SPARTON

SPARTON TECHNOLOGY

RECEIVED
MAR 13 1990

March 13, 1990

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

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 February 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. During the month, 47,900 gallons of recovered groundwater were treated bringing the total volume treated to date to 861,300 gallons. Air stripper performance data is included in Attachment 2.

3. Analytical results from the confirmational sampling of offsite LFZ Wells 44 - 46 and offsite UFZ Wells 47 and 48 were received and are included in Attachment 3.

4. Analytical results for both the initial and confirmational sampling of onsite third flow zone Well 49 were received and are included in Attachment 4.

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. The revised report evaluating the effectiveness of the interim measures recovery well system was submitted to EPA on February 26.

6. On February 27, Sparton representatives met with EPA to review recent data and to discuss future plans for locating the leading edge of the plume. The plume is apparently much farther offsite than originally anticipated. We have prepared requests to both the City and County for the necessary permits to install additional wells as discussed in our February meeting. These requests were mailed March 1, 1990. At Mr. Peycke's suggestion, Mr. Jon DeWitt issued a letter to Mr. Peycke on March 2 reviewing the issues discussed in the meeting, outlining our plans to proceed with the investigation, and requesting EPA's concurrence with our plans and an adjustment to the RFI schedule to allow sufficient time to complete this additional effort. We are awaiting a response.

This concludes our progress report for the month of February. 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
SPRT039.2LT

Attachments (as stated)

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

ATTACHMENT 1

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

001854

[---------- 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
02-07-90	4978.81	4975.77	4975.40	4976.35	4973.82	4976.52	4980.00	4980.12	4980.08	4979.38	4975.06	4975.60	4974.00	4972.92	4971.28
02-21-90	4978.81	4975.52	4975.32	4976.35	4973.65	4976.35	4979.92	4980.08	4980.00	4979.13	4975.06	4975.52	4973.88	4972.94	4971.99

ATTACHMENT 2

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

GROUNDWATER RECOVERY SYSTEM
VOLUME TREATED
MONTH OF FEBRUARY 1990

DATE	BEGIN READING	END READING	GALLONS	CUMULATIVE GALLONS
02-01-90	8300	10400	2100	815,500
02-02-90	10400	16100	5700	821,200
02-05-90	16100	18000	1900	823,100
02-06-90	18000	20700	2700	825,800
02-07-90	20700	22500	1800	827,600
02-08-90	22500	24400	1900	829,500
02-09-90	24400	29900	5500	835,000
02-12-90	29900	31600	1700	836,700
02-13-90	31600	33300	1700	838,400
02-14-90	33300	34900	1600	840,000
02-15-90	34900	36400	1500	841,500
02-16-90	36400	41600	5200	846,700
02-19-90	41600	43100	1500	848,200
02-20-90	43100	45300	2200	850,400
02-21-90	45300	46800	1500	851,900
02-22-90	46800	48600	1800	853,700
02-23-90	48600	51400	2800	856,500
02-26-90	51400	52500	1100	857,600
02-27-90	52500	53900	1400	859,000
02-28-90	53900	56200	2300	861,300
			47,900	

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
02/05/90	34.0	0.1	99.7	44	0.22	99.5	250	0.47	99.8	670	1.8	99.7
avg	61	0.4	99.3	394	3.3	99.2	364	2.2	99.4	932	5.2	99.4

001858

ATTACHMENT 3

JAY

Enseco

February 8, 1990

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

Dear Mr. Samala:

Enclosed is the report for the one aqueous sample received at Rocky Mountain Analytical Laboratory on January 26, 1990.

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 #008204

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.

Enseco
A CORNING Company

SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
008204-0001-SA	MW-49	AQUEOUS	25 JAN 90	10:38	26 JAN 90

Enseco
A CORNING Company

ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 008204	Group Code	Analysis Description	Custom Test?
0001	A	Total Kjeldahl Nitrogen (TKN)	N
		Ammonia	N
		Nitrate, as Nitrogen	N
		Sulfate, Ion Chromatography	N
		Chloride, Ion Chromatography	N
		Fluoride, Electrode	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace AA (Total)	N
		Appendix IX Volatile Organics	N
		Prep-Volatile Organics by GC/MS	N

Enseco
A CORNING Company

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-49
Lab ID: 008204-0001-SA Enseco ID: 1065121
Matrix: AQUEOUS Sampled: 25 JAN 90 Received: 26 JAN 90
Authorized: 26 JAN 90 Prepared: 28 JAN 90 Analyzed: 05 FEB 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
A CORNING Company

Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-49
Lab ID: 008204-0001-SA Enseco ID: 1065121
Matrix: AQUEOUS Sampled: 25 JAN 90 Received: 26 JAN 90
Authorized: 26 JAN 90 Prepared: 28 JAN 90 Analyzed: 05 FEB 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	12	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	94.3	%	--
4-Bromofluorobenzene	90.9	%	--
1,2-Dichloroethane-d4	103	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

Enseco
A CORNING Company

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-49
Lab ID: 008204-0001-SA Enseco ID: 1065121
Matrix: AQUEOUS Sampled: 25 JAN 90 Received: 26 JAN 90
Authorized: 26 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	29 JAN 90	01 FEB 90
Arsenic	ND	mg/L	0.005	7060	29 JAN 90	31 JAN 90
Barium	0.13	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Beryllium	ND	mg/L	0.002	6010	29 JAN 90	01 FEB 90
Boron	0.14	mg/L	0.02	6010	29 JAN 90	01 FEB 90
Cadmium	ND	mg/L	0.005	6010	29 JAN 90	01 FEB 90
Chromium	ND	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Cobalt	ND	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Copper	ND	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Lead	ND	mg/L	0.005	7421	29 JAN 90	31 JAN 90
Manganese	0.08	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Mercury	ND	mg/L	0.0002	7470	01 FEB 90	02 FEB 90
Nickel	ND	mg/L	0.04	6010	29 JAN 90	01 FEB 90
Selenium	ND	mg/L	0.01	7740	29 JAN 90	31 JAN 90
Silver	ND	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Thallium	ND	mg/L	0.005	7841	29 JAN 90	01 FEB 90
Tin	ND	mg/L	0.05	6010	29 JAN 90	01 FEB 90
Vanadium	ND	mg/L	0.01	6010	29 JAN 90	01 FEB 90
Zinc	0.02	mg/L	0.01	6010	29 JAN 90	01 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones Approved By: Tammy Bailey

Enseco
A CORNING Company

General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-49
Lab ID: 008204-0001-SA Enseco ID: 1065121
Matrix: AQUEOUS Sampled: 25 JAN 90 Received: 26 JAN 90
Authorized: 26 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	19	mg/L	3	300.0	NA	31 JAN 90
Fluoride	0.3	mg/L	0.1	340.2	NA	30 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	29 JAN 90
Nitrate as N	0.7	mg/L	0.1	353.2	NA	31 JAN 90
Sulfate	107	mg/L	5	300.0	NA	31 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	01 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Dan Appelhans Approved By: Kimberly Conroy

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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)
008204-0001-SA	AQUEOUS	624-A	04 FEB 90-L	05 FEB 90-L

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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: 04 FEB 90-L								
Concentration Units: ug/L								
1,1-Dichloroethene	50	51.9	51.2	51.6	103	61-145	1.4	14
Trichloroethene	50	51.1	53.9	52.5	105	71-120	5.3	14
Benzene	50	52.4	56.4	54.4	109	76-127	7.4	11
Toluene	50	54.1	59.1	56.6	113	76-125	8.8	13
Chlorobenzene	50	53.5	59.4	56.4	113	75-130	10	13

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

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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: 04 FEB 90-L QC Run: 05 FEB 90-L				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	48.5	97	76-114
4-Bromofluorobenzene	50.0	46.9	94	86-115
Toluene-d8	50.0	47.0	94	88-110

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

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METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 04 FEB 90-L QC Run: 05 FEB 90-L

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

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

Analyte	Result	Units	Reporting Limit
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 04 FEB 90-L QC Run: 05 FEB 90-L			
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)
008204-0001-SA	AQUEOUS	ICP-AT	29 JAN 90-D	29 JAN 90-D
008204-0001-SA	AQUEOUS	AS-FAA-AT	29 JAN 90-D	29 JAN 90-D
008204-0001-SA	AQUEOUS	PB-FAA-AT	29 JAN 90-D	29 JAN 90-D
008204-0001-SA	AQUEOUS	HG-CVAA-AT	01 FEB 90-A	01 FEB 90-A
008204-0001-SA	AQUEOUS	SE-FAA-AT	29 JAN 90-D	29 JAN 90-D
008204-0001-SA	AQUEOUS	TL-FAA-AT	29 JAN 90-D	29 JAN 90-D

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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: 29 JAN 90-D Concentration Units: mg/L								
Aluminum	2.0	1.89	1.89	1.89	95	75-125	0.0	20
Antimony	0.5	0.47	0.47	0.47	94	75-125	0.0	20
Arsenic	0.5	0.42	0.42	0.42	84	75-125	0.0	20
Barium	2.0	1.59	1.61	1.60	80	75-125	1.2	20
Beryllium	0.05	0.043	0.042	0.042	85	75-125	2.4	20
Cadmium	0.05	0.043	0.043	0.043	86	75-125	0.0	20
Calcium	100	88.5	89.5	89.0	89	75-125	1.1	20
Chromium	0.2	0.19	0.19	0.19	95	75-125	0.0	20
Cobalt	0.5	0.43	0.43	0.43	86	75-125	0.0	20
Copper	0.25	0.23	0.23	0.23	92	75-125	0.0	20
Iron	1.0	0.94	0.95	0.94	95	75-125	1.1	20
Lead	0.5	0.43	0.44	0.44	87	75-125	2.3	20
Magnesium	50	44.7	45.2	45.0	90	75-125	1.1	20
Manganese	0.5	0.45	0.45	0.45	90	75-125	0.0	20
Nickel	0.5	0.47	0.47	0.47	94	75-125	0.0	20
Potassium	100	89.8	90.5	90.2	90	75-125	0.8	20
Silver	0.04	0.030	0.033	0.032	79	75-125	9.5	20
Sodium	100	88.2	87.4	87.8	88	75-125	0.9	20
Vanadium	0.5	0.44	0.44	0.44	88	75-125	0.0	20
Zinc	0.5	0.45	0.46	0.46	91	75-125	2.2	20
Category: AS-FAA-AT Matrix: AQUEOUS QC Lot: 29 JAN 90-D Concentration Units: mg/L								
Arsenic	0.04	0.031	0.030	0.031	76	75-125	2.3	20
Category: PB-FAA-AT Matrix: AQUEOUS QC Lot: 29 JAN 90-D Concentration Units: mg/L								
Lead	0.02	0.021	0.019	0.020	101	75-125	13	20

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

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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: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 01 FEB 90-A Concentration Units: mg/L								
Mercury	0.0010	0.00106	0.00108	0.00107	107	75-125	1.9	20
Category: SE-FAA-AT Matrix: AQUEOUS QC Lot: 29 JAN 90-D Concentration Units: mg/L								
Selenium	0.01	0.010	0.0097	0.010	101	75-125	7.9	20
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 29 JAN 90-D Concentration Units: mg/L								
Thallium	0.05	0.052	0.056	0.054	108	75-125	7.4	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: 29 JAN 90-D QC Run: 29 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: 29 JAN 90-D QC Run: 29 JAN 90-D			
Arsenic	ND	mg/L	0.0050
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 29 JAN 90-D QC Run: 29 JAN 90-D			
Lead	ND	mg/L	0.0050
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 01 FEB 90-A QC Run: 01 FEB 90-A			
Mercury	ND	mg/L	0.00020

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METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: SE-FAA-AT Matrix: AQUEOUS QC Lot: 29 JAN 90-D QC Run: 29 JAN 90-D			
Selenium	ND	mg/L	0.0050
Test: TL-FAA-AT Matrix: AQUEOUS QC Lot: 29 JAN 90-D QC Run: 29 JAN 90-D			
Thallium	ND	mg/L	0.0050

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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)
008204-0001-SA	AQUEOUS	TKN-A	29 JAN 90-A	29 JAN 90-A
008204-0001-SA	AQUEOUS	NH3-A	29 JAN 90-A	-
008204-0001-SA	AQUEOUS	NO3-A	31 JAN 90-C	-
008204-0001-SA	AQUEOUS	SO4-IC-A	31 JAN 90-M	-
008204-0001-SA	AQUEOUS	CL-IC-A	31 JAN 90-M	-
008204-0001-SA	AQUEOUS	F-A	30 JAN 90-A	-

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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: TKN-A Matrix: AQUEOUS QC Lot: 29 JAN 90-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	5.2	5.66	5.85	5.76	111	78-122	3.3	20
Category: NH3-A Matrix: AQUEOUS QC Lot: 29 JAN 90-A Concentration Units: mg/L								
Ammonia as N	4.1	4.05	4.14	4.10	100	93-107	2.2	10
Category: NO3-A Matrix: AQUEOUS QC Lot: 31 JAN 90-C Concentration Units: mg/L								
Nitrate as N	5.4	5.33	5.26	5.30	98	91-109	1.3	10
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 31 JAN 90-M Concentration Units: mg/L								
Sulfate	200	199	198	198	99	93-107	0.5	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 31 JAN 90-M Concentration Units: mg/L								
Chloride	100	99.9	98.9	99.4	99	92-108	1.0	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: 30 JAN 90-A								
Concentration Units: mg/L								
Fluoride	13.5	13.3	13.7	13.5	100	88-112	3.0	15

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

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METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 29 JAN 90-A QC Run: 29 JAN 90-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.50

Rocky Mountain
Analytical Laboratory

MW-49
2nd event

Enseco

February 16, 1990

Mr. Ven Samala
Sparton Technology Incorporated
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 February 1, 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/kas
Enclosures

RMAL #008253

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 INCORPORATED

ENSECO-RMAL NO. 008253

FEBRUARY 16, 1990

Reviewed by: Joel E. Holtz

Jeanne B. Howbert

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

The reporting limit for manganese for Method 6010 was raised on samples 008253-0001 through 0003 due to the concentration of manganese in the preparation blank.

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.

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SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
008253-0001-SA	MW-49(SECOND SAMPLING EVENT)	AQUEOUS	31 JAN 90		01 FEB 90
008253-0002-SA	FEILD BLANK	AQUEOUS	31 JAN 90	10:42	01 FEB 90
008253-0003-SA	TRIP BLANK	AQUEOUS	31 JAN 90	10:58	01 FEB 90

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ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 008253	Group Code	Analysis Description	Custom Test?
0001 - 0003	A	Total Kjeldahl Nitrogen (TKN)	N
		Ammonia	N
		Nitrate, as Nitrogen	N
		Sulfate, Ion Chromatography	N
		Chloride, Ion Chromatography	N
		Fluoride, Electrode	N
		Appendix IX Volatile Organics	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
		Lead, Furnace AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	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.

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-49(SECOND SAMPLING EVENT)
Lab ID: 008253-0001-SA Enseco ID: 1065691
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: 02 FEB 90 Analyzed: 06 FEB 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

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-49(SECOND SAMPLING EVENT)
Lab ID: 008253-0001-SA Enseco ID: 1065691
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: 02 FEB 90 Analyzed: 06 FEB 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	6.9	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	97.1	%	--
4-Bromofluorobenzene	94.8	%	--
1,2-Dichloroethane-d4	110	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

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A CORNING Company

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FEILD BLANK
Lab ID: 008253-0002-SA Enseco ID: 1065692
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: 02 FEB 90 Analyzed: 05 FEB 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

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FEILD BLANK
Lab ID: 008253-0002-SA Enseco ID: 1065692
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: 02 FEB 90 Analyzed: 05 FEB 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	90.4	%	--
4-Bromofluorobenzene	96.9	%	--
1,2-Dichloroethane-d4	106	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008253-0003-SA Enseco ID: 1065693
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: 02 FEB 90 Analyzed: 05 FEB 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

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008253-0003-SA Enseco ID: 1065693
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: 02 FEB 90 Analyzed: 05 FEB 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	92.7	%	--
4-Bromofluorobenzene	95.0	%	--
1,2-Dichloroethane-d4	106	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-49(SECOND SAMPLING EVENT)
Lab ID: 008253-0001-SA Enseco ID: 1065691
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.050	6010	07 FEB 90	12 FEB 90
Arsenic	0.0058	mg/L	0.0050	7060	06 FEB 90	07 FEB 90
Barium	0.14	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Beryllium	ND	mg/L	0.0020	6010	07 FEB 90	12 FEB 90
Boron	0.13	mg/L	0.020	6010	07 FEB 90	12 FEB 90
Cadmium	ND	mg/L	0.0050	6010	07 FEB 90	12 FEB 90
Chromium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Cobalt	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Copper	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Lead	ND	mg/L	0.0050	7421	06 FEB 90	08 FEB 90
Manganese	0.086	mg/L	0.011	6010	07 FEB 90	12 FEB 90
Mercury	ND	mg/L	0.00020	7470	05 FEB 90	06 FEB 90
Nickel	ND	mg/L	0.040	6010	07 FEB 90	12 FEB 90
Selenium	ND	mg/L	0.0050	7740	06 FEB 90	08 FEB 90
Silver	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Thallium	ND	mg/L	0.0050	7841	06 FEB 90	07 FEB 90
Tin	ND	mg/L	0.050	6010	07 FEB 90	12 FEB 90
Vanadium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Zinc	0.012	mg/L	0.010	6010	07 FEB 90	12 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones Approved By: Toni Lusk

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: FEILD BLANK
Lab ID: 008253-0002-SA Enseco ID: 1065692
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.050	6010	07 FEB 90	12 FEB 90
Arsenic	ND	mg/L	0.0050	7060	06 FEB 90	07 FEB 90
Barium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Beryllium	ND	mg/L	0.0020	6010	07 FEB 90	12 FEB 90
Boron	ND	mg/L	0.020	6010	07 FEB 90	12 FEB 90
Cadmium	ND	mg/L	0.0050	6010	07 FEB 90	12 FEB 90
Chromium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Cobalt	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Copper	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Lead	ND	mg/L	0.0050	7421	06 FEB 90	08 FEB 90
Manganese	ND	mg/L	0.011	6010	07 FEB 90	12 FEB 90
Mercury	ND	mg/L	0.00020	7470	05 FEB 90	06 FEB 90
Nickel	ND	mg/L	0.040	6010	07 FEB 90	12 FEB 90
Selenium	ND	mg/L	0.0050	7740	06 FEB 90	08 FEB 90
Silver	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Thallium	ND	mg/L	0.0050	7841	06 FEB 90	07 FEB 90
Tin	ND	mg/L	0.050	6010	07 FEB 90	12 FEB 90
Vanadium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Zinc	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones Approved By: Toni Lusk

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008253-0003-SA Enseco ID: 1065693
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.050	6010	07 FEB 90	12 FEB 90
Arsenic	ND	mg/L	0.0050	7060	06 FEB 90	07 FEB 90
Barium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Beryllium	ND	mg/L	0.0020	6010	07 FEB 90	12 FEB 90
Boron	ND	mg/L	0.020	6010	07 FEB 90	12 FEB 90
Cadmium	ND	mg/L	0.0050	6010	07 FEB 90	12 FEB 90
Chromium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Cobalt	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Copper	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Lead	ND	mg/L	0.0050	7421	06 FEB 90	08 FEB 90
Manganese	ND	mg/L	0.011	6010	07 FEB 90	12 FEB 90
Mercury	ND	mg/L	0.00020	7470	05 FEB 90	06 FEB 90
Nickel	ND	mg/L	0.040	6010	07 FEB 90	12 FEB 90
Selenium	ND	mg/L	0.0050	7740	06 FEB 90	08 FEB 90
Silver	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Thallium	ND	mg/L	0.0050	7841	06 FEB 90	07 FEB 90
Tin	ND	mg/L	0.050	6010	07 FEB 90	12 FEB 90
Vanadium	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90
Zinc	ND	mg/L	0.010	6010	07 FEB 90	12 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones Approved By: Toni Lusk

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-49(SECOND SAMPLING EVENT)
Lab ID: 008253-0001-SA Enseco ID: 1065691
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	19.7	mg/L	3.0	300.0	NA	07 FEB 90
Fluoride	0.25	mg/L	0.10	340.2	NA	02 FEB 90
Ammonia as N	ND	mg/L	0.10	350.1	NA	02 FEB 90
Nitrate as N	0.62	mg/L	0.10	353.2	NA	05 FEB 90
Sulfate	103	mg/L	5.0	300.0	NA	07 FEB 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.50	351.2	NA	05 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Dan Appelhans Approved By: Tammy Bailey

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: FEILD BLANK
Lab ID: 008253-0002-SA Enseco ID: 1065692
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3.0	300.0	NA	07 FEB 90
Fluoride	ND	mg/L	0.10	340.2	NA	02 FEB 90
Ammonia as N	ND	mg/L	0.10	350.1	NA	02 FEB 90
Nitrate as N	ND	mg/L	0.10	353.2	NA	05 FEB 90
Sulfate	ND	mg/L	5.0	300.0	NA	07 FEB 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.50	351.2	NA	05 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Dan Appelhans Approved By: Tammy Bailey

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008253-0003-SA Enseco ID: 1065693
Matrix: AQUEOUS Sampled: 31 JAN 90 Received: 01 FEB 90
Authorized: 01 FEB 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	ND	mg/L	3.0	300.0	NA	07 FEB 90
Fluoride	ND	mg/L	0.10	340.2	NA	02 FEB 90
Ammonia as N	ND	mg/L	0.10	350.1	NA	02 FEB 90
Nitrate as N	ND	mg/L	0.10	353.2	NA	05 FEB 90
Sulfate	ND	mg/L	5.0	300.0	NA	07 FEB 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.50	351.2	NA	05 FEB 90

ND = Not detected
NA = Not applicable

Reported By: Dan Appelhans 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.

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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)
008253-0001-SA	AQUEOUS	624-A	04 FEB 90-L	05 FEB 90-L
008253-0002-SA	AQUEOUS	624-A	04 FEB 90-L	05 FEB 90-L
008253-0003-SA	AQUEOUS	624-A	04 FEB 90-L	05 FEB 90-L

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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: 04 FEB 90-L								
Concentration Units: ug/L								
1,1-Dichloroethene	50	51.9	51.2	51.6	103	61-145	1.4	14
Trichloroethene	50	51.1	53.9	52.5	105	71-120	5.3	14
Benzene	50	52.4	56.4	54.4	109	76-127	7.4	11
Toluene	50	54.1	59.1	56.6	113	76-125	8.8	13
Chlorobenzene	50	53.5	59.4	56.4	113	75-130	10	13

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

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SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Category: 624-A
Matrix: AQUEOUS
QC Lot: 04 FEB 90-L QC Run: 05 FEB 90-L
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
1,2-Dichloroethane-d4	50.0	48.5	97	76-114
4-Bromofluorobenzene	50.0	46.9	94	86-115
Toluene-d8	50.0	47.0	94	88-110

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

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METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 04 FEB 90-L QC Run: 05 FEB 90-L

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

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

Analyte	Result	Units	Reporting Limit
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 04 FEB 90-L QC Run: 05 FEB 90-L			
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
A CORNING Company

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
008253-0001-SA	AQUEOUS	ICP-AT	07 FEB 90-D	07 FEB 90-D
008253-0001-SA	AQUEOUS	AS-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0001-SA	AQUEOUS	PB-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0001-SA	AQUEOUS	SE-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0001-SA	AQUEOUS	TL-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0001-SA	AQUEOUS	HG-CVAA-AT	05 FEB 90-B	05 FEB 90-B
008253-0002-SA	AQUEOUS	ICP-AT	07 FEB 90-D	07 FEB 90-D
008253-0002-SA	AQUEOUS	AS-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0002-SA	AQUEOUS	PB-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0002-SA	AQUEOUS	SE-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0002-SA	AQUEOUS	TL-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0002-SA	AQUEOUS	HG-CVAA-AT	05 FEB 90-B	05 FEB 90-B
008253-0003-SA	AQUEOUS	ICP-AT	07 FEB 90-D	07 FEB 90-D
008253-0003-SA	AQUEOUS	AS-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0003-SA	AQUEOUS	PB-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0003-SA	AQUEOUS	SE-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0003-SA	AQUEOUS	TL-FAA-AT	06 FEB 90-D	06 FEB 90-D
008253-0003-SA	AQUEOUS	HG-CVAA-AT	05 FEB 90-B	05 FEB 90-B

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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: SE-FAA-AT Matrix: AQUEOUS QC Lot: 06 FEB 90-D Concentration Units: mg/L								
Selenium	0.01	0.010	0.010	0.010	104	75-125	1.9	20
Category: TL-FAA-AT Matrix: AQUEOUS QC Lot: 06 FEB 90-D Concentration Units: mg/L								
Thallium	0.05	0.050	0.053	0.052	103	75-125	5.8	20
Category: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 05 FEB 90-B Concentration Units: mg/L								
Mercury	0.0010	0.00107	0.00106	0.00106	107	75-125	0.9	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: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 07 FEB 90-D QC Run: 07 FEB 90-D			
Antimony	ND	mg/L	0.050
Barium	ND	mg/L	0.010
Beryllium	ND	mg/L	0.0020
Boron	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0050
Chromium	ND	mg/L	0.010
Cobalt	ND	mg/L	0.010
Copper	ND	mg/L	0.010
Manganese	0.011	mg/L	0.010
Nickel	ND	mg/L	0.040
Silver	ND	mg/L	0.010
Tin	ND	mg/L	0.050
Vanadium	ND	mg/L	0.010
Zinc	ND	mg/L	0.010
Test: AS-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 06 FEB 90-D QC Run: 06 FEB 90-D			
Arsenic	ND	mg/L	0.0050
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 06 FEB 90-D QC Run: 06 FEB 90-D			
Lead	ND	mg/L	0.0050
Test: SE-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 06 FEB 90-D QC Run: 06 FEB 90-D			
Selenium	ND	mg/L	0.0050

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METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: TL-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 06 FEB 90-D QC Run: 06 FEB 90-D			
Thallium	ND	mg/L	0.0050
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 05 FEB 90-B QC Run: 05 FEB 90-B			
Mercury	ND	mg/L	0.00020

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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)
008253-0001-SA	AQUEOUS	TKN-A	05 FEB 90-A	05 FEB 90-A
008253-0001-SA	AQUEOUS	NH3-A	02 FEB 90-A	-
008253-0001-SA	AQUEOUS	NO3-A	05 FEB 90-F	-
008253-0001-SA	AQUEOUS	SO4-IC-A	07 FEB 90-M	-
008253-0001-SA	AQUEOUS	CL-IC-A	07 FEB 90-M	-
008253-0001-SA	AQUEOUS	F-A	02 FEB 90-A	-
008253-0002-SA	AQUEOUS	TKN-A	05 FEB 90-A	05 FEB 90-A
008253-0002-SA	AQUEOUS	NH3-A	02 FEB 90-A	-
008253-0002-SA	AQUEOUS	NO3-A	05 FEB 90-F	-
008253-0002-SA	AQUEOUS	SO4-IC-A	07 FEB 90-M	-
008253-0002-SA	AQUEOUS	CL-IC-A	07 FEB 90-M	-
008253-0002-SA	AQUEOUS	F-A	02 FEB 90-A	-
008253-0003-SA	AQUEOUS	TKN-A	05 FEB 90-A	05 FEB 90-A
008253-0003-SA	AQUEOUS	NH3-A	02 FEB 90-A	-
008253-0003-SA	AQUEOUS	NO3-A	05 FEB 90-F	-
008253-0003-SA	AQUEOUS	SO4-IC-A	07 FEB 90-M	-
008253-0003-SA	AQUEOUS	CL-IC-A	07 FEB 90-M	-
008253-0003-SA	AQUEOUS	F-A	02 FEB 90-A	-

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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: TKN-A Matrix: AQUEOUS QC Lot: 05 FEB 90-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	5.2	5.34	5.20	5.27	101	78-122	2.7	20
Category: NH3-A Matrix: AQUEOUS QC Lot: 02 FEB 90-A Concentration Units: mg/L								
Ammonia as N	2.0	1.97	1.98	1.98	99	93-107	0.5	10
Category: NO3-A Matrix: AQUEOUS QC Lot: 05 FEB 90-F Concentration Units: mg/L								
Nitrate as N	5.4	5.57	5.54	5.56	103	91-109	0.5	10
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 07 FEB 90-M Concentration Units: mg/L								
Sulfate	200	190	193	192	96	93-107	1.6	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 07 FEB 90-M Concentration Units: mg/L								
Chloride	100	96.1	98.3	97.2	97	92-108	2.3	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 Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 02 FEB 90-A								
Concentration Units: mg/L								
Fluoride	13.5	13.4	13.3	13.4	99	88-112	0.8	15

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

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METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 05 FEB 90-A QC Run: 05 FEB 90-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.50

ATTACHMENT 4

Rocky Mountain
Analytical Laboratory

Enseco

February 7, 1990

Mr. Ven Samala
Sparton Technology, Incorporated
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 January 17, 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:

Susan C. Wyatt for
Jeanne B. Howbert
Technical Manager

JEH/JBH/kas
Enclosures

RMAL #008112

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

Rocky Mountain
Analytical Laboratory

Enseco Incorporated

Enseco

ANALYTICAL RESULTS

FOR

SPARTON TECHNOLOGY, INCORPORATED

ENSECO-RMAL NO. 008112

FEBRUARY 7, 1990

Reviewed by: Joel E. Holtz
Joel E. Holtz

Susan C. Wyatt for
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.

Acetone was detected in samples 008112-0001 and 0002, but, was not detected in the method blank. Concentrations of acetone present at levels just above the reporting limit are highly suspect, since acetone is a common laboratory contaminant.

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.

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SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
008112-0001-SA	MW-48[os]	AQUEOUS	16 JAN 90	10:56	17 JAN 90
008112-0002-SA	MW-47[os]	AQUEOUS	16 JAN 90	13:15	17 JAN 90
008112-0003-SA	MW-44[os]	AQUEOUS	16 JAN 90	14:58	17 JAN 90

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ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 008112	Group Code	Analysis Description	Custom Test?
0001 - 0003	A	Total Kjeldahl Nitrogen (TKN)	N
		Ammonia	N
		Nitrate, as Nitrogen	N
		Sulfate, Ion Chromatography	N
		Chloride, Ion Chromatography	N
		Fluoride, Electrode	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Prep-Volatile Organics by GC/MS	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace 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.

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REVISED

Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-48[os]
Lab ID: 008112-0001-SA Enseco ID: 1064586
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 JAN 90 Prepared: 19 JAN 90 Analyzed: 21 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	50	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: Tim Miller Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-48[os]
Lab ID: 008112-0001-SA Enseco ID: 1064586
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 JAN 90 Prepared: 19 JAN 90 Analyzed: 21 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	830	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	97.6	%	--
4-Bromofluorobenzene	94.9	%	--
1,2-Dichloroethane-d4	98.6	%	--

ND = Not detected
NA = Not applicable

Reported By: Tim Miller Approved By: Jeff Lowry

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-47[os]
Lab ID: 008112-0002-SA Enseco ID: 1064587
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 JAN 90

Parameter	Result	Units	Reporting Limit
Acetone	29	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	ND	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: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-47[os]
Lab ID: 008112-0002-SA Enseco ID: 1064587
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 JAN 90

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	ND	ug/L	12
1,1,2-Trichloroethane	ND	ug/L	12
Trichloroethene	330	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	97.4	%	--
4-Bromofluorobenzene	99.8	%	--
1,2-Dichloroethane-d4	102	%	--

ND = Not detected
NA = Not applicable

Reported By: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-44[os]
Lab ID: 008112-0003-SA Enseco ID: 1064588
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-44[os]
Lab ID: 008112-0003-SA Enseco ID: 1064588
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	97.6	%	--
4-Bromofluorobenzene	95.4	%	--
1,2-Dichloroethane-d4	101	%	--

ND = Not detected
NA = Not applicable

Reported By: Phillip Tallarico Approved By: Jeff Lowry

Enseco
A CORNING Company

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-48[os]
Lab ID: 008112-0001-SA Enseco ID: 1064586
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 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	23 JAN 90	25 JAN 90
Arsenic	ND	mg/L	0.01	7060	18 JAN 90	22 JAN 90
Barium	0.06	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Beryllium	ND	mg/L	0.002	6010	23 JAN 90	25 JAN 90
Boron	0.36	mg/L	0.02	6010	23 JAN 90	25 JAN 90
Cadmium	ND	mg/L	0.005	6010	23 JAN 90	25 JAN 90
Chromium	0.16	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Cobalt	ND	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Copper	ND	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Lead	ND	mg/L	0.005	7421	18 JAN 90	22 JAN 90
Manganese	ND	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Mercury	ND	mg/L	0.0002	7470	18 JAN 90	19 JAN 90
Nickel	ND	mg/L	0.04	6010	23 JAN 90	25 JAN 90
Selenium	ND	mg/L	0.005	7740	18 JAN 90	22 JAN 90
Silver	ND	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Thallium	ND	mg/L	0.01	7841	18 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	23 JAN 90	25 JAN 90
Vanadium	ND	mg/L	0.01	6010	23 JAN 90	25 JAN 90
Zinc	0.01	mg/L	0.01	6010	23 JAN 90	25 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones Approved By: Kimberly Conroy

Enseco
A CORNING Company

Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-47[os]
Lab ID: 008112-0002-SA Enseco ID: 1064587
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 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	18 JAN 90	22 JAN 90
Arsenic	0.006	mg/L	0.005	7060	18 JAN 90	22 JAN 90
Barium	0.05	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Beryllium	ND	mg/L	0.002	6010	18 JAN 90	22 JAN 90
Boron	0.11	mg/L	0.02	6010	18 JAN 90	22 JAN 90
Cadmium	ND	mg/L	0.005	6010	18 JAN 90	22 JAN 90
Chromium	0.27	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Cobalt	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Copper	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Lead	ND	mg/L	0.005	7421	18 JAN 90	22 JAN 90
Manganese	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Mercury	ND	mg/L	0.0002	7470	18 JAN 90	19 JAN 90
Nickel	ND	mg/L	0.04	6010	18 JAN 90	22 JAN 90
Selenium	ND	mg/L	0.005	7740	18 JAN 90	22 JAN 90
Silver	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Thallium	ND	mg/L	0.01	7841	18 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	18 JAN 90	22 JAN 90
Vanadium	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Zinc	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-44[os]
Lab ID: 008112-0003-SA Enseco ID: 1064588
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 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	18 JAN 90	22 JAN 90
Arsenic	ND	mg/L	0.01	7060	18 JAN 90	22 JAN 90
Barium	0.10	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Beryllium	ND	mg/L	0.002	6010	18 JAN 90	22 JAN 90
Boron	0.11	mg/L	0.02	6010	18 JAN 90	22 JAN 90
Cadmium	ND	mg/L	0.005	6010	18 JAN 90	22 JAN 90
Chromium	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Cobalt	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Copper	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Lead	ND	mg/L	0.005	7421	18 JAN 90	22 JAN 90
Manganese	0.02	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Mercury	ND	mg/L	0.0002	7470	18 JAN 90	19 JAN 90
Nickel	ND	mg/L	0.04	6010	18 JAN 90	22 JAN 90
Selenium	ND	mg/L	0.005	7740	18 JAN 90	22 JAN 90
Silver	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Thallium	ND	mg/L	0.01	7841	18 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	18 JAN 90	22 JAN 90
Vanadium	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90
Zinc	ND	mg/L	0.01	6010	18 JAN 90	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: David Patterson Approved By: Kimberly Conroy

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-48[os]
Lab ID: 008112-0001-SA Enseco ID: 1064586
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 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	24 JAN 90
Fluoride	0.3	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	2.5	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	123	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Kimberly Conroy

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-47[os]
Lab ID: 008112-0002-SA Enseco ID: 1064587
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 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	24 JAN 90
Fluoride	0.3	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	3.8	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	115	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Kimberly Conroy

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-44[os]
Lab ID: 008112-0003-SA Enseco ID: 1064588
Matrix: AQUEOUS Sampled: 16 JAN 90 Received: 17 JAN 90
Authorized: 17 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	24 JAN 90
Fluoride	0.3	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	1.9	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	72	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Kimberly Conroy

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.

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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)
008112-0001-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L
008112-0002-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L
008112-0003-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L

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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	Limit
Category: 624-A								
Matrix: AQUEOUS								
QC Lot: 22 JAN 90-L								
Concentration Units: ug/L								
1,1-Dichloroethene	50	66.1	73.1	69.6	139	61-145	10	14
Trichloroethene	50	49.8	54.2	52.0	104	71-120	8.5	14
Benzene	50	76.3	72.1	74.2	148	76-127	5.7	11
Toluene	50	59.9	58.3	59.1	118	76-125	2.7	13
Chlorobenzene	50	53.2	52.9	53.0	106	75-130	0.6	13

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

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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: 22 JAN 90-L QC Run: 23 JAN 90-L				
Concentration Units: ug/L				
1,2-Dichloroethane-d4	50.0	50.9	102	76-114
4-Bromofluorobenzene	50.0	47.2	94	86-115
Toluene-d8	50.0	48.6	97	88-110

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

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METHOD BLANK REPORT
Volatile Organics by GC/MS

Test: 624-AP9-AP
Matrix: AQUEOUS
QC Lot: 22 JAN 90-L QC Run: 23 JAN 90-L

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

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

Analyte	Result	Units	Reporting Limit
Test: 624-AP9-AP			
Matrix: AQUEOUS			
QC Lot: 22 JAN 90-L QC Run: 23 JAN 90-L			
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)
008112-0001-SA	AQUEOUS	ICP-AT	23 JAN 90-D	23 JAN 90-D
008112-0001-SA	AQUEOUS	AS-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0001-SA	AQUEOUS	PB-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0001-SA	AQUEOUS	HG-CVAA-AT	18 JAN 90-A	18 JAN 90-A
008112-0001-SA	AQUEOUS	SE-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0001-SA	AQUEOUS	TL-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0002-SA	AQUEOUS	ICP-AT	18 JAN 90-F	18 JAN 90-F
008112-0002-SA	AQUEOUS	AS-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0002-SA	AQUEOUS	PB-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0002-SA	AQUEOUS	HG-CVAA-AT	18 JAN 90-A	18 JAN 90-A
008112-0002-SA	AQUEOUS	SE-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0002-SA	AQUEOUS	TL-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0003-SA	AQUEOUS	ICP-AT	18 JAN 90-F	18 JAN 90-F
008112-0003-SA	AQUEOUS	AS-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0003-SA	AQUEOUS	PB-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0003-SA	AQUEOUS	HG-CVAA-AT	18 JAN 90-A	18 JAN 90-A
008112-0003-SA	AQUEOUS	SE-FAA-AT	18 JAN 90-E	18 JAN 90-E
008112-0003-SA	AQUEOUS	TL-FAA-AT	18 JAN 90-E	18 JAN 90-E

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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: 23 JAN 90-D								
Concentration Units: mg/L								
Aluminum	2.0	1.94	1.94	1.94	97	75-125	0.0	20
Antimony	0.5	0.48	0.48	0.48	96	75-125	0.0	20
Arsenic	0.5	0.45	0.45	0.45	90	75-125	0.0	20
Barium	2.0	1.64	1.64	1.64	82	75-125	0.0	20
Beryllium	0.05	0.044	0.044	0.044	88	75-125	0.0	20
Cadmium	0.05	0.046	0.044	0.045	90	75-125	4.4	20
Calcium	100	92.4	92.8	92.6	93	75-125	0.4	20
Chromium	0.2	0.20	0.19	0.20	98	75-125	5.1	20
Cobalt	0.5	0.44	0.44	0.44	88	75-125	0.0	20
Copper	0.25	0.23	0.23	0.23	92	75-125	0.0	20
Iron	1.0	0.96	0.95	0.96	96	75-125	1.0	20
Lead	0.5	0.44	0.44	0.44	88	75-125	0.0	20
Magnesium	50	46.4	46.6	46.5	93	75-125	0.4	20
Manganese	0.5	0.46	0.46	0.46	92	75-125	0.0	20
Nickel	0.5	0.48	0.48	0.48	96	75-125	0.0	20
Potassium	100	91.3	91.3	91.3	91	75-125	0.0	20
Silver	0.05	0.036	0.039	0.038	75	75-125	8.0	20
Sodium	100	85.4	85.2	85.3	85	75-125	0.2	20
Vanadium	0.5	0.45	0.45	0.45	90	75-125	0.0	20
Zinc	0.5	0.46	0.47	0.46	93	75-125	2.2	20
Category: AS-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 18 JAN 90-E								
Concentration Units: mg/L								
Arsenic	0.04	0.041	0.040	0.040	101	75-125	2.5	20
Category: PB-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 18 JAN 90-E								
Concentration Units: mg/L								
Lead	0.02	0.023	0.023	0.023	115	75-125	0.0	20

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

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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: HG-CVAA-AT								
Matrix: AQUEOUS								
QC Lot: 18 JAN 90-A								
Concentration Units: mg/L								
Mercury	0.0010	0.00111	0.00110	0.00110	111	75-125	0.9	20
Category: SE-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 18 JAN 90-E								
Concentration Units: mg/L								
Selenium	0.01	0.011	0.0097	0.010	105	75-125	14	20
Category: TL-FAA-AT								
Matrix: AQUEOUS								
QC Lot: 18 JAN 90-E								
Concentration Units: mg/L								
Thallium	0.05	0.047	0.047	0.047	94	75-125	0.0	20
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 18 JAN 90-F								
Concentration Units: mg/L								
Aluminum	2.0	1.98	1.99	1.98	99	75-125	0.5	20
Antimony	0.5	0.52	0.51	0.52	103	75-125	1.9	20
Arsenic	0.5	0.49	0.48	0.48	97	75-125	2.1	20
Barium	2.0	1.69	1.71	1.70	85	75-125	1.2	20
Beryllium	0.05	0.046	0.046	0.046	92	75-125	0.0	20
Cadmium	0.05	0.046	0.048	0.047	94	75-125	4.3	20
Calcium	100	94.7	95.2	95.0	95	75-125	0.5	20
Chromium	0.2	0.19	0.19	0.19	95	75-125	0.0	20
Cobalt	0.5	0.45	0.46	0.46	91	75-125	2.2	20
Copper	0.25	0.25	0.25	0.25	100	75-125	0.0	20
Iron	1.0	0.96	0.97	0.96	97	75-125	1.0	20
Lead	0.5	0.47	0.47	0.47	94	75-125	0.0	20
Magnesium	50	47.6	47.9	47.8	96	75-125	0.6	20
Manganese	0.5	0.47	0.47	0.47	94	75-125	0.0	20
Nickel	0.5	0.49	0.50	0.50	99	75-125	2.0	20
Potassium	100	97.4	98.0	97.7	98	75-125	0.6	20

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

Enseco
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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: 18 JAN 90-F								
Concentration Units: mg/L								
Silver	0.05	0.043	0.040	0.042	83	75-125	7.2	20
Sodium	100	94.9	95.9	95.4	95	75-125	1.0	20
Vanadium	0.5	0.46	0.46	0.46	92	75-125	0.0	20
Zinc	0.5	0.48	0.48	0.48	96	75-125	0.0	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: 23 JAN 90-D QC Run: 23 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: 18 JAN 90-E QC Run: 18 JAN 90-E			
Arsenic	ND	mg/L	0.005
Test: PB-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 18 JAN 90-E QC Run: 18 JAN 90-E			
Lead	ND	mg/L	0.005
Test: HG-CVAA-AT			
Matrix: AQUEOUS			
QC Lot: 18 JAN 90-A QC Run: 18 JAN 90-A			
Mercury	ND	mg/L	0.0002

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METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: SE-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 18 JAN 90-E QC Run: 18 JAN 90-E			
Selenium	ND	mg/L	0.005
Test: TL-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 18 JAN 90-E QC Run: 18 JAN 90-E			
Thallium	ND	mg/L	0.005
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 18 JAN 90-F QC Run: 18 JAN 90-F			
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

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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)
008112-0001-SA	AQUEOUS	TKN-A	22 JAN 90-A	22 JAN 90-A
008112-0001-SA	AQUEOUS	NH3-A	22 JAN 90-Y	-
008112-0001-SA	AQUEOUS	NO3-A	23 JAN 90-B	-
008112-0001-SA	AQUEOUS	SO4-IC-A	24 JAN 90-M	-
008112-0001-SA	AQUEOUS	CL-IC-A	24 JAN 90-N	-
008112-0001-SA	AQUEOUS	F-A	19 JAN 90-A	-
008112-0002-SA	AQUEOUS	TKN-A	22 JAN 90-A	22 JAN 90-A
008112-0002-SA	AQUEOUS	NH3-A	22 JAN 90-Y	-
008112-0002-SA	AQUEOUS	NO3-A	23 JAN 90-B	-
008112-0002-SA	AQUEOUS	SO4-IC-A	24 JAN 90-M	-
008112-0002-SA	AQUEOUS	CL-IC-A	24 JAN 90-N	-
008112-0002-SA	AQUEOUS	F-A	19 JAN 90-A	-
008112-0003-SA	AQUEOUS	TKN-A	22 JAN 90-A	22 JAN 90-A
008112-0003-SA	AQUEOUS	NH3-A	22 JAN 90-Y	-
008112-0003-SA	AQUEOUS	NO3-A	23 JAN 90-A	-
008112-0003-SA	AQUEOUS	SO4-IC-A	24 JAN 90-M	-
008112-0003-SA	AQUEOUS	CL-IC-A	24 JAN 90-N	-
008112-0003-SA	AQUEOUS	F-A	19 JAN 90-A	-

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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: TKN-A Matrix: AQUEOUS QC Lot: 22 JAN 90-A Concentration Units: mg/L								
Total Kjeldahl Nitrogen as N	4.7	4.80	5.06	4.93	105	78-122	5.3	20
Category: NH3-A Matrix: AQUEOUS QC Lot: 22 JAN 90-Y Concentration Units: mg/L								
Ammonia as N	4.1	3.87	3.89	3.88	95	93-107	0.5	10
Category: NO3-A Matrix: AQUEOUS QC Lot: 23 JAN 90-B Concentration Units: mg/L								
Nitrate as N	5.4	5.43	5.50	5.46	101	91-109	1.3	10
Category: SO4-IC-A Matrix: AQUEOUS QC Lot: 24 JAN 90-M Concentration Units: mg/L								
Sulfate	200	201	200	200	100	93-107	0.5	20
Category: CL-IC-A Matrix: AQUEOUS QC Lot: 24 JAN 90-N Concentration Units: mg/L								
Chloride	100	101	100	100	101	92-108	1.0	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 Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: F-A								
Matrix: AQUEOUS								
QC Lot: 19 JAN 90-A								
Concentration Units: mg/L								
Fluoride	13.5	14.1	14.1	14.1	104	88-112	0.0	15
Category: NO3-A								
Matrix: AQUEOUS								
QC Lot: 23 JAN 90-A								
Concentration Units: mg/L								
Nitrate as N	5.4	5.61	5.53	5.57	103	91-109	1.4	10

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

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METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A			
Matrix: AQUEOUS			
QC Lot: 22 JAN 90-A QC Run: 22 JAN 90-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5

Enseco

February 5, 1990

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 January 18, 1990.

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 #008122

001956

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.

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analysis 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 interference. 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.

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SAMPLE DESCRIPTION INFORMATION
for
Sparton Technology Inc.

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
008122-0001-SA	MW-46[os]	AQUEOUS	17 JAN 90	11:25	18 JAN 90
008122-0002-SA	MW-45[os]	AQUEOUS	17 JAN 90	12:58	18 JAN 90
008122-0003-SA	FIELD BLANK	AQUEOUS	17 JAN 90	12:46	18 JAN 90
008122-0004-SA	TRIP BLANK	AQUEOUS	17 JAN 90		18 JAN 90

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ANALYTICAL TEST REQUESTS
for
Sparton Technology Inc.

Lab ID: 008122	Group Code	Analysis Description	Custom Test?
0001 - 0004	A	Total Kjeldahl Nitrogen (TKN)	N
		Ammonia	N
		Nitrate, as Nitrogen	N
		Sulfate, Ion Chromatography	N
		Chloride, Ion Chromatography	N
		Fluoride, Electrode	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Arsenic, Furnace AA (Total)	N
		Prep - Total Metals, Furnace AA	N
		Lead, Furnace AA (Total)	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Selenium, Furnace AA (Total)	N
		Thallium, Furnace AA (Total)	N
		Appendix IX Volatile Organics	N
		Prep-Volatile Organics by GC/MS	N

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-46[os]
Lab ID: 008122-0001-SA Enseco ID: 1064711
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-46[os]
Lab ID: 008122-0001-SA Enseco ID: 1064711
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	100	ug/L	100
1,1,2-Trichloroethane	ND	ug/L	100
Trichloroethene	2300	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	97.6	%	--
4-Bromofluorobenzene	98.0	%	--
1,2-Dichloroethane-d4	94.2	%	--

ND = Not detected
NA = Not applicable

Reported By: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-45[os]
Lab ID: 008122-0002-SA Enseco ID: 1064712
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	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: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: MW-45[os]
Lab ID: 008122-0002-SA Enseco ID: 1064712
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	1400	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	95.9	%	--
4-Bromofluorobenzene	92.1	%	--
1,2-Dichloroethane-d4	101	%	--

ND = Not detected
NA = Not applicable

Reported By: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008122-0003-SA Enseco ID: 1064714
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	5.8	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: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008122-0003-SA Enseco ID: 1064714
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	95.8	%	--
4-Bromofluorobenzene	94.9	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008122-0004-SA Enseco ID: 1064717
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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: Phillip Tallarico Approved By: Jeff Lowry

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Appendix IX Volatile Organics (CONT.)

Method 8240

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008122-0004-SA Enseco ID: 1064717
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: 19 JAN 90 Analyzed: 23 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	97.0	%	--
4-Bromofluorobenzene	93.9	%	--
1,2-Dichloroethane-d4	96.0	%	--

ND = Not detected
NA = Not applicable

Reported By: Phillip Tallarico Approved By: Jeff Lowry

Enseco
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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-46[os]
Lab ID: 008122-0001-SA Enseco ID: 1064711
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	26 JAN 90	29 JAN 90
Arsenic	ND	mg/L	0.005	7060	22 JAN 90	23 JAN 90
Barium	0.15	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Beryllium	ND	mg/L	0.002	6010	26 JAN 90	29 JAN 90
Boron	0.13	mg/L	0.02	6010	26 JAN 90	29 JAN 90
Cadmium	ND	mg/L	0.005	6010	26 JAN 90	29 JAN 90
Chromium	0.17	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Cobalt	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Copper	0.13	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Lead	0.024	mg/L	0.005	7421	24 JAN 90	26 JAN 90
Manganese	0.08	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Mercury	ND	mg/L	0.0002	7470	22 JAN 90	23 JAN 90
Nickel	ND	mg/L	0.04	6010	26 JAN 90	29 JAN 90
Selenium	ND	mg/L	0.01	7740	22 JAN 90	24 JAN 90
Silver	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Thallium	ND	mg/L	0.005	7841	22 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	26 JAN 90	29 JAN 90
Vanadium	0.01	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Zinc	0.43	mg/L	0.02	6010	26 JAN 90	29 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts Approved By: Mary Grehl

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: MW-45[os]
Lab ID: 008122-0002-SA Enseco ID: 1064712
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	26 JAN 90	29 JAN 90
Arsenic	ND	mg/L	0.005	7060	22 JAN 90	23 JAN 90
Barium	0.06	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Beryllium	ND	mg/L	0.002	6010	26 JAN 90	29 JAN 90
Boron	0.36	mg/L	0.02	6010	26 JAN 90	29 JAN 90
Cadmium	ND	mg/L	0.005	6010	26 JAN 90	29 JAN 90
Chromium	0.57	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Cobalt	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Copper	0.02	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Lead	ND	mg/L	0.01	7421	24 JAN 90	26 JAN 90
Manganese	0.01	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Mercury	ND	mg/L	0.0002	7470	22 JAN 90	23 JAN 90
Nickel	ND	mg/L	0.04	6010	26 JAN 90	29 JAN 90
Selenium	ND	mg/L	0.01	7740	22 JAN 90	24 JAN 90
Silver	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Thallium	ND	mg/L	0.01	7841	22 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	26 JAN 90	29 JAN 90
Vanadium	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Zinc	0.05	mg/L	0.02	6010	26 JAN 90	29 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts Approved By: Mary Grehl

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008122-0003-SA Enseco ID: 1064714
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	26 JAN 90	29 JAN 90
Arsenic	ND	mg/L	0.005	7060	22 JAN 90	23 JAN 90
Barium	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Beryllium	ND	mg/L	0.002	6010	26 JAN 90	29 JAN 90
Boron	0.02	mg/L	0.02	6010	26 JAN 90	29 JAN 90
Cadmium	ND	mg/L	0.005	6010	26 JAN 90	29 JAN 90
Chromium	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Cobalt	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Copper	0.02	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Lead	ND	mg/L	0.01	7421	24 JAN 90	26 JAN 90
Manganese	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Mercury	ND	mg/L	0.0002	7470	22 JAN 90	23 JAN 90
Nickel	0.06	mg/L	0.04	6010	26 JAN 90	29 JAN 90
Selenium	ND	mg/L	0.005	7740	22 JAN 90	24 JAN 90
Silver	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Thallium	ND	mg/L	0.005	7841	22 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	26 JAN 90	29 JAN 90
Vanadium	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Zinc	0.04	mg/L	0.02	6010	26 JAN 90	29 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts Approved By: Mary Grehl

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Metals

Total Metals

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008122-0004-SA Enseco ID: 1064717
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	26 JAN 90	29 JAN 90
Arsenic	ND	mg/L	0.005	7060	22 JAN 90	23 JAN 90
Barium	0.02	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Beryllium	ND	mg/L	0.002	6010	26 JAN 90	29 JAN 90
Boron	0.02	mg/L	0.02	6010	26 JAN 90	29 JAN 90
Cadmium	ND	mg/L	0.005	6010	26 JAN 90	29 JAN 90
Chromium	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Cobalt	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Copper	0.02	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Lead	ND	mg/L	0.01	7421	24 JAN 90	26 JAN 90
Manganese	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Mercury	ND	mg/L	0.0002	7470	22 JAN 90	23 JAN 90
Nickel	ND	mg/L	0.04	6010	26 JAN 90	29 JAN 90
Selenium	ND	mg/L	0.005	7740	22 JAN 90	24 JAN 90
Silver	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Thallium	ND	mg/L	0.005	7841	22 JAN 90	23 JAN 90
Tin	ND	mg/L	0.05	6010	26 JAN 90	29 JAN 90
Vanadium	ND	mg/L	0.01	6010	26 JAN 90	29 JAN 90
Zinc	0.05	mg/L	0.02	6010	26 JAN 90	29 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts Approved By: Mary Grehl

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-46[os]
Lab ID: 008122-0001-SA Enseco ID: 1064711
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	24 JAN 90
Fluoride	0.4	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	2.3	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	100	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Tammy Bailey

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: MW-45[os]
Lab ID: 008122-0002-SA Enseco ID: 1064712
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 JAN 90 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chloride	41	mg/L	3	300.0	NA	24 JAN 90
Fluoride	0.2	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	4.0	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	119	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Tammy Bailey

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: FIELD BLANK
Lab ID: 008122-0003-SA Enseco ID: 1064714
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	24 JAN 90
Fluoride	ND	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	ND	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	ND	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Tammy Bailey

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General Inorganics

Client Name: Sparton Technology Inc.
Client ID: TRIP BLANK
Lab ID: 008122-0004-SA Enseco ID: 1064717
Matrix: AQUEOUS Sampled: 17 JAN 90 Received: 18 JAN 90
Authorized: 18 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	24 JAN 90
Fluoride	ND	mg/L	0.1	340.2	NA	19 JAN 90
Ammonia as N	ND	mg/L	0.1	350.1	NA	22 JAN 90
Nitrate as N	ND	mg/L	0.1	353.2	NA	23 JAN 90
Sulfate	ND	mg/L	5	300.0	NA	24 JAN 90
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5	351.2	NA	22 JAN 90

ND = Not detected
NA = Not applicable

Reported By: Jennifer Franzen Approved By: Tammy Bailey

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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)
008122-0001-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L
008122-0002-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L
008122-0003-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L
008122-0004-SA	AQUEOUS	624-A	22 JAN 90-L	23 JAN 90-L

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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: 22 JAN 90-L								
Concentration Units: ug/L								
1,1-Dichloroethene	50	66.1	73.1	69.6	139	61-145	10	14
Trichloroethene	50	49.8	54.2	52.0	104	71-120	8.5	14
Benzene	50	76.3	72.1	74.2	148	76-127	5.7	11
Toluene	50	59.9	58.3	59.1	118	76-125	2.7	13
Chlorobenzene	50	53.2	52.9	53.0	106	75-130	0.6	13

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 Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: F-A Matrix: AQUEOUS QC Lot: 19 JAN 90-A Concentration Units: mg/L								
Fluoride	13.5	14.1	14.1	14.1	104	88-112	0.0	15
Category: NO3-A Matrix: AQUEOUS QC Lot: 23 JAN 90-A Concentration Units: mg/L								
Nitrate as N	5.4	5.61	5.53	5.57	103	91-109	1.4	10

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

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METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: TKN-TEC-A Matrix: AQUEOUS QC Lot: 22 JAN 90-A QC Run: 22 JAN 90-A			
Total Kjeldahl Nitrogen as N	ND	mg/L	0.5