SPARTON

SPARTON TECHNOLOGY

February 14, 1990

Technical Section (6H-CX)
RCRA Enforcement Branch
Hazardous Waste Management Division
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

RECEIVED
FEB 16 1990

Attention: Mr. Guy L. Tidmore, Chief

Reference: Monthly Report
Sparton Technology, Inc.

Gentlemen:

This is the monthly progress report for Sparton Technology, Inc.'s Coors Road Facility located in Albuquerque, New Mexico, as required in Section IV.C of the Consent Order. This report summarizes activities during the month of January 1990.

1. The bi-weekly water level measurements taken to date, as required in Section IV.A.1 of the Consent Order, are included in Attachment 1.

2. The air stripper removal efficiencies continue to average over 99 percent for the measured indicator parameters. On January 23, we replaced the system's faulty water meter. Air stripper performance data is included in Attachment 2.

3. The installation of Third Flow Zone Well MW-49 was completed in January. Both initial and confirmational samplings were also completed.

4. Initial and confirmational samplings were conducted for offsite lower flow zone (LFZ) wells 44 through 46 and offsite upper flow zone (UFZ) wells 47 and 48. Analytical results from the initial sampling have been received and are included in Attachment 3.

Sparton Technology, Inc. ☐ 4901 Rockaway Blvd., SE ☐ Rio Rancho, NM 87124 ☐ P.O. Box 1784 ☐ Albuquerque, NM 87103 ☐ (505) 892-5300 ☐ TWX 910-989-1657

5. Analytical results of both the initial and confirmational samplings of onsite LFZ wells 38 through 41 have been received and are included in Attachment 4.

6. Analytical results for both the initial and confirmational samplings of onsite LFZ wells 42 and 43 have been received and are included in Attachment 5.

7. On January 10, Sparton representatives met with EPA to discuss the report issued October 20, 1989 addressing the effectiveness of the interim measures recovery well system. As a result of this meeting, Sparton agreed to revise and reissue the report. Our target deadline is February 26, 1990.

This concludes our progress report for the month of January. Additional details may be found in the weekly updates furnished to EPA during the month. If you have any questions, please contact the undersigned.

Very truly yours,

SPARTON TECHNOLOGY, INC.

for/ Richard D. Mico
Vice President/General Manager

RDM:nkm
SPRT039.LTR

Attachments (as stated)

cc: NMEID
B. Thompson
J. DeWitt
J. Mabrey
G. Richardson
V. Samala

001586

ATTACHMENT 1

BI-WEEKLY WATER LEVEL MEASUREMENTS

SPARTON TECHNOLOGY, INC.
COORS ROAD FACILITY
BIWEEKLY WATER LEVEL MEASUREMENTS

	Water Level Elevation - Feet Above MSL														
DATE	MW-7	MW-9	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-21	MW-22	MW-33	MW-34	MW-35	MW-36	MW-37
02-23-89	4978.48	4975.57	4975.23	4976.51	4974.24	4976.45	4980.07	4980.08	4979.76	4979.23	4975.07	---	---	---	---
03-08-89	4978.40	4975.36	4975.15	4976.35	4974.15	4976.36	4979.87	4980.08	4979.64	4979.14	4974.90	---	---	---	---
03-21-89	4978.81	4975.65	4975.40	4976.76	4974.07	4976.36	4979.82	4980.08	4979.68	4979.35	4975.15	---	---	---	---
04-06-89	4979.15	4975.11	4975.65	4977.18	4974.24	4976.45	4980.10	4980.16	4979.68	4979.64	4975.40	---	---	---	---
04-21-89	4979.31	4975.95	4975.73	4977.18	4974.32	4976.45	4980.07	4980.16	4979.84	4979.77	4975.40	---	---	---	---
05-03-89	4979.40	4976.03	4975.82	4977.18	4974.49	4976.53	4980.07	4980.24	4979.84	4979.81	4975.48	---	---	---	---
05-17-89	4979.65	4976.15	4975.90	4977.26	4974.32	4976.53	4980.10	4980.33	4979.93	4979.98	4975.57	---	---	---	---
06-01-89	4979.73	4976.24	4975.90	4977.43	4974.49	4976.54	4980.07	4980.41	4980.01	4979.98	4975.48	---	---	---	---
06-13-89	4979.90	4976.40	4976.07	4977.64	4974.55	4976.70	4980.32	4980.49	4980.01	4980.06	4975.65	---	---	---	---
06-30-89	4980.06	4976.49	4976.15	4977.60	4974.53	4976.53	4980.16	4980.49	4979.93	4980.19	4975.57	---	---	---	---
07-12-89	4980.40	4976.82	4976.40	4978.01	4974.82	4976.78	4980.57	4980.74	4980.26	4980.48	4975.78	---	---	---	---
07-28-89	4980.40	4976.20	4976.40	4977.93	4974.82	4976.78	4980.82	4980.87	4980.18	4980.56	4975.82	---	---	---	---
08-10-89	4980.06	4976.40	4976.07	4977.60	4974.53	4976.74	4980.68	4980.83	4980.26	4980.39	4975.73	---	---	---	---
08-24-89	4980.48	4976.90	4976.65	4978.18	4974.90	4976.99	4980.74	4980.91	4980.30	4980.30	4976.04	---	---	---	---
09-07-89	4980.65	4977.07	4976.73	4978.43	4975.07	4977.11	4980.82	4981.08	4980.30	4980.89	4976.19	---	---	---	---
09-21-89	4980.90	4977.24	4976.90	4978.46	4975.16	4977.16	4980.91	4981.16	4980.47	4981.06	4976.23	---	---	---	---
10-05-89	4980.90	4977.24	4976.94	4978.47	4975.15	4977.03	4981.07	4981.24	4980.49	4981.06	4976.32	---	---	---	---
10-20-89	4980.65	4976.82	4976.65	4978.01	4974.90	4977.07	4980.91	4981.08	4980.34	4980.81	4975.69	---	---	---	---
11-03-89	4980.40	4977.02	4976.40	4978.01	4974.90	4977.27	4980.92	4980.99	4980.58	4980.59	4975.89	---	---	---	---
11-17-89	4980.15	4977.02	4976.28	4977.60	4974.82	4977.52	4980.92	4980.87	4980.58	4980.38	4975.98	4976.98	4974.91	4984.83	4972.45
12-01-89	4979.81	4976.56	4975.90	4977.26	4974.40	4977.10	4980.83	4980.66	4980.50	4980.01	4975.81	4976.60	4974.65	4973.50	4972.35
12-15-89	4979.56	4976.27	4975.82	4977.10	4974.15	4977.10	4980.75	4980.49	4980.46	4979.88	4975.56	4976.28	4974.46	4973.35	4972.30
12-28-89	4979.31	4976.10	4975.61	4976.85	4974.15	4976.89	4980.42	4980.41	4980.33	4979.72	4975.48	4976.03	4974.21	4973.29	4972.23

[---------- Water Level Elevation - Feet Above MSL ----------]

DATE	MW-7	MW-9	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-21	MW-22	MW-33	MW-34	MW-35	MW-36	MW-37
01-09-90	4979.15	4975.85	4975.44	4976.68	4973.99	4976.85	4980.33	4980.33	4980.29	4979.55	4975.31	4975.89	4974.19	4973.12	4972.12
01-24-90	4978.98	4975.85	4975.48	4976.43	4973.90	4976.68	4980.25	4980.16	4980.08	4979.55	4975.14	4975.84	4974.04	4973.01	4972.10

ATTACHMENT 2

AIR STRIPPER PERFORMANCE DATA

AIR STRIPPER PERFORMANCE

Sparton Technology, Inc.
Albuquerque, New Mexico

(all concentrations in micrograms per liter (ppb))

DATE SAMPLED	1,1-Dichloroethylene INFLUENT	1,1-Dichloroethylene EFFLUENT	1,1-Dichloroethylene PERCENT REDUCTION	Methylene Chloride INFLUENT	Methylene Chloride EFFLUENT	Methylene Chloride PERCENT REDUCTION	1,1,1-Trichloroethane INFLUENT	1,1,1-Trichloroethane EFFLUENT	1,1,1-Trichloroethane PERCENT REDUCTION	Trichloroethylene INFLUENT	Trichloroethylene EFFLUENT	Trichloroethylene PERCENT REDUCTION
12/12/88	21	0.32	98.5	293	5.4	98.2	95	1.9	98.0	328	6.3	98.1
12/14/88	170	1.1	99.4	2,230	26.5	98.8	1,090	9.7	99.1	2,490	22.4	99.1
12/19/88	87	0.4	99.5	1,320	13.6	99.0	862	6.0	99.3	2,200	14.8	99.3
12/27/88	89	0.5	99.4	1,250	2.4	99.8	648	3.3	99.5	1,300	7.2	99.4
01/06/89	64	0.2	99.7	581	3.3	99.4	340	1.7	99.5	712	4.1	99.4
01/23/89	82	0.2	99.8	545	7.4	98.6	571	2.6	99.5	1,220	7.5	99.4
02/02/89	83	0.3	99.6	514	0.1	100.0	389	2.2	99.4	1,550	8.6	99.4
03/06/89	107	1.5	98.6	38	0.4	98.9	708	11.0	98.4	1,300	21.0	98.4
04/03/89	79	1	98.7	87	1	98.9	371	1	99.7	880	1.5	99.8
05/01/89	94	1	98.9	14	1	92.9	243	1	99.6	632	1	99.8
06/05/89	28	1	96.4	148	1	99.3	198	1	99.5	685	1	99.9
07/05/89	20	0.1	99.5	2.4	0.1	95.8	154	0.1	99.9	452	0.14	100.0
08/07/89	27	0.1	99.6	2.4	0.1	95.8	152	0.18	99.9	477	0.19	100.0
09/05/89	53	0.1	99.8	8.5	0.1	98.8	310	0.1	100.0	785	0.2	100.0
10/02/89	62	0.1	99.8	2.6	0.1	96.2	286	0.1	100.0	905	0.1	100.0
11/06/89	20.9	0.1	99.5	140	0.26	99.8	87.5	0.1	99.9	392	0.25	99.9
12/04/89	23.0	0.1	99.6	131	0.2	99.8	71	0.1	99.9	378	0.4	99.9
01/08/90	19.7	0.1	99.5	140	0.41	99.7	90.3	0.18	99.8	359	0.91	99.7
avg	63	0.5	99.3	414	3.5	99.1	370	2.3	99.4	947	5.4	99.4

001591

SPARTON TECHNOLOGY, INC.
COORS ROAD FACILITY
ALBUQUERQUE, NEW MEXICO

GROUNDWATER RECOVERY SYSTEM
VOLUME TREATED

JANUARY 1990

DATE	BEGIN READING	END READING	GALLONS	CUMULATIVE GALLONS
				764,500
01-02-90	772200	774000	1800	766,300
01-03-90	774000	775800	1800	768,100
01-04-90	775800	777800	2000	770,100
01-05-90	777800	783800	6000	776,100
01-08-90	783800	787000	3200	779,300
01-09-90	787000	788800	1800	781,100
01-10-90	788800	790700	1900	783,000
01-11-90	790700	792500	1800	784,800
01-12-90	792500	798500	6000	790,800
01-15-90	798500	800200	1700	792,500
01-16-90	800200	801900	1700	794,200
01-17-90	801900	804100	2200	796,400
01-18-90	804100	805900	1800	798,200
01-19-90	805900	811500	5600	803,800
01-22-90	811500	813400	1900	805,700
01-23-90	813400	813700	300	806,000
*******	NEW METER INSTALLED			*******
01-24-90	100	1600	1500	806,700
01-25-90	1600	1900	300	807,000
01-26-90	1900	3200	1300	808,300
01-29-90	3200	4600	1400	809,700
01-30-90	4600	6500	1900	811,600
01-31-90	6500	8300	1800	813,400
			49,700	

ATTACHMENT 3

INITIAL SAMPLING ANALYTICAL RESULTS

WELLS 44 - 48

Rocky Mountain
Analytical Laboratory

44, 45, 46
1st event

Enseco

January 25, 1990

Mr. Ven Samala
Sparton Technology, Inc.
9621 Coors Road, N.W.
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for five aqueous samples we received at Enseco-Rocky Mountain Analytical Laboratory on January 5, 1990.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Joel E. Holtz

Joel E. Holtz
Program Administrator

Reviewed by:

Jeanne B. Howbert

Jeanne B. Howbert
Technical Manager

JEH/JBH/lw
Enclosures

RMAL #008008

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco Incorporated

ANALYTICAL RESULTS

FOR

SPARTON TECHNOLOGY, INC.

ENSECO-RMAL NO. 008008

JANUARY 25, 1990

Reviewed by: Joel E. Holtz

Joel E. Holtz

Jeanne B. Howbert

Jeanne B. Howbert

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611

Facsimile: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions must be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Samples 008008-0001 and 0002 were diluted due to the concentration of target compounds beyond linear range for Method 624 and the reporting limits have been raised accordingly.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Enseco

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
008008-0001-SA	MW-45	AQUEOUS	04 JAN 90	11:00	05 JAN 90
008008-0002-SA	MW-46	AQUEOUS	04 JAN 90	13:20	05 JAN 90
008008-0003-SA	MW-44	AQUEOUS	04 JAN 90	14:42	05 JAN 90
008008-0004-SA	FIELD BLANK	AQUEOUS	04 JAN 90	14:16	05 JAN 90
008008-0005-SA	TRIP BLANK	AQUEOUS			05 JAN 90

Enseco

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 008008	Group Code	Analysis Description	Custom Test?
0001 - 0005	A	Nitrate, as Nitrogen	N
		Ammonia	N
		Total Kjeldahl Nitrogen (TKN)	N
		Chloride, Ion Chromatography	N
		Sulfate, Ion Chromatography	N
		Fluoride, Electrode	N
		Prep-Volatile Organics by GC/MS	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace AA (Total)	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Appendix IX Volatile Organics	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-45
Lab ID: 008008-0001-SA Enseco ID: 1063944
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	200
Acetonitrile	ND	ug/L	2000
Acrolein	ND	ug/L	2000
Acrylonitrile	ND	ug/L	2000
Allyl chloride	ND	ug/L	100
Benzene	ND	ug/L	100
Bromodichloromethane	ND	ug/L	100
Bromoform	ND	ug/L	100
Bromomethane	ND	ug/L	200
Carbon disulfide	ND	ug/L	100
Carbon tetrachloride	ND	ug/L	100
Chlorobenzene	ND	ug/L	100
Chloroprene	ND	ug/L	100
Chloroethane	ND	ug/L	200
Chlorodibromomethane	ND	ug/L	100
Chloroform	ND	ug/L	100
Chloromethane	ND	ug/L	200
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	100
EDB (1,2-Dibromoethane)	ND	ug/L	100
Dibromomethane	ND	ug/L	100
trans-1,4-Dichloro-2-butene	ND	ug/L	100
Dichlorodifluoromethane	ND	ug/L	200
1,1-Dichloroethane	ND	ug/L	100
1,2-Dichloroethane	ND	ug/L	100
trans-1,2-Dichloroethene	ND	ug/L	100
1,1-Dichloroethene	ND	ug/L	100
Dichloromethane	ND	ug/L	100
1,2-Dichloropropane	ND	ug/L	100
cis-1,3-Dichloropropene	ND	ug/L	100
trans-1,3-Dichloropropene	ND	ug/L	100
1,4-Dioxane	ND	ug/L	2000
Ethylbenzene	ND	ug/L	100
Ethyl cyanide	ND	ug/L	100
2-Hexanone	ND	ug/L	200
Iodomethane	ND	ug/L	100
Isobutyl alcohol	ND	ug/L	2000
Methacrylonitrile	ND	ug/L	100
Methyl ethyl ketone	ND	ug/L	200
4-Methyl-2-pentanone	ND	ug/L	200

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-45
Lab ID: 008008-0001-SA Enseco ID: 1063944
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	100
1,1,1,2-Tetrachloroethane	ND	ug/L	100
1,1,2,2-Tetrachloroethane	ND	ug/L	100
Tetrachloroethene	ND	ug/L	100
Toluene	ND	ug/L	100
1,1,1-Trichloroethane	ND	ug/L	100
1,1,2-Trichloroethane	ND	ug/L	100
Trichloroethene	1400	ug/L	100
Trichlorofluoromethane	ND	ug/L	100
1,2,3-Trichloropropane	ND	ug/L	100
Vinyl acetate	ND	ug/L	200
Vinyl chloride	ND	ug/L	200
Xylenes (total)	ND	ug/L	100
Toluene-d8	99.8	%	--
4-Bromofluorobenzene	98.7	%	--
1,2-Dichloroethane-d4	105	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-46
Lab ID: 008008-0002-SA Enseco ID: 1063945
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	500
Acetonitrile	ND	ug/L	5000
Acrolein	ND	ug/L	5000
Acrylonitrile	ND	ug/L	5000
Allyl chloride	ND	ug/L	250
Benzene	ND	ug/L	250
Bromodichloromethane	ND	ug/L	250
Bromoform	ND	ug/L	250
Bromomethane	ND	ug/L	500
Carbon disulfide	ND	ug/L	250
Carbon tetrachloride	ND	ug/L	250
Chlorobenzene	ND	ug/L	250
Chloroprene	ND	ug/L	250
Chloroethane	ND	ug/L	500
Chlorodibromomethane	ND	ug/L	250
Chloroform	ND	ug/L	250
Chloromethane	ND	ug/L	500
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	250
EDB (1,2-Dibromoethane)	ND	ug/L	250
Dibromomethane	ND	ug/L	250
trans-1,4-Dichloro-2-butene	ND	ug/L	250
Dichlorodifluoromethane	ND	ug/L	500
1,1-Dichloroethane	ND	ug/L	250
1,2-Dichloroethane	ND	ug/L	250
trans-1,2-Dichloroethene	ND	ug/L	250
1,1-Dichloroethene	ND	ug/L	250
Dichloromethane	ND	ug/L	250
1,2-Dichloropropane	ND	ug/L	250
cis-1,3-Dichloropropene	ND	ug/L	250
trans-1,3-Dichloropropene	ND	ug/L	250
1,4-Dioxane	ND	ug/L	5000
Ethylbenzene	ND	ug/L	250
Ethyl cyanide	ND	ug/L	250
2-Hexanone	ND	ug/L	500
Iodomethane	ND	ug/L	250
Isobutyl alcohol	ND	ug/L	5000
Methacrylonitrile	ND	ug/L	250
Methyl ethyl ketone	ND	ug/L	500
4-Methyl-2-pentanone	ND	ug/L	500

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-46
Lab ID: 008008-0002-SA Enseco ID: 1063945
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	250
1,1,1,2-Tetrachloroethane	ND	ug/L	250
1,1,2,2-Tetrachloroethane	ND	ug/L	250
Tetrachloroethene	ND	ug/L	250
Toluene	ND	ug/L	250
1,1,1-Trichloroethane	ND	ug/L	250
1,1,2-Trichloroethane	ND	ug/L	250
Trichloroethene	4200	ug/L	250
Trichlorofluoromethane	ND	ug/L	250
1,2,3-Trichloropropane	ND	ug/L	250
Vinyl acetate	ND	ug/L	500
Vinyl chloride	ND	ug/L	500
Xylenes (total)	ND	ug/L	250
Toluene-d8	100	%	--
4-Bromofluorobenzene	98.7	%	--
1,2-Dichloroethane-d4	102	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-44
Lab ID: 008008-0003-SA Enseco ID: 1063946
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-44
Lab ID: 008008-0003-SA Enseco ID: 1063946
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	100	%	--
4-Bromofluorobenzene	97.4	%	--
1,2-Dichloroethane-d4	101	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008008-0004-SA Enseco ID: 1063947
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	13	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008008-0004-SA Enseco ID: 1063947
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	101	%	--
4-Bromofluorobenzene	99.2	%	--
1,2-Dichloroethane-d4	99.6	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008008-0005-SA Enseco ID: 1063948
Matrix: AQUEOUS Sampled: Unknown Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008008-0005-SA Enseco ID: 1063948
Matrix: AQUEOUS Sampled: Unknown Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: 07 JAN 90 Analyzed: 10 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	100	%	--
4-Bromofluorobenzene	95.0	%	--
1,2-Dichloroethane-d4	99.3	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-45
Lab ID: 008008-0001-SA Enseco ID: 1063944
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	ND	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	0.06	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	0.33	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	0.53	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.01	7421	15 JAN 90	15 JAN 90
Manganese	0.01	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.01	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	0.06	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-46
Lab ID: 008008-0002-SA Enseco ID: 1063945
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	0.005	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	0.11	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	0.10	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	0.11	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	0.07	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	0.21	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.01	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	1.2	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-44
Lab ID: 008008-0003-SA Enseco ID: 1063946
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	ND	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	0.09	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	0.10	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	0.01	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.005	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	0.01	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008008-0004-SA Enseco ID: 1063947
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	0.005	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	ND	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.01	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008008-0005-SA Enseco ID: 1063948
Matrix: AQUEOUS Sampled: Unknown Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	ND	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	ND	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.005	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-45
Lab ID: 008008-0001-SA Enseco ID: 1063944
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	39	mg/L	3	300.0	NA	17 JAN 90
Fluoride	0.3	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	3.9	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	120	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-46
Lab ID: 008008-0002-SA
Enseco ID: 1063945
Matrix: AQUEOUS
Sampled: 04 JAN 90
Received: 05 JAN 90
Authorized: 05 JAN 90
Prepared: See Below
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	31	mg/L	3	300.0	NA	17 JAN 90
Fluoride	0.4	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	2.2	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	102	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-44
Lab ID: 008008-0003-SA Enseco ID: 1063946
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	9	mg/L	3	300.0	NA	17 JAN 90
Fluoride	0.4	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	1.9	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	71	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008008-0004-SA Enseco ID: 1063947
Matrix: AQUEOUS Sampled: 04 JAN 90 Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	17 JAN 90
Fluoride	ND	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	ND	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	ND	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008008-0005-SA Enseco ID: 1063948
Matrix: AQUEOUS Sampled: Unknown Received: 05 JAN 90
Authorized: 05 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	17 JAN 90
Fluoride	ND	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	ND	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	ND	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser Approved By: Tammy Bailey

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

Enseco

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008008-0001-SA	AQUEOUS	624-A	10 JAN 90-H	10 JAN 90-H
008008-0002-SA	AQUEOUS	624-A	10 JAN 90-H	10 JAN 90-H
008008-0003-SA	AQUEOUS	624-A	10 JAN 90-H	10 JAN 90-H
008008-0004-SA	AQUEOUS	624-A	10 JAN 90-H	10 JAN 90-H
008008-0005-SA	AQUEOUS	624-A	10 JAN 90-H	10 JAN 90-H

Enseco

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 10 JAN 90-H QC Run: 10 JAN 90-H				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	49.3	99	76-114
4-Bromofluorobenzene	50.0	49.3	99	86-115
Toluene-d8	50.0	50.7	101	88-110

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

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 10 JAN 90-H QC Run: 10 JAN 90-H

Analyte	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0

Enseco

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008008-0001-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008008-0001-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0001-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0001-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0001-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008008-0001-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B
008008-0002-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008008-0002-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0002-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0002-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0002-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008008-0002-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B
008008-0003-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008008-0003-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0003-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0003-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0003-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008008-0003-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B
008008-0004-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008008-0004-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0004-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0004-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0004-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008008-0004-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B
008008-0005-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008008-0005-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0005-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0005-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008008-0005-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008008-0005-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B

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DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-D Concentration Units: mg/L								
Aluminum	2.0	1.77	1.87	1.82	91	75-125	5.5	20
Antimony	0.5	0.46	0.49	0.48	95	75-125	6.3	20
Arsenic	0.5	0.42	0.43	0.42	85	75-125	2.4	20
Barium	2.0	1.52	1.59	1.56	78	75-125	4.5	20
Beryllium	0.05	0.041	0.043	0.042	84	75-125	4.8	20
Cadmium	0.05	0.044	0.044	0.044	88	75-125	0.0	20
Calcium	100	84.2	86.4	85.3	85	75-125	2.6	20
Chromium	0.2	0.17	0.18	0.18	88	75-125	5.7	20
Cobalt	0.5	0.41	0.43	0.42	84	75-125	4.8	20
Copper	0.25	0.21	0.22	0.22	86	75-125	4.7	20
Iron	1.0	0.90	0.94	0.92	92	75-125	4.3	20
Lead	0.5	0.42	0.45	0.44	87	75-125	6.9	20
Magnesium	50	42.4	43.4	42.9	86	75-125	2.3	20
Manganese	0.5	0.42	0.44	0.43	86	75-125	4.7	20
Nickel	0.5	0.45	0.47	0.46	92	75-125	4.3	20
Potassium	100	82.6	86.1	84.4	84	75-125	4.1	20
Silver	0.05	0.042	0.043	0.042	85	75-125	2.4	20
Sodium	100	79.1	82.9	81.0	81	75-125	4.7	20
Vanadium	0.5	0.41	0.42	0.42	83	75-125	2.4	20
Zinc	0.5	0.43	0.45	0.44	88	75-125	4.5	20
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-E Concentration Units: mg/L								
Arsenic	0.04	0.036	0.038	0.037	93	75-125	5.4	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-E Concentration Units: mg/L								
Selenium	0.01	0.011	0.012	0.012	115	75-125	8.7	20

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

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-E Concentration Units: mg/L								
Thallium	0.05	0.048	0.050	0.049	98	75-125	4.1	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 15 JAN 90-N Concentration Units: mg/L								
Lead	0.02	0.022	0.022	0.022	110	75-125	0.0	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-B Concentration Units: mg/L								
Mercury	0.0010	0.00103	0.00107	0.00105	105	75-125	3.8	20

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

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METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 08 JAN 90-D QC Run: 08 JAN 90-D			
Antimony	ND	mg/L	0.05
Barium	ND	mg/L	0.01
Beryllium	ND	mg/L	0.002
Boron	ND	mg/L	0.02
Cadmium	ND	mg/L	0.005
Chromium	ND	mg/L	0.01
Cobalt	ND	mg/L	0.01
Copper	ND	mg/L	0.01
Manganese	ND	mg/L	0.01
Nickel	ND	mg/L	0.04
Silver	ND	mg/L	0.01
Tin	ND	mg/L	0.05
Vanadium	ND	mg/L	0.01
Zinc	ND	mg/L	0.01
Test: AS-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 08 JAN 90-E QC Run: 08 JAN 90-E			
Arsenic	ND	mg/L	0.005
Test: SE-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 08 JAN 90-E QC Run: 08 JAN 90-E			
Selenium	ND	mg/L	0.005
Test: TL-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 08 JAN 90-E QC Run: 08 JAN 90-E			
Thallium	ND	mg/L	0.005

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METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 15 JAN 90-N QC Run: 15 JAN 90-N			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 08 JAN 90-B QC Run: 08 JAN 90-B			
Mercury	ND	mg/L	0.0002

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008008-0001-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008008-0001-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008008-0001-SA	AQUEOUS	TKN-A	15 JAN 90-A	-
008008-0001-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008008-0001-SA	AQUEOUS	SO4-IC-A	17 JAN 90-N	-
008008-0001-SA	AQUEOUS	F-A	10 JAN 90-A	-
008008-0002-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008008-0002-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008008-0002-SA	AQUEOUS	TKN-A	15 JAN 90-A	-
008008-0002-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008008-0002-SA	AQUEOUS	SO4-IC-A	17 JAN 90-N	-
008008-0002-SA	AQUEOUS	F-A	10 JAN 90-A	-
008008-0003-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008008-0003-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008008-0003-SA	AQUEOUS	TKN-A	15 JAN 90-A	-
008008-0003-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008008-0003-SA	AQUEOUS	SO4-IC-A	17 JAN 90-N	-
008008-0003-SA	AQUEOUS	F-A	10 JAN 90-A	-
008008-0004-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008008-0004-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008008-0004-SA	AQUEOUS	TKN-A	15 JAN 90-A	-
008008-0004-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008008-0004-SA	AQUEOUS	SO4-IC-A	17 JAN 90-N	-
008008-0004-SA	AQUEOUS	F-A	10 JAN 90-A	-
008008-0005-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008008-0005-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008008-0005-SA	AQUEOUS	TKN-A	15 JAN 90-A	-
008008-0005-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008008-0005-SA	AQUEOUS	SO4-IC-A	17 JAN 90-N	-
008008-0005-SA	AQUEOUS	F-A	10 JAN 90-A	-

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: NO3-A Matrix: AQUEOUS QC Lot: 12 JAN 90-A Concentration Units: mg/L								
Nitrate as N	5.4	5.31	5.40	5.36	99	91-109	1.7	10
Category: NH3-A Matrix: AQUEOUS QC Lot: 12 JAN 90-A Concentration Units: mg/L								
Ammonia as N	4.1	4.13	4.07	4.10	100	93-107	1.5	10
Category: TKN-A Matrix: AQUEOUS QC Lot: 15 JAN 90-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	4.7	5.56	5.14	5.35	114	78-122	7.9	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 17 JAN 90-M Concentration Units: mg/L								
Chloride	100	98.2	98.8	98.5	99	92-108	0.6	20
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 17 JAN 90-N Concentration Units: mg/L								
Sulfate	200	195	196	196	98	93-107	0.5	20

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

Rocky Mountain
Analytical Laboratory

47, 48
1st event

Enseco

January 25, 1990

Mr. Ven Samala
Sparton Technology, Inc.
9621 Coors Road, N.W.
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for two aqueous samples we received at Enseco-Rocky Mountain Analytical Laboratory on January 4, 1990.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Joel E. Holtz
Program Administrator

Reviewed by:

Jeanne B. Howbert
Technical Manager

JEH/JBH/lw
Enclosures

RMAL #008005

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco Incorporated

ANALYTICAL RESULTS

FOR

SPARTON TECHNOLOGY, INC.

ENSECO-RMAL NO. 008005

JANUARY 25, 1990

Reviewed by: Joel E. Holtz

Jeanne B. Howbert

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611

Facsimile: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions must be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Samples 008005-0001 and 0002 were diluted due to the concentration of target compounds beyond linear range for Method 624 and the reporting limits have been raised accordingly.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Enseco

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
008005-0001-SA	MW-48	AQUEOUS	03 JAN 90	13:45	04 JAN 90
008005-0002-SA	MW-47	AQUEOUS	03 JAN 90	16:43	04 JAN 90

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 008005	Group Code	Analysis Description	Custom Test?
0001 - 0002	A	Nitrate, as Nitrogen	N
		Ammonia	N
		Total Kjeldahl Nitrogen (TKN)	N
		Chloride, Ion Chromatography	N
		Sulfate, Ion Chromatography	N
		Fluoride, Electrode	N
		Prep-Volatile Organics by GC/MS	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace AA (Total)	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Appendix IX Volatile Organics	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-48
Lab ID: 008005-0001-SA Enseco ID: 1063917
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: 05 JAN 90 Analyzed: 09 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	100
Acetonitrile	ND	ug/L	1000
Acrolein	ND	ug/L	1000
Acrylonitrile	ND	ug/L	1000
Allyl chloride	ND	ug/L	50
Benzene	ND	ug/L	50
Bromodichloromethane	ND	ug/L	50
Bromoform	ND	ug/L	50
Bromomethane	ND	ug/L	100
Carbon disulfide	ND	ug/L	50
Carbon tetrachloride	ND	ug/L	50
Chlorobenzene	ND	ug/L	50
Chloroprene	ND	ug/L	50
Chloroethane	ND	ug/L	100
Chlorodibromomethane	ND	ug/L	50
Chloroform	ND	ug/L	50
Chloromethane	ND	ug/L	100
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	50
EDB (1,2-Dibromoethane)	ND	ug/L	50
Dibromomethane	ND	ug/L	50
trans-1,4-Dichloro-2-butene	ND	ug/L	50
Dichlorodifluoromethane	ND	ug/L	100
1,1-Dichloroethane	ND	ug/L	50
1,2-Dichloroethane	ND	ug/L	50
trans-1,2-Dichloroethene	ND	ug/L	50
1,1-Dichloroethene	ND	ug/L	50
Dichloromethane	70	ug/L	50
1,2-Dichloropropane	ND	ug/L	50
cis-1,3-Dichloropropene	ND	ug/L	50
trans-1,3-Dichloropropene	ND	ug/L	50
1,4-Dioxane	ND	ug/L	1000
Ethylbenzene	ND	ug/L	50
Ethyl cyanide	ND	ug/L	50
2-Hexanone	ND	ug/L	100
Iodomethane	ND	ug/L	50
Isobutyl alcohol	ND	ug/L	1000
Methacrylonitrile	ND	ug/L	50
Methyl ethyl ketone	ND	ug/L	100
4-Methyl-2-pentanone	ND	ug/L	100

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Michael Blades Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-48
Lab ID: 008005-0001-SA Enseco ID: 1063917
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: 05 JAN 90 Analyzed: 09 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	50
1,1,1,2-Tetrachloroethane	ND	ug/L	50
1,1,2,2-Tetrachloroethane	ND	ug/L	50
Tetrachloroethene	ND	ug/L	50
Toluene	ND	ug/L	50
1,1,1-Trichloroethane	ND	ug/L	50
1,1,2-Trichloroethane	ND	ug/L	50
Trichloroethene	820	ug/L	50
Trichlorofluoromethane	ND	ug/L	50
1,2,3-Trichloropropane	ND	ug/L	50
Vinyl acetate	ND	ug/L	100
Vinyl chloride	ND	ug/L	100
Xylenes (total)	ND	ug/L	50
Toluene-d8	100	%	--
4-Bromofluorobenzene	99.1	%	--
1,2-Dichloroethane-d4	97.4	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-47
Lab ID: 008005-0002-SA Enseco ID: 1063918
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: 05 JAN 90 Analyzed: 09 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	50
Acetonitrile	ND	ug/L	500
Acrolein	ND	ug/L	500
Acrylonitrile	ND	ug/L	500
Allyl chloride	ND	ug/L	25
Benzene	ND	ug/L	25
Bromodichloromethane	ND	ug/L	25
Bromoform	ND	ug/L	25
Bromomethane	ND	ug/L	50
Carbon disulfide	ND	ug/L	25
Carbon tetrachloride	ND	ug/L	25
Chlorobenzene	ND	ug/L	25
Chloroprene	ND	ug/L	25
Chloroethane	ND	ug/L	50
Chlorodibromomethane	ND	ug/L	25
Chloroform	ND	ug/L	25
Chloromethane	ND	ug/L	50
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	25
EDB (1,2-Dibromoethane)	ND	ug/L	25
Dibromomethane	ND	ug/L	25
trans-1,4-Dichloro-2-butene	ND	ug/L	25
Dichlorodifluoromethane	ND	ug/L	50
1,1-Dichloroethane	ND	ug/L	25
1,2-Dichloroethane	ND	ug/L	25
trans-1,2-Dichloroethene	ND	ug/L	25
1,1-Dichloroethene	ND	ug/L	25
Dichloromethane	ND	ug/L	25
1,2-Dichloropropane	ND	ug/L	25
cis-1,3-Dichloropropene	ND	ug/L	25
trans-1,3-Dichloropropene	ND	ug/L	25
1,4-Dioxane	ND	ug/L	500
Ethylbenzene	ND	ug/L	25
Ethyl cyanide	ND	ug/L	25
2-Hexanone	ND	ug/L	50
Iodomethane	ND	ug/L	25
Isobutyl alcohol	ND	ug/L	500
Methacrylonitrile	ND	ug/L	25
Methyl ethyl ketone	ND	ug/L	50
4-Methyl-2-pentanone	ND	ug/L	50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Michael Blades Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-47
Lab ID: 008005-0002-SA Enseco ID: 1063918
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: 05 JAN 90 Analyzed: 09 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	25
1,1,1,2-Tetrachloroethane	ND	ug/L	25
1,1,2,2-Tetrachloroethane	ND	ug/L	25
Tetrachloroethene	ND	ug/L	25
Toluene	ND	ug/L	25
1,1,1-Trichloroethane	ND	ug/L	25
1,1,2-Trichloroethane	ND	ug/L	25
Trichloroethene	310	ug/L	25
Trichlorofluoromethane	ND	ug/L	25
1,2,3-Trichloropropane	ND	ug/L	25
Vinyl acetate	ND	ug/L	50
Vinyl chloride	ND	ug/L	50
Xylenes (total)	ND	ug/L	25
Toluene-d8	101	%	--
4-Bromofluorobenzene	98.9	%	--
1,2-Dichloroethane-d4	98.8	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-48
Lab ID: 008005-0001-SA Enseco ID: 1063917
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	0.006	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	0.07	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	0.08	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	0.14	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.01	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.01	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	0.01	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-47
Lab ID: 008005-0002-SA Enseco ID: 1063918
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Arsenic	0.006	mg/L	0.005	7060	08 JAN 90	10 JAN 90
Barium	0.06	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Beryllium	ND	mg/L	0.002	6010	08 JAN 90	10 JAN 90
Boron	0.09	mg/L	0.02	6010	08 JAN 90	10 JAN 90
Cadmium	ND	mg/L	0.005	6010	08 JAN 90	10 JAN 90
Chromium	0.25	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Cobalt	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Copper	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Lead	ND	mg/L	0.01	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Mercury	ND	mg/L	0.0002	7470	08 JAN 90	09 JAN 90
Nickel	ND	mg/L	0.04	6010	08 JAN 90	10 JAN 90
Selenium	ND	mg/L	0.005	7740	08 JAN 90	10 JAN 90
Silver	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Thallium	ND	mg/L	0.01	7841	08 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	08 JAN 90	10 JAN 90
Vanadium	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90
Zinc	ND	mg/L	0.01	6010	08 JAN 90	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-48
Lab ID: 008005-0001-SA Enseco ID: 1063917
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	32	mg/L	3	300.0	NA	17 JAN 90
Fluoride	0.4	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	2.5	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	120	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-47
Lab ID: 008005-0002-SA Enseco ID: 1063918
Matrix: AQUEOUS Sampled: 03 JAN 90 Received: 04 JAN 90
Authorized: 04 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	27	mg/L	3	300.0	NA	17 JAN 90
Fluoride	0.4	mg/L	0.1	340.2	NA	10 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	12 JAN 90
Nitrate as N	4.0	mg/L	0.1	353.2	NA	15 JAN 90
Sulfate	116	mg/L	5	300.0	NA	17 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	16 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Blake Besser Approved By: Tammy Bailey

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

Enseco

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008005-0001-SA	AQUEOUS	624-A	02 JAN 90-H2	08 JAN 90-H
008005-0002-SA	AQUEOUS	624-A	02 JAN 90-H2	08 JAN 90-H

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: 624-A								
Matrix: AQUEOUS								
QC Lot: 02 JAN 90-H2								
Concentration Units: ug/L								
1,1-Dichloroethene	50	47.7	44.6	46.2	92	61-145	6.7	14
Trichloroethene	50	47.8	47.5	47.6	95	71-120	0.6	14
Benzene	50	54.1	53.0	53.6	107	76-127	2.1	11
Toluene	50	50.5	48.9	49.7	99	76-125	3.2	13
Chlorobenzene	50	51.5	51.6	51.6	103	75-130	0.2	13

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

Enseco

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 02 JAN 90-H2 QC Run: 08 JAN 90-H				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	48.0	96	76-114
4-Bromofluorobenzene	50.0	50.3	101	86-115
Toluene-d8	50.0	49.7	99	88-110

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

Enseco

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 02 JAN 90-H2 QC Run: 08 JAN 90-H

Analyte	Result	Units	Reporting Limit
Acetone	19	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

Enseco

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 02 JAN 90-H2 QC Run: 08 JAN 90-H

Analyte	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0

Enseco

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008005-0001-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008005-0001-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008005-0001-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008005-0001-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008005-0001-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008005-0001-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B
008005-0002-SA	AQUEOUS	ICP-AT	08 JAN 90-D	08 JAN 90-D
008005-0002-SA	AQUEOUS	AS-FAA-AT	08 JAN 90-E	08 JAN 90-E
008005-0002-SA	AQUEOUS	SE-FAA-AT	08 JAN 90-E	08 JAN 90-E
008005-0002-SA	AQUEOUS	TL-FAA-AT	08 JAN 90-E	08 JAN 90-E
008005-0002-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-N	15 JAN 90-N
008005-0002-SA	AQUEOUS	HG-CVAA-AT	08 JAN 90-B	08 JAN 90-B

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-D Concentration Units: mg/L								
Aluminum	2.0	1.77	1.87	1.82	91	75-125	5.5	20
Antimony	0.5	0.46	0.49	0.48	95	75-125	6.3	20
Arsenic	0.5	0.42	0.43	0.42	85	75-125	2.4	20
Barium	2.0	1.52	1.59	1.56	78	75-125	4.5	20
Beryllium	0.05	0.041	0.043	0.042	84	75-125	4.8	20
Cadmium	0.05	0.044	0.044	0.044	88	75-125	0.0	20
Calcium	100	84.2	86.4	85.3	85	75-125	2.6	20
Chromium	0.2	0.17	0.18	0.18	88	75-125	5.7	20
Cobalt	0.5	0.41	0.43	0.42	84	75-125	4.8	20
Copper	0.25	0.21	0.22	0.22	86	75-125	4.7	20
Iron	1.0	0.90	0.94	0.92	92	75-125	4.3	20
Lead	0.5	0.42	0.45	0.44	87	75-125	6.9	20
Magnesium	50	42.4	43.4	42.9	86	75-125	2.3	20
Manganese	0.5	0.42	0.44	0.43	86	75-125	4.7	20
Nickel	0.5	0.45	0.47	0.46	92	75-125	4.3	20
Potassium	100	82.6	86.1	84.4	84	75-125	4.1	20
Silver	0.05	0.042	0.043	0.042	85	75-125	2.4	20
Sodium	100	79.1	82.9	81.0	81	75-125	4.7	20
Vanadium	0.5	0.41	0.42	0.42	83	75-125	2.4	20
Zinc	0.5	0.43	0.45	0.44	88	75-125	4.5	20
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-E Concentration Units: mg/L								
Arsenic	0.04	0.036	0.038	0.037	93	75-125	5.4	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-E Concentration Units: mg/L								
Selenium	0.01	0.011	0.012	0.012	115	75-125	8.7	20

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

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-E Concentration Units: mg/L								
Thallium	0.05	0.048	0.050	0.049	98	75-125	4.1	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 15 JAN 90-N Concentration Units: mg/L								
Lead	0.02	0.022	0.022	0.022	110	75-125	0.0	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 08 JAN 90-B Concentration Units: mg/L								
Mercury	0.0010	0.00103	0.00107	0.00105	105	75-125	3.8	20

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

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 15 JAN 90-N QC Run: 15 JAN 90-N			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 08 JAN 90-B QC Run: 08 JAN 90-B			
Mercury	ND	mg/L	0.0002

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008005-0001-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008005-0001-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008005-0001-SA	AQUEOUS	TKN-A	15 JAN 90-A	15 JAN 90-A
008005-0001-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008005-0001-SA	AQUEOUS	SO4-IC-A	17 JAN 90-M	-
008005-0001-SA	AQUEOUS	F-A	10 JAN 90-A	-
008005-0002-SA	AQUEOUS	NO3-A	12 JAN 90-A	-
008005-0002-SA	AQUEOUS	NH3-A	12 JAN 90-A	-
008005-0002-SA	AQUEOUS	TKN-A	15 JAN 90-A	15 JAN 90-A
008005-0002-SA	AQUEOUS	CL-IC-A	17 JAN 90-M	-
008005-0002-SA	AQUEOUS	SO4-IC-A	17 JAN 90-M	-
008005-0002-SA	AQUEOUS	F-A	10 JAN 90-A	-

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: NO3-A Matrix: AQUEOUS QC Lot: 12 JAN 90-A Concentration Units: mg/L								
Nitrate as N	5.4	5.31	5.40	5.36	99	91-109	1.7	10
Category: NH3-A Matrix: AQUEOUS QC Lot: 12 JAN 90-A Concentration Units: mg/L								
Ammonia as N	4.1	4.13	4.07	4.10	100	93-107	1.5	10
Category: TKN-A Matrix: AQUEOUS QC Lot: 15 JAN 90-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	4.7	5.56	5.14	5.35	114	78-122	7.9	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 17 JAN 90-M Concentration Units: mg/L								
Chloride	100	98.2	98.8	98.5	99	92-108	0.6	20
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 17 JAN 90-M Concentration Units: mg/L								
Sulfate	200	196	197	196	98	93-107	0.5	20

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

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 10 JAN 90-A								
Concentration Units: mg/L								
Fluoride	13.5	13.4	13.4	13.4	99	88-112	0.0	15

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

Enseco

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 15 JAN 90-A QC Run: 15 JAN 90-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5

ATTACHMENT 4

INITIAL AND CONFIRMATIONAL SAMPLING ANALYTICAL RESULTS

WELLS 38 - 41

Rocky Mountain
Analytical Laboratory

38, 39
1 Revert

Enseco

December 15, 1989

Ven Samala
Sparton Technology Inc.
9621 Coors Rd. NW
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for two aqueous samples received at Rocky Mountain Analytical Laboratory on November 7, 1989.

If you have any questions, the Program Administrator assigned to this project is Joel Holtz.

Sincerely,

Ramona Power

Ramona Power
Data Control

Enclosures

cc: Joel Holtz, PA

RMAL #007379

001667

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Discussion

This report contains results and supporting quality control and sample identification information associated with analyses performed on this project. The results and supporting information are contained in tables following this section, arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report
- Data Quality Assessment

Analyses were performed in accordance with EPA methods and with Enseco's current Quality Assurance Program Plan for Environmental Chemical Monitoring. The specific analytical methods used are presented with each result. The first four sections below describes the format, content, and organization for the four corresponding separate components of this report. The fifth section provides an overall data quality assessment of the results.

Sample Description Information

The Sample Description Information lists all the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Analytical Results

The analytical results for this project are presented in data tables. Each data table includes sample identification information, and where available and appropriate, dates sampled, received, authorized, prepared, and analyzed.

Data sheets contain a listing of the parameters measured in each test, the analytical results, the analytical method, and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

Quality Control Reports

As documented in more detail in Enseco's QAPP, various internal quality control checks are performed to assure that the laboratory was in control during the time that samples on this project were analyzed. The QC checks include analysis of method blanks, duplicate control samples (DCS), and single control samples (SCS). Results from these analyses are presented along with the control limits.

Method Blank Results: A method blank is a laboratory generated sample used to assess the degree to which laboratory operations and procedures cause false positive analytical results.

Duplicate Control Samples (DCS): Each DCS consists of a standard control matrix that is spiked with a group of target analytes representative of the method analytes. One Duplicate Control Sample is prepared for every twenty (20) samples.

Single Control Samples (SCS): An SCS is a spiked sample analyzed with each batch of samples.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in Enseco's Quality Assurance Project Plan for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered.

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
007379-0001-SA	MW-39	AQUEOUS	06 NOV 89	11:25	07 NOV 89
007379-0002-SA	MW-38	AQUEOUS	06 NOV 89	14:20	07 NOV 89

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 007379	Group Code	Analysis Description	Custom Test?
0001 - 0002	A	Nitrate, as Nitrogen	N
		Ammonia	N
		Total Kjeldahl Nitrogen (TKN)	N
		Chloride, Ion Chromatography	N
		Sulfate, Ion Chromatography	N
		Fluoride, Electrode	N
		HSL Volatile Organics	N
		Prep-Volatile Organics by GC/MS	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Thallium, Furnace AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007379-0001-SA Enseco ID: 1059276
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: NA Analyzed: 13 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007379-0001-SA Enseco ID: 1059276
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: NA Analyzed: 13 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	5.3	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	96.9	%	--
4-Bromofluorobenzene	86.1	%	--
1,2-Dichloroethane-d4	99.5	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007379-0002-SA Enseco ID: 1059277
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: NA Analyzed: 14 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007379-0002-SA Enseco ID: 1059277
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: NA Analyzed: 14 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	96.2	%	--
4-Bromofluorobenzene	100	%	--
1,2-Dichloroethane-d4	90.4	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007379-0001-SA Enseco ID: 1059276
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	04 DEC 89	05 DEC 89
Arsenic	ND	mg/L	0.005	206.2	04 DEC 89	05 DEC 89
Barium	0.14	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Beryllium	ND	mg/L	0.002	200.7	04 DEC 89	05 DEC 89
Boron	0.12	mg/L	0.02	200.7	04 DEC 89	05 DEC 89
Cadmium	ND	mg/L	0.005	200.7	04 DEC 89	05 DEC 89
Chromium	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Cobalt	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Copper	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Lead	ND	mg/L	0.01	239.2	04 DEC 89	05 DEC 89
Manganese	0.38	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	04 DEC 89	05 DEC 89
Selenium	ND	mg/L	0.005	270.2	04 DEC 89	05 DEC 89
Silver	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Thallium	ND	mg/L	0.01	279.2	04 DEC 89	11 DEC 89
Tin	ND	mg/L	0.05	200.7	04 DEC 89	05 DEC 89
Vanadium	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Zinc	0.35	mg/L	0.01	200.7	04 DEC 89	05 DEC 89

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007379-0002-SA Enseco ID: 1059277
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	04 DEC 89	05 DEC 89
Arsenic	ND	mg/L	0.005	206.2	04 DEC 89	05 DEC 89
Barium	0.13	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Beryllium	ND	mg/L	0.002	200.7	04 DEC 89	05 DEC 89
Boron	0.13	mg/L	0.02	200.7	04 DEC 89	05 DEC 89
Cadmium	ND	mg/L	0.005	200.7	04 DEC 89	05 DEC 89
Chromium	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Cobalt	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Copper	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Lead	ND	mg/L	0.01	239.2	04 DEC 89	05 DEC 89
Manganese	0.27	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	04 DEC 89	05 DEC 89
Selenium	ND	mg/L	0.005	270.2	04 DEC 89	05 DEC 89
Silver	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Thallium	ND	mg/L	0.01	279.2	04 DEC 89	11 DEC 89
Tin	ND	mg/L	0.05	200.7	04 DEC 89	05 DEC 89
Vanadium	ND	mg/L	0.01	200.7	04 DEC 89	05 DEC 89
Zinc	0.76	mg/L	0.01	200.7	04 DEC 89	05 DEC 89

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007379-0001-SA Enseco ID: 1059276
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	25	mg/L	3	300.0	NA	19 NOV 89
Fluoride	0.3	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	10 NOV 89
Nitrate as N	0.3	mg/L	0.1	353.2	NA	10 NOV 89
Sulfate	106	mg/L	5	300.0	NA	19 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	21 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Janice Collins Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007379-0002-SA Enseco ID: 1059277
Matrix: AQUEOUS Sampled: 06 NOV 89 Received: 07 NOV 89
Authorized: 07 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	12	mg/L	3	300.0	NA	19 NOV 89
Fluoride	0.3	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	10 NOV 89
Nitrate as N	0.4	mg/L	0.1	353.2	NA	10 NOV 89
Sulfate	71	mg/L	5	300.0	NA	19 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	21 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Janice Collins Approved By: Tammy Bailey

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007379-0001-SA	AQUEOUS	624-A	09 NOV 89-L	12 NOV 89-L
007379-0002-SA	AQUEOUS	624-A	09 NOV 89-L	14 NOV 89-L

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 624-A								
Matrix: AQUEOUS								
QC Lot: 09 NOV 89-L								
Concentration Units: ug/L								
1,1-Dichloroethene	50	48.2	49.7	49.0	98	61-145	3.1	14
Trichloroethene	50	47.6	46.5	47.0	94	71-120	2.3	14
Benzene	50	54.6	55.1	54.8	110	76-127	0.9	11
Toluene	50	50.4	49.6	50.0	100	76-125	1.6	13
Chlorobenzene	50	48.1	47.5	47.8	96	75-130	1.3	13

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

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 09 NOV 89-L QC Run: 12 NOV 89-L				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	50.1	100	76-114
4-Bromofluorobenzene	50.0	45.7	91	86-115
Toluene-d8	50.0	49.6	99	88-110
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 09 NOV 89-L QC Run: 14 NOV 89-L				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	54.5	109	76-114
4-Bromofluorobenzene	50.0	53.1	106	86-115
Toluene-d8	50.0	50.2	100	88-110

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

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-HSL-AP
Matrix: AQUEOUS
QC Lot: 09 NOV 89-L QC Run: 12 NOV 89-L

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	12	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Chlorodibromomethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Test: 624-HSL-AP
Matrix: AQUEOUS
QC Lot: 09 NOV 89-L QC Run: 14 NOV 89-L

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Chlorodibromomethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007379-0001-SA	AQUEOUS	AS-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0001-SA	AQUEOUS	TL-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0001-SA	AQUEOUS	SE-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0001-SA	AQUEOUS	PB-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0001-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-A	01 DEC 89-A
007379-0001-SA	AQUEOUS	ICP-AT	04 DEC 89-A	04 DEC 89-A
007379-0002-SA	AQUEOUS	AS-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0002-SA	AQUEOUS	TL-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0002-SA	AQUEOUS	SE-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0002-SA	AQUEOUS	PB-FAA-AT	04 DEC 89-A	04 DEC 89-A
007379-0002-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-A	01 DEC 89-A
007379-0002-SA	AQUEOUS	ICP-AT	04 DEC 89-A	04 DEC 89-A

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A Concentration Units: mg/L								
Arsenic	0.04	0.034	0.034	0.034	85	75-125	0.0	20
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A Concentration Units: mg/L								
Thallium	0.05	0.044	0.040	0.042	84	75-125	9.5	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A Concentration Units: mg/L								
Selenium	0.01	0.011	0.010	0.010	105	75-125	9.5	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A Concentration Units: mg/L								
Lead	0.02	0.020	0.018	0.019	95	75-125	11	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 01 DEC 89-A Concentration Units: mg/L								
Mercury	0.0010	0.00108	0.00109	0.00108	109	75-125	0.9	20

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

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 04 DEC 89-A								
Concentration Units: mg/L								
Aluminum	2.0	1.94	1.93	1.94	97	75-125	0.5	20
Antimony	0.5	0.48	0.47	0.48	95	75-125	2.1	20
Arsenic	0.5	0.45	0.46	0.46	91	75-125	2.2	20
Barium	2.0	1.92	1.91	1.92	96	75-125	0.5	20
Beryllium	0.05	0.048	0.048	0.048	96	75-125	0.0	20
Cadmium	0.05	0.043	0.051	0.047	94	75-125	17	20
Calcium	100	91.0	92.2	91.6	92	75-125	1.3	20
Chromium	0.2	0.18	0.18	0.18	90	75-125	0.0	20
Cobalt	0.5	0.44	0.46	0.45	90	75-125	4.4	20
Copper	0.25	0.23	0.23	0.23	92	75-125	0.0	20
Iron	1.0	0.93	0.92	0.92	93	75-125	1.1	20
Lead	0.5	0.44	0.45	0.44	89	75-125	2.2	20
Magnesium	50	46.8	46.8	46.8	94	75-125	0.0	20
Manganese	0.5	0.47	0.47	0.47	94	75-125	0.0	20
Nickel	0.5	0.46	0.46	0.46	92	75-125	0.0	20
Potassium	100	90.3	89.4	89.8	90	75-125	1.0	20
Silver	0.05	0.041	0.039	0.040	80	75-125	5.0	20
Sodium	100	85.0	82.3	83.6	84	75-125	3.2	20
Vanadium	0.5	0.46	0.46	0.46	92	75-125	0.0	20
Zinc	0.5	0.48	0.49	0.48	97	75-125	2.1	20

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

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: AS-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A QC Run: 04 DEC 89-A			
Arsenic	ND	mg/L	0.005
Test: TL-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A QC Run: 04 DEC 89-A			
Thallium	ND	mg/L	0.005
Test: SE-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A QC Run: 04 DEC 89-A			
Selenium	ND	mg/L	0.005
Test: PB-FAA-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A QC Run: 04 DEC 89-A			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 01 DEC 89-A QC Run: 01 DEC 89-A			
Mercury	ND	mg/L	0.0002
Test: ICP-AT Matrix: AQUEOUS QC Lot: 04 DEC 89-A QC Run: 04 DEC 89-A			
Antimony	ND	mg/L	0.05
Barium	ND	mg/L	0.01
Beryllium	ND	mg/L	0.002
Boron	ND	mg/L	0.02
Cadmium	ND	mg/L	0.005
Chromium	ND	mg/L	0.01

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 04 DEC 89-A QC Run: 04 DEC 89-A			
Cobalt	ND	mg/L	0.01
Copper	ND	mg/L	0.01
Manganese	ND	mg/L	0.01
Nickel	ND	mg/L	0.04
Silver	ND	mg/L	0.01
Tin	ND	mg/L	0.05
Vanadium	ND	mg/L	0.01
Zinc	ND	mg/L	0.01

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007379-0001-SA	AQUEOUS	NO3-A	10 NOV 89-C	-
007379-0001-SA	AQUEOUS	NH3-A	10 NOV 89-A	-
007379-0001-SA	AQUEOUS	TKN-A	20 NOV 89-A	20 NOV 89-A
007379-0001-SA	AQUEOUS	CL-IC-A	19 NOV 89-M	-
007379-0001-SA	AQUEOUS	SO4-IC-A	19 NOV 89-M	-
007379-0001-SA	AQUEOUS	F-A	28 NOV 89-A	-
007379-0002-SA	AQUEOUS	NO3-A	10 NOV 89-C	-
007379-0002-SA	AQUEOUS	NH3-A	10 NOV 89-A	-
007379-0002-SA	AQUEOUS	TKN-A	20 NOV 89-A	20 NOV 89-A
007379-0002-SA	AQUEOUS	CL-IC-A	19 NOV 89-M	-
007379-0002-SA	AQUEOUS	SO4-IC-A	19 NOV 89-M	-
007379-0002-SA	AQUEOUS	F-A	28 NOV 89-A	-

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: NO3-A Matrix: AQUEOUS QC Lot: 10 NOV 89-C Concentration Units: mg/L								
Nitrate as N	5.4	5.41	5.36	5.38	100	91-109	0.9	10
Category: NH3-A Matrix: AQUEOUS QC Lot: 10 NOV 89-A Concentration Units: mg/L								
Ammonia as N	8.0	7.78	7.83	7.80	98	93-107	0.6	10
Category: TKN-A Matrix: AQUEOUS QC Lot: 20 NOV 89-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	4.6	4.20	4.12	4.16	90	78-122	1.9	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 19 NOV 89-M Concentration Units: mg/L								
Chloride	100	99.6	101	100	100	92-108	1.4	20
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 19 NOV 89-M Concentration Units: mg/L								
Sulfate	200	201	205	203	102	93-107	2.0	20

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

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 28 NOV 89-A								
Concentration Units: mg/L								
Fluoride	6.7	7.08	7.10	7.09	106	88-112	0.3	15

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

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 20 NOV 89-A QC Run: 20 NOV 89-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5

Rocky Mountain
Analytical Laboratory

40, 41
1st event

Enseco

December 15, 1989

Ven Samala
Sparton Technology Inc.
9621 Coors Rd. NW
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for the four aqueous samples received at Rocky Mountain Analytical Laboratory on November 8, 1989.

If you have any questions, the Program Administrator assigned to this project is Joel Holtz.

Sincerely,

Ramona Power
Data Control

Enclosures

cc: Joel Holtz, PA

RMAL #007399

001694

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Discussion

This report contains results and supporting quality control and sample identification information associated with analyses performed on this project. The results and supporting information are contained in tables following this section, arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report
- Data Quality Assessment

Analyses were performed in accordance with EPA methods and with Enseco's current Quality Assurance Program Plan for Environmental Chemical Monitoring. The specific analytical methods used are presented with each result. The first four sections below describes the format, content, and organization for the four corresponding separate components of this report. The fifth section provides an overall data quality assessment of the results.

Sample Description Information

The Sample Description Information lists all the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Analytical Results

The analytical results for this project are presented in data tables. Each data table includes sample identification information, and where available and appropriate, dates sampled, received, authorized, prepared, and analyzed.

Data sheets contain a listing of the parameters measured in each test, the analytical results, the analytical method, and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

Quality Control Reports

As documented in more detail in Enseco's QAPP, various internal quality control checks are performed to assure that the laboratory was in control during the time that samples on this project were analyzed. The QC checks include analysis of method blanks, duplicate control samples (DCS), and single control samples (SCS). Results from these analyses are presented along with the control limits.

Method Blank Results: A method blank is a laboratory generated sample used to assess the degree to which laboratory operations and procedures cause false positive analytical results.

Duplicate Control Samples (DCS): Each DCS consists of a standard control matrix that is spiked with a group of target analytes representative of the method analytes. One Duplicate Control Sample is prepared for every twenty (20) samples.

Single Control Samples (SCS): An SCS is a spiked sample analyzed with each batch of samples.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

Data Quality Assessment

The results contained in this report were reviewed relative to data acceptance criteria as specified in Enseco's Quality Assurance Project Plan for completeness, precision, accuracy, representativeness and defensibility of the data. Unless otherwise stated below, no quality control problems or technical difficulties were encountered.

For samples 007399-0003 and 0004 zinc was detected at the reporting limit of 0.01 mg/L.

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
007399-0001-SA	MW-40	AQUEOUS	07 NOV 89	11:48	08 NOV 89
007399-0002-SA	MW-41	AQUEOUS	07 NOV 89	09:45	08 NOV 89
007399-0003-SA	FIELD BLANK	AQUEOUS	07 NOV 89	12:08	08 NOV 89
007399-0004-SA	TRIP BLANK	AQUEOUS	07 NOV 89	13:00	08 NOV 89

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007399-0001-SA Enseco ID: 1059315
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 16 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007399-0001-SA Enseco ID: 1059315
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 16 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	5.4	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	99.3	%	--
4-Bromofluorobenzene	103	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007399-0002-SA Enseco ID: 1059316
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 16 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	100
Acetonitrile	ND	ug/L	1000
Acrolein	ND	ug/L	1000
Acrylonitrile	ND	ug/L	1000
Allyl chloride	ND	ug/L	50
Benzene	ND	ug/L	50
Bromodichloromethane	ND	ug/L	50
Bromoform	ND	ug/L	50
Bromomethane	ND	ug/L	100
Carbon disulfide	ND	ug/L	50
Carbon tetrachloride	ND	ug/L	50
Chlorobenzene	ND	ug/L	50
Chloroprene	ND	ug/L	50
Chloroethane	ND	ug/L	100
Chlorodibromomethane	ND	ug/L	50
Chloroform	ND	ug/L	50
Chloromethane	ND	ug/L	100
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	50
EDB (1,2-Dibromoethane)	ND	ug/L	50
Dibromomethane	ND	ug/L	50
trans-1,4-Dichloro-2-butene	ND	ug/L	50
Dichlorodifluoromethane	ND	ug/L	100
1,1-Dichloroethane	ND	ug/L	50
1,2-Dichloroethane	ND	ug/L	50
trans-1,2-Dichloroethene	ND	ug/L	50
1,1-Dichloroethene	150	ug/L	50
Dichloromethane	ND	ug/L	50
1,2-Dichloropropane	ND	ug/L	50
cis-1,3-Dichloropropene	ND	ug/L	50
trans-1,3-Dichloropropene	ND	ug/L	50
1,4-Dioxane	ND	ug/L	1000
Ethylbenzene	ND	ug/L	50
Ethyl cyanide	ND	ug/L	50
2-Hexanone	ND	ug/L	100
Iodomethane	ND	ug/L	50
Isobutyl alcohol	ND	ug/L	1000
Methacrylonitrile	ND	ug/L	50
Methyl ethyl ketone	ND	ug/L	100
4-Methyl-2-pentanone	ND	ug/L	100

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007399-0002-SA Enseco ID: 1059316
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 16 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	50
1,1,1,2-Tetrachloroethane	ND	ug/L	50
1,1,2,2-Tetrachloroethane	ND	ug/L	50
Tetrachloroethene	ND	ug/L	50
Toluene	ND	ug/L	50
1,1,1-Trichloroethane	310	ug/L	50
1,1,2-Trichloroethane	ND	ug/L	50
Trichloroethene	1100	ug/L	50
Trichlorofluoromethane	ND	ug/L	50
1,2,3-Trichloropropane	ND	ug/L	50
Vinyl acetate	ND	ug/L	100
Vinyl chloride	ND	ug/L	100
Xylenes (total)	ND	ug/L	50
Toluene-d8	101	%	--
4-Bromofluorobenzene	106	%	--
1,2-Dichloroethane-d4	103	%	--

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007399-0003-SA Enseco ID: 1059317
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 15 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007399-0003-SA Enseco ID: 1059317
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 15 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	98.4	%	--
4-Bromofluorobenzene	96.2	%	--
1,2-Dichloroethane-d4	98.8	%	--

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007399-0004-SA Enseco ID: 1059318
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 15 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007399-0004-SA Enseco ID: 1059318
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: NA Analyzed: 15 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	97.9	%	--
4-Bromofluorobenzene	94.8	%	--
1,2-Dichloroethane-d4	99.2	%	--

ND = Not detected
NA = Not applicable

Reported By: Steve Siegel Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007399-0001-SA Enseco ID: 1059315
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Arsenic	ND	mg/L	0.01	206.2	05 DEC 89	08 DEC 89
Barium	0.12	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Beryllium	ND	mg/L	0.002	200.7	05 DEC 89	08 DEC 89
Boron	0.14	mg/L	0.02	200.7	05 DEC 89	08 DEC 89
Cadmium	ND	mg/L	0.005	200.7	05 DEC 89	08 DEC 89
Chromium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Cobalt	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Copper	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Lead	ND	mg/L	0.005	239.2	05 DEC 89	08 DEC 89
Manganese	0.02	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	05 DEC 89	08 DEC 89
Selenium	ND	mg/L	0.01	270.2	05 DEC 89	08 DEC 89
Silver	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Thallium	ND	mg/L	0.01	279.2	05 DEC 89	11 DEC 89
Tin	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Vanadium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Zinc	0.66	mg/L	0.01	200.7	05 DEC 89	08 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Toni Lusk

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007399-0002-SA Enseco ID: 1059316
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Arsenic	ND	mg/L	0.005	206.2	05 DEC 89	08 DEC 89
Barium	0.06	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Beryllium	ND	mg/L	0.002	200.7	05 DEC 89	08 DEC 89
Boron	0.14	mg/L	0.02	200.7	05 DEC 89	08 DEC 89
Cadmium	ND	mg/L	0.005	200.7	05 DEC 89	08 DEC 89
Chromium	0.02	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Cobalt	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Copper	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Lead	ND	mg/L	0.005	239.2	05 DEC 89	08 DEC 89
Manganese	0.13	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	05 DEC 89	08 DEC 89
Selenium	ND	mg/L	0.01	270.2	05 DEC 89	08 DEC 89
Silver	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Thallium	ND	mg/L	0.01	279.2	05 DEC 89	11 DEC 89
Tin	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Vanadium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Zinc	0.03	mg/L	0.01	200.7	05 DEC 89	08 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Toni Lusk

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007399-0003-SA Enseco ID: 1059317
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Arsenic	ND	mg/L	0.005	206.2	05 DEC 89	08 DEC 89
Barium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Beryllium	ND	mg/L	0.002	200.7	05 DEC 89	08 DEC 89
Boron	ND	mg/L	0.02	200.7	05 DEC 89	08 DEC 89
Cadmium	ND	mg/L	0.005	200.7	05 DEC 89	08 DEC 89
Chromium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Cobalt	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Copper	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Lead	ND	mg/L	0.005	239.2	05 DEC 89	08 DEC 89
Manganese	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	05 DEC 89	08 DEC 89
Selenium	ND	mg/L	0.01	270.2	05 DEC 89	08 DEC 89
Silver	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Thallium	ND	mg/L	0.01	279.2	05 DEC 89	11 DEC 89
Tin	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Vanadium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Zinc	0.01	mg/L	0.01	200.7	05 DEC 89	08 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Toni Lusk

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007399-0004-SA Enseco ID: 1059318
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Arsenic	ND	mg/L	0.005	206.2	05 DEC 89	08 DEC 89
Barium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Beryllium	ND	mg/L	0.002	200.7	05 DEC 89	08 DEC 89
Boron	ND	mg/L	0.02	200.7	05 DEC 89	08 DEC 89
Cadmium	ND	mg/L	0.005	200.7	05 DEC 89	08 DEC 89
Chromium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Cobalt	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Copper	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Lead	ND	mg/L	0.005	239.2	05 DEC 89	08 DEC 89
Manganese	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	05 DEC 89	08 DEC 89
Selenium	ND	mg/L	0.01	270.2	05 DEC 89	08 DEC 89
Silver	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Thallium	ND	mg/L	0.01	279.2	05 DEC 89	11 DEC 89
Tin	ND	mg/L	0.05	200.7	05 DEC 89	08 DEC 89
Vanadium	ND	mg/L	0.01	200.7	05 DEC 89	08 DEC 89
Zinc	0.01	mg/L	0.01	200.7	05 DEC 89	08 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Toni Lusk

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007399-0001-SA Enseco ID: 1059315
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	24	mg/L	3	300.0	NA	19 NOV 89
Fluoride	0.3	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	10 NOV 89
Nitrate as N	0.9	mg/L	0.1	353.2	NA	10 NOV 89
Sulfate	119	mg/L	5	300.0	NA	19 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Mary Grehl

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007399-0002-SA Enseco ID: 1059316
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	54	mg/L	3	300.0	NA	19 NOV 89
Fluoride	0.2	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	10 NOV 89
Nitrate as N	3.2	mg/L	0.1	353.2	NA	10 NOV 89
Sulfate	128	mg/L	5	300.0	NA	19 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Mary Grehl

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007399-0003-SA Enseco ID: 1059317
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	19 NOV 89
Fluoride	ND	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	10 NOV 89
Nitrate as N	ND	mg/L	0.1	353.2	NA	10 NOV 89
Sulfate	ND	mg/L	5	300.0	NA	19 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Mary Grehl

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007399-0004-SA Enseco ID: 1059318
Matrix: AQUEOUS Sampled: 07 NOV 89 Received: 08 NOV 89
Authorized: 08 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	19 NOV 89
Fluoride	ND	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	10 NOV 89
Nitrate as N	ND	mg/L	0.1	353.2	NA	10 NOV 89
Sulfate	ND	mg/L	5	300.0	NA	19 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Mary Grehl

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007399-0001-SA	AQUEOUS	624-A	16 NOV 89-B	16 NOV 89-B
007399-0002-SA	AQUEOUS	624-A	16 NOV 89-B	16 NOV 89-B
007399-0003-SA	AQUEOUS	624-A	09 NOV 89-B	15 NOV 89-B
007399-0004-SA	AQUEOUS	624-A	09 NOV 89-B	15 NOV 89-B

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 624-A Matrix: AQUEOUS QC Lot: 16 NOV 89-B Concentration Units: ug/L								
1,1-Dichloroethene	50	63.0	66.1	64.6	129	61-145	4.8	14
Trichloroethene	50	51.2	50.0	50.6	101	71-120	2.4	14
Benzene	50	59.4	59.7	59.6	119	76-127	0.5	11
Toluene	50	54.0	51.8	52.9	106	76-125	4.2	13
Chlorobenzene	50	52.8	49.4	51.1	102	75-130	6.7	13
Category: 624-A Matrix: AQUEOUS QC Lot: 09 NOV 89-B Concentration Units: ug/L								
1,1-Dichloroethene	50	42.2	40.3	41.2	83	61-145	4.6	14
Trichloroethene	50	45.5	44.7	45.1	90	71-120	1.8	14
Benzene	50	56.0	51.7	53.8	108	76-127	8.0	11
Toluene	50	55.3	52.5	53.9	108	76-125	5.2	13
Chlorobenzene	50	52.0	52.4	52.2	104	75-130	0.8	13

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

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 16 NOV 89-B QC Run: 16 NOV 89-B				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	49.8	100	76-114
4-Bromofluorobenzene	50.0	50.6	101	86-115
Toluene-d8	50.0	47.8	96	88-110
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 09 NOV 89-B QC Run: 15 NOV 89-B				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	46.7	93	76-114
4-Bromofluorobenzene	50.0	46.9	94	86-115
Toluene-d8	50.0	49.0	98	88-110

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

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-HSL-AP
Matrix: AQUEOUS
QC Lot: 16 NOV 89-B QC Run: 16 NOV 89-B

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Chlorodibromomethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Test: 624-HSL-AP
Matrix: AQUEOUS
QC Lot: 09 NOV 89-B QC Run: 15 NOV 89-B

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Chlorodibromomethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007399-0001-SA	AQUEOUS	AS-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0001-SA	AQUEOUS	TL-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0001-SA	AQUEOUS	SE-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0001-SA	AQUEOUS	PB-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0001-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007399-0001-SA	AQUEOUS	ICP-AT	05 DEC 89-A	05 DEC 89-A
007399-0002-SA	AQUEOUS	AS-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0002-SA	AQUEOUS	TL-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0002-SA	AQUEOUS	SE-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0002-SA	AQUEOUS	PB-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0002-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007399-0002-SA	AQUEOUS	ICP-AT	05 DEC 89-A	05 DEC 89-A
007399-0003-SA	AQUEOUS	AS-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0003-SA	AQUEOUS	TL-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0003-SA	AQUEOUS	SE-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0003-SA	AQUEOUS	PB-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0003-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007399-0003-SA	AQUEOUS	ICP-AT	05 DEC 89-A	05 DEC 89-A
007399-0004-SA	AQUEOUS	AS-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0004-SA	AQUEOUS	TL-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0004-SA	AQUEOUS	SE-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0004-SA	AQUEOUS	PB-FAA-AT	05 DEC 89-A	05 DEC 89-A
007399-0004-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007399-0004-SA	AQUEOUS	ICP-AT	05 DEC 89-A	05 DEC 89-A

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A Concentration Units: mg/L								
Arsenic	0.04	0.036	0.037	0.036	91	75-125	2.7	20
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A Concentration Units: mg/L								
Thallium	0.05	0.050	0.048	0.049	98	75-125	4.1	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A Concentration Units: mg/L								
Selenium	0.01	0.011	0.010	0.011	106	75-125	2.8	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A Concentration Units: mg/L								
Lead	0.02	0.019	0.019	0.019	95	75-125	0.0	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 01 DEC 89-B Concentration Units: mg/L								
Mercury	0.0010	0.00107	0.00109	0.00108	108	75-125	1.9	20

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

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 05 DEC 89-A								
Concentration Units: mg/L								
Aluminum	2.0	1.96	1.95	1.96	98	75-125	0.5	20
Antimony	0.5	0.46	0.46	0.46	92	75-125	0.0	20
Arsenic	0.5	0.51	0.49	0.50	100	75-125	4.0	20
Barium	2.0	1.97	1.95	1.96	98	75-125	1.0	20
Beryllium	0.05	0.051	0.050	0.050	101	75-125	2.0	20
Cadmium	0.05	0.046	0.046	0.046	92	75-125	0.0	20
Calcium	100	91.0	90.1	90.6	91	75-125	1.0	20
Chromium	0.2	0.20	0.20	0.20	100	75-125	0.0	20
Cobalt	0.5	0.48	0.48	0.48	96	75-125	0.0	20
Copper	0.25	0.25	0.25	0.25	100	75-125	0.0	20
Iron	1.0	0.98	0.97	0.98	98	75-125	1.0	20
Lead	0.5	0.48	0.47	0.48	95	75-125	2.1	20
Magnesium	50	46.6	46.6	46.6	93	75-125	0.0	20
Manganese	0.5	0.49	0.48	0.48	97	75-125	2.1	20
Nickel	0.5	0.50	0.49	0.50	99	75-125	2.0	20
Potassium	100	91.0	92.8	91.9	92	75-125	2.0	20
Silver	0.05	0.049	0.045	0.047	94	75-125	8.5	20
Sodium	100	85.3	85.3	85.3	85	75-125	0.0	20
Vanadium	0.5	0.48	0.47	0.48	95	75-125	2.1	20
Zinc	0.5	0.52	0.51	0.52	103	75-125	1.9	20

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

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: AS-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A QC Run: 05 DEC 89-A			
Arsenic	ND	mg/L	0.005
Test: TL-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A QC Run: 05 DEC 89-A			
Thallium	ND	mg/L	0.005
Test: SE-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A QC Run: 05 DEC 89-A			
Selenium	ND	mg/L	0.005
Test: PB-FAA-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A QC Run: 05 DEC 89-A			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 01 DEC 89-B QC Run: 01 DEC 89-B			
Mercury	ND	mg/L	0.0002
Test: ICP-AT Matrix: AQUEOUS QC Lot: 05 DEC 89-A QC Run: 05 DEC 89-A			
Antimony	ND	mg/L	0.05
Barium	ND	mg/L	0.01
Beryllium	ND	mg/L	0.002
Boron	ND	mg/L	0.02
Cadmium	ND	mg/L	0.005
Chromium	ND	mg/L	0.01

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Test: ICP-AT
Matrix: AQUEOUS
QC Lot: 05 DEC 89-A QC Run: 05 DEC 89-A

Analyte	Result	Units	Reporting Limit
Cobalt	ND	mg/L	0.01
Copper	ND	mg/L	0.01
Manganese	ND	mg/L	0.01
Nickel	ND	mg/L	0.04
Silver	ND	mg/L	0.01
Tin	ND	mg/L	0.05
Vanadium	ND	mg/L	0.01
Zinc	ND	mg/L	0.01

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007399-0001-SA	AQUEOUS	NO3-A	10 NOV 89-C	-
007399-0001-SA	AQUEOUS	NH3-A	10 NOV 89-A	-
007399-0001-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007399-0001-SA	AQUEOUS	CL-IC-A	19 NOV 89-M	-
007399-0001-SA	AQUEOUS	SO4-IC-A	19 NOV 89-M	-
007399-0001-SA	AQUEOUS	F-A	28 NOV 89-A	-
007399-0002-SA	AQUEOUS	NO3-A	10 NOV 89-C	-
007399-0002-SA	AQUEOUS	NH3-A	10 NOV 89-A	-
007399-0002-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007399-0002-SA	AQUEOUS	CL-IC-A	19 NOV 89-M	-
007399-0002-SA	AQUEOUS	SO4-IC-A	19 NOV 89-M	-
007399-0002-SA	AQUEOUS	F-A	28 NOV 89-A	-
007399-0003-SA	AQUEOUS	NO3-A	10 NOV 89-C	-
007399-0003-SA	AQUEOUS	NH3-A	10 NOV 89-A	-
007399-0003-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007399-0003-SA	AQUEOUS	CL-IC-A	19 NOV 89-M	-
007399-0003-SA	AQUEOUS	SO4-IC-A	19 NOV 89-M	-
007399-0003-SA	AQUEOUS	F-A	28 NOV 89-A	-
007399-0004-SA	AQUEOUS	NO3-A	10 NOV 89-C	-
007399-0004-SA	AQUEOUS	NH3-A	10 NOV 89-A	-
007399-0004-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007399-0004-SA	AQUEOUS	CL-IC-A	19 NOV 89-M	-
007399-0004-SA	AQUEOUS	SO4-IC-A	19 NOV 89-M	-
007399-0004-SA	AQUEOUS	F-A	28 NOV 89-A	-

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: NO3-A Matrix: AQUEOUS QC Lot: 10 NOV 89-C Concentration Units: mg/L								
Nitrate as N	5.4	5.41	5.36	5.38	100	91-109	0.9	10
Category: NH3-A Matrix: AQUEOUS QC Lot: 10 NOV 89-A Concentration Units: mg/L								
Ammonia as N	8.0	7.78	7.83	7.80	98	93-107	0.6	10
Category: TKN-A Matrix: AQUEOUS QC Lot: 28 NOV 89-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	5.2	5.66	5.64	5.65	109	78-122	0.3	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 19 NOV 89-M Concentration Units: mg/L								
Chloride	100	99.6	101	100	100	92-108	1.4	20
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 19 NOV 89-M Concentration Units: mg/L								
Sulfate	200	201	205	203	102	93-107	2.0	20

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

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 28 NOV 89-A								
Concentration Units: mg/L								
Fluoride	6.7	7.08	7.10	7.09	106	88-112	0.3	15

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

Enseco

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-A QC Run: 28 NOV 89-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5

Rocky Mountain
Analytical Laboratory

38, 39, 41
2nd event

Enseco

December 11, 1989

Mr. Ven Samala
Sparton Technology
9621 Coors Road NW
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for three aqueous samples we received at Enseco-Rocky Mountain Analytical Laboratory on November 21, 1989.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Joel E. Holtz
Program Administrator

Reviewed by:

Jeanne B. Howbert
Technical Manager

JEH/JBH/kas
Enclosures

RMAL #007566

001729

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco

ANALYTICAL RESULTS
FOR
SPARTON TECHNOLOGY
ENSECO-RMAL NO. 007566

DECEMBER 11, 1989

Reviewed by: Joel E. Holtz

Jeanne B. Howbert

001730

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions must be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
007566-0001-SA	MW-38	AQUEOUS	20 NOV 89	12:20	21 NOV 89
007566-0002-SA	MW-39	AQUEOUS	20 NOV 89	10:05	21 NOV 89
007566-0003-SA	MW-41	AQUEOUS	20 NOV 89	13:52	21 NOV 89

Enseco

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 007566	Group Code	Analysis Description	Custom Test?
0001 - 0003	A	Nitrate, as Nitrogen	N
		Ammonia	N
		Total Kjeldahl Nitrogen (TKN)	N
		Chloride, Ion Chromatography	N
		Sulfate, Ion Chromatography	N
		Fluoride, Electrode	N
		HSL Volatile Organics	N
		Prep-Volatile Organics by GC/MS	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Thallium, Furnace AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007566-0001-SA Enseco ID: 1060617
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007566-0001-SA Enseco ID: 1060617
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	5.7	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	103	%	--
4-Bromofluorobenzene	96.6	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007566-0002-SA Enseco ID: 1060619
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007566-0002-SA Enseco ID: 1060619
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	5.3	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	104	%	--
4-Bromofluorobenzene	96.2	%	--
1,2-Dichloroethane-d4	107	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007566-0003-SA Enseco ID: 1060621
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: NA Analyzed: 01 DEC 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	100
Acetonitrile	ND	ug/L	1000
Acrolein	ND	ug/L	1000
Acrylonitrile	ND	ug/L	1000
Allyl chloride	ND	ug/L	50
Benzene	ND	ug/L	50
Bromodichloromethane	ND	ug/L	50
Bromoform	ND	ug/L	50
Bromomethane	ND	ug/L	100
Carbon disulfide	ND	ug/L	50
Carbon tetrachloride	ND	ug/L	50
Chlorobenzene	ND	ug/L	50
Chloroprene	ND	ug/L	50
Chloroethane	ND	ug/L	100
Chlorodibromomethane	ND	ug/L	50
Chloroform	ND	ug/L	50
Chloromethane	ND	ug/L	100
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	50
EDB (1,2-Dibromoethane)	ND	ug/L	50
Dibromomethane	ND	ug/L	50
trans-1,4-Dichloro-2-butene	ND	ug/L	50
Dichlorodifluoromethane	ND	ug/L	100
1,1-Dichloroethane	ND	ug/L	50
1,2-Dichloroethane	ND	ug/L	50
trans-1,2-Dichloroethene	ND	ug/L	50
1,1-Dichloroethene	110	ug/L	50
Dichloromethane	ND	ug/L	50
1,2-Dichloropropane	ND	ug/L	50
cis-1,3-Dichloropropene	ND	ug/L	50
trans-1,3-Dichloropropene	ND	ug/L	50
1,4-Dioxane	ND	ug/L	1000
Ethylbenzene	ND	ug/L	50
Ethyl cyanide	ND	ug/L	50
2-Hexanone	ND	ug/L	100
Iodomethane	ND	ug/L	50
Isobutyl alcohol	ND	ug/L	1000
Methacrylonitrile	ND	ug/L	50
Methyl ethyl ketone	ND	ug/L	100
4-Methyl-2-pentanone	ND	ug/L	100

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007566-0003-SA Enseco ID: 1060621
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: NA Analyzed: 01 DEC 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	50
1,1,1,2-Tetrachloroethane	ND	ug/L	50
1,1,2,2-Tetrachloroethane	ND	ug/L	50
Tetrachloroethene	ND	ug/L	50
Toluene	ND	ug/L	50
1,1,1-Trichloroethane	290	ug/L	50
1,1,2-Trichloroethane	ND	ug/L	50
Trichloroethene	960	ug/L	50
Trichlorofluoromethane	ND	ug/L	50
1,2,3-Trichloropropane	ND	ug/L	50
Vinyl acetate	ND	ug/L	100
Vinyl chloride	ND	ug/L	100
Xylenes (total)	ND	ug/L	50
Toluene-d8	102	%	--
4-Bromofluorobenzene	95.2	%	--
1,2-Dichloroethane-d4	105	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007566-0001-SA Enseco ID: 1060617
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	28 NOV 89	29 NOV 89
Arsenic	ND	mg/L	0.005	206.2	28 NOV 89	29 NOV 89
Barium	0.12	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Beryllium	ND	mg/L	0.002	200.7	28 NOV 89	29 NOV 89
Boron	0.11	mg/L	0.02	200.7	28 NOV 89	29 NOV 89
Cadmium	ND	mg/L	0.005	200.7	28 NOV 89	29 NOV 89
Chromium	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Cobalt	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Copper	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Lead	ND	mg/L	0.005	239.2	28 NOV 89	29 NOV 89
Manganese	0.42	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	28 NOV 89	29 NOV 89
Selenium	ND	mg/L	0.005	270.2	28 NOV 89	29 NOV 89
Silver	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Thallium	ND	mg/L	0.01	279.2	28 NOV 89	29 NOV 89
Tin	ND	mg/L	0.05	200.7	28 NOV 89	29 NOV 89
Vanadium	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Zinc	0.54	mg/L	0.01	200.7	28 NOV 89	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Tammy Bailey

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007566-0002-SA Enseco ID: 1060619
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	28 NOV 89	29 NOV 89
Arsenic	ND	mg/L	0.005	206.2	28 NOV 89	29 NOV 89
Barium	0.14	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Beryllium	ND	mg/L	0.002	200.7	28 NOV 89	29 NOV 89
Boron	0.12	mg/L	0.02	200.7	28 NOV 89	29 NOV 89
Cadmium	ND	mg/L	0.005	200.7	28 NOV 89	29 NOV 89
Chromium	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Cobalt	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Copper	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Lead	ND	mg/L	0.005	239.2	28 NOV 89	29 NOV 89
Manganese	0.64	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	28 NOV 89	29 NOV 89
Selenium	ND	mg/L	0.005	270.2	28 NOV 89	29 NOV 89
Silver	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Thallium	ND	mg/L	0.02	279.2	28 NOV 89	29 NOV 89
Tin	ND	mg/L	0.05	200.7	28 NOV 89	29 NOV 89
Vanadium	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Zinc	0.15	mg/L	0.01	200.7	28 NOV 89	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Tammy Bailey

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007566-0003-SA Enseco ID: 1060621
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	28 NOV 89	29 NOV 89
Arsenic	ND	mg/L	0.005	206.2	28 NOV 89	29 NOV 89
Barium	0.06	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Beryllium	ND	mg/L	0.002	200.7	28 NOV 89	29 NOV 89
Boron	0.14	mg/L	0.02	200.7	28 NOV 89	29 NOV 89
Cadmium	ND	mg/L	0.005	200.7	28 NOV 89	29 NOV 89
Chromium	0.02	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Cobalt	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Copper	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Lead	ND	mg/L	0.005	239.2	28 NOV 89	29 NOV 89
Manganese	0.14	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Mercury	ND	mg/L	0.0002	245.1	01 DEC 89	01 DEC 89
Nickel	ND	mg/L	0.04	200.7	28 NOV 89	29 NOV 89
Selenium	ND	mg/L	0.005	270.2	28 NOV 89	29 NOV 89
Silver	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Thallium	ND	mg/L	0.05	279.2	28 NOV 89	29 NOV 89
Tin	ND	mg/L	0.05	200.7	28 NOV 89	29 NOV 89
Vanadium	ND	mg/L	0.01	200.7	28 NOV 89	29 NOV 89
Zinc	0.02	mg/L	0.01	200.7	28 NOV 89	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-38
Lab ID: 007566-0001-SA Enseco ID: 1060617
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	12	mg/L	3	300.0	NA	28 NOV 89
Fluoride	0.4	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	29 NOV 89
Nitrate as N	0.3	mg/L	0.1	353.2	NA	28 NOV 89
Sulfate	71	mg/L	5	300.0	NA	28 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-39
Lab ID: 007566-0002-SA Enseco ID: 1060619
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	21	mg/L	3	300.0	NA	28 NOV 89
Fluoride	0.3	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	29 NOV 89
Nitrate as N	ND	mg/L	0.1	353.2	NA	28 NOV 89
Sulfate	93	mg/L	5	300.0	NA	28 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-41
Lab ID: 007566-0003-SA Enseco ID: 1060621
Matrix: AQUEOUS Sampled: 20 NOV 89 Received: 21 NOV 89
Authorized: 21 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	44	mg/L	3	300.0	NA	28 NOV 89
Fluoride	0.2	mg/L	0.1	340.2	NA	28 NOV 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	29 NOV 89
Nitrate as N	3.3	mg/L	0.1	353.2	NA	28 NOV 89
Sulfate	122	mg/L	5	300.0	NA	28 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Tammy Bailey

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

Enseco

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007566-0001-SA	AQUEOUS	624-A	21 NOV 89-H	30 NOV 89-H
007566-0002-SA	AQUEOUS	624-A	21 NOV 89-H	30 NOV 89-H
007566-0003-SA	AQUEOUS	624-A	21 NOV 89-H	30 NOV 89-H

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: 624-A								
Matrix: AQUEOUS								
QC Lot: 21 NOV 89-H								
Concentration Units: ug/L								
1,1-Dichloroethene	50	57.0	57.1	57.0	114	61-145	0.2	14
Trichloroethene	50	44.5	46.6	45.6	91	71-120	4.6	14
Benzene	50	52.0	52.6	52.3	105	76-127	1.1	11
Toluene	50	49.4	48.8	49.1	98	76-125	1.2	13
Chlorobenzene	50	48.1	46.9	47.5	95	75-130	2.5	13

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

Enseco

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 21 NOV 89-H QC Run: 30 NOV 89-H				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	49.9	100	76-114
4-Bromofluorobenzene	50.0	50.0	100	86-115
Toluene-d8	50.0	51.1	102	88-110

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

Enseco

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-HSL-AP
Matrix: AQUEOUS
QC Lot: 21 NOV 89-H QC Run: 30 NOV 89-H

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Chlorodibromomethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Enseco

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007566-0001-SA	AQUEOUS	AS-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0001-SA	AQUEOUS	TL-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0001-SA	AQUEOUS	SE-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0001-SA	AQUEOUS	PB-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0001-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007566-0001-SA	AQUEOUS	ICP-AT	28 NOV 89-K	28 NOV 89-K
007566-0002-SA	AQUEOUS	AS-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0002-SA	AQUEOUS	TL-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0002-SA	AQUEOUS	SE-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0002-SA	AQUEOUS	PB-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0002-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007566-0002-SA	AQUEOUS	ICP-AT	28 NOV 89-K	28 NOV 89-K
007566-0003-SA	AQUEOUS	AS-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0003-SA	AQUEOUS	TL-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0003-SA	AQUEOUS	SE-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0003-SA	AQUEOUS	PB-FAA-AT	28 NOV 89-K	28 NOV 89-K
007566-0003-SA	AQUEOUS	HG-CVAA-AT	01 DEC 89-B	01 DEC 89-B
007566-0003-SA	AQUEOUS	ICP-AT	28 NOV 89-K	28 NOV 89-K

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 28 NOV 89-K Concentration Units: mg/L								
Arsenic	0.04	0.029	0.032	0.030	76	75-125	9.8	20
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 28 NOV 89-K Concentration Units: mg/L								
Thallium	0.05	0.049	0.047	0.048	96	75-125	4.2	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 28 NOV 89-K Concentration Units: mg/L								
Selenium	0.01	0.010	0.011	0.010	105	75-125	9.5	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 28 NOV 89-K Concentration Units: mg/L								
Lead	0.02	0.018	0.018	0.018	90	75-125	0.0	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 01 DEC 89-B Concentration Units: mg/L								
Mercury	0.0010	0.00107	0.00109	0.00108	108	75-125	1.9	20

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

Enseco

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: AS-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-K QC Run: 28 NOV 89-K			
Arsenic	ND	mg/L	0.005
Test: TL-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-K QC Run: 28 NOV 89-K			
Thallium	ND	mg/L	0.005
Test: SE-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-K QC Run: 28 NOV 89-K			
Selenium	ND	mg/L	0.005
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-K QC Run: 28 NOV 89-K			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 01 DEC 89-B QC Run: 01 DEC 89-B			
Mercury	ND	mg/L	0.0002
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-K QC Run: 28 NOV 89-K			
Antimony	ND	mg/L	0.05
Barium	ND	mg/L	0.01
Beryllium	ND	mg/L	0.002
Boron	ND	mg/L	0.02
Cadmium	ND	mg/L	0.005
Chromium	ND	mg/L	0.01

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007566-0001-SA	AQUEOUS	NO3-A	28 NOV 89-C	-
007566-0001-SA	AQUEOUS	NH3-A	29 NOV 89-A	-
007566-0001-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007566-0001-SA	AQUEOUS	CL-IC-A	28 NOV 89-N	-
007566-0001-SA	AQUEOUS	SO4-IC-A	28 NOV 89-M	-
007566-0001-SA	AQUEOUS	F-A	28 NOV 89-A	-
007566-0002-SA	AQUEOUS	NO3-A	28 NOV 89-C	-
007566-0002-SA	AQUEOUS	NH3-A	29 NOV 89-A	-
007566-0002-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007566-0002-SA	AQUEOUS	CL-IC-A	28 NOV 89-N	-
007566-0002-SA	AQUEOUS	SO4-IC-A	28 NOV 89-M	-
007566-0002-SA	AQUEOUS	F-A	28 NOV 89-A	-
007566-0003-SA	AQUEOUS	NO3-A	28 NOV 89-C	-
007566-0003-SA	AQUEOUS	NH3-A	29 NOV 89-A	-
007566-0003-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007566-0003-SA	AQUEOUS	CL-IC-A	28 NOV 89-N	-
007566-0003-SA	AQUEOUS	SO4-IC-A	28 NOV 89-M	-
007566-0003-SA	AQUEOUS	F-A	28 NOV 89-A	-

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: NO3-A Matrix: AQUEOUS QC Lot: 28 NOV 89-C Concentration Units: mg/L								
Nitrate as N	5.4	5.77	5.60	5.68	105	91-109	3.0	10
Category: NH3-A Matrix: AQUEOUS QC Lot: 29 NOV 89-A Concentration Units: mg/L								
Ammonia as N	8.0	8.44	8.04	8.24	103	93-107	4.9	10
Category: TKN-A Matrix: AQUEOUS QC Lot: 28 NOV 89-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	5.2	5.66	5.64	5.65	109	78-122	0.3	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 28 NOV 89-N Concentration Units: mg/L								
Chloride	100	104	103	104	104	92-108	1.0	20
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 28 NOV 89-M Concentration Units: mg/L								
Sulfate	200	203	208	206	103	93-107	2.4	20

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

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 28 NOV 89-A								
Concentration Units: mg/L								
Fluoride	6.7	7.08	7.10	7.09	106	88-112	0.3	15

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

Enseco

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 28 NOV 89-A QC Run: 28 NOV 89-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5

Rocky Mountain
Analytical Laboratory

40
2nd eval

Enseco

December 29, 1989

Mr. Ven Samala
Sparton Technology
9621 Coors Road, N.W.
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for three aqueous samples we received at Enseco-Rocky Mountain Analytical Laboratory on November 22, 1989.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Joel E. Holtz
Program Administrator

Reviewed by:

Jeanne B. Howbert
Technical Manager

JEH/JBH/heg
Enclosures

RMAL #007581

001763

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco

ANALYTICAL RESULTS

FOR

SPARTON TECHNOLOGY

ENSECO-RMAL NO. 007581

DECEMBER 29, 1989

Reviewed by: Joel E. Holtz

Jeanne B. Howbert

001764

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Enseco

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
007581-0001-SA	MW-40	AQUEOUS	21 NOV 89	10:11	22 NOV 89
007581-0002-SA	FIELD BLANK	AQUEOUS	21 NOV 89	10:15	22 NOV 89
007581-0003-SA	TRIP BLANK	AQUEOUS	21 NOV 89		22 NOV 89

Enseco

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 007581	Group Code	Analysis Description	Custom Test?
0001 - 0003	A	Nitrate, as Nitrogen	N
		Ammonia	N
		Total Kjeldahl Nitrogen (TKN)	N
		Chloride, Ion Chromatography	N
		Sulfate, Ion Chromatography	N
		Fluoride, Electrode	N
		HSL Volatile Organics	N
		Prep-Volatile Organics by GC/MS	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Thallium, Furnace AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007581-0001-SA Enseco ID: 1060746
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Monica Brinkman Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007581-0001-SA Enseco ID: 1060746
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	100	%	--
4-Bromofluorobenzene	98.1	%	--
1,2-Dichloroethane-d4	90.9	%	--

ND = Not detected
NA = Not applicable

Reported By: Monica Brinkman Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007581-0002-SA Enseco ID: 1060747
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	12	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Monica Brinkman Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007581-0002-SA Enseco ID: 1060747
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	101	%	--
4-Bromofluorobenzene	99.5	%	--
1,2-Dichloroethane-d4	95.6	%	--

ND = Not detected
NA = Not applicable

Reported By: Monica Brinkman Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007581-0003-SA Enseco ID: 1060749
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Monica Brinkman Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007581-0003-SA Enseco ID: 1060749
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: NA Analyzed: 30 NOV 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	97.0	%	--
4-Bromofluorobenzene	96.6	%	--
1,2-Dichloroethane-d4	92.0	%	--

ND = Not detected
NA = Not applicable

Reported By: Monica Brinkman Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007581-0001-SA Enseco ID: 1060746
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	15 DEC 89	19 DEC 89
Arsenic	ND	mg/L	0.01	206.2	15 DEC 89	18 DEC 89
Barium	0.12	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Beryllium	ND	mg/L	0.002	200.7	15 DEC 89	19 DEC 89
Boron	0.15	mg/L	0.02	200.7	15 DEC 89	19 DEC 89
Cadmium	ND	mg/L	0.005	200.7	15 DEC 89	19 DEC 89
Chromium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Cobalt	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Copper	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Lead	ND	mg/L	0.005	239.2	15 DEC 89	18 DEC 89
Manganese	0.01	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Mercury	ND	mg/L	0.0002	245.1	06 DEC 89	08 DEC 89
Nickel	ND	mg/L	0.04	200.7	15 DEC 89	19 DEC 89
Selenium	ND	mg/L	0.005	270.2	15 DEC 89	18 DEC 89
Silver	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Thallium	ND	mg/L	0.01	279.2	15 DEC 89	18 DEC 89
Tin	ND	mg/L	0.05	200.7	15 DEC 89	19 DEC 89
Vanadium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Zinc	0.37	mg/L	0.01	200.7	15 DEC 89	19 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007581-0002-SA Enseco ID: 1060747
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	15 DEC 89	19 DEC 89
Arsenic	ND	mg/L	0.005	206.2	15 DEC 89	18 DEC 89
Barium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Beryllium	ND	mg/L	0.002	200.7	15 DEC 89	19 DEC 89
Boron	1.1	mg/L	0.02	200.7	15 DEC 89	19 DEC 89
Cadmium	ND	mg/L	0.005	200.7	15 DEC 89	19 DEC 89
Chromium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Cobalt	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Copper	0.02	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Lead	ND	mg/L	0.005	239.2	15 DEC 89	18 DEC 89
Manganese	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Mercury	ND	mg/L	0.0002	245.1	06 DEC 89	08 DEC 89
Nickel	ND	mg/L	0.04	200.7	15 DEC 89	19 DEC 89
Selenium	ND	mg/L	0.005	270.2	15 DEC 89	18 DEC 89
Silver	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Thallium	ND	mg/L	0.005	279.2	15 DEC 89	18 DEC 89
Tin	ND	mg/L	0.05	200.7	15 DEC 89	19 DEC 89
Vanadium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Zinc	0.01	mg/L	0.01	200.7	15 DEC 89	19 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Kimberly Conroy

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007581-0003-SA Enseco ID: 1060749
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	200.7	15 DEC 89	19 DEC 89
Arsenic	ND	mg/L	0.005	206.2	15 DEC 89	18 DEC 89
Barium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Beryllium	ND	mg/L	0.002	200.7	15 DEC 89	19 DEC 89
Boron	0.02	mg/L	0.02	200.7	15 DEC 89	19 DEC 89
Cadmium	ND	mg/L	0.005	200.7	15 DEC 89	19 DEC 89
Chromium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Cobalt	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Copper	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Lead	ND	mg/L	0.005	239.2	15 DEC 89	18 DEC 89
Manganese	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Mercury	ND	mg/L	0.0002	245.1	06 DEC 89	08 DEC 89
Nickel	ND	mg/L	0.04	200.7	15 DEC 89	19 DEC 89
Selenium	ND	mg/L	0.005	270.2	15 DEC 89	18 DEC 89
Silver	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Thallium	ND	mg/L	0.005	279.2	15 DEC 89	18 DEC 89
Tin	ND	mg/L	0.05	200.7	15 DEC 89	19 DEC 89
Vanadium	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89
Zinc	ND	mg/L	0.01	200.7	15 DEC 89	19 DEC 89

ND = Not detected
NA = Not applicable

Reported By: Bryan Anderson Approved By: Kimberly Conroy

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-40
Lab ID: 007581-0001-SA Enseco ID: 1060746
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	24	mg/L	3	300.0	NA	28 NOV 89
Fluoride	0.3	mg/L	0.1	340.2	NA	05 DEC 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	29 NOV 89
Nitrate as N	0.8	mg/L	0.1	353.2	NA	28 NOV 89
Sulfate	120	mg/L	5	300.0	NA	28 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007581-0002-SA Enseco ID: 1060747
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	28 NOV 89
Fluoride	ND	mg/L	0.1	340.2	NA	05 DEC 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	29 NOV 89
Nitrate as N	ND	mg/L	0.1	353.2	NA	28 NOV 89
Sulfate	ND	mg/L	5	300.0	NA	28 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007581-0003-SA Enseco ID: 1060749
Matrix: AQUEOUS Sampled: 21 NOV 89 Received: 22 NOV 89
Authorized: 22 NOV 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	28 NOV 89
Fluoride	ND	mg/L	0.1	340.2	NA	05 DEC 89
Ammonia as N	0.4	mg/L	0.1	350.1	NA	29 NOV 89
Nitrate as N	ND	mg/L	0.1	353.2	NA	28 NOV 89
Sulfate	ND	mg/L	5	300.0	NA	28 NOV 89
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	29 NOV 89

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones Approved By: Tammy Bailey

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

Enseco

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007581-0001-SA	AQUEOUS	624-A	20 NOV 89-L	30 NOV 89-L
007581-0002-SA	AQUEOUS	624-A	20 NOV 89-L	30 NOV 89-L
007581-0003-SA	AQUEOUS	624-A	20 NOV 89-L	30 NOV 89-L

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 624-A								
Matrix: AQUEOUS								
QC Lot: 20 NOV 89-L								
Concentration Units: ug/L								
1,1-Dichloroethene	50	64.7	63.6	64.2	128	61-145	1.7	14
Trichloroethene	50	48.7	51.4	50.0	100	71-120	5.4	14
Benzene	50	54.7	57.0	55.8	112	76-127	4.1	11
Toluene	50	47.3	48.7	48.0	96	76-125	2.9	13
Chlorobenzene	50	48.8	48.8	48.8	98	75-130	0.0	13

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

Enseco

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 20 NOV 89-L QC Run: 30 NOV 89-L				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	46.8	94	76-114
4-Bromofluorobenzene	50.0	49.9	100	86-115
Toluene-d8	50.0	51.6	103	88-110

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

Enseco

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-HSL-AP
Matrix: AQUEOUS
QC Lot: 20 NOV 89-L QC Run: 30 NOV 89-L

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Chlorodibromomethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Enseco

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007581-0001-SA	AQUEOUS	AS-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0001-SA	AQUEOUS	TL-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0001-SA	AQUEOUS	SE-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0001-SA	AQUEOUS	PB-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0001-SA	AQUEOUS	HG-CVAA-AT	06 DEC 89-C	06 DEC 89-C
007581-0001-SA	AQUEOUS	ICP-AT	15 DEC 89-A	15 DEC 89-A
007581-0002-SA	AQUEOUS	AS-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0002-SA	AQUEOUS	TL-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0002-SA	AQUEOUS	SE-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0002-SA	AQUEOUS	PB-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0002-SA	AQUEOUS	HG-CVAA-AT	06 DEC 89-C	06 DEC 89-C
007581-0002-SA	AQUEOUS	ICP-AT	15 DEC 89-A	15 DEC 89-A
007581-0003-SA	AQUEOUS	AS-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0003-SA	AQUEOUS	TL-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0003-SA	AQUEOUS	SE-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0003-SA	AQUEOUS	PB-FAA-AT	15 DEC 89-A	15 DEC 89-A
007581-0003-SA	AQUEOUS	HG-CVAA-AT	06 DEC 89-C	06 DEC 89-C
007581-0003-SA	AQUEOUS	ICP-AT	15 DEC 89-A	15 DEC 89-A

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 15 DEC 89-A Concentration Units: mg/L								
Arsenic	0.04	0.040	0.040	0.040	100	75-125	0.0	20
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 15 DEC 89-A Concentration Units: mg/L								
Thallium	0.05	0.047	0.048	0.048	95	75-125	2.1	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 15 DEC 89-A Concentration Units: mg/L								
Selenium	0.01	0.011	0.010	0.010	105	75-125	9.5	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 15 DEC 89-A Concentration Units: mg/L								
Lead	0.020	0.018	0.019	0.019	93	75-125	1.6	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 06 DEC 89-C Concentration Units: mg/L								
Mercury	0.0010	0.00100	0.00102	0.00101	101	75-125	2.0	20

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

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 15 DEC 89-A								
Concentration Units: mg/L								
Aluminum	2.0	1.97	1.98	1.98	99	75-125	0.5	20
Antimony	0.5	0.49	0.48	0.48	97	75-125	2.1	20
Arsenic	0.5	0.48	0.50	0.49	98	75-125	4.1	20
Barium	2.0	1.79	1.80	1.80	90	75-125	0.6	20
Beryllium	0.05	0.049	0.049	0.049	98	75-125	0.0	20
Cadmium	0.05	0.048	0.049	0.048	97	75-125	2.1	20
Calcium	100	95.8	96.4	96.1	96	75-125	0.6	20
Chromium	0.2	0.20	0.20	0.20	100	75-125	0.0	20
Cobalt	0.5	0.48	0.48	0.48	96	75-125	0.0	20
Copper	0.25	0.25	0.25	0.25	100	75-125	0.0	20
Iron	1.0	0.98	0.97	0.98	98	75-125	1.0	20
Lead	0.5	0.48	0.49	0.48	97	75-125	2.1	20
Magnesium	50	49.2	49.6	49.4	99	75-125	0.8	20
Manganese	0.5	0.50	0.50	0.50	100	75-125	0.0	20
Nickel	0.5	0.50	0.50	0.50	100	75-125	0.0	20
Potassium	100	96.3	97.2	96.8	97	75-125	0.9	20
Silver	0.05	0.049	0.048	0.048	97	75-125	2.1	20
Sodium	100	88.8	89.3	89.0	89	75-125	0.6	20
Vanadium	0.5	0.47	0.48	0.48	95	75-125	2.1	20
Zinc	0.5	0.51	0.52	0.52	103	75-125	1.9	20

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

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METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: AS-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 15 DEC 89-A QC Run: 15 DEC 89-A			
Arsenic	ND	mg/L	0.005
Test: TL-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 15 DEC 89-A QC Run: 15 DEC 89-A			
Thallium	ND	mg/L	0.005
Test: SE-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 15 DEC 89-A QC Run: 15 DEC 89-A			
Selenium	ND	mg/L	0.005
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 15 DEC 89-A QC Run: 15 DEC 89-A			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 06 DEC 89-C QC Run: 06 DEC 89-C			
Mercury	ND	mg/L	0.0002
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 15 DEC 89-A QC Run: 15 DEC 89-A			
Antimony	ND	mg/L	0.05
Barium	ND	mg/L	0.01
Beryllium	ND	mg/L	0.002
Boron	ND	mg/L	0.02
Cadmium	ND	mg/L	0.005
Chromium	ND	mg/L	0.01

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METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 15 DEC 89-A QC Run: 15 DEC 89-A			
Cobalt	ND	mg/L	0.01
Copper	ND	mg/L	0.01
Manganese	ND	mg/L	0.01
Nickel	ND	mg/L	0.04
Silver	ND	mg/L	0.01
Tin	ND	mg/L	0.05
Vanadium	ND	mg/L	0.01
Zinc	ND	mg/L	0.01

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007581-0001-SA	AQUEOUS	NO3-A	28 NOV 89-C	-
007581-0001-SA	AQUEOUS	NH3-A	29 NOV 89-A	-
007581-0001-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007581-0001-SA	AQUEOUS	CL-IC-A	28 NOV 89-M	-
007581-0001-SA	AQUEOUS	SO4-IC-A	28 NOV 89-M	-
007581-0001-SA	AQUEOUS	F-A	05 DEC 89-A	-
007581-0002-SA	AQUEOUS	NO3-A	28 NOV 89-C	-
007581-0002-SA	AQUEOUS	NH3-A	29 NOV 89-A	-
007581-0002-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007581-0002-SA	AQUEOUS	CL-IC-A	28 NOV 89-M	-
007581-0002-SA	AQUEOUS	SO4-IC-A	28 NOV 89-M	-
007581-0002-SA	AQUEOUS	F-A	05 DEC 89-A	-
007581-0003-SA	AQUEOUS	NO3-A	28 NOV 89-C	-
007581-0003-SA	AQUEOUS	NH3-A	29 NOV 89-A	-
007581-0003-SA	AQUEOUS	TKN-A	28 NOV 89-A	28 NOV 89-A
007581-0003-SA	AQUEOUS	CL-IC-A	28 NOV 89-M	-
007581-0003-SA	AQUEOUS	SO4-IC-A	28 NOV 89-M	-
007581-0003-SA	AQUEOUS	F-A	05 DEC 89-A	-

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: NO3-A Matrix: AQUEOUS QC Lot: 28 NOV 89-C Concentration Units: mg/L								
Nitrate as N	5.4	5.77	5.60	5.68	105	91-109	3.0	10
Category: NH3-A Matrix: AQUEOUS QC Lot: 29 NOV 89-A Concentration Units: mg/L								
Ammonia as N	8.0	8.44	8.04	8.24	103	93-107	4.9	10
Category: TKN-A Matrix: AQUEOUS QC Lot: 28 NOV 89-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	5.2	5.66	5.64	5.65	109	78-122	0.3	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 28 NOV 89-M Concentration Units: mg/L								
Chloride	100	101	104	102	103	92-108	2.9	20
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 28 NOV 89-M Concentration Units: mg/L								
Sulfate	200	203	208	206	103	93-107	2.4	20

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

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DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 05 DEC 89-A								
Concentration Units: mg/L								
Fluoride	6.7	6.64	6.67	6.66	99	88-112	0.4	15

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

Enseco

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A Matrix: AQUEOUS QC Lot: 28 NOV 89-A QC Run: 28 NOV 89-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5

ATTACHMENT 5

INITIAL AND CONFIRMATIONAL SAMPLING ANALYTICAL RESULTS

WELLS 42 & 43

Rocky Mountain
Analytical Laboratory

42, 43
2nd event
+
1st event

Enseco

January 25, 1990

Mr. Ven Samala
Sparton Technology
9621 Coors Road N.W.
Albuquerque, NM 87114

Dear Mr. Samala:

Enclosed is the report for four aqueous samples we received at Enseco-Rocky Mountain Analytical Laboratory on December 22, 1989.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

Joel E. Holtz
Program Administrator

Reviewed by:

Jeanne B. Howbert
Technical Manager

JEH/JBH/kas
Enclosures

RMAL #007945

001798

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Rocky Mountain
Analytical Laboratory

Enseco Incorporated

ANALYTICAL RESULTS
FOR
SPARTON TECHNOLOGY
ENSECO-RMAL NO. 007945

JANUARY 25, 1990

Reviewed by: Joel E. Holtz

Joel E. Holtz

Jeanne B. Howbert

Jeanne B. Howbert

001799

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611

Facsimile: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- Sample Description Information
- Analytical Test Requests
- Analytical Results
- Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions must be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Samples 007945-0001 and 0002 were diluted due to the concentration of target compounds present beyond linear range for Method 624 and the reporting limits have been raised accordingly.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

Enseco

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
007945-0001-SA	MW-42	AQUEOUS	21 DEC 89	10:00	22 DEC 89
007945-0002-SA	MW-43	AQUEOUS	21 DEC 89	11:25	22 DEC 89
007945-0003-SA	FIELD BLANK	AQUEOUS	21 DEC 89	10:45	22 DEC 89
007945-0004-SA	TRIP BLANK	AQUEOUS	21 DEC 89		22 DEC 89

Enseco

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 007945	Group Code	Analysis Description	Custom Test?
0001 - 0004	A	Nitrate, as Nitrogen	N
		Ammonia	N
		Total Kjeldahl Nitrogen (TKN)	N
		Chloride, Ion Chromatography	N
		Sulfate, Ion Chromatography	N
		Fluoride, Electrode	N
		Prep-Volatile Organics by GC/MS	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace AA (Total)	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Appendix IX Volatile Organics	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-42
Lab ID: 007945-0001-SA Enseco ID: 1063503
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	120
Acetonitrile	ND	ug/L	1200
Acrolein	ND	ug/L	1200
Acrylonitrile	ND	ug/L	1200
Allyl chloride	ND	ug/L	60
Benzene	ND	ug/L	60
Bromodichloromethane	ND	ug/L	60
Bromoform	ND	ug/L	60
Bromomethane	ND	ug/L	120
Carbon disulfide	ND	ug/L	60
Carbon tetrachloride	ND	ug/L	60
Chlorobenzene	ND	ug/L	60
Chloroprene	ND	ug/L	60
Chloroethane	ND	ug/L	120
Chlorodibromomethane	ND	ug/L	60
Chloroform	ND	ug/L	60
Chloromethane	ND	ug/L	120
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	60
EDB (1,2-Dibromoethane)	ND	ug/L	60
Dibromomethane	ND	ug/L	60
trans-1,4-Dichloro-2-butene	ND	ug/L	60
Dichlorodifluoromethane	ND	ug/L	120
1,1-Dichloroethane	ND	ug/L	60
1,2-Dichloroethane	ND	ug/L	60
trans-1,2-Dichloroethene	ND	ug/L	60
1,1-Dichloroethene	130	ug/L	60
Dichloromethane	ND	ug/L	60
1,2-Dichloropropane	ND	ug/L	60
cis-1,3-Dichloropropene	ND	ug/L	60
trans-1,3-Dichloropropene	ND	ug/L	60
1,4-Dioxane	ND	ug/L	1200
Ethylbenzene	ND	ug/L	60
Ethyl cyanide	ND	ug/L	60
2-Hexanone	ND	ug/L	120
Iodomethane	ND	ug/L	60
Isobutyl alcohol	ND	ug/L	1200
Methacrylonitrile	ND	ug/L	60
Methyl ethyl ketone	ND	ug/L	120
4-Methyl-2-pentanone	ND	ug/L	120

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-42
Lab ID: 007945-0001-SA Enseco ID: 1063503
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	60
1,1,1,2-Tetrachloroethane	ND	ug/L	60
1,1,2,2-Tetrachloroethane	ND	ug/L	60
Tetrachloroethene	ND	ug/L	60
Toluene	ND	ug/L	60
1,1,1-Trichloroethane	200	ug/L	60
1,1,2-Trichloroethane	ND	ug/L	60
Trichloroethene	1200	ug/L	60
Trichlorofluoromethane	ND	ug/L	60
1,2,3-Trichloropropane	ND	ug/L	60
Vinyl acetate	ND	ug/L	120
Vinyl chloride	ND	ug/L	120
Xylenes (total)	ND	ug/L	60
Toluene-d8	102	%	--
4-Bromofluorobenzene	92.6	%	--
1,2-Dichloroethane-d4	102	%	--

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-43
Lab ID: 007945-0002-SA Enseco ID: 1063504
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	20
Acetonitrile	ND	ug/L	200
Acrolein	ND	ug/L	200
Acrylonitrile	ND	ug/L	200
Allyl chloride	ND	ug/L	10
Benzene	ND	ug/L	10
Bromodichloromethane	ND	ug/L	10
Bromoform	ND	ug/L	10
Bromomethane	ND	ug/L	20
Carbon disulfide	ND	ug/L	10
Carbon tetrachloride	ND	ug/L	10
Chlorobenzene	ND	ug/L	10
Chloroprene	ND	ug/L	10
Chloroethane	ND	ug/L	20
Chlorodibromomethane	ND	ug/L	10
Chloroform	ND	ug/L	10
Chloromethane	ND	ug/L	20
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	10
EDB (1,2-Dibromoethane)	ND	ug/L	10
Dibromomethane	ND	ug/L	10
trans-1,4-Dichloro-2-butene	ND	ug/L	10
Dichlorodifluoromethane	ND	ug/L	20
1,1-Dichloroethane	ND	ug/L	10
1,2-Dichloroethane	ND	ug/L	10
trans-1,2-Dichloroethene	ND	ug/L	10
1,1-Dichloroethene	46	ug/L	10
Dichloromethane	ND	ug/L	10
1,2-Dichloropropane	ND	ug/L	10
cis-1,3-Dichloropropene	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ug/L	10
1,4-Dioxane	ND	ug/L	200
Ethylbenzene	ND	ug/L	10
Ethyl cyanide	ND	ug/L	10
2-Hexanone	ND	ug/L	20
Iodomethane	ND	ug/L	10
Isobutyl alcohol	ND	ug/L	200
Methacrylonitrile	ND	ug/L	10
Methyl ethyl ketone	ND	ug/L	20
4-Methyl-2-pentanone	ND	ug/L	20

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Shawn Kassner Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-43
Lab ID: 007945-0002-SA Enseco ID: 1063504
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	10
1,1,1,2-Tetrachloroethane	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	10
Tetrachloroethene	ND	ug/L	10
Toluene	ND	ug/L	10
1,1,1-Trichloroethane	86	ug/L	10
1,1,2-Trichloroethane	ND	ug/L	10
Trichloroethene	160	ug/L	10
Trichlorofluoromethane	ND	ug/L	10
1,2,3-Trichloropropane	ND	ug/L	10
Vinyl acetate	ND	ug/L	20
Vinyl chloride	ND	ug/L	20
Xylenes (total)	ND	ug/L	10
Toluene-d8	103	%	--
4-Bromofluorobenzene	88.6	%	--
1,2-Dichloroethane-d4	87.4	%	--

ND = Not detected
NA = Not applicable

Reported By: Shawn Kassner Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007945-0003-SA Enseco ID: 1063505
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	19	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007945-0003-SA Enseco ID: 1063505
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	107	%	--
4-Bromofluorobenzene	90.2	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007945-0004-SA Enseco ID: 1063506
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Enseco

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007945-0004-SA Enseco ID: 1063506
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: 27 DEC 89 Analyzed: 03 JAN 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	105	%	--
4-Bromofluorobenzene	94.2	%	--
1,2-Dichloroethane-d4	101	%	--

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-42
Lab ID: 007945-0001-SA Enseco ID: 1063503
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Arsenic	ND	mg/L	0.01	7060	05 JAN 90	09 JAN 90
Barium	0.07	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Beryllium	ND	mg/L	0.002	6010	04 JAN 90	09 JAN 90
Boron	0.11	mg/L	0.02	6010	04 JAN 90	09 JAN 90
Cadmium	ND	mg/L	0.005	6010	04 JAN 90	09 JAN 90
Chromium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Cobalt	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Copper	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Mercury	ND	mg/L	0.0002	7470	03 JAN 90	04 JAN 90
Nickel	ND	mg/L	0.04	6010	04 JAN 90	09 JAN 90
Selenium	ND	mg/L	0.01	7740	05 JAN 90	09 JAN 90
Silver	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Thallium	ND	mg/L	0.01	7841	05 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Vanadium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Zinc	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Harold Borquez Approved By: Toni Lusk

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-43
Lab ID: 007945-0002-SA Enseco ID: 1063504
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Arsenic	0.008	mg/L	0.005	7060	05 JAN 90	09 JAN 90
Barium	0.16	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Beryllium	ND	mg/L	0.002	6010	04 JAN 90	09 JAN 90
Boron	0.12	mg/L	0.02	6010	04 JAN 90	09 JAN 90
Cadmium	ND	mg/L	0.005	6010	04 JAN 90	09 JAN 90
Chromium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Cobalt	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Copper	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	0.48	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Mercury	ND	mg/L	0.0002	7470	03 JAN 90	04 JAN 90
Nickel	ND	mg/L	0.04	6010	04 JAN 90	09 JAN 90
Selenium	ND	mg/L	0.01	7740	05 JAN 90	09 JAN 90
Silver	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Thallium	ND	mg/L	0.02	7841	05 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Vanadium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Zinc	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Harold Borquez Approved By: Toni Lusk

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007945-0003-SA Enseco ID: 1063505
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Arsenic	ND	mg/L	0.005	7060	05 JAN 90	09 JAN 90
Barium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Beryllium	ND	mg/L	0.002	6010	04 JAN 90	09 JAN 90
Boron	0.03	mg/L	0.02	6010	04 JAN 90	09 JAN 90
Cadmium	ND	mg/L	0.005	6010	04 JAN 90	09 JAN 90
Chromium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Cobalt	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Copper	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Mercury	ND	mg/L	0.0002	7470	03 JAN 90	04 JAN 90
Nickel	ND	mg/L	0.04	6010	04 JAN 90	09 JAN 90
Selenium	ND	mg/L	0.005	7740	05 JAN 90	09 JAN 90
Silver	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Thallium	ND	mg/L	0.005	7841	05 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Vanadium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Zinc	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Harold Borquez Approved By: Toni Lusk

Enseco

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007945-0004-SA Enseco ID: 1063506
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Arsenic	ND	mg/L	0.005	7060	05 JAN 90	09 JAN 90
Barium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Beryllium	ND	mg/L	0.002	6010	04 JAN 90	09 JAN 90
Boron	0.02	mg/L	0.02	6010	04 JAN 90	09 JAN 90
Cadmium	ND	mg/L	0.005	6010	04 JAN 90	09 JAN 90
Chromium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Cobalt	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Copper	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Lead	ND	mg/L	0.005	7421	15 JAN 90	15 JAN 90
Manganese	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Mercury	ND	mg/L	0.0002	7470	03 JAN 90	04 JAN 90
Nickel	ND	mg/L	0.04	6010	04 JAN 90	09 JAN 90
Selenium	ND	mg/L	0.005	7740	05 JAN 90	09 JAN 90
Silver	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Thallium	ND	mg/L	0.005	7841	05 JAN 90	10 JAN 90
Tin	ND	mg/L	0.05	6010	04 JAN 90	09 JAN 90
Vanadium	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90
Zinc	ND	mg/L	0.01	6010	04 JAN 90	09 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Harold Borquez Approved By: Toni Lusk

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-42
Lab ID: 007945-0001-SA Enseco ID: 1063503
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	20	mg/L	3	300.0	NA	11 JAN 90
Fluoride	0.3	mg/L	0.1	340.2	NA	28 DEC 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	05 JAN 90
Nitrate as N	2.5	mg/L	0.1	353.2	NA	29 DEC 89
Sulfate	92	mg/L	5	300.0	NA	11 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Linda Sullivan Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-43
Lab ID: 007945-0002-SA Enseco ID: 1063504
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	26	mg/L	3	300.0	NA	11 JAN 90
Fluoride	0.2	mg/L	0.1	340.2	NA	28 DEC 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	05 JAN 90
Nitrate as N	0.6	mg/L	0.1	353.2	NA	29 DEC 89
Sulfate	105	mg/L	5	300.0	NA	11 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Linda Sullivan Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007945-0003-SA Enseco ID: 1063505
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	11 JAN 90
Fluoride	0.2	mg/L	0.1	340.2	NA	28 DEC 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	05 JAN 90
Nitrate as N	ND	mg/L	0.1	353.2	NA	29 DEC 89
Sulfate	ND	mg/L	5	300.0	NA	11 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Linda Sullivan Approved By: Tammy Bailey

Enseco

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007945-0004-SA Enseco ID: 1063506
Matrix: AQUEOUS Sampled: 21 DEC 89 Received: 22 DEC 89
Authorized: 22 DEC 89 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3	300.0	NA	11 JAN 90
Fluoride	ND	mg/L	0.1	340.2	NA	28 DEC 89
Ammonia as N	ND	mg/L	0.1	350.1	NA	05 JAN 90
Nitrate as N	ND	mg/L	0.1	353.2	NA	29 DEC 89
Sulfate	ND	mg/L	5	300.0	NA	11 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	10 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Linda Sullivan Approved By: Tammy Bailey

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data

2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix

3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and

4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

Enseco

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007945-0001-SA	AQUEOUS	624-A	02 JAN 90-F	02 JAN 90-F2
007945-0002-SA	AQUEOUS	624-A	02 JAN 90-F	03 JAN 90-F
007945-0003-SA	AQUEOUS	624-A	02 JAN 90-F	02 JAN 90-F2
007945-0004-SA	AQUEOUS	624-A	02 JAN 90-F	02 JAN 90-F2

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 624-A								
Matrix: AQUEOUS								
QC Lot: 02 JAN 90-F								
Concentration Units: ug/L								
1,1-Dichloroethene	50	50.0	49.2	49.6	99	61-145	1.6	14
Trichloroethene	50	50.5	52.8	51.6	103	71-120	4.5	14
Benzene	50	56.8	57.9	57.4	115	76-127	1.9	11
Toluene	50	49.1	50.2	49.6	99	76-125	2.2	13
Chlorobenzene	50	52.2	51.8	52.0	104	75-130	0.8	13

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

Enseco

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 02 JAN 90-F QC Run: 02 JAN 90-F2				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	47.8	96	76-114
4-Bromofluorobenzene	50.0	46.5	93	86-115
Toluene-d8	50.0	51.8	104	88-110
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 02 JAN 90-F QC Run: 03 JAN 90-F				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	44.7	89	76-114
4-Bromofluorobenzene	50.0	47.7	95	86-115
Toluene-d8	50.0	51.8	104	88-110

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

Enseco

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 02 JAN 90-F QC Run: 02 JAN 90-F2

Analyte	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 02 JAN 90-F QC Run: 02 JAN 90-F2			
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 02 JAN 90-F QC Run: 03 JAN 90-F			
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 02 JAN 90-F QC Run: 03 JAN 90-F

Analyte	Result	Units	Reporting Limit
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0

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QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007945-0001-SA	AQUEOUS	ICP-AT	04 JAN 90-A	04 JAN 90-A
007945-0001-SA	AQUEOUS	AS-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0001-SA	AQUEOUS	SE-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0001-SA	AQUEOUS	TL-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0001-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-D	15 JAN 90-D
007945-0001-SA	AQUEOUS	HG-CVAA-AT	03 JAN 90-B	03 JAN 90-B
007945-0002-SA	AQUEOUS	ICP-AT	04 JAN 90-A	04 JAN 90-A
007945-0002-SA	AQUEOUS	AS-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0002-SA	AQUEOUS	SE-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0002-SA	AQUEOUS	TL-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0002-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-D	15 JAN 90-D
007945-0002-SA	AQUEOUS	HG-CVAA-AT	03 JAN 90-B	03 JAN 90-B
007945-0003-SA	AQUEOUS	ICP-AT	04 JAN 90-A	04 JAN 90-A
007945-0003-SA	AQUEOUS	AS-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0003-SA	AQUEOUS	SE-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0003-SA	AQUEOUS	TL-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0003-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-D	15 JAN 90-D
007945-0003-SA	AQUEOUS	HG-CVAA-AT	03 JAN 90-B	03 JAN 90-B
007945-0004-SA	AQUEOUS	ICP-AT	04 JAN 90-A	04 JAN 90-A
007945-0004-SA	AQUEOUS	AS-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0004-SA	AQUEOUS	SE-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0004-SA	AQUEOUS	TL-FAA-AT	05 JAN 90-E	05 JAN 90-E
007945-0004-SA	AQUEOUS	PB-FAA-AT	15 JAN 90-D	15 JAN 90-D
007945-0004-SA	AQUEOUS	HG-CVAA-AT	03 JAN 90-B	03 JAN 90-B

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 04 JAN 90-A								
Concentration Units: mg/L								
Aluminum	2.0	1.92	1.95	1.94	97	75-125	1.6	20
Antimony	0.5	0.47	0.48	0.48	95	75-125	2.1	20
Arsenic	0.5	0.47	0.49	0.48	96	75-125	4.2	20
Barium	2.0	1.73	1.76	1.74	87	75-125	1.7	20
Beryllium	0.05	0.047	0.048	0.048	95	75-125	2.1	20
Cadmium	0.05	0.049	0.046	0.048	95	75-125	6.3	20
Calcium	100	93.7	95.8	94.8	95	75-125	2.2	20
Chromium	0.2	0.19	0.20	0.20	98	75-125	5.1	20
Cobalt	0.5	0.47	0.48	0.48	95	75-125	2.1	20
Copper	0.25	0.24	0.25	0.24	98	75-125	4.1	20
Iron	1.0	0.95	0.96	0.96	96	75-125	1.0	20
Lead	0.5	0.45	0.47	0.46	92	75-125	4.3	20
Magnesium	50	48.1	49.1	48.6	97	75-125	2.1	20
Manganese	0.5	0.49	0.50	0.50	99	75-125	2.0	20
Nickel	0.5	0.48	0.49	0.48	97	75-125	2.1	20
Potassium	100	97.7	97.2	97.4	97	75-125	0.5	20
Silver	0.05	0.047	0.049	0.048	96	75-125	4.2	20
Sodium	100	91.8	90.3	91.0	91	75-125	1.6	20
Vanadium	0.5	0.46	0.47	0.46	93	75-125	2.2	20
Zinc	0.5	0.50	0.51	0.50	101	75-125	2.0	20
Category: AS-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 05 JAN 90-E								
Concentration Units: mg/L								
Arsenic	0.04	0.037	0.037	0.037	93	75-125	0.0	20
Category: SE-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 05 JAN 90-E								
Concentration Units: mg/L								
Selenium	0.01	0.0092	0.010	0.0096	96	75-125	8.3	20

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

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 05 JAN 90-E Concentration Units: mg/L								
Thallium	0.05	0.044	0.043	0.044	87	75-125	2.3	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 15 JAN 90-D Concentration Units: mg/L								
Lead	0.02	0.021	0.021	0.021	105	75-125	0.0	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 03 JAN 90-B Concentration Units: mg/L								
Mercury	0.0010	0.000940	0.000920	0.000930	93	75-125	2.2	20

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

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METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 04 JAN 90-A QC Run: 04 JAN 90-A			
Antimony	ND	mg/L	0.05
Barium	ND	mg/L	0.01
Beryllium	ND	mg/L	0.002
Boron	ND	mg/L	0.02
Cadmium	ND	mg/L	0.005
Chromium	ND	mg/L	0.01
Cobalt	ND	mg/L	0.01
Copper	ND	mg/L	0.01
Manganese	ND	mg/L	0.01
Nickel	ND	mg/L	0.04
Silver	ND	mg/L	0.01
Tin	ND	mg/L	0.05
Vanadium	ND	mg/L	0.01
Zinc	ND	mg/L	0.01
Test: AS-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 05 JAN 90-E QC Run: 05 JAN 90-E			
Arsenic	ND	mg/L	0.005
Test: SE-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 05 JAN 90-E QC Run: 05 JAN 90-E			
Selenium	ND	mg/L	0.005
Test: TL-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 05 JAN 90-E QC Run: 05 JAN 90-E			
Thallium	ND	mg/L	0.005

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: PB-FAA-AT Matrix: AQUEOUS QC Lot: 15 JAN 90-D QC Run: 15 JAN 90-D			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 03 JAN 90-B QC Run: 03 JAN 90-B			
Mercury	ND	mg/L	0.0002

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007945-0001-SA	AQUEOUS	NO3-A	29 DEC 89-A	-
007945-0001-SA	AQUEOUS	NH3-A	05 JAN 90-A	-
007945-0001-SA	AQUEOUS	TKN-A	08 JAN 90-A	08 JAN 90-A
007945-0001-SA	AQUEOUS	CL-IC-A	11 JAN 90-M	-
007945-0001-SA	AQUEOUS	SO4-IC-A	11 JAN 89-M	-
007945-0001-SA	AQUEOUS	F-A	29 DEC 89-A	-
007945-0002-SA	AQUEOUS	NO3-A	29 DEC 89-A	-
007945-0002-SA	AQUEOUS	NH3-A	05 JAN 90-A	-
007945-0002-SA	AQUEOUS	TKN-A	08 JAN 90-A	08 JAN 90-A
007945-0002-SA	AQUEOUS	CL-IC-A	11 JAN 90-M	-
007945-0002-SA	AQUEOUS	SO4-IC-A	11 JAN 89-M	-
007945-0002-SA	AQUEOUS	F-A	29 DEC 89-A	-
007945-0003-SA	AQUEOUS	NO3-A	29 DEC 89-A	-
007945-0003-SA	AQUEOUS	NH3-A	05 JAN 90-A	-
007945-0003-SA	AQUEOUS	TKN-A	08 JAN 90-A	08 JAN 90-A
007945-0003-SA	AQUEOUS	CL-IC-A	11 JAN 90-M	-
007945-0003-SA	AQUEOUS	SO4-IC-A	11 JAN 89-M	-
007945-0003-SA	AQUEOUS	F-A	29 DEC 89-A	-
007945-0004-SA	AQUEOUS	NO3-A	29 DEC 89-A	-
007945-0004-SA	AQUEOUS	NH3-A	05 JAN 90-A	-
007945-0004-SA	AQUEOUS	TKN-A	08 JAN 90-A	08 JAN 90-A
007945-0004-SA	AQUEOUS	CL-IC-A	11 JAN 90-M	-
007945-0004-SA	AQUEOUS	SO4-IC-A	11 JAN 89-M	-
007945-0004-SA	AQUEOUS	F-A	29 DEC 89-A	-

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 29 DEC 89-A								
Concentration Units: mg/L								
Fluoride	13.5	14.0	14.2	14.1	104	88-112	1.4	15

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

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-42
Lab ID: 007823-0001-SA Enseco ID: 1062610
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	100
Acetonitrile	ND	ug/L	1000
Acrolein	ND	ug/L	1000
Acrylonitrile	ND	ug/L	1000
Allyl chloride	ND	ug/L	50
Benzene	ND	ug/L	50
Bromodichloromethane	ND	ug/L	50
Bromoform	ND	ug/L	50
Bromomethane	ND	ug/L	100
Carbon disulfide	ND	ug/L	50
Carbon tetrachloride	ND	ug/L	50
Chlorobenzene	ND	ug/L	50
Chloroprene	ND	ug/L	50
Chloroethane	ND	ug/L	100
Chlorodibromomethane	ND	ug/L	50
Chloroform	ND	ug/L	50
Chloromethane	ND	ug/L	100
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	50
EDB (1,2-Dibromoethane)	ND	ug/L	50
Dibromomethane	ND	ug/L	50
trans-1,4-Dichloro-2-butene	ND	ug/L	50
Dichlorodifluoromethane	ND	ug/L	100
1,1-Dichloroethane	ND	ug/L	50
1,2-Dichloroethane	ND	ug/L	50
trans-1,2-Dichloroethene	ND	ug/L	50
1,1-Dichloroethene	140	ug/L	50
Dichloromethane	ND	ug/L	50
1,2-Dichloropropane	ND	ug/L	50
cis-1,3-Dichloropropene	ND	ug/L	50
trans-1,3-Dichloropropene	ND	ug/L	50
1,4-Dioxane	ND	ug/L	1000
Ethylbenzene	ND	ug/L	50
Ethyl cyanide	ND	ug/L	50
2-Hexanone	ND	ug/L	100
Iodomethane	ND	ug/L	50
Isobutyl alcohol	ND	ug/L	1000
Methacrylonitrile	ND	ug/L	50
Methyl ethyl ketone	ND	ug/L	100
4-Methyl-2-pentanone	ND	ug/L	100

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-42
Lab ID: 007823-0001-SA Enseco ID: 1062610
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	50
1,1,1,2-Tetrachloroethane	ND	ug/L	50
1,1,2,2-Tetrachloroethane	ND	ug/L	50
Tetrachloroethene	ND	ug/L	50
Toluene	ND	ug/L	50
1,1,1-Trichloroethane	200	ug/L	50
1,1,2-Trichloroethane	ND	ug/L	50
Trichloroethene	1100	ug/L	50
Trichlorofluoromethane	ND	ug/L	50
1,2,3-Trichloropropane	ND	ug/L	50
Vinyl acetate	ND	ug/L	100
Vinyl chloride	ND	ug/L	100
Xylenes (total)	ND	ug/L	50
Toluene-d8	108	%	--
4-Bromofluorobenzene	97.0	%	--
1,2-Dichloroethane-d4	98.2	%	--

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-43
Lab ID: 007823-0002-SA Enseco ID: 1062611
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	25
Acetonitrile	ND	ug/L	250
Acrolein	ND	ug/L	250
Acrylonitrile	ND	ug/L	250
Allyl chloride	ND	ug/L	12
Benzene	ND	ug/L	12
Bromodichloromethane	ND	ug/L	12
Bromoform	ND	ug/L	12
Bromomethane	ND	ug/L	25
Carbon disulfide	ND	ug/L	12
Carbon tetrachloride	ND	ug/L	12
Chlorobenzene	ND	ug/L	12
Chloroprene	ND	ug/L	12
Chloroethane	ND	ug/L	25
Chlorodibromomethane	ND	ug/L	12
Chloroform	ND	ug/L	12
Chloromethane	ND	ug/L	25
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	12
EDB (1,2-Dibromoethane)	ND	ug/L	12
Dibromomethane	ND	ug/L	12
trans-1,4-Dichloro-2-butene	ND	ug/L	12
Dichlorodifluoromethane	ND	ug/L	25
1,1-Dichloroethane	ND	ug/L	12
1,2-Dichloroethane	ND	ug/L	12
trans-1,2-Dichloroethene	ND	ug/L	12
1,1-Dichloroethene	55	ug/L	12
Dichloromethane	ND	ug/L	12
1,2-Dichloropropane	ND	ug/L	12
cis-1,3-Dichloropropene	ND	ug/L	12
trans-1,3-Dichloropropene	ND	ug/L	12
1,4-Dioxane	ND	ug/L	250
Ethylbenzene	ND	ug/L	12
Ethyl cyanide	ND	ug/L	12
2-Hexanone	ND	ug/L	25
Iodomethane	ND	ug/L	12
Isobutyl alcohol	ND	ug/L	250
Methacrylonitrile	ND	ug/L	12
Methyl ethyl ketone	ND	ug/L	25
4-Methyl-2-pentanone	ND	ug/L	25

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-43
Lab ID: 007823-0002-SA Enseco ID: 1062611
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	12
1,1,1,2-Tetrachloroethane	ND	ug/L	12
1,1,2,2-Tetrachloroethane	ND	ug/L	12
Tetrachloroethene	ND	ug/L	12
Toluene	ND	ug/L	12
1,1,1-Trichloroethane	100	ug/L	12
1,1,2-Trichloroethane	ND	ug/L	12
Trichloroethene	270	ug/L	12
Trichlorofluoromethane	ND	ug/L	12
1,2,3-Trichloropropane	ND	ug/L	12
Vinyl acetate	ND	ug/L	25
Vinyl chloride	ND	ug/L	25
Xylenes (total)	ND	ug/L	12
Toluene-d8	106	%	--
4-Bromofluorobenzene	99.0	%	--
1,2-Dichloroethane-d4	96.2	%	--

ND = Not detected
NA = Not applicable

Reported By: Cesar Rojas Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007823-0003-SA Enseco ID: 1062612
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	15	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 007823-0003-SA Enseco ID: 1062612
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	102	%	--
4-Bromofluorobenzene	99.4	%	--
1,2-Dichloroethane-d4	95.2	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle Approved By: Jeff Lowry

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007823-0004-SA Enseco ID: 1062613
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle Approved By: Jeff Lowry

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 007823-0004-SA Enseco ID: 1062613
Matrix: AQUEOUS Sampled: 12 DEC 89 Received: 13 DEC 89
Authorized: 13 DEC 89 Prepared: NA Analyzed: 21 DEC 89

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Toluene-d8	98.7	%	--
4-Bromofluorobenzene	100	%	--
1,2-Dichloroethane-d4	99.0	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle Approved By: Jeff Lowry

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
007823-0001-SA	AQUEOUS	624-A	21 DEC 89-S2	20 DEC 89-S
007823-0002-SA	AQUEOUS	624-A	21 DEC 89-S2	20 DEC 89-S
007823-0003-SA	AQUEOUS	624-A	20 DEC 89-H	21 DEC 89-H
007823-0004-SA	AQUEOUS	624-A	20 DEC 89-H	21 DEC 89-H

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 624-A Matrix: AQUEOUS QC Lot: 21 DEC 89-S2 Concentration Units: ug/L								
1,1-Dichloroethene	50	51.0	47.0	49.0	98	61-145	8.2	14
Trichloroethene	50	58.3	57.3	57.8	116	71-120	1.7	14
Benzene	50	64.6	59.2	61.9	124	76-127	8.7	11
Toluene	50	50.4	49.7	50.0	100	76-125	1.4	13
Chlorobenzene	50	57.1	55.2	56.2	112	75-130	3.4	13
Category: 624-A Matrix: AQUEOUS QC Lot: 20 DEC 89-H Concentration Units: ug/L								
1,1-Dichloroethene	50	56.8	54.2	55.5	111	61-145	4.7	14
Trichloroethene	50	51.3	48.1	49.7	99	71-120	6.4	14
Benzene	50	50.7	48.2	49.4	99	76-127	5.1	11
Toluene	50	46.8	42.6	44.7	89	76-125	9.4	13
Chlorobenzene	50	54.3	49.8	52.0	104	75-130	8.6	13

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

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 21 DEC 89-S2 QC Run: 20 DEC 89-S				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	46.6	93	76-114
4-Bromofluorobenzene	50.0	47.7	95	86-115
Toluene-d8	50.0	52.7	105	88-110
Category: 624-A				
Matrix: AQUEOUS				
QC Lot: 20 DEC 89-H QC Run: 21 DEC 89-H				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	49.2	98	76-114
4-Bromofluorobenzene	50.0	51.2	102	86-115
Toluene-d8	50.0	50.7	101	88-110

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

METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 21 DEC 89-S2 QC Run: 20 DEC 89-S

Analyte	Result	Units	Reporting Limit
Acetone	ND	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 21 DEC 89-S2 QC Run: 20 DEC 89-S			
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 20 DEC 89-H QC Run: 21 DEC 89-H			
Acetone	13	ug/L	10
Acetonitrile	ND	ug/L	100
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Allyl chloride	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
Bromomethane	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Chloroprene	ND	ug/L	5.0
Chloroethane	ND	ug/L	10
Chlorodibromomethane	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
Chloromethane	ND	ug/L	10
DBCP (1,2-Dibromo-3-chloropropane)	ND	ug/L	5.0
EDB (1,2-Dibromoethane)	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 20 DEC 89-H QC Run: 21 DEC 89-H

Analyte	Result	Units	Reporting Limit
Dichlorodifluoromethane	ND	ug/L	10
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
Dichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
1,4-Dioxane	ND	ug/L	100
Ethylbenzene	ND	ug/L	5.0
Ethyl cyanide	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Iodomethane	ND	ug/L	5.0
Isobutyl alcohol	ND	ug/L	100
Methacrylonitrile	ND	ug/L	5.0
Methyl ethyl ketone	ND	ug/L	10
4-Methyl-2-pentanone	ND	ug/L	10
Styrene	ND	ug/L	5.0
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0