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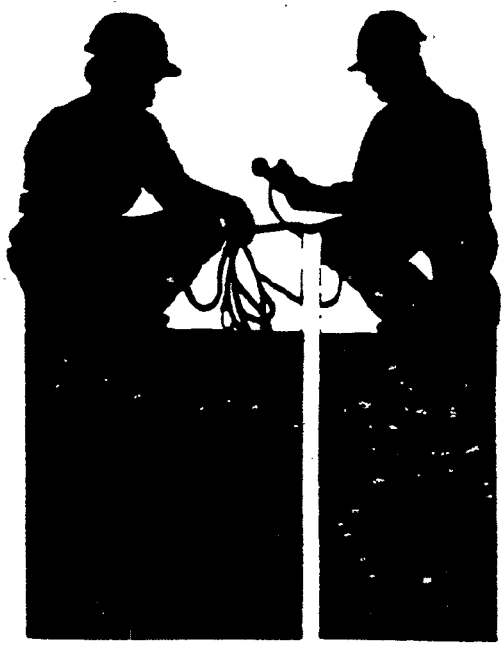
FINAL

REMEDIAL INVESTIGATION REPORT

OCCIDENTAL CHEMICAL CORPORATION

Pottstown, Pennsylvania

March 1993



Appendix L
Volume 3
Data Validation Reports
Surface Water Sample
SR-3-SW

BCM

Engineers, Planners, Scientists
and Laboratory Services

REPORT

BCM

APPENDIX L
VOLUME III

The sample data validation packages, as requested by USEPA, is separated into individual volumes by sample matrix. Volume III consists of a surface water sample, SR-3-SW, taken from a transect adjacent to the site. The following page is a table of contents listing and identifying the location of the requested attachments as specified by the USEPA. The required information is referenced according to either the location in the data validation report narrative or the appropriate attachment to the data validation report narrative. Pesticides/PCBs were not tested in the surface water samples and are therefore not included in this package.

APPENDIX L - VOLUME III
TABLE OF CONTENTS

Surface Water Sample SR-3-SW
Order 37932, Sample 036651

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DATA VALIDATION FOR OCCIDENTAL CHEMICAL PLANT POTTSTOWN, PENNSYLVANIA SITE

ORGANIC DATA:
Volatiles and Semivolatiles
Order Number 37932

Chemical Analyses Performed by:
BCM Laboratory

FOR

Occidental Chemical Company
Niagara Falls, NY

BY

Trillium, Inc.
7A Grace's Drive
Coatesville, Pennsylvania 19320

June 7, 1991

TRILLIUM INC.

EXECUTIVE SUMMARY

Validation of the GC/MS organics data (volatiles and semivolatiles) prepared by the BCM Laboratory for 7 surface water samples from the Occidental Chemical Plant Site in Pottstown, Pennsylvania, has been completed according to EPA's "Functional Guidelines for Evaluating Organics Analyses (2/88)", with modifications specified by EPA Region III. These data were reported by the laboratory under Order Number 37932, which includes the following field samples:

OXY-SR-3-SW	OXY-SR-4-SW	TRIP BLANK
OXY-SR-3A-SW	OXY-SR-3-2-SW	TRIP BLANK
OXY-SR-1-SW	OXY-SR-3-3-SW	
OXY-SR-2-SW	TRIP BLANK	

Analyses were performed according to the USEPA Contract Laboratory Program (CLP) 2/88 Statement of Work. According to this protocol, results of sample analyses are reported by the laboratory as either qualified or unqualified. Unqualified results mean that the reported values may be used without reservations. Various qualifier codes are used by the laboratory (per CLP procedures) to denote specific information regarding the analytical results.

During the validation process, laboratory-qualified and unqualified data are verified against all available supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data validator. Final validated results are, therefore, either qualified or unqualified. Unqualified results still mean that the reported values may be used without reservation. Validator-qualified results are annotated with the following codes in accordance with the Region III-modified Functional Guidelines:

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

UL = Not detected. Quantitation limit is probably higher.

These codes are recorded on the Data Summary Sheets contained in Attachment A of this validation report to qualify the results as appropriate according to the review of the data package.

Key findings of the validation effort for each analysis parameter that resulted in qualification of sample results include:

. Volatile method blanks (MB) and trip blanks (TB) showed consistent contamination with methylene chloride, toluene, and acetone. Sample results for these compounds were compared to the highest blank levels observed. Only one sample result for toluene was more than 10 times the highest blank level; all other sample results for these compounds are qualified "B".

. Low levels of xylenes (total) were seen in one volatile MB and one TB; one TB also contained a small amount of 1,1,1-trichloroethane. All sample results for these compounds are less than 5 times the blank levels, and are qualified "B".

. Two samples each showed 1 or 2 unknown (TIC) peaks; these are all rejected, "R", as artifacts. Two of the TBs contained similar peaks at similar levels, and one of the TICs appears to be a "shoulder" on a surrogate peak (volatiles).

. The volatile matrix spike/matrix spike duplicate runs were performed 29 days after the sample used was collected. While it has no direct adverse affect on the reported sample results, this QC data is rejected due to the grossly exceeded holding time.

. Semivolatile target compound 3-nitroaniline showed a very low response factor (RF), below the QC limit of 0.05, in every standard run. Sample results for this compound are qualified as unreliable "R" in all samples.

. All four (4) semivolatile method blanks were contaminated with low levels of bis(2-ethylhexyl)phthalate; one also contained several analytical artifacts attributable to septum bleed. Blank contaminant levels were compared to levels of the same compounds seen in the samples, and results were

qualified as "B" unless greater than 10 times the highest blank level, according to the Region III rules.

. CRQLs for 2 samples (OXY-SR-4-SW and OXY-SR-3-3-SW) are elevated to 55 and 11 ppb to account for extraction volumes less than 1000 ml.

In addition, the following observations were made with respect to the data package:

. The sample numbers used on the chain-of-custody records are not recorded on Form I (sample results) for each sample. Therefore, there is no direct link between the reported results and the samples sent to the laboratory under chain-of-custody. CLP protocol requires that "EPA numbers" (i.e., field numbers) be used to report sample results, with the laboratory-assigned numbers recorded just below. The exclusive use of laboratory numbers, as done by BCM, reduces the value of the chain-of-custody as important legal documentation of these field samples.

. The four (4) chain-of-custody records in this data package were not accurately completed. Several problems were listed by the laboratory in the Case Narrative, including missing signatures, project number not recorded, and no collection time recorded for the TBs. In addition, it is noted that the practice of documenting the dispatch of empty sample containers is confusing, as the samples returned do not account for the containers dispatched. Also, the practice of dating TBs as the date prepared at the laboratory does not allow a clear means of identifying which TB goes with what samples, especially when more than one TB is dispatched on a given date. It cannot be over-emphasized that chain-of-custody records are important legal documents; as such, the information they contain must be complete, accurate, consistent, and clear.

. It would be useful for both rinse blanks and trip blanks to be given unique field identification numbers, recorded on the chain-of-custody records.

. One of the method blanks (for both volatiles and semivolatiles) was reported in the "Sample Raw Data" section of each data package as well as in the "Raw QC Data" section. It is not clear why this was done. This laboratory blank also has a "date received" recorded on the Form I; again, the true meaning here is unclear.

. No rinse blanks analyzed for volatiles or semivolatiles are reported in this data package, although it appears from the custody records that they were prepared in association with these samples.

. Chloroform is footnoted on the volatiles standard summaries as a System Performance Check Compound (SPCC); it is, in fact, a Calibration Check Compound (CCC).

. Several errors were found in the data package documentation for both volatiles and semivolatiles, including incorrect dates, calculation errors, and transcription errors.

. The Case Narratives for both volatiles and semivolatiles describe these samples as groundwaters when they are, in fact, surface waters.

Details of the validation findings and conclusions for volatiles and semivolatiles are provided in Sections I and II, respectively, of this report. The following QC requirements were evaluated:

A. Holding Times
B. GC/MS Tuning
C. Calibration
    1. Initial
    2. Continuing
D. Blanks
E. Surrogate Recovery
F. Matrix Spike/Matrix Spike Duplicates
G. Field Duplicates
H. Internal Standards Performance
I. TCL Compound Identification
J. Compound Quantitation and Reported Detection Limits
K. Tentatively Identified Compounds
L. System Performance
M. Overall Assessment

I. VOLATILES

A. Holding Times

The surface water samples were collected on December 18, 19, and 27, 1990. Analyses were performed on December 19, 20, and 30, 1990. Elapsed holding times ranged from 1 to 3 days. HCl preservation was appropriately documented on the chain-of-custody records, except for samples OXY-SR-3-SW and OXY-SR-3A-SW. The data is not affected since the samples were analyzed less than 7 days after collection.

The matrix spike and matrix spike duplicate analyses were originally run on 12/19/90, well within holding times, but were rerun on 1/16/91. Only the rerun data are reported. These data are rejected "R" due to the extensive delay before analysis.

No cold storage is indicated on the chain-of-custody; this is a form of preservation and must be documented. In general, any activity that is not documented must be assumed to have not been done. No action is taken here due to the short analysis turnaround time.

B. GC/MS Tuning

Sample analyses were performed on a single GC/MS system ("G") under 7 separate bromofluorobenzene (BFB) tunes, covering all applicable analysis dates. All of the tunes met acceptability criteria.

C. Calibration

Manual areas were integrated for several compounds, most commonly the light gases, in each standard in this data package. No evaluation of these manual integrations can be performed as no hardcopy documentation is provided. The validation has been completed with the assumption that the manual integrations performed and reported by the laboratory are valid and correct.

Chloroform is incorrectly flagged as a System Performance Check Compound (SPCC) on all of the standard forms; chloroform is a Calibration Check Compound (CCC). Results have been evaluated for chloroform as a CCC in this validation.

1. Initial Calibration

Three (3) initial calibrations (IC) were performed during the sample analyses. All criteria were met in the 2 ICs run 12/17/90 and 12/26/90. In the 1/16/91 IC, xylenes (total) showed a percent relative standard deviation (%RSD) of 32.1, slightly above the QC limit of 30%. Since all positive results for xylene in these samples are qualified due to blank contamination, no additional qualifiers are required.

2. Continuing Calibration

All sample analyses were performed under 4 continuing calibration (CC) standards. In all cases, response factors (RFs) were above the 0.05 minimum criterion. One or more compounds in 3 of the standards were outside the percent difference (%D) criterion of 25%; these are listed below:

System G	12/19/90	20:05	trichlorofluoromethane	26.5%
System G	12/20/90	10:10	methylene chloride	31.1%
			2-butanone	34.2%
			c-1,2-dichloroethene	42.1%
System G	12/30/90	10:25	acetone	28.8%

Otherwise unqualified positive results for these compounds in samples associated with these samples are qualified as estimated "J"; non-detects are acceptable as reported.

D. Blanks

Four (4) laboratory method blanks (MB) and 3 trip blanks (TB) were analyzed and reported in association with the surface water samples. One MB was run on each analysis shift. Region III guidance requires that all blanks in a case be considered associated with all samples, therefore collection and analysis dates have not been used to link samples with blanks. The highest levels of 3 common lab contaminants observed in the blanks were as follows: methylene chloride, 4 ppb; acetone, 14 ppb; and toluene, 2 ppb. Small amounts of xylene (5 ppb) and 1,1,1-trichloroethane (2 ppb) were also seen in one of the trip blanks. TICs were not reported in any of the MBs, and low levels of late-eluting unknown alkanes were observed in 2 of the TBs.

Blank contaminants at the indicated levels were compared to results for the surface water samples. If the sample result was not significantly (more than 5 or 10 times, per the Region III guidelines) greater than the blank level, that compound was considered an analytical artifact and qualified as "B". Unknown peaks in the blanks, including small peaks not reported, were similarly compared to sample results. Reported sample TICs that matched retention times for peaks seen in one or more blanks and were not more than ten times higher in concentration were rejected "R" as analytical artifacts.

With the exception of 1 toluene result of 24 ug/L (OXY-SR-3-3-SW), all sample results for the listed blank contaminants are qualified "B" and all TICs are rejected "R" as artifacts.

Attachment 2 contains copies of the MB results forms from the data package, as required by Region III.

E. Surrogate Recovery

All surrogate recoveries are within the CLP-specified QC limits.

Recovery for toluene-d8 is incorrectly reported as 104% on both the quant report for OXY-SR-3-SW and Form II; the correct value is 102%. Copies of corrected forms are provided in Attachment C.

F. Matrix Spike/Matrix Spike Duplicate

Sample OXY-SR-3-SW was also run as a matrix spike and matrix spike duplicate. Recovery results for toluene were incorrectly reported; a corrected Form III is provided in Attachment C. Acceptable recovery and relative percent difference values were obtained for all spiked compounds. However, the original runs, performed on 12/19/91, are not reported; the Case Narrative states that they were rerun on 1/16/91, "due to spiked samples not resembling original samples". Since the original data are not reported, no evaluation of this statement can be made. The chain-of-custody indicates that 3 sample containers were provided to the lab, making it possible that the rerun analyses were performed using a previously unopened sample container; however, the chain-of-custody does not indicate that the sample was preserved with HCl. Therefore, the reported MS/MSD results are rejected "R", due to the extensive delay prior to analysis.

Because the original sample is essentially "clean" and no matrix effect would be expected, and since the recoveries obtained in the rerun spiked samples are within limits and may be likened to blank spikes, and since all samples are "spiked" with internal standard and surrogate compounds for which responses are monitored, the rejection of the MS/MSD results alone is determined to have no direct adverse effect on the sample results.

G. Field Duplicate

Samples OXY-SR-3-SW and OXY-SR-3A-SW were prepared as field duplicates. Both contained only blank-related TICs and target compounds. Surrogate recoveries and IS performance areas were also comparable.

H. Internal Standard Performance

Internal standard (IS) areas and retention times were within QC limits for all analyses in this sample set.

I. TCL Compound Identification

All target compounds are correctly identified with supporting spectra present in the data package.

J. Compound Quantitation and Reported Detection Limits

All target compound quantitations and quantitation limits were reported correctly with the following exception:

- OXY-SR-3-SW: Results for methylene chloride, toluene, and xylene should be reported by the laboratory with "JB" qualifiers due to associated MB contamination as well as being below the CRQLs. Each is reported with "J" only.

Corrected qualifiers are entered on the Data Summary Forms in Attachment A.

All of the samples and TBs except OXY-SR-3-SW were analyzed using 10 ml aliquots instead of the 5 ml specified by CLP. This corresponds to a "dilution factor" of 0.5, as noted (in parentheses) on the Data Summary Forms in Attachment A. Although detection limits, strictly speaking, would be reduced by the use of a larger aliquot, the CRQLs, which are not the same thing, have not been adjusted.

K. Tentatively Identified Compounds

One or two TICs were reported in each of two of the surface water samples. All are rejected "R" as artifacts based on similar peaks in the TBs and similarity to the spectrum for the surrogate 1,2-dichloroethane-d4, indicating the possibility of a split peak.

Attachment D contains copies of the Form I-TIC for each sample where TICs were reported, with qualifiers noted; similar results forms for MBs may be found in Attachment B.

An "R" is recorded on the Data Summary Form at the TIC(s) entry only if all of the reported TICs for that sample are rejected. If any reported TICs are not rejected, then no qualifier is recorded here. Since the TB results are used to qualify sample results, an "R" is not recorded for these entries.

L. System Performance

Both analytical systems appear to have been working well at the time of these analyses. The presence of what may be a split peak for the 1,2-dichloroethane-d4 surrogate in 2 sample analyses (lab numbers 036651 and 036754) should be looked into by the laboratory.

M. Overall Assessment

Sample results are qualified as described above; the Data Summary Forms in Attachment A list all individual sample analytes affected by the applied qualifications. All positive results are listed on these forms, whether or not the value or qualifier has changed as a result of validation. Where no result is listed, the compound was not detected, and no qualification of the CRQL was required. Quantitation limits not specifically recorded for a sample may be found in the far left column of the Data Summary Forms.

Note that the Data Summary Forms reflect all corrections and qualifications resulting from the validation effort.

The following information should be provided by the laboratory to complete the volatiles data package validation:

- Documentation of manually integrated areas for all standards, samples and blanks (where applicable).
- Clarification of chain-of-custody documentation.

II. SEMIVOLATILES

A. Holding Times

The 7 surface water samples were extracted on 12/20, 12/24, and 12/31/90, and were analyzed on 12/27, 12/31, 1/3, 1/4, and 1/7/91. No holding times were exceeded.

As noted for the volatiles, the chain-of-custody records do not document that the samples were refrigerated (or otherwise kept cold) at the time of collection; this is also a requirement for samples intended for semivolatiles analysis and must be documented.

B. GC/MS Tuning

The analyses were performed on two GC/MS systems, identified as "S" and "D". Three (3) decafluorotriphenylphosphine (DFTPP) tunes were run on system D and 7 on system S, representing every shift (12-hour period) in which the samples or associated standards were analyzed. All the DFTPP tunes were acceptable.

One abundance was incorrectly transcribed by the laboratory from the raw data onto Form V for that run; a corrected copy of this page is provided in Attachment C.

C. Calibration

As for the volatiles, areas were integrated manually for some target compounds in most of the standards (and some of the samples) in this data set. No documentation of these integrations is provided therefore their validity cannot be evaluated. The semivolatiles data validation has been completed on the assumption that all the manual integrations performed and reported by the laboratory are valid and correct.

1. Initial Calibration

Five (5) initial calibrations (IC) were performed:

- GC/MS D, 12/13/90 11:41-16:06, Files D2352-2356
- GC/MS D, 12/31/90 10:40-14:57, Files D2553-2557
- GC/MS S, 12/18/90 10:56-17:40, Files S0889-0895
- GC/MS S, 01/04/91 11:21-15:52, Files S1039-1043
- GC/MS S, 01/11/91 12:26-21:32, Files S1102-1107

All IC standards are present and RF as well as %RSD values are accurately reported. Table 1 lists the few findings outside the CLP QC limits. All sample results for 3-nitroaniline are rejected "R" due to the low RF observed in each IC. Positive results for the other listed compounds would be qualified as "J" if not otherwise qualified.

Form VI for the 1/11 IC on GC/MS S incorrectly reports the calibration date as 1/12/91. Corrected copies of the affected pages are provided in Attachment C.

2. Continuing Calibration

Analyses were performed under 5 continuing calibration (CC) standards, representing applicable analysis shifts.

All CC standards are present and RF as well as %D values are accurately reported. Table 2 lists findings that are outside the QC criteria. Consistently "out" RF or %D values are again seen for 3-nitroaniline, further supporting the decision to reject these results. For the other compounds listed with high %D values, either no positive results are reported in associated samples or results are already qualified (e.g., values are below the quantitation limit), therefore no additional qualifiers are required.

Form VII for the standard on 1/12/91, system S, incorrectly refers to an IC on 1/12/91; the correct IC date is 1/11/91. Corrected copies of the affected pages are provided in Attachment C.

D. Blanks

Four (4) laboratory MBs were analyzed with this sample set. SVBLK#1, #2, and #3 were extracted on 12/20, 12/31, and 12/24/90, respectively. SVBLK#4 is a rerun of SVBLK#1 on a different GC/MS at a later date.

Bis(2-ethylhexyl)phthalate was detected in all of the blanks. The highest level (4 ug/L) was compared to the level of the contaminant observed in each of the surface water samples. In each case, the sample result was less than ten times the blank value, therefore the result is flagged "B".

SVBLK#2 also contained 5 reported unknown TICs, attributed to septum bleed. Similar peaks in the surface water samples are rejected "R" as artifacts.

Attachment B contains copies of the MB results forms from the data package, as required by Region III.

SVBLK#3 was extracted with Batch 364 on 12/24/90, according to the extraction page included in the data package. The Form I for this blank lists 12/26/90 as the extraction date; correction of this entry to 12/24/90 has been made on the copies provided in Attachment B.

E. Surrogate Recovery

All surrogate recoveries are within CLP QC limits.

F. Matrix Spike/Matrix Spike Duplicate

Sample OXY-SR-3-SW was also run as a matrix spike and matrix spike duplicate. Results were correctly reported and acceptable recovery and RPD results were achieved for all spiked compounds.

G. Field Duplicate

Results for OXY-SR-3-SW and OXY-SR-3A-SW are comparable; no non-blank-related compounds are detected in either sample run. Surrogate recoveries and IS area responses also match well.

H. Internal Standard Performance

All internal standard areas are within QC limits for all reported analyses.

I. TCL Compound Identification

All target compounds are correctly identified and reported with supporting spectra present in the data package.

Samples OXY-SR-1-SW, OXY-SR-2-SW, AND OXY-SR-4-SW were extracted in Batch 364 on 12/24/90, according to the extraction page in the data package; Form I for each sample lists 12/26 as the extraction date. Corrected Form I's should be provided by the laboratory.

J. Compound Quantitation and Reported Detection Limits

For 6 of the 7 surface water samples the aliquot extracted was less than the 1000 ml specified by CLP; actual volumes used ranged from 950-990 ml. This results in actual dilution factors ranging from 1.01 to 1.05. The laboratory has reported dilution factors on the Form I for each sample as follows:

OXY-SR-3-SW	970 ml	DF 1.1
OXY-SR-3A-SW	950 ml	DF 1.1
OXY-SR-1-SW	990 ml	DF 1.0
OXY-SR-2-SW	1000 ml	DF 1.0
OXY-SR-4-SW	970 ml	DF 1.0
OXY-SR-3-2-SW	980 ml	DF 1.0
OXY-SR-3-3-SW	960 ml	DF 1.0

CRQLs were adjusted by the laboratory to reflect the reported 1.1 DF in the first 2 samples; no other CRQLs were adjusted. The values as reported are, therefore, inconsistent.

The Data Summary Forms in Attachment A reflect the actual dilution factor for each sample. When the volume used was 970 ml or less (DF 1.03 or greater), the CRQLs should be adjusted to reflect the dilution; this is consistent with the laboratory-reported CRQLs for the first 2 samples. CRQLs for 2 additional samples are affected by this change: OXY-SR-4-SW and OXY-SR-3-3-SW. The correctly adjusted CRQLs (55/11 ug/l) for these samples are recorded on the Data Summary Forms. For the 2 samples where less than 1000 ml was extracted but the CRQLs are not adjusted, the actual DF is recorded in parentheses on the Data Summary Forms.

Sample OXY-SR-3-SW (and the MS/MSD) were analyzed under an IC standard without a separate continuing calibration standard. Results are calculated using the average RFs from the IC. This is noted only because it is different from the usual procedure; there is nothing wrong, on a technical basis, with the results being generated in this way.

K. Tentatively Identified Compounds

One or more TICs were reported in 4 of the surface water samples. All of these are rejected "R" as analytical artifacts, notably septum bleed and solvent preservatives (e.g. cyclohexanol).

Attachment D contains copies of the Form I for each sample where TICs were reported with qualifiers noted; similar results forms for MBs may be found in Attachment B.

L. System Performance

Both analytical systems were working well at the time of these analyses; no evidence of any problems was observed in the data.

M. Overall Assessment

Sample results for semivolatile compounds are qualified as described above as the result of this validation. All positive results are listed on the Data Summary Forms in Attachment A. Where no result is listed, the compound was not detected and no qualification of the CRQLs was required. Where not listed, quantitation limits may be found on the laboratory-generated Form I for the sample (in the data package), or calculated from the information on the Data Summary Forms.

The following should be provided by the laboratory to complete the data package and be made available for review:

. Documentation of manually integrated areas for all standards, samples, and blanks where applicable.

. Form I's for OXY-SR-1-SW, OXY-SR-2-SW, and OXY-SR-4-SW reflecting the correct extraction date of 12/24/90.

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Table 1. Semivolatile Initial Calibration Standards
FINDINGS OUTSIDE CLP QC LIMITS
Lab Order #37932

Date of Calibration	GC/MS	Compound	* RRF	** % Rel Std Deviation
12/13/90	D	3-nitroaniline	0.040	59.1
12/31/90	D	3-nitroaniline	0.024	39.1
		benzoic acid	--	39.6
		4-chloroaniline	--	46.2
		hexachlorocyclopentadiene	--	33.1
		4-nitroaniline	--	34.1
		3,3'-dichlorobenzidine	--	41.9
12/18/90	S	3-nitroaniline	0.023	--
		4-chloroaniline	--	46.4
01/04/91	S	3-nitroaniline	0.026	--
		4-chloroaniline	--	30.5
01/11/91	S	3-nitroaniline	0.038	--
		hexachlorocyclopentadiene	--	30.9
		di-N-butylphthalate	--	36.0

* QC limit is >0.05
** QC limit is < 30%

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Table 2. Semivolatile Continuing Calibration Standards
FINDINGS OUTSIDE QC LIMITS
Lab Order #37932

Date/Time of Standard	GC/MS	Compound	* RRF	** % D
12/27/90 20:05	D	3-nitroaniline	0.045	--
1/3/91 13:10	S	3-nitroaniline	0.023	---
		4-chloroaniline	--	82.9
		4-nitroaniline	--	32.8
		benzoic acid	--	33.2
		hexachlorocyclopentadiene	--	26.7
		terphenyl-d14 (surr)	--	38.3
		3,3'-dichlorobenzidine	--	30.6
1/4/91 17:51	S	3-nitroaniline	0.029	---
1/7/91 09:07	S	3-nitroaniline	0.028	---
		benzoic acid	--	48.7
		2,4-dinitrophenol	--	26.9
		4-nitrophenol	--	26.8
		3,3'-dichlorobenzidine	--	37.4
1/12/91 13:32	S	3-nitroaniline	0.027	29.0
		4-chloroaniline	--	28.0
		4-nitroaniline	--	25.5

* QC limit is > 0.05
** QC limit is < 25%

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ATTACHMENT A

Data Summary Forms: Order #37932

1. Volatiles
2. Semivolatiles

DATA SUMMARY FORM: VOLATILES 1 Page 1 of 4

Site Name: Occidental Chem. Plant–Pottstown, PA WATER SAMPLES
(ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

AR306289

	Sample No.	OXY-SR-3-SW		OXY-SR-3A-SW		TB		OXY-SR-1-SW		OXY-SR-2-SW		OXY-SR-4-SW		TB			
	Dilution Factor	1		1 (0.5)		1 (0.5)		1 (0.5)		1 (0.5)		1 (0.5)		1 (0.5)			
	Collected	12/18/90		12/18/90		12/18/90		12/19/90		12/19/90		12/19/90		12/19/90			
	Analyzed	12/19/90		12/20/90		12/20/90		12/20/90		12/20/90		12/20/90		12/20/90			
CRQL																	
10	Chloromethane																
10	Bromoethane																
10	*Vinyl Chloride																
10	Chloroethane																
5	*Methylene Chloride	2	JB	1	JB	1	JB										
10	Acetone																
5	Carbon Disulfide																
5	*1,1–Dichloroethene																
5	1,1–Dichloroethane																
5	*Total 1,2–Dichloroethene																
5	Chloroform																
5	*1,2–Dichloroethane																
10	*2–Butanone																
5	*1,1,1–Trichloroethane			2	JB									2	J		
5	*Carbon Tetrachloride																
10	Vinyl Acetate																
5	Bromodichloromethane																

Site Name: Occidental Chem. Plant--Pottstown, PA WATER SAMPLES (ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

CRQL	Sample No.	OXY-SR-3-SW		OXY-SR-3A-SW		TB		OXY-SR-1-SW		OXY-SR-2-SW		OXY-SR-4-SW		TB			
	Dilution Factor	1		1 (0.5)		1 (0.5)		1 (0.5)		1 (0.5)		1 (0.5)		1 (0.5)			
	Collected	12/18/90		12/18/90		12/18/90		12/19/90		12/19/90		12/19/90		12/19/90			
	Analyzed	12/19/90		12/20/90		12/20/90		12/20/90		12/20/90		12/20/90		12/20/90			
5	1,2-Dichloropropane																
5	Cis-1,3-Dichloropropene																
5	Trichloroethene																
5	Dibromochloromethane																
5	1,1,2-Trichloroethane																
5	Benzene																
5	Trans-1,3-Dichloropropene																
5	Bromoform																
10	4-Methyl-2-pentanone																
10	2-Hexanone																
5	Tetrachloroethene																
5	1,1,2,2-Tetrachloroethane																
5	Toluene	2	JB	1	JB	1	JB	1	JB	1	JB	1	JB	1	JB		
5	Chlorobenzene																
5	Ethylbenzene																
5	Styrene																
5	Total Xylenes	2	JB					4	JB			2	JB	5	B		
		TIC	R			TIC		TICs	R					TIC			

Site Name: Occidental Chem. Plant–Pottstown, PA WATER SAMPLES
(ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

	Sample No.	OXY-SR-3-2-SW		OXY-SR-3-3-SW		TB											
	Dilution Factor	1 (0.5)		1 (0.5)		1 (0.5)											
	Collected	12/27/90		12/27/90		12/27/90											
	Analyzed	12/30/90		12/30/90		12/30/90											
CRQL																	
10	Chloromethane																
10	Bromoethane																
10	*Vinyl Chloride																
10	Chloroethane																
5	*Methylene Chloride																
10	Acetone																
5	Carbon Disulfide																
5	*1,1–Dichloroethene																
5	1,1–Dichloroethane																
5	*Total 1,2–Dichloroethene																
5	Chloroform																
5	*1,2–Dichloroethane																
10	*2–Butanone																
5	*1,1,1–Trichloroethane																
5	*Carbon Tetrachloride																
10	Vinyl Acetate																
5	Bromodichloromethane																

Site Name: Occidental Chem. Plant–Pottstown, PA WATER SAMPLES
(ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

	Sample No.	OXY-SR-3-2-SW		OXY-SR-3-3-SW		TB											
	Dilution Factor	1 (0.5)		1 (0.5)		1 (0.5)											
	Collected	12/27/90		12/27/90		12/27/90											
	Analyzed	12/30/90		12/30/90		12/30/90											
CRQL																	
5	1,2–Dichloropropane																
5	Cis–1,3–Dichloropropene																
5	Trichloroethene																
5	Dibromochloromethane																
5	1,1,2–Trichloroethane																
5	Benzene																
5	Trans–1,3–Dichloropropene																
5	Bromoform																
10	4–Methyl–2–pentanone																
10	2–Hexanone																
5	Tetrachloroethene																
5	1,1,2,2–Tetrachloroethane																
5	Toluene			24		2	JB										
5	Chlorobenzene																
5	Ethylbenzene																
5	Styrene																
5	Total Xylenes			4	JB												

DATA SUMMARY FORM: BNAS 1

Site Name: Occidental Chem. Plant–Pottstown, PA WATER SAMPLES
(ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

	Sample No.	OXY-SR-3-SW		OXY-SR-3A-SW		OXY-SR-1-SW		OXY-SR-2-SW		OXY-SR-4-SW		OXY-SR-3-2-SW		OXY-SR-3-3-SW	
	Dilution Factor	1.03		1.05		1 (1.01)		1		1.03		1 (1.02)		1.04	
	Extracted	12/20/90		12/20/90		12/24/90		12/24/90		12/24/90		12/31/90		12/31/90	
	Analyzed	12/31/90		1/3/91		1/4/91		1/4/91		1/3/91		1/7/91		1/7/91	
	GC/MS	D		S		S		S		S		S		S	
CRQL	COMPOUND														
10	Phenol									11	U			11	U
10	bis(2-Chloroethyl)ether									11	U			11	U
10	2-Chlorophenol									11	U			11	U
10	1,3-Dichlorobenzene									11	U			11	U
10	1,4-Dichlorobenzene									11	U			11	U
10	Benzyl Alcohol									11	U			11	U
10	1,2-Dichlorobenzene									11	U			11	U
10	2-Methylphenol									11	U			11	U
10	bis(2-Chloroisopropyl)ether									11	U			11	U
10	4-Methylphenol									11	U			11	U
10	N-Nitroso-di-n-propylamine									11	U			11	U
10	Hexachloroethane									11	U			11	U
10	Nitrobenzene									11	U			11	U
10	Isophorone									11	U			11	U
10	2-Nitrophenol									11	U			11	U
10	2,4-Dimethylphenol									11	U			11	U
50	Benzoic Acid									55	U			55	U
10	bis(2-Chloroethoxy)methane									11	U			11	U
10	2,4-Dichlorophenol									11	U			11	U
10	1,2,3-Trichlorobenzene									11	U			11	U
10	Naphthalene									11	U			11	U
10	4-Chloroaniline									11	U			11	U

DATA SUMMARY FORM: BNAS 2

Site Name: Occidental Chem. Plant–Pottstown, PA WATER SAMPLES (ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

CRQL	COMPOUND	OXY-SR-3-SW	OXY-SR-3A-SW	OXY-SR-1-SW	OXY-SR-2-SW	OXY-SR-4-SW	OXY-SR-3-2-SW	OXY-SR-3-3-SW
	Sample No.	OXY-SR-3-SW	OXY-SR-3A-SW	OXY-SR-1-SW	OXY-SR-2-SW	OXY-SR-4-SW	OXY-SR-3-2-SW	OXY-SR-3-3-SW
	Dilution Factor	1.03	1.05	1 (1.01)	1	1.03	1 (1.02)	1.04
	Extracted	12/20/90	12/20/90	12/24/90	12/24/90	12/24/90	12/31/90	12/31/90
	Analyzed	12/31/90	1/3/91	1/4/91	1/4/91	1/3/91	1/7/91	1/7/91
	GC/MS	D	S	S	S	S	S	S
10	Hexachlorobutadiene					11 U		11 U
10	4–Chloro–3–methylphenol					11 U		11 U
10	2–Methylnaphthalene					11 U		11 U
10	Hexachlorocyclopentadiene					11 U		11 U
10	2,4,6–Trichlorophenol					11 U		11 U
50	2,4,5–Trichlorophenol					55 U		55 U
10	2–Chloronaphthalene					11 U		11 U
50	2–Nitroaniline					55 U		55 U
10	Dimethylphthalate					11 U		11 U
10	Acenaphthylene					11 U		11 U
10	2,6–Dinitrotoluene					11 U		11 U
50	3–Nitroaniline					55 U		55 U
10	Acenaphthene					11 U		11 U
50	2,4–Dinitrophenol					55 U		55 U
50	4–Nitrophenol					55 U		55 U
10	Dibenzofuran					11 U		11 U
10	2,4–Dinitrotoluene					11 U		11 U
10	Diethylphthalate					11 U		11 U
10	4–Chlorophenyl–phenylether					11 U		11 U
10	Fluorene					11 U		11 U
50	4–Nitroaniline					55 U		55 U
50	4,6–Dinitro–2–methylphenol					55 U		55 U

DATA SUMMARY FORM: BNAS 3

Site Name: Occidental Chem. Plant--Pottstown, PA WATER SAMPLES
(ug/L)

Case #: 37932 Sampling Date(s): December 18, 19, 27, 1990

	Sample No.	OXY-SR-3-SW		OXY-SR-3A-SW		OXY-SR-1-SW		OXY-SR-2-SW		OXY-SR-4-SW		OXY-SR-3-2-SW		OXY-SR-3-3-SW					
	Dilution Factor	1.03		1.05		1 (1.01)		1		1.03		1 (1.02)		1.04					
	Extracted	12/20/90		12/20/90		12/24/90		12/24/90		12/24/90		12/31/90		12/31/90					
	Analyzed	12/31/90		1/3/91		1/4/91		1/4/91		1/3/91		1/7/91		1/7/91					
	GC/MS	D		S		S		S		S		S		S					
CRQL	COMPOUND																		
10	N-Nitrosodiphenylamine									11	U			11	U				
10	4-Bromophenyl-phenylether									11	U			11	U				
10	Hexachlorobenzene									11	U			11	U				
50	Pentachlorophenol									55	U			55	U				
10	Phenanthrene									11	U			11	U				
10	Anthracene									11	U			11	U				
10	Di-n-butylphthalate									11	U			11	U				
10	Fluoranthene									11	U			11	U				
10	Pyrene									11	U			11	U				
10	Butylbenzylphthalate									11	U			11	U				
20	3,3'-Dichlorobenzidine									22	U			22	U				
10	Benzo(a)anthracene									11	U			11	U				
10	Chrysene									11	U			11	U				
10	bis(2-Ethylhexyl)phthalate	6	BJ	14	BJ	5	BJ	4	BJ	5	BJ	2	BJ	4	BJ				
10	Di-n-octylphthalate									11	U			11	U				
10	Benzo(b)fluoranthene									11	U			11	U				
10	Benzo(k)fluoranthene									11	U			11	U				
10	Benzo(a)pyrene									11	U			11	U				
10	Indeno(1,2,3-cd)pyrene									11	U			11	U				
10	Dibenz(a,h)anthracene									11	U			11	U				
10	Benzo(g,h)perylene									11	U			11	U				
		TICs	R	TIC	R							TICs	R	TIC	R				

TRILLIUM INC.

ATTACHMENT B

Laboratory Method Blank Results: Order #37932

1. Volatiles
2. Semivolatiles

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

V BLANK 1

Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 5 ml Lab File ID: >G1329

Level: (low/med) LOW Date Received: N/A

% Moisture: 100% Date Analyzed: 12/19/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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		4.	J
67-64-1	Acetone	14.	~~10.~~	~~U~~
75-15-0	Carbon Disulfide		5.	U
75-35-4	1,1-Dichloroethene	COE 6/1/91	5.	U
75-34-3	1,1-Dichloroethane		5.	U
540-59-0	1,2-Dichloroethene (total)		5.	U
67-66-3	Chloroform		5.	U
107-02-2	1,2-Dichloroethane		5.	U
78-93-3	2-Butanone		5.	U
71-55-6	1,1,1-Trichloroethane		5.	U
56-23-5	Carbon Tetrachloride		5.	U
108-05-4	Vinyl Acetate		10.	U
75-27-4	Bromodichloromethane		5.	U
78-87-5	1,2-Dichloropropane		5.	U
10061-01-5	cis-1,3-Dichloropropene		5.	U
79-01-6	Trichloroethene		5.	U
124-48-1	Dibromochloromethane		5.	U
79-00-5	1,1,2-Trichloroethane		5.	U
71-43-2	Benzene		5.	U
10061-02-6	trans-1,3-Dichloropropene		5.	U
75-25-2	Bromoform		5.	U
108-10-1	4-Methyl-2-pentanone		10.	U
591-78-6	2-Hexanone		10.	U
127-18-4	Tetrachloroethene		5.	U
79-34-5	1,1,2,2-Tetrachloroethane		5.	U
108-88-3	Toluene		2.	J
108-90-7	Chlorobenzene		5.	U
100-41-4	Ethylbenzene		5.	U
100-42-5	Styrene		5.	U
133-02-7	Xylene (total)		1.	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. VBIK#1

Lab Name: Bem Labs Contract: Occidental Chemical

Lab Code: Bem Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: VBIK#

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1329

Level: (low/med) low Date Received: N/A

% Moisture: not dec. 100% Date Analyzed: 12-19-90

Column: (pack/cap) Cap Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

V BLANK 2

Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 5 ml Lab File ID: >G1344

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK#2
036654

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VBLK#2 036654

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1344

Level: (low/med) LOW Date Received: 12-19-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

V BLANK 3

Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 5 ml Lab File ID: >G1484

Level: (low/med) LOW Date Received: N/A

% Moisture: 100% Date Analyzed: 12/30/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	8.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. VBLK#3

Lab Name: BOMLABS Contract: OCCIDENTAL Chem

Lab Code: BOMM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: VBLK#

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1484

Level: (low/med) low Date Received: N/A

% Moisture: not dec. 100% Date Analyzed: 12-30-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		no peaks detected			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

EPA SAMPLE NO.

V BLANK 4

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 5 ml Lab File ID: >G1823

Level: (low/med) LOW Date Received: N/A

% Moisture: 100% Date Analyzed: 01/16/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	2.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: BCM Labs Contract: OCCidental Chemical VBLK#4

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: VBLK#4

Sample wt/vol: 5 (g/mL) mL Lab File ID: >61823

Level: (low/med) Low Date Received: N/A

% Moisture: not dec. 100% Date Analyzed: 1-16-91

Column: (pack/cap) CAP. Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1BK#1
036654

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >D2511

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: not dec. 100 % dec. Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 12/27/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS	J.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-	2	--------Phenol	10.	U
111-	4	--------bis(2-Chloroethyl)Ether	10.	U
95-57-	8	----------2-Chlorophenol	10.	U
541-73-	1	--------1,3-Dichlorobenzene	10.	U
106-46-	7	--------1,4-Dichlorobenzene	10.	U
100-51-	6	--------Benzyl alcohol	10.	U
95-50-1		--------1,2-Dichlorobenzene	10.	U
95-48-7		----------2-Methylphenol	10.	U
39638-32-9		------bis(2-chloroisopropyl)ether	10.	U
106-44-5		--------4-Methylphenol	10.	U
621-64-7		--------N-Nitroso-Di-n-propylamine	10.	U
67-72-1		----------Hexachloroethane	10.	U
98-95-3		----------Nitrobenzene	10.	U
78-59-1		----------Isophorone	10.	U
88-75-5		----------2-Nitrophenol	10.	U
105-67-9		--------2,4-Dimethylphenol	10.	U
65-85-0		----------Benzoic acid	50.	U
111-91-1		--------bis(2-Chloroethoxy)methane	10.	U
120-83-2		--------2,4-Dichlorophenol	10.	U
120-82-1		--------1,2,4-Trichlorobenzene	10.	U
91-20-3		----------Naphthalene	10.	U
106-47-8		--------4-Chloroaniline	10.	U
87-68-3		----------Hexachlorobutadiene	10.	U
59-50-7		----------4-Chloro-3-methylphenol	10.	U
91-57-6		----------2-Methylnaphthalene	10.	U
77-47-4		----------Hexachlorocyclopentadiene	10.	U
88-06-2		----------2,4,6-Trichlorophenol	10.	U
95-95-4		----------2,4,5-Trichlorophenol	50.	U
91-58-7		----------2-Chloronaphthalene	10.	U
88-74-4		----------2-Nitroaniline	50.	U
131-11-3		--------Dimethylphthalate	10.	U
208-96-8		--------Acenaphthylene	10.	U
606-20-2		--------2,6-Dinitrotoluene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVBK#1
036654

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >D2511

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: not dec. 100 % dec. Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 12/27/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	3.	J
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U
92-87-5	Benzidine	50.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: SVBLK#1

Lab Name: BCM LAB Contract: _____

Lab Code: BCM Case No.: 3732 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: 036C054

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >D2571

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) Sepf Date Analyzed: 12/27/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		None Found			
2.					
3.					
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV BLK #2

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1077

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100 % dec. Date Extracted: 12/31/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 1/07/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV BLK # 2

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1077

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100 % dec. Date Extracted: 12/31/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 1/07/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	3.	J
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U
92-87-5	Benzidine	50.	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV BLK #2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: BCM LAB Contract: _____

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: m BLK

Sample wt/vol: 1000 (g/mL) ml Lab File ID: 751077

Level: (low/med) low Date Received: N/A

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/31/90

Extraction: (SepF/Cont/Sonc) Sepf Date Analyzed: 1/7/91

GPC Cleanup: (Y/N) N pH: ___ Dilution Factor: 1.0

Number TICs found: _____ CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	m/z 73, 147, 221	Septum Bleed	30.61	9	J
2.	73, 147, 221		32.05	10	J
3.	73, 147, 221		33.78	11	J
4.	73, 147, 221		35.94	9	J
5.	73, 147, 221		38.67	7	J
6.					
7.					
8.					
9.		CAE 6/2/91			
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30.					

EPA SAMPLE NO.

SV BLK #3

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1114

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100 % dec. Date Extracted: ~~12/26/90~~ 12/24/90 CAE 6/6/91

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 1/12/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

AR306311

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV-BLK # 3

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1114

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100 % dec. Date Extracted: ~~12/26/90~~ 12/24/90 CAE 6/6/91

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 1/12/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.	J
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U
92-87-5	Benzidine	50.	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: SV BLK#3

Lab Name: BCM LAB Contract:

Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) Water Lab Sample ID: M.Blank

Sample wt/vol: 1000 (g/mL) mL Lab File ID: Z81114

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100% dec. Date Extracted: 12/24/90 CAF 6/4/91

Extraction: (SepF/Cont/Sonc) Sepf Date Analyzed: 1/12/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		None Found.			
2.					
3.					
4.					
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AR306313

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV BLK #4

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1115

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100 % dec. Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 1/12/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)Ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV BLK # 4

Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1115

Level: (low/med) LOW Date Received: N/A

% Moisture: not dec. 100 % dec. Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 1/12/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.	J
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U
92-87-5	Benzidine	50.	U

(1) - Cannot be separated from Diphenylamine

AR306315

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV BLK#4

Lab Name: BCM LAB Contract: _____

Lab Code: BCM Case No.: 3733 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: m.Blank

Sample wt/vol: 1000 (g/mL) ml Lab File ID: >S1115

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) SepF Data Analyzed: 1/12/91

GPC Cleanup: (Y/N) ___ pH: ___ Dilution Factor: 10

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		None Found			
2.					
3.					
4.					
5.					
6.					
7.					
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29.					
30.					

AR306316

TRILLIUM INC.

ATTACHMENT C

Corrections: Order #37932

1. Volatiles
2. Semivolatiles

QUANT REPORT

Operator ID: TS Quant Rev: 6 Quant Time: 901220 00:43
Output File: ^G1332::D1 Injected at: 901219 23:59
Data File: >G1332::D2 Dilution Factor: 1.00000
Name: 036651 624MS
Misc: 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.72	962	51328	50.00	UG/L	93
11)	Methylene Chloride	13.86	662	3500M	1.99	UG/L	87
21)	1,2-Dichloroethane-d4 (SUR)	21.39	1048	81701	52.33	UG/L 105	95
25)	**1,4-Difluorobenzene (IS)	22.62	1111	236514	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.60	1315	184870	51.19	UG/L ~~104~~	98
36)	Toluene	26.82	1326	14449	2.29	UG/L 102	89
42)	**Chlorobenzene-d5 (IS)	30.60	1520	248372	50.00	UG/L	99
46)	Xylene (total)	31.13	1547	5225M	2.08	UG/L	93
50)	Bromofluorobenzene (SUR)	33.94	1691	184265	50.40	UG/L 101	86

mae 6/11/91

** Compound is ISTD

WATER VOLATILE SURROGATE RECOVERY

Lab Name: BCM LAB Contract: Occidental Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

VBLK# 2

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	036651	104 (102 CAE 6/11/91)	101	105		0
02	036652	102	99	88		0
03	036653	106	102	95		0
04	036654	102	103	98		0
05	036754	104	100	90		0
06	036755	105	102	95		0
07	036756	104	101	97		0
08	036757	107	100	97		0
09	037118	103	95	93		0
10	037119	103	95	96		0
11	037120	101	94	95		0
12	VBLK#1	99	100	98		0
13	VBLK#3	103	101	100		0
14	036656	104	107	102		0
15	036655	102	107	103		0
16	VBLK#4	103	107	97		0
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: BCM Labs Contract: Occidental Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: 036656/036655

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	N.D.	50.75	102	61-145
Trichloroethene		↓	50.19	100	71-120
Benzene		↓	49.41	100	76-127
Toluene		2.3	51.71 ~~49.41~~	99	76-125
Chlorobenzene	↓	ND	CAS 6/1/91 53.48	107	75-130
		⊠			

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	50.	53.05	106	3.8	14	61-145
Trichloroethene		49.31	99	1	14	71-120
Benzene		48.61	97	3	11	76-127
Toluene		44.29	9499	~~4~~ 5	13	76-125
Chlorobenzene	↓	52.47 CAS 6/1/91	105	19	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: _____

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Name: BCM LAB Contract: _____

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >51101 DFTPP Injection Date: 11/11/91

Instrument ID: S DFTPP Injection Time: 12:07

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	56.02
68	Less than 2.0% of mass 69	0.00 (0.00)1
69	Mass 69 relative abundance	64.89
70	Less than 2.0% of mass 69	0.22 (0.34)1
127	40.0 - 60.0% of mass 198 41.37	~~41.37~~
197	Less than 1.0% of mass 198 CAE 11/12/91	0.00
198	Base Peak, 100% relative abundance	100.00
199	5.0 to 9.0% of mass 198	6.22
275	10.0 - 30.0% of mass 198	24.69
365	Greater than 1.00% of mass 198	2.51
441	Present, but less than mass 443	12.99
442	Greater than 40.0% of mass 198	94.86
443	17.0 - 23.0% of mass 442	17.66 (18.62)2

1-Value is % mass 69 2-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		20 PPM STD	>51107	11/11/91	21:32
02		50 PPM STD	>51102	11/11/91	12:26
03		80 PPM STD	>51105	11/11/91	19:19
04		120 PPM STD	>51104	11/11/91	18:14
05		160 PPM STD	>51103	11/11/91	17:08
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					AR30632
22					

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: HP5970-1

Contractor: BCM LABS Calibration Date: ~~01/12/91~~ 1/11/91 CAEG 1/2/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30%

Laboratory ID:		>S1107	>S1102	>S1105	>S1104	>S1103					
Compound		RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
N-Nitrosodimethylamine		.90328	.84001	.92217	.92090	.87027	.511	.89133	3.984		
2-Fluorophenol	SA	1.07255	1.04477	1.05818	1.01094	.93835	.768	1.02496	5.222		
Phenol-d6	SA	1.49501	1.41478	1.40187	1.31547	1.23839	.936	1.37310	7.181		
Phenol		1.64256	1.54757	1.62505	1.51301	1.35733	.938	1.53710	7.408	*	
bis(2-Chloroethyl)ether		1.62333	1.62593	1.36845	1.30981	1.34014	.952	1.45353	10.840		
2-Chlorophenol		1.42582	1.31620	1.31550	1.23716	1.14656	.967	1.28825	8.061		
1,3-Dichlorobenzene		1.57001	1.45238	1.37852	1.28802	1.15155	.993	1.36810	11.631		
1,4-Dichlorobenzene		1.62375	1.50008	1.37530	1.27150	1.14618	1.004	1.38336	13.536	*	
Benzyl alcohol		.83145	.81054	.78025	.76722	.72121	1.027	.78213	5.415		
1,2-Dichlorobenzene		1.54747	1.43721	1.37318	1.27014	1.12641	1.039	1.35088	11.908		
2-Methylphenol		1.33689	1.17399	1.21177	1.07201	.96921	1.050	1.15277	12.117		
bis(2-Chloroisopropyl)ether		3.61020	3.44515	3.50586	3.38547	3.09695	1.057	3.40873	5.664		
4-Methylphenol		1.38537	1.28913	1.21584	1.11610	1.01230	1.078	1.20375	12.093		
N-Nitroso-di-n-propylamine		1.35562	1.23711	1.31235	1.27598	1.18202	1.085	1.27262	5.264		**
Hexachloroethane		.70705	.68213	.66803	.61466	.56933	1.101	.64824	8.573		
Nitrobenzene-d5	SB	.43603	.41810	.42591	.40104	.37729	.887	.41167	5.608		
Nitrobenzene		.46196	.44291	.44086	.40595	.37630	.890	.42559	8.029		
Isophorone		.87742	.85529	.84782	.82617	.78122	.927	.83758	4.351		
2-Nitrophenol		.26840	.22658	.22131	.20651	.19337	.941	.22324	12.723	*	
2,4-Dimethylphenol		.39284	.37010	.38521	.35720	.32610	.944	.36629	7.192		
Benzoic acid		-	.06968	.09452	.12219	.10617	.963	.09814	22.527		
bis(2-Chloroethoxy)methane		.54642	.50930	.49394	.45993	.41644	.959	.48521	10.186		
2,4-Dichlorophenol		.34569	.33137	.32902	.30170	.26927	.978	.31541	9.608	*	
1,2,4-Trichlorobenzene		.39501	.35589	.34729	.31508	.28100	.993	.33885	12.717		
Naphthalene		1.10800	1.00094	.93363	.80837	.69916	1.003	.91002	17.618		
4-Chloroaniline		.32589	.25225	.22853	.30328	.35802	1.011	.29359	18.048		
Hexachlorobutadiene		.26137	.24822	.23572	.21070	.18588	1.031	.22838	13.234	*	
4-Chloro-3-methylphenol		.39529	.38287	.37827	.35069	.31773	1.087	.36497	8.503	*	
2-Methylnaphthalene		.74729	.65978	.61685	.55236	.49508	1.114	.61427	15.827		
Hexachlorocyclopentadiene		.09136	.15628	.20313	.22596	.21182	.893	.17771	30.888		**

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: HP5970-1

Contractor: BCM LABS Calibration Date: ~~01/12/91~~ 1/11/91 CAE 6/2/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30%

Compound		Laboratory ID: >S1107 RF 20.00	>S1102 RF 50.00	>S1105 RF 80.00	>S1104 RF 120.00	>S1103 RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2,4,6-Trichlorophenol		.41095	.37632	.37755	.35823	.32002	.903	.36862	8.998	*	
2,4,5-Trichlorophenol		.43178	.41622	.40658	.38213	.31704	.908	.39075	11.509		
2-Chloronaphthalene		1.19923	1.07176	.98862	.90426	.78730	.927	.99023	15.879		
2-Fluorobiphenyl	SB	1.34992	1.17708	1.06396	.97833	.83733	.912	1.08132	18.013		
2-Nitroaniline		.51948	.48737	.49060	.50055	.45417	.941	.49043	4.858		
Dimethylphthalate		1.55259	1.38681	1.30667	1.22634	1.04822	.966	1.30413	14.351		
Acenaphthylene		2.03266	1.81408	1.64688	1.43633	1.18399	.981	1.62279	20.262		
3-Nitroaniline		-	.04842	.03875	.03287	.03331	.994	.03834	18.869		
Acenaphthene		1.30154	1.10820	.98868	.90996	.78175	1.004	1.01803	19.463	*	
[illegible]nitrophenol		-	.07349	.11104	.12002	.11843	1.007	.10575	20.667		**
[illegible]rophenol		.09250	.11121	.12318	.12994	.11735	1.013	.11483	12.438		**
Dibenzofuran		1.75558	1.53138	1.37773	1.24576	1.05711	1.024	1.39351	19.167		
2,4-Dinitrotoluene		.48892	.47310	.46395	.43229	.38210	1.026	.44807	9.434		
2,6-Dinitrotoluene		.37135	.37645	.36145	.34461	.30440	.975	.35165	8.268		
Diethylphthalate		1.68796	1.52906	1.41235	1.24733	1.03265	1.054	1.38187	18.319		
4-Chlorophenyl-phenylether		.76543	.70204	.63165	.55942	.46107	1.065	.62392	19.111		
Fluorene		1.45707	1.29298	1.17173	1.04052	.88537	1.068	1.16953	18.894		
4-Nitroaniline		.15517	.13655	.12418	.13097	.13387	1.072	.13615	8.510		
2,4,6-Tribromophenol	SA	.30765	.31534	.33296	.32613	.28477	1.100	.31337	5.973		
4,6-Dinitro-2-methylphenol		.07409	.08787	.11193	.11695	.11063	.908	.10029	18.388		
N-Nitrosodiphenylamine (1)		.56584	.42853	.37817	.32154	.28092	.910	.39496	28.033	*	
4-Bromophenyl-phenylether		.30202	.27361	.26144	.23187	.20281	.949	.25435	15.043		
Hexachlorobenzene		.42506	.37511	.35374	.33075	.27468	.968	.35187	15.762		
Pentachlorophenol		-	.10331	.13138	.14748	.14268	.986	.13121	15.082	*	
Phenanthrene		1.23396	1.07974	.97793	.86366	.70433	1.003	.97192	20.811		
Anthracene		1.19490	1.08616	.98681	.83305	.68253	1.008	.95669	21.221		
1,2-Diphenylhydrazine		1.08695	.97690	.90144	.77707	.63346	.914	.87516	20.113		
Di-n-butylphthalate		1.88035	1.57491	1.19426	.95186	.75574	1.059	1.27142	35.976		
Fluoranthene		1.26292	1.19152	1.06189	.90671	.72950	1.131	1.05051	20.974	*	
Pyrene		1.94018	1.67532	1.76091	1.45617	1.36233	.891	1.63898	14.206		

RF - Response Factor (Subscript is amount in ug/L)

[illegible] - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: HP5970-1

Contractor: BCM LABS Calibration Date: ~~01/12/91~~ 1/11/91 CAC 6/2/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30%

Laboratory ID:		>S1107	>S1102	>S1105	>S1104	>S1103					
Compound		RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Benzidine		-	.00677	.00315	.00399	.00328	.879	.00429	39.318		
Terphenyl-d14	SB	1.44447	1.29391	1.27757	1.13162	1.06684	.900	1.24288	11.921		
Butylbenzylphthalate		1.00982	.90805	.96143	.87464	.83245	.940	.91728	7.634		
3,3'-Dichlorobenzidine		.27094	.20896	.18744	.19967	.20117	.992	.21364	15.422		
Benzo(a)anthracene		1.14004	1.08430	1.09548	1.05352	1.02874	.998	1.08042	3.924		
Chrysene		1.02011	1.00257	.98931	.93265	.92462	1.003	.97385	4.394		
bis(2-Ethylhexyl)phthalate		1.40226	.86419	1.29135	1.15587	1.04291	.995	1.15131	18.261		
Di-n-octylphthalate		2.49783	2.22663	2.80436	2.61211	2.43203	.877	2.51459	8.517	*	
Benzo(b)fluoranthene		1.25002	1.21188	1.30009	1.26903	1.29958	.941	1.26612	2.924		
Benzo(k)fluoranthene		1.12537	1.02777	1.21982	1.12143	1.11446	.945	1.12177	6.065		
Benzo(a)pyrene		1.05066	1.05069	1.07350	1.06651	1.05241	.991	1.05876	1.000	*	
Indeno(1,2,3-cd)pyrene		1.01843	1.08379	1.02135	1.05998	1.13098	1.224	1.06291	4.409		
Dibenz(a,h)anthracene		.87610	.93721	.88936	.92892	.96947	1.227	.92021	4.098		
Benzo(g,h,i)perylene		.84707	.90822	.85080	.87903	.93230	1.292	.88348	4.162		

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

[redacted] No:

Calibration Date: 01/12/91

Contractor: BCM LABS

Time: 13:32

Contract No:

Laboratory ID: >51110

Instrument ID: HP5970-1

Initial Calibration Date: ~~01/12/91~~ 1/11/91 CAE 6/2/91

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25%

Compound		$\overline{RF}$	RF	%Diff	CCC	SPCC
N-Nitrosodimethylamine		.89133	.87427	1.91		
2-Fluorophenol	SA	1.02496	1.06347	3.76		
Phenol-d6	SA	1.37310	1.47412	7.36		
Phenol		1.53710	1.59923	4.04	*	
bis(2-Chloroethyl)ether		1.45353	1.65352	13.76		
2-Chlorophenol		1.28825	1.29576	.58		
1,3-Dichlorobenzene		1.36810	1.47309	7.67		
1,4-Dichlorobenzene		1.38336	1.49667	8.19	*	
Benzyl alcohol		.78213	.80371	2.76		
1,2-Dichlorobenzene		1.35088	1.47715	9.35		
2-Methylphenol		1.15277	1.18724	2.99		
[redacted]2-Chloroisopropyl)ether		3.40873	3.41549	.20		
[redacted]hylphenol		1.20375	1.25803	4.51		
N-Nitroso-di-n-propylamine		1.27262	1.30023	2.17		**
Hexachloroethane		.64824	.69251	6.83		
Nitrobenzene-d5	SB	.41167	.42923	4.27		
Nitrobenzene		.42559	.44196	3.85		
Isophorone		.83758	.86443	3.20		
2-Nitrophenol		.22324	.22795	2.10	*	
2,4-Dimethylphenol		.36629	.36465	.45		
Benzoic acid		.09814	.08126	17.20		
bis(2-Chloroethoxy)methane		.48521	.50385	3.84		
2,4-Dichlorophenol		.31541	.33130	5.04	*	
1,2,4-Trichlorobenzene		.33885	.35959	6.12		
Naphthalene		.91002	1.01053	11.05		
4-Chloroaniline		.29359	.21157	28.01		
Hexachlorobutadiene		.22838	.23664	3.62	*	
4-Chloro-3-methylphenol		.36497	.37406	2.49	*	
2-Methylnaphthalene		.61427	.65356	6.40		
Hexachlorocyclopentadiene		.17771	.16154	9.10		**
2,4,6-Trichlorophenol		.36862	.38335	4.00	*	
2,4,5-Trichlorophenol		.39075	.41648	6.58		

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 01/12/91

ntractor: BCM LABS Time: 13:32

Contract No: Laboratory ID: >S1110

Instrument ID: HP5970-1 Initial Calibration Date: ~~01/12/91~~ 1/11/91

CAE 6/2/91

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25%

Compound		$\overline{RF}$	RF	%Diff	CCC	SPCC	
2-Chloronaphthalene		.99023	1.05819	6.86			
2-Fluorobiphenyl	SB	1.08132	1.16703	7.93			
2-Nitroaniline		.49043	.46127	5.95			
Dimethylphthalate		1.30413	1.40280	7.57			
Acenaphthylene		1.62279	1.81836	12.05			
3-Nitroaniline		.03834	.02722	29.01			
Acenaphthene		1.01803	1.11645	9.67	*		
2,4-Dinitrophenol		.10575	.09358	11.50		**	
4-Nitrophenol		.11483	.10702	6.81		**	(Conc=50.00)
Dibenzofuran		1.39351	1.48545	6.60			
2,4-Dinitrotoluene		.44807	.46799	4.44			
2,6-Dinitrotoluene		.35165	.36850	4.79			
Diethylphthalate		1.38187	1.52940	10.68			
4-Chlorophenyl-phenylether		.62392	.66950	7.30			
Fluorene		1.16953	1.20420	2.96			
4-Nitroaniline		.13615	.10138	25.54			
2,4,6-Tribromophenol	SA	.31337	.30602	2.35			
4,6-Dinitro-2-methylphenol		.10029	.11439	14.01			
N-Nitrosodiphenylamine (1)		.39496	.42546	7.72	*		
4-Bromophenyl-phenylether		.25455	.28030	10.20			
Hexachlorobenzene		.35187	.39157	11.25			
Pentachlorophenol		.13121	.11004	16.15	*		
Phenanthrene		.97192	1.08816	11.96			
Anthracene		.95669	1.07954	12.82			
1,2-Diphenylhydrazine		.87516	1.00619	14.97			
Di-n-butylphthalate		1.27142	1.48911	17.12			
Fluoranthene		1.03051	1.13953	10.58	*		
Pyrene		1.63898	1.83879	12.19			
Benzidine		.00429	.00287	33.12			(Conc=50.00)
Terphenyl-d14	SB	1.24288	1.38318	11.29			
Butylbenzylphthalate		.91728	.94318	2.82			
3,3'-Dichlorobenzidine		.21364	.17677	17.26			

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

[redacted]: Calibration Date: 01/12/91

Contractor: BCM LABS Time: 13:32

Contract No: Laboratory ID: >S1110

Instrument ID: HP5970-1 Initial Calibration Date: ~~01/12/91~~ 1/11/91 CAE 6/2/91

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Benzo(a)anthracene	1.08042	1.09948	1.76		
Chrysene	.97385	.97573	.19		
bis(2-Ethylhexyl)phthalate	1.15131	1.15845	.62		
Di-n-octylphthalate	2.51459	2.47802	1.45	*	
Benzo(b)Fluoranthene	1.26612	1.24935	1.32		
Benzo(k)Fluoranthene	1.12177	1.10890	1.15		
Benzo(a)pyrene	1.05876	1.05371	.48	*	
Indeno(1,2,3-cd)pyrene	1.06291	1.01956	4.08		
Dibenz(a,h)anthracene	.92021	.88203	4.15		
Benzo(g,h,i)perylene	.88348	.84620	4.22		

[redacted]

RF - Response Factor from daily standard file at 50.00 ug/L

[redacted] - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

TRILLIUM INC.

ATTACHMENT D

Tentatively Identified Compound Results
Order #37932

1. Volatiles
2. Semivolatiles

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. OXY-5R-3-SW

CAE 6/5/91

036651

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036651

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1332

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-19-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	DV Qual	COMPOUND NAME	RT	EST. CONC.	C
1.		R	UNKNOWN m/z 65	21.72	4	J
2.						
3.			(surrogate peak appears to be split -)			
4.						
5.						
6.			CAE 6/4/91			
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO: TB-036653

CAE 6/5/91

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036653

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G-1353

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN m/z 41/43, 56/57, 70/71	39.36	2	J
2.					
3.					
4.		CAE 6/4/91			
5.					
6.					
7.					
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: OXY-SR-1-SW

CAE 6/5/91

Lab Name: BCM LAB Contract: Occidental 036754

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036754

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G-1347

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	DV Qual	COMPOUND NAME	RT	EST. CONC.	Q
1.		R	UNKNOWN m/e 45	21.77	2	J
2.		R	~~UNKNOWN ALKANE~~	37.69	1	J
3.						
4.						
5.			CAE 6/4/91			
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EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CAE 6/5/91 TB 036757

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036757

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1350

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	C
1.		UNKNOWN m/z 91, 106	32.30	1	J
2.		* xylene isomer, likely *			
3.					
4.					
5.		CAE 6/4/91			
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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CAE 6/6/91

EPA SAMPLE NO.
OXY-SR-3-SW

036651

Lab Name: BCM LAB Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: 036651

Sample wt/vol: 970 (g/mL) ml Lab File ID: > D2561

Level: (low/med) Low Date Received: 12/18/90

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) Sep f. Date Analyzed: 12/31/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	DV Qual	COMPOUND NAME	RT	EST. CONC.	Q
1.		R	UNKNOWN	10.25	4.	J
2.		R		10.51	8.	J
3.		R		14.47	29.	J
4.						
5.						
6.			CAE 6/6/91			
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CAE 6/6/91

EPA SAMPLE NO.
OXY-SR-3A-SW
036652

Lab Name: BCM LAB Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: 036652

Sample wt/vol: 950 (g/mL) ml Lab File ID: >51029

Level: (low/med) Low Date Received: 12/18/90

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/20/90

Extraction: (SepF/Cont/Sonc) Sept. Date Analyzed: 1/3/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.1

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	D.V Qual	COMPOUND NAME	RT	EST. CONC.	Q
1.		R	UNKNOWN	10.64	5.	J
2.						
3.			CAE 6/6/91			
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AR306334

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: OXY-SR-3-2-SW

CAE 6/6/91

037118

Lab Name: BCM LAB Contract: OCCIDENTAL

Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: 037118

Sample wt/vol: 980 (g/mL) ml Lab File ID: >51078

Level: (low/med) Low Date Received: 12/27/90

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/31/90

Extraction: (SepF/Cont/Sonc) Sepf. Date Analyzed: 1/7/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	DV Qual	COMPOUND NAME	RT	EST. CONC.	Q
1.		R	Septum Bleed	32.04		J
2.		R		33.77		J
3.		R	↓	35.92		J
4.						
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6.			CAE 6/6/91			
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO: OXY-SR-3-3-SW

CAE 6/6/91

037119

Lab Name: BCM LAB Contract: OCCIDENTAL

Lab Code: Bcm Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: 037119

Sample wt/vol: 960 (g/mL) ml Lab File ID: > S1079

Level: (low/med) LOW Date Received: 12/27/90

% Moisture: not dec. 100% dec. _____ Date Extracted: 12/31/90

Extraction: (SepF/Cont/Sonc) Sepf. Date Analyzed: 1/7/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	DV Qual	COMPOUND NAME	RT	EST. CONC.	Q
1.		R	Spotted Blood	33.75		J
2.						
3.			CAE 6/6/91			
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Attachment E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036651

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036651

Sample wt/vol: 5 ml Lab File ID: >G1332

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 12/19/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	2.	J

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

036651

Lab Name: BCM LABS Contract: OCCIDENTAL

Lab Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 036651

Sample wt/vol: 970 (g/mL) ml Lab File ID: D2561

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: not dec. 100 % dec. Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 12/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	11.	U
111-44-4	bis(2-Chloroethyl)Ether	11.	U
95-57-8	2-Chlorophenol	11.	U
541-73-1	1,3-Dichlorobenzene	11.	U
106-46-7	1,4-Dichlorobenzene	11.	U
100-51-6	Benzyl alcohol	11.	U
95-50-1	1,2-Dichlorobenzene	11.	U
95-48-7	2-Methylphenol	11.	U
39638-32-9	bis(2-chloroisopropyl)ether	11.	U
106-44-5	4-Methylphenol	11.	U
621-64-7	N-Nitroso-Di-n-propylamine	11.	U
67-72-1	Hexachloroethane	11.	U
98-95-3	Nitrobenzene	11.	U
78-59-1	Isophorone	11.	U
88-75-5	2-Nitrophenol	11.	U
105-67-9	2,4-Dimethylphenol	11.	U
65-85-0	Benzoic acid	55.	U
111-91-1	bis(2-Chloroethoxy)methane	11.	U
120-83-2	2,4-Dichlorophenol	11.	U
120-82-1	1,2,4-Trichlorobenzene	11.	U
91-20-3	Naphthalene	11.	U
106-47-8	4-Chloroaniline	11.	U
87-68-3	Hexachlorobutadiene	11.	U
59-50-7	4-Chloro-3-methylphenol	11.	U
91-57-6	2-Methylnaphthalene	11.	U
77-47-4	Hexachlorocyclopentadiene	11.	U
88-06-2	2,4,6-Trichlorophenol	11.	U
95-95-4	2,4,5-Trichlorophenol	55.	U
91-58-7	2-Chloronaphthalene	11.	U
88-74-4	2-Nitroaniline	55.	U
131-11-3	Dimethylphthalate	11.	U
208-96-8	Acenaphthylene	11.	U
606-20-2	2,6-Dinitrotoluene	11.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

036651

Lab Name: BCM LABS Contract: OCCIDENTAL

Code: BCM Case No.: 37932 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 036651

Sample wt/vol: 970 (g/mL) ml Lab File ID: D2561

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: not dec. 100 % dec. Date Extracted: 12/20/90

Extraction: (Sepf/Cont/Sonc) Sepf Date Analyzed: 12/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	55.	U
83-32-9	Acenaphthene	11.	U
51-28-5	2,4-Dinitrophenol	55.	U
100-02-7	4-Nitrophenol	55.	U
132-64-9	Dibenzofuran	11.	U
121-14-2	2,4-Dinitrotoluene	11.	U
84-66-2	Diethylphthalate	11.	U
7005-72-3	4-Chlorophenyl-phenylether	11.	U
86-73-7	Fluorene	11.	U
100-01-6	4-Nitroaniline	55.	U
534-52-1	4,6-Dinitro-2-methylphenol	55.	U
86-30-6	N-Nitrosodiphenylamine (1)	11.	U
101-55-3	4-Bromophenyl-phenylether	11.	U
118-74-1	Hexachlorobenzene	11.	U
87-86-5	Pentachlorophenol	55.	U
85-01-8	Phenanthrene	11.	U
120-12-7	Anthracene	11.	U
84-74-2	Di-n-butylphthalate	11.	U
206-44-0	Fluoranthene	11.	U
129-00-0	Pyrene	11.	U
85-68-7	Butylbenzylphthalate	11.	U
91-94-1	3,3'-Dichlorobenzidine	22.	U
56-55-3	Benzo(a)anthracene	11.	U
218-01-9	Chrysene	11.	U
117-81-7	bis(2-Ethylhexyl)phthalate	6.	JB
117-84-0	Di-n-octylphthalate	11.	U
205-99-2	Benzo(b)fluoranthene	11.	U
207-08-9	Benzo(k)fluoranthene	11.	U
50-32-8	Benzo(a)pyrene	11.	U
193-39-5	Indeno(1,2,3-cd)pyrene	11.	U
53-70-3	Dibenz(a,h)anthracene	11.	U
191-24-2	Benzo(g,h,i)perylene	11.	U
92-87-5	Benzidine	55.	U

(1) - Cannot be separated from Diphenylamine

Attachment F

BCM Laboratory Analytical Data Package

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401

Lab. Cert. # : NJ 77175
: PA 46-007

Data Package

Client: OCCIDENTAL CHEMICAL

Project No.: 00-4064-13

Project Manager:

Order: 37932

LOCATION	SAMPLE ID	BCM No.	LOCATION	SAMPLE ID	BCM No.	LOCATION	SAMPLE ID	BCM No.
OXY-SR-3-SW		036651	OXY-SR-3A-SW		036652	TRIP BLANK		036653
METHOD BLANK		036654	DUP 036651		036655	SPIKE 036651		036656
OXY-SR-1-SW		036754	OXY-SR-2-SW		036755	OXY-SR-4-SW		036756
TRIP BLANK		036757	OXY-SR-3-2-SW		037118	OXY-SR-3-3-SW		037119
TRIP BLANK		037120						

This case includes the following packages:

	BCM	Subcontractor
GC/MS Volatiles	[✓]	[ ]
GC/MS Semi-Volatiles	[✓]	[ ]
Metals	[✓]	[ ]
Micro	[ ]	[ ]
WetChem	[✓]	[ ]
GC	[ ]	[ ]

This is the GC/MS Volatiles package for this case.

Data Package audited by Joanne Quimble Date 1/23/91

AR306342

BCM

QC Summary

WATER VOLATILE SURROGATE RECOVERY

Lab Name: BCM LAB Contract: Occidental Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	036651	104	101	105		0
02	036652	102	99	88		0
03	036653	106	102	95		0
VBLK# 2 04	036654	102	103	98		0
05	036754	104	100	90		0
06	036755	105	102	95		0
07	036756	104	101	97		0
08	036757	107	100	97		0
09	037118	103	95	93		0
10	037119	103	95	96		0
11	037120	101	94	95		0
12	VBLK#1	99	100	98		0
13	VBLK#3	103	101	100		0
14	036656	104	107	102		0
15	036655	102	107	103		0
16	VBLK#4	103	107	97		0
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: BC Labs Contract: Occidental Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: 036656/036655

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	N.D.	50.75	102	61-145
Trichloroethene		↓	50.19	100	71-120
Benzene		↓	49.41	100	76-127
Toluene		2.3	49.41	99	76-125
Chlorobenzene	↓	ND	53.48	107	75-130
		↓			

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	
1,1-Dichloroethene	50.	53.05	106	3.8	14	61-145
Trichloroethene		49.31	99	1	14	71-120
Benzene		48.161	97	3	11	76-127
Toluene		49.29	99	0	13	76-125
Chlorobenzene	↓	52.47	105	1.9	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: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: BCM Labs Contract: Occidental Chemica

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >G1329 Lab Sample ID: VBLKH1

Date Analyzed: 12-19-90 Time Analyzed: 21:09

Matrix: (soil/water) Water Level: (low/med) Low

Instrument ID: G

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01		036651	>G1332	23:59
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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29				
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COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: BCM Labs Contract: OCCIDENTAL Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >G1344 Lab Sample ID: VBK#2 036654

Date Analyzed: 12-20-90 Time Analyzed: 11:03

Matrix: (soil/water) water Level: (low/med) low

Instrument ID: G

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01		036652	>G1345	12:13
02		036653	>G1353	19:17
03		036654	>G1344	11:03
04		036754	>G1347	13:59
05		036755	>G1348	14:52
06		036756	>G1349	15:44
07		036757	>G1350	16:38
08				
09				
10				
11				
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COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: BCM Labs Contract: Occidental Chemi

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >G1484 Lab Sample ID: VBLK#3

Date Analyzed: 12-30-96 Time Analyzed: 11:17

Matrix: (soil/water) Water Level: (low/med) Low

Instrument ID: G

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01		037118	>G1491	17:45
02		037119	>G1492	18:37
03		037120	>G1493	19:30
04				
05				
06				
07				
08				
09				
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29				
30				

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: Chem Labs Contract: Occidental Chemical

Lab Code: Chem Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >G1823 Lab Sample ID: VBLK#4

Date Analyzed: 1-16-91 Time Analyzed: 22:20

Matrix: (soil/water) Water Level: (low/med) Low

Instrument ID: G

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01		036656	>G1826	10:17
02		036655	>G1825	23:25
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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29				
30				

COMMENTS: _____

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: BCM LAB Contract: OCCIDENTAL Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >G1263 BFB Injection Date: 12/17/90

Instrument ID: G BFB Injection Time: 8:55

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.18
75	30.0 - 60.0% of mass 95	36.62
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.11
173	Less than 2.0% of mass 174	0.63 (0.68)1
174	Greater than 50.0% of mass 95	92.74
175	5.0 - 9.0% of mass 174	7.01 (7.55)1
176	Greater than 95.0%, but less than 101.0% of mass 174	90.85 (97.91)1
177	5.0 - 9.0% of mass 176	6.12 (6.74)2

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

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS.

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		20 PPB STD	>G1265	12/17/90	10:29
02		50 PPB STD	>G1264	12/17/90	09:32
03		100 PPB STD	>G1266	12/17/90	11:22
04		150 PPB STD	>G1267	12/17/90	12:14
05		200 PPB STD	>G1268	12/17/90	13:11
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: BCM Labs Contract: Occidental Chemicals

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >G1327 BFB Injection Date: 12-19-90

Instrument ID: G BFB Injection Time: 19:25

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.97
75	30.0 - 60.0% of mass 95	39.75
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.52
173	Less than 2.0% of mass 174	0.45 (0.52) 1
174	Greater than 50.0% of mass 95	85.99
175	5.0 - 9.0% of mass 174	5.72 (6.66) 1
176	Greater than 95.0%, but less than 101.0% of mass 174	82.81 (96.29) 1
177	5.0 - 9.0% of mass 176	5.54 (6.69) 2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		50PPB STD	>G1328	12-19-90	20:05
02	VBLK#1	M. Blank	>G1329	12-19-90	21:09
03		036651	>G1332	12-19-90	23:59
04					
05					
06					
07					
08					
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15					
16					
17					
18					
19					
20					
21					
22					

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: BCM Contract: Occidental Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Lab File ID: >GB42 BFB Injection Date: 12/20/90

Instrument ID: G BFB Injection Time: 9:28

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.35
75	30.0 - 60.0% of mass 95	38.90
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.15
173	Less than 2.0% of mass 174	0.86 (0.64) 1
174	Greater than 50.0% of mass 95	82.77
175	5.0 - 9.0% of mass 174	6.34 (7.23) 1
176	Greater than 95.0%, but less than 101.0% of mass 174	86.77 (98.40) 1
177	5.0 - 9.0% of mass 176	5.85 (6.77) 2

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

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		50PPB STD	>G1343	12-20-90	10:10
02		mBlank	>G1344	12-20-90	11:03
03		036652	>G1345	12-20-90	12:13
04		036653	>G1353	12-20-90	19:17
05	VBLK#2	036654	>G1344	12-20-90	11:03
06		036754	>G1347	12-20-90	13:59
07		036755	>G1348	12-20-90	14:52
08		036756	>G1349	12-20-90	15:44
09		036757	>G1350	12-20-90	16:38
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: BCM Labs Contract: OCCIDENTAL CHEMICA

Lab Code: BCM Case No: 37932 SAS no: _____ SDG no: _____.

Lab File ID (Standard): >G1328::D2 Date Analyzed: 12/19/90

Instrument ID: G Time Analyzed: 20:05

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) PACK

	IS 1 AREA	#	RT	IS 2 AREA	#	RT	IS 3 AREA	#	RT
	12 Hour Std		53914	19.71		271581	22.60		289004		30.59
	UPPER LIMIT		107828			543162			578008		
	LOWER LIMIT		26957			135790			144502		
	SAMPLE NO										
1	METHOD BLANK		54774	19.70		262242	22.59		267618		30.59
2	036655 624MS		56485	19.70		267752	22.58		265437		30.58
3	036656 624MS		53570	19.71		259936	22.60		251528		30.60
4	036651 624MS		51328	19.72		236514	22.62		248372		30.60
5	036653 624MS		53131	19.73		250176	22.62		256630		30.60
6	036659 624MS		52304	19.72		243837	22.63		243299		30.61
7	036321 624MS		49118	19.73		237181	22.62		244795		30.61
8	036322 624MS		51380	19.72		245386	22.61		246544		30.61
9	036334 624MS		49561	19.74		232596	22.63		232253		30.62
10	036328 624MS		48303	19.73		232178	22.64		213368		30.62
11	036333 624MS		49954	19.74		230337	22.63		107944	*	30.61
12	036619 624MS		93148	19.23		236056	22.30		228408		30.55
13	~~BLANK~~		0	0.00	*	0	0.00	*	0	*	0.00
14	~~50 NG BFB~~		0	0.00	*	0	0.00	*	0	*	0.00
15											
16											
17											
18											
19											
20											

IS 1 = *Bromochloromethane (IS)
IS 2 = *1,4-Difluorobenzene (IS)
IS 3 = *Chlorobenzene-d5 (IS)

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area.

Column used to flag internal standard area values with an aste

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036651

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036651

Sample wt/vol: 5 ml Lab File ID: >G1332

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 12/19/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	2.	J

QUANT REPORT

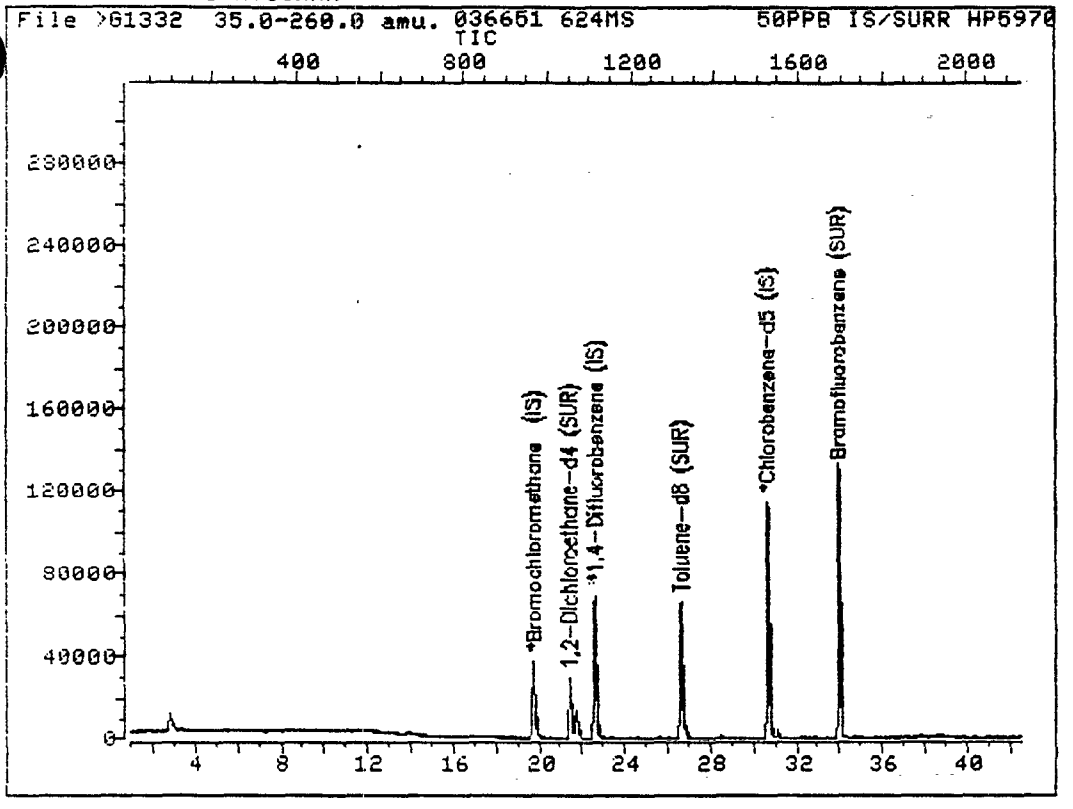
Operator ID: TS Quant Rev: 6 Quant Time: 901220 00:43
Output File: ^G1332::D1 Injected at: 901219 23:59
Data File: >G1332::D2 Dilution Factor: 1.00000
Name: 036651 624MS
Misc: 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	**Bromochloromethane (IS)	19.72	962	51328	50.00	UG/L		93
11)	Methylene Chloride	13.86	662	3500M	1.99	UG/L		87
21)	1,2-Dichloroethane-d4 (SUR)	21.39	1048	81701	52.33	UG/L	105	95
25)	**1,4-Difluorobenzene (IS)	22.62	1111	236514	50.00	UG/L		99
35)	Toluene-d8 (SUR)	26.60	1315	184870	51.19	UG/L	104	98
36)	Toluene	26.82	1326	14449	2.29	UG/L		89
42)	**Chlorobenzene-d5 (IS)	30.60	1520	248372	50.00	UG/L		99
46)	Xylene (total)	31.13	1547	5225M	2.08	UG/L		93
50)	Bromofluorobenzene (SUR)	33.94	1691	184265	50.40	UG/L	101	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM

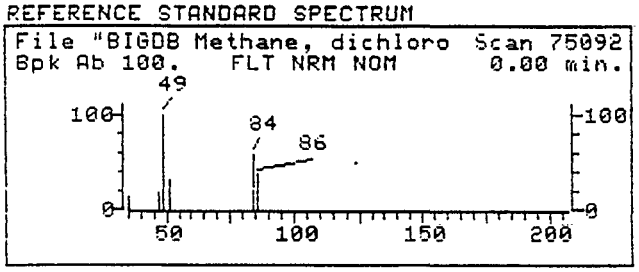


Data File: >G1332::D2 Quant Output File: ^G1332::D1
Name: 036651 624MS
Misc: 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL

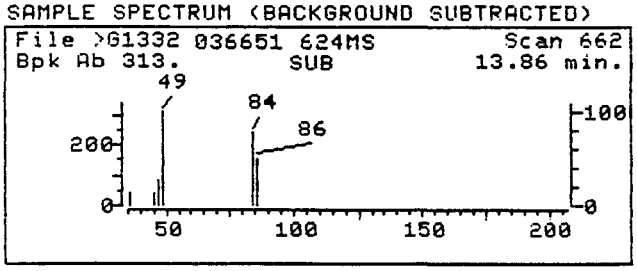
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

Operator ID: TS
Quant Time: 901220 00:43
Injected at: 901219 23:59

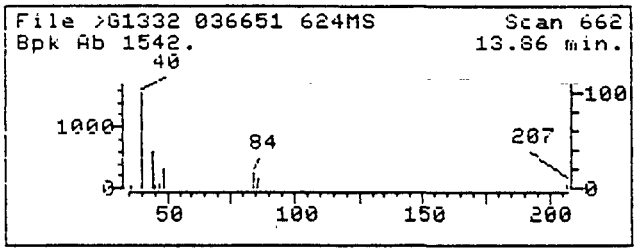
REFERENCE STANDARD SPECTRUM

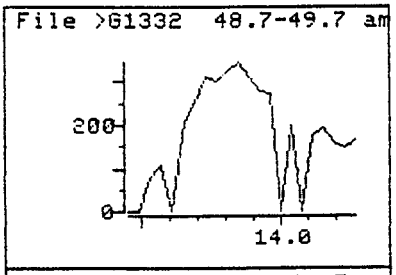


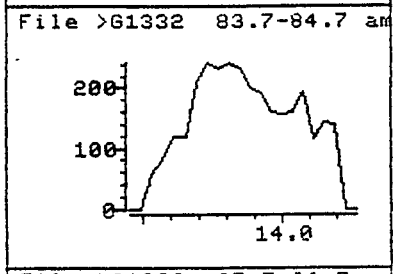
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

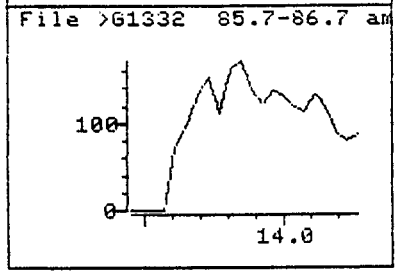


SAMPLE SPECTRUM (UNALTERED)





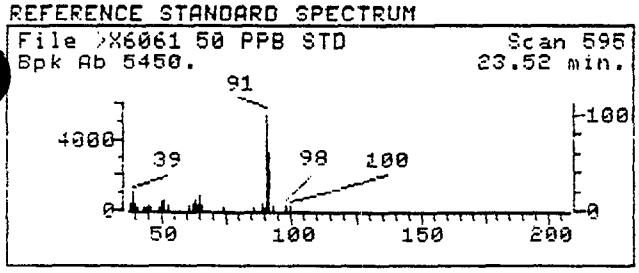




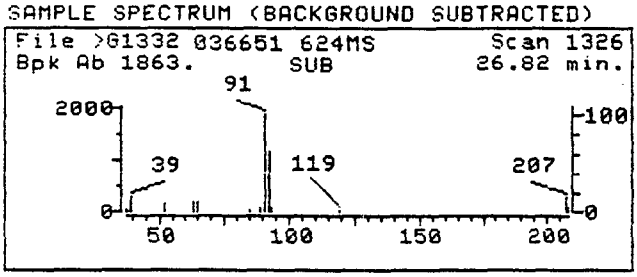
Data File: >G1332::D2 Quant Output File: ^G1332::D1
Name: 036651 624MS
Misc: 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL
Quant Time: 901220 00:43 Quant ID File: RHMSVO::QT
Injected at: 901219 23:59 Last Calibration: 901219 21:04

Compound No: 11
Compound Name: Methylene Chloride
Scan Number: 662
Retention Time: 13.86 min.
Quant Ion: 84.0
Area: 3500M
Concentration: 1.99 UG/L
q-value: 87

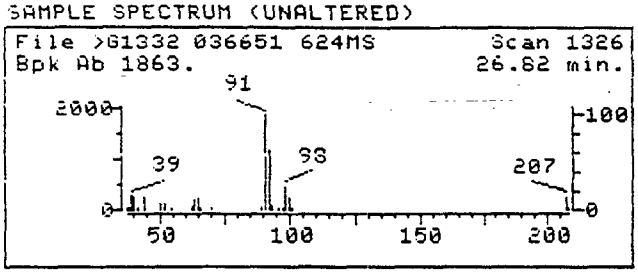
REFERENCE STANDARD SPECTRUM

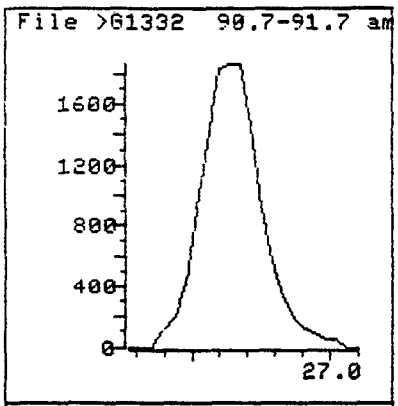


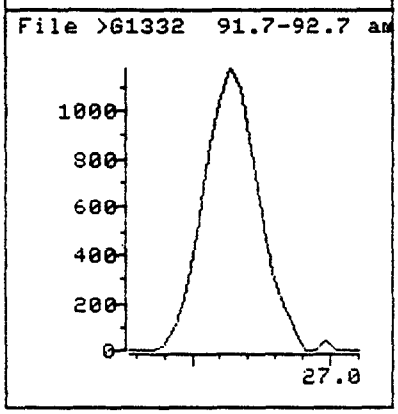
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



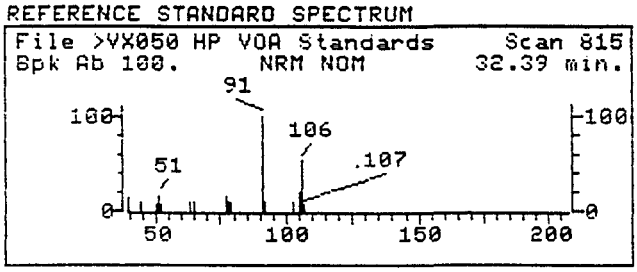




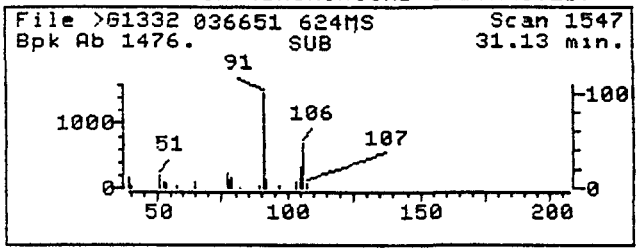
Data File: >G1332::D2 Quant Output File: ^G1332::D1
Name: 036651 624MS
Misc: 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL
Quant Time: 901220 00:43 Quant ID File: RHMSVO::QT
Injected at: 901219 23:59 Last Calibration: 901219 21:04

Compound No: 36
Compound Name: Toluene
Scan Number: 1326
Retention Time: 26.82 min.
Quant Ion: 91.0
Area: 14449
Concentration: 2.29 UG/L
q-value: 89

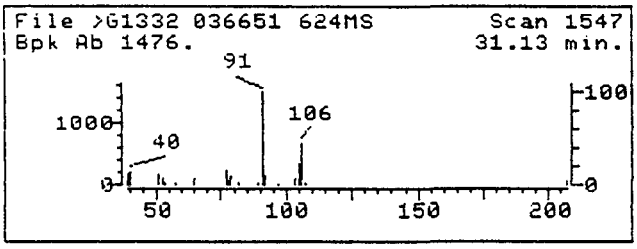
REFERENCE STANDARD SPECTRUM

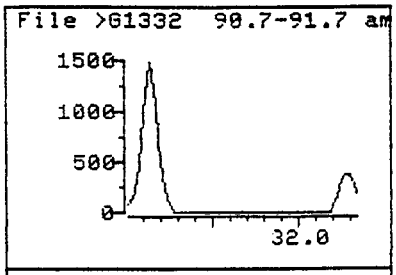


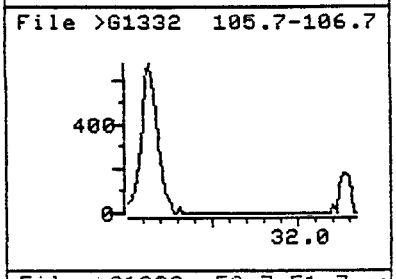
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

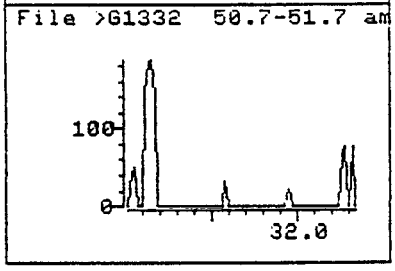


SAMPLE SPECTRUM (UNALTERED)









Data File: >G1332::D2 Quant Output File: ^G1332::D1
Name: 036651 624MS
Misc: 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL
Quant Time: 901220 00:43 Quant ID File: RHMSVO::QT
Injected at: 901219 23:59 Last Calibration: 901219 21:04

Compound No: 46
Compound Name: Xylene (total)
Scan Number: 1547
Retention Time: 31.13 min.
Quant Ion: 106.0
Area: 5225M
Concentration: 2.08 UG/L
q-value: 93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 036651

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036651

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1332

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-19-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.72	4	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1332

Sample: 036651 624MS Operator: TS SUPER GRP. 12/19/90 23:59
Misc : 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1332 036651 624MS 50PPB IS/SURR HP5970-3 5MLS OCCIDENTAL
35.01 260.0 CLP TIC
Upslope: .20 Area Reject: 34497. Max Peaks: 2 Bunching: 1
Dnslope: 0.00 Results File IG1332 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.75	87	92	108	8830	182932	88314	100.00	69.716
2	21.72	1064	1065	1073	10616	43611	38362	43.44	30.284

Sum of corrected areas: 126676.

Summary of Unknowns PBM Library Search and Quantitation

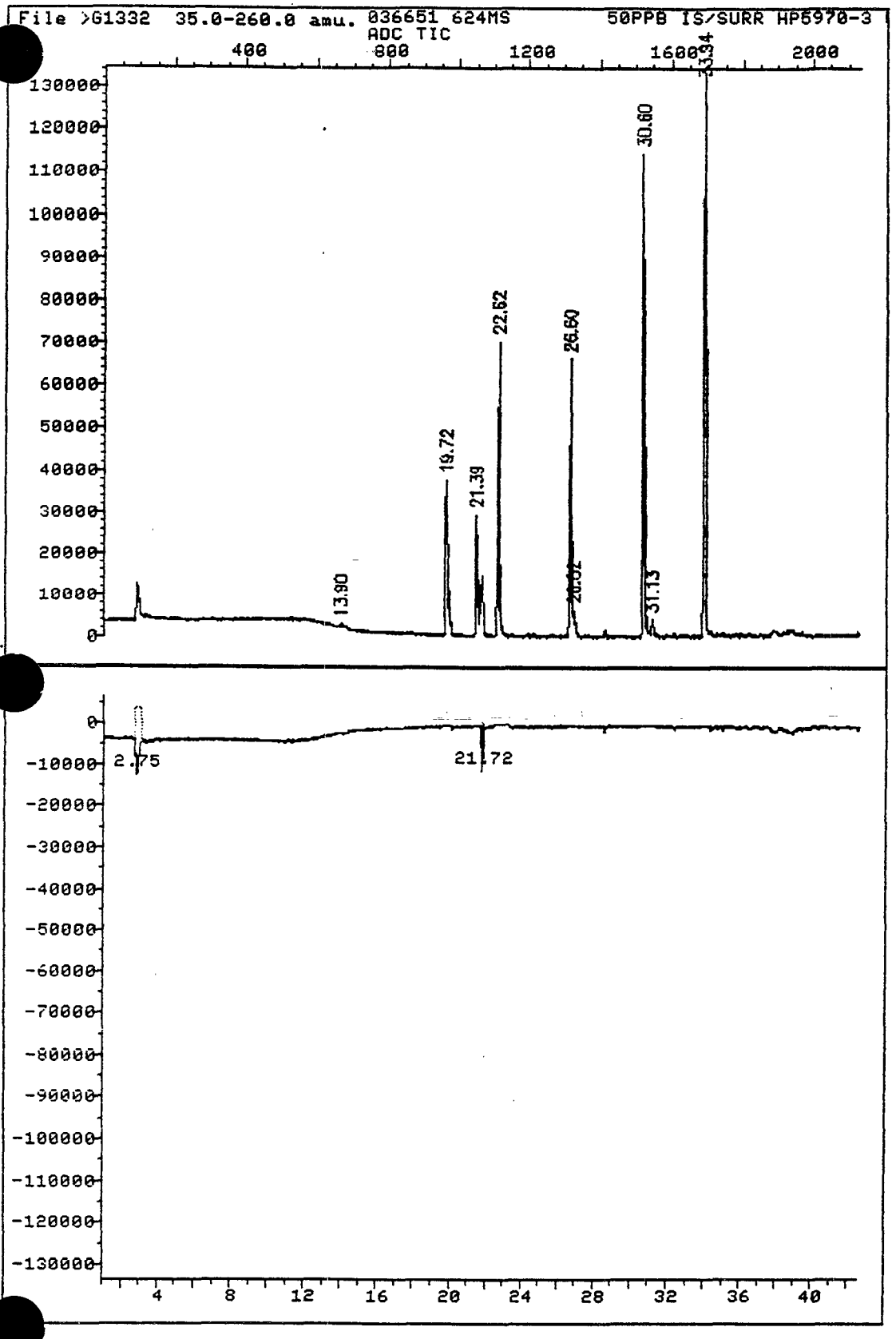
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	344967.	19.72	.99 - 21.17
2	50.0	546111.	22.62	21.17 - 26.61
3	50.0	756513.	30.60	26.61 - 42.54

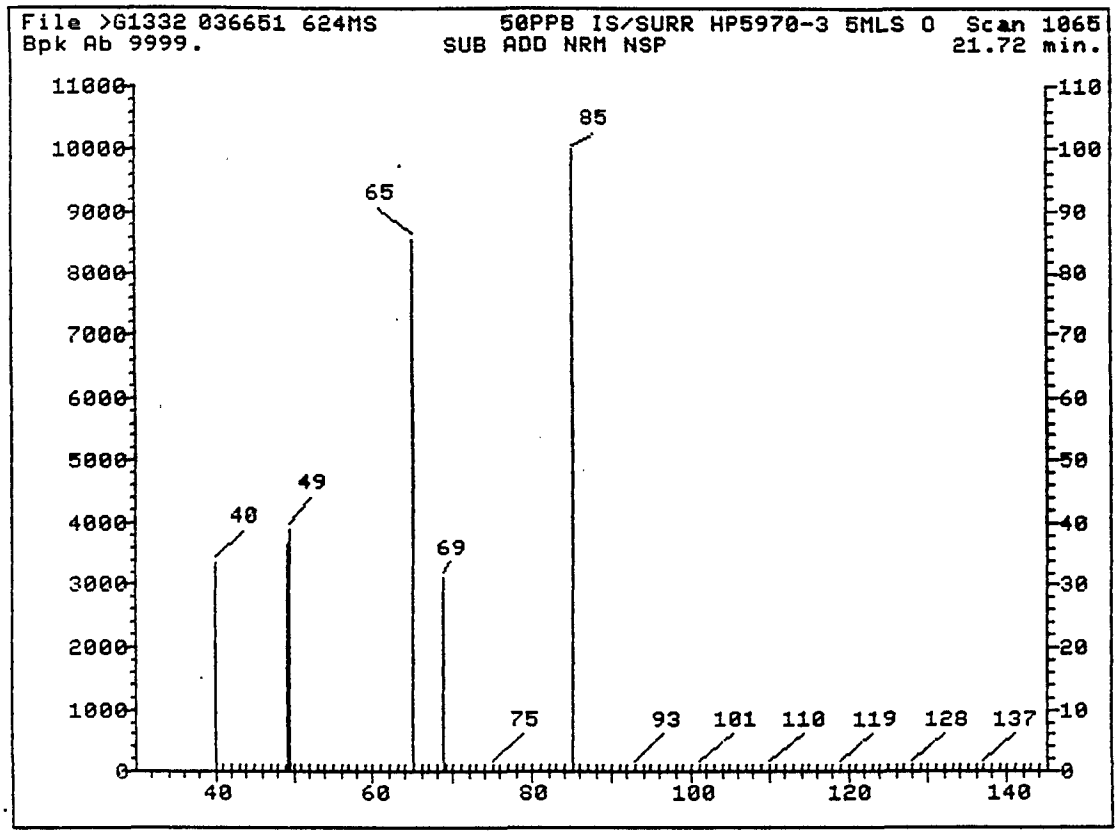
'^' Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

4:34 PM THU., 20 DEC., 1990


File >G1332 35.0-260.0 amu. 036651 624MS
50PPB IS/SURR HP5970-3
ADC TIC
400
800
1200
1600
2000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
13.90
19.72
21.39
22.62
26.60
30.60
31.13
33.34
0
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
-100000
-110000
-120000
-130000
2.75
21.72
4
8
12
16
20
24
28
32
36
40



. UNKNOWN #,2
AREA = 38362.00 TENTATIVE CONCENTRATION IS 4.00

Sample file: >G1332 Spectrum #: 1065

No data base entries were retrieved.

QUANT REPORT

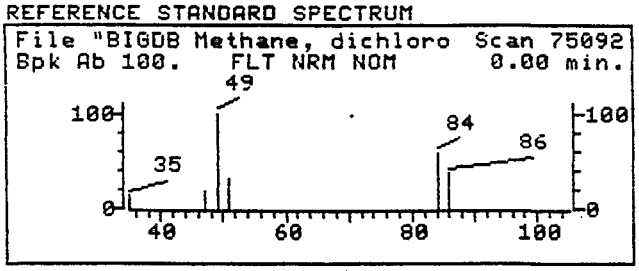
Operator ID: TS Quant Rev: 6 Quant Time: 901220 20:00
Output File: ^G1353::D1 Injected at: 901220 19:17
Data File: >G1353::D3 Dilution Factor: .50000
Name: 036653 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS TRIP BLANK

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

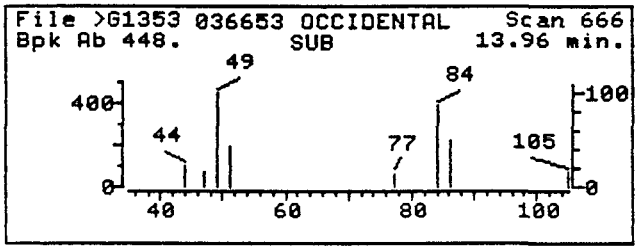
	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.77	964	50493	50.00	UG/L	98
11)	Methylene Chloride	13.96	666	5727	1.17	UG/L	94
20)	Chloroform	19.38	944	1164	.12	UG/L	92
21)	1,2-Dichloroethane-d4 (SUR)	21.43	1049	80765	23.77	UG/L 95	96
25)	**1,4-Difluorobenzene (IS)	22.66	1112	268609	50.00	UG/L	98
35)	Toluene-d8 (SUR)	26.64	1316	209402	26.48	UG/L 104 106	97
36)	Toluene	26.85	1327	17171	1.14	UG/L	96
39)	Tetrachloroethane	28.55	1414	2283	.27	UG/L	91
42)	**Chlorobenzene-d5 (IS)	30.62	1520	262443	50.00	UG/L	99
44)	Ethylbenzene	30.95	1537	324	.03	UG/L	79
46)	Xylene (total)	31.14	1547	2650	.44	UG/L	91
50)	Bromofluorobenzene (SUR)	33.95	1691	201564	25.38	UG/L 102	86

* Compound is ISTD

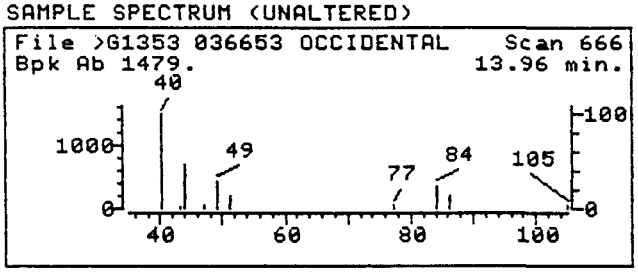
REFERENCE STANDARD SPECTRUM

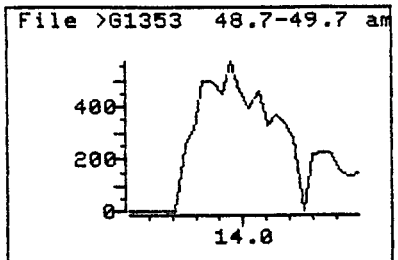


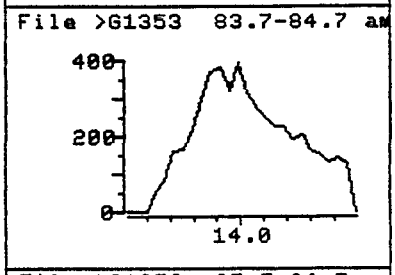
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

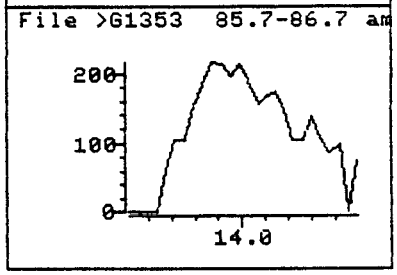


SAMPLE SPECTRUM (UNALTERED)





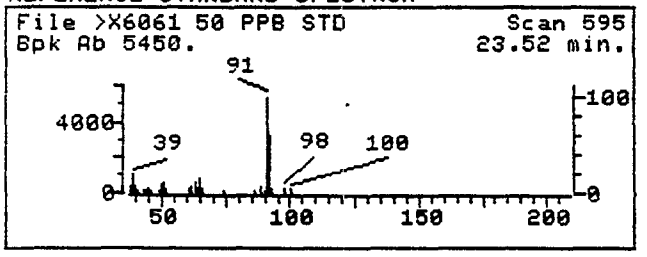




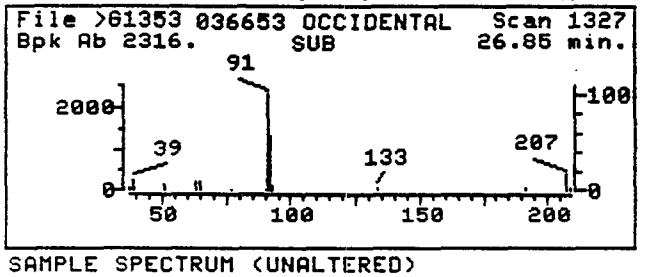
Data File: >G1353::D3 Quant Output File: ^G1353::D1
Name: 036653 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS TRIP BLANK
Quant Time: 901220 20:00 Quant ID File: RHMSVO::QT
Injected at: 901220 19:17 Last Calibration: 901220 12:06

Compound No: 11
Compound Name: Methylene Chloride
Scan Number: 666
Retention Time: 13.96 min.
Quant Ion: 84.0
Area: 5727
Concentration: 1.17 UG/L
q-value: 94

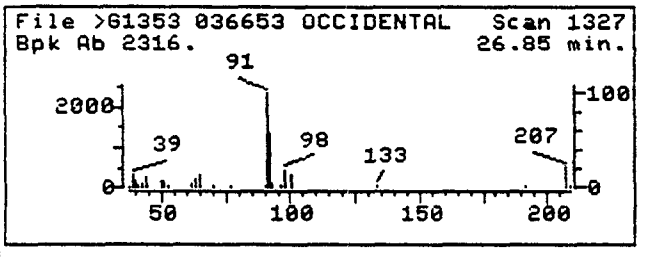
REFERENCE STANDARD SPECTRUM

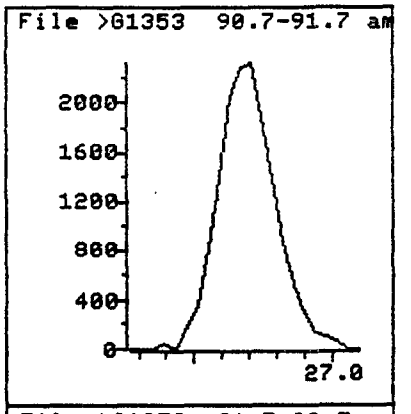


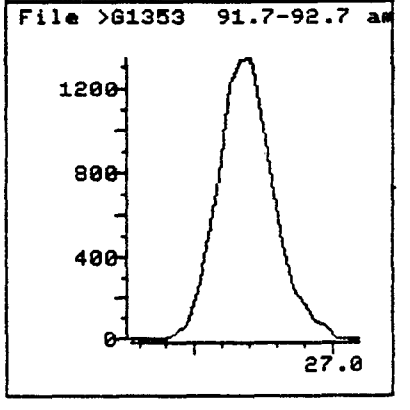
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >G1353::D3
Name: 036653 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS
Quant Time: 901220 20:00
Injected at: 901220 19:17

Quant Output File: ^G1353::D1

TRIP BLANK
Quant ID File: RHMSVO::QT
Last Calibration: 901220 12:06

Compound No: 36
Compound Name: Toluene
Scan Number: 1327
Retention Time: 26.85 min.
Quant Ion: 91.0
Area: 17171
Concentration: 1.14 UG/L
q-value: 96

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 036653

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036653

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1353

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	39.36	2	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

G data file header from : >G1353

Sample: 036653 OCCIDENTAL Operator: TS SUPER GRP. 12/20/90 19:17
Misc : 50 PPB IS/SURR 10MLS TRIP BLANK
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1353 036653 OCCIDENTAL 50 PPB IS/SURR 10MLS TRIP BLANK
35.01 260.0 CLP TIC
Upslope: .20 Area Reject: 34658. Max Peaks: 2 Bunching: 1
Dnslope: 0.00 Results File IG1353 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.78	88	93	104	4605	109881	44064	79.65	44.335
2	39.36	1961	1968	1973	8882	64343	55324	100.00	55.665

Sum of corrected areas: 99388.

Summary of Unknowns PBM Library Search and Quantitation

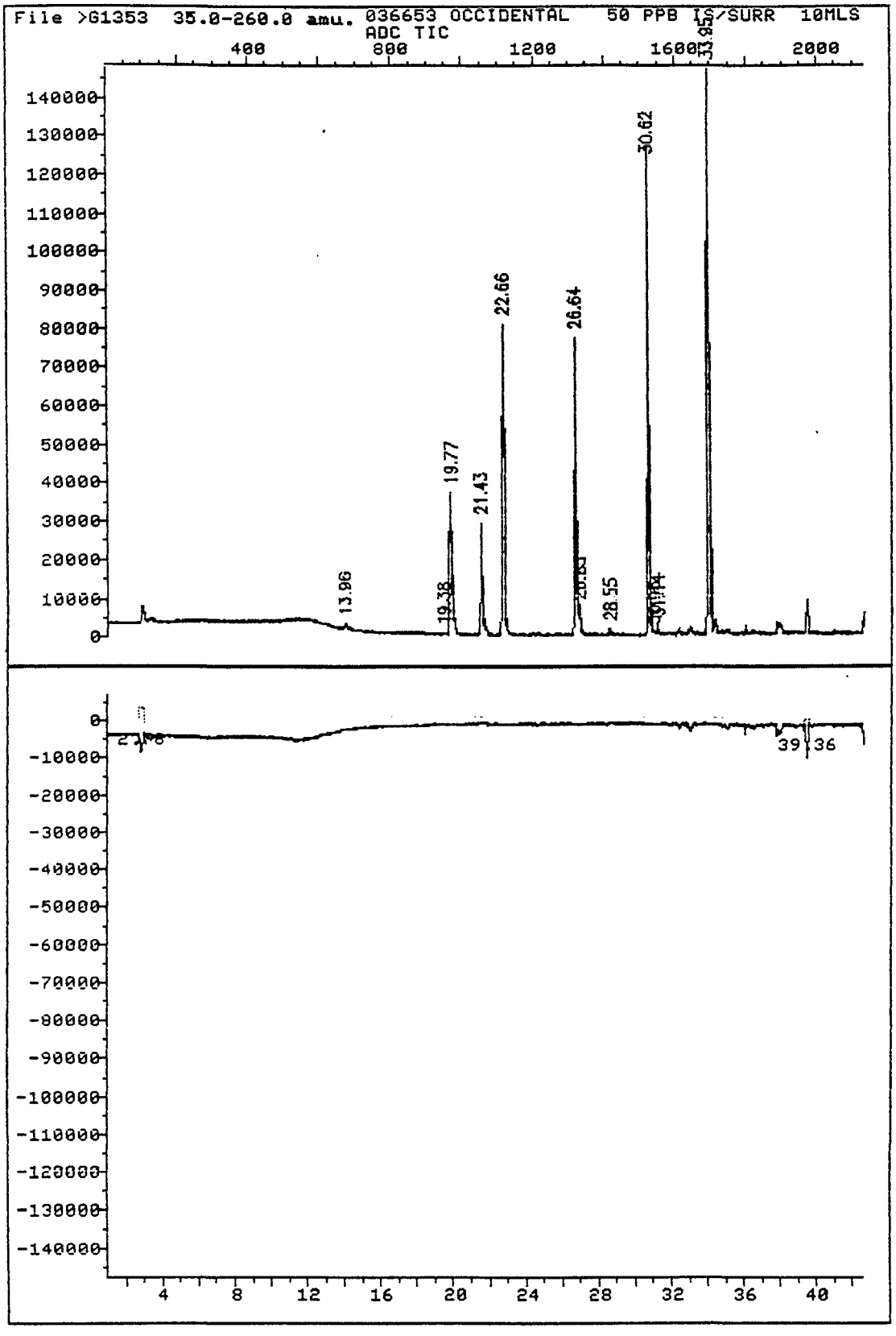
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	346578.	19.77	1.00 - 21.21
2	50.0	625997.	22.66	21.21 - 26.64
3	50.0	829768.	30.62	26.64 - 42.54

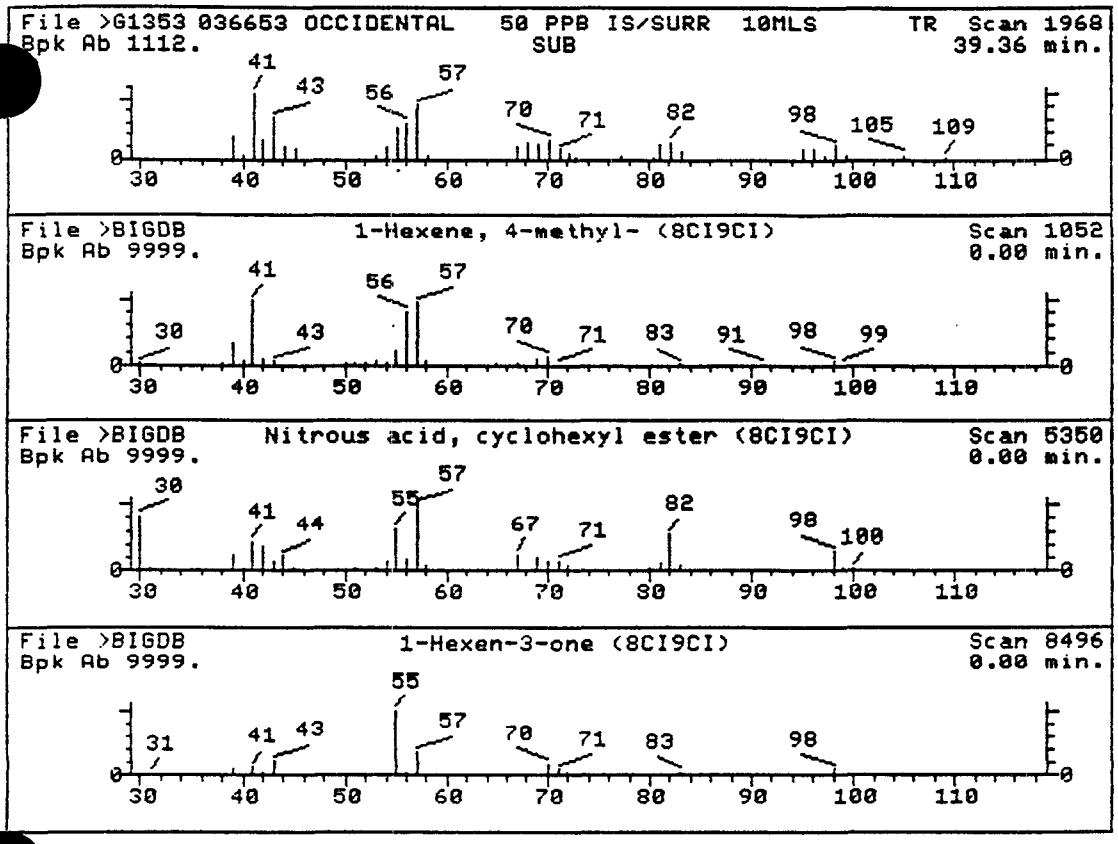
'^' Dilution Factor = .50 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = .50

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

2:04 AM FRI., 21 DEC., 1990


File >G1353 35.0-260.0 amu. 036653 OCCIDENTAL 50 PPB IS/SURR 10MLS
ADC TIC
400
800
1200
1600
2000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
13.96
19.38
19.77
21.43
22.66
26.64
28.55
30.62
33.95
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
-100000
-110000
-120000
-130000
-140000
39.36
4
8
12
16
20
24
28
32
36
40



. UNKNOWN #,2
AREA = 55324.00 TENTATIVE CONCENTRATION IS 2.00

1.	1-Hexene, 4-methyl- (8CI9CI)	98 C7H14
2.	Nitrous acid, cyclohexyl ester (8CI9CI)	129 C6H11NO2
3.	1-Hexen-3-one (8CI9CI)	98 C6H10O
4.	1-Heptene (8CI9CI)	98 C7H14
5.	Butane, 1-isocyanato- (9CI)	99 C5H9NO
6.	3-Heptene (8CI9CI)	98 C7H14

Sample file: >G1353 Spectrum #: 1968
Search speed: 1 Tilting option: N No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	31*	3769231	1052	"BIGDB	27	66	0	0	67	44	8	19
2.	28	5156401	5350	"BIGDB	58	54	1	0	71	44	8	16
3.	26*	1629603	8496	"BIGDB	29	53	2	0	154	43	8	14
4.	11*	592767	3578	"BIGDB	33	50	1	0	48	65	2	18
5.	11*	111364	8485	"BIGDB	35	60	2	0	97	65	2	15
6.	11*	592789	8490	"BIGDB	29	62	2	0	74	64	2	14

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036654
M.B.
VBLK#2

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 5 ml Lab File ID: >G1344

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

Operator ID: TS
Output File: ^G1344::D1
Data File: >G1344::D2
Name: MEHTOD BLANK D36654
Misc: 50 PPB IS/SURR 5MLS

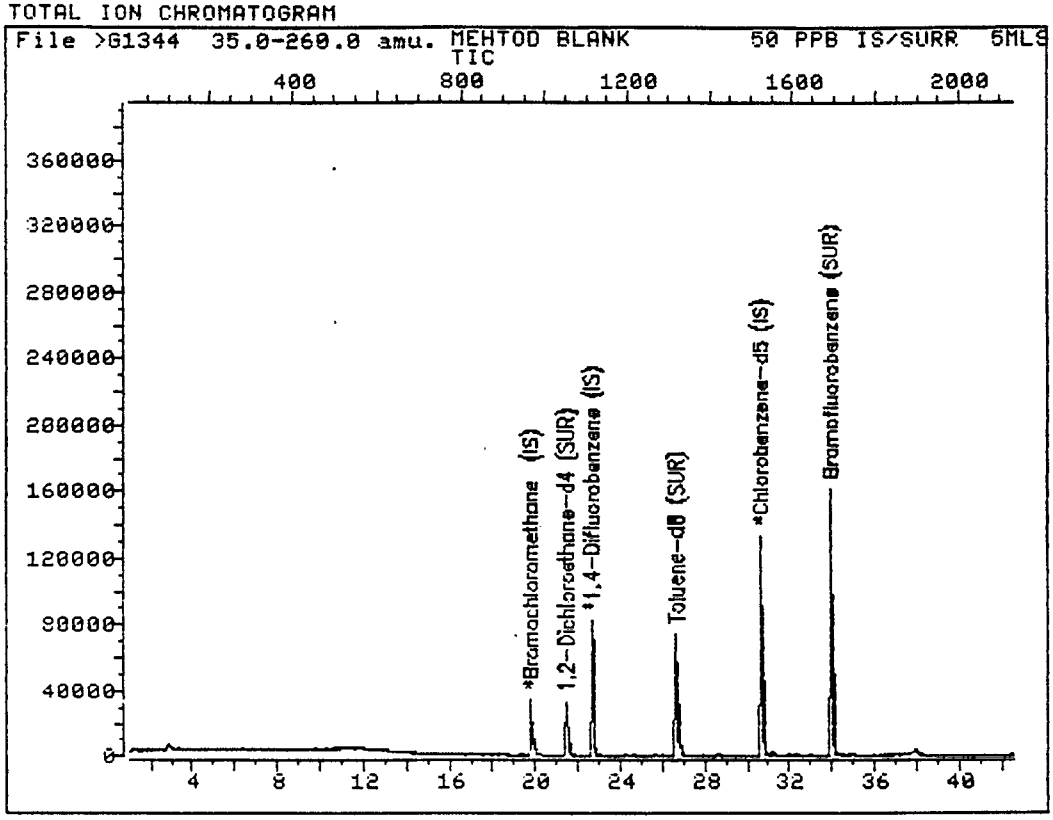
Quant Rev: 6 Quant Time: 901220 12:06
Injected at: 901220 11:03
Dilution Factor: 1.00000

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.76	962	53857	50.00	UG/L	95
11)	Methylene Chloride	13.95	664	3926	1.50	UG/L	71
21)	1,2-Dichloroethane-d4 (SUR)	21.44	1048	88695	48.94	UG/L 98	95
25)	**1,4-Difluorobenzene (IS)	22.65	1110	276897	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.63	1314	207560	50.93	UG/L 102	97
36)	Toluene	26.84	1325	16066	2.08	UG/L	99
42)	**Chlorobenzene-d5 (IS)	30.63	1519	283632	50.00	UG/L	99
50)	Bromofluorobenzene (SUR)	33.94	1689	221713	51.67	UG/L 103	91

* Compound is ISTD

TOTAL ION CHROMATOGRAM

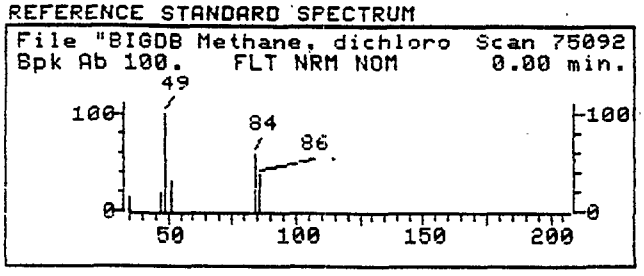


Data File: >G1344::D2 Quant Output File: ^G1344::D1
Name: MEHTOD BLANK
Misc: 50 PPB IS/SURR 5MLS

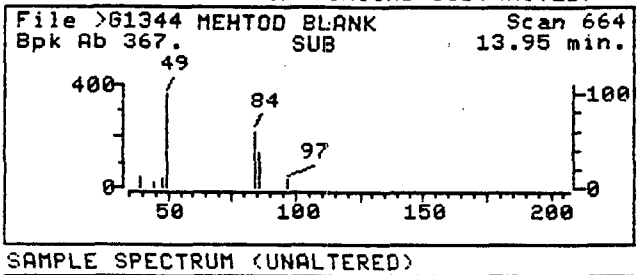
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

Operator ID: TS
Quant Time: 901220 12:06
Injected at: 901220 11:03

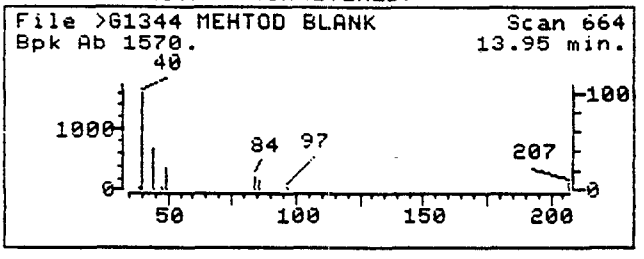
REFERENCE STANDARD SPECTRUM

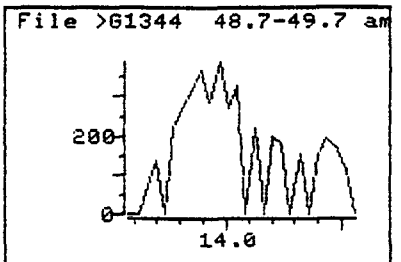


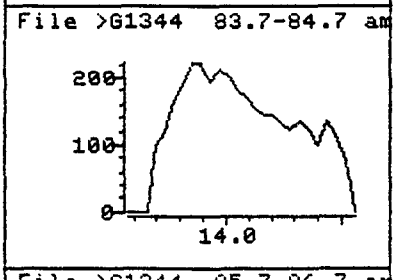
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

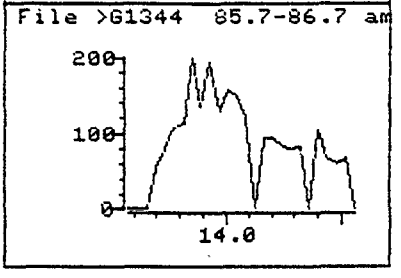


SAMPLE SPECTRUM (UNALTERED)





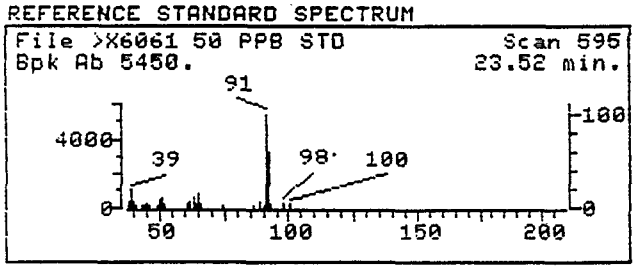




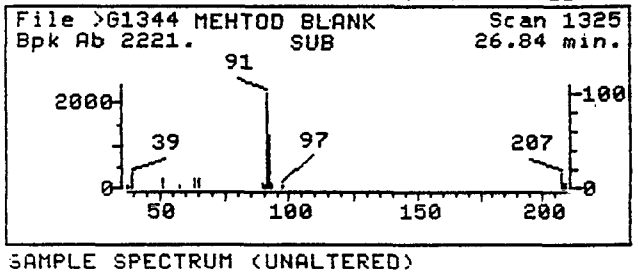
Data File: >G1344::D2 Quant Output File: ^G1344::D1
Name: MEHTOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901220 12:06 Quant ID File: RHMSUO::QT
Injected at: 901220 11:03 Last Calibration: 901220 12:06

Compound No: 11
Compound Name: Methylene Chloride
Scan Number: 664
Retention Time: 13.95 min.
Quant Ion: 84.0
Area: 3926
Concentration: 1.50 UG/L
q-value: 71

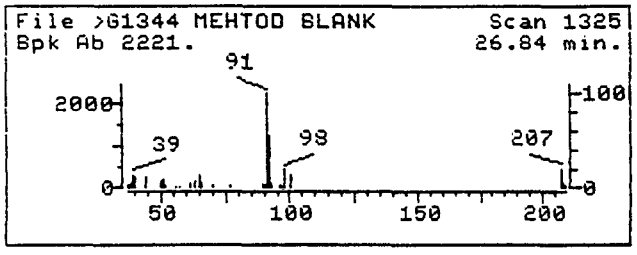
REFERENCE STANDARD SPECTRUM

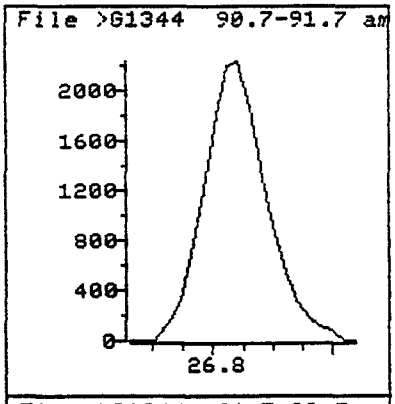


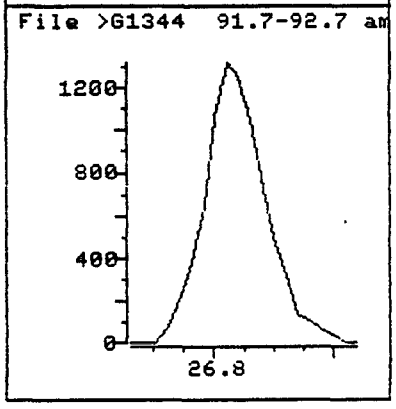
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >G1344::D2
Name: MEHTOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901220 12:06
Injected at: 901220 11:03

Quant Output File: ^G1344::D1

Quant ID File: RHMSVO::QT
Last Calibration: 901220 12:06

Compound No: 36
Compound Name: Toluene
Scan Number: 1325
Retention Time: 26.84 min.
Quant Ion: 91.0
Area: 16066
Concentration: 2.08 UG/L
q-value: 99

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

036654

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G-1344

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1344

Sample: MEHTOD BLANK 036654 Operator: TS SUPER GRP. 12/20/90 11:
Misc : 50 PPB IS/SURR 5MLS
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1344 MEHTOD BLANK 50 PPB IS/SURR 5MLS
35.01 260.0 CLP TIC
Upslope: .20 Area Reject: 34846. Max Peaks: 1 Bunching: 1
Dnslope: 0.00 Results File IG1344 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.81	87	93	107	4162	132424	44711	100.00	100.000

Sum of corrected areas: 44711.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	348462.	19.76	1.01 - 21.20
2	50.0	637675.	22.65	21.20 - 26.64
3	50.0	864646.	30.63	26.64 - 42.55

'^' Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

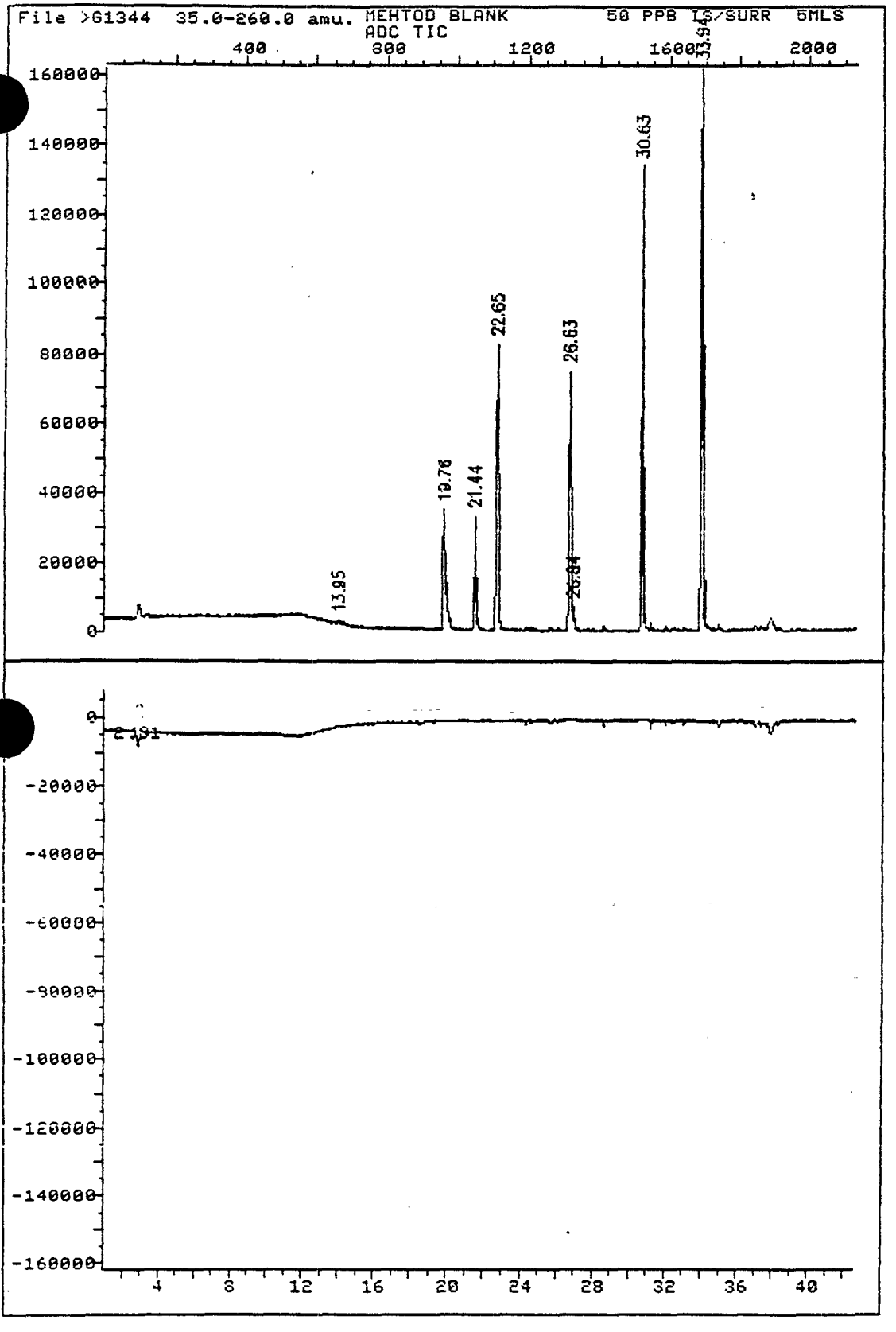
Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

12:50 AM FRI., 4 JAN., 1991

000069

AR306377


File >G1344 35.0-260.0 amu. MEHTOD BLANK 50 PPB IS/SURR 5MLS
ADC TIC
400
800
1200
1600
2000
160000
140000
120000
100000
80000
60000
40000
20000
0
13.95
18.76
21.44
22.65
26.63
26.84
30.63
33.96
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
4
8
12
16
20
24
28
32
36
40

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036754

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036754

Sample wt/vol: 10 ml Lab File ID: >G1347

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	1.	JB
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	4.	J

QUANT REPORT

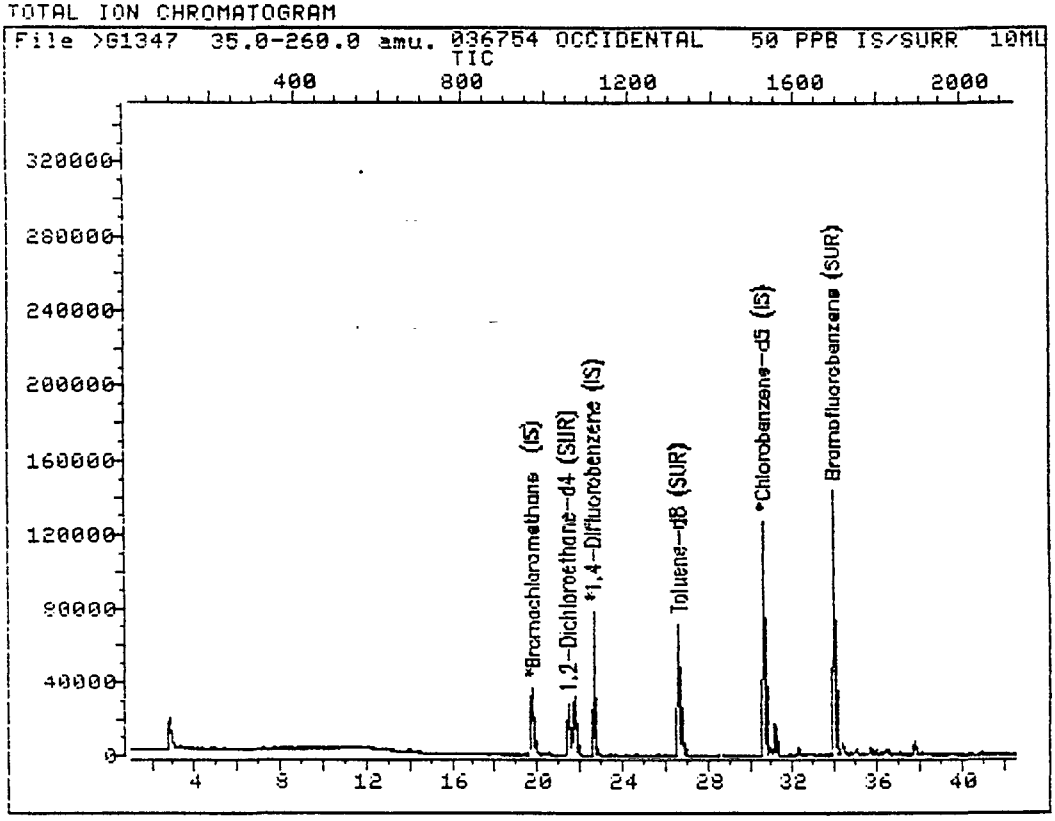
Operator ID: TS Quant Rev: 6 Quant Time: 901220 14:47
Output File: ^G1347::D1 Injected at: 901220 13:59
Data File: >G1347::D3 Dilution Factor: .50000
Name: 036754 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-1-SW

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.74	961	50569	50.00	UG/L	94
21)	1,2-Dichloroethane-d4 (SUR)	21.42	1047	76826	22.58	UG/L 90	98
25)	**1,4-Difluorobenzene (IS)	22.63	1109	256891	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.63	1314	197722	26.15	UG/L 104	97
36)	Toluene	26.82	1324	21099	1.47	UG/L	92
42)	**Chlorobenzene-d5 (IS)	30.63	1519	267865	50.00	UG/L	99
44)	Ethylbenzene	30.92	1534	4148M	.66	UG/L	68
46)	Xylene (total)	31.13	1545	22353M	3.68	UG/L	92
50)	Bromofluorobenzene (SUR)	33.95	1689	202489	24.98	UG/L 100	85

* Compound is ISTD

TOTAL ION CHROMATOGRAM

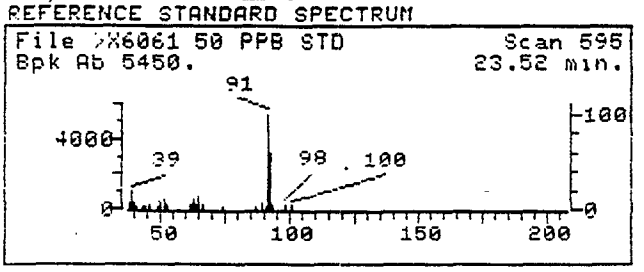


Data File: >G1347::D3 Quant Output File: ^G1347::D1
Name: 036754 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-1-SW

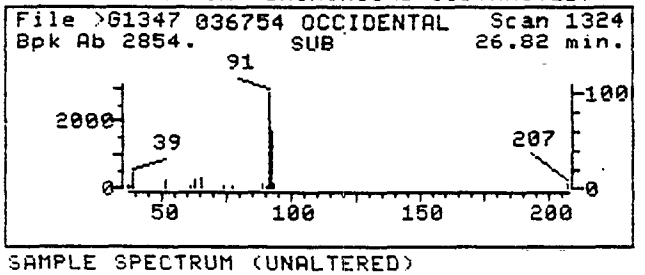
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

Operator ID: TS
Quant Time: 901220 14:47
Injected at: 901220 13:59

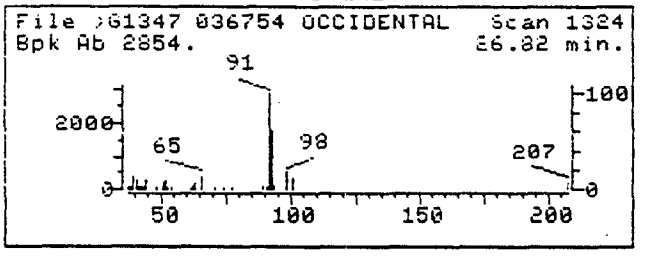
REFERENCE STANDARD SPECTRUM

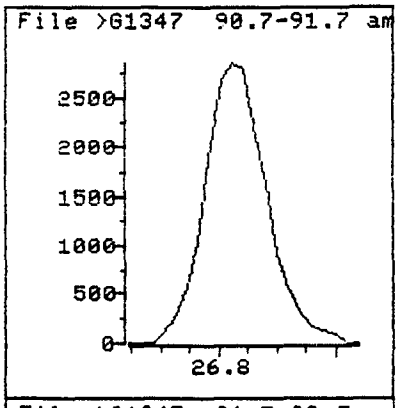


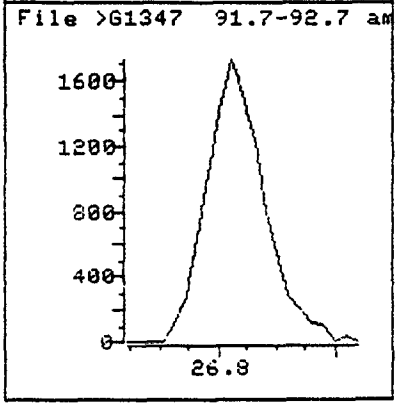
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



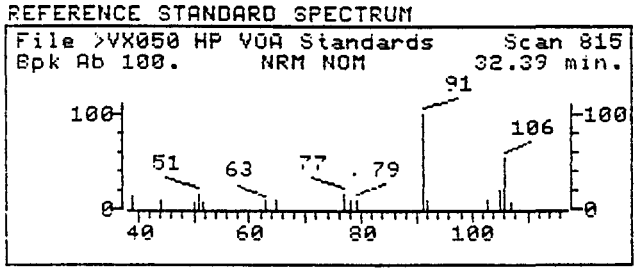




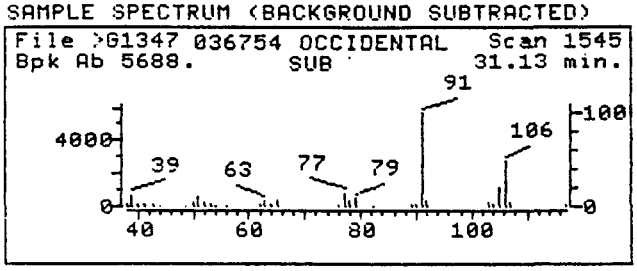
Data File: >G1347::03 Quant Output File: ^G1347::D1
Name: 036754 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-1-SW
Quant Time: 901220 14:47 Quant ID File: RHMSUO::QT
Injected at: 901220 13:59 Last Calibration: 901220 12:06

Compound No: 36
Compound Name: Toluene
Scan Number: 1324
Retention Time: 26.82 min.
Quant Ion: 91.0
Area: 21099
Concentration: 1.47 UG/L
q-value: 92

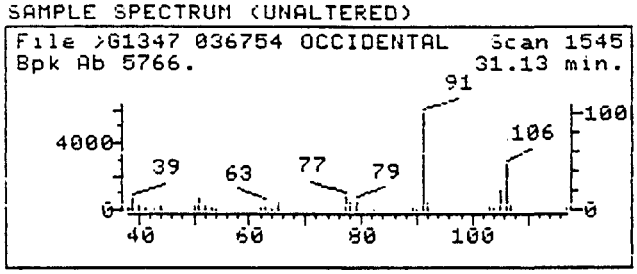
REFERENCE STANDARD SPECTRUM

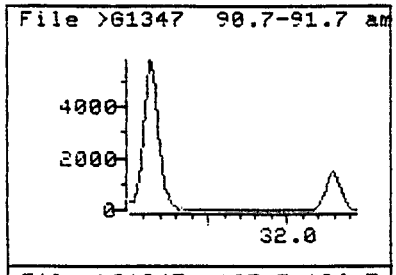


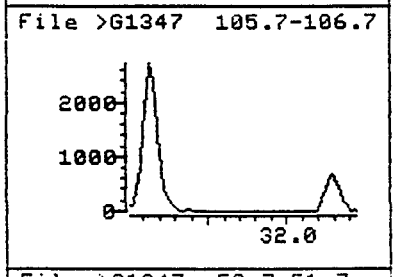
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

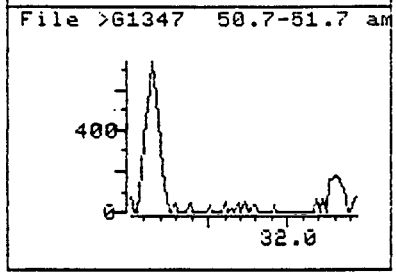


SAMPLE SPECTRUM (UNALTERED)









Data File: >G1347::D3 Quant Output File: ^G1347::D1
Name: 036754 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-1-SW
Quant Time: 901220 14:47 Quant ID File: RHMSVO::QT
Injected at: 901220 13:59 Last Calibration: 901220 12:06

Compound No: 46
Compound Name: Xylene (total)
Scan Number: 1545
Retention Time: 31.13 min.
Quant Ion: 106.0
Area: 22353M
Concentration: 3.68 UG/L
q-value: 92

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

036754

Lab Name: BCM LAB Contract: Occidental

Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036754

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1347

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.77	2	J
2.		↓ UNKNOWN ALKANE	37.69	1	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1347

Sample: 036754 OCCIDENTAL Operator: TS SUPER GRP. 12/20/90 13:
Misc : 50 PPB IS/SURR 10MLS OXY-SR-1-SW
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1347 036754 OCCIDENTAL 50 PPB IS/SURR 10MLS OXY-SR-1-SW
35.01 260.0 CLP TIC
Upslope: .20 Area Reject: 33434. Max Peaks: 3 Bunching: 1
Dnslope: 0.00 Results File IG1347 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.77	86	91	107	16600	243759	157985	100.00	64.283
2	21.77	1064	1065	1071	13894	48786	43154	27.32	17.559
3	37.69	1875	1881	1890	6519	65242	44627	28.25	18.158

Sum of corrected areas: 245766.

Summary of Unknowns PBM Library Search and Quantitation

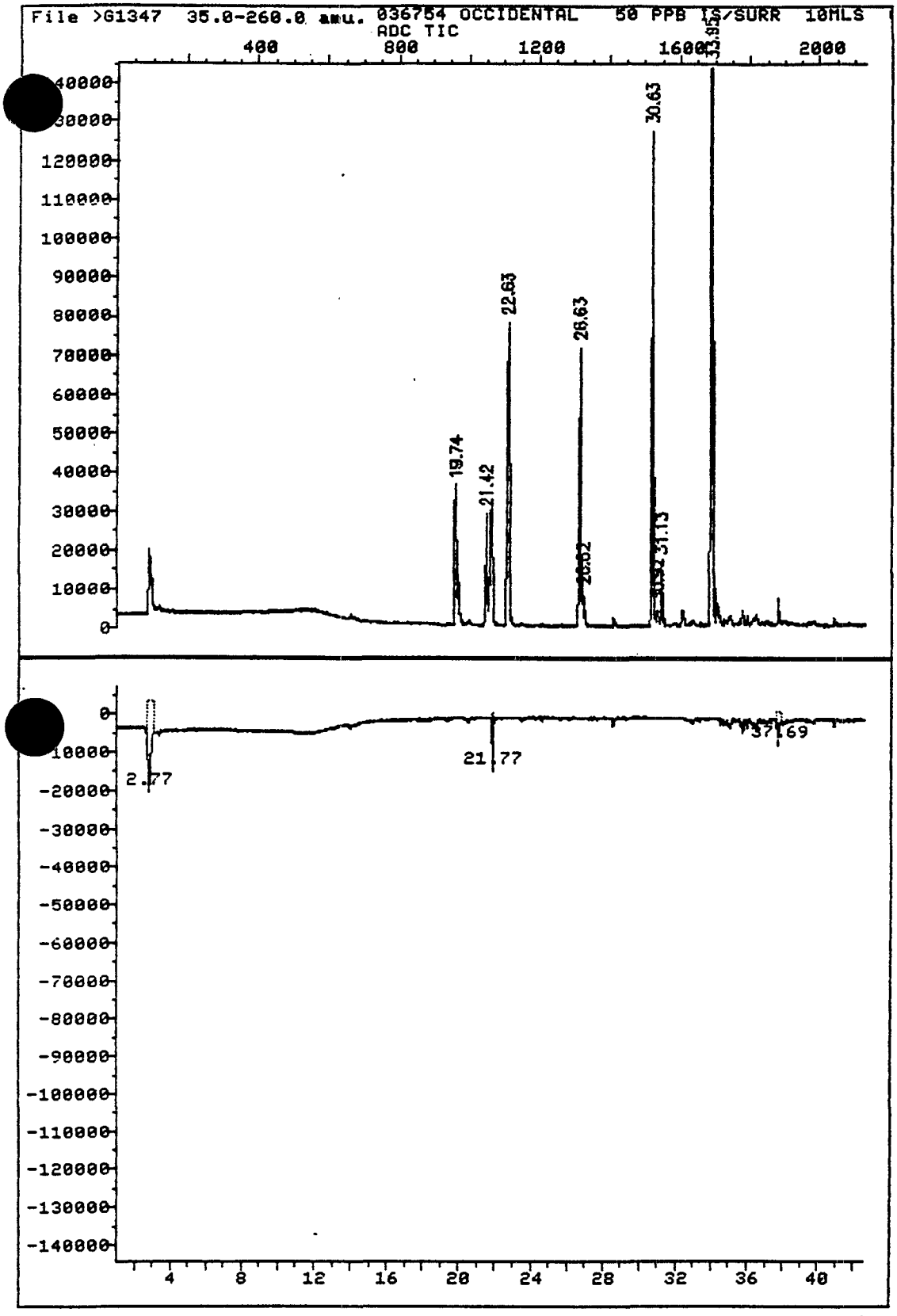
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	334338.	19.74	1.02 - 21.18
2	50.0	602621.	22.63	21.18 - 26.63
3	50.0	830505.	30.63	26.63 - 42.55

'^' Dilution Factor = .50 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = .50

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

12:07 PM THU., 10 JAN., 1991


File >G1347 35.0-260.0 amu. 036754 OCCIDENTAL 50 PPB IS/SURR 10MLS
ADC TIC
400
800
1200
1600
2000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
19.74
21.42
22.63
26.63
30.63
31.13
0
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
-100000
-110000
-120000
-130000
-140000
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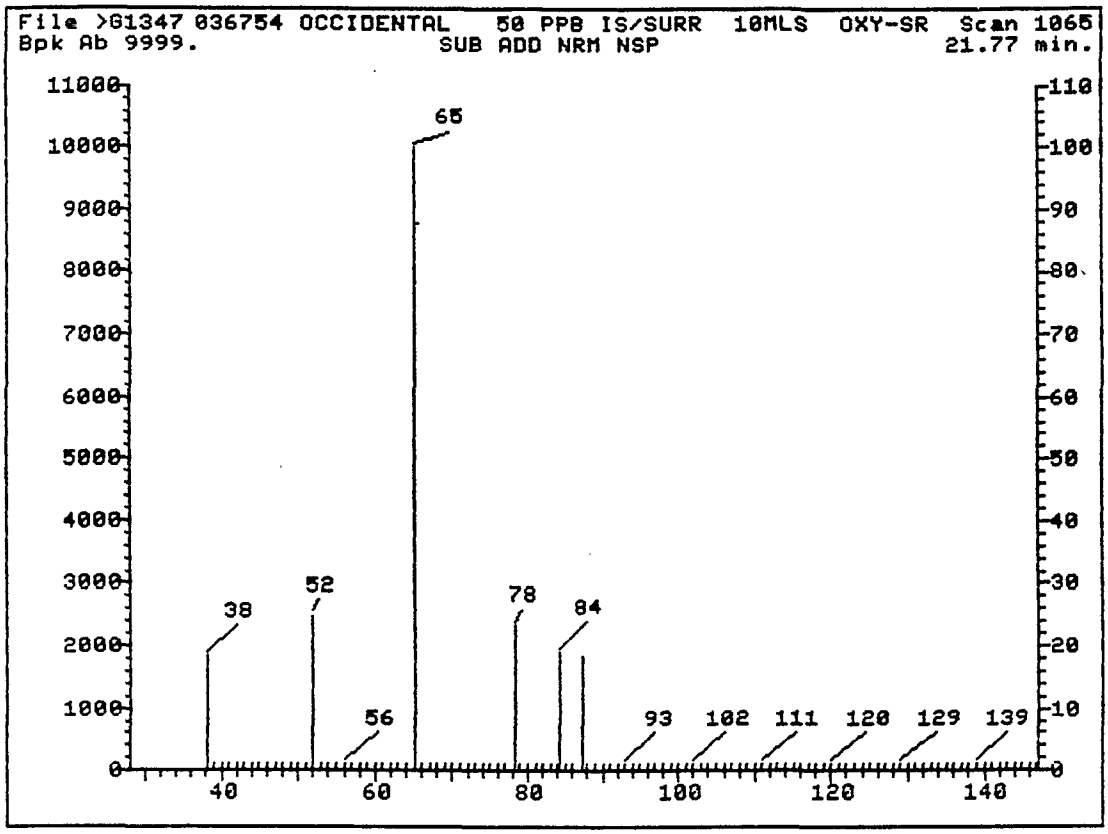
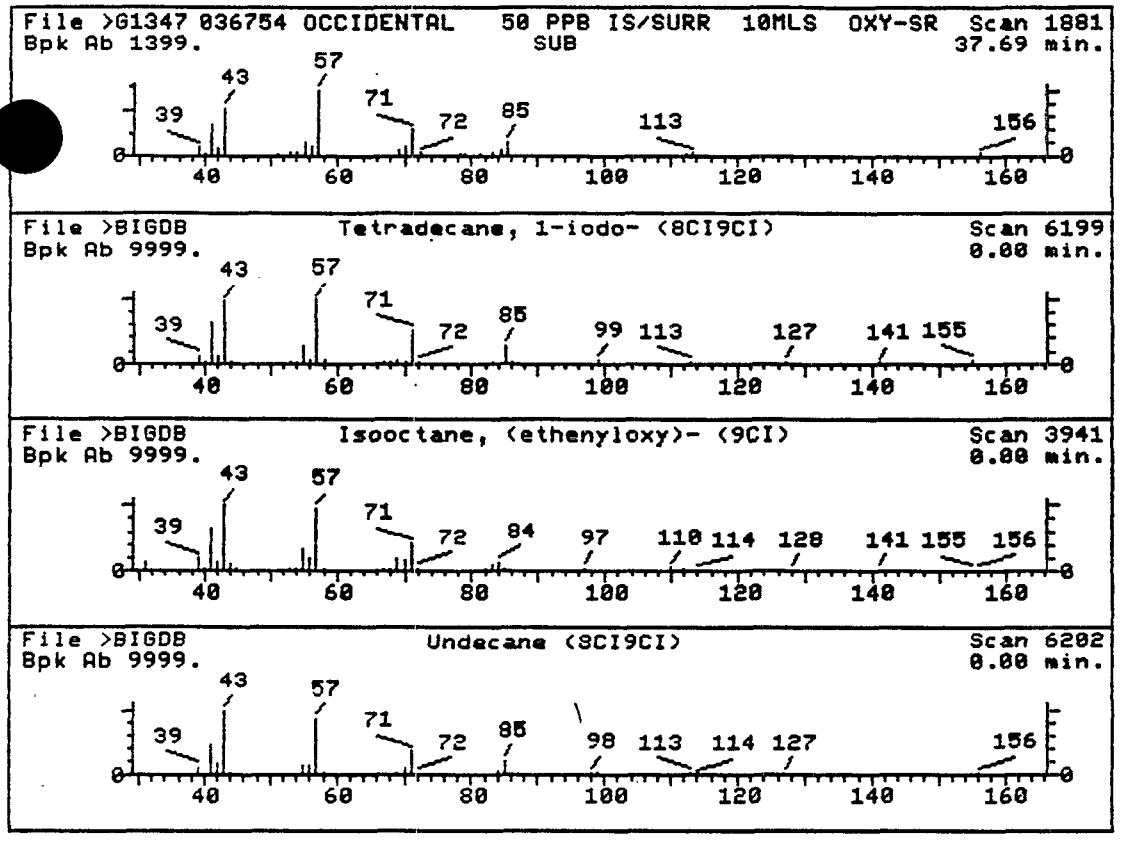
4
8
12
16
20
24
28
32
36
40



. UNKNOWN #,2
AREA = 43154.00 TENTATIVE CONCENTRATION IS 2.00

Sample file: >G1347 Spectrum #: 1065

No data base entries were retrieved.



UNKNOWN #,3

AREA = 44627.00 TENTATIVE CONCENTRATION IS 1.000

1.	Tetradecane, 1-iodo- (8CI9CI)	324 C14H29I
2.	Isooctane, (ethenyloxy)- (9CI)	156 C10H20O
3.	Undecane (8CI9CI)	156 C11H24
4.	Nonane, 2,6-dimethyl- (8CI9CI)	156 C11H24
5.	Decane, 5-methyl- (8CI9CI)	156 C11H24
6.	Nonane, 3,7-dimethyl- (8CI9CI)	156 C11H24

Sample file: >G1347 Spectrum #: 1881
Search speed: 1 Tilting option: N No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	60	19218941	6199	"BIGDB	71	57	2	0	73	14	30	17
2.	52*	37769623	3941	"BIGDB	42	61	3	0	73	18	20	13
3.	40*	1120214	6202	"BIGDB	51	46	2	0	73	39	14	27
4.	36*	17302282	3956	"BIGDB	40	51	1	0	51	36	14	23
5.	30*	13151354	5993	"BIGDB	26	73	3	0	76	35	12	13
6.	28*	17302328	6100	"BIGDB	28	58	2	0	56	36	10	14

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036755

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036755

Sample wt/vol: 10 ml Lab File ID: >G1348

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	1.	J6
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

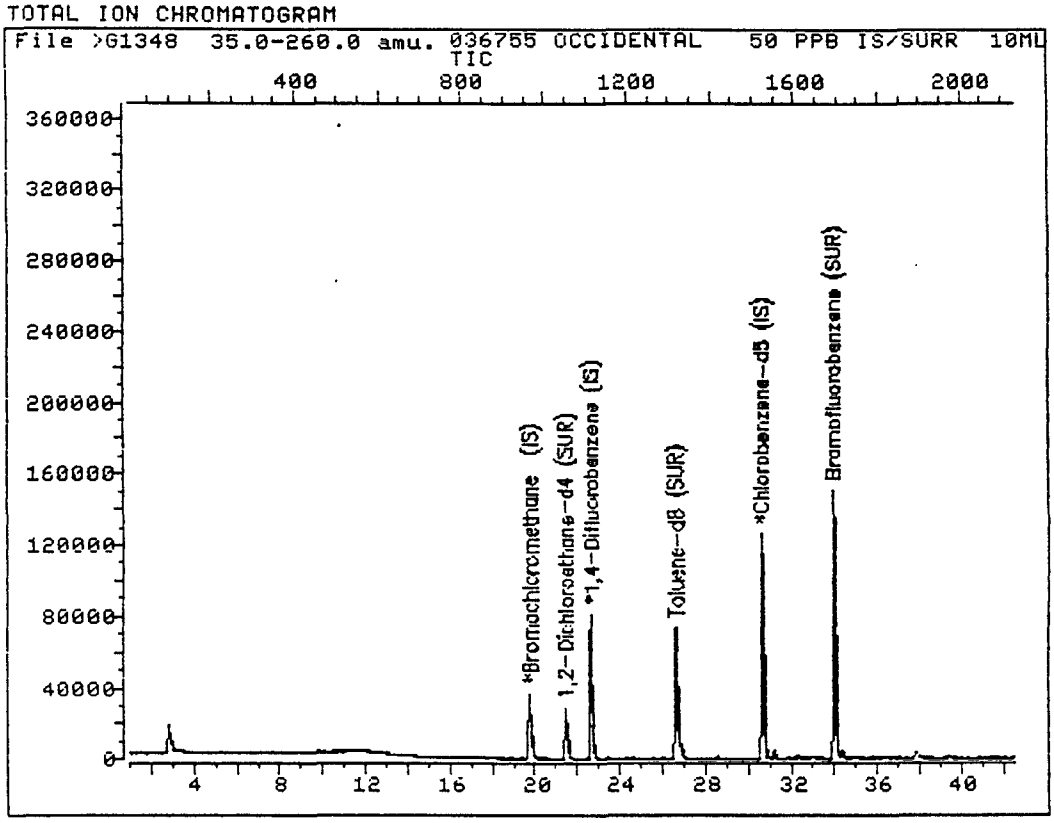
Operator ID: TS Quant Rev: 6 Quant Time: 901220 15:36
Output File: ^G1348::D1 Injected at: 901220 14:52
Data File: >G1348::D3 Dilution Factor: .50000
Name: 036755 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-2-SW

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	**Bromochloromethane (IS)	19.75	963	49415	50.00	UG/L		96
21)	1,2-Dichloroethane-d4 (SUR)	21.43	1049	79018	23.76	UG/L	95	97
25)	**1,4-Difluorobenzene (IS)	22.64	1111	264499	50.00	UG/L		99
35)	Toluene-d8 (SUR)	26.62	1315	204772	26.30	UG/L	105	99
36)	Toluene	26.83	1326	19245	1.30	UG/L		99
42)	**Chlorobenzene-d5 (IS)	30.62	1520	263028	50.00	UG/L		99
50)	Bromofluorobenzene (SUR)	33.94	1690	203810	25.61	UG/L	102	88

* Compound is ISTD

TOTAL ION CHROMATOGRAM

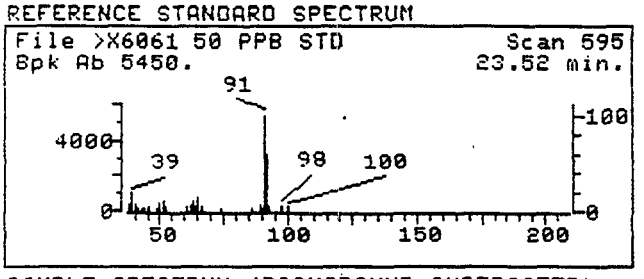


Data File: >G1348::D3 Quant Output File: ^G1348::D1
Name: 036755 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-2-SW

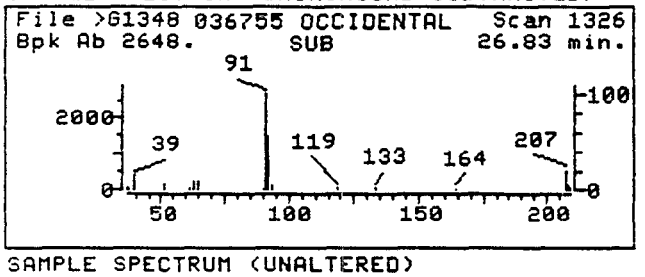
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

Operator ID: TS
Quant Time: 901220 15:36
Injected at: 901220 14:52

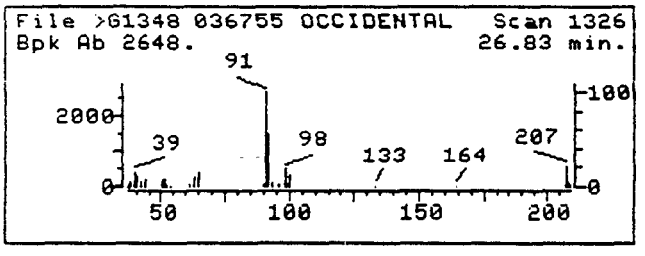
REFERENCE STANDARD SPECTRUM

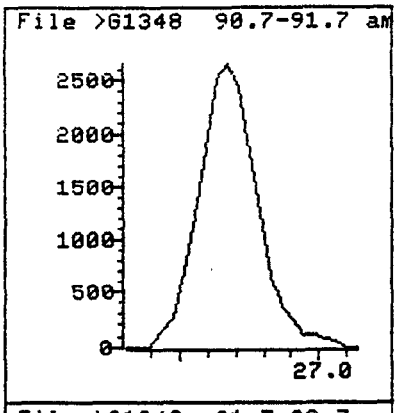


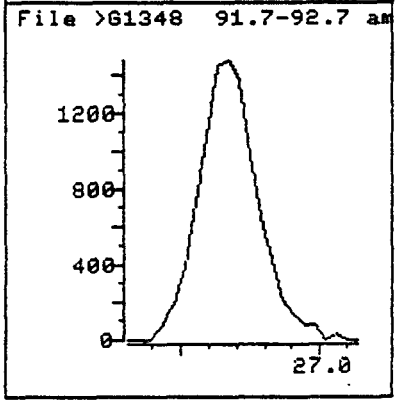
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >G1348::D3 Quant Output File: ^G1348::D1
Name: 036755 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-2-SW
Quant Time: 901220 15:36 Quant ID File: RHMSVO::QT
Injected at: 901220 14:52 Last Calibration: 901220 12:06

Compound No: 36
Compound Name: Toluene
Scan Number: 1326
Retention Time: 26.83 min.
Quant Ion: 91.0
Area: 19245
Concentration: 1.30 UG/L
q-value: 99

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 036755

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37937 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036755

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1348

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1348

Sample: 036755 OCCIDENTAL Operator: TS SUPER GRP. 12/20/90 14:5
Misc : 50 PPB IS/SURR 10MLS OXY-SR-2-SW
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1348 036755 OCCIDENTAL 50 PPB IS/SURR 10MLS OXY-SR-2-SW
35.01 260.0 CLP TIC
Upslope: .20 Area Reject: 33161. Max Peaks: 1 Bunching: 1
Dnslope: 0.00 Results File IG1348 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of tota
1	2.78	88	93	111	16218	254277	157442	100.00	100.0(

Sum of corrected areas: 157442.

Summary of Unknowns PBM Library Search and Quantitation

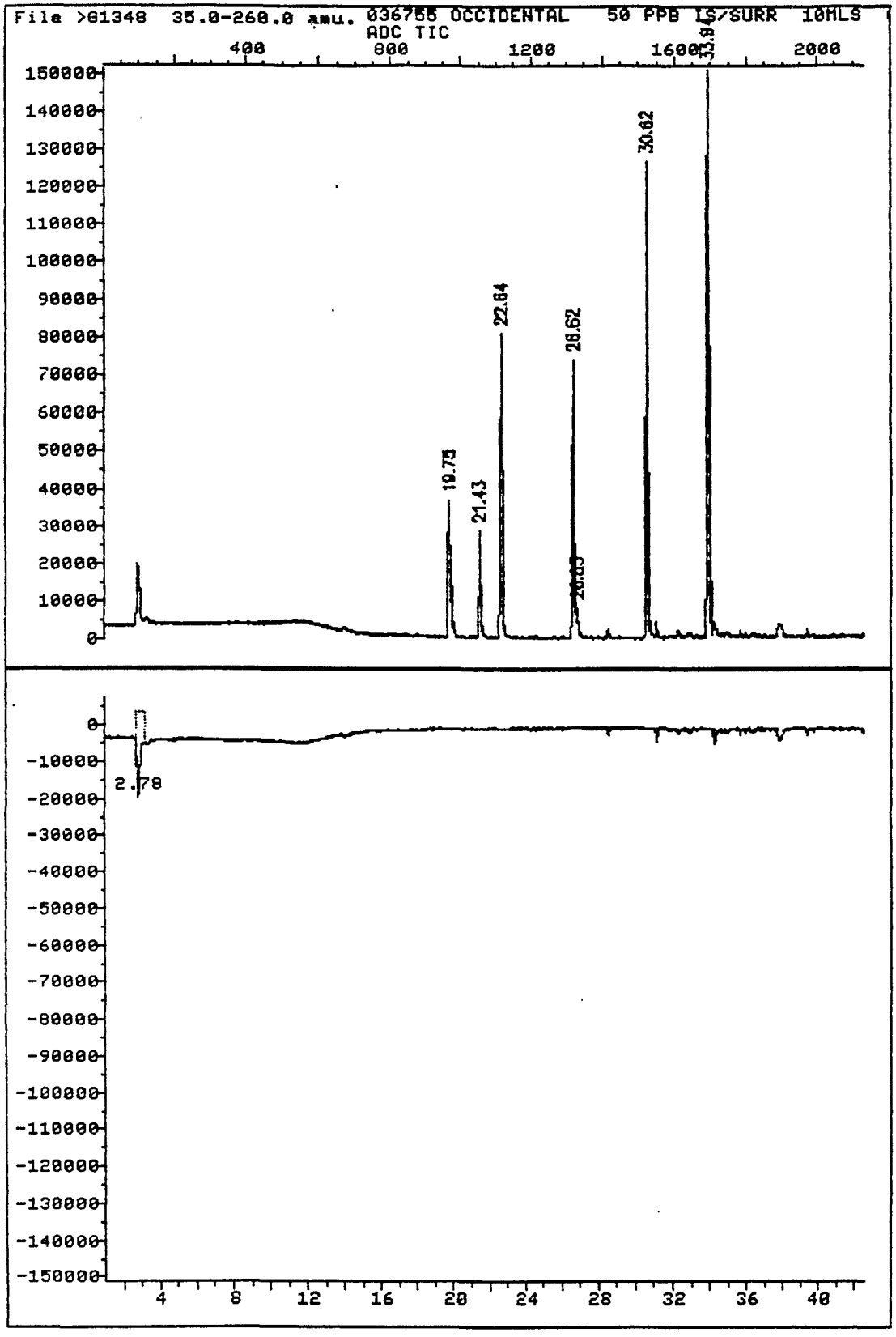
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	331607.	19.75	1.00 - 21.20
2	50.0	617939.	22.64	21.20 - 26.63
3	50.0	819337.	30.62	26.63 - 42.54

'^' Dilution Factor = .50 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = .50

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

12:20 PM THU., 10 JAN., 1991


File >01348 35.0-260.0 amu. 036755 OCCIDENTAL 50 PPB IS/SURR 10HLS
ADC TIC
400
800
1200
1600
2000
150000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
19.73
21.43
22.84
26.62
30.62
33.9
0
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
-100000
-110000
-120000
-130000
-140000
-150000
2.78
4
8
12
16
20
24
28
32
36
40

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036756

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036756

Sample wt/vol: 10 ml Lab File ID: >G1349

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	1.	JB
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	2.	J

QUANT REPORT

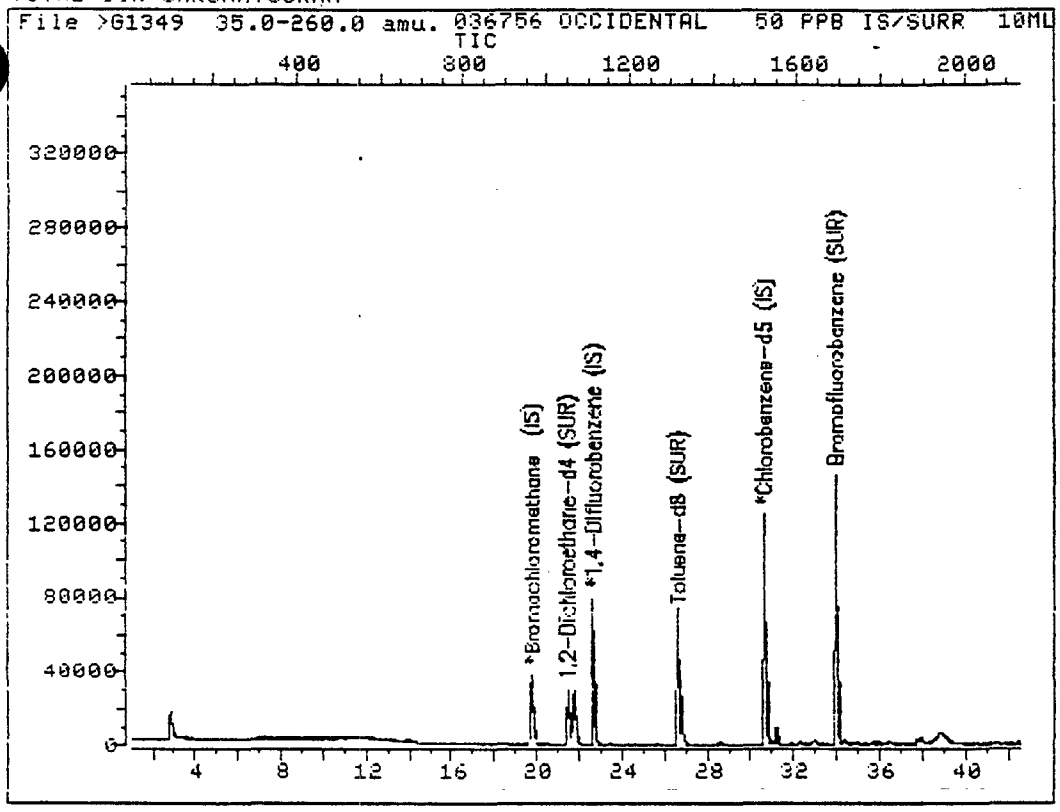
Operator ID: TS Quant Rev: 6 Quant Time: 901220 16:29
Output File: ^G1349::D1 Injected at: 901220 15:44
Data File: >G1349::D3 Dilution Factor: .50000
Name: 036756 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-4-SW

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.74	961	49930	50.00	UG/L	95
21)	1,2-Dichloroethane-d4 (SUR)	21.42	1047	81148	24.15	UG/L 97	96
25)	**1,4-Difluorobenzene (IS)	22.63	1109	260762	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.61	1313	200299	26.09	UG/L 104	98
36)	Toluene	26.83	1324	17515	1.20	UG/L	92
42)	**Chlorobenzene-d5 (IS)	30.61	1518	264005	50.00	UG/L	99
46)	Xylene (total)	31.16	1546	12374M	2.07	UG/L	89
50)	Bromofluorobenzene (SUR)	33.93	1688	202377	25.33	UG/L 101	91

* Compound is ISTD

TOTAL ION CHROMATOGRAM

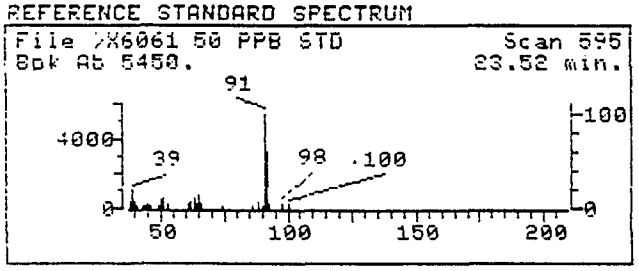


Data File: >G1349::D3 Quant Output File: ^G1349::D1
Name: 036756 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-4-SW

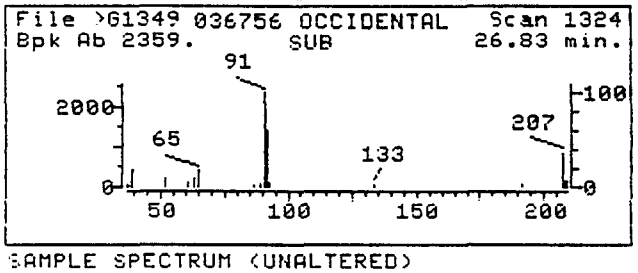
Id File: RHMSVO::DT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

Operator ID: TS
Quant Time: 901220 16:29
Injected at: 901220 15:44

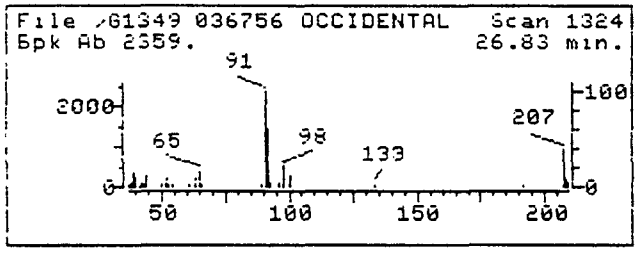
REFERENCE STANDARD SPECTRUM

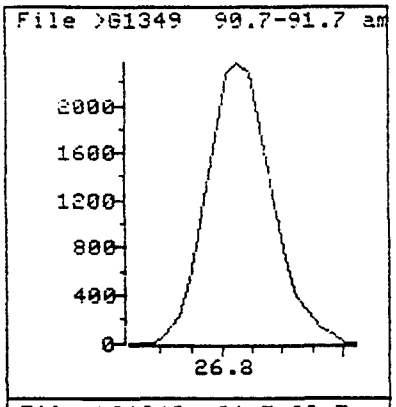


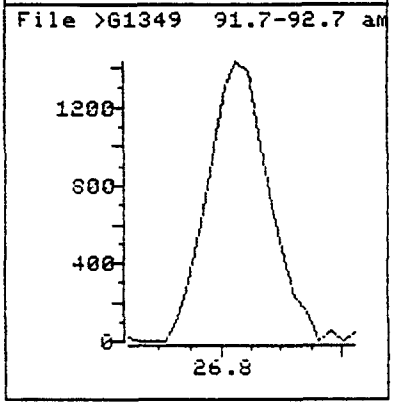
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



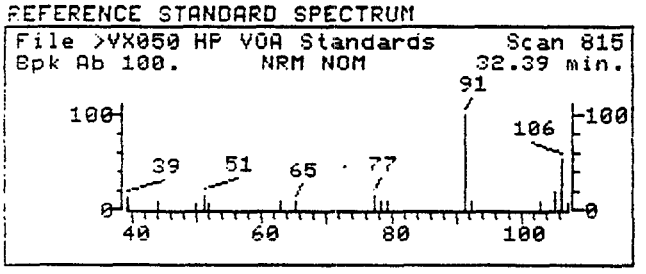




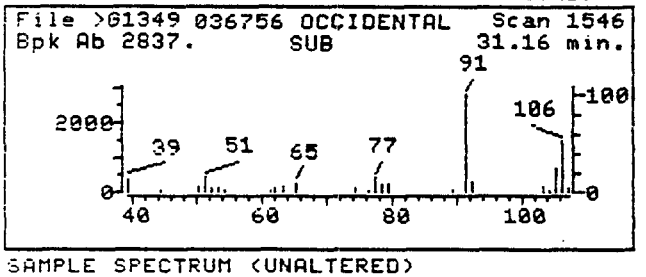
Data File: >G1349::D3 Quant Output File: ^G1349::D1
Name: 036756 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-4-SW
Quant Time: 901220 16:29 Quant ID File: RHMSVO::QT
Injected at: 901220 15:44 Last Calibration: 901220 12:06

Compound No: 36
Compound Name: Toluene
Scan Number: 1324
Retention Time: 26.83 min.
Quant Ion: 91.0
Area: 17515
Concentration: 1.20 UG/L
q-value: 92

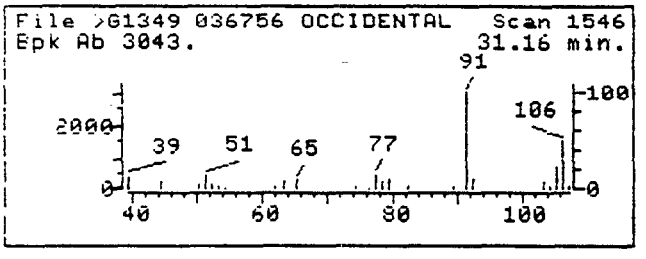
REFERENCE STANDARD SPECTRUM

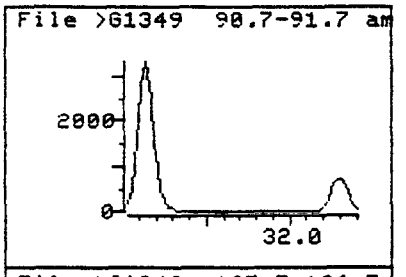


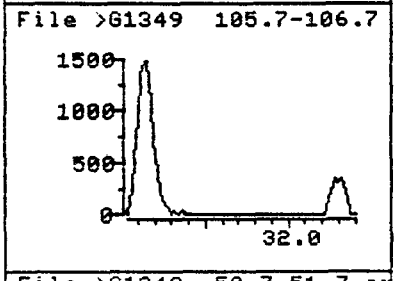
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

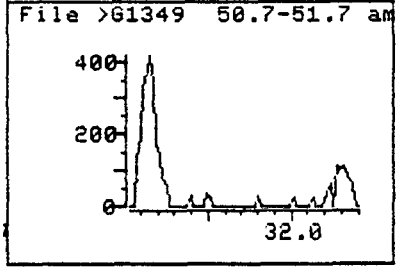


SAMPLE SPECTRUM (UNALTERED)









Data File: >G1349::D3 Quant Output File: ^G1349::D1
Name: 036756 OCCIDENTAL
Misc: 50 PPB IS/SURR 10MLS OXY-SR-4-SW
Quant Time: 901220 16:29 Quant ID File: RHMSVO::QT
Injected at: 901220 15:44 Last Calibration: 901220 12:06

Compound No: 46
Compound Name: Xylene (total)
Scan Number: 1546
Retention Time: 31.16 min.
Quant Ion: 106.0
Area: 12374M
Concentration: 2.07 UG/L
q-value: 89

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 036756

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 036756

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1349

Level: (low/med) LOW Date Received: 12-18-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

S data file header from : >G1349

Sample: 036756 OCCIDENTAL Operator: TS SUPER GRP. 12/20/90 15:44
Misc : 50 PPB IS/SURR 10MLS OXY-SR-4-SW
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1349 036756 OCCIDENTAL 50 PPB IS/SURR 10MLS OXY-SR-4-SW
35.01 260.0 CLP TIC
Upslope: .20 Area Reject: 34392. Max Peaks: 1 Bunching: 1
Dnslope: 0.00 Results File IG1349 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.77	86	91	108	14777	231615	140655	100.00	100.000

Sum of corrected areas: 140655.

Summary of Unknowns PBM Library Search and Quantitation

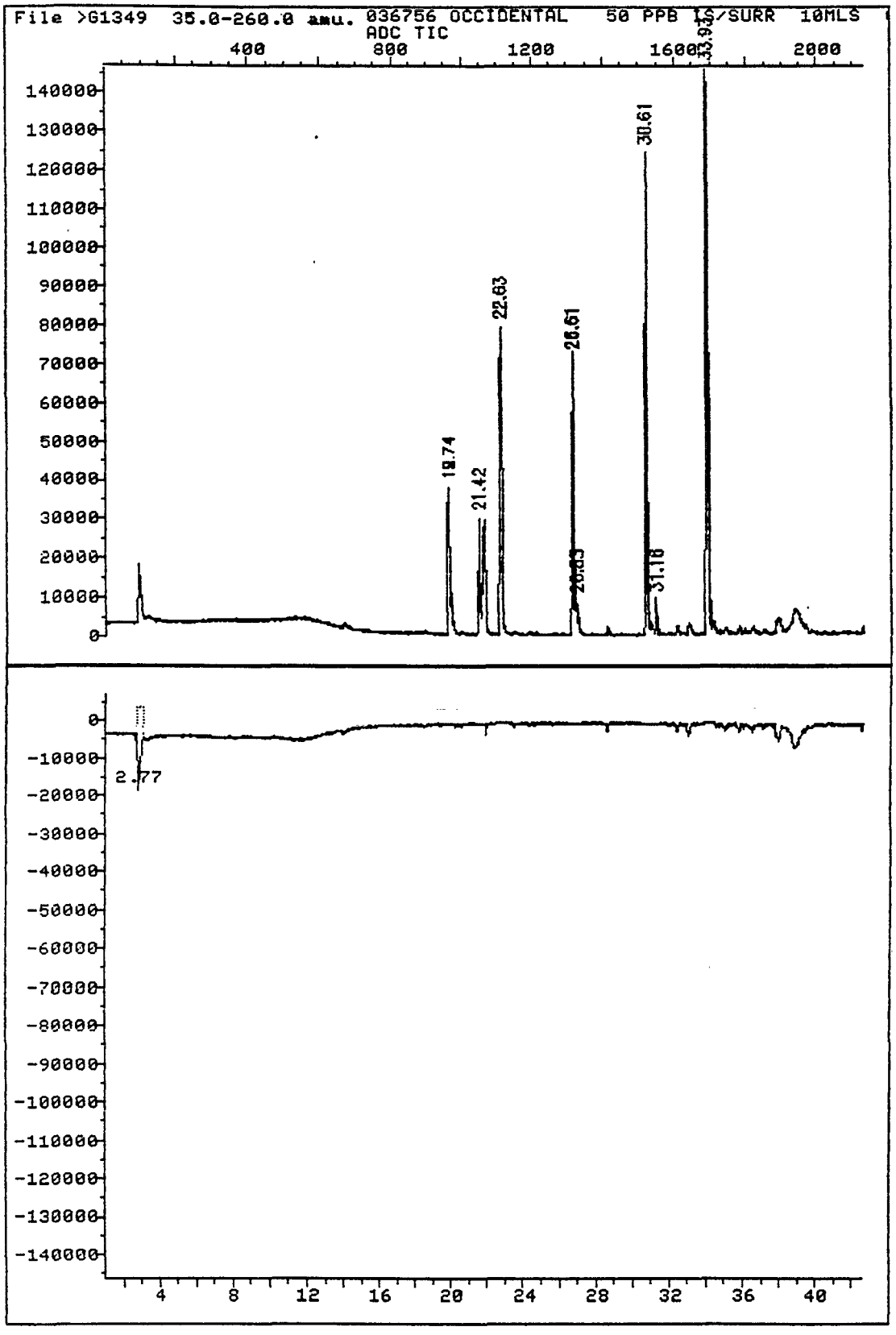
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	343921.	19.74	1.02 - 21.19
2	50.0	613576.	22.63	21.19 - 26.62
3	50.0	829818.	30.61	26.62 - 42.56

'^' Dilution Factor = .50 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = .50

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

5:28 PM THU., 20 DEC., 1990


File >G1349 35.0-260.0 amu. 036756 OCCIDENTAL 50 PPB IS/SURR 10MLS
ADC TIC
400
800
1200
1600
2000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
19.74
21.42
22.63
28.61
30.61
31.18
33.93
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
-100000
-110000
-120000
-130000
-140000
2.77
4
8
12
16
20
24
28
32
36
40

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036757

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036757

Sample wt/vol: 10 ml Lab File ID: >G1350

Level: (low/med) LOW Date Received: 12/19/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	2.	J
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	1.	JB
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 12/19/90

Contractor: BCM Time: 20:05

Contract No: Laboratory ID: >G1328

Instrument ID: HP5970-3 Initial Calibration Date: 12/17/90

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.65399	1.54906	6.34		**	
Vinyl Chloride	1.69394	1.61824	4.47	*		
Bromomethane	1.79614	1.67400	6.80			
Chloroethane	.97083	.88068	9.29			
Trichlorofluoromethane	2.53928	3.21174	26.48			
1,1,2-Trichlorotrifluoroethane	4.94910	4.52074	8.66			
Acetone	.52463	.57488	9.58			
Acrolein	.24306	.18867	22.38			
1,1-Dichloroethene	1.87419	1.85686	.92	*		
Methylene Chloride	1.85260	1.71230	7.57			
Carbon Disulfide	1.49231	1.15117	22.86			
Trans-1,2-Dichloroethene	1.98906	2.12887	7.03			
Acrylonitrile	.50120	.46096	8.03			
1,1-Dichloroethane	3.91188	4.25073	8.66		**	
Vinyl Acetate	3.23997	2.66921	17.62			
2-Butanone	1.13280	1.09842	3.04			
Cis-1,2-Dichloroethene	2.03186	2.17079	6.84			
Ethyl Acetate	2.18740	1.94910	10.89			
Chloroform	4.04765	4.43163	9.49		**	
1,2-Dichloroethane-d4 (SUR)	1.44301	1.52101	5.41			(Conc=50.00)
1,1,1-Trichloroethane	3.11640	3.42987	10.06			
Carbon Tetrachloride	2.85632	2.86914	.45			
1,2-Dichloroethane	2.43985	2.64642	8.47			
Benzene	1.08889	1.08214	.62			
Trichloroethene	.57125	.60634	6.14			
Ethyl Acrylate	.51774	.45128	12.84			
1,2-Dichloropropane	.51119	.50350	1.51	*		
Methyl Methacrylate	.43906	.36848	16.08			
Bromodichloromethane	.78207	.81193	3.82			
2-Chloroethylvinyl ether	.30874	.29526	4.37			
4-Methyl-2-Pentanone	.64334	.54046	15.99			
Cis-1,3-Dichloropropene	.94513	.96596	2.20			

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

[redacted] No: Calibration Date: 12/19/90

Contractor: BCM Time: 20:05

Contract No: Laboratory ID: >G1328

Instrument ID: HP5970-3 Initial Calibration Date: 12/17/90

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Toluene-d8 (SUR)	.76676	.76347	.43			(Conc=50.00)
Toluene	1.24115	1.33369	7.46	*		
Trans-1,3-Dichloropropene	.25540	.25873	1.30			
1,1,2-Trichloroethane	.42658	.46930	10.01			
Tetrachloroethane	.73458	.77546	5.56			
2-Hexanone	.34173	.29352	14.11			
Dibromochloromethane	.58993	.64026	8.53			
Chlorobenzene	.99995	1.03536	3.54		**	
Ethylbenzene	.53500	.55437	3.62	*		
Butyl Acrylate	.97055	.79819	17.76			
Xylene (total)	.50688	.50610	.15			
[redacted]ne	1.13311	1.06281	6.20			
[redacted]form	.71739	.68578	4.41		**	
1,1,2,2-Tetrachloroethane	.69863	.70406	.78		**	
Bromofluorobenzene (SUR)	.78779	.73595	6.58			(Conc=50.00)
Butyl Methacrylate	.81842	.65516	19.95			
1,3-Dichlorobenzene	.98393	1.01775	3.44			
1,4-Dichlorobenzene	1.02704	1.04465	1.71			
1,2-Dichlorobenzene	.97196	1.00033	2.92			

RF - Response Factor from daily standard file at 50.00 UG/L

[redacted] - Average Response Factor from Initial Calibration Form VI

[redacted] - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

QUANT REPORT

Operator ID: TS
Output File: ^G1328::D1
Data File: >G1328::D2
Name: 50 PPB STD
Misc: 50 PPB IS/SURR 5MLS

Quant Rev: 6 Quant Time: 901219 20:49
Injected at: 901219 20:05
Dilution Factor: 1.00000

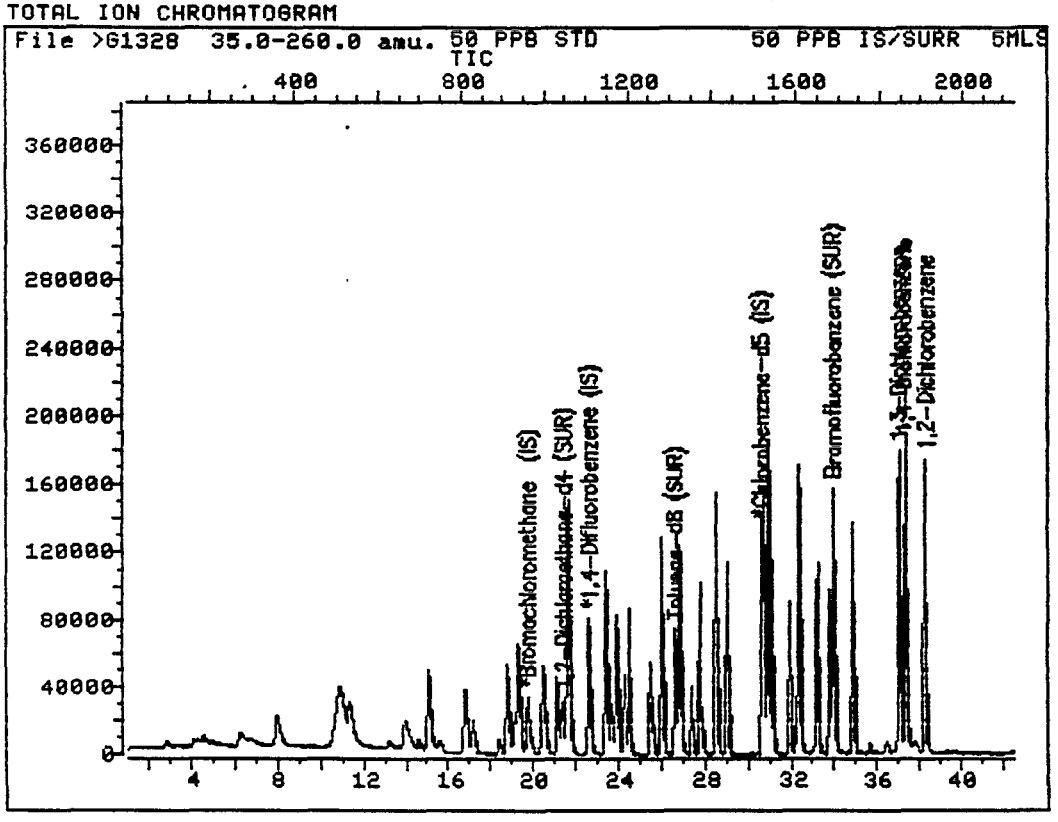
ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 11:03

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.71	957	53914	50.00	UG/L	94
2)	Chloromethane	4.05	155	83516M	46.36	UG/L	98
3)	Vinyl Chloride	4.48	177	87246M	46.49	UG/L	98
4)	Bromomethane	6.24	267	90252M	46.21	UG/L	95
5)	Chloroethane	6.71	291	47481M	44.89	UG/L	95
6)	Trichlorofluoromethane	7.96	355	173158	54.77	UG/L	94
7)	1,1,2-Trichlorotrifluoroethane	10.81	501	243731	45.53	UG/L	89
8)	Acetone	11.14	518	30994	41.24	UG/L	97
9)	Acrolein	10.61	491	10172	41.11	UG/L	92
10)	1,1-Dichloroethene	11.36	529	100111	49.60	UG/L	93
11)	Methylene Chloride	13.87	658	92317	42.85	UG/L	86
12)	Carbon Disulfide	13.15	621	62064	44.15	UG/L	[redacted]
13)	Trans-1,2-Dichloroethene	15.06	719	114776	52.22	UG/L	[redacted]
14)	Acrylonitrile	14.58	694	24852	49.14	UG/L	91
15)	1,1-Dichloroethane	16.74	805	229174	54.48	UG/L	97
16)	Vinyl Acetate	17.09	823	143908	43.43	UG/L	95
17)	2-Butanone	18.42	891	59220	48.03	UG/L	91
18)	Cis-1,2-Dichloroethene	18.77	909	117036	48.29	UG/L	96
19)	Ethyl Acetate	19.11	926	105084	45.12	UG/L	81
20)	Chloroform	19.28	935	238927	53.47	UG/L	99
21)	1,2-Dichloroethane-d4 (SUR)	21.39	1043	82004	49.33	UG/L	95
22)	1,1,1-Trichloroethane	20.43	994	184918	53.86	UG/L	99
23)	Carbon Tetrachloride	21.14	1030	154687	51.44	UG/L	99
24)	1,2-Dichloroethane	21.64	1056	142679	53.44	UG/L	89
25)	**1,4-Difluorobenzene (IS)	22.60	1105	271581	50.00	UG/L	99
26)	Benzene	21.62	1055	293889	48.40	UG/L	98
27)	Trichloroethene	23.38	1145	164671	49.99	UG/L	96
28)	Ethyl Acrylate	23.64	1158	122558	43.64	UG/L	98
29)	1,2-Dichloropropane	23.87	1170	136740	49.60	UG/L	99
30)	Methyl Methacrylate	24.22	1188	100071	42.88	UG/L	93
31)	Bromodichloromethane	24.48	1201	220506	51.05	UG/L	96
32)	2-Chloroethylvinyl ether	25.47	1252	80187	49.01	UG/L	96
33)	4-Methyl-2-Pentanone	25.51	1254	146778	45.07	UG/L	71
34)	Cis-1,3-Dichloropropene	26.00	1279	262336	51.43	UG/L	96
35)	Toluene-d8 (SUR)	26.60	1310	207344	52.21	UG/L	96
36)	Toluene	26.80	1320	362206	51.73	UG/L	97
37)	Trans-1,3-Dichloropropene	27.35	1348	70266	52.53	UG/L	[redacted]
38)	1,1,2-Trichloroethane	27.72	1367	127453	52.66	UG/L	[redacted]
39)	Tetrachloroethane	28.52	1408	210599	50.71	UG/L	[redacted]
40)	2-Hexanone	27.87	1375	79714	46.64	UG/L	98
41)	Dibromochloromethane	29.01	1433	173883	53.30	UG/L	95
42)	**Chlorobenzene-d5 (IS)	30.59	1514	289004	50.00	UG/L	98
43)	Chlorobenzene	30.70	1520	299222	50.73	UG/L	99

	Compound	R.T.	Scan#	Area	Conc	Units	q
44)	Ethylbenzene	30.90	1530	160216	50.47	UG/L	99
45)	Butyl Acrylate	31.93	1583	230680	41.15	UG/L	96
46)	Xylene (total)	31.11	1541	146265M	51.61	UG/L	94
47)	Styrene	32.36	1605	307155	44.25	UG/L	95
48)	Bromoform	33.17	1646	198193	45.60	UG/L	98
49)	1,1,2,2-Tetrachloroethane	33.73	1675	203477	47.12	UG/L	98
50)	Bromofluorobenzene (SUR)	33.91	1684	212693	47.37	UG/L	97
51)	Butyl Methacrylate	34.88	1734	189345	39.78	UG/L	97
52)	1,3-Dichlorobenzene	36.97	1841	294135	49.18	UG/L	96
53)	1,4-Dichlorobenzene	37.27	1856	301907	48.38	UG/L	99
54)	1,2-Dichlorobenzene	38.28	1908	289098	49.41	UG/L	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >G1328::D2 Quant Output File: ^G1328::D1
Name: 50 PPB STD
Misc: 50 PPB IS/SURR 5MLS

Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 11:03

Operator ID: TS
Quant Time: 901219 20:49
Injected at: 901219 20:05

Continuing Calibration Check
HSL Compounds

[redacted]se No: Calibration Date: 12/20/90

Contractor: BCM Time: 10:10

Contract No: Laboratory ID: >G1343

Instrument ID: HP5970-3 Initial Calibration Date: 12/17/90

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.65399	1.87742	13.51		**	
Vinyl Chloride	1.69394	1.88202	11.10	*		
Bromomethane	1.79614	1.83758	2.31			
Chloroethane	.97083	1.06281	9.47			
Trichlorofluoromethane	2.53928	2.49127	1.89			
1,1,2-Trichlorotrifluoroethane	4.94910	6.04141	22.07			
Acetone	.52463	.63370	20.79			
Acrolein	.24306	.30232	24.38			
1,1-Dichloroethene	1.87419	2.10418	12.27	*		
Methylene Chloride	1.85260	2.42948	31.14			
Carbon Disulfide	1.49231	1.61073	7.94			
[redacted]ans-1,2-Dichloroethene	1.98906	2.32827	17.05			
[redacted]rylonitrile	.50120	.66825	33.33			
1,1-Dichloroethane	3.91188	4.66982	19.38		**	
Vinyl Acetate	3.23997	3.87723	19.67			
2-Butanone	1.13280	1.52038	34.21			
Cis-1,2-Dichloroethene	2.03186	2.88763	42.12			
Ethyl Acetate	2.18740	2.80665	28.31			
Chloroform	4.04765	4.89489	20.93		**	
1,2-Dichloroethane-d4 (SUR)	1.44301	1.68239	16.59			(Conc=50.00)
1,1,1-Trichloroethane	3.11640	3.65614	17.32			
Carbon Tetrachloride	2.85632	3.16456	10.79			
1,2-Dichloroethane	2.43985	2.83476	16.19			
Benzene	1.08889	1.17109	7.55			
Trichloroethene	.57125	.63965	11.97			
Ethyl Acrylate	.51774	.62557	20.83			
1,2-Dichloropropane	.51119	.55302	8.18	*		
Methyl Methacrylate	.43906	.50625	15.30			
Bromodichloromethane	.78207	.86596	10.73			
2-Chloroethylvinyl ether	.30874	.37995	23.06			
4-Methyl-2-Pentanone	.64334	.74737	16.17			
Cis-1,3-Dichloropropene	.94513	1.02675	8.64			

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 12/20/90

Contractor: BCM Time: 10:10

Contract No: Laboratory ID: >G1343

Instrument ID: HP5970-3 Initial Calibration Date: 12/17/90

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Toluene-d8 (SUR)	.76676	.73590	4.03			(Conc=50.00)
Toluene	1.24115	1.39637	12.51	*		
Trans-1,3-Dichloropropene	.25540	.27036	5.86			
1,1,2-Trichloroethane	.42658	.48242	13.09			
Tetrachloroethane	.73458	.78739	7.19			
2-Hexanone	.34173	.41527	21.52			
Dibromochloromethane	.58993	.65101	10.35			
Chlorobenzene	.99995	1.08447	8.45		**	
Ethylbenzene	.53500	.58714	9.75	*		
Butyl Acrylate	.97055	1.08339	11.63			
Xylene (total)	.50688	.56743	11.94			
Styrene	1.13311	1.35158	19.28			
Bromoform	.71739	.77046	7.40		**	
1,1,2,2-Tetrachloroethane	.69863	.78532	12.41		**	
Bromofluorobenzene (SUR)	.78779	.75648	3.97			(Conc=50.00)
Butyl Methacrylate	.81842	.85477	4.44			
1,3-Dichlorobenzene	.98393	1.05937	7.67			
1,4-Dichlorobenzene	1.02704	1.09843	6.95			
1,2-Dichlorobenzene	.97196	1.05491	8.53			

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

QUANT REPORT

Operator ID: TS
Output File: ^G1343::D1
Data File: >G1343::D2
Name: 50 PPB STD
Misc: 50 PPB IS/SURR 5MLS

Quant Rev: 6 Quant Time: 901220 10:56
Injected at: 901220 10:10
Dilution Factor: 1.00000

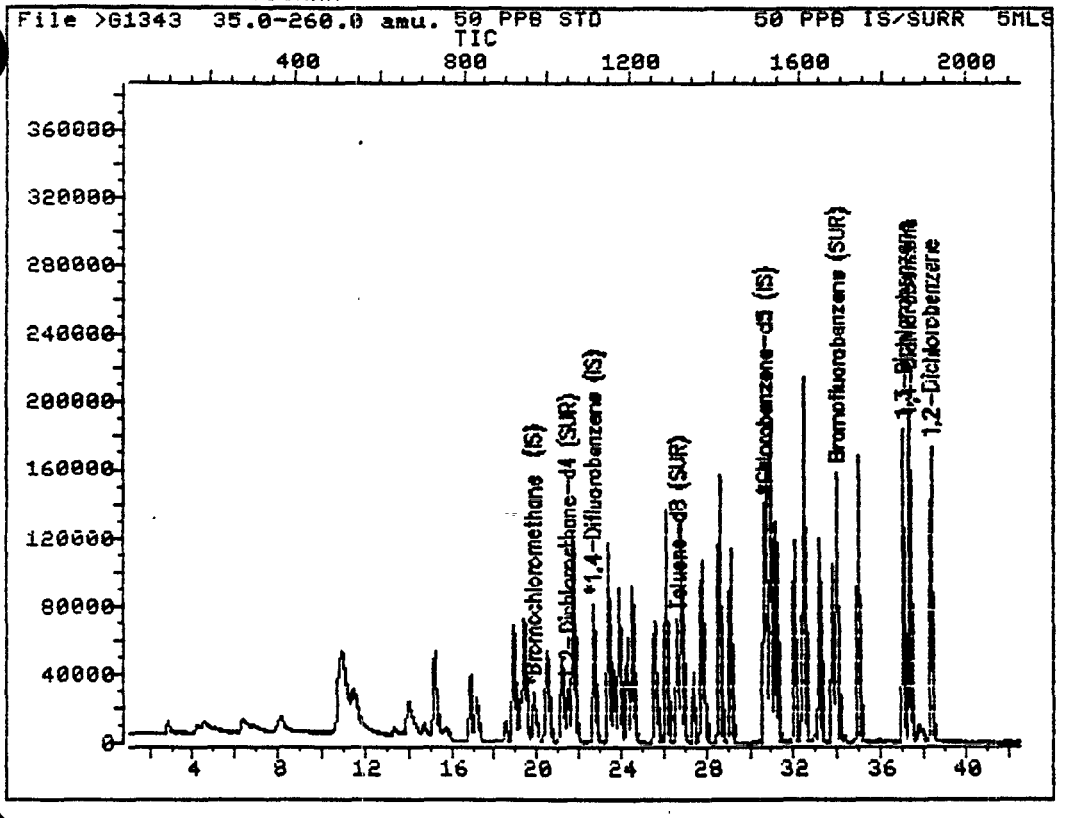
ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.79	963	51756	50.00	UG/L	94
2)	Chloromethane	4.10	159	97168M	60.60	UG/L	99
3)	Vinyl Chloride	4.56	183	97406M	58.15	UG/L	99
4)	Bromomethane	6.32	273	95106M	54.89	UG/L	99
5)	Chloroethane	6.85	300	55007M	60.34	UG/L	99
6)	Trichlorofluoromethane	8.08	363	128938M	38.78	UG/L	94
7)	1,1,2-Trichlorotrifluoroethane	10.95	510	312679	66.82	UG/L	94
8)	Acetone	11.24	525	32798	55.12	UG/L	98
9)	Acrolein	10.73	499	15647	80.12	UG/L	95
10)	1,1-Dichloroethene	11.49	538	108904M	56.66	UG/L	98
11)	Methylene Chloride	13.97	665	125740M	70.94	UG/L	83
12)	Carbon Disulfide	13.29	630	83365	69.96	UG/L	96
13)	Trans-1,2-Dichloroethene	15.18	727	120502	54.68	UG/L	91
14)	Acrylonitrile	14.67	701	34586	72.49	UG/L	97
15)	1,1-Dichloroethane	16.82	811	241691	54.93	UG/L	97
16)	Vinyl Acetate	17.17	829	200670	72.63	UG/L	93
17)	2-Butanone	18.48	896	78689	69.21	UG/L	88
18)	Cis-1,2-Dichloroethene	18.85	915	149452	66.51	UG/L	93
19)	Ethyl Acetate	19.16	931	145261	72.00	UG/L	82
20)	Chloroform	19.34	940	253340	55.23	UG/L	94
21)	1,2-Dichloroethane-d4 (SUR)	21.43	1047	87074M	55.30	UG/L	91
22)	1,1,1-Trichloroethane	20.49	999	189227	53.30	UG/L	99
23)	Carbon Tetrachloride	21.18	1034	163785	55.15	UG/L	96
24)	1,2-Dichloroethane	21.70	1061	146716	53.56	UG/L	95
25)	**1,4-Difluorobenzene (IS)	22.64	1109	270712	50.00	UG/L	99
26)	Benzene	21.66	1059	317027	54.11	UG/L	98
27)	Trichloroethene	23.42	1149	173161	52.75	UG/L	90
28)	Ethyl Acrylate	23.67	1162	169350	69.31	UG/L	98
29)	1,2-Dichloropropane	23.91	1174	149709	54.92	UG/L	98
30)	Methyl Methacrylate	24.26	1192	137048	68.70	UG/L	91
31)	Bromodichloromethane	24.51	1205	234427	53.33	UG/L	98
32)	2-Chloroethylvinyl ether	25.51	1256	102857	64.34	UG/L	98
33)	4-Methyl-2-Pentanone	25.57	1259	202321	69.14	UG/L	80
34)	Cis-1,3-Dichloropropene	26.04	1283	277954	53.15	UG/L	96
35)	Toluene-d8 (SUR)	26.64	1314	199217	48.19	UG/L	96
36)	Toluene	26.84	1324	378014	52.35	UG/L	90
37)	Trans-1,3-Dichloropropene	27.39	1352	73191	52.25	UG/L	98
38)	1,1,2-Trichloroethane	27.76	1371	130597	51.40	UG/L	96
39)	Tetrachloroethene	28.56	1412	213157	50.77	UG/L	97
40)	2-Hexanone	27.89	1378	112419	70.74	UG/L	94
41)	Dibromochloromethane	29.03	1436	176236	50.84	UG/L	99
42)	**Chlorobenzene-d5 (IS)	30.63	1518	285561	50.00	UG/L	94
43)	Chlorobenzene	30.74	1524	309482	52.32	UG/L	97

	Compound	R.T.	Scan#	Area	Conc	Units	
44)	Ethylbenzene	30.94	1534	167663	52.95	UG/L	99
45)	Butyl Acrylate	31.95	1586	309375	67.87	UG/L	98
46)	Xylene (total)	31.15	1545	162035M	56.06	UG/L	93
47)	Styrene	32.40	1609	385959	63.59	UG/L	96
48)	Bromoform	33.18	1649	220014	56.17	UG/L	99
49)	1,1,2,2-Tetrachloroethane	33.77	1679	224256	55.77	UG/L	98
50)	Bromofluorobenzene (SUR)	33.95	1688	216021	51.39	UG/L	94
51)	Butyl Methacrylate	34.92	1738	244088	65.23	UG/L	97
52)	1,3-Dichlorobenzene	36.99	1844	302514	52.04	UG/L	97
53)	1,4-Dichlorobenzene	37.29	1859	313670	52.57	UG/L	98
54)	1,2-Dichlorobenzene	38.30	1911	301242	52.73	UG/L	98

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >G1343::D2 Quant Output File: ^G1343::D1
Name: 50 PPB STD
Misc: 50 PPB IS/SURR 5MLS

Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

Operator ID: TS
Quant Time: 901220 10:56
Injected at: 901220 10:10

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

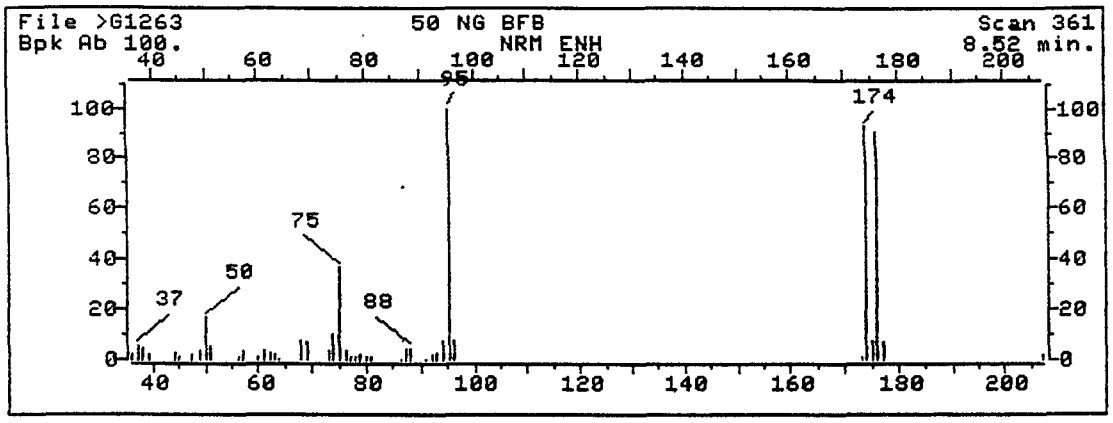
m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	16.18	16.18	Ok
75	30-60% of mass 95	36.62	36.62	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.11	7.11	Ok
173	Less than 2% of mass 174	.63	.68	Ok
174	Greater than 50% of mass 95	92.79	92.79	Ok
175	5-9% of mass 174	7.01	7.55	Ok
176	95-101% of mass 174	90.85	97.91	Ok
177	5-9% of mass 176	6.12	6.74	Ok

Injection Date: 12/17/90
Injection Time: 08:55
Data File: >G1263
Scan: 361

>G1263 50 NG BFB
361 NRM ENH

File: >G1263 Scan #: 361 Retn. time: 8.52

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.10	1.070	51.10	4.689	69.15	6.091	80.95	.995	95.15	100.000
37.10	5.106	56.10	1.023	73.15	3.116	86.25	.095	96.15	7.114
38.00	3.893	57.10	3.571	74.05	9.842	87.05	3.997	173.15	.635
39.10	1.137	60.00	.597	75.15	36.620	88.05	4.234	174.15	92.792
44.00	2.217	61.00	2.965	76.15	2.794	91.05	.114	175.15	7.010
45.00	.445	62.10	2.520	77.15	.673	92.05	1.591	176.15	90.850
47.10	1.459	63.10	1.762	78.05	.237	93.05	2.368	177.15	6.119
49.10	3.353	64.00	.104	78.95	1.175	94.15	7.720	207.20	1.137
50.10	16.179	68.00	7.171	80.05	.350				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Bpk Ab 100.
50 NG BFB
NRM ENH
Scan 361
8.52 min.
95
174
75
50
37
88
100
80
60
40
20
0
40
60
80
100
120
140
160
180
200

bundance m/z	% Relative Abundance Base Appropriate Criteria	Peak	Peak	Status
50	15-40% of mass 95	17.97	17.97	Ok
75	30-60% of mass 95	39.75	39.75	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.52	7.52	Ok
173	Less than 2% of mass 174	.45	.52	Ok
174	Greater than 50% of mass 95	85.99	85.99	Ok
175	5-9% of mass 174	5.72	6.66	Ok
176	95-101% of mass 174	82.81	96.29	Ok
177	5-9% of mass 176	5.54	6.69	Ok

Injection Date: 12/19/90
Injection Time: 19:25
Data File: >G1327
Scan: 360

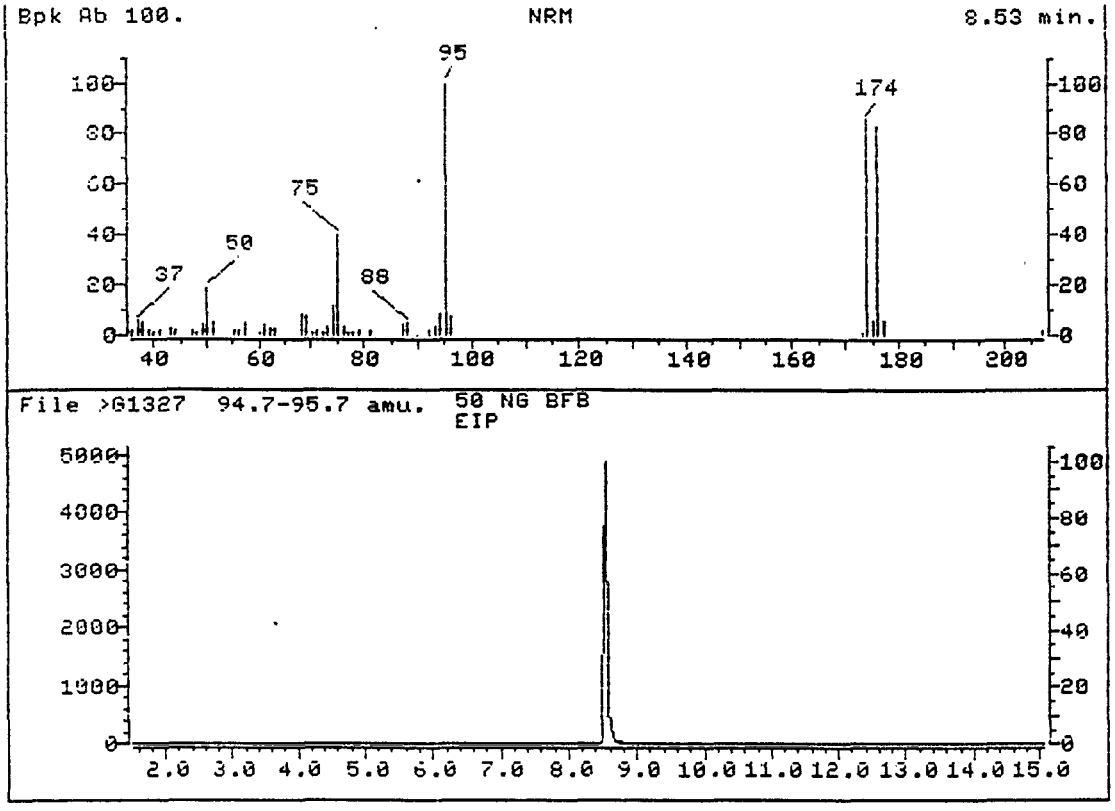
1327 50 NG BFB
360 NRM

File: G1327 Scan #: 360 Retn. time: 8.53

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.00	1.063	49.10	3.639	63.10	2.147	76.15	3.537	94.15	8.465
37.10	5.356	50.10	17.972	68.10	8.424	77.15	.859	95.15	100.000
38.10	4.621	51.10	4.989	69.15	7.688	78.05	.470	96.15	7.524
39.10	1.779	55.10	1.084	70.15	.981	79.05	1.390	173.15	.450
40.00	.695	56.10	1.656	71.15	1.615	81.05	1.247	174.15	85.995
41.10	1.165	57.10	4.519	72.15	.511	87.05	4.232	175.15	5.725
43.10	2.331	60.00	.777	73.15	3.210	88.05	4.478	176.15	82.805
44.10	1.493	61.10	3.639	74.15	11.143	92.15	1.554	177.15	5.541
47.10	1.349	62.10	2.699	75.15	39.746	93.15	2.822	207.20	1.595
48.00	.491								

000210

AR306418


Bpk Ab 100.
NRM
8.53 min.
95
174
75
50
37
88
100
80
60
40
20
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40
60
80
100
120
140
160
180
200
File >G1327 94.7-95.7 amu. 50 NG BFB
EIP
5000
4000
3000
2000
1000
0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	16.35	16.35	Ok
75	30-60% of mass 95	38.80	38.80	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.15	7.15	Ok
173	Less than 2% of mass 174	.56	.64	Ok
174	Greater than 50% of mass 95	87.77	87.77	Ok
175	5-9% of mass 174	6.34	7.23	Ok
176	95-101% of mass 174	86.37	98.40	Ok
177	5-9% of mass 176	5.85	6.77	Ok

Injection Date: 12/20/90
Injection Time: 09:28
Data File: >G1342
Scan: 362

>G1342 50 NG BFB
362 NRM

File: >G1342 Scan #: 362 Retn. time: 8.54

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.10	1.129	51.10	5.044	70.15	.718	80.05	.393	95.15	100.000
37.10	5.181	56.10	.940	72.05	.445	81.05	1.214	96.15	7.148
38.10	4.429	57.10	2.001	73.05	3.112	81.95	.274	130.00	.359
39.10	1.453	60.00	.718	74.15	10.482	87.05	4.001	173.05	.564
40.00	.718	61.00	3.283	75.15	38.800	88.05	4.189	174.15	87.774
43.10	.496	62.10	3.198	76.15	3.386	91.05	.256	175.15	6.344
44.00	1.556	63.00	1.949	77.05	.684	92.15	1.864	176.15	86.371
47.10	1.402	67.00	.256	78.05	.598	93.05	2.719	177.15	5.848
49.10	3.659	68.10	7.267	79.05	1.146	94.15	7.883	207.20	.530
50.10	16.347	69.15	7.319						

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

V BLANK 1

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 5 ml Lab File ID: >G1329

Level: (low/med) LOW Date Received: N/A

% Moisture: 100% Date Analyzed: 12/19/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	4.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	1.	J

QUANT REPORT

Operator ID: TS
Output File: ^G1329::D1
Data File: >G1329::D2
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS

Quant Rev: 6 Quant Time: 901219 21:52
Injected at: 901219 21:09
Dilution Factor: 1.00000

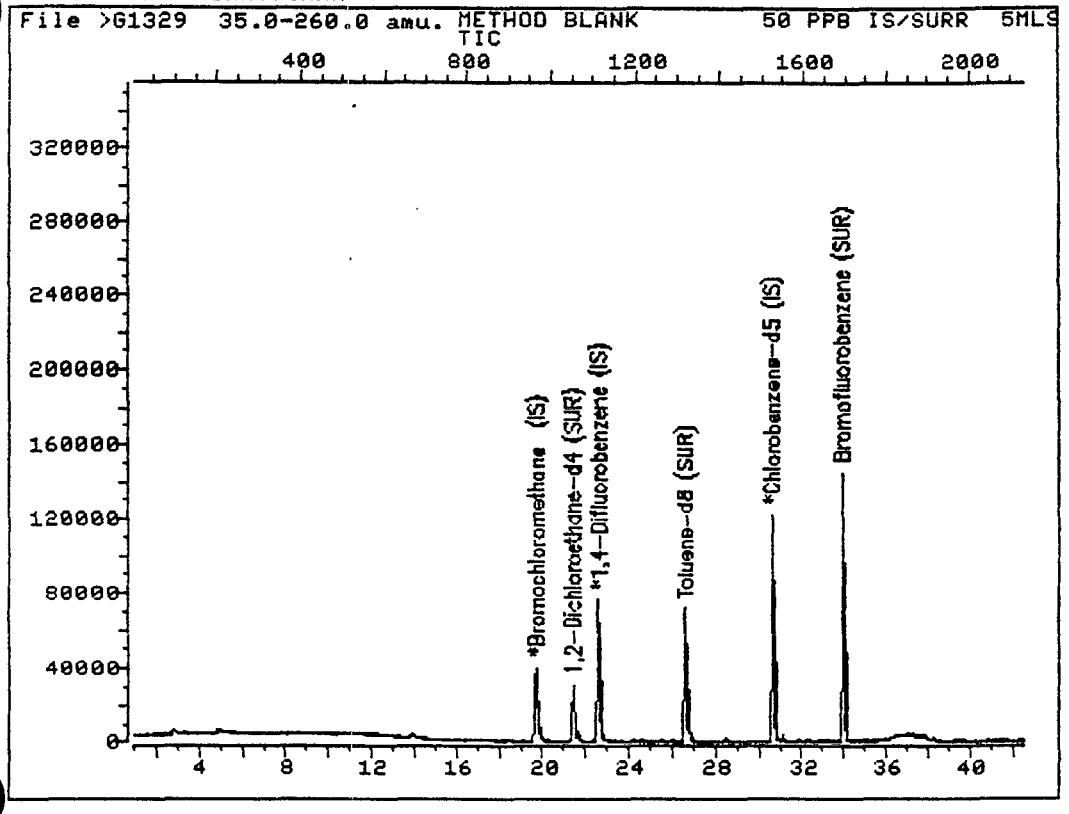
ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.70	961	54774	50.00	UG/L	91
8)	Acetone	11.10	520	8579	13.62	UG/L	89
11)	Methylene Chloride	13.87	662	7289	3.89	UG/L	80
21)	1,2-Dichloroethane-d4 (SUR)	21.38	1047	81694	49.03	UG/L 98	94
25)	**1,4-Difluorobenzene (IS)	22.59	1109	262242	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.59	1314	197689	49.37	UG/L 99	98
36)	Toluene	26.79	1324	13925	1.99	UG/L	99
42)	**Chlorobenzene-d5 (IS)	30.59	1519	267618	50.00	UG/L	99
46)	Xylene (total)	31.12	1546	3503	1.29	UG/L	93
50)	Bromofluorobenzene (SUR)	33.91	1689	197304	50.09	UG/L 100	94

* Compound is ISTD

$$51 = \frac{50}{54774} \cdot \frac{81694}{1.52101} = 49.03$$

TOTAL ION CHROMATOGRAM

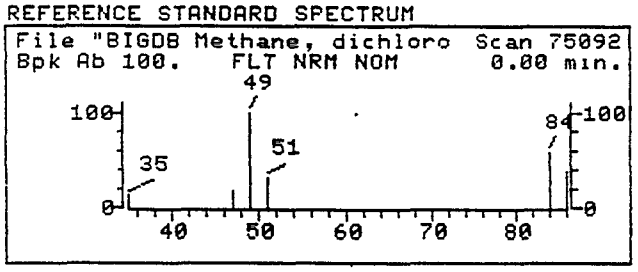


Data File: >G1329::D2 Quant Output File: ^G1329::D1
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS

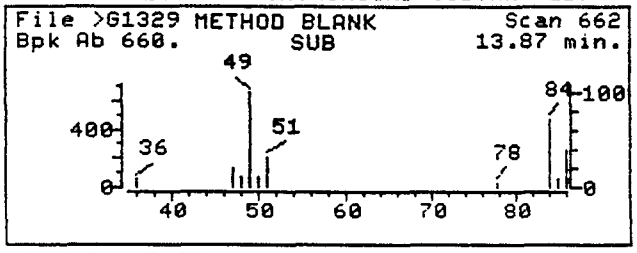
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901219 21:04

Operator ID: TS
Quant Time: 901219 21:52
Injected at: 901219 21:09

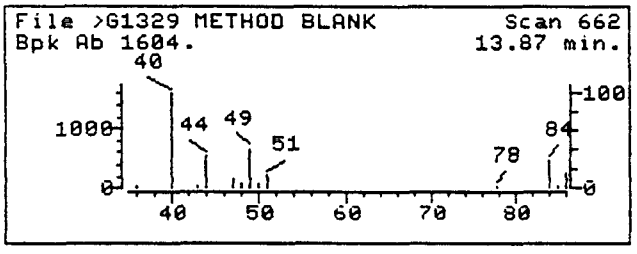
REFERENCE STANDARD SPECTRUM

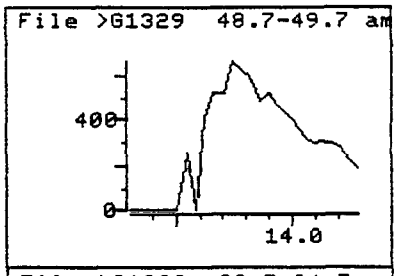


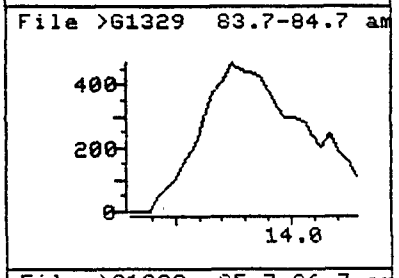
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

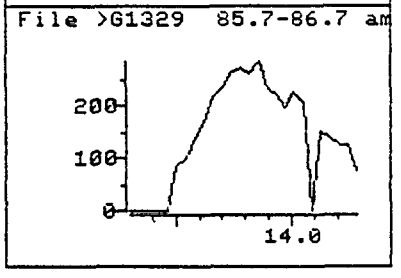


SAMPLE SPECTRUM (UNALTERED)





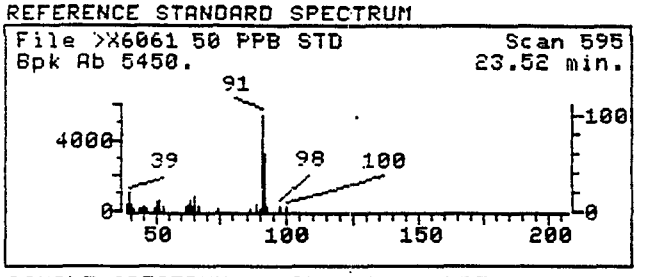




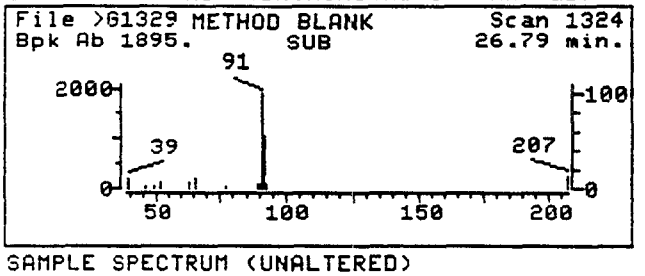
Data File: >G1329::D2 Quant Output File: ^G1329::D1
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901219 21:52 Quant ID File: RHMSUO::QT
Injected at: 901219 21:09 Last Calibration: 901219 21:04

Compound No: 11
Compound Name: Methylene Chloride
Scan Number: 662
Retention Time: 13.87 min.
Quant Ion: 84.0
Area: 7289
Concentration: 3.89 UG/L
q-value: 80

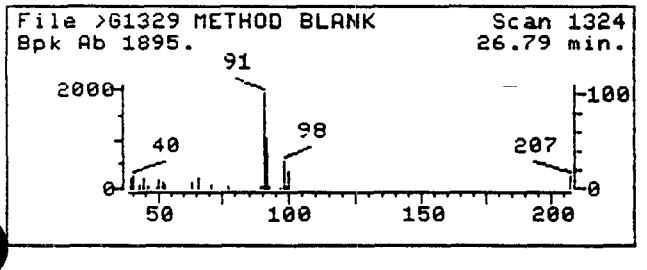
REFERENCE STANDARD SPECTRUM

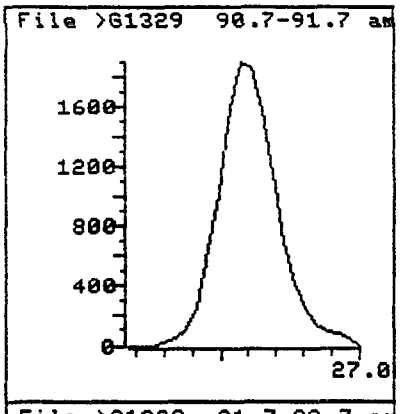


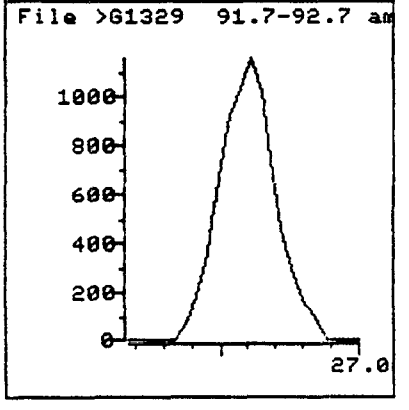
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







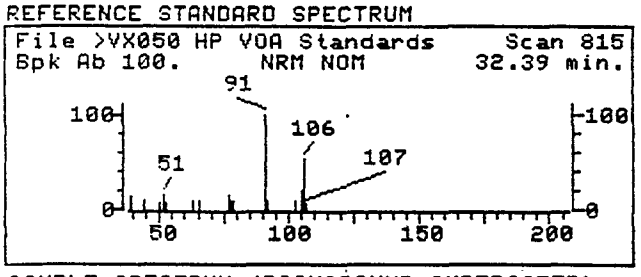
Data File: >G1329::D2
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901219 21:52
Injected at: 901219 21:09

Quant Output File: ^G1329::D1

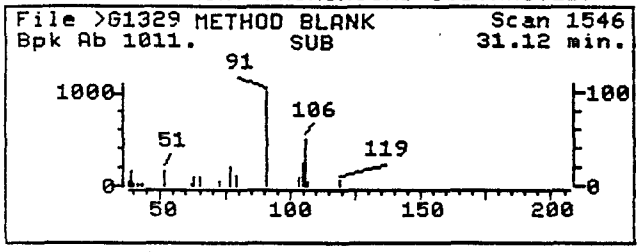
Quant ID File: RHMSV0::QT
Last Calibration: 901219 21:04

Compound No: 36
Compound Name: Toluene
Scan Number: 1324
Retention Time: 26.79 min.
Quant Ion: 91.0
Area: 13925
Concentration: 1.99 UG/L
q-value: 99

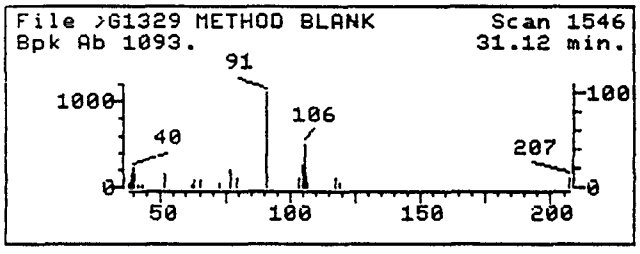
REFERENCE STANDARD SPECTRUM

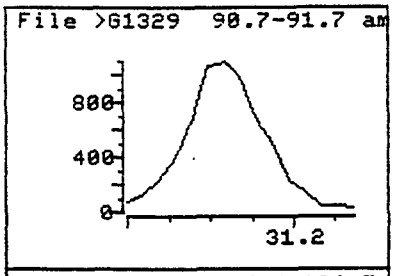


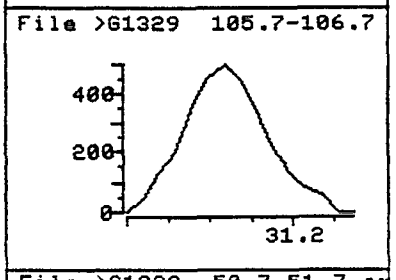
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

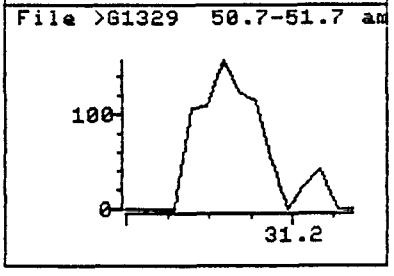


SAMPLE SPECTRUM (UNALTERED)









Data File: >G1329::D2
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901219 21:52
Injected at: 901219 21:09

Quant Output File: ^G1329::D1

Quant ID File: RHMSVO::QT
Last Calibration: 901219 21:04

Compound No: 46
Compound Name: Xylene (total)
Scan Number: 1546
Retention Time: 31.12 min.
Quant Ion: 106.0
Area: 3503
Concentration: 1.29 UG/L
q-value: 93

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. VBIK#1

Lab Name: Bem Labs Contract: Occidental Chemical

Lab Code: Bem Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) water Lab Sample ID: VBIK#

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1329

Level: (low/med) low Date Received: N/A

% Moisture: not dec. 100% Date Analyzed: 12-19-90

Column: (pack/cap) Cap Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		no Compounds found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1329

Sample: METHOD BLANK Operator: TS SUPER GRP. 12/19/90 21:09
Misc : 50 PPB IS/SURR 5MLS
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

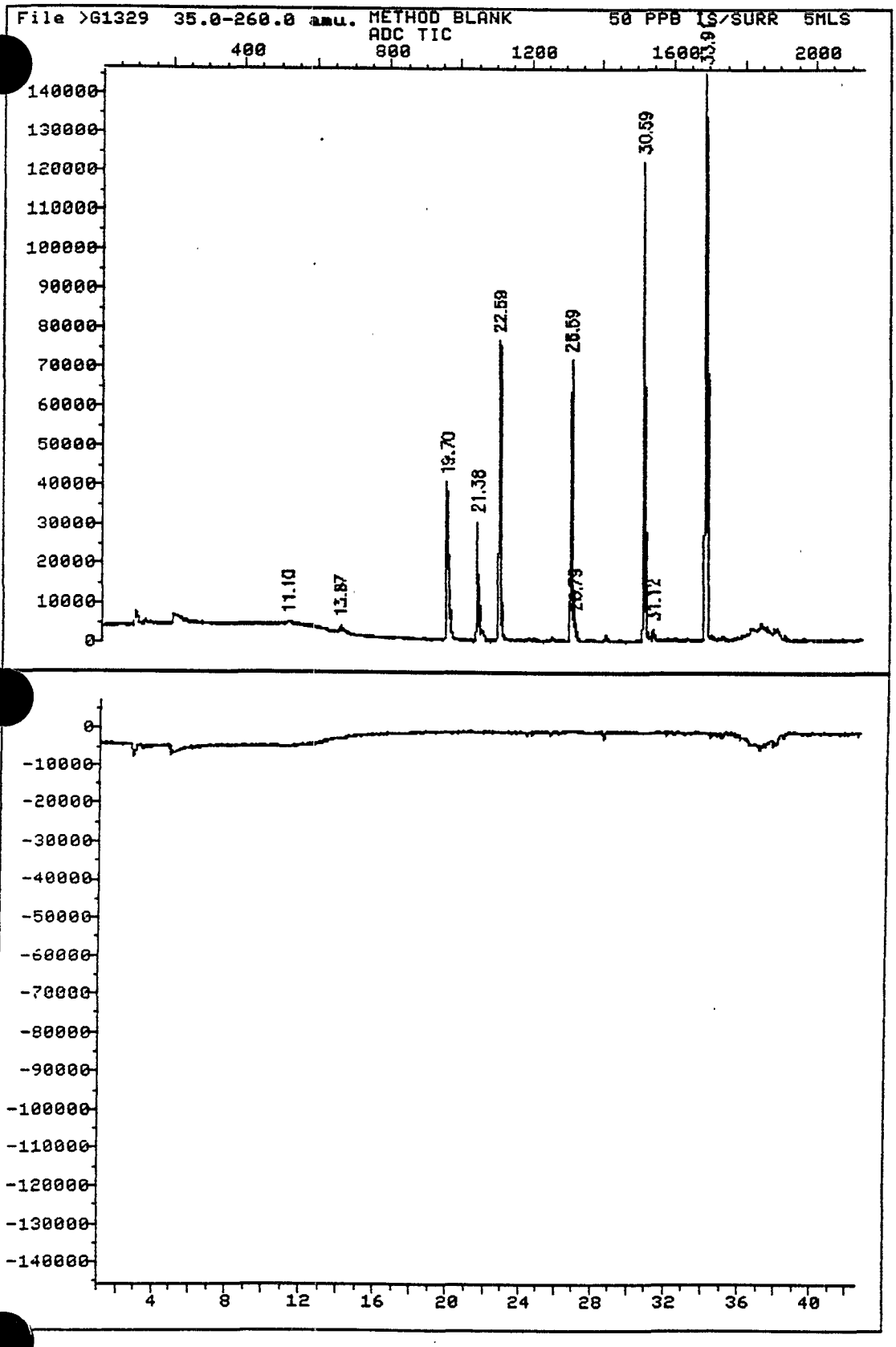
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	357823.	19.70	1.00 - 21.15
2	50.0	597907.	22.59	21.15 - 26.59
3	50.0	804477.	30.59	26.59 - 42.55

'^' Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

2:18 PM THU., 20 DEC., 1990


File >G1329 35.0-260.0 amu. METHOD BLANK 50 PPB IS/SURR 5MLS
ADC TIC
400
800
1200
1600
2000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
11.10
13.87
18.70
21.38
22.59
28.59
30.59
33.90
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
-100000
-110000
-120000
-130000
-140000
4
8
12
16
20
24
28
32
36
40

AR306430

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

V BLANK 2

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036654

Sample wt/vol: 5 ml Lab File ID: >G1344

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 12/20/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	2.	J
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

Operator ID: TS
Output File: ^G1344::D1
Data File: >G1344::D2
Name: MEHTOD BLANK 036654
Misc: 50 PPB IS/SURR 5MLS

Quant Rev: 6 Quant Time: 901220 12:06
Injected at: 901220 11:03
Dilution Factor: 1.00000

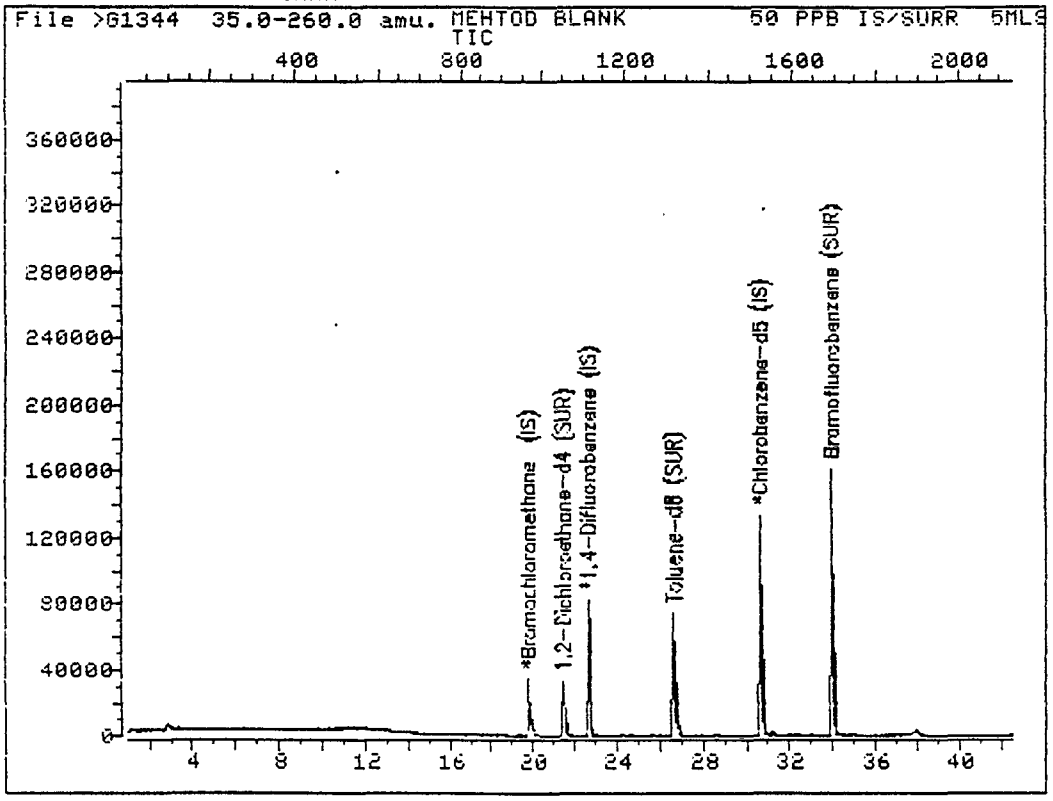
ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.76	962	53857	50.00	UG/L	95
11)	Methylene Chloride	13.95	664	3926	1.50	UG/L	71
21)	1,2-Dichloroethane-d4 (SUR)	21.44	1048	88695	48.94	UG/L 98	95
25)	**1,4-Difluorobenzene (IS)	22.65	1110	276897	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.63	1314	207560	50.93	UG/L 102	97
36)	Toluene	26.84	1325	16066	2.08	UG/L	99
42)	**Chlorobenzene-d5 (IS)	30.63	1519	283632	50.00	UG/L	99
50)	Bromofluorobenzene (SUR)	33.94	1689	221713	51.67	UG/L 103	91

* Compound is ISTD

$$S1 = \frac{50}{53857} \cdot \frac{88695}{1.68239} = 48.94$$

TOTAL ION CHROMATOGRAM

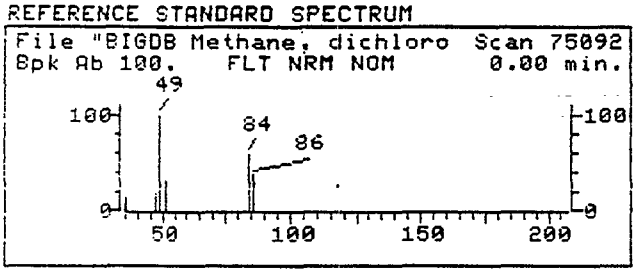


Data File: >G1344::D2 Quant Output File: ^G1344::D1
Name: MEHTOD BLANK
Misc: 50 PPB IS/SURR 5MLS

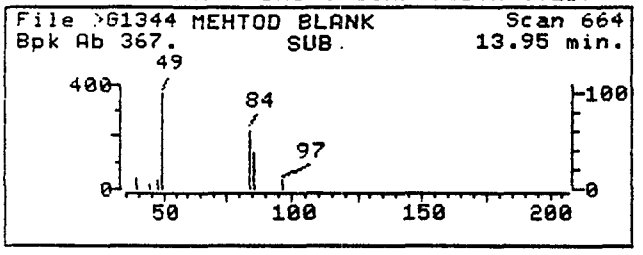
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901220 12:06

Operator ID: TS
Quant Time: 901220 12:06
Injected at: 901220 11:03

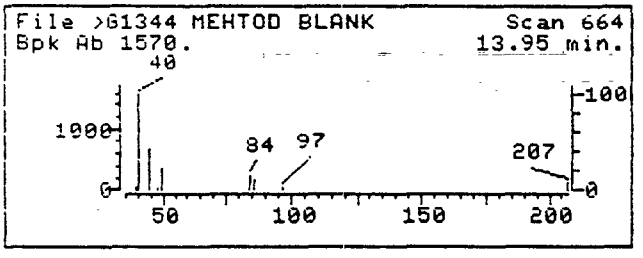
REFERENCE STANDARD SPECTRUM

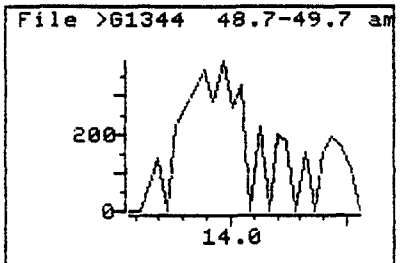


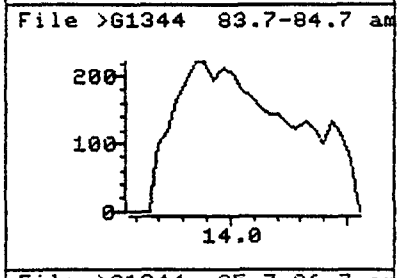
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

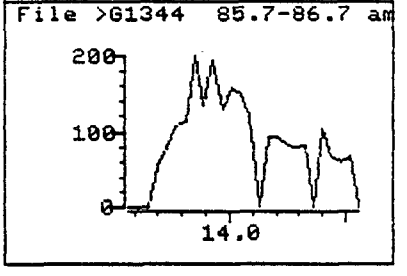


SAMPLE SPECTRUM (UNALTERED)





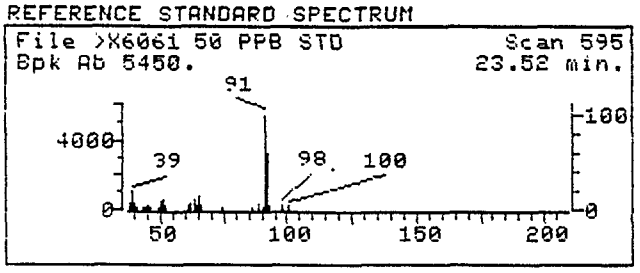




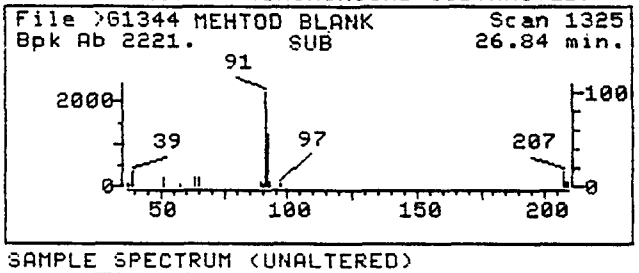
Data File: >G1344::D2 Quant Output File: ^G1344::D1
Name: MEHTOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901220 12:06 Quant ID File: RHMSVO::QT
Injected at: 901220 11:03 Last Calibration: 901220 12:06

Compound No: 11
Compound Name: Methylene Chloride
Scan Number: 664
Retention Time: 13.95 min.
Quant Ion: 84.0
Area: 3926
Concentration: 1.50 UG/L
q-value: 71

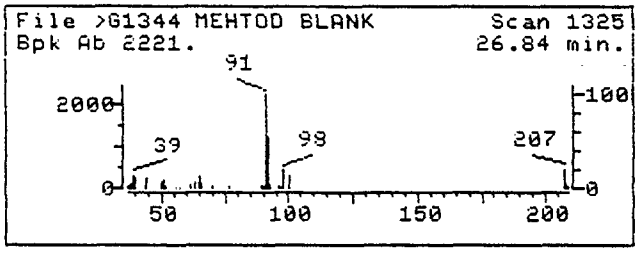
REFERENCE STANDARD SPECTRUM

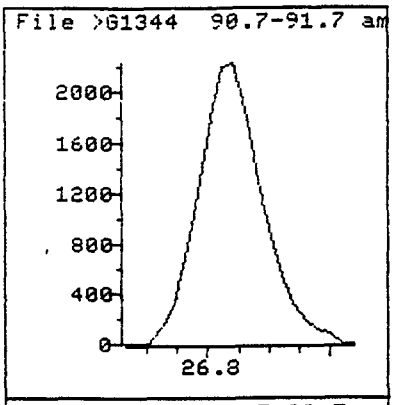


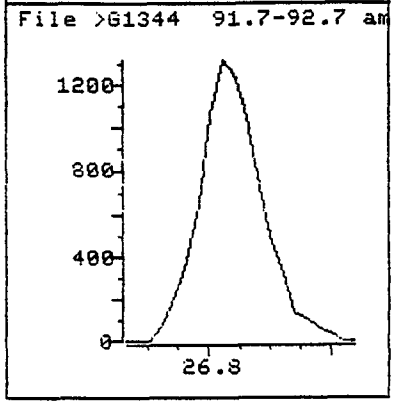
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >G1344::D2
Name: MEHTOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901220 12:06
Injected at: 901220 11:03

Quant Output File: ^G1344::D1

Quant ID File: RHMSUO::QT
Last Calibration: 901220 12:06

Compound No: 36
Compound Name: Toluene
Scan Number: 1325
Retention Time: 26.84 min.
Quant Ion: 91.0
Area: 16066
Concentration: 2.08 UG/L
q-value: 99

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBK#2
036654

Lab Name: BCM LAB Contract: Occidental

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: VBK#2 036654

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G-1344

Level: (low/med) LOW Date Received: 12-19-90

% Moisture: not dec. 100% Date Analyzed: 12-20-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1344

Sample: MEHTOD BLANK 036654 Operator: TS SUPER GRP. 12/20/90 11

Misc : 50 PPB IS/SURR 5MLS

Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0

Method file: SP1000 Tuning file: MT1020 No. of extra records: 2

Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1344 MEHTOD BLANK 50 PPB IS/SURR 5MLS

35.01 260.0 CLP TIC

Upslope: .20 Area Reject: 34846. Max Peaks: 1 Bunching: 1

Onslope: 0.00 Results File IG1344 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.81	87	93	107	4162	132424	44711	100.00	100.000

Sum of corrected areas: 44711.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	348462.	19.76	1.01 - 21.20
2	50.0	637675.	22.65	21.20 - 26.64
3	50.0	864646.	30.63	26.64 - 42.55

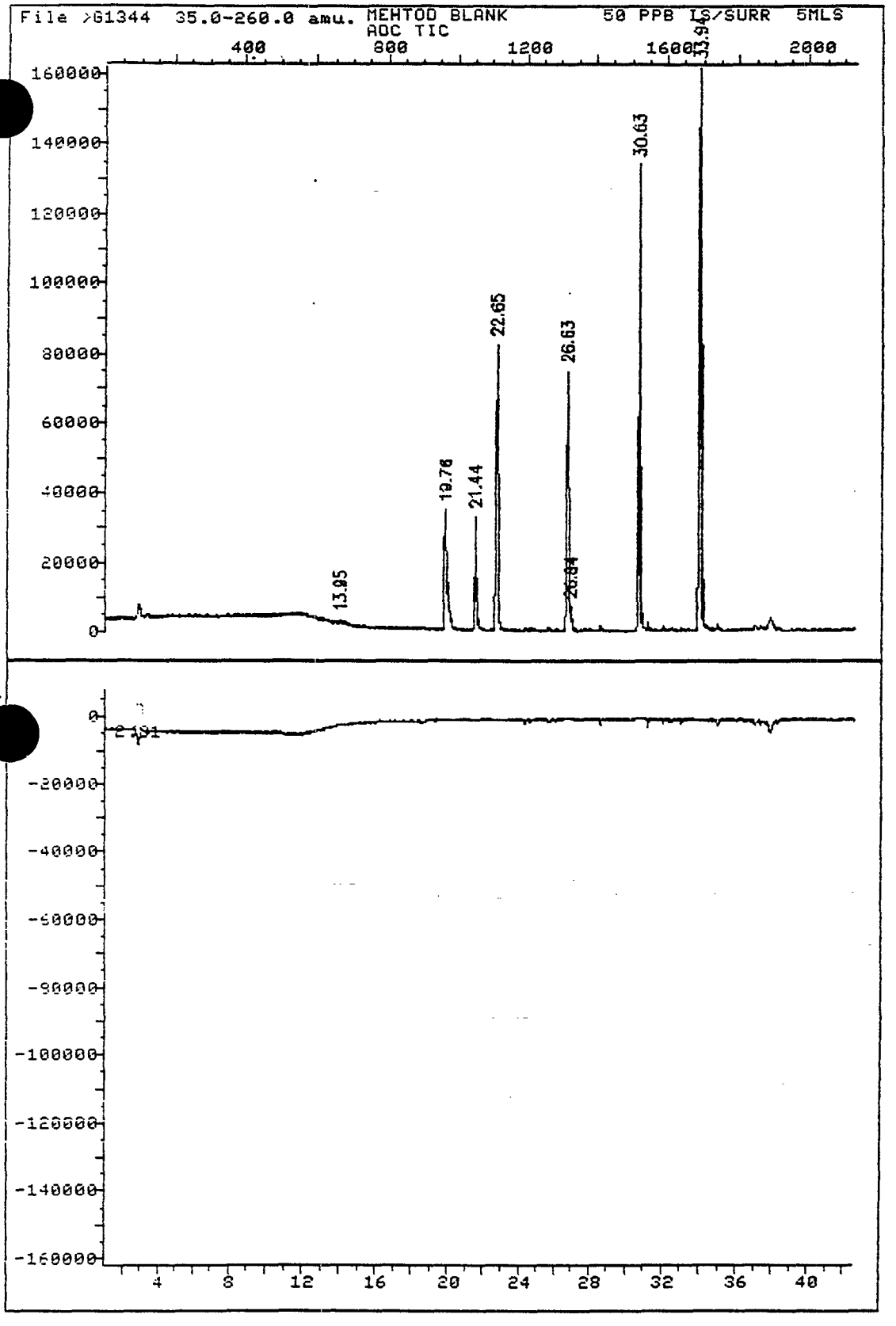
" Dilution Factor = 1.00 U dilf = 1.00

Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

12:50 AM FRI., 4 JAN., 1991


File >G1344 35.0-260.0 amu. MEHTOD BLANK 50 PPB IS/SURR 5MLS
ADC TIC
400
800
1200
1600
2000
160000
140000
120000
100000
80000
60000
40000
20000
0
13.95
19.76
21.44
22.65
26.63
26.84
30.63
33.94
-20000
-40000
-60000
-80000
-100000
-120000
-140000
-160000
4
8
12
16
20
24
28
32
36
40

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

V BLANK 3

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 5 ml Lab File ID: >G1484

Level: (low/med) LOW Date Received: N/A

% Moisture: 100% Date Analyzed: 12/30/90

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	8.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	5.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

Operator ID: TS
Output File: ^G1484::D1
Data File: >G1484::D2
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS

Quant Rev: 6 Quant Time: 901230 12:01
Injected at: 901230 11:17
Dilution Factor: 1.00000

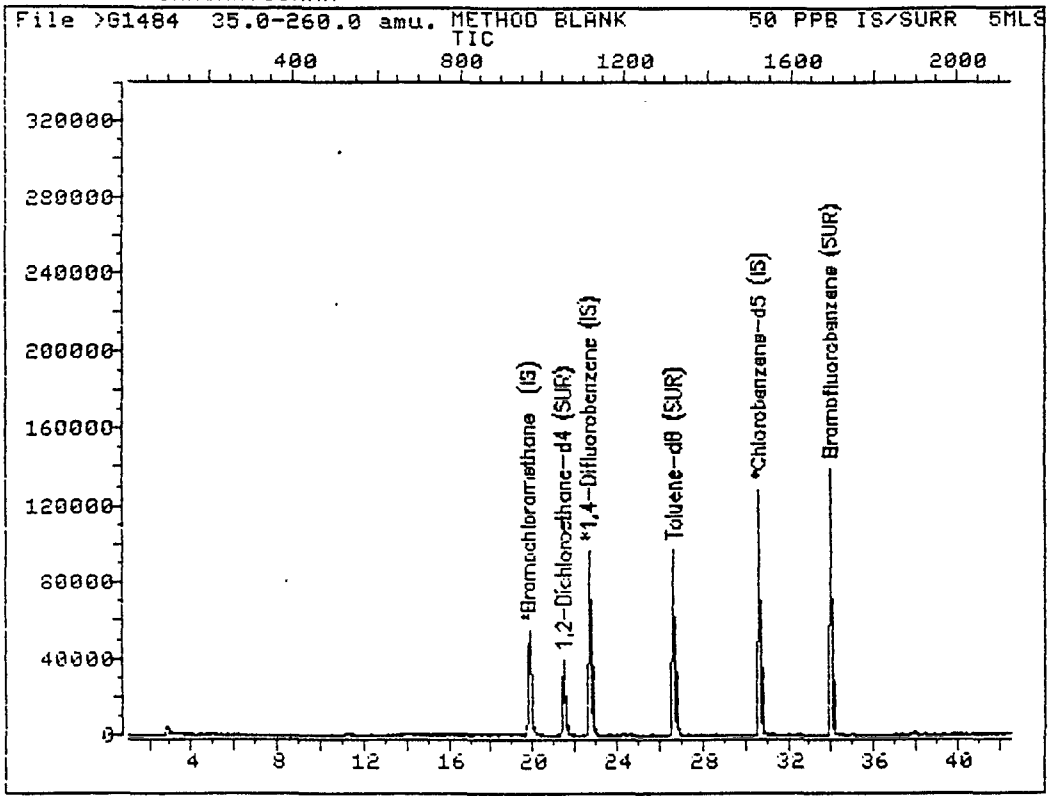
ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901230 11:55

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	**Bromochloromethane (IS)	19.74	961	76867	50.00	UG/L	92
8)	Acetone	11.26	526	4738	7.85	UG/L	92
21)	1,2-Dichloroethane-d4 (SUR)	21.42	1047	99709	49.79	UG/L 100	93
25)	**1,4-Difluorobenzene (IS)	22.63	1109	309525	50.00	UG/L	99
35)	Toluene-d8 (SUR)	26.63	1314	258729	51.35	UG/L 103	94
42)	**Chlorobenzene-d5 (IS)	30.61	1518	267734	50.00	UG/L	94
50)	Bromofluorobenzene (SUR)	33.93	1688	193079	50.27	UG/L 101	86

* Compound is ISTD

$$S1 = \frac{50}{76867} \cdot \frac{99709}{1.30265} = 49.79$$

TOTAL ION CHROMATOGRAM

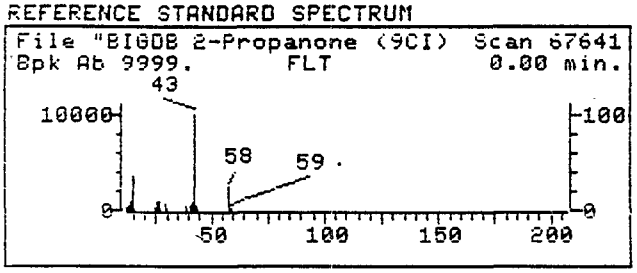


Data File: >G1484::D2 Quant Output File: ^G1484::D1
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS

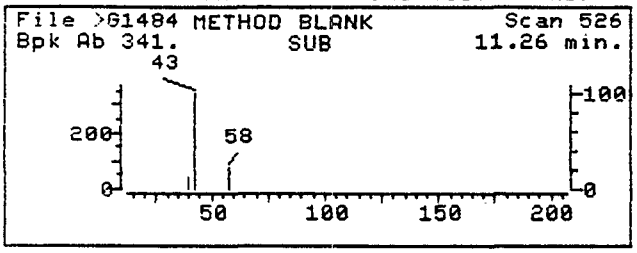
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 901230 11:55

Operator ID: TS
Quant Time: 901230 12:01
Injected at: 901230 11:17

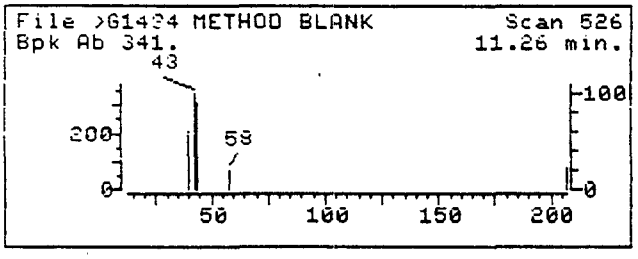
REFERENCE STANDARD SPECTRUM

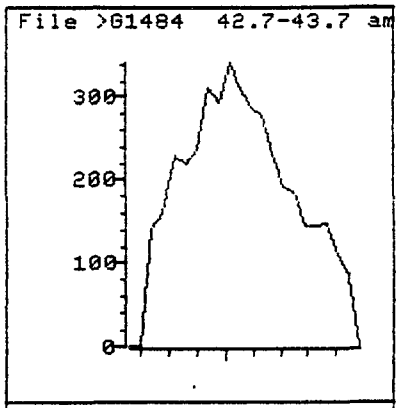


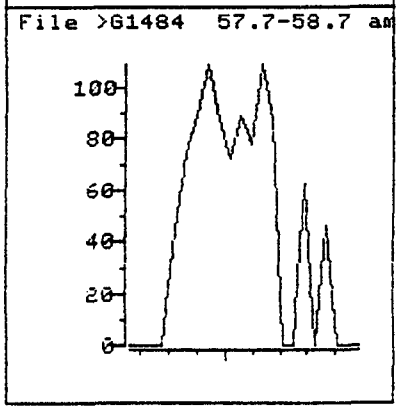
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >G1484::D2
Name: METHOD BLANK
Misc: 50 PPB IS/SURR 5MLS
Quant Time: 901230 12:01
Injected at: 901230 11:17

Quant Output File: ^G1484::D1

Quant ID File: RHMSUD::QT
Last Calibration: 901230 11:55

Compound No: 8
Compound Name: Acetone
Scan Number: 526
Retention Time: 11.26 min.
Quant Ion: 43.0
Area: 4738
Concentration: 7.85 UG/L
q-value: 92

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. V BLK#3

Lab Name: BOMLABS Contract: OCCIDENTAL Chem

Lab Code: BOM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: V BLK #

Sample wt/vol: 5 (g/mL) mL Lab File ID: >G1484

Level: (low/med) low Date Received: N/A

% Moisture: not dec. 100% Date Analyzed: 12-30-90

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		no peaks detected			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1484

Sample: METHOD BLANK Operator: TS SUPER GRP. 12/30/90 11:17
Misc : 50 PPB IS/SURR 5MLS
Sys. #: 2 MS model: 70 SW/HW rev.: 1A ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

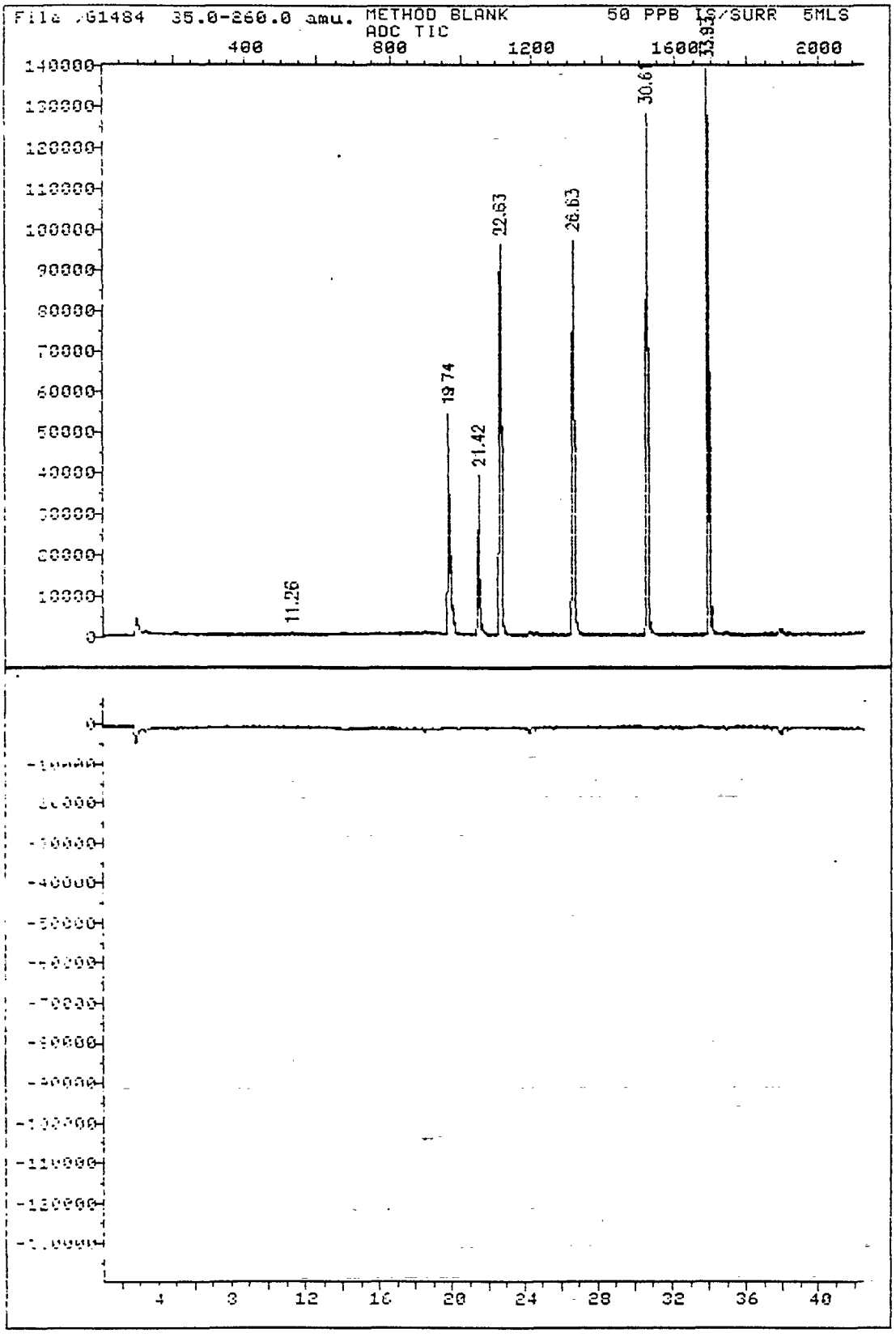
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	562235.	19.74	1.02 - 21.19
2	50.0	757221.	22.63	21.19 - 26.62
3	50.0	861397.	30.61	26.62 - 42.53

Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

3:34 PM SUN., 30 DEC., 1990


File :61484 35.0-260.0 amu. METHOD BLANK 50 PPB IS/SURR 5MLS
ADC TIC
400
800
1200
1600
2000
140000
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
11.26
19.74
21.42
22.63
26.63
30.61
33.93
4
8
12
16
20
24
28
32
36
40

EPA SAMPLE NO.

V BLANK 4

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: M BLANK

Sample wt/vol: 5 ml Lab File ID: >G1823

Level: (low/med) LOW Date Received: N/A

% Moisture: 100% Date Analyzed: 01/16/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	2.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

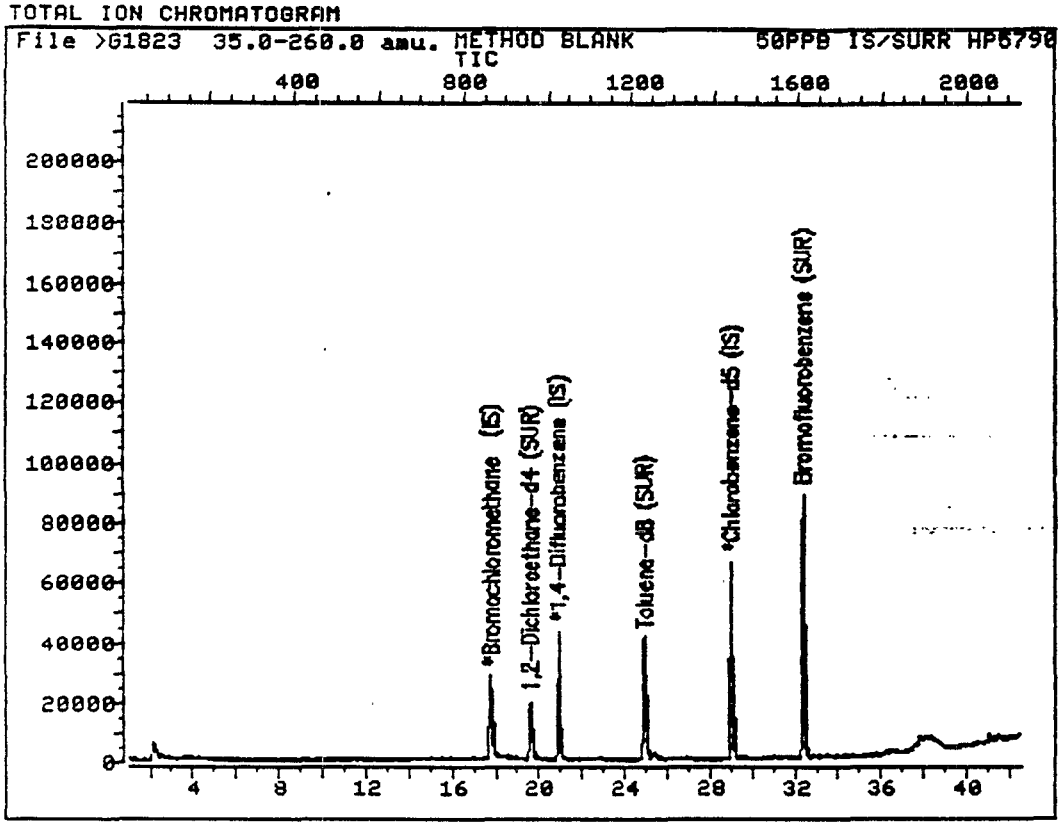
Operator ID: TLS Quant Rev: 6 Quant Time: 910117 08:17
Output File: ^G1823::D1 Injected at: 910116 22:20
Data File: >G1823::D2 Dilution Factor: 1.00000
Name: METHOD BLANK
Misc: 50PPB IS/SURR HP5790-3 5MLS

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 910117 08:17

	Compound	R.T.	Scan#	Area	Conc	Units	q	
1)	**Bromochloromethane (IS)	17.77	859	37410M	50.00	UG/L		
2)	Chloromethane	2.25	64	174	~~1.47~~	UG/L		82
8)	Acetone	9.20	420	464	1.60	UG/L		99
9)	Acrolein	9.50	435	380	~~3.25~~	UG/L		78
21)	1,2-Dichloroethane-d4 (SUR)	19.57	951	71405	48.73	UG/L	97	85
25)	**1,4-Difluorobenzene (IS)	20.86	1017	134866	50.00	UG/L		98
35)	Toluene-d8 (SUR)	24.92	1225	110726	51.44	UG/L	103	93
42)	**Chlorobenzene-d5 (IS)	28.98	1433	129099	50.00	UG/L		97
50)	Bromofluorobenzene (SUR)	32.36	1606	101433	53.53	UG/L	107	95

* Compound is ISTD

TOTAL ION CHROMATOGRAM

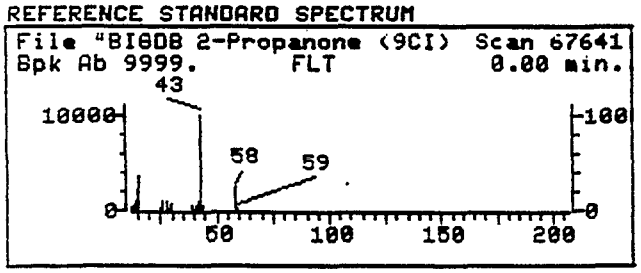


Data File: >G1823::D2 Quant Output File: ^G1823::D1
Name: METHOD BLANK
Misc: 50PPB IS/SURR HP5790-3 5MLS

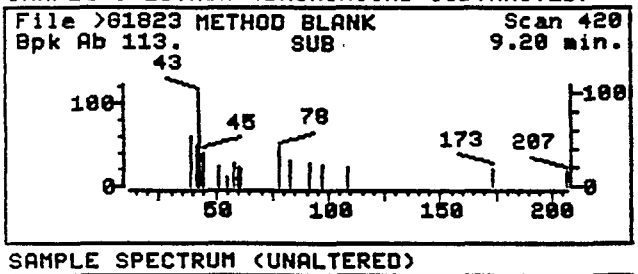
Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 910117 08:17

Operator ID: TLS
Quant Time: 910117 08:17
Injected at: 910116 22:20

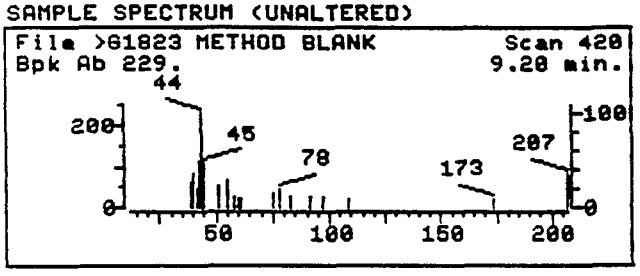
REFERENCE STANDARD SPECTRUM

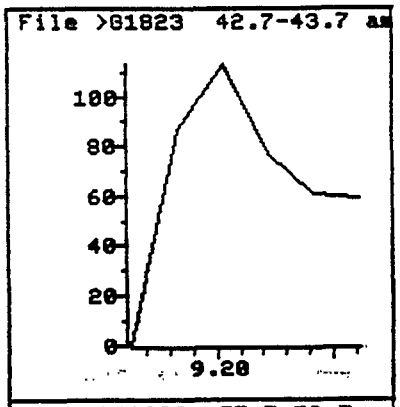


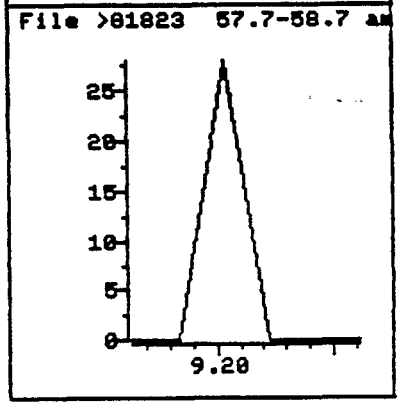
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >G1823::D2 Quant Output File: ^G1823::D1
Name: METHOD BLANK
Misc: 50PPB IS/SURR HP5790-3 5MLS
Quant Time: 910117 08:17 Quant ID File: RHMSV0::QT
Injected at: 910116 22:20 Last Calibration: 910117 08:17

Compound No: 8
Compound Name: Acetone
Scan Number: 420
Retention Time: 9.20 min.
Quant Ion: 43.0
Area: 464
Concentration: 1.60 UG/L
q-value: 99

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. VBLK#4

Lab Name: BCM Labs Contract: OCCidental Chemical

Lab Code: BCM Case No.: 37932 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Water Lab Sample ID: VBLK#4

Sample wt/vol: 5 (g/mL) mL Lab File ID: >61823

Level: (low/med) Low Date Received: N/A

% Moisture: not dec. 100% Date Analyzed: 1-16-91

Column: (pack/cap) CAP. Dilution Factor: 1.0

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Compounds Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

MS data file header from : >G1823

Sample: METHOD BLANK Operator: TLS REG. GRP. 1/16/91 2[redacted]
Misc : 50PPB IS/SURR HP5790-3 5MLS
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: SP1000 Tuning file: MT1020 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 250 Transfer line temp. : 0

Chromatographic temperatures :	10.	180.	0.	0.	0.
Chromatographic times, min. :	10.0	2.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	5.0	0.0	0.0	.5	0.0

>G1823 METHOD BLANK 50PPB IS/SURR HP5790-3 5MLS
35.0[illegible] 260.0 CLP TIC
Upslope: .20 Area Reject: 24339. Max Peaks: 1 Bunching: 1
Dnslope: 0.00 Results File IG1823 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	2.13	54	58	59	6190	30351	25105	100.00	100.00[illegible]

Sum of corrected areas: 25105.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	243391.	17.77	1.02 - 19.32
2	50.0	359374.	20.86	19.32 - 24.92
3	50.0	436277.	28.98	24.92 - 42.52

'^' Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

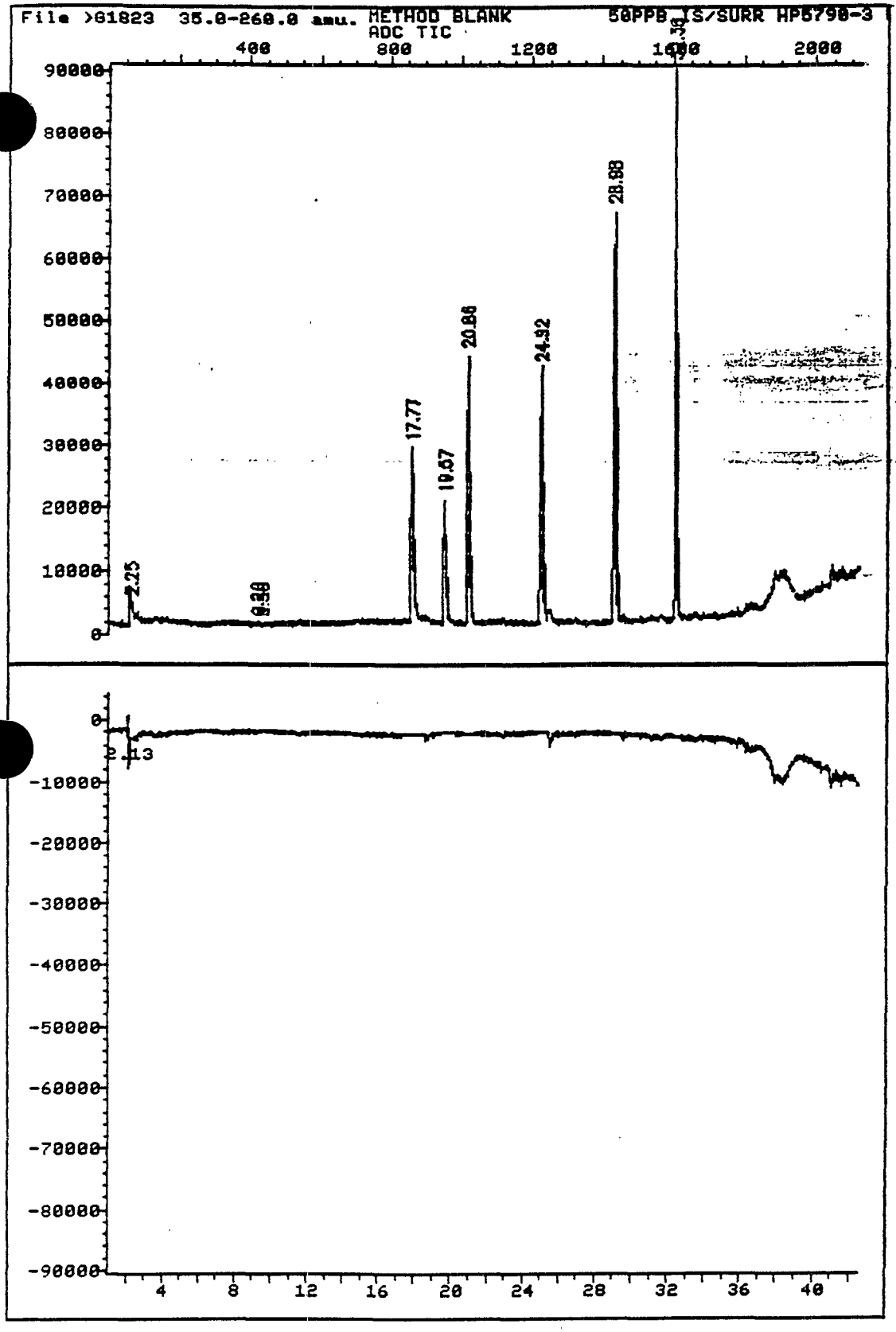
Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

6:35 PM THU., 17 JAN., 1991

000254

AR306451


File >01823 35.0-260.0 amu. METHOD BLANK
ADC TIC
50PPB IS/SURR HP5790-3
400
800
1200
1600
2000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
2.25
9.38
17.77
19.57
20.86
24.92
28.88
30.
-10000
-20000
-30000
-40000
-50000
-60000
-70000
-80000
-90000
4
8
12
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24
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32
36
40

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036656

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036656

Sample wt/vol: 5 ml Lab File ID: >G1826

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 01/17/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	2.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	NR.	
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	NR.	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	NR.	
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	NR.	
108-90-7	Chlorobenzene	NR.	
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

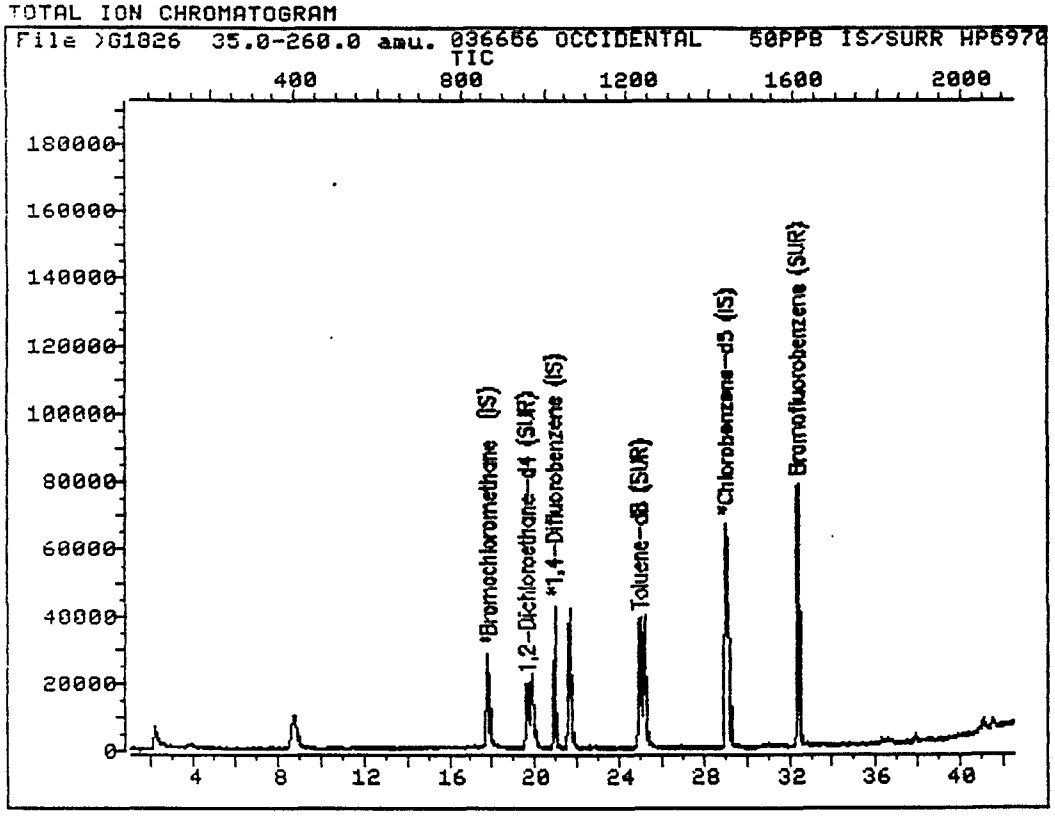
Operator ID: TS Quant Rev: 6 Quant Time: 910117 08:29
Output File: ^G1826::D1 Injected at: 910117 00:17
Data File: >G1826::D2 Dilution Factor: 1.00000
Name: 036656 OCCIDENTAL
Misc: 50PPB IS/SURR HP5970-3 5MLS

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 910117 08:17

	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	**Bromochloromethane (IS)	17.78	859	35052	50.00	UG/L		96
2)	Chloromethane	2.51	77	811	~~2.32~~	UG/L		81
8)	Acetone	8.68	393	650	2.40	UG/L		96
10)	1,1-Dichloroethene	8.72	395	31578	50.75	UG/L		86
21)	1,2-Dichloroethane-d4 (SUR)	19.58	951	70029	51.01	UG/L	102	81
25)	**1,4-Difluorobenzene (IS)	20.89	1018	124496	50.00	UG/L		99
26)	Benzene	19.77	961	76698	49.91	UG/L		95
27)	Trichloroethene	21.63	1056	55729	50.19	UG/L		84
35)	Toluene-d8 (SUR)	24.93	1225	103324	51.99	UG/L	104	94
36)	Toluene	25.14	1236	109667	51.71	UG/L		99
42)	**Chlorobenzene-d5 (IS)	28.99	1433	119512	50.00	UG/L		98
43)	Chlorobenzene	29.09	1438	99354	53.48	UG/L		93
50)	Bromofluorobenzene (SUR)	32.35	1605	93699	53.41	UG/L	107	90

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >G1826::D2 Quant Output File: ^G1826::D1
Name: 036656 OCCIDENTAL
Misc: 50PPB IS/SURR HP5970-3 5MLS

Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 910117 08:17

Operator ID: TS
Quant Time: 910117 08:29
Injected at: 910117 00:17

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

036655

Lab Name: BCM LABS Contract: OCCIDENTAL CHEMICAL

Lab Code: BCM Case No.: 37932

Matrix: (soil/water) WATER Lab Sample ID: 036655

Sample wt/vol: 5 ml Lab File ID: >G1825

Level: (low/med) LOW Date Received: 12/18/90

% Moisture: 100% Date Analyzed: 01/16/91

Column: (pack/cap) CAP Dilution Factor: 1.0

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	5.	U
67-64-1	Acetone	1.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	NR.	
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-02-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	NR.	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	NR.	
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	NR.	
108-90-7	Chlorobenzene	NR.	
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
133-02-7	Xylene (total)	5.	U

QUANT REPORT

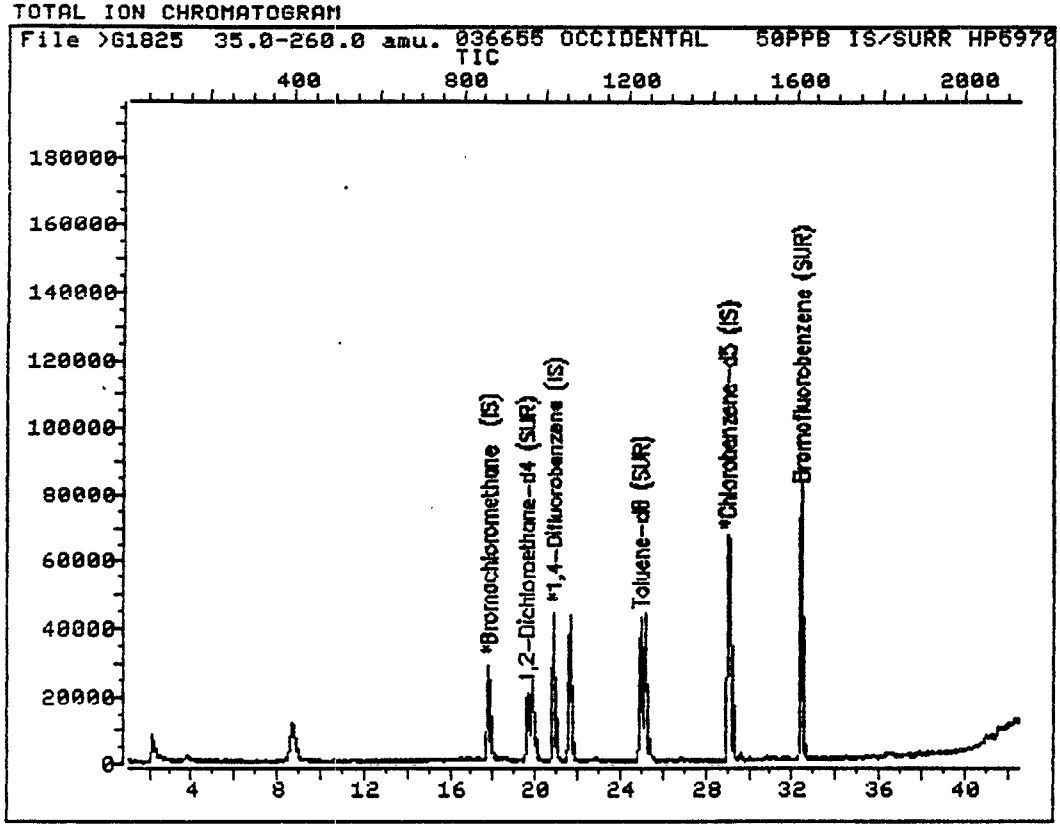
Operator ID: TS Quant Rev: 6 Quant Time: 910117 08:22
Output File: ^G1825::D1 Injected at: 910116 23:25
Data File: >G1825::D2 Dilution Factor: 1.00000
Name: 036655 OCCIDENTAL
Misc: 50PPB IS/SURR HP5970-3 5MLS

ID File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 910117 08:17

	Compound	R.T.	Scan#	Area	Conc	Units		q
1)	**Bromochloromethane (IS)	17.77	859	36117M	50.00	UG/L		87
8)	Acetone	8.94	407	408	1.46	UG/L	✓	83
10)	1,1-Dichloroethene	8.71	395	34010	53.05	UG/L		85
21)	1,2-Dichloroethane-d4 (SUR)	19.56	951	72741	51.42	UG/L	103	83
25)	**1,4-Difluorobenzene (IS)	20.87	1018	137691	50.00	UG/L		99
26)	Benzene	19.78	962	82609	48.61	UG/L		97
27)	Trichloroethene	21.63	1057	60558	49.31	UG/L		85
35)	Toluene-d8 (SUR)	24.93	1226	111619	50.79	UG/L	102	98
36)	Toluene	25.15	1237	115622	49.29	UG/L		95
42)	**Chlorobenzene-d5 (IS)	28.98	1433	124952	50.00	UG/L		90
43)	Chlorobenzene	29.07	1438	101917	52.47	UG/L		94
50)	Bromofluorobenzene (SUR)	32.38	1607	97962	53.41	UG/L	107	87

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >G1825::D2 Quant Output File: ^G1825::D1
Name: 036655 OCCIDENTAL
Misc: 50PPB IS/SURR HP5970-3 5MLS

Id File: RHMSVO::QT
Title: VOLATILE ORGANIC COMPOUNDS
Last Calibration: 910117 08:17

Operator ID: TS
Quant Time: 910117 08:22
Injected at: 910116 23:25

BCM Laboratory Analytical Data Package

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401

Lab. Cert. # : NJ 77175
PA 46-007

Data Package

Client: OCCIDENTAL CHEMICAL

Project No.: 00-4064-13

Project Manager:

Order: 37932

LOCATION	SAMPLE ID	BCM No.	LOCATION	SAMPLE ID	BCM No.	LOCATION	SAMPLE ID	BCM No.
OXY-SR-3-SW		036651	OXY-SR-3A-SW		036652	METHOD BLANK		036654
DUP 036651		036655	SPIKE 036651		036656	OXY-SR-1-SW		036754
OXY-SR-2-SW		036755	OXY-SR-4-SW		036756	OXY-SR-3-2-SW		037118
OXY-SR-3-3-SW		037119						

This case includes the following packages:

	BCM	Subcontractor
GC/MS Volatiles	[✓]	[ ]
GC/MS Semi-Volatiles	[✓]	[ ]
Metals	[✓]	[ ]
Micro	[ ]	[ ]
WetChem	[✓]	[ ]
GC	[ ]	[ ]

This is the GC/MS Semivolatiles package for this case.

Data Package audited by Joanne Gumble Date 1/16/91