11Jan01/0945
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

T-19161 Pg 3 of 3

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel Location: Bay 9 831.761.7277	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178 **Chain of Custody No.** COC01AIA003

Required Completion Date: ASAP	P.O. #: AK01-1000	KLI Proj. #: 510.02

ANALYSIS TYPE: Static renewal chronic testing using (1) *Atherinops affinas* (Topsmelt), survival and growth test, (2) *Mytilus spp.*, survival and growth test, and (3) Stronglocentrus purpuratus (Purple urchin) fertilization test. Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms,* (EPA/600/4-87/028). Effluent and effluent + glycol testing: at least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above (1.4 and 2.8%) and two concentrations below (0.35 and 0.175). The maximum concentration of glycol to be tested will be 0.0854% (0.854 ml of glycol per 1 L of final effluent mixture) of the final effluent mixture, the new effluent + glycol will the be tested at the same dilutions as the final effluent. In addition new effluent will be made that contains: 50, 25, 12.5, 6.25, and 3.125% of the maximum glycol tested above and will be tested at the 0.70% ZID boundary concentration only. Reference toxicant testing must be performed concurrently. Results of the test will be reported in TUc, NOEC, EC_{50}, IC_{25}, and other endpoints that may be appropriate. Please see attached pages for further information, including reporting requirements. A separate report will be required for the effluent only test to satisfy Pt. Woronzof permit requirements. In addition a complete report that details all glycol and effluent testing will be prepared. BOD, COD, and refractometer tests will be performed as outlined.

MATRIX: Water (effluent)	**Preservative:** None (4° C)	**Type of Container:** 1 Gallon Cubi-container

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
AIA01TOX0003	1	1/11-1/12/01	0600 - 0600	Intact	T-19161-01-C

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	1/12/01 9:55	hand	Mark A. Savoie	1/12/01 9:55
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Mark A. Savoie	1/12/01 11:30	Fed-x	J. Crowley	1/13/01 1015
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

T-19189 pg 1 of 3

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:	
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel 831.761.7277 Location: Frig 9	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178	**Chain of Custody No.** COC01MOA001
Required Completion Date: ASAP	P.O. #:AK01-1000	KLI Proj. #: 514.01

ANALYSIS TYPE: Static renewal chronic testing using 1) *Atherinops affinas* (Topsmelt), survival and growth test, Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms,* (EPA/600/4-87/028) and/or *West Coast Marine Methods Manuel, First Ed., Eds Chapman, Denton, Lazorchak,* EPA/600/R-95-136. At least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above and two concentrations below 0.70% Reference toxicant testing must be performed concurrently.

MATRIX: Water (effluent)	**Preservative:** None (4° C)	**Type of Container:** 2 Liter HDPE Container

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TOX0001	1	1/21-1/22/01	0600-0600	Intact	T-19189-01-A ~~Intact~~ DC

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	1/22/01 1023	hand	Mark A Savoie	1/22/01 1023
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Mark A Savoie	1/22/01 11:00	Fed-X	Douglas Clark	23 Jan 01/0940
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Mark A Savoie

T-19189 pg. 2 of 3

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel 831.761.7277 Location: Frig 9	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178 **Chain of Custody No.** COC01MOA002
Required Completion Date: ASAP	P.O. #:AK01-1000 / KLI Proj. #: 514.01

ANALYSIS TYPE: Static renewal chronic testing using 1) *Atherinops affinas* (Topsmelt), survival and growth test, Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms,* (EPA/600/4-87/028) and/or *West Coast Marine Methods Manuel, First Ed., Eds Chapman, Denton, Lazorchak,* EPA/600/R-95-136. At least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above and two concentrations below 0.70% Reference toxicant testing must be performed concurrently.

MATRIX: Water (effluent)	**Preservative:** None (4° C)	**Type of Container:** 2 Liter HDPE Container

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TOX002	1	1/23 - 1/24/01	0600 - 0600	Intact	T-19189-01-B

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	1/24/01 0900	hand	Mark A. Savoie	1/24/01 0900
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	~~1/24/01~~ 1-24-01 GL	Fred Ex	Douglas Clark	25Jan01/0940
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

T-19189 Pg. 3 of 3

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel 831.761.7277 Location: Frig 9	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178 **Chain of Custody No.** COC01MOA003
Required Completion Date: ASAP	P.O. #:AK01-1000 KLI Proj. #: 514.01

ANALYSIS TYPE: Static renewal chronic testing using 1) *Atherinops affinas* (Topsmelt), survival and growth test, Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms,* (EPA/600/4-87/028) and/or *West Coast Marine Methods Manuel, First Ed., Eds Chapman, Denton, Lazorchak,* EPA/600/R-95-136. At least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above and two concentrations below 0.70% Reference toxicant testing must be performed concurrently.

MATRIX: Water (effluent) | **Preservative:** None (4° C) | **Type of Container:** 2 Liter HDPE Container

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TOX003	1	1/25-1/26/01	0600-0600	Intact	T-19189-01-C

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	1/26/01 9:25	hand	[signature]	1/26/01 9:25
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
M. Savoie	1/26/01 11:20	Fed-X	Sara Clark	1/27/01 10:45
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): M. Savoie

APPENDIX C

Whole Effluent Toxicity Testing

C2 Toxscan

Second Quarter Test

KINNETIC LABORATORIES INCORPORATED

ToxScan Inc.
42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

John M. Aplund Wastewater Treatment Facility
Chronic Toxicity Testing - 2nd Quarter 2001
NPDES Permit No. AK-002255-1

Bivalve Chronic Bioassay Results:

SAMPLES RECEIVED 11 April 2001
(KLI Project 514.01)

Prepared for

KINNETIC LABORATORIES, INC.
Anchorage, Alaska

Prepared by

TOXSCAN, INC.
BIOASSAY DIVISION
Watsonville, California

May 2001

Introduction

One effluent sample from the Municipality of Anchorage's John M. Asplund ("Point Woronzof") Water Pollution Control Facility were collected by Kinnetic Laboratories, Inc. personnel and shipped via overnight air courier to ToxScan's laboratory in Watsonville, CA for whole effluent toxicity (WET) testing. The sample was collected as a 24-hr flow-based composite final effluent sample and was sampled on 9-10 April 2001. The sample arrived at ToxScan on 11 April, was assigned the ToxScan laboratory number T-19422, and the bioassay was initiated on the same day.

One short-term chronic toxicity test was requested as required by the National Pollutant Discharge Elimination System (NPDES) permit for the facility, a bivalve larvae survival and development test using the blue mussel (*Mytilus galloprovincialis*). The test is of short duration (48-hours) and requires only a single effluent sample.

Five concentrations of effluent plus a control were tested. Following permit directions, the five concentrations were 0.175%, 0.35%, 0.7%, 1.4% and 2.8%. Dilutions of the effluent were made with natural seawater from our laboratory system, resulting in test solutions whose salinity was high enough to be compatible with the requirements of the test organisms.

Methods

The test method followed Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. (EPA/600/R-95/136. August, 1995), and is briefly described below:

Mussel Larvae Survival and Development Test

Gravid mussels, supplied by Carlsbad Aquafarms, Carlsbad, CA, were induced to spawn by thermal stimulation. Eggs and sperm were collected in separate beakers filled with 0.45 µm-filtered seawater. After inspection, gametes from multiple individuals were screened and pooled. Egg density was determined by microscopically counting several 1-ml aliquots taken from the well-mixed egg beaker. Fertilization was accomplished by addition of an appropriate amount of sperm suspension. Tests were initiated when at least 90% fertilization was observed.

Larvae were tested at 16°C in 100 mm borosilicate glass test tubes containing 5 ml of test solution. After adequate fertilization was confirmed, an aliquot of embryos was pipetted into each test tube. Five extra test tubes were prepared in addition to those required for test and control replicates. These "extra" test containers were not incubated, but rather they were evaluated immediately after inoculation to provide the "initial recovery" data used to establish the mean number of embryos added to each test container.

At the end of the 48 hour exposure period the contents of each test tube were prepared for microscopic evaluation. Each tube was inverted at least five times to promote uniform mixing of contents, and then rapidly subsampled with a 1 ml Eppendorf pipette. The 1 ml subsample was placed onto a Sedgwick-Rafter counting slide and the total number of normal and abnormal larvae was determined. Larvae were scored for evidence of internal tissue inside a complete larval shell. Larvae which had a complete larval shell containing tissue were counted as normal, whereas empty shells and larvae with incomplete shells were scored as abnormal. On the assumption that

abnormal larvae would not survive, abnormals were counted as mortalities. Data were reported as percent of initial embryos which survived, and percent of survivors which showed normal development.

Results

Table1 presents the results of the mussel larvae bioassay. Statistical analysis of these data show that no effluent concentration tested produced significantly reduced survival or normal development of the test organisms. The NOEC for both survival and normal development was 2.8% effluent and the LOEC for both endpoints was >2.8%. Chronic toxicity units were <35.7 TUc. Table 2 summarizes the results of the concurrent reference toxicant bioassay using copper as the toxicant. The LC_{50} (for survival) was 6.25 ppb of copper and the EC_{50} (for normal development) was 6.35 ppb of copper. These are within our laboratory control chart limits, although the values are a little on the low side. This suggests that the test population was somewhat more sensitive to copper than usual. Tables 3 and 4 present the water quality monitoring data collected during the effluent and reference toxicant bioassays, respectively, and were within acceptable test limits. All test validity criteria were met in both the effluent and reference toxicant bioassays.

Discussion

In summary, no chronic toxicity to mussel larvae was produced by the tested concentrations of Point Woronzof effluent.

Monthly monitoring data for January 2001 that includes daily flow and laboratory test results that were conducted concurrently with the WET testing for the Point Woronzof Wastewater Treatment Facility are presented in Attachment 1. Plant flow, chemical concentrations, and other physical measurements were found to be typical for the Point Woronzof facility during the WET testing.

John M. Asplund WastewaterTreatment Facility NPDES Monitoring - 2nd Qtr 2001 WET Testing

Table 1

KLI - Alaska - *Mytilus edulis* Bioassay T-19422

Initial Recovery AVG: 3295.0

Sample ID	Rep	Number Normal	Number Abnormal	Total Recovered per 1 mL	Resus-pended Volume	Total # Normal Larvae Recovered	% Survival	Mean % Survival + S.D.	% Normal Develop-ment	Mean % Normal Development + S.D.	Survival Abbotts Corrected Value	Survival Mean Corrected Value	Normal Development Abbotts Corrected Value	Normal Development Mean Corrected Value
	1	107	5	112	31.5	3371	102.3		95.5					
LAB SW	2	123	6	129	31.5	3875	117.6	110.5	95.3	95.6				
CONTROL	3	114	4	118	31	3534	107.3	+	96.6	+				
	4	126	7	133	30	3780	114.7	7.0	94.7	0.8				
	1	113	7	120	30	3390	102.9		94.2		93.1		98.5	
0.175%	2	111	4	115	30	3330	101.1	105.4	96.5	96.7	91.5	95.4	101.0	101.2
	3	124	4	128	31	3844	116.7	+	96.9	+	105.6	+	101.4	+
	4	111	1	112	30	3330	101.1	7.5	99.1	2.0	91.5	6.8	103.7	2.1
	1	123	3	126	30.5	3752	113.9		97.6		103.1		102.2	
0.35%	2	127	4	131	30	3810	115.6	107.7	96.9	94.7	104.7	97.5	101.5	99.1
	3	100	10	110	31	3100	94.1	+	90.9	+	85.2	+	95.1	+
	4	112	8	120	31.5	3528	107.1	9.8	93.3	3.2	96.9	8.8	97.7	3.3
	1	118	3	121	30	3540	107.4		97.5		97.3		102.1	
0.70%	2	124	7	131	30	3720	112.9	108.5	94.7	96.2	102.2	98.3	99.1	100.6
	3	111	4	115	30.5	3386	102.7	+	96.5	+	93.0	+	101.0	+
	4	120	5	125	30.5	3660	111.1	4.5	96.0	1.2	100.6	4.1	100.5	1.2
	1	118	5	123	32	3776	114.6		95.9		103.7		100.4	
1.40%	2	126	6	132	33	4158	126.2	119.9	95.5	96.4	114.2	108.6	99.9	100.9
	3	141	6	147	31.5	4442	134.8	+	95.9	+	122.0	+	100.4	+
	4	109	2	111	31.5	3434	104.2	13.4	98.2	1.2	94.3	12.1	102.8	1.3
	1	116	12	128	30	3480	105.6		90.6		95.6		94.8	
2.80%	2	111	6	117	30	3330	101.1	111.8	94.9	94.3	91.5	101.2	99.3	98.6
	3	115	7	122	31	3565	108.2	+	94.3	+	97.9	+	98.6	+
	4	143	4	147	30.5	4362	132.4	14.0	97.3	2.8	119.8	12.7	101.8	2.9

NOEC = 2.8%
LOEC = >2.8%
TUc = <35.7

Table 2

KLI - Alaska - Copper Reference Toxicant- *Mytilus edulis* Bioassay for T-19422
RECOVERY: AVG: 3295

Sample ID	Rep	Number Normal	Number Abnormal	Total Recovered per 1 mL	Resus-pended Volume	Total # Normal Larvae Recovered	% Survival	Mean % Survival + S.D.	% Normal Develop-ment	Mean % Normal Developmer + S.D.	Survival Abbotts Corrected Value	Normal Development Mean Corrected Value	Abbotts Corrected Value	Mean Corrected Value
	1	107	8	115	32	3424	103.9	104.4	93.0	95.2				
Control	2	119	3	122	30	3570	108.3	+	97.5	+				
	3	111	6	117	30	3330	101.1	3.7	94.9	2.3				
	1	115	7	122	30	3450	104.7	107.1	94.3	94.0	100.3	102.5	99.1	98.8
2 ppb	2	117	7	124	30	3510	106.5	+	94.4	+	102.0	+	99.2	+
	3	115	8	123	31.5	3623	109.9	2.7	93.5	0.5	105.3	2.5	98.3	0.5
	1	96	27	123	31	2976	90.3	89.6	78.0	75.7	86.5	85.8	82.0	79.6
4 ppb	2	81	39	120	31.5	2552	77.4	+	67.5	+	74.1	+	70.9	+
	3	111	25	136	30	3330	101.1	11.8	81.6	7.3	96.8	11.3	85.8	7.7
	1	29	75	104	30	870	26.4	29.2	27.9	27.8	25.3	27.9	29.3	29.2
8 ppb	2	29	74	103	31	899	27.3	+	28.2	+	26.1	+	29.6	+
	3	36	96	132	31	1116	33.9	4.1	27.3	0.5	32.4	3.9	28.7	0.5
	1	2	65	67	30	60	1.8	1.5	3.0	2.4	1.7	1.5	3.1	2.6
16 ppb	2	0	86	86	30	0	0.0	+	0.0	+	0.0	+	0.0	+
	3	3	66	69	30	90	2.7	1.4	4.3	2.2	2.6	1.3	4.6	2.3
	1	0	16	16	31	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 ppb	2	0	21	21	31	0	0.0	+	0.0	+	0.0	+	0.0	+
	3	0	18	18	31.5	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LC50 = 6.51 ppb Cu (4.48 - 14.86 ppb Cu)
EC50 = 6.35 ppb Cu (5.40 - 13.90 ppb Cu)

Table 3

Start Date: 4/11/01
End Date: 4/13/01
ToxScan Number: T-19422

Client: KLI Alaska
Species: Mytilus edulis

Water Column Bioassay Monitoring

Sample ID	Parameter				MEAN	SD	MAX	MIN
Lab SW Control	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
	temp.	15.5	15.4	15.5	15.5	0.06	15.5	15.4
	DO	7.6		8.1	7.9	0.35	8.1	7.6
	salinity	33.4		33.5	33.5	0.07	33.5	33.4
0.175%	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
	temp.	15.5	15.5	15.5	15.5	0.00	15.5	15.5
	DO	7.7		8.2	8.0	0.35	8.2	7.7
	salinity	33.3		33	33.2	0.00	33.3	33.0
0.35%	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
	temp.	15.4	15.5	15.5	15.5	0.06	15.5	15.4
	DO	7.7		8.2	8.0	0.35	8.2	7.7
	salinity	33.3		33	33.2	0.21	33.3	33.0
0.70%	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
	temp.	15.4	15.5	15.4	15.4	0.06	15.5	15.4
	DO	7.7		8.2	8.0	0.35	8.2	7.7
	salinity	33.3		33	33.2	0.21	33.3	33.0
1.40%	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
	temp.	15.4	15.5	15.4	15.4	0.06	15.5	15.4
	DO	7.7		8.2	8.0	0.35	8.2	7.7
	salinity	33		33	33.0	0.00	33.0	33.0
2.80%	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
	temp.	15.4	15.5	15.4	15.4	0.06	15.5	15.4
	DO	7.7		8.1	7.9	0.28	8.1	7.7
	salinity	32.6		32.5	32.6	0.07	32.6	32.5

Table 4

Start Date: 4/11/01
End Date: 4/13/01
ToxScan Number: T-19422

Client: KLI Alaska - Reference Toxicant
Species: Mytilus edulis

COPPER

Reference Toxicant Monitoring

Sample ID	Parameter				MEAN	SD	MAX	MIN
	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
Lab SW	temp.	15.9	15.9	15.7	15.8	0.12	15.9	15.7
Control	DO	7.6		7.8	7.7	0.14	7.8	7.6
	salinity	33.2		35	34.1	1.27	35.0	33.2
	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
2 ppb	temp.	15.6	15.7	15.5	15.6	0.10	15.7	15.5
Cu	DO	7.6		8	7.8	0.28	8.0	7.6
	salinity	33.2		35	34.1	1.27	35.0	33.2
	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
4 ppb	temp.	15.6	15.7	15.5	15.6	0.10	15.7	15.5
Cu	DO	7.7		8	7.9	0.21	8.0	7.7
	salinity	33.3		34	33.7	0.49	34.0	33.3
	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
8 ppb	temp.	15.5	15.6	15.5	15.5	0.06	15.6	15.5
Cu	DO	7.7		8	7.9	0.21	8.0	7.7
	salinity	33.3		34	33.7	0.49	34.0	33.3
	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
16 ppb	temp.	15.5	15.6	15.5	15.5	0.06	15.6	15.5
Cu	DO	7.6		8	7.8	0.28	8.0	7.6
	salinity	33.3		33.5	33.4	0.14	33.5	33.3
	ph	8.1	8.1	8.1	8.1	0.00	8.1	8.1
32 ppb	temp.	15.9	15.5	15.5	15.6	0.23	15.9	15.5
Cu	DO	7.6		8	7.8	0.28	8.0	7.6
	salinity	33.3		33	33.2	0.21	33.3	33.0

Attachment 1

Monthly Monitoring Report - April 2001
John M. Asplund Wastewater Treatment Facility

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

April 2001

		Flow	BOD5							TS		TVS		Suspended Solids (TSS)							VSS		TDS	
		MGD	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L
			24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	24 HC	24 HC	24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	CALC	CALC
Date	Day		I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE	I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE
1-Apr	Sun	27.606																						
2-Apr	Mon	29.222	240	144		40	58491	35094		676	520	366	194	282	52		82	68727	12673		216	34	394	468
3-Apr	Tue	34.664	215	136		37	62156	39317		586	446	282	158	234	42		82	67649	12142		180	22	352	404
4-Apr	Wed	34.583	198	136		31	57108	39225		566	470	284	182	260	60		77	74990	17305		192	26	306	410
5-Apr	Thu	30.665	229	144	140	37	58566	36827	37616	600	494	306	178	288	54	52	81	73655	13810	13983	182	32	372	440
6-Apr	Fri	29.614																						
7-Apr	Sat	30.577																						
8-Apr	Sun	33.615																						
9-Apr	Mon	31.824	182	103		43	48305	27337		544	478	284	182	192	66		66	50959	17517		156	50	352	412
10-Apr	Tue	31.068	200	123		39	51821	31870		566	472	310	182	182	44		76	47157	11401		160	32	384	428
11-Apr	Wed	32.205	212	133		37	56941	35722		566	482	276	156	178	50		72	47809	13429		130	34	388	432
12-Apr	Thu	30.261	260	134	123	48	65618	33818	32187	534	474	264	170	202	26	47	87	50980	6562	12227	156	14	332	448
13-Apr	Fri	29.758																						
14-Apr	Sat	29.542																						
15-Apr	Sun	29.710																						
16-Apr	Mon	29.465	211	130		38	51851	31946		620	496	318	188	270	48		82	66349	11795		220	28	350	448
17-Apr	Tue	29.425	261	143		45	64051	35093		652	512	326	180	202	56		72	49572	13743		192	36	450	456
18-Apr	Wed	28.987	258	149		42	62372	36021		662	526	288	156	220	34		85	53185	8220		178	28	442	492
19-Apr	Thu	28.678	275	175	149	36	65773	41856	36229	712	526	352	176	262	34	43	87	62664	8132	10472	222	26	450	492
20-Apr	Fri	28.555																						
21-Apr	Sat	28.703																						
22-Apr	Sun	28.392																						
23-Apr	Mon	28.723	243	127		48	58211	30423		612	514	318	188	212	38		82	50785	9103		178	32	400	476
24-Apr	Tue	27.314	261	159		39	59455	36220		636	526	308	172	202	46		77	46015	10479		156	28	434	480
25-Apr	Wed	27.645	286	183		36	65940	42192		656	562	324	188	214	44		79	49340	10145		176	32	442	518
26-Apr	Thu	28.630	268	162	158	40	63991	38681	36879	664	544	336	192	220	32	40	85	52530	7641	9342	180	30	444	512
27-Apr	Fri	27.140																						
28-Apr	Sat	27.245																						
29-Apr	Sun	27.713																						
30-Apr	Mon	28.112	195	137	137	30	45719	32120	32120	604	550	304	192	184	24	24	87	43140	5627	5627	160	24	420	526
MIN		27.140	182	103	123	30	45719	27337	32120	534	446	264	156	178	24	24	66	43140	5627	5627	130	14	306	404
MAX		34.664	286	183	158	48	65940	42192	37616	712	562	366	194	288	66	52	87	74990	17517	13983	222	50	450	526
AVE		29.655	235	142			58610	35516		615	505	309	178	224	44			56206	11160		178	30	395	461
%REM CALCTD						39											80							

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

April 2001

		Parameter	Temp		pH		D O	Total Ammonia NH3 - N	Chloride	Total Chlorine Residual			Fecal Coli	Sludge Cake		Filtrate
		Units	deg C	deg C	units	units	mg/L	mg/L	mg/L	mg/L	mg/L		FC/100 mL	% TS	% TVS	mg/L SS
		MDL						0.02					2			
		Sample Type	G	G	G	G	G	24 HC	24 HC	24G/DAY AVE	G		G	24 HC (3 G)		24 HC (3 G)
Date	Day	Sample Point	I	FE	I	FE	FE	FE	I	FE	FE		FE	Discharge Belt		Belt press
1-Apr	Sun		10.9	10.8	7.6	7.3	7.2			0.8				31.9	77.2	1510
2-Apr	Mon		11.5	11.5	7.4	7.1	6.8		57	0.8	1.1		490	33.1	77.4	710
3-Apr	Tue		10.9	11.7	7.2	7.0	6.3		50	0.8	0.6		17	31.5	77.3	1020
4-Apr	Wed		10.5	10.6	7.5	7.2	7.1		50	0.8	1.3		22	32.0	73.5	470
5-Apr	Thu		11.3	11.4	7.3	7.2	6.9		48	0.8				33.9	72.8	740
6-Apr	Fri									0.7				33.3	74.0	740
7-Apr	Sat									0.8				35.8	76.0	520
8-Apr	Sun		10.2	11.2	7.3	6.9	6.8			0.8				35.1	75.9	410
9-Apr	Mon		11.4	11.2	7.3	7.0	6.4		50	0.8				32.1	75.1	530
10-Apr	Tue		11.0	11.4	7.2	7.0	6.7		46	0.7				31.8	74.9	560
11-Apr	Wed		11.2	11.4	7.5	7.1	6.5	13.8	53	0.7				32.7	76.1	370
12-Apr	Thu								46	0.8	1.0		11	33.1	73.9	340
13-Apr	Fri									0.8	0.6		23	32.6	75.6	630
14-Apr	Sat									0.8	0.8		5	33.5	77.0	990
15-Apr	Sun		10.2	12.0	7.2	7.0	6.7			0.7	0.8		23	33.4	77.6	310
16-Apr	Mon		11.4	11.5	7.5	7.4	6.2		64	0.7	0.8		130	32.9	78.4	290
17-Apr	Tue		11.5	11.7	7.6	7.3	6.2		66	0.6				31.8	78.3	570
18-Apr	Wed								64	0.8	1.7		14	31.9	77.7	410
19-Apr	Thu								65	0.7				32.8	77.1	520
20-Apr	Fri		12.1	12.1	7.5	7.4	6.4			0.8				30.7	76.7	480
21-Apr	Sat									0.8				32.2	75.5	100
22-Apr	Sun		10.3	12.1	7.0	7.0	6.0			0.7				33.8	77.6	360
23-Apr	Mon		11.6	12.1	7.5	7.3	6.1		52	0.6	0.8		170	33.7	76.6	400
24-Apr	Tue		11.2	12.1	7.4	7.3	6.0		46	0.7	1.1		8	31.8	77.2	820
25-Apr	Wed		11.0	12.5	7.2	7.0	5.6		53	0.7	0.5		22	32.1	79.0	770
26-Apr	Thu								54	0.8				33.7	77.4	600
27-Apr	Fri									0.8				32.3	77.7	600
28-Apr	Sat									0.9				28.8	77.1	470
29-Apr	Sun		10.3	11.8	7.4	7.2	6.0			0.8				30.8	77.0	410
30-Apr	Mon		12.3	12.9	7.5	7.3	6.6		44	0.7	1.8		34	31.1	76.6	1320
MIN	MIN		10.2	10.6	7.0	6.9	5.6	13.80	44	0.6	0.5		5	28.8	72.8	100
MAX	MAX		12.3	12.9	7.6	7.4	7.2	13.80	66	0.9	1.8		490	35.8	79.0	1510
AVE	AVE		11.1	11.7			6.4	13.80	53	0.8	1.0		29	32.5	76.5	599

April 2001

COMMENTS

Report Prepared By: Mark Spano

Report Checked By: Patty Nosslinger

Abbreviations

AVE	arithmetic average (except Fecal Coli which is a geometric mean)	ND	not detected	% REM	percent removal, calculated from daily concentrations
BOD5	biochemical oxygen demand, 5 day test	MGD	million gallons per day	%REM CALCTD	average percent removal, calculated from monthly average concentrations; reported on DMR per EPA guidelines
CALCTD	calculated	mg/L	milligrams per liter	S	sludge cake
DO	dissolved oxygen	mg/kg	milligrams per kilogram of dry weight	TDS	total dissolved solids
deg C	degree(s) Celsius	MPN	most probable number	TS	total solids
E	estimated result	NR	no analytical results or unusable data due to lab error or failure to meet quality control criteria	TSS	total suspended solids
FE	final effluent	NT	not tested	TVS	total volatile solids
G	grab			VSS	volatile suspended solids
I	influent			24 HC	24 hour flow composite
LWA	loading, weekly average			24 HC (3G)	24 hour composite of one grab per each eight hour shift

Comments, Footnotes: P.1: The final effluent autosampler is normally taken off line on Saturdays, Mondays, and Wednesdays for line cleaning for approximately 1.5 hours each time; the composite samples for BODs, TSS, etc. are therefore slightly less than a 24HC on these days. Extra grabs on 4/5/01 to make up for a missed sample the previous week.

Wastewater metals, cyanide, and oil & grease analyses are conducted twice per year during toxic pollutant testing. Results are no longer reported on the MMR; they are filed in the toxic pollutant folders in the file room and reported in the annual report to EPA. Metals analyses on sludge for 40 CFR Part 503 are conducted periodically but are no longer reported on the MMR. Results are reported to EPA each year on February 19 on reports found in W:Wastewater\Asplund WWTF\Reports\Part503\.

Permit Exceedances:

T-19422

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel Location: Bay 9 831.761.7277	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178 **Chain of Custody No.** COC01MOA004 COPY
Required Completion Date: ASAP	P.O. #:AK01-1002 / KLI Proj. #: 514.01

ANALYSIS TYPE: Static chronic toxicity testing using 1) *Mytilus spp.* (Blue mussel), survival and growth test, Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Esturine Organisms*, (EPA/600/4-87/028) and/or *West Coast Marine Methods Manuel, First Ed., Eds Chapman, Denton, Lazorchak*, EPA/600/R-95-136. At least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above and two concentrations below 0.70% Reference toxicant testing must be performed concurrently.

MATRIX: Water (effluent) | **Preservative:** None (4° C) | **Type of Container:** 2 Liter HDPE Container *

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TOX004	1	4/9-4/10/01	0600-0600	Intact	T-19422-01-A

DATA REPORTS MUST INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Edward [illegible]	4/10/01 11:35	hand	Mark Savoie	4/10/01 11:35
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Mark Savoie	4/10/01 1200	Fed-X	Douglas Clark	11 Apr 01 1100
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Mark Savoie

* Sample received - 1-1 Gal cubitainer DC

APPENDIX C

Whole Effluent Toxicity Testing

C3 Toxscan

Third Quarter Test

KINNETIC LABORATORIES INCORPORATED

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

John M. Asplund Wastewater Treatment Facility
Chronic Toxicity Testing - 3rd Quarter 2001
NPDES Permit No. AK002255-1

Bivalve Chronic Bioassay Results

SAMPLE RECEIVED 19 September 2001
(KLI Project 516.03)

Prepared for

KINNETIC LABORATORIES, INC.
Anchorage, Alaska

Prepared by

TOXSCAN, INC.
BIOASSAY DIVISION
Watsonville, California

November 2001

Introduction

One effluent sample from the Municipality of Anchorage's John M. Asplund ("Point Woronzof") Water Pollution Control Facility was collected by Kinnetic Laboratories, Inc. personnel and shipped via overnight air courier to ToxScan's laboratory in Watsonville, CA for whole effluent toxicity (WET) testing. The sample was collected as a 24-hr flow-based composite final effluent sample and was sampled on 17-18 September 2001. The sample arrived at ToxScan on 19 September, was assigned the ToxScan laboratory number T-19740, and the bioassay was initiated on the same day.

One short-term chronic toxicity test was requested as required by the National Pollutant Discharge Elimination System (NPDES) permit for the facility, a bivalve larvae survival and development test using the blue mussel (*Mytilus galloprovincialis*). The test is of short duration (48-hours) and requires only a single effluent sample.

Five concentrations of effluent plus a control were tested. Following permit directions, the five concentrations were 0.175%, 0.35%, 0.7%, 1.4% and 2.8%. Dilutions of the effluent were made with natural seawater from our laboratory system, resulting in test solutions whose salinity was high enough to be compatible with the requirements of the test organisms.

Methods

The test method followed Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. (EPA/600/R-95/136. August, 1995), and is briefly described below:

Mussel Larvae Survival and Development Test

Gravid mussels, supplied by Carlsbad Aquafarms, Carlsbad, CA, were induced to spawn by thermal stimulation. Eggs and sperm were collected in separate beakers filled with 0.45 µm-filtered seawater. After inspection, gametes from multiple individuals were screened and pooled. Egg density was determined by microscopically counting several 1-ml aliquots taken from the well-mixed egg beaker. Fertilization was accomplished by addition of an appropriate amount of sperm suspension. Tests were initiated when at least 90% fertilization was observed.

Larvae were tested at 16°C in 100 mm borosilicate glass test tubes containing 5 ml of test solution. After adequate fertilization was confirmed, an aliquot of embryos was pipetted into each test tube. Five extra test tubes were prepared in addition to those required for test and control replicates. These "extra" test containers were not incubated, but rather they were evaluated immediately after inoculation to provide the "initial recovery" data used to establish the mean number of embryos added to each test container.

At the end of the 48 hour exposure period the contents of each test tube were prepared for microscopic evaluation. Each tube was inverted at least five times to promote uniform mixing of contents, and then rapidly subsampled with a 1 ml Eppendorf pipette. The 1 ml subsample was

placed onto a Sedgwick-Rafter counting slide and the total number of normal and abnormal larvae was determined. Larvae were scored for evidence of internal tissue inside a complete larval shell. Larvae which had a complete larval shell containing tissue were counted as normal, whereas empty shells and larvae with incomplete shells were scored as abnormal. On the assumption that abnormal larvae would not survive, abnormals were counted as mortalities. Data were reported as percent of initial embryos which survived, and percent of survivors which showed normal development.

Results

The results of the mussel larvae bioassays are presented in the attached TOXIS reports (Appendix A). Statistical analysis of the effluent data show that the 2.8% effluent concentration produced significantly reduced normal development of the test organisms. Therefore, the NOEC for normal development was 1.4% effluent, and the LOEC was 2.8%. For survival, the NOEC was 2.8% effluent and the LOEC was >2.8%. Chronic toxicity units were 71.4 TUc (development) and ≤35.7 TUc (survival). When normalized to 100% effluent, these values convert to 2.0 TUc for normal development, and to ≤1.0 TUc for survival.

The results of the concurrent reference toxicant bioassay using copper as the toxicant show the LC_{50} (for survival) was 9.90 ppb of copper (95% C.L. 9.6 - 10.2) and the EC_{50} (for normal development) was 11.5 ppb of copper (95% C.L. 11.3 - 11.7). These are within our laboratory control chart limits. The water quality monitoring data collected during the effluent and reference toxicant bioassays are presented in their respective TOXIS reports. All test validity criteria were met in both the effluent and reference toxicant bioassays.

Discussion

In summary, although this effluent produced nominal chronic toxicity to mussel larvae development of 71.4TU this number is a statistical artifact of a data set with extremely low variance. The development LOEC concentration of 2.8% effluent produced >95% normal larvae and also allowed survival of >97% larvae. Therefore, this effluent contained minimal levels of toxicity. No statistically significant toxicity was observed for the survival endpoint for any of the tested concentrations when compared to the control.

Monthly monitoring data for January 2001 that includes daily flow and laboratory test results that were conducted concurrently with the WET testing for the Point Woronzof Wastewater Treatment Facility are presented in Appendix C. Plant flow, chemical concentrations, and other physical measurements were found to be typical for the Point Woronzof facility during the WET testing.

Appendix A

Toxis Reports

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
17-Sep-01	19-Sep-01	19740ME-A

SPECIES: Mytilus edulis

TEST MATERIAL: Effluent - Industrial (%)

SOURCE: AK0022551 Municipality of Anchorage
JM Asplund WWTF- Pt Woronzof

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

REFERENCE TOXICANT TEST: 19740ME-R

Jim Crowley
Analyst (print name)

J. Crowley JR
Signature

Bioassay Lab Mgr
Title

11/6/01
Date

Dave Lewis
Supervisor (print name)

D B Lewis
Signature

Bioassay Director
Title

11/5/01
Date

ToxScan, Inc.

BIVALVE TEST DATA

Test Number: 19740ME-A (x) Chronic ( ) Acute hours

Test Date: 19-Sep-01

Source: AK0022551 Test Material: EFF2 (%)

Conc	Rep	Cont. No.	Initial Density	Final Density	Prop Alive	Normal	Ab-Normal	Prop Normal
0.00 D	1		3899	3224	.83	104	10	.91
0.00 D	2		3899	3749	.96	119	10	.92
0.00 D	3		3899	3538	.91	116	12	.91
0.00 D	4		3899	3441	.88	111	6	.95
.18 D	1		3899	4662	1.00	148	16	.90
.18 D	2		3899	3330	.85	111	9	.93
.18 D	3		3899	3325	.85	109	18	.86
.18 D	4		3899	3193	.82	103	10	.91
.35 D	1		3899	4347	1.00	138	15	.90
.35 D	2		3899	3969	1.00	126	7	.95
.35 D	3		3899	3630	.93	110	9	.92
.35 D	4		3899	3654	.94	116	7	.94
.70 D	1		3899	3538	.91	116	13	.90
.70 D	2		3899	3782	.97	122	10	.92
.70 D	3		3899	3900	1.00	130	16	.89
.70 D	4		3899	3906	1.00	126	14	.90
1.40 D	1		3899	3497	.90	111	15	.88
1.40 D	2		3899	3906	1.00	126	12	.91
1.40 D	3		3899	3379	.87	109	11	.91
1.40 D	4		3899	4179	1.00	137	18	.88
2.80 D	1		3899	3503	.90	113	17	.87
2.80 D	2		3899	3477	.89	114	12	.90
2.80 D	3		3899	3100	.80	100	14	.88
2.80 D	4		3899	3488	.89	109	18	.86

ToxScan, Inc.

Test Date: 9/19/01
Sample Date: 9/17/01
Species: Mytilus edulis
Test Type: Chronic

Test Number: 19740ME-A
Test Material: Effluent - Industrial %
Source: AK0022551
Municipality of Anchorage
JM Asplund WWTF- Pt Woronzof

SUMMARY

End Point	Day	Transformation		Conc		#Reps	Mean	StDev	% Surv
Proportion Normal		Arc sine sqrt w/ adj.							
			X	0.000	D	4	1.29	.037	
			X	.175	D	4	1.25	.047	
			X	.350	D	4	1.30	.040	
			X	.700	D	4	1.26	.025	
			X	1.400	D	4	1.24	.027	
			X	2.800	D	4	1.21	.031	
Proportion Normal		No transformation							
				0.000	D	4	.92	.019	
				.175	D	4	.90	.029	
				.350	D	4	.93	.021	
				.700	D	4	.90	.015	
				1.400	D	4	.90	.016	
				2.800	D	4	.88	.020	
Proportion Alive		Arc sine sqrt w/ adj.							
			X	0.000	D	4	1.25	.096	
			X	.175	D	4	1.26	.201	
			X	.350	D	4	1.44	.145	
			X	.700	D	4	1.45	.146	
			X	1.400	D	4	1.39	.199	
			X	2.800	D	4	1.21	.070	
Proportion Alive		No transformation							
				0.000	D	4	.89	.056	
				.175	D	4	.88	.081	
				.350	D	4	.97	.038	
				.700	D	4	.97	.044	
				1.400	D	4	.94	.069	
				2.800	D	4	.87	.050	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Normal		Arc sine sqrt w/ adj.					
		Dunnett	1.400	2.800	71.43	.001	
Proportion Alive	7	Arc sine sqrt w/ adj.					
		Dunnett	> 2.800	> 2.800	< 35.71	.023	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P	Conc	95% CI	TU
Proportion Normal		Probit				
			EC 10	> 2.800	-	< 35.71
			EC 25	> 2.800	-	< 35.71
			EC 50	> 2.800	-	< 35.71

ToxScan, Inc.

WATER QUALITY

Test Number: 19740ME-A Test Date: 19-Sep-2001 Source: AK0022551

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	8.00	7.8	31.10	15.2							
	Maximum	8.10	8.1	32.60	16.4							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	7.8	31.10	16.1							
	Maximum	8.10	8.0	32.60	16.4							
Day: 1												
	Minimum	8.00			15.2							
	Maximum	8.10			15.3							
Day: 2												
	Minimum	8.00	8.1	31.30	15.2							
	Maximum	8.00	8.1	32.00	15.2							

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
17-Sep-01	19-Sep-01	19740ME-R

SPECIES: Mytilus edulis

TEST MATERIAL: Copper sulfate (ug/l)

SOURCE: REF Reference Toxicant

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

Jim Crowley — Bioassay Lab Mgr

Analyst (print name) — Title

J. Crowley (DR) — 11/6/01

Signature — Date

Dave Lewis — Bioassay Director

Supervisor (print name) — Title

DB Lewis — 11/5/01

Signature — Date

ToxScan, Inc.

BIVALVE TEST DATA

Test Number: 19740ME-R (x) Chronic ( ) Acute hours

Test Date: 19-Sep-01

Source: REF Test Material: CUSO (ug/l)

Conc	Rep	Cont. No.	Initial Density	Final Density	Prop Alive	Normal	Ab-Normal	Prop Normal
0.00 D	1		3899	4278	1.00	138	9	.94
0.00 D	2		3899	4031	1.00	139	7	.95
0.00 D	3		3899	4230	1.00	141	5	.97
2.00 D	1		3899	3150	.81	100	4	.96
2.00 D	2		3899	3534	.91	114	5	.96
2.00 D	3		3899	4514	1.00	148	10	.94
4.00 D	1		3899	4247	1.00	137	15	.90
4.00 D	2		3899	3210	.82	107	10	.91
4.00 D	3		3899	3569	.92	117	12	.91
8.00 D	1		3899	3131	.80	101	20	.83
8.00 D	2		3899	3472	.89	112	18	.86
8.00 D	3		3899	3450	.88	115	19	.86
16.00 D	1		3899	0	0.00	0	112	0.00
16.00 D	2		3899	0	0.00	0	94	0.00
16.00 D	3		3899	0	0.00	0	114	0.00
32.00 D	1		3899	0	0.00	0	69	0.00
32.00 D	2		3899	0	0.00	0	71	0.00
32.00 D	3		3899	0	0.00	0	64	0.00

ToxScan, Inc.

Test Date: 9/19/01
Sample Date: 9/17/01
Species: Mytilus edulis
Test Type: Chronic

Test Number: 19740ME-R
Test Material: Copper sulfate ug/l
Source: REF
Reference Toxicant

SUMMARY

End Point	Day	Transformation		Conc	#Reps	Mean	StDev	% Surv
Proportion Normal		Arc sine sqrt w/ adj.						
			X	0.000 D	3	1.35	.032	
			X	2.000 D	3	1.35	.031	
			X	4.000 D	3	1.26	.011	
			X	8.000 D	3	1.18	.020	
				16.000 D	3	.05	0.000	
				32.000 D	3	.05	0.000	
Proportion Normal		No transformation						
				0.000 D	3	.95	.013	
				2.000 D	3	.95	.013	
				4.000 D	3	.91	.007	
				8.000 D	3	.85	.015	
				16.000 D	3	0.00	0.000	
				32.000 D	3	0.00	0.000	
Proportion Alive		Arc sine sqrt w/ adj.						
			X	0.000 D	3	1.56	0.000	
			X	2.000 D	3	1.31	.228	
			X	4.000 D	3	1.33	.217	
			X	8.000 D	3	1.19	.068	
				16.000 D	3	.01	0.000	
				32.000 D	3	.01	0.000	
Proportion Alive		No transformation						
				0.000 D	3	1.00	0.000	
				2.000 D	3	.90	.096	
				4.000 D	3	.91	.088	
				8.000 D	3	.86	.049	
				16.000 D	3	0.00	0.000	
				32.000 D	3	0.00	0.000	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Normal		Arc sine sqrt w/ adj.					
		Dunnett + t-test				.000	
Proportion Alive	7	Arc sine sqrt w/ adj.					
		Dunnett + t-test				.017	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P	Conc	95% CI	TU
Proportion Alive		Spearman-Karber				
			EC 50	13.229	-	
Proportion Normal		Linear Interpolation				
			EC 10	7.609	5.31 - 8.58	
			EC 25	9.290	9.01 - 9.55	
			EC 40	10.632	10.42 - 10.79	
			EC 50	11.527	11.34 - 11.67	

ToxScan, Inc.

WATER QUALITY

Test Number: 19740ME-R Test Date: 19-Sep-2001 Source: REF

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	8.00	7.5	33.20	15.2							
	Maximum	8.20	8.1	33.50	15.7							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	7.5	33.20	15.3							
	Maximum	8.20	7.9	33.20	15.7							
Day: 1												
	Minimum	8.10			15.2							
	Maximum	8.10			15.4							
Day: 2												
	Minimum	8.00	8.0	33.20	15.2							
	Maximum	8.10	8.1	33.50	15.4							

Appendix B

Summary of Test Conditions

TABLE B-1 Bivalve Larvae Bioassay

Test Type:	Static
Test Endpoints:	Normal Development Survival
Test Duration:	48 hours
Temperature:	16 ± 1°C
Photoperiod:	16:8 L:D
Start:	19 September 2001
Finish:	21 September 2001
Test Containers:	250 mL HDPE cups
Test Volume:	150 mL
Test Material:	POTW Effluent
Test Concentrations:	2.8%, 1.4%, 0.7%, 0.35%, 0.175%, and 0%(control)
# Replicates:	4
Organisms per replicate:	$\bar{X}$ = 3899
Test Species:	*Mytilus* (*galloprovincialis*) *edulis*
Source:	Carlsbad Aquafarms
Age:	Embryo larvae
Dilution/Control water:	1.0 micron- filtered laboratory seawater
Diet:	n/a

Appendix C

Monthly Monitoring Report - September 2001
John M. Asplund Wastewater Treatment Facility

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

September 2001

		Flow	BOD5							TS		TVS		Suspended Solids (TSS)							VSS		TDS	
		MGD	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L
			24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	24 HC	24 HC	24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	CALC	CALC
Date	Day		I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE	I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE
1-Sep	Sat	25.210																						
2-Sep	Sun	25.010																						
3-Sep	Mon	28.399	192	115		40	45475	27237		552	506	236	134	182	38		79	43106	9000		160	26	370	468
4-Sep	Tue	28.727	252	155		38	60375	37135		620	510	308	152	228	32		86	54625	7667		180	24	392	478
5-Sep	Wed	28.203	225	150		33	52923	35282		648	560	306	180	250	42		83	58803	9879		182	32	398	518
6-Sep	Thu	26.455	283	173		39	62440	38170		710	568	372	176	236	52		78	52070	11473		190	42	474	516
7-Sep	Fri	26.762																						
8-Sep	Sat	26.525			148				34456	684	544	290	134	248	38	40	85	54862	8406	9285	200	26	436	506
9-Sep	Sun	26.410																						
10-Sep	Mon	26.409	268	146		46	59027	32157		858	548	486	182	304	50		84	66956	11013		250	36	554	498
11-Sep	Tue	25.216	261	169		35	54889	35541		762	596	348	198	272	58		79	57202	12197		214	36	490	538
12-Sep	Wed	25.337	274	170		38	57899	35923		708	528	322	162	236	44		81	49869	9298		186	30	472	484
13-Sep	Thu	26.275	243	153		37	53249	33527		772	562	404	184	268	44		84	58728	9642		212	28	504	518
14-Sep	Fri	26.177																						
15-Sep	Sat	25.792			160				34287							49				10537				
16-Sep	Sun	26.384																						
17-Sep	Mon	26.533	190	133		30	42044	29431		624	554	284	160	226	40		82	50010	8851		174	24	398	514
18-Sep	Tue	26.522	225	145		36	49769	32073		706	554	390	178	296	58		80	65473	12829		252	48	410	496
19-Sep	Wed	26.730	237	147		38	52834	32770		642	536	328	164	232	38		84	51719	8471		192	36	410	498
20-Sep	Thu	25.866	252	149		41	54362	32143		602	556	308	188	244	36		85	52636	7766		202	30	358	520
21-Sep	Fri	26.191																						
22-Sep	Sat	26.164			144				31604							43				9479				
23-Sep	Sun	26.216																						
24-Sep	Mon	26.218	238	130		45	52041	28426		698	542	338	188	272	42		85	59475	9184		230	38	426	500
25-Sep	Tue	25.987	253	146		42	54833	31643		652	474	292	110	312	32		90	67620	6935		264	24	340	442
26-Sep	Wed	26.032	240	143		40	52106	31046		686	524	320	154	240	44		82	52106	9553		200	36	446	480
27-Sep	Thu	26.248	249	138		45	54508	30209		688	512	346	166	252	44		83	55165	9632		214	40	436	468
28-Sep	Fri	26.032																						
29-Sep	Sat	26.212			139				30331							41				8826				
30-Sep	Sun	26.994																						
MIN		25.010	190	115	139	30	42044	27237	30331	552	474	236	110	182	32	40	78	43106	6935	8826	160	24	340	442
MAX		28.727	283	173	160	46	62440	38170	34456	858	596	486	198	312	58	49	90	67620	12829	10537	264	48	554	538
AVE		26.375	243	148	148		53673	32670		683	540	334	165	253	43			55907	9517		206	33	430	497
%REM CALCTD						39											83							

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

September 2001

		Parameter	Temp		pH		D O	Total Ammonia NH3 - N	Chloride	Total Chlorine Residual			Fecal Coli	Sludge Cake		Filtrate
		Units	deg C	deg C	units	units	mg/L	mg/L	mg/L	mg/L	mg/L		FC/100 mL	% TS	% TVS	mg/L SS
		MDL						0.03					2			
		Sample Type	G	G	G	G	G	24 HC	24 HC	24G/DAY AVE	G		G	24 HC (3 G)		24 HC (3 G)
Date	Day	Sample Point	I	FE	I	FE	FE	FE	I	FE	FE		FE	Discharge Belt		Belt press
1-Sep	Sat									0.8				35.6	70.5	940
2-Sep	Sun		17.2	15.9	7.2	6.9	6.4			0.8				37.3	71.3	550
3-Sep	Mon		15.3	15.7	7.2	7.0	5.1		48	0.8				36.0	71.1	630
4-Sep	Tue		16.5	16.5	7.4	7.0	5.6		46	0.7	1.4		5	37.5	69.8	380
5-Sep	Wed		16.3	16.4	7.4	7.1	5.0		38	0.7	1.2		17	37.2	72.4	350
6-Sep	Thu		16.5	16.6	7.3	7.1	4.9		52	0.8	2.1	<	2	36.4	71.3	430
7-Sep	Fri									0.8				36.0	73.1	720
8-Sep	Sat									0.9				36.4	74.1	480
9-Sep	Sun		15.1	15.2	7.1	6.9	4.6			0.9				36.2	73.3	490
10-Sep	Mon		16.1	16.6	7.3	7.1	4.8		79	0.7	1.0		26	35.4	74.3	520
11-Sep	Tue								82	0.6				35.1	75.1	1020
12-Sep	Wed		16.4	16.3	7.4	7.0	4.4		78	0.7	0.9		8	36.8	73.9	510
13-Sep	Thu		16.5	16.4	7.4	7.1	3.7		70	0.7	0.6		23	34.4	73.6	780
14-Sep	Fri									0.7				34.2	73.1	690
15-Sep	Sat									0.7				36.5	73.2	570
16-Sep	Sun		15.5	16.5	7.1	6.9	5.5			0.9				35.7	74.1	610
17-Sep	Mon							19.6	68	0.8				36.4	73.5	650
18-Sep	Tue								61	0.7				34.6	74.9	540
19-Sep	Wed		16.5	16.7	7.3	7.1	6.1		57	0.8				33.0	76.3	900
20-Sep	Thu		15.7	16.5	7.3	7.1	5.6		48	0.8	0.6		8	31.8	76.7	750
21-Sep	Fri		16.4	16.4	7.4	7.1	5.3			0.9	0.6		1800	35.3	77.5	1040
22-Sep	Sat									0.8	1.5		29	32.0	77.0	740
23-Sep	Sun		14.9	15.7	7.6	7.3	5.7			0.9	1.8	<	2	33.6	77.6	720
24-Sep	Mon		16.3	16.1	7.3	7.1	6.1		82	0.7	0.4		33	34.6	77.2	590
25-Sep	Tue		15.6	16.3	7.2	6.9	4.9		77	0.8	0.7		8	34.5	79.3	490
26-Sep	Wed		16.3	16.5	7.4	7.1	5.2		80	0.7				33.9	77.6	510
27-Sep	Thu								76	0.7				35.1	75.7	630
28-Sep	Fri									0.8				35.2	77.6	790
29-Sep	Sat									0.7				33.9	78.7	430
30-Sep	Sun		14.8	15.5	NT	NT	5.1			0.7				33.8	76.9	460
MIN	MIN		14.8	15.2	7.1	6.9	3.7	19.60	38	0.6	0.4	<	2	31.8	69.8	350
MAX	MAX		17.2	16.7	7.6	7.3	6.4	19.60	82	0.9	2.1		1800	37.5	79.3	1040
AVE	AVE		16.0	16.2			5.2	19.60	65	0.8	1.1		15	35.1	74.7	630

September 2001

COMMENTS

Report Prepared By: Angie Monteleone

Report Checked By: Paul Smith

Abbreviations

AVE	arithmetic average (except Fecal Coli which is a geometric mean)	ND	not detected	% REM	percent removal, calculated from daily concentrations
BOD5	biochemical oxygen demand, 5 day test	MGD	million gallons per day	%REM CALCTD	average percent removal, calculated from monthly average concentrations; reported on DMR per EPA guidelines
CALCTD	calculated	mg/L	milligrams per liter	S	sludge cake
DO	dissolved oxygen	mg/kg	milligrams per kilogram of dry weight	TDS	total dissolved solids
deg C	degree(s) Celsius	MPN	most probable number	TS	total solids
E	estimated result	NR	no analytical results or unusable data due to lab error or failure to meet quality control criteria	TSS	total suspended solids
FE	final effluent	NT	not tested	TVS	total volatile solids
G	grab			VSS	volatile suspended solids
I	influent			24 HC	24 hour flow composite
LWA	loading, weekly average			24 HC (3G)	24 hour composite of one grab per each eight hour shift

Comments, Footnotes: P.1: The final effluent autosampler is normally taken off line on Saturdays, Mondays, and Wednesdays for line cleaning for approximately 1.5 hours each time; the composite samples for BODs, TSS, etc. are therefore slightly less than a 24HC on these days.
P.2: Scheduled pH on 9/30/01 not measured due to non-functioning meter. Extra tests will be scheduled the following week to compensate.

MMR; they are filed in the toxic pollutant folders in the file room and reported in the annual report to EPA. Metals analyses on sludge for 40 CFR Part 503 are conducted periodically but are no longer reported on the MMR. Results are reported to EPA each year on February 19 on reports found in W:Wastewater\Asplund WWTF\Reports\Part503\.

Permit Exceedances:

1-19740

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 ATTN: Ray Markel 831.761.7277 Location: Frig 9	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Mark Savoie 907.276.6178

Required Completion Date: ASAP	P.O. #: AK01-1034	KLI Proj. #: 516.03

ANALYSIS TYPE: Static renewal chronic testing using 1)*Mytilus spp.* (Blue mussel), survival and growth test, Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,* (EPA/600/4-87/028) and/or *West Coast Marine Methods Manuel, First Ed., Eds Chapman, Denton, Lazorchak,* EPA/600/R-95-136. At least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above and two concentrations below 0.70% Reference toxicant testing must be performed concurrently.

MATRIX: Water (effluent)	**Preservative:** None (4° C)	**Type of Container:** 2 Liter HDPE Container

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME (MAS)	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TOX005	1	9/17-9/18/01	~~0815~~-0600 0605	INTACT	T.19740-01-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Susan Lang	9/18/01 0900	hand	M Savoie	9/18/01 0900
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
M. Savoie	9/18/01 1015	Fed-X	[illegible]	9/19/01 1045
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): Susan Lang / Susan Lang

APPENDIX C

Whole Effluent Toxicity Testing

C4 Toxscan

Fourth Quarter Test

KINNETIC LABORATORIES INCORPORATED

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

John M. Asplund Wastewater Treatment Facility
Chronic Toxicity Testing - 4th Quarter 2001
NPDES Permit No. AK002255-1

Bivalve Chronic Bioassay Results

SAMPLE RECEIVED 7 November 2001
(KLI Project 516.03)

Prepared for

KINNETIC LABORATORIES, INC.
Anchorage, Alaska

Prepared by

TOXSCAN, INC.
BIOASSAY DIVISION
Watsonville, California

December 2001

Introduction

One effluent sample from the Municipality of Anchorage's John M. Asplund ("Point Woronzof") Water Pollution Control Facility was collected by Kinnetic Laboratories, Inc. personnel and shipped via overnight air courier to ToxScan's laboratory in Watsonville, CA for whole effluent toxicity (WET) testing. The sample was collected as a 24-hr flow-based composite final effluent sample and was sampled on 5-6 November 2001. The sample arrived at ToxScan on 7 November and was assigned the ToxScan laboratory number T-19873; the bioassay was initiated on the same day.

One short-term chronic toxicity test was requested as required by the National Pollutant Discharge Elimination System (NPDES) permit for the facility, a bivalve larvae survival and development test using the blue mussel (*Mytilus (edulis) galloprovincialis*). The test is of short duration (48-hours) and requires only a single effluent sample.

Five concentrations of effluent plus a control were tested. Following permit directions, the five concentrations were 0.175%, 0.35%, 0.7%, 1.4% and 2.8%. Dilutions of the effluent were made with natural seawater from our laboratory system, resulting in test solutions whose salinity was high enough to be compatible with the requirements of the test organisms.

Methods

The test method followed Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, August 1995), and is briefly described below:

Mussel Larvae Survival and Development Test

Gravid mussels, supplied by Carlsbad Aquafarms, Carlsbad, CA, were induced to spawn by thermal stimulation. Eggs and sperm were collected in separate beakers filled with 0.45 µm-filtered seawater. After inspection, gametes from multiple individuals were screened and pooled. Egg density was determined by microscopically counting several 1-mL aliquots taken from the well-mixed egg beaker. Fertilization was accomplished by addition of an appropriate amount of sperm suspension. Tests were initiated when at least 90% fertilization was observed.

Larvae were tested at 16°C in 100 mm borosilicate glass test tubes containing 5 ml of test solution. After adequate fertilization was confirmed, an aliquot of embryos was pipetted into each test tube. Five extra test tubes were prepared in addition to those required for test and control replicates. These "extra" test containers were not incubated, but rather they were evaluated immediately after inoculation to provide the "initial recovery" data used to establish the mean number of embryos added to each test container.

At the end of the 48 hour exposure period the contents of each test tube were prepared for microscopic evaluation. Each tube was inverted at least five times to promote uniform mixing of contents, and then rapidly subsampled with a 1 mL Eppendorf pipette. The 1 mL subsample was placed onto a Sedgwick-Rafter counting slide and the total number of normal and abnormal larvae

was determined. Larvae were scored for evidence of internal tissue inside a complete larval shell. Larvae which had a complete larval shell containing tissue were counted as normal, whereas empty shells and larvae with incomplete shells were scored as abnormal. On the assumption that abnormal larvae would not survive, abnormals were counted as mortalities. Data were reported as percent of initial embryos which survived, and percent of survivors which showed normal development.

Results

The results of the mussel larvae bioassays are presented in the attached TOXIS reports (Appendix A). Statistical analysis of the effluent data show that none of the effluent concentrations produced significantly reduced normal development of the test organisms. Therefore, the NOEC for normal development was 2.8% effluent, and the LOEC was >2.8%. For survival, the NOEC was 2.8% effluent and the LOEC was >2.8%. Chronic toxicity units were <35.7 TUc for both development and survival.

The results of the concurrent reference toxicant bioassay using copper as the toxicant show the LC_{50} (for survival) was 13.34 ppb of copper (95% C.L. 13.33 - 13.36) and the EC_{50} (for normal development) was 11.3 ppb of copper (95% C.L. 11.1 - 11.5). These are within our laboratory control chart limits. The water quality monitoring data collected during the effluent and reference toxicant bioassays are presented in their respective TOXIS reports. A summary of test conditions is presented in Appendix B. All test validity criteria were met in both the effluent and reference toxicant bioassays.

Discussion

In summary, this effluent produced no significant chronic toxicity to mussel larvae survival and normal development.

Monthly monitoring data for November 2001 that includes daily flow and laboratory test results that were conducted concurrently with the WET testing for the Point Woronzof Wastewater Treatment Facility are presented in Appendix C. Plant flow, chemical concentrations, and other physical measurements were found to be typical for the Point Woronzof facility during the WET testing.

Appendix A

Toxis Reports

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
5-Nov-01	7-Nov-01	19873ME-A

SPECIES: Mytilus edulis

TEST MATERIAL: Effluent - Industrial (%)

SOURCE: AK0022551 Municipality of Anchorage
JM Asplund WWTF- Pt Woronzof

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

REFERENCE TOXICANT TEST: 19873ME-R

Jim Crowley
Analyst (print name)

Bioassay Lab Manager
Title

Signature

Date

Dave Lewis
Supervisor (print name)

Bioassay Director
Title

DB Lewis
Signature

11/21/01
Date

ToxScan, Inc.

BIVALVE TEST DATA

Test Number: 19873ME-A (x) Chronic ( ) Acute hours

Test Date: 7-Nov-01

Source: AK0022551 Test Material: EFF2 (%)

Conc	Rep	Cont. No.	Initial Density	Final Density	Prop Alive	Normal	Ab-Normal	Prop Normal
0.00 D	1		3707	3538	.95	116	8	.94
0.00 D	2		3707	3402	.92	108	8	.93
0.00 D	3		3707	4188	1.00	125	6	.95
0.00 D	4		3707	4110	1.00	137	6	.96
.18 D	1		3707	4154	1.00	134	3	.98
.18 D	2		3707	3100	.84	100	5	.95
.18 D	3		3707	4209	1.00	138	7	.95
.18 D	4		3707	3348	.90	108	6	.95
.35 D	1		3707	3782	1.00	124	7	.95
.35 D	2		3707	3680	.99	115	7	.94
.35 D	3		3707	3935	1.00	139	7	.95
.35 D	4		3707	3828	1.00	110	8	.93
.70 D	1		3707	3564	.96	108	4	.96
.70 D	2		3707	3906	1.00	124	6	.95
.70 D	3		3707	3720	1.00	120	10	.92
.70 D	4		3707	4026	1.00	132	10	.93
1.40 D	1		3707	3630	.98	121	5	.96
1.40 D	2		3707	4898	1.00	158	10	.94
1.40 D	3		3707	3627	.98	117	7	.94
1.40 D	4		3707	3596	.97	116	12	.91
2.80 D	1		3707	4185	1.00	135	10	.93
2.80 D	2		3707	3808	1.00	119	2	.98
2.80 D	3		3707	4820	1.00	153	17	.90
2.80 D	4		3707	3828	1.00	116	10	.92

ToxScan, Inc.

Test Date: 11/07/01
Sample Date: 11/05/01
Species: Mytilus edulis
Test Type: Chronic

Test Number: 19873ME-A
Test Material: Effluent - Industrial %
Source: AK0022551
Municipality of Anchorage
JM Asplund WWTF- Pt Woronzof

SUMMARY

End Point	Day	Transformation		Conc		#Reps	Mean	StDev	% Surv
Proportion Normal		Arc sine sqrt w/ adj.							
			X	0.000	D	4	1.33	.030	
			X	.175	D	4	1.37	.038	
			X	.350	D	4	1.33	.018	
			X	.700	D	4	1.33	.043	
			X	1.400	D	4	1.32	.046	
			X	2.800	D	4	1.32	.084	
Proportion Normal		No transformation							
				0.000	D	4	.94	.013	
				.175	D	4	.96	.014	
				.350	D	4	.94	.008	
				.700	D	4	.94	.020	
				1.400	D	4	.94	.023	
				2.800	D	4	.93	.036	
Proportion Alive		Arc sine sqrt w/ adj.							
			X	0.000	D	4	1.44	.145	
			X	.175	D	4	1.38	.211	
			X	.350	D	4	1.54	.039	
			X	.700	D	4	1.52	.095	
			X	1.400	D	4	1.45	.075	
			X	2.800	D	4	1.56	0.000	
Proportion Alive		No transformation							
				0.000	D	4	.97	.040	
				.175	D	4	.93	.080	
				.350	D	4	1.00	.004	
				.700	D	4	.99	.019	
				1.400	D	4	.98	.013	
				2.800	D	4	1.00	0.000	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Normal		Arc sine sqrt w/ adj.					
		Dunnett	> 2.800	> 2.800	< 35.71	.002	
Proportion Alive	7	Arc sine sqrt w/ adj.					
		Steel many-one rank test	> 2.800	> 2.800	< 35.71	.014	

ToxScan, Inc.

WATER QUALITY

Test Number: 19873ME-A Test Date: 7-Nov-1901 Source: AK0022551

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	8.00	7.5	32.40	15.9							
	Maximum	8.10	7.9	33.40	16.4							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	7.6	32.40	15.9							
	Maximum	8.10	7.9	33.30	16.0							
Day: 1												
	Minimum	8.10			16.2							
	Maximum	8.10			16.2							
Day: 2												
	Minimum	8.00	7.5	32.40	16.3							
	Maximum	8.00	7.7	33.40	16.4							

ToxScan, Inc.

SAMPLE DATE	TEST DATE	TEST NUMBER
5-Nov-01	7-Nov-01	19873ME-R

SPECIES: Mytilus edulis

TEST MATERIAL: Copper sulfate (ug/l)

SOURCE: AK0022551 Municipality of Anchorage
JM Asplund WWTF- Pt Woronzof

PROTOCOL: EPA West Coast Marine, 1st Ed, 1995

TEST TYPE: ( ) hr acute (X) chronic

REFERENCE TOXICANT TEST:

Jim Crowley — Bioassay Lab Manager

Analyst (print name) — Title

Signature — Date

Dave Lewis — Bioassay Director

Supervisor (print name) — Title

D B Lewis — 11/21/01

Signature — Date

ToxScan, Inc.

BIVALVE TEST DATA

Test Number: 19873ME-R (x) Chronic ( ) Acute hours

Test Date: 7-Nov-01

Source: AK0022551 Test Material: CUSO (ug/l)

Conc	Rep	Cont. No.	Initial Density	Final Density	Prop Alive	Normal	Ab-Normal	Prop Normal
0.00 D	1		3707	4350	1.00	145	1	.99
0.00 D	2		3707	3930	1.00	131	10	.93
0.00 D	3		3707	3560	.96	113	4	.97
2.00 D	1		3707	4224	1.00	132	13	.91
2.00 D	2		3707	3434	.93	101	8	.93
2.00 D	3		3707	3339	.90	106	5	.95
4.00 D	1		3707	4216	1.00	136	12	.92
4.00 D	2		3707	4362	1.00	143	2	.99
4.00 D	3		3707	3968	1.00	128	5	.96
8.00 D	1		3707	3472	.94	112	9	.93
8.00 D	2		3707	3721	1.00	122	11	.92
8.00 D	3		3707	3782	1.00	122	8	.94
16.00 D	1		3707	320	.09	10	133	.07
16.00 D	2		3707	0	0.00	0	126	0.00
16.00 D	3		3707	109	.03	3	92	.03
32.00 D	1		3707	0	0.00	0	59	0.00
32.00 D	2		3707	0	0.00	0	28	0.00
32.00 D	3		3707	0	0.00	0	14	0.00

ToxScan, Inc.

Test Date: 11/07/01
Sample Date: 11/05/01
Species: Mytilus edulis
Test Type: Chronic

Test Number: 19873ME-R
Test Material: Copper sulfate ug/l
Source: AK0022551
Municipality of Anchorage
JM Asplund WWTF- Pt Woronzof

SUMMARY

End Point	Day	Transformation		Conc	#Reps	Mean	StDev	% Surv
Proportion Normal		Arc sine sqrt w/ adj.						
			X	0.000 D	3	1.39	.094	
			X	2.000 D	3	1.31	.046	
			X	4.000 D	3	1.37	.086	
			X	8.000 D	3	1.30	.021	
			X	16.000 D	3	.16	.111	
				32.000 D	3	.05	0.000	
Proportion Normal		No transformation						
				0.000 D	3	.96	.032	
				2.000 D	3	.93	.023	
				4.000 D	3	.96	.034	
				8.000 D	3	.93	.011	
				16.000 D	3	.03	.035	
				32.000 D	3	0.00	0.000	
Proportion Alive		Arc sine sqrt w/ adj.						
			X	0.000 D	3	1.50	.111	
			X	2.000 D	3	1.37	.169	
			X	4.000 D	3	1.56	0.000	
			X	8.000 D	3	1.48	.142	
			X	16.000 D	3	.16	.145	
				32.000 D	3	.01	0.000	
Proportion Alive		No transformation						
				0.000 D	3	.99	.023	
				2.000 D	3	.94	.052	
				4.000 D	3	1.00	0.000	
				8.000 D	3	.98	.037	
				16.000 D	3	.04	.044	
				32.000 D	3	0.00	0.000	

X = indicates concentrations used in calculations

- HYPOTHESIS TEST -

End Point	Day	Transformation/Analysis	NOEC	LOEC	TU	MSE	MSD
Proportion Normal		Arc sine sqrt w/ adj.					
		Dunnett + t-test				.005	
Proportion Alive	7	Arc sine sqrt w/ adj.					
		Dunnett + t-test				.014	

- PROPORTION POINT ESTIMATE -

End Point	Day	Method	P	Conc	95% CI	TU
Proportion Alive		Spearman-Karber				
			EC 50	13.344	13.33 - 13.36	7.49
Proportion Normal						
			EC 50	11.276	11.06 - 11.49	8.87

ToxScan, Inc.

WATER QUALITY

Test Number: 19873ME-R Test Date: 7-Nov-1901 Source: AK0022551

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Test												
	Minimum	8.00	7.4	33.30	16.0							
	Maximum	8.10	8.0	33.80	16.6							

		pH	DO	Salin	Temp	Cond	Hard	Alk	NH3	Chlor	SO3	TS
Day: 0												
	Minimum	8.10	7.6	33.30	16.0							
	Maximum	8.10	8.0	33.40	16.3							
Day: 1												
	Minimum	8.10			16.2							
	Maximum	8.10			16.5							
Day: 2												
	Minimum	8.00	7.4	33.40	16.5							
	Maximum	8.00	7.6	33.80	16.6							

Appendix B

Summary of Test Conditions

TABLE B-1 Bivalve Larvae Bioassay

Test Type:	Static
Test Endpoints:	Normal Development
Test Duration:	48 hours
Temperature:	16 ± 1°C
Photoperiod:	16:8 L:D
Start:	7 November 2001
Finish:	9 November 2001
Test Containers:	250 mL HDPE cups
Test Volume:	150 mL
Test Material:	POTW Effluent
Test Concentrations:	2.8%, 1.4%, 0.7%, 0.35%, 0.175%, and 0%(control)
# Replicates:	4
Organisms per replicate:	$\bar{X}$ = 3707
Test Species:	*Mytilus* (*edulis*) *galloprovincialis*
Source:	Carlsbad Aquafarms
Age:	Embryo larvae
Dilution/Control water:	1.0 micron- filtered laboratory seawater
Diet:	n/a

Appendix C

Monthly Monitoring Report - November 2001
John M. Asplund Wastewater Treatment Facility

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

November 2001

		Flow	BOD5							TS		TVS		Suspended Solids (TSS)							VSS		TDS	
		MGD	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L	mg/L
			24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	24 HC	24 HC	24 HC	24 HC	CALCTD	CALCTD	CALCTD	CALCTD	CALCTD	24 HC	24 HC	CALC	CALC
Date	Day		I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE	I	FE	FE W AVE	% REM	I LOAD	FE LOAD	FE LWA	I	FE	I	FE
1-Nov	Thu	27.490	215	131		39	49292	30034		580	514	308	194	190	44		77	43561	10088		166	40	390	470
2-Nov	Fri	27.566																						
3-Nov	Sat	28.341			131				30034							44				10088				
4-Nov	Sun	28.429																						
5-Nov	Mon	28.219	251	145		42	59072	34125		562	540	264	168	200	72		64	47069	16945		164	50	362	468
6-Nov	Tue	28.060	215	121		44	50314	28316		616	544	294	174	238	88		63	55697	20594		186	62	378	456
7-Nov	Wed	27.838	237	127		46	55024	29485		672	536	366	182	238	64		73	55256	14859		200	58	434	472
8-Nov	Thu	27.747	NR	NR		NR	NR	NR		656	508	318	140	264	42		84	61092	9719		220	30	392	466
9-Nov	Fri	28.101																						
10-Nov	Sat	28.193			131				30642							67				15529				
11-Nov	Sun	28.040																						
12-Nov	Mon	28.881	290	125		57	69852	30108		648	554	280	170	224	62		72	53954	14934		182	46	424	492
13-Nov	Tue	27.660	238	113		53	54903	26067		626	496	320	168	236	58		75	54442	13380		192	38	390	438
14-Nov	Wed	27.561	219	106		52	50339	24365		636	488	322	192	248	72		71	57005	16550		212	56	388	416
15-Nov	Thu	27.696	243	122		50	56129	28180		618	508	304	178	234	70		70	54050	16169		200	58	384	438
16-Nov	Fri	27.536	226	128		43	51901	29395																
17-Nov	Sat	27.709			119				27623							66				15258				
18-Nov	Sun	27.925	190	112		41	44250	26084		676	504	402	178	182	58		68	42387	13508		154	50	494	446
19-Nov	Mon	27.990	223	122		45	52056	28479		576	514	306	200	202	62		69	47154	14473		168	52	374	452
20-Nov	Tue	27.747	219	132		40	50679	30546		512	468	198	132	202	68		66	46745	15736		168	50	310	400
21-Nov	Wed	27.550	226	136		40	51927	31248		NT	NT	NT	NT	NT	NT		NT	NT	NT		NT	NT	NT	NT
22-Nov	Thu	27.663	240	147		39	55370	33914																
23-Nov	Fri	25.910																						
24-Nov	Sat	27.320			134				30054							63				14572				
25-Nov	Sun	27.924																						
26-Nov	Mon	28.064	210	114		46	49151	26682		590	528	298	176	296	40		86	69280	9362		266	34	294	488
27-Nov	Tue	27.620	190	108		43	43767	24878		582	478	296	154	210	40		81	48374	9214		180	36	372	438
28-Nov	Wed	27.785	204	117		43	47272	27112		582	520	330	178	222	70		68	51443	16221		188	52	360	450
29-Nov	Thu	28.071	239	128		46	55953	29966		608	524	316	174	212	68		68	49632	15920		182	56	396	456
30-Nov	Fri	27.552																						
					117				27160							55				12679				
MIN		25.910	190	106	117	39	43767	24365	27160	512	468	198	132	182	40	44	63	42387	9214	10088	154	30	294	400
MAX		28.881	290	147	134	57	69852	34125	30642	676	554	402	200	296	88	67	86	69280	20594	15529	266	62	494	492
AVE		27.806	229	125	126		52625	28833		609	514	308	172	225	61			52321	14229		189	48	384	453
EM CALCTD						45											73							

Anchorage Water and Wastewater Utility
John M. Asplund ("Pt. Woronzof") Wastewater Treatment Facility
NPDES Permit # AK-002255-1
Monthly Monitoring Report

November 2001

		Parameter	Temp		pH		D O	Total Ammonia NH3 - N	Chloride	Total Chlorine Residual		Fecal Coliform	Sludge Cake		Filtrate
		Units	deg C	deg C	units	units	mg/L	mg/L	mg/L	mg/L	mg/L	FC/100 mL	% TS	% TVS	mg/L SS
		MDL						0.03		24G/DAY		2			
		Sample Type	G	G	G	G	G	24 HC	24 HC	AVE	G	G	24 HC (3 G)		24 HC (3 G)
Date	**Day**	Sample Point	I	FE	I	FE	FE	FE	I	FE	FE	FE	Discharge Belt		Belt press
1-Nov	Thu								48	0.8			32.2	79.3	2670
2-Nov	Fri									0.7			34.2	79.8	450
3-Nov	Sat									0.8			34.7	78.6	410
4-Nov	Sun		13.0	14.5	7.4	7.2	7.8			0.8			34.0	79.6	330
5-Nov	Mon		14.0	14.7	7.0	7.0	8.3		48	0.7			34.4	78.4	440
6-Nov	Tue		14.3	14.3	7.4	7.1	6.3		46	0.8	1.4	5	33.1	78.4	360
7-Nov	Wed		13.5	14.4	7.2	7.1	6.1		48	0.8			34.0	78.2	440
8-Nov	Thu								48	0.9			33.6	77.6	410
9-Nov	Fri									0.8	1.1	2	32.9	77.3	510
10-Nov	Sat									0.9	1.0	6	35.5	77.0	250
11-Nov	Sun		14.6	14.5	7.4	7.2	5.6			0.8			33.0	78.3	600
12-Nov	Mon		13.5	13.6	7.3	7.2	6.5		74	0.8			33.9	78.0	470
13-Nov	Tue								66	0.8			32.8	77.9	430
14-Nov	Wed		13.9	14.2	7.4	7.1	7.9		67	0.8	0.6	170	35.4	79.8	380
15-Nov	Thu		13.5	14.2	7.4	7.0	6.6		62	0.7	0.8	43	33.8	79.6	280
16-Nov	Fri		13.6	14.1	7.4	7.1	6.6			0.7	0.8	36	32.8	81.4	300
17-Nov	Sat									0.8			34.1	81.4	330
18-Nov	Sun		12.5	13.9	7.2	7.2	6.3		52	0.9	1.6	22	31.2	80.6	320
19-Nov	Mon		14.2	14.3	7.6	7.5	6.7		48	0.8	1.0	49	33.3	80.1	360
20-Nov	Tue		14.0	14.3	7.5	7.1	6.7		60	0.8	0.2	16000	31.5	80.3	460
21-Nov	Wed		14.0	14.5	7.2	7.1	6.8		NT	0.7			33.0	78.7	670
22-Nov	Thu									0.8			32.8	77.5	880
23-Nov	Fri									0.8			NT - burn on standby		
24-Nov	Sat									0.9			35.1	81.2	470
25-Nov	Sun		12.4	13.5	7.3	7.3	6.6			0.8			34.1	82.4	500
26-Nov	Mon		13.6	14.1	7.3	7.2	6.8		50	0.8	2.0	4	33.7	79.8	440
27-Nov	Tue		13.5	13.5	7.3	7.0	6.8		44	0.8	1.7	2	36.0	74.5	230
28-Nov	Wed		13.8	13.6	7.4	7.0	6.7	25.1	46	0.8	1.3	33	31.4	79.9	400
29-Nov	Thu								46	0.7			32.5	79.0	390
30-Nov	Fri									0.8			32.5	79.7	670
MIN	MIN		12.4	13.5	7.0	7.0	5.6	25.10	44	0.7	0.2	2	31.2	74.5	230
MAX	MAX		14.6	14.7	7.6	7.5	8.3	25.10	74	0.9	2.0	16000	36.0	82.4	2670
AVE	AVE		13.6	14.1			6.8	25.10	53	0.8	1.1	25	33.5	79.1	512

November 2001

COMMENTS

Report Prepared By: Angie Monteleone

Report Checked By: Susan Lang

Abbreviations

AVE	arithmetic average (except Fecal Coli which is a geometric mean)	ND	not detected	% REM	percent removal, calculated from daily concentrations
BOD5	biochemical oxygen demand, 5 day test	MGD	million gallons per day	%REM CALCTD	average percent removal, calculated from monthly average concentrations; reported on DMR per EPA guidelines
CALCTD	calculated	mg/L	milligrams per liter	S	sludge cake
DO	dissolved oxygen	mg/kg	milligrams per kilogram of dry weight	TDS	total dissolved solids
deg C	degree(s) Celsius	MPN	most probable number	TS	total solids
E	estimated result	NR	no analytical results or unusable data due to lab error or failure to meet quality control criteria	TSS	total suspended solids
FE	final effluent	NT	not tested	TVS	total volatile solids
G	grab			VSS	volatile suspended solids
I	influent			24 HC	24 hour flow composite
LWA	loading, weekly average			24 HC (3G)	24 hour composite of one grab per each eight hour shift

Comments, Footnotes: P.1: The final effluent autosampler is normally taken off line on Saturdays, Mondays, and Wednesdays for line cleaning for approximately 1.5 hours each time; the composite samples for BODs, TSS, etc. are therefore slightly less than a 24HC on these days.
No result for 12/8/01 BOD due to lab error. Extra sample will be run to compensate.
TSS sample scheduled for 12/21/01 mistakenly not analyzed. Extra sample will be run to compensate.
11/2/01: Water Champ on-line (different mechanism for mixing chlorine into flow than the preceding liquid injection through diffuser.)
11/11/01: chlorine feed off for approx. 1 1/4 hr due to frozen line at Water Champ.

Wastewater metals, cyanide, and oil & grease analyses are conducted twice per year during toxic pollutant testing. Results are no longer reported on the MMR; they are filed in the toxic pollutant folders in the file room and reported in the annual report to EPA. Metals analyses on sludge for 40 CFR Part 503 are conducted periodically but are no longer reported on the MMR. Results are reported to EPA each year on February 19 on reports found in W:Wastewater\Asplund WWTF\Reports\Part503\.

T-19873

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

COPY

LABORATORY:

ToxScan, Inc.
42 Hangar Way
Watsonville, CA 95076
ATTN: Dave Lewis
831.761.7277

FROM:

Kinnetic Laboratories, Inc.
403 West 8th Avenue
Anchorage, AK 99501
Attn: Mark Savoie
907.276.6178

Location: Frig 9

Required Completion Date: ASAP

P.O. #: AK01-1039

KLI Proj. #: 516.03

ANALYSIS TYPE: Static renewal chronic testing using 1)*Mytilus spp.* (Blue mussel), survival and growth test, Test following procedures in accordance with *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,* (EPA/600/4-87/028) and/or *West Coast Marine Methods Manuel, First Ed., Eds Chapman, Denton, Lazorchak,* EPA/600/R-95-136. At least five dilutions must be tested, including a ZID boundary concentration of 0.70%, and two concentrations above and two concentrations below 0.70% Reference toxicant testing must be performed concurrently.

MATRIX: Water (effluent)

Preservative: None (4° C)

Type of Container: 1 gallon Qubitainer

SAMPLE IDENTIFICATION #	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TOX006	1	11/5/01-11/6/01	09:00-09:00	Intact	T-19873-01-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: *Please return all completed original COCs to KLI Anchorage.*

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	11/6/01 09:20	hand	[signature]	11/6/01 09:20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	11/6/01 1300	Fed Ex	[signature]	07Nov01/0945
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

SAMPLED BY (NAME/SIGNATURE): _____

APPENDIX D

Receiving Water Quality Monitoring

D1 Toxscan

Hydrocarbons, TSS, and Cyanide

KINNETIC LABORATORIES INCORPORATED

RECEIVING WATER, HYDROCARBONS, TOXSCAN SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01TCN001	F1-1S	SAMPLE
MOA01TCN002	F1-2S	SAMPLE
MOA01TCN003	F1-3S	SAMPLE
MOA01TCN004	C1-1S	SAMPLE
MOA01TCN005	C1-2S	SAMPLE
MOA01TCN006	C1-2S	FIELD DUPLICATE
MOA01TCN007	C1-3S	SAMPLE
MOA01TCN008	EFFLUENT	SAMPLE
MOA01TSS001	F1-1S	SAMPLE
MOA01TSS002	F1-2S	SAMPLE
MOA01TSS003	F1-3S	SAMPLE
MOA01TSS004	C1-1S	SAMPLE
MOA01TSS005	C1-2S	SAMPLE
MOA01TSS006	C1-2S	DUPLICATE
MOA01TSS007	C1-3S	SAMPLE
MOA01TSS008	EFFLUENT	SAMPLE
MOA01VOA011	1F1-1S	SAMPLE
MOA01VOA012	1F1-2S	SAMPLE
MOA01VOA013	1F1-2S	FIELD DUPLICATE
MOA01VOA014	1F1-3S	SAMPLE
MOA01VOA015	1C1-1S	SAMPLE
MOA01VOA016	1C1-2S	SAMPLE
MOA01VOA017	1C1-3S	SAMPLE
MOA01VOA018	EFFLUENT	SAMPLE
MOA01VOA019	C-STATION	FIELD BLANK
MOA01VOA020	TRIP BLANK	TRIP BLANK

ToxScan Inc.

42 Hangar Way • Watsonville, CA 95076-2404 • (831) 724-4522 • FAX (831) 724-3188

July 17, 2001

ToxScan Number: T-19554

Kinnetic Laboratories Incorporated
403 West Eighth Avenue
Anchorage, AK 99501

Attn: Mark Savoie

Project Name:	None
Project Number:	514.02
Date Sampled:	June 19, 2001 - June 20, 2001
Date Received:	June 22, 2001
Matrix:	Water

Please find the enclosed test results for the parameters requested for analyses. The samples were analyzed within holding time using the following methods:

Aromatic Volatile Organics by EPA Method 602
Cyanide by EPA Method 335.2
Total Suspended Solids (TSS) by EPA Method 160.2

The samples were received intact and were handled with the proper chain-of-custody procedures. Appropriate QA/QC guidelines were employed during the analyses on a minimum of a 5% basis. QC results were within limits and are reported with or following the data for each analysis.

If you have any questions or require any additional information, please feel free to call.

Sincerely,

Philip D. Carpenter, Ph.D.
President

Enclosures

This cover letter is an integral part of the report.

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: 19554
Method:	EPA 602	
Date Analyzed:	July 2, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA011	MOA01VOA012	
Site ID:	F1-1S	F1-2S	Reporting
Toxscan Lab ID:	19554-17-A	19554-18-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	ND	ND	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	ND	ND	0.50
1,3 Dichlorobenzene	ND	ND	0.50
1,4 Dichlorobenzene	ND	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	101	100	65-142
1,1,1-Trifluorotoluene	101	101	77-143
1,4-Bromofluorobenzene	95	92	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number:19554
Method:	EPA 602	
Date Analyzed:	July 2, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA013	MOA01VOA014	
Site ID:	F1-2S	F1-3S	Reporting
Toxscan Lab ID:	19554-19-A	19554-20-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	ND	ND	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	ND	ND	0.50
1,3 Dichlorobenzene	ND	ND	0.50
1,4 Dichlorobenzene	ND	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	99	99	65-142
1,1,1-Trifluorotoluene	99	100	77-143
1,4-Bromofluorobenzene	91	91	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number:19554
Method:	EPA 602	
Date Analyzed:	July 2, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA015	MOA01VOA016	
Site ID:	C1-1S	C1-2S	Reporting
Toxscan Lab ID:	19554-21-A	19554-22-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	ND	ND	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	ND	ND	0.50
1,3 Dichlorobenzene	ND	ND	0.50
1,4 Dichlorobenzene	ND	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	99	98	65-142
1,1,1-Trifluorotoluene	99	98	77-143
1,4-Bromofluorobenzene	90	88	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number:19554
Method:	EPA 602	
Date Analyzed:	July 2 and 3, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA017	MOA01VOA018	
Site ID:	C1-3S	Effluent	Reporting
Toxscan Lab ID:	19554-23-A	19554-24-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	ND	4.0	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	ND	5.1	0.50
1,3 Dichlorobenzene	ND	5.6	0.50
1,4 Dichlorobenzene	ND	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	98	100	65-142
1,1,1-Trifluorotoluene	99	101	77-143
1,4-Bromofluorobenzene	89	107	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number:19554
Method:	EPA 602	
Date Analyzed:	July 3, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID:	MOA01VOA019	MOA01VOA020	
Site ID:	C-Station	Trip Blank	Reporting
Toxscan Lab ID:	19554-25-A	19554-26-A	Limit
Analyte			
Benzene	ND	ND	0.50
Toluene	ND	ND	0.50
Chlorobenzene	ND	ND	0.50
Ethylbenzene	ND	ND	0.50
Xylenes	ND	ND	0.50
1,2 Dichlorobenzene	ND	ND	0.50
1,3 Dichlorobenzene	ND	ND	0.50
1,4 Dichlorobenzene	ND	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	102	101	65-142
1,1,1-Trifluorotoluene	103	102	77-143
1,4-Bromofluorobenzene	93	93	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: 19554
Method:	EPA 602	
Date Analyzed:	July 2, 2001	
Matrix:	Water	
Units:	ug/L (ppb)	

Client Sample ID: Toxscan Lab ID: Analyte	Method Blank	Reporting Limit
Benzene	ND	0.50
Toluene	ND	0.50
Chlorobenzene	ND	0.50
Ethylbenzene	ND	0.50
Xylenes	ND	0.50
1,2 Dichlorobenzene	ND	0.50
1,3 Dichlorobenzene	ND	0.50
1,4 Dichlorobenzene	ND	0.50

ND = None Detected

Quality Control Report:
Surrogate Recovery expressed as percentages

Surrogate	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	100	65-142
1,1,1-Trifluorotoluene	101	77-143
1,4-Bromofluorobenzene	93	86-115

Client:	Kinnetic Laboratories Incorporated	ToxScan Number: T-19554
Method:	EPA 602	
Date Analyzed:	July 2, 2001	
Matrix:	Water	

Quality Control Report:
Spike recoveries expressed as percentages

Spiked compound	LCS %Rec	QC Limits %Rec
Benzene	85	76-127
Toluene	86	76-125
Chlorobenzene	83	75-130

Quality Control Report :
Surrogate recovery expressed as percentages

Surrogate	Surrogate % Rec	QC Limits % Rec
1,4-Difluorobenzene	108	65-142
1,1,1-Trifluorotoluene	108	77-143
1,4-Bromofluorobenzene	97	86-115

LCS = Laboratory Control Sample

Client: Kinnetic Laboratories Incorporated
Method: EPA Method(s) 335.2
Date Completed: 6/26/2001
Matrix: Water
Units: ug/L

ToxScan Number: T-19554

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01TCN001	F1-1S	19554-01	Cyanide	ND	2.0
MOA01TCN002	F1-2S	19554-02	Cyanide	ND	2.0
MOA01TCN003	F1-3S	19554-03	Cyanide	ND	2.0
MOA01TCN004	C1-1S	19554-04	Cyanide	ND	2.0
MOA01TCN005	C1-2S	19554-05	Cyanide	ND	2.0
MOA01TCN006	C1-2S	19554-06	Cyanide	ND	2.0
MOA01TCN007	C1-3S	19554-07	Cyanide	ND	2.0
MOA01TCN008	EFFLUENT	19554-08	Cyanide	3.4	2.0

Client: Kinnetic Laboratories Incorporated
Method: EPA Method(s) 160.2
Date Completed: 6/26/2001
Matrix: Water
Units: mg/L

ToxScan Number: T-19554

Client Sample ID	Site ID	ToxScan Lab ID	Analyte	Sample Value	Reporting Limit
MOA01TSS001	F1-1S	19554-09	Total Suspended Solids	90	1.0
MOA01TSS002	F1-2S	19554-10	Total Suspended Solids	170	1.0
MOA01TSS003	F1-3S	19554-11	Total Suspended Solids	190	1.0
MOA01TSS004	C1-1S	19554-12	Total Suspended Solids	34	1.0
MOA01TSS005	C1-2S	19554-13	Total Suspended Solids	720	1.0
MOA01TSS006	C1-2S	19554-14	Total Suspended Solids	680	1.0
MOA01TSS007	C1-3S	19554-15	Total Suspended Solids	740	1.0
MOA01TSS008	EFFLUENT	19554-16	Total Suspended Solids	79	1.0

EXPLANATION OF ACRONYMS FOR PROJECT # T-19554

The following is a glossary for acronyms that may be used in this report.

Abbreviation	Definition
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	None Detected
REP	Replicate
RPD	Relative Percent Difference
SRM	Standard Reference Material
TOC	Total Organic Carbon

QC FOR PROJECT # 19554

Concentrations of the following are in ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY:

Matrix: Water

Analyte	Sample Amount	Amount of Spike	Matrix Spike	MS % Rec	Matrix Spike Dup	MSD % Rec	RPD
Cyanide							
19554-09	ND	7.8	5.95	76	6.07	78	3

QC FOR PROJECT # T-19554

LABORATORY METHOD BLANK SUMMARY

Applicable Matrix: Water

Analyte	Amount	Reporting Limit	Units	EPA Method Number
Cyanide	ND	5.0	ug/L	335.2
Total Suspended Solids	ND	1.0	mg/L	160.2

QC FOR PROJECT # T-19554

SRM SUMMARY:

Matrix: Water

Analyte	Amount Found	Dilution	Corrected Value	SRM	Certified Value	Units	% Recovery
Cyanide	515	1	515	ERA 9984	484	ug/L	106
Total Suspended Solids	76.0	1	76.0	ERA 99110	67.3	mg/L	113

ERA 9984 = Environmental Resource Associates, WasteWatR Lot No. 9984

QC FOR PROJECT # T-19554

LABORATORY PRECISION SUMMARY:

Matrix: Water

Analyte	REP 1	REP 2	Units	RPD
Total Suspended Solids				
19554-16	79.0	87.0	mg/L	10

FRIG. 8 SHELF 20

T. 19554 pg 105

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**	
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clark (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178	
REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1015	**KLI Proj. #:** 514.02

ANALYSIS TYPE: Total Cyanide (EPA 335.2). Detection limit < 2 µg/L.

MATRIX: Water	**Preservative:** NaOH to pH 12.5 Station F1 samples contain $Na_2S_2O_3$	**Type of Container:** 1-L HDPE

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TCN001	F1-1S	1	6/19/01	1321	INTACT	T.19554-01-A
MOA01TCN002	F1-2S	1	6/19/01	1345		-02-A
MOA01TCN003	F1-3S	1	6/19/01	1407		-03-A
MOA01TCN004	C1-1S	1	6/20/01	1420		-04-A
MOA01TCN005	C1-2S	1	6/20/01	1445		-05-A
MOA01TCN006	C1-2S	1	6/20/01	1445		-06-A
MOA01TCN007	C1-3S	1	6/20/01	1510		-07-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 / 1230	FED EX	Kati King	22 Jun 01 / 1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

FRIG. 8 SHELF 20 T.19554 Pg 2 of 5

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clark (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1015 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Total Cyanide (EPA 335.2). Detection limit < 2 µg/L.

MATRIX: Water | **Preservative:** NaOH to pH 12.5 | **Type of Container:** 1-L HDPE

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TCN008	EFFLUENT	1	6/19-6/20/01	0900-0900	INTACT	T.19554-08-A

(with sodium arsenite)

Sample dechlorinated at Pt. Mowatt lab before preserving it with NaOH.

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	6/20/01 1150	hand	A.A. [illegible] 1153	6/20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01 1230	FEDEX	Kati King	22 Jun 01/1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

T-19554 Pg 3 of 5

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clark (408)724-4522 FRIG. 8 SHELF 20	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1015 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Total Suspended Solids.

MATRIX: Water | **Preservative:** None | **Type of Container:** 250-mL HDPE

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TSS001	F1-1S	1	6/19/01	1321	INTACT	T-19554-09-A
MOA01TSS002	F1-2S	1	6/19/01	1345		-10-A
MOA01TSS003	F1-3S	1	6/19/01	1407		-11-A
MOA01TSS004	C1-1S	1	6/20/01	1420		-12-A
MOA01TSS005	C1-2S	1	6/20/01	1445		-13-A
MOA01TSS006	C1-2S	1	6/20/01	1445		-14-A
MOA01TSS007	C1-3S	1	6/20/01	1510		-15-A
						JMS

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01/1230	FED EX	Kate King	22 Jun 01/1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

FRIG. 8 SHELF 20

T·19554 Pg 4 of 5

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clark (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1015	**KLI Proj. #:** 514.02

ANALYSIS TYPE: Total Suspended Solids.

MATRIX: Water	**Preservative:** None	**Type of Container:** 250-mL HDPE

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01TSS008	EFFLUENT	1	6/19-20	0900-0900	INTACT	T·19554-16-A

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[illegible]	6/20/01 1152	hand carried	[illegible] 1153	6/20
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01/1230	FEDEX	Kati King	22 Jun 01/1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

M

FRIG. 6 T.19554 Pg 5 of 5

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
ToxScan, Inc. 42 Hangar Way Watsonville, CA 95076 Attn: Doug Clark (408)724-4522	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1015 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: EPA 602. Detection limit 0.5 µg/L.

MATRIX: Water | **Preservative:** HCl, 4°C. Station F1 samples contain $Na_2S_2O_3$ | **Type of Container:** 40-mL glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01VOA011	F1-1S	3	6/19/01	1321	INTACT	T.19554-17-A,B-C
MOA01VOA012	F1-2S	3	6/19/01	1345		-18-A,B,-C
MOA01VOA013	F1-2S	3	6/19/01	1345		-19-A,B,-C
MOA01VOA014	F1-3S	3	6/19/01	1407		-20-A,B,-C
MOA01VOA015	C1-1S	3	6/20/01	1420		-21-A,B,-C
MOA01VOA016	C1-2S	3	6/20/01	1445		-22-A,B-C
* MOA01VOA017	C1-3S	3	6/20/01	1510		-23-A,B-C
MOA01VOA019	C-STATION	3	6/20/01	1445		-25-~~24~~-A,B-C
MOA01VOA020	TRIP BLANK	3	6/20/01	N/A	Bubbles in all 3 TB's	-26 ~~-25~~-A,B,-C GL
* VOA'S RECEIVED THAT ARE NOT ON C.O.C.:					MOA01VOA018	
				Station:	EFFLUENT	
				Sample Date:	6/19/01	
				TOXSCAN I.D.	T.19554-24-A,B,C	

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DAT3E OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
Janet M. Savoie	6/21/01/1230	FED EX	Kati King	22 Jun 01/1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

APPENDIX D

Receiving Water Quality Monitoring

D2 Texas A&M GERG

PAH's

KINNETIC LABORATORIES INCORPORATED

RECEIVING WATER, PAH, GERG SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01PAH001	1F1-1S	SAMPLE
MOA01PAH002	1F1-2S	SAMPLE
MOA01PAH003	1F1-3S	SAMPLE
MOA01PAH004	1C1-1S	SAMPLE
MOA01PAH005	1C1-2S	SAMPLE
MOA01PAH006	1C1-3S	SAMPLE
MOA01PAH007	EFFLUENT	SAMPLE

TEXAS A&M UNIVERSITY
Geochemical and Environmental Research Group
College of Geosciences

Analytical Report
Municipality of Anchorage 2001 Sampling
Sample Delivery Group B6418
Analytical Report No. B6418-A

Kinnetic Laboratories, Inc.
403 West 8th Avenue
Anchorage, Alaska 99501-3515
Tel 907-276-6178
Fax 907-278-6881

1.0 Introduction

Seven water samples were received in duplicate under chain of custody in one sample delivery group on June 22, 1999. Samples were logged in under chain of custody and stored at 2°C. One water sample of each duplicate pair was extracted and analyzed for polynuclear aromatic hydrocarbons (PAHs) as requested.

2.0 Analytical Results/Methodology

The extraction and analyses were conducted in accordance with the standard operating procedures at GERG. Extraction was carried out using the procedures outlined in GERG SOP 8901 Rev 3. All data was reviewed for quality and met the QA criteria as specified in GERG SOP 9733 Rev 3. The QA criteria for the relative percent difference (RPD) between spiked blank (LBS) and spiked blank duplicate (LBSD) analyses are an average RPD of less than 40%. Method detection limits (MDL) were run for this matrix in Spring 2001 for PAHs. A value of two times the MDL for the parent compound was used for multi-peak concentrations (i.e., MDL for C1-Fluorenes is 11.0 ng/L from an MDL of 5.5 ng/L for Fluorene based on a 1.0 liter water sample).

The GERG STD Check (REF Oil) is no longer available. GERG has been running a second reference oil (STD OIL 2000) in parallel to determine new acceptance criteria. STD Oil 2000 (REF Oil) is run on the instrument prior to each analytical batch. The sample is a solution of petroleum oil in methylene chloride with a concentration of about 800 mg/milliliter of solution. The analysis is compared to the running average for the laboratory for all single analyte peaks, which are primarily non-alkylated analytes. The control limits for the GERG STD Check samples (REF Oil) are plus or minus 25% of the laboratory average for each single component analyte. No control limits are applied to the alkylated PAH homologue clusters (multi-peak analytes) because the variation in the analytical results (and associated uncertainty) increases with increased alkylation and increased number of homologues within the cluster. This effect can be seen in the data table that includes the

laboratory average and one standard deviation for each analyte. The GERG STD Check is used to define the retention time windows for the alkylated PAH homologue clusters; it is not a certified reference material.

The results are enclosed. The PAH concentrations are reported in nanograms per liter (ng/L), or parts per trillion. Analytes that are below the MDL are qualified in the tables as "J". Those analytes not detected during the analysis are qualified as "ND". Measurements that are out of QA limits are qualified as "Q".

3.0 QA/QC Variances

Surrogate recoveries met the QC criteria. No further action was required.

No analytes were measured above the MDL in the procedural blank for PAH analyses. No further action was required.

The average recovery for the spike blank and spike blank duplicate for the PAH analysis were within the QC limits. The recoveries were 99.9 and 98.9. The RPD was 1.9%. No further action was required.

The analytes for the Reference Oil analyses had no concentrations that exceeded the QC criteria. The overall QA objectives were met. No further action was taken.

No other QA variances were found for these data.

Reviewed and Approved: 28 Nov 2001

Guy J. Denoux Ph.D.
Laboratory Manager

Sample Integrity Report
& Chains of Custody

Storage Location: B6418

GERG SAMPLE RECEIVING/ INTEGRITY REPORT

Catalog: _____ Date Received: 6/22/01 SDG#: B6418

Sender: Kinetics

Proj Invest: _____ Notif. by (Name/Date): _____

1. Number of Shipping Containers:

Comments: 2

2. Airbill Present?
No (Yes)

Shipping Company:
(Fedex) UPS Airborne Express Other

Airbill Number: 7900-8473-1785
7900-8472-7874

Comments:

3. Custody Seals on Container?
No (Yes) Intact Not Intact

Comments:

4. Chain of Custody Records?
No (Yes)

Comments:

5. General Sample Condition:
Frozen Cool Unrefrigerated
Dry Ice (Blue Ice) Ice

Temperature/Comments: -0.5

6. List of Broken Containers:

MOA01PAH003 is broken

7. Number of Waters: 14 Number of Tissues: _____ Number of Sediments: _____
Number of Other: _____ Total Number of Samples Received: _____

8. Problems/ Discrepancies:

9. Resolutions:

10. Checked in by: H. Christopher Date: 6/22/01

SID 20010606

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Texas A & M GERG 833 Graham Road College Station, TX 77845 Attn: Dr. Guy Denoux (409)862-2323	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 45 days | **P.O. #:** AK01-1013 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Extraction of water for hydrocarbon analysis (GERG SOP-8901); determination of PAH and their alkylated homologues (GERG SOP-9733).

MATRIX: Water | **Preservative:** HCl, 4°C; EFFLUENT and F1-1 and F1-2 contain $Na_2S_2O_3$ | **Type of Container:** 1-L amber glass

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01PAH001 ✓✓	F1-1S	2	6/19/01	1321		
MOA01PAH002 ✓✓	F1-2S	2	6/19/01	1345		
MOA01PAH003 ✓✓	F1-3S	2	6/19/01	1407		
MOA01PAH004 ✓✓	C1-1S	2	6/20/01	1420		
MOA01PAH005 ✓✓	C1-2S	2	6/20/01	1445		
MOA01PAH006 ✓✓	C1-3S	2	6/20/01	1510		
MOA01PAH007 ✓✓	EFFLUENT	2	6/19/01	1308		

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
A.A. Cauty	6/21/01 1360	Fed EX	G. Christophe	6/22/01 9:40
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

Monday, June 25, 2001

SAMPLE INFORMATION SHEET

Subproject Name : 514.02

Client Name : Kinnetics

Subproject ID : 20010606 Project No : 633911-00001

Receive Date : 6/22/01 Due Date : 8/3/01

PO A : AK01-1013

PO B :

PO C :

PO D :

				FID					ECD		FPD	MS				HRMS		LABORATORY								AA				IRMS	OTHER			
Gerg ID	Client ID	SDG	M	TP	AL	CF	WO	HS	OC	AC	TB	AR	VO	BS	BA	CP	DF	SP	DW	PL	OG	GS	AV	TV	CN	CV	AM	PM	FM	IS	BM	FL	TC	UI
C39016	MOA01PAH001	B6418	Wat									A																						
C39017	MOA01PAH002	B6418	Wat									A																						
C39018	MOA01PAH003	B6418	Wat									A																						
C39019	MOA01PAH004	B6418	Wat									A																						
C39020	MOA01PAH005	B6418	Wat									A																						
C39021	MOA01PAH006	B6418	Wat									A																						
C39022	MOA01PAH007	B6418	Wat									A																						
Total Samples:	7			0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Monday, June 25, 2001

SAMPLE IDENTIFICATION

Subproject Name : 514.02

Client Name : Kinnetics

Subproject ID : 20010606

Receive Date : 6/22/01 Due Date : 8/3/01

PO A : AK01-1013

PO B :

PO C :

PO D :

Gerg ID	Sample ID	SDG	Matrix	Sample Description
C39016	MOA01PAH001	B6418	Water	
C39017	MOA01PAH002	B6418	Water	
C39018	MOA01PAH003	B6418	Water	
C39019	MOA01PAH004	B6418	Water	
C39020	MOA01PAH005	B6418	Water	
C39021	MOA01PAH006	B6418	Water	
C39022	MOA01PAH007	B6418	Water	

Total Samples : 7

Aromatic Hydrocarbon Data for Water Samples

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH001	MOA01PAH002	MOA01PAH003	MOA01PAH004
Sample Descriptor	F1-1S	F1-2S	F1-3S	C1-1S
Original Sample				
GERG ID	C39016	C39017	C39018	C39019
Sample Type	SAMP	SAMP	SAMP	SAMP
SDG	B6418	B6418	B6418	B6418
Dry Weight				
Volume	0.93	0.98	0.97	0.94
Sample Size Units	Liter	Liter	Liter	Liter
Matrix	Water	Water	Water	Water
% solid				
% Lipid				
Reporting Units	ng/L	ng/L	ng/L	ng/L
Calculation Basis (dry/wet)	Wet	Wet	Wet	Wet
QC Batch ID	M3084	M3084	M3084	M3084
Method	GCMS	GCMS	GCMS	GCMS
Collection Date	06/19/01	06/19/01	06/19/01	06/20/01
Receive Date	06/22/01	06/22/01	06/22/01	06/22/01
Extraction Date	06/25/01	06/25/01	06/25/01	06/25/01
Analysis Date	07/18/01	07/18/01	07/18/01	07/18/01
Surrogate Compounds	**%Recovery**	**%Recovery**	**%Recovery**	**%Recovery**
d8-Naphthalene	74.8	84.3	97.5	93.3
d10-Acenaphthene	98.4	104.5	110.5	100.7
d10-Phenanthrene	106.6	114.7	118.3	108.5
d12-Chrysene	111.6	113.5	114.9	114.4
d12-Perylene	58.3	60.5	59.7	53.0
Total PAHs	**Concentration**	**Concentration**	**Concentration**	**Concentration**
Total PAHs with Perylene	567.8	107.2	104.2	55.4
Total PAHs without Perylene	565.9	106.2	103.2	54.9

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH001		MOA01PAH002		MOA01PAH003		MOA01PAH004	
Sample Descriptor	F1-1S		F1-2S		F1-3S		C1-1S	
Original Sample								
GERG ID	C39016		C39017		C39018		C39019	
Sample Type	SAMP		SAMP		SAMP		SAMP	
SDG	B6418		B6418		B6418		B6418	
PAH Compounds	**Concentration**		**Concentration**		**Concentration**		**Concentration**	
Naphthalene	40.3		12.3		14.4		6.3	
C1-Naphthalenes	54.6		11.7		11.2		4.5	J
C2-Naphthalenes	41.3		9.0		7.3	J	3.2	J
C3-Naphthalenes	67.5		12.4		10.1		6.4	
C4-Naphthalenes	41.2		7.9		6.1		1.8	J
Biphenyl	6.8		2.3	J	2.3	J	1.9	J
Acenaphthylene	1.5	J	0.7	J	0.7	J	0.6	J
Acenaphthene	9.9	J	1.1	J	0.7	J	0.5	J
Fluorene	13.1		2.6	J	2.4	J	1.1	J
C1-Fluorenes	16.7		4.2	J	4.6	J	1.8	J
C2-Fluorenes	22.2		1.8	J	6.1	J	4.6	J
C3-Fluorenes	4.5	J	1.0	J	1.6	J	1.5	J
Phenanthrene	25.6		5.0		4.6		2.3	J
Anthracene	6.3	J	0.9	J	0.6	J	0.5	J
C1-Phenanthrenes/Anthracenes	16.1		3.8	J	3.7	J	2.5	J
C2-Phenanthrenes/Anthracenes	16.4		4.7	J	3.8	J	3.0	J
C3-Phenanthrenes/Anthracenes	67.8		5.0	J	3.9	J	1.1	J
C4-Phenanthrenes/Anthracenes	7.9	J	1.7	J	2.6	J	0.3	J
Dibenzothiophene	3.2		0.6	J	0.5	J	0.4	J
C1-Dibenzothiophenes	10.2		0.9	J	0.8	J	0.6	J
C2-Dibenzothiophenes	9.5		0.8	J	0.6	J	1.3	J
C3-Dibenzothiophenes	11.4		2.1	J	1.1	J	1.2	J
Fluoranthene	10.9		1.3	J	1.0	J	0.5	J
Pyrene	10.7		1.4	J	1.0	J	0.5	J
C1-Fluoranthenes/Pyrenes	12.7		2.5	J	2.1	J	0.6	J
Benzo(a)anthracene	2.7		0.5	J	0.5	J	0.4	J
Chrysene	3.4	J	0.9	J	1.0	J	0.7	J
C1-Chrysenes	1.5	J	0.5	J	0.6	J	0.4	J
C2-Chrysenes	17.9		2.5	J	1.3	J	0.9	J
C3-Chrysenes	0.6	J	0.7	J	0.7	J	0.2	J
C4-Chrysenes	1.0	J	0.8	J	1.7	J	1.2	J
Benzo(b)fluoranthene	2.4	J	0.6	J	0.8	J	0.5	J
Benzo(k)fluoranthene	1.0	J	0.2	J	0.3	J	0.2	J
Benzo(e)pyrene	1.6	J	0.4	J	0.8	J	0.4	J
Benzo(a)pyrene	2.0	J	0.4	J	0.6	J	0.4	J
Perylene	1.9	J	1.0	J	1.0	J	0.4	J
Indeno(1,2,3-c,d)pyrene	1.4	J	0.4	J	0.5	J	0.3	J
Dibenzo(a,h)anthracene	0.8	J	0.3	J	0.2	J	0.1	J
Benzo(g,h,i)perylene	1.7	J	0.4	J	0.5	J	0.3	J
2-Methylnaphthalene	30.7		6.5		6.3		2.3	J
1-Methylnaphthalene	23.9		5.2		4.9		2.2	J
2,6-Dimethylnaphthalene	14.4		3.4	J	3.0	J	1.3	J
1,6,7-Trimethylnaphthalene	9.5		2.2	J	2.4	J	1.2	J
1-Methylphenanthrene	4.5		1.0	J	1.0	J	0.8	J

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH005	MOA01PAH006	MOA01PAH007
Sample Descriptor	C1-2S	C1-3S	Effluent
Original Sample			
GERG ID	C39020	C39021	C39022
Sample Type	SAMP	SAMP	SAMP
SDG	B6418	B6418	B6418
Dry Weight			
Volume	0.94	0.94	0.94
Sample Size Units	Liter	Liter	Liter
Matrix	Water	Water	Water
% solid			
% Lipid			
Reporting Units	ng/L	ng/L	ng/L
Calculation Basis (dry/wet)	Wet	Wet	Wet
QC Batch ID	M3084	M3084	M3084
Method	GCMS	GCMS	GCMS
Collection Date	06/20/01	06/20/01	06/19/01
Receive Date	06/22/01	06/22/01	06/22/01
Extraction Date	06/25/01	06/25/01	06/25/01
Analysis Date	07/18/01	07/18/01	07/18/01
Surrogate Compounds	**%Recovery**	**%Recovery**	**%Recovery**
d8-Naphthalene	109.8	115.0	78.7
d10-Acenaphthene	113.8	119.3	98.6
d10-Phenanthrene	117.7	123.8	102.0
d12-Chrysene	95.1	106.4	113.0
d12-Perylene	50.6	58.5	46.3
Total PAHs	**Concentration**	**Concentration**	**Concentration**
Total PAHs with Perylene	133.8	154.2	7541.4
Total PAHs without Perylene	130.2	150.7	7538.0

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH005		MOA01PAH006		MOA01PAH007	
Sample Descriptor	C1-2S		C1-3S		Effluent	
Original Sample						
GERG ID	C39020		C39021		C39022	
Sample Type	SAMP		SAMP		SAMP	
SDG	B6418		B6418		B6418	
PAH Compounds	**Concentration**		**Concentration**		**Concentration**	
Naphthalene	13.6		14.1		320.3	
C1-Naphthalenes	19.2		19.7		743.3	
C2-Naphthalenes	12.0		13.0		606.4	
C3-Naphthalenes	10.9		14.7		1135.6	
C4-Naphthalenes	7.4		9.5		488.4	
Biphenyl	3.6		3.9		74.3	
Acenaphthylene	0.6	J	0.7	J	9.7	
Acenaphthene	0.6	J	0.8	J	193.1	
Fluorene	2.6	J	3.3	J	204.3	
C1-Fluorenes	3.0	J	4.3	J	223.4	
C2-Fluorenes	1.2	J	9.0	J	289.3	
C3-Fluorenes	1.4	J	1.5	J	39.4	
Phenanthrene	7.6		7.7		475.5	
Anthracene	1.2	J	1.0	J	110.9	
C1-Phenanthrenes/Anthracenes	7.4	J	8.1	J	278.1	
C2-Phenanthrenes/Anthracenes	7.2	J	7.5	J	319.5	
C3-Phenanthrenes/Anthracenes	5.0	J	4.5	J	277.3	
C4-Phenanthrenes/Anthracenes	4.9	J	2.9	J	15.7	
Dibenzothiophene	1.0	J	0.9	J	47.6	
C1-Dibenzothiophenes	1.3	J	1.5	J	85.9	
C2-Dibenzothiophenes	0.8	J	1.9	J	140.6	
C3-Dibenzothiophenes	0.7	J	0.5	J	139.6	
Fluoranthene	1.2	J	1.1	J	247.7	
Pyrene	1.8	J	1.6	J	229.0	
C1-Fluoranthenes/Pyrenes	3.0	J	3.8	J	173.9	
Benzo(a)anthracene	0.9	J	0.8	J	91.6	
Chrysene	1.9	J	2.0	J	68.9	
C1-Chrysenes	2.0	J	2.3	J	20.3	
C2-Chrysenes	1.5	J	3.0	J	63.8	
C3-Chrysenes	0.0	J	0.2	J	74.8	
C4-Chrysenes	0.4	J	1.4	J	153.2	
Benzo(b)fluoranthene	1.1	J	1.0	J	55.3	
Benzo(k)fluoranthene	0.4	J	0.5	J	20.3	
Benzo(e)pyrene	1.2	J	1.0	J	21.2	
Benzo(a)pyrene	0.7	J	0.5	J	49.0	
Perylene	3.6	J	3.5	J	3.5	J
Indeno(1,2,3-c,d)pyrene	0.3	J	0.2	J	22.9	
Dibenzo(a,h)anthracene	0.1	J	0.1	J	4.3	
Benzo(g,h,i)perylene	0.9	J	0.5	J	23.9	
2-Methylnaphthalene	10.4		11.3		417.9	
1-Methylnaphthalene	8.8		8.4		325.4	
2,6-Dimethylnaphthalene	5.3		5.7		240.4	
1,6,7-Trimethylnaphthalene	4.4		4.8		132.0	
1-Methylphenanthrene	2.2	J	2.3	J	74.8	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	
Sample Descriptor	Proc. Blank
Original Sample	
GERG ID	Q19702
Sample Type	Blank
SDG	

Dry Weight	
Volume	1.00
Sample Size Units	Liter
Matrix	Water
% solid	
% Lipid	
Reporting Units	ng/L
Calculation Basis (dry/wet)	

QC Batch ID	M3084
Method	GCMS
Collection Date	
Receive Date	
Extraction Date	06/25/01
Analysis Date	07/18/01

Surrogate Compounds	**%Recovery**
d8-Naphthalene	89.9
d10-Acenaphthene	91.2
d10-Phenanthrene	95.0
d12-Chrysene	92.3
d12-Perylene	65.4

Total PAHs	**Concentration**
Total PAHs with Perylene	102.4
Total PAHs without Perylene	98.8

ND	Not Detected
J	<MDL
NA	Not Applicable
Q	Results Outside QC
I	Interference
B	Blank Contamination >3xMDL
D	Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH001	MOA01PAH002	MOA01PAH003	MOA01PAH004
Sample Descriptor	F1-1S	F1-2S	F1-3S	C1-1S
Original Sample				
GERG ID	C39016	C39017	C39018	C39019
Sample Type	SAMP	SAMP	SAMP	SAMP
SDG	B6418	B6418	B6418	B6418
Dry Weight				
Volume	0.93	0.98	0.97	0.94
Sample Size Units	Liter	Liter	Liter	Liter
Matrix	Water	Water	Water	Water
% solid				
% Lipid				
Reporting Units	ng/L	ng/L	ng/L	ng/L
Calculation Basis (dry/wet)	Wet	Wet	Wet	Wet
QC Batch ID	M3084	M3084	M3084	M3084
Method	GCMS	GCMS	GCMS	GCMS
Collection Date	06/19/01	06/19/01	06/19/01	06/20/01
Receive Date	06/22/01	06/22/01	06/22/01	06/22/01
Extraction Date	06/25/01	06/25/01	06/25/01	06/25/01
Analysis Date	07/18/01	07/18/01	07/18/01	07/18/01
Surrogate Compounds	**%Recovery**	**%Recovery**	**%Recovery**	**%Recovery**
d8-Naphthalene	74.8	84.3	97.5	93.3
d10-Acenaphthene	98.4	104.5	110.5	100.7
d10-Phenanthrene	106.6	114.7	118.3	108.5
d12-Chrysene	111.6	113.5	114.9	114.4
d12-Perylene	58.3	60.5	59.7	53.0
Total PAHs	**Concentration**	**Concentration**	**Concentration**	**Concentration**
Total PAHs with Perylene	567.8	107.2	104.2	55.4
Total PAHs without Perylene	565.9	106.2	103.2	54.9

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH001		MOA01PAH002		MOA01PAH003		MOA01PAH004	
Sample Descriptor	F1-1S		F1-2S		F1-3S		C1-1S	
Original Sample								
GERG ID	C39016		C39017		C39018		C39019	
Sample Type	SAMP		SAMP		SAMP		SAMP	
SDG	B6418		B6418		B6418		B6418	
PAH Compounds	**Concentration**		**Concentration**		**Concentration**		**Concentration**	
Naphthalene	40.3		12.3		14.4		6.3	
C1-Naphthalenes	54.6		11.7		11.2		4.5	J
C2-Naphthalenes	41.3		9.0		7.3	J	3.2	J
C3-Naphthalenes	67.5		12.4		10.1		6.4	
C4-Naphthalenes	41.2		7.9		6.1		1.8	J
Biphenyl	6.8		2.3	J	2.3	J	1.9	J
Acenaphthylene	1.5	J	0.7	J	0.7	J	0.6	J
Acenaphthene	9.9	J	1.1	J	0.7	J	0.5	J
Fluorene	13.1		2.6	J	2.4	J	1.1	J
C1-Fluorenes	16.7		4.2	J	4.6	J	1.8	J
C2-Fluorenes	22.2		1.8	J	6.1	J	4.6	J
C3-Fluorenes	4.5	J	1.0	J	1.6	J	1.5	J
Phenanthrene	25.6		5.0		4.6		2.3	J
Anthracene	6.3	J	0.9	J	0.6	J	0.5	J
C1-Phenanthrenes/Anthracenes	16.1		3.8	J	3.7	J	2.5	J
C2-Phenanthrenes/Anthracenes	16.4		4.7	J	3.8	J	3.0	J
C3-Phenanthrenes/Anthracenes	67.8		5.0	J	3.9	J	1.1	J
C4-Phenanthrenes/Anthracenes	7.9	J	1.7	J	2.6	J	0.3	J
Dibenzothiophene	3.2		0.6	J	0.5	J	0.4	J
C1-Dibenzothiophenes	10.2		0.9	J	0.8	J	0.6	J
C2-Dibenzothiophenes	9.5		0.8	J	0.6	J	1.3	J
C3-Dibenzothiophenes	11.4		2.1	J	1.1	J	1.2	J
Fluoranthene	10.9		1.3	J	1.0	J	0.5	J
Pyrene	10.7		1.4	J	1.0	J	0.5	J
C1-Fluoranthenes/Pyrenes	12.7		2.5	J	2.1	J	0.6	J
Benzo(a)anthracene	2.7		0.5	J	0.5	J	0.4	J
Chrysene	3.4	J	0.9	J	1.0	J	0.7	J
C1-Chrysenes	1.5	J	0.5	J	0.6	J	0.4	J
C2-Chrysenes	17.9		2.5	J	1.3	J	0.9	J
C3-Chrysenes	0.6	J	0.7	J	0.7	J	0.2	J
C4-Chrysenes	1.0	J	0.8	J	1.7	J	1.2	J
Benzo(b)fluoranthene	2.4	J	0.6	J	0.8	J	0.5	J
Benzo(k)fluoranthene	1.0	J	0.2	J	0.3	J	0.2	J
Benzo(e)pyrene	1.6	J	0.4	J	0.8	J	0.4	J
Benzo(a)pyrene	2.0	J	0.4	J	0.6	J	0.4	J
Perylene	1.9	J	1.0	J	1.0	J	0.4	J
Indeno(1,2,3-c,d)pyrene	1.4	J	0.4	J	0.5	J	0.3	J
Dibenzo(a,h)anthracene	0.8	J	0.3	J	0.2	J	0.1	J
Benzo(g,h,i)perylene	1.7	J	0.4	J	0.5	J	0.3	J
2-Methylnaphthalene	30.7		6.5		6.3		2.3	J
1-Methylnaphthalene	23.9		5.2		4.9		2.2	J
2,6-Dimethylnaphthalene	14.4		3.4	J	3.0	J	1.3	J
1,6,7-Trimethylnaphthalene	9.5		2.2	J	2.4	J	1.2	J
1-Methylphenanthrene	4.5		1.0	J	1.0	J	0.8	J

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH005	MOA01PAH006	MOA01PAH007
Sample Descriptor	C1-2S	C1-3S	Effluent
Original Sample			
GERG ID	C39020	C39021	C39022
Sample Type	SAMP	SAMP	SAMP
SDG	B6418	B6418	B6418
Dry Weight			
Volume	0.94	0.94	0.94
Sample Size Units	Liter	Liter	Liter
Matrix	Water	Water	Water
% solid			
% Lipid			
Reporting Units	ng/L	ng/L	ng/L
Calculation Basis (dry/wet)	Wet	Wet	Wet
QC Batch ID	M3084	M3084	M3084
Method	GCMS	GCMS	GCMS
Collection Date	06/20/01	06/20/01	06/19/01
Receive Date	06/22/01	06/22/01	06/22/01
Extraction Date	06/25/01	06/25/01	06/25/01
Analysis Date	07/18/01	07/18/01	07/18/01
Surrogate Compounds	**%Recovery**	**%Recovery**	**%Recovery**
d8-Naphthalene	109.8	115.0	78.7
d10-Acenaphthene	113.8	119.3	98.6
d10-Phenanthrene	117.7	123.8	102.0
d12-Chrysene	95.1	106.4	113.0
d12-Perylene	50.6	58.5	46.3
Total PAHs	**Concentration**	**Concentration**	**Concentration**
Total PAHs with Perylene	133.8	154.2	7541.4
Total PAHs without Perylene	130.2	150.7	7538.0

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	MOA01PAH005		MOA01PAH006		MOA01PAH007	
Sample Descriptor	C1-2S		C1-3S		Effluent	
Original Sample						
GERG ID	C39020		C39021		C39022	
Sample Type	SAMP		SAMP		SAMP	
SDG	B6418		B6418		B6418	
PAH Compounds	**Concentration**		**Concentration**		**Concentration**	
Naphthalene	13.6		14.1		320.3	
C1-Naphthalenes	19.2		19.7		743.3	
C2-Naphthalenes	12.0		13.0		606.4	
C3-Naphthalenes	10.9		14.7		1135.6	
C4-Naphthalenes	7.4		9.5		488.4	
Biphenyl	3.6		3.9		74.3	
Acenaphthylene	0.6	J	0.7	J	9.7	
Acenaphthene	0.6	J	0.8	J	193.1	
Fluorene	2.6	J	3.3	J	204.3	
C1-Fluorenes	3.0	J	4.3	J	223.4	
C2-Fluorenes	1.2	J	9.0	J	289.3	
C3-Fluorenes	1.4	J	1.5	J	39.4	
Phenanthrene	7.6		7.7		475.5	
Anthracene	1.2	J	1.0	J	110.9	
C1-Phenanthrenes/Anthracenes	7.4	J	8.1	J	278.1	
C2-Phenanthrenes/Anthracenes	7.2	J	7.5	J	319.5	
C3-Phenanthrenes/Anthracenes	5.0	J	4.5	J	277.3	
C4-Phenanthrenes/Anthracenes	4.9	J	2.9	J	15.7	
Dibenzothiophene	1.0	J	0.9	J	47.6	
C1-Dibenzothiophenes	1.3	J	1.5	J	85.9	
C2-Dibenzothiophenes	0.8	J	1.9	J	140.6	
C3-Dibenzothiophenes	0.7	J	0.5	J	139.6	
Fluoranthene	1.2	J	1.1	J	247.7	
Pyrene	1.8	J	1.6	J	229.0	
C1-Fluoranthenes/Pyrenes	3.0	J	3.8	J	173.9	
Benzo(a)anthracene	0.9	J	0.8	J	91.6	
Chrysene	1.9	J	2.0	J	68.9	
C1-Chrysenes	2.0	J	2.3	J	20.3	
C2-Chrysenes	1.5	J	3.0	J	63.8	
C3-Chrysenes	0.0	J	0.2	J	74.8	
C4-Chrysenes	0.4	J	1.4	J	153.2	
Benzo(b)fluoranthene	1.1	J	1.0	J	55.3	
Benzo(k)fluoranthene	0.4	J	0.5	J	20.3	
Benzo(e)pyrene	1.2	J	1.0	J	21.2	
Benzo(a)pyrene	0.7	J	0.5	J	49.0	
Perylene	3.6	J	3.5	J	3.5	J
Indeno(1,2,3-c,d)pyrene	0.3	J	0.2	J	22.9	
Dibenzo(a,h)anthracene	0.1	J	0.1	J	4.3	
Benzo(g,h,i)perylene	0.9	J	0.5	J	23.9	
2-Methylnaphthalene	10.4		11.3		417.9	
1-Methylnaphthalene	8.8		8.4		325.4	
2,6-Dimethylnaphthalene	5.3		5.7		240.4	
1,6,7-Trimethylnaphthalene	4.4		4.8		132.0	
1-Methylphenanthrene	2.2	J	2.3	J	74.8	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	
Sample Descriptor	Proc. Blank
Original Sample	
GERG ID	Q19702
Sample Type	Blank
SDG	

Dry Weight	
Volume	1.00
Sample Size Units	Liter
Matrix	Water
% solid	
% Lipid	
Reporting Units	ng/L
Calculation Basis (dry/wet)	

QC Batch ID	M3084
Method	GCMS
Collection Date	
Receive Date	
Extraction Date	06/25/01
Analysis Date	07/18/01

Surrogate Compounds	**%Recovery**
d8-Naphthalene	89.9
d10-Acenaphthene	91.2
d10-Phenanthrene	95.0
d12-Chrysene	92.3
d12-Perylene	65.4

Total PAHs	**Concentration**
Total PAHs with Perylene	102.4
Total PAHs without Perylene	98.8

ND	Not Detected
J	<MDL
NA	Not Applicable
Q	Results Outside QC
I	Interference
B	Blank Contamination >3xMDL
D	Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	
Sample Descriptor	Proc. Blank
Original Sample	
GERG ID	Q19702
Sample Type	Blank
SDG	

PAH Compounds	Concentration	
Naphthalene	7.2	J
C1-Naphthalenes	7.3	J
C2-Naphthalenes	3.7	J
C3-Naphthalenes	6.8	J
C4-Naphthalenes		ND
Biphenyl	3.8	J
Acenaphthylene	1.9	J
Acenaphthene	1.9	J
Fluorene	3.2	J
C1-Fluorenes	3.1	J
C2-Fluorenes	0.5	J
C3-Fluorenes	7.9	J
Phenanthrene	4.6	J
Anthracene	2.8	J
C1-Phenanthrenes/Anthracenes	4.1	J
C2-Phenanthrenes/Anthracenes	3.3	J
C3-Phenanthrenes/Anthracenes	0.7	J
C4-Phenanthrenes/Anthracenes	2.6	J
Dibenzothiophene	1.8	J
C1-Dibenzothiophenes	0.7	J
C2-Dibenzothiophenes	0.8	J
C3-Dibenzothiophenes	0.1	J
Fluoranthene	2.3	J
Pyrene	2.7	J
C1-Fluoranthenes/Pyrenes	0.1	J
Benzo(a)anthracene	2.3	J
Chrysene	3.6	J
C1-Chrysenes	0.2	J
C2-Chrysenes	1.4	J
C3-Chrysenes	0.4	J
C4-Chrysenes	0.2	J
Benzo(b)fluoranthene	2.2	J
Benzo(k)fluoranthene	2.5	J
Benzo(e)pyrene	2.8	J
Benzo(a)pyrene	3.4	J
Perylene	3.6	J
Indeno(1,2,3-c,d)pyrene	2.4	J
Dibenzo(a,h)anthracene	1.3	J
Benzo(g,h,i)perylene	2.2	J
2-Methylnaphthalene	3.6	J
1-Methylnaphthalene	3.8	J
2,6-Dimethylnaphthalene	1.2	J
1,6,7-Trimethylnaphthalene	1.8	J
1-Methylphenanthrene	2.1	J
Average Recovery		

ND	Not Detected
J	<MDL
NA	Not Applicable
Q	Results Outside QC
I	Interference
B	Blank Contamination >3xMDL
D	Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	
Sample Descriptor	Proc. Blank
Original Sample	
GERG ID	Q19702
Sample Type	Blank
SDG	

PAH Compounds	Concentration	
Naphthalene	7.2	J
C1-Naphthalenes	7.3	J
C2-Naphthalenes	3.7	J
C3-Naphthalenes	6.8	J
C4-Naphthalenes		ND
Biphenyl	3.8	J
Acenaphthylene	1.9	J
Acenaphthene	1.9	J
Fluorene	3.2	J
C1-Fluorenes	3.1	J
C2-Fluorenes	0.5	J
C3-Fluorenes	7.9	J
Phenanthrene	4.6	J
Anthracene	2.8	J
C1-Phenanthrenes/Anthracenes	4.1	J
C2-Phenanthrenes/Anthracenes	3.3	J
C3-Phenanthrenes/Anthracenes	0.7	J
C4-Phenanthrenes/Anthracenes	2.6	J
Dibenzothiophene	1.8	J
C1-Dibenzothiophenes	0.7	J
C2-Dibenzothiophenes	0.8	J
C3-Dibenzothiophenes	0.1	J
Fluoranthene	2.3	J
Pyrene	2.7	J
C1-Fluoranthenes/Pyrenes	0.1	J
Benzo(a)anthracene	2.3	J
Chrysene	3.6	J
C1-Chrysenes	0.2	J
C2-Chrysenes	1.4	J
C3-Chrysenes	0.4	J
C4-Chrysenes	0.2	J
Benzo(b)fluoranthene	2.2	J
Benzo(k)fluoranthene	2.5	J
Benzo(e)pyrene	2.8	J
Benzo(a)pyrene	3.4	J
Perylene	3.6	J
Indeno(1,2,3-c,d)pyrene	2.4	J
Dibenzo(a,h)anthracene	1.3	J
Benzo(g,h,i)perylene	2.2	J
2-Methylnaphthalene	3.6	J
1-Methylnaphthalene	3.8	J
2,6-Dimethylnaphthalene	1.2	J
1,6,7-Trimethylnaphthalene	1.8	J
1-Methylphenanthrene	2.1	J
Average Recovery		

ND	Not Detected
J	<MDL
NA	Not Applicable
Q	Results Outside QC
I	Interference
B	Blank Contamination >3xMDL
D	Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID		
Sample Descriptor	Blank Spike	Blank Spike
Original Sample		
GERG ID	Q19703	Q19704
Sample Type	LBS	LBSD
SDG		
Dry Weight		
Volume	1.00	1.00
Sample Size Units	Liter	Liter
Matrix	Water	Water
% solid		
% Lipid		
Reporting Units	%	%
Calculation Basis (dry/wet)		
QC Batch ID	M3084	M3084
Method	GCMS	GCMS
Collection Date		
Receive Date		
Extraction Date	06/25/01	06/25/01
Analysis Date	07/18/01	07/18/01

Surrogate Compounds	**% Recovery**	**% Recovery**
d8-Naphthalene	94.6	90.0
d10-Acenaphthene	98.0	93.9
d10-Phenanthrene	104.8	98.2
d12-Chrysene	118.4	108.8
d12-Perylene	63.4	60.7

Total PAHs	**Concentration**	**Concentration**
Total PAHs with Perylene	3175.7	3135.6
Total PAHs without Perylene	3080.4	3041.7

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID						
Sample Descriptor	Blank Spike		Blank Spike			
Original Sample						
GERG ID	Q19703		Q19704			
Sample Type	LBS		LBSD			
SDG						
PAH Compounds	**% Recovery**		**% Recovery**		**%RPD**	
Naphthalene	105.9		103.1		2.7	
C1-Naphthalenes		NA		NA		NA
C2-Naphthalenes		NA		NA		NA
C3-Naphthalenes		NA		NA		NA
C4-Naphthalenes		NA		NA		NA
Biphenyl	102.3		101.1		1.2	
Acenaphthylene	124.6		117.0		6.3	
Acenaphthene	104.3		102.6		1.6	
Fluorene	99.5		98.4		1.1	
C1-Fluorenes		NA		NA		NA
C2-Fluorenes		NA		NA		NA
C3-Fluorenes		NA		NA		NA
Phenanthrene	107.6		106.4		1.1	
Anthracene	101.4		99.1		2.3	
C1-Phenanthrenes/Anthracenes		NA		NA		NA
C2-Phenanthrenes/Anthracenes		NA		NA		NA
C3-Phenanthrenes/Anthracenes		NA		NA		NA
C4-Phenanthrenes/Anthracenes		NA		NA		NA
Dibenzothiophene	89.3		89.4		0.2	
C1-Dibenzothiophenes		NA		NA		NA
C2-Dibenzothiophenes		NA		NA		NA
C3-Dibenzothiophenes		NA		NA		NA
Fluoranthene	105.8		103.1		2.5	
Pyrene	112.4		110.1		2.1	
C1-Fluoranthenes/Pyrenes		NA		NA		NA
Benzo(a)anthracene	98.1		100.6		2.5	
Chrysene	102.5		103.4		0.9	
C1-Chrysenes		NA		NA		NA
C2-Chrysenes		NA		NA		NA
C3-Chrysenes		NA		NA		NA
C4-Chrysenes		NA		NA		NA
Benzo(b)fluoranthene	81.5		82.8		1.6	
Benzo(k)fluoranthene	101.2		102.2		1.0	
Benzo(e)pyrene	93.8		95.8		2.1	
Benzo(a)pyrene	93.4		96.8		3.6	
Perylene	95.9		94.5		1.4	
Indeno(1,2,3-c,d)pyrene	82.5		81.9		0.7	
Dibenzo(a,h)anthracene	95.5		92.1		3.6	
Benzo(g,h,i)perylene	92.8		91.5		1.4	
2-Methylnaphthalene	98.9		96.6		2.4	
1-Methylnaphthalene	103.4		103.7		0.3	
2,6-Dimethylnaphthalene	98.5		96.3		2.2	
1,6,7-Trimethylnaphthalene	102.9		102.1		0.8	
1-Methylphenanthrene	103.6		102.5		1.1	
Average Recovery	**99.9**		**98.9**		**1.9**	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	
Sample Descriptor	STD OIL 2000
Original Sample	
GERG ID	W42158
Sample Type	REF
SDG	

Dry Weight	1.00
Volume	
Sample Size Units	Milliliter
Matrix	Oil
% solid	
% Lipid	
Reporting Units	ng/mL
Calculation Basis (dry/wet)	

QC Batch ID	
Method	GCMS
Collection Date	
Receive Date	
Extraction Date	
Analysis Date	07/17/01

Surrogate Compounds	**% Recovery**
d8-Naphthalene	NA
d10-Acenaphthene	NA
d10-Phenanthrene	NA
d12-Chrysene	NA
d12-Perylene	NA

Total PAHs	**Concentration**
Total PAHs with Perylene	9517.5
Total PAHs without Perylene	9504.6

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Kinnetic Laboratories - Municipality of Anchorage 2001

Client Sample ID	
Sample Descriptor	STD OIL 2000
Original Sample	
GERG ID	W42158
Sample Type	REF
SDG	

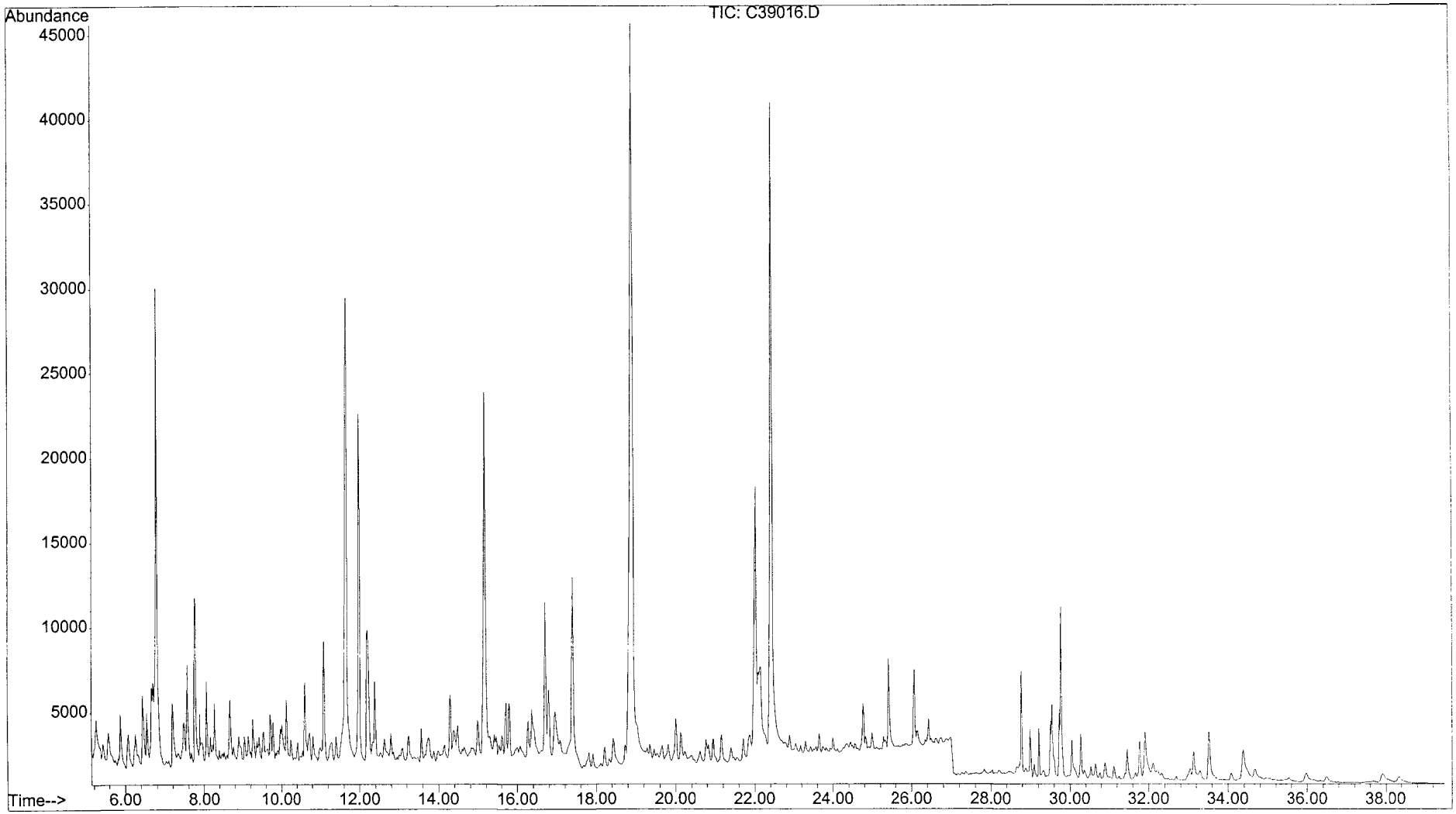
PAH Compounds	Concentration		QC Acceptance Range -35% to +35%			Mean Lab Values Conc	SD
Naphthalene	583.6		271.2	to	898.6	541.4	124.2
C1-Naphthalenes	1769.8		736.8	to	2645.0	1546.4	412.9
C2-Naphthalenes	1594.8		744.9	to	2916.2	1653.1	507.1
C3-Naphthalenes	1414.9		584.9	to	2227.3	1274.9	375.0
C4-Naphthalenes	762.4		306.5	to	1124.0	652.1	180.5
Biphenyl	70.3		33.3	to	93.1	60.1	8.9
Acenaphthylene	34.3		12.2	to	68.6	34.8	16.0
Acenaphthene	8.5	J	1.3	to	15.4	6.7	4.7
Fluorene	125.5		52.9	to	155.8	98.4	17.0
C1-Fluorenes	358.5		134.8	to	411.5	256.1	48.7
C2-Fluorenes	455.8		212.0	to	589.1	381.3	55.1
C3-Fluorenes	423.9		146.9	to	523.7	307.0	81.0
Phenanthrene	157.3		74.5	to	201.1	131.8	17.2
Anthracene	27.4		-3.9	to	61.6	19.8	25.8
C1-Phenanthrenes/Anthracenes	375.3		164.1	to	450.7	293.2	40.7
C2-Phenanthrenes/Anthracenes	489.6		188.3	to	544.6	346.5	56.9
C3-Phenanthrenes/Anthracenes	302.9		129.9	to	399.1	247.8	47.9
C4-Phenanthrenes/Anthracenes	143.4		66.8	to	209.7	129.0	26.3
Dibenzothiophene	20.6		9.4	to	26.5	17.1	2.6
C1-Dibenzothiophenes	89.9		32.1	to	97.3	60.7	11.3
C2-Dibenzothiophenes	63.4		29.8	to	91.9	57.0	11.1
C3-Dibenzothiophenes	50.0		20.6	to	65.7	40.1	8.5
Fluoranthene	7.7	J	1.5	to	17.4	7.6	5.3
Pyrene	2.5	J	-3.8	to	35.9	10.3	16.2
C1-Fluoranthenes/Pyrenes	63.8		25.4	to	114.0	61.8	22.7
Benzo(a)anthracene	6.3	J	0.7	to	14.4	5.9	4.8
Chrysene	13.4	J	5.6	to	19.8	11.7	3.0
C1-Chrysenes	30.4		14.0	to	48.3	28.7	7.1
C2-Chrysenes	47.3		20.4	to	71.6	42.2	10.8
C3-Chrysenes	3.7	J	1.9	to	13.3	6.4	3.5
C4-Chrysenes	0.4	J	-0.1	to	5.0	1.8	1.9
Benzo(b)fluoranthene	2.8	J	0.7	to	5.7	2.7	1.6
Benzo(k)fluoranthene	2.5	J	-0.1	to	5.1	1.8	2.0
Benzo(e)pyrene	0.3	J	0.3	to	8.3	3.3	2.8
Benzo(a)pyrene	0.8	J	0.3	to	7.2	2.9	2.4
Perylene	13.0	J	6.6	to	20.2	12.6	2.4
Indeno(1,2,3-c,d)pyrene	0.2	J	0.0	to	2.8	1.1	1.0
Dibenzo(a,h)anthracene	0.1	J	0.2	to	1.7	0.7	0.5
Benzo(g,h,i)perylene	0.1	J	-1.8	to	15.6	4.3	7.2
2-Methylnaphthalene	1044.1		478.5	to	1587.4	956.0	219.9
1-Methylnaphthalene	725.7		344.4	to	1129.4	683.2	153.4
2,6-Dimethylnaphthalene	804.1		398.2	to	1101.7	714.3	101.8
1,6,7-Trimethylnaphthalene	562.4		278.0	to	749.8	491.6	63.8
1-Methylphenanthrene	104.8		43.3	to	169.2	96.0	29.4

Average Recovery

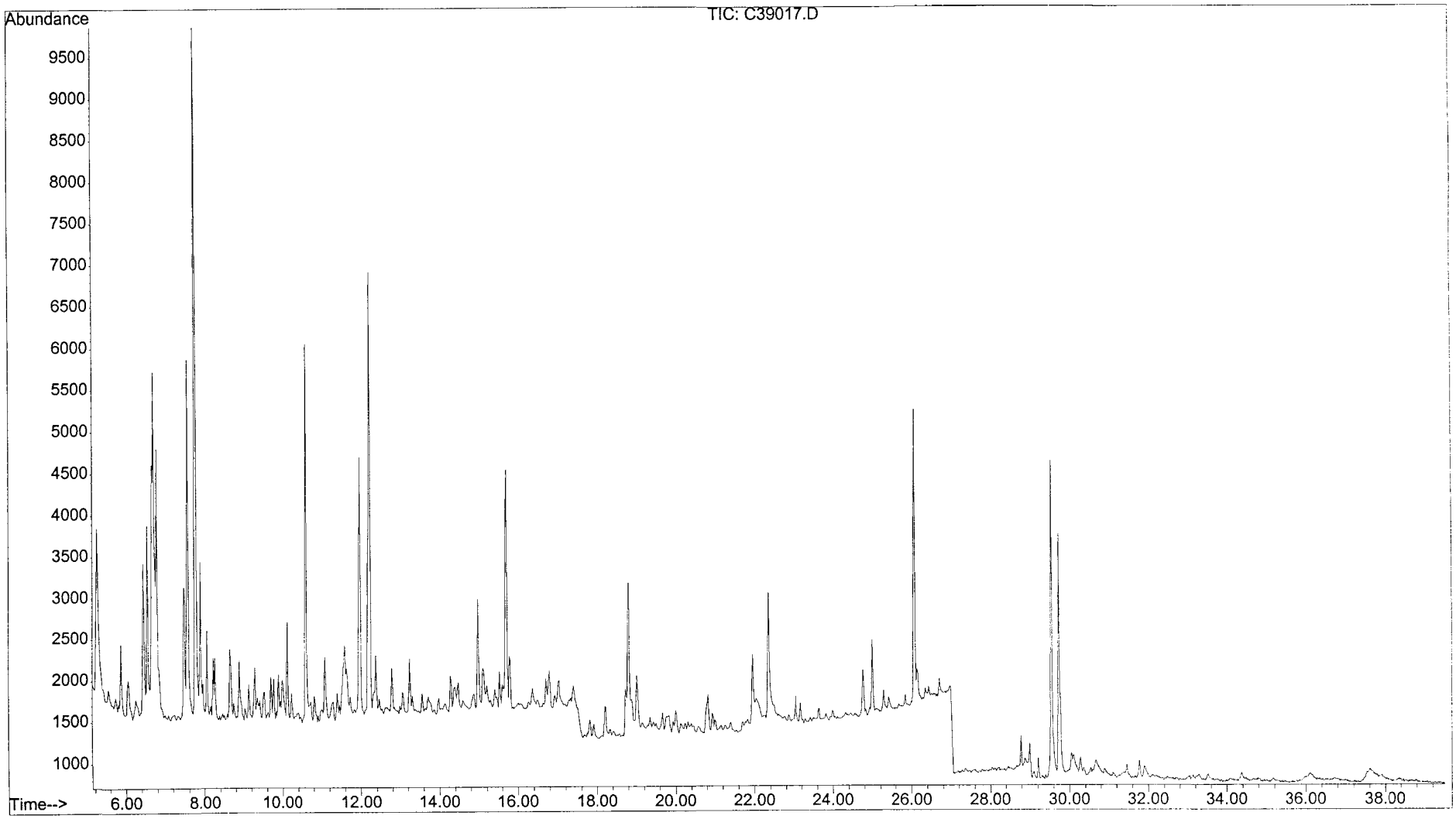
ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination >3xMDL
D Dilution

Total Ion Chromatograms
For PAH Analyses

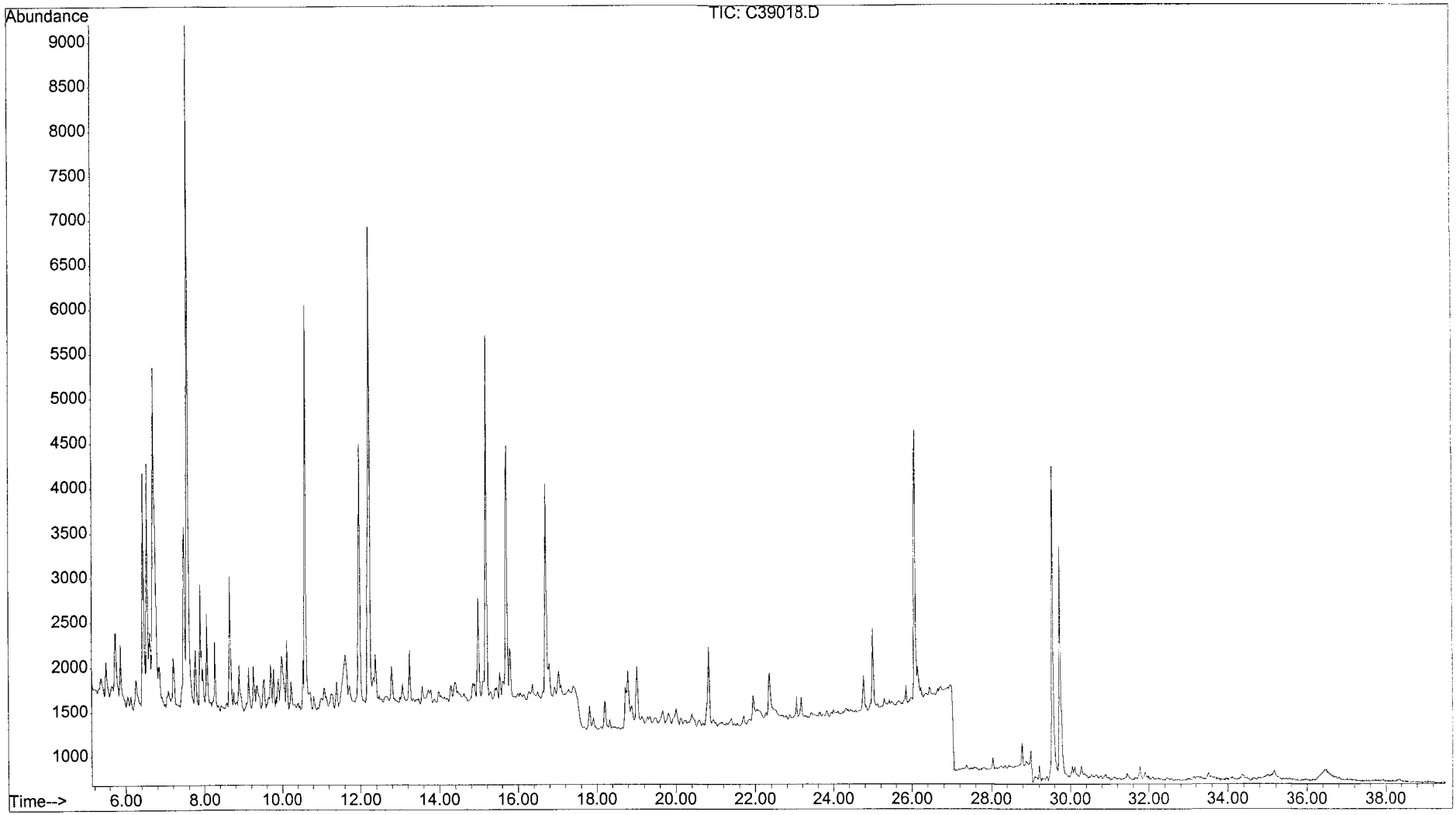
File : K:\HPCHEM\1\DATA\M3084AR\C39016.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 4:09 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: SAMP
Misc Info : M3084
Vial Number: 17



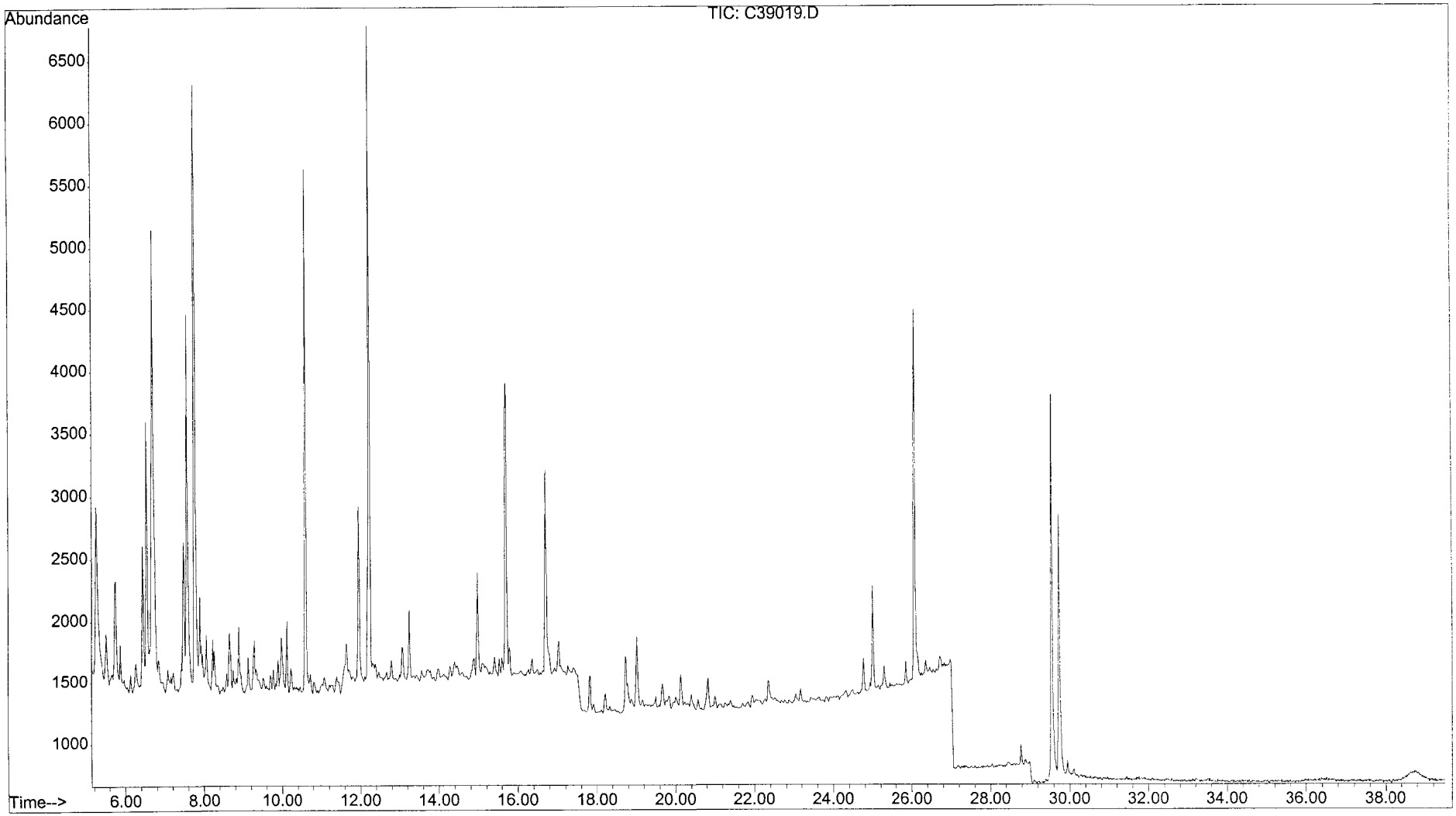
File : K:\HPCHEM\1\DATA\M3084AR\C39017.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 4:54 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: SAMP
Misc Info : M3084
Vial Number: 18



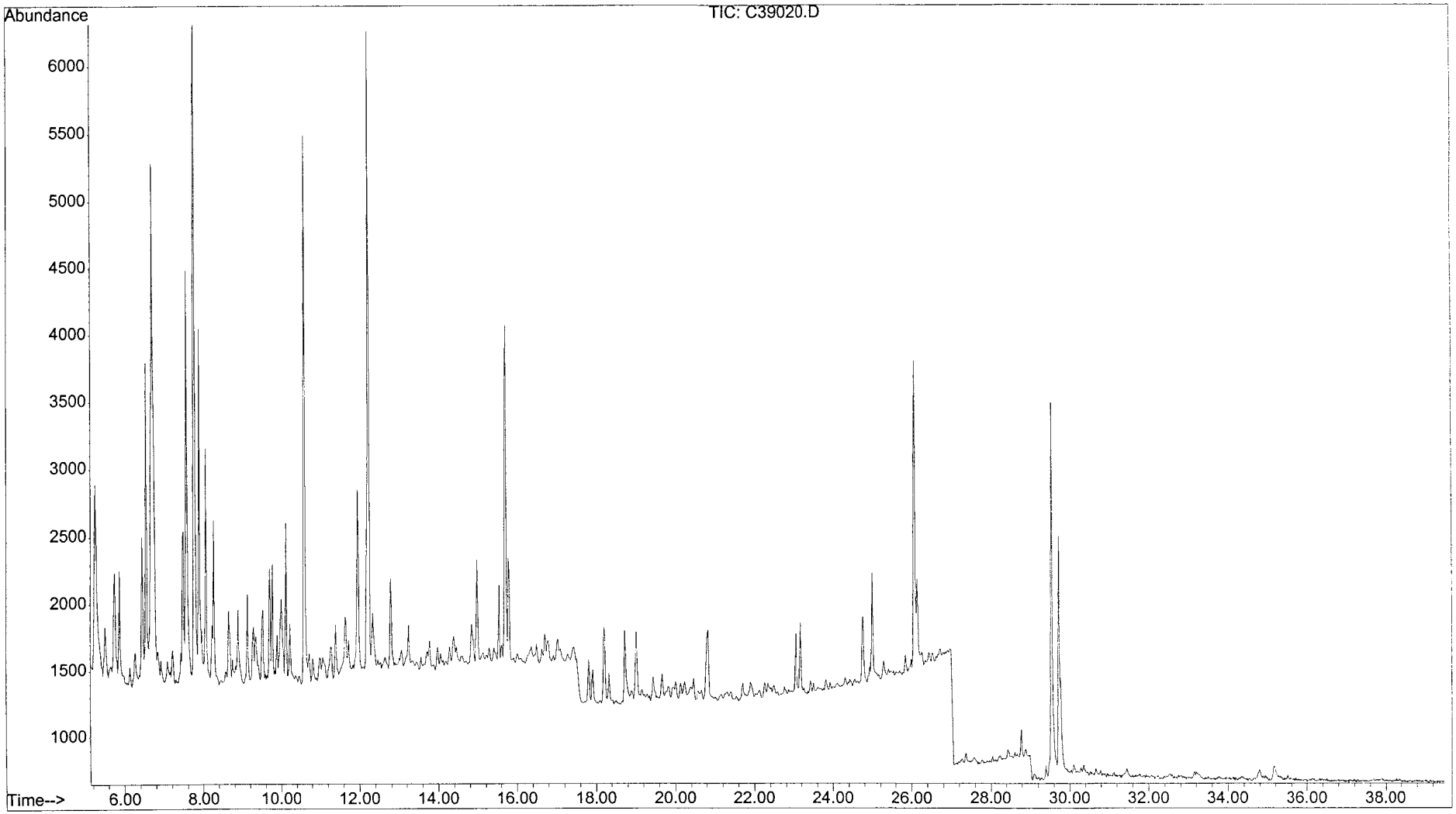
File : K:\HPCHEM\1\DATA\M3084AR\C39018.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 5:39 using AcqMethod AR7061M9
Instrument : GC/MS Ins –
Sample Name: SAMP
Misc Info : M3084
Vial Number: 19



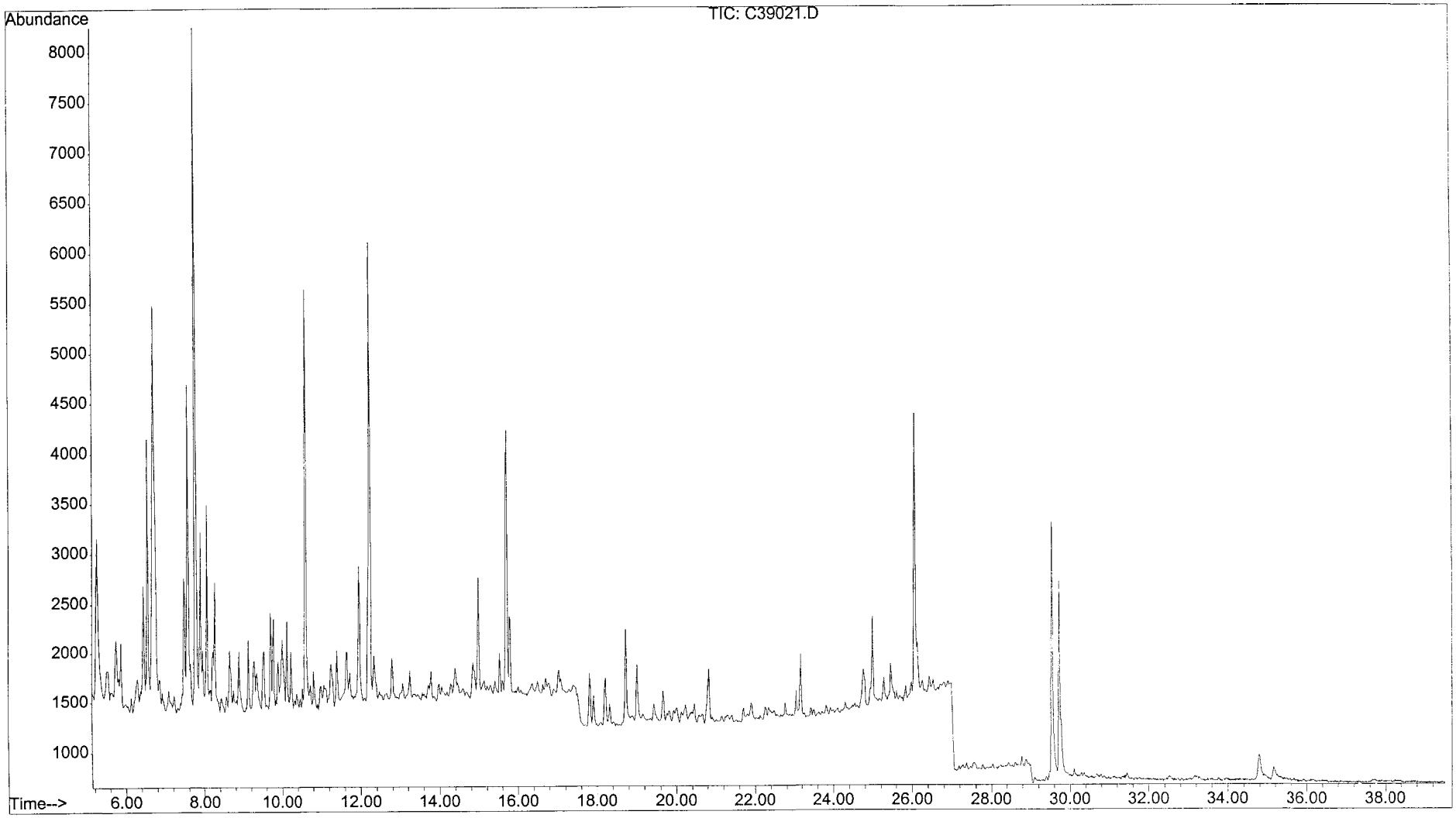
File : K:\HPCHEM\1\DATA\M3084AR\C39019.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 6:23 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: SAMP
Misc Info : M3084
Vial Number: 20



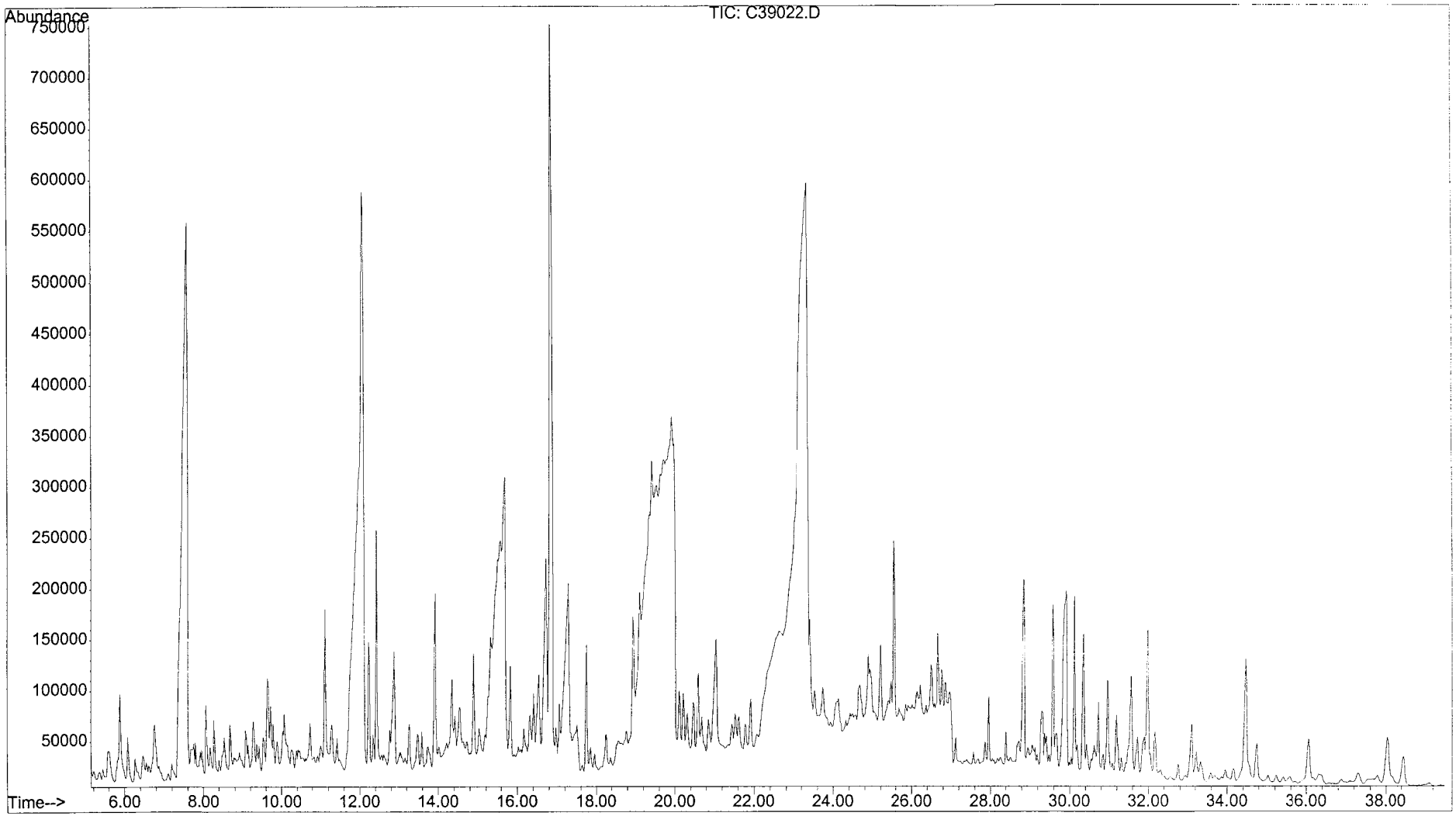
File : K:\HPCHEM\1\DATA\M3084AR\C39020.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 7:08 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: SAMP
Misc Info : M3084
Vial Number: 21



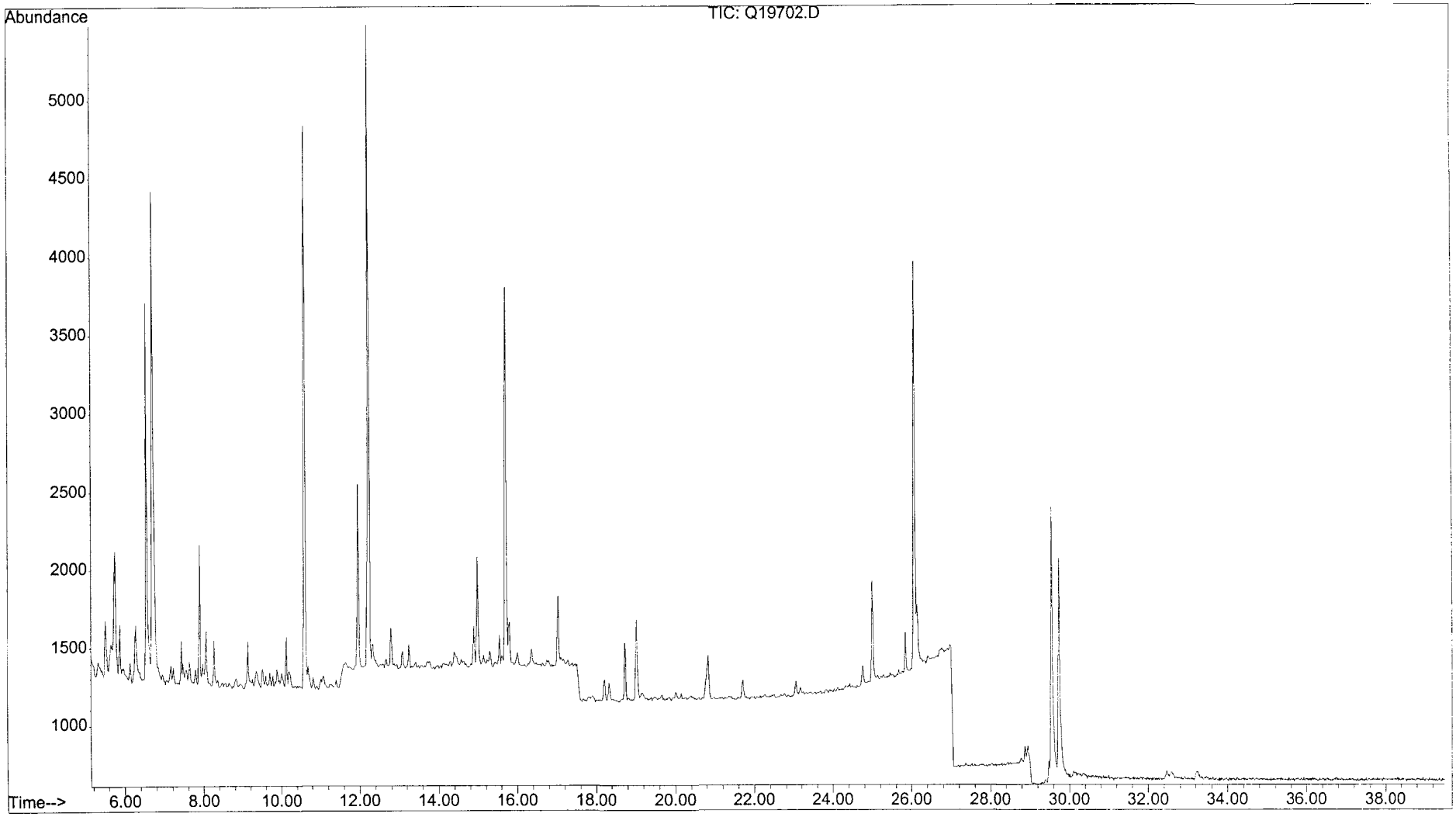
File : K:\HPCHEM\1\DATA\M3084AR\C39021.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 7:53 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: SAMP
Misc Info : M3084
Vial Number: 22



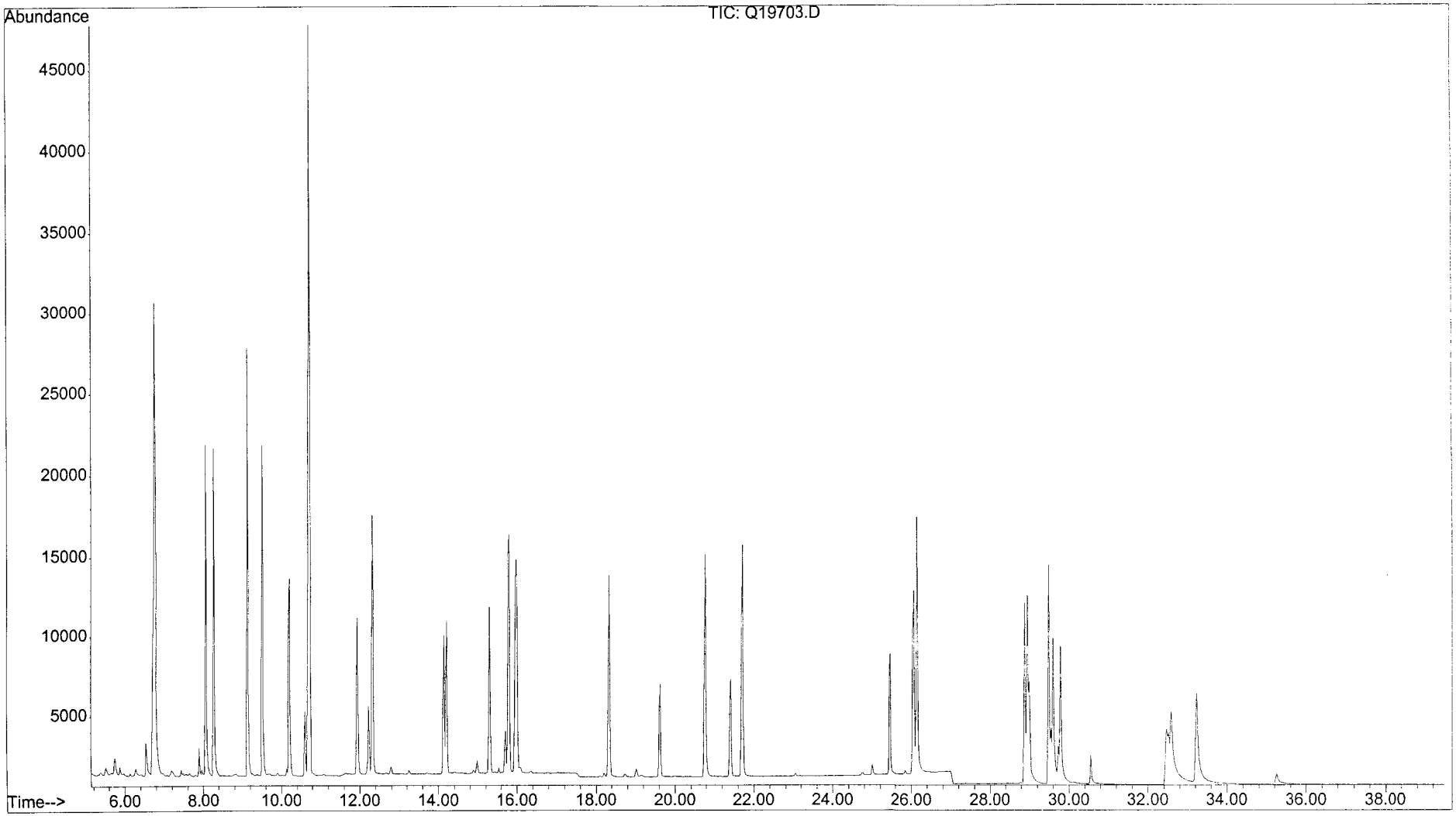
File : K:\HPCHEM\1\DATA\M3084AR\C39022.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 8:38 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: SAMP
Misc Info : M3084
Vial Number: 23



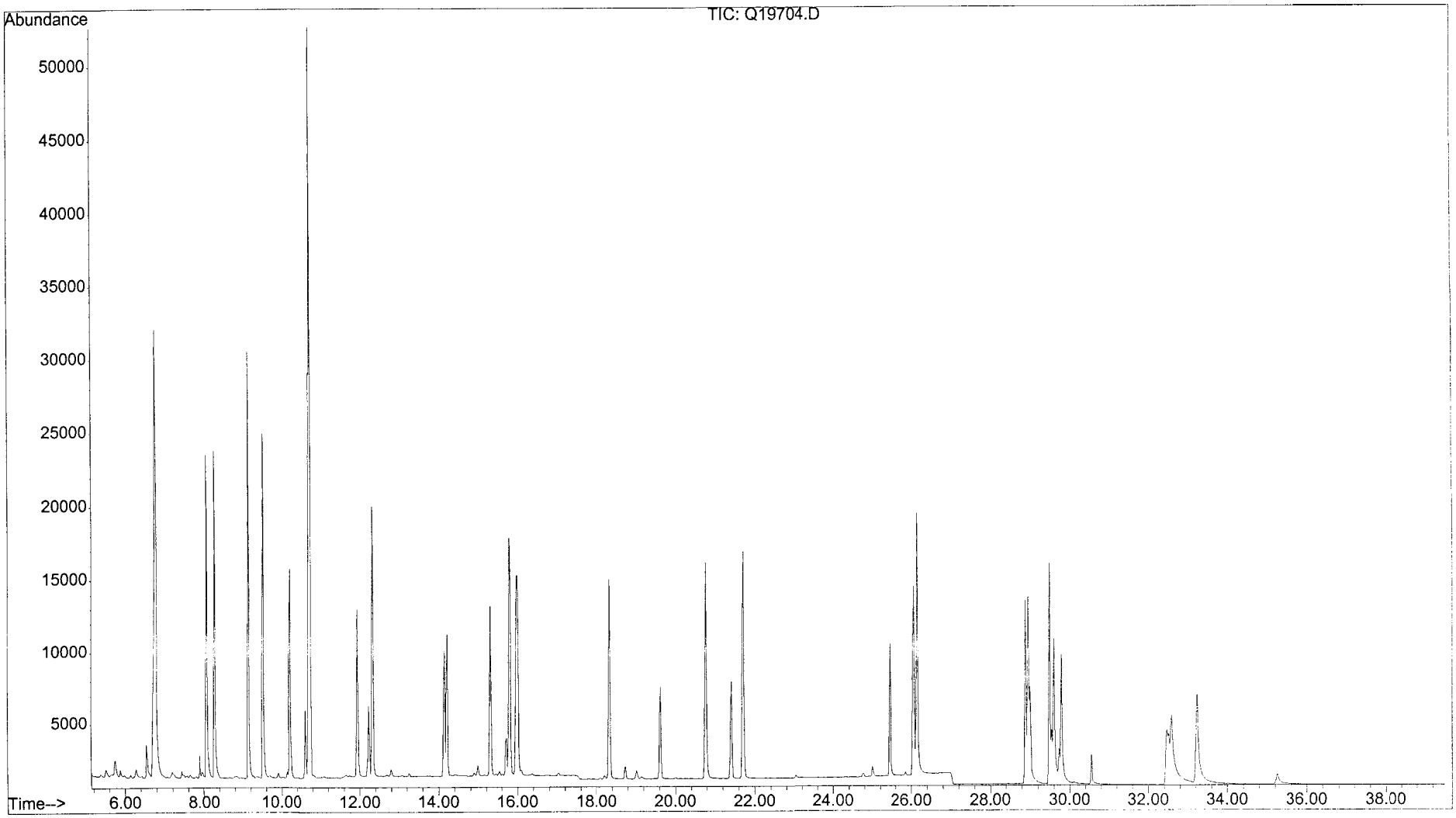
File : K:\HPCHEM\1\DATA\M3084AR\Q19702.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 1:10 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: BLANK
Misc Info : M3084
Vial Number: 13



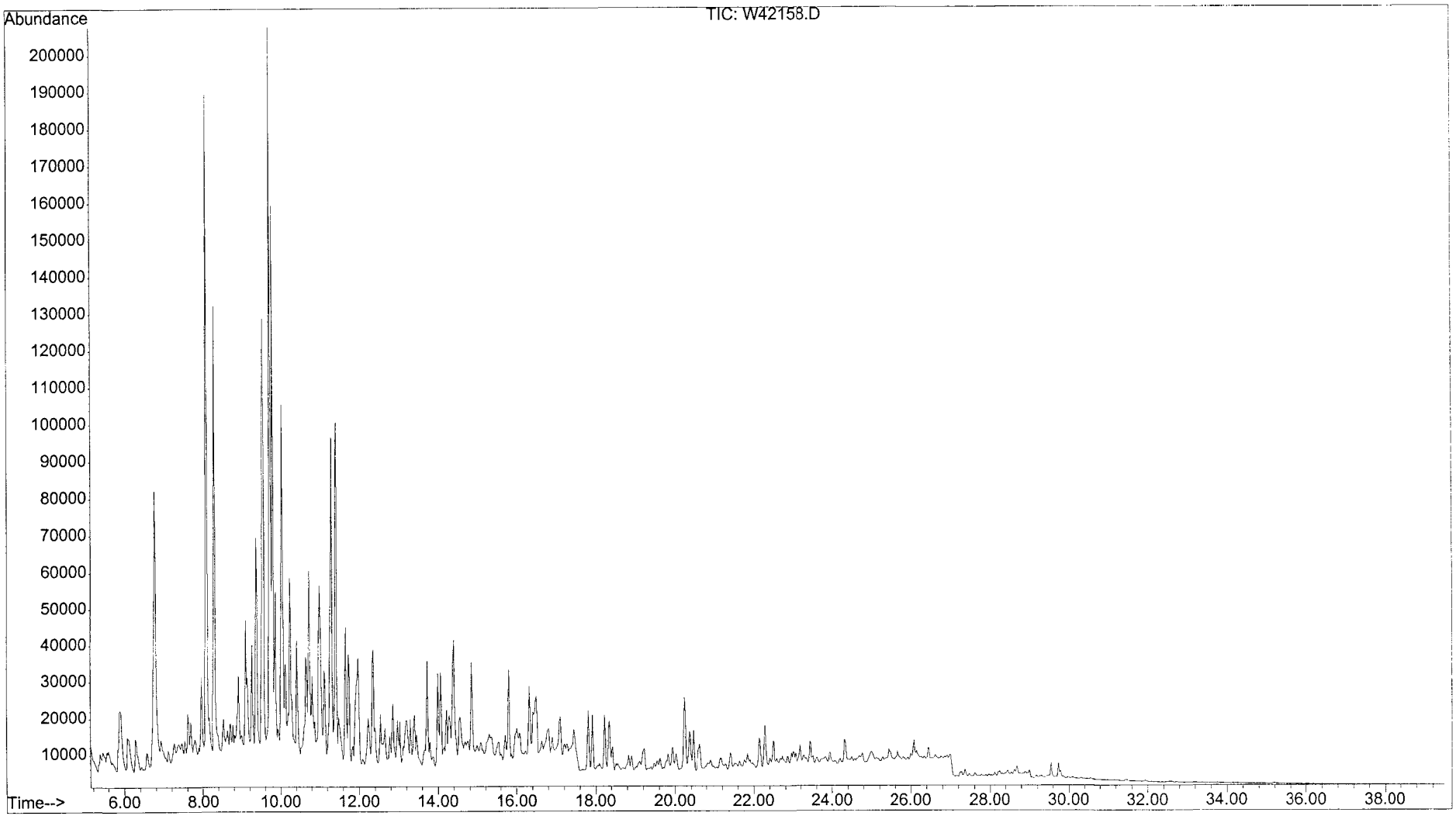
File : K:\HPCHEM\1\DATA\M3084AR\Q19703.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 1:55 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: LBS
Misc Info : M3084
Vial Number: 14



File : K:\HPCHEM\1\DATA\M3084AR\Q19704.D
Operator : Hyun-Min
Acquired : 18 Jul 2001 2:40 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: LBSD
Misc Info : M3084
Vial Number: 15



File : K:\HPCHEM\1\DATA\M3084AR\W42158.D
Operator : Hyun-Min
Acquired : 17 Jul 2001 16:57 using AcqMethod AR7061M9
Instrument : GC/MS Ins
Sample Name: GERG STD CHK 2000
Misc Info :
Vial Number: 2



This is the last page

of this report

APPENDIX D

Receiving Water Quality Monitoring

D3 Battelle

Trace Metals

KINNETIC LABORATORIES INCORPORATED

RECEIVING WATER, TRACE METALS, BATTELLE SAMPLE LIST

SAMPLE IDENTIFICATION NUMBER	SAMPLE LOCATION	SAMPLE TYPE
MOA01MTL001	1F1-1S	SAMPLE
MOA01MTL002	1F1-2S	SAMPLE
MOA01MTL003	1F1-3S	SAMPLE
MOA01MTL004	1C1-1S	SAMPLE
MOA01MTL005	1C1-2S	SAMPLE
MOA01MTL006	1C1-3S	SAMPLE
MOA01MTL007	EFFLUENT	SAMPLE

August 14, 2001

Battelle
Pacific Northwest Division

Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382-9099
Telephone (206) 683-4151
Facsimile (206) 681-3699

Ms. Janet Savoie
Kinnetic Laboratories, Inc.
Oceanographic and Environmental Consulting
Alaska Regional Office
403 West 8th Avenue
Anchorage, AK 99501-3515

Dear Janet:

Enclosed are final results for trace metals in seawater and effluent samples received from Kinnetic Laboratories between June 21 and 22, 2001. Chromium, Ni, Cu, Zn, Cd, and Pb in seawater samples were pre-concentrated prior to analysis by inductively coupled plasma mass spectroscopy (ICP/MS). Cr, Ni, Cu, Zn, Cd, Pb, and Hg were determined in seawater and effluent samples by total recoverable and dissolved methods as appropriate for ICP/MS and cold vapor atomic flourescence. Arsenic was analyzed by flame ionization atomic spectroscopy. Silver was determined by graphite furnace atomic absorption.

Chromium, Cu, and Zn were detected in the pre-concentration (Fe/Pd) blank. Other metals were undetected in the blanks. The SRM results were within Battelle's default criteria of ±20%, except Cr and Pb in Cass-4. Chromium recovery is slightly high; Pb recovery is quite high, but the result is near the detection limit for that element. Both metals recovered well within our criteria for 1643d. Matrix spikes were within our default criteria of ±25%, except one matrix spike for Ag, which recovered slightly low. A blank spike (not reported) was analyzed with this batch of samples, with a recovery of 80%. Looking at the QC analyzed with this graphite furnace run, it appears there may have been a slight matrix interference with Ag, biasing the data slightly low. Sample results were not blank corrected. I have enclosed a disk containing the data in Excel format for your convenience.

A cost breakdown has been included with these data and appears in Table 1 and Table 2. An invoice will be sent to you under separate cover. If you have any questions or comments concerning the data, please don't hesitate to contact me at 360-681-3627 or email: ls_bingler@pnl.gov at anytime. These samples will be disposed of on August 30, unless otherwise advised by you.

Sincerely,

Linda S. Bingler
Senior Research Scientist

Enc.

cc: L Massey

BATTELLE MARINE SCIENCES LABORATORY
1529 W. Sequim Bay Road
Sequim, WA 98382
(360) 683-4151

KINNETICS

1/25/02

CONCENTRATIONS OF METALS IN SEAWATER and EFFLUENT SAMPLES

Samples Received: 06/21/01

(concentrations in μg/L - not blank corrected)

(cf#1672)

MSL Code	Rep	Sponsor I.D.	Type	Fe/Pd Cr ICP/MS	Fe/Pd Ni ICP/MS	Fe/Pd Cu ICP/MS	Fe/Pd Zn ICP/MS	FIAS As FIAS	GFAA Ag GFAA	Fe/Pd Cd ICP/MS	Fe/Pd Pb ICP/MS	CVAF Hg CVAF
SAMPLE RESULTS												
1672*1		MOA01MTL007	Total	4.42	4.13	50.1	75.0	1.85	7.41	0.414	3.86	0.0843
1672*2		MOA01MTL001	Total	5.06	5.42	9.82	17.0	3.56	0.437	0.111	2.44	0.0131
1672*3		MOA01MTL002	Total	11.9	11.8	16.5	30.8	6.94	0.111	0.141	4.83	0.0211
1672*4		MOA01MTL003	Total	9.94	9.82	13.1	23.7	5.75	0.0860	0.103	2.79	0.0169
1672*5		MOA01MTL007	Diss	2.03	2.95	26.6	33.7	1.61	0.573	0.234	0.441	0.00586
1672*6		MOA01MTL001	Diss	0.192	1.18	3.38	3.56	1.52	0.115	0.0967	0.0580	0.000919
1672*7		MOA01MTL002	Diss	0.174	1.14	1.52	1.54	1.49	0.0370	0.0907	0.0284	0.000786
1672*8		MOA01MTL003	Diss	0.161	1.00	1.40	0.521	1.51	0.0297	0.0726	0.0647	0.000744
1672*9		MOA01MTL004	Total	2.47	3.03	4.16	6.18	2.48	0.0381	0.0788	0.873	0.00440
1672*10		MOA01MTL005	Total	18.9	18.7	25.8	45.4	9.79	0.100	0.128	5.81	0.0359
1672*11		MOA01MTL006	Total	33.0	33.8	43.1	79.9	19.4	0.170	0.182	10.2	0.0715
1672*12		MOA01MTL004	Diss	0.199	1.03	1.29	0.616	1.49	0.0233	0.0700	0.0197	0.000628
1672*13		MOA01MTL005	Diss	0.176	0.976	1.28	0.405	1.45	0.0223	0.0572	0.0131	0.000584
1672*14		MOA01MTL006	Diss	0.171	0.976	1.25	0.580	1.46	0.0204	0.0596	0.012 U	0.000828
PROCEDURAL BLANK												
		Fe/Pd		0.078	0.022 U	0.128	0.155	NA	NA	0.014 U	0.012 U	NA
		Dissolved		0.120 U	0.036 U	0.029 U	0.052 U	0.052 U	0.013 U	0.015 U	0.021 U	0.00007 U~
		TRM		0.120 U	0.036 U	0.027 U	0.065 U	0.052 U	0.013 U	0.019 U	0.024 U	NA
INSTRUMENT DETECTION LIMIT												
		Fe/Pd		**0.044**	**0.022**	**0.039**	**0.060**	**NA**	**NA**	**0.014**	**0.012**	**NA**
		Dissolved		**0.120**	**0.036**	**0.029**	**0.052**	**0.052**	**0.013**	**0.015**	**0.021**	**0.00007 ~**
		TRM		**0.120**	**0.036**	**0.027**	**0.065**	**0.052**	**0.013**	**0.019**	**0.024**	**NA**
STANDARD REFERENCE MATERIAL												
1643d		Dissolved		19.3	61.5	20.8	75.2	NA	1.17	6.25	18.5	NA
1643d		TRM		20.6	63.5	21.7	69.0	NA	1.20	6.16	18.5	NA
1643d		certified value		18.5	58.1	20.5	72.5	56.0	1.27	6.47	18.2	NC
1643d		range		±0.2	±2.7	±3.8	±0.65	±0.73	±0.057	±0.37	±0.64	NC
		% difference		**4%**	**6%**	**2%**	**4%**	**N/A**	**8%**	**3%**	**2%**	**N/A**
				11%	**9%**	**6%**	**5%**	**N/A**	**6%**	**5%**	**2%**	**N/A**

BATTELLE MARINE SCIENCES LABORATORY
1529 W. Sequim Bay Road
Sequim, WA 98382
(360) 683-4151

KINNETICS

1/25/02

CONCENTRATIONS OF METALS IN SEAWATER and EFFLUENT SAMPLES

Samples Received: 06/21/01

(concentrations in μg/L - not blank corrected)

(cf#1672)

MSL Code	Rep	Sponsor I.D.	Type	Fe/Pd Cr ICP/MS	Fe/Pd Ni ICP/MS	Fe/Pd Cu ICP/MS	Fe/Pd Zn ICP/MS	FIAS As FIAS	GFAA Ag GFAA	Fe/Pd Cd ICP/MS	Fe/Pd Pb ICP/MS	CVAF Hg CVAF
STANDARD REFERENCE MATERIAL, cont.												
CASS-4		Dissolved	Mean	0.186	0.360	0.635	0.417	1.03	NA	0.0289	0.0157	NA
CASS-4		certified value		0.144	0.314	0.592	0.381	1.11	NC	0.026	0.0098 U	N/A
CASS-4		range		±0.029	±0.030	±0.055	±0.057	±0.16	NC	±0.003	±0.0036	N/A
		% difference		**29% #**	**15%**	**7%**	**9%**	**7%**	**N/A**	**11%**	**60% #**	**N/A**
1641d		Dissolved		NA	NA	NA	NA	NA	NA	NA	NA	1657
1641d		certified value		NC	NC	NC	NC	NC	NC	NC	NC	1590
1641d		range		NC	NC	NC	NC	NC	NC	NC	NC	±4.00
		% difference		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**4%**
MATRIX SPIKE RESULTS												
		Amount Spiked		10.0	10.0	10.0	10.0	5.00	5.00	10.0	10.0	0.0162
		1672*3	Total	11.9	11.8	16.5	30.8	6.94	0.111	0.141	4.83	0.0211
		1672*3 + Spike	Total	22.5	21.1	25.7	40.3	11.7	3.60	9.40	14.2	0.0408
		Amount Recovered		10.6	9.25	9.15	9.50	4.76	3.49	9.25	9.4	0.0197
		Percent Recovery		**106%**	**93%**	**92%**	**95%**	**95%**	**70% #**	**93%**	**94%**	**121%**
		Amount Spiked		10.0	10.0	10.0	10.0	5.00	5.00	10.0	10.0	0.0153
		1672*7	Diss	0.174	1.14	1.52	1.46	1.49	0.037	0.0907	0.0284	0.000790
		1672*7 + Spike	Diss	9.75	10.3	11.0	9.97	6.33	3.89	9.09	9.54	0.0169
		Amount Recovered		9.57	9.11	9.43	8.51	4.84	3.85	8.99	9.51	0.0161
		Percent Recovery		**96%**	**91%**	**94%**	**85%**	**97%**	**77%**	**90%**	**95%**	**105%**

U = not detected at or above detection limit.
NC = not certified.
NA = not analyzed.
N/A = not applicable.
= outside Quality Control Criteria.
* = Blank Corrected.
~ = the blank and detection limit apply to both the dissolved and total fractions for Hg.

cc: Project Manager/Central File
Login File

1672

SAMPLE LOGIN

(SOP# MSL-A-001)

Project Manager: Bingler
Date Received: 06/21/01
Batch: 1

PROJECT: Kinnetic Laboratories

SPONSOR CODE	BATTELLE CODE	MATRIX	STORAGE LOCATION	PARAMETERS REQUESTED	COLLECTION DATE	INITIALS
MOA01MTL007	1672-1	raw water	Prep Lab I-2	Total recoverrable Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19-20/01	MLFM
MOA01MTL001	1672-2	raw water	Prep Lab I-2	Total recoverrable Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19/01	MLFM
MOA01MTL002	1672-3	raw water	Prep Lab I-2	Total recoverrable Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19/01	MLFM
MOA01MTL003	1672-4	raw water	Prep Lab I-2	Total recoverrable Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19/01	MLFM
MOA01MTL007	1672-5	filt. water	Prep Lab I-2	Total dissolved Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19-20/01	MLFM
MOA01MTL001	1672-6	filt. water	Prep Lab I-2	Total dissolved Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19/01	MLFM
MOA01MTL002	1672-7	filt. water	Prep Lab I-2	Total dissolved Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19/01	MLFM
MOA01MTL003	1672-8	filt. water	Prep Lab I-2	Total dissolved Ar, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn	06/19/01	MLFM

Comments:

cc: Project Manager/Central File
Login File

1672

SAMPLE LOGIN

(SOP# MSL-A-001)

Project Manager: Bingler
Date Received: 06/22/01
Batch: 2

PROJECT: Kinnetic Labortories, Inc.

SPONSOR CODE	BATTELLE CODE	MATRIX	STORAGE LOCATION	PARAMETERS REQUESTED	COLLECTION DATE	INITIALS
MOA01MTL004	1672-9	raw water	Prep Lab I-2	Total rec. metals	06/22/01	MLFM
MOA01MTL005	1672-10	raw water	Prep Lab I-2	Total rec. metals	06/22/01	MLFM
MOA01MTL006	1672-11	raw water	Prep Lab I-2	Total rec. metals	06/22/01	MLFM
MOA01MTL004	1672-12	filt. water	Prep Lab I-2	Total diss. metals	06/22/01	MLFM
MOA01MTL005	1672-13	filt. water	Prep Lab I-2	Total diss. metals	06/22/01	MLFM
MOA01MTL006	1672-14	filt. water	Prep Lab I-2	Total diss. metals	06/22/01	MLFM

Comments:

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**	
Battelle Northwest Laboratory 1529 West Sequim Bay Road Sequim, WA 98382 Attn: Dr. Eric Crecelius (360)683-3625	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178	
REQUIRED COMPLETION DATE: 30 days	**P.O. #:** AK01-1014	**KLI Proj. #:** 514.02

ANALYSIS TYPE: Total dissolved and total recoverable metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. All ICP/MS except As, Cr, Zn (GFAA) and Hg (CVAA).
Data to be reported in printed and digital formats.

MATRIX: Water	**Preservative:** None, 4° C	**Type of Container:** 1-l Teflon

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT Raw	ASSIGNED LABORATORY NUMBER Lab
MOA01MTL001	F1-1S	1	6/19/01	1321	1672-2	1672-6
MOA01MTL002	F1-2S	1	6/19/01	1345	1672-3	7
MOA01MTL003	F1-3S	1	6/19/01	1407	1672-4	8

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
J Savoie	6/20/01 / 1230	Fed Ex	[illegible]	06/21/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Battelle Northwest Laboratory 1529 West Sequim Bay Road Sequim, WA 98382 Attn: Dr. Eric Crecelius (360)683-3625	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1014 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Total dissolved and total recoverable metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. All ICP/MS except As, Cr, Zn (GFAA) and Hg (CVAA).
Data to be reported in printed and digital formats.

MATRIX: Water | **Preservative:** None, 4° C | **Type of Container:** 1-l Teflon

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER RAW	FILT
MOA01MTL004	C1-1S	1	6/20/01	1420	Good	1672-9	1672-12
MOA01MTL005	C1-2S	1	6/20/01	1445		1672-10	1672-13
MOA01MTL006	C1-3S	1	6/20/01	1510	Low	1672-11	1672-14

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
A.A. Canty	6/21/01 1300	Fed Ex	Caroline Battelle	6/22/01 1300
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

1672 Bat 1 Prep lab 1-2 ~~GAC~~ LB

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**
Battelle Northwest Laboratory 1529 West Sequim Bay Road Sequim, WA 98382 Attn: Dr. Eric Crecelius (360)683-3625	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** AK01-1014 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Total dissolved and total recoverable metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. All ICP/MS except As, Cr, Zn (GFAA) and Hg (CVAA).
Data to be reported in printed and digital formats.

MATRIX: Water | **Preservative:** None, 4° C | **Type of Container:** 1-l Teflon

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT Raw	ASSIGNED LABORATORY NUMBER Filt
MOA01MTL007	EFFLUENT	1	6/19-6/20/01	0900-0900	1672-1	1672-5

Please filter and preserve immediately upon receipt at laboratory.

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	6/20/01 1150	[signature]	[signature]	6/20/01 1150
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
JMSavoie	6/20/01 1230	Fed Ex	[signature]	6/21/01 1110
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

APPENDIX D

Receiving Water Quality Monitoring

D4 Northern Testing Laboratories, Inc.

Intertidal Bacteria, TRC, and Color

KINNETIC LABORATORIES INCORPORATED

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

June 29, 2001
Kinnetic Laboratories, Incorporated
403 West 8th Avenue
Anchorage, AK 99501-3515

Attn: Janet Savoie

Please find enclosed the results for the Point Woronzof/Inlet Monitoring samples per your request. This includes the individual data reports, a summary report, Quality Control specifications, and a disk containing an IBM formatted Excel file of the data. The sample analysis for Enterococci, MPN follows Standard Methods SM 9230 B specifications; sample analysis for Fecal Coliform, MPN follows Standard Methods SM 9221 E specifications; sample analysis for Color follows Standard Methods SM 2120 B. Total Residual Chlorine analysis took place in the field and followed Standard Methods SM 4500 E.

If you have any questions concerning these reports, please contact me at (907) 349-1000. It has been a pleasure working with you on this joint venture with the Municipality of Anchorage and I hope that next year you choose Northern Testing Laboratories as your laboratory of choice for the 2002 MOA Inlet Monitoring Project .

Sincerely,

Patience Prieksat
Patience Prieksat
Environmental Analyst

Wendy Mitchell
Wendy Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

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QUALITY CONTROL
MOA/Inlet Monitoring Project 2001

SM 9221E

The Fecal Coliform Most Probable Number analysis includes two bacteriological controls: *Escherichia coli* (positive control) and *Pseudomonas aeruginosa* (negative control), and a Buffered Dilution Water blank.

SM 4500 E

Total Residual Chlorine analysis is a titrimetric method which includes a blank, and a Quality Control (QC). Percent Recovery of QC was 99%.

SM 2120 B

Visual Comparison Color analysis samples were pre-treated with paper filtration to remove turbidity, and reported as "True Color."

SM 9230 B

The Enterococci Most Probable Number analysis includes two bacteriological controls: *Streptococcus faecalis* (positive control) and *Escherichia coli* (negative control).

NORTHERN TESTING LABORATORIES, INC.

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PRUDHOE BAY, ALASKA 99734

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

STATION LOCATION	SAMPLE ID	LABORATORY ID	SAMPLE DATE	SAMPLE TIME	METHOD	RESULT	UNIT	DATE ANALYZED
E1-1S	MOA01FEC001	A173376	6/19/01	8:18	SM9221E	2.0	mpn/100mL	6/19/01
	MOA01CLR001	A173376			SM2120B	20.0	Color Units *	6/19/01
	MOA01TRC001	A173376			SM4500E	<0.005	mg/L	6/19/01
E1-2S	MOA01FEC002	A173377	6/19/01	8:32	SM9221E	2.0	mpn/100mL	6/19/01
	MOA01CLR002	A173377			SM2120B	10.0	Color Units *	6/19/01
	MOA01TRC002	A173377			SM4500E	<0.005	mg/L	6/19/01
E1-3S	MOA01FEC003	A173378	6/19/01	8:53	SM9221E	4.0	mpn/100mL	6/19/01
	MOA01CLR003	A173378			SM2120B	10.0	Color Units *	6/19/01
	MOA01TRC003	A173378			SM4500E	<0.005	mg/L	6/19/01
E1-4S	MOA01FEC004	A173379	6/19/01	9:10	SM9221E	4.0	mpn/100mL	6/19/01
	MOA01CLR004	A173379			SM2120B	15.0	Color Units *	6/19/01
	MOA01TRC004	A173379			SM4500E	<0.005	mg/L	6/19/01
E2-1S	MOA01FEC005	A173380	6/19/01	9:46	SM9221E	<2.0	mpn/100mL	6/19/01
	MOA01CLR005	A173380			SM2120B	10.0	Color Units *	6/19/01
	MOA01TRC005	A173380			SM4500E	<0.005	mg/L	6/19/01
E2-2S	MOA01FEC006	A173381	6/19/01	9:54	SM9221E	<2.0	mpn/100mL	6/19/01
	MOA01CLR006	A173381			SM2120B	10.0	Color Units *	6/19/01
	MOA01TRC006	A173381			SM4500E	0.0080	mg/L	6/19/01
E2-3S	MOA01FEC007	A173382	6/19/01	10:04	SM9221E	<2.0	mpn/100mL	6/19/01
	MOA01CLR007	A173382			SM2120B	10.0	Color Units *	6/19/01
	MOA01TRC007	A173382			SM4500E	<0.005	mg/L	6/19/01
E2-4S	MOA01FEC008	A173383	6/19/01	10:46	SM9221E	13.0	mpn/100mL	6/19/01
	MOA01CLR008	A173383			SM2120B	20.0	Color Units *	6/19/01
	MOA01TRC008	A173383			SM4500E	0.0148	mg/L	6/19/01
E3-1S	MOA01FEC009	A173384	6/19/01	11:17	SM9221E	<2.0	mpn/100mL	6/19/01
	MOA01CLR009	A173384			SM2120B	20.0	Color Units *	6/19/01
	MOA01TRC009	A173384			SM4500E	<0.005	mg/L	6/19/01
E3-2S	MOA01FEC010	A173385	6/19/01	11:31	SM9221E	2.0	mpn/100mL	6/19/01
	MOA01CLR010	A173385			SM2120B	15.0	Color Units *	6/19/01
	MOA01TRC010	A173385			SM4500E	<0.005	mg/L	6/19/01
E3-3S	MOA01FEC011	A173386	6/19/01	11:54	SM9221E	<2.0	mpn/100mL	6/19/01
	MOA01CLR011	A173386			SM2120B	15.0	Color Units *	6/19/01
	MOA01TRC011	A173386			SM4500E	<0.005	mg/L	6/19/01
E3-4S	MOA01FEC012	A173387	6/19/01	12:13	SM9221E	<2.0	mpn/100mL	6/19/01
	MOA01CLR012	A173387			SM2120B	15.0	Color Units *	6/19/01
	MOA01TRC012	A173387			SM4500E	<0.005	mg/L	6/19/01

* TRUE COLOR

Patience Prieksat

DATE: 02-Jul-01

REPORTED BY: Patience Prieksat, Environmental Analyst

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

STATION LOCATION	SAMPLE ID	LABORATORY ID	SAMPLE DATE	SAMPLE TIME	METHOD	RESULT	UNIT	DATE ANALYZED
F1-1S	MOA01FEC013	A173407	6/19/01	13:21	SM9221E	2.0	mpn/100mL	6/20/01
	MOA01CLR013	A173407			SM2120B	15.0	Color Units *	6/20/01
	MOA01TRC013	A173407			SM4500E	0.0121	mg/L	6/19/01
F1-2S	MOA01FEC014	A173408	6/19/01	13:45	SM9221E	<2.0	mpn/100mL	6/20/01
	MOA01CLR014	A173408			SM2120B	20.0	Color Units *	6/20/01
	MOA01TRC014	A173408			SM4500E	<0.005	mg/L	6/19/01
F1-3S	MOA01FEC015	A173409	6/19/01	14:07	SM9221E	2.0	mpn/100mL	6/20/01
	MOA01CLR015	A173409			SM2120B	10.0	Color Units *	6/20/01
	MOA01TRC015	A173409			SM4500E	<0.005	mg/L	6/19/01
F1-4S	MOA01FEC016	A173410	6/19/01	14:40	SM9221E	2.0	mpn/100mL	6/20/01
	MOA01CLR016	A173410			SM2120B	15.0	Color Units *	6/20/01
	MOA01TRC016	A173410			SM4500E	<0.005	mg/L	6/19/01
F2-1S	MOA01FEC017	A173411	6/19/01	15:15	SM9221E	2.0	mpn/100mL	6/20/01
	MOA01CLR017	A173411			SM2120B	10.0	Color Units *	6/20/01
	MOA01TRC017	A173411			SM4500E	<0.005	mg/L	6/19/01
F2-2S	MOA01FEC018	A173412	6/19/01	15:25	SM9221E	8.0	mpn/100mL	6/20/01
	MOA01CLR018	A173412			SM2120B	15.0	Color Units *	6/20/01
	MOA01TRC018	A173412			SM4500E	<0.005	mg/L	6/19/01
F2-3S	MOA01FEC019	A173413	6/19/01	15:43	SM9221E	<2.0	mpn/100mL	6/20/01
	MOA01CLR019	A173413			SM2120B	15.0	Color Units *	6/20/01
	MOA01TRC019	A173413			SM4500E	<0.005	mg/L	6/19/01
F2-4S	MOA01FEC020	A173414	6/19/01	16:08	SM9221E	4.0	mpn/100mL	6/20/01
	MOA01CLR020	A173414			SM2120B	15.0	Color Units *	6/20/01
	MOA01TRC020	A173414			SM4500E	<0.005	mg/L	6/19/01
F3-1S	MOA01FEC021	A173415	6/19/01	16:57	SM9221E	<2.0	mpn/100mL	6/20/01
	MOA01CLR021	A173415			SM2120B	15.0	Color Units *	6/20/01
	MOA01TRC021	A173415			SM4500E	<0.005	mg/L	6/19/01
F3-2S	MOA01FEC022	A173416	6/19/01	17:05	SM9221E	<2.0	mpn/100mL	6/20/01
	MOA01CLR022	A173416			SM2120B	10.0	Color Units *	6/20/01
	MOA01TRC022	A173416			SM4500E	<0.005	mg/L	6/19/01
F3-3S	MOA01FEC023	A173417	6/19/01	17:14	SM9221E	<2.0	mpn/100mL	6/20/01
	MOA01CLR023	A173417			SM2120B	10.0	Color Units *	6/20/01
	MOA01TRC023	A173417			SM4500E	<0.005	mg/L	6/19/01
F3-4S	MOA01FEC024	A173418	6/19/01	17:30	SM9221E	<2.0	mpn/100mL	6/20/01
	MOA01CLR024	A173418			SM2120B	10.0	Color Units *	6/20/01
	MOA01TRC024	A173418			SM4500E	<0.005	mg/L	6/19/01

* TRUE COLOR

Patience Prieksat

DATE: 05-Jul-01

REPORTED BY: Patience Prieksat, Environmental Analyst

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
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Kinnetic Laboratories Inc.
Attn: Mark Savoie
403 West 8th Avenue
Anchorage, AK 99501-3515

2001 INLET MONITORING PROJECT, PT. WORONZOF

STATION LOCATION	SAMPLE ID	LABORATORY ID	SAMPLE DATE	SAMPLE TIME	METHOD	RESULT	UNIT	DATE ANALYZED
C1-1S	MOA01FEC025	A173488	6/20/01	14:20	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR025	A173488			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC025	A173488			SM4500E	<0.005	mg/L	6/20/01
C1-2S	MOA01FEC026	A173489	6/20/01	14:45	SM9221E	4.0	mpn/100mL	6/22/01
	MOA01CLR026	A173489			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC026	A173489			SM4500E	<0.005	mg/L	6/20/01
C1-3S	MOA01FEC027	A173490	6/20/01	15:10	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR027	A173490			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC027	A173490			SM4500E	<0.005	mg/L	6/20/01
C1-4S	MOA01FEC028	A173491	6/20/01	15:37	SM9221E	2.0	mpn/100mL	6/22/01
	MOA01CLR028	A173491			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC028	A173491			SM4500E	<0.005	mg/L	6/20/01
C2-1S	MOA01FEC029	A173492	6/20/01	16:10	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR029	A173492			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC029	A173492			SM4500E	<0.005	mg/L	6/20/01
C2-2S(A)	MOA01FEC030	A173493	6/20/01	16:25	SM9221E	2.0	mpn/100mL	6/22/01
	MOA01CLR030	A173493			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC030	A173493			SM4500E	<0.005	mg/L	6/20/01
C2-2S(B)	MOA01FEC031	A173494	6/20/01	16:25	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR031	A173494			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC031	A173494			SM4500E	<0.005	mg/L	6/20/01
C2-2S(C)	MOA01FEC032	A173495	6/20/01	16:25	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR032	A173495			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC032	A173495			SM4500E	<0.005	mg/L	6/20/01
C2-3S	MOA01FEC033	A173496	6/20/01	17:08	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR033	A173496			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC033	A173496			SM4500E	<0.005	mg/L	6/20/01

* TRUE COLOR

Patience Prieksat

DATE: 17-Jan-02

REPORTED BY: Patience Prieksat, Environmental Analyst

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
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STATION LOCATION	SAMPLE ID	LABORATORY ID	SAMPLE DATE	SAMPLE TIME	METHOD	RESULT	UNIT	DATE ANALYZED
C2-4S	MOA01FEC034	A173497	6/20/01	17:25	SM9221E	2.0	mpn/100mL	6/22/01
	MOA01CLR034	A173497			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC034	A173497			SM4500E	<0.005	mg/L	6/20/01
C3-1S(A)	MOA01FEC035	A173498	6/20/01	18:41	SM9221E	2.0	mpn/100mL	6/22/01
	MOA01CLR035	A173498			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC035	A173498			SM4500E	<0.005	mg/L	6/20/01
C3-1S(B)	MOA01FEC036	A173499	6/20/01	18:41	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR036	A173499			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC036	A173499			SM4500E	<0.005	mg/L	6/20/01
C3-1S(C)	MOA01FEC037	A173500	6/20/01	18:41	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR037	A173500			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC037	A173500			SM4500E	<0.005	mg/L	6/20/01
C3-2S	MOA01FEC038	A173501	6/20/01	18:57	SM9221E	<2.0	mpn/100mL	6/22/01
	MOA01CLR038	A173501			SM2120B	10.0	Color Units *	6/21/01
	MOA01TRC038	A173501			SM4500E	<0.005	mg/L	6/20/01
C3-3S	MOA01FEC039	A173502	6/20/01	19:36	SM9221E	4.0	mpn/100mL	6/22/01
	MOA01CLR039	A173502			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC039	A173502			SM4500E	<0.005	mg/L	6/20/01
C3-4S	MOA01FEC040	A173503	6/20/01	19:51	SM9221E	2.0	mpn/100mL	6/22/01
	MOA01CLR040	A173503			SM2120B	15.0	Color Units *	6/21/01
	MOA01TRC040	A173503			SM4500E	<0.005	mg/L	6/20/01

* TRUE COLOR

Patience Prieksat

DATE: 29-Jun-01

REPORTED BY: Patience Prieksat, Environmental Analyst

NORTHERN TESTING LABORATORIES, INC.

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STATION LOCATION	SAMPLE ID	LABORATORY ID	SAMPLE DATE	SAMPLE TIME	METHOD	RESULT	UNIT	DATE ANALYZED
Chester Creek Rep 1	MOA01FEC061	A173397	6/19/01	14:15	SM9221E	2.0	mpn/100mL	6/20/01
Chester Creek Rep 2	MOA01FEC62	A173398	6/19/01	14:15	SM9221E	2.0	mpn/100mL	6/20/01
Ship Creek Rep 1	MOA01FEC63	A173399	6/19/01	14:35	SM9221E	50.0	mpn/100mL	6/20/01
Ship Creek Rep 2	MOA01FEC64	A173400	6/19/01	14:35	SM9221E	70.0	mpn/100mL	6/20/01
Fish Creek Rep 1	MOA01FEC65	A173401	6/19/01	14:00	SM9221E	220.0	mpn/100mL	6/20/01
Fish Creek Rep 2	MOA01FEC66	A173402	6/19/01	14:00	SM9221E	130.0	mpn/100mL	6/20/01
Effluent Rep 1	MOA01FEC59	A173395	6/19/01	13:07	SM9221E	2.0	mpn/100mL	6/20/01
Effluent Rep 1	MOA01FEC60	A173396	6/19/01	13:07	SM9221E	2.0	mpn/100mL	6/20/01

* TRUE COLOR

Patience Prieksat

DATE: 29-Jun-01

REPORTED BY: Patience Prieksat, Environmental Analyst

NORTHERN TESTING LABORATORIES, INC.

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STATION LOCATION	SAMPLE ID	LABORATORY ID	SAMPLE DATE	SAMPLE TIME	METHOD	RESULT	UNIT	DATE ANALYZED
IT-1 REP 1	MOA01FEC043	A173422	6/19/01	18:54	SM9221E	<2.0	mpn/100mL	6/21/01
IT-1 REP 2	MOA01FEC044	A173423	6/19/01	18:54	SM9221E	<2.0	mpn/100mL	6/21/01
IT-2 REP1	MOA01FEC045	A173424	6/19/01	18:50	SM9221E	2.0	mpn/100mL	6/21/01
IT-2 REP 2	MOA01FEC046	A173425	6/19/01	18:50	SM9221E	2.0	mpn/100mL	6/21/01
IT-3 REP1	MOA01FEC047	A173426	6/19/01	18:48	SM9221E	<2.0	mpn/100mL	6/21/01
IT-3 REP 2	MOA01FEC048	A173427	6/19/01	18:48	SM9221E	11.0	mpn/100mL	6/21/01
IT-4 REP 1	MOA01FEC049	A173428	6/19/01	18:44	SM9221E	50.0	mpn/100mL	6/21/01
IT-4 REP 2	MOA01FEC050	A173429	6/19/01	18:44	SM9221E	17.0	mpn/100mL	6/21/01
IT-5 REP 1	MOA01FEC051	A173430	6/19/01	18:41	SM9221E	22.0	mpn/100mL	6/21/01
IT-5 REP 2	MOA01FEC052	A173431	6/19/01	18:41	SM9221E	50.0	mpn/100mL	6/21/01
IT-6 REP 1	MOA01FEC053	A173432	6/19/01	18:37	SM9221E	4.0	mpn/100mL	6/21/01
IT-6 REP 2	MOA01FEC054	A173433	6/19/01	18:37	SM9221E	4.0	mpn/100mL	6/21/01
IT-7 REP 1	MOA01FEC055	A173434	6/19/01	18:33	SM9221E	<2.0	mpn/100mL	6/21/01
IT-7 REP 2	MOA01FEC056	A173435	6/19/01	18:33	SM9221E	<2.0	mpn/100mL	6/21/01
IT-C REP 1	MOA01FEC057	A173436	6/19/01	18:05	SM9221E	<2.0	mpn/100mL	6/21/01
IT-C REP 2	MOA01FEC058	A173437	6/19/01	18:05	SM9221E	2.0	mpn/100mL	6/21/01
Effluent Rep1	MOA01ENT001	A173392	6/19/01	13:07	SM9230 B	>2419.2	mpn/100mL	6/20/01
Effluent Rep 2	MOA01ENT002	A173393	6/19/01	13:07	SM9230 B	>2419.2	mpn/100mL	6/20/01

Patience Prieksat

DATE: 29-Jun-01

REPORTED BY: Patience Prieksat, Environmental Analyst

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E1-1S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173376
Sample Matrix: Water
Comments: MOA01FEC001, MOA01CLR001, MOA01TRC001

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 8:18
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	20.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/19/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E1-2S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173377
Sample Matrix: Water
Comments: MOA01FEC002, MOA01CLR002, MOA01TRC002

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 8:32
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E1-3S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173378
Sample Matrix: Water
Comments: MOA01FEC003, MOA01CLR003, MOA01TRC003

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 8:53
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/19/01

Wendy M. Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E1-4S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173379
Sample Matrix: Water
Comments: MOA01FEC004, MOA01CLR004, MOA01TRC004

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 9:10
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/19/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E2-1S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173380
Sample Matrix: Water
Comments: MOA01FEC005, MOA01CLR005, MOA01TRC005

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 9:46
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E2-2S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173381
Sample Matrix: Water
Comments: MOA01FEC006, MOA01CLR006, MOA01TRC006

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 9:54
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	0.008	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/19/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E2-3S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173382
Sample Matrix: Water
Comments: MOA01FEC007, MOA01CLR007, MOA01TRC007

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 10:04
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E2-4S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173383
Sample Matrix: Water
Comments: MOA01FEC008, MOA01CLR008, MOA01TRC008

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 10:46
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	20.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	0.015	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	13.0	2.00		6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
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POUCH 340043

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E3-1S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173384
Sample Matrix: Water
Comments: MOA01FEC009, MOA01CLR009, MOA01TRC009

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 11:17
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	20.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/19/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E3-2S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173385
Sample Matrix: Water
Comments: MOA01FEC010, MOA01CLR010, MOA01TRC010

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 11:31
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/19/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: E3-3S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173386
Sample Matrix: Water
Comments: MOA01FEC011, MOA01CLR011, MOA01TRC011

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 11:54
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/19/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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POUCH 340043

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie
Client ID: E3-4S
Client Project #: KLI 514.02
Source:
NTL Lab#: A173387
Sample Matrix: Water
Comments: MOA01FEC012, MOA01CLR012, MOA01TRC012

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 12:13
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/19/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/19/01

Wendy M. Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 Attn: Wendy Mitchell (907)349-1000	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE:	P.O. #: AK01-1016	KLI Proj. #: 514.02

ANALYSIS TYPE: Fecal coliform (SM 9221E) and color determination (SM 2120B).
Data to be reported in printed and digital formats.

MATRIX: Water	Preservative: None, 4° C	Type of Container: 125-mL plastic

STATION LOCATION	FECAL SAMPLE ID	COLOR SAMPLE ID	DATE/TIME	LAB ID	COMMENTS
E1-1S	MOA01FEC001	MOA01CLR001	6/19/01 / 8:18	A173376	
E1-2S	MOA01FEC002	MOA01CLR002	6/19/01 / 8:32	A173377	
E1-3S	MOA01FEC003	MOA01CLR003	6/19/01 / 8:53	A173378	
E1-4S	MOA01FEC004	MOA01CLR004	6/19/01 / 9:10	A173379.	
E2-1S	MOA01FEC005	MOA01CLR005	6/19/01 / 9:46	A173380	
E2-2S	MOA01FEC006	MOA01CLR006	6/19/01 / 9:54	A173381.	
E2-3S	MOA01FEC007	MOA01CLR007	6/19/01 / 10:04	A173382.	
E2-4S	MOA01FEC008	MOA01CLR008	6/19/01 / 10:46	A173383.	
E3-1S	MOA01FEC009	MOA01CLR009	6/19/01 / 11:17	A173384.	
E3-2S	MOA01FEC010	MOA01CLR010	6/19/01 / 11:31	A173385.	
E3-3S	MOA01FEC011	MOA01CLR011	6/19/01 / 11:54	A173386.	
E3-4S	MOA01FEC012	MOA01CLR012	6/19/01 / 12:13	A173387	

One in ten color samples should also be run in duplicate. Please report duplicates with a "D" or "DUP" appended to the SAMPLE ID.

RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
A. G. Landy	6/19/01 1230	HAND/Skiff	BK	6/19/01 1230p
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
BK	6/19/01 13:10	hand	D. Toomy	6-19-01 13:10
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F1-1S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173407
Sample Matrix: Water
Comments: MOA01FEC013, MOA01CLR013, MOA01TRC013

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 13:21
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	0.012	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F1-2S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173408
Sample Matrix: Water
Comments: MOA01FEC014, MOA01CLR014, MOA01TRC014

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 13:45
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	20.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F1-3S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173409
Sample Matrix: Water
Comments: MOA01FEC015, MOA01CLR015, MOA01TRC015

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:07
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F1-4S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173410
Sample Matrix: Water
Comments: MOA01FEC016, MOA01CLR016, MOA01TRC016

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:40
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F2-1S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173411
Sample Matrix: Water
Comments: MOA01FEC017, MOA01CLR017, MOA01TRC017

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 15:15
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F2-2S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173412
Sample Matrix: Water
Comments: MOA01FEC018, MOA01CLR018, MOA01TRC018

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 15:25
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	8.00	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F2-3S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173413
Sample Matrix: Water
Comments: MOA01FEC019, MOA01CLR019, MOA01TRC019

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 15:43
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F2-4S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173414
Sample Matrix: Water
Comments: MOA01FEC020, MOA01CLR020, MOA01TRC020

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 16:08
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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POUCH 340043

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F3-1S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173415
Sample Matrix: Water
Comments: MOA01FEC021, MOA01CLR021, MOA01TRC021

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 16:57
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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POUCH 340043

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F3-2S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173416
Sample Matrix: Water
Comments: MOA01FEC022, MOA01CLR022, MOA01TRC022

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 17:05
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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5761 SILVERADO WAY; UNIT N
POUCH 340043

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F3-3S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173417
Sample Matrix: Water
Comments: MOA01FEC023, MOA01CLR023, MOA01TRC023

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 17:14
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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POUCH 340043

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: F3-4S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173418
Sample Matrix: *Water*
Comments: MOA01FEC024, MOA01CLR024, MOA01TRC024

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 17:30
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/20/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/19/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 Attn: Wendy Mitchell (907)349-1000	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: | **P.O. #:** AK01-1016 | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Fecal coliform (SM 9221E) and color determination (SM 2120B).
Data to be reported in printed and digital formats.

MATRIX: Water | **Preservative:** None, 4° C | **Type of Container:** 125-mL plastic

STATION LOCATION	FECAL SAMPLE ID	COLOR SAMPLE ID	DATE/TIME	LAB ID	COMMENTS
F1-1S	MOA01FEC013	MOA01CLR013	6/19/01 / 1321	A173407	
F1-2S	MOA01FEC014	MOA01CLR014	6/19/01 / 1345	A173408	
F1-3S	MOA01FEC015	MOA01CLR015	6/19/01 / 1407	A173409	
F1-4S	MOA01FEC016	MOA01CLR016	6/19/01 / 1440	A173410	
F2-1S	MOA01FEC017	MOA01CLR017	6/19/01 / 1515	A173411	
F2-2S	MOA01FEC018	MOA01CLR018	6/19/01 / 1525	A173412	
F2-3S	MOA01FEC019	MOA01CLR019	6/19/01 / 1543	A173413	
F2-4S	MOA01FEC020	MOA01CLR020	6/19/01 / 1608	A173414	
F3-1S	MOA01FEC021	MOA01CLR021	6/19/01 / 1657	A173415	
F3-2S	MOA01FEC022	MOA01CLR022	6/19/01 / 1705	A173416	
F3-3S	MOA01FEC023	MOA01CLR023	6/19/01 / 1714	A173417	
F3-4S	MOA01FEC024	MOA01CLR024	6/19/01 / 1730	A173418	

One in ten color samples should also be run in duplicate. Please report duplicates with a "D" or "DUP" appended to the SAMPLE ID.

RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
[illegible]	6/19/01 18:30	skiff	BK 6/19/01 18:30	
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME

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403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C1-1S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173488
Sample Matrix: Water
Comments: MOA01FEC025, MOA01CLR025, MOA01TRC025

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 14:20
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C1-2S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173489
Sample Matrix: Water
Comments: MOA01FEC026, MOA01CLR026, MOA01TRC026

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 14:45
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C1-3S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173490
Sample Matrix: Water
Comments: MOA01FEC027, MOA01CLR027, MOA01TRC027

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 15:10
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C1-4S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173491
Sample Matrix: Water
Comments: MOA01FEC028, MOA01CLR028, MOA01TRC028

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 15:27
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C2-1S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173492
Sample Matrix: Water
Comments: MOA01FEC029, MOA01CLR029, MOA01TRC029

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 16:10
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

Wendy M. Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C2-2S(A)
Client Project #: KLI #514.02
Source:
NTL Lab#: A173493
Sample Matrix: Water
Comments: MOA01FEC030, MOA01CLR030, MOA01TRC030

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 16:25
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/22/01

Wendy M. Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C2-2S(B)
Client Project #: KLI #514.02
Source:
NTL Lab#: A173494
Sample Matrix: Water
Comments: MOA01FEC031, MOA01CLR031, MOA01TRC031

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 16:25
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C2-2S(C)
Client Project #: KLI #514.02
Source:
NTL Lab#: A173495
Sample Matrix: Water
Comments: MOA01FEC032, MOA01CLR032, MOA01TRC032

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 16:25
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C2-3S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173496
Sample Matrix: Water
Comments: MOA01FEC033, MOA01CLR033, MOA01TRC033

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 17:08
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C2-4S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173497
Sample Matrix: Water
Comments: MOA01FEC034, MOA01CLR034, MOA01TRC034

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 17:25
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C3-1S(A)
Client Project #: KLI #514.02
Source:
NTL Lab#: A173498
Sample Matrix: Water
Comments: MOA01FEC035, MOA01CLR035, MOA01TRC035

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 18:41
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C3-1S(B)
Client Project #: KLI #514.02
Source:
NTL Lab#: A173499
Sample Matrix: Water
Comments: MOA01FEC036, MOA01CLR036, MOA01TRC036

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 18:41
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Attn: Janet Savoie

Client ID: C3-1S(C)
Client Project #: KLI #514.02
Source:
NTL Lab#: A173500
Sample Matrix: Water
Comments: MOA01FEC037, MOA01CLR037, MOA01TRC037

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 18:41
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C3-2S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173501
Sample Matrix: Water
Comments: MOA01FEC038, MOA01CLR038, MOA01TRC038

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 18:57
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	10.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C3-3S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173502
Sample Matrix: Water
Comments: MOA01FEC039, MOA01CLR039, MOA01TRC039

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 19:36
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/22/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: C3-4S
Client Project #: KLI #514.02
Source:
NTL Lab#: A173503
Sample Matrix: Water
Comments: MOA01FEC040, MOA01CLR040, MOA01TRC040

Report Date: 6/27/01
Date Arrived: 6/21/01
Sample Date: 6/20/01
Sample Time: 19:51
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 2120 B						
	Color, True	Color Units	15.0	5.00		6/21/01
SM 4500 E						
	Chlorine, Total	mg/L	<MRL	0.005		6/20/01
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/22/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	**FROM:**	
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 Attn: Wendy Mitchell (907)349-1000	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178	
REQUIRED COMPLETION DATE:	**P.O. #:** AK01-1016	**KLI Proj. #:** 514.02

ANALYSIS TYPE: Fecal coliform (SM 9221E) and color determination (SM 2120B).
Data to be reported in printed and digital formats.

MATRIX: Water	**Preservative:** None, 4° C	**Type of Container:** 125-mL plastic or 250-mL (for duplicate Fecal analyses)

STATION LOCATION	FECAL SAMPLE ID	COLOR SAMPLE ID	DATE/TIME	LAB ID	COMMENTS
C1-1S	MOA01FEC025	MOA01CLR025	6/20/01 / 1420	A173488	
C1-2S	MOA01FEC026	MOA01CLR026	6/20/01 / 1445	A173489	
C1-3S	MOA01FEC027	MOA01CLR027	6/20/01 / 1510	A173490.	
C1-4S	MOA01FEC028	MOA01CLR028	6/20/01 / 1537	A173491	
C2-1S	MOA01FEC029	MOA01CLR029	6/20/01 / 1610	A173492	
C2-2S(A)	MOA01FEC030	MOA01CLR030	6/20/01 / 1625	A173493.	
C2-2S(B)	MOA01FEC031	MOA01CLR031	6/20/01 / 1625	A173494	
C2-2S(C)	MOA01FEC032	MOA01CLR032	6/20/01 / 1625	A173495	
C2-3S	MOA01FEC033	MOA01CLR033	6/20/01 / 1708	A173496.	
C2-4S	MOA01FEC034	MOA01CLR034	6/20/01 / 1725	A173497	
C3-1S(A)	MOA01FEC035	MOA01CLR035	6/20/01 / 1841	A173498	~~Fecal laboratory triplicate in larger container; analyze 3 times~~
C3-1S(B)	MOA01FEC036	MOA01CLR036	6/20/01 / 1841	A173499.	
C3-1S(C)	MOA01FEC037	MOA01CLR037	6/20/01 / 1841	A173500	
C3-2S	MOA01FEC038	MOA01CLR038	6/20/01 / 1857	A173501	
C3-3S	MOA01FEC039	MOA01CLR039	6/20/01 / 1936	A173502	
C3-4S	MOA01FEC040	MOA01CLR040	6/20/01 / 1951	A173503	

One in ten color samples should also be run in duplicate. Please report duplicates with a "D" or "DUP" appended to the SAMPLE ID.

RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
[illegible]	6/21/01 10:45	[illegible]	[illegible]	6/21 1045
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-1 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173422
Sample Matrix: Water
Comments: MOA01FEC043

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:54
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-1 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173423
Sample Matrix: Water
Comments: MOA01FEC044

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:54
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/21/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-2 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173424
Sample Matrix: Water
Comments: MOA01FEC045

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:50
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-2 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173425
Sample Matrix: Water
Comments: MOA01FEC046

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:50
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-3 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173426
Sample Matrix: Water
Comments: MOA01FEC047

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:48
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/21/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-3 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173427
Sample Matrix: Water
Comments: MOA01FEC048

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:48
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	11.0	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-4 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173428
Sample Matrix: Water
Comments: MOA01FEC049

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:44
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	50.0	2.00		6/21/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-4 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173429
Sample Matrix: Water
Comments: MOA01FEC050

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:44
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	17.0	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-5 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173430
Sample Matrix: Water
Comments: MOA01FEC051

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:41
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	22.0	2.00		6/21/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Attn: Janet Savoie

Client ID: IT-5 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173431
Sample Matrix: Water
Comments: MOA01FEC052

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:41
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	50.0	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

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Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-6 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173432
Sample Matrix: Water
Comments: MOA01FEC053

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:37
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-6 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173433
Sample Matrix: Water
Comments: MOA01FEC054

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:37
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	4.00	2.00		6/21/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-7 Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173434
Sample Matrix: Water
Comments: MOA01FEC055

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:33
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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POUCH 340043

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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-7 Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173435
Sample Matrix: Water
Comments: MOA01FEC056

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:33
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
ANCHORAGE, ALASKA 99518
PRUDHOE BAY, ALASKA 99734

(907) 456-3116 • FAX 456-3125
(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-C Rep 1
Client Project #: KLI#514.02
Source:
NTL Lab#: A173436
Sample Matrix: Water
Comments: MOA01FEC057

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:05
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	<MRL	2.00		6/21/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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5761 SILVERADO WAY; UNIT N
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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: IT-C Rep 2
Client Project #: KLI#514.02
Source:
NTL Lab#: A173437
Sample Matrix: Water
Comments: MOA01FEC058

Report Date: 6/27/01
Date Arrived: 6/20/01
Sample Date: 6/19/01
Sample Time: 18:05
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/21/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 Attn: Wendy Mitchell (907)349-1000	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE:	P.O. #: AK01-1016	KLI Proj. #: 514.02

ANALYSIS TYPE: Fecal coliform (SM 9221E).
Data to be reported in printed and digital formats.

MATRIX: Water	Preservative: None, 4° C	Type of Container: 125-mL plastic

STATION LOCATION	FECAL SAMPLE ID	DATE/TIME	LAB ID	COMMENTS
IT-1 Rep1	MOA01FEC043	6/19/01 / 1854	A173422	
IT-1 Rep2	MOA01FEC044	6/19/01 / 1854	A173423	
IT-2 Rep1	MOA01FEC045	6/19/01 / 1850	A173424	
IT-2 Rep2	MOA01FEC046	6/19/01 / 1850	A173425	
IT-3 Rep1	MOA01FEC047	6/19/01 / 1848	A173426	
IT-3 Rep2	MOA01FEC048	6/19/01 / 1848	A173427	
IT-4 Rep1	MOA01FEC049	6/19/01 / 1844	A173428	
IT-4 Rep2	MOA01FEC050	6/19/01 / 1844	A173429	
IT-5 Rep1	MOA01FEC051	6/19/01 / 1841	A173430	
IT-5 Rep2	MOA01FEC052	6/19/01 / 1841	A173431	
IT-6 Rep1	MOA01FEC053	6/19/01 / 1837	A173432	
IT-6 Rep2	MOA01FEC054	6/19/01 / 1837	A173433	
IT-7 Rep1	MOA01FEC055	6/19/01 / 1833	A173434	
IT-7 Rep2	MOA01FEC056	6/19/01 / 1833	A173435	
IT-C Rep1	MOA01FEC057	6/19/01 / 1805	A173436	
IT-C Rep2	MOA01FEC058	6/19/01 / 1805	A173437	

RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
J M Savoie	6/20/01 / 0910	HAND	[illegible]	6-20-01 910a
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent Rep 1
Client Project #: KLI #514.02
Source:
NTL Lab#: A173395
Sample Matrix: Water
Comments: MOA01FEC059

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 13:07
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
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Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Effluent Rep 2
Client Project #: KLI #514.02
Source:
NTL Lab#: A173396
Sample Matrix: Water
Comments: MOA01FEC060

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 13:07
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Chester Creek Rep 1
Client Project #: KLI #514.02
Source:
NTL Lab#: A173397
Sample Matrix: Water
Comments: MOA01FEC061

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:15
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

FAIRBANKS, ALASKA 99701
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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Chester Creek Rep 2
Client Project #: KLI #514.02
Source:
NTL Lab#: A173398
Sample Matrix: Water
Comments: MOA01FEC062

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:15
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	2.00	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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POUCH 340043

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Ship Creek Rep 1
Client Project #: KLI #514.02
Source:
NTL Lab#: A173399
Sample Matrix: Water
Comments: MOA01FEC063

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:35
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	50.0	2.00		6/20/01

Wendy M Mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

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5761 SILVERADO WAY; UNIT N
POUCH 340043

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Ship Creek Rep 2
Client Project #: KLI #514.02
Source:
NTL Lab#: A173400
Sample Matrix: Water
Comments: MOA01FEC064

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:35
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	70.0	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

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PRUDHOE BAY, ALASKA 99734

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Fish Creek Rep 1
Client Project #: KLI #514.02
Source:
NTL Lab#: A173401
Sample Matrix: Water
Comments: MOA01FEC065

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	220	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

NORTHERN TESTING LABORATORIES, INC.

3330 INDUSTRIAL AVENUE
5761 SILVERADO WAY; UNIT N
POUCH 340043

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(907) 349-1000 • FAX 349-1016
(907) 659-2145 • FAX 659-2146

Kinnetic Laboratories
403 W. 8th Avenue
Anchorage, AK 99501

Attn: Janet Savoie

Client ID: Fish Creek Rep 2
Client Project #: KLI #514.02
Source:
NTL Lab#: A173402
Sample Matrix: Water
Comments: MOA01FEC066

Report Date: 6/27/01
Date Arrived: 6/19/01
Sample Date: 6/19/01
Sample Time: 14:00
Collected By:

** Legend **

MRL = Method Report Level
MCL = Max. Contaminant Level
B = Present In Method Blank
E = Estimated Value
M = Matrix Interference
H = Above MCL
D = Lost To Dilution

Method	Parameter	Units	Result	MRL	Date Prepared	Date Analyzed
SM 9221E						
	Fecal Coliform, MPN	mpn/100mL	130	2.00		6/20/01

wendy m mitchell

Reported By: Wendy M. Mitchell
Anchorage Laboratory Manager

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
Northern Testing Laboratories 5761 Silverado Way, Suite N Anchorage, AK 99518 Attn: Wendy Mitchell (907)349-1000	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE:	P.O. #: AK01-1016	KLI Proj. #: 514.02

ANALYSIS TYPE: Fecal coliform (SM 9221E).
Data to be reported in printed and digital formats.

MATRIX: Water	Preservative: None, 4° C $Na_2S_2O_3$	Type of Container: 125-mL plastic

STATION LOCATION	FECAL SAMPLE ID	DATE/TIME	LAB ID	COMMENTS
Effluent Rep1	MOA01FEC059	6/19/01 / 1307	A173395	
Effluent Rep2	MOA01FEC060	6/19/01 / 1307	A173396	
Chester Creek Rep1	MOA01FEC061	6/19/01 / 1415	A173397	
Chester Creek Rep2	MOA01FEC062	6/19/01 / 1415	A173398	
Ship Creek Rep1	MOA01FEC063	6/19/01 / 1435	A173399	
Ship Creek Rep2	MOA01FEC064	6/19/01 / 1435	A173400	
Fish Creek Rep1	MOA01FEC065	6/19/01 / 1400	A173401	
Fish Creek Rep2	MOA01FEC066	6/19/01 / 1400	A173402	

RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
JMSavoie	6/19/01/1500	HAND	[illegible]	6/19/01 1545
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	TRANSPORTED BY:	RECEIVED BY:	DATE/TIME

APPENDIX D

Receiving Water Quality Monitoring

D5 Kinnetic Laboratories, Inc.

Salinity, Dissolved Oxygen, and Turbidities

KINNETIC LABORATORIES INCORPORATED

KINNETIC LABORATORIES, INC.
DISSOLVED OXYGEN DATA LOG

CLIENT: MUNICIPALITY OF ANCHORAGE AWWU
PROJECT: SUMMER 2001 PT WORONZOF WATER QUALITY

CALIBRATION STANDARDS:

	STD 1:	STD 2:	X STD	DATE	TIME
D.O.	20.34	20.35	20.345	6/18/01	15:10
F=20/XSTD=	0.983				

SAMPLE ID	STATION	SAMPLE DATE	SAMPLE TIME	ANALYSIS DATE	ANALYSIS TIME	TITRANT mL	FACTOR	D.O. mg/L
MOA01DOX0001	E1-1S	6/19/01	8:18	6/19/01	15:18	9.41	0.983	9.25
MOA01DOX0002	E1-1M	6/19/01	8:18	6/19/01	15:26	9.66	0.983	9.50
MOA01DOX0003	E1-1B	6/19/01	8:18	6/19/01	15:34	9.35	0.983	9.19
MOA01DOX0004	E1-2S	6/19/01	8:32	6/19/01	16:07	9.30	0.983	9.14
MOA01DOX0005	E1-2M	6/19/01	8:32	6/19/01	16:11	9.46	0.983	9.30
MOA01DOX0006	E1-2B	6/19/01	8:32	6/19/01	15:39	9.46	0.983	9.30
MOA01DOX0007	E1-3S	6/19/01	8:53	6/19/01	16:24	9.42	0.983	9.26
MOA01DOX0008	E1-3M	6/19/01	8:53	6/19/01	16:28	9.44	0.983	9.28
MOA01DOX0009	E1-3B	6/19/01	8:53	6/19/01	16:40	9.40	0.983	9.24
MOA01DOX0010	E1-4S	6/19/01	9:10	6/19/01	16:44	9.37	0.983	9.21
MOA01DOX0011	E1-4M	6/19/01	9:10	6/19/01	16:56	9.36	0.983	9.20
MOA01DOX0012	E1-4B	6/19/01	9:10	6/19/01	16:59	9.36	0.983	9.20
MOA01DOX0013	E2-1S	6/19/01	9:46	6/19/01	18:05	9.47	0.983	9.31
MOA01DOX0014	E2-1M	6/19/01	9:46	6/19/01	18:08	9.38	0.983	9.22
MOA01DOX0015	E2-1B	6/19/01	9:46	6/19/01	18:20	9.41	0.983	9.25
MOA01DOX0016	E2-2S	6/19/01	9:54	6/19/01	18:23	9.54	0.983	9.38
MOA01DOX0017	E2-2M	6/19/01	9:54	6/19/01	18:28	9.52	0.983	9.36
MOA01DOX0018	E2-2B	6/19/01	9:54	6/19/01	18:31	9.54	0.983	9.38
MOA01DOX0019	E2-3S	6/19/01	10:04	6/19/01	17:37	9.43	0.983	9.27
MOA01DOX0020	E2-3M	6/19/01	10:04	6/19/01	17:49	9.41	0.983	9.25
MOA01DOX0021	E2-3B	6/19/01	10:04	6/19/01	17:52	9.36	0.983	9.20
MOA01DOX0022	E2-4S	6/19/01	10:46	6/19/01	17:16	9.41	0.983	9.25
MOA01DOX0023	E2-4M	6/19/01	10:46	6/19/01	17:20	9.38	0.983	9.22
MOA01DOX0024	E2-4B	6/19/01	10:46	6/19/01	17:33	9.46	0.983	9.30
MOA01DOX0025	E3-1S	6/19/01	11:17	6/19/01	20:35	9.31	0.983	9.15
MOA01DOX0026	E3-1M	6/19/01	11:17	6/20/01	0:38	9.41	0.983	9.25
MOA01DOX0027	E3-1B	6/19/01	11:17	6/19/01	21:46	9.40	0.983	9.24
MOA01DOX0028	E3-2S	6/19/01	11:31	6/19/01	20:40	9.51	0.983	9.35
MOA01DOX0029	E3-2M	6/19/01	11:31	6/20/01	1:03	9.46	0.983	9.30
MOA01DOX0030	E3-2B	6/19/01	11:31	6/19/01	21:43	9.31	0.983	9.15
MOA01DOX0031	E3-3S	6/19/01	11:54	6/19/01	20:54	9.35	0.983	9.19
MOA01DOX0032	E3-3M	6/19/01	11:54	6/20/01	1:06	9.30	0.983	9.14
MOA01DOX0033	E3-3B	6/19/01	11:54	6/19/01	21:55	9.26	0.983	9.10
MOA01DOX0034	E3-4S	6/19/01	12:13	6/19/01	21:00	9.30	0.983	9.14
MOA01DOX0035	E3-4M	6/19/01	12:13	6/20/01	0:41	9.32	0.983	9.16
MOA01DOX0036	E3-4B	6/19/01	12:13	6/19/01	22:37	9.52	0.983	9.36

ANALYZED BY: Steen Trump DATE: 6-19, 6-20-01 SIGNATURE: Steen Trump

KINNETIC LABORATORIES, INC.
DISSOLVED OXYGEN DATA LOG

CLIENT: MUNICIPALITY OF ANCHORAGE AWWU
PROJECT: SUMMER 2001 PT WORONZOF WATER QUALITY

CALIBRATION STANDARDS:

	STD 1:	STD 2:	X STD	DATE	TIME
D.O.	20.34	20.35	20.345	6/18/01	15:10
F=20/XSTD=	0.983				

SAMPLE ID	STATION	SAMPLE DATE	SAMPLE TIME	ANALYSIS DATE	ANALYSIS TIME	TITRANT mL	FACTOR	D.O. mg/L
MOA01DOX0037	F1-1S	6/19/01	13:21	6/19/01	22:01	9.47	0.983	9.31
MOA01DOX0038	F1-1M	6/19/01	13:21	6/20/01	0:45	9.46	0.983	9.30
MOA01DOX0039	F1-1B	6/19/01	13:21	6/19/01	21:10	9.52	0.983	9.36
MOA01DOX0040	F1-2S	6/19/01	13:45	6/19/01	22:23	9.50	0.983	9.34
MOA01DOX0041	F1-2M	6/19/01	13:45	6/20/01	0:48	9.45	0.983	9.29
MOA01DOX0042	F1-2B	6/19/01	13:45	6/19/01	21:15	9.50	0.983	9.34
MOA01DOX0043	F1-3S	6/19/01	14:07	6/19/01	22:19	9.53	0.983	9.37
MOA01DOX0044	F1-3M	6/19/01	14:07	6/20/01	1:18	9.52	0.983	9.36
MOA01DOX0045	F1-3B	6/19/01	14:07	6/20/01	1:21	9.50	0.983	9.34
MOA01DOX0046	F1-4S	6/19/01	14:40	6/19/01	22:42	9.65	0.983	9.49
MOA01DOX0047	F1-4M	6/19/01	14:40	6/20/01	1:24	9.38	0.983	9.22
MOA01DOX0048	F1-4B	6/19/01	14:40	6/19/01	21:33	9.34	0.983	9.18
MOA01DOX0049	F2-1S	6/19/01	15:15	6/20/01	0:24	9.30	0.983	9.14
MOA01DOX0050	F2-1M	6/19/01	15:15	6/20/01	0:34	9.34	0.983	9.18
MOA01DOX0051	F2-1B	6/19/01	15:15	6/20/01	0:06	9.26	0.983	9.10
MOA01DOX0052	F2-2S	6/19/01	15:25	6/20/01	0:51	9.45	0.983	9.29
MOA01DOX0053	F2-2M	6/19/01	15:25	6/20/01	0:12	9.47	0.983	9.31
MOA01DOX0054	F2-2B	6/19/01	15:25	6/20/01	0:17	9.41	0.983	9.25
MOA01DOX0055	F2-3S	6/19/01	15:43	6/20/01	0:55	9.42	0.983	9.26
MOA01DOX0056	F2-3M	6/19/01	15:43	6/20/01	0:58	9.42	0.983	9.26
MOA01DOX0057	F2-3B	6/19/01	15:43	6/19/01	23:44	9.36	0.983	9.20
MOA01DOX0058	F2-4S	6/19/01	16:08	6/20/01	1:12	9.37	0.983	9.21
MOA01DOX0059	F2-4M	6/19/01	16:08	6/20/01	1:15	9.39	0.983	9.23
MOA01DOX0060	F2-4B	6/19/01	16:08	6/19/01	23:34	9.34	0.983	9.18
MOA01DOX0061	F3-1S	6/19/01	16:57	6/19/01	23:59	9.40	0.983	9.24
MOA01DOX0062	F3-1M	6/19/01	16:57	6/20/01	1:10	9.36	0.983	9.20
MOA01DOX0063	F3-1B	6/19/01	16:57	6/19/01	23:03	9.39	0.983	9.23
MOA01DOX0064	F3-2S	6/19/01	17:05	6/19/01	23:52	9.36	0.983	9.20
MOA01DOX0065	F3-2M	6/19/01	17:05	6/20/01	1:27	9.38	0.983	9.22
MOA01DOX0066	F3-2B	6/19/01	17:05	6/19/01	23:00	9.39	0.983	9.23
MOA01DOX0067	F3-3S	6/19/01	17:14	6/19/01	22:47	9.43	0.983	9.27
MOA01DOX0068	F3-3M	6/19/01	17:14	6/20/01	1:31	9.42	0.983	9.26
MOA01DOX0069	F3-3B	6/19/01	17:14	6/19/01	23:47	9.42	0.983	9.26
MOA01DOX0070	F3-4S	6/19/01	17:30	6/19/01	23:28	9.54	0.983	9.38
MOA01DOX0071	F3-4M	6/19/01	17:30	6/20/01	1:33	9.53	0.983	9.37
MOA01DOX0072	F3-4B	6/19/01	17:30	6/19/01	22:51	9.48	0.983	9.32

ANALYZED BY: Steen Trump DATE: 6-19, 6-20-01 SIGNATURE: Steen Trump

KINNETIC LABORATORIES, INC.
DISSOLVED OXYGEN DATA LOG

CLIENT: MUNICIPALITY OF ANCHORAGE AWWU
PROJECT: SUMMER 2001 PT WORONZOF WATER QUALITY

CALIBRATION STANDARDS:

	STD 1:	STD 2:	X STD	DATE	TIME
D.O.	20.34	20.35	20.345	6/18/01	15:10
F=20/XSTD=	0.983				

SAMPLE ID	STATION	SAMPLE DATE	SAMPLE TIME	ANALYSIS DATE	ANALYSIS TIME	TITRANT mL	FACTOR	D.O. mg/L
MOA01DOX0073	C1-1S	6/20/01	14:20	6/21/01	0:57	9.51	0.983	9.35
MOA01DOX0074	C1-1M	6/20/01	14:20	6/21/01	2:13	9.72	0.983	9.55
MOA01DOX0075	C1-1B	6/20/01	14:20	6/21/01	1:44	9.43	0.983	9.27
MOA01DOX0076	C1-2S	6/20/01	14:45	6/21/01	1:04	9.58	0.983	9.42
MOA01DOX0077	C1-2M	6/20/01	14:45	6/21/01	1:12	9.70	0.983	9.54
MOA01DOX0078	C1-2B	6/20/01	14:45	6/21/01	2:30	9.61	0.983	9.45
MOA01DOX0079	C1-3S	6/20/01	15:10	6/21/01	0:53	9.60	0.983	9.44
MOA01DOX0080	C1-3M	6/20/01	15:10	6/21/01	1:09	9.49	0.983	9.33
MOA01DOX0081	C1-3B	6/20/01	15:10	6/21/01	2:33	9.60	0.983	9.44
MOA01DOX0082	C1-4S	6/20/01	15:37	6/21/01	0:49	9.58	0.983	9.42
MOA01DOX0083	C1-4M	6/20/01	15:37	6/21/01	1:00	9.55	0.983	9.39
MOA01DOX0084	C1-4B	6/20/01	15:37	6/21/01	2:28	9.45	0.983	9.29
MOA01DOX0085	C2-1S	6/20/01	16:10	6/21/01	0:23	9.40	0.983	9.24
MOA01DOX0086	C2-1M	6/20/01	16:10	6/21/01	0:25	9.53	0.983	9.37
MOA01DOX0087	C2-1B	6/20/01	16:10	6/21/01	0:45	9.40	0.983	9.24
MOA01DOX0088	C2-2S A	6/20/01	16:25	6/21/01	0:20	9.54	0.983	9.38
MOA01DOX0089	C2-2S B	6/20/01	16:25	6/21/01	0:31	9.33	0.983	9.17
MOA01DOX0090	C2-2S C	6/20/01	16:25	6/21/01	0:40	9.49	0.983	9.33
MOA01DOX0091	C2-2M	6/20/01	16:25	6/21/01	0:35	9.36	0.983	9.20
MOA01DOX0092	C2-2B	6/20/01	16:25	6/21/01	0:42	9.45	0.983	9.29
MOA01DOX0093	C2-3S	6/20/01	17:08	6/21/01	0:17	9.49	0.983	9.33
MOA01DOX0094	C2-3M	6/20/01	17:08	6/21/01	0:13	9.42	0.983	9.26
MOA01DOX0095	C2-3B	6/20/01	17:08	6/21/01	0:28	9.22	0.983	9.06
MOA01DOX0096	C2-4S	6/20/01	17:25	6/21/01	1:24	9.45	0.983	9.29
MOA01DOX0097	C2-4M	6/20/01	17:25	6/21/01	1:15	9.52	0.983	9.36
MOA01DOX0098	C2-4B	6/20/01	17:25	6/21/01	2:26	9.50	0.983	9.34
MOA01DOX0099	C3-1S A	6/20/01	18:41	6/21/01	1:35	9.18	0.983	9.02
MOA01DOX0100	C3-1S B	6/20/01	18:41	6/21/01	1:54	9.29	0.983	9.13
MOA01DOX0101	C3-1S C	6/20/01	18:41	6/21/01	1:39	9.26	0.983	9.10
MOA01DOX0102	C3-1M	6/20/01	18:41	6/21/01	2:18	9.34	0.983	9.18
MOA01DOX0103	C3-1B	6/20/01	18:41	6/21/01	2:21	9.25	0.983	9.09
MOA01DOX0104	C3-2S	6/20/01	18:57	6/21/01	1:31	9.33	0.983	9.17
MOA01DOX0105	C3-2M	6/20/01	18:57	6/21/01	2:24	9.34	0.983	9.18
MOA01DOX0106	C3-2B	6/20/01	18:57	6/21/01	1:48	9.24	0.983	9.08
MOA01DOX0107	C3-3S	6/20/01	19:36	6/21/01	1:57	9.35	0.983	9.19
MOA01DOX0108	C3-3M	6/20/01	19:36	6/21/01	2:08	9.38	0.983	9.22
MOA01DOX0109	C3-3B	6/20/01	19:36	6/21/01	2:10	9.29	0.983	9.13
MOA01DOX0110	C3-4S	6/20/01	19:51	6/21/01	2:05	9.43	0.983	9.27
MOA01DOX0111	C3-4M	6/20/01	19:51	6/21/01	2:02	9.46	0.983	9.30
MOA01DOX0112	C3-4B	6/20/01	19:51	6/21/01	2:15	9.35	0.983	9.19

ANALYZED BY: Steen Trump DATE: 6-21-01 SIGNATURE: Steen Trump

KINNETIC LABORATORIES, INC.
TURBIDITY DATA LOG

CLIENT: MUNICIPALITY OF ANCHORAGE AWWU

PROJECT: SUMMER 2001 PT WORONZOF WATER QUALITY

CALIBRATION STANDARDS:

	STD 1:	STD 2:	DATE	TIME
Turbidity		20.0	6/20/01	12:00 AM

SAMPID	STATION	SAMPLE DATE	SAMPLE TIME	ANALYSIS DATE	ANALYSIS TIME	DILUTION FACTOR	MEASURED TURBIDITY (NTU)	ACTUAL TURBIDITY (NTU)
MOA01TUR0001	E1-1S	6/19/01	8:18	6/20/01	9:01	10	11.0	110
MOA01TUR0002	E1-1M	6/19/01	8:18	6/20/01	9:15	10	16.5	165
MOA01TUR0003	E1-1B	6/19/01	8:18	6/20/01	9:17	10	9.0	90
MOA01TUR0004	E1-2S	6/19/01	8:32	6/20/01	9:27	10	17.5	175
MOA01TUR0005	E1-2M	6/19/01	8:32	6/20/01	9:29	10	14.8	148
MOA01TUR0006	E1-2B	6/19/01	8:32	6/20/01	9:32	10	13.4	134
MOA01TUR0007	E1-3S	6/19/01	8:53	6/20/01	9:34	10	14.0	140
MOA01TUR0008	E1-3M	6/19/01	8:53	6/20/01	9:37	10	13.6	136
MOA01TUR0009	E1-3B	6/19/01	8:53	6/20/01	9:40	10	16.3	163
MOA01TUR0010	E1-4S	6/19/01	9:10	6/20/01	9:42	10	12.7	127
MOA01TUR0011	E1-4M	6/19/01	9:10	6/20/01	9:42	10	15.0	150
MOA01TUR0012	E1-4B	6/19/01	9:10	6/20/01	9:48	10	16.9	169
MOA01TUR0013	E2-1S	6/19/01	9:46	6/20/01	9:52	10	16.2	162
MOA01TUR0014	E2-1M	6/19/01	9:46	6/20/01	9:55	10	16.8	168
MOA01TUR0015	E2-1B	6/19/01	9:46	6/20/01	9:57	10	15.2	152
MOA01TUR0016	E2-2S	6/19/01	9:54	6/20/01	10:00	10	15.4	154
MOA01TUR0017	E2-2M	6/19/01	9:54	6/20/01	10:08	10	14.8	148
MOA01TUR0018	E2-2B	6/19/01	9:54	6/20/01	10:10	10	16.4	164
MOA01TUR0019	E2-3S	6/19/01	10:04	6/20/01	10:11	10	14.3	143
MOA01TUR0020	E2-3M	6/19/01	10:04	6/20/01	10:23	10	17.4	174
MOA01TUR0021	E2-3B	6/19/01	10:04	6/20/01	10:25	10	16.7	167
MOA01TUR0022	E2-4S	6/19/01	10:46	6/20/01	10:26	10	14.2	142
MOA01TUR0023	E2-4M	6/19/01	10:46	6/20/01	10:28	10	15.5	155
MOA01TUR0024	E2-4B	6/19/01	10:46	6/20/01	10:29	10	15.2	152
MOA01TUR0025	E3-1S	6/19/01	11:17	6/20/01	10:32	10	11.4	114
MOA01TUR0026	E3-1M	6/19/01	11:17	6/20/01	10:34	10	9.8	98
MOA01TUR0027	E3-1B	6/19/01	11:17	6/20/01	10:37	10	8.4	84
MOA01TUR0028	E3-2S	6/19/01	11:31	6/20/01	10:40	10	10.1	101
MOA01TUR0029	E3-2M	6/19/01	11:31	6/20/01	10:46	10	12.7	127
MOA01TUR0030	E3-2B	6/19/01	11:31	6/20/01	10:47	10	16.1	161
MOA01TUR0031	E3-3S	6/19/01	11:54	6/20/01	10:49	10	3.4	34
MOA01TUR0032	E3-3M	6/19/01	11:54	6/20/01	10:51	10	12.0	120
MOA01TUR0033	E3-3B	6/19/01	11:54	6/20/01	10:52	10	15.4	154
MOA01TUR0034	E3-4S	6/19/01	12:13	6/20/01	10:54	10	5.4	54
MOA01TUR0035	E3-4M	6/19/01	12:13	6/20/01	10:56	10	15.7	157
MOA01TUR0036	E3-4B	6/19/01	12:13	6/20/01	10:57	10	15.8	158

ANALYZED BY: A Lewis DATE: 6-20-01 SIGNATURE: A A Lewis

KINNETIC LABORATORIES, INC.
TURBIDITY DATA LOG

CLIENT: MUNICIPALITY OF ANCHORAGE AWWU

PROJECT: SUMMER 2001 PT WORONZOF WATER QUALITY

CALIBRATION STANDARDS:

	STD 1:	STD 2:	DATE	TIME
Turbidity		20.0	6/20/01	12:00 AM

SAMPID	STATION	SAMPLE DATE	SAMPLE TIME	ANALYSIS DATE	ANALYSIS TIME	DILUTION FACTOR	MEASURED TURBIDITY (NTU)	ACTUAL TURBIDITY (NTU)
MOA01TUR0037	F1-1S	6/19/01	13:21	6/20/01	11:00	10	4.5	45
MOA01TUR0038	F1-1M	6/19/01	13:21	6/20/01	11:02	10	4.2	42
MOA01TUR0039	F1-1B	6/19/01	13:21	6/20/01	11:04	10	5.6	56
MOA01TUR0040	F1-2S	6/19/01	13:45	6/21/01	12:27	10	6.7	67
MOA01TUR0041	F1-2M	6/19/01	13:45	6/21/01	12:35	10	7.0	70
MOA01TUR0042	F1-2B	6/19/01	13:45	6/21/01	12:44	10	7.2	72
MOA01TUR0043	F1-3S	6/19/01	14:07	6/21/01	14:26	10	7.2	72
MOA01TUR0044	F1-3M	6/19/01	14:07	6/21/01	13:40	10	7.8	78
MOA01TUR0045	F1-3B	6/19/01	14:07	6/21/01	13:03	10	7.2	72
MOA01TUR0046	F1-4S	6/19/01	14:40	6/21/01	12:08	10	3.1	31
MOA01TUR0047	F1-4M	6/19/01	14:40	6/21/01	12:14	10	2.1	21
MOA01TUR0048	F1-4B	6/19/01	14:40	6/21/01	12:16	10	3.5	35
MOA01TUR0049	F2-1S	6/19/01	15:15	6/21/01	12:49	10	10.9	109
MOA01TUR0050	F2-1M	6/19/01	15:15	6/21/01	12:31	10	10.8	108
MOA01TUR0051	F2-1B	6/19/01	15:15	6/21/01	12:46	10	11.1	111
MOA01TUR0052	F2-2S	6/19/01	15:25	6/21/01	12:56	10	10.0	100
MOA01TUR0053	F2-2M	6/19/01	15:25	6/21/01	12:38	10	11.4	114
MOA01TUR0054	F2-2B	6/19/01	15:25	6/21/01	14:10	10	13.8	138
MOA01TUR0055	F2-3S	6/19/01	15:43	6/21/01	13:18	10	15.5	155
MOA01TUR0056	F2-3M	6/19/01	15:43	6/21/01	12:19	10	15 / 14.7	150 / 147
MOA01TUR0057	F2-3B	6/19/01	15:43	6/21/01	14:31	10	14.2	142
MOA01TUR0058	F2-4S	6/19/01	16:08	6/21/01	13:50	10	9.3	93
MOA01TUR0059	F2-4M	6/19/01	16:08	6/21/01	13:43	10	16.3 / 16.3	163 / 163
MOA01TUR0060	F2-4B	6/19/01	16:08	6/21/01	14:37	10	20.6	206
MOA01TUR0061	F3-1S	6/19/01	16:57	6/21/01	12:53	10	11.3	113
MOA01TUR0062	F3-1M	6/19/01	16:57	6/21/01	14:17	10	14.0	140
MOA01TUR0063	F3-1B	6/19/01	16:57	6/21/01	13:36	10	13.9	139
MOA01TUR0064	F3-2S	6/19/01	17:05	6/21/01	13:28	10	11.7	117
MOA01TUR0065	F3-2M	6/19/01	17:05	6/21/01	14:13	10	17.0	170
MOA01TUR0066	F3-2B	6/19/01	17:05	6/21/01	13:24	10	12.2	122
MOA01TUR0067	F3-3S	6/19/01	17:14	6/21/01	14:39	10	7.6	76
MOA01TUR0068	F3-3M	6/19/01	17:14	6/21/01	12:41	10	10.8	108
MOA01TUR0069	F3-3B	6/19/01	17:14	6/21/01	14:28	10	14.8	148
MOA01TUR0070	F3-4S	6/19/01	17:30	6/21/01	14:19	10	12.7	127
MOA01TUR0071	F3-4M	6/19/01	17:30	6/21/01	14:24	10	16.7	167
MOA01TUR0072	F3-4B	6/19/01	17:30	6/21/01	13:59	10	19.5 / 19.4	195 /194

ANALYZED BY: Steen Trump DATE: 6-20, 6-21-01 SIGNATURE: Steen Trump

KINNETIC LABORATORIES, INC.
TURBIDITY DATA LOG

CLIENT: MUNICIPALITY OF ANCHORAGE AWWU

PROJECT: SUMMER 2001 PT WORONZOF WATER QUALITY

CALIBRATION STANDARDS:

	STD 1:	STD 2:	DATE	TIME
Turbidity		20.0	6/20/01	12:00 AM

SAMPID	STATION	SAMPLE DATE	SAMPLE TIME	ANALYSIS DATE	ANALYSIS TIME	DILUTION FACTOR	MEASURED TURBIDITY (NTU)	ACTUAL TURBIDITY (NTU)
MOA01TUR0073	C1-1S	6/20/01	14:20	6/21/01	16:12	10	5.8	58
MOA01TUR0074	C1-1M	6/20/01	14:20	6/21/01	16:13	10	2.7	27
MOA01TUR0075	C1-1B	6/20/01	14:20	6/21/01	16:15	10	5.0	50
MOA01TUR0076	C1-2S	6/20/01	14:45	6/21/01	15:08	10	20.1 / 21.0	201 / 210
MOA01TUR0077	C1-2M	6/20/01	14:45	6/21/01	16:02	10	17.5	175
MOA01TUR0078	C1-2B	6/20/01	14:45	6/21/01	16:17	10	20.1	201
MOA01TUR0079	C1-3S	6/20/01	15:10	6/21/01	16:19	10	17.3	173
MOA01TUR0080	C1-3M	6/20/01	15:10	6/21/01	16:21	10	21.2	212
MOA01TUR0081	C1-3B	6/20/01	15:10	6/21/01	14:53	10	22.3	223
MOA01TUR0082	C1-4S	6/20/01	15:37	6/21/01	16:25	10	10.7	107
MOA01TUR0083	C1-4M	6/20/01	15:37	6/21/01	16:27	10	13.6	136
MOA01TUR0084	C1-4B	6/20/01	15:37	6/21/01	15:03	10	13.2	132
MOA01TUR0085	C2-1S	6/20/01	16:10	6/21/01	16:28	10	12.0	120
MOA01TUR0086	C2-1M	6/20/01	16:10	6/21/01	16:29	10	16.4	164
MOA01TUR0087	C2-1B	6/20/01	16:10	6/21/01	16:30	10	16.5	165
MOA01TUR0088	C2-2S A	6/20/01	16:25	6/21/01	16:31	10	11.8	118
MOA01TUR0089	C2-2S B	6/20/01	16:25	6/21/01	16:33	10	11.0	110
MOA01TUR0090	C2-2S C	6/20/01	16:25	6/21/01	16:34	10	11.0	110
MOA01TUR0091	C2-2M	6/20/01	16:25	6/21/01	16:35	10	23.1	231
MOA01TUR0092	C2-2B	6/20/01	16:25	6/21/01	16:38	10	39.1	391
MOA01TUR0093	C2-3S	6/20/01	17:08	6/21/01	16:39	10	16.2	162
MOA01TUR0094	C2-3M	6/20/01	17:08	6/21/01	16:41	10	22.3	223
MOA01TUR0095	C2-3B	6/20/01	17:08	6/21/01	16:42	10	26.7	267
MOA01TUR0096	C2-4S	6/20/01	17:25	6/21/01	16:43	10	17.0	170
MOA01TUR0097	C2-4M	6/20/01	17:25	6/21/01	16:45	10	23.0	230
MOA01TUR0098	C2-4B	6/20/01	17:25	6/21/01	16:48	10	29.3	293
MOA01TUR0099	C3-1S A	6/20/01	18:41	6/21/01	16:49	10	16.9	169
MOA01TUR0100	C3-1S B	6/20/01	18:41	6/21/01	16:50	10	14.7	147
MOA01TUR0101	C3-1S C	6/20/01	18:41	6/21/01	16:51	10	18.9	189
MOA01TUR0102	C3-1M	6/20/01	18:41	6/21/01	16:04	10	14.5	145
MOA01TUR0103	C3-1B	6/20/01	18:41	6/21/01	15:01	10	14.2	142
MOA01TUR0104	C3-2S	6/20/01	18:57	6/21/01	16:53	10	9.2	92
MOA01TUR0105	C3-2M	6/20/01	18:57	6/21/01	16:54	10	22.0	220
MOA01TUR0106	C3-2B	6/20/01	18:57	6/21/01	16:55	10	27.9	279
MOA01TUR0107	C3-3S	6/20/01	19:36	6/21/01	16:56	10	14.5	145
MOA01TUR0108	C3-3M	6/20/01	19:36	6/21/01	16:57	10	14.5	145
MOA01TUR0109	C3-3B	6/20/01	19:36	6/21/01	16:05	10	16.3	163
MOA01TUR0110	C3-4S	6/20/01	19:51	6/21/01	16:08	10	7.1	71
MOA01TUR0111	C3-4M	6/20/01	19:51	6/21/01	15:05	10	13.4	134
MOA01TUR0112	C3-4B	6/20/01	19:51	6/21/01	14:57	10	15.5	155

ANALYZED BY: GGL DATE: 6-21-01 SIGNATURE: A. A. Lamb

Kinnetic Laboratories, Inc. - Salinity Data Form

Project: MOA
Date: 6-20-01

Analyst: JEREMY BURNS
Analysis Date: 11/20/01

Notes: meter used : YSI model 63 , KLI #903

Bottle #	Station	Sample ID	Salinity	Temp. (Cel)	Comments
–	C2-2S	MOA01SAL001	11.6 ppt	20.7	
–	C2-2M	MOA01SAL002	11.9	20.6	
33E	C2-2B	MOA01SAL003	12.0	20.7	
26E	C3-3S	MOA01SAL004	12.7	20.7	
1E	C3-3M	MOA01SAL005	12.6	20.5	
9E	C3-3B	MOA01SAL006	13.3	20.5	

KINNETIC LABORATORIES, INC. CHAIN OF CUSTODY RECORD

LABORATORY:	FROM:
Kinnetic Laboratories, Inc. 307 Washington Street Santa Cruz, CA 95060 Attn: Jon Toal (408)426-3900	Kinnetic Laboratories, Inc. 403 West 8th Avenue Anchorage, AK 99501 Attn: Janet Savoie (907)276-6178

REQUIRED COMPLETION DATE: 30 days | **P.O. #:** N/A | **KLI Proj. #:** 514.02

ANALYSIS TYPE: Salinity SM 205 (2520B). Detection limit 1 ppm.

MATRIX: Water | **Preservative:** None | **Type of Container:** Salinity bottle

SAMPLE IDENTIFICATION #	STATION LOCATION	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	CONDITION UPON RECEIPT	ASSIGNED LABORATORY NUMBER
MOA01SAL001	C2-2S	1	6/20/01	1625	INTACT	
MOA01SAL002	C2-2M	1	6/20/01	1625		
MOA01SAL003	C2-2B	1	6/20/01	1625		
MOA01SAL004	C3-3S	1	6/20/01	1936		
MOA01SAL005	C3-3M	1	6/20/01	1936		
MOA01SAL006	C3-3B	1	6/20/01	1936		

DATA REPORTS **MUST** INCLUDE THE FOLLOWING: SAMPLE ID NUMBER, ANALYTICAL METHOD, DETECTION LIMIT, DATE OF EXTRACTION IF APPLICABLE, DATE OF ANALYSIS, ANALYTICAL RESULTS, AND SIGNATURE OF QA REVIEWER.

COMMENTS: PLEASE REPORT ALL QA/QC, INCLUDING METHOD BLANKS, MS/SDs, DUPLICATES, ETC.

Please return completed original COC to KLI Anchorage.

RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
[signature]	8/9/01 1100	FEDEX	Jon Toal	8/10/01 1000
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME
RELINQUISHED BY:	DATE AND TIME	TRANSPORTED BY:	RECEIVED BY:	DATE AND TIME

APPENDIX D

Receiving Water Quality Monitoring

D6 Kinnetic Laboratories, Inc.

Hydrographic Data Profiles

KINNETIC LABORATORIES INCORPORATED

MOA HYDROGRAPHIC DATA

STATION: E1-1 DATE: 6/19/01 TIME: 8:18

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.3615	1.81769	7.691	9.719	14.1770	0.
1.00	13.5404	1.81763	7.773	9.887	14.1102	0.
1.50	13.5401	1.81743	7.795	9.885	14.1085	0.
2.00	13.5400	1.81716	7.851	9.878	14.1062	0.
2.50	13.5378	1.81685	7.855	9.905	14.1043	0.
3.00	13.5409	1.81714	7.855	9.927	14.1056	0.
3.50	13.5408	1.81732	7.862	9.921	14.1070	0.
4.00	13.5389	1.81733	7.865	9.923	14.1077	0.
4.50	13.5401	1.81751	7.868	9.926	14.1086	0.
5.00	13.5405	1.81780	7.871	9.925	14.1109	0.
5.50	13.5416	1.81827	7.872	9.922	14.1144	0.
6.00	13.5409	1.81832	7.873	9.918	14.1149	0.
6.50	13.5407	1.81825	7.876	9.932	14.1143	0.
7.00	13.5418	1.81814	7.878	9.937	14.1129	0.
7.50	13.5424	1.81837	7.878	9.943	14.1145	0.
8.00	13.5433	1.81902	7.876	9.971	14.1195	0.
8.50	13.5445	1.81940	7.879	9.964	14.1222	0.
9.00	13.5430	1.81939	7.881	9.981	14.1227	0.
9.50	13.5440	1.81934	7.881	9.984	14.1217	0.
10.00	13.5445	1.81939	7.881	9.976	14.1219	0.
10.50	13.5437	1.81941	7.881	9.982	14.1223	0.
11.00	13.5432	1.81939	7.881	9.975	14.1222	0.
11.50	13.5429	1.81945	7.881	9.999	14.1227	0.
12.00	13.5440	1.81956	7.881	9.996	14.1232	0.
12.50	13.5436	1.81954	7.881	10.014	14.1230	0.
13.00	13.5445	1.81938	7.883	10.005	14.1212	0.
13.50	13.5445	1.81930	7.886	10.006	14.1205	0.
14.00	13.5440	1.81922	7.889	9.647	14.1198	0.
14.50	13.5497	1.81885	7.884	10.524	14.1146	0.

MOA HYDROGRAPHIC DATA

STATION: E1-2 DATE: 6/19/01 TIME: 8:32

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.0005	1.12148	7.674	10.821	8.0653	0.
1.00	13.5459	1.80239	7.770	10.381	13.9797	0.
1.50	13.5453	1.82048	7.746	10.387	14.1324	0.
2.00	13.5471	1.82088	7.780	10.402	14.1351	0.
2.50	13.5479	1.82122	7.818	10.423	14.1374	0.
3.00	13.5468	1.82127	7.845	10.436	14.1383	0.
3.50	13.5467	1.82116	7.855	10.460	14.1372	0.
4.00	13.5476	1.82089	7.858	10.455	14.1346	0.
4.50	13.5468	1.82070	7.863	10.482	14.1332	0.
5.00	13.5463	1.82060	7.867	10.503	14.1324	0.
5.50	13.5477	1.82067	7.867	10.501	14.1324	0.
6.00	13.5475	1.82080	7.867	10.533	14.1335	0.
6.50	13.5486	1.82092	7.867	10.564	14.1340	0.
7.00	13.5483	1.82084	7.867	10.587	14.1333	0.
7.50	13.5468	1.82069	7.867	10.596	14.1325	0.
8.00	13.5467	1.82058	7.867	10.606	14.1315	0.
8.50	13.5463	1.82037	7.864	10.628	14.1298	0.
9.00	13.5467	1.81991	7.867	10.655	14.1256	0.
9.50	13.5458	1.81966	7.865	10.678	14.1238	0.
10.00	13.5464	1.81961	7.865	10.684	14.1231	0.
10.50	13.5469	1.81966	7.865	10.693	14.1232	0.
11.00	13.5472	1.81986	7.864	10.719	14.1247	0.
11.50	13.5476	1.82037	7.862	10.754	14.1288	0.
12.00	13.5465	1.82062	7.860	10.782	14.1311	0.
12.50	13.5484	1.82059	7.862	10.802	14.1302	0.
13.00	13.5478	1.82046	7.859	10.825	14.1291	0.
13.50	13.5485	1.82026	7.857	10.851	14.1271	0.
14.00	13.5478	1.81869	7.857	10.857	14.1140	0.
14.50	13.5486	1.81330	7.860	10.857	14.0681	0.

MOA HYDROGRAPHIC DATA

STATION: E1-3 DATE: 6/19/01 TIME: 8:53

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.3013	1.07946	7.829	12.522	7.7130	0.
1.00	13.5398	1.79159	7.881	12.446	13.8909	0.
1.50	13.5409	1.81249	7.881	12.599	14.0665	0.
2.00	13.5415	1.81233	7.881	12.703	14.0648	0.
2.50	13.5418	1.81232	7.878	12.824	14.0646	0.
3.00	13.5417	1.81253	7.876	12.935	14.0662	0.
3.50	13.5419	1.81182	7.875	13.306	14.0601	0.

MOA HYDROGRAPHIC DATA

STATION: E1-4 DATE: 6/19/01 TIME: 9:10

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.4005	1.81740	7.886	10.128	14.1599	0.
1.00	13.5422	1.81734	7.898	10.341	14.1071	0.
1.50	13.5426	1.81768	7.902	10.368	14.1097	0.
2.00	13.5402	1.81775	7.903	10.391	14.1111	0.
2.50	13.5409	1.81789	7.905	10.405	14.1119	0.
3.00	13.5416	1.81794	7.905	10.421	14.1120	0.
3.50	13.5414	1.81796	7.903	10.439	14.1121	0.
4.00	13.5417	1.81795	7.904	10.467	14.1118	0.
4.50	13.5417	1.81781	7.905	10.483	14.1106	0.
5.00	13.5415	1.81757	7.904	10.502	14.1085	0.
5.50	13.5420	1.81723	7.905	10.533	14.1054	0.
6.00	13.5414	1.81670	7.905	10.539	14.1011	0.
6.50	13.5427	1.81620	7.903	10.542	14.0962	0.
7.00	13.5411	1.81596	7.905	10.564	14.0947	0.
7.50	13.5418	1.81572	7.905	10.605	14.0923	0.
8.00	13.5426	1.81543	7.908	10.643	14.0895	0.
8.50	13.5420	1.81534	7.909	10.639	14.0889	0.

MOA HYDROGRAPHIC DATA

STATION: E2-1 DATE: 6/19/01 TIME: 9:46

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.3887	1.77293	7.888	11.286	13.7875	0.
1.00	13.6267	1.77273	7.901	11.522	13.7004	0.
1.50	13.6274	1.77262	7.903	11.616	13.6992	0.
2.00	13.6280	1.77250	7.904	11.684	13.6979	0.
2.50	13.6288	1.77272	7.904	11.709	13.6994	0.
3.00	13.6272	1.77330	7.904	11.775	13.7047	0.
3.50	13.6258	1.77368	7.904	11.823	13.7083	0.
4.00	13.6252	1.77395	7.904	11.879	13.7107	0.
4.50	13.6262	1.77395	7.904	11.932	13.7103	0.
5.00	13.6268	1.77368	7.905	11.980	13.7077	0.
5.50	13.6279	1.77318	7.904	12.037	13.7030	0.
6.00	13.6285	1.77275	7.904	12.112	13.6991	0.
6.50	13.6280	1.77276	7.908	12.167	13.6993	0.
7.00	13.6276	1.77315	7.905	12.234	13.7026	0.
7.50	13.6264	1.77392	7.908	12.333	13.7094	0.
8.00	13.6264	1.77388	7.914	12.336	13.7090	0.

MOA HYDROGRAPHIC DATA

STATION: E2-2 DATE: 6/19/01 TIME: 9:54

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.3184	.86895	7.819	10.748	6.3342	0.
1.00	13.6378	1.70519	7.900	10.360	13.1308	0.
1.50	13.6367	1.76472	7.903	10.389	13.6295	0.
2.00	13.6361	1.76502	7.906	10.396	13.6321	0.
2.50	13.6355	1.76475	7.909	10.407	13.6300	0.
3.00	13.6365	1.76455	7.914	10.420	13.6279	0.
3.50	13.6365	1.76439	7.912	10.425	13.6264	0.
4.00	13.6361	1.76422	7.914	10.450	13.6250	0.
4.50	13.6369	1.76406	7.916	10.460	13.6233	0.
5.00	13.6368	1.76390	7.914	10.463	13.6220	0.
5.50	13.6371	1.76375	7.914	10.485	13.6205	0.
6.00	13.6371	1.76369	7.914	10.523	13.6199	0.
6.50	13.6379	1.76347	7.914	10.551	13.6177	0.
7.00	13.6379	1.76331	7.915	10.555	13.6163	0.
7.50	13.6374	1.76318	7.914	10.574	13.6152	0.
8.00	13.6375	1.76306	7.914	10.579	13.6141	0.
8.50	13.6380	1.76294	7.914	10.606	13.6128	0.
9.00	13.6375	1.76298	7.914	10.658	13.6133	0.
9.50	13.6387	1.76310	7.916	10.688	13.6138	0.
10.00	13.6371	1.76319	7.916	10.722	13.6149	0.
10.50	13.6374	1.76319	7.919	10.757	13.6148	0.
11.00	13.6377	1.76306	7.917	10.785	13.6135	0.
11.50	13.6381	1.76310	7.918	10.805	13.6136	0.
12.00	13.6371	1.76322	7.920	10.888	13.6148	0.
12.50	13.6380	1.76328	7.924	10.938	13.6149	0.

MOA HYDROGRAPHIC DATA

STATION: E2-3 DATE: 6/19/01 TIME: 10:04

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.5942	1.76987	7.930	9.637	13.6879	0.
1.00	13.6405	1.76950	7.918	9.807	13.6685	0.
1.50	13.6344	1.77054	7.917	9.877	13.6792	0.
2.00	13.6359	1.77008	7.918	9.884	13.6748	0.
2.50	13.6310	1.77194	7.919	9.905	13.6920	0.
3.00	13.6296	1.77324	7.920	9.902	13.7034	0.
3.50	13.6288	1.77452	7.919	9.901	13.7143	0.
4.00	13.6258	1.77565	7.920	9.915	13.7248	0.
4.50	13.6241	1.77645	7.919	9.929	13.7321	0.
5.00	13.6247	1.77694	7.920	9.920	13.7359	0.
5.50	13.6250	1.77719	7.919	9.916	13.7378	0.
6.00	13.6241	1.77737	7.919	9.926	13.7395	0.
6.50	13.6241	1.77750	7.921	9.942	13.7405	0.
7.00	13.6248	1.77770	7.919	9.976	13.7419	0.
7.50	13.6236	1.77802	7.919	9.977	13.7449	0.
8.00	13.6232	1.77829	7.921	9.957	13.7472	0.
8.50	13.6230	1.77846	7.921	9.962	13.7486	0.
9.00	13.6222	1.77896	7.922	9.995	13.7530	0.
9.50	13.6210	1.77948	7.920	10.009	13.7578	0.
10.00	13.6210	1.77989	7.922	10.024	13.7611	0.
10.50	13.6203	1.78031	7.923	10.055	13.7648	0.

MOA HYDROGRAPHIC DATA

STATION: E2-4 DATE: 6/19/01 TIME: 10:46

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.5894	1.78856	7.940	11.525	13.8464	0.
1.00	13.6433	1.78861	7.934	11.931	13.8281	0.
1.50	13.6357	1.78820	7.935	12.066	13.8273	0.
2.00	13.6289	1.78865	7.938	12.156	13.8334	0.
2.50	13.6242	1.78917	7.938	12.260	13.8394	0.
3.00	13.6220	1.78940	7.937	12.346	13.8421	0.
3.50	13.6214	1.78946	7.935	12.405	13.8427	0.
4.00	13.6218	1.78946	7.935	12.526	13.8425	0.
4.50	13.6217	1.78946	7.935	12.653	13.8424	0.
5.00	13.6220	1.78946	7.933	12.778	13.8422	0.
5.50	13.6209	1.78959	7.934	12.930	13.8436	0.
6.00	13.6174	1.78867	7.928	13.420	13.8370	0.
6.50	13.6178	1.78892	7.896	13.544	13.8389	0.
7.00	13.6145	1.78911	8.017	13.517	13.8416	0.

MOA HYDROGRAPHIC DATA

STATION: E3-1 DATE: 6/19/01 TIME: 11:17

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.3098	1.32913	7.967	10.138	9.9363	0.
1.00	13.7101	1.70929	7.956	9.934	13.1395	0.
1.50	13.7068	1.70924	7.960	9.936	13.1402	0.
2.00	13.7032	1.70909	7.962	9.971	13.1401	0.
2.50	13.7012	1.70900	7.964	9.988	13.1399	0.
3.00	13.6999	1.70878	7.969	9.975	13.1384	0.
3.50	13.6986	1.70844	7.971	9.993	13.1359	0.
4.00	13.6970	1.70824	7.984	10.018	13.1347	0.
4.50	13.6983	1.70807	7.997	9.989	13.1327	0.

MOA HYDROGRAPHIC DATA

STATION: E3-2 DATE: 6/19/01 TIME: 11:31

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.6582	1.70350	7.941	10.083	13.1076	0.
1.00	13.7235	1.70252	7.940	10.252	13.0784	0.
1.50	13.7216	1.70449	7.948	10.291	13.0954	0.
2.00	13.7224	1.70719	7.952	10.309	13.1177	0.
2.50	13.7228	1.70849	7.954	10.324	13.1282	0.
3.00	13.7231	1.71020	7.956	10.327	13.1424	0.
3.50	13.7266	1.71282	7.956	10.336	13.1629	0.
4.00	13.7281	1.71517	7.956	10.355	13.1820	0.
4.50	13.7278	1.71600	7.959	10.387	13.1890	0.
5.00	13.7285	1.71733	7.960	10.399	13.1998	0.
5.50	13.7265	1.72101	7.959	10.431	13.2311	0.
6.00	13.7221	1.72491	7.959	10.437	13.2651	0.
6.50	13.7145	1.72749	7.956	10.474	13.2893	0.
7.00	13.7153	1.72926	7.959	10.493	13.3037	0.
7.50	13.7140	1.72966	7.961	10.481	13.3074	0.
8.00	13.7141	1.73006	7.961	10.522	13.3106	0.
8.50	13.7139	1.73007	7.959	10.549	13.3107	0.
9.00	13.7097	1.73194	7.959	10.632	13.3277	0.
9.50	13.7102	1.73184	7.961	10.703	13.3266	0.

MOA HYDROGRAPHIC DATA

STATION: E3-3 DATE: 6/19/01 TIME: 11:54

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.6410	.59715	7.949	10.937	4.2005	0.
1.00	13.8297	1.70314	7.938	10.519	13.0477	0.
1.50	13.7269	1.70739	7.956	10.770	13.1178	0.
2.00	13.7295	1.70950	7.961	10.783	13.1345	0.
2.50	13.7319	1.71158	7.961	10.797	13.1510	0.
3.00	13.7338	1.71408	7.961	10.844	13.1712	0.
3.50	13.7343	1.71595	7.961	10.860	13.1865	0.
4.00	13.7334	1.71798	7.961	10.879	13.2037	0.
4.50	13.7312	1.71983	7.961	10.900	13.2198	0.
5.00	13.7327	1.72103	7.961	10.942	13.2293	0.
5.50	13.7298	1.72272	7.966	10.971	13.2442	0.
6.00	13.7290	1.72460	7.961	10.982	13.2602	0.
6.50	13.7267	1.72631	7.963	10.992	13.2752	0.
7.00	13.7223	1.72804	7.961	11.003	13.2911	0.
7.50	13.7234	1.72851	7.964	11.053	13.2945	0.
8.00	13.7234	1.72862	7.966	11.064	13.2953	0.
8.50	13.7232	1.72879	7.963	11.128	13.2968	0.
9.00	13.7225	1.72898	7.969	11.167	13.2985	0.
9.50	13.7230	1.72897	7.987	11.154	13.2982	0.

MOA HYDROGRAPHIC DATA

STATION: E3-4 DATE: 6/19/01 TIME: 12:13

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.6826	1.71337	7.973	10.886	13.1827	0.
1.00	13.7610	1.71297	7.962	11.090	13.1529	0.
1.50	13.7555	1.71329	7.967	11.128	13.1574	0.
2.00	13.7520	1.71406	7.970	11.240	13.1649	0.
2.50	13.7498	1.71437	7.972	11.280	13.1682	0.
3.00	13.7542	1.71438	7.972	11.355	13.1666	0.
3.50	13.7561	1.71446	7.975	11.431	13.1666	0.
4.00	13.7531	1.71489	7.975	11.493	13.1712	0.
4.50	13.7555	1.71584	7.976	11.576	13.1782	0.
5.00	13.7512	1.71868	7.977	11.626	13.2033	0.
5.50	13.7375	1.72126	7.975	11.686	13.2295	0.
6.00	13.7373	1.72153	7.976	11.759	13.2317	0.
6.50	13.7376	1.72149	7.977	11.840	13.2311	0.
7.00	13.7366	1.72142	7.975	11.863	13.2308	0.
7.50	13.7367	1.72180	7.977	11.995	13.2338	0.
8.00	13.7358	1.72181	7.979	12.146	13.2342	0.

MOA HYDROGRAPHIC DATA

STATION: F1-1 DATE: 6/19/01 TIME: 13:21

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.7631	1.63783	7.878	10.476	12.5121	0.
1.00	13.8553	1.66357	7.972	10.695	12.7100	0.
1.50	13.9506	1.69017	7.990	10.730	12.8990	0.
2.00	14.0560	1.72967	7.987	10.772	13.1912	0.
2.50	14.0755	1.74762	7.984	10.798	13.3334	0.
3.00	14.0864	1.75591	7.985	10.877	13.3983	0.
3.50	14.1297	1.76681	7.982	10.980	13.4738	0.
4.00	14.0635	1.76077	7.982	10.934	13.4466	0.

MOA HYDROGRAPHIC DATA

STATION: F1-2 DATE: 6/19/01 TIME: 13:45

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.8448	.67687	7.990	11.579	5.2122	0.
1.00	13.9284	1.65814	7.974	11.167	12.6410	0.
1.50	13.9268	1.65928	7.976	11.258	12.6509	0.
2.00	13.9277	1.65932	7.976	11.335	12.6509	0.
2.50	13.9292	1.65925	7.979	11.405	12.6497	0.
3.00	13.9297	1.65891	7.981	11.507	12.6466	0.
3.50	13.9289	1.65880	7.983	11.585	12.6459	0.
4.00	13.9273	1.65872	7.985	11.708	12.6456	0.
4.50	13.9286	1.65867	7.993	11.942	12.6448	0.

MOA HYDROGRAPHIC DATA

STATION: F1-3 DATE: 6/19/01 TIME: 14:07

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.9806	1.65919	8.016	9.907	12.6323	0.
1.00	14.0095	1.65910	8.006	10.164	12.6225	0.
1.50	14.0092	1.65917	8.006	10.189	12.6231	0.
2.00	14.0079	1.65918	8.006	10.229	12.6235	0.
2.50	14.0079	1.65940	8.007	10.246	12.6252	0.
3.00	14.0070	1.65934	8.007	10.260	12.6250	0.
3.50	14.0102	1.65920	8.015	10.269	12.6227	0.

MOA HYDROGRAPHIC DATA

STATION: F1-4 DATE: 6/19/01 TIME: 14:40

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.5575	1.17863	8.059	10.147	9.2266	0.
1.00	14.3305	1.46250	8.020	9.991	10.9172	0.
1.50	14.3462	1.49793	8.023	10.006	11.1994	0.
2.00	14.3762	1.50643	8.022	10.003	11.2596	0.
2.50	14.3898	1.51103	8.023	10.008	11.2929	0.
3.00	14.4257	1.51422	8.022	10.021	11.3083	0.
3.50	14.4581	1.51801	8.021	10.017	11.3295	0.

MOA HYDROGRAPHIC DATA

STATION: F2-1 DATE: 6/19/01 TIME: 15:15

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.1132	1.84270	8.045	9.905	14.1113	0.
1.00	14.1098	1.84192	8.021	9.883	14.1060	0.
1.50	14.1036	1.84131	8.023	9.913	14.1031	0.
2.00	14.0979	1.84110	8.024	9.921	14.1033	0.
2.50	14.0908	1.84061	8.025	9.940	14.1017	0.
3.00	14.0894	1.84072	8.023	9.936	14.1030	0.
3.50	14.0876	1.84097	8.023	9.926	14.1057	0.
4.00	14.0913	1.84074	8.023	9.943	14.1024	0.
4.50	14.0927	1.84059	8.024	9.984	14.1006	0.
5.00	14.0957	1.84043	8.026	10.002	14.0980	0.
5.50	14.0903	1.84018	8.027	10.009	14.0978	0.
6.00	14.0848	1.84065	8.030	10.009	14.1037	0.
6.50	14.0817	1.84110	8.032	10.019	14.1084	0.
7.00	14.0818	1.84103	8.040	9.956	14.1077	0.
7.50	14.0799	1.84102	8.066	10.145	14.1082	0.
8.00	14.0798	1.84114	8.093	10.504	14.1091	0.

MOA HYDROGRAPHIC DATA

STATION: F2-2 DATE: 6/19/01 TIME: 15:25

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.9796	1.56592	7.986	9.982	11.8515	0.
1.00	14.1715	1.85168	8.014	9.845	14.1649	0.
1.50	14.1661	1.85429	8.019	9.891	14.1885	0.
2.00	14.1616	1.85659	8.023	9.957	14.2092	0.
2.50	14.1704	1.85899	8.021	9.990	14.2260	0.
3.00	14.1864	1.86068	8.021	9.970	14.2341	0.
3.50	14.1892	1.86112	8.022	9.996	14.2366	0.
4.00	14.1901	1.86179	8.026	10.020	14.2418	0.
4.50	14.1914	1.86294	8.026	10.065	14.2509	0.
5.00	14.1976	1.86534	8.026	10.083	14.2684	0.
5.50	14.2242	1.86802	8.026	10.103	14.2808	0.
6.00	14.2305	1.86869	8.026	10.100	14.2840	0.
6.50	14.2359	1.86881	8.025	10.076	14.2829	0.
7.00	14.2323	1.86676	8.024	9.874	14.2671	0.
7.50	14.2050	1.86310	8.024	9.863	14.2466	0.
8.00	14.1873	1.86029	8.023	9.911	14.2295	0.
8.50	14.1685	1.85753	8.020	10.087	14.2134	0.
9.00	14.1612	1.85625	8.025	10.008	14.2053	0.
9.50	14.2132	1.86420	8.028	10.031	14.2524	0.
10.00	14.1778	1.85817	8.024	10.243	14.2150	0.
10.50	14.1519	1.85405	8.026	10.253	14.1900	0.

MOA HYDROGRAPHIC DATA

STATION: F2-3 DATE: 6/19/01 TIME: 15:43

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.8575	.78022	8.015	10.602	6.1217	0.
1.00	14.0566	1.81150	8.022	10.102	13.8716	0.
1.50	14.0387	1.81419	8.023	10.133	13.9004	0.
2.00	14.0242	1.81154	8.025	10.157	13.8834	0.
2.50	14.0110	1.80954	8.025	10.194	13.8713	0.
3.00	14.0108	1.80930	8.026	10.194	13.8693	0.
3.50	14.0066	1.80797	8.026	10.203	13.8595	0.
4.00	14.0023	1.80685	8.025	10.226	13.8517	0.
4.50	14.0032	1.80689	8.026	10.243	13.8516	0.
5.00	14.0029	1.80730	8.026	10.276	13.8550	0.
5.50	14.0009	1.80744	8.026	10.287	13.8569	0.
6.00	14.0003	1.80784	8.026	10.331	13.8604	0.
6.50	14.0003	1.80835	8.026	10.362	13.8645	0.
7.00	14.0012	1.80874	8.026	10.358	13.8673	0.
7.50	14.0002	1.80919	8.026	10.372	13.8713	0.
8.00	14.0022	1.80972	8.027	10.428	13.8750	0.
8.50	14.0028	1.81030	8.026	10.441	13.8795	0.
9.00	14.0032	1.81075	8.026	10.483	13.8830	0.
9.50	14.0039	1.81083	8.026	10.525	13.8833	0.
10.00	14.0000	1.81036	8.031	10.619	13.8807	0.
10.50	14.0030	1.81031	8.031	10.625	13.8792	0.

MOA HYDROGRAPHIC DATA

STATION: F2-4 DATE: 6/19/01 TIME: 16:08

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.2160	1.77001	8.019	9.775	13.4281	0.
1.00	14.1909	1.80655	8.013	10.043	13.7827	0.
1.50	14.0678	1.80752	8.013	10.261	13.8344	0.
2.00	14.0346	1.80401	8.013	10.281	13.8169	0.
2.50	14.0215	1.80043	8.014	10.305	13.7915	0.
3.00	14.0076	1.79737	8.015	10.356	13.7709	0.
3.50	14.0020	1.79555	8.014	10.388	13.7576	0.
4.00	13.9990	1.79489	8.013	10.444	13.7531	0.
4.50	13.9989	1.79436	8.014	10.468	13.7486	0.
5.00	13.9972	1.79429	8.014	10.552	13.7486	0.
5.50	13.9911	1.79371	8.014	10.573	13.7458	0.
6.00	13.9913	1.79350	8.016	10.644	13.7439	0.
6.50	13.9929	1.79375	8.015	10.686	13.7453	0.
7.00	13.9943	1.79429	8.017	10.775	13.7492	0.
7.50	13.9952	1.79518	8.017	10.870	13.7563	0.
8.00	13.9962	1.79555	8.017	10.962	13.7589	0.
8.50	13.9985	1.79631	8.017	11.051	13.7643	0.
9.00	14.0025	1.79748	8.017	11.193	13.7726	0.
9.50	14.0040	1.79920	8.017	11.344	13.7863	0.
10.00	14.0034	1.80003	8.017	11.458	13.7934	0.

MOA HYDROGRAPHIC DATA

STATION: F3-1 DATE: 6/19/01 TIME: 16:57

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.6287	.90078	7.994	11.494	6.4361	0.
1.00	13.7194	1.77777	8.008	10.988	13.7124	0.
1.50	13.7130	1.83186	8.008	10.988	14.1667	0.
2.00	13.7057	1.83163	8.009	11.047	14.1674	0.
2.50	13.7051	1.83152	8.009	11.086	14.1666	0.
3.00	13.7034	1.83138	8.008	11.124	14.1659	0.
3.50	13.7021	1.83126	8.009	11.186	14.1654	0.
4.00	13.7014	1.83124	8.009	11.227	14.1653	0.
4.50	13.6995	1.83120	8.009	11.325	14.1656	0.
5.00	13.6993	1.83122	8.009	11.389	14.1657	0.
5.50	13.6996	1.83120	8.009	11.382	14.1654	0.
6.00	13.7000	1.83113	8.009	11.456	14.1645	0.
6.50	13.6998	1.83102	8.009	11.525	14.1635	0.
7.00	13.6989	1.83125	8.009	11.580	14.1658	0.
7.50	13.6980	1.83141	8.009	11.651	14.1673	0.
8.00	13.6975	1.83132	8.009	11.761	14.1667	0.
8.50	13.6981	1.83130	8.010	11.941	14.1662	0.
9.00	13.6980	1.83139	8.009	12.020	14.1669	0.
9.50	13.6973	1.83161	8.009	12.142	14.1689	0.
10.00	13.6989	1.83146	8.016	12.467	14.1670	0.

MOA HYDROGRAPHIC DATA

STATION: F3-3 DATE: 6/19/01 TIME: 17:14

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.1444	1.58703	8.010	9.861	11.9728	0.
1.00	14.1657	1.79105	7.988	9.919	13.6628	0.
1.50	14.1332	1.77050	7.993	9.946	13.5036	0.
2.00	14.1192	1.76260	7.993	9.946	13.4427	0.
2.50	14.1053	1.75529	7.995	9.974	13.3867	0.
3.00	14.0949	1.75299	7.999	9.991	13.3711	0.
3.50	14.1012	1.75519	8.002	9.975	13.3872	0.
4.00	14.1004	1.76413	8.004	9.953	13.4615	0.
4.50	14.0922	1.76965	8.007	9.972	13.5102	0.
5.00	14.0613	1.77187	8.006	10.003	13.5393	0.
5.50	14.0657	1.76798	8.007	10.008	13.5053	0.
6.00	14.0821	1.76102	8.007	9.991	13.4417	0.
6.50	14.1019	1.75056	8.007	9.991	13.3480	0.
7.00	14.1099	1.74434	8.007	10.012	13.2935	0.
7.50	14.1046	1.74325	8.006	10.023	13.2863	0.
8.00	14.1036	1.74401	8.013	10.015	13.2928	0.
8.50	14.1015	1.74464	8.007	10.023	13.2987	0.
9.00	14.0976	1.74620	8.009	10.021	13.3129	0.
9.50	14.0974	1.74740	8.012	10.026	13.3228	0.
10.00	14.1042	1.75139	8.009	9.997	13.3534	0.
10.50	14.0619	1.75472	8.009	10.064	13.3956	0.
11.00	13.9669	1.76529	8.013	10.074	13.5165	0.
11.50	13.8570	1.78451	8.014	10.070	13.7154	0.
12.00	13.7945	1.80287	8.009	10.087	13.8916	0.
12.50	13.7562	1.81725	8.008	10.099	14.0260	0.
13.00	13.7490	1.81968	8.007	10.110	14.0489	0.
13.50	13.7514	1.82064	8.008	10.119	14.0561	0.
14.00	13.7516	1.82045	8.008	10.116	14.0543	0.
14.50	13.7482	1.82066	8.008	10.114	14.0572	0.
15.00	13.7399	1.82176	8.008	10.143	14.0694	0.
15.50	13.7398	1.82194	8.008	10.154	14.0709	0.
16.00	13.7425	1.82092	8.008	10.186	14.0612	0.
16.50	13.7414	1.82135	8.009	10.217	14.0651	0.
17.00	13.7415	1.82185	8.010	10.253	14.0692	0.
17.50	13.7473	1.82151	8.011	10.244	14.0641	0.
18.00	13.7396	1.82203	8.020	10.565	14.0712	0.

MOA HYDROGRAPHIC DATA

STATION: F3-4 DATE: 6/19/01 TIME: 17:30

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.9352	.86532	7.966	9.999	6.1382	0.
1.00	13.8891	1.73971	7.986	9.616	13.3327	0.
1.50	13.8873	1.78269	7.984	9.599	13.6913	0.
2.00	13.8811	1.78378	7.983	9.592	13.7026	0.
2.50	13.8510	1.78734	7.982	9.588	13.7429	0.
3.00	13.8071	1.79455	7.984	9.595	13.8189	0.
3.50	13.7900	1.79611	7.988	9.577	13.8380	0.
4.00	13.7780	1.79842	7.993	9.568	13.8616	0.
4.50	13.7748	1.79915	7.989	9.600	13.8687	0.
5.00	13.7740	1.79920	7.993	9.595	13.8694	0.
5.50	13.7766	1.79895	7.997	9.584	13.8663	0.
6.00	13.7776	1.79892	7.999	9.599	13.8655	0.
6.50	13.7826	1.79885	7.994	9.608	13.8631	0.
7.00	13.7862	1.79896	7.994	9.614	13.8626	0.
7.50	13.7844	1.79911	7.997	9.610	13.8644	0.
8.00	13.7822	1.79920	7.998	9.605	13.8659	0.
8.50	13.7795	1.79921	8.004	9.607	13.8669	0.
9.00	13.7785	1.79919	8.004	9.608	13.8670	0.
9.50	13.7772	1.79936	8.004	9.590	13.8688	0.
10.00	13.7772	1.79940	8.004	9.565	13.8691	0.
10.50	13.7756	1.79948	8.004	9.597	13.8701	0.
11.00	13.7740	1.79951	8.006	9.604	13.8709	0.
11.50	13.7738	1.79964	8.004	9.617	13.8720	0.
12.00	13.7739	1.79977	8.004	9.611	13.8729	0.
12.50	13.7726	1.79992	8.004	9.600	13.8745	0.
13.00	13.7718	1.80001	8.004	9.582	13.8755	0.
13.50	13.7694	1.80006	8.005	9.582	13.8767	0.
14.00	13.7649	1.80007	8.004	9.585	13.8783	0.
14.50	13.7571	1.80012	8.004	9.585	13.8815	0.
15.00	13.7551	1.80008	8.004	9.572	13.8817	0.
15.50	13.7546	1.80003	8.004	9.593	13.8814	0.
16.00	13.7554	1.80002	8.004	9.585	13.8809	0.
16.50	13.7568	1.79996	8.004	9.584	13.8798	0.
17.00	13.7556	1.79986	8.004	9.596	13.8793	0.
17.50	13.7558	1.79981	8.004	9.593	13.8787	0.
18.00	13.7543	1.79992	8.004	9.587	13.8802	0.
18.50	13.7536	1.80016	8.004	9.589	13.8823	0.
19.00	13.7510	1.80044	8.004	9.597	13.8855	0.
19.50	13.7502	1.80043	8.004	9.589	13.8856	0.
20.00	13.7457	1.80020	8.004	9.578	13.8852	0.
20.50	13.7429	1.80033	8.003	9.604	13.8872	0.
21.00	13.7387	1.80100	8.004	9.609	13.8943	0.
21.50	13.7366	1.80275	8.001	9.600	13.9096	0.
22.00	13.7343	1.80243	8.001	9.619	13.9076	0.
22.50	13.7337	1.80439	8.001	9.627	13.9243	0.
23.00	13.7407	1.80340	8.003	9.623	13.9133	0.
23.50	13.7421	1.79980	8.002	9.617	13.8825	0.
24.00	13.7409	1.80026	8.002	9.624	13.8867	0.
24.50	13.7402	1.80042	8.004	9.613	13.8882	0.
25.00	13.7358	1.80136	8.004	9.617	13.8975	0.
25.50	13.7352	1.80221	8.001	9.606	13.9048	0.
26.00	13.7352	1.80250	8.002	9.618	13.9072	0.
26.50	13.7369	1.80267	8.002	9.621	13.9079	0.
27.00	13.7393	1.80146	8.000	9.638	13.8968	0.
27.50	13.7389	1.80105	8.002	9.649	13.8934	0.
28.00	13.7348	1.80168	8.002	9.638	13.9001	0.

28.50	13.7297	1.80284	7.998	9.627	13.9116	0.
29.00	13.7329	1.80270	8.004	9.636	13.9091	0.
29.50	13.7260	1.80499	8.002	9.638	13.9308	0.
30.00	13.7152	1.80858	7.999	9.621	13.9648	0.
30.50	13.7148	1.81062	7.999	9.621	13.9820	0.
31.00	13.7137	1.81156	7.999	9.642	13.9902	0.
31.50	13.7132	1.81161	7.999	9.644	13.9907	0.
32.00	13.7113	1.81178	7.999	9.623	13.9927	0.
32.50	13.7101	1.81197	7.999	9.616	13.9947	0.
33.00	13.7106	1.81199	7.999	9.620	13.9945	0.
33.50	13.7104	1.81202	7.999	9.621	13.9948	0.
34.00	13.7097	1.81210	7.999	9.621	13.9956	0.
34.50	13.7101	1.81216	7.999	9.616	13.9959	0.
35.00	13.7084	1.81261	7.999	9.620	14.0002	0.
35.50	13.7084	1.81290	7.998	9.655	14.0026	0.
36.00	13.7086	1.81295	7.998	9.659	14.0028	0.
36.50	13.7083	1.81289	7.999	9.646	14.0024	0.
37.00	13.7082	1.81286	7.999	9.657	14.0020	0.
37.50	13.7091	1.81283	7.996	9.652	14.0013	0.
38.00	13.7091	1.81283	7.997	9.671	14.0012	0.
38.50	13.7085	1.81280	7.997	9.658	14.0011	0.
39.00	13.7083	1.81292	7.997	9.660	14.0021	0.
39.50	13.7097	1.81297	7.999	9.650	14.0019	0.
40.00	13.7101	1.81297	7.996	9.664	14.0016	0.
40.50	13.7090	1.81294	7.996	9.685	14.0017	0.
41.00	13.7092	1.81296	7.994	9.661	14.0018	0.
41.50	13.7091	1.81294	7.994	9.660	14.0015	0.
42.00	13.7097	1.81297	7.994	9.664	14.0014	0.
42.50	13.7092	1.81298	7.995	9.663	14.0016	0.
43.00	13.7103	1.81291	7.994	9.685	14.0005	0.
43.50	13.7097	1.81299	7.989	9.720	14.0013	0.
44.00	13.7097	1.81304	7.985	9.728	14.0016	0.
44.50	13.7105	1.81304	7.985	9.738	14.0013	0.
45.00	13.7092	1.81298	7.985	9.759	14.0011	0.

MOA HYDROGRAPHIC DATA

STATION: C1-1 DATE: 6/20/01 TIME: 14:20

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.5149	1.48300	7.954	9.886	11.0334	0.
1.00	14.5130	1.48697	8.008	10.502	11.0633	0.
1.50	14.5040	1.48513	7.999	10.491	11.0509	0.
2.00	14.2341	1.47977	8.012	10.742	11.0841	0.
2.50	14.1214	1.47832	8.012	10.809	11.1045	0.
3.00	14.1037	1.47836	8.012	10.768	11.1097	0.
3.50	14.0984	1.47842	8.014	10.819	11.1117	0.
4.00	14.0950	1.47836	8.015	10.884	11.1121	0.
4.50	14.1004	1.47844	8.018	10.861	11.1111	0.

MOA HYDROGRAPHIC DATA

STATION: C1-2 DATE: 6/20/01 TIME: 14:45

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.3297	1.48728	8.025	11.385	11.1179	0.
1.00	14.3404	1.48696	8.020	11.445	11.1122	0.
1.50	14.3208	1.48665	8.021	11.591	11.1152	0.
2.00	14.2923	1.48557	8.021	11.690	11.1145	0.
2.50	14.2871	1.48498	8.021	11.809	11.1111	0.
3.00	14.2875	1.48410	8.021	12.336	11.1038	0.

MOA HYDROGRAPHIC DATA

STATION: C1-3 DATE: 6/20/01 TIME: 15:10

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.3966	1.49504	8.031	11.278	11.1609	0.
1.00	14.4058	1.49500	8.011	11.547	11.1586	0.
1.50	14.4005	1.49576	8.012	11.643	11.1662	0.
2.00	14.3992	1.49577	8.011	11.836	11.1666	0.
2.50	14.3952	1.49639	8.011	12.120	11.1727	0.

MOA HYDROGRAPHIC DATA

STATION: C1-4 DATE: 6/20/01 TIME: 15:37

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
1.00	14.7979	1.34413	8.005	10.428	9.8069	0.
1.50	14.8482	1.45166	8.025	10.506	10.6867	0.
2.00	14.8592	1.45145	8.028	10.486	10.6820	0.
2.50	14.8586	1.45180	8.028	10.488	10.6849	0.
3.00	14.8680	1.45133	8.031	10.548	10.6785	0.
3.50	14.8705	1.45102	8.030	10.587	10.6753	0.
4.00	14.8746	1.45075	8.033	10.573	10.6720	0.
4.50	14.8753	1.45025	8.033	10.583	10.6677	0.
5.00	14.8775	1.45027	8.033	10.567	10.6672	0.
5.50	14.8753	1.45050	8.033	10.645	10.6695	0.
6.00	14.8751	1.45109	8.031	10.636	10.6743	0.
6.50	14.8811	1.45276	8.033	10.651	10.6858	0.
7.00	14.8918	1.45604	8.028	10.646	10.7090	0.
7.50	14.8646	1.46224	8.028	10.660	10.7658	0.
8.00	14.8143	1.46573	8.026	10.698	10.8075	0.
8.50	14.8129	1.46715	8.026	10.669	10.8192	0.
9.00	14.7810	1.46903	8.027	10.706	10.8429	0.
9.50	14.7659	1.47011	8.028	10.726	10.8557	0.
10.00	14.7603	1.47072	8.028	10.810	10.8621	0.

MOA HYDROGRAPHIC DATA

STATION: C2-1 DATE: 6/20/01 TIME: 16:10

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.7715	1.57609	7.987	9.939	11.7069	0.
1.00	14.6744	1.57185	7.990	10.143	11.7017	0.
1.50	14.6189	1.56798	7.995	10.172	11.6869	0.
2.00	14.5987	1.56637	7.995	10.179	11.6798	0.
2.50	14.5872	1.56456	7.996	10.213	11.6685	0.
3.00	14.5822	1.56387	7.996	10.220	11.6644	0.
3.50	14.5760	1.56388	7.996	10.275	11.6662	0.
4.00	14.5680	1.56353	7.997	10.241	11.6657	0.
4.50	14.5584	1.56257	7.998	10.286	11.6607	0.
5.00	14.5558	1.56175	7.998	10.292	11.6547	0.
5.50	14.5487	1.56127	7.997	10.355	11.6529	0.
6.00	14.5426	1.55956	7.998	10.380	11.6408	0.
6.50	14.5501	1.56047	7.996	10.390	11.6459	0.
7.00	14.5489	1.56051	7.998	10.410	11.6464	0.
7.50	14.5478	1.55949	7.999	10.465	11.6384	0.
8.00	14.5443	1.55797	8.001	10.541	11.6270	0.
8.50	14.5422	1.55738	8.000	10.600	11.6229	0.
9.00	14.5420	1.55691	8.001	10.655	11.6190	0.
9.50	14.5462	1.55756	8.000	10.678	11.6230	0.
10.00	14.5527	1.55798	8.001	10.708	11.6244	0.
10.50	14.5483	1.55740	8.001	10.764	11.6209	0.
11.00	14.5425	1.55572	8.001	10.807	11.6089	0.
11.50	14.5371	1.55447	8.004	10.775	11.6004	0.

MOA HYDROGRAPHIC DATA

STATION: C2-2(A) DATE: 6/20/01 TIME: 16:27

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.2149	.55970	8.058	10.332	4.0534	0.
1.00	14.2870	1.36979	8.058	10.332	10.2740	0.
1.50	14.3146	1.60147	8.058	10.235	12.0518	0.
2.00	14.3131	1.60159	8.060	10.332	12.0532	0.
2.50	14.3041	1.60161	8.058	10.340	12.0560	0.
3.00	14.2639	1.60190	8.059	10.328	12.0707	0.
3.50	14.2626	1.60161	8.059	10.327	12.0687	0.
4.00	14.2598	1.60194	8.059	10.295	12.0721	0.
4.50	14.2478	1.60273	8.059	10.267	12.0823	0.
5.00	14.2292	1.60334	8.060	10.280	12.0930	0.
5.50	14.2220	1.60340	8.059	10.267	12.0957	0.
6.00	14.2312	1.60292	8.059	10.257	12.0887	0.
6.50	14.2482	1.60249	8.059	10.243	12.0799	0.
7.00	14.2576	1.60235	8.059	10.244	12.0757	0.
7.50	14.2597	1.60244	8.059	10.224	12.0758	0.
8.00	14.2593	1.60251	8.059	10.188	12.0764	0.
8.50	14.2589	1.60250	8.059	10.175	12.0764	0.
9.00	14.2508	1.60274	8.059	10.178	12.0807	0.
9.50	14.2405	1.60306	8.059	10.176	12.0865	0.
10.00	14.2327	1.60331	8.059	10.181	12.0908	0.
10.50	14.2206	1.60384	8.056	10.182	12.0989	0.
11.00	14.2121	1.60418	8.059	10.188	12.1042	0.
11.50	14.2061	1.60417	8.059	10.167	12.1060	0.
12.00	14.2060	1.60390	8.057	10.136	12.1037	0.
12.50	14.2136	1.60308	8.060	10.115	12.0945	0.
13.00	14.2219	1.60286	8.059	10.113	12.0900	0.
13.50	14.1991	1.60364	8.057	10.146	12.1034	0.
14.00	14.1637	1.60425	8.054	10.158	12.1194	0.
14.50	14.1532	1.60437	8.054	10.155	12.1236	0.
15.00	14.1509	1.60445	8.059	10.152	12.1249	0.
15.50	14.1518	1.60493	8.054	10.147	12.1285	0.
16.00	14.1579	1.60534	8.054	10.135	12.1299	0.
16.50	14.1638	1.60488	8.054	10.126	12.1242	0.
17.00	14.1571	1.60382	8.054	10.106	12.1175	0.
17.50	14.1605	1.60372	8.054	10.079	12.1155	0.
18.00	14.1675	1.60378	8.054	10.061	12.1138	0.
18.50	14.1608	1.60211	8.051	10.070	12.1020	0.
19.00	14.1502	1.60011	8.053	10.068	12.0889	0.
19.50	14.1457	1.59995	8.054	10.063	12.0888	0.
20.00	14.1458	1.60007	8.050	10.062	12.0898	0.
20.50	14.1448	1.60013	8.050	10.061	12.0904	0.
21.00	14.1478	1.60051	8.050	10.058	12.0925	0.
21.50	14.1455	1.59935	8.050	10.059	12.0837	0.
22.00	14.1466	1.59721	8.055	10.061	12.0658	0.
22.50	14.1442	1.59584	8.049	10.057	12.0551	0.
23.00	14.1454	1.59539	8.052	10.053	12.0510	0.
23.50	14.1454	1.59511	8.054	10.047	12.0486	0.
24.00	14.1450	1.59483	8.052	10.022	12.0463	0.
24.50	14.1454	1.59473	8.050	10.018	12.0453	0.
25.00	14.1440	1.59493	8.050	10.045	12.0473	0.
25.50	14.1448	1.59638	8.050	10.044	12.0589	0.
26.00	14.1452	1.59813	8.050	10.029	12.0731	0.
26.50	14.1465	1.59871	8.050	10.050	12.0774	0.
27.00	14.1463	1.59906	8.050	10.037	12.0802	0.
27.50	14.1448	1.59893	8.050	10.019	12.0795	0.
28.00	14.1463	1.59860	8.047	10.026	12.0763	0.

MOA HYDROGRAPHIC DATA

STATION: F3-2 DATE: 6/19/01 TIME: 17:05

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	13.7350	.76275	7.981	10.748	5.3423	0.
1.00	13.7332	1.77057	7.989	10.202	13.6472	0.
1.50	13.7239	1.83109	8.003	10.184	14.1563	0.
2.00	13.7239	1.83120	8.009	10.223	14.1571	0.
2.50	13.7226	1.83129	8.008	10.237	14.1583	0.
3.00	13.7228	1.83126	8.009	10.241	14.1578	0.
3.50	13.7233	1.83113	8.008	10.269	14.1564	0.
4.00	13.7249	1.83082	8.014	10.298	14.1532	0.
4.50	13.7251	1.83058	8.013	10.293	14.1509	0.
5.00	13.7252	1.83036	8.014	10.333	14.1490	0.
5.50	13.7247	1.83031	8.015	10.381	14.1487	0.
6.00	13.7242	1.83053	8.018	10.391	14.1506	0.
6.50	13.7230	1.83064	8.018	10.390	14.1518	0.
7.00	13.7228	1.83061	8.017	10.430	14.1516	0.
7.50	13.7230	1.83080	8.018	10.463	14.1531	0.
8.00	13.7223	1.83110	8.018	10.462	14.1558	0.
8.50	13.7225	1.83126	8.018	10.503	14.1569	0.
9.00	13.7222	1.83154	8.018	10.533	14.1593	0.
9.50	13.7192	1.83164	8.018	10.564	14.1611	0.
10.00	13.7181	1.83165	8.019	10.600	14.1615	0.
10.50	13.7186	1.83185	8.020	10.660	14.1629	0.
11.00	13.7176	1.83211	8.022	10.664	14.1654	0.
11.50	13.7152	1.83223	8.023	10.735	14.1672	0.
12.00	13.7144	1.83221	8.023	10.800	14.1671	0.
12.50	13.7143	1.83227	8.023	10.857	14.1676	0.
13.00	13.7145	1.83228	8.023	10.899	14.1676	0.
13.50	13.7150	1.83226	8.023	10.950	14.1671	0.
14.00	13.7156	1.83224	8.024	11.049	14.1667	0.
14.50	13.7152	1.83216	8.023	11.048	14.1660	0.
15.00	13.7158	1.83232	8.023	11.126	14.1670	0.
15.50	13.7161	1.83243	8.026	11.226	14.1677	0.

28.50	14.1471	1.59822	8.045	10.028	12.0728	0.
29.00	14.1465	1.59783	8.049	10.032	12.0697	0.
29.50	14.1472	1.59766	8.050	10.029	12.0680	0.
30.00	14.1444	1.59789	8.050	10.023	12.0707	0.
30.50	14.1487	1.59818	8.050	10.005	12.0716	0.
31.00	14.1458	1.59837	8.044	10.028	12.0741	0.
31.50	14.1452	1.59852	8.045	10.033	12.0754	0.
32.00	14.1464	1.59849	8.045	10.023	12.0747	0.
32.50	14.1463	1.59826	8.045	10.012	12.0728	0.
33.00	14.1453	1.59780	8.045	10.000	12.0692	0.
33.50	14.1454	1.59698	8.045	9.989	12.0624	0.
34.00	14.1439	1.59489	8.045	9.974	12.0456	0.
34.50	14.1416	1.59133	8.045	9.964	12.0171	0.
35.00	14.1397	1.58733	8.045	9.961	11.9847	0.
35.50	14.1397	1.58384	8.049	9.970	11.9560	0.
36.00	14.1392	1.58146	8.049	9.980	11.9366	0.
36.50	14.1356	1.57954	8.049	9.985	11.9219	0.
37.00	14.1332	1.57795	8.049	9.983	11.9095	0.
37.50	14.1319	1.57621	8.049	9.982	11.8946	0.
38.00	14.1300	1.57621	8.049	9.991	11.8734	0.
38.50	14.1284	1.57072	8.049	10.000	11.8584	0.
39.00	14.1269	1.56961	8.049	10.000	11.8505	0.
39.50	14.1255	1.56955	8.049	9.968	11.8575	0.
40.00	14.1264	1.56839	8.049	9.962	11.8328	0.
40.50	14.1240	1.56726	8.050	9.989	11.8243	0.
41.00	14.1248	1.56674	8.050	9.998	11.8197	0.
41.50	14.1234	1.56664	8.050	9.975	11.8193	0.
42.00	14.1247	1.56651	8.047	9.970	11.8177	0.
42.50	14.1235	1.56612	8.051	9.972	11.8148	0.

MOA HYDROGRAPHIC DATA

STATION: C2-2(B) DATE: 6/20/01 TIME: 16:29

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
1.00	14.1571	1.59812	7.989	9.654	12.0733	0.
1.50	14.1576	1.59808	7.995	9.558	12.0727	0.
2.00	14.1589	1.59793	7.997	9.602	12.0709	0.
2.50	14.1562	1.59778	7.998	8.982	12.0705	0.
3.00	14.1588	1.59808	7.993	9.637	12.0721	0.
3.50	14.1581	1.59835	7.985	9.633	12.0745	0.
4.00	14.1591	1.59797	7.993	9.657	12.0709	0.
4.50	14.1572	1.59623	8.000	9.674	12.0571	0.
5.00	14.1552	1.59350	8.002	9.663	12.0354	0.
5.50	14.1482	1.58820	8.006	9.659	11.9940	0.
6.00	14.1377	1.58129	8.009	9.661	11.9405	0.
6.50	14.1297	1.57645	8.007	9.669	11.9031	0.
7.00	14.1287	1.57438	8.010	9.664	11.8864	0.
7.50	14.1316	1.57489	8.010	9.646	11.8896	0.
8.00	14.1315	1.57536	8.012	9.656	11.8931	0.
8.02	14.1313	1.57491	8.012	9.645	11.8899	0.
8.50	14.1349	1.57182	8.007	9.679	11.8634	0.
9.00	14.1367	1.59516	8.007	9.670	12.0541	0.
9.50	14.1655	1.60039	8.007	9.141	12.0880	0.
10.50	14.1682	1.59935	8.007	9.647	12.0785	0.
11.00	14.1673	1.59987	8.007	9.622	12.0829	0.
11.50	14.1673	1.60096	8.007	9.667	12.0917	0.
12.00	14.1637	1.60155	8.007	9.687	12.0976	0.
12.50	14.1591	1.60179	8.007	9.698	12.1009	0.
13.00	14.1358	1.58425	8.007	9.664	11.9641	0.
13.50	14.1367	1.58053	8.007	9.660	11.9333	0.
14.00	14.1349	1.57921	8.012	9.655	11.9230	0.
14.50	14.1367	1.57872	8.007	9.656	11.9184	0.
15.00	14.1366	1.57890	8.010	9.668	11.9198	0.
15.50	14.1382	1.57910	8.012	9.685	11.9208	0.
16.00	14.1376	1.57907	8.012	9.681	11.9207	0.
16.50	14.1370	1.57927	8.010	9.654	11.9225	0.
17.00	14.1373	1.57940	8.010	9.666	11.9233	0.
17.50	14.1373	1.57988	8.012	9.682	11.9272	0.
18.00	14.1371	1.57982	8.010	9.801	11.9267	0.
18.50	14.1368	1.57954	8.012	9.667	11.9244	0.
19.00	14.1355	1.57930	8.012	9.683	11.9227	0.
19.50	14.1345	1.57840	8.009	9.705	11.9156	0.
20.00	14.1328	1.57682	8.012	9.697	11.9031	0.
20.50	14.1334	1.57552	8.012	9.699	11.8922	0.
21.00	14.1319	1.57462	8.012	9.700	11.8852	0.
21.50	14.1316	1.57464	8.012	9.689	11.8854	0.
22.00	14.1332	1.57425	8.012	9.686	11.8816	0.
22.50	14.1343	1.57460	8.012	9.688	11.8841	0.
23.00	14.1349	1.57568	8.010	9.682	11.8926	0.
23.50	14.1380	1.57729	8.012	9.690	11.9048	0.
24.00	14.1383	1.57842	8.010	9.669	11.9138	0.
24.50	14.1380	1.57783	8.012	9.685	11.9091	0.
25.00	14.1320	1.57542	8.012	9.694	11.8911	0.
25.50	14.1283	1.57125	8.010	9.695	11.8580	0.
26.00	14.1277	1.57014	8.012	9.662	11.8490	0.
26.50	14.1269	1.56917	8.010	9.672	11.8412	0.
27.00	14.1278	1.56807	8.012	9.676	11.8319	0.
27.50	14.1271	1.56824	8.012	9.669	11.8333	0.
28.00	14.1275	1.56848	8.012	9.676	11.8351	0.
28.50	14.1270	1.56875	8.012	9.681	11.8374	0.

29.00	14.1271	1.56757	8.011	9.660	11.8276	0.
29.50	14.1291	1.56829	8.011	9.665	11.8328	0.
30.00	14.1290	1.57236	8.010	9.673	11.8662	0.
30.50	14.1236	1.56951	8.012	9.670	11.8444	0.
31.00	14.1216	1.56315	8.012	9.682	11.7928	0.
31.50	14.1179	1.56006	8.012	9.667	11.7685	0.
32.00	14.1145	1.55668	8.011	9.691	11.7418	0.
32.50	14.1170	1.55657	8.012	9.700	11.7401	0.
33.00	14.1147	1.55659	8.012	9.688	11.7409	0.
33.50	14.1151	1.55579	8.010	9.687	11.7341	0.
34.00	14.0938	1.55594	8.009	9.707	11.7418	0.
34.50	14.1164	1.55794	8.010	9.697	11.7512	0.
35.00	14.1172	1.55849	8.009	9.684	11.7553	0.
35.50	14.1179	1.55759	8.010	9.695	11.7476	0.
36.00	14.1191	1.57220	8.009	9.700	11.8670	0.
36.50	14.1192	1.62036	8.008	9.657	12.0620	0.
37.00	14.1169	1.63771	8.014	9.568	12.0051	0.
37.50	14.1245	1.56913	8.007	9.635	11.8399	0.
38.00	14.1334	1.56545	8.007	9.690	11.8070	0.
38.50	14.1484	1.57823	8.008	9.682	11.9069	0.
39.00	14.1508	1.59026	8.002	9.682	12.0047	0.
39.50	14.1538	1.59230	8.002	9.698	12.0204	0.
40.00	14.1527	1.59350	8.002	9.678	12.0306	0.
40.50	14.1507	1.59349	8.002	9.657	12.0310	0.
41.00	14.1504	1.59232	8.001	9.670	12.0214	0.
41.50	14.1485	1.59085	7.998	9.667	12.0099	0.
42.00	14.1399	1.58043	7.998	9.667	11.9270	0.
42.50	14.1244	1.57179	8.002	9.689	11.8610	0.
43.00	14.1238	1.62781	7.998	9.662	12.3214	0.

MOA HYDROGRAPHIC DATA

STATION: C2-2(C) DATE: 6/20/01 TIME: 16:31

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.1513	1.57899	8.003	9.535	11.9182	0.
1.00	14.1724	1.58948	7.995	9.427	11.9977	0.
1.50	14.1471	1.58577	7.993	9.646	11.9750	0.
2.00	14.1439	1.58476	7.995	9.629	11.9676	0.
2.50	14.1450	1.58509	7.998	9.664	11.9699	0.
3.00	14.1472	1.58645	7.998	9.655	11.9803	0.
3.50	14.1469	1.58715	7.998	9.642	11.9861	0.
4.00	14.1457	1.58700	7.998	9.655	11.9851	0.
4.50	14.1435	1.58555	7.996	9.651	11.9738	0.
5.00	14.1391	1.58310	7.994	9.640	11.9551	0.
5.50	14.1397	1.58193	8.002	9.638	11.9451	0.
6.00	14.1396	1.58246	8.002	9.640	11.9495	0.
6.50	14.1426	1.58419	8.002	9.643	11.9627	0.
7.00	14.1451	1.58673	8.004	9.631	11.9826	0.
7.50	14.1451	1.58816	8.002	9.660	11.9943	0.
8.00	14.1446	1.58767	8.002	9.674	11.9903	0.
8.50	14.1433	1.58712	8.002	9.644	11.9861	0.
9.00	14.1424	1.59414	8.002	9.644	12.0439	0.
9.50	14.1460	1.58419	8.002	9.567	12.0760	0.
10.00	14.1478	1.58673	8.002	9.352	12.0083	0.
10.50	14.1496	1.58816	8.002	8.711	12.0229	0.
11.00	14.1515	1.58767	8.002	7.763	12.0229	0.
11.50	14.1750	1.58712	8.002	6.815	12.0174	0.
12.00	14.1786	1.59414	8.002	7.329	12.0175	0.
12.50	14.1750	1.59419	8.002	8.491	12.0083	0.
13.00	14.1732	1.59188	8.002	10.013	12.0229	0.
13.50	14.1505	1.73704	8.002	9.654	12.0581	0.
14.00	14.1487	1.59839	8.007	9.633	12.0760	0.
14.50	14.1457	1.59115	8.002	9.651	12.0175	0.
15.00	14.1485	1.59014	8.006	8.814	12.0083	0.
15.50	14.1478	1.59124	8.002	9.769	12.0174	0.
16.00	14.1472	1.59188	8.002	8.804	12.0228	0.
16.50	14.1488	1.59196	8.002	9.630	12.0229	0.
17.00	14.1483	1.59187	8.002	9.626	12.0222	0.
17.50	14.1493	1.59128	8.002	9.629	12.0169	0.
18.00	14.1495	1.58961	8.006	9.640	12.0031	0.
18.50	14.1494	1.58897	8.003	9.648	11.9978	0.
19.00	14.1499	1.58876	8.005	9.662	11.9958	0.
19.50	14.1519	1.58866	8.007	9.673	11.9948	0.
20.00	14.1509	1.58877	8.005	9.992	11.9948	0.
21.00	14.1523	1.58909	8.002	9.635	11.9978	0.
21.50	14.1505	1.58917	8.005	9.642	11.9986	0.
22.00	14.1487	1.58811	8.007	9.656	11.9904	0.
22.50	14.1487	1.58737	8.004	9.661	11.9843	0.
23.00	14.1484	1.58739	8.002	9.644	11.9844	0.
23.50	14.1481	1.58751	8.004	9.650	11.9855	0.
24.00	14.1477	1.58730	8.002	9.653	11.9838	0.
24.50	14.1443	1.58560	8.002	9.654	11.9708	0.
25.00	14.1424	1.58379	8.004	9.644	11.9564	0.
25.50	14.1400	1.58008	8.004	9.652	11.9268	0.
26.00	14.1395	1.57888	8.005	9.660	11.9171	0.
26.50	14.1404	1.58007	8.007	9.654	11.9264	0.
27.00	14.1423	1.58140	8.005	9.646	11.9366	0.
27.50	14.1490	1.58253	8.005	9.632	11.9437	0.
28.00	14.1740	1.58290	8.003	9.616	11.9390	0.
28.50	14.1414	1.58237	8.005	9.627	11.9446	0.

29.00	14.1419	1.58207	8.007	9.648	11.9420	0.
29.50	14.1410	1.58211	8.007	9.666	11.9425	0.
30.00	14.1440	1.58281	8.005	9.643	11.9472	0.
30.50	14.1455	1.58408	8.003	9.630	11.9571	0.
31.00	14.1444	1.58488	8.002	9.661	11.9639	0.
31.50	14.1434	1.58361	8.004	9.669	11.9537	0.
32.00	14.1377	1.58034	8.003	9.635	11.9286	0.
32.50	14.1325	1.57448	8.007	9.638	11.8821	0.
33.00	14.1284	1.56981	8.006	9.636	11.8449	0.
33.50	14.1267	1.56687	8.006	9.642	11.8214	0.
34.00	14.1253	1.56472	8.006	9.633	11.8040	0.
34.50	14.1260	1.56473	8.007	9.636	11.8038	0.
35.00	14.1261	1.56513	8.007	9.647	11.8070	0.
35.50	14.1265	1.56530	8.007	9.648	11.8082	0.
36.00	14.1276	1.56594	8.005	9.654	11.8131	0.
36.50	14.1279	1.56695	8.007	9.648	11.8212	0.
37.00	14.1271	1.56645	8.007	9.630	11.8172	0.
37.50	14.1295	1.56736	8.008	9.671	11.8239	0.
38.00	14.1287	1.56764	8.007	9.679	11.8263	0.
38.50	14.1291	1.56772	8.007	9.652	11.8268	0.
39.00	14.1286	1.56787	8.007	9.652	11.8280	0.
39.50	14.1290	1.56781	8.005	9.661	11.8275	0.
40.00	14.1284	1.56789	8.007	9.643	11.8282	0.
40.50	14.1290	1.56786	8.007	9.636	11.8276	0.
41.00	14.1288	1.56725	8.007	9.645	11.8226	0.
41.50	14.1277	1.56650	8.007	9.624	11.8168	0.
42.00	14.1271	1.56524	8.009	9.628	11.8066	0.

MOA HYDROGRAPHIC DATA

STATION: C3-1 DATE: 6/20/01 TIME: 18:41

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.2874	1.75882	8.049	9.896	13.3537	0.
1.00	14.2730	1.76504	8.044	9.983	13.4099	0.
1.50	14.2712	1.76464	8.044	9.969	13.4072	0.
2.00	14.2694	1.76440	8.049	9.998	13.4057	0.
2.50	14.2684	1.76413	8.044	9.958	13.4037	0.
3.00	14.2648	1.76380	8.044	9.976	13.4021	0.
3.50	14.2585	1.76355	8.044	10.037	13.4021	0.
4.00	14.2567	1.76332	8.044	10.020	13.4008	0.
4.50	14.2540	1.76312	8.044	10.001	13.4000	0.
5.00	14.2504	1.76278	8.044	10.013	13.3983	0.
5.50	14.2458	1.76207	8.044	10.044	13.3939	0.
6.00	14.2522	1.76259	8.044	10.040	13.3959	0.
6.50	14.2486	1.76291	8.044	10.011	13.3998	0.
7.00	14.2413	1.76220	8.044	10.048	13.3963	0.
7.50	14.2452	1.76208	8.044	10.090	13.3939	0.
8.00	14.2486	1.76225	8.040	10.041	13.3940	0.
8.50	14.2495	1.76270	8.040	10.040	13.3973	0.
9.00	14.2405	1.76184	8.040	10.597	13.3933	0.
9.50	14.2405	1.76159	8.040	10.144	13.3910	0.
10.00	14.2387	1.76167	8.035	10.101	13.3923	0.
10.50	14.2396	1.76096	8.030	10.060	13.3861	0.
11.00	14.2387	1.66734	8.087	12.749	12.6142	0.

MOA HYDROGRAPHIC DATA
STATION: C3-2 DATE: 6/20/01 TIME: 18:57

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.2005	1.52325	8.086	9.387	11.6397	0.
1.00	14.2140	1.70802	8.113	9.553	12.9591	0.
1.50	14.2115	1.70824	8.116	9.560	12.9617	0.
2.00	14.2098	1.70824	8.118	9.565	12.9621	0.
2.50	14.2129	1.70820	8.120	9.570	12.9608	0.
3.00	14.2065	1.70832	8.120	9.572	12.9637	0.
3.50	14.2045	1.70852	8.120	9.568	12.9659	0.
4.00	14.2020	1.70885	8.120	9.557	12.9694	0.
4.50	14.2035	1.70867	8.120	9.544	12.9673	0.
5.00	14.2093	1.70706	8.121	9.603	12.9521	0.
5.50	14.2210	1.70640	8.122	9.618	12.9426	0.
6.00	14.2211	1.70725	8.121	9.618	12.9495	0.
6.50	14.2173	1.70711	8.120	9.632	12.9495	0.
7.00	14.2182	1.70683	8.122	9.641	12.9468	0.
7.50	14.2188	1.70655	8.122	9.628	12.9442	0.
8.00	14.2182	1.70673	8.125	9.622	12.9458	0.
8.50	14.2176	1.70718	8.123	9.604	12.9496	0.
9.00	14.2172	1.70678	8.125	9.641	12.9464	0.
9.50	14.2143	1.70704	8.125	9.651	12.9494	0.
10.00	14.2110	1.70764	8.125	9.657	12.9554	0.
10.50	14.2105	1.70774	8.125	9.645	12.9563	0.
11.00	14.2026	1.70948	8.125	9.655	12.9733	0.
11.50	14.1992	1.71131	8.125	9.630	12.9894	0.
12.00	14.1911	1.71242	8.125	9.636	13.0012	0.
12.50	14.1805	1.71454	8.125	9.633	13.0221	0.
13.00	14.1730	1.71677	8.127	9.630	13.0430	0.
13.50	14.1671	1.71837	8.126	9.659	13.0581	0.
14.00	14.1587	1.71972	8.125	9.653	13.0720	0.
14.50	14.1493	1.72018	8.126	9.633	13.0789	0.
15.00	14.1300	1.72130	8.126	9.628	13.0946	0.
15.50	14.1310	1.72140	8.129	9.625	13.0950	0.
16.00	14.1409	1.72019	8.128	9.630	13.0815	0.
16.50	14.1348	1.71403	8.127	9.648	13.0325	0.
17.00	14.1317	1.72322	8.128	9.635	13.1095	0.
17.50	14.1308	1.72557	8.128	9.622	13.1292	0.
18.00	14.1271	1.72691	8.130	9.682	13.1414	0.
18.50	14.0948	1.73030	8.130	9.675	13.1804	0.
19.00	14.0876	1.73300	8.129	9.675	13.2051	0.
19.50	14.1076	1.73135	8.128	9.667	13.1846	0.
20.00	14.1283	1.72878	8.130	9.678	13.1540	0.
20.50	14.1385	1.72669	8.130	9.687	13.1353	0.
21.00	14.1276	1.72587	8.130	9.695	13.1321	0.
21.50	14.1249	1.72562	8.135	9.687	13.1309	0.
22.00	14.0923	1.72702	8.135	9.713	13.1534	0.
22.50	14.0487	1.73092	8.135	9.737	13.2005	0.
23.00	14.0397	1.73702	8.130	9.743	13.2541	0.
23.50	14.0279	1.73962	8.135	9.731	13.2796	0.
24.00	14.0269	1.73924	8.131	9.772	13.2767	0.
24.50	14.0179	1.74366	8.131	9.757	13.3065	0.
25.00	14.0151	1.82424	8.135	9.667	13.3165	0.
25.50	14.0314	1.98837	8.135	9.645	13.3212	0.
26.00	14.0278	1.74575	8.135	9.766	13.3302	0.
26.50	14.0223	1.73849	8.135	9.769	13.2716	0.
27.00	14.0124	1.74079	8.135	9.758	13.2941	0.
27.50	14.0024	1.74408	8.135	9.765	13.3247	0.
28.00	13.9983	1.74521	8.135	9.779	13.3355	0.

28.50	13.9948	1.74647	8.137	9.767	13.3471	0.
29.00	13.9955	1.74612	8.135	9.760	13.3438	0.
29.50	13.9957	1.74473	8.135	9.773	13.3321	0.
30.00	13.9968	1.74509	8.137	9.777	13.3347	0.
30.50	13.9955	1.74573	8.137	9.789	13.3402	0.
31.00	13.9913	1.74587	8.137	9.799	13.3428	0.
31.50	13.9978	1.74430	8.137	9.796	13.3274	0.
32.00	14.0151	1.74179	8.137	9.782	13.3005	0.
32.50	14.0340	1.73465	8.135	9.819	13.2348	0.
33.00	14.0395	1.72974	8.140	9.834	13.1920	0.
33.50	14.0412	1.72551	8.142	9.853	13.1563	0.
34.00	14.0397	1.72578	8.143	9.832	13.1589	0.
34.50	14.0363	1.72735	8.142	9.856	13.1730	0.
35.00	14.0320	1.72902	8.140	9.866	13.1882	0.
35.50	14.0376	1.72918	8.145	9.846	13.1876	0.
36.00	14.0467	1.72626	8.140	9.831	13.1602	0.
36.50	14.0512	1.72239	8.145	9.858	13.1265	0.
37.00	14.0521	1.72135	8.145	9.879	13.1175	0.
37.50	14.0566	1.72152	8.145	9.896	13.1173	0.
38.00	14.0566	1.72018	8.145	9.915	13.1061	0.
38.50	14.0521	1.72079	8.145	9.887	13.1126	0.
39.00	14.0430	1.72377	8.149	9.914	13.1403	0.
39.50	14.0285	1.72662	8.149	9.908	13.1688	0.
40.00	14.0239	1.73194	8.149	9.925	13.2143	0.
40.50	14.0221	1.73290	8.145	9.941	13.2228	0.
41.00	14.0239	1.73298	8.149	9.911	13.2229	0.
41.50	14.0239	1.73218	8.149	9.907	13.2161	0.
42.00	14.0311	1.72895	8.149	9.918	13.1867	0.
42.50	14.0320	1.73025	8.149	9.929	13.1971	0.
43.00	14.0366	1.72477	8.149	9.949	13.1500	0.
43.50	14.0244	1.72658	8.149	9.963	13.1691	0.
44.00	14.0203	1.73507	8.149	9.970	13.2409	0.
44.50	14.0199	1.73671	8.154	9.984	13.2546	0.
45.00	14.0209	1.73783	8.154	9.957	13.2635	0.
45.50	14.0209	1.74059	8.152	9.966	13.2862	0.
46.00	14.0207	1.74156	8.154	10.010	13.2942	0.
46.50	14.0214	1.74164	8.154	10.007	13.2947	0.
47.00	14.0222	1.74207	8.156	10.034	13.2979	0.
47.50	14.0222	1.74222	8.154	10.080	13.2989	0.

MOA HYDROGRAPHIC DATA

STATION: C3-3 DATE: 6/20/01 TIME: 19:36

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.1134	1.70344	8.059	9.593	12.9549	0.
1.00	14.1107	1.70313	8.050	9.674	12.9531	0.
1.50	14.1107	1.70302	8.054	9.683	12.9521	0.
2.00	14.1107	1.70278	8.050	9.680	12.9501	0.
2.50	14.1052	1.70400	8.040	10.118	12.9619	0.
3.00	14.1043	1.70288	8.046	10.203	12.9529	0.
3.50	14.1034	1.70468	8.048	8.541	12.9680	0.
4.00	14.1035	1.70524	8.048	9.093	12.9725	0.
4.50	14.1025	1.70529	8.052	9.373	12.9732	0.
5.00	14.1043	1.70507	8.050	10.365	12.9706	0.
5.50	14.1046	1.70488	8.046	9.664	12.9689	0.
6.00	14.1048	1.70483	8.050	9.672	12.9683	0.
6.50	14.1048	1.70488	8.053	9.682	12.9686	0.
7.00	14.1037	1.70499	8.054	9.684	12.9698	0.
7.50	14.1036	1.70532	8.054	9.700	12.9725	0.
8.00	14.1024	1.70548	8.054	9.712	12.9742	0.
8.50	14.1036	1.70568	8.054	9.709	12.9753	0.
9.00	14.1051	1.70538	8.054	9.712	12.9722	0.
9.50	14.1067	1.70474	8.054	9.684	12.9664	0.
10.00	14.1075	1.70393	8.053	9.698	12.9593	0.
10.50	14.1053	1.70061	8.054	9.924	12.9325	0.
11.00	14.1034	1.70257	8.056	9.464	12.9493	0.
11.50	14.1032	1.70574	8.054	9.437	12.9755	0.
12.00	14.1040	1.70607	8.054	9.705	12.9778	0.
12.50	14.1061	1.70518	8.054	9.684	12.9697	0.
13.00	14.1098	1.70462	8.058	9.682	12.9637	0.
13.50	14.1111	1.70341	8.054	9.695	12.9532	0.
14.00	14.1105	1.70318	8.054	9.690	12.9514	0.
14.50	14.1087	1.70378	8.054	9.702	12.9569	0.
15.00	14.1064	1.70421	8.056	9.717	12.9612	0.
15.50	14.0994	1.70621	8.057	9.702	12.9800	0.
16.00	14.0947	1.70830	8.054	9.709	12.9987	0.
16.50	14.0947	1.70915	8.054	9.721	13.0057	0.
17.00	14.0977	1.70894	8.054	9.726	13.0028	0.
17.50	14.0998	1.70788	8.054	9.712	12.9933	0.
18.00	14.1051	1.70666	8.054	9.732	12.9813	0.
18.50	14.1088	1.70509	8.054	9.737	12.9670	0.
19.00	14.1099	1.70470	8.054	9.727	12.9633	0.
19.50	14.1093	1.70519	8.056	9.746	12.9674	0.
20.00	14.1055	1.70712	8.056	9.742	12.9846	0.
20.50	14.0994	1.70896	8.054	9.735	13.0018	0.
21.00	14.0941	1.70993	8.054	9.732	13.0115	0.
21.50	14.0872	1.71085	8.055	9.738	13.0213	0.
22.00	14.0840	1.71262	8.055	9.767	13.0370	0.
22.50	14.0796	1.71580	8.055	9.761	13.0647	0.
23.00	14.0752	1.71846	8.055	9.052	13.0882	0.
23.50	14.0726	1.71944	8.057	9.820	13.0971	0.
24.00	14.0706	1.72024	8.055	9.741	13.1042	0.
24.50	14.0739	1.72046	8.055	9.746	13.1049	0.
25.00	14.0722	1.72019	8.058	9.753	13.1031	0.
25.50	14.0698	1.72144	8.055	9.747	13.1142	0.
26.00	14.0618	1.72290	8.055	9.755	13.1289	0.
26.50	14.0526	1.72640	8.055	9.760	13.1610	0.
27.00	14.0443	1.72897	8.061	9.778	13.1850	0.
27.50	14.0390	1.73117	8.058	9.761	13.2050	0.
28.00	14.0309	1.73303	8.058	9.769	13.2231	0.

28.50	14.0211	1.73631	8.055	9.770	13.2536	0.
29.00	14.0185	1.73820	8.053	9.781	13.2701	0.
29.50	14.0171	1.73894	8.053	9.794	13.2766	0.
30.00	14.0145	1.74036	8.052	9.794	13.2892	0.
30.50	14.0114	1.74132	8.052	9.819	13.2982	0.
31.00	14.0147	1.74099	8.052	9.817	13.2942	0.
31.50	14.0184	1.73962	8.053	9.833	13.2815	0.
32.00	14.0142	1.73943	8.055	9.834	13.2812	0.
32.50	14.0186	1.73992	8.052	9.839	13.2837	0.
33.00	14.0172	1.74031	8.055	9.841	13.2873	0.
33.50	14.0177	1.74055	8.050	9.835	13.2891	0.
34.00	14.0200	1.74054	8.053	9.828	13.2877	0.
34.50	14.0226	1.90032	8.077	9.722	13.2877	0.
35.00	14.0250	1.96285	8.053	9.134	13.3087	0.
35.50	14.0233	1.75407	8.053	10.091	13.3092	0.
36.00	14.0175	1.74183	8.055	9.844	13.2994	0.
36.50	14.0182	1.74241	8.055	9.863	13.3039	0.
37.00	14.0180	1.74288	8.053	9.870	13.3077	0.
37.50	14.0156	1.74330	8.053	9.890	13.3120	0.
38.00	14.0122	1.74411	8.055	9.895	13.3198	0.
38.50	14.0103	1.74456	8.055	9.886	13.3241	0.
39.00	14.0050	1.74542	8.055	9.899	13.3330	0.
39.50	14.0064	1.74612	8.055	9.898	13.3382	0.
40.00	14.0062	1.74621	8.055	9.920	13.3389	0.
40.50	14.0077	1.74592	8.055	9.954	13.3359	0.
41.00	14.0064	1.74557	8.055	9.942	13.3333	0.
41.50	14.0059	1.74524	8.055	9.935	13.3307	0.
42.00	14.0046	1.74504	8.053	9.925	13.3294	0.
42.50	14.0047	1.74517	8.055	9.954	13.3304	0.
43.00	14.0055	1.74531	8.055	9.968	13.3312	0.
43.50	14.0052	1.74555	8.055	9.968	13.3332	0.
44.00	14.0069	1.74575	8.055	9.974	13.3342	0.
44.50	14.0064	1.74606	8.055	9.979	13.3368	0.
45.00	14.0036	1.74652	8.055	9.978	13.3416	0.
45.50	13.9984	1.74768	8.057	10.034	13.3528	0.
46.00	13.9962	1.74841	8.055	10.060	13.3596	0.
46.50	13.9941	1.74914	8.055	10.060	13.3663	0.
47.00	13.9888	1.75019	8.055	10.058	13.3768	0.
47.50	13.9851	1.75149	8.055	10.032	13.3888	0.
48.00	13.9819	1.75253	8.055	10.058	13.3984	0.
48.50	13.9828	1.75210	8.055	10.096	13.3945	0.
49.00	13.9795	1.75278	8.057	10.095	13.4012	0.
49.50	13.9737	1.76061	8.055	10.103	13.4662	0.
50.00	13.9660	2.21572	8.058	9.888	13.4650	0.
50.50	13.9617	2.67803	8.058	9.653	13.4638	0.
51.00	13.9613	1.78893	8.058	10.129	13.4686	0.
51.50	13.9599	1.75952	8.057	10.178	13.4637	0.
52.00	13.9599	1.75891	8.059	10.164	13.4584	0.
52.50	13.9628	1.75823	8.060	10.183	13.4517	0.
53.00	13.9632	1.75801	8.060	10.223	13.4497	0.
53.50	13.9628	1.75809	8.060	10.217	13.4503	0.
54.00	13.9614	1.75828	8.060	10.252	13.4524	0.
54.50	13.9624	1.76003	8.060	10.256	13.4664	0.
55.00	13.9628	1.75195	8.062	10.304	13.3987	0.
55.50	13.9640	1.51975	8.064	10.467	13.3987	0.
56.00	13.9600	1.74339	8.070	10.321	13.3287	0.

MOA HYDROGRAPHIC DATA

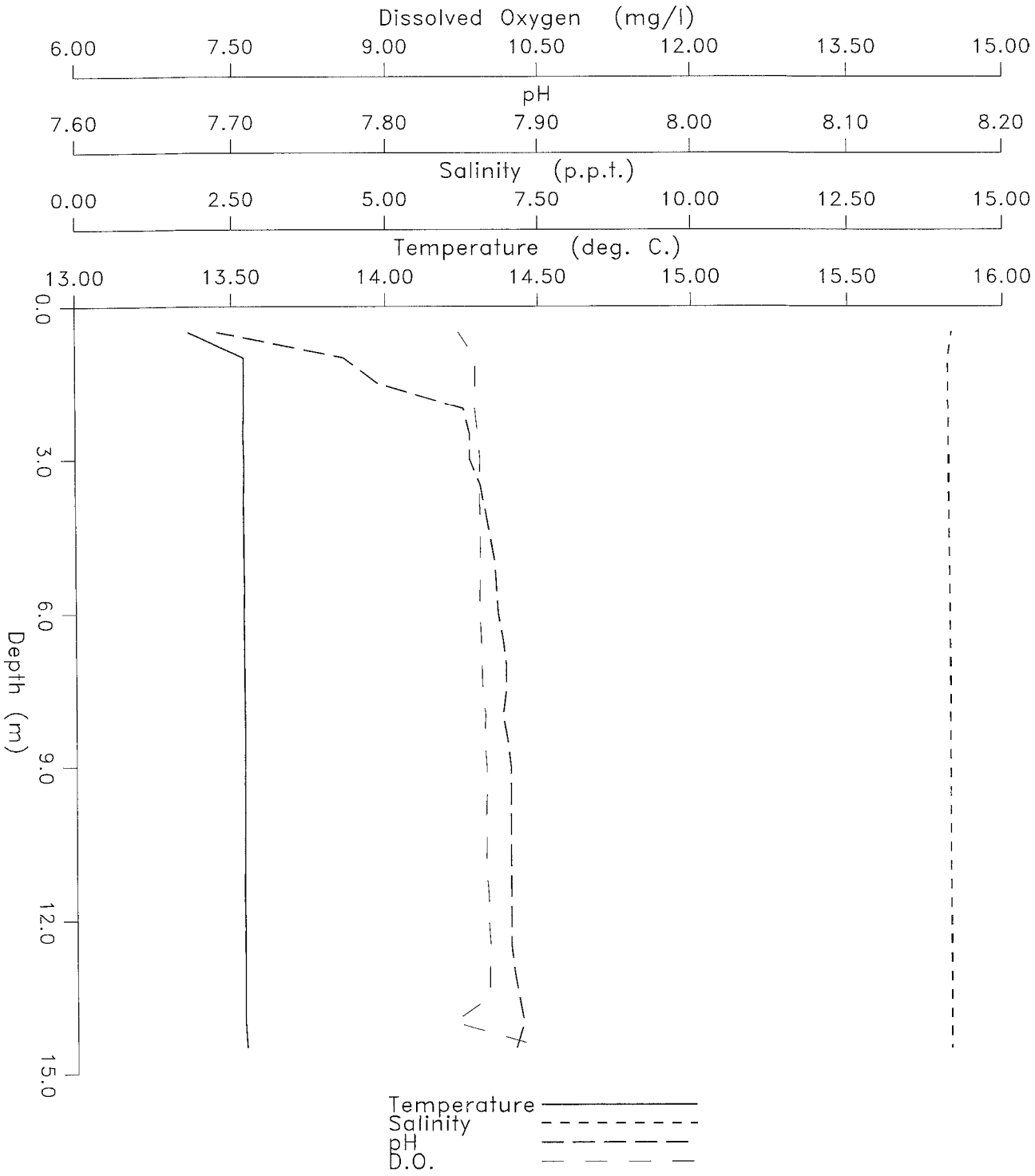
STATION: C3-4 DATE: 6/20/01 TIME: 19:51

Meters	Temp	Cond (s/m)	pH	D.O.(mg/l)	Salinity	Flag
.50	14.0937	1.67774	8.018	9.401	12.7432	0.
1.00	14.1325	1.67376	8.073	9.489	12.7033	0.
1.50	14.1277	1.68022	8.073	9.473	12.7582	0.
2.00	14.1245	1.68486	8.073	9.505	12.7974	0.
2.50	14.1192	1.68984	8.073	9.527	12.8403	0.
3.00	14.1182	1.69347	8.074	9.570	12.8705	0.
3.50	14.1179	1.69534	8.077	9.608	12.8859	0.
4.00	14.1171	1.69725	8.073	9.611	12.9019	0.
4.50	14.1150	1.69943	8.073	9.615	12.9205	0.
5.00	14.0910	1.71814	8.073	9.609	13.0834	0.
5.50	14.0801	1.72656	8.074	9.622	13.1566	0.
6.00	14.0639	1.73160	8.071	9.620	13.2038	0.
6.50	14.0494	1.73521	8.071	9.610	13.2386	0.
7.00	14.0423	1.73696	8.074	9.633	13.2555	0.
7.50	14.0408	1.73709	8.071	9.645	13.2571	0.
8.00	14.0425	1.73673	8.072	9.669	13.2534	0.
8.50	14.0409	1.73664	8.072	9.688	13.2530	0.
9.00	14.0387	1.73687	8.072	9.683	13.2556	0.
9.50	14.0301	1.73728	8.071	9.680	13.2619	0.
10.00	14.0251	1.73799	8.074	9.687	13.2694	0.
10.50	14.0191	1.73877	8.074	9.730	13.2779	0.
11.00	14.0176	1.73911	8.071	9.735	13.2812	0.
11.50	14.0168	1.73925	8.074	9.713	13.2825	0.
12.00	14.0161	1.73930	8.071	9.724	13.2831	0.
12.50	14.0167	1.73932	8.074	9.723	13.2829	0.
13.00	14.0156	1.73935	8.074	9.716	13.2835	0.
13.50	14.0147	1.73940	8.073	9.710	13.2841	0.
14.00	14.0134	1.73939	8.074	9.717	13.2844	0.
14.50	14.0146	1.73942	8.076	9.749	13.2841	0.
15.00	14.0128	1.73942	8.074	9.756	13.2847	0.
15.50	14.0116	1.73942	8.074	9.739	13.2850	0.
16.00	14.0111	1.73942	8.074	9.761	13.2850	0.
16.50	14.0113	1.73944	8.075	9.783	13.2851	0.
17.00	14.0095	1.73950	8.075	9.781	13.2861	0.
17.50	14.0113	1.73944	8.076	9.787	13.2848	0.
18.00	14.0097	1.73915	8.075	9.771	13.2829	0.
18.50	14.0091	1.73890	8.075	9.754	13.2810	0.
19.00	14.0094	1.73886	8.077	9.777	13.2805	0.
19.50	14.0090	1.73885	8.077	9.785	13.2804	0.
20.00	14.0102	1.73897	8.074	9.777	13.2809	0.
20.50	14.0091	1.73903	8.077	9.793	13.2817	0.
21.00	14.0092	1.73901	8.077	9.813	13.2814	0.
21.50	14.0080	1.73950	8.076	9.841	13.2858	0.
22.00	14.0065	1.74013	8.077	9.836	13.2915	0.
22.50	14.0047	1.74108	8.078	9.824	13.2999	0.
23.00	14.0038	1.74195	8.078	9.797	13.3073	0.
23.50	14.0023	1.74249	8.074	9.791	13.3122	0.
24.00	14.0017	1.74297	8.076	9.790	13.3164	0.
24.50	14.0011	1.74343	8.079	9.832	13.3204	0.
25.00	14.0008	1.74380	8.076	9.861	13.3234	0.
25.50	13.9984	1.74399	8.075	9.887	13.3257	0.
26.00	13.9985	1.74450	8.080	9.885	13.3298	0.
26.50	13.9978	1.74524	8.074	9.888	13.3361	0.
27.00	13.9979	1.74540	8.077	9.906	13.3374	0.
27.50	13.9975	1.74545	8.077	9.913	13.3378	0.
28.00	13.9983	1.74547	8.079	9.922	13.3376	0.

28.50	13.9974	1.74551	8.079	9.911	13.3382	0.
29.00	13.9985	1.74535	8.077	9.923	13.3363	0.
29.50	13.9979	1.74525	8.076	9.938	13.3356	0.
30.00	13.9978	1.74512	8.078	9.959	13.3345	0.
30.50	13.9990	1.74448	8.079	9.948	13.3287	0.
31.00	13.9988	1.74391	8.079	9.951	13.3240	0.
31.50	13.9992	1.74441	8.079	9.929	13.3279	0.
32.00	13.9996	1.74489	8.079	9.930	13.3317	0.
32.50	14.0012	1.74462	8.078	9.978	13.3288	0.
33.00	14.0028	1.74375	8.078	9.993	13.3209	0.
33.50	14.0029	1.74290	8.078	9.999	13.3137	0.
34.00	14.0027	1.74264	8.078	10.001	13.3115	0.
34.50	14.0012	1.74330	8.079	10.035	13.3174	0.
35.00	13.9998	1.74370	8.079	10.042	13.3211	0.
35.50	13.9976	1.74428	8.079	10.054	13.3267	0.
36.00	13.9972	1.74443	8.081	10.070	13.3280	0.
36.50	13.9943	1.74545	8.079	10.083	13.3373	0.
37.00	13.9940	1.74686	8.079	10.087	13.3491	0.
37.50	13.9925	1.74778	8.079	10.085	13.3571	0.
38.00	13.9938	1.74810	8.079	10.110	13.3592	0.
38.50	13.9930	1.74810	8.079	10.127	13.3594	0.
39.00	13.9917	1.74777	8.079	10.130	13.3571	0.
39.50	13.9904	1.74787	8.082	10.090	13.3583	0.
40.00	13.9878	1.74846	8.082	10.130	13.3640	0.
40.50	13.9873	1.74875	8.079	10.184	13.3665	0.
41.00	13.9855	1.74890	8.081	10.184	13.3683	0.
41.50	13.9826	1.74931	8.082	10.182	13.3726	0.
42.00	13.9787	1.75026	8.081	10.189	13.3817	0.
42.50	13.9760	1.75093	8.079	10.210	13.3882	0.
43.00	13.9776	1.75131	8.080	10.242	13.3907	0.
43.50	13.9803	1.75118	8.079	10.272	13.3886	0.
44.00	13.9825	1.75053	8.080	10.277	13.3823	0.
44.50	13.9815	1.75032	8.083	10.279	13.3808	0.
45.00	13.9793	1.75073	8.082	10.277	13.3849	0.
45.50	13.9790	1.75111	8.080	10.322	13.3880	0.
46.00	13.9793	1.75116	8.082	10.314	13.3882	0.
46.50	13.9799	1.75100	8.083	10.338	13.3867	0.
47.00	13.9784	1.75105	8.085	10.350	13.3875	0.
47.50	13.9781	1.75134	8.082	10.375	13.3899	0.
48.00	13.9778	1.75176	8.083	10.415	13.3934	0.
48.50	13.9748	1.75226	8.083	10.412	13.3986	0.
49.00	13.9730	1.75248	8.083	10.443	13.4009	0.
49.50	13.9720	1.75274	8.083	10.472	13.4033	0.
50.00	13.9677	1.75324	8.083	10.502	13.4090	0.
50.50	13.9578	1.75429	8.083	10.494	13.4210	0.
51.00	13.9573	1.75434	8.082	10.545	13.4215	0.
51.50	13.9605	1.75408	8.083	10.592	13.4182	0.
52.00	13.9603	1.75389	8.083	10.596	13.4166	0.

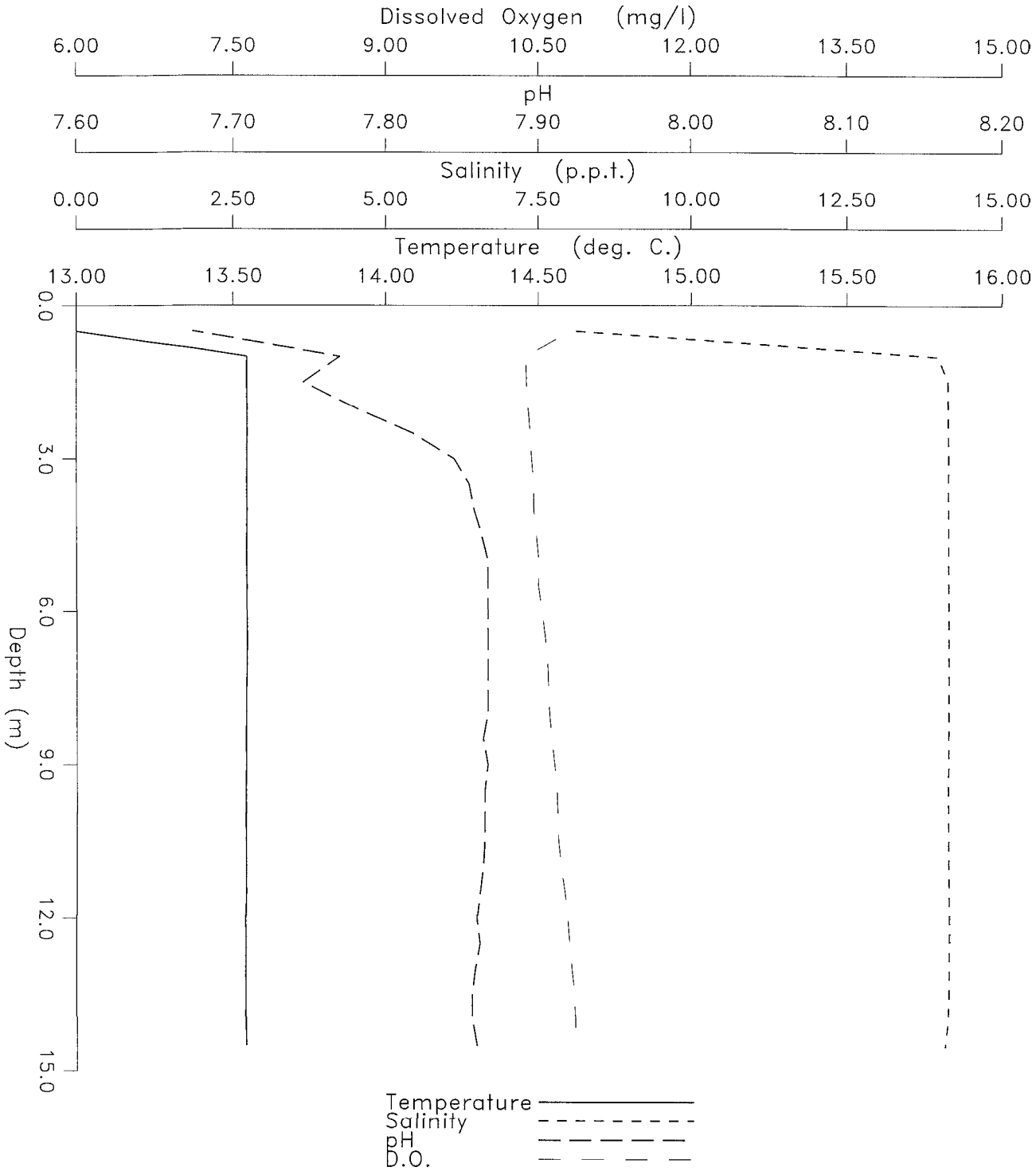
MOA HYDROGRAPHIC DATA

Station: E1-1 Date: 6/19/01 Time: 8:18



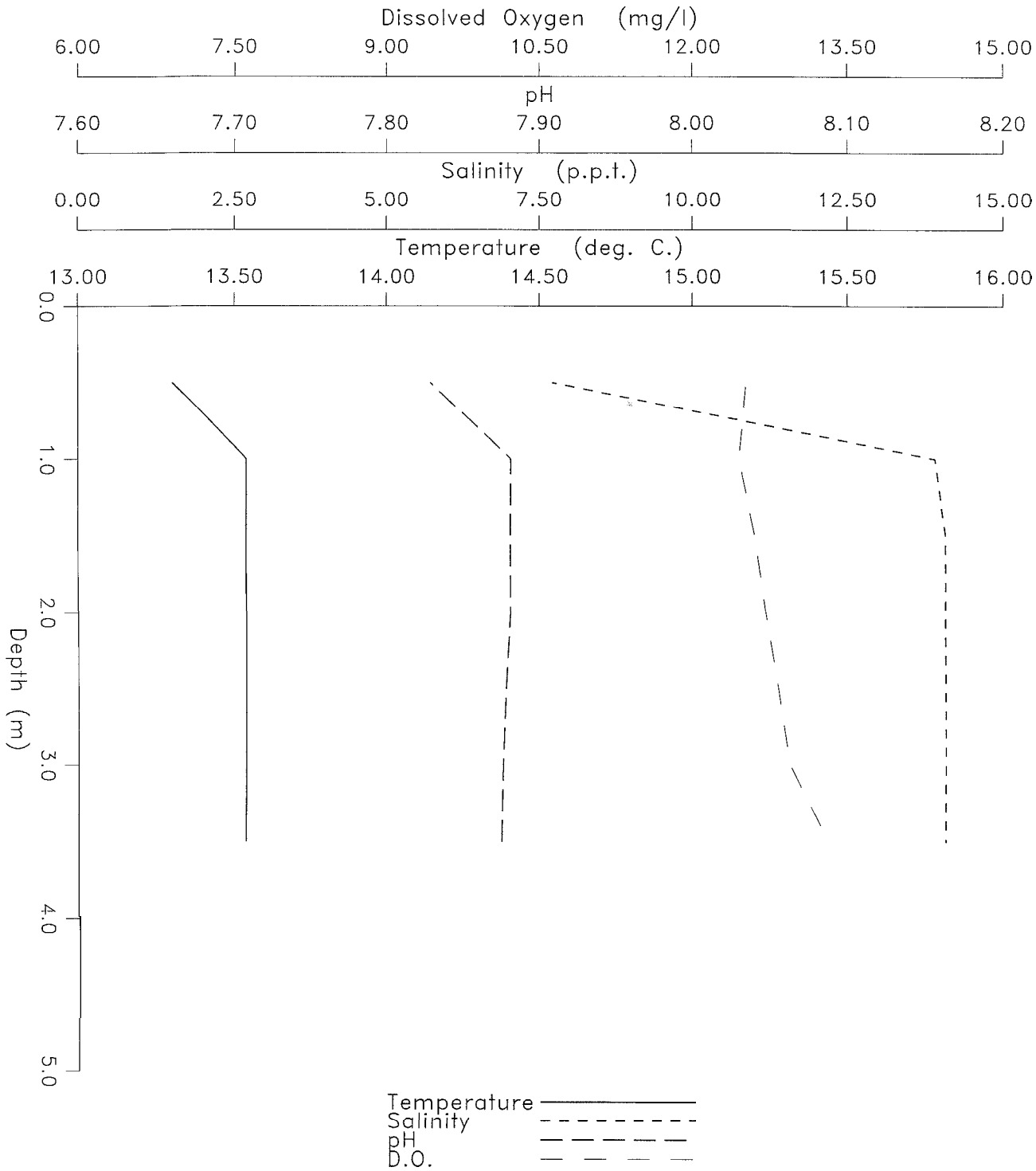
MOA HYDROGRAPHIC DATA

Station: E1-2 Date: 6/19/01 Time: 8:32



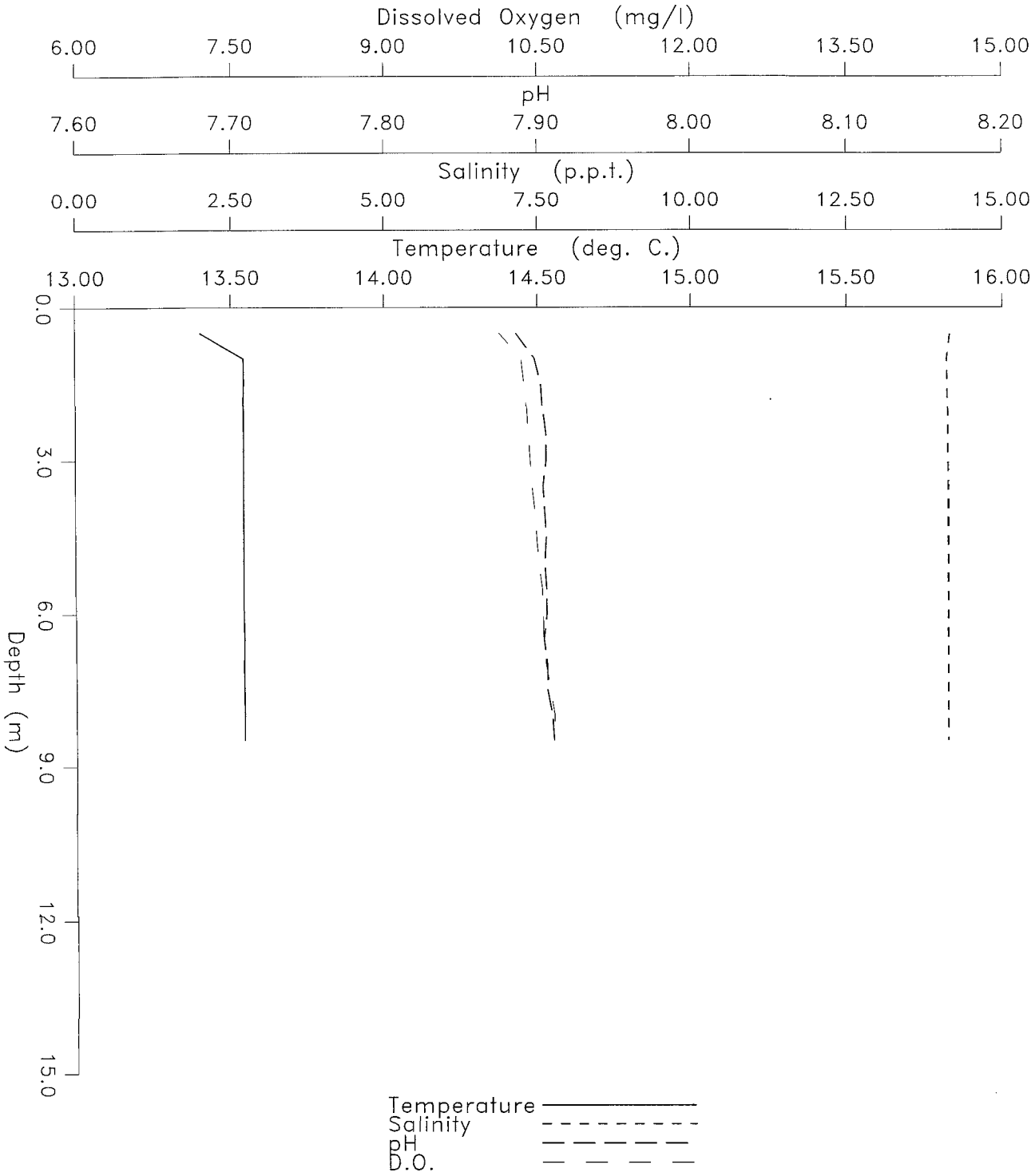
MOA HYDROGRAPHIC DATA

Station: E1-3 Date: 6/19/01 Time: 8:53



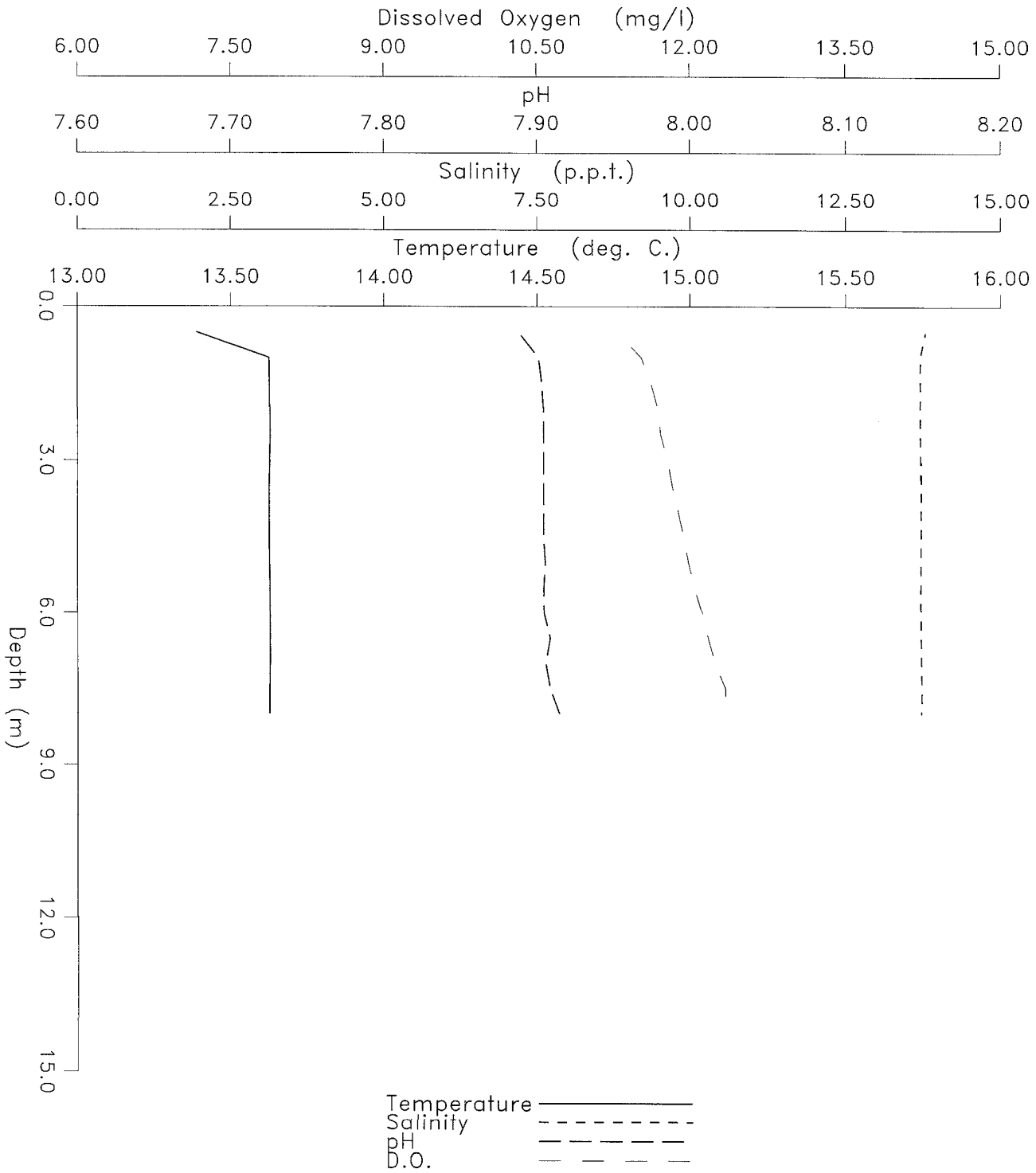
MOA HYDROGRAPHIC DATA

Station: E1-4 Date: 6/19/01 Time: 9:10



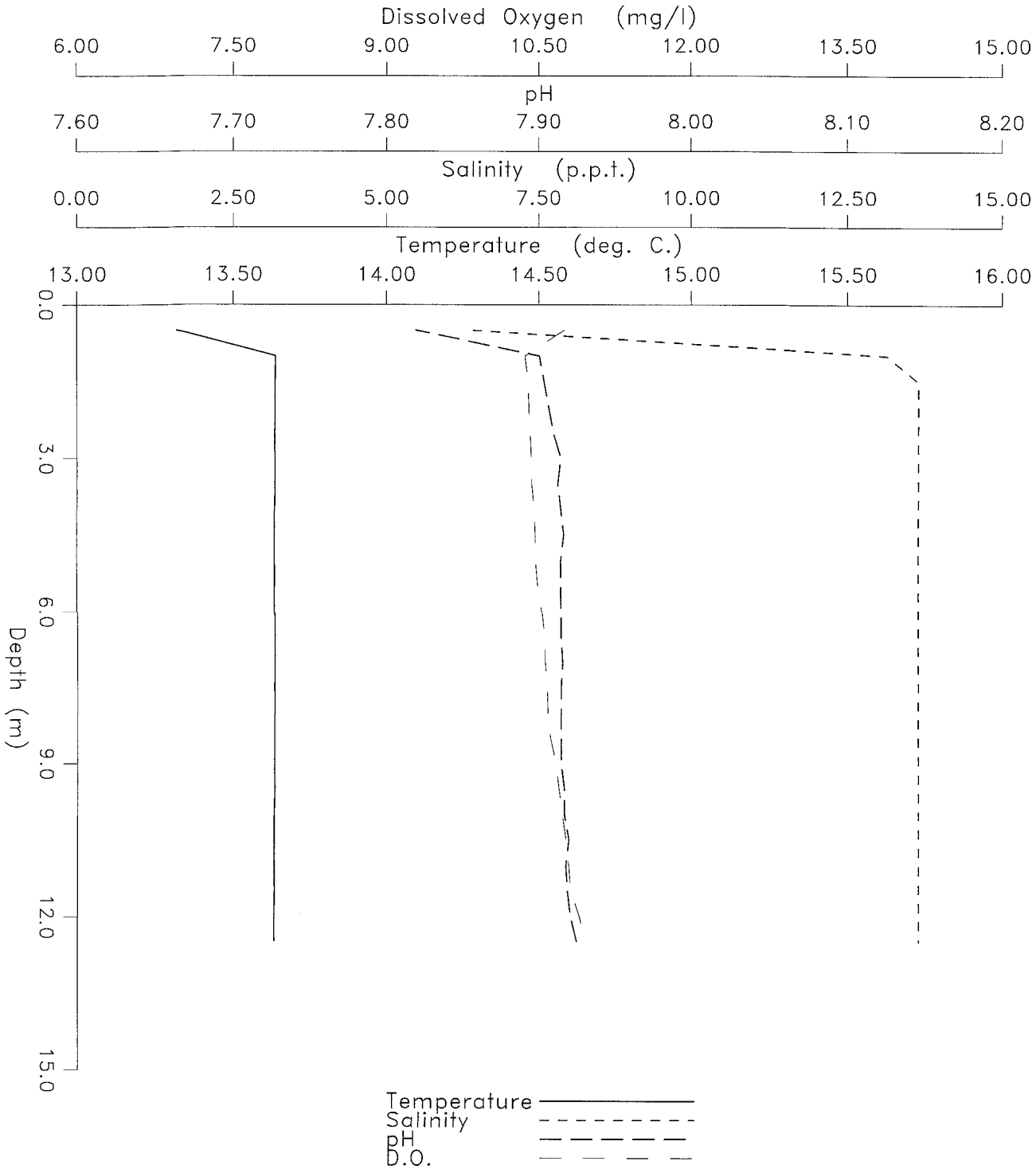
MOA HYDROGRAPHIC DATA

Station: E2-1 Date: 6/19/01 Time: 9:46



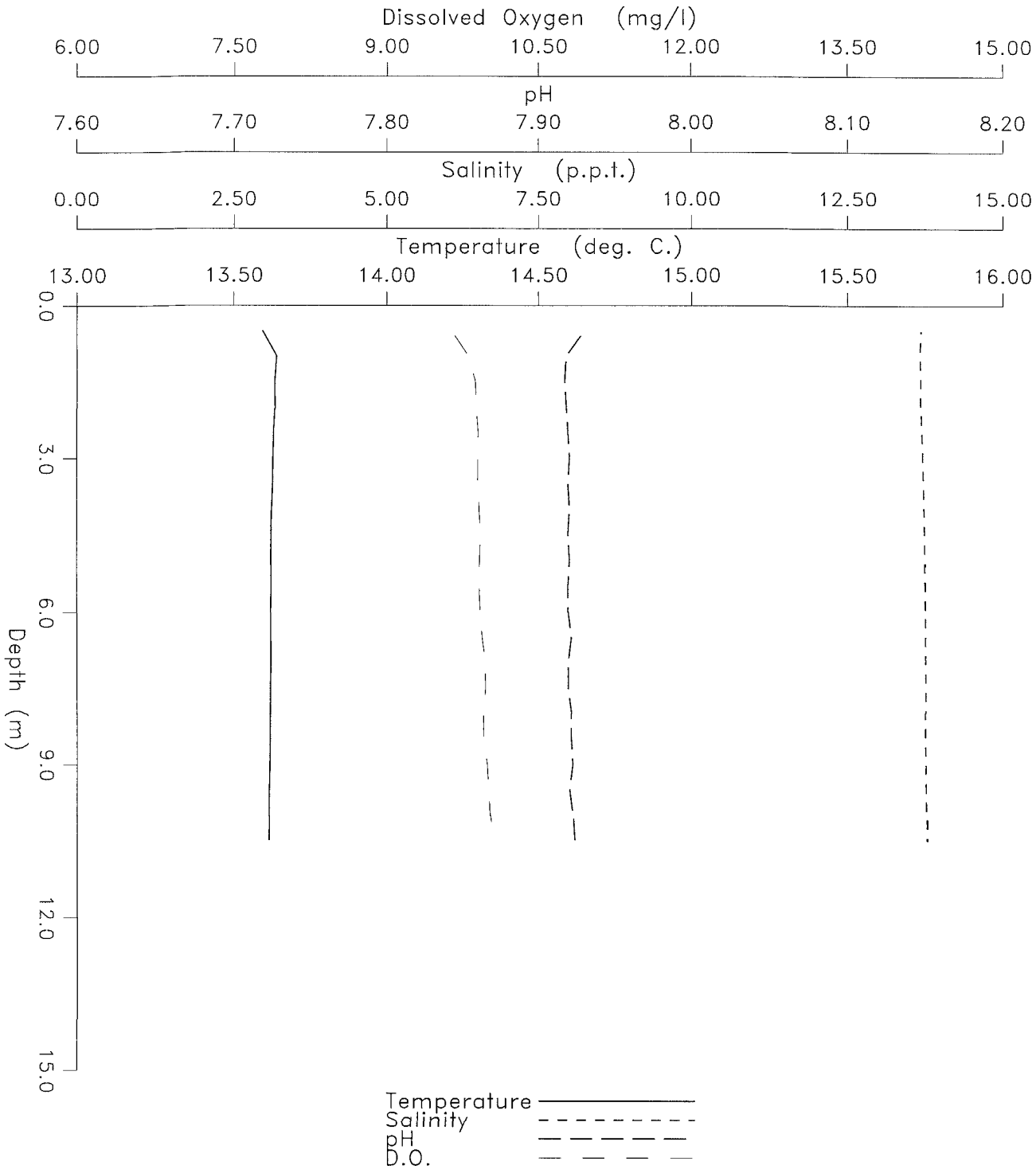
MOA HYDROGRAPHIC DATA

Station: E2-2 Date: 6/19/01 Time: 9:54



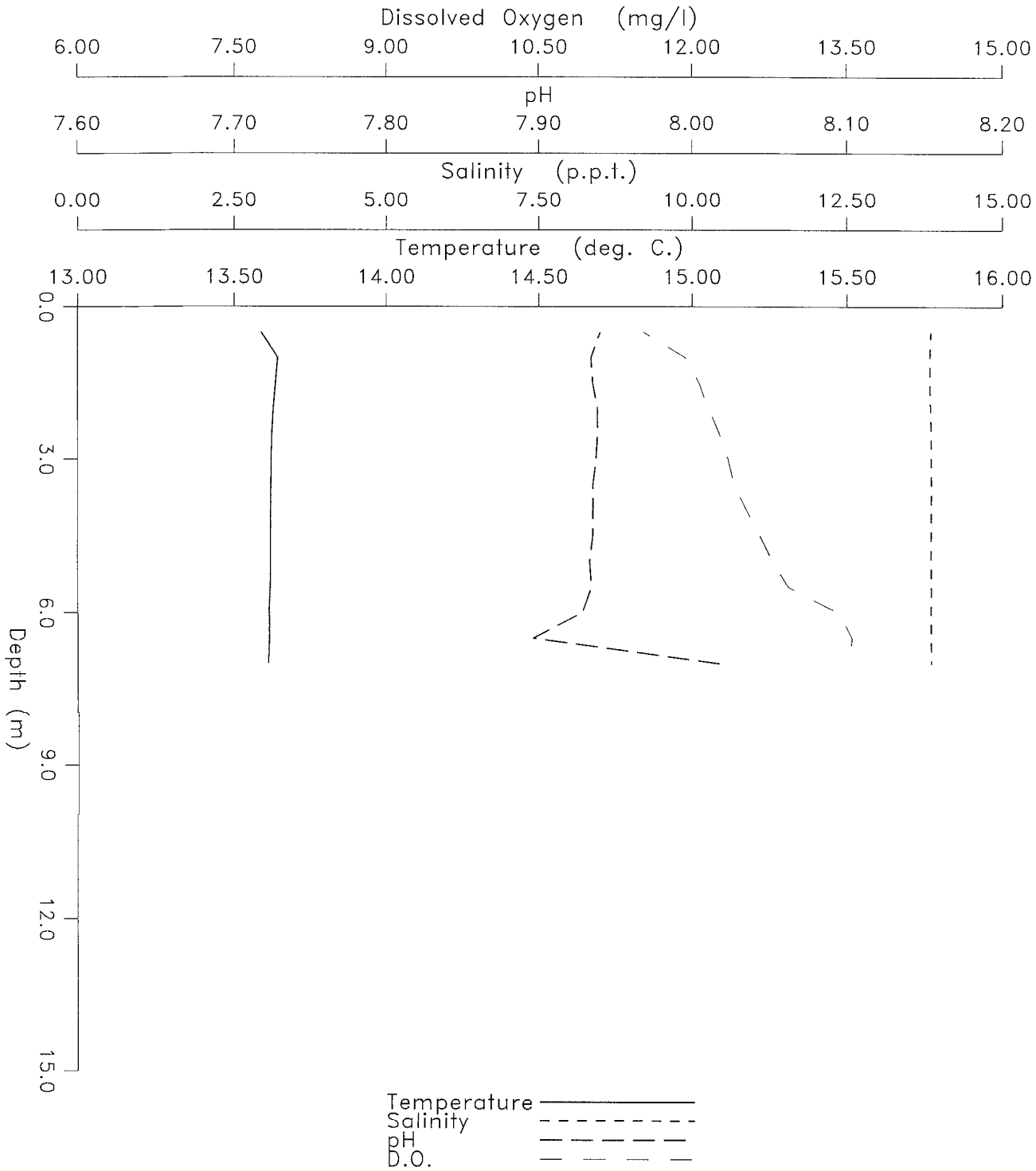
MOA HYDROGRAPHIC DATA

Station: E2-3 Date: 6/19/01 Time: 10:04



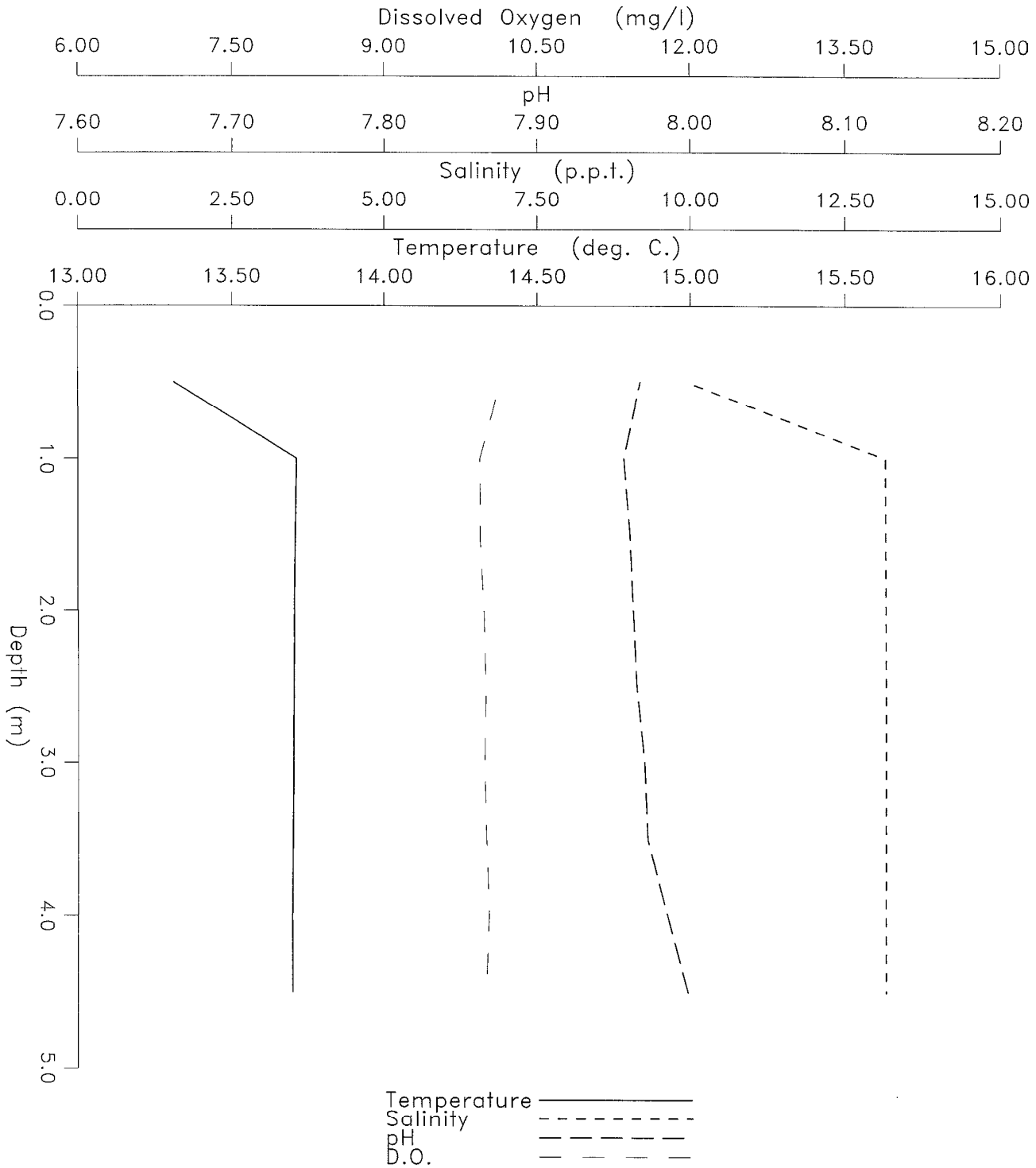
MOA HYDROGRAPHIC DATA

Station: E2-4 Date: 6/19/01 Time: 10:46



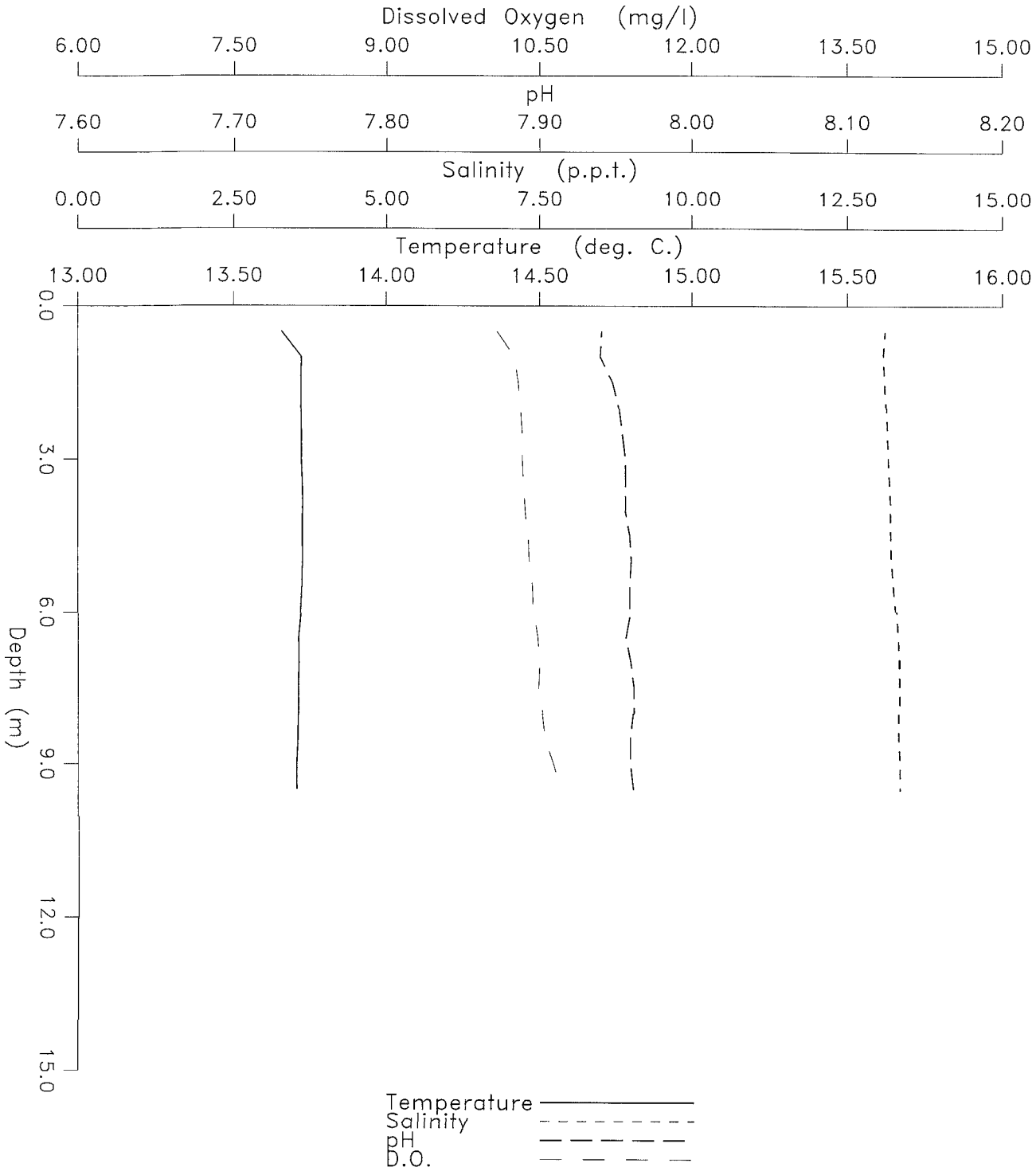
MOA HYDROGRAPHIC DATA

Station: E3-1 Date: 6/19/01 Time: 11:17



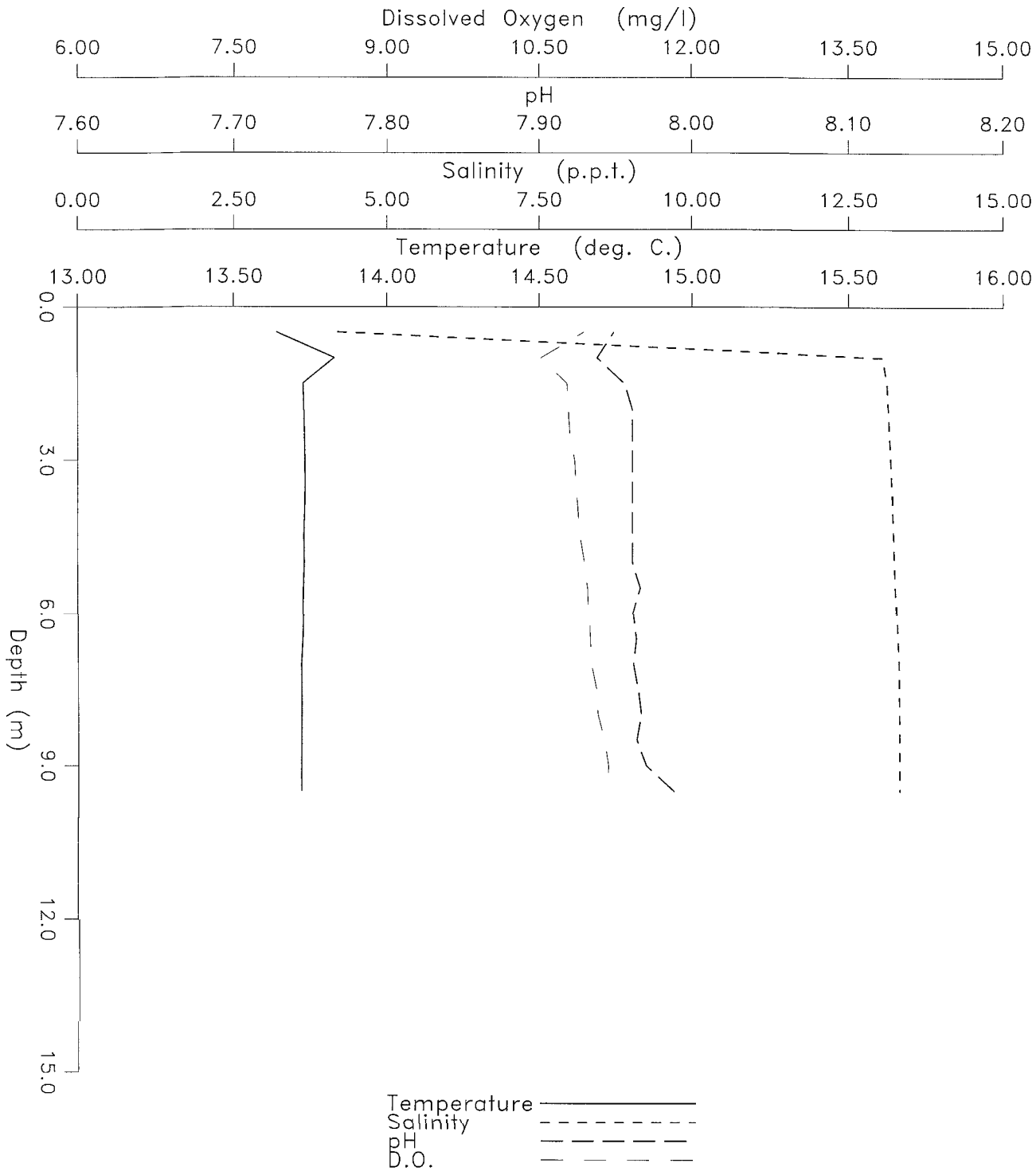
MOA HYDROGRAPHIC DATA

Station: E3-2 Date: 6/19/01 Time: 11:31



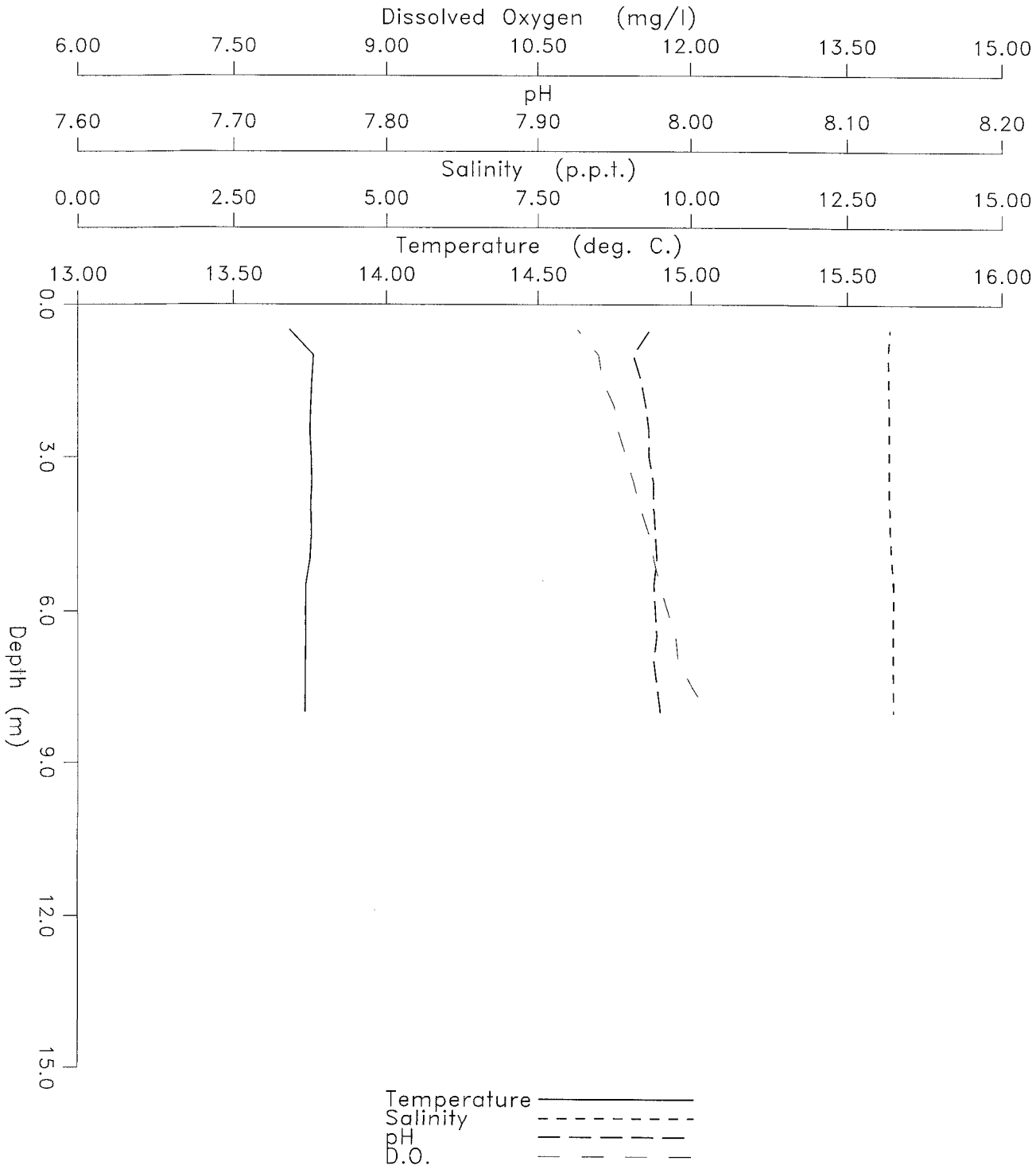
MOA HYDROGRAPHIC DATA

Station: E3-3 Date: 6/19/01 Time: 11:54



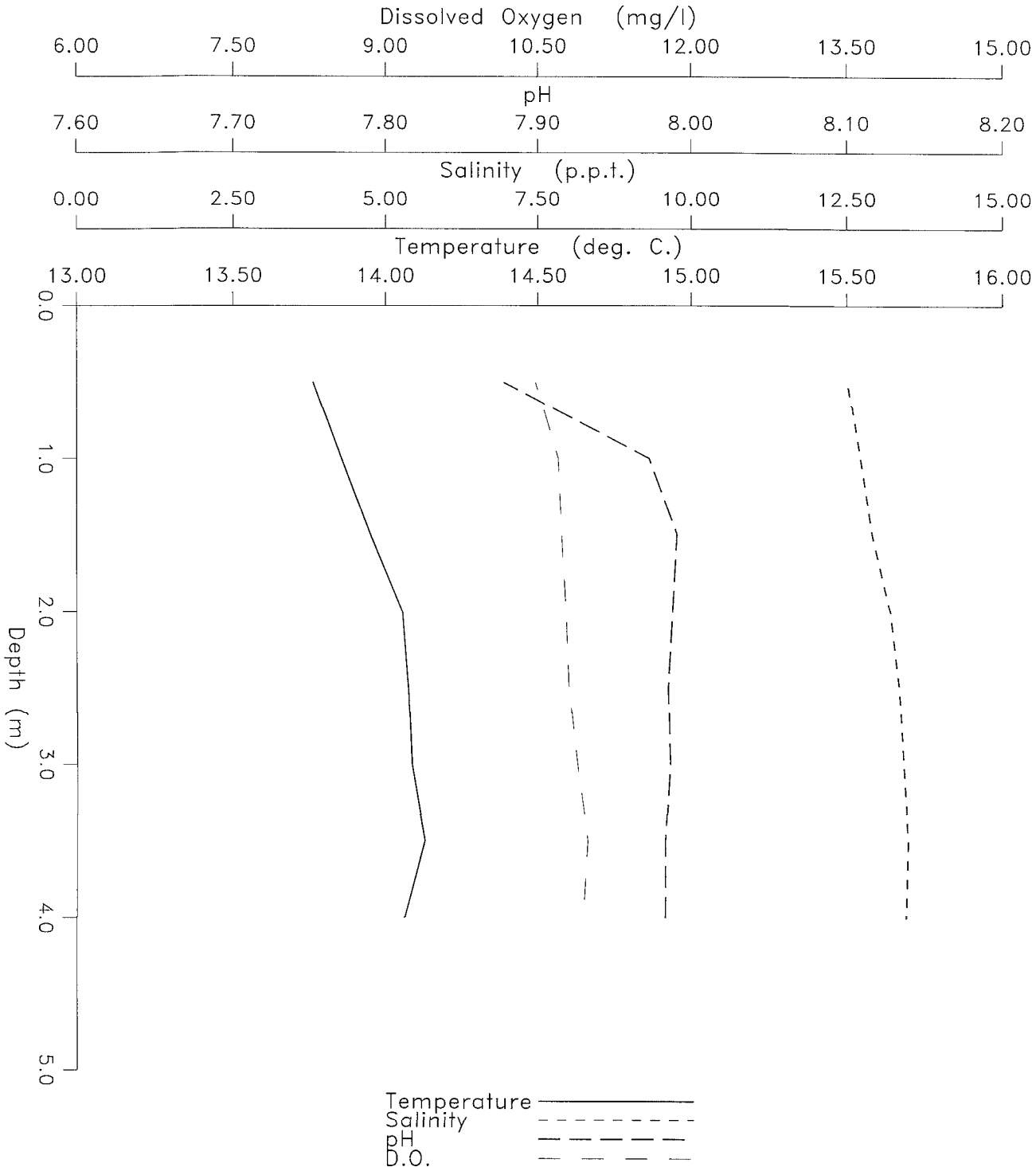
MOA HYDROGRAPHIC DATA

Station: E3-4 Date: 6/19/01 Time: 12:13



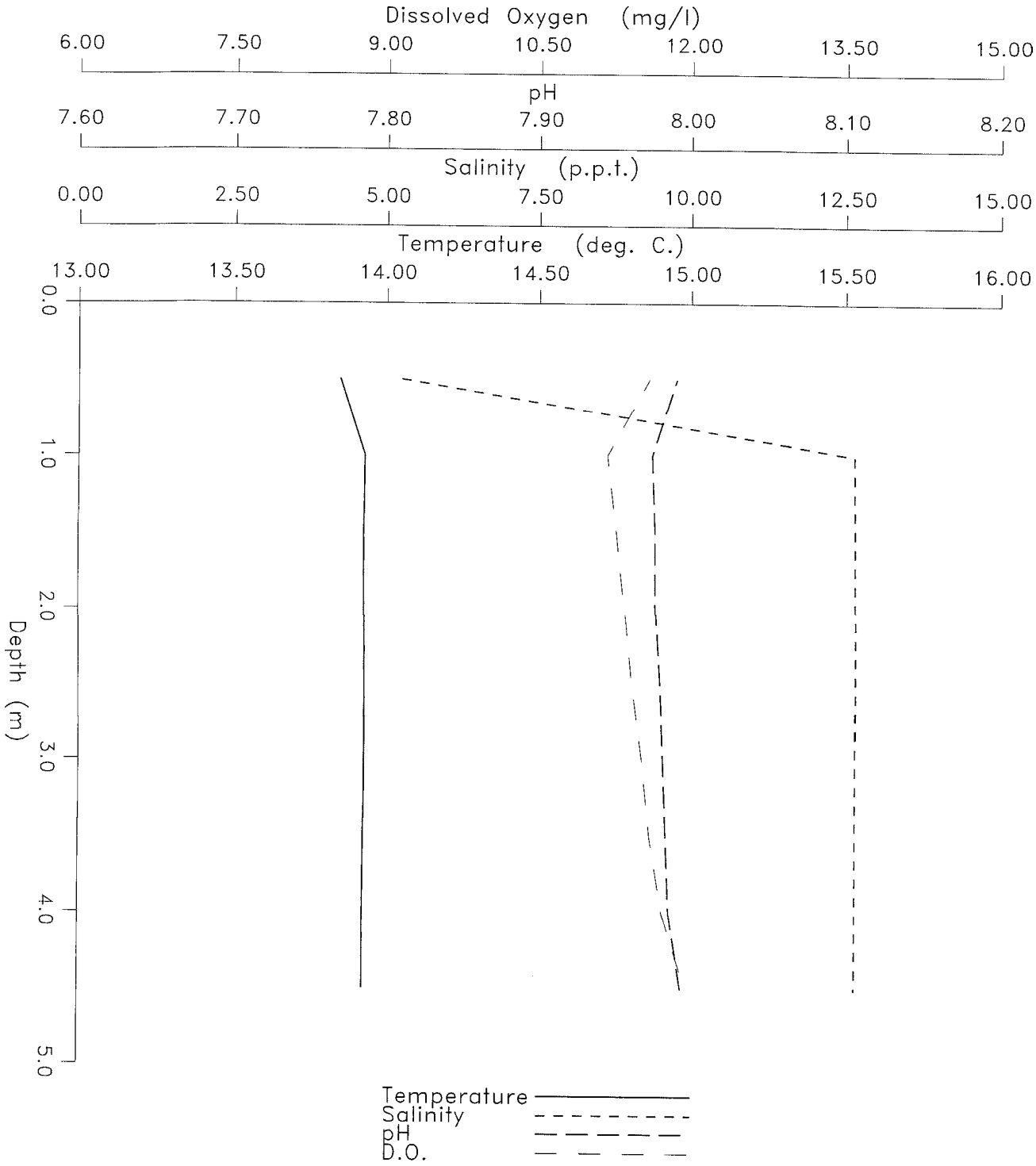
MOA HYDROGRAPHIC DATA

Station: F1-1 Date: 6/19/01 Time: 13:21



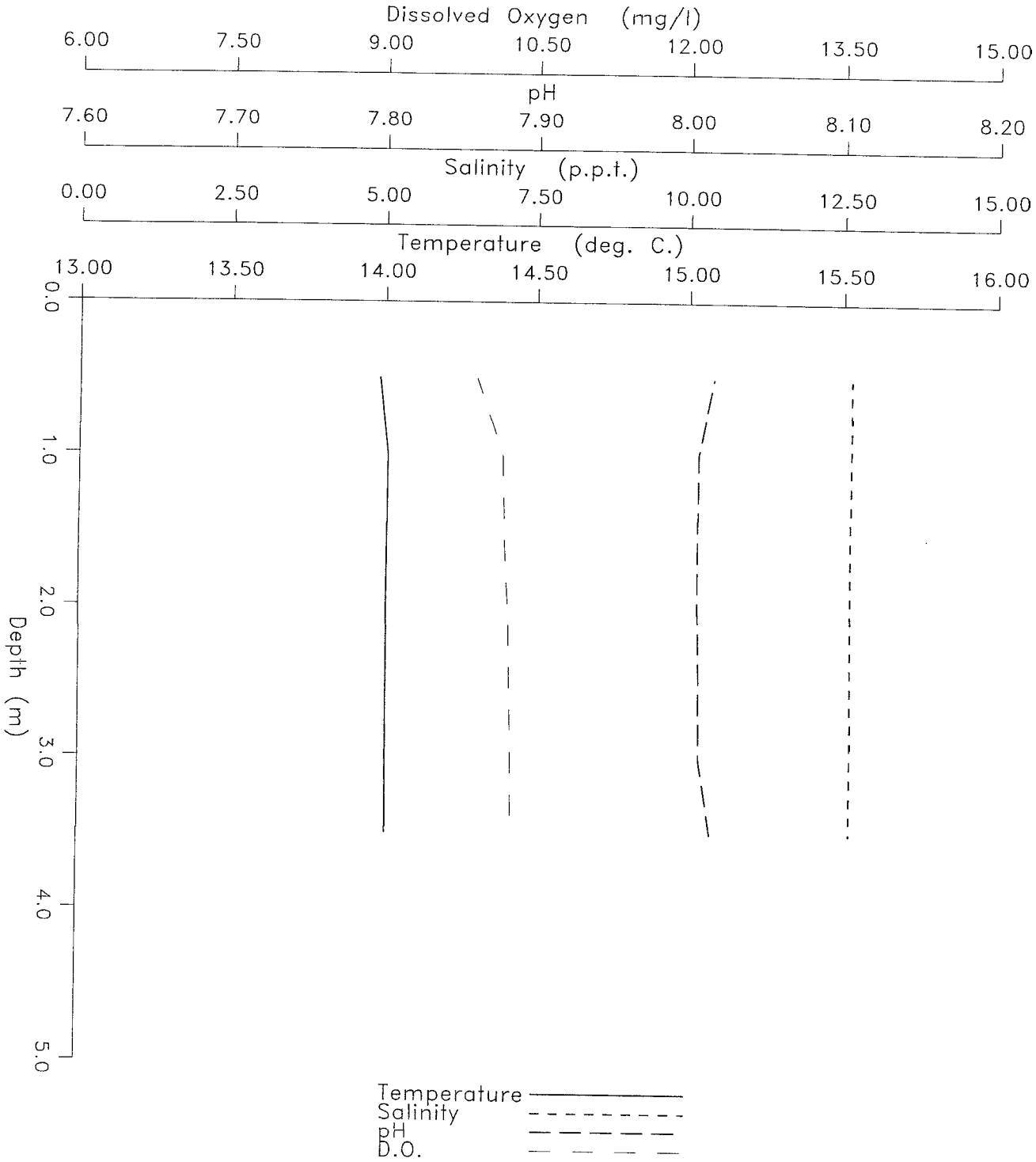
MOA HYDROGRAPHIC DATA

Station: F1-2 Date: 6/19/01 Time: 13:45



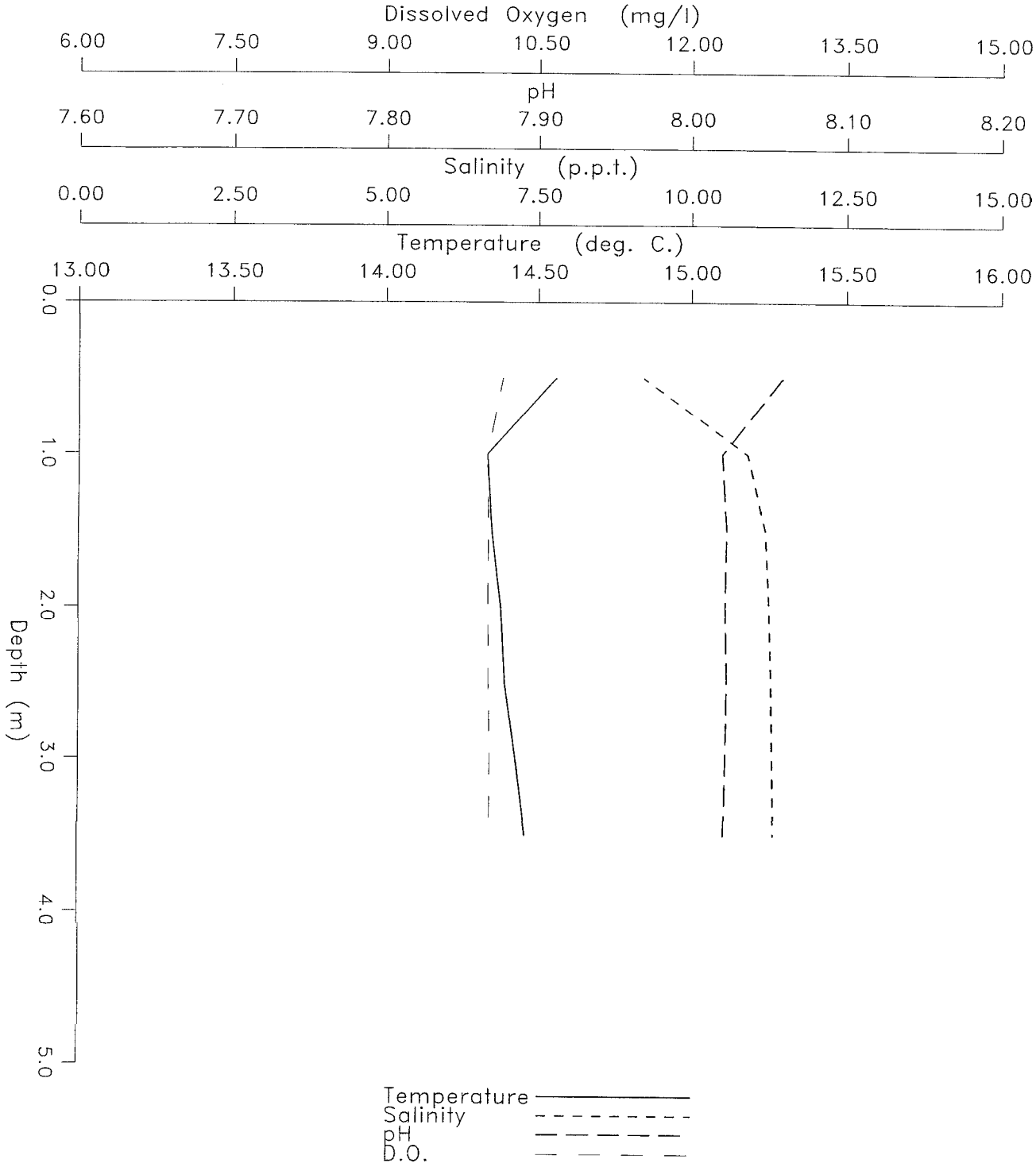
MOA HYDROGRAPHIC DATA

Station: F1-3 Date: 6/19/01 Time: 14:07



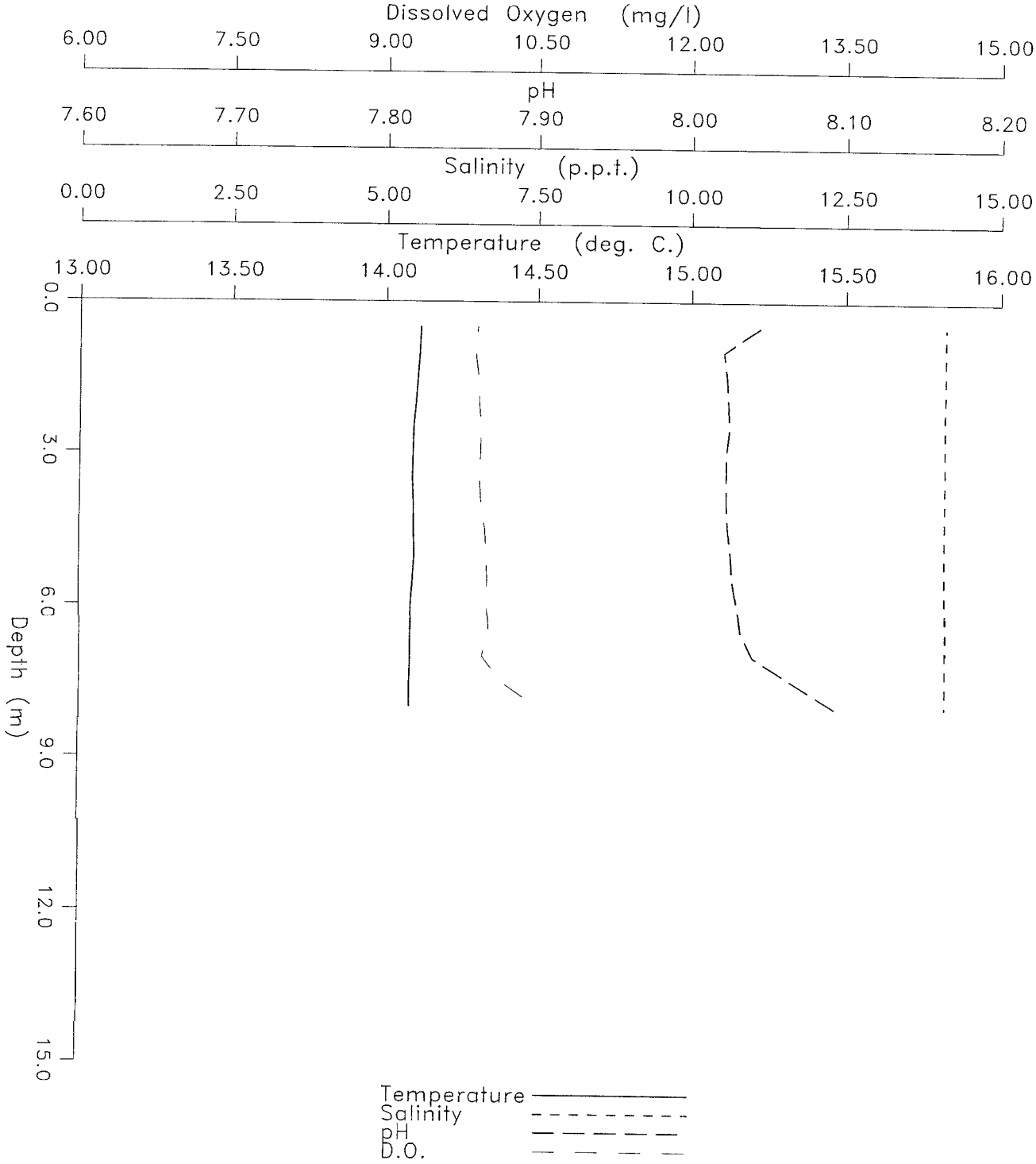
MOA HYDROGRAPHIC DATA

Station: F1-4 Date: 6/19/01 Time: 14:40



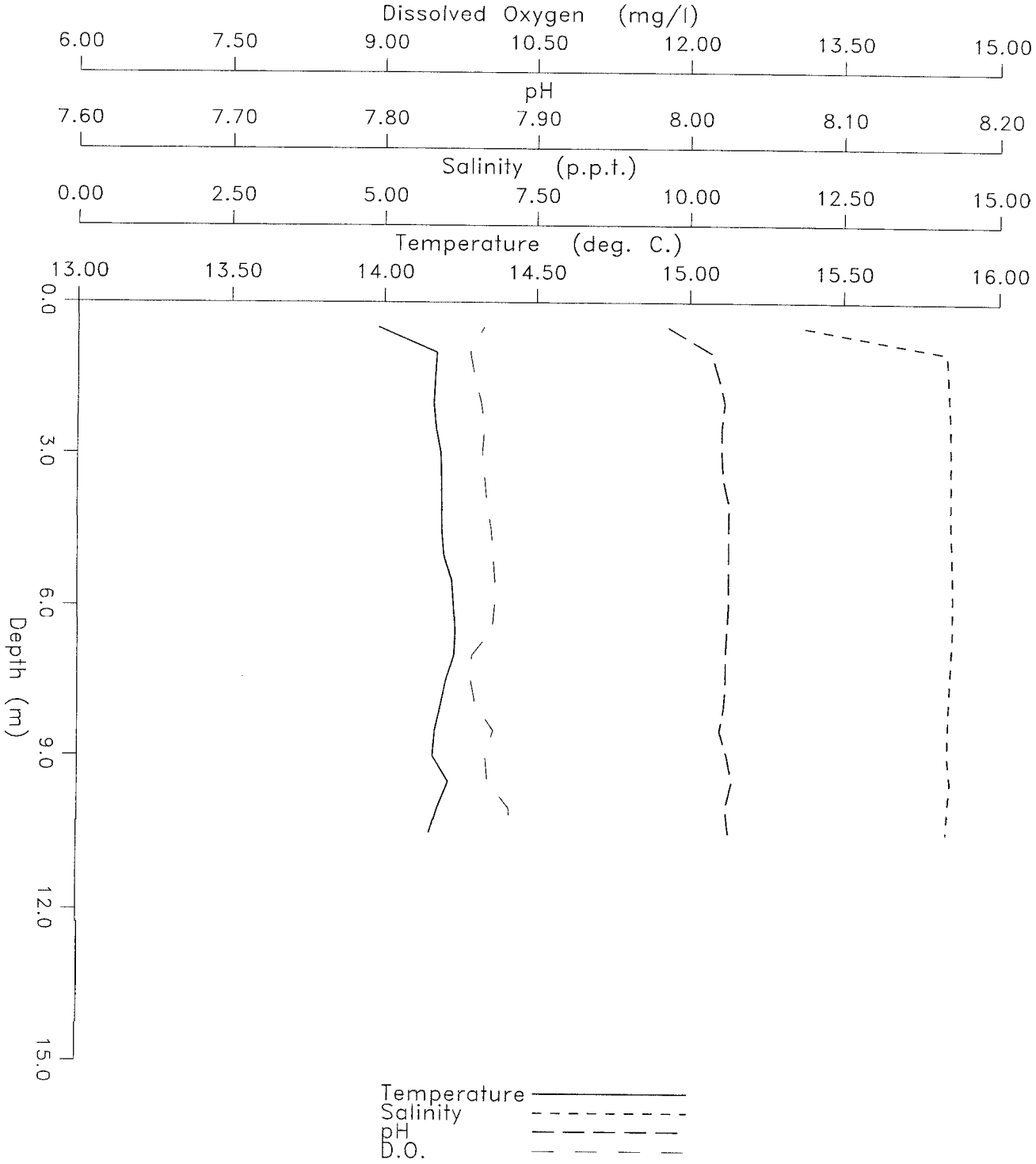
MOA HYDROGRAPHIC DATA

Station: F2-1 Date: 6/19/01 Time: 15:15



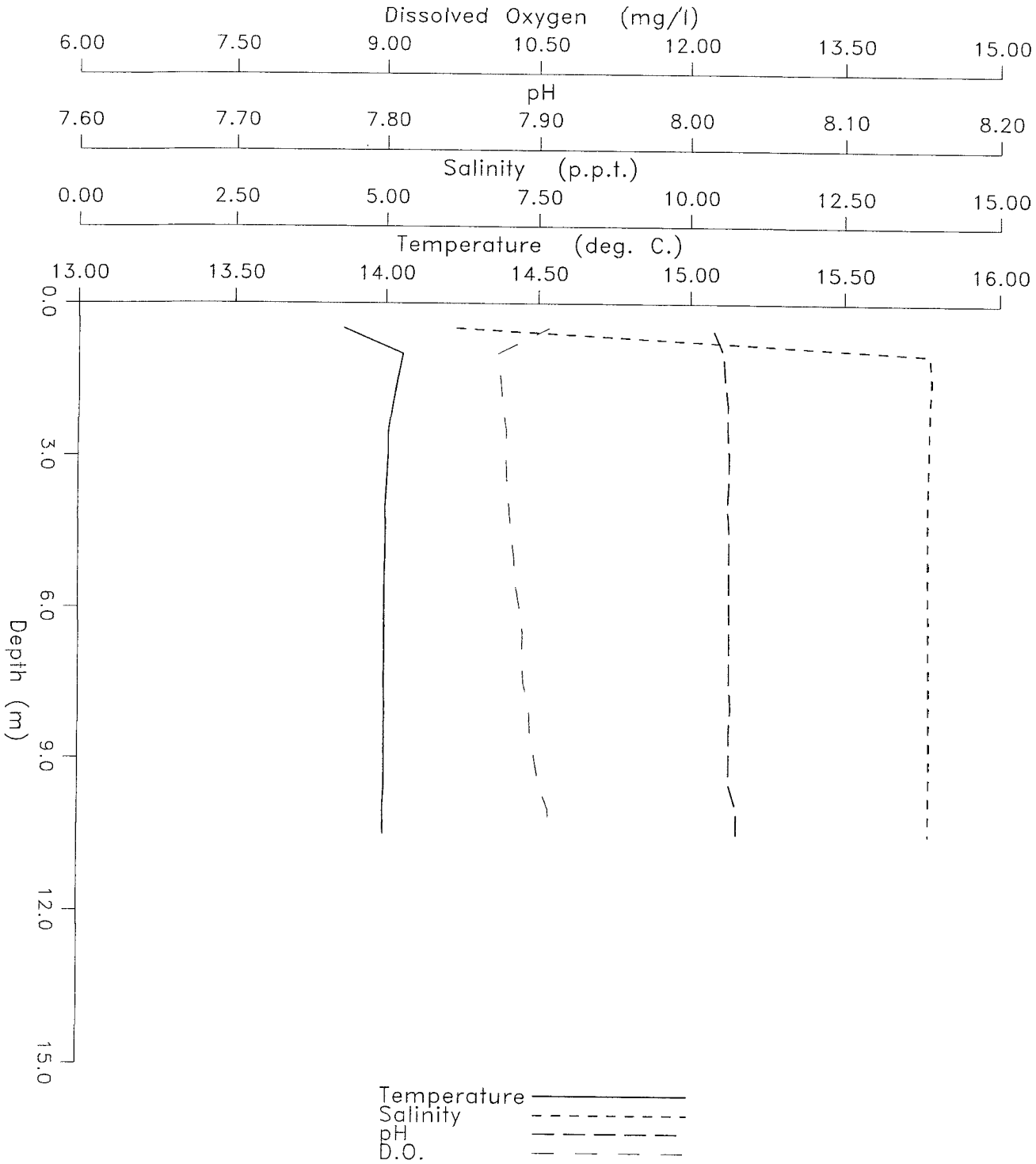
MOA HYDROGRAPHIC DATA

Station: F2-2 Date: 6/19/01 Time: 15:25



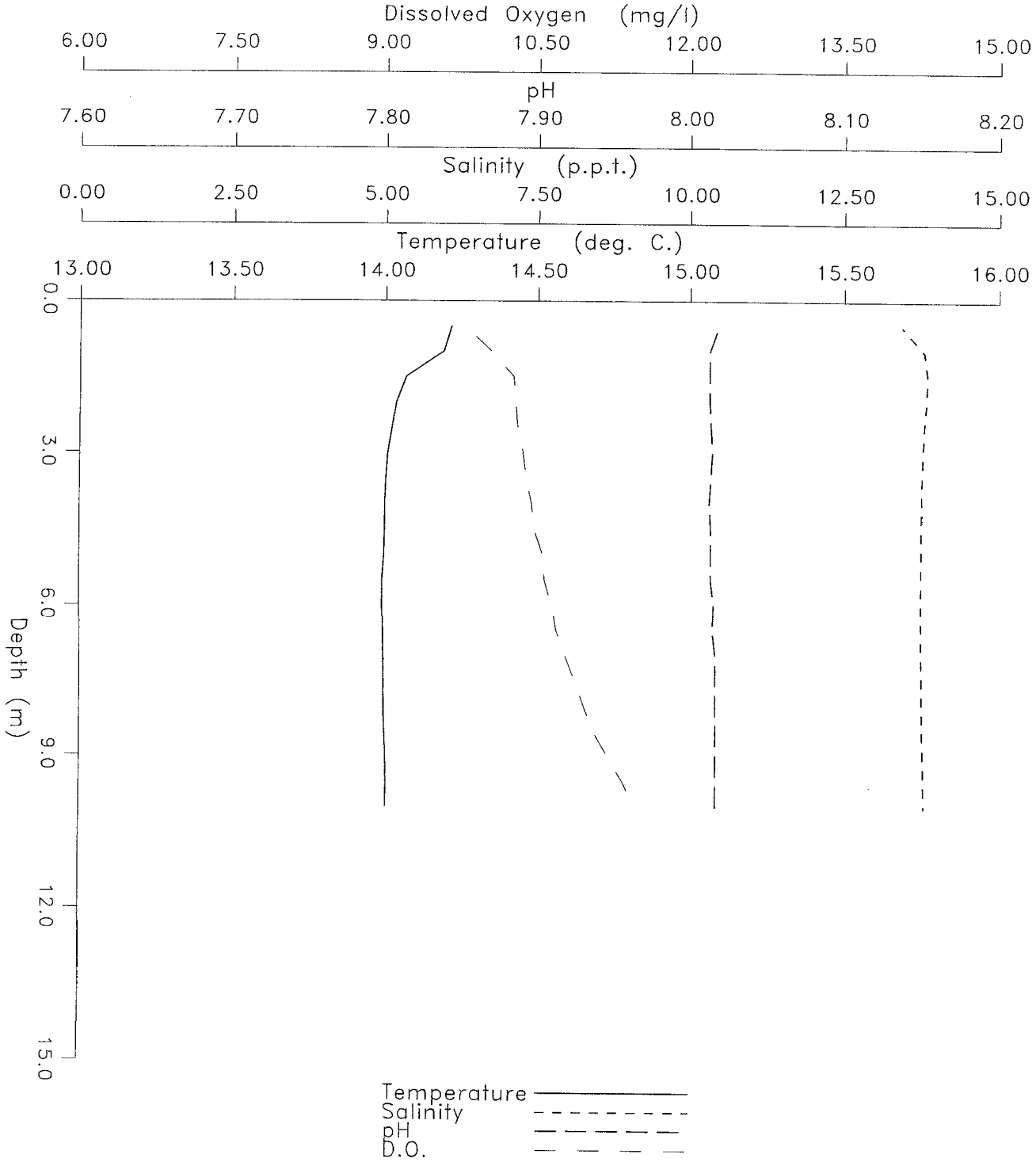
MOA HYDROGRAPHIC DATA

Station: F2-3 Date: 6/19/01 Time: 15:43



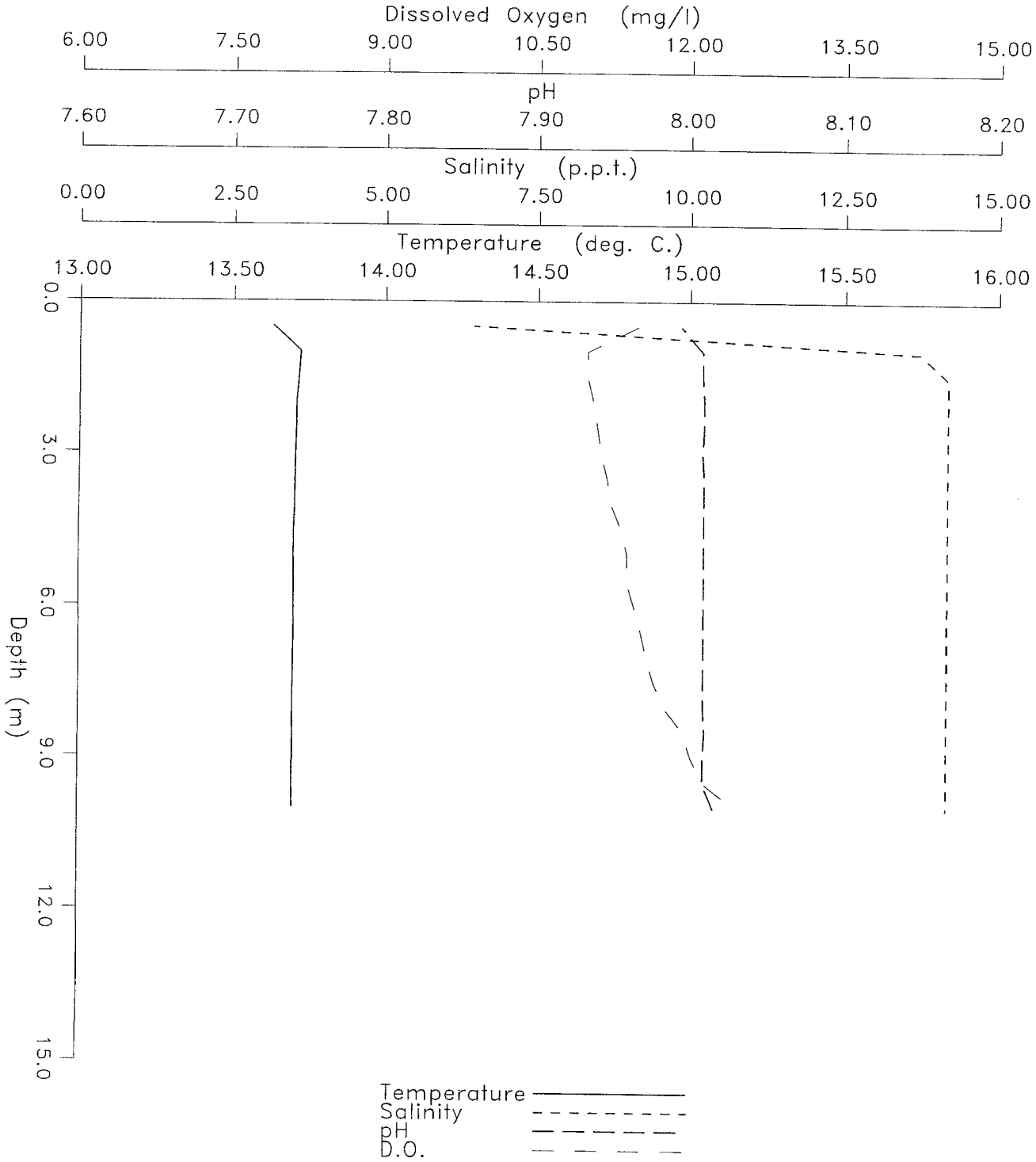
MOA HYDROGRAPHIC DATA

Station: F2-4 Date: 6/19/01 Time: 16:08



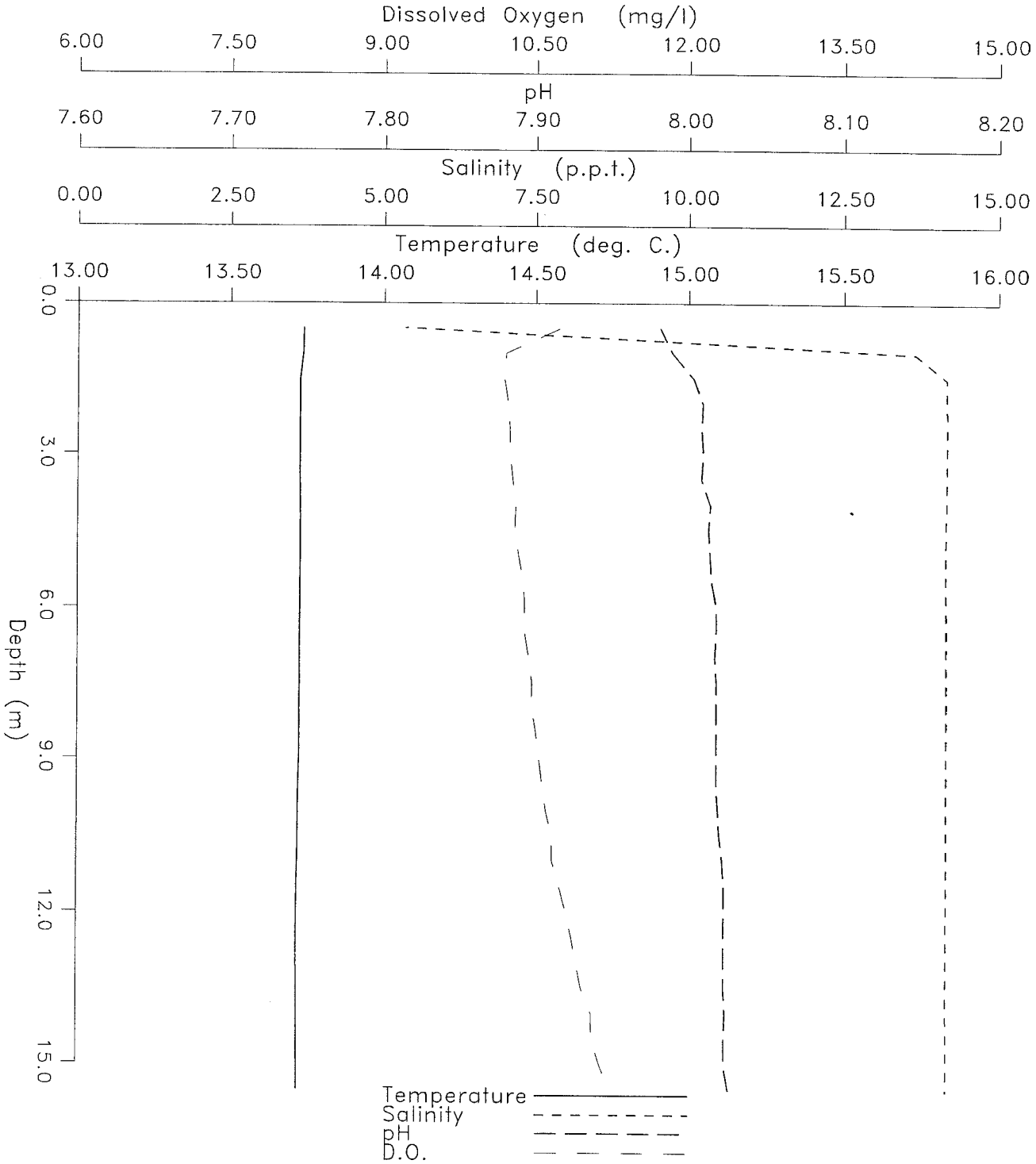
MOA HYDROGRAPHIC DATA

Station: F3-1 Date: 6/19/01 Time: 16:57



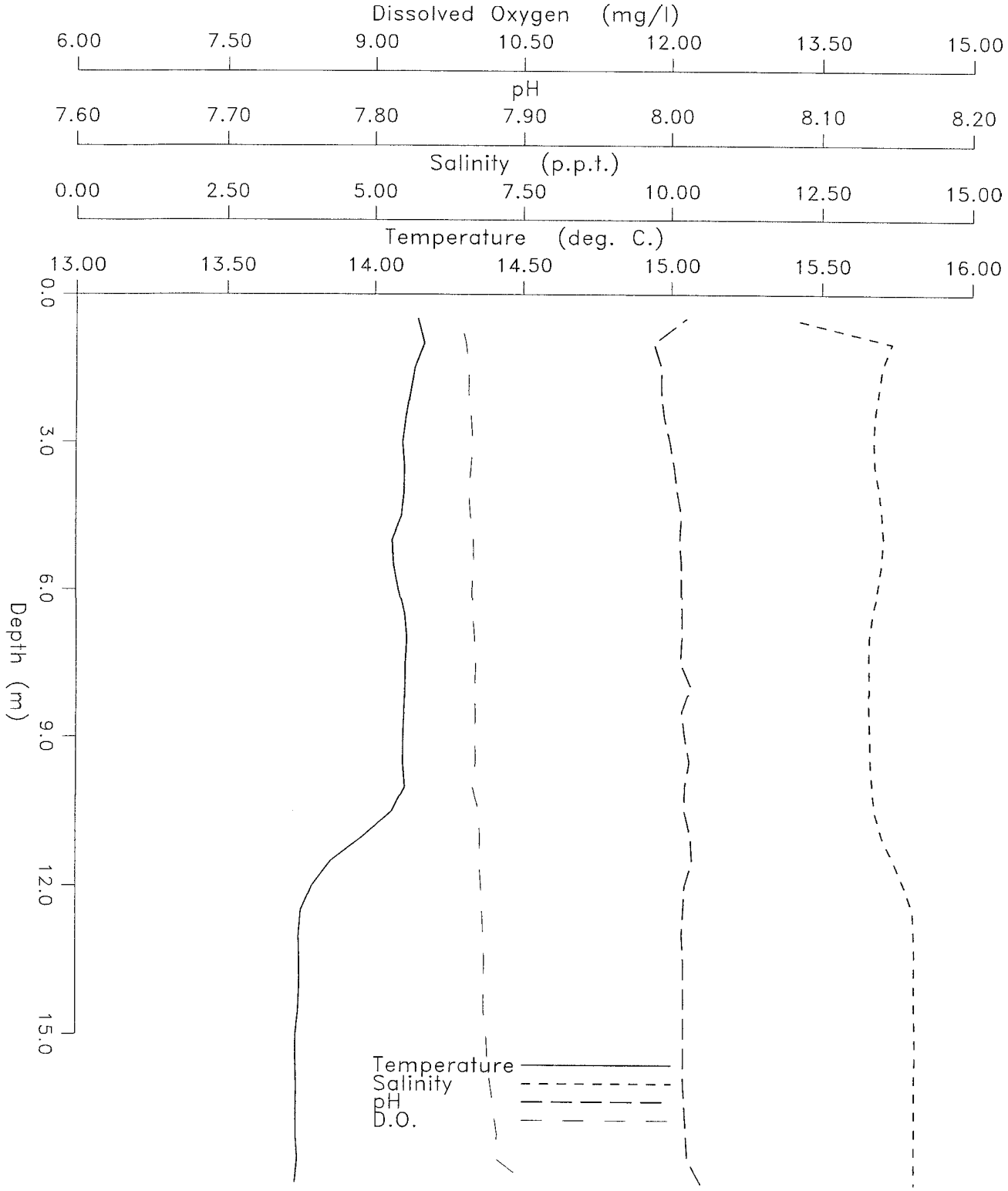
MOA HYDROGRAPHIC DATA

Station: F3-2 Date: 6/19/01 Time: 17:05



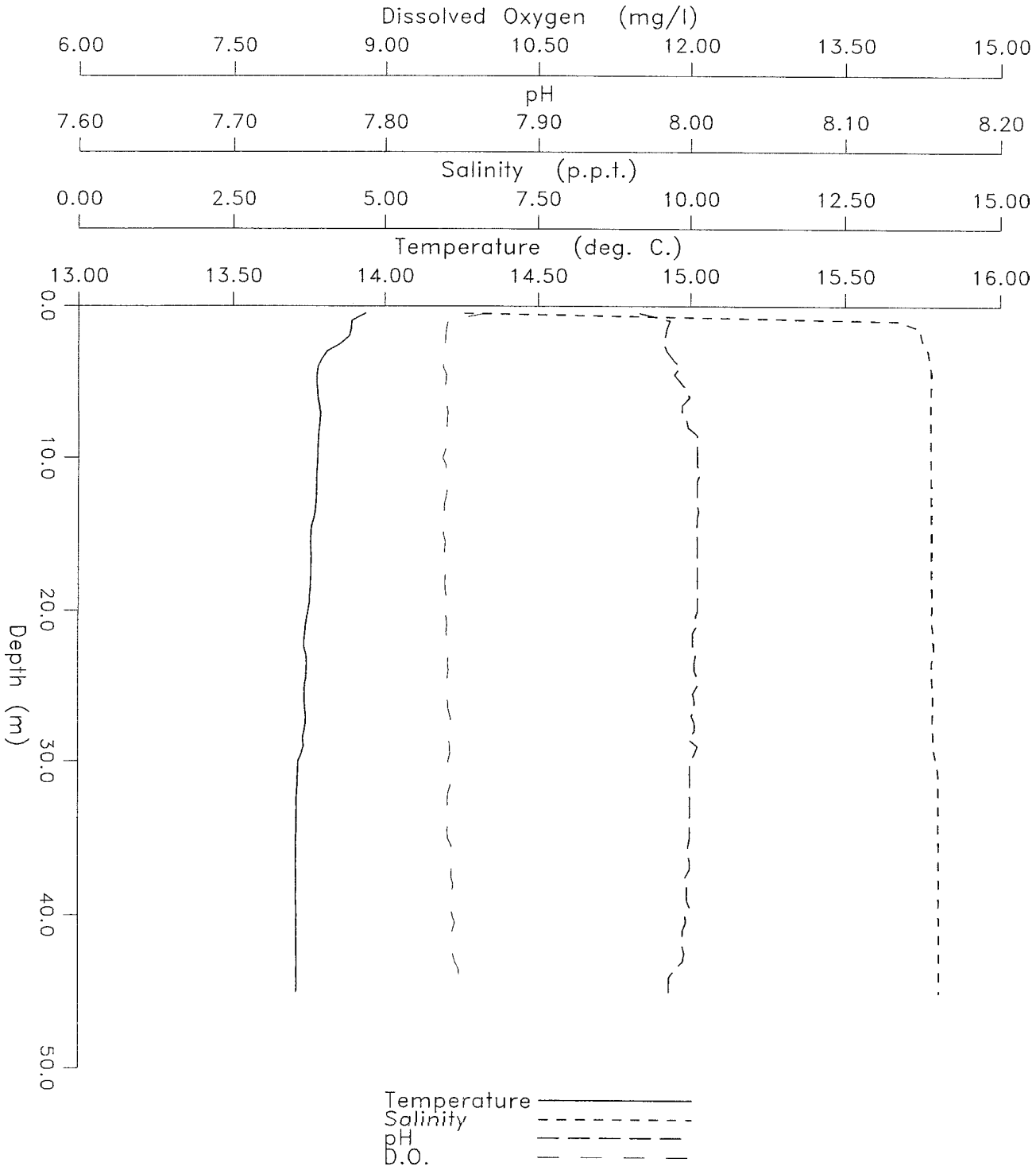
MOA HYDROGRAPHIC DATA

Station: F3-3 Date: 6/19/01 Time: 17:14



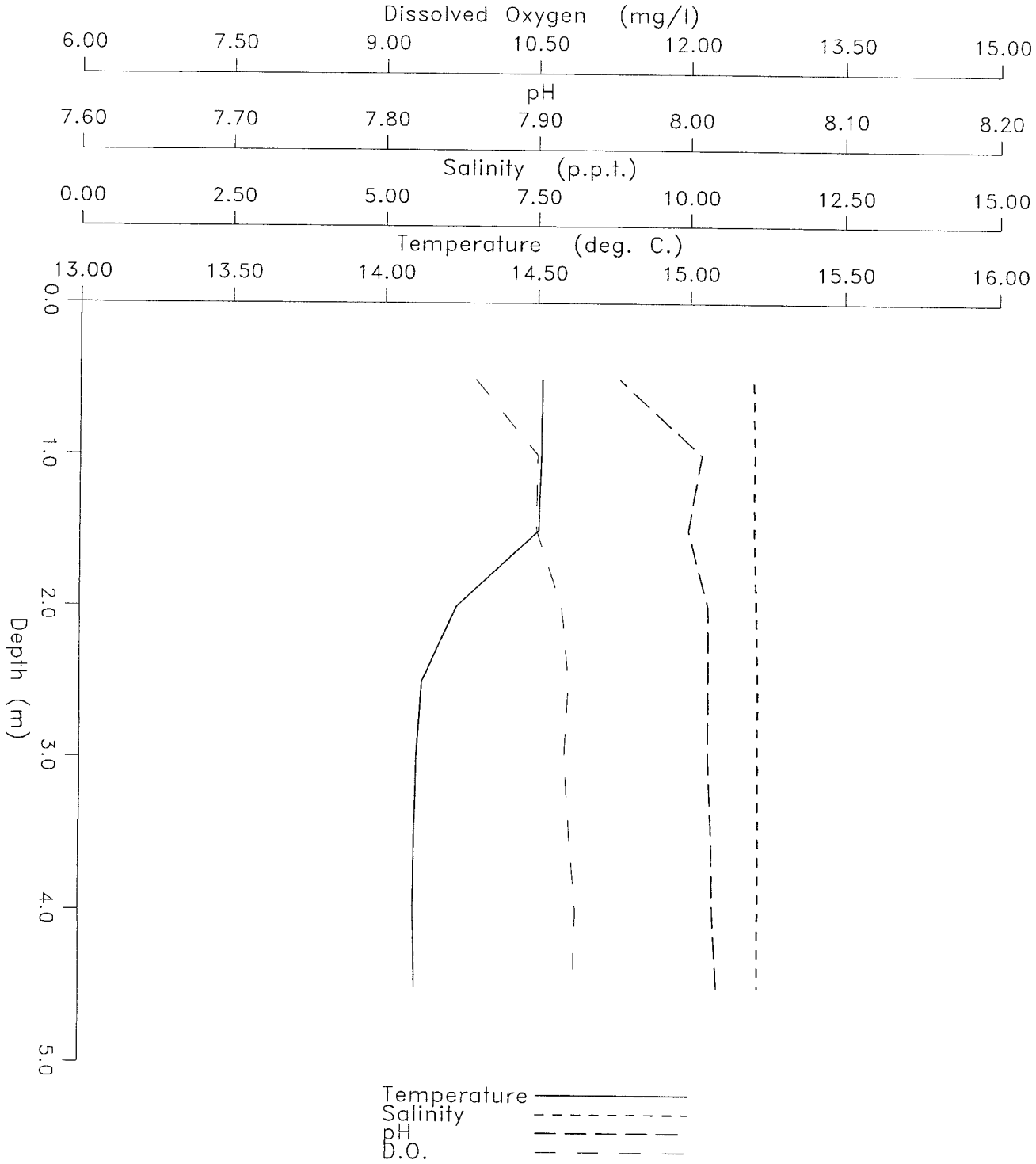
MOA HYDROGRAPHIC DATA

Station: F3-4 Date: 6/19/01 Time: 17:30



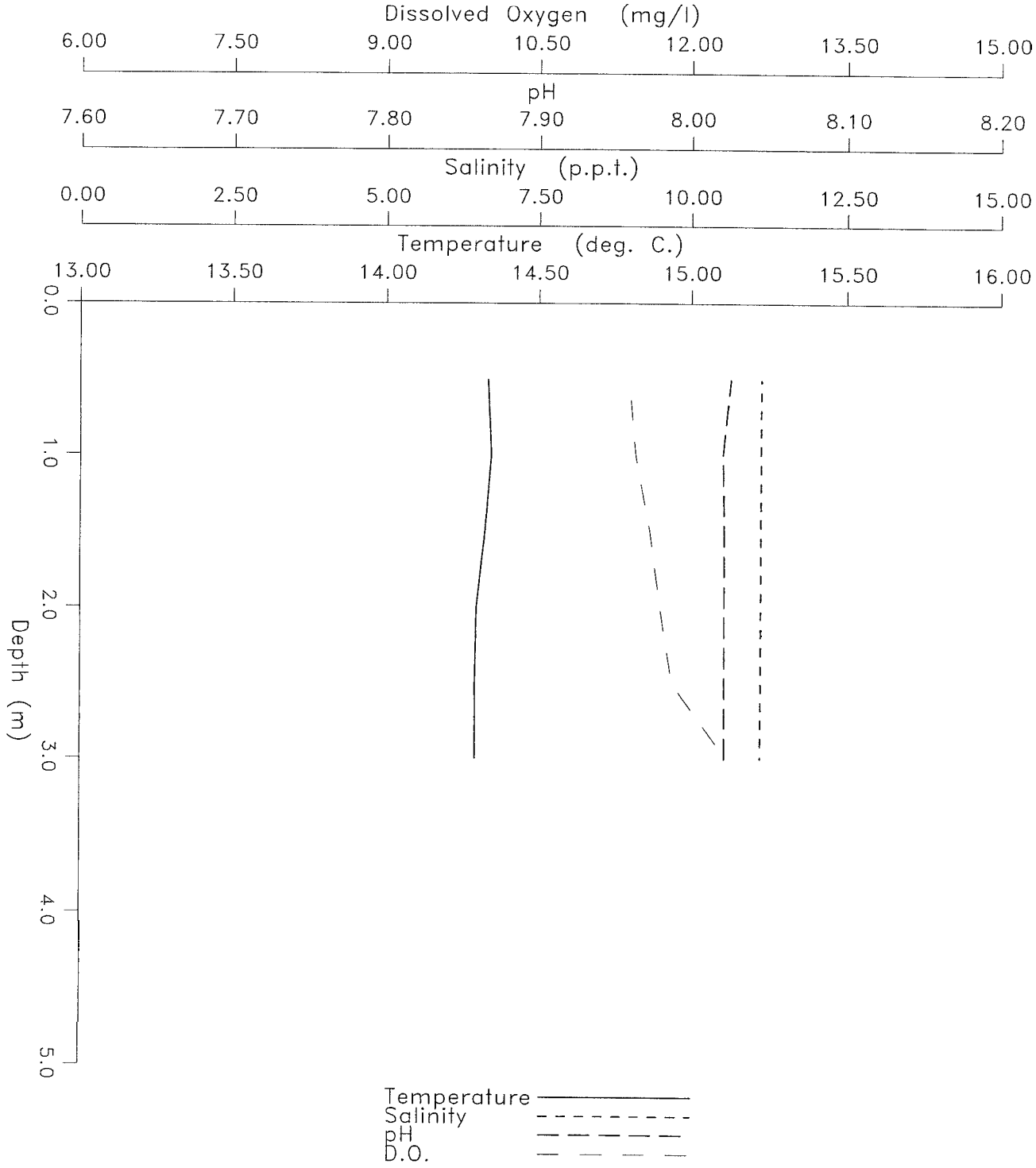
MOA HYDROGRAPHIC DATA

Station: C1-1 Date: 6/20/01 Time: 14:20



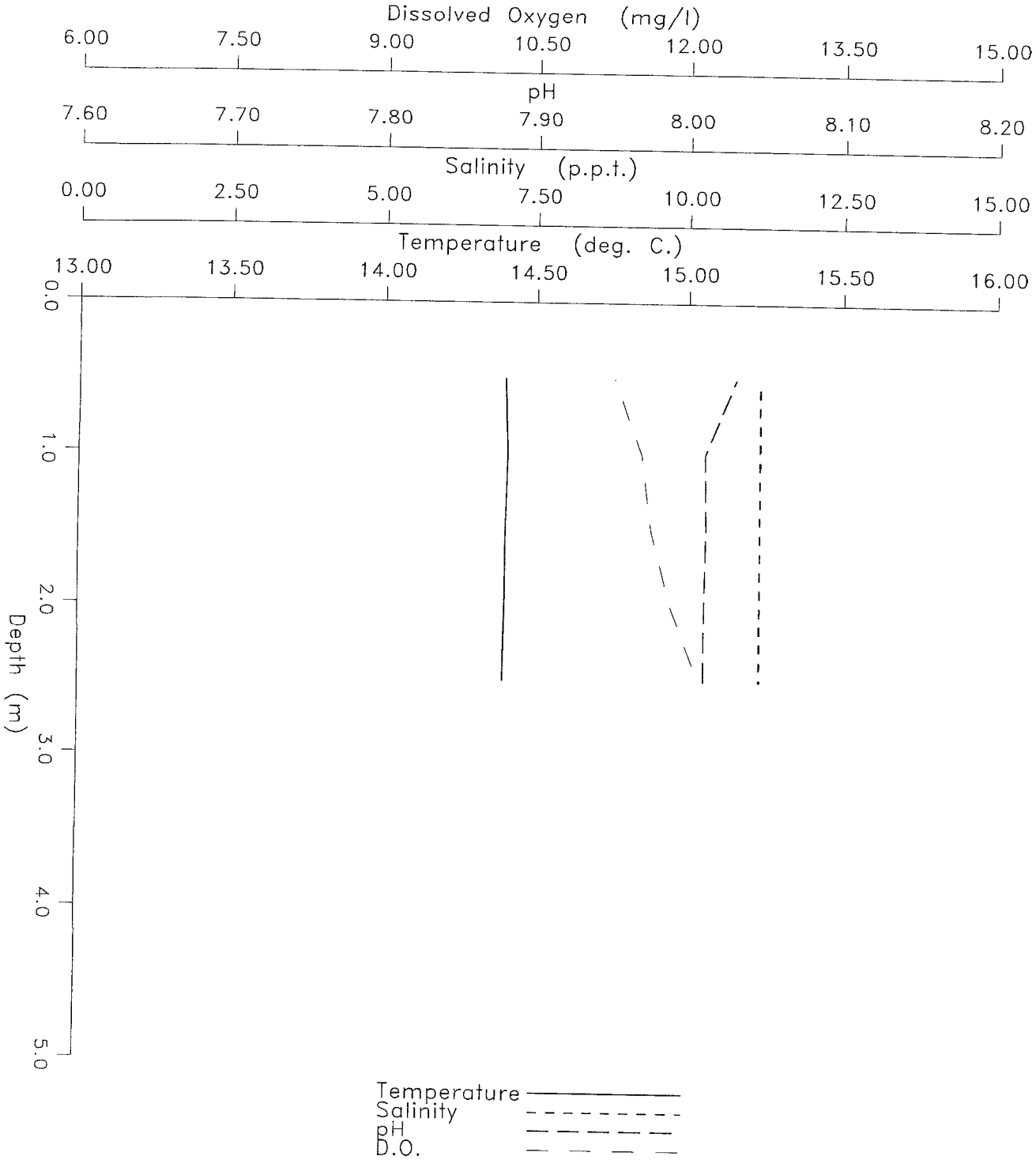
MOA HYDROGRAPHIC DATA

Station: C1-2 Date: 6/20/01 Time: 14:45



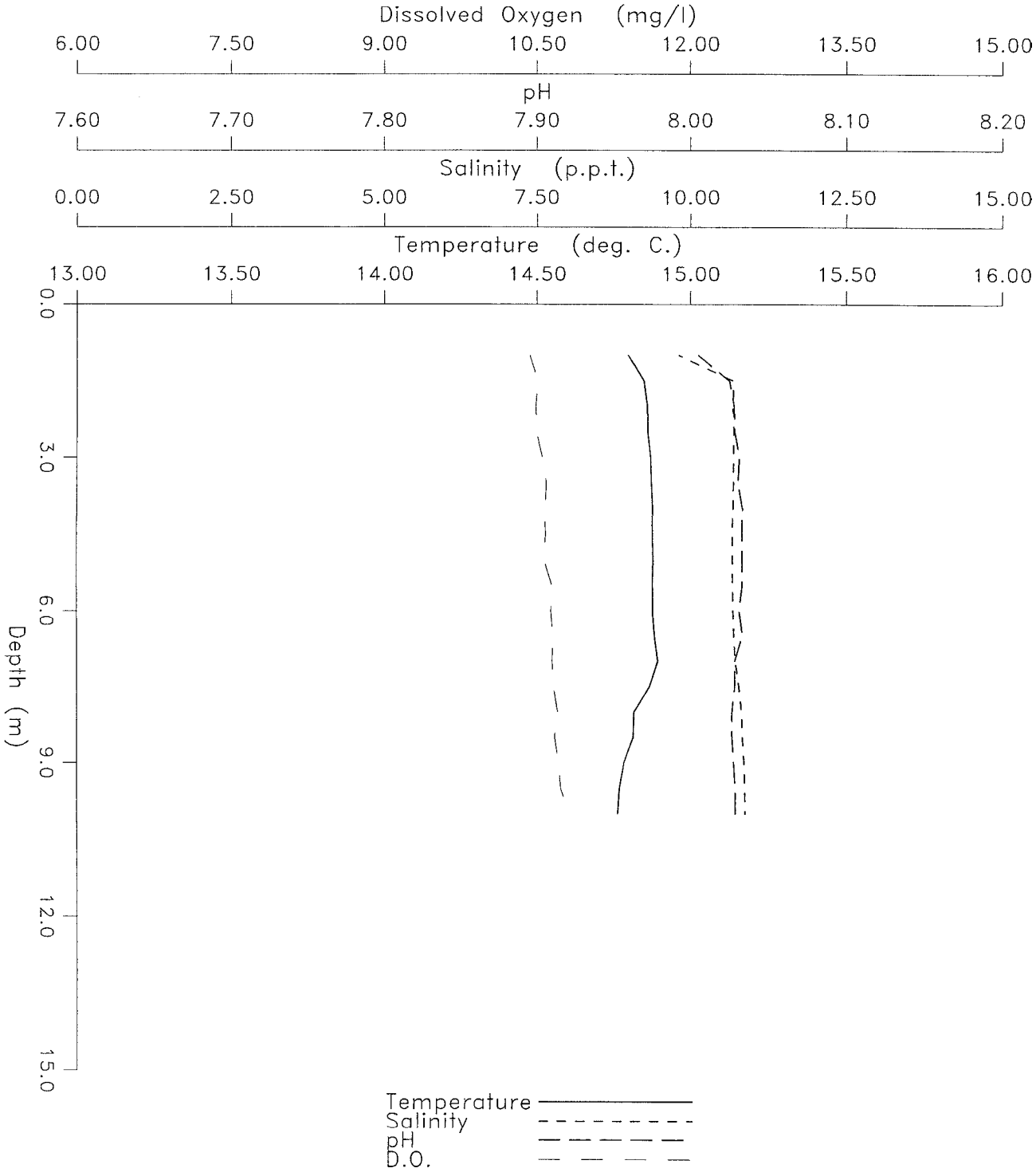
MOA HYDROGRAPHIC DATA

Station: C1-3 Date: 6/20/01 Time: 15:10



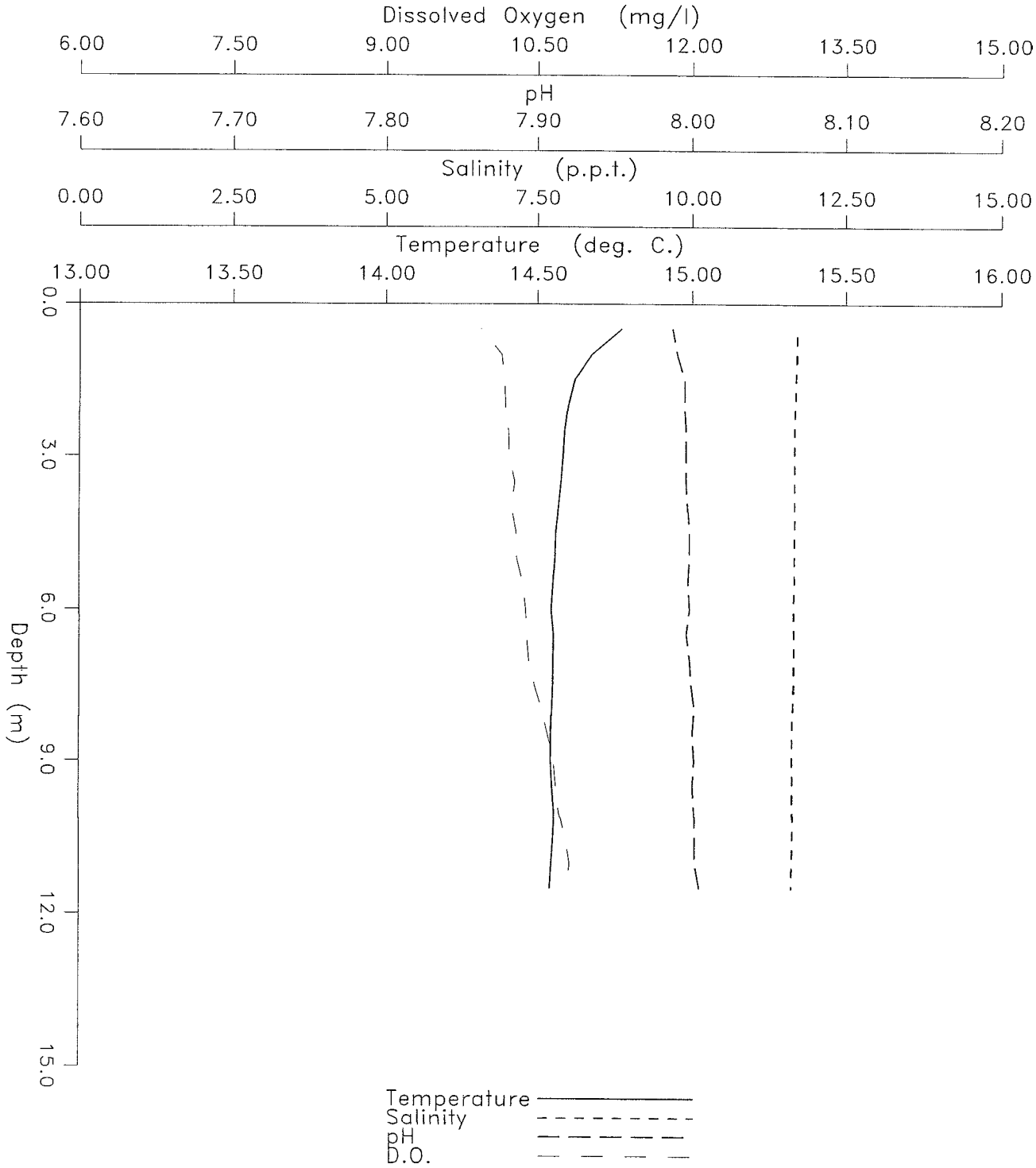
MOA HYDROGRAPHIC DATA

Station: C1-4 Date: 6/20/01 Time: 15:37



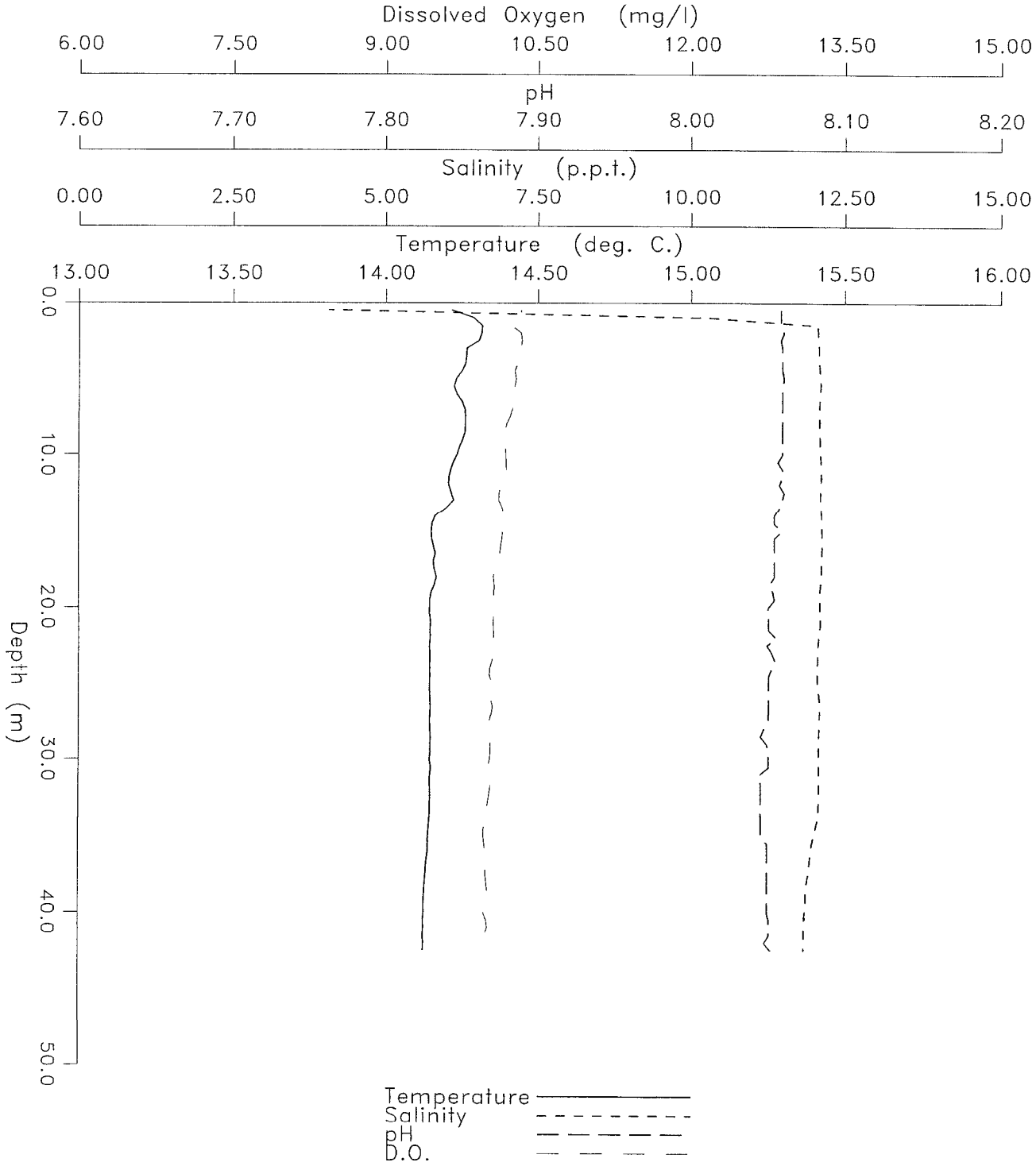
MOA HYDROGRAPHIC DATA

Station: C2-1 Date: 6/20/01 Time: 16:10



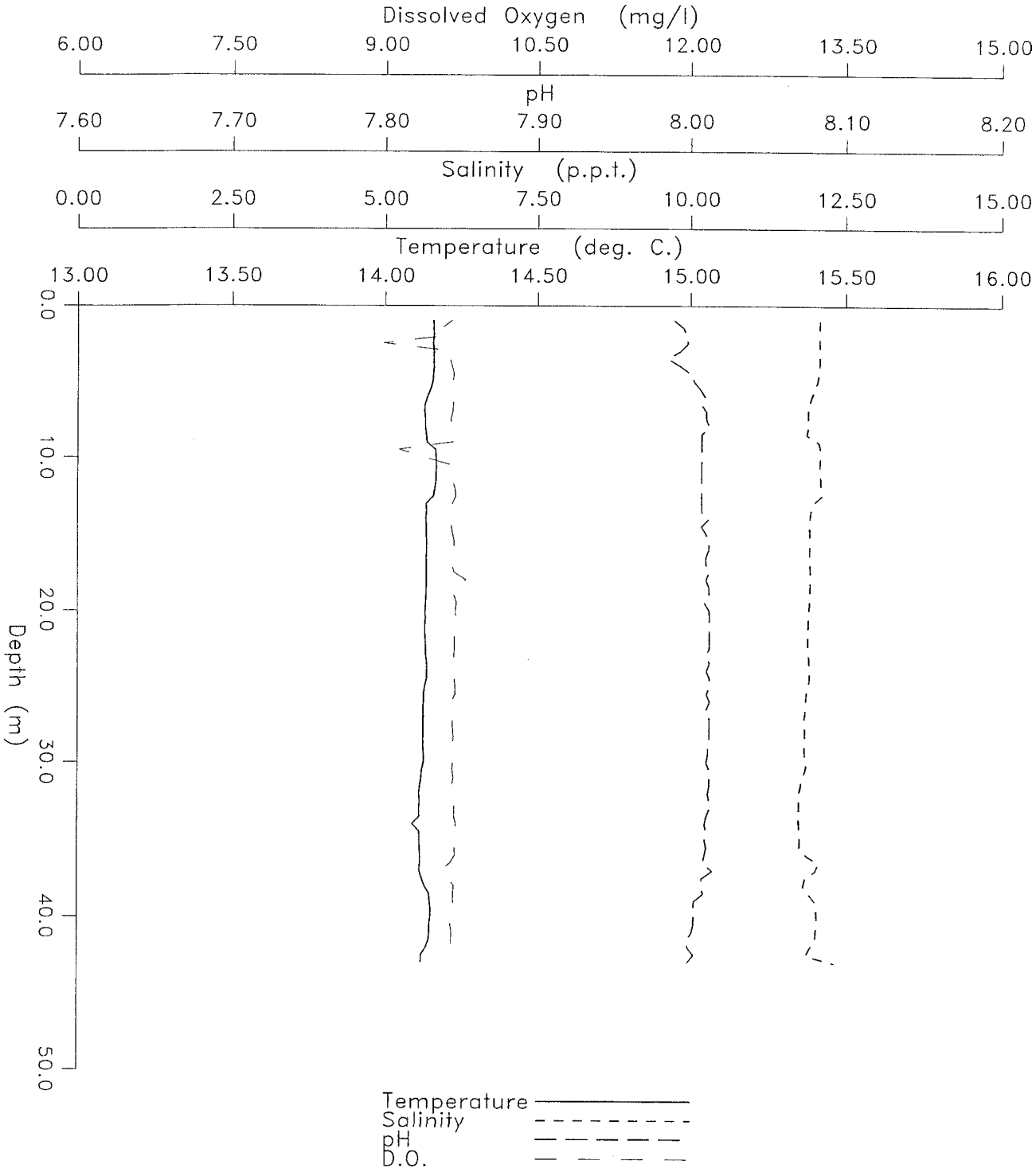
MOA HYDROGRAPHIC DATA

Station: C2-2(A) Date: 6/20/01 Time: 16:27



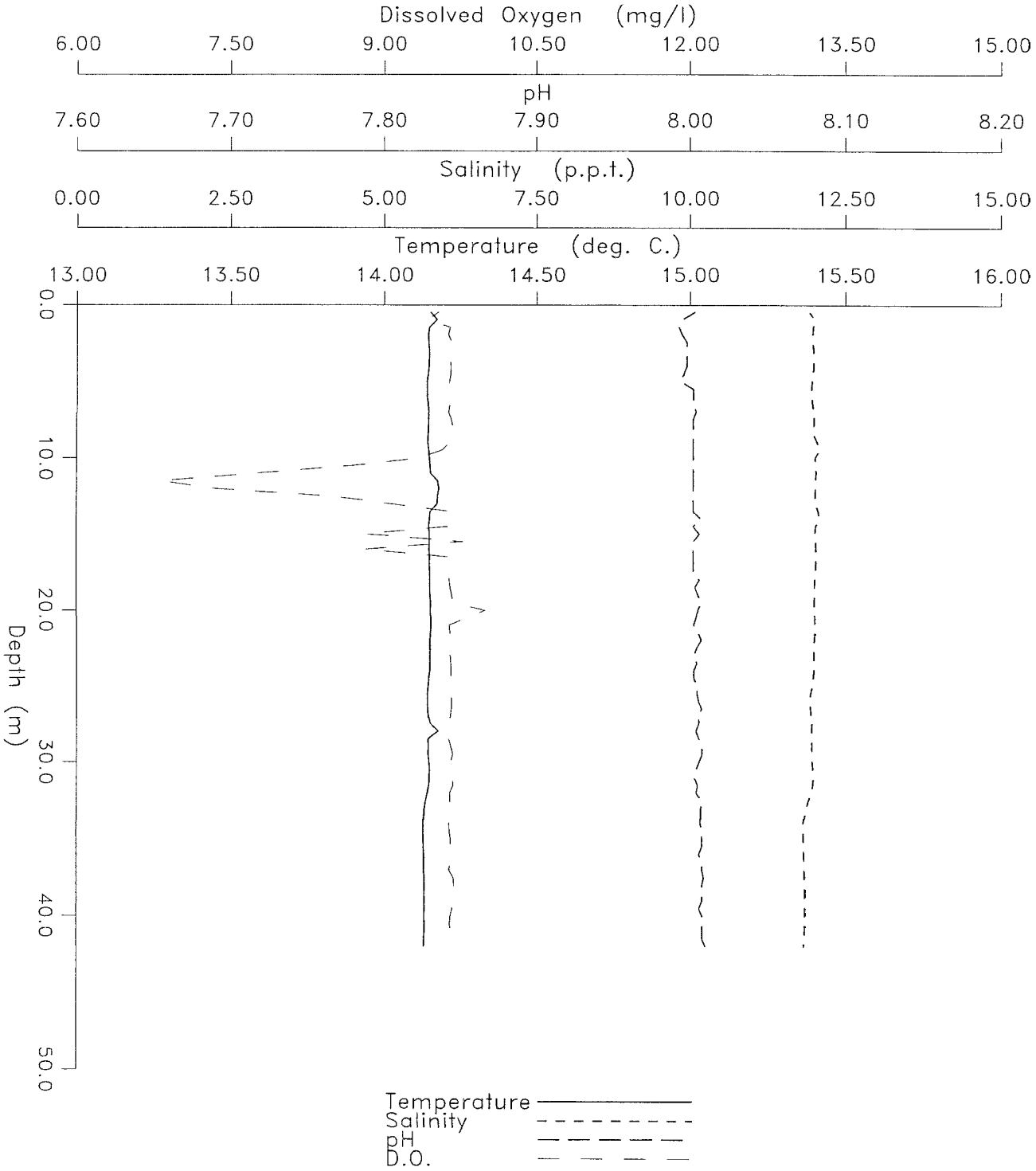
MOA HYDROGRAPHIC DATA

Station: C2-2(B) Date: 6/20/01 Time: 16:29



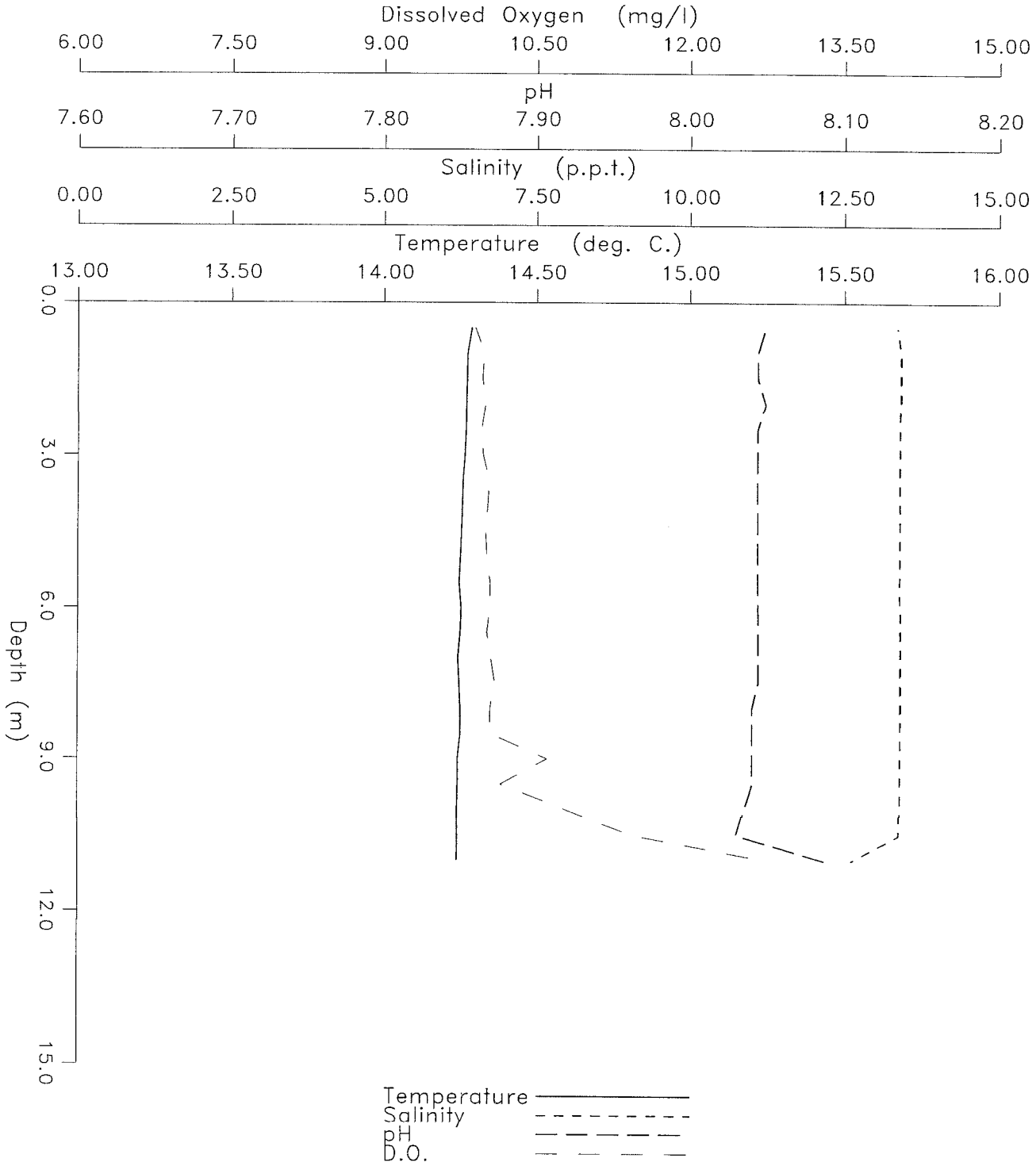
MOA HYDROGRAPHIC DATA

Station: C2-2(C) Date: 6/20/01 Time: 16:31



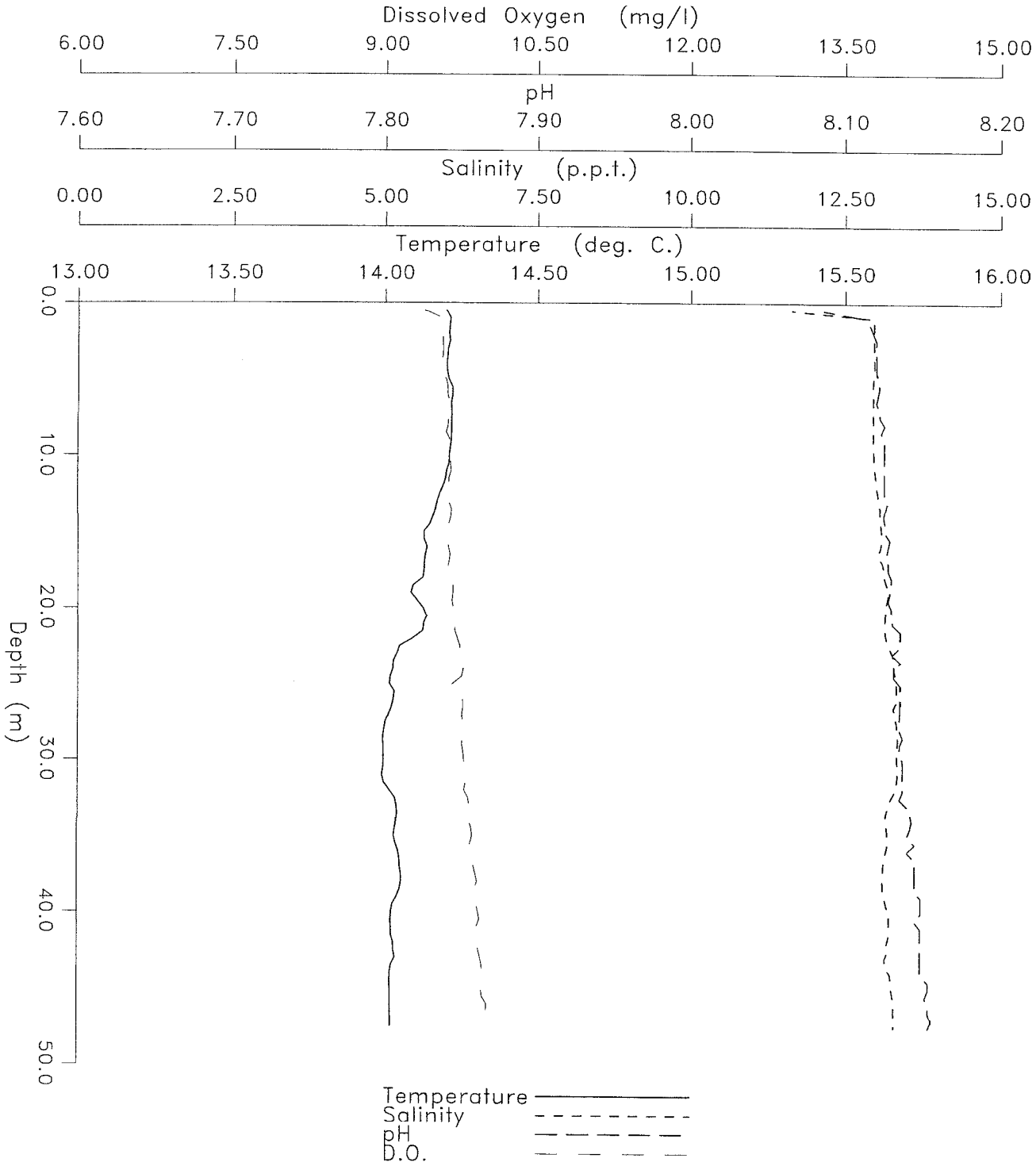
MOA HYDROGRAPHIC DATA

Station: C3-1 Date: 6/20/01 Time: 18:41



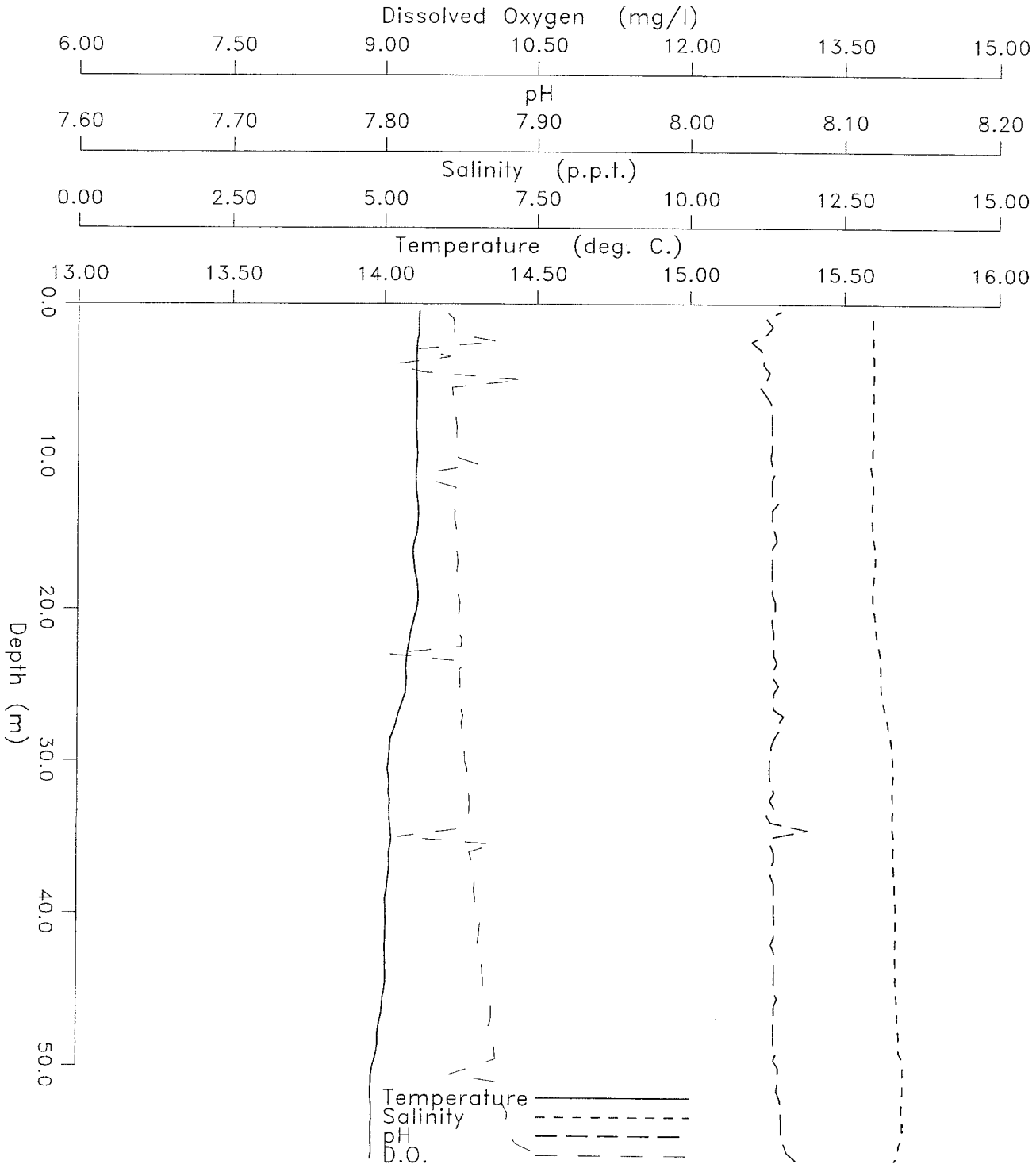
MOA HYDROGRAPHIC DATA

Station: C3-2 Date: 6/20/01 Time: 18:57



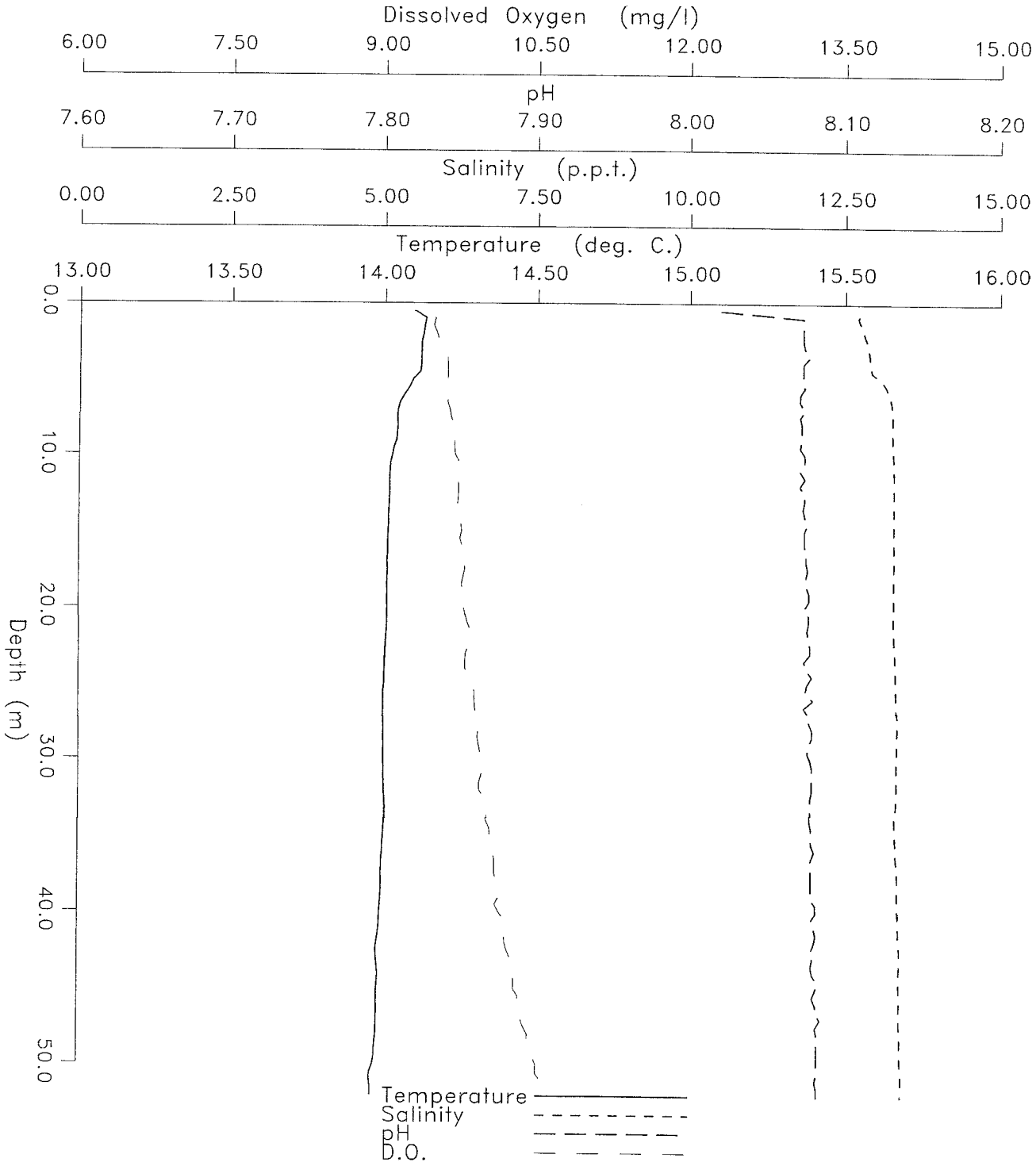
MOA HYDROGRAPHIC DATA

Station: C3-3 Date: 6/20/01 Time: 19:36



MOA HYDROGRAPHIC DATA

Station: C3-4 Date: 6/20/01 Time: 19:51



APPENDIX D

Receiving Water Quality Monitoring

D7 Kinnetic Laboratories, Inc.

Field Data Sheets

KINNETIC LABORATORIES INCORPORATED

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 1 of 36
STATION: E1-1	TIME: 8:18	
TIDE STAGE: Ebb	DEPTH: 50 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 14.5 m

LATITUDE (N): 61° 12' 20.52"	DGPS? Circle Y or (N)	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 01' 16.70"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: At outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 1	CSTD ON TIME: 18:22

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks/logs		
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR	↓		
RECREATION	↓		
WILDLIFE	↓		

WEATHER INFORMATION/COMMENTS: Overcast, light winds
Different GPS antenna out replaced at station E2-3.

Reviewed By: M Aaron Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: ~~8:32~~ 6/19/01	Page 2 of 36
STATION: E1-2	TIME: 8:32	
TIDE STAGE: Ebb	DEPTH: 42 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 14.5 m

LATITUDE (N): 61 12' 17.9	DGPS? Circle Y or (N)	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150 02' 00.1		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 2	CSTD ON TIME: 08:35

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	none		
SHEEN OR OIL	none		
ODOR	none		
RECREATION	none		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS: Overcast, light winds

Reviewed By: M Anan Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 3 of 36
STATION: E1-3	TIME: 8:53	
TIDE STAGE: Ebb	DEPTH: 30 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 3.5m

LATITUDE (N): 61° 11' 25.5"	DGPS? Circle Y or (N)	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 03' 14.2"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 3	CSTD ON TIME: 08:58

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: same

Reviewed By: M Anon Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 4 of 36
STATION: E1-4	TIME: 9:10	
TIDE STAGE: Ebb	DEPTH: 26 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 8.5

LATITUDE (N): 61° 11' 16.5"	DGPS? Circle Y or (N)	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 03' 17.5"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 4	CSTD ON TIME: 9:11

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Aaron Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 5 of 36
STATION: E2-1	TIME: 9:46	
TIDE STAGE: Ebb	DEPTH: 21 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 8.0 m

LATITUDE (N): 61° 12' 20.5"	DGPS? Circle Y or (N)	DGPS REFERENCE STN:
LONGITUDE (W): 150° 01' 18.0		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 5	CSTD ON TIME: 9:47

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	none		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Brown Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 6 of 36
STATION: E2-2	TIME: 9:54	
TIDE STAGE: Ebb	DEPTH: 30 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 12.5 m

LATITUDE (N): 61° 12' 19.8"	DGPS? Circle Y or (N)	DGPS REFERENCE STN:
LONGITUDE (W): 150° 02' 01.4"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 6	CSTD ON TIME: 9:55

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: overcast

Reviewed By: M Aronson Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 7 of 36
STATION: E2-3	TIME: 10:04	
TIDE STAGE: Ebb	DEPTH: 42 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 10.5

LATITUDE (N): 61° 12' 07.2	DGPS? Circle Y or (N)	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 02' 42.4		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 7	CSTD ON TIME: 10:05

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Tansey Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 8 of 36
STATION: E2-4	TIME: 10:46	
TIDE STAGE: Ebb	DEPTH: 22 (Feet) Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 7.0 m

LATITUDE (N): 61° 11' 36.0"	DGPS? Circle (Y) or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 04' 21.7		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 8	CSTD ON TIME: 10:46

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: overcast, 60°F, no wind

Reviewed By: M Anon Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 9 of 36
STATION: E3-1	TIME: 11:17	
TIDE STAGE: Ebb	DEPTH: 5.5 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 4.5 m

LATITUDE (N): 61° 12' 20.5"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 01' 16.7"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 9	CSTD ON TIME: 11:17

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	none		
WILDLIFE	↓		

WEATHER INFORMATION/COMMENTS: overcast, ~ 60-65°F
light breeze / no waves

Reviewed By: M Aaron Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 10 of 36
STATION: E3-2	TIME: 11:31	
TIDE STAGE: Ebb	DEPTH: 10 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 9.5 m

LATITUDE (N): 61° 12' 20.5	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai	
LONGITUDE (W): 150 02 02.2		COORDINATE SYSTEM: *Nad83*	

STATION LOCATION/DESCRIPTION: 650 m west of outfall on ZID boundary

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 10	CSTD ON TIME: 11:33

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	2 people on board at Pt. Woronzof		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS: overcast

Reviewed By: M Sowoie Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 11 of 36
STATION: E3-3	TIME: 11:54	
TIDE STAGE: Ebb	DEPTH: 9.3 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 9.5m

LATITUDE (N): 61° 12' 09.1"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 02' 32.1"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~ 1.2 Km west of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 11	CSTD ON TIME: 11:54

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Amari Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 12 of 36
STATION: E3-4	TIME: 12:13	
TIDE STAGE:	DEPTH: 8.5 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth 8.0 m

LATITUDE (N): 61° 12' 05.1"	DGPS? Circle Y or N	DGPS REFERENCE STN:
LONGITUDE (W): 150° 02' 48.8"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 12	CSTD ON TIME: 12:13

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Tarom Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 13 of 36
STATION: F1-1	TIME: 13:21	
TIDE STAGE: Flood	DEPTH: 4.0 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 4.0m

LATITUDE (N): 61° 12' 20.8"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 01' 17.8"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: At outfall, overtop of outfall boil at low slack water

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓	✓011	✓01	✓02	✓01	✓01	
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 13	CSTD ON TIME: 13:22

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	~6 people on beach		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Amon Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 14 of 36
STATION: F1-2	TIME: 13:45	
TIDE STAGE: Flood	DEPTH: 3.8 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 4.5m

LATITUDE (N): 61° 12' 24.8"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 00' 30.6"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~650 m east of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓	012/13 ✓✓	✓02	✓02	✓02	✓02	
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: Dups on 602 - volatiles

CSTD Seabird: 376	CAST NO.: 14	CSTD ON TIME: 13:50

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	people on beach		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS: Sunny, overcast conditions receded ~65°F

Reviewed By: M [signature] Date: 1/15/02

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KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 15 of 36
STATION: F1-3	TIME: 14:07	
TIDE STAGE: Flood	DEPTH: 3.8 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 3.5 m

LATITUDE (N): 61° 12' 17.8"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 59' 47.9"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: 1.3 km east of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓	014 ✓	✓ 03	✓ 03	✓ 03	✓ 03	
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 15	CSTD ON TIME:

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	small sticks from rivers		
FOAM (other than trace)	none		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Amon Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 16 of 36
STATION: F1-4	TIME: 14:40	
TIDE STAGE: Flood	DEPTH: 3.6 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 3.5

LATITUDE (N): 61° 12' 06.7"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 59' 01.5"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 16	CSTD ON TIME: 14:42

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Anson Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 17 of 36
STATION: F2-1	TIME: 1515	
TIDE STAGE: Flood	DEPTH: 5.5 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 8.0 m

LATITUDE (N): 61° 12' 20.8"	DGPS? Circle Y or N	DGPS REFERENCE STN:
LONGITUDE (W): 150° 01' 16.0"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: At outfall over boil

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 17	CSTD ON TIME: 15:16

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	people on beach		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Amin Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 18 of 36
STATION: F2-2	TIME: 1525	
TIDE STAGE: Flood	DEPTH: 10.0 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth= 10.5 m

LATITUDE (N): 61° 12' 20.8"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 01' 16.0"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: At ZID boundary ~650 m from outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 18	CSTD ON TIME: 1526

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	logs/sticks	river input	
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Sarain Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 19 of 36
STATION: F2-3	TIME: 1543	
TIDE STAGE: Flood	DEPTH: 19 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 10.5

LATITUDE (N): 61° 12' 37.1"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 59' 28.5"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~ 1.5 Km east of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 19	CSTD ON TIME: 1545

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: Light wind, sunny

Reviewed By: M Amen Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 20 of 36
STATION: F2-4	TIME: 1608	
TIDE STAGE: Flood	DEPTH: 10 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 10.0

LATITUDE (N): 61° 12' 25.9"	DGPS? Circle Y or N	DGPS REFERENCE STN:
LONGITUDE (W): 149° 59' 13.1"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 20	CSTD ON TIME: 1609

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	↓		
RECREATION	↓		
WILDLIFE	↓		

WEATHER INFORMATION/COMMENTS: partly cloudy,

Reviewed By: M Sorrie Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 21 of 36
STATION: F3-1	TIME: 16:57	
TIDE STAGE: Flood	DEPTH: 8.5 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth= 10.0

LATITUDE (N): 61° 12' 20.5"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kevin
LONGITUDE (W): 150° 01' 16.7		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: over outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 21	CSTD ON TIME: 1659

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL	↓		
ODOR	chlorine		
RECREATION	people on board		
WILDLIFE	none		

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Sorain Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 22 of 36
STATION: P3-2	TIME: (MAS) ~~1657~~ 1705	
TIDE STAGE: Flood	DEPTH: 13.5 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 15.5

LATITUDE (N): 61° 12' 35.2"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150° 00' 42.1		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~650 m east of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 22	CSTD ON TIME: (MAS) ~~1659~~ 1706

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: clear, few clouds, wind picking up w/ 5 knots

Reviewed By: M Anson Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 23 of 36
STATION: F3-3	TIME: 1714	
TIDE STAGE: Flood	DEPTH: 20.5 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 18.0 m

LATITUDE (N): 61° 12' 47.5	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 150 59' 53.1		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~1.5 km east of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 23	CSTD ON TIME: 1715

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	logs, sticks	rivers	
FOAM (other than trace)	none		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: In tide rip

Reviewed By: M Amme Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 24 of 36
STATION: F3-4	TIME: 1730	
TIDE STAGE: Flood	DEPTH: 50+ Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = ~~28.0~~ 45.0 m

LATITUDE (N): 61° 13' 04.3"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 58' 58.8"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~ 2-3 km east of outfall

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 24	CSTD ON TIME: 1731

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks/logs		
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: clear, few clouds
~5 knot NW wind

Reviewed By: M Brown Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 25 of 36
STATION: C1-1	TIME: 14:20	
TIDE STAGE: Flood	DEPTH: 5 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 4.5 m

LATITUDE (N): 61° 14' 03.6"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 59' 30.0"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: Directly between chlorination tower at Woronzof + Green Navi Marker on cliff

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓	✓015	✓04	✓04	✓04	✓04	
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 346	CAST NO.: 25	CSTD ON TIME: 1435

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks + logs	river output	in tide rips
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: clear, light wind ~2-3 knots

Reviewed By: M [signature] Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 26 of 36
STATION: C1-2	TIME: 1445	
TIDE STAGE: Flood	DEPTH: 4.6 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 3.0m

LATITUDE (N): 61° 14' 11.9"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 58' 22.1"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓	Ø16✓	05✓	05✓/06	✓05	05✓/06	
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: Dups on TSS & Cyanide, 602 blank
Trip Blank - Ø2Ø DI Blank C-Station-Ø19

CSTD Seabird: 376	CAST NO.: 26	CSTD ON TIME: 1446

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks		
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Aron Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 27 of 36
STATION: C1-3	TIME: 1510	
TIDE STAGE: Flood	DEPTH: 3.6 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 2.5 m

LATITUDE (N): 61° 14' 44.9"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 57' 23.2"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~ 1 km Northeast of Pt. MacKenzie

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓	✓017	06✓	07✓	06✓	07✓	
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 27	CSTD ON TIME: 1510

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)	↓		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Amin Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 28 of 36
STATION: Cl-4	TIME: 1537	
TIDE STAGE: Flood	DEPTH: 6.7 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 10.0 m

LATITUDE (N): 61° 14' 56.7"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 56' 19.1"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: ~ 1 km from Cam Pt. and 300-400 m from shore

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 28	CSTD ON TIME: 1536

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks in tide rips		
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Sarain Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 29 of 36
STATION: C2-1	TIME: 1610	
TIDE STAGE: Flood	DEPTH: 13.2 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 11.5 m

LATITUDE (N): 61° 14' 03.8"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 59' 33.8"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: At Pt. MacKenzie at Control Drop Pt.

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 29	CSTD ON TIME: 1611

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Amoin Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 30 of 36
STATION: C2-2	TIME: 1625	
TIDE STAGE: Flood	DEPTH: 16.5 Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 42.5 m

LATITUDE (N): 61° 14' 9.9"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 57' 49.7		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓						ϕ1
MID				✓	✓						ϕ2
BOTTOM				✓	✓						ϕ3

QC SAMPLES COLLECTED: Sampling Variability – 3 separate Niskins at surface, 3 CTD casts performed twice

CSTD Seabird: 376	CAST NO.: 30 + 31	CSTD ON TIME: 1627/1635

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Sarai Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 31 of 36
STATION: C2-3	TIME: 1708	
TIDE STAGE: Flood	DEPTH: 50+ Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = NA

LATITUDE (N): 61° 16' 16.1"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kena
LONGITUDE (W): 149° 53' 49.3"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: Not Working	CSTD ON TIME: —

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	none		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: CTD wouldn't turn on no data at this station.

Reviewed By: M Sorain Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20	Page 32 of 36
STATION: C2-4	TIME: 1725	
TIDE STAGE: Flood	DEPTH: 35 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = NA

LATITUDE (N): 61° 17' 37.0"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 53' 21.0"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird:	CAST NO.: No Cast	CSTD ON TIME: —

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks etc.		
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: CTD pump didn't appear to work

Reviewed By: M Tomson Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 33 of 36
STATION: C3-1	TIME: 1841	
TIDE STAGE: Flood	DEPTH: 11 Feet Meters Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 11.0 m

LATITUDE (N): 61° 14' 03.8"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 59' 33.8"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓✓✓	✓✓✓	✓✓	✓✓	✓✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: Lab variability check - triplicate from same bottle - DO trip from same Niskin

CSTD Seabird: 376	CAST NO.: 32	CSTD ON TIME: 1841

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	logs, sticks	- river	
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: Clear, few clouds

Reviewed By: M Amaio Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 34 of 36
STATION: C3-2	TIME: 1857	
TIDE STAGE: Flood	DEPTH: 30+ Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 47.5 m

LATITUDE (N): 61° 14' 06.5"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 57' 51.0"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: 1 Km NE of Pt. Mac.

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED:

CSTD Seabird: 376	CAST NO.: 33	CSTD ON TIME: ~~1858~~ 1920

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	logs + sticks		
FOAM (other than trace)	none		
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: CTD Didn't work 1st time, reset pump + recorded at a later time.

Reviewed By: M Tarrie Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 35 of 36
STATION: C3-3	TIME: 1936	
TIDE STAGE: Flood	DEPTH: 50+ Feet (Meters) Fathoms (Circle unit)	

NAVIGATIONAL INFORMATION CTD depth = 56.0 m

LATITUDE (N): 61° 15' 12.0"	DGPS? Circle (Y) or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 54' 15.5"		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION: Mid channel between Port of A and Port at Pt. Mac.

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						04
MID				✓	✓						05
BOTTOM				✓	✓						06

QC SAMPLES COLLECTED: Salinity QC surf, mid + bottom

CSTD Seabird: 376	CAST NO.: 34	CSTD ON TIME: 1937

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	sticks etc		
FOAM (other than trace)	none		
SHEEN OR OIL	↓		
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS:

Reviewed By: M Tarani Date: 1/15/02

KINNETIC LABORATORIES, INC.
HYDROGRAPHIC FIELD LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 36 of 36
STATION: C3-4	TIME: 1951	
TIDE STAGE: Flood	DEPTH: 50+ Feet Meters (Circle unit) Fathoms	

NAVIGATIONAL INFORMATION CTD depth = 52.0 m

LATITUDE (N): 61° 15' 42.2"	DGPS? Circle Y or N	DGPS REFERENCE STN: Kenai
LONGITUDE (W): 149° 54' 01.0		COORDINATE SYSTEM: *Nad83*

STATION LOCATION/DESCRIPTION:

SAMPLE COLLECTION INFORMATION (Record suffix of SAMPID for each sample collected.)

DEPTH	ANALYSIS TYPE										
	TRC	FECAL	COLOR	DO	TURB/ pH	EPA 602	EPA 610	TSS	METALS	CYANIDE	SAL (QC)
SURFACE	✓	✓	✓	✓	✓						
MID				✓	✓						
BOTTOM				✓	✓						

QC SAMPLES COLLECTED: none

CSTD Seabird: 376	CAST NO.: 35	CSTD ON TIME: 1958

STANDARD OBSERVATIONS

PARAMETER	TYPE	SOURCE	EXTENT OR NUMBER
FLOATING MATERIAL	logs + sticks		
FOAM (other than trace)			
SHEEN OR OIL			
ODOR			
RECREATION			
WILDLIFE			

WEATHER INFORMATION/COMMENTS: CTD switch not working properly, finally turned on - cast ~3 minutes after sampling.

Reviewed By: M [signature] Date: 1/15/02

KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 1 of 9
RELEASE POINT: outfall	NUMBER RELEASED: - 1	
DGPS REFERENCE STATION INFORMATION		
STATION: E1	COORDINATE SYSTEM: *Nad83* Kenai	
LATITUDE (N): USCG Kenai	LONGITUDE (W):	

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
8:18	1	61° 12' 20.52"	150° 01' 16.70"	N	outfall
8:32		12' 17.9	02' 00.1"	|	2 ID Boundary
8:45		61° 11' 39.9"	150 03' 12.4"	|	
8:53		11' 25.5"	03' 14.2"	|	E1-3
9:03		11' 20.5"	03' 16.0"	|	
9:10		11' 16.5	03 17.5	|	E1-4
9:22		11' 05.3	03 30.4	↓	pulled drogue

Reviewed By: Mark A. Smith Date: 6/19/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 2 of 9
RELEASE POINT: outfall	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION	
STATION: E2	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): USCG Kenai	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
9:46	1	61° 12' 20.5	150° 01' 18.0	N	outfall/E2-1
9:54		61° 12 19.8	02 01.4	|	E2-2
9:58		12 15.0	02 24.7	|	
10:04		12 07.2	02 42.4	|	E2-3
10:11		11 59.0	03 00.1	↓	
10:21		11 53.6	03 38.8	N	
10:31		11 45.5	04 03.0	Y	
10:46		11 36.0	04 21.7	Y	E2-4
11:01		11 14.6	05 08.4	Y	pulled drogue

Reviewed By: Mark Amon Date: 6/19/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 3 of 9
RELEASE POINT: outfall	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION

STATION: E3	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): Kenai USCG	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
11:17	1	61° 12' 20.5"	150° 01' 16.7"	Y	outfall E3-1
11:27		12 19.0	01 53.1	Y	
11:31		12 16.3	02 02.2	Y	E3-2
~~11:45~~		~~12 20.5~~	~~01~~		
11:45		12 12.0	02 25.0	Y	
11:54		12 09.1	02 32.1	Y	E3-3
12:13		12 05.1	02 48.8	Y	E3-4
12:30		11 58.8	03 39.1	Y	picked up drogue

Reviewed By: [signature] Date: 6/19/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

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KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 4 of 9
RELEASE POINT: Outfall	NUMBER RELEASED: 1	
DGPS REFERENCE STATION INFORMATION		
STATION: F1	COORDINATE SYSTEM: *Nad83*	
LATITUDE (N): Kenai USCG	LONGITUDE (W):	

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
13:21		61° 12' 20.8"	150° 01' 17.8"	Y	F1-1, outfall
13:45		61 12' 24.8"	150° 00' 30.6	Y	F1-2 ZID Boundary
13:58		12' 21.7"	00' 06.0	Y	
14:07		12' 17.8"	149 59' 47.9	Y	F1-3
14:19		12' 12.7"	59' 21.5	Y	
14:26		12' 10.5"	59' 12.7	Y	
14:30		12 09.6	59 08.6	Y	
14:40		12 06.7	59 01.5	Y	F1-4
14:50		12 07.3	58 58.1	Y	- pulled drogue

Reviewed By: [signature] Date: 6/19/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

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KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 5 of 9
RELEASE POINT: Outfall	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION

STATION: F2	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): Kenai USCG	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
1515	1	61° 12' 20.8"	150° 01' 16.0"		Outfall F2-1
1521		12' 29.5	00' 48.6"		
1525		12' 32.8	00' 39.0"		ZID F2-2
1529		12' 37.3"	00' 18.0"		
1539		12 39.1	149° 59' 40.0"		
1543		12 37.1	59' 28.5		F2-3
1552		12 31.8	59' 15.2		
1608		12 25.9	59 13.1		F2-4
1622		12 27.7	59 20.7		
1635		61° 12 35.2	149° 59 14.5		picked up drogue

Reviewed By: Mary A. Sanders Date: 6/19/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/19/01	Page 6 of 9
RELEASE POINT: Outfall	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION

STATION: F3	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): Kenai USCG	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
1657	1	61° 12' 20.5	150 01 16.7	Y	outfall F3-1
1705		61° 12' 35.2	150° 00' 42.1"	Y	ZID F3-2
1711		12 43.9	00 09.9	Y	
1714		12 47.5	149 59 53.1	Y	F3-3
1730		13 04.3	149 58' 58.8	Y	F3-4
1744		13 19.6	58 09.6	Y	
1754		13 25.8	57 30.4		
1804		13 39.8	56 30.0		
1814		13 51.0	55 50.6		
1824		14 04.9	55 15.8		
1834		14 24.9	54 35.7		
1846		14 49.6	54 14.2		
1854		15 03.1	54 07.6		

Reviewed By: Mark A. Brown Date: 6/19/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 7 of 9
RELEASE POINT: Control - C1	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION	
STATION: C1 -	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): Kenai USCG	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
1420	1	61° 14' 03.6"	149° 59' 30.0"	Y	Control Drop C1-1
1435		14' 02.2"	58' 54.5	Y	
~~1445~~		14' 11.9"	58' 22.1"	Y	C1-2
1510		14' 44.9"	57' ~~33.2~~	Y	C1-3 23.2
1525		14' 55.5"	56' 44.3"	Y	
1533		14' 57.3"	56' 27.1	Y	
1537		14' 56.7"	56' 19.1	Y	C1-4
1545		15' 05.9"	55' 36.0	Y	
1550		15' 21.4"	55' 20.0	Y	
1555		15' 29.0"	55' 14.9	Y	pulled drogue

Reviewed By: Mark A. Savoie Date: 6/20/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

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KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 8 of 9
RELEASE POINT: Control C2	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION

STATION: C2	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): USCG Kenai	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
1610	1	61° 14' 03.8	149° 59' 33.8		C2-1
1617		14 00.0	58' 46.7		
1619		14' 00.6	58 36.7		
1625		14' 09.9	57 49.7		C2-2
1638		14' 35.1	56 22.7		
1708		16' 16.1	53 49.3		C2-3
1717		17' 00.3"	53 35.2		
1725		17 37.0	53 21.0		C2-4
1738		18 36.6	52 50.1		picked drogue

Reviewed By: Mark A Sarsie Date: 6/20/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

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KINNETIC LABORATORIES, INC.
DROGUE TRACKING LOG

STUDY: *Pt. Woronzof NPDES*	DATE: 6/20/01	Page 9 of 9
RELEASE POINT: C3	NUMBER RELEASED: 1	

DGPS REFERENCE STATION INFORMATION	
STATION: Control - C3	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): USCG - Kenai	LONGITUDE (W):

TIME	DROGUE NO.	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
1841		61° 14' 03.8"	149° 59' 33.8"		At Control C3-1
1851		14' 00.7"	58 35.7		
1857		14 06.5"	57 51.0		C3-2
1912		14' 27.4	56 17.7		
1936		15 12.0	54 15.5		C3-3
1947		15 32.9	54 04.4		
1951		15' 42.2	54 01.0		C3-4
2006		15' 58.8	53 59.4		pick-up drogue

Reviewed By: Mark A. Amoie Date: 6/20/01

Record Y or N for differential fix in DGPS column.
Minus sign (-) indicates end of observation set.

KINNETIC LABORATORIES, INC.
FECAL COLIFORM COLLECTION LOG

STUDY: *Pt. Woronzof NPDES 2001*	DATE: 6-19-01	Page 1 of 1
TIDE STAGE: Flood		

DGPS REFERENCE STATION INFORMATION

STATION: N/A	COORDINATE SYSTEM: *Nad83*
LATITUDE (N): N/A	LONGITUDE (W): N/A

STATION	REP	TIME	SAMPLE ID MOA01FEC___	LATITUDE (N)	LONGITUDE (W)	DGPS*	COMMENTS
IT-C	1	18:05	057	61° 14 33.5	150° 01 19.7	N	
IT-C	2	18:05	058	In front of	2 Duck shacks	onshore.	
IT-7	1	18:33	055	61° 11 17.0	150° 01 54.3	N	
IT-7	2	18:33	056	↓	↓	N	
IT-6	1	18:37	053	61° 11 56.6	150° 01 32.5	N	
IT-6	2	18:37	054	↓	↓	N	
IT-5	1	18:41	051	61° 12 10.~~4~~ 2	150° 01 18.2	N	
IT-5	2	18:41	052	↓	↓	N	
IT-4	1	18:44	049	61° 12 14.5	150° 01 04.8	N	
IT-4	2	18:44	050	↓	↓	N	
IT-3	1	18:48	047	61° 12 11.3	150° 00 27.6	N	
IT-3	2	18:48	048	↓	↓	N	
IT-2	1	18:50	045	61° 12 04.7	149° 59 58.7	N	
IT-2	2	18:50	046	↓	↓	N	
IT-1	1	18:54	043	61° 12 02.0	149° 59 05.9	N	
IT-1	2	18:54	044	↓	↓	N	

Reviewed By: Mark [illegible] Date: 6/19/01

Record Y or N for differential fix in DGPS column.

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