FAHISHOLTZ

Environmental
Engineering &
Consulting, Inc.

April 17, 1991

John, For your information
Robert

RECEIVED
APR 26 1991
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Mr. Jim Trunzo
Executive Vice President
Silicon Metaltech, Inc.
100 4th Street
Rock Island, Washington 98850

Dear Jim:

Results of lab testing of fume waste via the TCLP method were recently received. I have attached a copy of revised Table C from the recent excerpts report to which these data have been added. The data has been graphed also for comparison with the prior EP Toxicity data and with the regulatory limits, see attached.

The results show no samples exceed the TCLP regulatory limits. We did not test for eleven volatile organics nor eight pesticides because it would be so improbable that these could be present, considering the source of the fume and the high temperatures to which it is exposed.

The 1991 TCLP lead results were substantially lower than the previous EP Tox results, which allayed what could have been a major concern. Generally other elements/metals in the 1991 sample results were similar to or lower than the 1988 EP Tox results. None of the semivolatile organics were detected above the method reporting limit. Enclosed also is a copy of the lab report.

It is recommended these results be forwarded to the WDOE along with other data not provided in the excerpts report. Please do not hesitate to call me if there are any questions.

Sincerely,

Pat

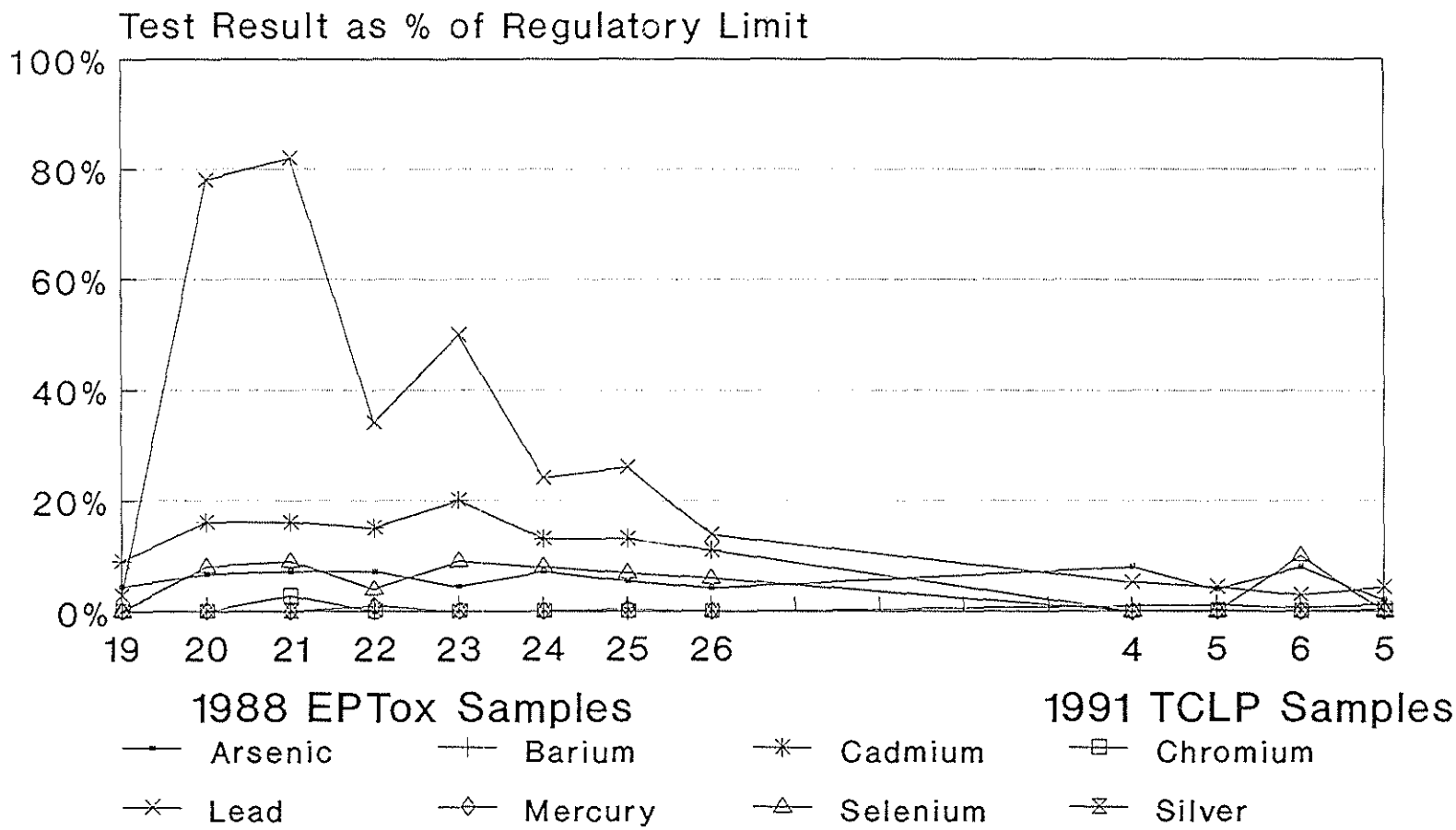
Patrick H. Wicks, PE, CHMM
President

Enclosures

cc: Robert L. Miller

19125 Northcreek Parkway, Suite 111 Bothell, WA 98011-8002 206.485.3437 FAX 206.483.1058

Fume Waste TCLP/EPTox
SMI 1988 & 1991 Samples



C:\hgdata\39200tcl.cht

TABLE C (updated)
FUME WASTE ANALYTIC DATA SUMMARY
Constituent Concentration, parts per million (ppm, mg/l, mg/kg)

Sample Location	NWFL (1)	FWL (2)	FWL	FWDA (3)	FWDA	FWDA	FWL	FWL	Fume (4)	Fume (4)			Pond 1,2,8	Pond 4	Pond 6	Pond 4	
Sample Identification	SMTFU-9	Composite SMTFU-8&10	Composite MTFU-11&12	Composite SMTFU-6&7	Comp: SMTFU-2&3	Comp: SMTFU-4&5	Comp: MTFU-13&14	Comp: MTFU-15&16	Discharge SMT SLU-1	Discharge SMT SLU-1 duplicate			Fume Composite	Fume	Fume Slurry	Fume duplicate	
Sample Date	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	05-Oct 1988	05-Oct 1988			13-Mar 1991	13-Mar 1991	13-Mar 1991	13-Mar 1991	
Sample Type	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste			Dried Fume	Dried Fume	Fume Slurry	Dried Fume	
Sample Depth, Ft	surface	0-3.0	0-3.0	0-3.0	0-3.0	0-3.5	0-3.0	0-3.0			EP Toxicity Maximum Allowable Concentr.	TCLP Maximum Allowable Concentr.	0-0.5	0-0.5	surface	0-0.5	
Laboratory	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test			CAS	CAS	CAS	CAS	
Report Number or Date	36-88	36-88	36-88	36-88	36-88	36-88	36-88	36-88	36-88	36-88			K911367	K911367	K911367	K911367	
Laboratory Sample Number	820019	820020	820021	820022	820023	820024	820025	820026	820018	d820018			K1367-4	K1367-5	K1367-6	K1367-5	
TCLP or E P TOXICITY	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX					TCLP	TCLP	TCLP	TCLP	
Elements/Metals																	
Arsenic	0.22	0.33	0.36	0.36	0.22	0.36	0.27	0.21			5	5	0.4	0.2	0.4	0.1	ALL SAMPLES < TCLP/EPT
Barium	<1	<1	<1	<1	<1	<1	<1	<1			100	100	1	1.2	0.6	1.3	ALL SAMPLES < TCLP/EPT
Cadmium	0.09	0.16	0.16	0.15	0.2	0.13	0.13	0.11			1	1	<0.01	<0.01	<0.01	<0.01	ALL SAMPLES < TCLP/EPT
Chromium	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05			5	5	<0.01	0.01	<0.01	0.02	ALL SAMPLES < TCLP/EPT
Copper	<0.05	1.4	0.82	0.39	0.42	0.35	0.34	0.25			-	-					
Lead	0.14	3.9	4.1	1.7	2.5	1.2	1.3	0.69			5	5	0.26	0.22	0.15	0.22	ALL SAMPLES < TCLP/EPT
Mercury	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.001	<0.001			0.2	0.2	<0.001	<0.001	<0.001	<0.001	ALL SAMPLES < TCLP/EPT
Nickel	0.11	0.16	0.07	0.07	0.07	0.16	<0.05	<0.05			-	-					
Selenium	<0.05	0.08	0.09	0.04	0.09	0.08	0.07	0.06			1	1	<0.1	<0.1	0.1	<0.1	ALL SAMPLES < TCLP/EPT
Silver	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			5	5	<0.01	<0.01	<0.01	<0.01	ALL SAMPLES < TCLP/EPT
Zinc	0.89	16	11	6	9	3	4	2			-	-					
Semivolatile Organics																	
2,4,5-Trichlorophenol												400	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
2,4,6-Trichlorophenol												2	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
2,4-Dinitrotoluene												0.13	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Cresol, total												200	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Cresol, m,p-													<0.05	<0.05	<0.05		
Cresol, m-												200					
Cresol, o-												200	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Cresol, p-												200					
Hexachrolobenzene												0.13	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Hexachrolobutadiene												0.5	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Hexachroloethane												3	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Nitrobenzene												2	<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Pentachlorophenol												100	<0.2	<0.2	<0.2		ALL SAMPLES < TCLP/EPT
Pyridine												5	<0.2	<0.2	<0.2		ALL SAMPLES < TCLP/EPT

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APR 26 1991
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

FOOTNOTES:

(1) New Waste Fume Lagoon - NWFL

(2) Fume Waste Lagoon - FWL

(3) Fume Waste Disposal Area-FWDA

(4) Sample of slurry as discharged into lagoon. Results are reported as liquid in mg/liter. All other fume samples reported as mg/kg, dry weight basis.

Columbia Analytical Services INC.

April 9, 1991

Pat Wicks
Environmental Engineering & Consulting, Inc.
19125 Northcreek Parkway
Suite 120
Bothell, WA 98011-8002

Re: Rock Island Wa./Project #39200

Dear Pat:

Enclosed are the results of the soil and water samples submitted to our lab on March 14, 1991. Preliminary results were transmitted via facsimile on April 4, 1991. For your reference, our service request number for this work is K911367.

All analyses were performed in accordance with the laboratory's quality assurance program.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Abbie Spielman
Project Chemist

AS/das

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Engineering & Consulting, Inc.	**Date Received:**	03/14/91
Submitted By:	Pat Wicks	**Date TCLP Performed:**	03/25/91
Project:	Rock Island Wa./#39200	**Date Analyzed:**	03/26/91
Sample Matrix:	Soil	**Work Order #:**	K911367

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
mg/L (ppm) in TCLP Extract

			Sample Name:	Pond #1,2,8 Comp	Pond #4
			Lab Code:	K1367-4	K1367-5
Analytes	**Methods**	**MRL**	**Regulatory Limit***		
Arsenic	3010/6010	0.1	5.0	0.4	0.2
Barium	3010/6010	0.1	100	1.0	1.2
Cadmium	3010/6010	0.01	1.0	ND	ND
Chromium	3010/6010	0.01	5.0	ND	0.01
Lead	3010/6010	0.05	5.0	0.26	0.22
Mercury	7470	0.001	0.2	ND	ND
Selenium	3010/6010	0.1	1.0	ND	ND
Silver	3010/6010	0.01	5.0	ND	ND

MRL Method Reporting Limit
* From 40 CFR Part 261, et. al. and *Federal Register*, March 29, 1990 and June 29, 1990
ND None Detected at or above the method reporting limit

Approved by Abi Apelman Date 4/11/91

00001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Engineering & Consulting, Inc.	Date Received:	03/14/91
Submitted By:	Pat Wicks	Date TCLP Performed:	03/25/91
Project:	Rock Island Wa./#39200	Date Analyzed:	03/26/91
Sample Matrix:	Water	Work Order #:	K911367

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
mg/L (ppm) in TCLP Extract

			Sample Name:	Pond #6	Method Blank
			Lab Code:	K1367-6	K1367-MB
Analytes	Methods	MRL	Regulatory Limit*		
Arsenic	3010/6010	0.1	5.0	0.4	ND
Barium	3010/6010	0.1	100	0.6	ND
Cadmium	3010/6010	0.01	1.0	ND	ND
Chromium	3010/6010	0.01	5.0	ND	ND
Lead	3010/6010	0.05	5.0	0.15	ND
Mercury	7470	0.001	0.2	ND	ND
Selenium	3010/6010	0.1	1.0	0.1	ND
Silver	3010/6010	0.01	5.0	ND	ND

MRL Method Reporting Limit
* From 40 CFR Part 261, et. al. and *Federal Register*, March 29, 1990 and June 29, 1990
ND None Detected at or above the method reporting limit

Approved by Abhi Apsellmon Date 4/11/91

00002

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Engineering & Consulting, Inc.	Date Received:	03/14/91
Submitted By:	Pat Wicks	Date TCLP Performed:	03/25/91
Project:	Rock Island Wa./#39200	Date Extracted:	03/28/91
Sample Matrix:	Soil	Date Analyzed:	03/29/91
		Work Order #:	K911367

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Semivolatile Organic Compounds
mg/L (ppm) in TCLP Extract

Sample Name:				Pond #1,2,8 Comp	Pond #4
Lab Code:				K1367-4	K1367-5
Analytes	Methods	MRL	Regulatory Limit*		
Hexachloroethane	3510/8270	0.05	3	ND	ND
Nitrobenzene	3510/8270	0.05	2	ND	ND
Hexachlorobutadiene	3510/8270	0.05	0.5	ND	ND
2,4-Dinitrotoluene	3510/8270	0.05	0.13	ND	ND
Hexachlorobenzene	3510/8270	0.05	0.13	ND	ND
2,4,6-Trichlorophenol	3510/8270	0.05	2	ND	ND
2,4,5-Trichlorophenol	3510/8270	0.05	400	ND	ND
Pentachlorophenol	3510/8270	0.2	100	ND	ND
Pyridine	3510/8270	0.2	5	ND	ND
o-Cresol	3510/8270	0.05	200	ND	ND
m,p-Cresols	3510/8270	0.05	200	ND	ND
Total Cresols	3510/8270	0.05	200	ND	ND

MRL Method Reporting Limit
* From 40 CFR Part 261, et. al. and *Federal Register*, March 29, 1990 and June 29, 1990
ND None Detected at or above the method reporting limit

Approved by Abie Apillon Date 4/1/91

00003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Environmental Engineering & Consulting, Inc.	Date Received:	03/14/91
Submitted By:	Pat Wicks	Date TCLP Performed:	03/25/91
Project:	Rock Island Wa./#39200	Date Extracted:	03/28/91
Sample Matrix:	Water	Date Analyzed:	03/29/91
		Work Order #:	K911367

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Semivolatile Organic Compounds
mg/L (ppm) in TCLP Extract

Sample Name:				Pond #6	Method Blank
Lab Code:				K1367-6	K1367-MB
Analytes	Methods	MRL	Regulatory Limit*		
Hexachloroethane	3510/8270	0.05	3	ND	ND
Nitrobenzene	3510/8270	0.05	2	ND	ND
Hexachlorobutadiene	3510/8270	0.05	0.5	ND	ND
2,4-Dinitrotoluene	3510/8270	0.05	0.13	ND	ND
Hexachlorobenzene	3510/8270	0.05	0.13	ND	ND
2,4,6-Trichlorophenol	3510/8270	0.05	2	ND	ND
2,4,5-Trichlorophenol	3510/8270	0.05	400	ND	ND
Pentachlorophenol	3510/8270	0.2	100	ND	ND
Pyridine	3510/8270	0.2	5	ND	ND
o-Cresol	3510/8270	0.05	200	ND	ND
m,p-Cresols	3510/8270	0.05	200	ND	ND
Total Cresols	3510/8270	0.05	200	ND	ND

MRL Method Reporting Limit
* From 40 CFR Part 261, et. al. and *Federal Register*, March 29, 1990 and June 29, 1990
ND None Detected at or above the method reporting limit

Approved by Abi Apelman Date 4/11/91

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APPENDIX A

LABORATORY QC RESULTS

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Environmental Engineering & Consulting, Inc.	Date Received:	03/14/91
Submitted By:	Pat Wicks	Date TCLP Performed:	03/25/91
Project:	Rock Island Wa./#39200	Date Analyzed:	03/26/92
Sample Matrix:	Soil	Work Order #:	K911367

QA/QC Report
Duplicate Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
mg/L (ppm) in TCLP Extract

Sample Name: Pond #4
Lab Code: K1367-5

Analytes	Methods	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Arsenic	3010/6010	0.1	0.2	0.1	0.2	50
Barium	3010/6010	0.1	1.2	1.3	1.2	8
Cadmium	3010/6010	0.01	ND	ND	ND	--
Chromium	3010/6010	0.01	0.01	0.02	0.02	50
Lead	3010/6010	0.05	0.22	0.22	0.22	<1
Mercury	7470	0.001	ND	ND	ND	--
Selenium	3010/6010	0.1	ND	ND	ND	--
Silver	3010/6010	0.01	ND	ND	ND	--

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Abbie Spielman Date 4/11/92

00006

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COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Environmental Engineering & Consulting, Inc.	**Date Received:**	03/14/91
Submitted By:	Pat Wicks	**Date TCLP Performed:**	03/25/91
Project:	Rock Island Wa./#39200	**Date Analyzed:**	03/26/91
Sample Matrix:	Soil	**Work Order #:**	K911367

QA/QC Report
Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
mg/L (ppm) in TCLP Extract

Sample Name: Pond #4
Lab Code: K1367-5

Analytes	Methods	Spike Level	MRL	Sample Result	Spiked Sample Result	Percent Recovery
Arsenic	3010/6010	5.0	0.1	0.2	5.6	108
Barium	3010/6010	5.0	0.1	1.2	6.8	112
Cadmium	3010/6010	1.0	0.01	ND	1.03	103
Chromium	3010/6010	5.0	0.01	0.01	5.31	106
Lead	3010/6010	5.0	0.05	0.22	5.48	106
Mercury	7470	0.01	0.001	ND	0.010	100
Selenium	3010/6010	1.0	0.1	ND	1.1	110
Silver	3010/6010	1.0	0.01	ND	1.07	107

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Abhi Shrellur Date 4/11/91

00007

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Environmental Engineering & Consulting, Inc.	Date Received:	03/14/91
Submitted By:	Pat Wicks	Date TCLP Performed:	03/25/91
Project:	Rock Island Wa./#39200	Date Extracted:	03/28/91
Sample Matrix:	Soil/Water	Date Analyzed:	03/29/91
		Work Order #:	K911367

QA/QC Report
Surrogate Recovery Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Semivolatile Organic Compounds
(EPA Methods 3510/8270)
in TCLP Extract

Percent Recovery

Sample Name: / Lab Code:	Pond #1,2,8 Comp K1367-4	Pond #4 K1367-5	Pond #6 K1367-6	EPA Percent Recovery Acceptance Criteria
Analytes				
2-Fluorophenol	63.6	64.3	58.4	21-100
Phenol-D_8	60.8	64.4	56.1	10-94
2,4,6-Tribromophenol	85.4	90.7	87.1	10-123
Nitrobenzene-D_5	66.7	71.7	61.1	35-114
2-Fluorobiphenyl	66.5	74.2	63.9	43-116
Terphenyl-D_{14}	111	101	110	33-141

Approved by Abbie Spielman Date 4/11/91

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COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Environmental Engineering & Consulting, Inc.	**Date Received:**	03/14/91
Submitted By:	Pat Wicks	**Date TCLP Performed:**	03/25/91
Project:	Rock Island Wa./#39200	**Date Extracted:**	03/28/91
Sample Matrix:	Soil	**Date Analyzed:**	03/29/91
		Work Order #:	K911367

QA/QC Report
Surrogate Recovery Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Semivolatile Organic Compounds
(EPA Methods 3510/8270)
in TCLP Extract

P e r c e n t R e c o v e r y

Sample Name: Lab Code:	Method Blank K1367-MB	EPA Percent Recovery Acceptance Criteria
Analytes		
2-Fluorophenol	72.0	21-100
Phenol-D_6	66.2	10-94
2,4,6-Tribromophenol	87.4	10-123
Nitrobenzene-D_5	76.8	35-114
2-Fluorobiphenyl	72.0	43-116
Terphenyl-D_{14}	99.5	33-141

Approved by Abi Appelman Date 4/11/91

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APPENDIX B

CHAIN OF CUSTODY INFORMATION

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-4068

ENVIRONMENTAL ENGINEERING & CONSULTING, INC.
19125 Northcreek Parkway, Suite 120
Bothell, Washington 98011-8002
(206) 485-3437 FAX (206) 483-1058

CHAIN OF CUSTODY RECORD

Sampled by: Tom Clymer
Date: 3-13-91

Project #: 39200
Location: Rock Island Wa.

Sample Number	Date/Time Sampled	Type of Sample	# of Containers	Lab Sample #	Analyses Required and Comments
Pond #1	3-13-91	FeSi/Si Solid Fume	1		
Pond #2	3-13-91	FeSi/Si Solid Fume	1		
Pond #4	3-13-91	FeSi/Si Solid Fume	1		
Pond #6	3-13-91	Liquid Si Fume	2		
Pond #8	3-13-91	Solid FeSi Fume	1		

Relinquished by: Tom Clymer
Signature
Organization: Silicon MetalTech Inc.
Date: 3-13-91 Time: 1:00 Pm
Received by: [illegible]
Signature
Organization: CAS 3/14/91 830

Relinquished by: _____
Signature
Organization: _____
Date: _____ Time: _____
Received by: _____
Signature
Organization: _____

Relinquished by: _____
Signature
Organization: _____
Date: _____ Time: _____
Received by: _____
Signature
Organization: _____

Additional Comments:

Laboratory Please Note: Results are to be reported as detected values or as less than detected values with detection limit; do not use U, J, B, K, M or similar data reporting qualifiers.

16-Jul-90 c:\tools\coc.wr1

Environmental Engineering & Consulting, Inc.

INSTRUCTIONS FOR LABORATORY ANALYSIS

Date: 3/11/91

Project Number 39200
Please show this Project no. on invoices, charge slips and statements

Test 2 samples: one from pond 4 and one composite of ponds 1, 2 and 8

Turnaround Needed:
- Normal [X]
- One week [ ]
- Other [ ] _____

Compositing: [X] Yes [ ] No

a. Composite samples from ponds 1, 2 and 8 into

Chromatograms required: [ ] Yes [ ] No

Client to pay invoice: [X] Yes, but send invoice to EEC to be forwarded to client [ ] No, EEC to pay

Fax results as soon as available: [X] Yes [ ] No

	TCLP SV Extraction	TCLP metals	TCLP SVOCs 8270	Chromatograms for	Compositing
Analyses required:					
Prices:	$95	$105	$380	$38	$10
Analyses required:					
Prices:					

19125 Northcreek Parkway, Suite 111 Bothell, WA 98011-8002 206.485.3437 FAX 206.485.1058

Environmental Engineering & Consulting, Inc.

INSTRUCTIONS FOR LABORATORY ANALYSIS

Date: 3/11/91

Project Number 39200
Please show this Project no. on invoices, charge slips and statements

for: Fume Slurry Samples only in one l. bottles; only one sample to be tested

Turnaround Needed:
- Normal [X]
- One week [ ]
- Other [ ] _____

Compositing: [ ] Yes _____ [X] No, unless needed

Chromatograms required: [X] Yes [ ] No

Client to pay invoice: [X] Yes, lent send invoice to EEC, to be forwarded to client [ ] No, EEC to pay

Fax results as soon as available: [X] Yes [ ] No

Analyses required:	TCLP SV extraction	TCLP metals	TCLP SV organics 8270	chromatograms for	
Prices:	$95	$105	$380	$38	
Analyses required:					
Prices:					

19125 Northcreek Parkway, Suite 111 Bothell, WA 98011-8002 206.485.3437 FAX 206.[illegible]

TABLE C (updated)
FUME WASTE ANALYTIC DATA SUMMARY
Constituent Concentration, parts per million (ppm, mg/l, mg/kg)

Sample Location	NWFL (1)	FWL (2)	FWL	FWDA (3)	FWDA	FWDA	FWL	FWL	Fume (4)	Fume (4)			Pond 1,2,8	Pond 4	Pond 6	Pond 4	
Sample Identification	SMTFU-9	Composite SMTFU-8&10	Composite MTFU-11&12	Composite SMTFU-6&7	Comp: SMTFU-2&3	Comp: SMTFU-4&5	Comp: MTFU-13&14	Comp: MTFU-15&16	Discharge SMT SLU-1	Discharge SMT SLU-1 duplicate			Fume Composite	Fume	Fume Slurry	Fume duplicate	
Sample Date	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	04-Oct 1988	05-Oct 1988	05-Oct 1988			13-Mar 1991	13-Mar 1991	13-Mar 1991	13-Mar 1991	
Sample Type	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste	fume waste			Dried Fume	Dried Fume	Fume Slurry	Dried Fume	
Sample Depth, Ft	surface	0-3.0	0-3.0	0-3.0	0-3.0	0-3.5	0-3.0	0-3.0			EP Toxicity	TCLP	0-0.5	0-0.5	surface	0-0.5	
Laboratory	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Am Test	Maximum	Maximum	CAS	CAS	CAS	CAS	
Report Number or Date	36-88	36-88	36-88	36-88	36-88	36-88	36-88	36-88	36-88	36-88	Allowable	Allowable	K911367	K911367	K911367	K911367	
Laboratory Sample Number	820019	820020	820021	820022	820023	820024	820025	820026	820018	d820018	Concentr.	Concentr.	K1367-4	K1367-5	K1367-6	K1367-5	
TCLP or E P TOXICITY	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX	E P TOX					TCLP	TCLP	TCLP	TCLP	
Elements/Metals																	
Arsenic	0.22	0.33	0.36	0.36	0.22	0.36	0.27	0.21			5	5	0.4	0.2	0.4	0.1	ALL SAMPLES < TCLP/EPT
Barium	<1	<1	<1	<1	<1	<1	<1	<1			100	100	1	1.2	0.6	1.3	ALL SAMPLES < TCLP/EPT
Cadmium	0.09	0.16	0.16	0.15	0.2	0.13	0.13	0.11			1	1	<0.01	<0.01	<0.01	<0.01	ALL SAMPLES < TCLP/EPT
Chromium	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05			5	5	<0.01	0.01	<0.01	0.02	ALL SAMPLES < TCLP/EPT
Copper	<0.05	1.4	0.82	0.39	0.42	0.35	0.34	0.25			-	-					
Lead	0.14	3.9	4.1	1.7	2.5	1.2	1.3	0.69			5	5	0.26	0.22	0.15	0.22	ALL SAMPLES < TCLP/EPT
Mercury	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.001	<0.001			0.2	0.2	<0.001	<0.001	<0.001	<0.001	ALL SAMPLES < TCLP/EPT
Nickel	0.11	0.16	0.07	0.07	0.07	0.16	<0.05	<0.05			-	-					
Selenium	<0.05	0.08	0.09	0.04	0.09	0.08	0.07	0.06			1	1	<0.1	<0.1	0.1	<0.1	ALL SAMPLES < TCLP/EPT
Silver	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			5	5	<0.01	<0.01	<0.01	<0.01	ALL SAMPLES < TCLP/EPT
Zinc	0.89	16	11	6	9	3	4	2			-	-					
Semivolatile Organics																	
2,4,5-Trichlorophenol											400		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
2,4,6-Trichlorophenol											2		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
2,4-Dinitrotoluene											0.13		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Cresol, total											200		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Cresol, m,p-													<0.05	<0.05	<0.05		
Cresol, m-											200						
Cresol, o-											200		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Cresol, p-											200						
Hexachrolobenzene											0.13		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Hexachrolobutadiene											0.5		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Hexachroloethane											3		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Nitrobenzene											2		<0.05	<0.05	<0.05		ALL SAMPLES < TCLP/EPT
Pentachlorophenol											100		<0.2	<0.2	<0.2		ALL SAMPLES < TCLP/EPT
Pyridine											5		<0.2	<0.2	<0.2		ALL SAMPLES < TCLP/EPT

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FOOTNOTES:

(1) New Waste Fume Lagoon - NWFL

(2) Fume Waste Lagoon - FWL

(3) Fume Waste Disposal Area-FWDA

(4) Sample of slurry as discharged into lagoon. Results are reported as liquid in mg/liter. All other fume samples reported as mg/kg, dry weight basis.