

~~R-001-206.20~~

G-000-206.20

418

SAMPLE DATA SUMMARY

04-26-90

IT/ASI

9

SUMMARY

418



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

ADV 35888

SAMPLE DATA SUMMARY

Case # 35888

Sample Delivery Group # 00810

ITAS Project # ADV 35888

SAMPLE DATA SUMMARY

CERTIFICATE OF ANALYSIS

C/O ASI Inc.
11030 Hamilton Cleves Road
Ross, OH 45061
Attn: Cindy Capannari

Date: April 26, 1990

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Job Number: ADV 35888

P.O Number: Accounts Payable

This is the Certificate of Analysis for the following:

Client Project ID: FMPC RI/FS
Date Received by Lab: 03/30/90
Number of Samples: Nine (9)
Sample Type: Eight (8) soils and One (1) Rinsate

I. INTRODUCTION

On March 30, 1989, nine (9) samples were received at ITAS Oak Ridge, Tennessee laboratory from Advanced Sciences Inc., Ross, Ohio. The list of analytical tests performed, as well as date of receipt and analysis, can be found in the attached report.

Blanks are identified with client sample ID's starting with either "QX..B" or "QX...B.". Data are reported with the qualifier "U" if the compound was analyzed for but not detected. Lists with concentration unit code and lab and client suffix code definitions are attached.

II. ANALYTICAL RESULTS/METHODOLOGY

The analytical results for this report are presented by analytical tests. Each set of data will include sample identification information, the analytical results, and the appropriate detection limits.

Reviewed and Approved:

Mary Hallford Snell Mills
Snell A. Mills III
Laboratory Manager

SAM/mmh

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II. ANALYTICAL RESULTS/METHODOLOGY (Continued)

The samples were analyzed for Target Compound List (TCL) volatile compounds using the EPA CLP 10/86 Statement of Work.

The samples were analyzed for TCL semivolatile compounds using the EPA CLP 10/86 Statement of Work.

The samples were analyzed for TCL pesticide/PCB using the EPA CLP 10/86 Statement of Work.

The samples were analyzed for TCL metals and cyanide compounds using the EPA CLP 7/87 Statement of Work.

III. Quality Control

The matrix spike (MS) and matrix spike duplicate (MSD) for the organic analyses were performed on sample 00810.

The sample was analyzed for volatile organics on 04/04/90 and 04/05/90. The sample runs proceeded well. All surrogates and internal standards were within QC required limits. The MS/MSD percent recoveries were all within QC limits. There were no problems, QC or otherwise, seen in the final data review.

The sample was extracted on 04/03/90 and analyzed for semivolatile organics on 04/04/90 and 04/05/90. The analyses proceeded well with one surrogate on sample 00810MS below QC limits but within CLP protocol. All internal standards within QC required limits. The MS/MSD showed 1,4-Dichlorobenzene, N-Nitroso-di-n-propylamine and 1,2,4-Trichlorobenzene to have low percent recoveries, but all percent RPD's are within QC limits. There were no other problems, QC or otherwise, seen in the final data review.

The pesticide and aroclor analyses for the water sample was performed on 02/08/90. No confirmation analyses was needed. The sample and blank were prepared as low-level waters and analyzed by CLP protocol. All water pesticide surrogate recoveries were within QC limits.

The pesticide and aroclor analyses for the soil sample were analyzed on 04/05/90 and 04/06/90. All samples and blank were prepared and analyzed as low-level soils. Sample 00811 showed the soil pesticide surrogate recovery to be outside QC limits due to a large amount of matrix interference. The MS/MSD analyses were performed on sample 00810. All soil pesticide MS and MSD were within QC limits.

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III. Quality Control (cont.)

The duplicate and spike analyses for the inorganics were performed on sample 00810.

The samples were prepared for ICP analyses on 04/06/90 and analyzed on 04/09/90. The matrix spike was outside QC limits for Antimony. The serial dilution was outside QC limits for zinc. The duplicate values were outside QC limits for Calcium, Chromium, Magnesium, and Silver.

The samples were prepared for GFAA analysis on 04/06/90 and analyzed during the period 04/09/90 - 04/12/90. The MS recovery and analytical spike recovery were outside QC limits for selenium.

The samples were prepared and analyzed for Mercury on 04/12/90.

The samples were prepared for Potassium analyses on 04/06/90 and analyzed on 04/12/90.

The samples were prepared for cyanide analyses on 04/03/90 and 04/04/90 and analyzed on 04/05/90.

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III. Quality Control (cont.)

The duplicate and spike analyses for the inorganics were performed on sample 00810.

The samples were prepared for ICP analyses on 04/06/90 and analyzed on 04/09/90. The matrix spike was outside QC limits for Antimony. The serial dilution was outside QC limits for zinc. The duplicate values were outside QC limits for Calcium, Chromium, Magnesium, and Silver.

The samples were prepared for GFAA analysis on 04/06/90 and analyzed during the period 04/09/90 - 04/12/90. The MS recovery and analytical spike recovery were outside QC limits for selenium.

The samples were prepared and analyzed for Mercury on 04/12/90.

The samples were prepared for Potassium analyses on 04/06/90 and analyzed on 04/12/90.

The samples were prepared for cyanide analyses on 04/03/89 and 04/04/90 and analyzed on 04/05/90.

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SAMPLE DATA SUMMARY

<u>FIELD #</u>	<u>ITAS #</u>	<u>MATRIX</u>	<u>CONC.</u>	<u>ANALYSIS</u>
00810	MM4140	SOIL	LOW	VOC
	MM4120	SOIL	LOW	BNA
	MM4120	SOIL	LOW	PEST/PCB
	MM4130	SOIL	LOW	METALS
	MM4130	SOIL	LOW	MERCURY
	MM4130	SOIL	LOW	CYANIDE
00810MS	MM4141	SOIL	LOW	QC/MS/VOC
	MM4121	SOIL	LOW	QC/MS/BNA
	MM4121	SOIL	LOW	QC/MS/PEST/PCB
	MM4131	SOIL	LOW	QC/MS/METALS
	MM4131	SOIL	LOW	QC/MS/MERCURY
00810DUP	MM4131	SOIL	LOW	QC/MS/CYANIDE
	MM4132	SOIL	LOW	QC/DUP/METALS
	MM4132	SOIL	LOW	QC/DUP/MERCURY
00810MSD	MM4132	SOIL	LOW	QC/DUP/CYANIDE
	MM4142	SOIL	LOW	QC/MSD/VOC
	MM4122	SOIL	LOW	QC/MSD/BNA
00813	MM4122	SOIL	LOW	QC/MSD/PEST/PCB
	MM4143	SOIL	LOW	VOC
	MM4123	SOIL	LOW	BNA
	MM4123	SOIL	LOW	PEST/PCB
	MM4133	SOIL	LOW	METALS
00811	MM4133	SOIL	LOW	MERCURY
	MM4133	SOIL	LOW	CYANIDE
	MM4144	SOIL	LOW	VOC
	MM4124	SOIL	LOW	BNA
	MM4124	SOIL	LOW	PEST/PCB
	MM4134	SOIL	LOW	METALS
00817	MM4134	SOIL	LOW	MERCURY
	MM4134	SOIL	LOW	CYANIDE
	MM4145	SOIL	LOW	VOC
	MM4125	SOIL	LOW	BNA
	MM4125	SOIL	LOW	PEST/PCB
	MM4135	SOIL	LOW	METALS
	MM4135	SOIL	LOW	MERCURY
	MM4135	SOIL	LOW	CYANIDE

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SAMPLE DATA SUMMARY (cont.)

<u>FIELD #</u>	<u>ITAS #</u>	<u>MATRIX</u>	<u>CONC.</u>	<u>ANALYSIS</u>
00812	MM4146	SOIL	LOW	VOC
	MM4126	SOIL	LOW	BNA
	MM4126	SOIL	LOW	PEST/PCB
	MM4136	SOIL	LOW	METALS
	MM4136	SOIL	LOW	MERCURY
	MM4136	SOIL	LOW	CYANIDE
00816	MM4147	SOIL	LOW	VOC
	MM4127	SOIL	LOW	BNA
	MM4127	SOIL	LOW	PEST/PCB
	MM4137	SOIL	LOW	METALS
	MM4137	SOIL	LOW	MERCURY
00815	MM4137	SOIL	LOW	CYANIDE
	MM4148	SOIL	LOW	VOC
	MM4128	SOIL	LOW	BNA
	MM4128	SOIL	LOW	PEST/PCB
	MM4138	SOIL	LOW	METALS
	MM4138	SOIL	LOW	MERCURY
00814	MM4138	SOIL	LOW	CYANIDE
	MM4149	SOIL	LOW	VOC
	MM4129	SOIL	LOW	BNA
	MM4129	SOIL	LOW	PEST/PCB
	MM4139	SOIL	LOW	METALS
00818	MM4139	SOIL	LOW	MERCURY
	MM4139	SOIL	LOW	CYANIDE
	MM4117	RINSATE	LOW	VOC
	MM4108	RINSATE	LOW	BNA
	MM4111	RINSATE	LOW	PEST/PCB
	MM4118	RINSATE	LOW	METALS
	MM4119	RINSATE	LOW	MERCURY
MM4114	RINSATE	LOW	CYANIDE	

ABBREVIATIONS: VOC - VOLATILES
 BNA - SEMIVOLATILES
 PEST - PESTICIDES
 PCB - POLYCHLORINATED BIPHENYLS
 DUP - DUPLICATE
 MS - MATRIX SPIKE
 MSD - MATRIX SPIKE DUPLICATE

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ORGANIC QUALIFIERS

- U = Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- C = This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- E = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and reanalyzed. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- A = This flag indicates that a TIC is a suspected aldol-condensation product.
- F = Estimated value due to a confirmed compound which is off-scale in both columns.
- X = A flag that FORMASTER III CLP software automatically inserts to indicate that the data was entered manually.
- Y = Indistinguishable isomer in tentatively identified compounds.
- Z = No estimated value reported, or an elevated CRQL reported because matrix effects interfere with or obscure the compound on one or both columns. In either situation, the compound does not confirm as a positive identification.
- * = Values outside of contract required QC limits.

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INORGANIC QUALIFIERS

Concentration Qualifiers (C)

B = Reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRQL) but greater than or equal to the Instrument Detection Limit (IDL).

U = Analyte was analyzed for but not detected.

Quality Qualifiers (Q)

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions.

W = Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

G = Native analyte > 4 times spike added, therefore acceptance criteria do not apply.

X = Detection limit is higher than normal due to sample matrix interferences.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.955.

Method Qualifiers (M)

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "CV" for Manual Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- "NR" if the analyte is not required to be analyzed