START 9613458.0959

R6331

0045001

229

Westinghouse
Hanford Company

Internal
Memo

From: Program Support
Phone: 373-3683 T6-20
Date: February 7, 1995
Subject: RESULTS FOR FLUSH PUREX VESSELS

75725-96-008

To: C.N. Villalobos S6-19

cc: M. D. Rollison T6-20
ADR-File/LB

Attached analytical results have been obtained for the indicated sample which was submitted to the 222-S Laboratory.

LABORATORY ID: R6331

CUSTOMER ID: 94219-01

LABORATORY SUBMITTAL DATE: September 7, 1994

CHAIN OF CUSTODY No.: 008029

SAMPLE AUTHORIZATION FORM: 94-219

AUG 1996
RECEIVED
EDMC

If there are any questions regarding this data, please feel free to reach me at 373-3683.

Sincerely,

Leslie Diaz

Leslie A. Diaz for Michelle D. Rollison
Program Support

Attachments
1) Request for Special Analysis
2) Chain of Custody Form
3) Sample Authorization Forms
4) Volatile Organic Analysis
5) Analytical Data

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This document consists of pages 1 through 82 plus page 51.1.

9613458.0941

ATTACHMENT 1

REQUEST FOR SPECIAL ANALYSIS

9613458.0942

REQUEST FOR SPECIAL ANALYSIS (RSA)

RSA No. 2080

1. Sample Origin: PUREX 200 E
2. Date Submitted: 9-07-94
3. Submitted By: DE Richards
4. Requester Name: M.M. Gretsinger
5. Requester Phone/MSIN: 373-3680/S6-19
6. Charge Code/Work Package: KP39B
7. Date Required: ASAP

8. Customer ID	Collected Date	Collected Time	9. Laboratory ID
94219-01	9-7-94	1430	R# 6331

12. Number of Samples: 1 sample (3 bottles)
13. Volume of Samples: 1 20ml, 2 40ml
14. Protocols: ☐ None ☒ RCRA ☐ NQA-1 ☐ Other ☐ CERCLA

15. Sample Type: ☐ Solid ☐ Soil ☐ Slurry ☐ Gas ☒ Water ☐ Waste ☐ Solution ☐ Sludge ☐ Oil ☐ Other (specify)

16. Storage Requirements: ☐ None ☒ Specify Cool to 4°C

17. Process Knowledge/Known Listed Wastes: ☒ Unknown ☐ Known (Please attach list) ☐ Previously submitted for this Project

10. Determination	11. Expected Range
VOA	
ICP Metals TAL	
Arsenic, Selenium	
Mercury, TOC, pH	

18. Survey: R. Gieder (HPT Signature) Dose Rate <1.5 mr/hr

19. Disposition of Waste: ☐ Return to Client/Location ☒ Dispose per 222-S Procedures ☐ Other

Reported 10/17/94

20. Additional Information
Fax information to KB Hulse 373-3193
Std R6329
Blank R6330
Std R6332

21. Chain of Custody: ☐ No ☒ Yes Number: 8029

22. Assigned Custodial Group (select one): ☐ PCL ☐ PDSU ☐ ENV ☐ Process

23. Sample Received By: [signature] Date: 9/7/94 Time: 16:30

24. Laboratory Manager (if required): 2 Date:

BC-6700-181 (11/92)

9613458.0943

ATTACHMENT 2

CHAIN OF CUSTODY FORMS

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1
		008029

Collector D.E. Richards
SAF No. 94-219
Ice Chest No.
Method of Shipment Government Vehicle
Shipped to 222-S Lab
Possible Sample Hazards/Remarks RADIOACTIVE
Special Handling and/or Storage

Company Contact M.M. Gretsinger/L.D. Zuck
Project Designation Flush PUREX Vessels
Bill of Lading/Airbill No. N/A

Telephone 373-3680/372-3075
Sampling Locations PUREX/200 E
Offsite Property No. N/A
Field Logbook No.

SPECIAL INSTRUCTIONS SUMMARY DELIVERABLE
VOA Vial has visible air bubbles. Analyze anyway.

Sample Number	*	Date Collected	Time	Number and Type of Containers	Analysis Required	Preservative
94219.01-I07	W	09-07-94	1430	(1) 20ml aGs	VOA, 8240.	Cool to 4 C.
↓	↓	↓	↓	(2) 40ml aGs	ICP Metals TAL, 6010; As, 7060; Se, 7740; Hg, 7470; TOC, 9060; pH, 9040.	Cool to 4 C.
					R6331 (1 sample - 3 containers)	

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By
D.E. Richards	9/7/94	1630	G. Walley G. Walley

*Matrix
A = Air
DL = Drum Liquids
DS = Drum Solids
L = Liquid
O = Oil
S = Soil
SE = Sediment
SL = Sludge
SO = Solid
T = Tissue
W = Water
WI = Wipe
X = Other

LABORATORY SECTION	Received By	Title	Date/Time
Final Sample Disposition	Disposal Method:	Disposed by:	Date/Time:

9611 0347 196

ATTACHMENT 3

SAMPLE AUTHORIZATION FORM

9613458.0946

OFFICE OF SAMPLE MANAGEMENT
SAMPLING AUTHORIZATION FORM
SAF # 94-219

3 DATE: 08/12/94

PROJECT NUMBER 94-219 PROJECT TITLE Flush PUREX Vessels

OSM PROJECT COORDINATOR L. D. Zuck OPERABLE UNIT/TSD N/A

CUSTOMER NAME M. M. Gretsinger PHONE # 373-3680 MSIN S6-19

ORGANIZATION/CODE 17730 CHARGE CODE KP39B

SAMPLING DATE ASAP NUMBER OF SAMPLES ~1 SAMPLING LOCATION 202A/200E

SAMPLE PRIORITY:
1. EXPEDITED RESPONSE ACTION
2. TPA RANKING _____
3. ✓ NON-TPA RANKING _____

PROTOCOLS: CERCLA ✓ RCRA OTHER (specify) _____

DATA TURNAROUND REQUIREMENTS: PRIORITY ✓ REGULAR RADCHEM

SAMPLE MATRIX: SOIL/SEDIMENT WATER VEGETATION OILS
SLUDGE CONCRETE ✓ OTHER _____

LABORATORY SERVICES ✓ ON-SITE ✓ OFF-SITE

LABORATORY	LABORATORY CONTACT	TELEPHONE
222-S	Not Applicable	N/A
IT	Not Applicable	N/A

COMMENTS:

- Sample matrix: Liquid mixed waste.
- Revision 1: Change in volume requirements.
- Revision 2: Change in volume requirements.
- Revision 3: Change in SAF title.

NOTE THE FOLLOWING ON THE CHAIN OF CUSTODY -

- "Summary Deliverable"

Post-it Fax Note 7671	Date 8/15	# of pages 2
To John Kostofski	From Tian	
Co./Dept. 94-219	Co.	
Phone # RW3	Phone #	
Fax 373-4884	Fax #	

OF 1

6

08/15/94 09:46 ☎509 372 2108 WHC HASW 345HLS 001

9613460.0947

OFFICE OF SAMPLE MANAGEMENT
FIELD SAMPLING REQUIREMENTS

Requirements are for 222-S

94-219
SAF Number

REV 3

08/12/94

PARAMETER/ ANALYSIS	ANALYTICAL METHODS	CONTAINER[1]/ VOLUME	PRESERVATION	HOLDING TIME
1. VOA	8240	Ga* 20mℓ	Cool to 4°C	14 Days
2. ICP Metals TAL	6010			6 Months
Arsenic	7060	G 2x30mℓ	Cool to 4°C	6 Months
Selenium	7740			6 Months
Mercury	7470			28 Days
TOC	9060			28 Days
pH	9040			ASAP

[1] Container Types:

P = Plastic (Polyethylene)
= Glass
Glass w/septum cap
Glass/wide mouth jar
= Glass w/septum cap -- No head space in container

PW = Plastic (Polyethylene)/wide mouth jar
PP = Polypropylene
aG = Amber Glass
T = Fluorocarbon Resins

[2] 7 Days for Extraction, 40 Days After

TAL: Target Analyte List

08/15/94 09:47 ☎509 372 2106 WHC HASM 245HLS 002

Condensed Statement of Work for Flushing of PUREX Canyon Vessels, Purex K-Cell Vessels. Revision I

This checklist is to gather the essential information about a sampling project, and to convey the information to the 222-S lab. The customer and lab, and project manager needs to review the checklist questions which pertain to him. The Analytical Services/Commercial Analytical Services (AS/CAS) person will send a copy of this SOW to the Project Manager at 222-S, and to the customer. A "Request for Special Analysis" (RSA) will be required with each sampling event, to provide for a physical tracking mechanism through the lab. If the customer desires, the AS/CAS contact will prepare an example RSA based on information in this SOW.

Name of Project: Flush Purex K-Cell Vessels

Name of Project contact: Mary M. Gretsinger

Cost Codes for project: KP39B

Name of AS/CAS contact: Larry Zuck, 372-3075

Name of 222-S Project Contact: John Kristofzski (373-4225) and Richard (Dick) Vogel, 373-3683

Number of samples expected: 1 per vessel. 12 samples total.

When samples are expected to arrive at lab: The first sample will arrive August 15, 1994 and one sample per month for 11 months thereafter.

What protocol to follow: SW-846 Methods 8240, 6010, 7060, 7740, 7470, 9060, 9040 NOTE: Please see appendix A for Quantitation limits.

What level of deliverables are needed? Stand Alone Data Package for Level B Validation

What is the purpose of the analysis? To Characterize and delist hazardous constituents in accordance to WAC 173-303, section 173.51.

Does data need to be validated by AS for customer? Yes

Turnaround time needed? 90 days or less.

What is driving the turnaround need? The tanks cannot be flushed until all analytical results are back.

Briefly describe the sample matrix, source, waste stream, expected radioactivity, expected concentrations: The matrix is primarily a liquid.

Analyte	Dangerous Waste Designation Threshold (mg/L)	Quantation Limit (mg/L)
Cadmium	1.0	0.5
Chromium	5.0	2.5
Lead	5.0	2.5
Barium	100.0	50.0
Silver	5.0	2.5
Arsenic	5.0	2.5
Selenium	1.0	0.5
Mercury	0.2	0.1
pH	2<pH<12.5	NA
Total Organic Carbon (TOC)	100,000 (10wt% based upon designation limits for tri-butyl phosphate)	50,000
Benzene	0.5	0.25
Carbon Tetrachloride	0.5	0.25
Chlorobenzene	100	50
Chloroform	6.0	3.0
1,2-Dichloroethane	0.5	0.25
1,1 Dichloroethylene	0.7	0.35
Methyl Ethyl Ketone	200	100
Tetrachloroethylene	0.7	0.35
Trichloroethylene	0.5	0.25
Vinyl Chloride	0.2	0.1

Is the waste expected to contain a listed or characteristic hazardous waste? List expected hazardous components or characteristics: The waste should be treated as if all analyses requested came out as positive and the waste was characterized as hazardous.

Laboratory needs:

9613458.0951

ATTACHMENT 4

VOLATILE ORGANIC ANALYSIS

9613458.0952

VOLATILE ORGANIC ANALYSIS

BATCH 4422

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-4502	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
VOA	LA-523-405	NONE	KP39B	0

Sample Size	Customer ID
?	94219-01

Remarks, Calculations, Results:

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
DEM	JDC			
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.	
9/17/94			

54-6800-061 (R-10-83)

SDG NARRATIVE - PUREX
K-Cell
September 12, 1994

VOLATILE ORGANICS

SDG Number R-6331

The initial GC/MS calibration and continuing calibration met all protocols for RCRA analysis. All mass spectral tuning requirements were met for all standards and sample. The method blank met all applicable protocols and requirements. All internal standards and system monitoring compounds retention times and peak areas met all protocols. All system monitoring compound recoveries were within the required limits. The sample holding time was met. A small sample size was used because of excessive foaming. A Matrix Spike and Matrix Spike Duplicate were run and met all protocols. The sample vial was about three fourths full leaving a large headspace.

D.E. NELSON D E Nelson 9/12/94
J.B. DELAROSA-CHANG J.B. DeLaRosa-Chang 9/12/94
Organic Chemistry

9613458.0954

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

R-6331

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: R-6331

Sample wt/vol: 1 (g/mL) ML Lab File ID: >AI09D

Level: (low/med) LOW Date Received: 09/07/94

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	50.	U
75-35-4	1,1-Dichloroethene	50.	U
67-66-3	Chloroform	50.	U
107-02-2	1,2-Dichloroethane	50.	U
78-93-3	2-Butanone	50.	U
56-23-5	Carbon Tetrachloride	50.	U
79-01-6	Trichloroethene	50.	U
71-43-2	Benzene	50.	U
127-18-4	Tetrachloroethene	50.	U
108-90-7	Chlorobenzene	50.	U

FORM I VOA 3/90

9613458.0955

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

R-6331

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: R-6331

Sample wt/vol: 1 (g/mL) ML Lab File ID: >AI09D

Level: (low/med) LOW Date Received: 09/07/94

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71363	1-Butanol	9.31	225.	J
2.	112403	Dodecane	23.10	420.	JN
3.	629505	Tridecane	25.47	6000.	JN
4.	629594	Tetradecane	27.70	10000.	JN
5.	629629	Pentadecane	29.83	280.	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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25.					
26.					
27.					
28.					
29.					
30.					

9613458.0956

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK25

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: VBLK25

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AI09C

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10.	U
75-35-4	1,1-Dichloroethene	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
56-23-5	Carbon Tetrachloride	10.	U
79-01-6	Trichloroethene	10.	U
71-43-2	Benzene	10.	U
127-18-4	Tetrachloroethene	10.	U
108-90-7	Chlorobenzene	10.	U

FORM I VOA 3/90

9613458.0957

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK25

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: VBLK25

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AI09C

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
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26.					
27.					
28.					
29.					
30.					

ATTACHMENT 5

ANALYTICAL DATA

9613458.0959

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: PH	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-212-102
Technologist: ROD MEYER	Date: 09/08/94
Starting Time:	Temperature N/A
Ending Time: 16:34	Chemist: JANN FRYE

Comments:

BATCH 4411

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6329-5513	11		
2	SAMPLE LAD	R6331-5713	12		
3	DUPLICATE 2/14/96	R6331-5813	13		
4	LMCS STD	R6332-5513	14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	52N16BF			

A-6000-881 (03/92)

9613458.0960

pH ANALYSIS

Batch 4411

Serial No.	Sample Point	Date	Time Issued	Priority
R 6629.-5518	PUREX	9- 7-94	11: 8	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP89B	0

Sample Size	Customer ID
25 ml	[illegible]

Remarks, Calculations, Results

[illegible] 4.12
40 100.5

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]			[signature]	
Hrs	Hrs	Hrs	Hrs	Hrs
				[signature] CMCS

Date	Time Completed	Lab Unit Mgr	
9/9/94	1657	[signature]	[signature]

54-6800-061 (R-10-83)

9613458.0961

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5713	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP39B	0

Sample Size	Customer ID
? 5ml	94219-01

Remarks, Calculations, Results:

2.73

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9/8/94	1638		

54-6800-061 (R-10-83)

9613458.0962

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5813	PUREX	9- 7-94	11: 9	23

Determination	Method Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP39B	0

Sample Size	Customer ID
? 5 ml	94219-01

Remarks, Calculations, Results:

DUPLICATE SAMPLE 2.72

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9/7/94	1639		

54-6800-061 (R-10-83)

pH ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6332.-5513	FUREX	9- 7-94	11:12	23

Determination	Method-Standard	Result Units	Charge Code	Reruns
pH	LA-212-102	NONE	KP39B	0

Sample Size	Customer ID
? 5ml	STD

Remarks, Calculations, Results

STD VAL 4.0 RESULT 4.02 %REC 100.5

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
Date 9/9/94	Time Completed 1541	Lab Unit Manager		

54-6800-061 (R-10-83)

9613458.0964

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: TOC	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-344-105
Technologist: DAVID DUNHAM	Date: 09/18/94
Starting Time:	Temperature N/A
Ending Time: 13:45	Chemist: ROB SCHROEDER

Comments:

BATCH 4551

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6329-5526	11		
2	BLANK	R6330-5626	12		
3	SAMPLE ~~ATE~~ LMD 2/6/96	R6331-5726	13		
4	DUPLICATE	R6331-5826	14		
5	SPIKE	R6331-5926	15		
6	LMCS STD	R6332-5526	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	10N12-D			

A-6000-881 (03/92)

9613458.0965

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN Batch 4551

Serial No.	Sample Point	Date	Time Issued	Priority
R 6329.-5526	PUREX	9- 7-94	11: 6	23

Determination	Method-Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	N -9B	1

Sample Size	Customer ID
[illegible] 200ML in 5 M H_2SO_4	

Remarks, Calculations, Results

RESULT COSTOC

[illegible] IONIA-D RESULT 2.85 g/L

STD VAL 3.00 g/L %REC 95.0

Daniel L Dunham ID# 8183

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
His	His	His	His	His

Date	Time Completed	Lab Unit Mgr	
9-18-94	1345	9-19-94 Rw Schroeder	

54-5800-061 (R-10-83)

TOC : LA-344-105 (B-3) LIQUIDS

Type			STANDARD
STANDARD	Sample Volume in mL	(SS)	0.200
Work List	H2SO4 Volume in mL	(VR)	2.000
4551	Volume Injected in mL	(VI)	0.200
Test Code	Dilution Factor	(DF)	11
	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	57.9
Matrix	µg of Carbon in Blank	(C2)	6.1
LIQUID	g of Carbon/L	=	2.85E+00

Sample #	R6329-5526
Instrument Code	AL-10723
Analyst	D. DUNHAM
Date	09/18/94
Time	01:45 PM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

BEST AVAILABLE COPY

µg Carbon/mL =	2.85E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	K C Jones	Date:	09/19/94
Approved by:		Date:	

Form 344105_C Rev. 1.1

9613458.0966

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 09/18/94 Time: 10:36:57

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	0.60	0.00
2	1.01	1.00	40.00
3	1.51	1.70	41.18
4	2.00	2.00	15.00
5	2.50	2.60	23.08
6	3.00	2.90	10.34
7	3.50	3.50	17.14
8	4.00	3.80	7.89
9	4.50	4.20	7.52
10	5.00	4.60	8.70
11	5.50	5.00	8.00
12	6.00	5.40	7.41
13	6.50	5.80	6.90
14	7.00	6.10	4.92

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

Sample Run By: _____
DC DUNHAM 00000

9613458.0967

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6329 Date: 09/18/94 Time: 10:46:57

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .870735 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.00	0.00
2	1.01	35.20	100.00
3	1.51	44.90	21.60
4	2.01	49.20	8.74
5	2.51	51.80	5.02
6	3.01	53.30	2.81
7	3.51	54.30	1.84
8	4.01	55.10	1.45
9	4.51	55.60	0.90
10	5.01	56.10	0.89
11	5.51	56.80	1.23
12	6.01	57.30	0.53
13	6.51	57.60	0.52
14	7.00	57.90	0.36

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

SAMPLE RESULTS:
(57.9 - 6.100797)(11)/(200) = +2.85E+00 g/L Carbon
(57.9 - 6.100797)(11)/(200)(12) = +2.37E-01 Molar Carbon

Sample Run By: .....
DC DUNHAM 00000

9613458.0968

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No.	Sample Point	Date	Time Issued	Priority
R6330.-5626	[illegible]	9- 7-94	11: 7	23

Determination	Method-Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	[illegible]	XP39B	1

Sample Size	Customer ID
[illegible] ML of .5 M H_2SO_4	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

<5.00 E+0 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-18-94	1345	RW Schroeder 9-19-94	

54-6500-061 (R-10-83)

TOC : LA-344-105 (B-3) LIQUIDS

			BLANK
Type	Sample Volume in mL	(SS)	0.200
BLANK	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
4551	Dilution Factor	(DF)	1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	5.3
Matrix	µg of Carbon in Blank	(C2)	6.1
LIQUID	g of Carbon/L =	<	5.00E-03

Sample #
R6330.5626
Instrument Code
AL-10723
Analyst
D. DUNHAM
Date
09/18/94
Time
01:45 PM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

BEST AVAILABLE COPY

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	<	5.00E+00	DETECTION LEVEL in µg/mL
			5.00E+00

Data Entry by:		Date:	09/19/94
Approved by:		Date:	

Form 344105_C Rev. 1.1

9613458.0969

-TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6330 Date: 09/18/94 Time: 10:54:41

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = .870935 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	0.30	0.00
2	1.01	0.90	66.67
3	1.51	1.30	30.77
4	2.01	1.80	27.78
5	2.51	2.20	18.18
6	3.01	2.40	8.33
7	3.51	2.80	14.29
8	4.01	3.20	12.50
9	4.51	3.50	8.57
10	5.00	3.80	7.89
11	5.50	4.20	9.52
12	6.00	4.50	6.67
13	6.50	5.00	10.00
14	7.00	5.30	5.66

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

SAMPLE RESULTS:
(5.3 - 6.099894)(1)/(200) = < 5.00 E-3 g/L Carbon
(5.3 - 6.099894)(1)/(200)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
DC DUNHAM 00000

9613458.0970

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5726	RURN	9- 7-94	11: 9	3

Determination	Method-Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	MG C/ML	KP39B	1

Sample Size	Customer ID
2 ML - .200 ml - .200 ml in .5M H_2SO_4	94219-01

Remarks, Calculations, Results:

2.03 E+2 mg/mL

David C. Dunham

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Mgr	
9-18-94	1345	9-19-94 Ruy Schroeder	

54-6800-061 (R-10-83)

TOC : LA-344-105 (B-3) LIQUIDS

Type			SAMPLE
SAMPLE	Sample Volume in mL	(SS)	2.000
	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
4551	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	43
Matrix	µg of Carbon in Blank	(C2)	6.1
LIQUID	g of Carbon/L	=	2.03E-01

Sample #
R6331-5726
Instrument Code
AL-10723
Analyst
D. DUNHAM
Date
09/18/94
Time
01:45 PM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

BEST AVAILABLE COPY

µg Carbon/mL =	2.03E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	09/19/94
Approved by:		Date:	

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6331 Date: 09/18/94 Time: 11:29:45

Sample Size = 200 uL
Dil Factor = 1.1
Blank ID # = BLK
Blank Value = .870935 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	3.50	0.00
2	1.01	30.10	88.37
3	1.50	34.20	11.99
4	2.01	36.20	5.52
5	2.51	38.40	5.73
6	3.01	39.30	2.29
7	3.51	40.10	2.00
8	4.00	40.60	1.23
9	4.50	41.00	0.98
10	5.01	41.50	1.20
11	5.51	41.90	0.95
12	6.01	42.50	1.41
13	6.50	42.60	0.23
14	7.00	43.00	0.93

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

SAMPLE RESULTS:
(43 - 6.100691)(1.1)/(200) = +2.03E-01 g/L Carbon
(43 - 6.100691)(1.1)/(200)(12) = +1.69E-02 Molar Carbon

Sample Run By: _____
DC DUNHAM 00000

9613458.0972

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5826	FUREX	9- 7-94	11: 9	23

Determination	Method-Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP39B	1

Sample Size	Customer ID
2 ML - .200 ml - .200 ml in .5M H_2SO_4	94219-01

Remarks, Calculations, Results:

DUPLICATE SAMPLE

1.90 E+2 ug/mL

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr 9-19-94	
9-18-94	1345	RW Schroeder	

54-6800-061 (R-10-83)

TOC : LA-344-105 (B-3) LIQUIDS

			DUPLICATE
Type	Sample Volume in mL	(SS)	2.000
DUPLICATE	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
4551	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	40.7
Matrix	µg of Carbon in Blank	(C2)	6.1
LIQUID	g of Carbon/L	=	1.90E-01
Sample #			
R6331-5826			
Instrument Code			
AL-10723			
Analyst			
D. DUNHAM			
Date			
09/18/94			
Time			
01:45 PM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

BEST AVAILABLE COPY

µg Carbon/mL =	1.90E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:		Date:	09/19/94
Approved by:		Date:	

Form 344105_C Rev. 1.1

9613458.0973

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6331 DUP Date: 09/18/94 Time: 12:53:51

Sample Size = 200 uL Analyst : DC DUNHAM
Dil Factor = 1.1 Min Readings = 14
Blank ID # = BLK Max Readings = 14
Blank Value = .870935 ug/minute C % Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	2.70	0.00
2	1.01	27.10	90.04
3	1.51	31.90	15.05
4	2.01	34.70	8.07
5	2.51	36.20	4.14
6	3.01	37.00	2.16
7	3.51	37.90	2.37
8	4.01	38.50	1.56
9	4.51	39.00	1.28
10	5.01	39.40	1.02
11	5.51	39.80	1.01
12	6.01	40.10	0.75
13	6.50	40.50	0.99
14	7.00	40.70	0.49

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

SAMPLE RESULTS:
(40.7 - 6.100744)(1.1)/(200) = +1.90E-01 g/L Carbon
(40.7 - 6.100744)(1.1)/(200)(12) = +1.59E-02 Molar Carbon

Sample Run By: _____
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

9615458.0974 RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5926	TUREX	9- 7-94	11: 3	23

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP99B	1

Sample Size in .5 M H_2SO_4
~~2 M~~ DDO 9-18-94 .400 ml - .200 ml + .400 ml spike
inject .200 ml

Customer ID: 94219-01

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6331
SPIKE ID 11N12-D
SPIKE VOLUME .400 ml

Sp C.F. 1.0/.2 = 5
Sam C.F. = 2.2/.2 = 11
S.S. C.F. = .4/.2 = .2

$$\frac{[(78.2-6.1)\times 5]-[(43.0-6.1)\times 11\times .2]}{750\times .4}\cdot 100 = 93.11\ \%\ \text{rec}$$

David C. Dunham

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

	Time Completed	Lab Unit Mgr	
9-18-94	1345	9-19-94 Robert W. Schroeder	

54-5800-061 (R-10-83)

TOC: LA-344-105 (B-2) LIQUIDS

Type			SPIKE
SPIKE	Sample Volume in mL	(SS)	0.200
	H2S04 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
4412	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	17.9
Matrix	µg of Carbon in Blank	(C2)	2.8
LIQUID	g of Carbon/L	=	8.31E-01

Sample #
R6331-5926
Instrument Code
Analyst
SEVERSON
Date
09/11/94
Time
05:50

$$\text{g of Carbon/L} = \frac{(C1-C2) * DF * DDF}{VI * 1000}$$

$$\mu\text{g of Carbon/mL} = \text{g of Carbon/L} * 1000000\ \mu g/g\ /\ 1000\ mL/L$$

$$\text{Detection Level } (\mu g/mL) = \frac{1\ \mu g\ C * DF * DDF}{VI}$$

BEST AVAILABLE COPY

µg Carbon/mL =	8.31E+02	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	12-Sep-94
Approved by:	Rw Schroeder	Date:	9-15-94

Form 1 Rev. 1.0

Page 1 of 1

9613458.0975

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6331 Date: 09/11/94 Time: 05:18:24

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .3997813 ug/minute C

Analyst : BC SEVERSON
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	0.20	0.00
2	1.01	8.60	97.67
3	1.51	11.90	27.73
4	2.01	13.10	9.16
5	2.51	14.20	7.75
6	3.01	14.90	4.70
7	3.51	15.60	4.49
8	4.01	15.90	1.89
9	4.50	16.30	2.45
10	5.00	16.70	2.40
11	5.51	17.00	1.76
12	6.01	17.30	1.73
13	6.51	17.60	1.70
14	7.00	17.70	1.68

BEST AVAILABLE COPY

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 7.00383 = +4.0E-01 ug/min Carbon

SAMPLE RESULTS:
(17.9 - 2.800409)(11)/(200) = +8.30E-01 g/L Carbon
(17.9 - 2.800409)(11)/(200)(12) = +6.92E-02 Molar Carbon

Sample Run By: BC SEVERSON 00000

9613458.0976

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

RERUN

Serial No	Sample Point	Date	Time Issued	Priority
R [illegible]	[illegible]REX	9- 7-[illegible]	11:10	25

Determination	Method Standard	Result Units	Charge Code	Reruns
[illegible]	LA-344-[illegible]	% RECOVERY	KE99B	1

Sample Size	Customer ID
[illegible] RWS 9-16-94 .200 + 2ML + .200mL in.5MH2SO4	[illegible]

Remarks, Calculations, Results

[illegible] 00STOP

[illegible] 10N12-D [illegible] 2.80g/L

STD [illegible] 3.00g/L [illegible] 93.3

D. Dunham WC 8190

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit		
9-18-94	1345	RW Schroeder		

9-19-94

54-6600-061 (R-10-83)

TOC : LA-344-105 (B-3) LIQUIDS

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
4551	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	57
Matrix	µg of Carbon in Blank	(C2)	6.1
LIQUID	g of Carbon/L	=	2.80E+00

Sample #
R6332-5526
Instrument Code
AL-10723
Analyst
D. DUNHAM
Date
09/18/94
Time
01:45 PM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) $\frac{1 \mu g C * DF * DDF}{VI}$

BEST AVAILABLE COPY

µg Carbon/mL =	2.80E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	R C Jones	Date:	09/19/94
Approved by:		Date:	

Form 344105_C Rev. 1.1

9613458.0977

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6332 Date: 09/18/94 Time: 13:22:58

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .870935 ug/minute C

Analyst : DC DUNHAM
Min Readings = 14
Max Readings = 14
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	2.10	0.00
2	1.01	38.30	94.52
3	1.51	45.60	16.01
4	2.01	49.80	8.43
5	2.50	51.80	3.86
6	3.00	53.30	2.81
7	3.50	53.90	1.11
8	4.00	54.40	0.92
9	4.50	55.00	1.09
10	5.00	55.60	1.08
11	5.50	55.80	0.36
12	6.00	56.30	0.89
13	6.50	56.60	0.53
14	7.00	57.00	0.70

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

SAMPLE RESULTS:
(57 - 6.098405)(11)/(200) = +2.80E+00 g/L Carbon
(57 - 6.098405)(11)/(200)(12) = +2.33E-01 Molar Carbon

Sample Run By: _____
DC DUNHAM 00000

9613458.0978

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: TOC	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-344-105
Technologist: BRENDA SEVERSON	Date: 09/11/94
Starting Time:	Temperature N/A
Ending Time:	Chemist: ROB SCHROEDER

Comments: OUT FOR RERUN

BATCH 4412

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6329-5526	11		
2	BLANK	R6330-5626	12		
3	SAMPLE~~ATE~~ LAD 9/6/94	R6331-5726	13		
4	DUPLICATE	R6331-5826	14		
5	SPIKE	R6331-5926	15		
6	LMCS STD	R6332-5526	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	10N12-D			

A-6000-881 (03/92)

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

9613458.0979 Batch 4412

Serial No	Sample Point	Date	Time Issued	Priority
R [illegible]	PUREX	9- [illegible]	[illegible]	[illegible]

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KP39B	0

Sample Size	Customer ID
?.200ml in 2ml H_2SO_4 -.200ml	STD

Remarks, Calculations, Results

S356 COSTOC

STD# 10N12-D RESULT 2.85 E+0 g/L

STD VAL 3.00 g/L %REC 95.0

OUT FOR RERUN

WR# 6794

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Brenda Severson				
Hrs	Hrs	Hrs	Hrs	Hrs
				R C Jones

Date	Time Completed	Lab Unit Supr	
9-11-94		9-12-94 RW Schroeder	R C Jones

54-6800-061 (R-10-83)

TOC: LA-344-105 (B-2) LIQUIDS

Type			STANDARD
STANDARD	Sample Volume in mL	(SS)	0.200
Work List	H2S04 Volume in mL	(VR)	2.000
4412	Volume Injected in mL	(VI)	0.200
Test Code	Dilution Factor	(DF)	11
	Digest Dilution Factor	(DDF)	1
Matrix	µg of Carbon in Sample	(C1)	54.6
LIQUID	µg of Carbon in Blank	(C2)	2.8
Sample #	g of Carbon/L	=	2.85E+00
R6329-5526			
Instrument Code			
Analyst			
SEVERSON			
Date			
09/11/94			
Time			
05:50			

$$\text{g of Carbon/L} = \frac{(C1-C2) * DF * DDF}{VI * 1000}$$

$$\text{µg of Carbon/mL} = \text{g of Carbon/L} * 1000000\ \text{µg/g} / 1000\ \text{mL/L}$$

$$\text{Detection Level (µg/mL)} = \frac{1\ \text{µg C} * DF * DDF}{VI}$$

BEST AVAILABLE COPY

µg Carbon/mL =	2.85E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	[signature]	Date:	12-Sep-94
Approved by:	RW Schroeder	Date:	9-15-94

Form 1 Rev. 1.0

9613458.0980

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6329 Date: 09/11/94 Time: 03:10:18

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .3997813 ug/minute C

Analyst : SC SEVERSON
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading ====	Analysis Time ====	Coulometer ====	% Difference ==
1	0.51	0.90	0.00
2	1.01	28.30	96.82
3	1.51	39.80	28.89
4	2.01	44.30	10.16
5	2.51	47.20	6.14
6	3.01	49.00	3.67
7	3.51	50.40	2.78
8	4.01	51.20	1.56
9	4.51	52.00	1.54
10	5.01	52.70	1.33
11	5.51	53.20	0.94
12	6.01	53.70	0.93
13	6.51	54.10	0.74
14	7.00	54.60	0.92

BEST AVAILABLE COPY

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 7.00383 = +4.0E-01 ug/min Carbon

SAMPLE RESULTS:
(54.6 - 2.800403)(11)/(200) = +2.85E+00 g/L Carbon
(54.6 - 2.800403)(11)/(200)(12) = +2.37E-01 Molar Carbon

Sample Run By: Bruce Severson
SC SEVERSON 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	BLANK	9- 7-94	11: 7	08

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP39B	0

Sample Size	Customer ID
?, 200ml	BLANK

Remarks, Calculations, Results:

REAGENT BLANK

25.00E00 ug C/ML

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Linda Severson				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-11-94		9-15-94 RW Schroeder	

54-6800-061 (R-10-83)

TOC: LA-344-105 (B-2) LIQUIDS

Type			BLANK
BLANK	Sample Volume in mL	(SS)	0.200
	H2S04 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
4412	Dilution Factor	(DF)	1
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	2.8
Matrix	µg of Carbon in Blank	(C2)	2.8
LIQUID	g of Carbon/L	= <	5.00E-03

Sample #
R6330-5626
Instrument Code
Analyst
SEVERSON
Date
09/11/94
Time
05:50

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

BEST AVAILABLE COPY

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	< 5.00E+00	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by:		Date:	12-Sep-94
Approved by:	RW Schroeder	Date:	9-15-94

9613458.0982

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 09/11/94 Time: 02:36:19

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : BC SEVERSON
Min Readings = 14
Max Readings = 14
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.00	0.00
2	1.01	0.30	100.00
3	1.51	0.70	57.14
4	2.01	1.00	30.00
5	2.51	1.10	9.09
6	3.01	1.40	21.43
7	3.51	1.50	6.67
8	4.00	1.70	11.76
9	4.50	1.90	10.53
10	5.00	2.10	9.52
11	5.50	2.30	8.70
12	6.00	2.40	4.17
13	6.50	2.30	7.69
14	7.00	2.80	7.14

BEST AVAILABLE COPY

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 7.00383 = +4.0E-01 ug/min Carbon

Sample Run By: Brenda Severson
BC SEVERSON 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5726	PUREX	9- 7-94	11: 9	23

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP39B	0

Sample Size	Customer ID
? .200 ml in 2ml H_2SO_4 - .200ml	94219-01

Remarks, Calculations, Results

R RERUN

2.31E02 ug C/ML
OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-11-94		9-15-94 Ron Schroeder	R Jones

54-6800-061 (R-10-83)

TOC: LA-344-105 (B-2) LIQUIDS

			SAMPLE
Type	Sample Volume in mL	(SS)	0.200
SAMPLE	H2S04 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
4412	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	7
Matrix	µg of Carbon in Blank	(C2)	2.8
LIQUID	g of Carbon/L	=	2.31E-01

Sample #
R6331-5726
Instrument Code
Analyst
SEVERSON
Date
09/11/94
Time
05:50

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

BEST AVAILABLE COPY

µg Carbon/mL =	2.31E+02	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	12-Sep-94
Approved by:	Ron Schroeder	Date:	9-15-94

9613458.0984

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6331 Date: 09/11/94 Time: 05:02:00

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .3997813 ug/minute C

Analyst : BC SEVERSON
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	0.20	0.00
2	1.01	2.40	91.67
3	1.51	3.60	33.33
4	2.01	4.00	10.00
5	2.51	4.40	9.09
6	3.01	4.80	8.33
7	3.51	5.20	7.69
8	4.01	5.50	5.45
9	4.50	5.70	3.51
10	5.00	6.10	6.56
11	5.50	6.20	1.61
12	6.00	6.50	4.62
13	6.50	6.70	5.80
14	7.00	7.00	1.43

BEST AVAILABLE COPY

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 7.00383 = +4.0E-01 ug/min Carbon

SAMPLE RESULTS:
(7 - 2.800006)(11)/(200) = +2.3E-01 g/L Carbon
(7 - 2.800006)(11)/(200)(12) = +1.9E-02 Molar Carbon

Sample Run By: Brenda Severson
BC SEVERSON 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

9615458.0985

Serial No	Sample Point	Date	Time Issued	Priority
R 6331-5826	FORM	9- 7-94	11: 9	33

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	uG C/ML	KP63B	0

Sample Size	Customer ID
? .200 ml in 2ml H2SO4 - .200ml	94219-01

Remarks, Calculations, Results

DUPLICATE SAMPLE

2.20802 ug C/ML

OUT FOR RERUN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-11-94		9-15-94 RW Schroeder	

54-6800-061 (R-10-83)

TOC: LA-344-105 (B-2) LIQUIDS

Type			DUPLICATE
DUPLICATE	Sample Volume in mL	(SS)	0.200
Work List	H2S04 Volume in mL	(VR)	2.000
4412	Volume Injected in mL	(VI)	0.200
Test Code	Dilution Factor	(DF)	11
	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	6.8
Matrix	µg of Carbon in Blank	(C2)	2.8
LIQUID	g of Carbon/L	=	2.20E-01

Sample #
R6331-5826
Instrument Code
Analyst
SEVERSON
Date
09/11/94
Time
05:50

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

BEST AVAILABLE COPY

µg Carbon/mL =	2.20E+02	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:		Date:	12-Sep-94
Approved by:	RW Schroeder	Date:	9-15-94

Form 1 Rev. 1.0

9613458.0986

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6331 DUP Date: 09/11/94 Time: 05:09:58

Sample Size = 200 uL Analyst : BC SEVERSON
Dil Factor = 11 Min Readings = 14
Blank ID # = BLK Max Readings = 14
Blank Value = .3997813 ug/minute C % Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.20	0.00
2	1.01	2.60	92.31
3	1.50	3.20	18.75
4	2.00	3.90	17.95
5	2.50	4.30	9.30
6	3.00	4.70	8.51
7	3.50	4.90	4.08
8	4.00	5.20	5.77
9	4.50	5.60	7.14
10	5.00	5.80	3.45
11	5.50	6.10	4.92
12	6.00	6.20	1.61
13	6.50	6.30	4.62
14	7.00	6.60	4.41

BEST AVAILABLE COPY

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 7.00333 = +4.0E-01 ug/min Carbon

SAMPLE RESULTS:
(6.8 - 2.799664)(11)/(200) = +2.2E-01 g/L Carbon
(6.8 - 2.799664)(11)/(200)(12) = +1.8E-02 Molar Carbon

Sample Run By: Brenda Severson
BC SEVERSON 00000

9613458.0987

TOTAL ORGANIC CARBON ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-6926	PUREX	8- 7-94	11: 9	23

Determination	Method Standard	Result Units	Charge Code	Reruns
TOC	LA-844-105	% RECOVERY	KP99E	0

Sample Size	Customer ID
1,200ml in 2ml H_2SO_4 - .200ml	94219-01

Remarks, Calculations, Results:

[illegible] 11N12-D / .200ml

Spike C.F. = 2.4/.2 = 12

Sam. C.F. = 2.2/.2 = 11

S.S.C.F. = .2/.2 = 1

[(17.9 - 2.8) x 12] - [(7 - 2.8) x 11 x 1] = 135 OUT FOR RERUN

750 X .200mL = 150

135/150 · 100 = 90.0% recov.

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab [illegible]	
8-11-94		8-15-94	

54-6800-061 (R-10-83)

9613458.0988

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6331 SPIKE Date: 09/18/94 Time: 13:14:04

Sample Size = 200 uL Analyst : DC DUNHAM
Dil Factor = 3.5 Min Readings = 14
Blank ID # = BLK Max Readings = 14
Blank Value = .870935 ug/minute C % Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	3.00	0.00
2	1.01	53.70	94.41
3	1.51	63.80	15.83
4	2.01	67.70	5.76
5	2.51	71.20	4.92
6	3.01	73.20	2.73
7	3.50	74.10	1.21
8	4.00	75.50	1.85
9	4.50	76.10	0.79
10	5.00	76.40	0.39
11	5.50	77.00	0.78
12	6.00	77.30	0.39
13	6.50	77.70	0.51
14	7.00	78.20	0.64

BEST AVAILABLE COPY

BLANK VALUE = 6.1 micrograms carbon
BLANK FACTOR = 6.1 / 7.003967 = +8.7E-01 ug/min Carbon

SAMPLE RESULTS:
(78.2 - 6.09915)(3.5)/(200) = +1.26E+00 g/L Carbon
(78.2 - 6.09915)(3.5)/(200)(12) = +1.05E-01 Molar Carbon

Sample Run By: _____
DC DUNHAM 00000

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

Serial No	Sample Point	Date	Time Issued	Priority
R [illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	KPSSB	0

Sample Size	Customer ID
?.200 ml in 2ml H_2SO_4-.200ml	STD

Remarks, Calculations, Results:

SSSS CONSTOC

STD# 10N12-D RESULT 2.82 g/L

STD VAL 3.00 g/L %REC 94.00

Out for Rerun DH 9/14/94

WR# 6797

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit	
9-11-94		9-15-94 RW Schroeder	RL Jones

54-6800-261 (R-10-83)

TOC: LA-344-105 (B-2) LIQUIDS

Type			STANDARD
STANDARD	Sample Volume in mL	(SS)	0.200
	H_2SO_4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
4412	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
	µg of Carbon in Sample	(C1)	54
Matrix	µg of Carbon in Blank	(C2)	2.8
LIQUID	g of Carbon/L	=	2.82E+00

Sample #
R6331-5926
Instrument Code
Analyst
SEVERSON
Date
09/11/94
Time
05:50

$$\text{g of Carbon/L} = \frac{(C1-C2) * DF * DDF}{VI * 1000}$$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

$$\text{Detection Level (µg/mL)} = \frac{1\ \mu g\ C * DF * DDF}{VI}$$

BEST AVAILABLE COPY

µg Carbon/mL =	2.82E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	[signature]	Date:	12-Sep-94
Approved by:	RW Schroeder	Date:	9-15-94

9613458.0990

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: R6332 Date: 09/11/94 Time: 05:26:44

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .3997813 ug/minute C

Analyst : BC SEVERSON
Min Readings = 14
Max Readings = 14
% Difference = 10

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	0.51	0.20	0.00
2	1.01	26.00	99.23
3	1.50	39.20	33.67
4	2.00	43.90	10.71
5	2.50	46.70	6.00
6	3.00	48.80	4.30
7	3.50	50.00	2.40
8	4.00	50.90	1.77
9	4.50	51.70	1.55
10	5.01	52.30	1.15
11	5.51	52.80	0.95
12	6.01	53.20	0.75
13	6.50	53.70	0.93
14	7.00	54.00	0.56

BEST AVAILABLE COPY

BLANK VALUE = 2.8 micrograms carbon
BLANK FACTOR = 2.8 / 7.00383 = +4.0E-01 ug/min Carbon

SAMPLE RESULTS:
(54 - 2.800067)(11)/(200) = +2.82E+00 g/L Carbon
(54 - 2.800067)(11)/(200)(12) = +2.35E-01 Molar Carbon

Sample Run By: BC SEVERSON 00000

9613458.0991

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: ICP	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-505-161
Technologist: DENNIS SATO	Date: 09/13/94
Starting Time:	Temperature N/A
Ending Time: 15:00	Chemist: SAM PARONG

Comments:

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6329-5550	11		
2	BLANK	R6330-5650	12		
3	SAMPLE ~~ATE~~ 2/16/96 LAD	R6331-5750	13		
4	DUPLICATE	R6331-5850	14		
5	SPIKE	R6331-5950	15		
6	LMCS STD	R6332-5550	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	33B48BD			

A-6000-881 (03/92)

9613458.0992

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6329.-5550	PUREX	9- 7-94	11: 6	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~251~~/4 9.13.94	% RECOVERY	KP39B	0

Sample Size	Customer ID
? SSTK 35848B Direct	SID

Remarks, Calculations, Results

[illegible] CHECK SAMPLE

Ag (5.081/5)(100) = 101.62%
Ba 4.925 = 98.50%
Cd 5.096 = 101.92%
Cr 5.111 = 102.22%
Pb 5.143 = 102.86%
Al 4.995 = 99.90%
~~Co 5.133 = 102.66%~~ BW 12-12-94
B 4.954 = 99.08%
Be 5.170 = 103.40% OVER

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				
Hrs	Hrs	Hrs	Hrs	Hrs
				JK 7-13-94
Date	Time Completed	Lab Mgr		
9-13-94	1500	09/13/94 S. Pang		9.13.94

54-6800-061 (R-10-83)

Bi (5.038/5)(100) = 100.76%
Ca 5.271 = 105.42%
Ce 5.021 = 100.42%
Co 5.078 = 101.56%
Cu 5.079 = 101.58%
Fe 5.104 = 102.08%
~~K 5.317 = 110.34%~~ BW 12-12-94
La 4.993 = 99.86%
Li 4.992 = 99.84%
Mg 4.935 = 98.70%
Mn 5.003 = 100.06%
Zr 4.975 = 99.50%
~~U (10.07/5)(100) = 100.70%~~ BW 12-13-94
Mo 5.081 = 101.62%
Na 4.942 = 98.84%
Nd 5.131 = 102.62%
Ni 5.058 = 101.16%
P 4.991 = 99.82%
S 4.993 = 99.86%
Sb 4.797 = 95.94%
~~Se 5.110 = 102.20%~~ BW 12-12-94
Si 4.811 = 96.22%
Sm 5.030 = 100.60%
Sr 4.908 = 98.16%
Ti 4.878 = 97.56%
Tl 4.931 = 98.62%
V 5.016 = 100.32%
Zn 5.130 = 102.60%

R6329-5550

9613458.0993

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6330.-5650	PUREX	9- 7-94	11: 7	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~101~~/4 9-13-94	uG/ML	KP89B	0

Sample Size	Customer ID
? Direct	BLANK

Remarks, Calculations, Results

FWA PINT BLANK

Ag <.01 mg/mL	Al <.1	Ce <.1	Li <.01
~~Ag <.05~~ BW 12/12/94	Co <.02	Mg <.10	
Ba <.05	B <.05	Cu <.01	Mn <.01
Cd <.01	Be <.005	Fe <.05	Mo <.05
Cr <.01	Bi <.1	~~K <.1~~ BW 12-12-94	Na <.10
Pb <.10	Ca <.1	La <.05	Nd <.10

over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
SKLeto				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Manager		
9-13-94	1500	S Pierce	SKLeto 9-13-94	

54-6800-061 (R-10-83)

Ni <.02
P <.10
S <.05
Sb <.10
~~Se <.10~~ BW 12-12-94
Si <.05
Sn <.10
Sr <.01
Ti <.01
Tl <.10
~~U <.10~~ BW 12-13-94
V <.05
Zn <.01
Zr <.01

R6330 - 5650

9613458.0994

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time	Priority
[illegible]	PUBER	[illegible]-94	11: 9	[illegible]

Determination	Method/Standard	Units	Charge Code	Reruns
[illegible]	LA-505-[illegible]/41	UG/ML	[illegible]	0

Sample Size	Customer ID
2-10 ml	[illegible]

Remarks, Calculations, Results

Ag <.01 x 6 = <6.00E-2 ug/ml
Be .057 x 6 = 3.42E-1
Cd <.01 x 6 = <6.00E-2
Cr .056 x 6 = 3.36E-1
Pb <.10 x 6 = <6.00E-1

Al .106 = 6.36E-1
~~Ca <.05 = <3.00E-1~~ 12-13-94 BW
Fe .105 = 6.30E-1
Mg .106 = 3.10E-2
Bi <.10 = <6.00E-1
Ca 4.52 = 1.51E+1

Over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[illegible]				
Hrs	Hrs	Hrs	Hrs	Hrs
Date: 9-13-94	Time Completed: 1500	Lab Unit Mgr: [illegible] 9/13/94	[illegible] 9-13-94	

54-6800-061 (R-10-83)

Ce <.10 x 6 = <6.00E-1 ug/ml
Co <.02 = <1.20E-1
Cu <.01 = <6.00E-2
~~Cr~~ Fe .218 = 1.31
~~K .517 = 3.10~~ BW 12-13-94
La <.05 = <3.00E-1
Li <.01 = <6.00E-2
Mg .686 = 4.12
Mn .105 = 6.30E-1
Mo <.05 = <3.00E-1
Na .632 = 3.79
Nd <.10 = <6.00E-1
Ni .057 = 3.42E-1
P 9.54 = 5.72E+1
S .998 = 5.99

Sb <.20 = <1.20
~~Se <.10 = <6.00E-1~~ BW 12-13-94
Si .364 = 2.18
Sn <.20 = <1.20
Sr .023 = 1.38E-1
Ti .051 = 3.06E-1
Tl <.20 = <1.20
~~U .98.0 = 5.88E+2~~ BW 12-13-94
V <.05 = <3.00E-1
Zn .033 = 1.98E-1
Zr <.01 = <6.00E-2

R6331-5750

9613458.0995

Analysis Report Summary Tue 09-13-94 01:53:20 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	SST4 33B48B	940913B	ICP2	09/13/94	13:16	DKS	Q	CONC
2	HNO3 REAG BLK	940913B	ICP2	09/13/94	13:20	DKS	Q	CONC
3	R6329 SST4	940913B	ICP2	09/13/94	13:25	DKS	Q	CONC
4	R6330 REAG BLK	940913B	ICP2	09/13/94	13:28	DKS	Q	CONC
5	R6331 SAMDIL	940913B	ICP2	09/13/94	13:31	DKS	S	CONC
6	R6331 DUPDIL	940913B	ICP2	09/13/94	13:37	DKS	S	CONC
7	R6331 SPIKE	940913B	ICP2	09/13/94	13:41	DKS	S	CONC
8	HNO3 REAG BLK	940913B	ICP2	09/13/94	13:45	DKS	Q	CONC
9	R6332 SST4	940913B	ICP2	09/13/94	13:48	DKS	Q	CONC

DK Lot
9-13-94
Purex
R6329-R6332

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Analysis Report Averages Tue 09-13-94 01:53:20 PM page 2

#	Sample Name	Ag	Al	As	B	Ba	Be
1	SST4 33B48B	5.281	5.196	5.335	5.145	5.231	5.380
2	HNO3 REAG BLK	.0040	.0135	-.0410	.0094	.0002	.0003
3	R6329 SST4	5.081	4.995	5.133	4.954	4.925	5.170
4	R6330 REAG BLK	.0013	.0190	-.0318	.0047	.0002	.0003
5	R6331 SAMDIL	.0013	.1060	.0396	.1046	.0572	.0056
6	R6331 DUPDIL	-.0044	.0508	.0279	.1134	.0581	.0054
7	R6331 SPIKE	.8581	.9514	.9158	.9613	.9360	.8830
8	HNO3 REAG BLK	.0007	.0130	-.0108	.0019	.0000	.0003
9	R6332 SST4	5.205	5.126	5.286	5.072	5.125	5.337

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	SST4 33B48B	5.289	Q5.864	5.313	5.296	5.306	5.332
2	HNO3 REAG BLK	.0166	.0031	.0022	.0004	-.0007	-.0003
3	R6329 SST4	5.038	5.271	5.096	5.021	5.078	5.111
4	R6330 REAG BLK	.0320	.0062	-.0002	.0097	-.0043	.0003
5	R6331 SAMDIL	.0321	2.518	.0090	-.0079	-.0143	.0563
6	R6331 DUPDIL	.0396	2.569	.0098	-.0389	-.0138	.0683
7	R6331 SPIKE	.8865	3.512	.8699	.9031	.8480	.9411
8	HNO3 REAG BLK	.0249	.0038	.0011	-.0046	.0003	.0008
9	R6332 SST4	5.190	5.456	5.248	5.223	5.252	5.271

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	SST4 33B48B	5.339	.0290	5.332	Q5.789	5.293	5.226
2	HNO3 REAG BLK	.0004	-.0013	.0030	Q.4714	.0000	.0014
3	R6329 SST4	5.079	.0247	5.104	Q5.517	4.993	4.992
4	R6330 REAG BLK	.0014	-.0028	.0020	Q.4125	.0004	.0007
5	R6331 SAMDIL	.0038	-.0194	.2183	.5168	.0306	.0056
6	R6331 DUPDIL	.0054	-.0200	.2194	.5984	.0278	.0061
7	R6331 SPIKE	.8971	-.0155	1.111	1.818	.9299	.8960
8	HNO3 REAG BLK	.0009	-.0034	.0016	.2312	-.0018	.0004
9	R6332 SST4	5.247	.0256	5.272	Q5.594	5.206	5.129

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	SST4 33B48B	5.179	5.220	5.310	5.211	5.471	5.304
2	HNO3 REAG BLK	-.0068	.0007	.0002	.0129	.0007	.0063
3	R6329 SST4	4.935	5.003	5.081	4.942	5.131	5.058
4	R6330 REAG BLK	.0041	.0008	-.0039	.0090	.0053	-.0097
5	R6331 SAMDIL	.6862	.1051	-.0487	.6325	-.0430	.0566
6	R6331 DUPDIL	.7318	.1049	-.0551	.6443	-.0265	.0735
7	R6331 SPIKE	1.606	.9444	.8155	1.538	.8969	.9359
8	HNO3 REAG BLK	.0021	.0001	.0003	.0067	.0015	-.0036
9	R6332 SST4	5.088	5.122	5.242	5.099	5.352	5.218

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Analysis Report Averages Tue 09-13-94 01:53:20 PM page 3

#	Sample Name	P	Pb	S	Sb	Se	Si
1	SST4 33B48B	5.290	5.336	5.190	4.995	5.306	4.999
2	HNO3 REAG BLK	.0092	.0319	.0045	-.0012	.0263	.0194
3	R6329 SST4	4.991	5.143	4.993	4.797	5.110	4.811
4	R6330 REAG BLK	.0020	.0371	-.0121	-.0085	.0320	.0183
5	R6331 SAMDIL	9.544	.0910	.9980	.0138	.0237	.3643
6	R6331 DUPDIL	9.861	.0873	.9920	.0106	.0066	.3614
7	R6331 SPIKE	11.76	.8966	1.897	.8328	.8409	1.211
8	HNO3 REAG BLK	Q.5468	.0266	-.0059	-.0028	.0235	.0071
9	R6332 SST4	5.450	5.278	5.126	4.920	5.218	4.937

#	Sample Name	Sm	Sr	Ti	Tl	U	V
1	SST4 33B48B	5.338	5.204	5.141	5.163	10.73	5.250
2	HNO3 REAG BLK	.0165	.0004	.0000	-.0212	.0762	.0030
3	R6329 SST4	5.030	4.908	4.878	4.931	10.07	5.016
4	R6330 REAG BLK	.0120	.0004	.0005	-.0221	.0593	.0022
5	R6331 SAMDIL	-.0184	.0227	.0507	-.0636	97.96	.0033
6	R6331 DUPDIL	-.0173	.0232	.0523	-.0890	99.83	.0014
7	R6331 SPIKE	.8933	.9001	.9093	.8056	107.1	.8703
8	HNO3 REAG BLK	.0105	.0001	.0009	-.0181	.0380	.0015
9	R6332 SST4	5.253	5.119	5.068	5.131	10.50	5.190

#	Sample Name	Y	Zn	Zr
1	SST4 33B48B	.0124	5.305	5.233
2	HNO3 REAG BLK	.0008	-.0004	.0039
3	R6329 SST4	.0119	5.130	4.975
4	R6330 REAG BLK	.0005	.0002	.0026
5	R6331 SAMDIL	.0325	.0331	-.0026
6	R6331 DUPDIL	.0329	.0235	-.0033
7	R6331 SPIKE	.0375	.8639	.8590
8	HNO3 REAG BLK	.0002	.0005	.0020
9	R6332 SST4	.0123	5.275	5.158

DK
9-13-94
Purex
R6329-R6332

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9613458.0998

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5850	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP-LIQ	LA-505-~~[illegible]~~/41 BW 12-13-94	uG/ML	KP99B	0

Sample Size	Customer ID
? 2-10 ml	94219-01

Remarks, Calculations, Results:

DUPLICATE SAMPLE

~~Ag~~ <.01 x 6 = <6.00E-2 ug/ml

~~Ba~~ .058 x 6 = 3.48E-1

~~Cd~~ <.01 x 6 = <6.00E-2

~~Cr~~ .068 x 6 = 4.08E-1

~~Pb~~ <.10 x 6 = <6.00E-1

Al .051 = 3.06E-1

~~As <.05 = <3.00E-1~~ BW 12-13-94

B .113 = 6.78E-1

Be .005 = 3.00E-2

Bi <.1 = <6.00E-1

Ca 2.57 = 1.54E+1

Over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK Lt				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-13-94	1500	09/13/94 S. Sauer	JK Lt 9.13.94

CS 0800-061 (R-10-83)

Ce <.10 x 6 = <6.00E-1 ug/ml

Co <.02 = <1.20E-1

Cu <.01 = <6.00E-2

Fe .219 = 1.31

~~K .598 = 3.59~~ BW 12-13-94

La <.05 = <3.00E-1

Li <.01 = <6.00E-2

Mg .732 = 4.37

Mn .105 = 6.30E-1

Mo <.05 = <3.00E-1

Na .644 = 3.86

Nd <.10 = <6.00E-1

Ni .074 = 4.44E-1

P 9.86 = 5.92E+1

S .992 = 5.95

Sb <.20 = <1.20

~~Se <.10 = <6.00E-1~~ BW 12-13-94

Si .341 = 2.07

Sn <.20 = <1.20

Sr .023 = 1.38E-1

Ti .052 = 3.12E-1

Tl <.20 = <1.20

~~U 99.8 = 5.99E+2~~ BW 12-13-94

V <.05 = <3.00E-1

Zn .024 = 1.44E-1

Zr <.01 = <6.00E-2

R6331-5850

9613458.0999

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5950	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~251~~141 JK 9-13-94	% RECOVERY	KP39B	0

Sample Size	Customer ID
? 2-10 ml	94219-01

Remarks, Calculations, Results: (2ml)(5ppm) = (12ml)(x ppm) x = .833 ppm

SAMPLE SPIKED [illegible] 236485 [illegible] 2ml

~~Ag~~ (.858-0)/.833 x 100 = 103.00 %
~~Ba~~ (.936-.057)/.833 x 100 = 105.52 %
~~Cd~~ (.870-0)/.833 x 100 = 104.44 %
~~Cr~~ (.941-.054)/.833 x 100 = 106.24 %
~~Pb~~ (.897-0)/.833 x 100 = 107.68 %
~~Al~~ (.951-.104)/.833 x 100 = 101.44 %
~~As (.914-0)/.833 x 100 = 109.94 %~~ BW 0462

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JK				12-13-94
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit		
9-13-94	1500	12/13/94	JK 9-13-94	

54-6800-061 (R-10-83)

B (.941-.105)/.833 x 100 = 102.74 %
Be .992-.004 = ~~97.5~~ 105.28 % JK 12-12-94
Bi .884-0 = 106.36 %
Ca 3.51-2.52 = 118.84 %
Ce .903-0 = 108.40 %
Co .848-0 = 101.80 %
Cu .897-0 = 107.68 %
~~Fe~~ 1.11-.218 = ~~91.79~~ 107.55 % JK 12-12-94
~~K 1.82-.517 = 154.42 %~~ BW 12-13-94
La .930-0 = 111.64 %
Li .896-0 = 107.56 %
Mg 1.41-.686 = 110.92 %
Mn .944-.105 = 100.72 %
Mo .816-0 = 97.96 %
Na 1.54-.632 = 109.00 %
Ni .897-0 = 107.68 %
Ni .936-.057 = 105.52 %
P 11.8-9.54 = 271.31 %
S 1.40-.998 = 108.28 %
Sb .833-0 = 100.00 %
~~Se .841-0 = 100.96 %~~ BW 12-13-94
Si 1.21-.364 = 101.56 %
Sm .893-0 = 107.20 %
Sr .900-.023 = 105.28 %
Ti .909-.051 = 103.00 %
Tl .806-0 = 96.76 %
~~U 107.1-.88 = 104.24 %~~ BW 12-13-94
V .870-0 = 104.44 %
Zn .864-.033 = 99.76 %
Zr .859-0 = 103.12 %

R6331-5950

9613458.1000

INDUCTIVELY COUPLED PLASMA ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6332.-5550	PUREX	9- 7-94	11:12	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-~~[illegible]~~14 9.13.94	% RECOVERY	KP39B	0

Sample Size	Customer ID
? SST4 33348B, direct	STD

Remarks, Calculations, Results:

DMUA CHECK SAMPLE

Ag (5.205/5)(100) = 104.10 %
Ba 5.125 = 102.50 %
Cd 5.248 = 104.96 %
Cr 5.271 = 105.42 %
Pb 5.278 = 105.56 %
Gd 5.126 = 102.52 %
~~Ga 5.284 = 105.72 %~~ BW 12-13-94
B 5.072 = 101.44 %
Be 5.337 = 106.74 %

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
JKLeo				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
9.13.94	1500	9/13/94 S. Pang	JKLeo 9.13.94	

54-6800-061 (R-10-83)

Bi (5.190/5)(100) = 103.80 %
Ca 5.454 = 109.12 %
Ce 5.223 = 104.46 %
Co 5.252 = 105.04 %
Cu 5.247 = 104.94 %
Fe 5.272 = 105.44 %
~~K 5.511 = 111.88 %~~ BW 12-13-94
La 5.206 = 104.12 %
Li 5.129 = 102.58 %
Mg 5.088 = 101.76 %
Mn 5.122 = 102.44 %
Mo 5.242 = 104.84 %
Na 5.099 = 101.98 %
Nd 5.354 = 107.04 %
Ni 5.218 = 104.36 %
P 5.450 = 109.00 %
S 5.126 = 102.52 %
Sb 4.920 = 98.40 %
~~Se 5.218 = 104.36 %~~ BW 12-13-94
Si 4.937 = 98.74 %
Sm 5.253 = 105.06 %
Sr 5.111 = 102.38 %
Ti 5.068 = 101.36 %
Tl 5.131 = 102.62 %
~~U 10.50 = 105.00 %~~ BW 12-13-94
V 5.190 = 103.80 %
Zn 5.275 = 105.50 %
Zr 5.158 = 103.16 %

R6332-5550

9613458.1001

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: HG	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-325-104
Technologist: JACKIE STEELE	Date: 09/12/94
Starting Time:	Temperature N/A
Ending Time: 15:15	Chemist: RUTH SKODA

Comments: BATCH 4416

	Description	Lab ID
1	LMCS STD	R6329-5597
2	BLANK	R6330-5697
3	SAMPLE ~~ATE~~ LAD 2/16/96	R6331-5797
4	DUPLICATE	R6331-5897
5	SPIKE	R6331-5997
6	LMCS STD	R6332-5597
7		
8		
9		
10		

	Description	Lab ID
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	39N11-D			

A-6000-881 (03/92)

9613458.1002

MERCURY ANALYSIS

Batch 4416

Serial No.	Sample Point	Date	Time Issued	Priority
[illegible]	PUREX	9- 7-94	11: [illegible]	[illegible]

Determination	Method Standard	Result Units	Charge Code	Reruns
HG	LA-505-104	% RECOVERY	XP69B	0

Sample Size	Customer ID
.300ml	[illegible]

Remarks, Calculations, Results

39N11-D

0.100ppm

104%

~~0.100 µg/L~~

1.04E-1ppm

PLHT .272

31.51 ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-12-94	1515	R L Rhoda 9/13/94	R C Jones

54-6800-061 (R-10-83)

9613458.1003

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6880.-8897	PUREX	9- 7-94	11: 7	23

Determination	Method Standard	Result Units	Charge Code	Reruns
Hg	IA-325-104	uG/ML	KP39B	0

Sample Size: 25.0 ml

Customer ID: BLANK

Remarks, Calculations, Results:

BLANK BLANK

1.0 ml sample size is used for calculation for comparison with sample results

PKHT -.011

-3.89 ng

~~10.000 ug/ml~~ EEB 9/13/94

< 5.0 ug/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-12-94	1515	9/13/94	

54-6800-061 (R-10-83)

9613458.1004

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5797	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg LIQ	LA-325-104	uG/L	KP39B	0

Sample Size	Customer ID
? 1.0 ml	94219-01

Remarks, Calculations, Results

RES 9/13/94

~~2.0 ug/L~~

PKHT .038

2.24 ng

<5.0 µg/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-12-94	1515		

54-6800-061 (R-10-83)

9613458.1005

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5897	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg-LIQ	LA-325-104	uG/L	KP39B	0

Sample Size	Customer ID
? 1.0 ml	94219-01

Remarks, Calculations, Results

DUPLICATE SAMPLE

PKAT .041

2.61 ng

RRB 9/13/94

~~2.4 µg/L~~

< 5.0 µg/L

AVG & RPD

N/A

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J. Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-12-94	1515	9/13/94	

54-6800-061 (R-10-83)

9613458.1006

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5997	PUREX	9- 7-94	11: 9	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP39B	0.

Sample Size	Customer ID
1.0 ml	94219-0[illegible]

Remarks, Calculations, Results:

SAMPLE [illegible] 39N11-D .300ml

~~109.0%~~

PKHT .283

32.89ng

109.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Steele				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
9-12-94	1515	9/13/94	

54-6600-061 (R-10-83)

9613458.1007

MERCURY ANALYSIS

Serial No.	Sample Point	Date	Time Issued	Priority
R 6332.-5597	PUREX	9- 7-94	11:12	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-104	% RECOVERY	KP39B	0

Sample Size	Customer ID
.300 ml	STD

Remarks, Calculations, Results

39N11-D

0.100ppm

~~0.1ug/L~~ 9/13/94

PKHT.275
31.88ng

1.06 E-1 ppm 106%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
J Steele				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
9-12-94	15:15	9/13/94		

54-6800-061 (R-10-83)

9613458.1008

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: SE	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-365-131
Technologist: VALERIE MASSIE	Date: 09/07/94
Starting Time:	Temperature N/A
Ending Time: 13:15	Chemist: RUTH SKODA

Comments:

BATCH 4415

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6329-5596	11		
2	BLANK	R6330-5696	12		
3	SAMPLE ~~ATE~~ LAD 3/6/96	R6331-5796	13		
4	DUPLICATE	R6331-5896	14		
5	SPIKE	R6331-5996	15		
6	LMCS STD	R6332-5596	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	44B11A			

A-6000-881 (03/92)

9613458.1009

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 4415

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	PUREX	9- 7-94	11: 6	26

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP88B	0

Sample Size	Customer ID
.250 ml	STD

Remarks, Calculations, Results

[illegible] ADJUSTED

4HNIIA [illegible] 9.47E-2

1.00E-1 [illegible] 94.70%

PKHT= .185

ng= 23.67ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie H Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
				Steve Peter
Date	Time Completed	Lab Unit Mgr		
10-7-94	13:15	R E Wooda 10-10-94		Steve Peter

54-6800-061 R-10-83)

Selenium: LA-365-131 (B-2) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	Se ng (Nanograms)	23.67	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.095	N/A
4415	Conc Se µg/L (PPB)	94.7	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6329-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
10/07/94			
Instrument Code			
WB27979			
Analyst			
V.MASSIE			
Date		STANDARD	DUPLICATE
10/07/94	Conc Se µg/mL	9.47E-02	
Time		N/A	
01:15 PM		N/A	

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Data Entry by:	Steve Peter	Date:	10/10/94
Approved by:	R E Wooda	Date:	10/10/94

Form 365131_1 Rev. 1.1

9613458.1010

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	FUREX	9- 7-94	11: 7	23

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP39B	0

Sample Size	Customer ID
1.0ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PK HT= .022
ng= 3.38 ng

< .005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Vivian Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
10-7-94	13:15	R Eilerson 10-10-94	Steve Peter

54-6800-061 (R-10-83)

Selenium: LA-365-131 (B-2) Se LIQUIDS-DIRECT		BLANK	DUPLICATE
Type	Sample Size in mL SS	1.000	
BLANK	Se ng (Nanograms)	3.38	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.003	N/A
4415	Conc Se µg/L (PPB)	3.4	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID			

Sample #	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)
R6330-5696	Average Conc.=(Sample + Duplicate)/2
Calibration Date	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100
10/07/94	Detection Limit = (5 ng/SS)*(1µg/1000ng)
Instrument Code	Detection Limit is Corrected for Sample Prep/Dilution
WB27979	Detection Limit (µg/mL) = 0.005
Analyst	Detection Limit (µg/L) = 5.0
V.MASSIE	

Date		BLANK	DUPLICATE
10/07/94	Conc Se µg/mL	<0.005	
Time		N/A	
01:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:	Steve Peter	Date:	10/10/94
Approved by:	R Eilerson	Date:	10/10/94

Form 365131_1 Rev. 1.1

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9613458.1011

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	[illegible]	[illegible]	11: 3	22

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	UG/ML	XP98B	0

Sample Size	Customer ID
1.0ml	94219-01

Remarks, Calculations, Results

PKHT= ~~.047~~ .030 vm10-7-94

ng= ~~6.49ng~~ 4.38ng vm10-7-94

< .005 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
10-7-94	13:15	RESlade 10-10-94	Steve Pete

54-6800-061 (R-10-83)

Selenium: LA-365-131 (B-2) Se LIQUIDS-DIRECT		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	1.000	
SAMPLE	Se ng (Nanograms)	4.38	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.004	N/A
4415	Conc Se µg/L (PPB)	4.4	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6331-5796	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
10/07/94	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.005	
Analyst	Detection Limit (µg/L) =	5.0	
V.MASSIE			
Date		SAMPLE	DUPLICATE
10/07/94	Conc Se µg/mL	<0.005	
Time		N/A	
01:15 PM		N/A	

The Result is < Detection Limit

Data Entry by:	Steve Pete	Date:	10/10/94
Approved by:	RESlade	Date:	10/10/94

Form 365131_1 Rev. 1.1

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.207 26.41ng .250 ml LMCS 44N11A R6332

.176 22.55 ng R6331 spike 1.0 ml + .250 LMCS 44N11A

.047 6.49ng 1.0 ml R6331 Dup

.030 4.38 ng 1.0 ml R6331

.022 3.38 ng 1.0 ml R6330

.185 23.67 ng .250 ml LMCS 44N11A R6329

.555 100 ng 1.0 ml 37N11G Cal std (deleted from Cal curve)

.399 50 ng .500 ml 37N11G Cal std

.192 25 ng .250 ml 37N11G Cal std

.028 5 ng .050 ml 37N11G Cal std

.003 0 ng

13:15 10-07-94 Se Valerie L Massie

Analyte: Se
Date: 10-7-94

Analyst: Valerie L Massie
Start Time: 07:50 End Time: 13:15

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 30 sec.
Expansion: 10

Purge I: 40 sec.
Reaction: 10 sec.
Purge II: 50 sec.
Temperature: 975 C
EDL Power: 6 Watts

Valerie L Massie
10-07-94

Intercept:	-0.0051
Slope:	0.0080
9:	0.9993
8:	23.6727
7:	3.3795
6:	4.3755
5:	6.4920
4:	22.5522
3:	26.4116
2:	
1:	

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: -0.0051 absorbance units
Slope: 0.0080 abs. units / concentration
Correlation: 0.9993 (unitless)

Bid Lot # 4415

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9613458.1013

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No.	Sample Point	Date	Time Issued	Priority
R 6331.-5896	PUREX	9- 7-94	11: 9	23

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	uG/ML	KP39B	0

Sample Size	Customer ID
? 1.0 ml	94219-01

Remarks, Calculations, Results:
DUPLICATE SAMPLE

PK HT= .047
ng= 6.49ng

6.49E-3 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie L Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
10-7-94	13:15	10-10-94	

54-6800-061 (R-10-83)

Selenium: LA-365-131 (B-2) Se LIQUIDS-DIRECT

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	1.000	1.000
SAMPLE	Se ng (Nanograms)	4.38	6.49
Work List	Conc Se µg/mL (or mg/L or PPM)	0.004	0.006
4415	Conc Se µg/L (PPB)	4.4	6.5
Test Code	Average Conc (µg/mL)	N/A	N/A
N/A	Average Conc (µg/L)	N/A	N/A
Matrix	Relative % Difference	N/A	N/A
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6331-5896	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
10/07/94	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.005	
Analyst	Detection Limit (µg/L) =	5.0	
V.MASSIE			
Date		SAMPLE	DUPLICATE
10/07/94	Conc Se µg/mL	<0.005	6.49E-03
Time	Average Conc (µg/mL)	N/A	N/A
01:15 PM	Relative % Difference	N/A	N/A

The Result is < Detection Limit

Data Entry by: Stan Peter		Date:	10/10/94
Approved by:		Date:	10/10/94

Form 365131_1 Rev. 1.1

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9613458.1014

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5996	PUREX	9- 7-94	11: 9	28

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP39B	0

Sample Size	Customer ID
? 1.0ml + .250ml LMCS 44N11A	94219-01

Remarks, Calculations, Results:

SAMPLE SPIKED ID R6331
SPIKE ID 44N11A
SPIKE VOLUME .250ml

PKHT= .176
ng= 22.55ng

90.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
	7.94			
Date	Time Completed	Lab Unit Mgr		
10-7-94	~~14:~~ 13:15	10-10-94		

54-6800-061 R-10-83)

Selenium: LA-365-131 (B-2) Se LIQUIDS-DIRECT

		SAMPLE	SPIKE
Type	Spike Std Volume (mL) SSVOL		0.250
SPIKE	ng of Spike + Sample ngSSAM		22.55
Work List	ng of Sample ngSAM	4.38	
4415	Spike Std ID		44N11A
Test Code	Spike Std Value (ppm)		0.100
N/A	% Recovery	N/A	90.2%

Matrix	LIQUID
Sample #	R6331-5996
Calibration Date	10/07/94
Instrument Code	WB27979
Analyst	V.MASSIE
Date	10/07/94
Time	01:15 PM

Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery

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% Recovery = ([(ngSSAM-0)/(SSVOL*1000µL/mL)]/Spike Std Value)*100

% Recovery = 90.2%

Data Entry by:	Steve Peter	Date:	10/10/94
Approved by:	R E Sheridan	Date:	10/10/94

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9613458.1015

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6[illegible]-6596	PUREX	[illegible] 7-94	11:12	23

Determination	Method Standard	Result Units	Charge Code	Reruns
Se	LA-365-131	% RECOVERY	KP89B	0

Sample Size	Customer ID
[illegible] .250 ml	STD

Remarks, Calculations, Results

PRHT= .207
ng= 26.41ng

EDP R743 SE/HYDRD

STD= 44N11A RESULT 1.06E-1

[illegible] 1.00E-1 [illegible] 106.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Dakin Linnell				
Hrs	Hrs	Hrs	Hrs	Hrs
			Stan Peter	
Date	Time Completed	Lab Unit Mgr		
10-7-94	13:15	R E Shrode 10-10-94	Stan Peter	

54-6800-061 (R-10-83)

Selenium: LA-365-131 (B-2) Se LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	Se ng (Nanograms)	26.41	
Work List	Conc Se µg/mL (or mg/L or PPM)	0.106	N/A
4415	Conc Se µg/L (PPB)	105.6	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc Se µg/mL=(Se ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6332-5596	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
10/07/94			
Instrument Code			
WB27979			
Analyst			
V.MASSIE			
Date		STANDARD	DUPLICATE
10/07/94	Conc Se µg/mL	1.06E-01	
Time		N/A	
01:15 PM		N/A	

Data Entry by:	Stan Peter	Date:	10/10/94
Approved by:	R E Shrode	Date:	10/10/94

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'74

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9613458.1016

WESTINGHOUSE HANFORD COMPANY

222-S LABORATORY

ANALYTICAL BATCH

Lab Segment Serial No. R6331	Customer ID: 94219-01
Analysis: AS	Sample Prep: DIRECT

Instrument:	Procedure/ Rev: LA-355-131
Technologist: VALERIE MASSIE	Date: 09/14/94
Starting Time:	Temperature N/A
Ending Time: 13:40	Chemist: RUTH SKODA

Comments:

BATCH 4414

	Description	Lab ID		Description	Lab ID
1	LMCS STD	R6329-5595	11		
2	BLANK	R6330-5695	12		
3	SAMPLE ~~ATE~~ LAD 9/16/94	R6331-5795	13		
4	DUPLICATE	R6331-5895	14		
5	SPIKE	R6331-5995	15		
6	LMCS STD	R6332-5595	16		
7			17		
8			18		
9			19		
10			20		

Standard Type	Primary Book No. and Aliquot Vol.	Second Book No. and Aliquot Vol.	Third Book No. and Aliquot Vol.	Final Vol. of Standard
LMCS	40B11F			

A-6000-881 (03/92)

9613458.1017

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Batch 4414

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	[illegible]	[illegible]-7-94	11: 6	23

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP88B	0

Sample Size	Customer ID
.250 ml	SID

Remarks, Calculations, Results

[illegible] AS/HYDRO

[illegible] 40N11F [illegible]

[illegible] 100ppm [illegible]

PKHT= .772
ng= 27.15ng

1.09 E-01 ug/ml

109.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
09-14-94	13:40	9/19/94		

54-6800-061 (R-10-83)

Arsenic : LA-355-131 (3-1) As LIQUIDS-DIRECT		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	27.15	
Work List	Conc As µg/mL (or mg/L or PPM)	0.109	N/A
Batch #4414	Conc As µg/L (PPB)	108.6	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6329-5595	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date			
09/14/94			
Instrument Code			
WB27979			
Analyst			
Valerie Massie			
Date		STANDARD	DUPLICATE
09/14/94	Conc As µg/mL	1.09E-01	
Time		N/A	
01:40 PM		N/A	

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Data Entry by:	RD Smith	Date:	09/15/94
Approved by:	RE Shoda	Date:	9/19/94

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9613458.1018

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6330.-5695	PORIM -	9- 7-94	11: 7	23

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	XF39B	0

Sample Size	Customer ID
? .250 ml	BLANK

Remarks, Calculations, Results:
REAGENT BLANK

PKHT= .177 ma-14-94
ng= -2.80 ng
4

<0.020 ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.	
09-14-94	13:40	9-16-94	

54-6800-061 (R-10-83)

Arsenic : LA-355-131 (B-1) As LIQUIDS-DIRECT

		BLANK	DUPLICATE
Type	Sample Size in mL SS	0.250	
BLANK	As ng (Nanograms)	-2.40	
Work List	Conc As µg/mL (or mg/L or PPM)	-0.010	N/A
Batch #4414	Conc As µg/L (PPB)	-9.6	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6330-5695	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
09/14/94	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.020	
Analyst	Detection Limit (µg/L) =	20.0	
Valerie Massie			
Date		BLANK	DUPLICATE
09/14/94	Conc As µg/mL	<0.020	
Time		N/A	
01:40 PM		N/A	

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The Result is < Detection Limit

Data Entry by:		Date:	09/15/94
Approved by:		Date:	9/19/94

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9613458.1019

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	uG/ML	XF99B	0

Sample Size	Customer ID
? 1.0ml	94219-01

Remarks, Calculations, Results

PKHT= .176
ng= -2.45ng

<0.005ug/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
09-14-94	13:40	9-19-94	

54-6800-061 (R-10-83)

Arsenic : LA-355-131 (B-1) As LIQUIDS-DIRECT

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	1.000	
SAMPLE	As ng (Nanograms)	-2.45	
Work List	Conc As µg/mL (or mg/L or PPM)	-0.002	N/A
Batch #4414	Conc As µg/L (PPB)	-2.5	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6331-5795	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
09/14/94	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.005	
Analyst	Detection Limit (µg/L) =	5.0	
Valerie Massie			
Date		SAMPLE	DUPLICATE
09/14/94	Conc As µg/mL	<0.005	
Time		N/A	
01:40 PM		N/A	

The Result is < Detection Limit

Data Entry by:	M. Smith	Date:	09/15/94
Approved by:	[illegible]	Date:	9/19/94

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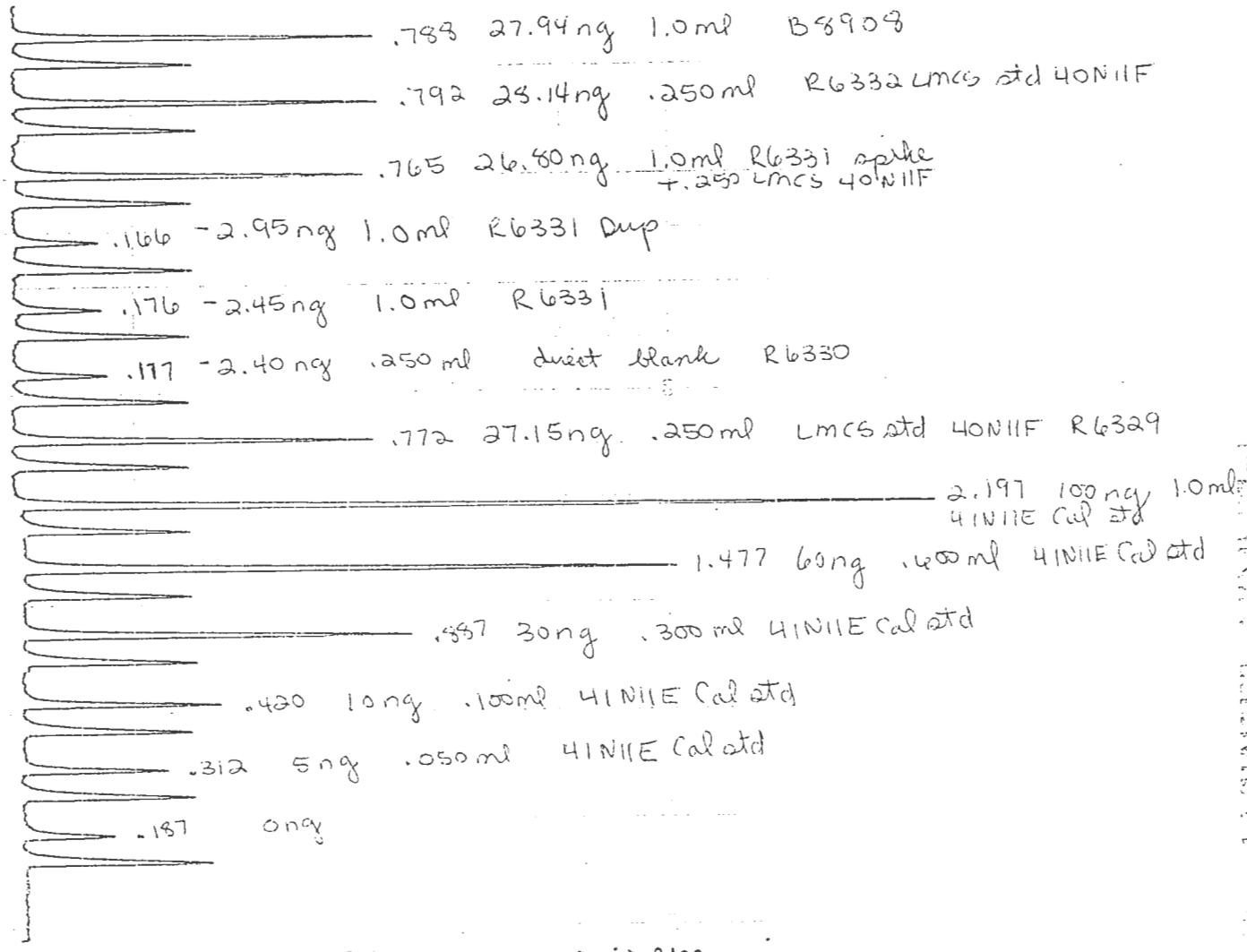
9613458.1020



Batch # 41114
Run on 9-14-94
Tested 9-19-94

13:40 9-14-94 AS Valerie L Massie

Analyte: As
Date: 09-14-94

Analyst: Valerie L Massie
Start Time: 07:45 End Time: 13:40

MHS 20 Data:

Signal: Concentration
Mode: PKHT
Recorder: TC3
Time: 40 sec.
Expansion: 4

Purge I: 50 sec.
Reaction: 24 sec.
Purge II: 60 sec.
Temperature: 900 C
EDL Power: 8 Watts

Valerie L Massie
09-14-94

10:	Intercept: 0.2253
9:	Slope: 0.0201
8:	0.9986
7:	27.1479
6:	-2.4005
5:	-2.4501
4:	-2.9468
3:	26.8003
2:	28.1411
1:	27.9425

Chart Recorder Data:

Chart speed: 5 mm/min Chart full scale: 20 mV

Calibration Data:

Intercept: 0.2253 absorbance units
Slope: 0.0201 abs. units / concentration
Correlation: 0.9986 (unitless)

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9613458.1021

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5895	PUREX	9- 7-94	11: 9	25

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	MG/ML	YP39P	0

Sample Size	Customer ID
1.0 ml	94219-01

Results, Calculations, Results

PKHT= .166
ng= -2.95

(<0.005 mg/ml)

AVG & RPD - N/A

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
09-14-94	13:40	9-19-94	

54-6800-061 (R-10-83)

Arsenic : LA-355-131 (B-1) As LIQUIDS-DIRECT

		SAMPLE	DUPLICATE
Type	Sample Size in mL SS	1.000	1.000
SAMPLE	As ng (Nanograms)	-2.45	-2.95
Work List	Conc As µg/mL (or mg/L or PPM)	-0.002	-0.003
Batch #4414	Conc As µg/L (PPB)	-2.5	-3.0
Test Code	Average Conc (µg/mL)	N/A	N/A
N/A	Average Conc (µg/L)	N/A	N/A
Matrix	Relative % Difference	N/A	N/A
LIQUID	Conc As µg/mL=(As ng/SS)*(1µg/1000ng)		
Sample #	Average Conc.=(Sample + Duplicate)/2		
R6331-5895	Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100		
Calibration Date	Detection Limit = (5 ng/SS)*(1µg/1000ng)		
09/14/94	Detection Limit is Corrected for Sample Prep/Dilution		
Instrument Code			
WB27979	Detection Limit (µg/mL) =	0.005	
Analyst	Detection Limit (µg/L) =	5.0	
Valerie Massie			
Date		SAMPLE	DUPLICATE
09/14/94	Conc As µg/mL	<0.005	<0.005
Time	Average Conc (µg/mL)	N/A	N/A
01:40 PM	Relative % Difference	N/A	N/A

Both Results are < Detection Limit

Data Entry by:	ND Smith	Date:	09/15/94
Approved by:		Date:	9/19/94

Form 355131_1 Rev. 1.1

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9613458.1022

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R 6331.-5995	FUREX	9- 7-94	11: 9	23

Determination	Method Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP39B	0

Sample Size	Customer ID
? 1.0ml + .250ml	94219-01 JM 9-14-94

Remarks, Calculations, Results

SAMPLE SPIKED ID R6331
SPIKE ID 40N11F
SPIKE VOLUME .250ml

PKHT: ~~26.50ng~~ .765
ng = 26.80ng

107.2% recovery

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
09-14-94	13:40	9-19-94	

54-6800-061 (R-10-83)

Arsenic : LA-355-131 (B-1) As LIQUIDS-DIRECT

		SAMPLE	SPIKE
Type	Spike Std Volume (mL) SSVOL		0.250
SPIKE	ng of Spike + Sample ngSSAM		26.80
Work List	ng of Sample ngSAM	-2.45	
Batch #4414	Spike Std ID		40N11F
Test Code	Spike Std Value (ppm)		0.100
N/A/	% Recovery	N/A	~~10720.0%~~

Matrix
LIQUID
Sample #
R6331-5995
Calibration Date
09/14/94
Instrument Code
WB27979
Analyst
Valerie Massie
Date
09/14/94
Time
01:40 PM

107.2%
RES 9-19-94
will check concentration in spreadsheet and have it corrected.

Sample result is < 5 ng, 0 ng of sample is used in the calculation for % recovery

$$\frac{26.80\text{ng} - 0\text{ng}}{0.250\text{mL} \times 1000\frac{\mu L}{mL}} = \frac{0.1072\ \text{ng}/\mu L}{0.100\ \text{ng}/\mu L} \times 100 = 107.2\%$$

ng/µL RES 9-19-94 recovery

% Recovery = ([(ngSSAM-0)/(SSVOL*1000µL/mL)]/Spike Std Value)*100

% Recovery =	10720.0%

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Data Entry by:	TD Smith	Date:	09/15/94
Approved by:	RSBlock	Date:	9/19/94

Form 355131_2 Rev. 1.1

9613458.1023

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

Serial No	Sample Point	Date	Time Issued	Priority
R [illegible]	PUREX	9- 7-94	11:12	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
As	LA-355-131	% RECOVERY	KP39B	0

Sample Size	Customer ID
.250 ml	STD

Remarks, Calculations, Results:

ELP R741 AS/HYDRD

STD#40NIIF RESULT

STD VAL .100ppm [illegible]

PKHT= .792

ng= 28.14 ng

1.13E-1

~~1.13E-01~~ ug/ml

113.0% 9-19-94

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Valerie J Massie				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
09-14-94	13:40	9-19-94	

54-6800-061 (R-10-83)

Arsenic : LA-355-131 (B-1) As LIQUIDS-DIRECT

		STANDARD	DUPLICATE
Type	Sample Size in mL SS	0.250	
STANDARD	As ng (Nanograms)	28.14	
Work List	Conc As µg/mL (or mg/L or PPM)	0.113	N/A
Batch #4414	Conc As µg/L (PPB)	112.6	N/A
Test Code		N/A	
N/A		N/A	
Matrix		N/A	
LIQUID			
Sample #			
R6332-5555			
Calibration Date			
09/14/94			
Instrument Code			
WB27979			
Analyst			
Valerie Massie			
Date		STANDARD	DUPLICATE
09/14/94	Conc As µg/mL	1.13E-01	
Time		N/A	
01:40 PM		N/A	

Conc As µg/mL=(As ng/SS)*(1µg/1000ng)

Average Conc.=(Sample + Duplicate)/2

Relative % Difference=((ABS(Sam.-Dup.))/Average Conc.)*100

BEST AVAILABLE COPY

Data Entry by:	[illegible]	Date:	09/15/94
Approved by:	[illegible]	Date:	9/19/94

Form 355131_1 Rev. 1.1

Page 1 of 1

9613458.1024

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

January 24, 1995 9550164

Mr. O. A. Farabee, Acting Director
Transition Program Division
U.S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Farabee:

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT K CELL AND G AND R CELL, PART I, LOOP FLUSH ANALYTICAL RESULTS

Attachments 1 and 2 are laboratory analytical and sample results conducted on the final flush for the Plutonium-Uranium Extraction (PUREX) K Cell and G and R Cell, Part I, canyon vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA).

Please note in Attachment 2, the sample delivery group narrative for PUREX Sample BODD50 Volatile Organic Analysis. It notes the deviations in meeting the holding time and proper refrigeration of the sample.

Analytical results from future flushes will be transmitted as they are obtained.

A copy of the Predetermination Reports, designating the final flush solution based on the analytical results, are also included in Attachments 1 and 2. The final flush for each cell was designated as non-dangerous waste.

Attachment 3 is a letter for your transmittal to Ecology and the EPA to transmit these results.

If you have any questions, please contact Mr. G. J. LeBaron (373-1792) of my staff.

Very truly yours,

D. G. Hamrick, Director
PUREX/UO_3 Transition Project
Transition Projects Division

sah

Attachments 3

DOE-HQ - B. K. Nelson (w/o attachment)
R. Martinez (w/o attachment)
D. Schmidt (w/o attachment)

RL - J. E. Mecca
L. D. Romine (w/o attachment)
E. J. Senat
A. H. Wirkkala (w/o attachment)

9613458.1026

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. David Lundstrom
200 Area Section Manager
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Messrs. Sherwood and Lundstrom:

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT K CELL AND G AND R CELL, PART I, LOOP FLUSH ANALYTICAL RESULTS

Enclosures 1 and 2 are all laboratory analytical and sample results conducted on the final flush for the Plutonium-Uranium Extraction Facility K Cell and G and R Cell, Part I, canyon vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

Please note in Enclosure 2, the sample delivery group narrative for PUREX Sample BODD50 Volatile Organic Analysis. It notes the deviations in meeting the holding time and proper refrigeration of the sample.

Analytical results from future flushes will be transmitted as they are obtained.

A copy of the Predetermination Reports, designating the final flush solution based on the analytical results, are also included in Enclosures 1 and 2. The final flush was designated as non-dangerous waste.

Sincerely,

O. A. Farabee, Acting Director
Transition Program Division
DOE Richland Operations Office

Enclosures:
PUREX K Cell Canyon Loop Flush Laboratory Analyses and Sample Results
PUREX G and R Cells, Part I, Loop Flush Laboratory Analyses and Sample Results

cc: D. L. Duncan, EPA, w/encl.
M. N. Jaraysi, Ecology, w/encl.
D. G. Hamrick, WHC, w/o encl.
G. J. LeBaron, WHC, w/o encl.

9613458.1027

Attachment 1 to 9550164

PUREX K Cell Canyon Loop Flush
Laboratory Analyses and Sample Results

SAMPLE REPORT DESCRIPTION

PUREX CANYON VESSELS - K CELL LOOP

SAMPLE NUMBER	SAMPLE REPORT DESCRIPTION
P2334/P2349	Screening sample on final flush from PUREX Laboratory. Used to determine if flush solution meets RCRA criteria.
E8529	Screening sample on final flush from 222-S Laboratory tested for total activity. Sample results used to determine if the off-site laboratory criteria for acceptance is met.
R6329 STD	Standard sample results indicating the percent recovery of the analyzed constituents. A tracer was injected to test the instrumentation precision in detecting concentration levels.
R6330 Blank	Blank sample
R5331 94219-01	RCRA protocol sample results from 222-S Laboratory
R6332 STD	Standard sample
Table 1	Volatile organics analysis results

9613458.1029

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES
PREDETERMINATION REPORT

REQUEST #: 25071 **DATE:** October 13, 1994

SUBJECT	PRODUCT PREDETERMINATION

TO	J. R. Hilliard	**COMPANY**	WHC
PHONE	373-1782	**ADDRESS**	P.O. Box 1970, Richland, WA 99352
FACILITY	MO273/C105/200E	**MSIN**	S6-19

ANALYST	J. M. Keating	**MSIN**	T3-05	**PHONE**	372-2679
REVIEWER					
cc	File				

This waste predetermination is based . a the MSDS information for products/materials listed in the predetermination request and was performed according to current state and Federal law (WAC 173-303 and 40 CFR 261). For questions or comments, please contact the Generator & Waste Acceptance Services analyst above and reference the request #. Thank you for your interest in waste predetermination.

			REGULATED ?				
Item #	**MSDS #**	**Product/Material**	**Unused Product**	**Used Product**	**Empty Container**	**Rags with 10% Product**	**Possible Waste Codes**
1	Lab Analysis	PUREX K-CELL Flush Solution	N	N	N	N	None

Comments: Based on the lab analysis, the Flush Solution does not designate as Dangerous Waste.

DISCLAIMER

This predetermination is believed accurate based on the information provided. Predeterminations are performed to assist generators in selecting less hazardous products. Since solid waste regulations are subject to constant revision, waste status may change without notice. *Waste designations must be performed on all wastes* by Generator & Waste Acceptance Services to assure proper disposal in the event products are spilled or contained within a waste matrix.

9613458.1030

4th flush

SAMPLE STATUS REPORT FOR P 2334. F10-3WF TIME: 9/19/94 15:31
DISPATCHED: 8/30/94 16:56 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 8/31/94 10: 5

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1203	TB	1.84000E 01 uCi/L	N	Y	KP32B
1267	AT	6.35000E 00 uCi/L	N	Y	KP32B
1383	Cr	1.33800E 00 uG/ML	N	Y	KP32B
1482	Cd	< 3.60000E-03 uG/ML	N	Y	KP32B
3203	pH	2.59000E 00 NONE	N	Y	KP32B
4411	U	1.02000E 00 G/L	N	Y	KP32B
6016	Cd-STD	101.34% REC			KP32B
6022	Cr-STD	93.80% REC			KP32B
6370	PH-STD	99.55% REC			KP32B
6422	TOTA-STD	COMPLETED			KP32B
6427	TOTB-STD	COMPLETED			KP32B
6524	U-STD	105.44% REC			KP32B

END OF REPORT

9613458.1031

SAMPLE STATUS REPORT FOR P 2349. F10-3WF TIME: 9/15/94 11:45
DISPATCHED: 9/ 7/94 12:39 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/ 7/94 15:30

E.D.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1383	Cr	1.17000E 00 uG/ML	N	Y	KP32B
1482	Cd	3.96000E-02 uG/ML	N	Y	KP32B
2215	H+	2.27000E-03 M ⇒ 2.64 None	N	Y	KP32B
4411	U	6.94000E-01 G/L	N	Y	KP32B
6016	Cd-STD	102.64% REC			KP32B
6022	Cr-STD	99.22% REC			KP32B
6106	H+-STD	98.55% REC			KP32B
6524	U-STD	COMPLETED			KP32B

END OF REPORT

SAMPLE STATUS REPORT FOR [redacted] TIME: 12/ 5/94 13:28
DISPATCHED: 9/ 7/94 11:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/ 8/94 23:13

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1210	TB MISC	1.73E4 pCi/ml			VOGEL
1211	AT MISC	9.02E2 pCi/ml			VOGEL
1341	AEA-ONLY	238PU/241AM, 239/240PU, URANIUM & NP237 PRESENT			VOGEL
2162	GEA-LIQ	4.66E-3 UCI/L CO-60 25%ERROR			VOGEL
2162	GEA-LIQ	2.72E-1 UCI/L RURH-106 25%ERROR			VOGEL
2162	GEA-LIQ	3.86000E-01 uCi/L Sb-125	N	Y	VOGEL
2162	GEA-LIQ	3.26000E-02 uCi/L Cs-134	N	Y	VOGEL
2162	GEA-LIQ	3.49000E 00 uCi/L Cs-137	N	Y	VOGEL
2162	GEA-LIQ	1.18E-1 UCI/L CE-144 26%ERROR			VOGEL
2162	GEA-LIQ	2.36E-1 UCI/L CEPR144 26%ERROR			VOGEL
2162	GEA-LIQ	5.56E-2 UCI/L EU-155 35%ERROR			VOGEL
2162	GEA-LIQ	3.13E-1 UCI/L RA-226 44%ERROR			VOGEL
2162	GEA-LIQ	1.70E-1 UCI/L AM-241 25%ERROR			VOGEL

END OF REPORT

SAMPLE STATUS REPORT FOR [redacted] PUREX [redacted] TIME: 12/13/94 13:28
DISPATCHED: 9/ 7/94 11: 7 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/ 8/94 8:31

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	100.5% REC			KP39B
5526	TOC	OUT FOR RERUN			KP39B
5526	TOC	9.50000E 01 % RECOVERY	N	Y	KP39B
5550	ICP	1.01620E 02 % RECOVERY Ag	N	Y	KP39B
5550	ICP	9.85000E 01 % RECOVERY Ba	N	Y	KP39B
5550	ICP	1.01920E 02 % RECOVERY Cd	N	Y	KP39B
5550	ICP	1.02220E 02 % RECOVERY Cr	N	Y	KP39B
5550	ICP	1.02860E 02 % RECOVERY Pb	N	Y	KP39B
5550	ICP	9.99000E 01 % RECOVERY Al	N	Y	KP39B
5550	ICP	9.90800E 01 % RECOVERY B	N	Y	KP39B
5550	ICP	1.03400E 02 % RECOVERY Be	N	Y	KP39B
5550	ICP	1.00760E 02 % RECOVERY Bi	N	Y	KP39B
5550	ICP	1.05420E 02 % RECOVERY Ca	N	Y	KP39B
5550	ICP	1.00420E 02 % RECOVERY Ce	N	Y	KP39B
5550	ICP	1.01560E 02 % RECOVERY Co	N	Y	KP39B
5550	ICP	1.01580E 02 % RECOVERY Cu	N	Y	KP39B
5550	ICP	1.02080E 02 % RECOVERY Fe	N	Y	KP39B
5550	ICP	9.98600E 01 % RECOVERY La	N	Y	KP39B
5550	ICP	9.98400E 01 % RECOVERY Li	N	Y	KP39B
5550	ICP	9.87000E 01 % RECOVERY Mg	N	Y	KP39B
5550	ICP	1.00060E 02 % RECOVERY Mn	N	Y	KP39B
5550	ICP	9.95000E 01 % RECOVERY Zr	N	Y	KP39B
5550	ICP	INCOMPLETE			KP39B
5550	ICP	1.01620E 02 % RECOVERY Mo	N	Y	KP39B
5550	ICP	9.88400E 01 % RECOVERY Na	N	Y	KP39B
5550	ICP	1.02620E 02 % RECOVERY Nd	N	Y	KP39B
5550	ICP	1.01160E 02 % RECOVERY Ni	N	Y	KP39B
5550	ICP	9.98200E 01 % RECOVERY P	N	Y	KP39B
5550	ICP	9.98600E 01 % RECOVERY S	N	Y	KP39B
5550	ICP	9.62200E 01 % RECOVERY Si	N	Y	KP39B
5550	ICP	9.59400E 01 % RECOVERY Sb	N	Y	KP39B
5550	ICP	1.00600E 02 % RECOVERY Sm	N	Y	KP39B
5550	ICP	9.81600E 01 % RECOVERY Sr	N	Y	KP39B
5550	ICP	9.75600E 01 % RECOVERY Ti	N	Y	KP39B
5550	ICP	9.86200E 01 % RECOVERY Tl	N	Y	KP39B
5550	ICP	1.00320E 02 % RECOVERY V	N	Y	KP39B
5550	ICP	1.02600E 02 % RECOVERY Zn	N	Y	KP39B
5595	As	1.09000E 02 % RECOVERY	N	Y	KP39B
5596	Se	9.47000E 01 % RECOVERY	N	Y	KP39B
5597	Hg	1.04000E 02 % RECOVERY	N	Y	KP39B

END OF REPORT

SAMPLE STATUS REPORT FOR R 6330 PUREX [redacted] TIME: 12/13/94 13:29
DISPATCHED: 9/ 7/94 11: 9 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/ 8/94 8:31

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5626	TOC	OUT FOR RERUN				KP39B
5626	TOC	< 5.00000E 00 uG C/ML		N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Ag	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	Ba	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Cd	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Cr	N	Y	KP39B
5650	ICP	1.00000E-01 uG/ML	Pb	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	Al	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	B	N	Y	KP39B
5650	ICP	< 5.00000E-03 uG/ML	Be	N	Y	KP39B
5650	ICP	< 1.00000E-01 uG/ML	Bi	N	Y	KP39B
5650	ICP	< 1.00000E-01 uG/ML	Ca	N	Y	KP39B
5650	ICP	< 1.00000E-01 uG/ML	Ce	N	Y	KP39B
5650	ICP	< 2.00000E-02 uG/ML	Co	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Cu	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	Fe	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	La	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Li	N	Y	KP39B
5650	ICP	< 1.00000E-01 uG/ML	Mg	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Mn	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	Mo	N	Y	KP39B
5650	ICP	< 1.00000E-01 uG/ML	Na	N	Y	KP39B
5650	ICP	< 1.00000E-01 uG/ML	Nd	N	Y	KP39B
5650	ICP	< 2.00000E-02 uG/ML	Ni	N	Y	KP39B
5650	ICP	< 2.00000E-01 uG/ML	P	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	S	N	Y	KP39B
5650	ICP	< 2.00000E-01 uG/ML	Sb	N	Y	KP39B
5650	ICP	< 5.00000E-02 uG/ML	Si	N	Y	KP39B
5650	ICP	< 2.00000E-01 uG/ML	Sm	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Sr	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Ti	N	Y	KP39B
5650	ICP	< 2.00000E-01 uG/ML	Tl	N	Y	KP39B
5650	ICP	INCOMPLETE				KP39B
5650	ICP	< 5.00000E-02 uG/ML	V	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Zn	N	Y	KP39B
5650	ICP	< 1.00000E-02 uG/ML	Zr	N	Y	KP39B
5695	As	< 2.00000E-02 uG/ML		N	Y	KP39B
5696	Se	< 5.00000E-03 uG/ML		N	Y	KP39B
5697	Hg	<5.0UG/L				KP39B

END OF REPORT

SAMPLE STATUS REPORT FOR R 6331 PUREX [redacted] TIME: 12/13/94 13:29
DISPATCHED: 9/ 7/94 11:12 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/ 8/94 8:31

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETED				KP39B
5713	pH	2.73000E 00 NONE		N	Y	KP39B
5726	TOC	OUT FOR RERUN				KP39B
5726	TOC	2.03000E 02 uG C/ML		N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Ag	N	Y	KP39B
5750	ICP-LIQ	3.42000E-01 uG/ML	Ba	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Cd	N	Y	KP39B
5750	ICP-LIQ	3.36000E-01 uG/ML	Cr	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Pb	N	Y	KP39B
5750	ICP-LIQ	6.36000E-01 uG/ML	Al	N	Y	KP39B
5750	ICP-LIQ	6.30000E-01 uG/ML	B	N	Y	KP39B
5750	ICP-LIQ	3.60000E-02 uG/ML	Be	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Bi	N	Y	KP39B
5750	ICP-LIQ	1.51000E 01 uG/ML	Ca	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Ce	N	Y	KP39B
5750	ICP-LIQ	< 1.20000E-01 uG/ML	Co	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Cu	N	Y	KP39B
5750	ICP-LIQ	1.31000E 00 uG/ML	Fe	N	Y	KP39B
5750	ICP-LIQ	< 3.00000E-01 uG/ML	La	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Li	N	Y	KP39B
5750	ICP-LIQ	4.12000E 00 uG/ML	Mg	N	Y	KP39B
5750	ICP-LIQ	6.30000E-01 uG/ML	Mn	N	Y	KP39B
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Mo	N	Y	KP39B
5750	ICP-LIQ	3.79000E 00 uG/ML	Na	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Nd	N	Y	KP39B
5750	ICP-LIQ	3.42000E-01 uG/ML	Ni	N	Y	KP39B
5750	ICP-LIQ	5.72000E 01 uG/ML	P	N	Y	KP39B
5750	ICP-LIQ	5.99000E 00 uG/ML	S	N	Y	KP39B
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sb	N	Y	KP39B
5750	ICP-LIQ	2.18000E 00 uG/ML	Si	N	Y	KP39B
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sm	N	Y	KP39B
5750	ICP-LIQ	1.38000E-01 uG/ML	Sr	N	Y	KP39B
5750	ICP-LIQ	3.06000E-01 uG/ML	Ti	N	Y	KP39B
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Tl	N	Y	KP39B
5750	ICP-LIQ	< 3.00000E-01 uG/ML	V	N	Y	KP39B
5750	ICP-LIQ	1.98000E-01 uG/ML	Zn	N	Y	KP39B
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Zr	N	Y	KP39B
5795	As	< 5.00000E-03 uG/ML		N	Y	KP39B
5796	Se	< 5.00000E-03 uG/ML		N	Y	KP39B
5797	Hg LIQ	< 5.00000E 00 uG/L		N	Y	KP39B
5813	pH	2.72000E 00 NONE		N	Y	KP39B
5826	TOC	OUT FOR RERUN				KP39B
5826	TOC	1.90000E 02 uG C/ML		N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-02 uG/ML	Ag	N	Y	KP39B
5850	ICP-LIQ	3.48000E-01 uG/ML	Ba	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-02 uG/ML	Cd	N	Y	KP39B
5850	ICP-LIQ	4.08000E-01 uG/ML	Cr	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-01 uG/ML	Pb	N	Y	KP39B
5850	ICP-LIQ	3.06000E-01 uG/ML	Al	N	Y	KP39B
5850	ICP-LIQ	6.78000E-01 uG/ML	B	N	Y	KP39B
5850	ICP-LIQ	3.00000E-02 uG/ML	Be	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-01 uG/ML	Bi	N	Y	KP39B

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6331. PUREX 94219-01 TIME: 12/13/94 13:29
DISPATCHED: 9/ 7/94 11:12 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS			OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********			***	***	******
5850	ICP-LIQ	1.54000E 01	uG/ML	Ca	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-01	uG/ML	Ce	N	Y	KP39B
5850	ICP-LIQ	< 1.20000E-01	uG/ML	Co	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-02	uG/ML	Cu	N	Y	KP39B
5850	ICP-LIQ	1.31000E 00	uG/ML	Fe	N	Y	KP39B
5850	ICP-LIQ	< 3.00000E-01	uG/ML	La	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-02	uG/ML	Li	N	Y	KP39B
5850	ICP-LIQ	4.39000E 00	uG/ML	Mg	N	Y	KP39B
5850	ICP-LIQ	6.30000E-01	uG/ML	Mn	N	Y	KP39B
5850	ICP-LIQ	< 3.00000E-01	uG/ML	Mo	N	Y	KP39B
5850	ICP-LIQ	3.86000E 00	uG/ML	Na	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-01	uG/ML	Nd	N	Y	KP39B
5850	ICP-LIQ	4.44000E-01	uG/ML	Ni	N	Y	KP39B
5850	ICP-LIQ	5.92000E 01	uG/ML	P	N	Y	KP39B
5850	ICP-LIQ	5.95000E 00	uG/ML	S	N	Y	KP39B
5850	ICP-LIQ	< 1.20000E 00	uG/ML	Sb	N	Y	KP39B
5850	ICP-LIQ	2.17000E 00	uG/ML	Si	N	Y	KP39B
5850	ICP-LIQ	< 1.20000E 00	uG/ML	Sm	N	Y	KP39B
5850	ICP-LIQ	1.38000E-01	uG/ML	Sr	N	Y	KP39B
5850	ICP-LIQ	3.12000E-01	uG/ML	Ti	N	Y	KP39B
5850	ICP-LIQ	< 1.20000E 00	uG/ML	Tl	N	Y	KP39B
5850	ICP-LIQ	< 3.00000E-01	uG/ML	V	N	Y	KP39B
5850	ICP-LIQ	1.44000E-01	uG/ML	Zn	N	Y	KP39B
5850	ICP-LIQ	< 6.00000E-02	uG/ML	Zr	N	Y	KP39B
5895	As	< 5.00000E-03	uG/ML		N	Y	KP39B
5896	Se	6.49000E-03	uG/ML		N	Y	KP39B
5897	Hg-LIQ	< 5.00000E 00	uG/L		N	Y	KP39B
5926	TOC	OUT FOR RERUN					KP39B
5926	TOC	9.31100E 01	% RECOVERY		N	Y	KP39B
5950	ICP	1.03000E 02	% RECOVERY	Ag	N	Y	KP39B
5950	ICP	1.05520E 02	% RECOVERY	Ba	N	Y	KP39B
5950	ICP	1.04440E 02	% RECOVERY	Cd	N	Y	KP39B
5950	ICP	1.06240E 02	% RECOVERY	Cr	N	Y	KP39B
5950	ICP	1.07680E 02	% RECOVERY	Pb	N	Y	KP39B
5950	ICP	1.01440E 02	% RECOVERY	Al	N	Y	KP39B
5950	ICP	1.02760E 02	% RECOVERY	B	N	Y	KP39B
5950	ICP	1.05280E 02	% RECOVERY	Be	N	Y	KP39B
5950	ICP	1.06360E 02	% RECOVERY	Bi	N	Y	KP39B
5950	ICP	1.18840E 02	% RECOVERY	Ca	N	Y	KP39B
5950	ICP	1.08400E 02	% RECOVERY	Ce	N	Y	KP39B
5950	ICP	1.01800E 02	% RECOVERY	Co	N	Y	KP39B
5950	ICP	1.07680E 02	% RECOVERY	Cu	N	Y	KP39B
5950	ICP	1.07080E 02	% RECOVERY	Fe	N	Y	KP39B
5950	ICP	1.11640E 02	% RECOVERY	La	N	Y	KP39B
5950	ICP	1.07560E 02	% RECOVERY	Li	N	Y	KP39B
5950	ICP	1.10920E 02	% RECOVERY	Mg	N	Y	KP39B
5950	ICP	1.00720E 02	% RECOVERY	Mn	N	Y	KP39B
5950	ICP	9.79600E 01	% RECOVERY	Mo	N	Y	KP39B
5950	ICP	1.09000E 02	% RECOVERY	Na	N	Y	KP39B
5950	ICP	1.07680E 02	% RECOVERY	Nd	N	Y	KP39B
5950	ICP	1.05520E 02	% RECOVERY	Ni	N	Y	KP39B
5950	ICP	2.71310E 02	% RECOVERY	P	N	Y	KP39B

REPORT CONTINUED ON NEXT PAGE

SAMPLE STATUS REPORT FOR R 6331. PUREX 94219-01 TIME: 12/13/94 13:29
DISPATCHED: 9/ 7/94 11:12 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5950	ICP	1.08280E 02 % RECOVERY S	N	Y	KP39B
5950	ICP	1.00000E 02 % RECOVERY Sb	N	Y	KP39B
5950	ICP	1.01560E 02 % RECOVERY Si	N	Y	KP39B
5950	ICP	1.07200E 02 % RECOVERY Sm	N	Y	KP39B
5950	ICP	INCOMPLETE			KP39B
5950	ICP	1.05280E 02 % RECOVERY Sr	N	Y	KP39B
5950	ICP	1.03000E 02 % RECOVERY Ti	N	Y	KP39B
5950	ICP	9.67600E 01 % RECOVERY Tl	N	Y	KP39B
5950	ICP	1.04440E 02 % RECOVERY V	N	Y	KP39B
5950	ICP	9.97600E 01 % RECOVERY Zn	N	Y	KP39B
5950	ICP	1.03120E 02 % RECOVERY Zr	N	Y	KP39B
5995	As	1.07200E 02 % RECOVERY	N	Y	KP39B
5996	Se	9.02000E 01 % RECOVERY	N	Y	KP39B
5997	Hg	1.09600E 02 % RECOVERY	N	Y	KP39B

END OF REPORT

SAMPLE STATUS REPORT FOR R 6332 PUREX STD TIME: 12/13/94 13:30
DISPATCHED: 9/ 7/94 11:13 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 9/ 8/94 8:32

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	100.5% REC			KP39B
5526	TOC	OUT FOR RERUN			KP39B
5526	TOC	9.33000E 01 % RECOVERY	N	Y	KP39B
5550	ICP	1.04100E 02 % RECOVERY Ag	N	Y	KP39B
5550	ICP	1.02500E 02 % RECOVERY Ba	N	Y	KP39B
5550	ICP	1.04960E 02 % RECOVERY Cd	N	Y	KP39B
5550	ICP	1.05420E 02 % RECOVERY Cr	N	Y	KP39B
5550	ICP	1.05560E 02 % RECOVERY Pb	N	Y	KP39B
5550	ICP	1.02520E 02 % RECOVERY Al	N	Y	KP39B
5550	ICP	1.01440E 02 % RECOVERY B	N	Y	KP39B
5550	ICP	1.06740E 02 % RECOVERY Be	N	Y	KP39B
5550	ICP	1.03800E 02 % RECOVERY Bi	N	Y	KP39B
5550	ICP	1.09120E 02 % RECOVERY Ca	N	Y	KP39B
5550	ICP	1.04460E 02 % RECOVERY Ce	N	Y	KP39B
5550	ICP	1.05040E 02 % RECOVERY Co	N	Y	KP39B
5550	ICP	1.04940E 02 % RECOVERY Cu	N	Y	KP39B
5550	ICP	1.05440E 02 % RECOVERY Fe	N	Y	KP39B
5550	ICP	1.04120E 02 % RECOVERY La	N	Y	KP39B
5550	ICP	1.02580E 02 % RECOVERY Li	N	Y	KP39B
5550	ICP	1.01760E 02 % RECOVERY Mg	N	Y	KP39B
5550	ICP	1.02440E 02 % RECOVERY Mn	N	Y	KP39B
5550	ICP	1.04840E 02 % RECOVERY Mo	N	Y	KP39B
5550	ICP	1.01980E 02 % RECOVERY Na	N	Y	KP39B
5550	ICP	1.07040E 02 % RECOVERY Nd	N	Y	KP39B
5550	ICP	1.04360E 02 % RECOVERY Ni	N	Y	KP39B
5550	ICP	1.09000E 02 % RECOVERY P	N	Y	KP39B
5550	ICP	1.02520E 02 % RECOVERY S	N	Y	KP39B
5550	ICP	9.84000E 01 % RECOVERY Sb	N	Y	KP39B
5550	ICP	9.87400E 01 % RECOVERY Si	N	Y	KP39B
5550	ICP	1.05060E 02 % RECOVERY Sm	N	Y	KP39B
5550	ICP	1.02380E 02 % RECOVERY Sr	N	Y	KP39B
5550	ICP	1.01360E 02 % RECOVERY Ti	N	Y	KP39B
5550	ICP	1.02620E 02 % RECOVERY Tl	N	Y	KP39B
5550	ICP	1.03800E 02 % RECOVERY V	N	Y	KP39B
5550	ICP	1.05500E 02 % RECOVERY Zn	N	Y	KP39B
5550	ICP	1.03160E 02 % RECOVERY Zr	N	Y	KP39B
5595	As	1.13000E 02 % RECOVERY	N	Y	KP39B
5596	Se	1.06000E 02 % RECOVERY	N	Y	KP39B
5597	Hg	1.06000E 02 % RECOVERY	N	Y	KP39B

END OF REPORT

Table 1. Volatile Organics Analysis Results.

Customer ID	Lab. ID	Analyte	Results	Units	Quantitation Limit
94219-01	R6331	Vinyl Chloride	ND*	ug/L	50
		1,1-Dichloroethene	ND	ug/L	50
		Chloroform	ND	ug/L	50
		1,2-Dichloroethane	ND	ug/L	50
		2-Butanone	ND	ug/L	50
		Carbon Tetrachloride	ND	ug/L	50
		Trichloroethene	ND	ug/L	50
		Benzene	ND	ug/L	50
		Tetrachloroethene	ND	ug/L	50
		Chlorobenzene	ND	ug/L	50
		1-Butanol	225~	ug/L	50
		Pentadecane	280~	ug/L	50
		Dodecane	420**	ug/L	N/A
		Tridecane	6000**	ug/L	N/A
		Tetradecane	10000**	ug/L	N/A

* ND = none detected

~ Estimated value; spectra meet criteria, but response is below the quantitation limit.

** Estimated value; compound identification is tenative.

Attachment 2 to 9550164

PUREX G and R Cell, Part I, Loop Flush
Laboratory Analyses and Sample Results

SAMPLE REPORT DESCRIPTION

PUREX CANYON VESSELS - G & R CELL, PART I

SAMPLE NUMBER	SAMPLE REPORT DESCRIPTION
P2809	Screening sample on final flush from PUREX Laboratory. Used to determine if flush solution meets RCRA criteria.
E9201	Screening sample on final flush from 222-S Laboratory tested for total activity. Sample results used to determine if the off-site laboratory criteria for acceptance is met.
R6634 STD	Standard RCRA sample. Standard sample results indicating the percent recovery of the analyzed constituents. A tracer was injected to test the instrumentation precision in detecting concentration levels.
R6635 Blank	Blank sample
R6636 BODD50	RCRA protocol sample results from 222-S Laboratory
Data Sheet	Volatile organics analysis results

WESTINGHOUSE HANFORD COMPANY
GENERATOR & WASTE ACCEPTANCE SERVICES
WASTE PREDETERMINATION

DATE: January 4, 1995

SUBJECT	PUREX G and R Cell Vessels- Part 1 Flush Solution	REQUEST #	25489

TO	C. Villalobos	FACILITY	PUREX	MSIN	S6-19	PHONE	373-4753
ANALYST	Clay V. Hawkes			MSIN	T3-05	PHONE	372-0508
REVIEWER							
cc	File						

This waste predetermination is based on the MSDS information for products/materials listed in the predetermination request and was performed according to current State and Federal law (WAC 173-303 and 40 CFR 261). For questions or comments, please contact the Generator & Waste Acceptance Services analyst above and reference the request #. Thank you for your interest in waste predetermination.

			REGULATED ?				
Item #	MSDS #	Product/Material	Unused Product	Used Product	Empty Container	Rags with 10% Product	Possible Waste Codes
1	n/a	PUREX G and R Cell Vessels- Part 1 Flush Solution Lab Analysis	N	N	N	N	None

Comments: Based on the lab analysis for this waste, the flush solution does not designate as a Washington dangerous or extremely hazardous waste.

DISCLAIMER

This predetermination is believed accurate based on the information provided. Predeterminations are performed to assist generators in selecting less hazardous products. Since solid waste regulations are subject to constant revision, waste status may change without notice. Waste designations must be performed on all wastes by Generator & Waste Acceptance Services to assure proper disposal in the event products are spilled or contained within a waste matrix.

9613458.1043

SAMPLE STATUS REPORT FOR [redacted]G-8 TIME: 12/28/94 9:41
DISPATCHED: 11/16/94 15:37 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 11/16/94 19:19

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1004	APPR/OTR	<1% SOLIDS. BROWN & CLOUDY. 20mRAD/HR			KP32B
1383	Cr	2.50000E 00 uG/ML	N	Y	KP32B
1482	Cd	<.0036 uG/ML			KP32B
3203	pH	1.01800E 01 NONE	YES	Y	KP32B

LEVEL III ALERT - CONTROL FEATURE REQUIREMENT

A Limiting Control Setting or Limiting Condition for Process Operations may have been violated. IMMEDIATELY notify Shift Management and Process Engineering. Action is required to return process variable to within Process Control Manual Addendum limits or shut down affected operation.

4411	U	6.46000E-01 G/L	N	Y	KP32B
6016	Cd-STD	COMPLETE			KP32B
6022	Cr-STD	COMPLETE			KP32B

END OF REPORT

9613458.1044

SAMPLE STATUS REPORT FOR [redacted]. E-BLANK BODD50 TIME: 12/27/94 10:14
DISPATCHED: 11/21/94 13: 0 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 11/22/94 8: 2

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
1213	TB-FLTRT	8.34000E 02 uCi/L	N	Y	KP39B
1213	TB-FLTRT	1.69000E 03 uCi/L	N	Y	KP39B
1223	AT-FLTRT	1.70000E 00 uCi/L	N	Y	KP39B
1223	AT-FLTRT	2.60000E 00 uCi/L	N	Y	KP39B
2162	GEA-LIQ	1.89E-2 UCI/L CO-60 23%ERROR			KP39B
2162	GEA-LIQ	1.04E+0 UCI/L RURH-106 44%ERROR			KP39B
2162	GEA-LIQ	3.69000E 00 uCi/L Sb-125	N	Y	KP39B
2162	GEA-LIQ	2.44E-1 UCI/L CS-134 31%ERROR			KP39B
2162	GEA-LIQ	1.13E+0 UCI/L CEPR-144 29%ERROR			KP39B
2162	GEA-LIQ	1.07000E-01 uCi/L Eu-154	N	Y	KP39B
2162	GEA-LIQ	2.37E-1 UCI/L EU-155 36%ERROR			KP39B
2162	GEA-LIQ	2.44000E 00 uCi/L Am-241	N	Y	KP39B
2162	GEA-LIQ	4.40000E-01 uCi/L Co-60	N	Y	KP39B
2162	GEA-LIQ	1.25E-01 uCi/L ZR-95 28% ERROR			KP39B
2162	GEA-LIQ	2.29000E 01 uCi/L RuRh-106	N	Y	KP39B
2162	GEA-LIQ	1.08000E 01 uCi/L Sb-125	N	Y	KP39B
2162	GEA-LIQ	4.10000E-01 uCi/L Cs-134	N	Y	KP39B
2162	GEA-LIQ	5.21000E 01 uCi/L Cs-137	N	Y	KP39B
2162	GEA-LIQ	1.14000E 01 uCi/L CE-144	N	Y	KP39B
2162	GEA-LIQ	2.28000E 01 uCi/L CePr-144	N	Y	KP39B
2162	GEA-LIQ	1.58000E 00 uCi/L Eu-154	N	Y	KP39B
2162	GEA-LIQ	5.04000E 00 uCi/L Eu-155	N	Y	KP39B
2162	GEA-LIQ	1.32E+00 uCi/L 31% ERROR AM-241			KP39B
4271	TOT-ACT	1.25000E 06 pCi/G	N	Y	KP39B

END OF REPORT

9613458.1045

SAMPLE STATUS REPORT FOR [redacted]. PUREX STD TIME: 12/27/94 10:14
DISPATCHED: 11/21/94 13:43 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 11/21/94 14:45

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5513	pH	9.99000E 01 NONE 4993	N	Y	KP39B
5526	TOC	9.30000E 01 % RECOVERY 4994	N	Y	KP39B
5550	ICP	9.97000E 01 % RECOVERY Al 4995	N	Y	KP39B
5550	ICP	9.97000E 01 % RECOVERY B 4995	N	Y	KP39B
5550	ICP	1.00580E 02 % RECOVERY Ba 4995	N	Y	KP39B
5550	ICP	1.02160E 02 % RECOVERY Ca 4995	N	Y	KP39B
5550	ICP	1.04280E 02 % RECOVERY Cd 4995	N	Y	KP39B
5550	ICP	1.04920E 02 % RECOVERY Cr 4995	N	Y	KP39B
5550	ICP	1.01900E 02 % RECOVERY Cu 4995	N	Y	KP39B
5550	ICP	1.03000E 02 % RECOVERY Fe 4995	N	Y	KP39B
5550	ICP	9.30800E 01 % RECOVERY K 4995	N	Y	KP39B
5550	ICP	1.02580E 02 % RECOVERY La 4995	N	Y	KP39B
5550	ICP	9.73200E 01 % RECOVERY Mg 4995	N	Y	KP39B
5550	ICP	1.02060E 02 % RECOVERY Mn 4995	N	Y	KP39B
5550	ICP	9.96600E 01 % RECOVERY Na 4995	N	Y	KP39B
5550	ICP	1.03000E 02 % RECOVERY Ni 4995	N	Y	KP39B
5550	ICP	1.01200E 02 % RECOVERY P 4995	N	Y	KP39B
5550	ICP	1.03240E 02 % RECOVERY S 4995	N	Y	KP39B
5550	ICP	9.13600E 01 % RECOVERY Si 4995	N	Y	KP39B
5550	ICP	1.00320E 02 % RECOVERY Sr 4995	N	Y	KP39B
5550	ICP	9.94400E 01 % RECOVERY Ti 4995	N	Y	KP39B
5550	ICP	9.80000E 01 % RECOVERY U 4995	N	Y	KP39B
5550	ICP	1.03920E 02 % RECOVERY Zn 4995	N	Y	KP39B
5550	ICP	1.00740E 02 % RECOVERY Zr 4995	N	Y	KP39B
5550	ICP	1.00220E 02 % RECOVERY Ag 4995	N	Y	KP39B
5550	ICP	1.06200E 02 % RECOVERY Be 4995	N	Y	KP39B

REPORT CONTINUED ON NEXT PAGE

9613458.1046

SAMPLE STATUS REPORT FOR [redacted]. PUREX STD TIME: 12/27/94 10:14
DISPATCHED: 11/21/94 13:43 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
5550	ICP	9.97400E 01 % RECOVERY Bi	N	Y	KP39B
		4995			
5550	ICP	1.02500E 02 % RECOVERY Ce	N	Y	KP39B
		4995			
5550	ICP	1.04160E 02 % RECOVERY Co	N	Y	KP39B
		4995			
5550	ICP	1.00420E 02 % RECOVERY Li	N	Y	KP39B
		4995			
5550	ICP	1.02700E 02 % RECOVERY Mo	N	Y	KP39B
		4995			
5550	ICP	9.72000E 01 % RECOVERY Nd	N	Y	KP39B
		4995			
5550	ICP	1.01240E 02 % RECOVERY Pb	N	Y	KP39B
		4995			
5550	ICP	9.81600E 01 % RECOVERY Sb	N	Y	KP39B
		4995			
5550	ICP	1.01820E 02 % RECOVERY Sm	N	Y	KP39B
		4995			
5550	ICP	9.78800E 01 % RECOVERY Tl	N	Y	KP39B
		4995			
5550	ICP	1.02200E 02 % RECOVERY V	N	Y	KP39B
		4995			
5595	As	8.89000E 01 % RECOVERY	N	Y	KP39B
		4996			
5596	Se	1.11000E 02 % RECOVERY	N	Y	KP39B
		4997			
5597	Hg	1.05000E 02 % RECOVERY	N	Y	KP39B
		4998			

END OF REPORT

9613458.1047

SAMPLE STATUS REPORT FOR [redacted] PUREX [redacted] TIME: 12/27/94 10:14
DISPATCHED: 11/21/94 13:45 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 11/21/94 14:45

EXT.	DETER.	RESULTS OR STATUS	OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********	***	***	******
4502	VOA	COMPLETE			KP39B
		4992			
5695	As	< 5.00000E-03 uG/ML	N	Y	KP39B
		4996			
5696	Se	< 5.00000E-03 uG/ML	N	Y	KP39B
		4997			
5697	Hg	< 5.00000E-03 uG/ML	N	Y	KP39B
		4998			

END OF REPORT

9613458.1048

SAMPLE STATUS REPORT FOR [redacted]. PUREX [redacted] TIME: 12/27/94 10:14
DISPATCHED: 11/21/94 13:48 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 11/21/94 14:45

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
4502	VOA	COMPLETE				KP39B
		4992				
5713	pH	7.62000E 00 NONE		N	Y	KP39B
		4993				
5726	TOC	4.44000E 02 uG C/ML		N	Y	KP39B
		4994				
5750	ICP-LIQ	1.39000E 00 uG/ML	Al	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.93000E 01 uG/ML	Ca	N	Y	KP39B
		4995				
5750	ICP-LIQ	6.78000E-01 uG/ML	Cd	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.06000E 00 uG/ML	Cr	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.53000E 01 uG/ML	Fe	N	Y	KP39B
		4995				
5750	ICP-LIQ	6.60000E 00 uG/ML	K	N	Y	KP39B
		4995				
5750	ICP-LIQ	4.44000E-01 uG/ML	La	N	Y	KP39B
		4995				
5750	ICP-LIQ	5.30000E 00 uG/ML	Mg	N	Y	KP39B
		4995				
5750	ICP-LIQ	3.39000E 02 uG/ML	Mn	N	Y	KP39B
		4995				
5750	ICP-LIQ	5.71000E 02 uG/ML	Na	N	Y	KP39B
		4995				
5750	ICP-LIQ	2.56000E 00 uG/ML	Ni	N	Y	KP39B
		4995				
5750	ICP-LIQ	8.52000E 01 uG/ML	P	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.24000E 01 uG/ML	S	N	Y	KP39B
		4995				
5750	ICP-LIQ	6.06000E 00 uG/ML	Si	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.20000E-01 uG/ML	Sr	N	Y	KP39B
		4995				
750	ICP-LIQ	1.50000E-01 uG/ML	Ti	N	Y	KP39B
		4995				
750	ICP-LIQ	2.57000E 02 uG/ML	U	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.68000E-01 uG/ML	Zn	N	Y	KP39B
		4995				
5750	ICP-LIQ	1.39000E 00 uG/ML	Zr	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Ag	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	B	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Ba	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 3.00000E-02 uG/ML	Be	N	Y	KP39B
		4995				

REPORT CONTINUED ON NEXT PAGE

9613458.1049

SAMPLE STATUS REPORT FOR [redacted]. PUREX [redacted] TIME: 12/27/94 10:14
DISPATCHED: 11/21/94 13:48 SAMPLE HAS NOT BEEN SLURPED

EXT.	DETER.	RESULTS OR STATUS		OUT OF RANGE?	GOOD ANS?	CHARGE CODE
****	********	**********		***	***	******
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Bi	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Ce	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 1.20000E-01 uG/ML	Co	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Cu	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 6.00000E-02 uG/ML	Li	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	Mo	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Nd	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 6.00000E-01 uG/ML	Pb	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sb	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Sm	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 1.20000E 00 uG/ML	Tl	N	Y	KP39B
		4995				
5750	ICP-LIQ	< 3.00000E-01 uG/ML	V	N	Y	KP39B
		4995				
5795	As	< 5.00000E-03 uG/ML		N	Y	KP39B
		4996				
5796	Se	6.57000E-03 uG/ML		N	Y	KP39B
		4997				
5797	Hg LIQ	< 5.00000E-03 uG/ML		N	Y	KP39B
		4998				

END OF REPORT

SDG NARRATIVE - BODD50
Purex
December 12, 1994

VOLATILE ORGANIC ANALYSIS (by GC/MS)

The sample was analyzed by method LA-523-405 A-4, using a Hewlett-Packard 5970 GC/MS (WB92426). Data acquisition and reduction was performed on an H.P.-1000 computer, running RTE-A revision F, which includes Aquarius software from Environmental Testing and Certification Corp.

A 5.0 mL aliquot of the sample was purged and analyzed. The method blank used a 5 mL sample size. Holding time was exceeded by 5 days. The specific holding time for volatile organics analysis is 14 days as found in chapter 4, table 4-1 of SW-846. The sample had not been refrigerated as was called for in the procedure.

The System Monitoring Compounds (SMC) and Internal Standard Compounds (IS) were the same as those used in LA-523-401 A-1. Acceptance criteria for each is also contained in LA-523-401 A-1. The Matrix Spike Compounds (MS) used were the same as those LA-523-401 A-1. Acceptance criteria for each compound is also contained in LA-523-401 A-1. All acceptance criteria were met.

LMCS control limits for the VOA compounds were administratively set to the criteria listed in procedure LA-523-401 A-1 for System Monitoring Compounds (SMC). The LMCS standard for VOA is defined as the method blank analyzed at the start of each 12 hour analysis window. The LMCS codes for the SMC's are R256 for 1,2-Dichloroethane-d4, R258 for Toluene-d8, and R260 for Bromofluorobenzene.

The following table defines the qualifiers, called Q-flags, used in Form I.

Q-Flag	Definition
U	Indicates the compound was analyzed for but not detected; the U-flagged concentration number is the quantitation limit.
J	Indicates an estimated value for the target or tentatively identified compounds; spectra meet criteria but response is below the quantitation limit for the target compounds.
B	Compound was found in the blank.
D	Analysis was performed on a diluted sample.
E	Indicates that quantitation was above the calibration range.

9613458.1051

N	Indicates the presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

D.E. NELSON D E Nelson 12/13/94
J.B DELAROSA-CHANG J de la Rosa-Chang 12/13/94
Organic Chemistry

9613458.1052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BODD50

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODD50

Matrix: (soil/water) WATER Lab Sample ID: R-6636

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AL09D

Level: (low/med) LOW Date Received: 11/21/94

% Moisture: not dec. Date Analyzed: 12/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	81.	
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	62.	
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	18.	
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
133-02-7	Xylene (total)	10.	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BODD50

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: BODD50

Matrix: (soil/water) WATER Lab Sample ID: R-6636

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AL09D

Level: (low/med) LOW Date Received: 11/21/94

% Moisture: not dec. Date Analyzed: 12/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71363	1-Butanol	9.32	11.	J
2.	1120214	Undecane	20.57	50.	JN
3.	112403	Dodecane	23.26	710.	JN
4.		Unknown	24.83	9.	J
5.	629505	Tridecane	25.57	620.	JN
6.	629594	Tetradecane	27.68	140.	JN
7.					
8.					
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Attachment 3 to 9550164

Transmittal Letter to Ecology and the EPA

9613458.1055

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. N. Villalobos, 373-4753	O. A. Farabee, RL	9550164

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT K CELL AND G AND R CELL, PART I, LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		R. W. Bailey	S5-66	X
		R. J. Bliss	B3-04	
		D. G. Hamrick	S6-15	X
	1/17/95	D. G. Harlow	S6-19	
		S. A. Hays	S6-19	
		L. E. Hetzer	S6-15	
		G. J. LeBaron	S6-19	X
		L. F. Perkins	S6-15	
		J. R. Robertson	H6-21	X
		M. J. Stephenson	H6-20	
		C. N. Villalobos	S6-19	X

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JAN 24 1995
CORRESPONDENCE CONTROL

'entire dist' 376-3750 bjh

54-6000-117 (9/88) WEF008

9613458.1056

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

9501095

FEB 15 1995

95-PUREX-005

RECEIVED
FEB 27 1995
CORRESPONDENCE CONTROL

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. M. N. Jaraysi
200 Area Unit Supervisor
State of Washington Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336

Dear Messrs. Sherwood and Jaraysi:

TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION (PUREX) PLANT K CELL AND G AND R CELLS, PART I, LOOP FLUSH ANALYTICAL RESULTS

Enclosures 1 and 2 are laboratory analytical and sample results conducted on the final flush for the PUREX Facility K Cell and G and R Cell, Part I, canyon vessels. These results are transmitted in accordance with U.S. Department of Energy, Richland Operations Office/Westinghouse Hanford Company agreement with the State of Washington Department of Ecology and the U.S. Environmental Protection Agency.

Please note in Enclosure 2, the sample delivery group narrative for PUREX Sample BODD50 Volatile Organic Analysis. It notes the deviations in meeting the holding time and proper refrigeration of the sample.

Analytical results from future flushes will be transmitted as they are obtained.

D. G. HAMRICK
☐ COPY ☐ FILE TICKLE_____
FEB 23 1995
TO:_____
☐ FOR ACTION ☐ COMMENTS ?
☐ FYI ☐ PLEASE RETURN

A copy of the Predetermination Reports, designating the final flush solution based on the analytical results, are also included in Enclosures 1 and 2. The final flush was designated as non-dangerous waste.

If you have any questions, please call L. D. Romine, PUREX Program Manager, on 376-4747.

Sincerely,

O. A. Farabee, Acting Director
Transition Program Division

TPD:EJS

Enclosures

cc w/encl:
D. L. Duncan, EPA
David Lundstrom, Ecology

cc w/o encl:
[redacted]
G. J. LeBaron, WHC

9613458.1058

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
O. A. Farabee, RL (D. G. Hamrick, WHC)	D. R. Sherwood, EPA D. Lundstrom, Ecology	Incoming 9501095 Xref 9550164

Subject: TRANSMITTAL OF PLUTONIUM-URANIUM EXTRACTION PLANT K CELL AND G AND R CELL, PART I, LOOP FLUSH ANALYTICAL RESULTS

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	
		R. W. Bailey	S5-66	
		R. J. Bliss (Sr. Staff)	B3-04	
		D. G. Hamrick (Assignee)	S6-15	
		D. G. Harlow	S6-19	
		S. A. Hays	S6-19	
		L. E. Hetzer	S6-15	
		G. J. LeBaron	S6-19	
		L. F. Perkins	S6-15	
		J. R. Robertson	H6-21	
		M. J. Stephenson	H6-20	
		C. N. Villalobos	S6-19	

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FEB 27 1995
CORRESPONDENCE CONTROL

9613458.1059

Westinghouse
Hanford Company

Internal
Memo K-cell

From: Program Support
Phone: 373-4225 T6-06
Date: October 5, 1994
Subject: VOLATILE ORGANIC ANALYSIS RESULTS - R6331

8E480-94-100

To: M. M. Gretsinger S6-19

cc: K. E. Bell T6-06
J. D. Farren S6-18
A. L. Fishback S5-51
C. H. Merry S5-65
G. J. Lebaron S6-19
N. Shrivastava S6-18
JGK File/LB

The attached analytical results have been obtained for the indicated sample which was submitted to the 222-S Laboratory. A narrative discussing the sample and analysis follows, and a summary of the results are presented in Tables 1 and 2.

Laboratory ID: R6331 Submitted by: M. M. Gretsinger

Customer ID: 94219-01 Matrix: Water

Laboratory submittal date: 09/07/94

If there are any questions regarding this data, please feel free to reach me at 373-1629.

Sincerely,

John Krsit

John G. Krsitofzski
Program Support

kb

Attachments Table 1 (1-page)
Table 2 (1-page)
Volatile Organics Package (111-pages)

K-cell

Table 1. Volitile Organics Analysis Results.

Customer ID	Lab. ID	Analyte	Results	Units	Quantitation Limit
94219-01	R6331	Vinyl Chloride	ND*	ug/L	50
		1,1-Dichloroethene	ND	ug/L	50
		Chloroform	ND	ug/L	50
		1,2-Dichloroethane	ND	ug/L	50
		2-Butanone	ND	ug/L	50
		Carbon Tetrachloride	ND	ug/L	50
		Trichloroethene	ND	ug/L	50
		Benzene	ND	ug/L	50
		Tetrachloroethene	ND	ug/L	50
		Chlorobenzene	ND	ug/L	50

* ND = none detected

376-2216

Table 2. Tentatively Identified Volitile Organics Compounds.

Customer ID	Lab. ID	Analyte	Results	Units	Quantitation Limit
94219-01	R6331	1-Butanol	225*	ug/L	50
		Dodecane	420**	ug/L	50
		Tridecane	6000**	ug/L	50
		Tetradecane	10000**	ug/L	50
		Pentadecane	280*	ug/L	50

* Estimated value; spectra meet criteria, but response is below the quantitation limit.

** Estimated value; response is below the quantitation limit and compound identification is based on a mass spectral library search.

9613458.1062

ORGANICS (SDG) INVENTORY SHEET

PAGE NO.

Inventory Sheet 1

SDG Case Narrative 3

Volatiles Data

a. QC Summary
- Surrogate Percent Recovery Summary (Form II VOA) 4
- Lab Control Sample Recovery (Form III VOA) 5
- Method Blank Summary (Form IV VOA) 6
- Tuning and Mass Calibration (Form V VOA) 7
- Internal Standard Area and RT Summary (Form VIII VOA) 8

b. Sample Data
- TCL Results - (Form I VOA) 9
- Tentatively Identified Compounds (Form I VOA-TIC) 10
- Reconstructed total ion chromatograms (RIC)
  - Raw spectra and background-subtracted mass spectra of target compound identified
  - Mass spectra of all reported TICs with three best library matches

c. Standards Data (All Instruments)
- Initial Calibration Data (Form VI VOA) 26
- RICs and Quan Reports for all Standards
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d. QC Data
- BFB 69
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- Matrix Spike Data 94
- Matrix Spike Duplicate Data 102

ORGANICS (SDG) INVENTORY SHEET (Continued)

Miscellaneous Data

Original preparation and analysis forms or copies of preparation and analysis logbook pages 109

Other Records (describe or list)

Request for Special Analysis # 2080 111

Comments: This document consists of pages 1 through 111, plus memorandum number 8E480-94-100, dated October 6, 1994.

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

SDG NARRATIVE - PUREX
K-Cell
September 12, 1994

VOLATILE ORGANICS

SDG Number R-6331

The initial GC/MS calibration and continuing calibration met all protocols for RCRA analysis. All mass spectral tuning requirements were met for all standards and sample. The method blank met all applicable protocols and requirements. All internal standards and system monitoring compounds retention times and peak areas met all protocols. All system monitoring compound recoveries were within the required limits. The sample holding time was met. A small sample size was used because of excessive foaming. A Matrix Spike and Matrix Spike Duplicate were run and met all protocols. The sample vial was about three fourths full leaving a large headspace.

D.E. NELSON — D E Nelson 9-13-94
J.B. DELAROSA-CHANG — JdeLaRosa-Chang 9-13-94
Organic Chemistry

54-7600-075

Hanford Operations and Engineering Contractor for the US Department of Energy

9613458.1065

2A - RCRA
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	VBLK25	102	101	92		0
02	R-6331	104	101	96		0
03	R-6331MS	99	102	92		0
04	R-6331MSD	102	106	90		0
05						
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	QC LIMITS
SMC1 (TOL) = Toluene-d8	(88-110)
SMC2 (BFB) = Bromofluorobenzene	(86-115)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM II VOA-1

3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix Spike - EPA Sample No.: R-6331

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.00	0.00	43.00	86	61-145
Trichloroethene	50.00	0.00	50.00	100	71-120
Benzene	50.00	0.00	54.00	110	76-127
Toluene	50.00	0.00	52.00	100	76-125
Chlorobenzene	50.00	0.00	52.00	100	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.00	43.00	86	0	14	61-145
Trichloroethene	50.00	49.00	98	2	14	71-120
Benzene	50.00	53.00	110	0	11	76-127
Toluene	50.00	53.00	110	9	13	76-125
Chlorobenzene	50.00	53.00	110	9	13	75-130

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

* Values outside of qc limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

9613458.1067

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK25

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Lab File ID: >AI09C Lab Sample ID: VBLK25

Date Analyzed: 9/09/94 Time Analyzed: 10:39

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: 70 2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	R-6331	R-6331	>AI09D	11:37
02	R-6331MS	R-6331MS	>AI09E	13:51
03	R-6331MSD	R-6331MSD	>AI09F	14:32
04				
05				
06				
07				
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COMMENTS:

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5A - RCRA
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Lab File ID: >AI09A BFB Injection Date: 9/09/94

Instrument ID: 70 2 BFB Injection Time: 9:07

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	19.1
75	30.0 - 60.0% OF MASS 95	48.4
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	7.5
173	Less than 2.0% of mass 174	.2(.2)1
174	Greater than 50% of mass 95	85.0
175	5.0 - 9.0% of mass 174	6.1(7.2)1
176	95.0 - 101.0% of mass 174	84.2(99.0)1
177	5.0 - 9.0% of mass 176	5.6(6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	VSTD050	>AI09B	9/09/94	9:40
02	VBLK25	VBLK25	>AI09C	9/09/94	10:39
03	R-6331	R-6331	>AI09D	9/09/94	11:37
04	R-6331MS	R-6331MS	>AI09E	9/09/94	13:51
05	R-6331MSD	R-6331MSD	>AI09F	9/09/94	14:32
06					
07					
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FORM V VOA

9613458.1069

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Lab File ID (Standard): >AI09B Date Analyzed: 9/09/94

Instrument ID: 70 2 Time Analyzed: 9:40

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	115051.	6.05	453253.	8.23	378263.	13.86
	UPPER LIMIT	230102.	6.55	906506.	8.73	756526.	14.36
	LOWER LIMIT	57525.	5.55	226627.	7.73	189131.	13.36
	EPA SAMPLE NO.						
01	VBLK25	115716.	6.06	449985.	8.26	366070.	13.88
02	R-6331	102282.	6.09	403031.	8.27	334691.	13.89
03	R-6331MS	109082.	6.08	407231.	8.27	351003.	13.89
04	R-6331MSD	109059.	6.07	411618.	8.26	343693.	13.89
05							
06							
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21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

BEST AVAILABLE COPY

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits

9613458.1070

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

R-6331

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: R-6331

Sample wt/vol: 1 (g/mL) ML Lab File ID: >AI09D

Level: (low/med) LOW Date Received: 09/07/94

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	50.	U
75-35-4	1,1-Dichloroethene	50.	U
67-66-3	Chloroform	50.	U
107-02-2	1,2-Dichloroethane	50.	U
78-93-3	2-Butanone	50.	U
56-23-5	Carbon Tetrachloride	50.	U
79-01-6	Trichloroethene	50.	U
71-43-2	Benzene	50.	U
127-18-4	Tetrachloroethene	50.	U
108-90-7	Chlorobenzene	50.	U

FORM I VOA 3/90

9613458.1071

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

R-6331

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: R-6331

Sample wt/vol: 1 (g/mL) ML Lab File ID: >AI09D

Level: (low/med) LOW Date Received: 09/07/94

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71363	1-Butanol	9.31	225.	J
2.	112403	Dodecane	23.10	420.	JN
3.	629505	Tridecane	25.47	6000.	JN
4.	629594	Tetradecane	27.70	10000.	JN
5.	629629	Pentadecane	29.83	280.	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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28.					
29.					
30.					

9613458.1072

9/12/94

QUANT REPORT

Operator ID: JOY

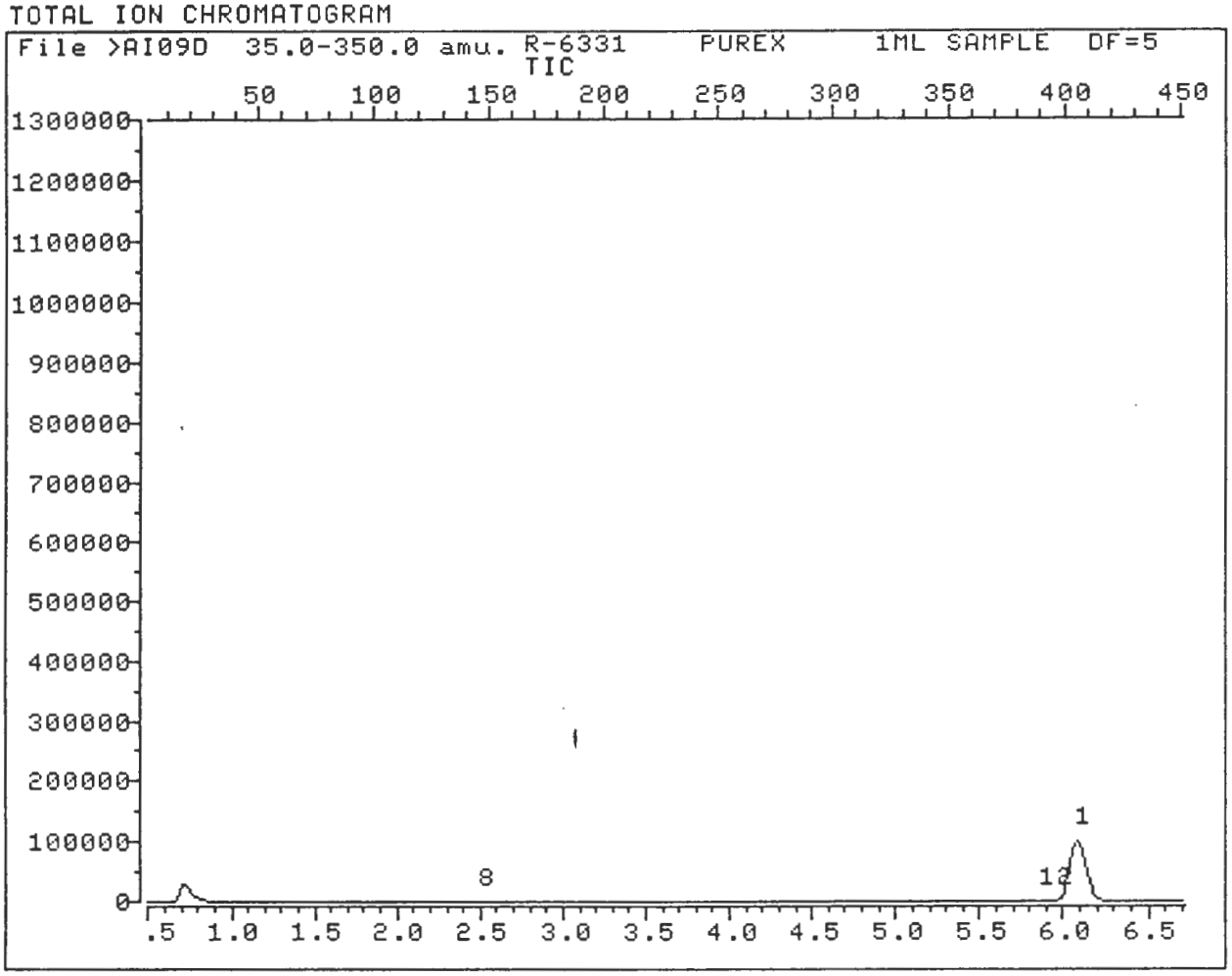
Quant Rev: 7 Quant Time: 940909 12:09
Output File: ^AI09D::D2 Injected at: 940909 11:37
Data File: >AI09D::D5 Dilution Factor: 1.00000
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.08	128.0	102282	9/12/94 50.00	UG/L	85
~~8)~~	~~ACETONE~~ No DEN 9-12-94	2.52	43.0	861M	JPC 2.88	UG/L	90
~~12)~~	~~2-BUTANONE~~ No DEN 9-12-94	5.92	43.0	614M	9/12/94 .778	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.23	65.0	133625	JPC 47.75	UG/L	90
16)	*1,4-DIFLUOROBENZENE	8.27	114.0	403031	50.00	UG/L	90
29)	*CHLOROBENZENE-d5	13.89	117.0	334691	50.00	UG/L	87
31)	TOLUENE-d8	11.03	98.0	377217	9/12/94 52.09	UG/L	96
~~37)~~	~~XYLENE (TOTAL)~~ No DEN 9-12-94	14.55	106.0	647M	JPC .215	UG/L	90
39)	BROMOFLUOROBENZENE	16.45	95.0	264149	50.45	UG/L	90

* Compound is ISTD

TOTAL ION CHROMATOGRAM



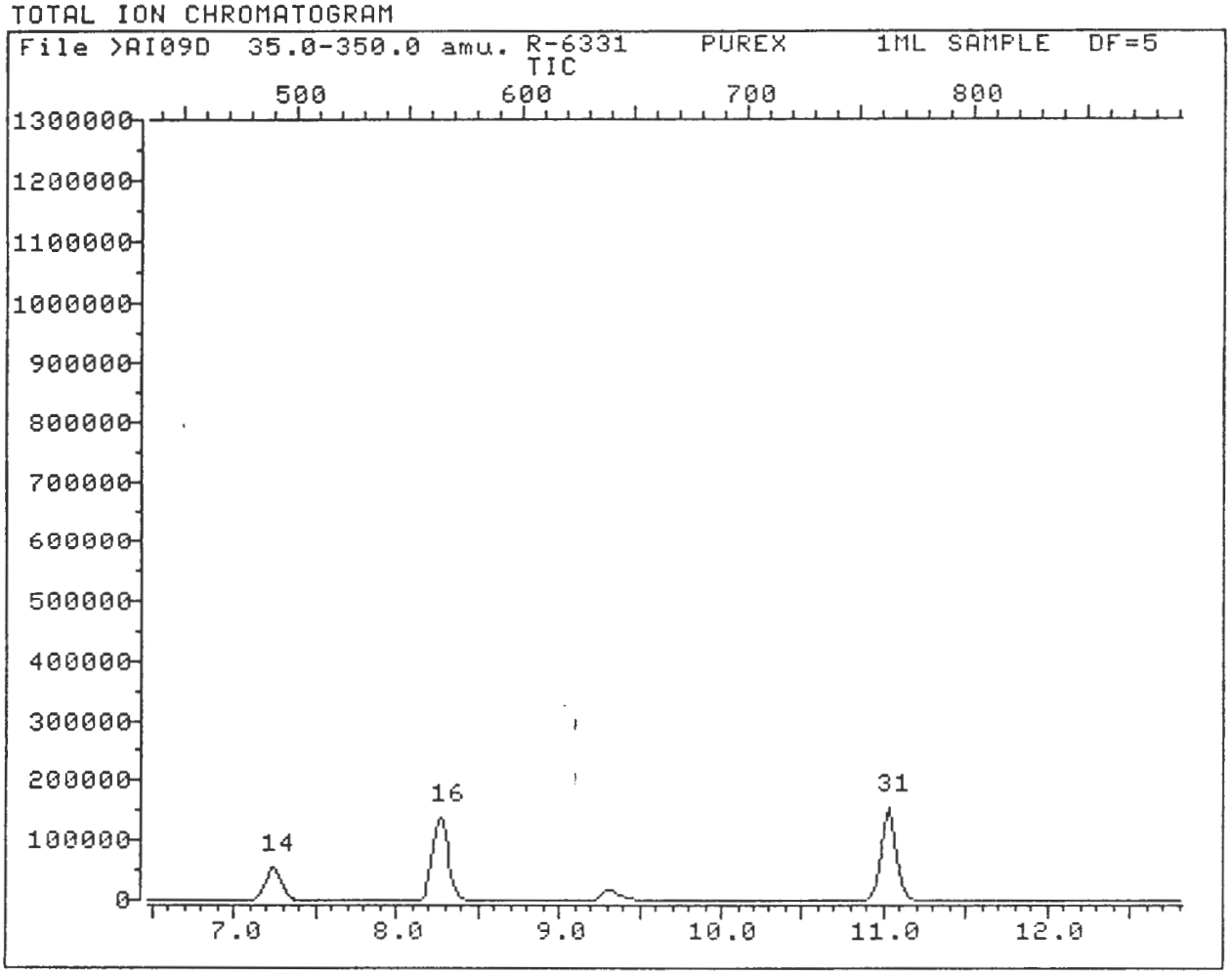
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 12:09
Injected at: 940909 11:37

Page 1 of 5

TOTAL ION CHROMATOGRAM



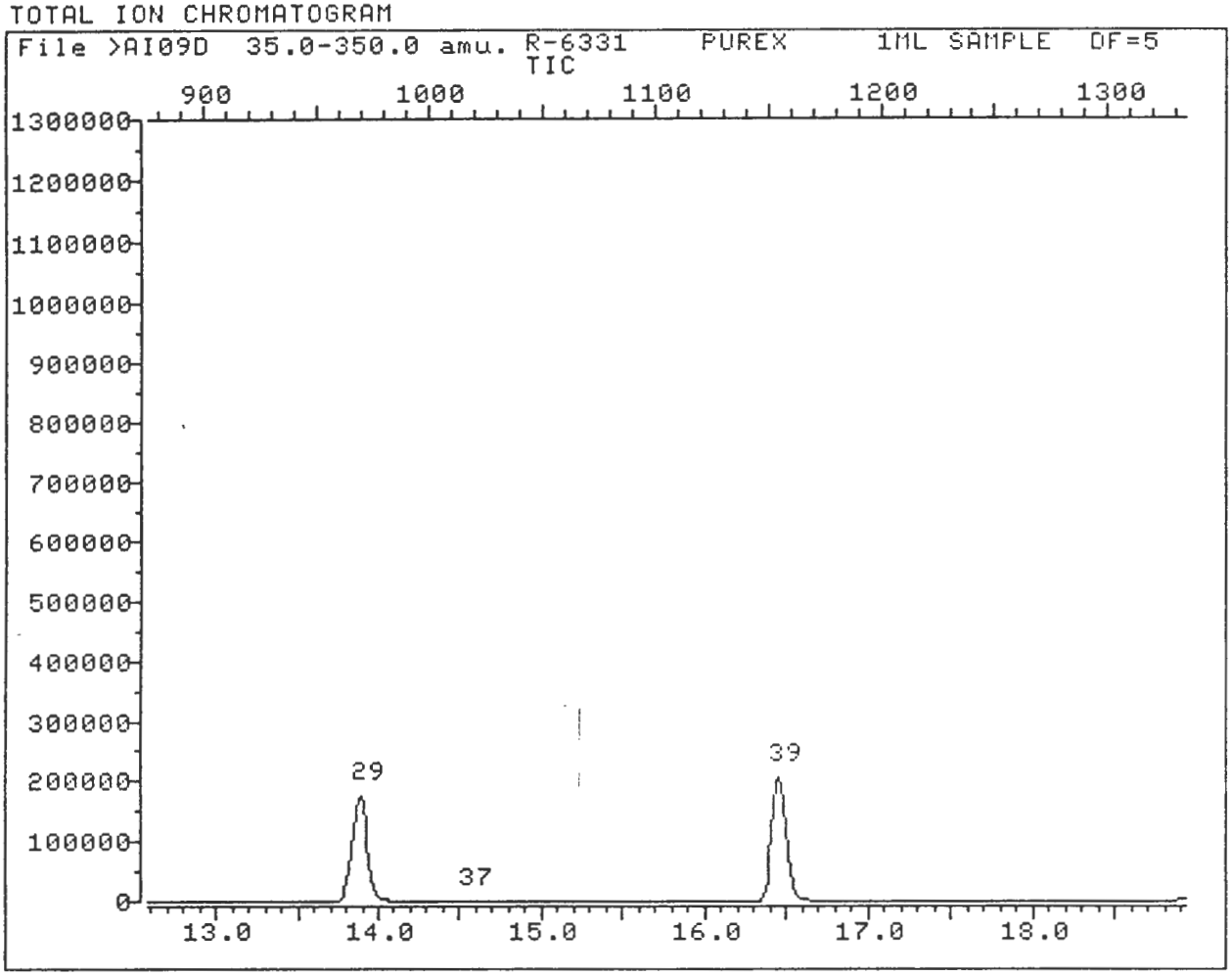
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 12:09
Injected at: 940909 11:37

Page 2 of 5

TOTAL ION CHROMATOGRAM



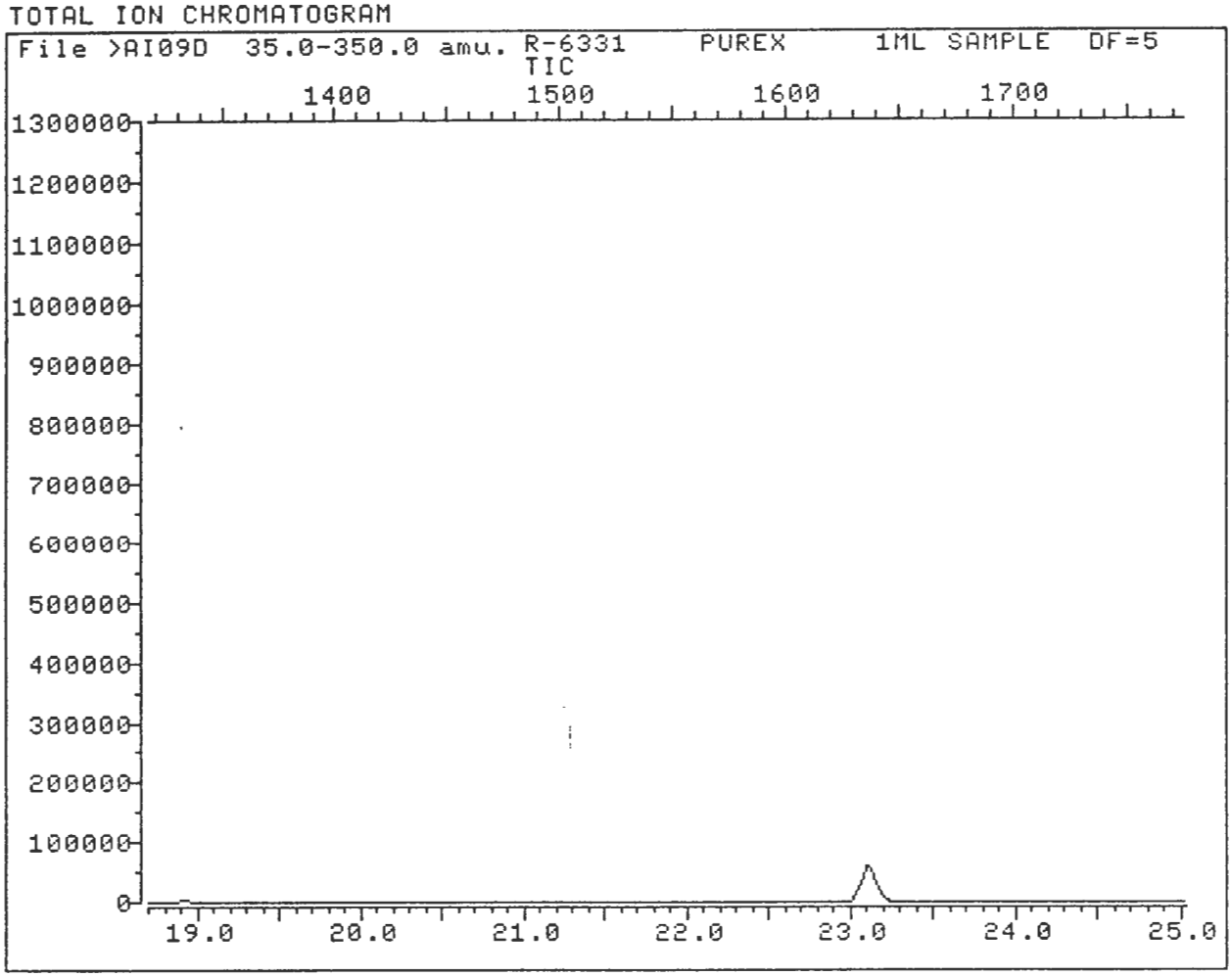
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 12:09
Injected at: 940909 11:37

Page 3 of 5

TOTAL ION CHROMATOGRAM



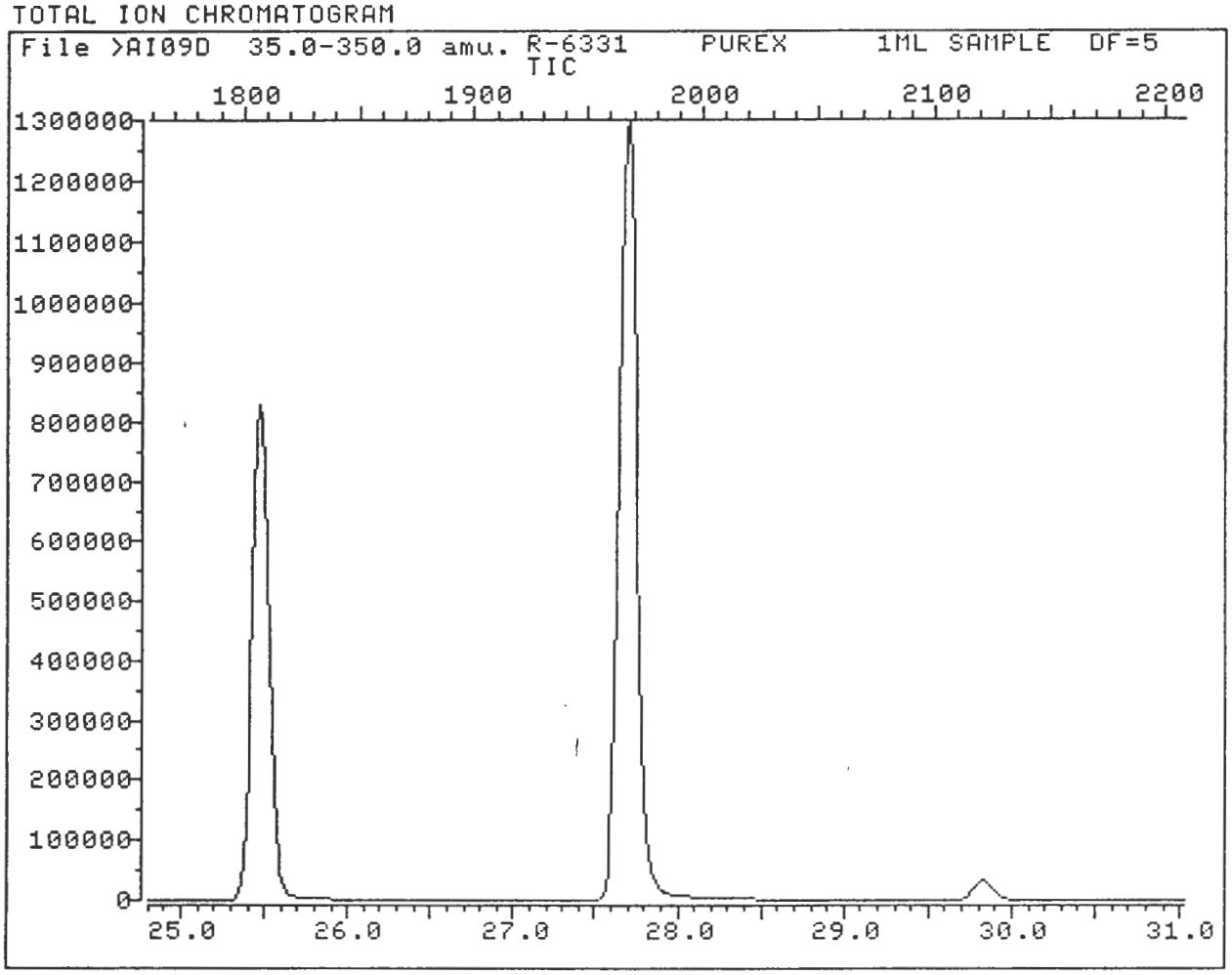
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 12:09
Injected at: 940909 11:37

Page 4 of 5

TOTAL ION CHROMATOGRAM



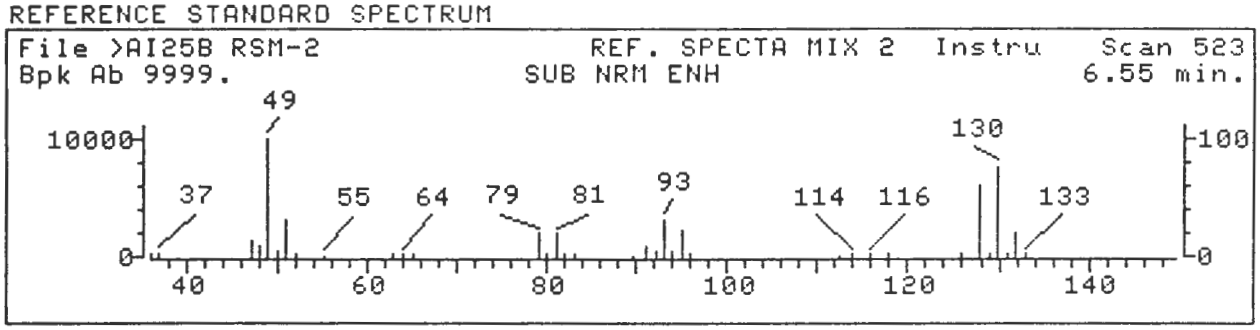
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

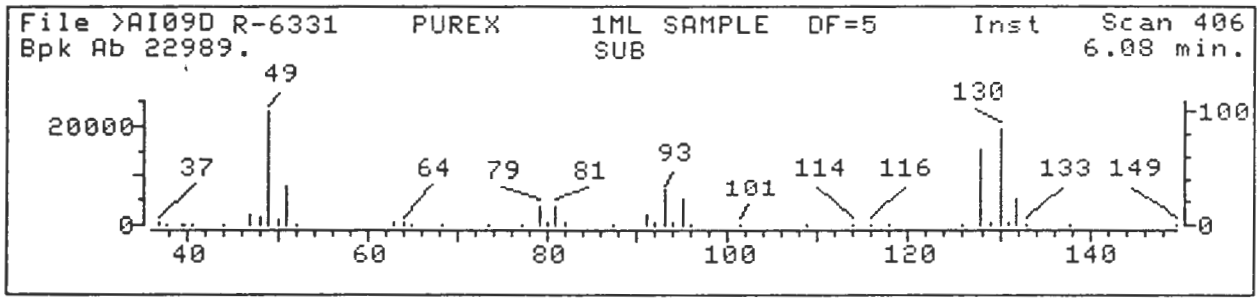
Operator ID: JOY
Quant Time : 940909 12:09
Injected at: 940909 11:37

Page 5 of 5

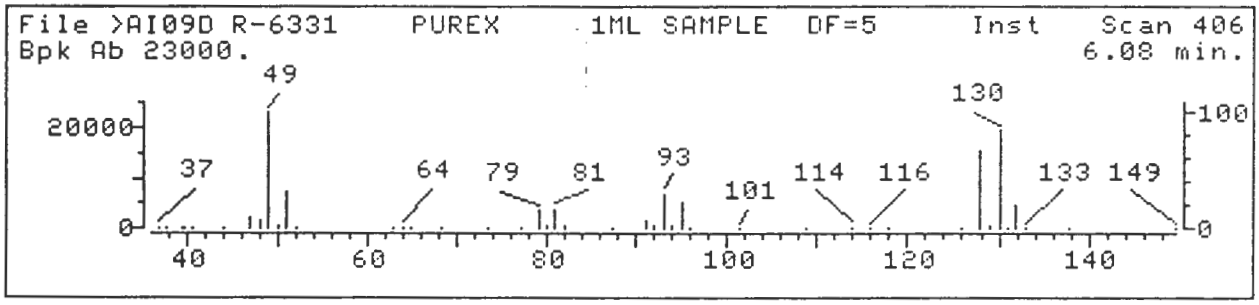
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



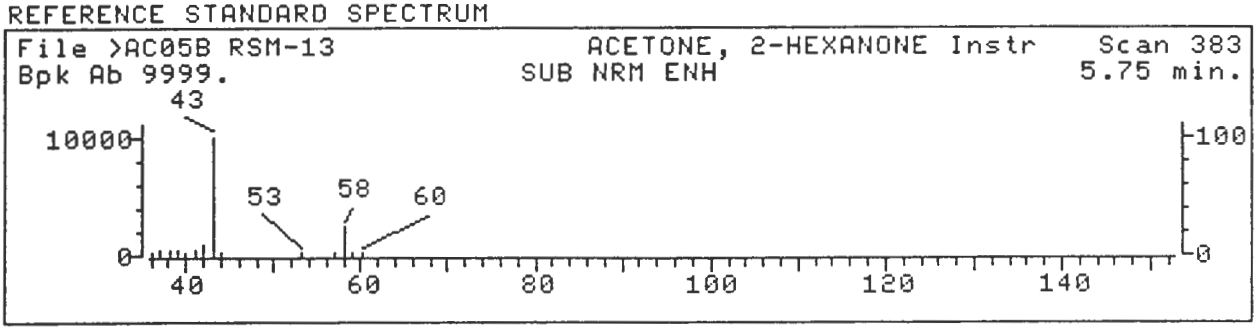
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 1 (ISTD)
Compound Name : BROMOCHLOROMETHANE
Scan Number : 406
Retention Time: 6.08 min.
Quant Ion : 128.0
Area : 102282
Concentration : 50.00 UG/L
q-value : 85

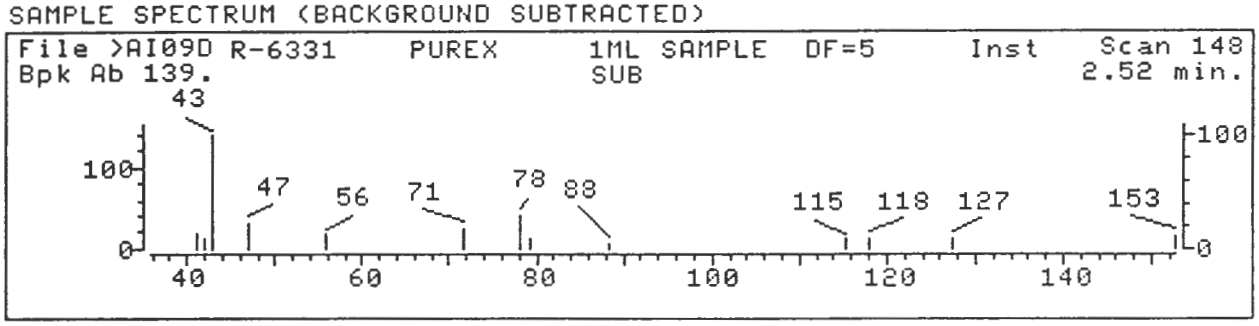
DEM
9-12-94

9613458.1079

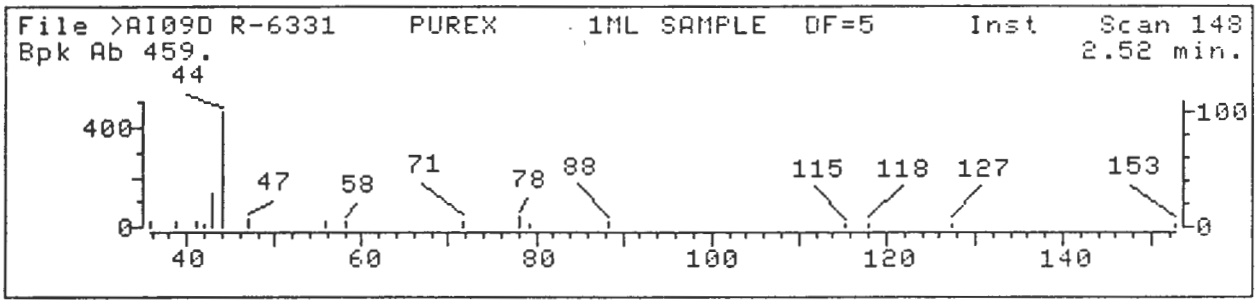
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

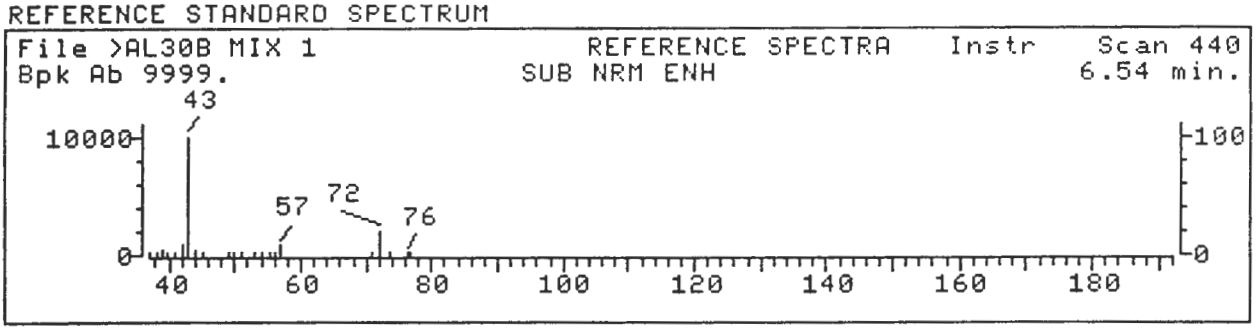


Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

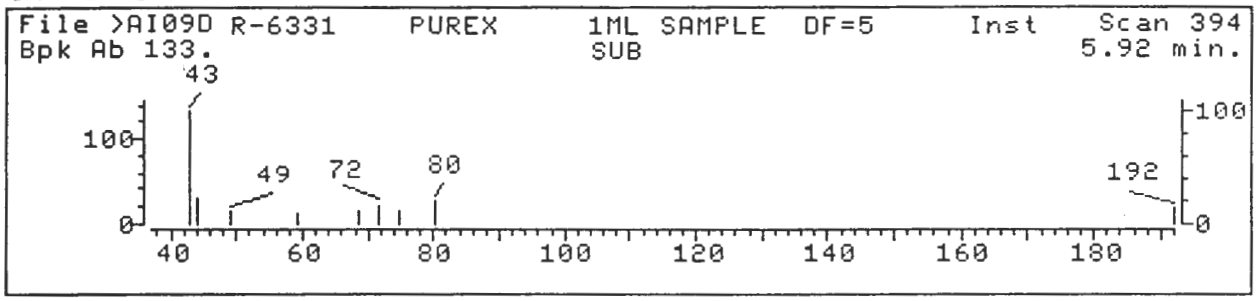
Compound No : 8
Compound Name : ACETONE
Scan Number : 148
Retention Time: 2.52 min.
Quant Ion : 43.0
Area : 861M
Concentration : 2.88 UG/L
q-value : 90

No
DEM
9-12-94

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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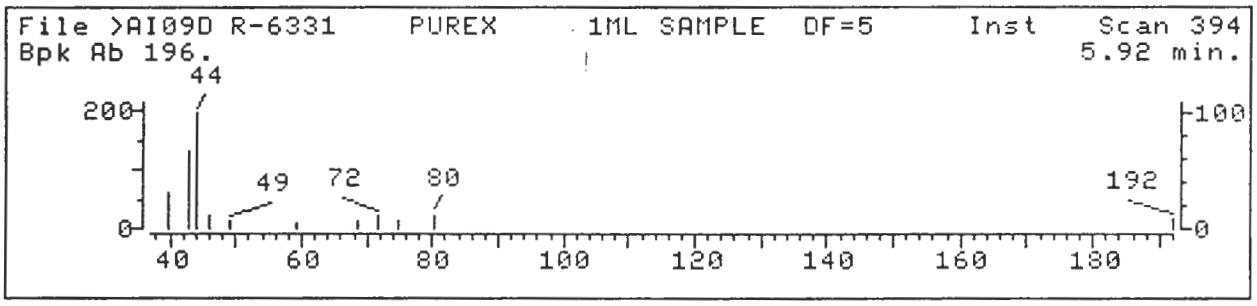


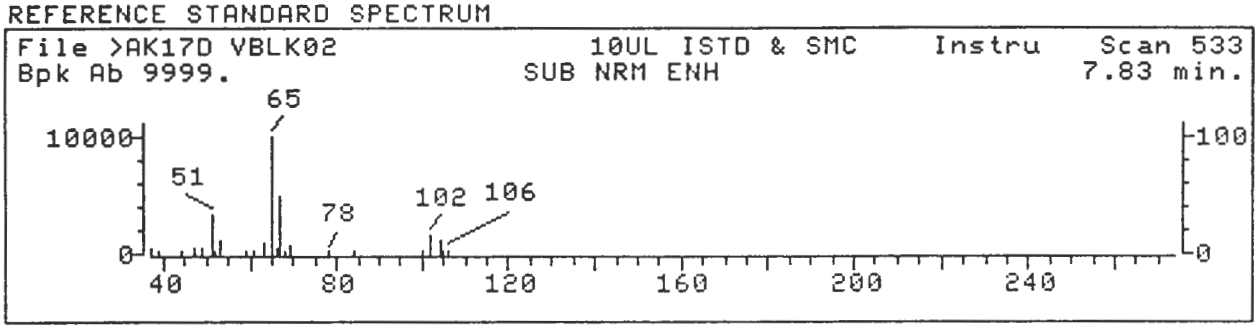
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 12
Compound Name : 2-BUTANONE
Scan Number : 394
Retention Time: 5.92 min.
Quant Ion : 43.0
Area : 614M
Concentration : .778 UG/L
q-value : 100

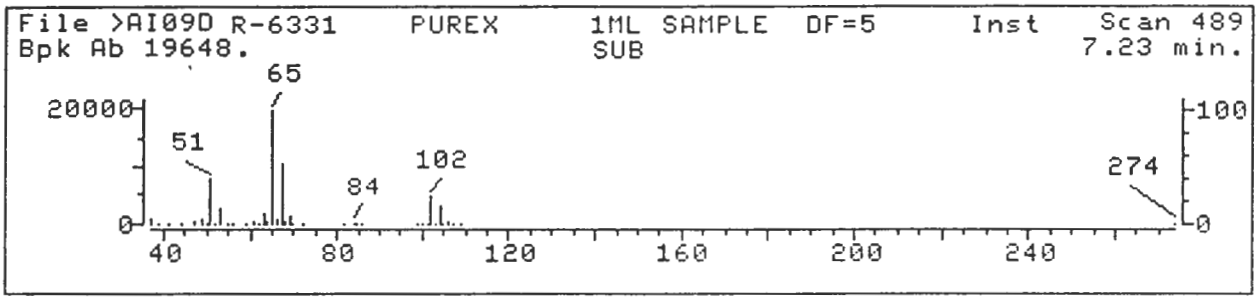
No
DEM
9-12-94

9613458.1081

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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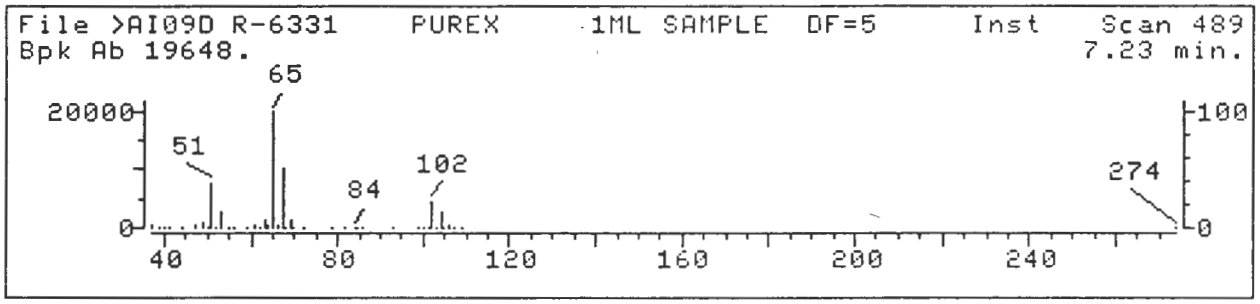
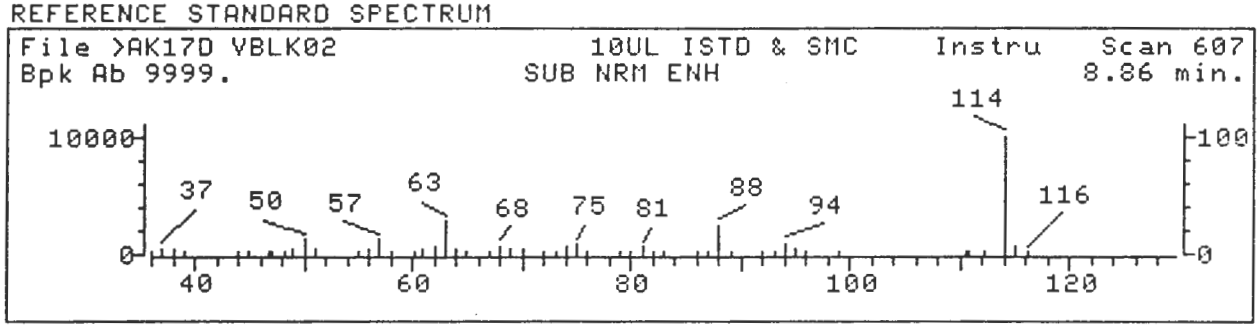


Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

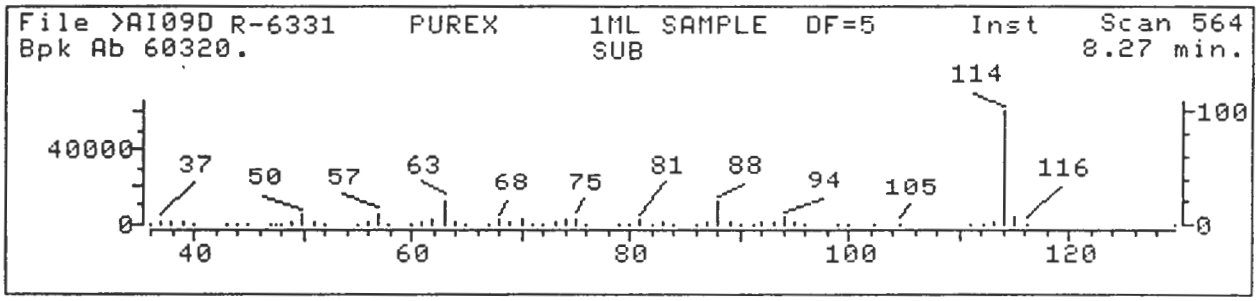
Compound No : 14
Compound Name : 1,2-DICHLOROETHANE-d4
Scan Number : 489
Retention Time: 7.23 min.
Quant Ion : 65.0
Area : 133625
Concentration : 47.75 UG/L
q-value : 90

DEN
9-12-94

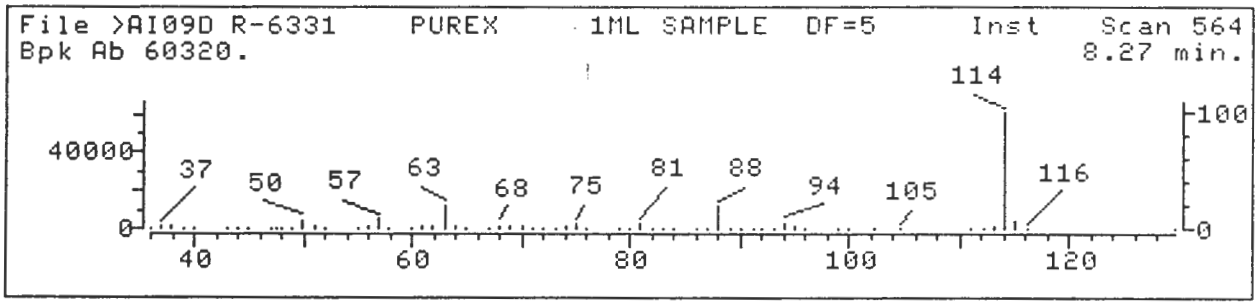
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

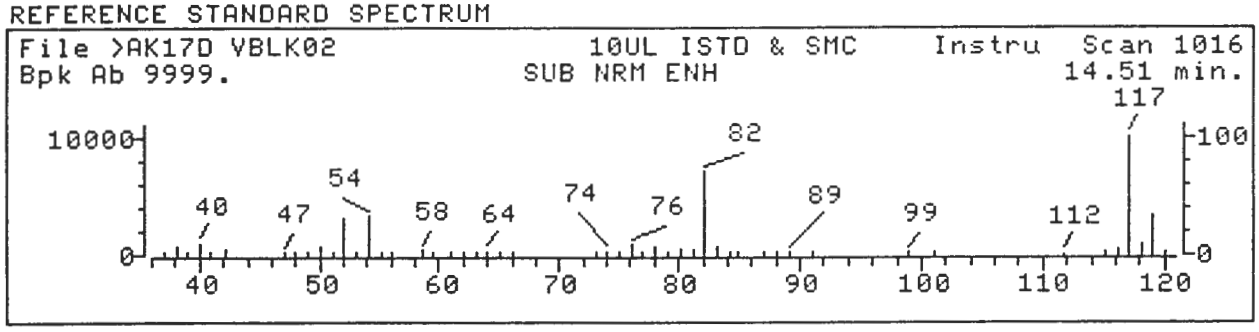


Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

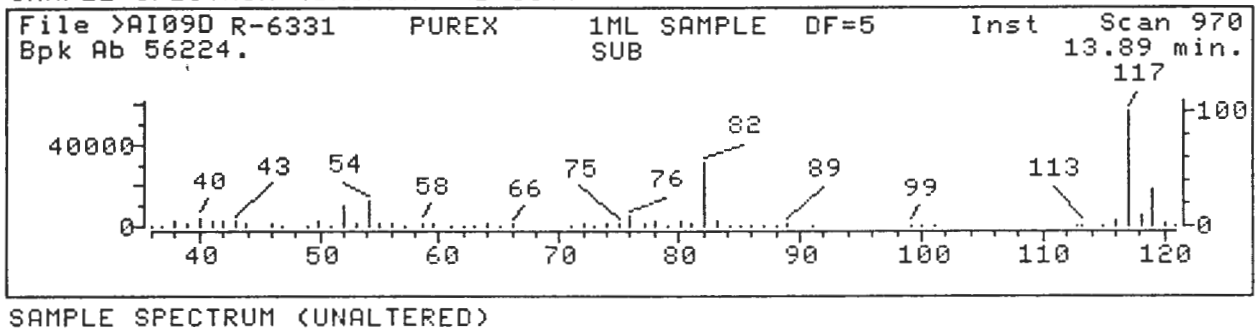
Compound No : 16 (ISTD)
Compound Name : 1,4-DIFLUOROBENZENE
Scan Number : 564
Retention Time: 8.27 min.
Quant Ion : 114.0
Area : 403031
Concentration : 50.00 UG/L
q-value : 90

DEN
9-12-94

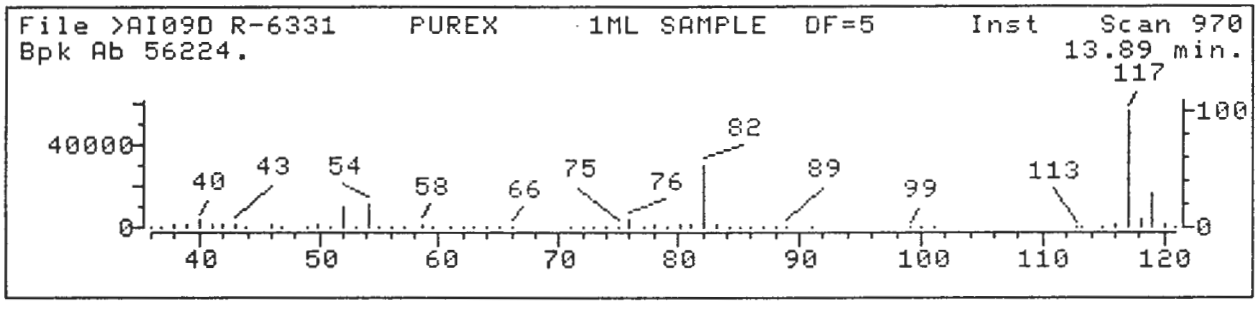
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



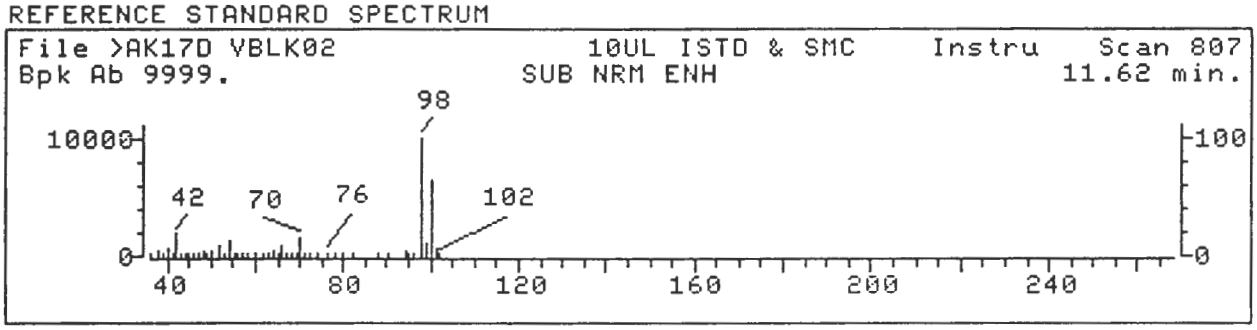
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 29 (ISTD)
Compound Name : CHLOROBENZENE-d5
Scan Number : 970
Retention Time: 13.89 min.
Quant Ion : 117.0
Area : 334691
Concentration : 50.00 UG/L
q-value : 87

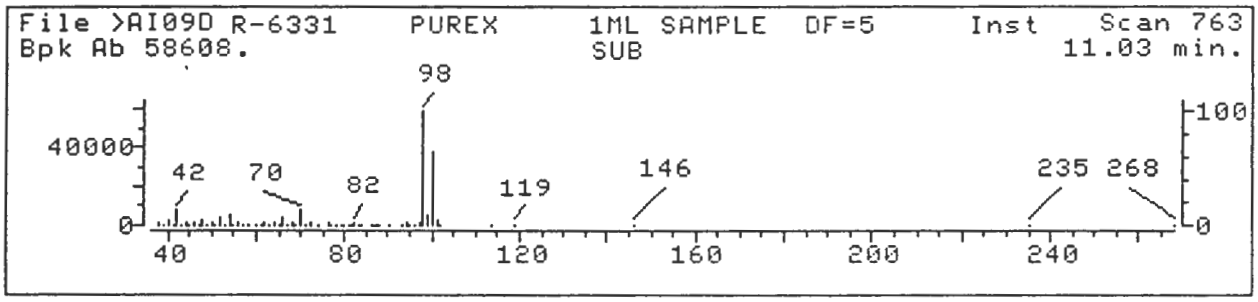
9-12-94

9613458.1084

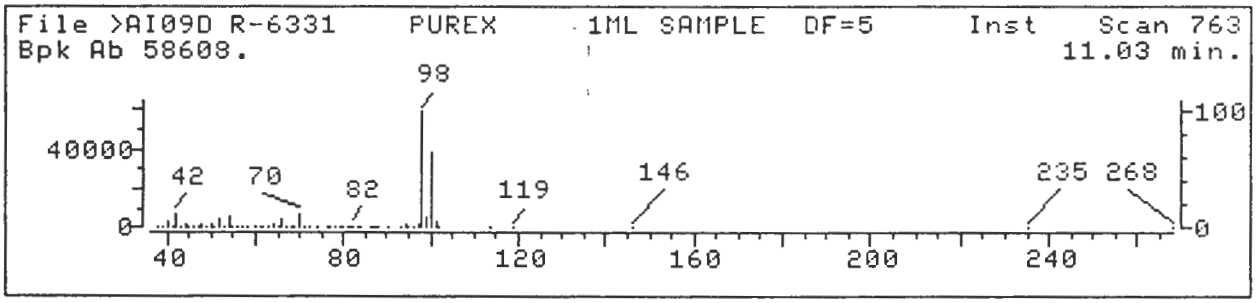
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

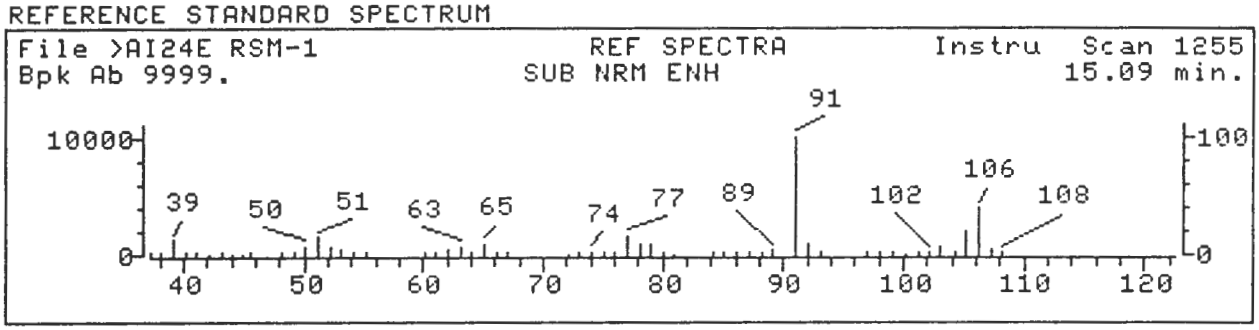


Data File: >AI09D::D5
Quant Output File: ^AI09D::D2
Name: R-6331 PUREX
Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5
Instrument ID: 70 2
Quant Time: 940909 12:09
Quant ID File: ID_VOA::QT
Injected at: 940909 11:37
Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

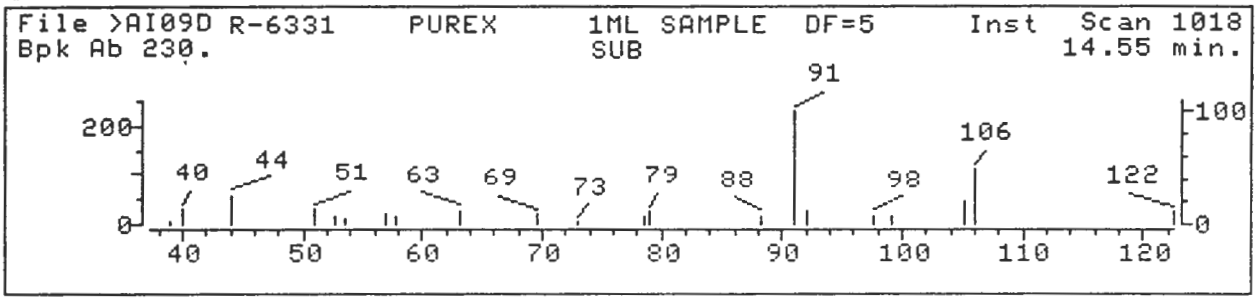
Compound No : 31
Compound Name : TOLUENE-d8
Scan Number : 763
Retention Time: 11.03 min.
Quant Ion : 98.0
Area : 377217
Concentration : 52.09 UG/L
q-value : 96

DEN
9-12-94

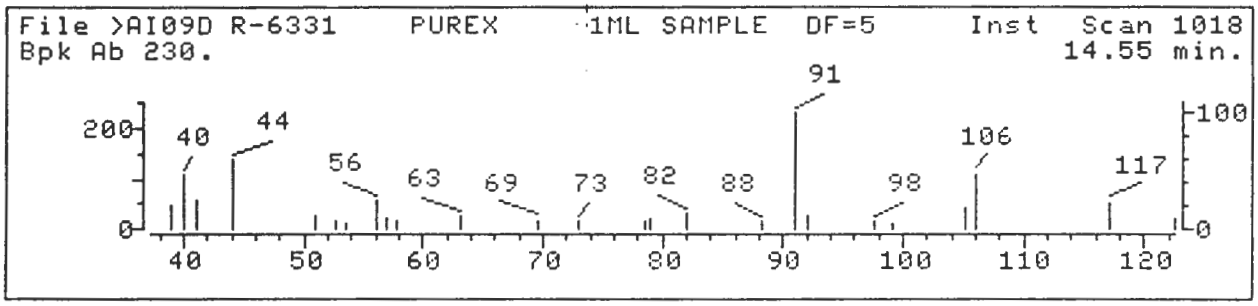
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



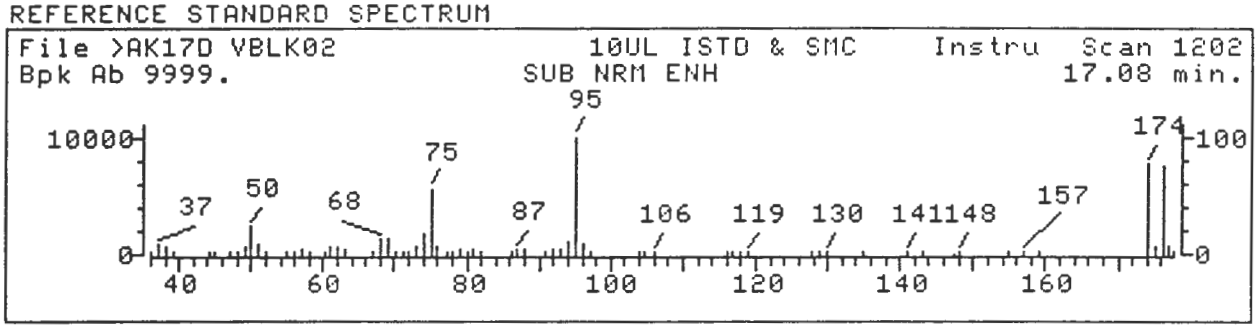
Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 37
Compound Name : XYLENE (TOTAL)
Scan Number : 1018
Retention Time: 14.55 min.
Quant Ion : 106.0
Area : 647M
Concentration : .215 UG/L
q-value : 90

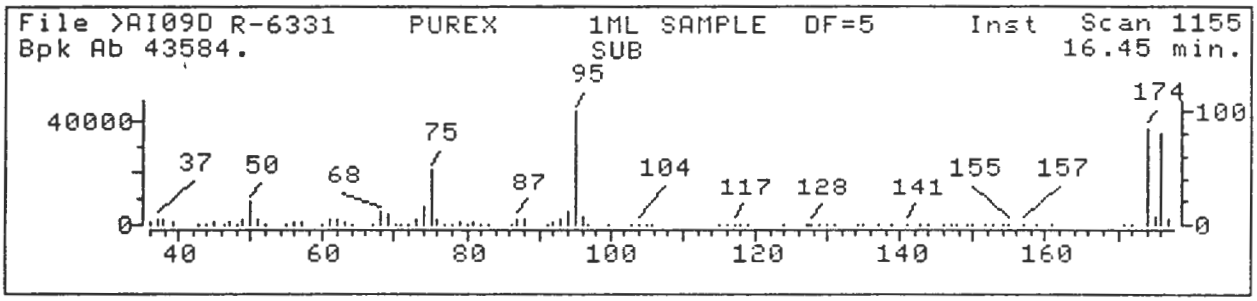
No
9-12-94

9613458.1086

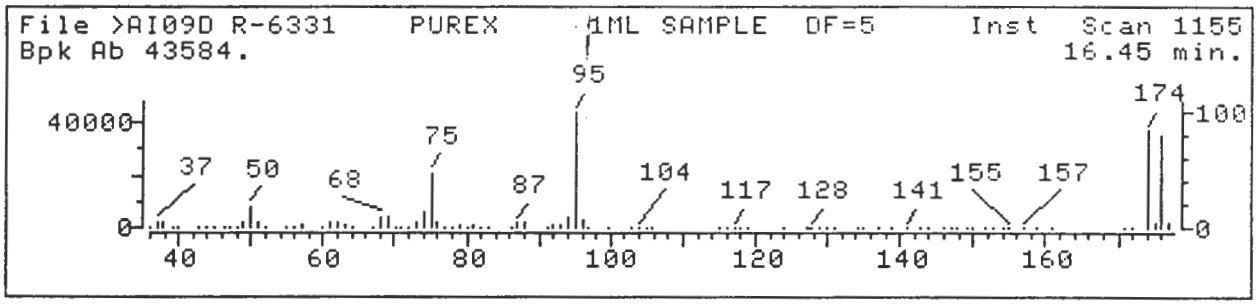
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI09D::D5 Quant Output File: ^AI09D::D2
Name: R-6331 PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2
Quant Time: 940909 12:09 Quant ID File: ID_VOA::QT
Injected at: 940909 11:37 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 39
Compound Name : BROMOFLUOROBENZENE
Scan Number : 1155
Retention Time: 16.45 min.
Quant Ion : 95.0
Area : 264149
Concentration : 50.45 UG/L
q-value : 90

9-12-94

9613458.1087

6A - RCRA
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: WHC PAL Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Instrument ID: 70 2 Calibration Date(s):03/30/94 03/30/94

Heated Purge: (Y/N) N Calibration Times: 1005 1426

GC Column: DB-624 ID: 0.53 (mm)

LAB FILE ID: RRF10 =>AC30C RRF20 =>AC30D
RRF50 =>AC30E RRF100=>AC30F RRF200=>AC30G

COMPOUND		RRF10	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Chloromethane	#	.835	.789	.772	.696	.662	.751	9.4#
Bromomethane		1.315	1.296	1.258	1.180	1.094	1.229	7.4
Vinyl Chloride	*	.919	.912	.905	.844	.836	.883	4.5*
Chloroethane		.493	.475	.464	.457	.426	.463	5.4
Methylene Chloride		1.115	1.138	1.079	1.049	1.004	1.077	4.9
Acetone		.481	.510	.510	.470	.487	.492	3.6
Carbon Disulfide		2.766	2.906	2.875	2.882	2.809	2.848	2.0
1,1-Dichloroethene	*	1.078	1.054	1.032	1.018	.947	1.026	4.8*
1,1-Dichloroethane	#	1.851	1.857	1.898	1.866	1.843	1.863	1.2#
1,2-Dichloroethene (total)		1.178	1.139	1.131	1.144	1.126	1.144	1.8
Chloroform	*	2.338	2.437	2.404	2.403	2.373	2.391	1.6*
1,2-Dichloroethane		1.379	1.429	1.470	1.470	1.474	1.444	2.8
2-Butanone		.690	.723	.755	.735	.809	.742	5.9
1,1,1-Trichloroethane		.511	.538	.538	.558	.532	.535	3.2
Carbon Tetrachloride		.482	.511	.533	.559	.545	.526	5.7
Bromodichloromethane		.586	.637	.667	.699	.676	.653	6.7
1,2-Dichloropropane	*	.315	.336	.348	.339	.319	.332	4.2*
cis-1,3-Dichloropropene		.451	.476	.504	.533	.518	.497	6.6
Trichloroethene		.424	.409	.418	.424	.410	.417	1.7
Dibromochloromethane		.611	.671	.725	.770	.748	.705	9.1
1,1,2-Trichloroethane		.346	.354	.368	.370	.356	.359	2.9
Benzene		.707	.725	.724	.738	.697	.718	2.3
trans-1,3-Dichloropropene		.381	.425	.456	.486	.470	.444	9.4
Bromoform	#	.466	.537	.603	.639	.652	.579	13.3#
4-Methyl-2-pentanone		.363	.401	.426	.423	.442	.411	7.4
2-Hexanone		.373	.410	.439	.438	.470	.426	8.6
Tetrachloroethene		.495	.504	.491	.532	.505	.505	3.2
1,1,2,2-Tetrachloroethane	#	.686	.750	.752	.819	.816	.765	7.2#
Toluene	*	1.066	1.093	1.095	1.137	1.112	1.101	2.4*
Chlorobenzene	#	.925	.935	.975	1.002	.977	.963	3.3#
Ethylbenzene	*	.371	.375	.382	.401	.389	.384	3.1*
Styrene		.705	.756	.780	.813	.812	.773	5.8
Xylene (total)		.421	.451	.447	.479	.469	.453	5.0
Toluene-d8		1.019	1.055	1.022	1.097	1.085	1.056	3.4
Bromofluorobenzene		.735	.782	.758	.820	.796	.778	4.2
1,2-Dichloroethane-d4		1.281	1.237	1.266	1.283	1.259	1.265	1.5

* - CCC Compounds must meet a maximum %RSD of 30%
\# - SPCC compounds must meet a minimum RRF of 0.3 (Bromoform = 0.25)

FORM VI VOA

9613458.1088

3/31/94 QUANT REPORT Page 1

Operator ID: JOY Jolie Rosa - Clay
Output File: ^AC30C::D2
Data File: >AC30C::D5
Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7 Quant Time: 940330 13:38
Injected at: 940330 10:05
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46 Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.40	128.0	122451	50.00	UG/L	82
2)	CHLOROMETHANE	1.01	50.0	20472	10.82	UG/L	98
3)	VINYL CHLORIDE	1.15	62.0	22202	10.17	UG/L	99
4)	BROMOMETHANE	1.43	94.0	31815	10.45	UG/L	98
5)	CHLOROETHANE	1.54	64.0	12241	10.63	UG/L	96
6)	1,1-DICHLOROETHENE	2.48	96.0	26396	10.45	UG/L	73
7)	CARBON DISULFIDE	2.66	76.0	67745	9.62	UG/L	97
8)	ACETONE	2.70	43.0	11778	9.43	UG/L	84
9)	METHYLENE CHLORIDE	3.37	84.0	27294 3/31/94	10.33	UG/L	80
10)	1,2-DICHLOROETHENE (TOTAL)	5.96	96.0	57691M JOC	20.83	UG/L	69
11)	1,1-DICHLOROETHANE	4.72	63.0	45320	9.75	UG/L	98
12)	2-BUTANONE	6.18	43.0	16898	9.13	UG/L	100
13)	CHLOROFORM	6.73	83.0	57259	9.73	UG/L	95
14)	1,2-DICHLOROETHANE-d4	7.54	65.0	31362	10.12	UG/L	90
15)	1,2-DICHLOROETHANE	7.69	62.0	33775	9.38	UG/L	94
16)	*1,4-DIFLUOROBENZENE	8.56	114.0	442718	50.00	UG/L	88
17)	VINYL ACETATE	5.11	43.0	36239	8.60	UG/L	100
18)	1,1,1-TRICHLOROETHANE	6.83	97.0	45216	9.49	UG/L	99
19)	CARBON TETRACHLORIDE	7.15	117.0	42701	9.04	UG/L	96
20)	BENZENE	7.57	78.0	62583	9.76	UG/L	100
21)	TRICHLOROETHENE	8.91	130.0	37519	10.15	UG/L	98
22)	1,2-DICHLOROPROPANE	9.31	63.0	27916	9.05	UG/L	95
23)	BROMODICHLOROMETHANE	10.01	83.0	51912	8.79	UG/L	94
24)	CIS-1,3-DICHLOROPROPENE	10.89	75.0	39945	8.95	UG/L	98
25)	TRANS-1,3-DICHLOROPROPENE	12.08	75.0	33768	8.36	UG/L	94
26)	1,1,2-TRICHLOROETHANE	12.38	97.0	30601	9.40	UG/L	93
27)	DIBROMOCHLOROMETHANE	13.07	129.0	54084	8.42	UG/L	99
28)	BROMOFORM	15.95	173.0	41310	7.74	UG/L	99
29)	*CHLOROBENZENE-d5	14.16	117.0	358769	50.00	UG/L	87
30)	4-METHYL-2-PENTANONE	11.36	43.0	26063	8.53	UG/L	99
31)	TOLUENE-d8	11.32	98.0	73135	9.97	UG/L	95
32)	TOLUENE	11.43	91.0	76522	9.74	UG/L	97
33)	TETRACHLOROETHENE	12.46	164.0	35501	10.08	UG/L	99
34)	2-HEXANONE	13.08	43.0	26747	8.50	UG/L	86
35)	CHLOROBENZENE	14.22	112.0	66351	9.48	UG/L	96
36)	ETHYLBENZENE	14.57	106.0	26634 3/31/94	9.72	UG/L	96
37)	XYLENE (TOTAL)	14.84	106.0	90534M JOC	28.21	UG/L	97
38)	STYRENE	15.69	104.0	50605	9.04	UG/L	93
39)	BROMOFLUOROBENZENE	16.71	95.0	52727	9.69	UG/L	94
40)	1,1,2,2-TETRACHLOROETHANE	17.27	83.0	49218	9.12	UG/L	90

QUANT REPORT

Operator ID: JOY
Output File: ^AC30C::D2
Data File: >AC30C::D5
Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7
Quant Time: 940330 13:38
Injected at: 940330 10:05
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

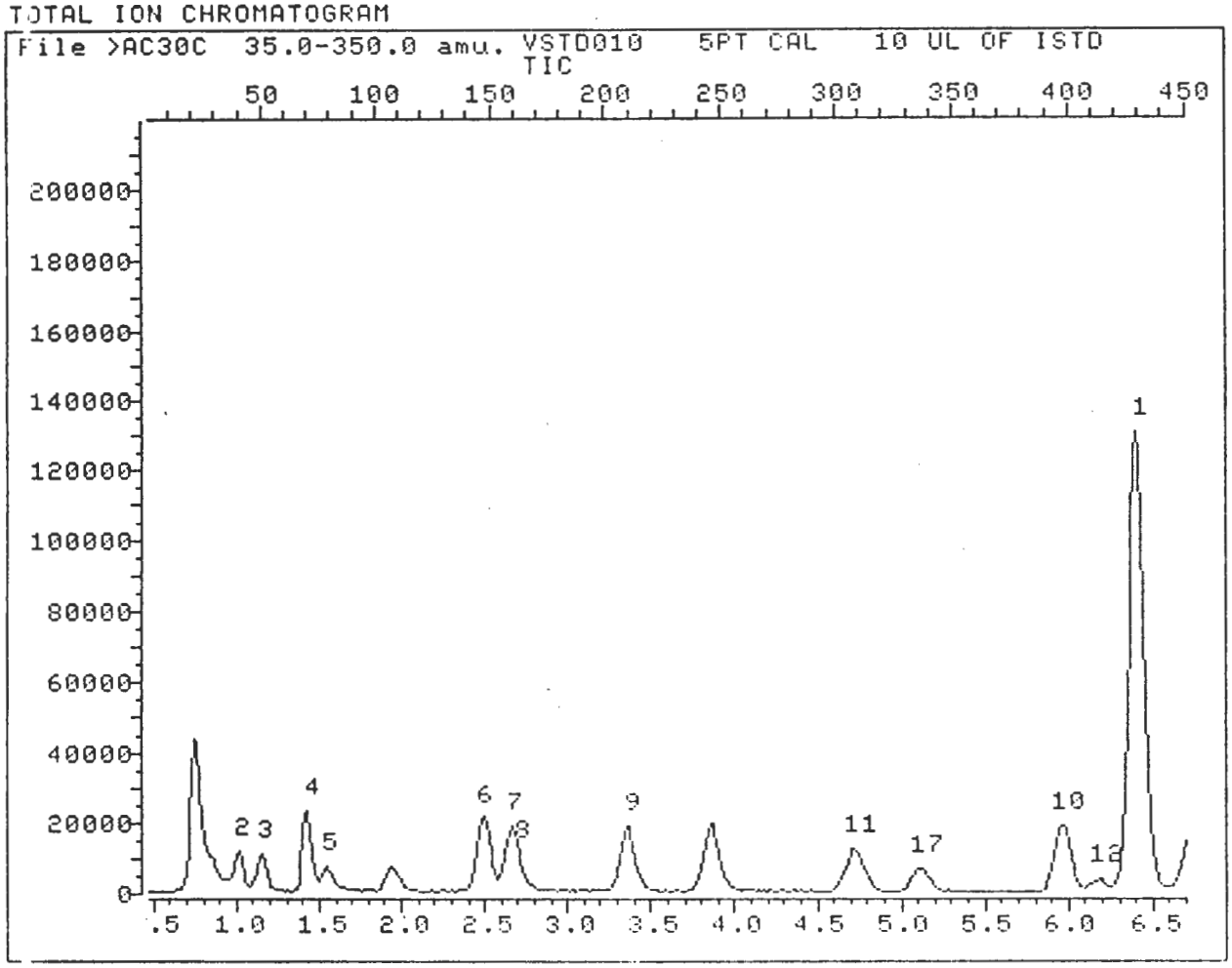
ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	1,3-DICHLOROBENZENE	18.99	146.0	60396	9.23	UG/L	100
42)	1,4-DICHLOROBENZENE	19.21	146.0	63101	9.17	UG/L	100
43)	1,2-DICHLOROBENZENE	19.97	146.0	60260	9.37	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AC30C::D5
Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30C::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:38
Injected at: 940330 10:05

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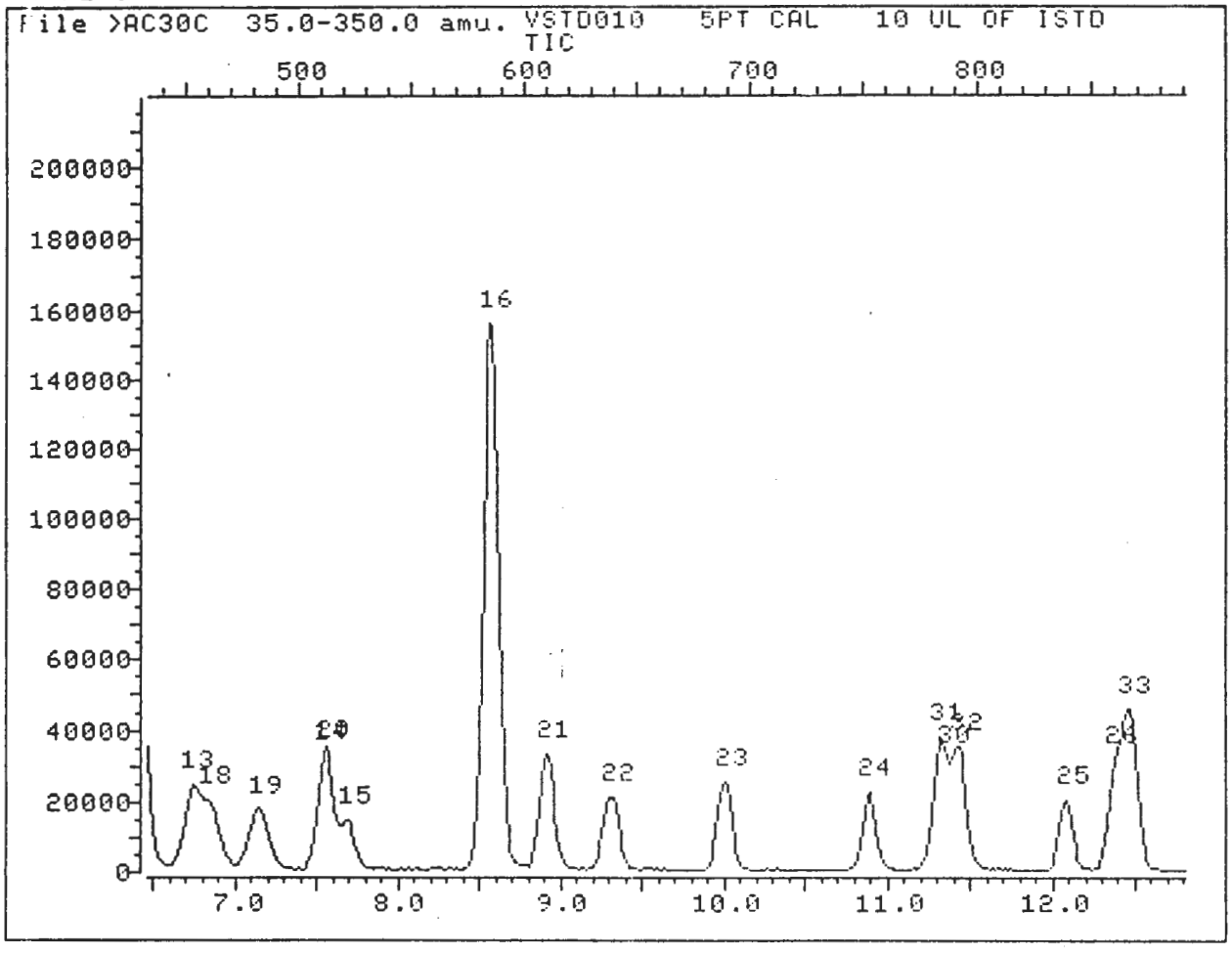
TOTAL ION CHROMATOGRAM



Data File: >AC30C::D5
Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30C::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:38
Injected at: 940330 10:05

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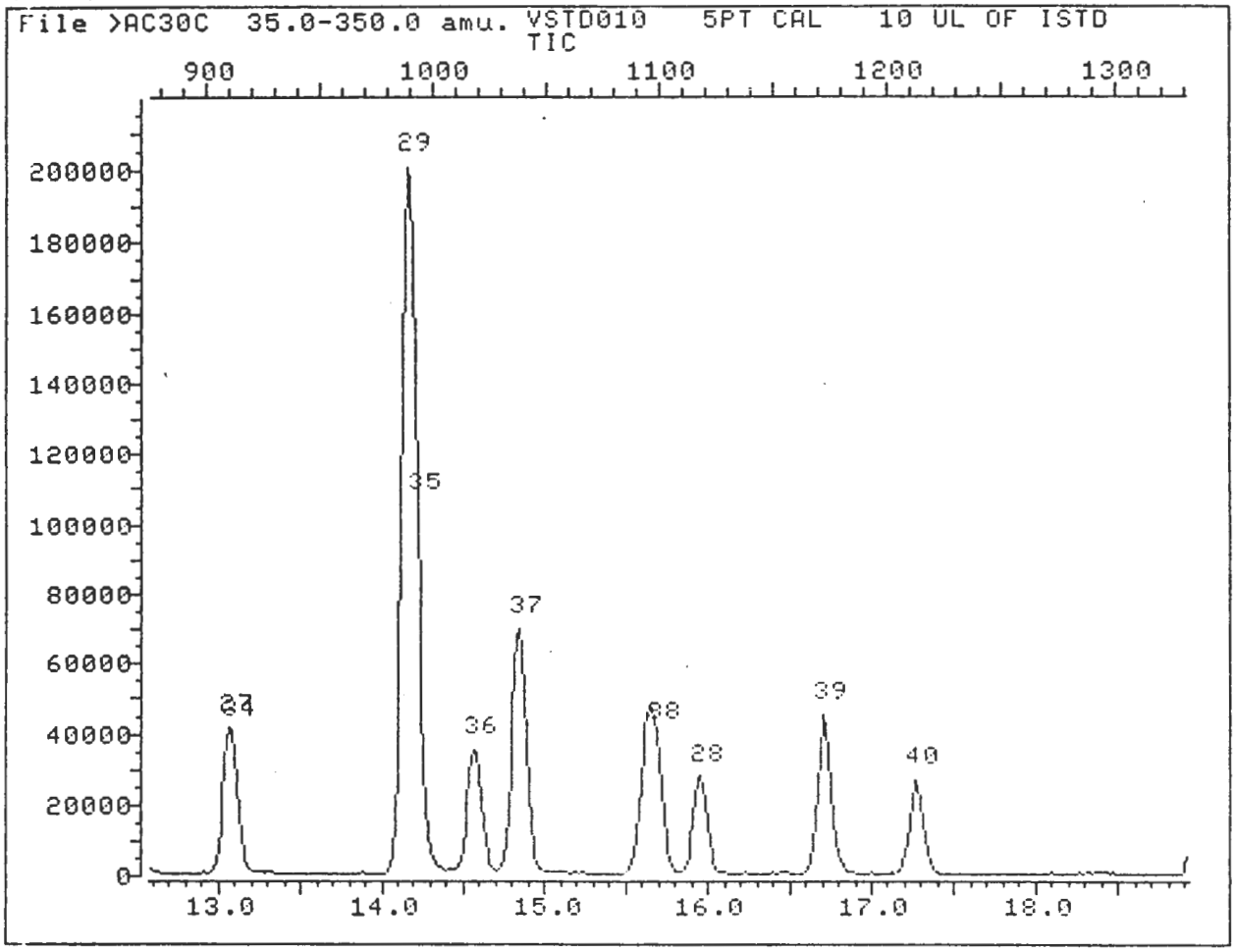
TOTAL ION CHROMATOGRAM



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Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30C::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:38
Injected at: 940330 10:05

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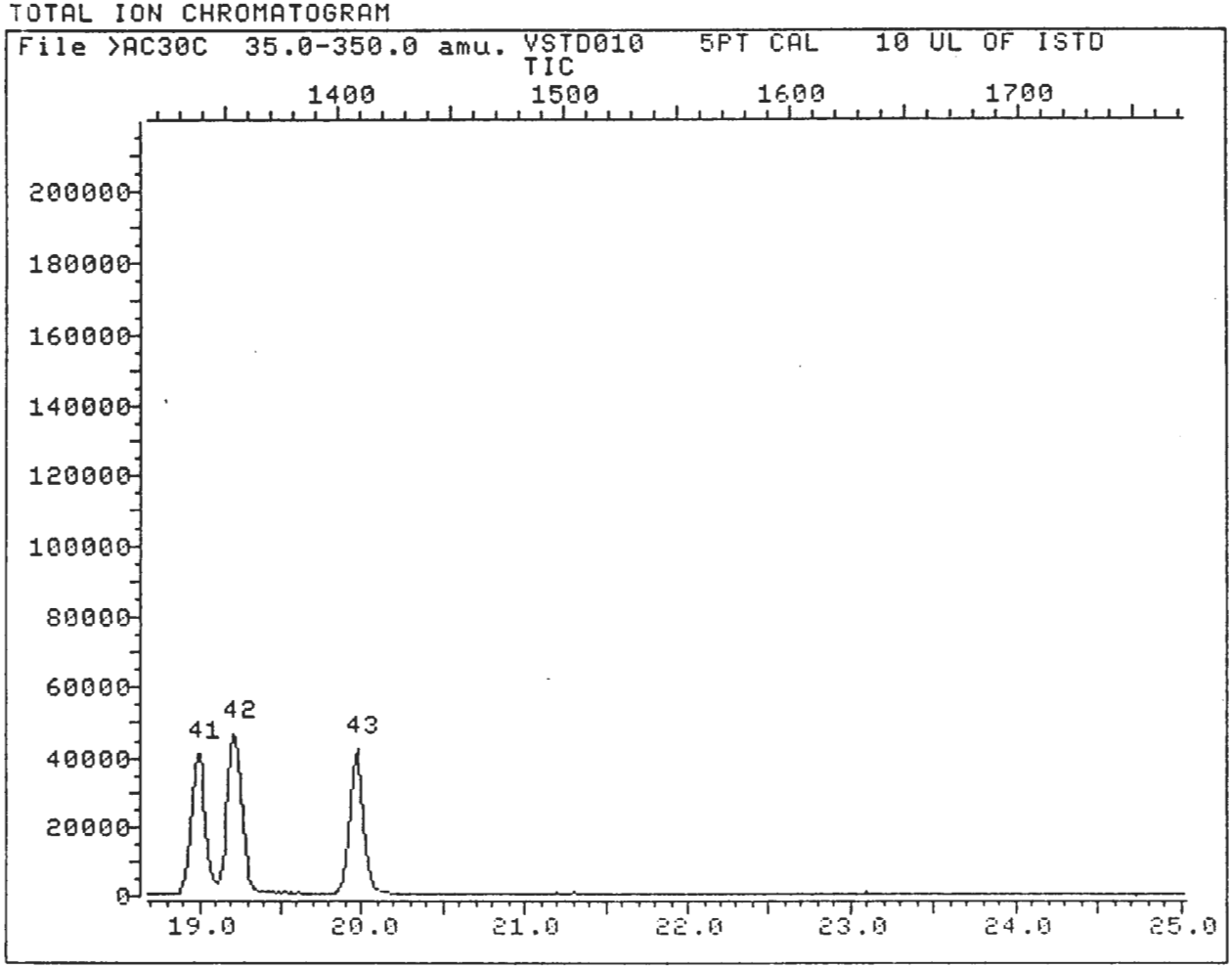
TOTAL ION CHROMATOGRAM



Data File: >AC30C::D5
Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30C::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:38
Injected at: 940330 10:05

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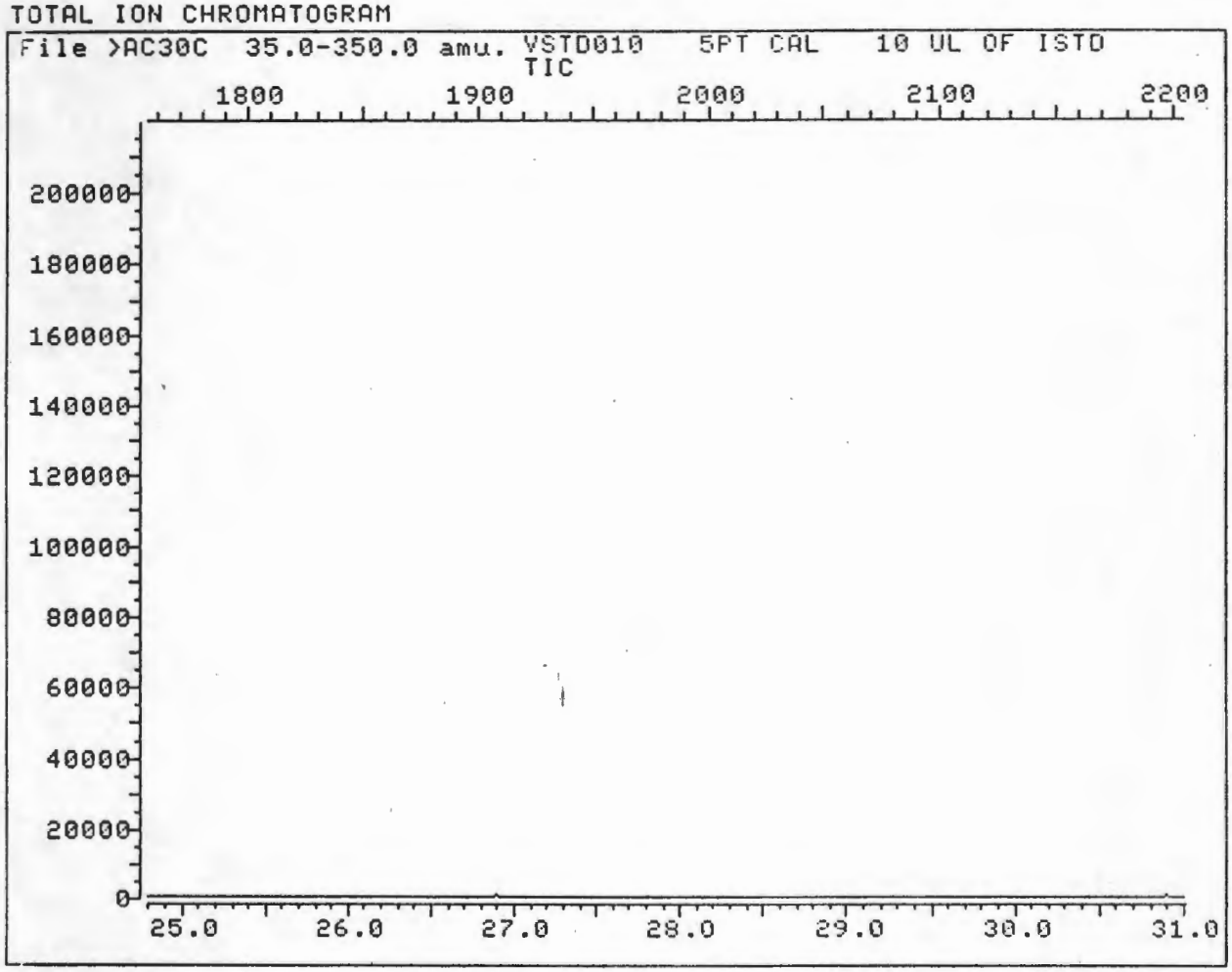
TOTAL ION CHROMATOGRAM



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Name: VSTD010 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30C::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:38
Injected at: 940330 10:05

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3/31/94

QUANT REPORT

Operator ID: JOY
Output File: ^AC30D::D2
Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7 Quant Time: 940330 13:43
Injected at: 940330 10:50
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46 Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.36	128.0	115515	50.00	UG/L	82
2)	CHLOROMETHANE	1.01	50.0	36511	20.46	UG/L	96
3)	VINYL CHLORIDE	1.15	62.0	41523	20.16	UG/L	94
4)	BROMOMETHANE	1.41	94.0	59184	20.61	UG/L	99
5)	CHLOROETHANE	1.52	64.0	22255	20.49	UG/L	98
6)	1,1-DICHLOROETHENE	2.47	96.0	48707	20.43	UG/L	82
7)	CARBON DISULFIDE	2.63	76.0	134276	20.22	UG/L	99
8)	ACETONE	2.69	43.0	23574	20.02	UG/L	88
9)	METHYLENE CHLORIDE	3.34	84.0	52583 3/31/94	21.09	UG/L	79
10)	1,2-DICHLOROETHENE (TOTAL)	5.93	96.0	105258M	40.29	UG/L	74
11)	1,1-DICHLOROETHANE	4.70	63.0	85825	19.57	UG/L	96
12)	2-BUTANONE	6.14	43.0	33399	19.13	UG/L	100
13)	CHLOROFORM	6.70	83.0	112621	20.28	UG/L	99
14)	1,2-DICHLOROETHANE-d4	7.51	65.0	57138	19.54	UG/L	88
15)	1,2-DICHLOROETHANE	7.66	62.0	66037	19.45	UG/L	98
16)	*1,4-DIFLUOROBENZENE	8.53	114.0	416179	50.00	UG/L	88
17)	VINYL ACETATE	5.08	43.0	73989	18.67	UG/L	100
18)	1,1,1-TRICHLOROETHANE	6.82	97.0	89512	19.99	UG/L	98
19)	CARBON TETRACHLORIDE	7.11	117.0	85101	19.17	UG/L	97
20)	BENZENE	7.52	78.0	120732	20.02	UG/L	100
21)	TRICHLOROETHENE	8.88	130.0	68144	19.61	UG/L	99
22)	1,2-DICHLOROPROPANE	9.28	63.0	55997	19.31	UG/L	99
23)	BROMODICHLOROMETHANE	9.98	83.0	106061	19.10	UG/L	99
24)	CIS-1,3-DICHLOROPROPENE	10.86	75.0	79262	18.89	UG/L	99
25)	TRANS-1,3-DICHLOROPROPENE	12.06	75.0	70712	18.62	UG/L	94
26)	1,1,2-TRICHLOROETHANE	12.36	97.0	58882	19.23	UG/L	91
27)	DIBROMOCHLOROMETHANE	13.04	129.0	111628	18.49	UG/L	99
28)	BROMOFORM	15.94	173.0	89355	17.81	UG/L	97
29)	*CHLOROBENZENE-d5	14.15	117.0	340464	50.00	UG/L	88
30)	4-METHYL-2-PENTANONE	11.35	43.0	54570	18.83	UG/L	98
31)	TOLUENE-d8	11.28	98.0	143637	20.64	UG/L	93
32)	TOLUENE	11.41	91.0	148796	19.95	UG/L	96
33)	TETRACHLOROETHENE	12.45	164.0	68656	20.53	UG/L	98
34)	2-HEXANONE	13.06	43.0	55887	18.71	UG/L	95
35)	CHLOROBENZENE	14.19	112.0	127298	19.17	UG/L	97
36)	ETHYLBENZENE	14.55	106.0	51097 3/31/94	19.65	UG/L	98
37)	XYLENE (TOTAL)	14.83	106.0	184046M	60.42	UG/L	96
38)	STYRENE	15.67	104.0	102982	19.38	UG/L	90
39)	BROMOFLUOROBENZENE	16.70	95.0	106557	20.64	UG/L	97
40)	1,1,2,2-TETRACHLOROETHANE	17.25	83.0	102119	19.95	UG/L	94

QUANT REPORT

Operator ID: JOY
Output File: ^AC30D::D2
Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7 Quant Time: 940330 13:43
Injected at: 940330 10:50
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

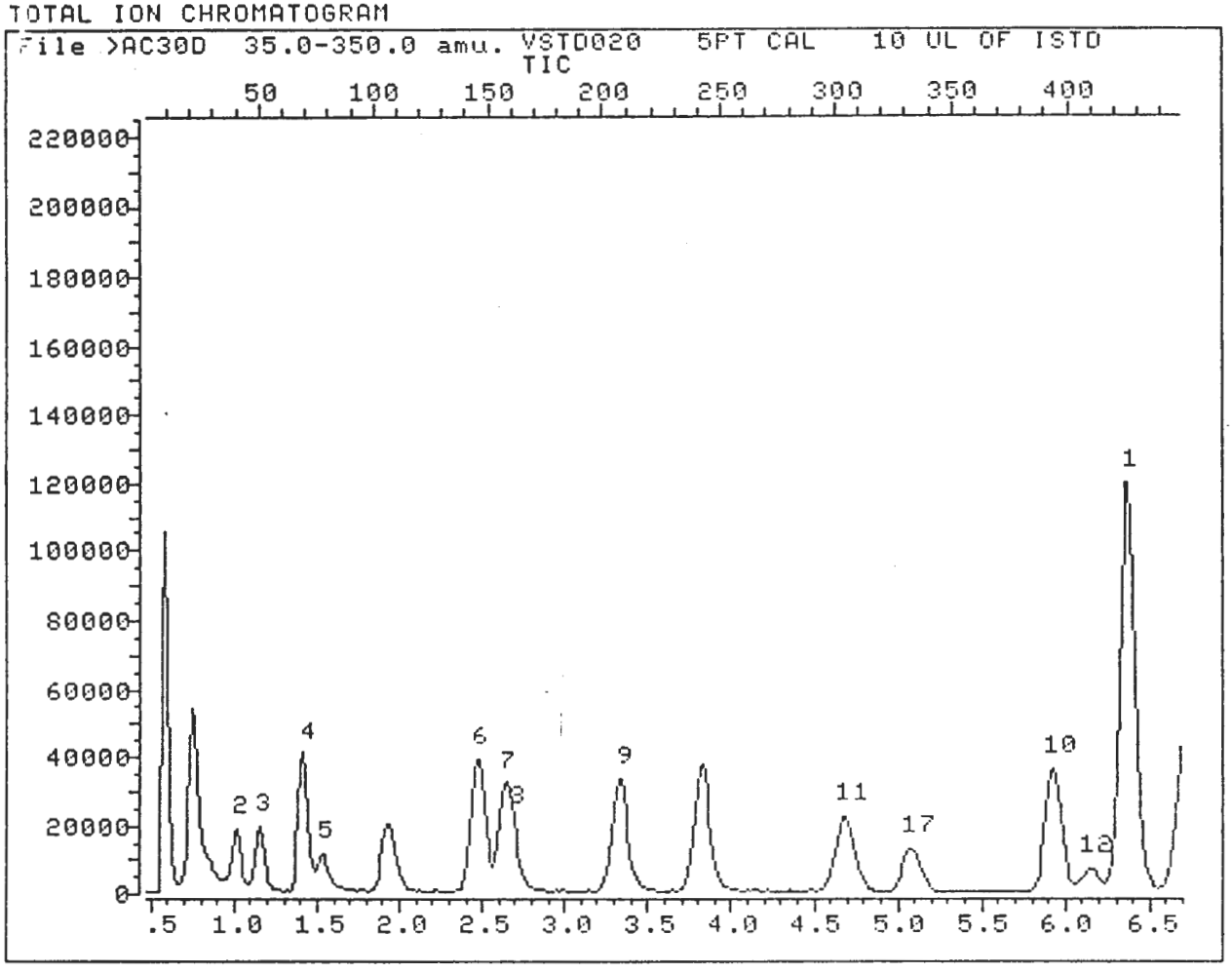
Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	1,3-DICHLOROBENZENE	18.97	146.0	118873	19.14	UG/L	100
42)	1,4-DICHLOROBENZENE	19.21	146.0	124626	19.08	UG/L	100
43)	1,2-DICHLOROBENZENE	19.96	146.0	117225	19.21	UG/L	100

* Compound is ISTD

9613458.1097

TOTAL ION CHROMATOGRAM



Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30D::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:43
Injected at: 940330 10:50

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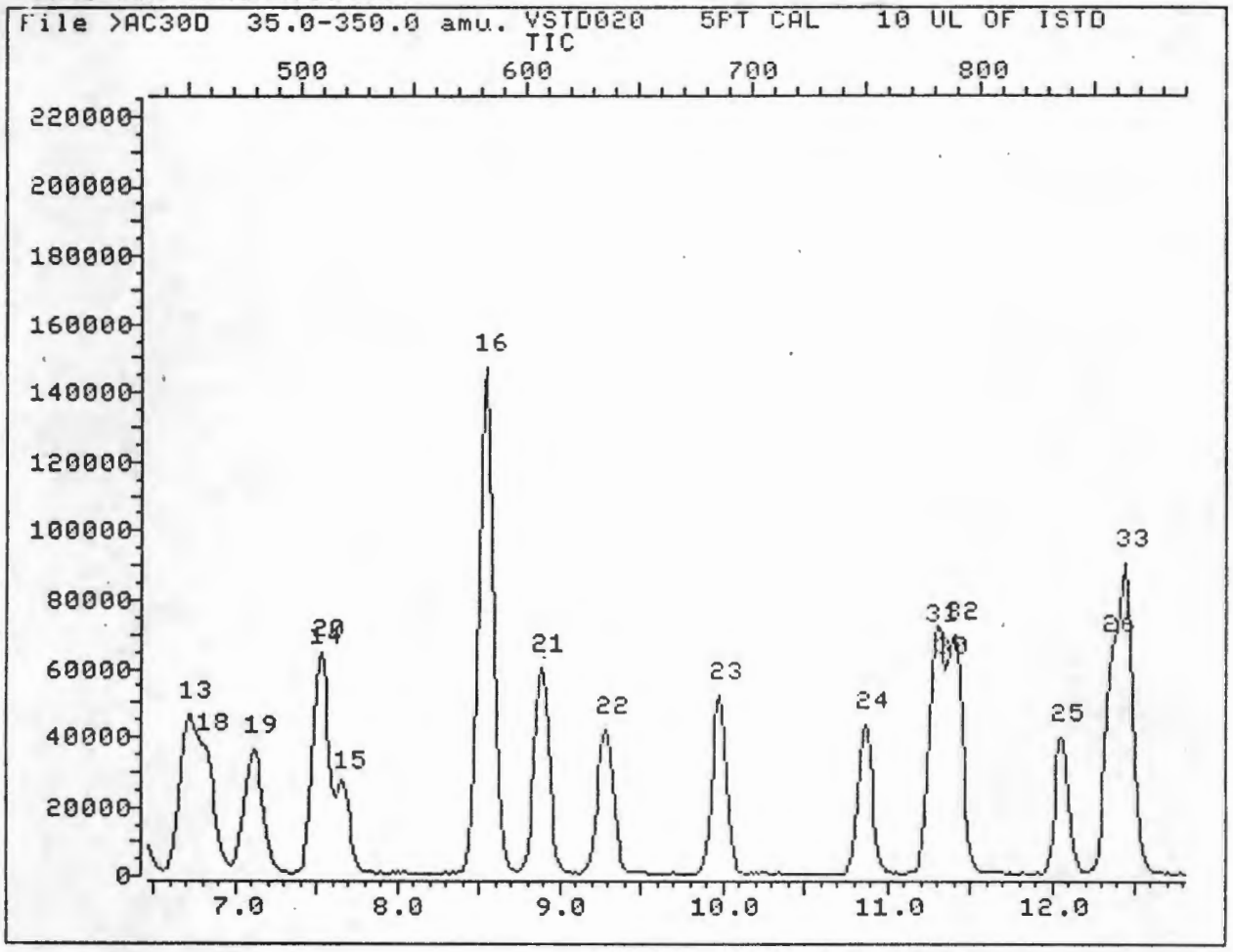
9613458.1098

TOTAL ION CHROMATOGRAM



Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30D::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:43
Injected at: 940330 10:50

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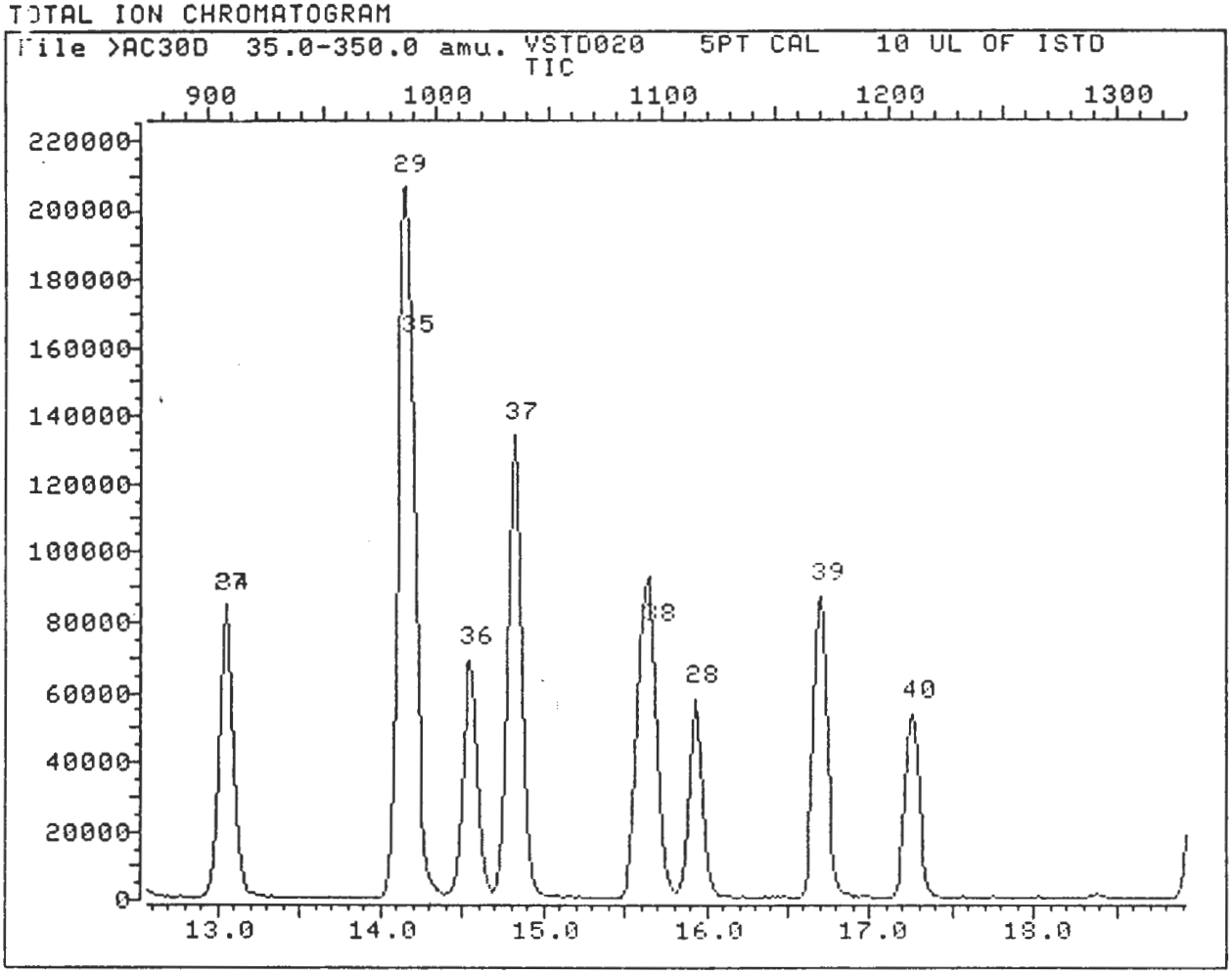
TOTAL ION CHROMATOGRAM



Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30D::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:43
Injected at: 940330 10:50

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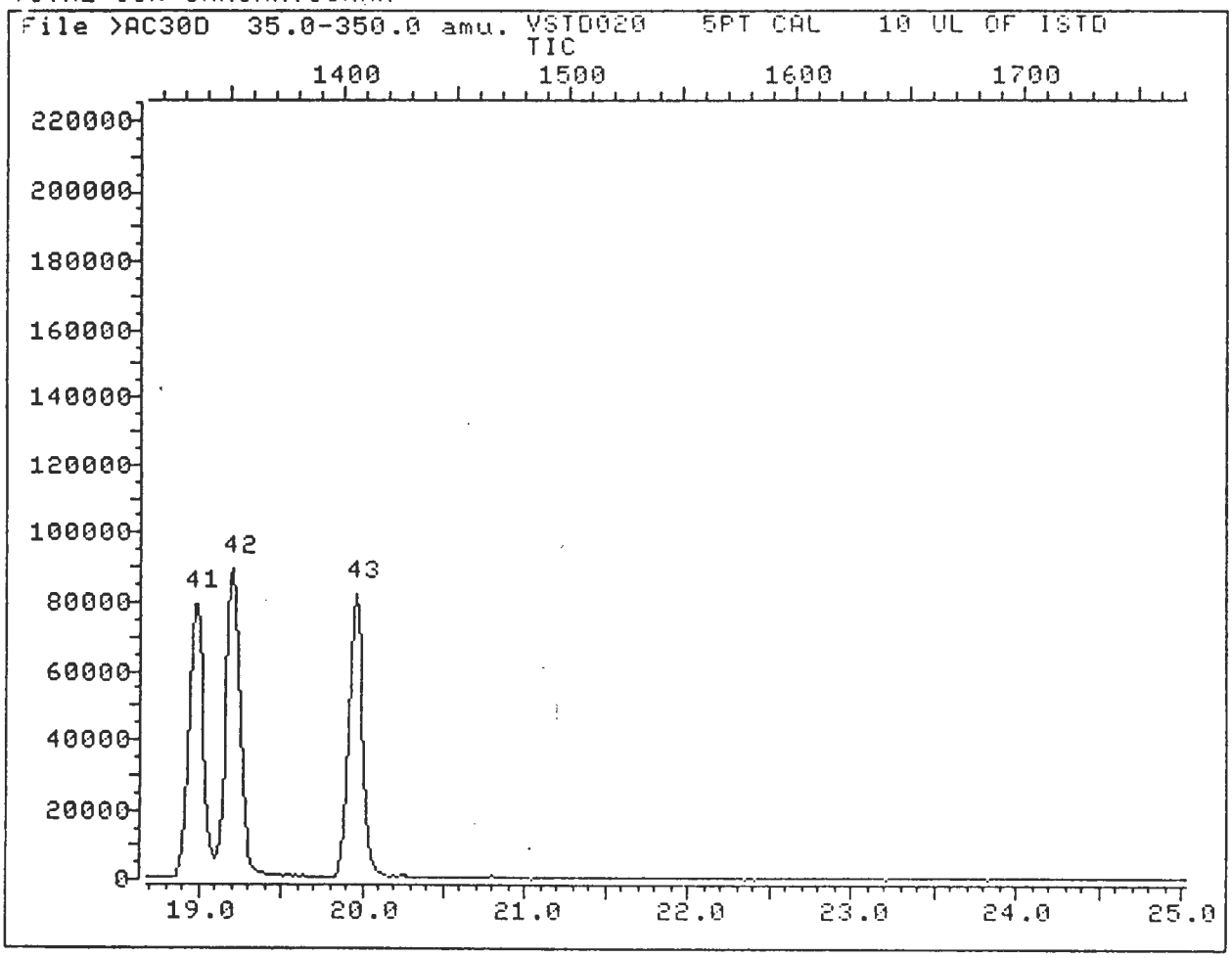
9613458.1100

TOTAL ION CHROMATOGRAM



Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30D::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:43
Injected at: 940330 10:50

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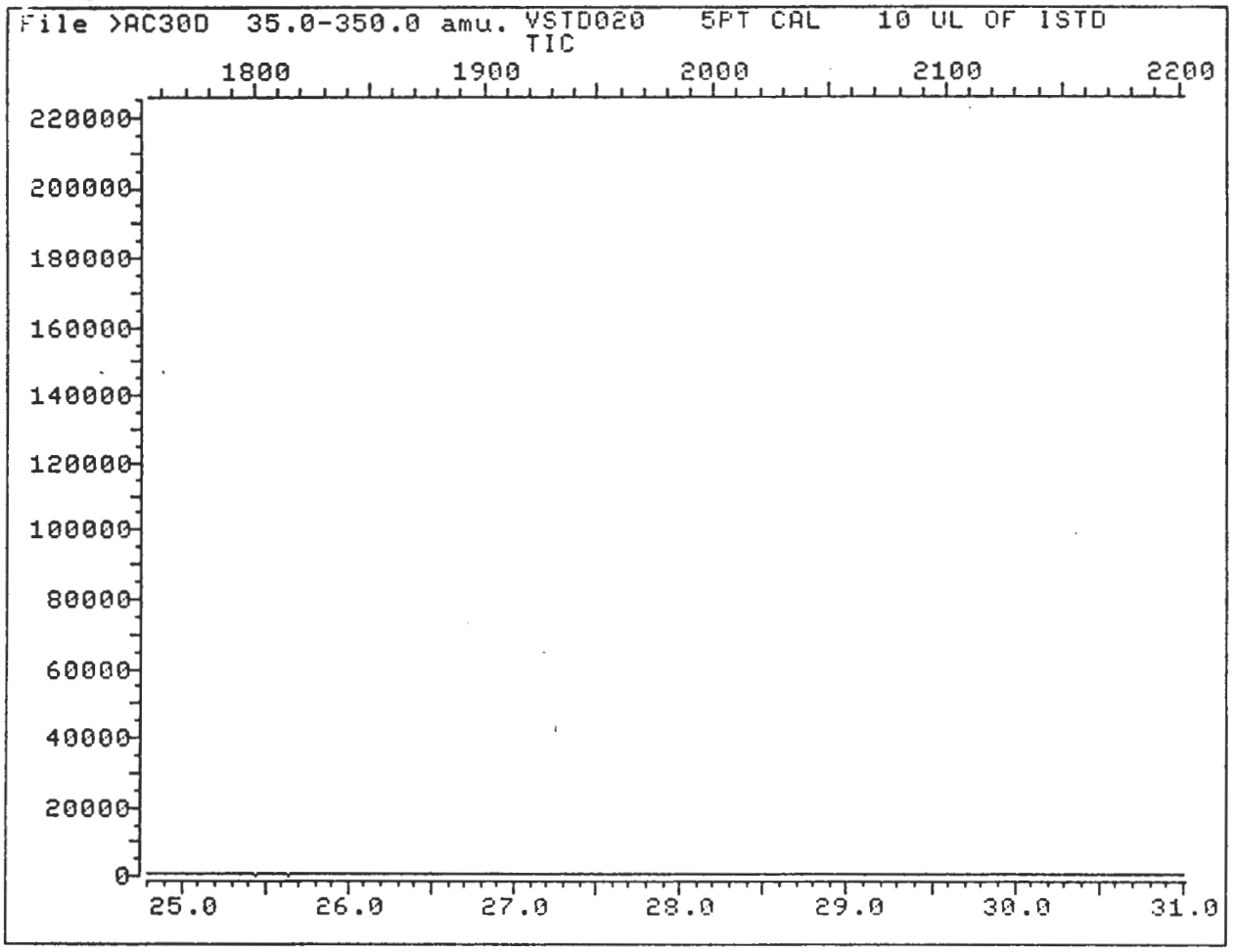
TOTAL ION CHROMATOGRAM



Data File: >AC30D::D5
Name: VSTD020 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30D::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 13:43
Injected at: 940330 10:50

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9615458.1102

3/31/94

QUANT REPORT

Operator ID: JOY
Output File: ^AC30E::D2
Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7 Quant Time: 940330 11:59
Injected at: 940330 11:28
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940329 09:52

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.37	128.0	116726	50.00	UG/L	80
2)	CHLOROMETHANE	1.01	50.0	90163	74.76	UG/L	97
3)	VINYL CHLORIDE	1.16	62.0	104083	65.87	UG/L	98
4)	BROMOMETHANE	1.43	94.0	145084	58.23	UG/L	98
5)	CHLOROETHANE	1.54	64.0	54877	55.34	UG/L	99
6)	1,1-DICHLOROETHENE	2.50	96.0	120427	49.16	UG/L	86
7)	CARBON DISULFIDE	2.68	76.0	335578	52.25	UG/L	99
8)	ACETONE	2.72	43.0	59499	54.45	UG/L	84
9)	METHYLENE CHLORIDE	3.35	84.0	125944 3/31/94	49.15	UG/L	85
10)	1,2-DICHLOROETHENE (TOTAL)	5.95	96.0	263991M JK	96.58	UG/L	76
11)	1,1-DICHLOROETHANE	4.71	63.0	221588	50.19	UG/L	99
12)	2-BUTANONE	6.18	43.0	88188	52.02	UG/L	100
13)	CHLOROFORM	6.72	83.0	280548	48.68	UG/L	98
14)	1,2-DICHLOROETHANE-d4	7.53	65.0	147712	50.24	UG/L	93
15)	1,2-DICHLOROETHANE	7.68	62.0	171568	50.39	UG/L	99
16)	*1,4-DIFLUOROBENZENE	8.55	114.0	415616	50.00	UG/L	90
17)	VINYL ACETATE	5.10	43.0	197837	48.00	UG/L	100
18)	1,1,1-TRICHLOROETHANE	6.82	97.0	223577	49.36	UG/L	98
19)	CARBON TETRACHLORIDE	7.12	117.0	221611	50.28	UG/L	95
20)	BENZENE	7.54	78.0	301114	50.23	UG/L	100
21)	TRICHLOROETHENE	8.90	130.0	173499	49.25	UG/L	97
22)	1,2-DICHLOROPROPANE	9.29	63.0	144767	50.41	UG/L	96
23)	BROMODICHLOROMETHANE	9.98	83.0	277317	50.01	UG/L	96
24)	CIS-1,3-DICHLOROPROPENE	10.87	75.0	209548	49.64	UG/L	98
25)	TRANS-1,3-DICHLOROPROPENE	12.06	75.0	189637	50.80	UG/L	98
26)	1,1,2-TRICHLOROETHANE	12.37	97.0	152873	49.41	UG/L	99
27)	DIBROMOCHLOROMETHANE	13.05	129.0	301384	49.85	UG/L	98
28)	BROMOFORM	15.93	173.0	250481	51.27	UG/L	98
29)	*CHLOROBENZENE-d5	14.14	117.0	346564	50.00	UG/L	86
30)	4-METHYL-2-PENTANONE	11.35	43.0	147528	53.57	UG/L	90
31)	TOLUENE-d8	11.30	98.0	354220	49.10	UG/L	96
32)	TOLUENE	11.42	91.0	379628	49.11	UG/L	96
33)	TETRACHLOROETHENE	12.45	164.0	170167	48.05	UG/L	95
34)	2-HEXANONE	13.06	43.0	152030	51.26	UG/L	93
35)	CHLOROBENZENE	14.20	112.0	337916	50.76	UG/L	95
36)	ETHYLBENZENE	14.54	106.0	132344 3/31/94	49.34	UG/L	97
37)	XYLENE (TOTAL)	14.82	106.0	465072M JK	149.01	UG/L	98
38)	STYRENE	15.67	104.0	270426	47.71	UG/L	93
39)	BROMOFLUOROBENZENE	16.69	95.0	262749	48.60	UG/L	90
40)	1,1,2,2-TETRACHLOROETHANE	17.25	83.0	260516	48.12	UG/L	94

QUANT REPORT

Operator ID: JOY
Output File: ^AC30E::D2
Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7
Quant Time: 940330 11:59
Injected at: 940330 11:28
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

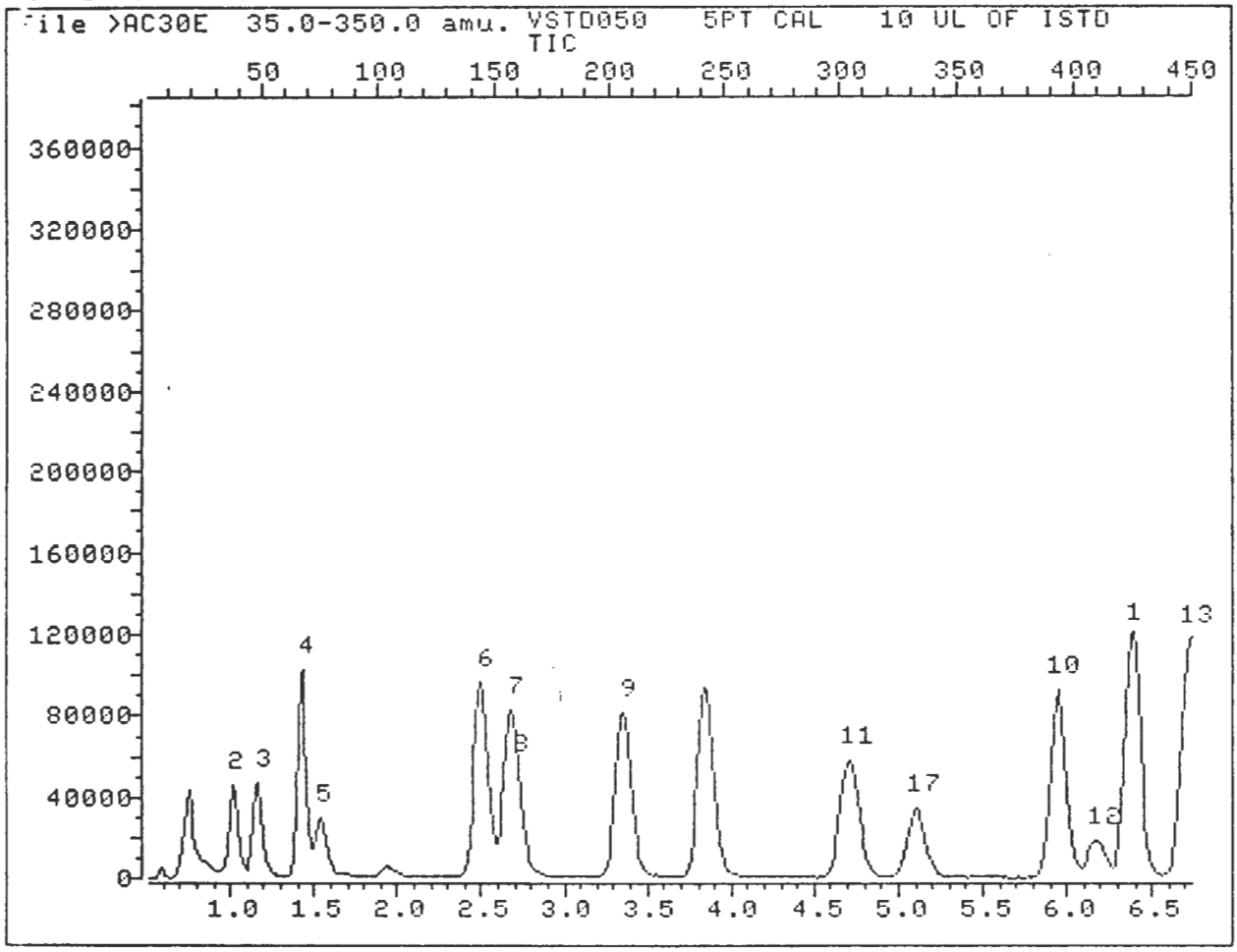
Last Qcal Time: 940329 09:52

	Compound	R.T.	Q ion	Area	Conc	Units	q
41	1,3-DICHLOROBENZENE	18.98	146.0	316030	50.44	UG/L	100
42)	1,4-DICHLOROBENZENE	19.20	146.0	332393	51.27	UG/L	100
43)	1,2-DICHLOROBENZENE	19.95	146.0	310632	50.31	UG/L	100

* Compound is ISTD

9613458.1104

TOTAL ION CHROMATOGRAM



Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30E::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940329 09:52

Operator ID: JOY
Quant Time : 940330 11:59
Injected at: 940330 11:28

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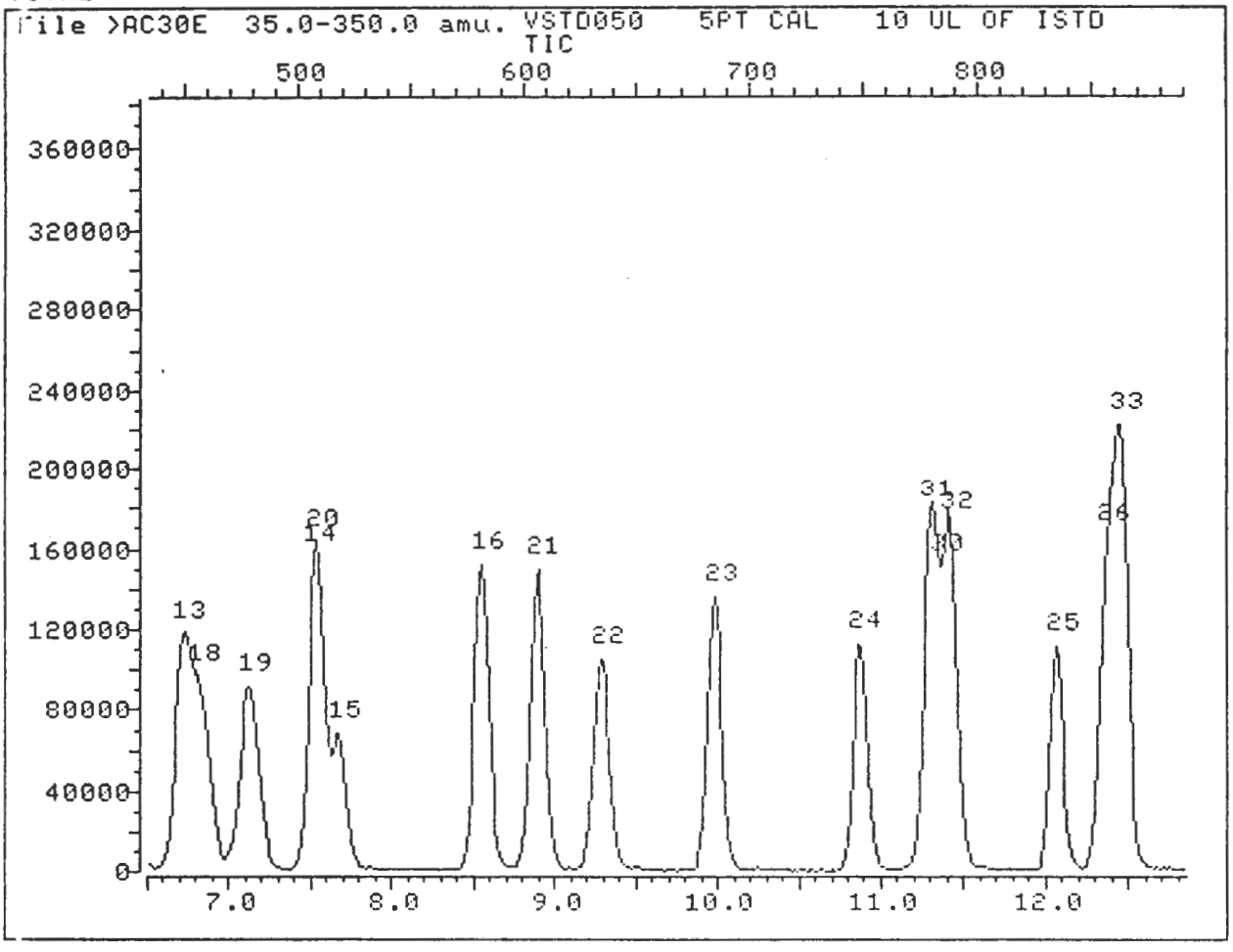
TOTAL ION CHROMATOGRAM



Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30E::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940329 09:52

Operator ID: JOY
Quant Time : 940330 11:59
Injected at: 940330 11:28

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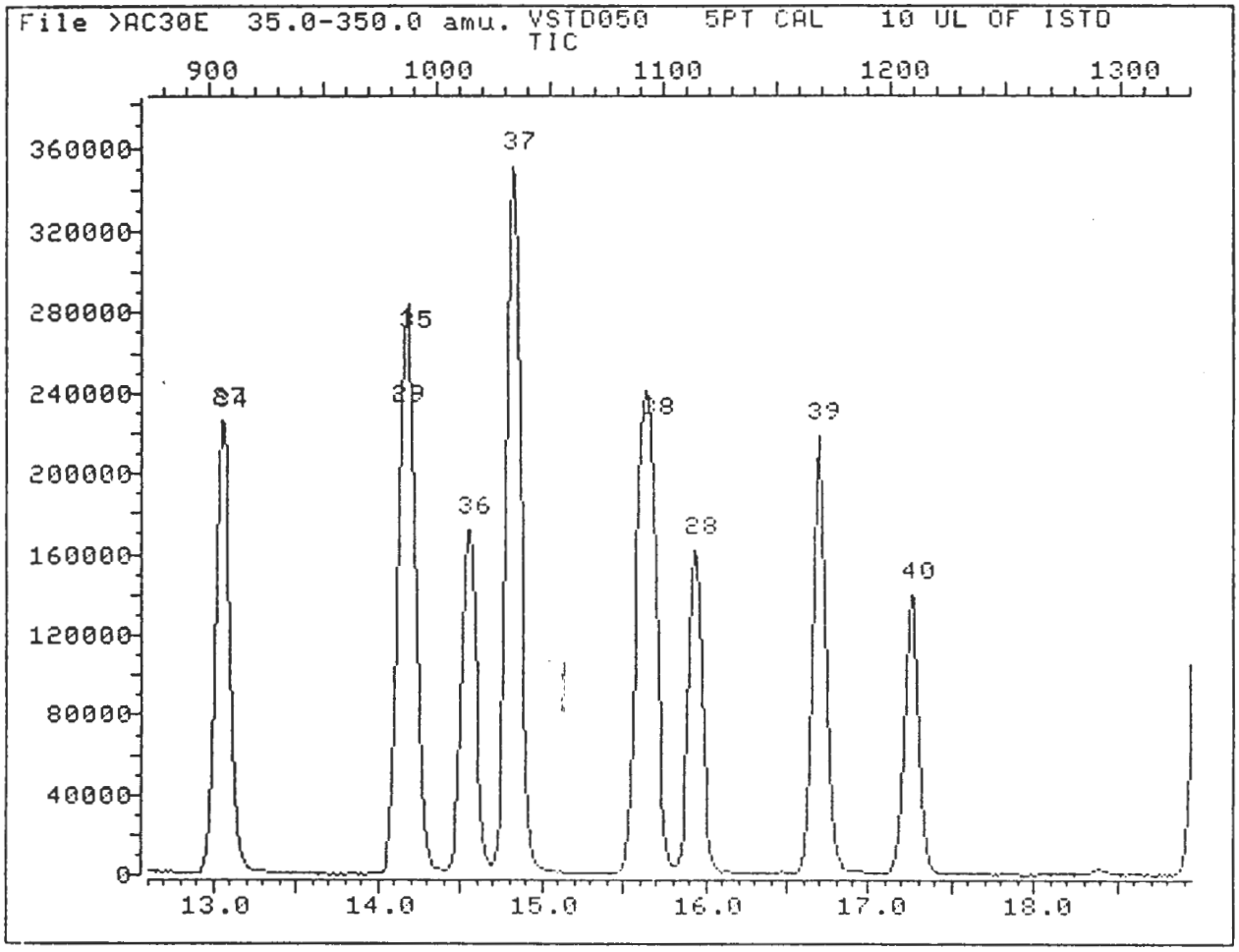
TOTAL ION CHROMATOGRAM



Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30E::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940329 09:52

Operator ID: JOY
Quant Time : 940330 11:59
Injected at: 940330 11:28

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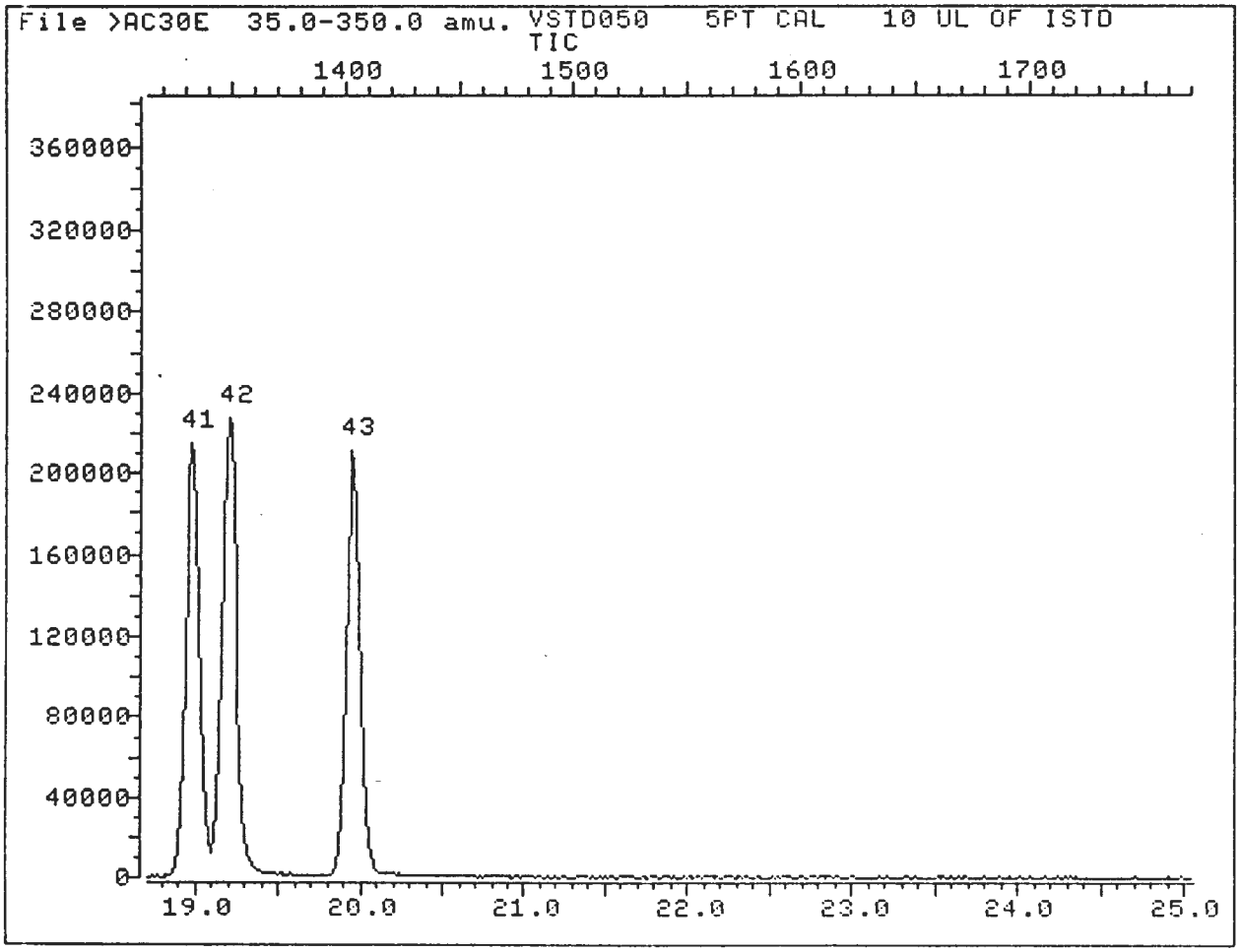
TOTAL ION CHROMATOGRAM



Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30E::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940329 09:52

Operator ID: JOY
Quant Time : 940330 11:59
Injected at: 940330 11:28

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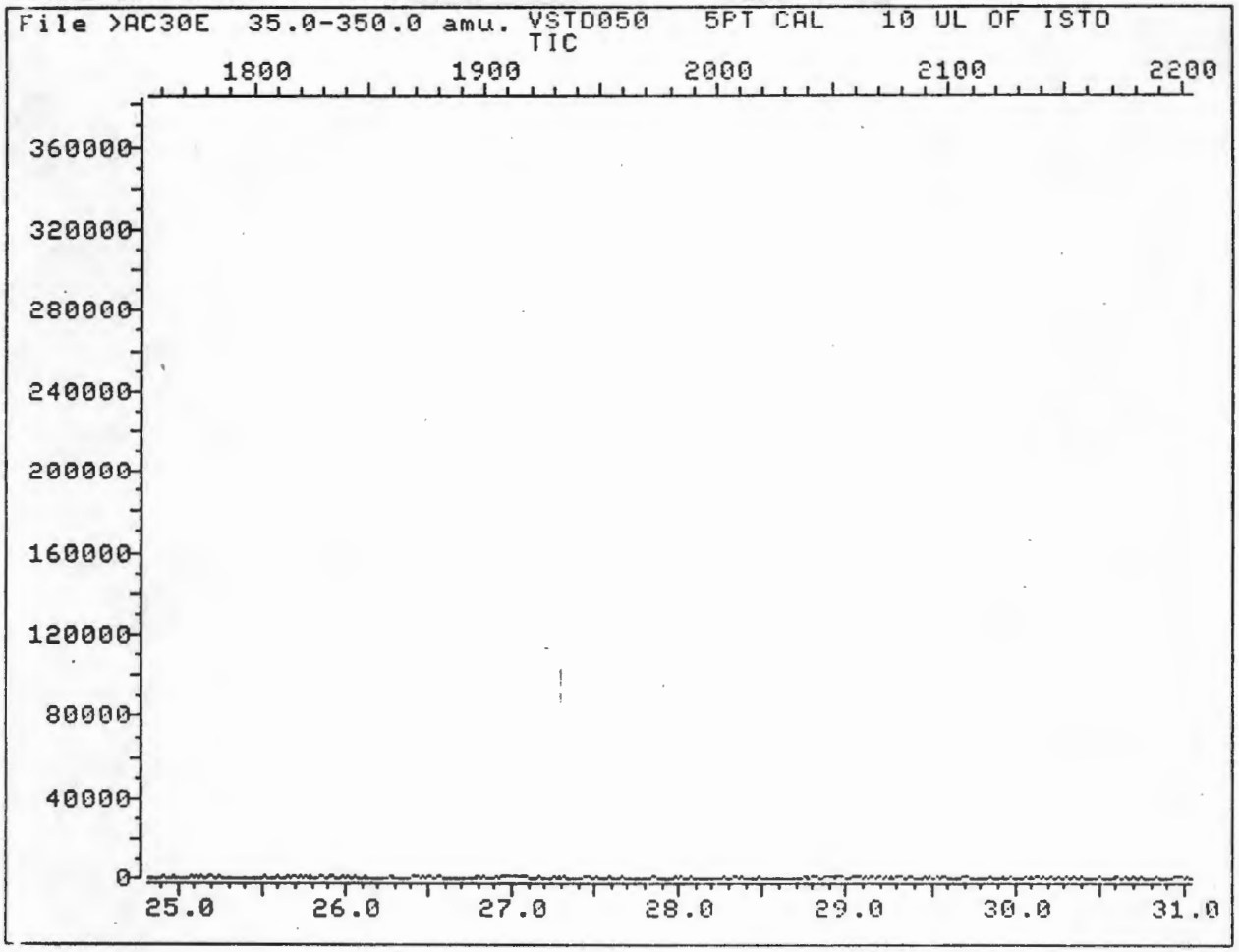
TOTAL ION CHROMATOGRAM



Data File: >AC30E::D5
Name: VSTD050 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30E::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940329 09:52

Operator ID: JOY
Quant Time : 940330 11:59
Injected at: 940330 11:28

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QUANT REPORT

Operator ID: JOY Jackie Rose. Chang
Output File: ^AC30F::D2
Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7 Quant Time: 940330 14:19
Injected at: 940330 13:47
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46 Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.35	128.0	114962	50.00	UG/L	83
2)	CHLOROMETHANE	1.03	50.0	160138	90.17	UG/L	97
3)	VINYL CHLORIDE	1.17	62.0	191175	93.25	UG/L	94
4)	BROMOMETHANE	1.42	94.0	268000	93.78	UG/L	97
5)	CHLOROETHANE	1.53	64.0	106350	98.39	UG/L	99
6)	1,1-DICHLOROETHENE	2.47	96.0	234138	98.70	UG/L	82
7)	CARBON DISULFIDE	2.64	76.0	662667	100.25	UG/L	99
8)	ACETONE	2.71	43.0	108134	92.26	UG/L	90
9)	METHYLENE CHLORIDE	3.33	84.0	241115 3/31/94	97.19	UG/L	84
10)	1,2-DICHLOROETHENE (TOTAL)	5.91	96.0	525938M JW	202.28	UG/L	68
11)	1,1-DICHLOROETHANE	4.68	63.0	429120	98.31	UG/L	98
12)	2-BUTANONE	6.16	43.0	169031	97.31	UG/L	100
13)	CHLOROFORM	6.70	83.0	552577	99.99	UG/L	96
14)	1,2-DICHLOROETHANE-d4	7.50	65.0	294900	101.35	UG/L	90
15)	1,2-DICHLOROETHANE	7.66	62.0	337940	100.00	UG/L	99
16)	*1,4-DIFLUOROBENZENE	8.53	114.0	405737	50.00	UG/L	90
17)	VINYL ACETATE	5.08	43.0	392272	101.55	UG/L	100
18)	1,1,1-TRICHLOROETHANE	6.80	97.0	452732	103.71	UG/L	98
19)	CARBON TETRACHLORIDE	7.10	117.0	453176	104.74	UG/L	97
20)	BENZENE	7.52	78.0	598913	101.87	UG/L	100
21)	TRICHLOROETHENE	8.88	130.0	343705	101.46	UG/L	95
22)	1,2-DICHLOROPROPANE	9.27	63.0	274891	97.25	UG/L	98
23)	BROMODICHLOROMETHANE	9.96	83.0	567450	104.80	UG/L	97
24)	CIS-1,3-DICHLOROPROPENE	10.86	75.0	432322	105.67	UG/L	98
25)	TRANS-1,3-DICHLOROPROPENE	12.05	75.0	394724	106.61	UG/L	99
26)	1,1,2-TRICHLOROETHANE	12.36	97.0	300603	100.71	UG/L	97
27)	DIBROMOCHLOROMETHANE	13.04	129.0	624993	106.21	UG/L	99
28)	BROMOFORM	15.93	173.0	518275	105.97	UG/L	98
29)	*CHLOROBENZENE-d5	14.14	117.0	328410	50.00	UG/L	89
30)	4-METHYL-2-PENTANONE	11.35	43.0	278077	99.46	UG/L	94
31)	TOLUENE-d8	11.28	98.0	720686	107.35	UG/L	95
32)	TOLUENE	11.40	91.0	746612	103.77	UG/L	97
33)	TETRACHLOROETHENE	12.44	164.0	349383	108.33	UG/L	99
34)	2-HEXANONE	13.05	43.0	287620	99.82	UG/L	89
35)	CHLOROBENZENE	14.19	112.0	658050	102.75	UG/L	97
36)	ETHYLBENZENE	14.55	106.0	263335 3/31/94	104.99	UG/L	99
37)	XYLENE (TOTAL)	14.82	106.0	944022M JW	321.31	UG/L	92
38)	STYRENE	15.66	104.0	533718	104.14	UG/L	93
39)	BROMOFLUOROBENZENE	16.69	95.0	538552	108.15	UG/L	91
40)	1,1,2,2-TETRACHLOROETHANE	17.24	83.0	537927	108.95	UG/L	99

QUANT REPORT

Operator ID: JOY
Output File: ^AC30F::D2
Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7
Quant Time: 940330 14:19
Injected at: 940330 13:47
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	1,3-DICHLOROBENZENE	18.98	146.0	644317	107.57	UG/L	100
42)	1,4-DICHLOROBENZENE	19.20	146.0	660146	104.79	UG/L	100
43)	1,2-DICHLOROBENZENE	19.96	146.0	624488	106.08	UG/L	100

* Compound is ISTD

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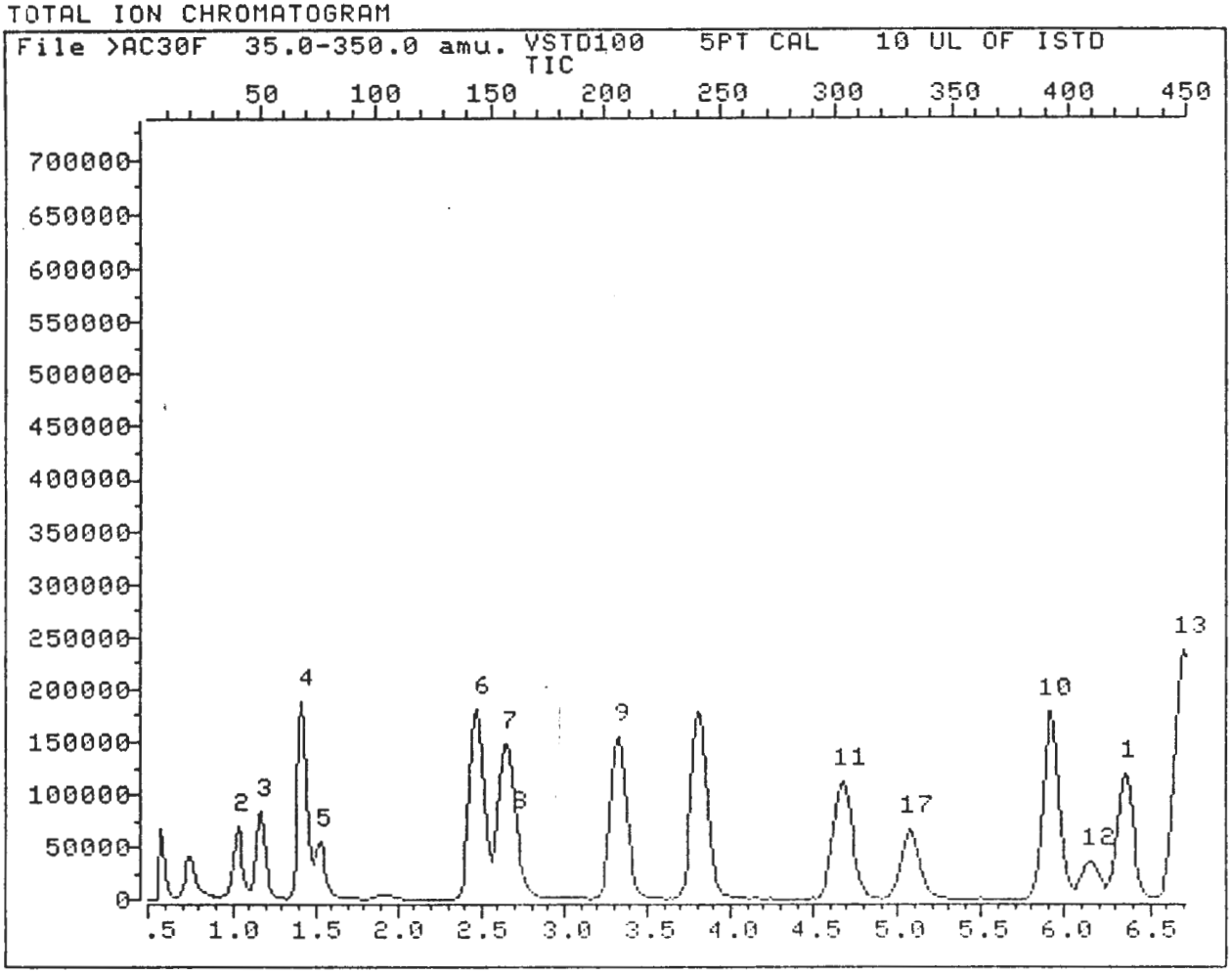
TOTAL ION CHROMATOGRAM



Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30F::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:19
Injected at: 940330 13:47

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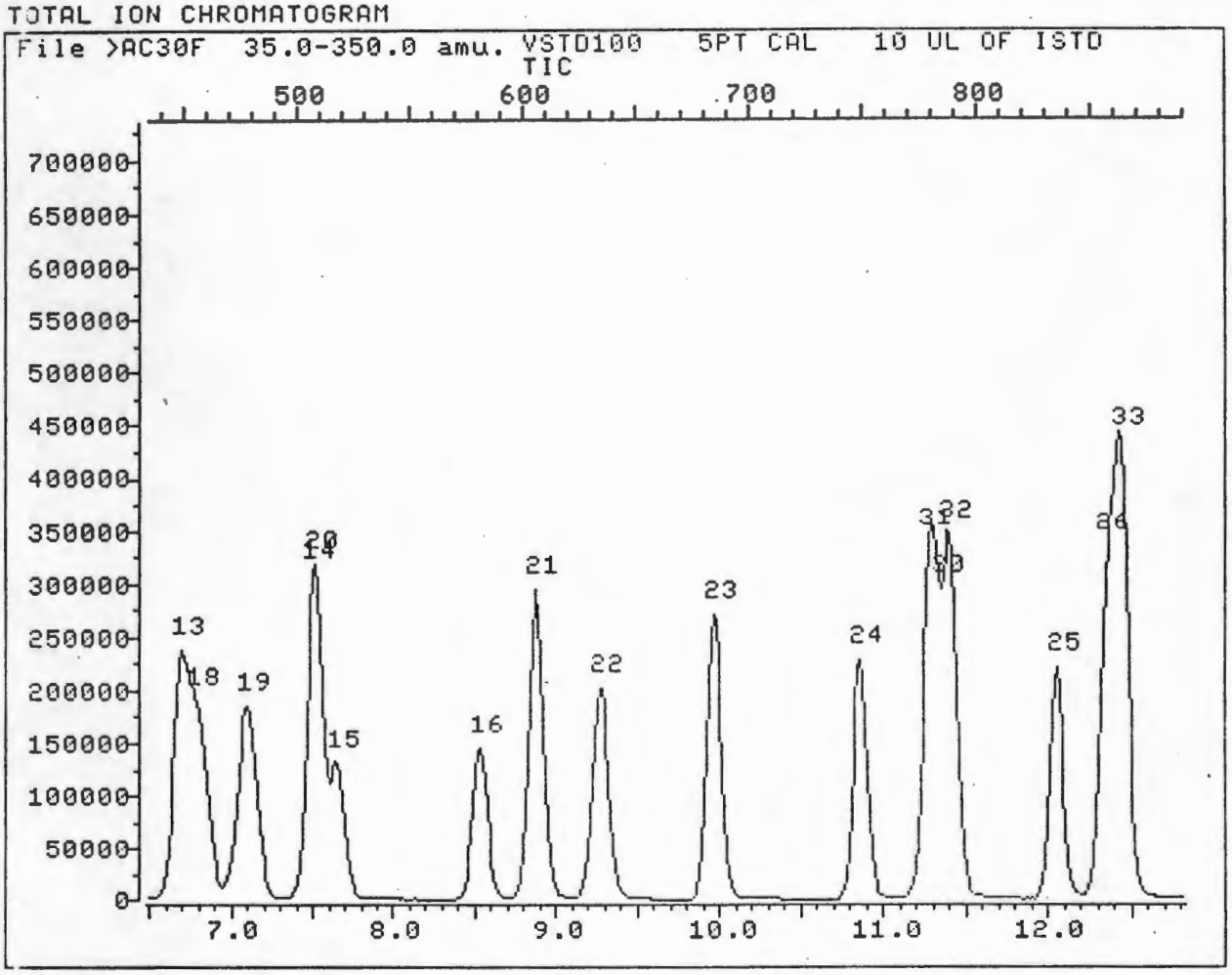
TOTAL ION CHROMATOGRAM



Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30F::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:19
Injected at: 940330 13:47

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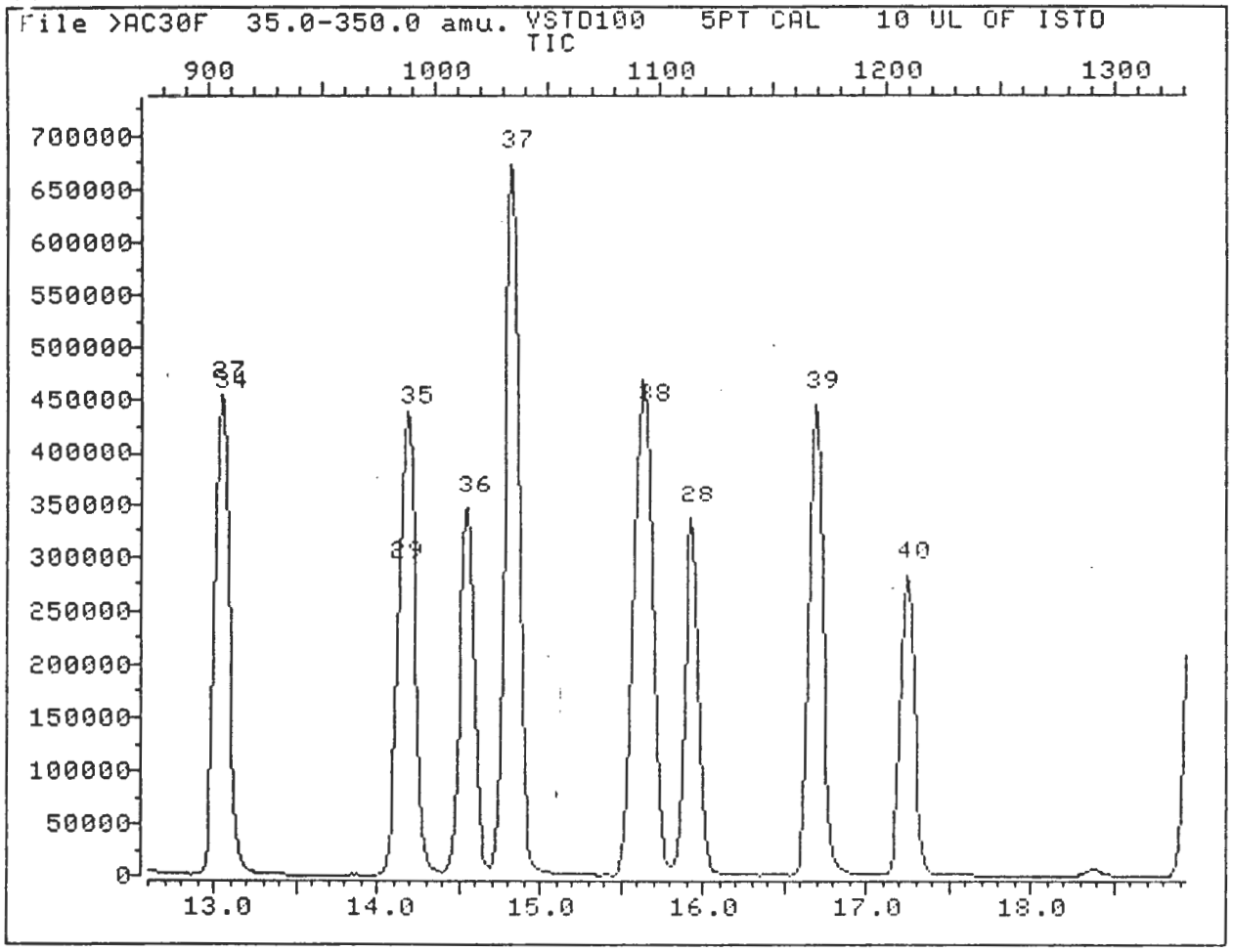
TOTAL ION CHROMATOGRAM



Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30F::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:19
Injected at: 940330 13:47

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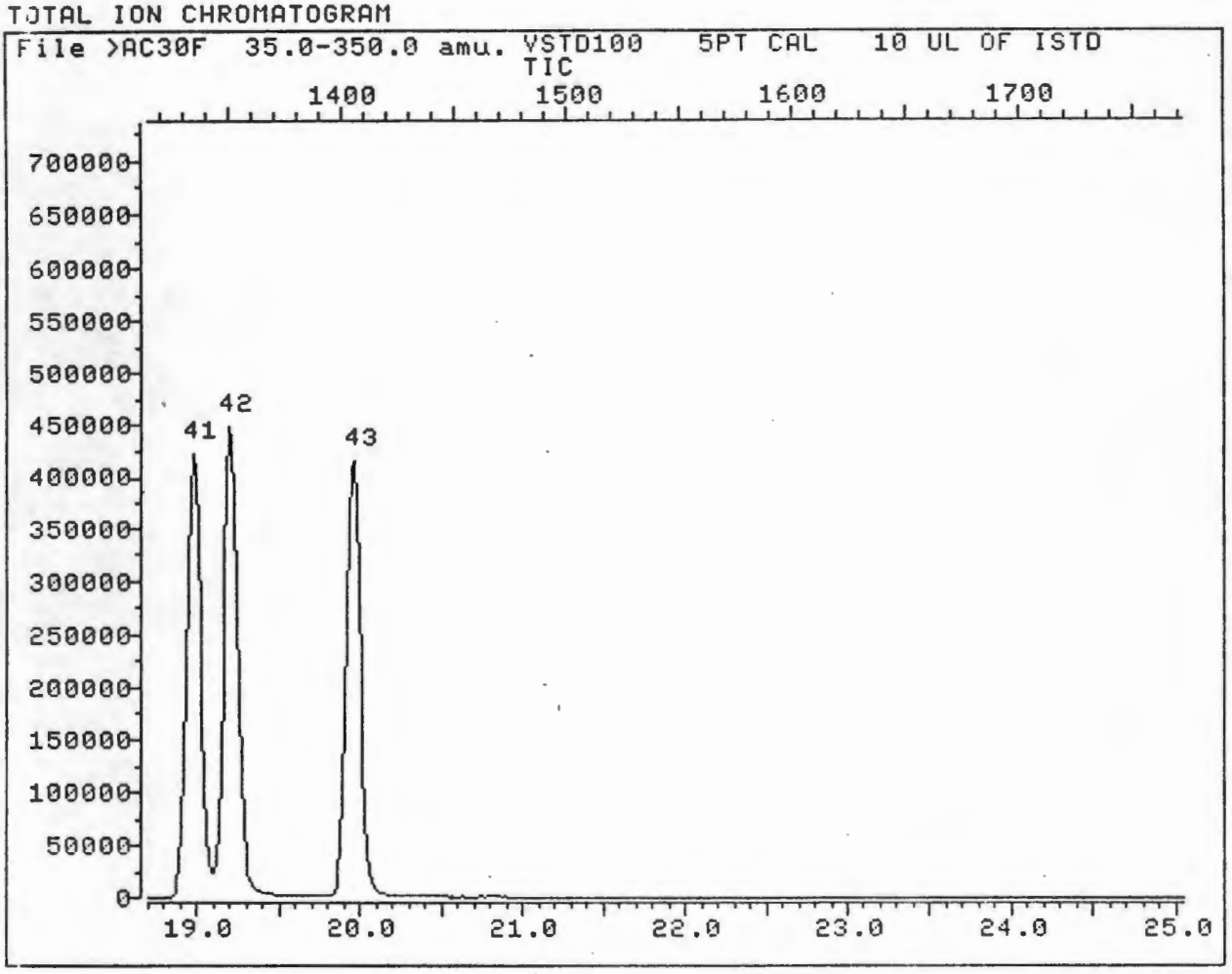
9613458.1114

TOTAL ION CHROMATOGRAM



Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30F::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:19
Injected at: 940330 13:47

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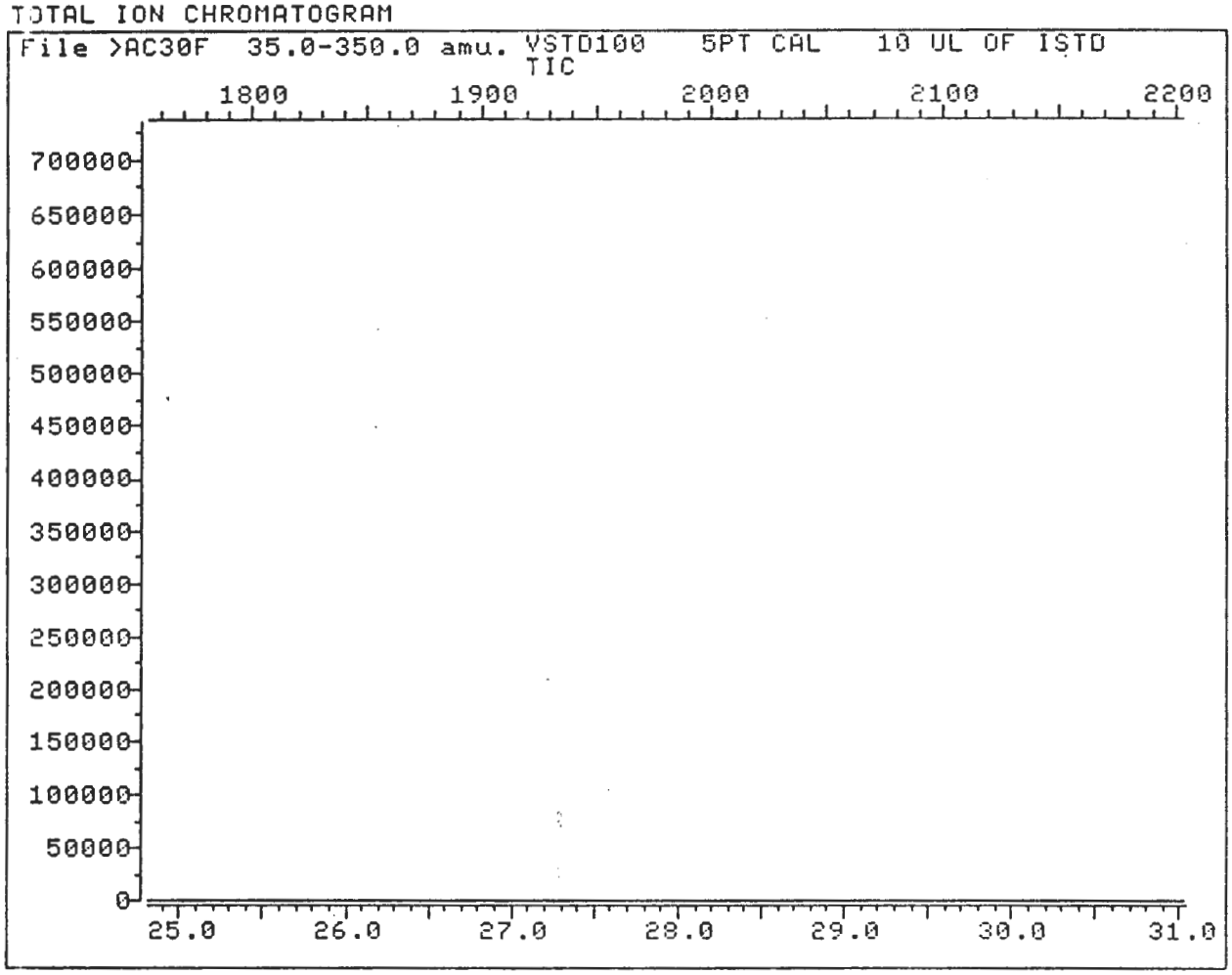
TOTAL ION CHROMATOGRAM



Data File: >AC30F::D5
Name: VSTD100 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30F::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:19
Injected at: 940330 13:47

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9613458.1116

3/31/94

QUANT REPORT

Operator ID: JOY Joel Rose - Chem
Output File: ^AC30G::D2
Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7
Quant Time: 940330 14:58
Injected at: 940330 14:26
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46
Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.38	128.0	117680	50.00	UG/L	82
2)	CHLOROMETHANE	1.04	50.0	312084	171.66	UG/L	96
3)	VINYL CHLORIDE	1.18	62.0	387720	184.75	UG/L	98
4	BROMOMETHANE	1.43	94.0	508983	173.99	UG/L	95
5	CHLOROETHANE	1.54	64.0	203075	183.53	UG/L	98
6	1,1-DICHLOROETHENE	2.48	96.0	445891	183.63	UG/L	86
7	CARBON DISULFIDE	2.66	76.0	1322189	195.40	UG/L	98
8)	ACETONE	2.75	43.0	229336	191.16	UG/L	87
9)	METHYLENE CHLORIDE	3.36	84.0	472757 3/31/94	186.16	UG/L	90
10)	1,2-DICHLOROETHENE (TOTAL)	5.94	96.0	1060089M Jbc	398.31	UG/L	78
11)	1,1-DICHLOROETHANE	4.70	63.0	867346	194.12	UG/L	99
12	2-BUTANONE	6.20	43.0	380711	214.10	UG/L	100
13	CHLOROFORM	6.71	83.0	1116866	197.44	UG/L	96
14	1,2-DICHLOROETHANE-d4	7.53	65.0	592392	198.90	UG/L	93
15	1,2-DICHLOROETHANE	7.67	62.0	693650	200.51	UG/L	99
16	*1,4-DIFLUOROBENZENE	8.54	114.0	432107	50.00	UG/L	89
17	VINYL ACETATE	5.10	43.0	832628	202.40	UG/L	100
18)	1,1,1-TRICHLOROETHANE	6.82	97.0	920100	197.92	UG/L	98
19)	CARBON TETRACHLORIDE	7.12	117.0	941796	204.38	UG/L	99
20)	BENZENE	7.55	78.0	1205301	192.50	UG/L	100
21)	TRICHLOROETHENE	8.89	130.0	707958	196.24	UG/L	98
22)	1,2-DICHLOROPROPANE	9.29	63.0	551782	183.30	UG/L	96
23)	BROMODICHLOROMETHANE	9.97	83.0	1168646	202.66	UG/L	97
24	CIS-1,3-DICHLOROPROPENE	10.86	75.0	895540	205.53	UG/L	96
25	TRANS-1,3-DICHLOROPROPENE	12.05	75.0	812064	205.94	UG/L	99
26	1,1,2-TRICHLOROETHANE	12.36	97.0	614796	193.41	UG/L	98
27)	DIBROMOCHLOROMETHANE	13.04	129.0	1292934	206.31	UG/L	97
28)	BROMOFORM	15.93	173.0	1126780	216.34	UG/L	96
29)	*CHLOROBENZENE-d5	14.15	117.0	343537	50.00	UG/L	88
30)	4-METHYL-2-PENTANONE	11.36	43.0	606837	207.48	UG/L	94
31)	TOLUENE-d8	11.29	98.0	1490637	212.27	UG/L	94
32)	TOLUENE	11.40	91.0	1527856	203.00	UG/L	92
33)	TETRACHLOROETHENE	12.44	164.0	694100	205.74	UG/L	95
34)	2-HEXANONE	13.05	43.0	646455	214.48	UG/L	94
35)	CHLOROBENZENE	14.19	112.0	1343071	200.48	UG/L	97
36)	ETHYLBENZENE	14.55	106.0	534086 3/31/94	203.56	UG/L	85
37)	XYLENE (TOTAL)	14.83	106.0	1935175M Jbc	629.65	UG/L	
38)	STYRENE	15.66	104.0	1115235	208.02	UG/L	92
39)	BROMOFLUOROBENZENE	16.69	95.0	1093315	209.89	UG/L	92
40)	1,1,2,2-TETRACHLOROETHANE	17.25	83.0	1121614	217.16	UG/L	99

QUANT REPORT

Operator ID: JOY
Output File: ^AC30G::D2
Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Rev: 7
Quant Time: 940330 14:58
Injected at: 940330 14:26
Dilution Factor: 1.00000
Instrument ID: VOA-1
Instrument ID: 70 2

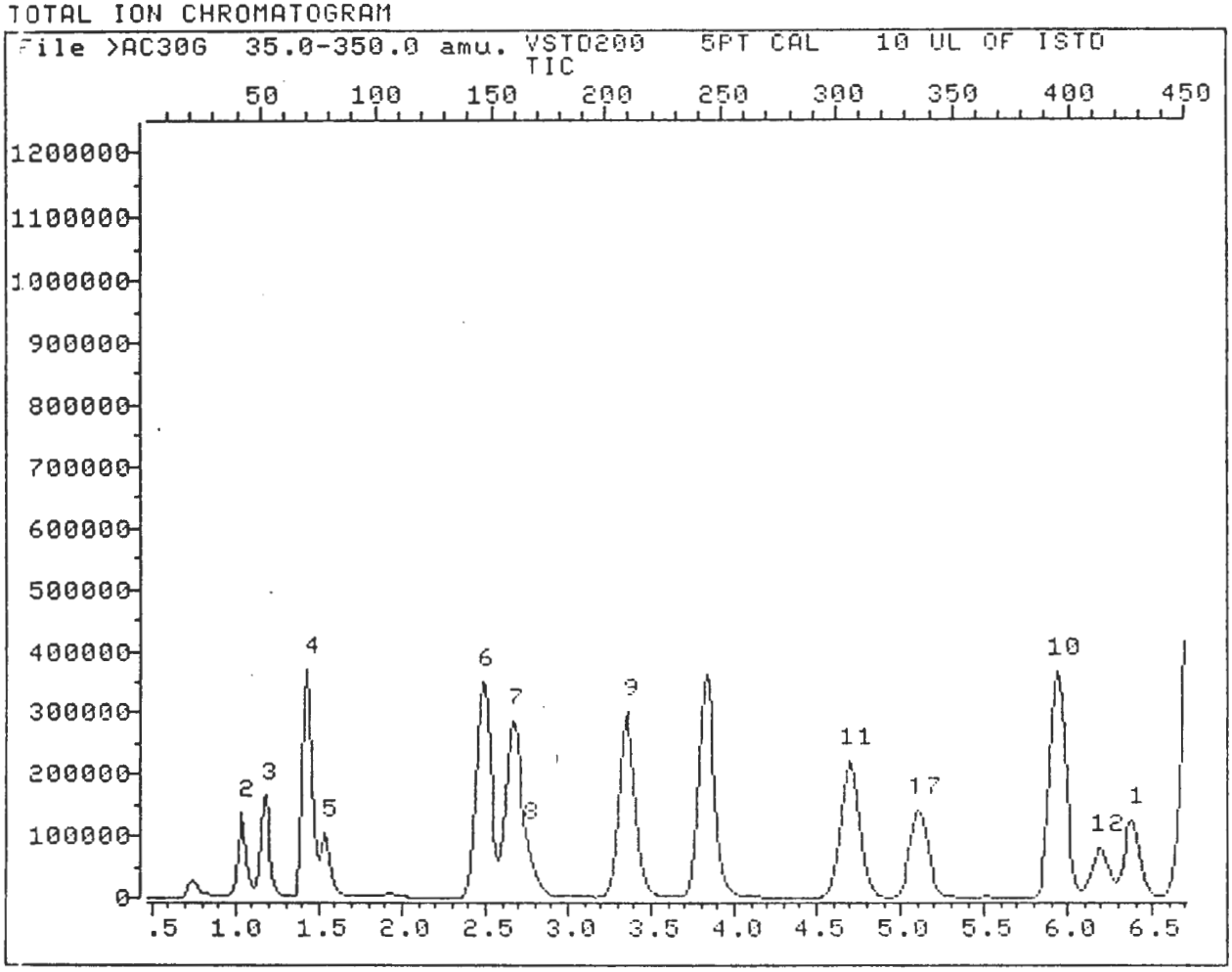
ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	1,3-DICHLOROBENZENE	18.98	146.0	1315763	210.00	UG/L	100
42)	1,4-DICHLOROBENZENE	19.21	146.0	1366877	207.42	UG/L	100
43)	1,2-DICHLOROBENZENE	19.96	146.0	1295132	210.30	UG/L	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30G::D2
Instrument ID: VOA-1
Instrument ID: 70 2

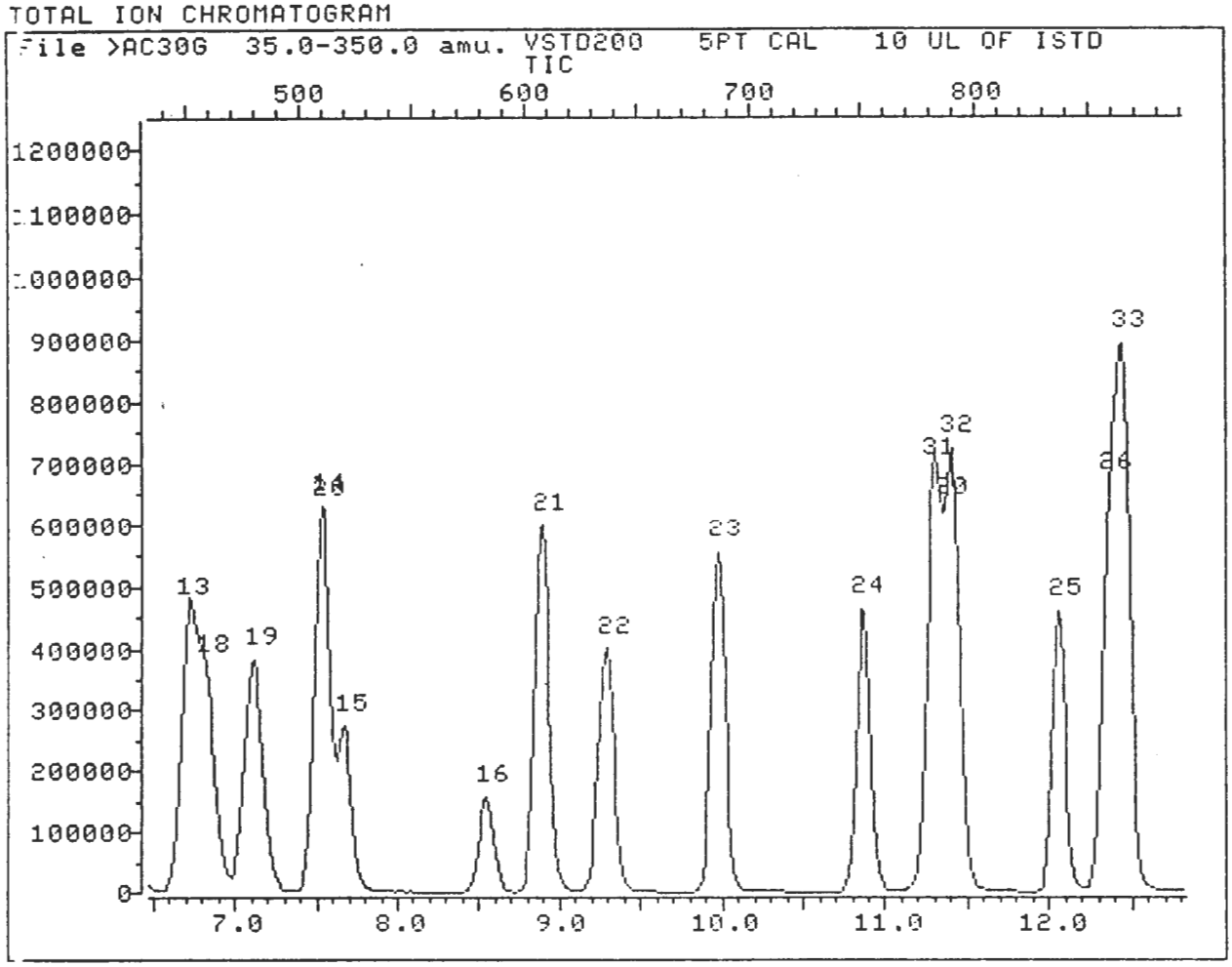
Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:58
Injected at: 940330 14:26

Page 1 of 5

TOTAL ION CHROMATOGRAM



Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30G::D2
Instrument ID: VOA-1
Instrument ID: 70 2

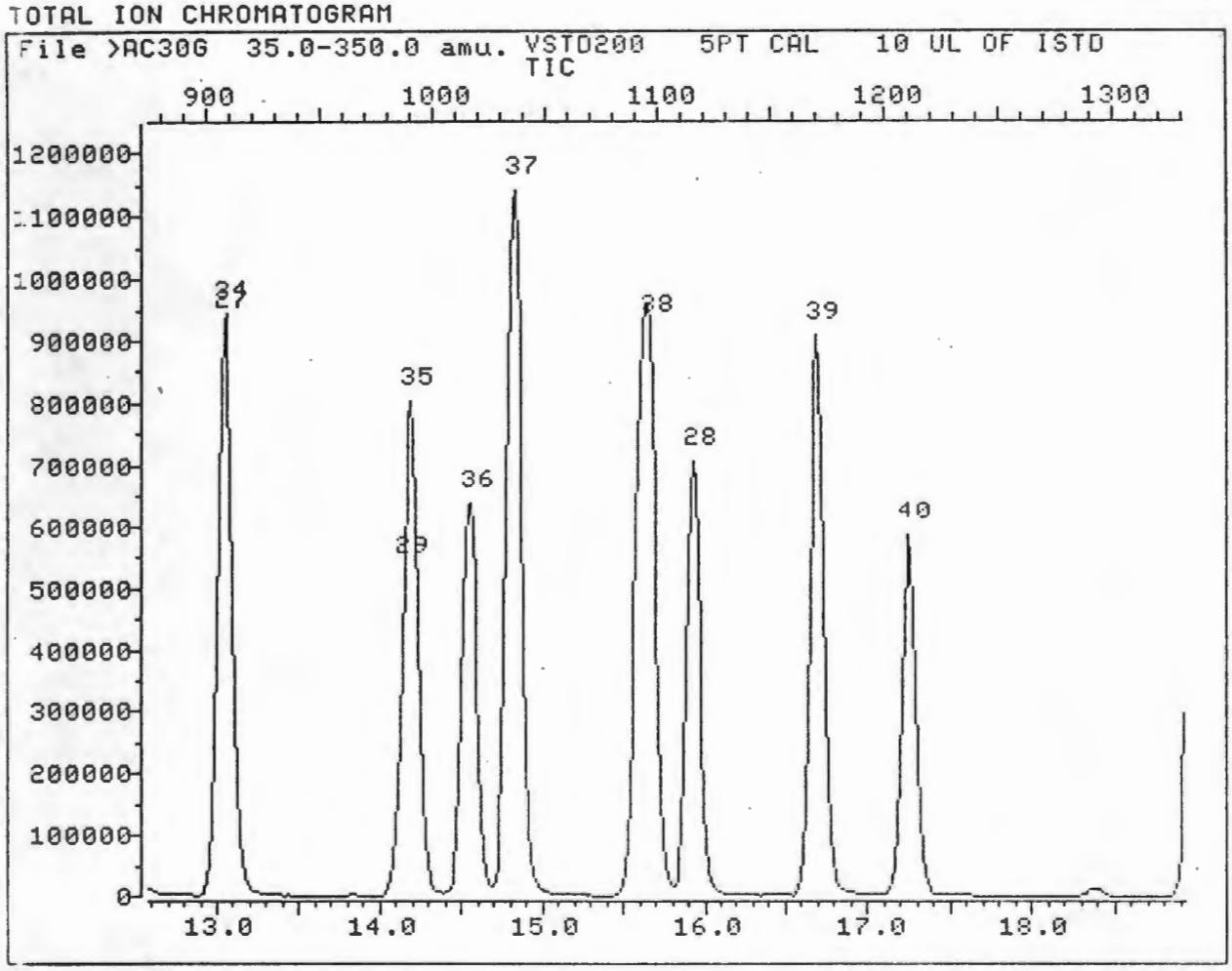
Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:58
Injected at: 940330 14:26

Page 2 of 5

TOTAL ION CHROMATOGRAM



Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30G::D2
Instrument ID: VOA-1
Instrument ID: 70 2

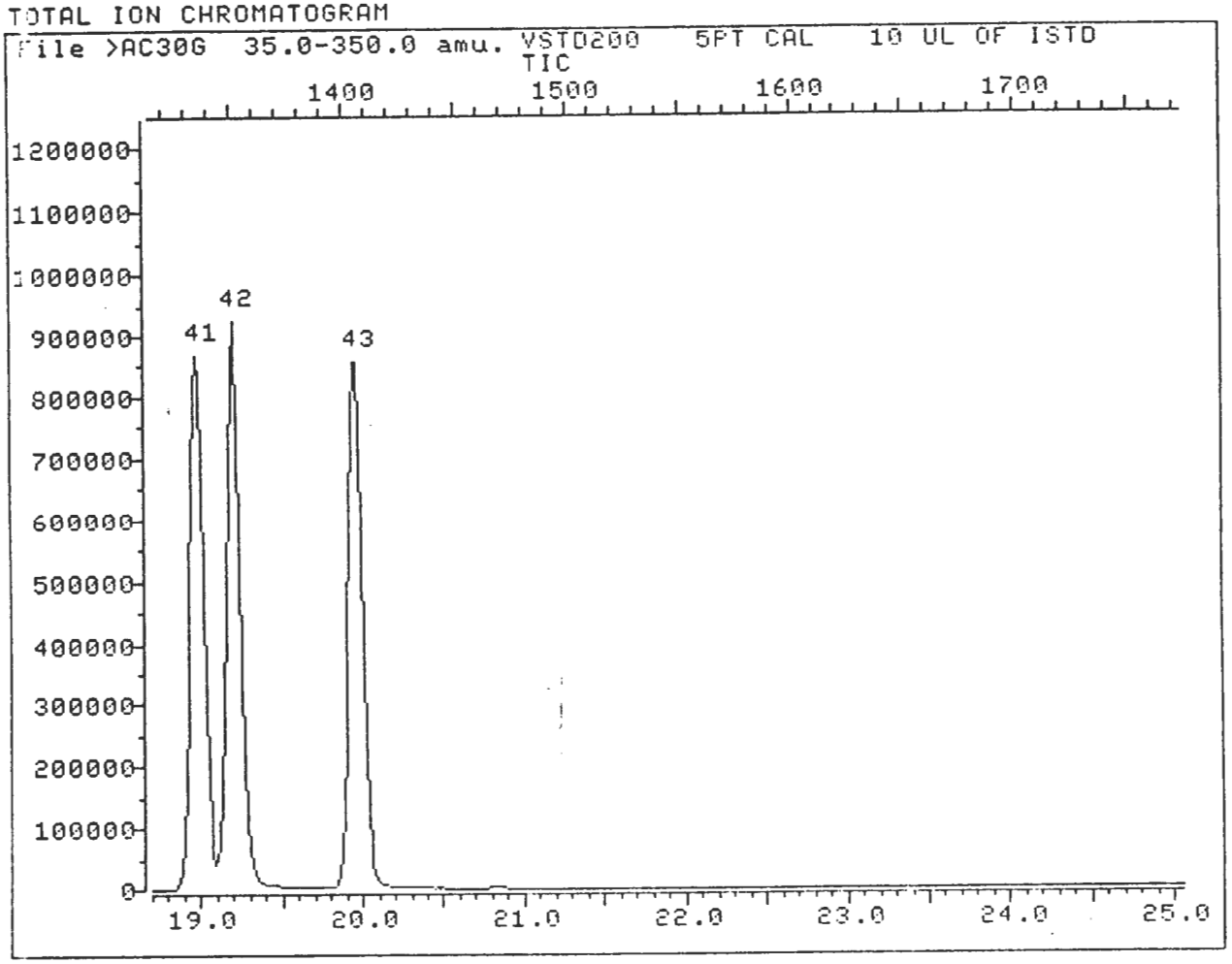
Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:58
Injected at: 940330 14:26

Page 3 of 5

TOTAL ION CHROMATOGRAM



Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30G::D2
Instrument ID: VOA-1
Instrument ID: 70 2

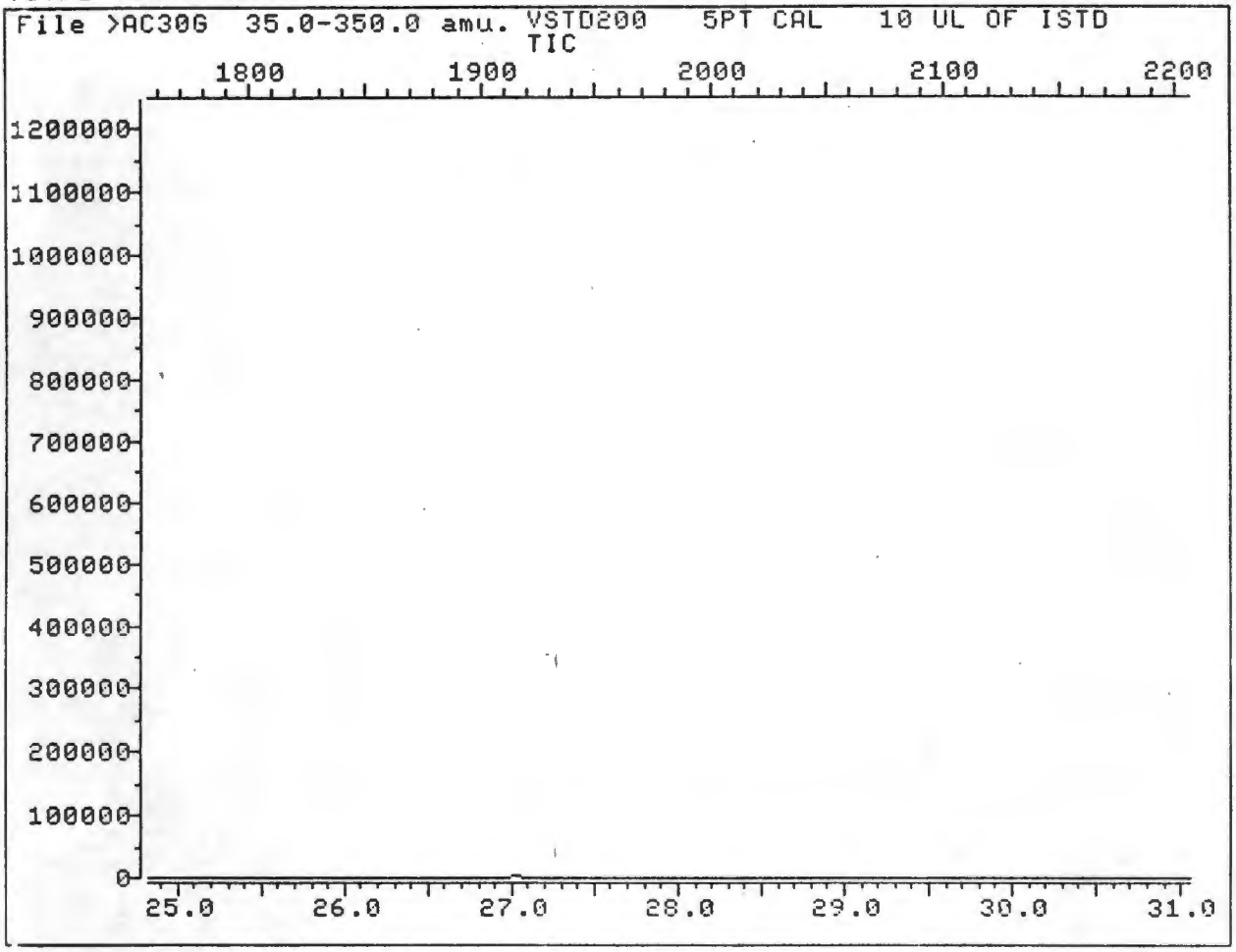
Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:58
Injected at: 940330 14:26

Page 4 of 5

TOTAL ION CHROMATOGRAM



Data File: >AC30G::D5
Name: VSTD200 5PT CAL
Misc: 10 UL OF ISTD

Quant Output File: ^AC30G::D2
Instrument ID: VOA-1
Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940324 07:46

Last Qcal Time: 940330 11:28

Operator ID: JOY
Quant Time : 940330 14:58
Injected at: 940330 14:26

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9613458.1123

7A - RCRA
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Instrument ID: 70 2 Calibration Date: 9/09/94 Time: 9:40

Lab File ID: >AI09B Init. Calib. Date(s):03/30/94 03/30/94

Heated Purge: (Y/N) N Init. Calib. Times: 1005 1426

GC Column: DB-624 ID: 0.53 (mm)

COMPOUND		$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Chloromethane	#	.751	.777	0.300	3.5	
Bromomethane		1.229	1.161		5.5	
Vinyl Chloride	*	.883	.924		4.6	25.0
Chloroethane		.463	.517		11.7	
Methylene Chloride		1.077	1.073		.3	
Acetone		.492	.146		70.3	
Carbon Disulfide		2.848	2.858		.3	
1,1-Dichloroethene	*	1.026	1.107		7.9	25.0
1,1-Dichloroethane	#	1.863	1.979	0.300	6.2	
1,2-Dichloroethene (total)		1.144	1.172		2.5	
Chloroform	*	2.391	2.466		3.1	25.0
1,2-Dichloroethane		1.444	1.562		8.2	
2-Butanone		.742	.386		48.0	
1,1,1-Trichloroethane		.535	.516		3.7	
Carbon Tetrachloride		.526	.511		2.8	
Bromodichloromethane		.653	.600		8.2	
1,2-Dichloropropane	*	.332	.305		8.1	25.0
cis-1,3-Dichloropropene		.497	.488		1.8	
Trichloroethene		.417	.392		5.9	
Dibromochloromethane		.705	.649		7.9	
1,1,2-Trichloroethane		.359	.354		1.4	
Benzene		.718	.714		.7	
trans-1,3-Dichloropropene		.444	.432		2.7	
Bromoform	#	.579	.559	0.250	3.5	
4-Methyl-2-pentanone		.411	.351		14.5	
2-Hexanone		.426	.256		39.8	
Tetrachloroethene		.505	.479		5.3	
1,1,2,2-Tetrachloroethane	#	.765	.714	0.300	6.6	
Toluene	*	1.101	1.102		.2	25.0
Chlorobenzene	#	.963	.924	0.300	4.0	
Ethylbenzene	*	.384	.388		1.2	25.0
Styrene		.773	.758		1.9	
Xylene (total)		.453	.450		.8	
Toluene-d8		1.056	1.082		2.5	
Bromofluorobenzene		.778	.782		.5	
1,2-Dichloroethane-d4		1.265	1.368		8.2	

* - CCC (Max %D = 25) # SPCC (Min RRF = 0.3 (Bromoform 0.25)

FORM VII VOA

9613458.1124

QUANT REPORT

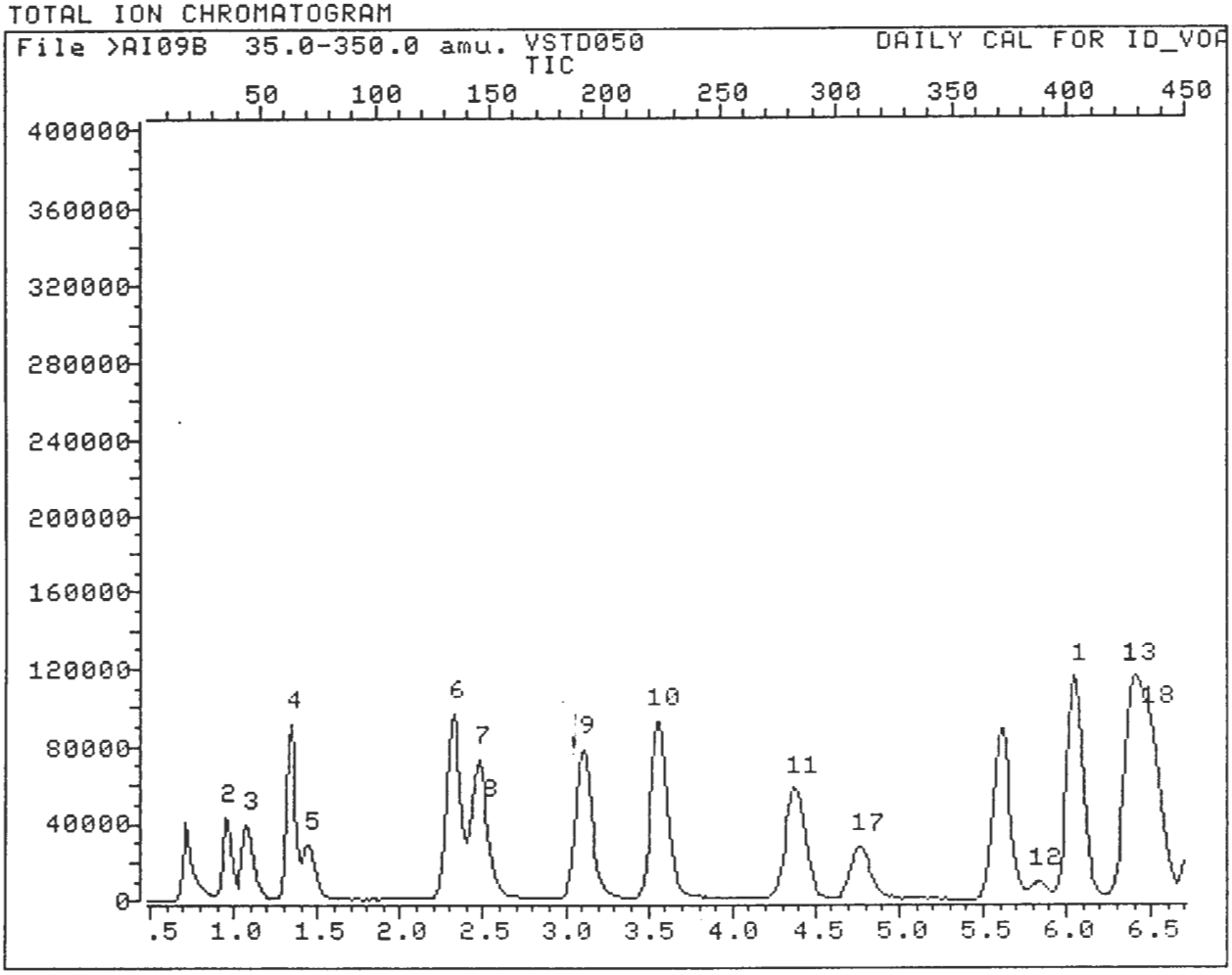
Operator ID: JOY
Quant Rev: 7
Quant Time: 940909 10:12
Output File: ^AI09B::D2
Injected at: 940909 09:40
Data File: >AI09B::D5
Dilution Factor: 1.00000
Name: VSTD050
Instrument ID: VOA-1
Misc: DAILY CAL FOR ID_VOA Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10
Last Qcal Time: 940817 08:59

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.04	128.0	115051	50.00	UG/L	83
2)	CHLOROMETHANE	.95	50.0	89432	45.30	UG/L	98
3)	VINYL CHLORIDE	1.08	62.0	106302	45.97	UG/L	97
4)	BROMOMETHANE	1.34	94.0	133526	47.58	UG/L	96
5)	CHLOROETHANE	1.45	64.0	59523	49.40	UG/L	96
6)	1,1-DICHLOROETHENE	2.32	96.0	127324	49.35	UG/L	81
7)	CARBON DISULFIDE	2.47	76.0	328754	49.23	UG/L	98
8)	ACETONE	2.52	43.0	16825	15.73	UG/L	89
9)	METHYLENE CHLORIDE	3.11	84.0	123496	48.11	UG/L	82
10)	1,2-DICHLOROETHENE (TOTAL)	3.55	96.0	269592M	94.14	UG/L	76
11)	1,1-DICHLOROETHANE	4.38	63.0	227655	49.02	UG/L	99
12)	2-BUTANONE	5.84	43.0	44397	26.70	UG/L	100
13)	CHLOROFORM	6.39	83.0	283713	49.89	UG/L	99
14)	1,2-DICHLOROETHANE-d4	7.21	65.0	157378	52.16	UG/L	85
15)	1,2-DICHLOROETHANE	7.35	62.0	179753	50.92	UG/L	99
16)	*1,4-DIFLUOROBENZENE	8.23	114.0	453253	50.00	UG/L	88
17)	VINYL ACETATE	4.77	43.0	170678	50.00	UG/L	100
18)	1,1,1-TRICHLOROETHANE	6.50	97.0	233708	49.97	UG/L	95
19)	CARBON TETRACHLORIDE	6.79	117.0	231794	49.75	UG/L	97
20)	BENZENE	7.21	78.0	323427	50.27	UG/L	100
21)	TRICHLOROETHENE	8.58	130.0	177777	49.38	UG/L	96
22)	1,2-DICHLOROPROPANE	8.98	63.0	138068	45.48	UG/L	99
23)	BROMODICHLOROMETHANE	9.68	83.0	271732	49.92	UG/L	97
24)	CIS-1,3-DICHLOROPROPENE	10.58	75.0	221048	50.71	UG/L	99
25)	TRANS-1,3-DICHLOROPROPENE	11.78	75.0	195749	49.88	UG/L	99
26)	1,1,2-TRICHLOROETHANE	12.07	97.0	160380	51.82	UG/L	97
27)	DIBROMOCHLOROMETHANE	12.77	129.0	294201	50.50	UG/L	99
28)	BROMOFORM	15.65	173.0	253322	53.28	UG/L	98
29)	*CHLOROBENZENE-d5	13.86	117.0	378263	50.00	UG/L	87
30)	4-METHYL-2-PENTANONE	11.06	43.0	132923	41.44	UG/L	87
31)	TOLUENE-d8	10.99	98.0	409247	48.85	UG/L	95
32)	TOLUENE	11.12	91.0	417015	47.32	UG/L	99
33)	TETRACHLOROETHENE	12.16	164.0	181132	47.19	UG/L	98
34)	2-HEXANONE	12.78	43.0	97017	27.85	UG/L	91
35)	CHLOROBENZENE	13.90	112.0	349691	47.99	UG/L	96
36)	ETHYLBENZENE	14.28	106.0	146792	47.72	UG/L	99
37)	XYLENE (TOTAL)	14.54	106.0	510511M	142.28	UG/L	96
38)	STYRENE	15.40	104.0	286840	47.62	UG/L	92
39)	BROMOFLUOROBENZENE	16.43	95.0	295863	49.24	UG/L	90
40)	1,1,2,2-TETRACHLOROETHANE	16.99	83.0	270124	48.96	UG/L	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM



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Name: VSTD050 Instrument ID: VOA-1
Misc: DAILY CAL FOR ID_VOA Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940817 08:59

Operator ID: JOY
Quant Time : 940909 10:12
Injected at: 940909 09:40

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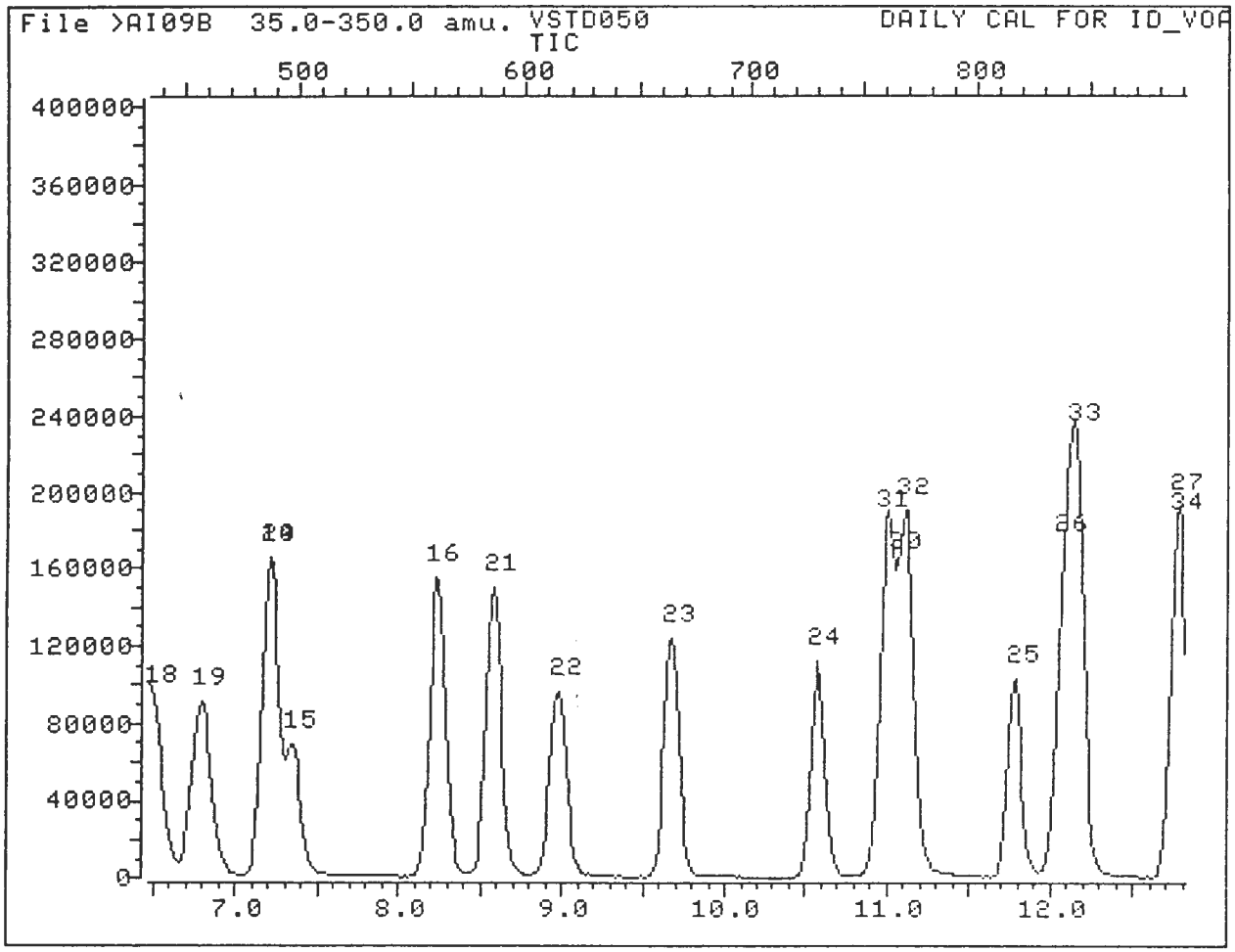
TOTAL ION CHROMATOGRAM



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Name: VSTD050 Instrument ID: VOA-1
Misc: DAILY CAL FOR ID_VOA Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940817 08:59

Operator ID: JOY
Quant Time : 940909 10:12
Injected at: 940909 09:40

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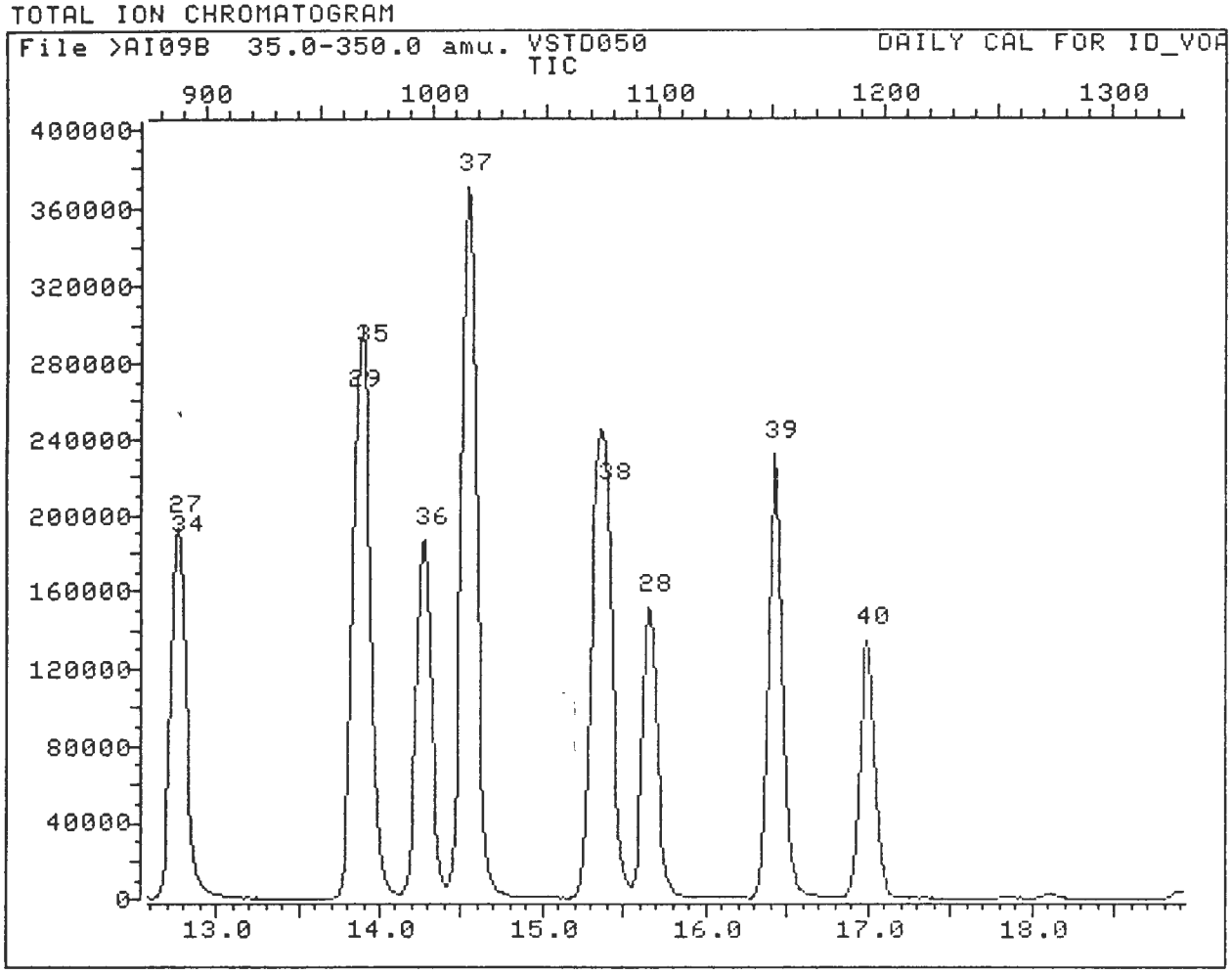
TOTAL ION CHROMATOGRAM



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Name: VSTD050 Instrument ID: VOA-1
Misc: DAILY CAL FOR ID_VOA Instrument ID: 70 2

Id File: ID_VOA::QT
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Last Calibration: 940330 15:10 Last Qcal Time: 940817 08:59

Operator ID: JOY
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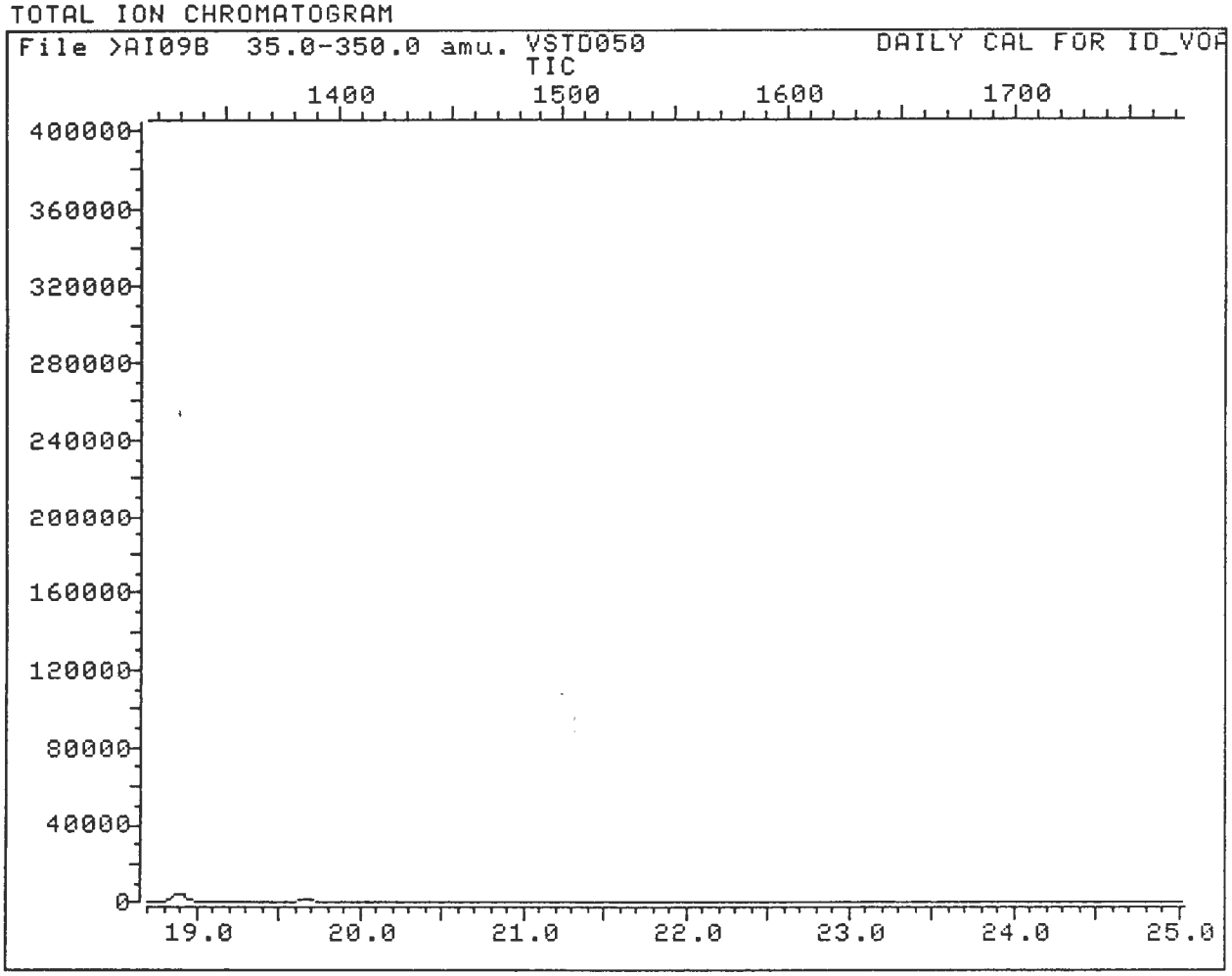
TOTAL ION CHROMATOGRAM



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Name: VSTD050 Instrument ID: VOA-1
Misc: DAILY CAL FOR ID_VOA Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940817 08:59

Operator ID: JOY
Quant Time : 940909 10:12
Injected at: 940909 09:40

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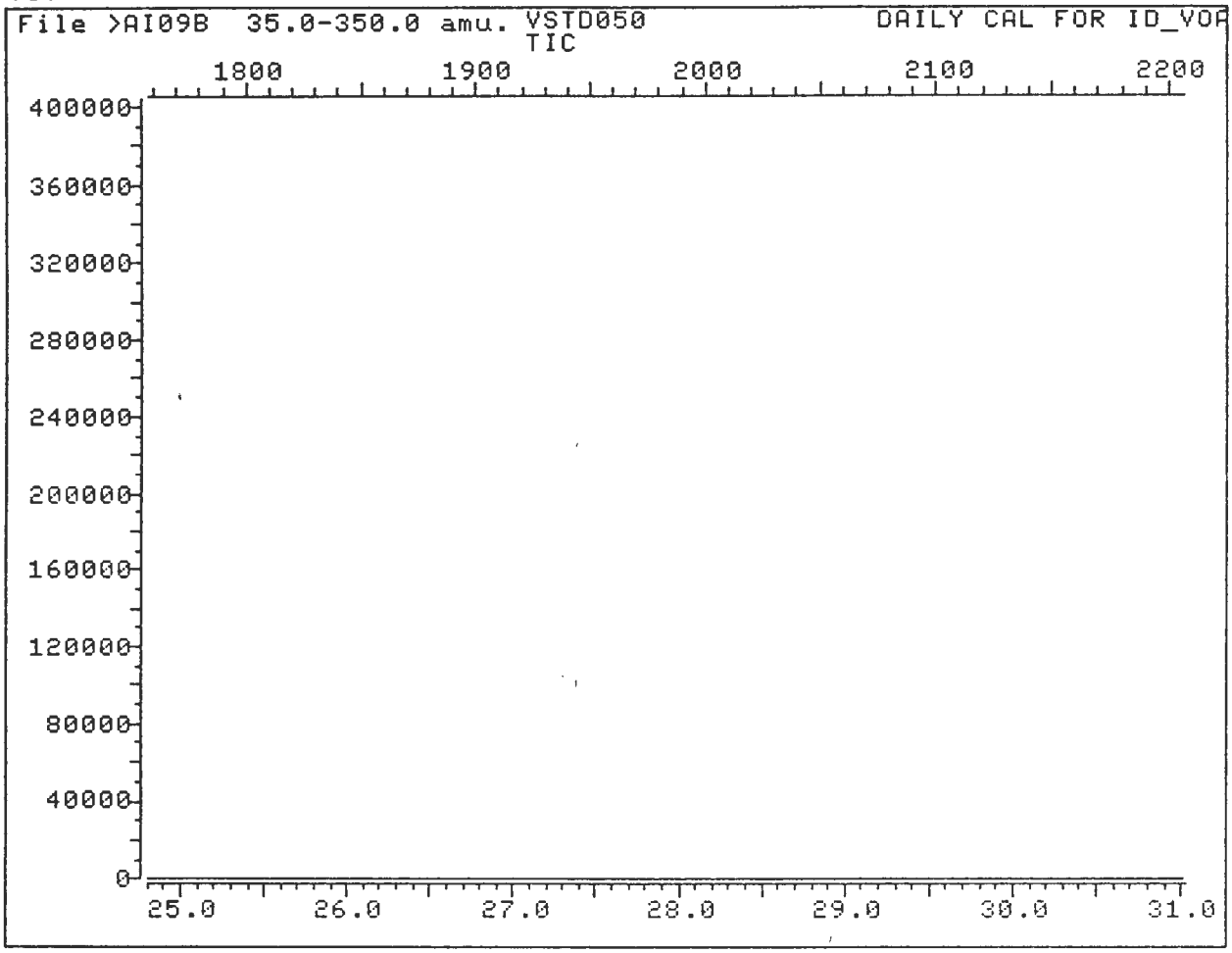
TOTAL ION CHROMATOGRAM



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Name: VSTD050 Instrument ID: VOA-1
Misc: DAILY CAL FOR ID_VOA Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940817 08:59

Operator ID: JOY
Quant Time : 940909 10:12
Injected at: 940909 09:40

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GC/MS PERFORMANCE STANDARD

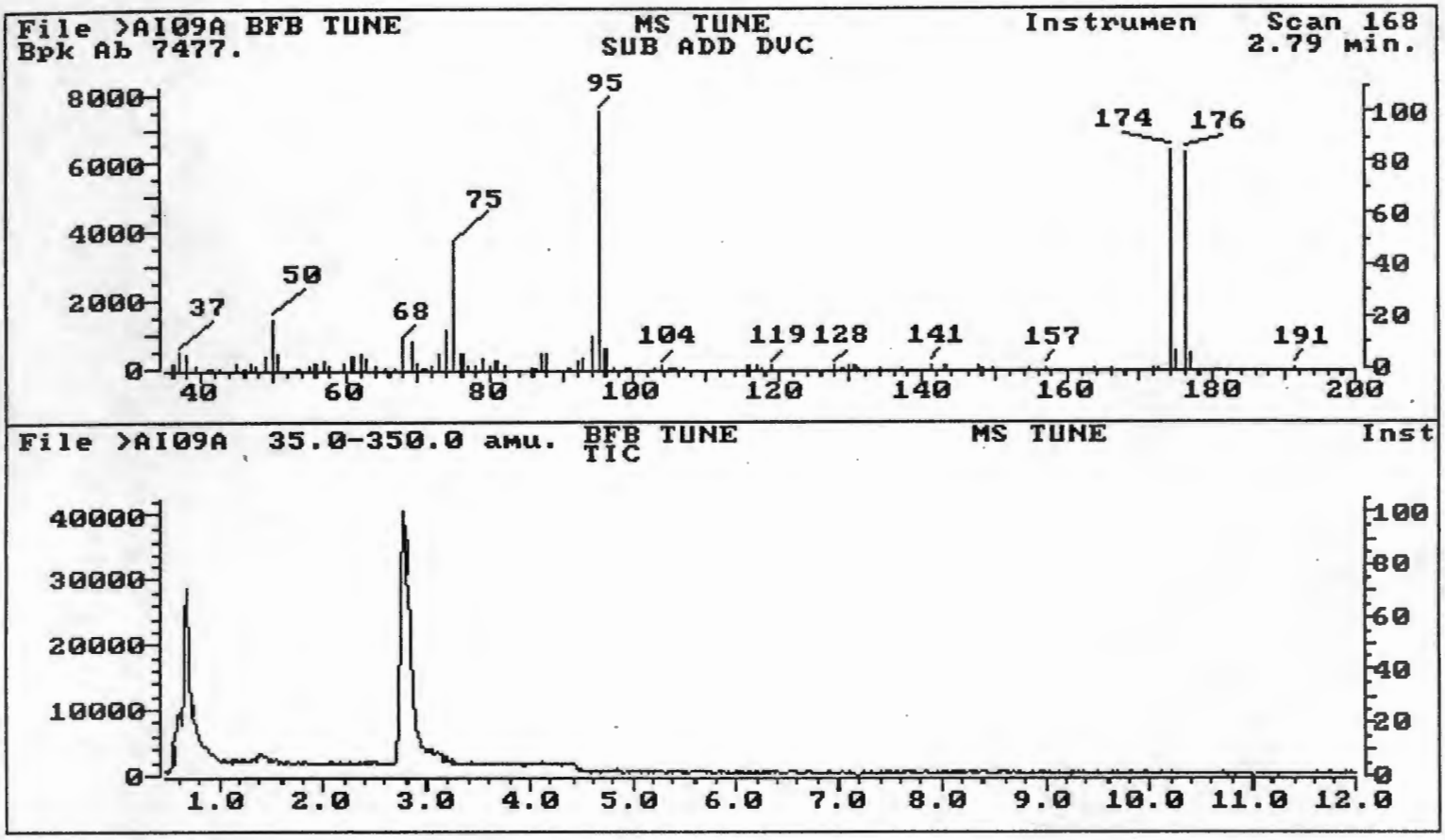
Bromofluorobenzene (BFB)

RCRA PROTOCOL

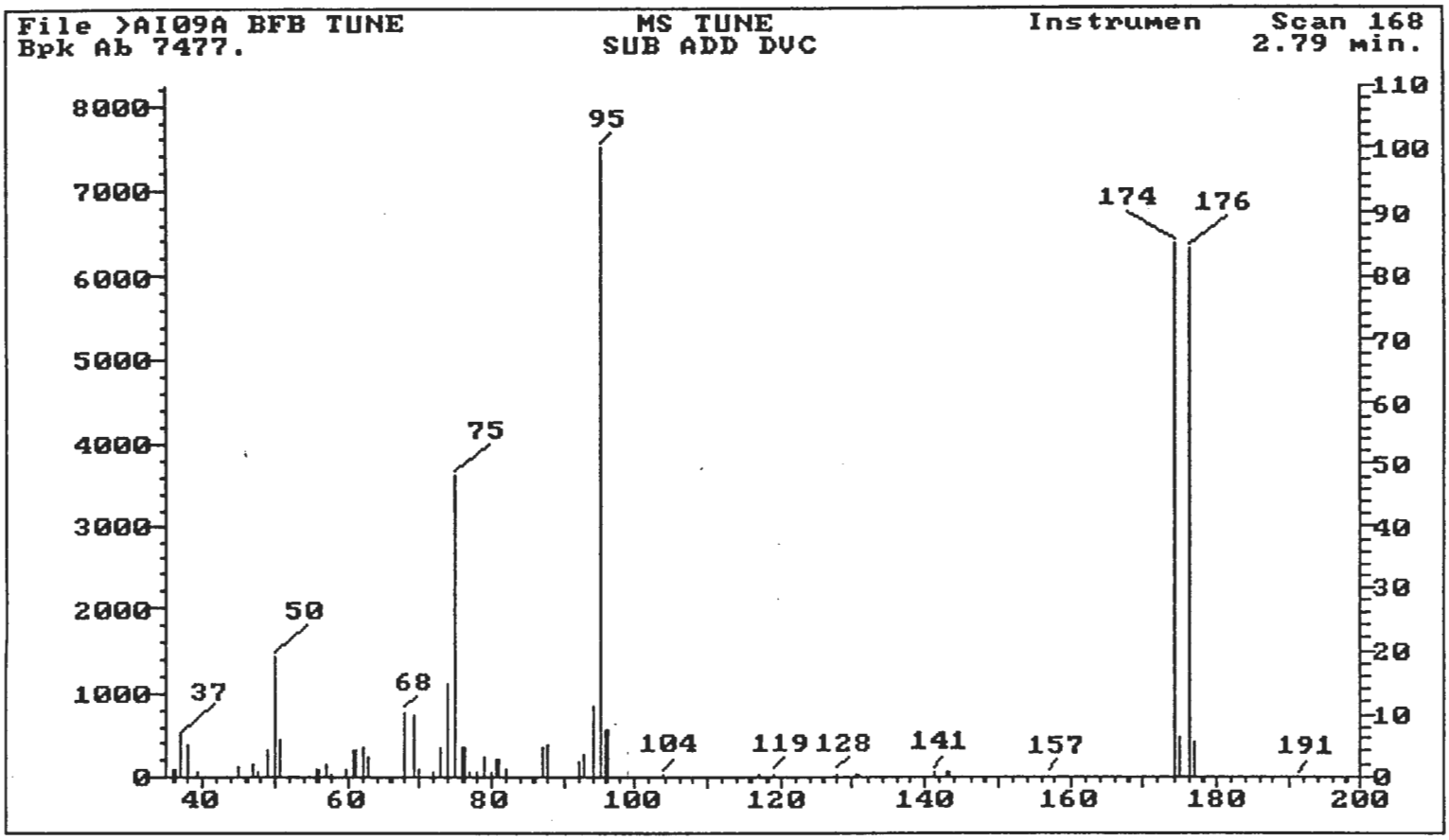
m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	19.13	19.13	Ok
75	30-60% of mass 95	48.39	48.39	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.47	7.47	Ok
173	Less than 2% of mass 174	.20	.24	Ok
174	50-100% of mass 95	84.97	84.97	Ok
175	5-9% of mass 174	6.12	7.20	Ok
176	95-101% of mass 174	84.16	99.05	Ok
177	5-9% of mass 176	5.56	6.61	Ok

Injection Date: 09/09/94
Injection Time: 09:07
Data File: >AI09A
Scan: 168

9613458.1131



9613458.1132



>AI09A BFB TUNE MS TUNE Instrument ID: 70 2

168 SUB ADD NRM DVC

File: >AI09A Scan #: 168 Retn. time: 2.79

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	1.092	60.95	4.266	80.90	2.710	105.50	.049	148.10	.076
36.95	6.415	62.05	4.422	82.00	1.007	105.80	.165	149.80	.076
38.05	5.251	62.95	2.973	85.70	.089	106.90	.094	154.60	.080
39.05	.727	64.00	.254	86.20	.107	116.00	.236	154.90	.107
40.95	.152	65.80	.098	87.00	4.913	116.90	.325	157.00	.143
41.35	.053	67.00	.210	88.00	5.243	117.00	.160	163.80	.045
42.65	.165	68.00	10.369	91.00	.143	117.90	.187	165.90	.071
45.05	1.591	69.00	9.669	92.10	2.389	119.00	.490	172.00	.053
46.15	.138	70.00	1.141	93.00	3.499	128.00	.535	172.70	.201
47.05	1.712	70.80	.062	94.10	11.377	128.60	.111	174.00	84.968
47.85	.807	71.20	.053	95.10	100.000	129.20	.049	175.10	6.121
48.95	4.302	71.90	.789	96.10	7.467	129.90	.236	176.00	84.157
49.95	19.129	73.10	4.783	97.10	.156	130.80	.361	177.00	5.559
51.05	5.760	74.00	15.081	98.90	.080	131.10	.103	191.25	.053
53.55	.120	75.00	48.386	99.20	.076	134.20	.049	201.65	.049
55.15	.245	76.00	4.440	99.50	.058	137.30	.067	206.85	.089
55.95	1.226	77.00	.611	102.80	.049	141.00	.753	207.15	.089
56.95	2.225	78.10	.874	103.90	.299	143.00	.687	207.45	.098
57.95	.294	79.00	2.973	105.10	.160	147.80	.227	241.15	.058
59.95	1.065	80.10	.660						

9613458.1134

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK25

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: VBLK25

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AI09C

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10.	U
75-35-4	1,1-Dichloroethene	10.	U
67-66-3	Chloroform	10.	U
107-02-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
56-23-5	Carbon Tetrachloride	10.	U
79-01-6	Trichloroethene	10.	U
71-43-2	Benzene	10.	U
127-18-4	Tetrachloroethene	10.	U
108-90-7	Chlorobenzene	10.	U

FORM I VOA 3/90

9613458.1135

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK25

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: VBLK25

Sample wt/vol: 5 (g/mL) ML Lab File ID: >AI09C

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
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16.				
17.				
18.				
19.				
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24.				
25.				
26.				
27.				
28.				
29.				
30.				

9613458.1136

9/12/94 QUANT REPORT Page 1

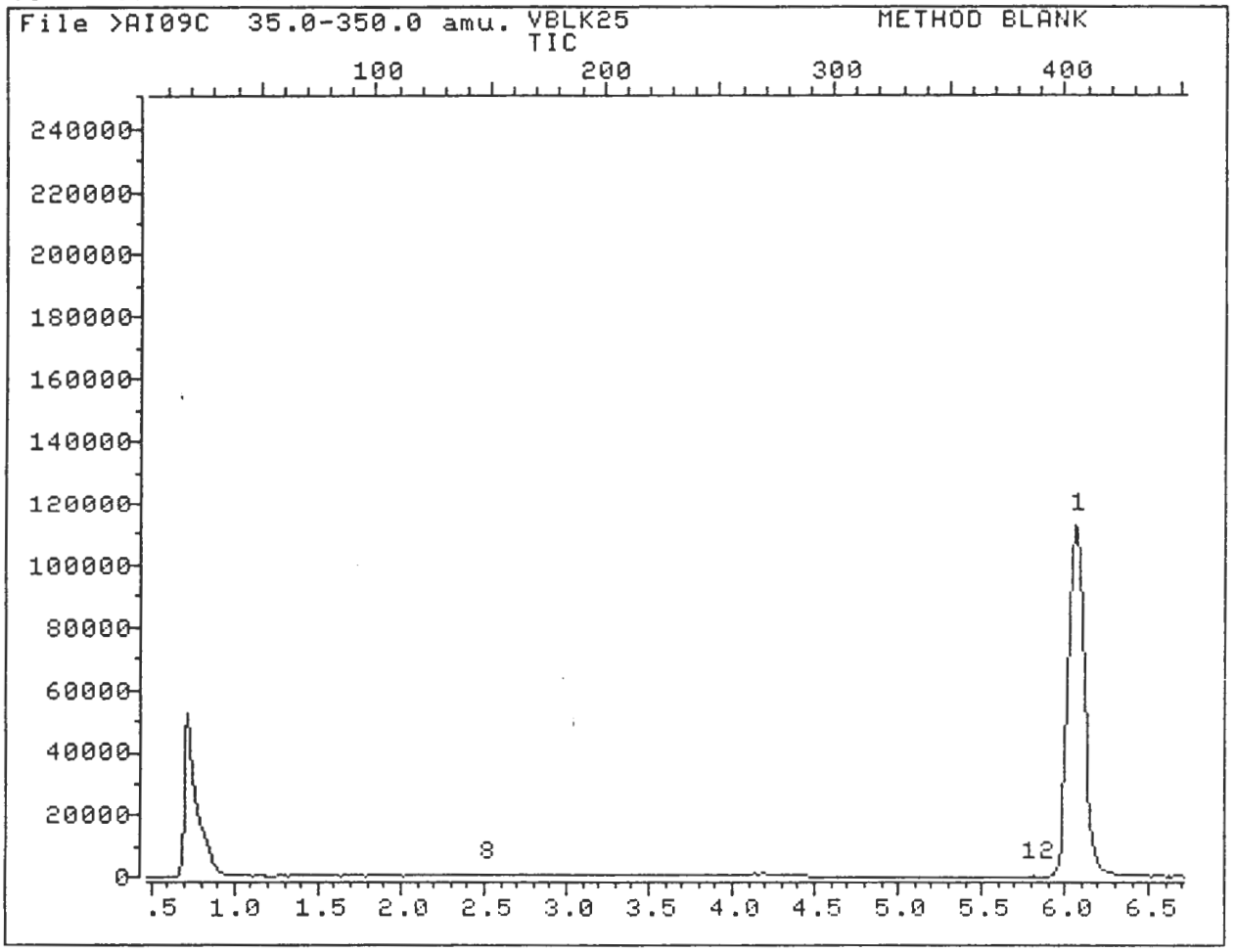
Operator ID: JOY Julie Rose-Chang Quant Rev: 7 Quant Time: 940909 11:11
Output File: ^AI09C::D2 Injected at: 940909 10:39
Data File: >AI09C::D5 Dilution Factor: 1.00000
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.06	128.0	115716	9/12/94 50.00	UG/L	81
~~8)~~	~~ACETONE~~ No DEN 9/12/94	2.49	43.0	946M	JDC 2.80	UG/L	69
~~12)~~	~~2-BUTANONE~~ No DEN 9/12/94	5.81	43.0	272M	9/12/94 .305	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.22	65.0	145644	JDC 46.01	UG/L	88
16)	*1,4-DIFLUOROBENZENE	8.26	114.0	449985	50.00	UG/L	90
29)	*CHLOROBENZENE-d5	13.88	117.0	366070	50.00	UG/L	91
31)	TOLUENE-d8	11.01	98.0	402854	50.86	UG/L	97
39)	BROMOFLUOROBENZENE	16.44	95.0	289795	50.61	UG/L	93

* Compound is ISTD

TOTAL ION CHROMATOGRAM



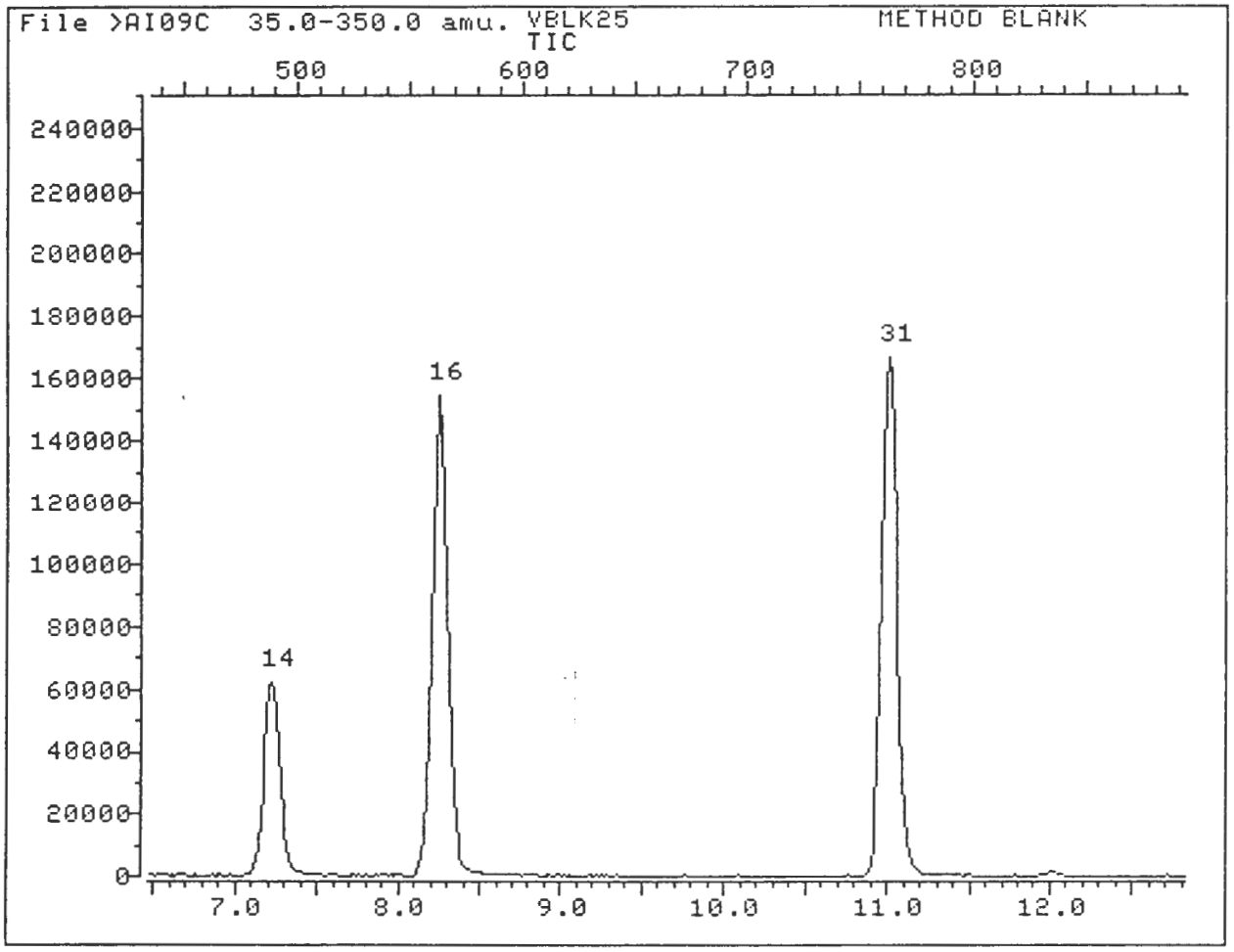
Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 11:11
Injected at: 940909 10:39

Page 1 of 5

TOTAL ION CHROMATOGRAM



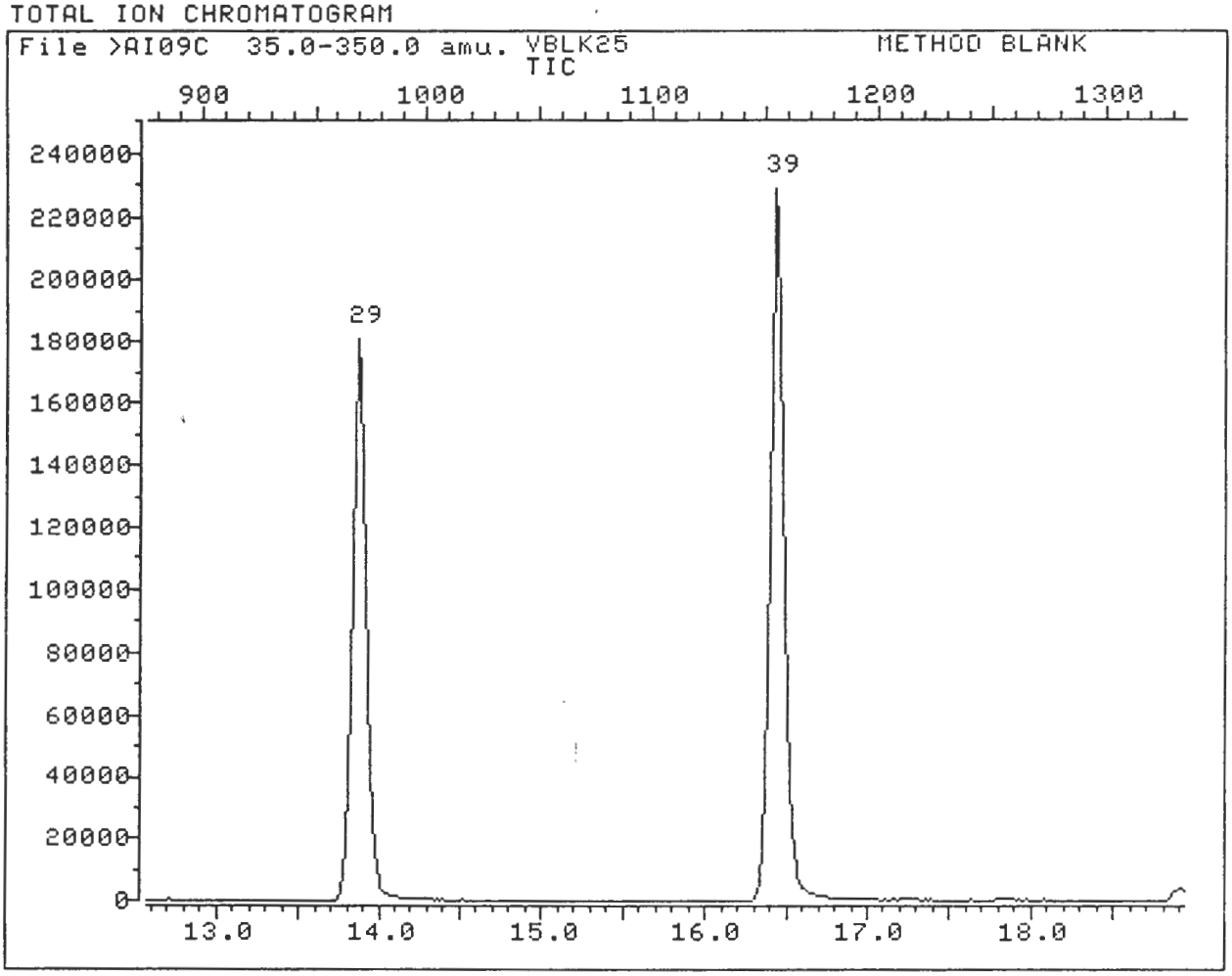
Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 11:11
Injected at: 940909 10:39

Page 2 of 5

TOTAL ION CHROMATOGRAM



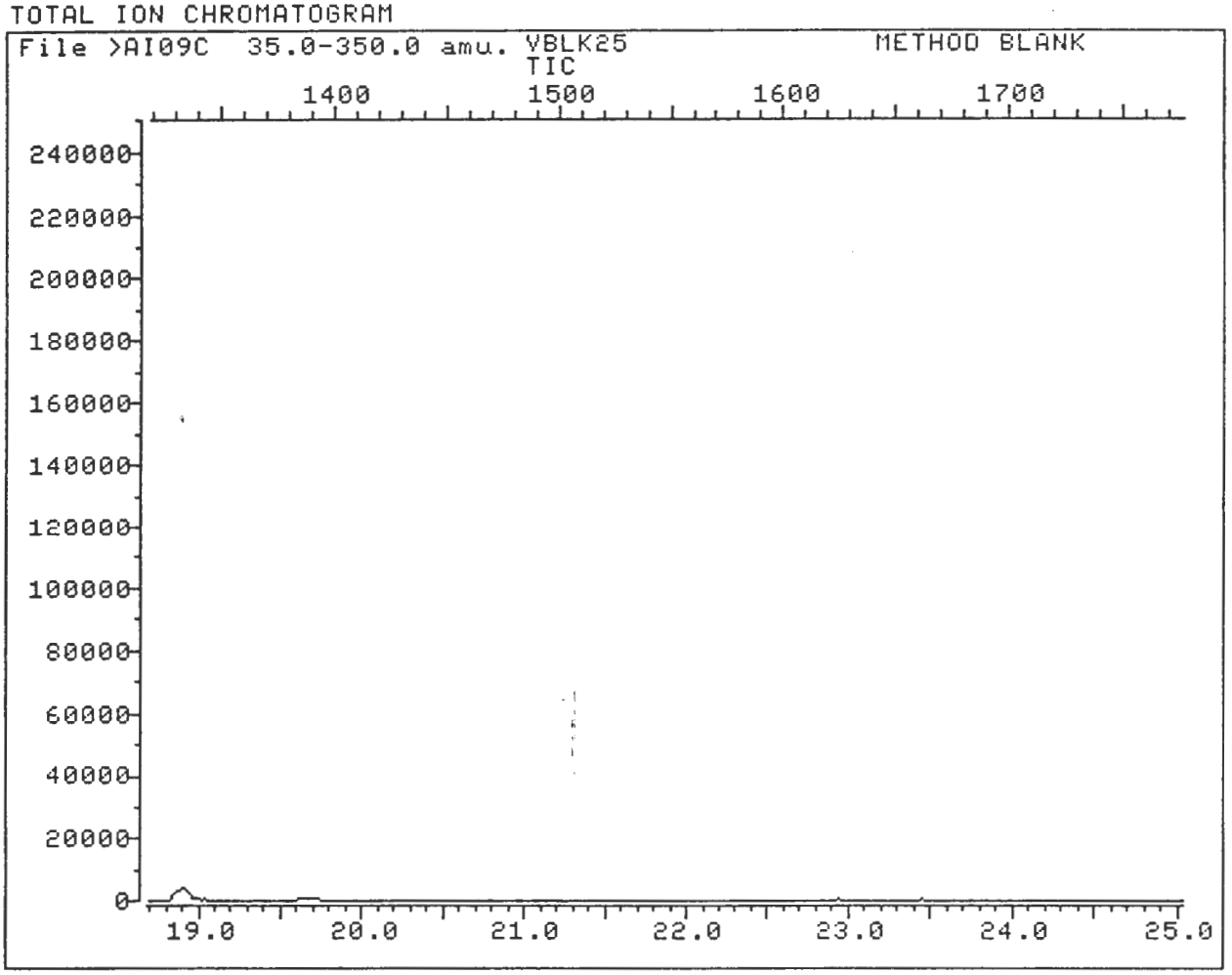
Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 11:11
Injected at: 940909 10:39

Page 3 of 5

TOTAL ION CHROMATOGRAM



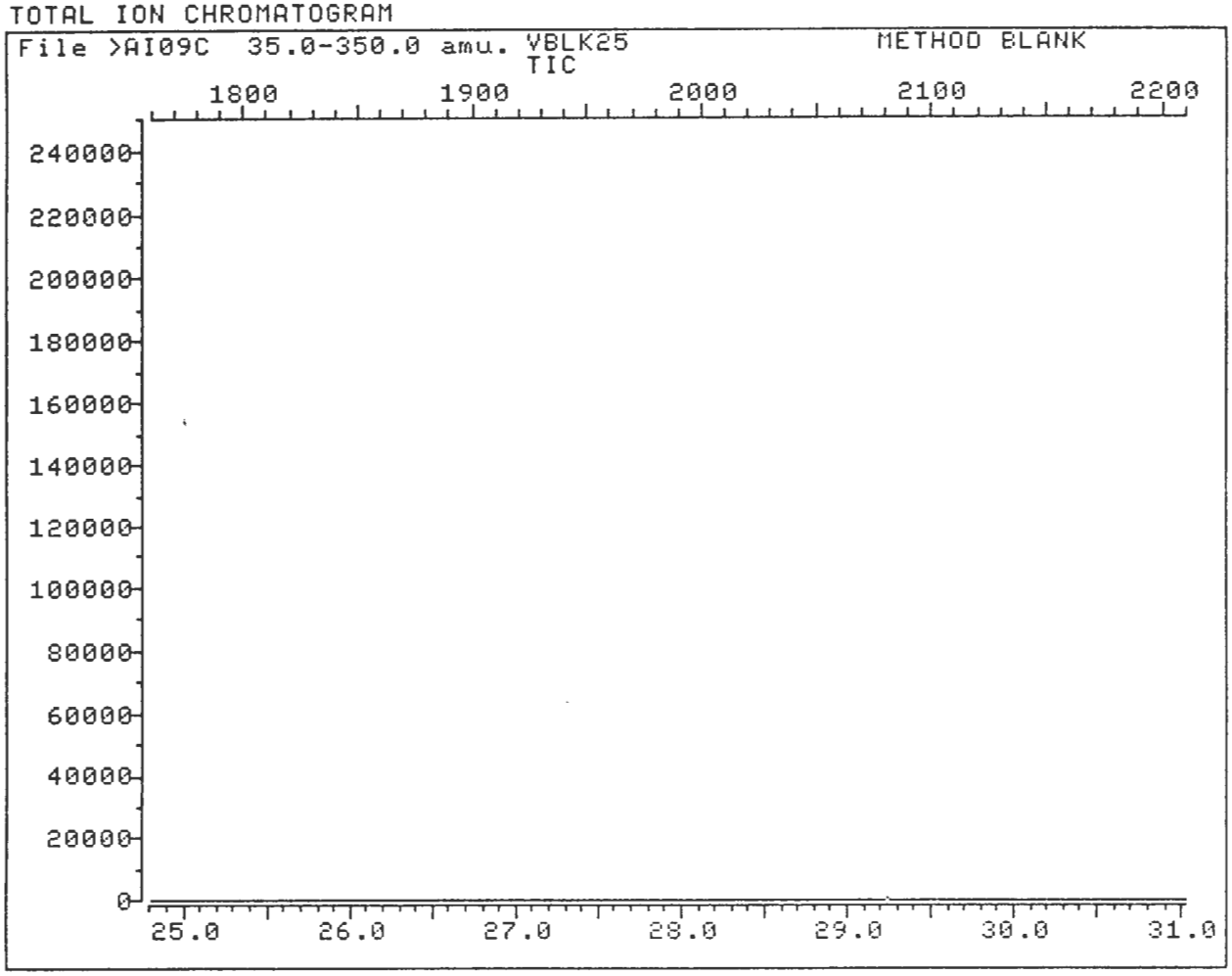
Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 11:11
Injected at: 940909 10:39

Page 4 of 5

TOTAL ION CHROMATOGRAM



Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 11:11
Injected at: 940909 10:39

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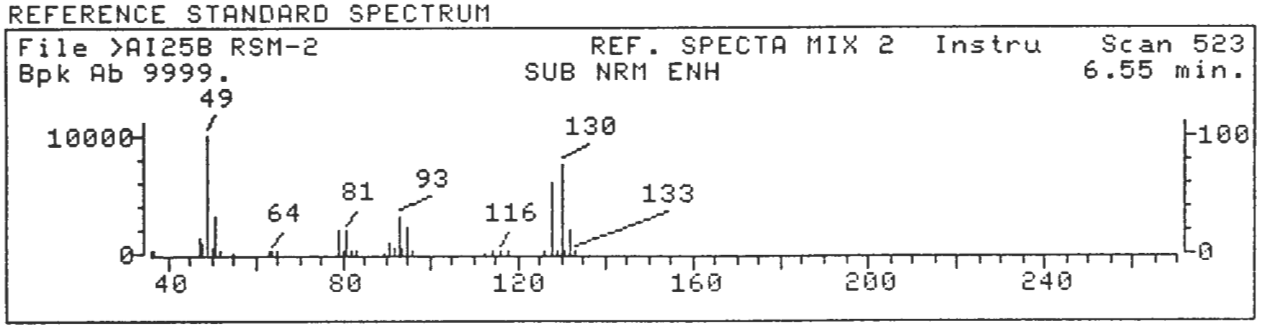
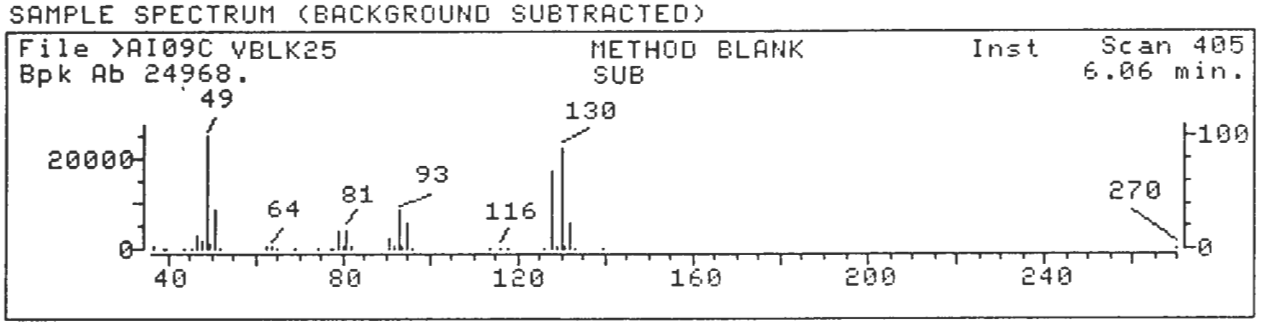
9613458.1142

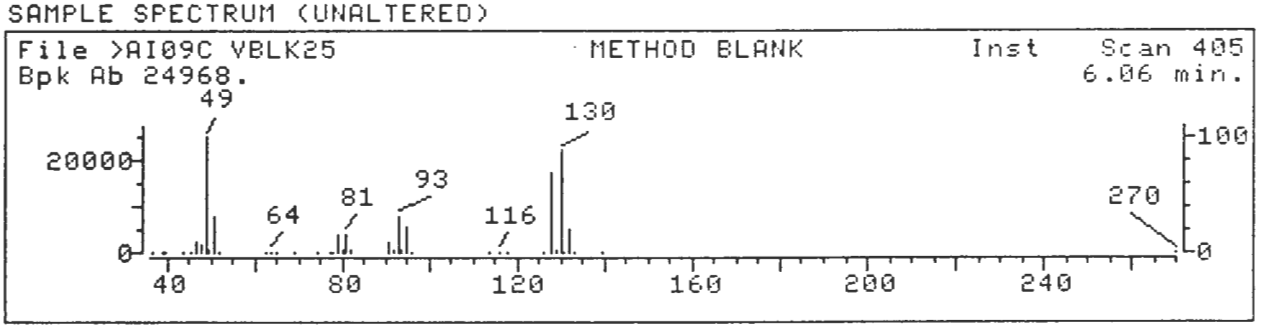
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



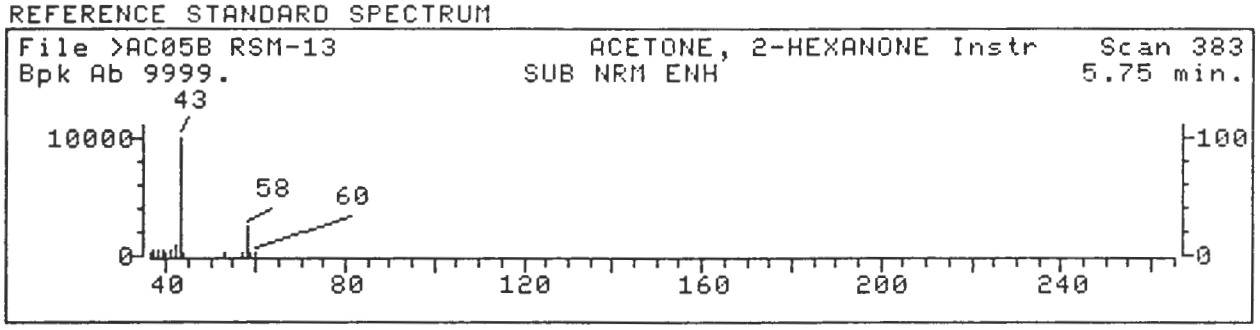
Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2
Quant Time: 940909 11:11 Quant ID File: ID_VOA::QT
Injected at: 940909 10:39 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 1 (ISTD)
Compound Name : BROMOCHLOROMETHANE
Scan Number : 405
Retention Time: 6.06 min.
Quant Ion : 128.0
Area : 115716
Concentration : 50.00 UG/L
q-value : 81

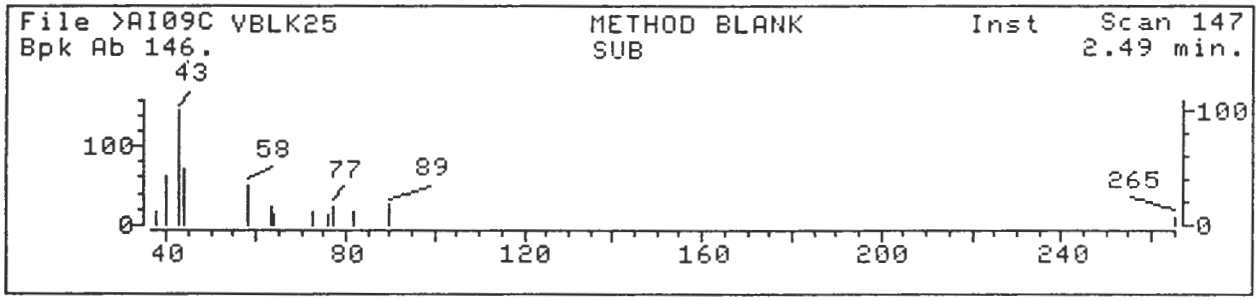
9-12-94

9613458.1143

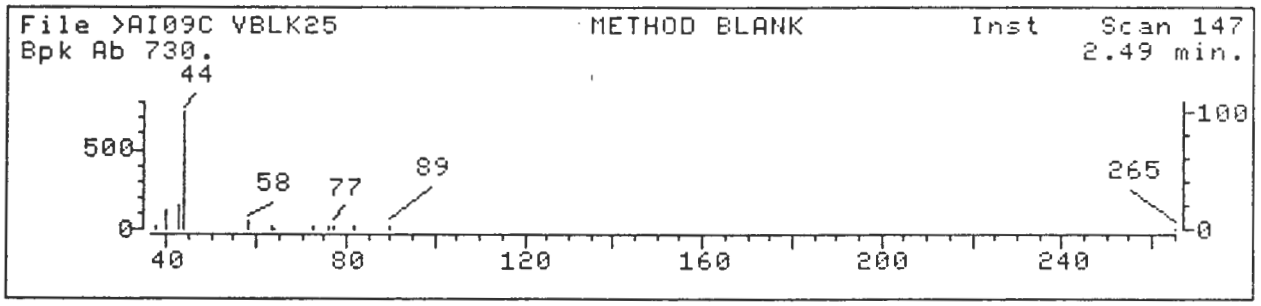
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI09C::D5
Quant Output File: ^AI09C::D2
Name: VBLK25
Instrument ID: VOA-1
Misc: METHOD BLANK
Instrument ID: 70 2
Quant Time: 940909 11:11
Quant ID File: ID_VOA::QT
Injected at: 940909 10:39
Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 8
Compound Name : ACETONE
Scan Number : 147
Retention Time: 2.49 min.
Quant Ion : 43.0
Area : 946M
Concentration : 2.80 UG/L
q-value : 69

No
DEN
9-12-94

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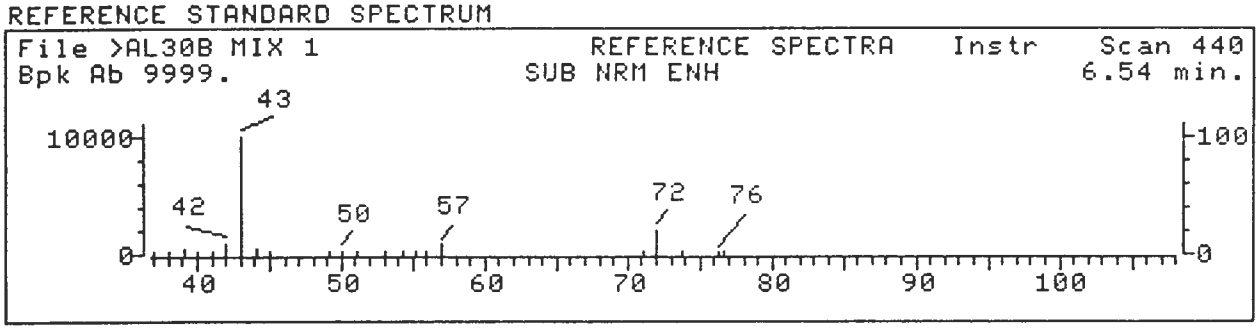
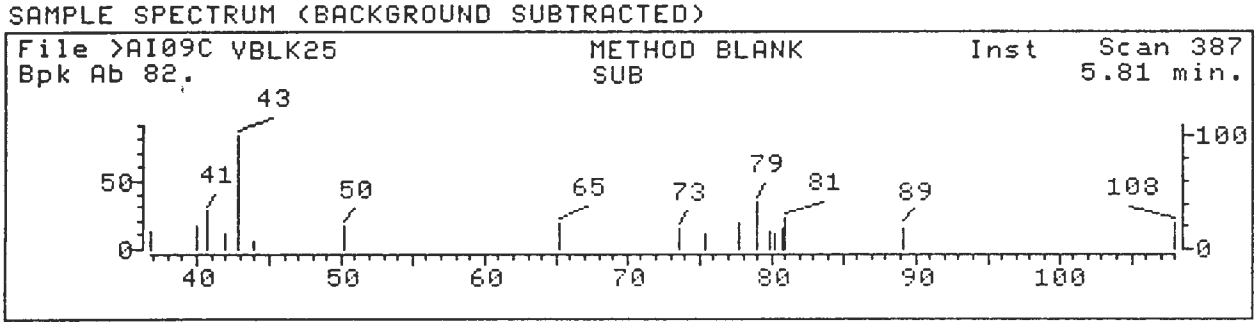
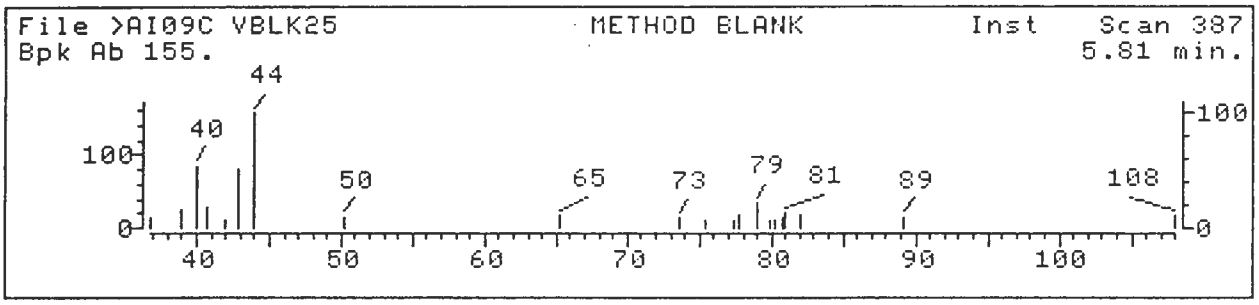
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

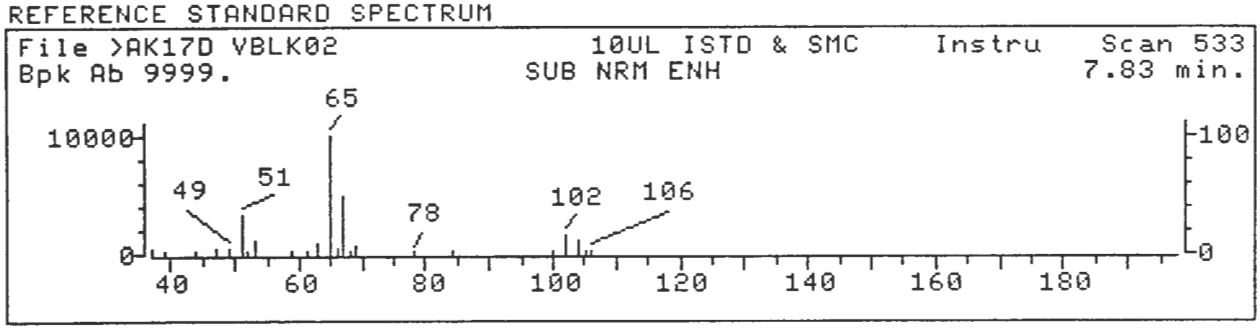


Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2
Quant Time: 940909 11:11 Quant ID File: ID_VOA::QT
Injected at: 940909 10:39 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

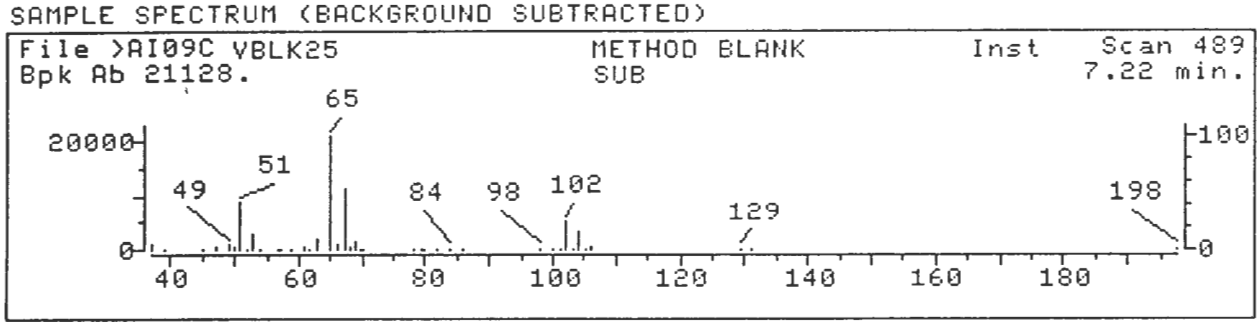
Compound No : 12
Compound Name : 2-BUTANONE
Scan Number : 387
Retention Time: 5.81 min.
Quant Ion : 43.0
Area : 272M
Concentration : .305 UG/L
q-value : 100

No
9-12-94

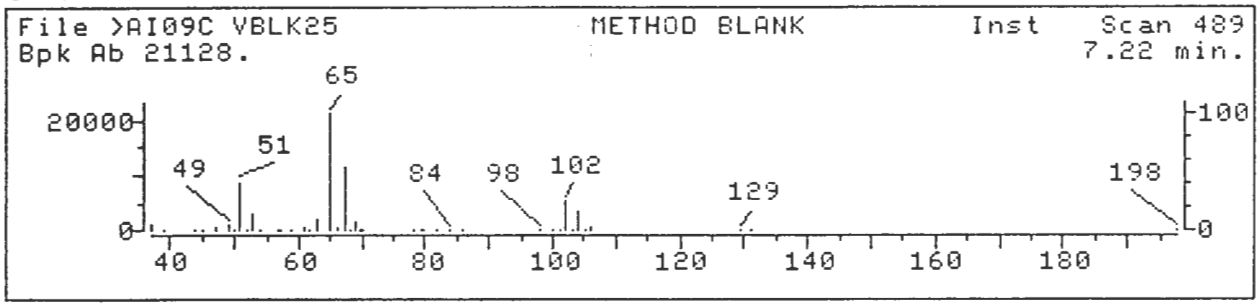
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

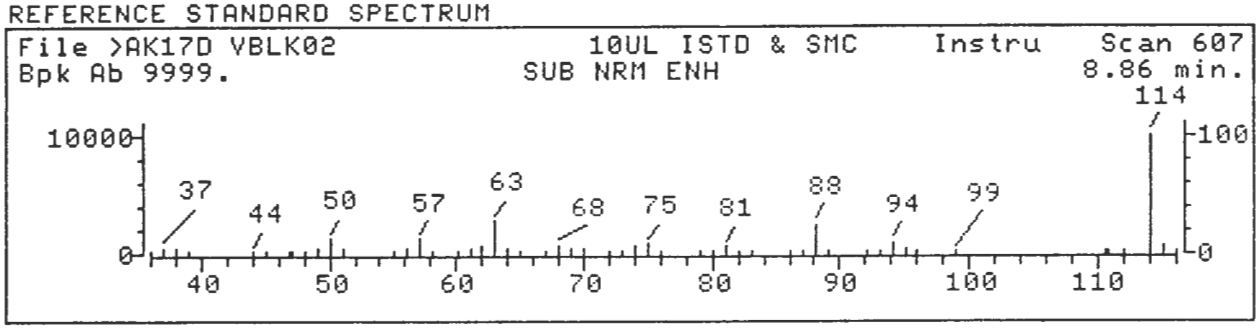


Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2
Quant Time: 940909 11:11 Quant ID File: ID_VOA::QT
Injected at: 940909 10:39 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

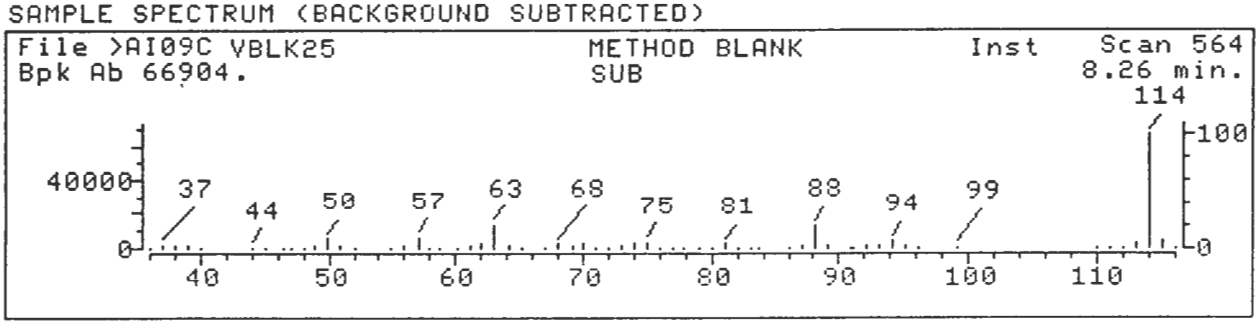
Compound No : 14
Compound Name : 1,2-DICHLOROETHANE-d4
Scan Number : 489
Retention Time: 7.22 min.
Quant Ion : 65.0
Area : 145644
Concentration : 46.01 UG/L
q-value : 88

9-12-94

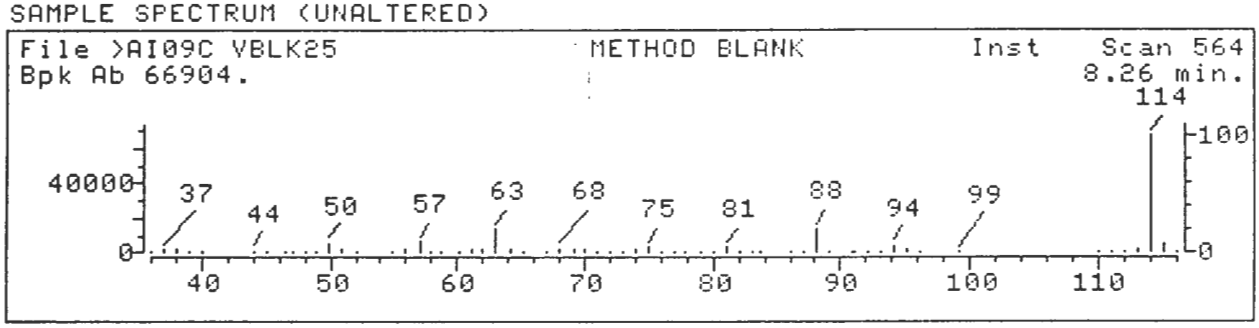
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



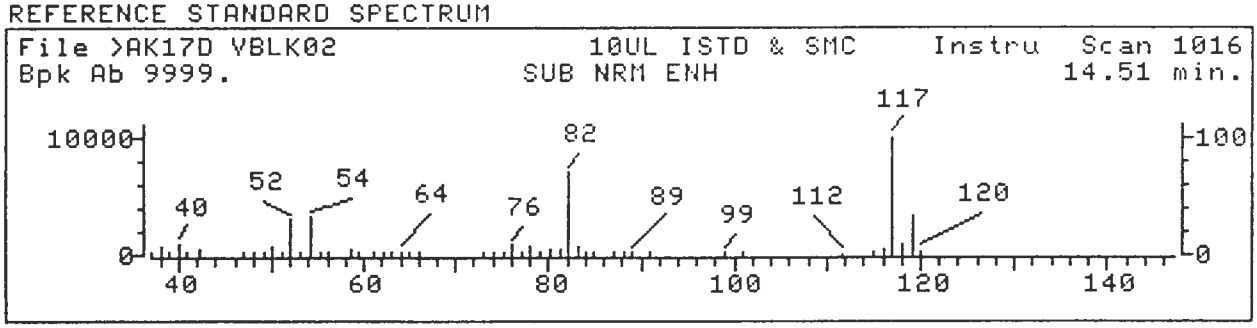
Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2
Quant Time: 940909 11:11 Quant ID File: ID_VOA::QT
Injected at: 940909 10:39 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 16 (ISTD)
Compound Name : 1,4-DIFLUOROBENZENE
Scan Number : 564
Retention Time: 8.26 min.
Quant Ion : 114.0
Area : 449985
Concentration : 50.00 UG/L
q-value : 90

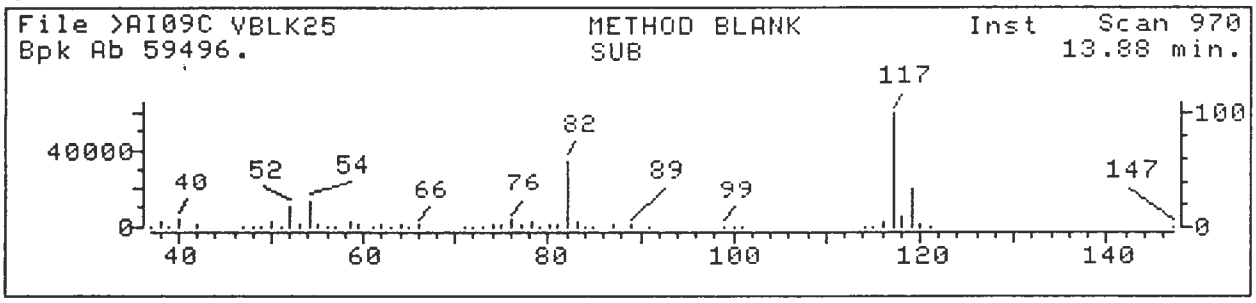
DEM
9-12-94

9613458.1147

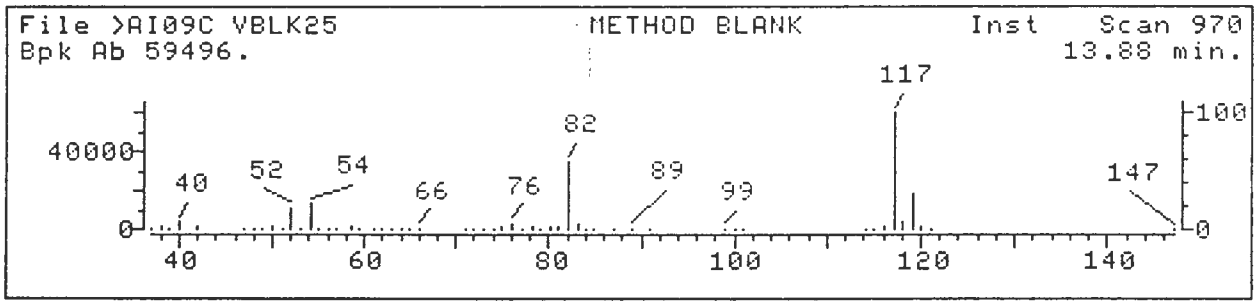
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

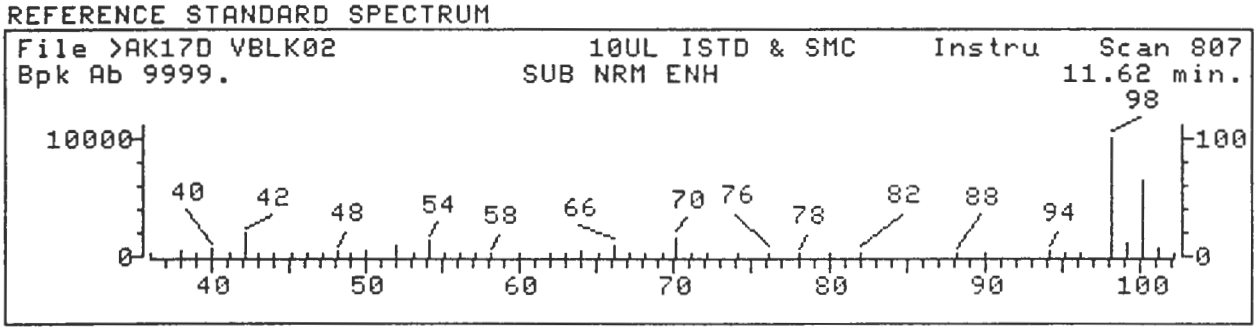


Data File: >AI09C::D5 Quant Output File: ^AI09C::D2
Name: VBLK25 Instrument ID: VOA-1
Misc: METHOD BLANK Instrument ID: 70 2
Quant Time: 940909 11:11 Quant ID File: ID_VOA::QT
Injected at: 940909 10:39 Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

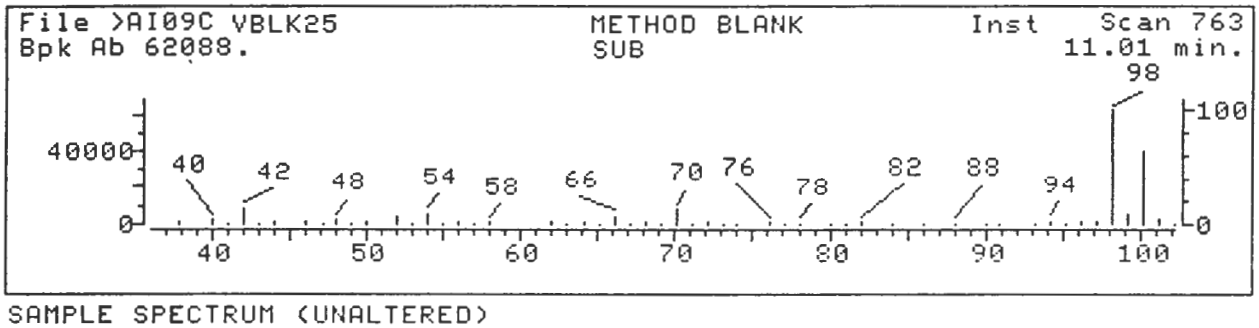
Compound No : 29 (ISTD)
Compound Name : CHLOROBENZENE-d5
Scan Number : 970
Retention Time: 13.88 min.
Quant Ion : 117.0
Area : 366070
Concentration : 50.00 UG/L
q-value : 91

DEM
9-12-94

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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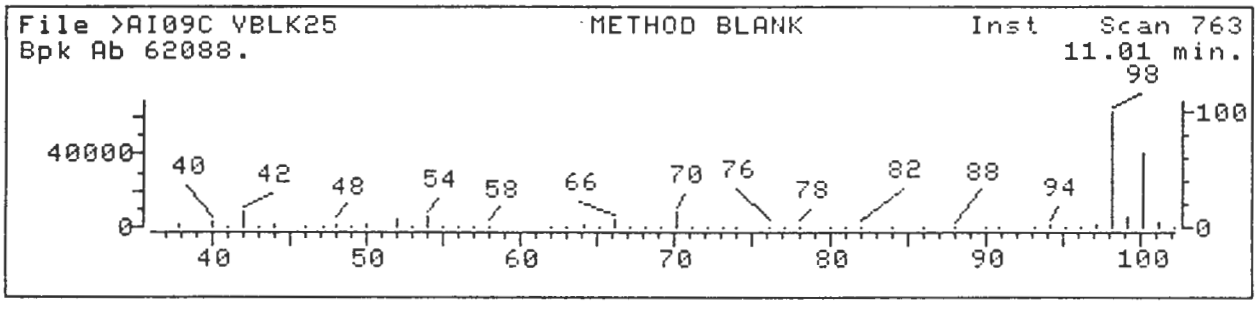


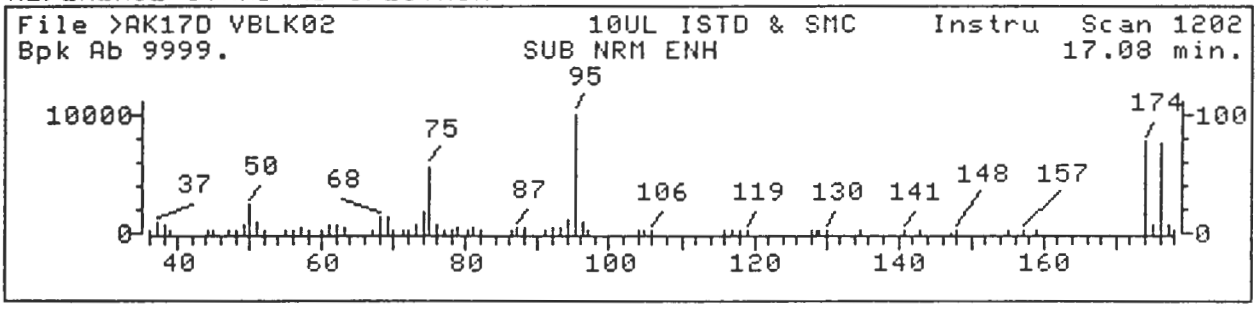
Data File: >AI09C::D5
Quant Output File: ^AI09C::D2
Name: VBLK25
Instrument ID: VOA-1
Misc: METHOD BLANK
Instrument ID: 70 2
Quant Time: 940909 11:11
Quant ID File: ID_VOA::QT
Injected at: 940909 10:39
Last Calibration: 940330 15:10
Last Qcal Time: 940909 09:40

Compound No : 31
Compound Name : TOLUENE-d8
Scan Number : 763
Retention Time: 11.01 min.
Quant Ion : 98.0
Area : 402854
Concentration : 50.86 UG/L
q-value : 97

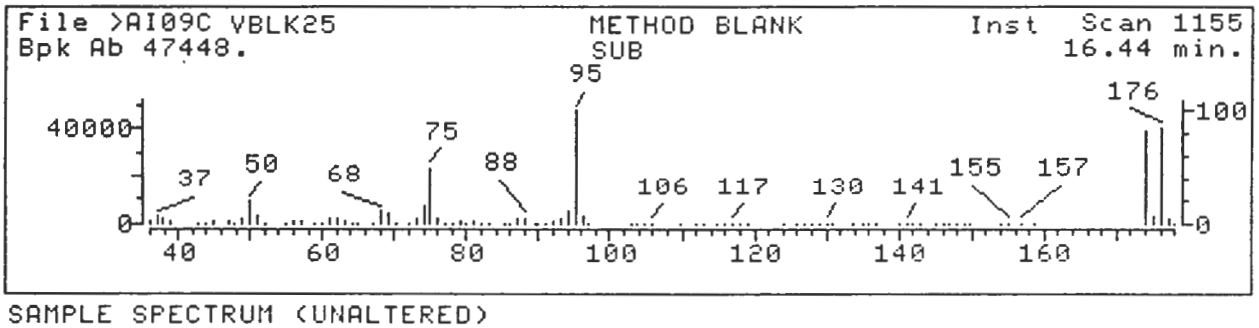
DEM
9-12-94

9613458.1149

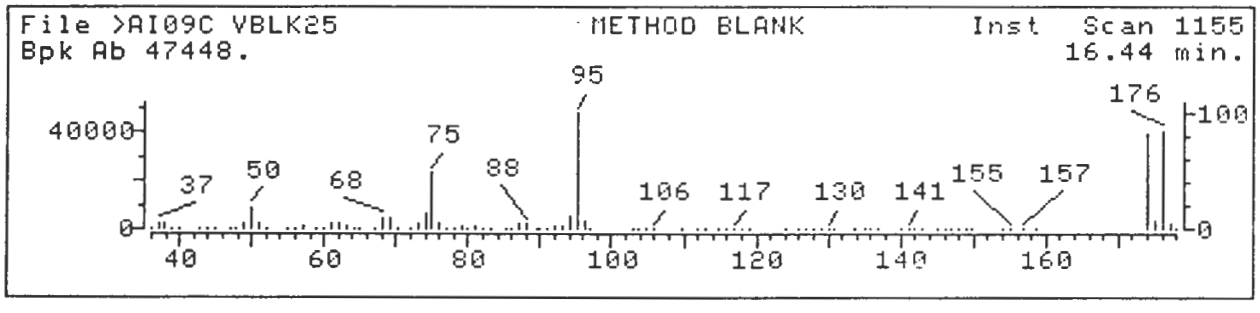
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AI09C::D5
Name: VBLK25
Misc: METHOD BLANK
Quant Time: 940909 11:11
Injected at: 940909 10:39
Last Qcal Time: 940909 09:40

Quant Output File: ^AI09C::D2
Instrument ID: VOA-1
Instrument ID: 70 2
Quant ID File: ID_VOA::QT
Last Calibration: 940330 15:10

Compound No : 39
Compound Name : BROMOFLUOROBENZENE
Scan Number : 1155
Retention Time: 16.44 min.
Quant Ion : 95.0
Area : 289795
Concentration : 50.61 UG/L
q-value : 93

DEM
9-12-94

9613458.1150

D E Nelson
9-12-94

9/12/94
Jackie Rose-Chang

MS data file header from : >AI09C::D5

Sample: VBLK25 Operator: JOY SUPER GRP. 9/09/94 10:39
Misc : METHOD BLANK Instrument ID: 70 2
Sys. #: 2 MS model: 70 SW/HW rev.: LF ALS # : 0 Equip ID: VOA-1
Method file: VOMETH Tuning file: BF2TUN No. of extra records: 2
Source temp.: N/A Analyzer temp.: N/A Transfer line temp. : 0

Chromatographic temperatures :	10.	160.	0.	0.	0.
Chromatographic times, min. :	4.0	2.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	6.0	0.0	0.0	.5	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	753771.	6.06	1.00 - 7.16
2	50.0	1038800.	8.26	7.16 - 11.07
3	50.0	1109124.	13.88	11.07 - 31.03

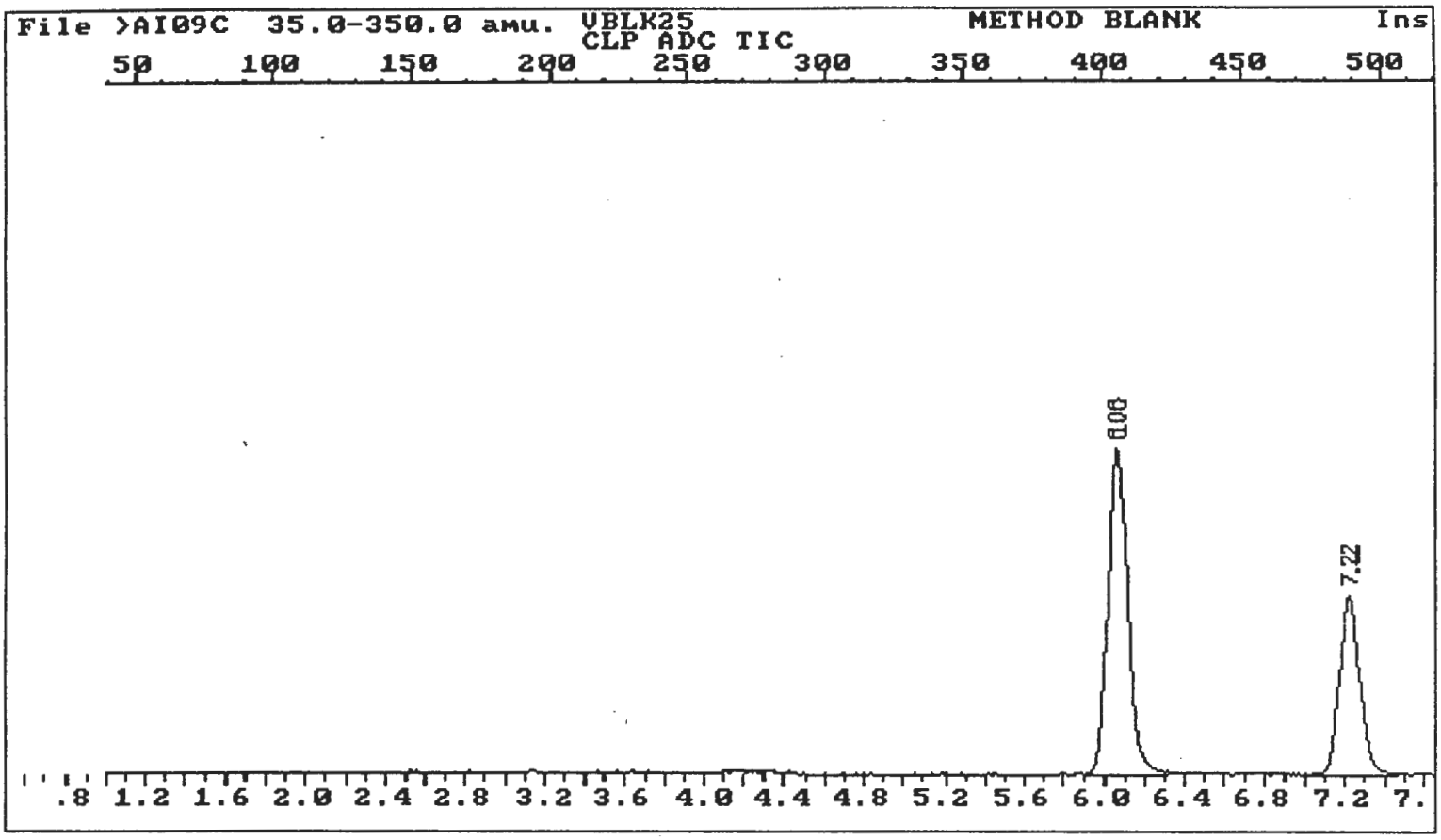
Dilution Factor = 1.00 This sample was 5.00000 g or mL

Correction Factor = 1.00

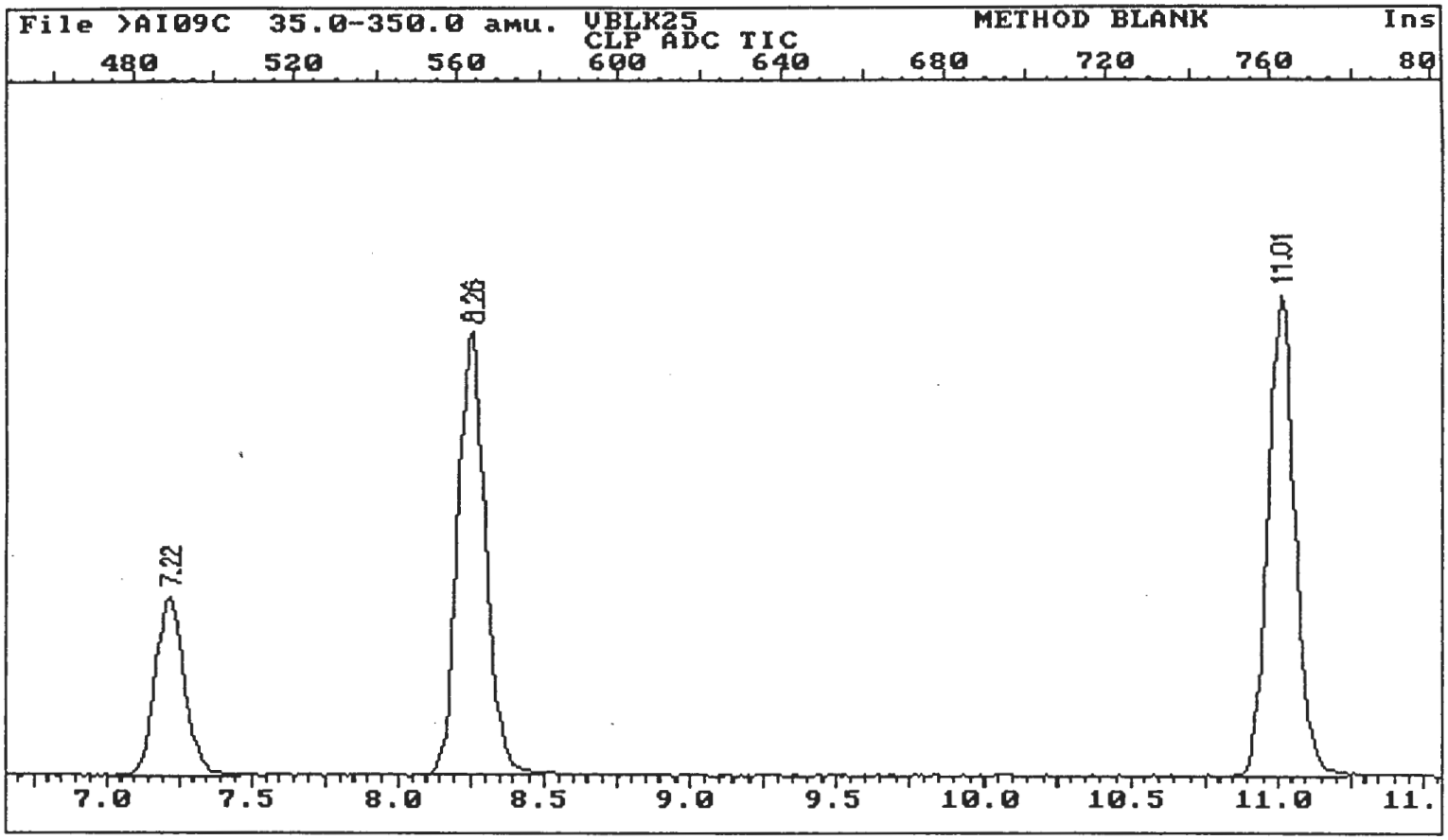
$$\text{Unknown Concentration} = \left| \frac{\text{Conc Int Std} * \text{Area Unknown}}{\text{Area Int Std}} \right| * \text{Correction Factor}$$

10:05 AM MON., 12 SEPT, 1994

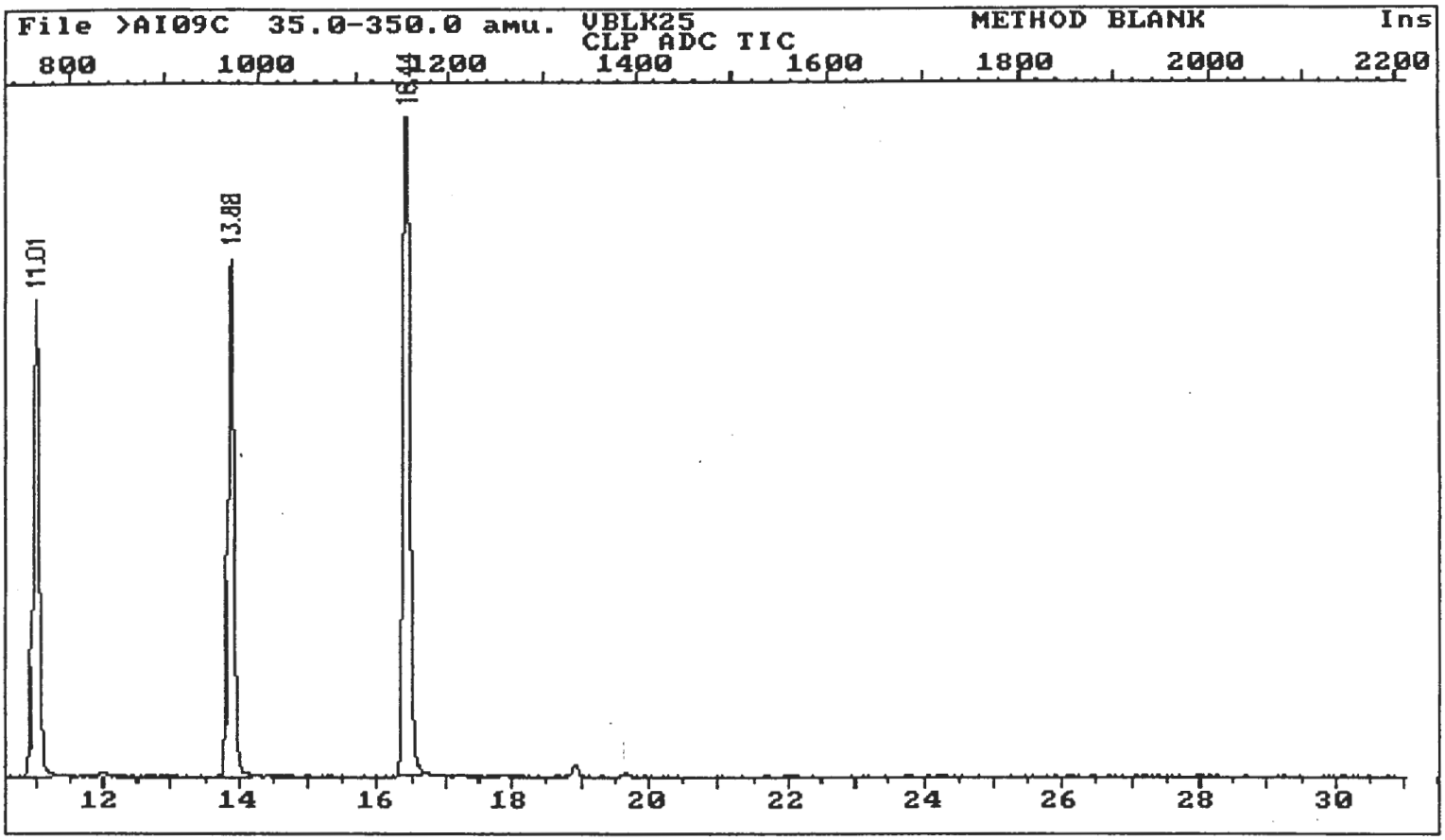
9613458.1151



9613458.1152



9613458.1153



9613458.1154

THERE WERE NO UNKNOWNS

9613458.1155

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

R-6331MS

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: R-6331MS

Sample wt/vol: 1 (g/mL) ML Lab File ID: >AI09E

Level: (low/med) LOW Date Received: 09/07/94

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	50.	U
75-35-4	1,1-Dichloroethene	43.	
67-66-3	Chloroform	50.	U
107-02-2	1,2-Dichloroethane	50.	U
78-93-3	2-Butanone	50.	U
56-23-5	Carbon Tetrachloride	50.	U
79-01-6	Trichloroethene	50.	
71-43-2	Benzene	54.	
127-18-4	Tetrachloroethene	50.	U
108-88-3	Toluene	52.	
108-90-7	Chlorobenzene	52.	

FORM I VOA 3/90

9613458.1156

9/12/94 Jule Rosa-Clay

QUANT REPORT

Operator ID: JOY
Output File: ^AI09E::D2
Data File: >AI09E::D5
Name: R-6331MS PUREX
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

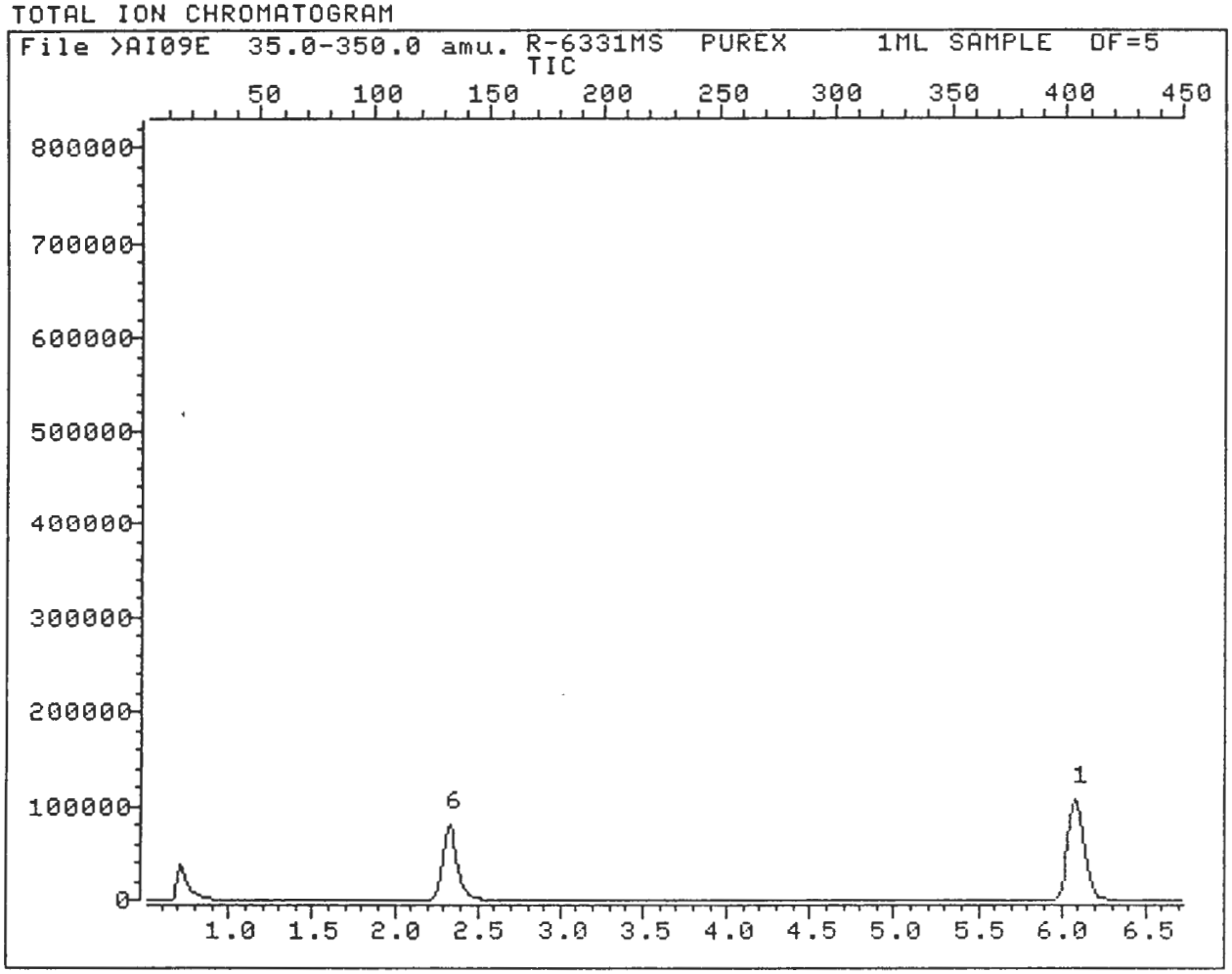
Quant Rev: 7 Quant Time: 940909 14:23
Injected at: 940909 13:51
Dilution Factor: 1.00000
Instrument ID: VOA-1

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.08	128.0	109082	50.00	UG/L	82
6)	1,1-DICHLOROETHENE	2.33	96.0	104110	43.12	UG/L	86
14)	1,2-DICHLOROETHANE-d4	7.25	65.0	137892	46.21	UG/L	85
16)	*1,4-DIFLUOROBENZENE	8.27	114.0	407231	50.00	UG/L	88
20)	BENZENE	7.25	78.0	312952	53.85	UG/L	100
21)	TRICHLOROETHENE	8.62	130.0	159871	50.05	UG/L	97
29)	*CHLOROBENZENE-d5	13.89	117.0	351003	50.00	UG/L	90
31)	TOLUENE-d8	11.03	98.0	375525	49.44	UG/L	94
32)	TOLUENE	11.15	91.0	404093	52.21	UG/L	95
35)	CHLOROBENZENE	13.95	112.0	334463	51.54	UG/L	99
39)	BROMOFLUOROBENZENE	16.47	95.0	280791	51.14	UG/L	92

* Compound is ISTD

TOTAL ION CHROMATOGRAM



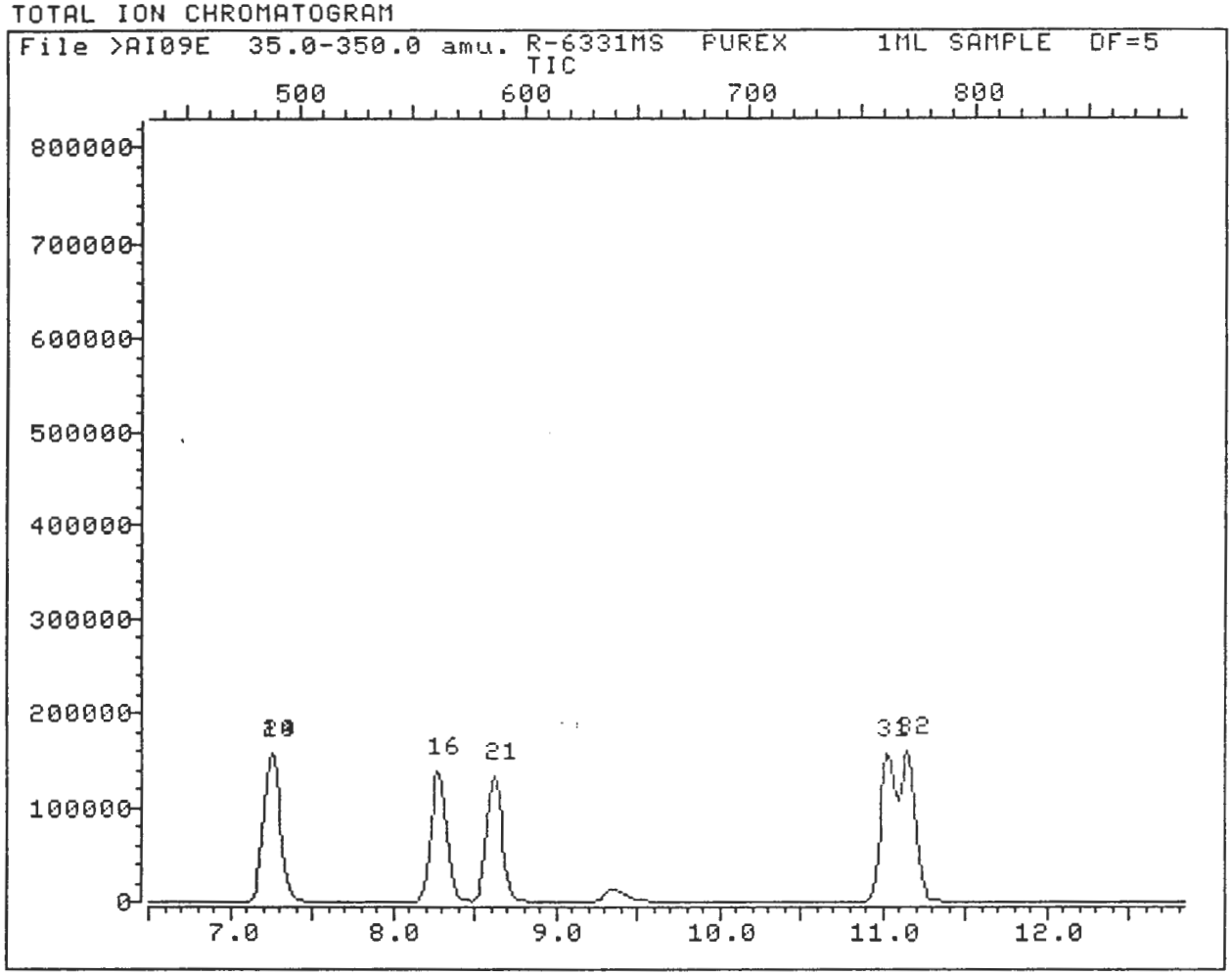
Data File: >AI09E::D5 Quant Output File: ^AI09E::D2
Name: R-6331MS PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 14:23
Injected at: 940909 13:51

Page 1 of 5

TOTAL ION CHROMATOGRAM



Data File: >AI09E::D5 Quant Output File: ^AI09E::D2
Name: R-6331MS PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 14:23
Injected at: 940909 13:51

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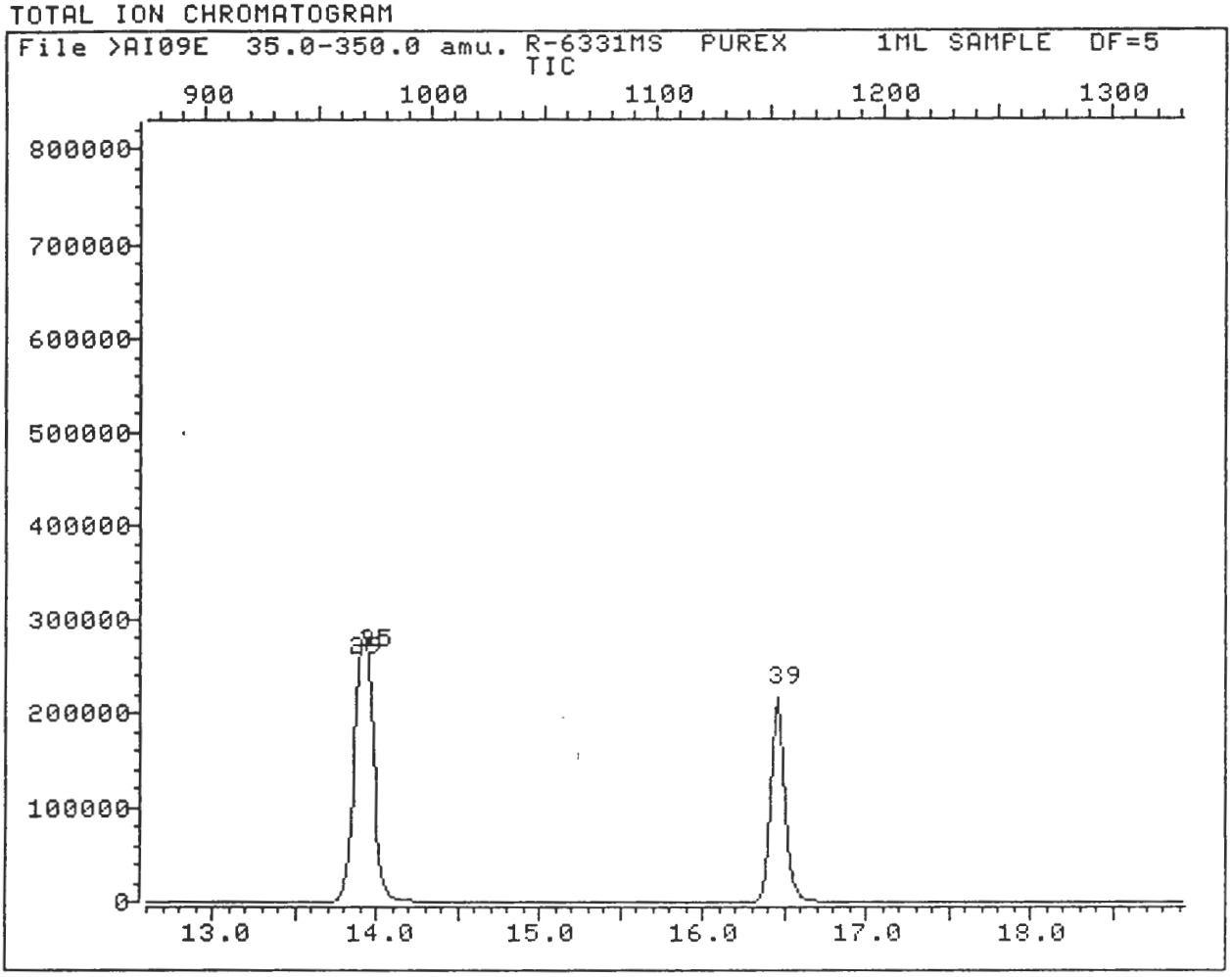
9613458.1159

TOTAL ION CHROMATOGRAM



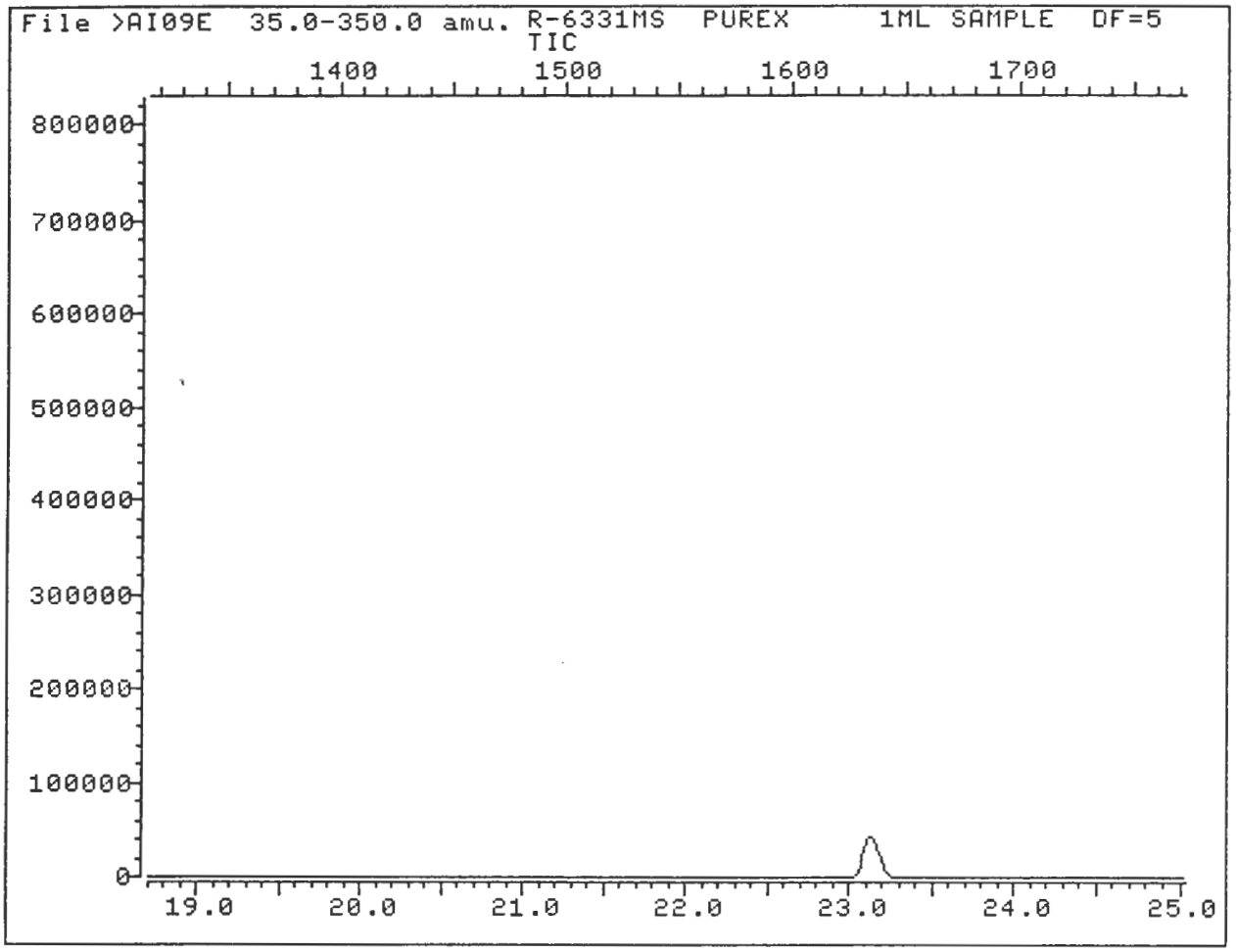
Data File: >AI09E::D5 Quant Output File: ^AI09E::D2
Name: R-6331MS PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 14:23
Injected at: 940909 13:51

Page 3 of 5

TOTAL ION CHROMATOGRAM



Data File: >AI09E::D5 Quant Output File: ^AI09E::D2
Name: R-6331MS PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 14:23
Injected at: 940909 13:51

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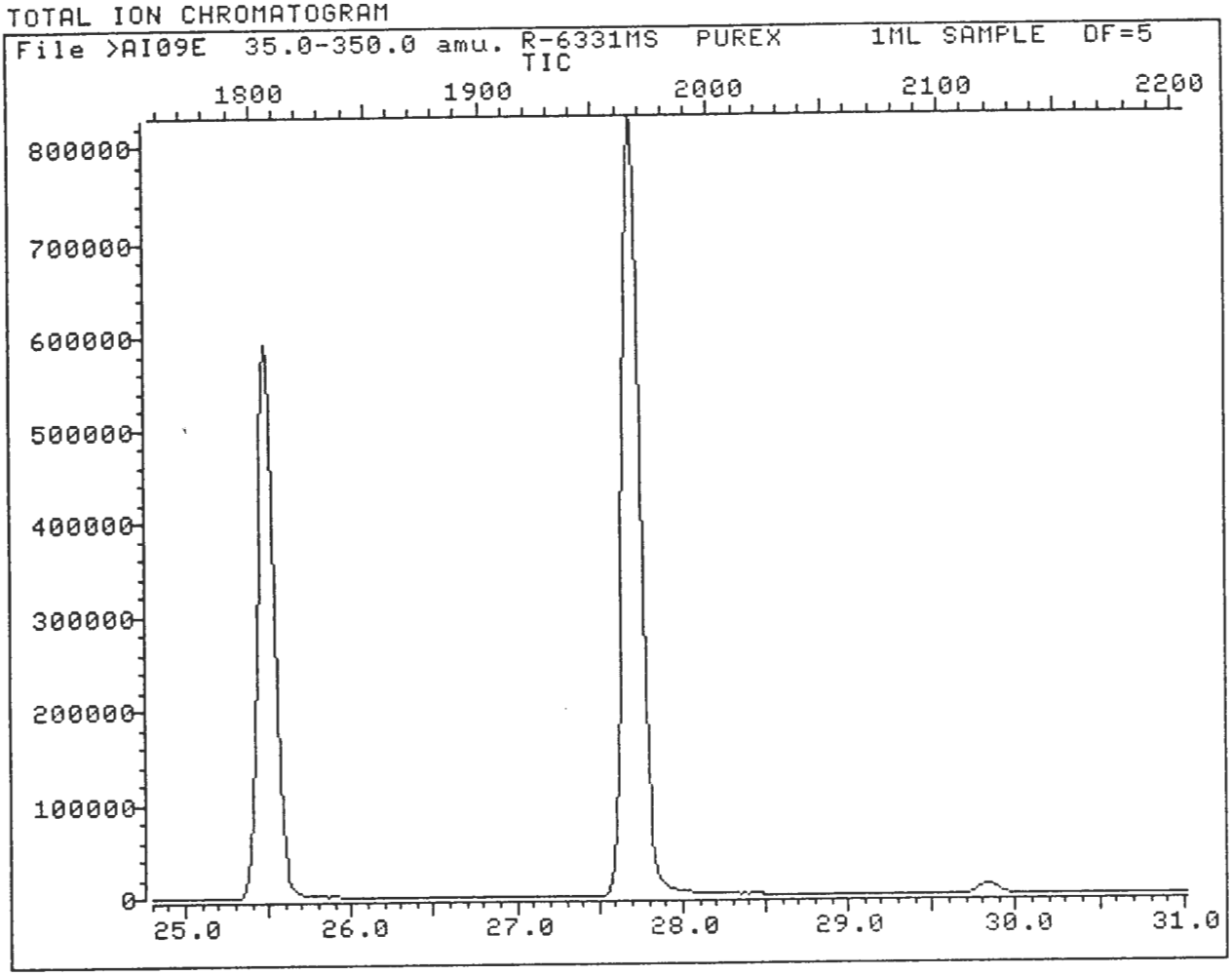
TOTAL ION CHROMATOGRAM



Data File: >AI09E::D5 Quant Output File: ^AI09E::D2
Name: R-6331MS PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 14:23
Injected at: 940909 13:51

Page 5 of 5

9613458.1162

QUANT REPORT

Operator ID: JOY
Output File: ^AI09F::D2
Data File: >AI09F::D5
Name: R-6331MSD PUREX
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Quant Rev: 7 Quant Time: 940909 15:04
Injected at: 940909 14:32
Dilution Factor: 1.00000
Instrument ID: VOA-1

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.08	128.0	109059	50.00	UG/L	81
6)	1,1-DICHLOROETHENE	2.33	96.0	103328	42.81	UG/L	88
8)	ACETONE	2.53	43.0	229^	.718	UG/L	60
12)	2-BUTANONE	5.87	43.0	536	.637	UG/L	100
14)	1,2-DICHLOROETHANE-d4	7.24	65.0	134036	44.92	UG/L	89
16)	*1,4-DIFLUOROBENZENE	8.26	114.0	411618	50.00	UG/L	88
20)	BENZENE	7.25	78.0	312077	53.13	UG/L	100
21)	TRICHLOROETHENE	8.61	130.0	158323	49.03	UG/L	97
29)	*CHLOROBENZENE-d5	13.89	117.0	343693	50.00	UG/L	91
30)	4-METHYL-2-PENTANONE	11.16	43.0	1785	.739	UG/L	51
31)	TOLUENE-d8	11.03	98.0	377972	50.82	UG/L	95
32)	TOLUENE	11.15	91.0	400078	52.79	UG/L	98
35)	CHLOROBENZENE	13.94	112.0	339389	53.41	UG/L	98
39)	BROMOFLUOROBENZENE	16.46	95.0	286275	53.25	UG/L	95

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

R-6331MSD

Lab Name: WHCWA Contract:

Lab Code: Case No.: SAS No.: SDG No.: R-6331

Matrix: (soil/water) WATER Lab Sample ID: R-6331MSD

Sample wt/vol: 1 (g/mL) ML Lab File ID: >AI09F

Level: (low/med) LOW Date Received: 09/07/94

% Moisture: not dec. Date Analyzed: 9/09/94

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	50.	U
75-35-4	1,1-Dichloroethene	43.	
67-66-3	Chloroform	50.	U
107-02-2	1,2-Dichloroethane	50.	U
78-93-3	2-Butanone	50.	U
56-23-5	Carbon Tetrachloride	50.	U
79-01-6	Trichloroethene	49.	
71-43-2	Benzene	53.	
127-18-4	Tetrachloroethene	50.	U
108-88-3	Toluene	53.	
108-90-7	Chlorobenzene	53.	

FORM I VOA 3/90

9613458.1164

9/12/94 QUANT REPORT Page 1

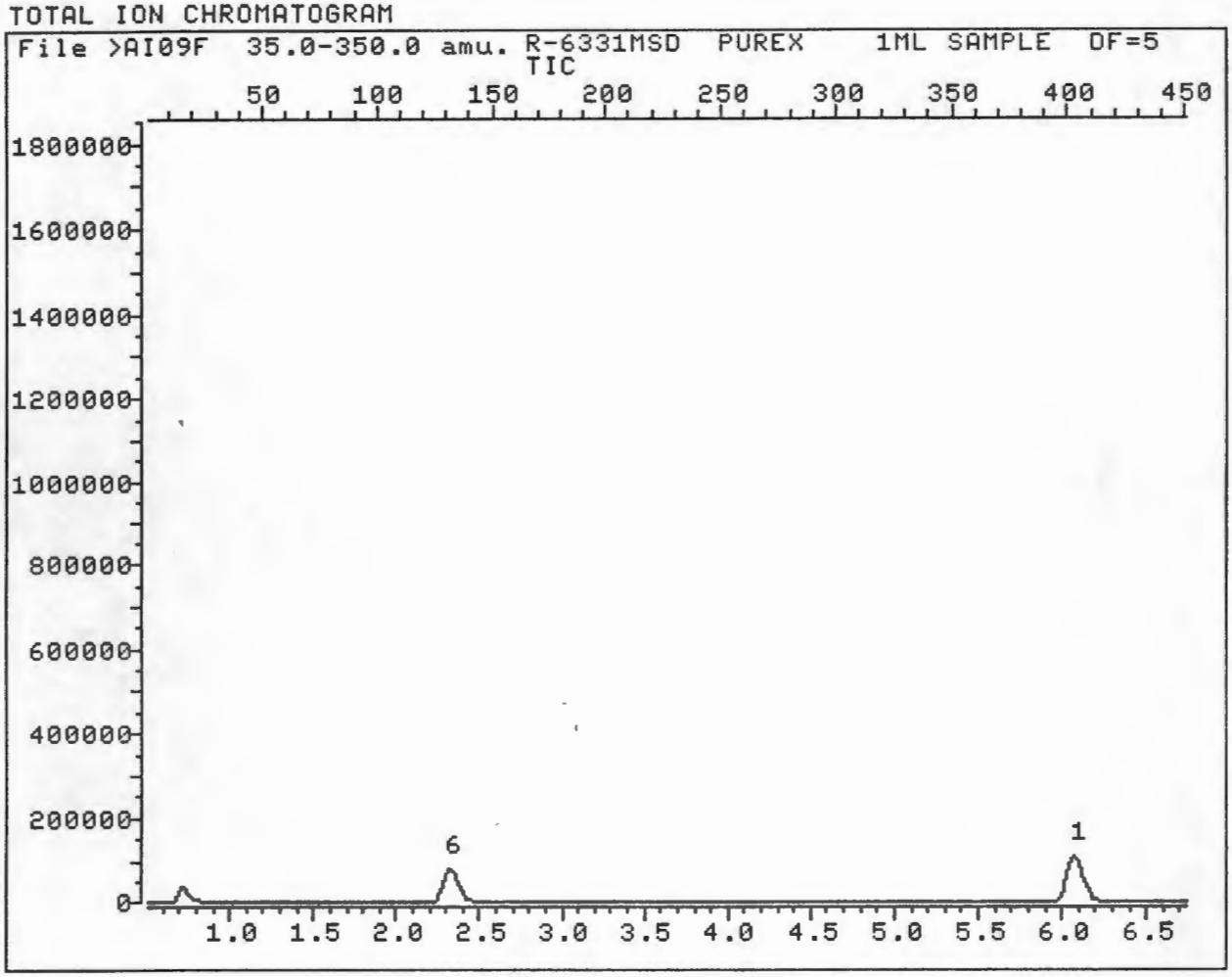
Operator ID: JOY Jackie Rose-Clay Quant Rev: 7 Quant Time: 940909 15:04
Output File: ^AI09F::D2 Injected at: 940909 14:32
Data File: >AI09F::D5 Dilution Factor: 1.00000
Name: R-6331MSD PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

ID File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*BROMOCHLOROMETHANE	6.08	128.0	109059	50.00	UG/L	81
6)	1,1-DICHLOROETHENE	2.33	96.0	103328	42.81	UG/L	88
14)	1,2-DICHLOROETHANE-d4	7.24	65.0	134036	44.92	UG/L	89
16)	*1,4-DIFLUOROBENZENE	8.26	114.0	411618	50.00	UG/L	88
20)	BENZENE	7.25	78.0	312077	53.13	UG/L	100
21)	TRICHLOROETHENE	8.61	130.0	158323	49.03	UG/L	97
29)	*CHLOROBENZENE-d5	13.89	117.0	343693	50.00	UG/L	91
31)	TOLUENE-d8	11.03	98.0	377972	50.82	UG/L	95
32)	TOLUENE	11.15	91.0	400078	52.79	UG/L	98
35)	CHLOROBENZENE	13.94	112.0	339389	53.41	UG/L	98
39)	BROMOFLUOROBENZENE	16.46	95.0	286275	53.25	UG/L	95

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >AI09F::D5 Quant Output File: ^AI09F::D2
Name: R-6331MSD PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 15:04
Injected at: 940909 14:32

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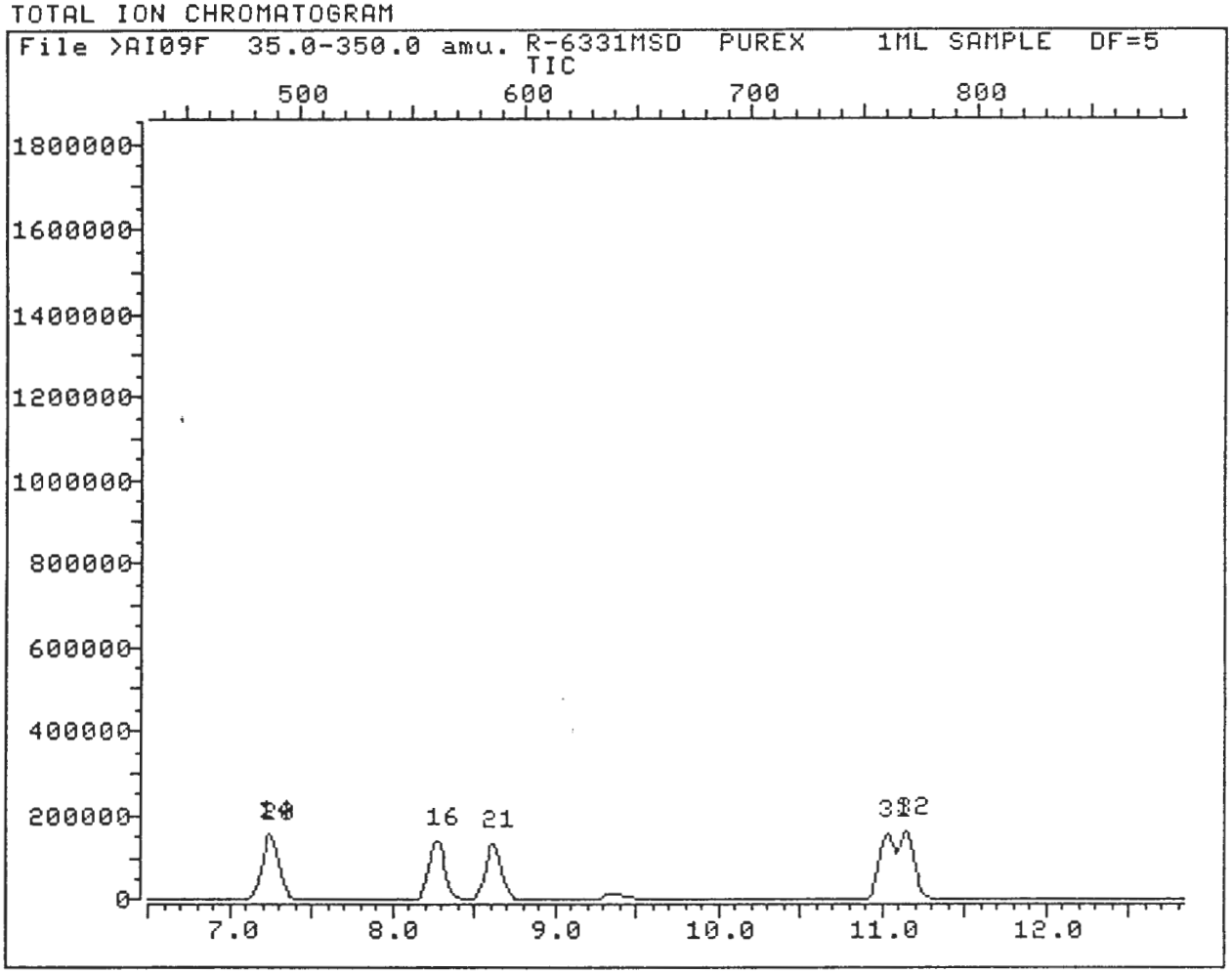
TOTAL ION CHROMATOGRAM



Data File: >AI09F::D5 Quant Output File: ^AI09F::D2
Name: R-6331MSD PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 15:04
Injected at: 940909 14:32

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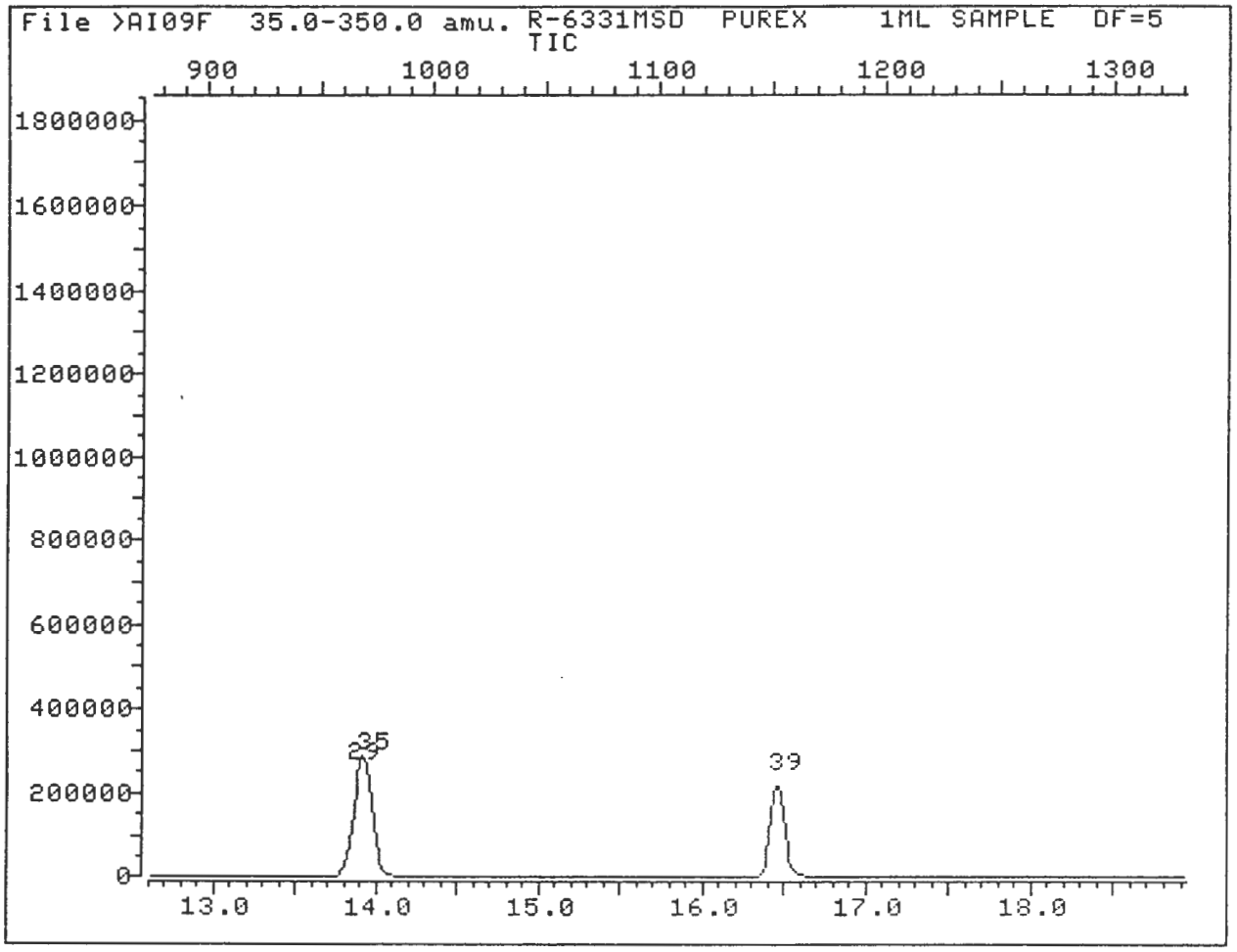
9613458.1167

TOTAL ION CHROMATOGRAM



Data File: >AI09F::D5 Quant Output File: ^AI09F::D2
Name: R-6331MSD PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 15:04
Injected at: 940909 14:32

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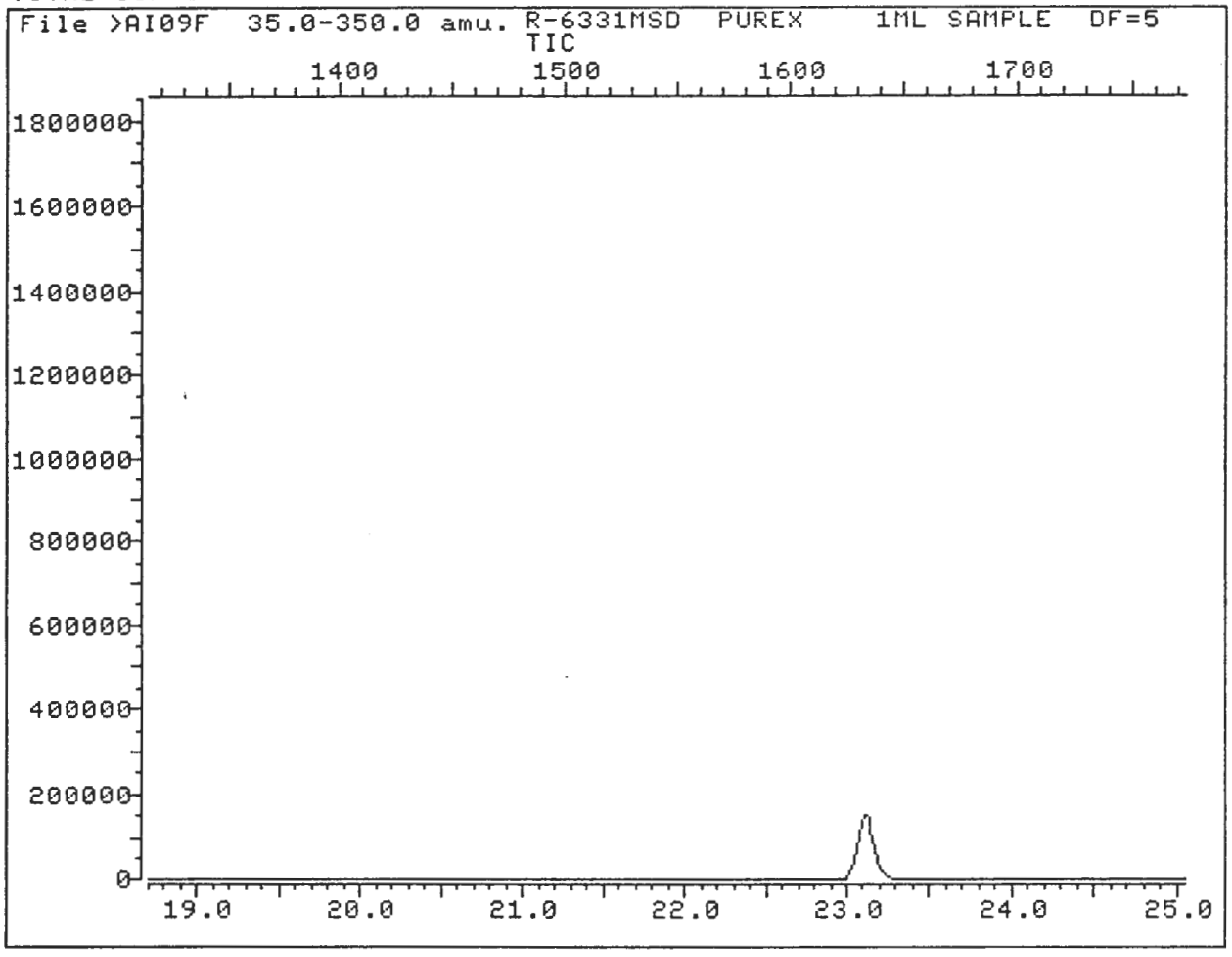
TOTAL ION CHROMATOGRAM



Data File: >AI09F::D5 Quant Output File: ^AI09F::D2
Name: R-6331MSD PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 15:04
Injected at: 940909 14:32

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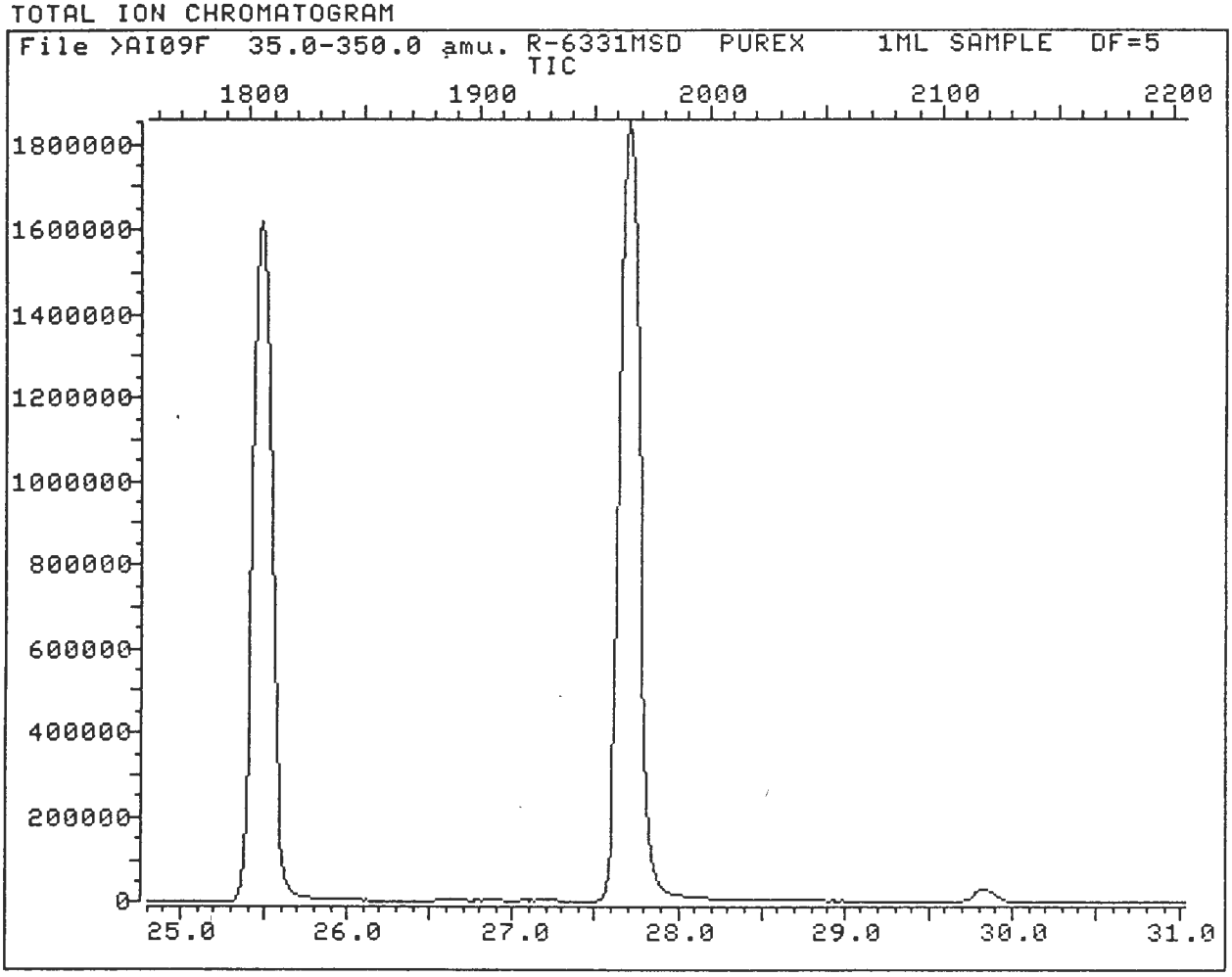
TOTAL ION CHROMATOGRAM



Data File: >AI09F::D5 Quant Output File: ^AI09F::D2
Name: R-6331MSD PUREX Instrument ID: VOA-1
Misc: 1ML SAMPLE DF=5 Instrument ID: 70 2

Id File: ID_VOA::QT
Title: VOLATILE ANALYSIS
Last Calibration: 940330 15:10 Last Qcal Time: 940909 09:40

Operator ID: JOY
Quant Time : 940909 15:04
Injected at: 940909 14:32

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Computer File Name	Analyst	Lab or Customer Sample ID #	Sample Description / Comments	Sample Vol/wt.	Dilution Factor	QAQC or N/A	Internal std Area			Internal std R.T.		
>AI02B	DEN	VSTD050	Daily Cal	5ml	1		127	498	412	6.06	8.25	13.87
>AI02C	DEN	VBLK22	method Blank	5ml	1		118	469	386	6.09	8.28	13.89
>AI02D	DEN	VBLK23	method Blank	5ml	1		121	482	390	6.07	8.27	13.88
>AI02E	DEN	R5600	B Plant Trip Blank	5ml	1		122	474	386	6.10	8.28	13.90
>AI02F	DEN	R5599	B Plant TK 9-1	100ul-5ml	50		116	454	369	6.09	8.28	13.90
>AI02G	DEN	R5599MS	B Plant TK-91 matrix sp	100ul-5ml	50		119	450	368	6.08	8.28	13.90
>AI02H	DEN	R5599MSD	B Plant TK-9.1 matrix sp Dup	100ul-5ml	50		119	447	374	6.10	8.28	13.90
>AI02I	DEN	Air Test	Purge and Run No Sample	—	—	N/A						
>AI06A	DEN	Test	Desorb — only	N/A	N/A	N/A						
>AI06B	DEN	Test	Water Purge	5ml	N/A	N/A						
>AI07A	DEN	BFB	BFB TUNE	5ml	1	N/A						
>AI07B	DEN	VSTD050 ~~BFB~~ 9-7-91	Daily Cal +1.Butanol ID-624	5ml	1		122	469	386	6.05	8.26	13.87
>AI07C	DEN	VBLK24	Method BLANK	5ml	1		115	457	368	6.08	8.28	13.90
>AI07D	DEN	R6235	F-18 SAMPLE	1ml	5		113	401	340	6.08	8.28	13.90
>AI07E	DEN	R6235MS	F-18 sample + matrix sp.	1ml	5		112	428	359	6.09	8.27	13.90
>AI07F	DEN	R6235MSD	F-18 sample, matrix spike dup.	1ml	5		113	420	357	6.08	8.28	13.90
>AI09A	JDC	BFB	BFB TUNE	5ml	1	N/A						
>AI09B	JDC	VSTD050	DAILY CAL ID_VOA	5ml	1		115	453	378	6.09	8.23	13.86
>AI09C	JDC	VBLK25	Method Blank	5ml	1		116	450	366	6.06	8.26	13.88
>AI09D	JDC	R-6331	PUREX sample	1ml	5		102	403	335	6.08	8.27	13.89
>AI09E	JDC	R-6331MS	PUREX sample - matrix spike	1ml	5		109	407	351	6.08	8.27	13.89
>AI09F	JDC	R-6331MSD	PUREX sample - matrix spike dup.	1ml	5		109	412	344	6.08	8.26	13.89

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9613458.1170

PREP BY	WITNESS	DATE
DEN	JDC	8/15/94

PREP BY	DATE
DEN	8/15/94

#

110

PREP BY	DATE
DEN	8/29/94
DEN	
DEN	
DEN	
DEN	
DEN	8/29/94

PREP BY	DATE

8/30/94 JDC

VOA DAILY CAL

VIAL LABEL	MIX #1 LOT # A002482	MIX #2 LOT # A002198	MIX #3 LOT # A002519	MIX #4 LOT # A002204	MIX #5 LOT # A002283	FINAL VOL	FINAL CONC	SOLVENT	PREP BY	DATE
VSTD-50	10ul	25ul	25ul	25ul	25ul	1.0ml	50ug/ml	MeOH	DEN	8/30/94

VOA INTERNAL & SMC STD

VIAL LABEL	VOLUME OF ISTD ADDED LOT # A000295	VOLUME OF SMC ADDED LOT # A001958	FINAL VOL	FINAL CONC	SOLVENT	PREP BY	DATE
ISTD/SMC-25	10ul	10ul	1.0ml	25ug/ml	MeOH	DEN	8/30/94

9-2-94 DEN

Vial Label	Volume of ISTD Added Lot # A000295	Volume of SMC Added Lot # A001958	Final Vol	Final Conc	Solvent	Prep By	Date
ISTD/SMC-25	10 ul	10 ul	1.0 ml	25ug/ml	MeOH	DEN	9/02/94

Vial Label	Volume of Matrix Spike Added Lot # A001789	Final Volume	Final Conc.	Solvent	Prep. By	Date
VMS	10 ul	1.0 ml	25ug/ml	MeOH	DEN	9/02/94

9/7/94 JDC

VIAL LABEL	MIX #1 LOT # A002482	MIX #2 LOT # A002198	MIX #3 LOT # A002519	MIX #4 LOT # A002204	MIX #5 LOT # A002283	FINAL VOL	FINAL CONC	SOLVENT	PREP BY	DATE
VSTD-50	10ul	25ul	25ul	25ul	25ul	1.0ml	50ug/ml	MeOH	DEN	9/7/94

VIAL LABEL	VOLUME OF ISTD ADDED LOT # A000295	VOLUME OF SMC ADDED LOT # A001958	FINAL VOL	FINAL CONC	SOLVENT	PREP BY	DATE
ISTD/SMC-25	10ul	10ul	1.0ml	25ug/ml	MeOH	DEN	9/7/94

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REQUEST FOR SPECIAL ANALYSIS (RSA)

RSA No. 2080

1. Sample Origin: PUREX 200 E	2. Date Submitted: 9-07-94	4. Requester Name: M.M. Gretsinger	6. Charge Code/Work Package: KP39B
	3. Submitted By:	5. Requester Phone/MSIN: 373-3680/S6-19	7. Date Required:

8. Customer ID	Collected Date	Collected Time	9. Laboratory ID
94219-01			RH 6331

12. Number of Samples: 1 sample (3 bottles)

13. Volume of Samples: 1 20ml, 2 40ml

14. Protocols: ☐ None ☒ RCRA ☐ NQA-1 ☐ Other ☐ CERCLA

15. Sample Type: ☐ Solid ☐ Soil ☐ Slurry ☐ Gas ☒ Water ☐ Waste ☐ Solution ☐ Sludge ☐ Oil ☐ Other (specify)

16. Storage Requirements: ☐ None ☒ Specify Cool to 4°C

17. Process Knowledge/Known Listed Wastes: ☒ Unknown ☐ Known (Please attach list) ☐ Previously submitted for this Project

10. Determination	11. Expected Range
VOA	
ICP Metals TAL	
Arsenic, Selenium	
Mercury, TOC, pH	

18. Survey — Dose Rate — HPT Signature

19. Disposition of Waste: ☐ Return to Client/Location ☒ Dispose per 222-S Procedures ☐ Other

20. Additional Information

Fax information to KB Hulse 373-3193

Std R6329
Blank R6330
Std R6332

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21. Chain of Custody: ☐ No ☒ Yes Number:

22. Assigned Custodial Group (select one): ☐ PCL ☐ POSU ☐ ENV ☐ Process

23. Sample Received By:

Date: 9-7-94 Time:

24. Laboratory Manager (if required) Date:

BC-6700-181 (11/92)

9613458.1173

DON'T SAY IT --- *Write It!*

DATE: October 17, 1994

TO: M. M. Gretsinger S6-19

FROM: K. Bell, Program Support KB

Telephone: 3-1629

cc: K. E. Bell T6-06
J. D. Farren S6-18
A. L. Fishback S5-51
C. H. Merry S5-65
G. J. Lebaron S6-19
K. B. Wehner T6-50
N. Shrivastava S6-18
JGK-File/LB

SUBJECT: CORRECTION TO INTERNAL MEMO 8E480-94-100

Attached are corrections to Internal Memo 8E480-94-100 that was issued to M. Gretsinger on October 5, 1994. Please remove pages ii and iii from the original memo and replace them with page ii attached.

I apologize for this inconvenience and will be glad to answer any questions related to this matter.

Thank you.

Table 1. Volatile Organics Analysis Results.

Customer ID	Lab. ID	Analyte	Results	Units	Quantitation Limit
94219-01	R6331	Vinyl Chloride	ND*	ug/L	50
		1,1-Dichloroethene	ND	ug/L	50
		Chloroform	ND	ug/L	50
		1,2-Dichloroethane	ND	ug/L	50
		2-Butanone	ND	ug/L	50
		Carbon Tetrachloride	ND	ug/L	50
		Trichloroethene	ND	ug/L	50
		Benzene	ND	ug/L	50
		Tetrachloroethene	ND	ug/L	50
		Chlorobenzene	ND	ug/L	50
		1-Butanol	225~	ug/L	50
		Pentadecane	280~	ug/L	50
		Dodecane	420**	ug/L	N/A
		Tridecane	6000**	ug/L	N/A
		Tetradecane	10000**	ug/L	N/A

* ND = none detected

~ Estimated value; spectra meet criteria, but response is below the quantitation limit.

** Estimated value; compound identification is tenative.