DEC 29 1999

ENGINEERING DATA TRANSMITTAL

Page 1 of 1
1. EDT No 612200

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) Waste Management Hanford		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: Tank Z-361, Characterization Project Management		6. Design Authority/ Design Agent/Cog. Engr.: R. S. Viswanath		7. Purchase Order No.: N/A	
8. Originator Remarks: This document is being released as a supporting document for retrievability purposes.				9. Equip./Component No.: N/A	
				10. System/Bldg./Facility: 241-Z-361	
11. Receiver Remarks: For Release 11A. Design Baseline Document? ☐ Yes ☒ No				12. Major Assm. Dwg. No.: N/A	
				13. Permit/Permit Application No.: N/A	
				14. Required Response Date: 12/27/99	

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-5367	N/A	0	Tank Vapor Sampling and Analysis Data Package for Tank 241-Z-361, Sampled September 22 and 27, 1999, During Sludge Core Removal	Q	2	1	1

16. KEY			
Approval Designator (F)	Reason for Transmittal (G)		Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
		Design Authority									
		Design Agent									
2	1	Cog. Mgr.	RS Viswanath	12/27/99							
2	1	QA	KM Meier	12/27/99							
2	1	Cog. Eng.	GA Fies	12/27/99							
		Safety									
		Env.									

18. GA Fies <i>[Signature]</i> Signature of EDT Originator Date 12/27/99	19. _____ Authorized Representative Date _____ for Receiving Organization	20. <i>[Signature]</i> RS Viswanath Design Authority/ Cognizant Manager Date 12/27/99	21. DOE APPROVAL (if required) N/A Ctrl. No. _____ ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	Waste Management Hanford	Date 12/27/99
Project Title/Work Order		EDT No. 612200
Tank Z-361, Characterization Project		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
R. A. Bechtold	K7-22	X			
D. M. Bogen	T2-12				X
R. A. Esch	T6-12				X
C. Defigh-Price	R2-12	X			
K. L. Powell	S3-30				X
L. L. Reed	T5-57				X
L. M. Sasaki	R2-12				X
C. A. Simonen	K6-80				X
R. S. Viswanath	S3-90	X			
Central Files	A3-88	X			

S

HNF-5367, Rev. 0

Tank Vapor Sampling and Analysis Data Package for Tank 241-Z-361, Sampled September 22 and 27, 1999, During Sludge Core Removal

R. S. Viswanath
Waste Management Hanford, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: EDT-612200 UC: 2070
Org Code: 31E00 CACN/COA Code: 102317/ES23
B&R Code: EW3130030 Total Pages: 328

Key Words: Tank 241-Z-361, headspace, vapor, SUMMATM, sludge, analysis, organic, and sampling

Abstract: This data package presents field data and analytical results from the September 22 and 27, 1999, headspace vapor sampling of Hanford Site single-shell tank 241-Z-361 during sludge core removal.

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Release Approval
Date 12/28/99

Approved for Public Release

Tank Vapor Sampling and Analysis Data Package for Tank 241-Z-361, Sampled September 22 and 27, 1999, During Sludge Core Removal

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L. D. Lockard
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Waste Management Federal Services of Hanford, Inc.

Date Published
December, 1999

Prepared for the U.S. Department of Energy
Office of Environmental Restoration and Waste Management

Approved for public release; distribution is unlimited

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DATA PACKAGE SIGNATURES

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Waste Management Federal Services of Hanford, Inc.

12-27-99
date

K. M. Meier, Quality Assurance Officer
Waste Management Federal Services of Hanford, Inc.

12-27-99

date

G. A. Fies, Document Assembler
COGEMA Engineering Corp.

12/21/99

date

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EXECUTIVE SUMMARY

This data package presents sampling data and analytical results from the September 22 and 27, 1999, headspace vapor sampling of Hanford Site Tank 241-Z-361 during sludge core removal. The Lockheed Martin Hanford Corporation (LMHC) sampling team collected the samples and Waste Management Laboratory (WML) analyzed the samples in accordance with the requirements specified in the *241-Z-361 Sludge Characterization Sampling and Analysis Plan*, (SAP), HNF-4371, Rev. 1, (Babcock and Wilcox Hanford Corporation, 1999).

Six SUMMATM canister samples were collected on each day (1 ambient field blank and 5 tank vapor samples collected when each core segment was removed). The samples were radiologically released on September 28 and October 4, 1999, and received at the laboratory on September 29 and October 6, 1999.

Target analytes were not detected at concentrations greater than their notification limits as specified in the SAP. Analytical results for the target analytes and tentatively identified compounds (TICs) are presented in Section 2.2.2 starting on page 2B-7. Three compounds identified for analysis in the SAP were analyzed as TICs. The discussion of this modification is presented in Section 2.2.1.2.

SUMMA is a registered trademark of Molectrics, Inc., Cleveland, Ohio.

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ABBREVIATIONS AND ACRONYMS

CCVS	continuing calibration verification standard
COC	chain of custody
CPO	Characterization Project Operations
DP	data package
EPA	Environmental Protection Agency
GC	gas chromatography
GC/MS	gas chromatography - mass spectrometry
HP	Hewlett - Packard
ICAL	initial calibration
ICVS	initial calibration verification standard
LCS	laboratory control sample
LEL	lower explosive limit
LMHC	Lockheed Martin Hanford Corporation
MB	method blank
mg/m ³	milligrams per cubic meter
MS	mass spectrometry
NIST	National Institute of Standards and Technology
ppbv	parts-per-billion by volume
Rev	revision
RMA	radioactive material area
RPD	relative percent difference
RPP	River Protection Project
RSD	relative standard deviation
TIC	tentatively identified compound
TO-14	EPA toxic organic method
VOC	volatile organic compound
VPRQL	Vapor Program Required Quantitation Limit
°C	degrees Celsius
%R	percent recovery

DOCUMENT INVENTORY FORM

Upon assembly of the complete data package, the document assembler shall verify that each required item is contained in the data package and check the box on this form associated with the required item. The document assembler shall then print his/her name, sign, and date in the assembler's signature block when all items have been checked.

Prefatory Elements:

- ☒ distribution list (form A-6000-135)
- ☒ Engineering Data Transmittal form (form BD-7400-172)
- ☒ Supporting Document cover page (form A-6400-073)
- ☒ title page
- ☒ executive summary
- ☒ table of contents
- ☒ list of abbreviations and acronyms
- ☒ document inventory form
- ☒ quality assurance data package review results
- ☐ non-conformance reports OR
 - ☒ non-conformance reports not applicable

Sampling Elements:

- ☒ sampling case narrative
- ☒ sampling procedures table
- ☒ sampling logbook table
- ☒ industrial hygiene screening data
- ☒ sample radiation screening results
- ☒ chain of custody forms

Analyses Elements:

- ☒ analytical case narrative
- ☒ analytical procedures identification table
- ☒ data qualifier flag translation table
- ☒ target analyte and duplicates concentration table
- ☒ tentatively identified compound concentration table
- ☒ laboratory blank summary
- ☒ field blank summary
- ☒ mass spectrometer instrument tune report
- ☒ target analyte initial calibration table
- ☒ target analyte continuing calibration table
- ☒ internal standards area counts table
- ☒ laboratory control sample results table
- ☒ quantitation reports
- ☒ chromatograms
- ☒ mass spectra of reported tentatively identified compounds

Greg A. Fies
Document Assembler (print name)

[Signature]
Document Assembler (sign)

12/21/99
date

DATA PACKAGE QUALITY ASSURANCE REVIEW

Date reviewed: 12/09/99 - 12/17/99

Reviewed by: K. M. Meier

ORGANIC DATA ASSESSMENT SUMMARY

	LA-523-404
Holding Time	0
LCS	0
Blanks	X
CCVS	X
GC/MS Tune	0
Calibration	X
Internal Standards	X

OVERALL ASSESSMENT: Data acceptable with qualifiers

0 = data had no problems

X = data qualified with minor problems

N = data qualified with major problems, some data may be unusable

n/a = not applicable

COMMENTS:

NONCONFORMANCE REPORTS

Nonconformance reports were not generated during the sampling and analysis events described in this data package.

1.0 Sampling Section

This page intentionally left blank.

1.1 SCOPE

The sampling section of this data package presents information and sampling data resulting from the September 22 and 27, 1999, vapor sampling of Tank 241-Z-361. The Lockheed Martin Hanford Corporation (LMHC) sampling team collected these samples for the River Protection Project (RPP) in accordance with the sampling requirements specified in the *241-Z-361 Sludge Characterization Sampling and Analysis Plan*, (SAP), HNF-4371, Rev. 1, (BWHC, 1999). The WML project file for this sampling event is numbered V9018. The analytical results from these samples are presented in the analyses section of this data package.

WML prepared the SUMMA canisters and particulate filters utilized for vapor sample collection and relinquished custody of the media to the LMHC sampling team. All samples were stored in a secure Radioactive Materials Area (RMA) until the samples were radiologically released and received by WML on September 28 and October 4, 1999.

Sample container preparation and sample handling were performed according to the procedures listed in Table 1-1. Project logbooks and logbook pages that contain data and information relevant to this sampling event are listed in Table 1-2.

Table 1-1. Summary of Tank Vapor Sample Preparation and Handling Procedures.

Procedure Title	Procedure #/- Revision #
Cleaning Procedure for SUMMA Canisters	LO-080-406/A-0
Laboratory and Sample Security	LAP-94-400/A-0
Preventing Sample Contamination	LAP-99-400/A-0
Logkeeping Practices	LAP-92-400/A-0
Sample Chain of Custody, Acceptance, and Disposal	LO-090-450/B-1

Table 1-2. Sampling Project Logbooks.

Logbook Title	Logbook Number	Page Numbers
Building 622R, Rm 122, SUMMA Preparation	WHC-N-1408-1	19 +
Chain of Custody Numbering	WHC-N-1410-1	65
Building 622F, Rm 01, Sample Custody	WHC-N-1405-1	26

1.2 SUMMA CANISTER PREPARATION

SUMMA canisters are stainless-steel vessels that allow collection and transfer of whole-air samples from the sample site to the analytical laboratory for analysis. These canisters have been treated by the SUMMA process that passivates adsorption sites on the interior canister walls to minimize adsorption of gases and vapors. SUMMA canisters must be cleaned and evacuated to < 50 mtorr before each use. The evacuated canister is filled with sample vapor through a valve that is then closed to seal the sample inside. The nominal capacity of each SUMMA canister is 6 L.

Per procedure *Sample Chain of Custody, Acceptance, and Disposal* (LO-090-450/B-1), chains of custody were maintained on each canister upon retrieval from locked storage, through the sampling event, and upon delivery to WML; Appendix 1A contains copies of the chains of custody for the samples. The canisters were transported at ambient temperature to and from the field.

Container cleanliness was confirmed as described by the *Cleaning Procedure for SUMMA Canisters* (LO-080-406/A-0). Contamination above 2.5 ppbv was not detected in the canisters.

1.3 FIELD MONITORING

Industrial Hygiene and Health Physics personnel continuously performed radiological, % Lower Flammability Limit (%LFL), carbon tetrachloride, and chloroform monitoring during the sampling event. This data is not included in this report.

1.4 SAMPLE RADIOLOGICAL SCREENING RESULTS

Particulate filter samples were prepared by WML and sampled by LMHC sampling team for radiation screening purposes. After completion of the sampling event, these filters were used to clear the samples of radiological contamination for receipt at the laboratory.

The release letters are included in Appendix 1B.

1.5 SAMPLING SUPPORTING DATA

The LMHC sampling team work document (W110), pre-job briefing checklist, unreviewed safety question screening and evaluation, and craft/resource usage log and maintenance record (J-5) are included in Appendix 1C.

Appendix 1A

Chains of Custody

WML/SAS		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST				COC No. V9018-a	
Originator		Date	Sample Collector(s)	Charge Code	Page	1	of 1
Karl O. Pennock		09/10/99					
Project Number V9018			Sample Origin	Resor No.			
Project Title 2-361 Sludge Sampling			Sampling Logbook No. :	COC Procedure LO-090-450B-1			
Shipped To WSCF			Method of Shipment	Sampling Method			
Sample Number	Quantity	Sample Type	Sampling Date	Sampling Time	Sample Identification	Analysis Requested	Holding Time
V9018-021-AMB-01	1	6 L SUMMA			filter 280 LAP		
V9018-023-00E-01	1	6 L SUMMA			280		
V9018-040-00E-02	1	6 L SUMMA			251		
V9018-045-00E-03	1	6 L SUMMA			252		
V9018-068-00E-04	1	6 L SUMMA			253		
V9018-075-00E-05	1	6 L SUMMA			254		
V9018-091-AMB-02	1	6 L SUMMA			281		
V9018-097-00F-01	1	6 L SUMMA			255		
V9018-110-00F-02	1	6 L SUMMA			256		
V9018-112-00F-03	1	6 L SUMMA			257		
V9018-140-00F-04	1	6 L SUMMA			258		
V9018-141-00F-05	1	6 L SUMMA			filter 261 LAP		
Comments/Anomalies: Summas and Filter Transferred To New COC for Residue Samples AN V9018c For Residue Samples 9-22-99							
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign
Karl O. Pennock		Print	Sign	9-13-99/1300	LAPINGER	Print	Sign
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign
LAPINGER		Print	Sign	9-13-99/1415	James S. Paine	Print	Sign
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign
S. Paine		Print	Sign	9-13-99/1415	James S. Paine	Print	Sign
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign
D. Reddick		Print	Sign	9-22-99/2000	V. Matthews	Print	Sign
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign
Final Sample Disposition							

WML/SAS		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST				COC No.	V9018-c
						Page	1 of 1
Originator	Karl O. Pennock	Date	09/14/99	Sample Collector(s)	James Sickels	Charge Code	
Project Number	V9018	Sample Origin	2-361	Riser No.	H		
Project Title	2-361 Study Sampling	Sampling Logbook No.	N/A	COC Procedure	LO-090-450/B-1		
Shipped To	WSCI	Method of Shipment	Government Vehicle	Sampling Method	SUMMA		
Sample Number	Quantity	Type	Sampling Date	Sample Identification	Analysis Requested	Holding Time	
V9019-091-AMB-01	1	6 L SUMMA	9-27-99	filter #281		1 min	
V9019-097-00F-01	1	6 L SUMMA	9-27-99	filter #235		1 min	
V9019-110-00F-02	1	6 L SUMMA	9-27-99	filter #256		1 min	
V9019-112-00F-03	1	6 L SUMMA	9-27-99	filter #257		1 min	
V9019-140-00F-04	1	6 L SUMMA	9-27-99	filter #238		1 min	
V9019-141-00F-05	1	6 L SUMMA	9-27-99	filter #261		1 min	
Comments/Anomalies: These Summas Transferred From Original COC # ① Filter Moved To New COC For Delivery To WSCI For Analysis 9-27-99							
Relinquished By	James Sickels	Sign	Received By	JL Mewla	Sign	Date/Time	9/22/99 2120
Relinquished By	JL Mewla	Sign	Received By	James Sickels	Sign	Date/Time	9-27-99 1035
Relinquished By	James Sickels	Sign	Received By	BRAD C Elstrom	Sign	Date/Time	10/6/99 0840
Relinquished By	BRAD C Elstrom	Sign	Received By	Karl O. Pennock	Sign	Date/Time	10/6/99 0900
Relinquished By		Sign	Received By		Sign	Date/Time	
Final Sample Disposition							

CHAIN-OF-CUSTODY RECORD FOR CPO

Sample Number <i>See Block #8</i>		(2) Supervisor/Sampler <i>James Sicks</i>		(3) Seal Intact Upon Release? ☐ Yes ☐ No	
(3) Tank <i>Z-361</i>	(4) Riser <i>E</i>	(5) Cast/Pig Serial No. <i>N/A</i>	(10) Seal Intact Upon Receipt? <i>A</i> ☐ Yes ☐ No		
(6) Shipment Description:			(11) Seal Number AND Cast/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No		
A. Work Package Number <i>WS-99-00376</i> B. Cast/Pig Seal Number <i>N/A</i> C. Date Sample Collected <i>9-22-99</i> D. Time Sample Collected <i>SEE Block #8</i>			(7) Sampling Data Y N - Lithium Bromide ☐ ☐ Amount <i>N</i> Concentration <i>A</i> - X-Ray ☐ ☐ - Partial Sample ☐ ☒ - Retrieved Partial Sample Stroke Length _____		
(8) Field Comments: <i>Analysis for Total Alpha and Total Beta per SAP HNF-437 Rev.1</i> <i>Sample #</i> <i>Fillets From Z-361 Vapor Samples</i> <i>V9018-021-AMB-01 Filter #280</i> <i>V9018-023-00E-01 #250</i> <i>V9018-040-00E-02 #251</i> <i>V9018-045-00E-03 #252</i> <i>V9018-058-00E-04 #253</i> <i>V9018-075-00E-05 #254</i>					
(13) Relinquished By (Sign and PRINT) <i>James Sicks James Sicks</i>			(15) Date/Time <i>9-23-99</i>		
(17) Relinquished By (Sign and PRINT) <i>James Sicks James Sicks</i>			(20) Receiver Comments		
(21) Relinquished By (Sign and PRINT) <i>James Sicks James Sicks</i>			(23) Date/Time <i>9-23-99</i>		
(25) Relinquished By (Sign and PRINT)			(26) Receiver Comments		
(27) Date/Time			(28) Receiver Comments		

BC-8001-326 (07/97)

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CHAIN-OF-CUSTODY RECORD FOR CPO																																					
(1) Sample Number <i>2-341</i>		(2) Supervisor/Sampler <i>[Signature]</i>		(9) Seal Intact Upon Release? ☒ Yes ☐ No		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No																															
(3) Tank <i>2-341</i>		(4) Riser <i>15</i>		(5) Cast/Pig Serial No. <i>1111</i>		(11) Seal Number AND Cast/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No																															
(6) Shipment Description:						(12) Laboratory Comments:																															
A. Work Package Number <i>WPK-71-0037C</i> B. Cast/Pig Seal Number <i>N/A</i> Date Sample Collected <i>9-27-99</i> D. Time Sample Collected <i>See Block 5P</i>						(7) Sampling Data <div style="display: flex; justify-content: space-between;"> <div> Y ☐ N ☐ Lithium Bromide Amount <i>N/A</i> Concentration - X-Ray ☐ - Partial Sample ☐ - Retrieved Partial Sample Stroke Length </div> </div>																															
(8) Field Comments: <i>Field Notes From 361 Area Samples</i> <i>Analyses for Total Alpha and Total Beta per</i> <i>SAP HNF-437 Rev 1</i>																																					
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample #</th> <th>Filter #</th> <th>Date Taken</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>V4019-081</td> <td>381</td> <td>9-27-99</td> <td>1410</td> </tr> <tr> <td>V4019-081</td> <td>382</td> <td>9-27-99</td> <td>1425</td> </tr> <tr> <td>V4019-140</td> <td>356</td> <td>9-27-99</td> <td>1514</td> </tr> <tr> <td>V4019-146</td> <td>357</td> <td>9-27-99</td> <td>1603</td> </tr> <tr> <td>V4019-140</td> <td>358</td> <td>9-27-99</td> <td>1623</td> </tr> <tr> <td>V4019-141</td> <td>361</td> <td>9-27-99</td> <td>1820</td> </tr> </tbody> </table>										Sample #	Filter #	Date Taken	Time	V4019-081	381	9-27-99	1410	V4019-081	382	9-27-99	1425	V4019-140	356	9-27-99	1514	V4019-146	357	9-27-99	1603	V4019-140	358	9-27-99	1623	V4019-141	361	9-27-99	1820
Sample #	Filter #	Date Taken	Time																																		
V4019-081	381	9-27-99	1410																																		
V4019-081	382	9-27-99	1425																																		
V4019-140	356	9-27-99	1514																																		
V4019-146	357	9-27-99	1603																																		
V4019-140	358	9-27-99	1623																																		
V4019-141	361	9-27-99	1820																																		
(13) Relinquished By (Sign and PRINT) <i>[Signature]</i>				(14) Received By (Sign and PRINT) <i>[Signature]</i>		(15) Date/Time <i>9/27/99</i>		(16) Receiver Comments																													
(17) Relinquished By (Sign and PRINT) <i>[Signature]</i>				(18) Received By (Sign and PRINT) <i>[Signature]</i>		(19) Date/Time <i>9/27/99</i>		(20) Receiver Comments																													
(21) Relinquished By (Sign and PRINT) <i>[Signature]</i>				(22) Received By (Sign and PRINT) <i>[Signature]</i>		(23) Date/Time		(24) Receiver Comments																													
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HC-0001-225 (07/07)

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

Appendix 1B

Release Letters

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DON'T SAY IT — Write It!

TO: R. J. Reeder S7-05
 cc: R. L. Brown S6-14
 J. W. Hobbs S6-14
 L. D. Lockard S3-31
 L. A. Pingel, Jr. S3-31
 J. F. Sickels S7-03
 REE File

DATE: September 28, 1999
 FROM: R. E. Elder *R. E. Elder* S6-14
 Telephone: 376-4187

SUBJECT: RELEASE OF VAPOR SAMPLES – Z-361 TANK HEAD SPACE

I have reviewed the laboratory analysis of the vapor samples taken September 22, 1999 from the Z-361 Tank Head Space during Core Sampling activities. The review of the data is shown below. Based on this review, the samples associated with this test have no potential for internal contamination above release limits and can be released based on external surveys of the SUMMA canisters.

Radioactive Release for Particulate or Surface Contamination

The SUMMA samples (6 liter volume) were drawn through a set of two 2-micron prefilters in series. The first set of filters (AMB-01) was used on ambient air only, with the remainder of the filters used during sampling activities. Laboratory results from all filters show a maximum activity of 7.1×10^{-6} uCi/sample beta and 2.2×10^{-6} uCi/sample alpha (see table below). In addition, all GEA results were less than MDL. The maximum total beta activity deposited on any filter sample was the upstream filter E-04 at 15.8 dpm. The downstream (second) filter for the same sample was appreciably less, at 7.8 dpm total beta activity. Therefore, the portions of the sampling system downstream of the filters would be considered releasable, per HNF-IP-0718, and would be a candidate for release based on external surveys.

SAMPLES from Z-361 Head Space

ID	Up/Down Stream	Analysis	Result (uCi/sample)	Total dpm (calculated)
AMB-01	U	Beta	4.0E-07	0.9
AMB-01	D	Beta	1.1E-06	2.4
AMB-01	U	Alpha	1.6E-07	0.4
AMB-01	D	Alpha	<DL*	
E-01	U	Beta	2.10E-06	4.7
E-01	D	Beta	1.00E-06	2.2
E-01	U	Alpha	<DL*	
E-01	D	Alpha	<DL*	
E-02	U	Beta	3.9E-06	8.7
E-02	D	Beta	2.8E-06	6.2
E-02	U	Alpha	2.2E-06	4.9
E-02	D	Alpha	<DL*	
E-03	U	Beta	2.43E-06	5.4
E-03	D	Beta	1.60E-06	3.6
E-03	U	Alpha	2.20E-06	4.9
E-03	D	Alpha	<DL*	
E-04	U	Beta	7.1E-06	15.8
E-04	D	Beta	3.5E-06	7.8
E-04	U	Alpha	1.9E-06	4.2
E-04	D	Alpha	<DL*	
E-05	U	Beta	5.70E-06	12.7
E-05	D	Beta	2.30E-06	5.1
E-05	U	Alpha	1.90E-06	4.2
E-05	D	Alpha	<DL*	

* The alpha MDL for these samples was 8.3E-07 uCi (1.8 dpm).

DON'T SAY IT — Write It!

TO: R. J. Reeder S7-05

cc: R. L. Brown S6-14
 J. W. Hobbs S6-14
 L. D. Lockard S3-31
 L. A. Pingel, Jr. S3-31
 J. F. Sickels S7-03
 REE File

DATE: October 4, 1999

FROM: R. E. Elder *R. E. Elder* S6-14

Telephone: 376-4187

SUBJECT: RELEASE OF VAPOR SAMPLES – Z-361 TANK HEAD SPACE

I have reviewed the laboratory analysis of the vapor samples taken September 27, 1999 from the Z-361 Tank Head Space during Core Sampling activities. The review of the data is shown below. Based on this review, the samples associated with this test have no potential for internal contamination above release limits and can be released based on external surveys of the SUMMA canisters.

Radioactive Release for Particulate or Surface Contamination

The SUMMA samples (6 liter volume) were drawn through a set of two 0.2 – 0.6 micron prefilters in series. The first set of filters (V9019-091, F# 281) was used on ambient air only, with the remainder of the filters used during sampling activities. Laboratory results from all filters show a maximum activity of 4.0×10^{-6} uCi/sample beta and 1.4×10^{-6} uCi/sample alpha (see table below). In addition, all GEA results were less than MDL, except one. The one positive GEA result was for ^{152}Eu (6.88×10^{-6} uCi/sample, with a 45% error), and was detected on the downstream filter V9019-140. However, since this was not detected on the upstream filter, and there were no other positive GEA results, it is believed to be an artifact of measuring concentrations around zero. The maximum total beta activity deposited on any filter sample was the upstream filter V9019-097 at 8.9 dpm. The downstream (second) filter for the same sample was appreciably less, at 3.6 dpm total beta activity. Therefore, the portions of the sampling system downstream of the filters would be considered releasable, per HNF-IP-0718, and would be a candidate for release based on external surveys.

SAMPLES from Z-361 Head Space

ID	Up/Down Stream	Analysis	Result (uCi/sample)	Total dpm (calculated)
V9019-091 F# 281	U	Beta	1.9E-06	4.2
V9019-091 F# 281	D	Beta	2.3E-06	5.1
V9019-091 F# 281	U	Alpha	<DL*	
V9019-091 F# 281	D	Alpha	<DL*	
V9019-097 F# 255	U	Beta	4.00E-06	8.9
V9019-097 F# 255	D	Beta	1.60E-06	3.6
V9019-097 F# 255	U	Alpha	1.40E-06	3.1
V9019-097 F# 255	D	Alpha	<DL*	
V9019-110 F# 256	U	Beta	3.7E-06	8.2
V9019-110 F# 256	D	Beta	2.2E-06	4.9
V9019-110 F# 256	U	Alpha	1.3E-06	2.9
V9019-110 F# 256	D	Alpha	<DL*	
V9019-112 F# 257	U	Beta	<DL*	
V9019-112 F# 257	D	Beta	<DL*	
V9019-112 F# 257	U	Alpha	<DL*	
V9019-112 F# 257	D	Alpha	<DL*	
V9019-140 F# 258	U	Beta	2.2E-06	4.9
V9019-140 F# 258	D	Beta	<DL*	
V9019-140 F# 258	U	Alpha	<DL*	
V9019-140 F# 258	D	Alpha	<DL*	
V9019-141 F# 261	U	Beta	2.80E-06	6.2
V9019-141 F# 261	D	Beta	<DL*	
V9019-141 F# 261	U	Alpha	<DL*	
V9019-141 F# 261	D	Alpha	<DL*	

* The alpha MDL for these samples was 1.2E-06 uCi (2.7 dpm).

The beta MDL for these samples was 8.6E-07 uCi (1.9 dpm).

Appendix 1C

Sampling Supporting Data

=====WORK DOCUMENT (W110)=====

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

3. Components

Component Number

Name

Temporary Number
241-Z-361

Name

COPY

4. System 03 SAMPLING

5. Location

Facility WS WEST SAMPLING/SALTWELLS

Bldg/Rm PFP TANKS

Other Z-361

Other

6. Symptom, Problem, or Condition

PERFORM VAPOR SAMPLING USING SUMMA CANASTERS IN SUPPORT OF CORE
DRILLING USING TRUCK #1.

7. Originator Name GREEN, DJ

Telephone No. 373-5529

MSIN S7-04

Date

06/29/99

8. CACN

101387

COA

9. Priority

3

10. Phase Designator

Z-361

Z-361 PROJECT

11. Cognizant Engineer

LIPNICKI, J

Phone

372-3488

12. Planning Required Y

13. Screener/Ops Review

Signature
X SICKELS, JFDate
08/24/99

14. Resolution By

Signature
X GREEN, DJDate
06/29/99

15. Approvals

Code	Description
CE	COGNIZANT ENGINEER
CM	COGNIZANT MANAGER
S	SAFETY
OP	OPERATIONS
PIC	PERSON IN CHARGE
RADCON	RADCON
E	ENVIRONMENTAL
PLN/SCH	PLANNER/SCHEDULER

Signature
X WANNER, DD
X SCHOFIELD, JS
X ZAK, FA
X SICKELS, JF
X SICKELS, JF
X DUNN, KR
X PENN, LL
X GREEN, DJ

Date
08/24/99
08/24/99
09/01/99
09/02/99
09/02/99
09/02/99
09/09/99
09/09/99

16. Resources Required

Res Code Description

No. Act Hrs

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HNF-5367 Rev. 0

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

04	CERTIFIED OPERATOR	1	_____
54	HEALTH PHYSICS TECHNICIAN	1	_____
24	PIPEFITTER	1	_____
PIC	PERSON IN CHARGE	1	_____

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

17. Pre-Work Review
18. Tagout Number

Signature

Date

9-14-99

19. Work Release F Type

Signature

Date

9-14-99

20. Work Suspension (See Work Suspension Sheet)
PIC

21. PIC PRAZNIK,RJ

PIC Org. 75150

Resolution/Retest

1.0 SCOPE:

- 1.1 PERFORM VAPOR SAMPLING FROM TANK 241-Z-361 USING SUMMA CANISTERS. 1 SUMMA CANISTER PER EACH CORE SEGMENT.
- 1.2 5 CORE SEGMENTS WILL BE TAKEN FROM EACH RISER. RISER E WILL BE FIRST RISER SAMPLED. RISER F WILL BE SECOND.
- 1.3 THIS WORK PACKAGE WILL BE WORKED SIMULTANEOUSLY WITH THE CORE SAMPLING PACKAGE WS-99-00232 OR WS-99-00233 AND PROCEDURE TO-080-505. PUSH MODE SAMPLING WITH TRUCK "1" WILL BE USED TO OBTAIN CORE SAMPLES.
- 1.4 TANK 241-Z-361 IS A FACILITY GROUP 3 TANK [REFERENCE HNF-2024 REV 2 HAZARD CONTROL REQUIREMENTS].
- 1.5 *(JCO) IDENTIFY JCO REQUIRMENTS.

2.0 DESCRIPTION:

- 2.1 THE TANK WILL BE VAPOR SAMPLED THROUGH A BREATHER FILTER SEAL LOOP. THE BREATHER FILTER AND SEAL LOOP WERE INSTALLED ON PACKAGE WS-98-00033. SAMPLES WILL BE COLLECTED FROM THE HEADSPACE.

3.0 REFERENCED DOCUMENTS:

- 3.1 HNF-2024 REV 2 JUSTIFICATION FOR CONTINUED OPERATION FOR 241-Z-361
- 3.2 HNF-4371 REV 1 TANK 241-Z-361 VAPOR SAMPLING AND ANALYSIS PLAN.

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE
- =====

- 3.3 USQ WS-99-00376 VAPOR SAMPLING OF TANK HEAD SPACE
3.4 TO-100-052 PERFORM WASTE GENERATION
SEGREGATION AND ACCUMULATION.
3.5 MSDS 23671 QUICK & BRITE
3.6 SD-CP-OSR-010 PFP OPERATIONAL SAFETY REQUIREMENTS
LCO 3.0.7; ACS 5.2 THROUGH 5.7;
ACS 5.9 THROUGH 5.20; AC 5.23.
3.7 H-2-829536 ATMOSPHERIC BREATHING AIR FILTER
ASSY.
3.8 ECN 650199 MODIFICATIONS TO H-2-829536.
3.9 6-TF-160 STATIC BONDING OF PORTABLE
EQUIPMENT

COPY

4.0 PERMITS AND SPECIAL PROCEDURES:

- 4.1 RWP CS-764
4.2 DOME LOAD EVALUATION
4.3 PRE-JOB SAFETY MEETING CHECKLIST
4.4 JOB HAZARD ANALYSIS
4.5 BILL OF MATERIALS
4.6 FIGURE 1 EQUIPMENT LAYOUT
4.7 FIGURE 2 DOME LOADING LIMITS
4.8 FIGURE 3 VAPOR SAMPLING YEE
4.9 EMERGENCY RESPONSE
4.10 PFP PLANT CASUALTY RESPONSE PROCEDURE ZCR-001
THROUGH 005 AND 008 THROUGH 010

5.0 MATERIALS AND EQUIPMENT:

- 5.1 SEE BILL OF MATERIAL IN PACKAGE.
5.2 WET RAGS
5.3 10 MIL PLASTIC BAGS
5.4 12 SUMMA CANISTERS
5.5 12 PARTICULATE FILTERS

6.0 PREREQUISITES:

- 6.1 A PRE-JOB SAFETY MEETING SHALL BE CONDUCTED, PRIOR
TO EACH SHIFT, UTILIZING THE PRE-JOB SAFETY MEETING
CHECKLIST, THE JOB HAZARD ANALYSIS, AND A REVIEW OF
THE PERTINENT PREREQUISITES.

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1. Document Number WS-99-00376/0 OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

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6.2 IF LIGHTNING IS IDENTIFIED BY WEATHER STATION
(373-2716) WITHIN A 50-MILE RADIUS OF THE HANFORD
SITE.*(JCO)

* STOP ALL WORK ACTIVITIES.

* SECURE EQUIPMENT IN LOWEST POSITION (E.G.,
LAY DOWN EQUIPMENT ELEVATED ABOVE THE TANKS
AND LOWER CRANE BOOM).

COPY

6.3 ELECTRICAL BONDING IS NOT REQUIRED FOR REMOVAL
OR INSTALLATION OF FITTINGS ON OPENING LESS THAN
OR EQUAL TO 2.54 CM. (1 INCH) INSIDE DIAMETER
DURING INTRUSIVE LOCATION ENTRY PER EXCEPTION
21 OF TABLE C-2 OF HNF-2024.*(JCO)

6.4 FIELD SUPERVISOR ENSURE EQUIPMENT IS POSITIONED
APPROXIMATELY AS SHOWN IN FIGURE 1.*(JCO)

6.5 FIELD SUPERVISOR ENSURE THAT THE DOME LOADING IS
LIMITED TO THE REQUIREMENTS OF THE JCO HNF-2024,
TABLES 5.6-1 AND 5.6-2 USING THE LOADING DIRECTION
GIVEN IN FIGURE 2.*(JCO)

6.6 THE VENTILATION AND FLAMMABLE GAS MONITORING
REQUIREMENTS WILL BE ADDRESSED IN THE CORE SAMPLING
PACKAGES WS-99-00230 AND WS-99-00232.

6.7 FIELD SUPERVISOR TO VERIFY THAT ALL EQUIPMENT AND
TOOLS USED DURING WORK ACTIVITY MEETS REQUIREMENTS
OF IGNITION SOURCE CONTROL SET 2 FOR THE DURATION OF
THE WASTE DISTURBANCE PER HNF-2024.*(JCO)

6.8 RESPIRATORY PROTECTION AND MONITORING REQUIREMENTS
SHALL BE IN ACCORDANCE WITH THE SAFE WORK
PRACTICES CONTAINED IN THE HASP (HNF-4371) CURRENT
REVISION AND RWP. SPECIFIC INSTRUCTION WILL BE
PART OF THE PRE-JOB SAFETY MEETING.

6.9 FIELD SUPERVISOR ENSURE THAT ALL OPERATING
PROCEDURES WORKED IN THIS PACKAGE ARE THE LATEST
REVISION.

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE
- =====

6.10 FIELD SUPERVISOR CHECK PFP STANDING ORDER LOG BOOK FOR ORDERS WHICH COULD AFFECT THIS ACTIVITY (OR PROCEDURES). IF THERE ARE ANY THAT AFFECT THIS ACTIVITY, CONTACT THE COG. ENGINEER (DD WANNER 373-3297).

6.11 THE CONTROLLED AREA OVER 241-Z-361 EXTENDS OUT 25 FEET FROM THE TANK RISERS.*(JCO)

- 1) NO ACCESS TO THE CONTROLLED ACCESS AREA IS ALLOWED WITHOUT AN APPROVED WORK PACKAGE.
- 2) VEHICLE ACCESS INTO THE RESTRICTED ACCESS AREA IS LIMITED TO TRUCK #1. NO OTHER VEHICLES ALLOWED INTO RESTRICTED AREA (PAST ORANGE LINE ON GROUND).

6.12 PLANNER VERIFICATION THAT PFP PRC HAS APPROVED WS-99-00376.*(JCO)

Dan J. Green 9/14/99
PLANNER DATE

6.13 MAXIMUM AUTHORIZED RISER LOADS FOR RISER "H" ARE AS FOLLOWS.*(JCO)

RISER "H"

VERTICAL: 250 LBS.
SIDE 250 LBS.
TORQUE 100 FT-LBS.

6.14 PFP CASUALTY RESPONSE PROCEDURES ZCR-001 THROUGH 005 AND 008 THROUGH 010 SHALL BE APPLIED FOR ABNORMAL EVENTS DURING PERFORMANCE OF THIS WORK.*(JCO)

6.15 NON-SPARKING TOOLS WILL BE USED AT ALL TIMES.

6.16 SAS WILL SUPPLY EVACUATED SUMMA CANISTERS AND DUAL PARTICULATE FILTERS AND ASSIGN THE SUMMA ID NUMBER PER HNF-4371 (SAP), SECTION 2.6.2.

6.17 A SUMMA AMBIENT FIELD BLANK WILL INVOLVE AMBIENT AIR BEING DRAWN THROUGH THE TUBING AND INTO THE SUMMA (INCLUDING DUAL PARTICULATE FILTER).

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1. Document Number WS-99-00376/0 OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

6.18 VAPOR PIC ESTABLISH COMMUNICATIONS IN PRE-JOB WITH CORE SAMPLE PIC TO ENSURE VAPOR SAMPLE IS TAKEN AT COMPLETION OF "STROKE" FOR EACH CORE SEGMENT.

7.0 SPECIFIC WORK INSTRUCTIONS:

7.1 FABRICATE SAMPLE TEE:

7.1.1 FABRICATE SAMPLE TEE PER FIGURE 3 SKETCH.

7.2 PIC VERIFY JOB BEING PERFORMED AT CORRECT TANK AND RISER, WITH INDEPENDENT VERIFICATION.

RISER #H :

TANK: Z-361 RISER: H
PIC SIGN: Jim Sickels DATE: 9-22-99
VERIFICATION BY: _____

7.3 HPT PRE-JOB SURVEY IS COMPLETE.

RISER "H"
Jo 9-22-99
HPT INITIAL DATE

7.4 INSTALL DRAPES UNDER SAMPLING CONNECTIONS THAT WILL BE DISCONNECTED.

7.4.1 HPT ESTABLISH CA IF NECESSARY. N/A AND INITIAL THIS STEP IF NO CA WAS ESTABLISHED.

MAC 9-22-99 NA
HPT INITIAL DATE

7.5 CLOSE ISOLATION VALVE (V1) IF NECESSARY (SEE FIGURE 3).

7.6 CONNECT TEE SAMPLING ASSY TO THE BREATHER FILTER VAPOR ASSY LOCATED ON RISER. (SEE FIGURE 3).

7.7 OBTAIN SUMMA AMBIENT FIELD BLANK SAMPLES:

NOTE SUMMA AMBIENT FIELD BLANK SAMPLES (SEE SECTION 6.17) WILL BE TAKEN AT APPROXIMATELY THE SAME LOCATION (RISER H) AS THE REMAINDER OF THE SUMMA SAMPLES WITHOUT BEING ATTACHED TO THE TEE ASSEMBLY.

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

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- 7.7.1 REMOVE THE PROTECTIVE CAP FROM THE SUMMA CANISTER.
- 7.7.2 OPEN SUMMA CANISTER ISOLATION VALVE.
- 7.7.3 ALLOW SUMMA CANISTER TO FILL FOR (1) ONE MINUTE .
- 7.7.4 CLOSE SUMMA CANISTER ISOLATION VALVE.
- 7.7.5 REPLACE PROTECTIVE CAP ON SUMMA CANISTER.
- 7.7.6 CPO SHALL MAINTAIN ALL VAPOR SAMPLES UNDER CHAIN OF CUSTODY REQUIRMENTS.
- 7.7.7 LABEL EACH SUMMA PER SECTION 2.6.2 OF HNF-4371 (SAP).

COPY

NOTE FLAMMABLE GAS MONITORING WILL BE PERFORMED IN CORE SAMPLING WORK PACKAGES WS-99-00230 AND WS-99-00232 AS REQUIRED TO FULFILL HNF-2024 (JCO) REQUIREMENTS.

7.8 OBTAIN VAPOR SAMPLE:

NOTE A NEW DUAL PARTICULATE AIR FILTER WILL BE ATTACHED FOR EACH SUMMA SAMPLE

- 7.8.1 CONNECT (IN SERIES) TWO (2) PARTICULATE AIR FILTERS TO THE TEE ASSEMBLY INSTALLED ON THE BREATHER FILTER SAMPLING LINE (SEE FIGURE 3).

NOTE WHEN CORE TRUCK PIC NOTIFIES A SAMPLE IS REQUIRED AT COMPLETION OF "STROKE" FOR EACH SEGMENT THE FOLLOWING STEPS WILL BE REQUIRED FOR A VAPOR SAMPLE PER SAMPLING AND ANALYSIS PLAN (SAP) HNF-4371.

- 7.8.2 CLOSE MONITORING PORT (V2) IF NECESSARY (SEE FIGURE 3).
- 7.8.3 REMOVE PROTECTIVE CAP FROM SUMMA CANISTER.

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE
- =====

- 7.8.4 CONNECT THE SUMMA CANISTER TO SAMPLE PORT TUBING (SEE FIGURE 3).
- 7.8.5 OPEN ISOLATION VALVE (V1) IF NECESSARY (SEE FIGURE 3)
- 7.8.6 OPEN SAMPLE PORT VALVE (V3) IF NECESSARY (SEE FIGURE 3).
- 7.8.7 OPEN SUMMA CANISTER ISOLATION VALVE.
- 7.8.8 ALLOW SUMMA CANISTER TO FILL FOR ONE (1) MINUTE.
- 7.8.9 CLOSE SUMMA CANISTER ISOLATION VALVE.
- See J-7 #1 → 7.8.10 CLOSE SAMPLE PORT VALVE (V3) IF NECESSARY.
- 7.8.11 REMOVE SUMMA CANISTER AND DUAL PARTICULATE FILTER FROM SAMPLE LINE.
- 7.8.12 REPLACE PROTECTIVE CAP ON SUMMA CANISTER.
- 7.8.13 RECORD ANY ANOMALIES IN FIELD NOTES AND ON THE J-5.
- 7.8.14 CPO SHALL MAINTAIN ALL VAPOR SAMPLES UNDER CHAIN OF CUSTODY REQUIRMENTS.
- 7.8.15 LABEL EACH SUMMA PER SECTION 2.6.2 OF HNF-4371 (SAP).
- 7.8.16 REPEAT STEPS 7.8.1 THROUGH 7.8.15 FOR REMAINING CORE SAMPLING SEGMENTS FOR RISER "E".
- 7.8.17 ONCE THE FIRST CORE IS COMPLETE (ALL 5 SEGMENTS HAVE BEEN COMPLETED), REPEAT STEPS 7.7 THROUGH 7.7.7 WHEN TRUCK HAS SETUP ON RISER "F".
- 7.8.18 REPEAT STEPS 7.8.1 THROUGH 7.8.15 AT COMPLETION OF "STROKE" FOR EACH SEGMENT SAMPLE (UNTIL ALL 5 SEGMENTS OF 2ND CORE IN RISER "F" HAVE BEEN COMPLETED).

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1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE
- =====

7.8.19 ENSURE ISOLATION VALVE (V1) IS CLOSED AFTER
FLAMMABLE GAS MONITORING AND VAPOR SAMPLING
HAVE BEEN COMPLETED.

7.8.20 HPT SURVEY SAMPLING EQUIPMENT PRIOR TO
REMOVING, DECON AS NECESSARY.

7.8.21 DISCONNECT TEE SAMPLING ASSY FROM
BREATHING FILTER VAPOR SAMPLING LINE.
(AFTER ALL SAMPLING HAS BEEN COMPLETED)

COPY

7.9 RELEASE SAMPLES:

NOTETHE SAMPLE MEDIA IS STILL UNDER CHAIN-OF-
CUSTODY.

7.9.1 HPT PREPARE SAMPLES FOR RELEASE AND SHIPMENT
PER SECTION 2.6.4 OF HNF-4371 SAP

7.10 HPT PERFORM 100% SURVEY AND DOWN POST CONTAMINATION
AREA IF ESTABLISHED. N/A AND INITIAL THIS STEP IF
NO CA WAS ESTABLISHED.

N/A BNA 9-27-99
HPT INITIAL DATE

7.11 CLEANUP WORK AREA:

7.11.1 WHERE POSSIBLE, SEGREGATE AND PACKAGE WASTE
PER TWRS WASTE PROCEDURE (TO-100-052). WASTE
THAT CANNOT BE EASILY SEGREGATED IS TO BE
INVENTORIED AND DOUBLE BAGGED IN 10 MIL BAGS.
ALL WASTE (SEGREGATED OR NOT) IS TO BE PLACED
IN THE "UNDESIGNATED" CONTAINER IN THE
SATELLITE ACCUMULATION AREA.

JOB COMPLETION:

7.12 ON J-5, PIC TO RECORD INFORMATION ON WORK PERFORMED
AND VERIFY THAT THE JOB SITE HAS BEEN CLEANED,
DECONTAMINATED TO PRE-JOB STATUS, AND THAT ALL
WASTE HAS BEEN PROPERLY DISPOSED OF.

7.13 CHAIN-OF-CUSTODY AND SHIPMENT RECORDS PLACED IN
WORK PACKAGE PRIOR TO ARCHIVE.

PLANNER _____ DATE _____

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1. Document Number WS-99-00376/0 OPERATIONS SPECIAL PROCEDURE
2. Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE
- =====

8.0 RESTORATION ACTIONS:

- 8.1 HPT POST-JOB SURVEY IS COMPLETE.

BAA 9-27-99
HPT INITIAL/DATE

COPY

- 8.2 PIC ENSURE THAT THE JOB SITE HAS BEEN DECONTAMINATED AND RESTORED TO ITS PRE-JOB CONDITION OR BETTER AND ALL WASTE HAS BEEN PLACED IN THE PROPER CONTAINERS PER TO-100-052 (RADIOACTIVE/CONTAMINATED)/HNF-IP-0842, SEC. 16.1 (NON-RADIOACTIVE), AS APPLICABLE

- 8.3 RETURN ALL UNUSED MATERIAL TO CPO MATERIAL COORDINATOR, AT 2101HV. THE RETURNED MATERIAL SHALL BE ACCOMPANIED BY A COPY OF THE BOM AND THE QC ACCEPT TAG (GREEN TAG) OR TRANSFER TAG, IF AVAILABLE.

9.0 POST-MAINTENANCE TESTING:

- 9.1 N/A

10.0 OPERATIONAL FUNCTIONAL TEST:

- 10.1 N/A

22. Reference Documents
SEE RESOLUTION

Type

23. Field Work Complete

Signature

Date

9-30-99

24. Ops_Acceptance

25. Post Review

=====WORK DOCUMENT (W110)=====

*** RECORD COPY ***

1C-12

*** RECORD COPY ***

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=====J-7 WORK CHANGE NOTICE - Detail (W175)=====

Page: 1 16:00:17 21 SEP 1999

1. Document Number WS-99-00376/O OPERATIONS SPECIAL PROCEDURE
Work Item Title 241-Z-361 PERFORM VAPOR SAMPLE

2. Originator Signature GREEN, DJ Date 09/21/99
3. WCN Number 01 Non-ADP WCN Number

COPY

4. Reason for Change
ADD STEP TO OPEN VALVE FOR FLAMMABLE GAS MONITORING.

5. Approval Signatures
Code	Description	Signature	Date
CE	COGNIZANT ENGINEER	X WANNER, DD	09/21/99
CM	COGNIZANT MANAGER	X SCHOFIELD, JS	09/21/99
PIC	PERSON IN CHARGE	X SICKELS, JF	09/21/99

6. Incorporated By Signature Don J Green Date 9/21/99

7. Change Instructions
Page Step/Para Description

PAGE 9 STEP 7.8.10 ADD STEP 7.8.10.1 TO SAY

7.8.10.1 OPEN MONITORING PORT VALVE (V2) FOR IH&S
FLAMMABLE GAS MONITORING.

=====J-7 WORK CHANGE NOTICE - Detail (W175)=====

*** RECORD COPY ***

FSP PRE-JOB BRIEFING CHECKLIST22-99-01414/WWORK PACKAGE NUMBER/TASK DESCRIPTION: PERFORM VAPOR SAMPLE TANK 241-Z-361A pre-job briefing is/is not (circle one) required.
Refer to FSP-PFP-5-8, Sections 1.1 & 13.4JAMES SICKELS
PLANNER / PIC9-22-99
DATE

PRE-JOB BRIEFING AGENDA:

COPY

- Verify personnel involved are present.
- Craft / RCT / Eng / QC / Ops / Other _____
- First Aid Provider: JAMES SICKELS

Conduct a Task Overview

- Briefly describe scope of work (use sketches, floor plan, etc.).

Discuss Personnel Assignments

- Discuss job assignments.
(verify training and qualifications)

Discuss Controlling Documents

- Procedures and lock and tag requirements
- RWP requirements, limitations, AMW controls and workplace radiological conditions
- Applicable OSR's/LCO's including time clocks, how the work impacts equipment operability, and what is required to restore operability
- Review applicable CPS and postings

Conduct Detailed Task Discussion

- Discuss the flowpath of work, including expected results, emphasizing areas addressed in the AJHA
- Review Material Safety Data Sheets for hazardous material
- Discuss Radiological Control or QC hold points
- Review plant activities that might affect persons during job (e.g., crit horn testing, drills, fire alarm testing)
- Cover air space boundaries (reference ZAP-000-006)
- Review precautions, warnings, special monitoring requirements and abort criteria, contingency plans and emergency actions
- Identify needed emergency communications systems and discuss with other groups
- Discuss other precautions/limitations identified by walkdown permits, etc.
- If job involves work on or near energized electrical circuits of 50 volts nominal with a current capacity of ≥ 1 milliamp discuss the need for the following:
 - Barrier strips/terminal covers are in place to prevent inadvertent contact with conductors
 - Removed all conductive articles (metal rings, watches, jewelry, buckles, etc.)
- Discuss time constraints, when breaks will occur, stopping points for turnover and job cleanup at end of shift.
- Discuss waste minimization and disposal
(Record minimization actions in the Post-ALARA Review section of this checklist)
- Discuss STOP WORK AUTHORITY and the need for everyone to work safely

Request Feedback

- Ask one final question, "Is everyone comfortable with the job and their part in it?"

Comments or other areas discussed: _____

USQ

UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION		
1. Identification Number: WS-99-00376	USQ SCREENING	Page 1 of 7
2. Title: 241-Z-361, WS-99-00376, VAPOR SAMPLING OF TANK HEAD SPACE DURING CORE SAMPLING		
<p>INSTRUCTIONS: Respond to each question and provide justification for each response. A restatement of the question does not constitute a satisfactory justification or basis. An adequate justification provides sufficient explanation such that an independent reviewer could reach the same conclusion based on the information provided (DOE 5480.21, 10.e.1).</p> <p>DESCRIPTION OF THE PROPOSED ACTIVITY/REPORTABLE OCCURRENCE OR PIAB</p> <p>The proposed activity is the vapor sampling of the head space of 241-Z-361 during core sampling using SUMMA canisters. This activity will be accomplished by WS-99-00376.</p> <p>REVISION HISTORY</p> <p>Revision 0</p> <p>Initial Issue.</p> <p>INTRODUCTION</p> <p>The tank was previously vapor sampled during Phase I activities for Tank 241-Z-361. WS-98-00056 was prepared to obtain vapor samples of 241-Z-361 using the Non-Electrical Vapor Sampling (NEVS) to satisfy the HNF-2024, and the Tank 241-Z-361 Vapor Sampling and Analysis Plan, HNF-2867, Rev 0-A, Section 2.5.</p> <p>This USQ Screening reviews WS-99-00376. WS-99-00376 provides the instructions for obtaining the vapor sample from the filtered vent installed on riser H of 241-Z-361 for Phase II sampling activities. The vapor sample will be performed per the requirements of the "241-Z-361 Sludge Characterization Sampling and Analysis Plan," HNF-4371, Rev 1, Section 2.6. The purpose of the vapor sample is to determine whether organic constituents are released in vapor form during the disturbance of sludge while core sampling. Vapor samples will be collected using SUMMA canisters without the NEVS system (as was used in Phase I sampling activities). It is planned to collect one SUMMA canister sample during the sampling of each core segment.</p> <p>AFFECTED SSC</p> <p>The affected System, Structure, and Component (SSC) is Settling tank 241-Z-361.</p> <p>AUTHORIZATION BASIS</p> <p>The Authorization Basis (AB) documents for work in 241-Z-361 are listed in the DOE Safety Evaluation Report (SER) for the JCO for 241-Z-361. The two AB documents are:</p> <ol style="list-style-type: none"> 1) HNF-2024, Rev. 2, <i>JUSTIFICATION FOR CONTINUED OPERATION FOR TANK 241-Z-361</i>; and 2) WHC-SD-CP-OSR-010, Rev. 0-J, <i>PLUTONIUM FINISHING PLANT OPERATIONAL SAFETY REQUIREMENTS (OSR)</i>. Only the following OSR controls are applicable to 241-Z-361: LCO 3.0.7, AC 5.2 through AC 5.7, AC 5.9 through AC 5.16, AC 5.19 through AC 5.20, and AC 5.23. The SER states that in addition to the JCO, the 241-Z-361 Authorization Basis includes specifically referenced portions of the PFP Authorization Basis. The above 		

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UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION		
1. Identification Number: WS-99-00376	USQ SCREENING	Page 2 of 7
2. Title: 241-Z-361, WS-99-00376, VAPOR SAMPLING OF TANK HEAD SPACE DURING CORE SAMPLING		
<p>OSR controls are the PFP Authorization Basis controls that are specifically referenced in the JCO, Section 5.0.</p> <p>The vapor sampling from the filtered vent installed on riser H of 241-Z-361 does not require an Authorization Basis change.</p> <p>CONCLUSION</p> <p>Obtaining vapor samples from riser H of 241-Z-361 using SUMMA canisters is within the bounds of the 241-Z-361 Authorization Basis. All screening questions have been answered "No" or "N/A", therefore, a USQ Evaluation is not required.</p> <p>REFERENCES</p> <p>DOE letter 99-TPD-206, Contract No. DE-AC06-96-RL13200, <i>JUSTIFICATION FOR CONTINUED OPERATION (JCO) FOR HANFORD UNDERGROUND STORAGE TANK 241-Z-361</i>, K.A. Klein, DOE-RL to R.D. Hanson, FDH, June 3, 1999. (This letter approved HNF-2024, Rev. 2, and provided the SER for the JCO.)</p> <p>FSP-PFP-5-8, Volume 1, Section 2.23, Rev. 16, <i>IDENTIFICATION AND RESOLUTION OF UNREVIEWED SAFETY QUESTIONS</i>, June 25, 1999</p> <p>USQ Evaluation PFP-99-13, <i>INITIAL RELEASE OF PROCEDURES TO-020-454 AND TO-080-505</i>, July 12, 1999</p> <p>HNF-4371, Rev. 1, <i>241-Z-361 SLUDGE CHARACTERIZATION SAMPLING AND ANALYSIS PLAN</i>, August 5, 1999</p> <p>H-2-829536, sheets 1 through 4, Rev. 0, <i>ATMOSPHERIC BREATHING AIR FILTER ASSEMBLIES</i></p> <p>DOE Order 5480.21, <i>UNREVIEWED SAFETY QUESTIONS</i>, December 24, 1991</p> <p>QUESTIONS</p> <p>1. Does the proposed change or occurrence represent a change to the facility or procedures as described in the Authorization Basis?</p> <p style="margin-left: 40px;">☐ N/A ☒ No ☐ Yes/Maybe</p> <p style="margin-left: 40px;">BASIS: Obtaining vapor samples from 241-Z-361 per WS-99-00376 is not a change to the facility as described in the Authorization Basis. Vapor samples will be obtained from 241-Z-361 using SUMMA canisters. The SUMMA canisters will be connected to the breather filter vapor sampling assembly via a "T" fitting, port connectors, quick connects, connectors, ferrules, nuts, ball valves, a dual particulate filter and tubing. The tank will be vapor sampled in accordance with HNF-4371.</p> <p style="margin-left: 40px;">This temporary installation of the above described equipment on the breather filter vapor sampling assembly is not a change to the facility as described in the Authorization Basis. JCO, Section 4.4.7, designates the breather filter as a safety significant component. The JCO does not provide a detailed description of the breather filter, but Section 4.4.7 does state that the breather filter provides a <i>filtered, passive ventilation path for the tank that will maintain an atmosphere less than 25% of the LFL</i>. Since the JCO does not provide a detailed description of</p>		

UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION		
1. Identification Number: WS-99-00376	USQ SCREENING	Page 3 of 7
2. Title: 241-Z-361, WS-99-00376, VAPOR SAMPLING OF TANK HEAD SPACE DURING CORE SAMPLING		
<p>the breather filter, any changes that affect the breather filter ventilation path are changes to the facility as described in the Authorization Basis. The breather filter is provided with an internal line to be used for taking tank vapor samples. The temporary installation of vapor sampling equipment to the outside of the breather filter vapor sampling assembly per WS-99-00376 has no impact on the breather filter ventilation path. After the vapor sampling activities are complete, the sampling equipment will be removed from the tank and the tank will be restored to its original configuration.</p> <p>Therefore, the proposed activity does not meet the "change to facility" criteria as defined in DOE Order 5480.21, Chapter II, #2.</p> <p>The temporary installation of the sampling equipment on the breather filter vapor sampling assembly and the vapor sampling of 241-Z-361 do not represent changes to procedures as described in the authorization basis. The JCO, Section 3.2.2, step 14, states <i>The sampler will be pushed up to 19-inches using the sampling truck hydraulic ram into the waste to collect a core segment. (See Ref 3-6, 3-7 and 3-8 for additional details.)</i> Reference 3-6 is HNF-4371 (Characterization Sampling and Analysis Plan). Section 2.6 of HNF-4371 describes the vapor sampling of 241-Z-361 headspace using SUMMA canisters during the core sampling of the tank. One SUMMA canister sample will be collected during the sampling of each core segment for two risers. One ambient SUMMA vapor sample will be taken per core as a field blank. WS-99-00376 and the JCO, Appendix G, include all the vapor sampling activities/equipment in the analysis of the anticipated loading requirements for the Phase II sampling event.</p> <p>The JCO does not provide a detailed description of the interface between the breather filter vapor sampling assembly and the vapor sampling system. However, HNF-4371 describes a "T" fitting with ball valves which will allow monitoring for combustible gases from the same tube used for sampling. HNF-4371 states: <i>During monitoring, the ball valve to the canister port will be closed and the valve to the instrument port will be open. For vapor sample collection, the instrument port ball valve will be closed and the sample port valve opened.</i></p> <p>Collecting a vapor sample using the method and equipment (see question 4) described above is contained in work package WS-99-00376. Since the method and equipment are used as described in the JCO, Section 3.2.2, step #14, the proposed 241-Z-361 vapor sampling activity does not represent a change to procedures as described in the authorization basis.</p> <p>2. Does the proposed change or occurrence represent conditions that have not been analyzed in the Authorization Basis? ☐ N/A ☒ No ☐ Yes/Maybe</p> <p>BASIS: Obtaining vapor samples from 241-Z-361 per WS-99-00376 do not represent conditions that have not been analyzed in the Authorization Basis. The JCO was prepared to address potential hazards with 241-Z-361. The JCO has analyzed the four principal hazards to the public and on-site workers that are associated with this tank: flammable gas ignition, structural collapse, pressurized release from the tank, and inadvertent criticality. HNF-2024, Section 3.2.2, Step 14, references HNF-4371 (Sampling Analysis Plan) which requires vapor sampling of 241-Z-361 using SUMMA canisters. The equipment and personnel that are required to access the tank</p>		

UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION		
1. Identification Number: WS-99-00376	USQ SCREENING	Page 4 of 7
2. Title: 241-Z-361, WS-99-00376, VAPOR SAMPLING OF TANK HEAD SPACE DURING CORE SAMPLING		
<p>to obtain the vapor samples could affect the flammable gas ignition and the structural collapse hazards. The flammable gas ignition hazard was analyzed in the JCO, Section 4.4 and Appendix C. A dome load analysis has been performed for Phase II sampling activities and has been placed in WS-99-00376. Thus obtaining vapor samples with the SUMMA canisters can be accomplished within the HNF-2024, Section 5.0, controls. Additional structural analysis information is provided by JCO, Sections 4.3 and 4.6; and Appendices F, H, and I. An explanation of how the controls are satisfied is discussed in response to question 4.</p> <p>3. Does the proposed change represent a test or experiment NOT described in the Authorization Basis that may affect the safe operation of the facility? ☒ N/A ☐ No ☐ Yes/Maybe</p> <p>BASIS: The activities accomplished in WS-99-00376 are not tests or experiments. Vapor sampling using SUMMA canisters has been done for years in tank farms and is related to an authorization basis requirement for 241-Z-361. The JCO (HNF-2024), Section 3.2.2, step 14, refers to HNF-4371. HNF-4371, 241-Z-361 Sludge Characterization Sampling and Analysis Plan, requires the use of SUMMA canisters to obtain the vapor sample.</p> <p>4. Does the proposed change or occurrence represent a change to the Technical Safety Requirements or a reduction in the margin of safety defined in the Technical Safety Requirements? ☐ N/A ☒ No ☐ Yes/Maybe</p> <p>BASIS: Obtaining vapor samples from 241-Z-361 per WS-99-00376 do not represent changes to the Technical Safety Requirements or a reduction in the margin of safety defined in the Technical Safety Requirements. None of the controls provided by JCO, Section 5.0, Hazard Control Requirements, are affected by the activities in WS-99-00376. Since WS-99-00376 can be accomplished within the existing JCO controls, the margin of safety is not affected.</p> <p>All of the applicable JCO, Section 5.0, controls are addressed in WS-99-00376. These include tank access, dome loading, and flammable gas. WS-99-00376 requires work package approval to access the controlled area over the tank.</p> <p>Nuclear criticality safety controls are not affected. All of the WS-99-00376 work activities will be accomplished outside the tank. The tank vapor space will be accessed using the breather filter vapor sampling assembly. This assembly provides a path (tube) that can be used to draw a vapor sample from the tank head space. None of the physical parameters affecting criticality safety can be changed by this work package.</p> <p>The dome loading is controlled by WS-99-00376, Figures 1 and 2. Figure 1 was developed to ensure that the actual equipment loading on 241-Z-361 is within the authorized tank dome load limits provided by JCO, Table 5.6-1. Figure 2 provides permissible personnel loading limits to ensure the equipment plus personnel loading during vapor sampling does not exceed the JCO, Table 5.6-1, requirements. The calculations that validate the equipment and personnel loading shown on WS-99-00376, Figures 1 and 2, are also contained in the work package.</p>		

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UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION		
1. Identification Number: WS-99-00376	USQ SCREENING	Page 5 of 7
2. Title: 241-Z-361, WS-99-00376, VAPOR SAMPLING OF TANK HEAD SPACE DURING CORE SAMPLING		
<p>The JCO, Table 5.6-2, Authorized Tank Riser Loads, are also incorporated into WS-99-00376. The Maximum Authorized Riser Loads for riser H listed in the work package are as follows:</p> <p>Vertical 250 LBS (This reflects the 500 LBS allowed by the JCO minus 250 LBS for the installed breather filter)</p> <p>Side 250 LBS</p> <p>Torque 100 FT-LBS</p> <p>WS-99-00376 also addresses the flammable gas controls. The flammable gas ventilation and monitoring controls are all addressed in the core sample work packages WS-99-00232 and WS-99-00230. JCO, Section 5.3.1, lines 1-3, requires ventilation to maintain the flammable gas concentration $\leq 25\%$ of the LFL. The installed breather filter satisfies this requirement. WS-99-00376 will stop work activities, if the flammable gas concentration $> 25\%$ of the LFL.</p> <p>The JCO, Section 4.4.3, paragraph 7 states that 241-Z-361 will be considered a Facility Group 3 tank during Phase II sampling activities. Therefore, since vapor sampling is defined as a dome intrusive activity in the JCO, Section 5.1, ISC 2 controls will apply for vapor sampling for the duration of the "Local Waste Disturbing" activity (core sampling) per Table 5.3-1 of the JCO. These ISCs are addressed in work package WS-99-00376.</p> <p>Since core sampling activities will already be started when vapor samples are to be performed, the flammable gas monitoring requirements per the JCO, Table 5.3-2 will have been met or be ongoing. The flammable gas monitoring requirements which consist of continuous and entry monitoring are addressed in the core sample work packages WS-99-00232 and WS-99-00230. Once these monitoring requirements are met or established, the SUMMA sampling assembly which consists of a "T" fitting, port connectors, quick connects, connectors, ferrules, nuts, ball valves, a dual particulate filter and tubing will be attached to the breather filter vapor sampling assembly. The tank will be isolated from the SUMMA sampling assembly by an isolation valve as well as the "T" fitting with ball valves described in question #1.</p> <p>HNF-2024, Table 5.3-2, requires continuous monitoring during locally waste disturbing activities. Core sampling is a locally waste disturbing activity. The breather filter vapor sampling assembly will be used for continuous monitoring and for obtaining SUMMA samples. HNF-2024, Section 5.3.3.3, allows for the temporary interruption of continuous monitoring. HNF-2024, Section 5.3.3.3, lines 7-8, state: <i>It is acceptable to disconnect a CGM or similar instrument during continuous monitoring to permit the temporary connection of alternate measurement devices such as organic vapor monitors (OVNs) or Drager tubes.</i> The vapor samples will be obtained immediately after the waste has been disturbed for each core sample segment. This will cause an interruption of approximately one minute in the continuous monitoring, but the interruption is allowed by the authorization basis.</p> <p>All of the equipment, materials, and work practices that will be used to accomplish vapor sampling on 241-Z-361 satisfy the JCO, Section 5.3.2, Flammable Gas Ignition Controls. Table 1 of this USQ screening is the same ignition source control</p>		

UNREVIEWED SAFETY QUESTION (USQ) SCREENING AND EVALUATION		
1. Identification Number: WS-99-00376	USQ SCREENING	Page 6 of 7
2. Title: 241-Z-361, WS-99-00376, VAPOR SAMPLING OF TANK HEAD SPACE DURING CORE SAMPLING		
<p>evaluation worksheet used within TWRS to verify compliance of equipment used in tank farms with the TWRS flammable gas controls. Table 1 of this USQ screening identifies equipment, materials and work practices that are required to support the vapor sampling of 241-Z-361. Table 1 from USQ Evaluation PFP-99-13 identifies additional equipment, materials and work practices that may also be required to support the vapor sampling of 241-Z-361. Table 1 of this USQ Screening, and Table 1 from USQ Evaluation PFP-99-13 also provide references for items that are approved equivalencies to or deviations from ICS 1 or ICS 2. JCO, Section 5.3.2.3, states deviations from Ignition Source Control Sets #1 and #2 are permitted provided the equipment, materials or work practices: (1) provide equivalent ignition source control safety, as approved by a TWRS Flammable Gas Advisory Board, or (2) is an approved exception listed in Table 5.3-3.</p>		
USQE #1 J Lipnicki	USQE #2 John Schofield	
(Print Name)	(Print Name)
Signature	Date: 5/19/99	Signature
Date: 8/19/99		
<p>If there is a YES/MAYBE response to questions 1, 2, 3, or 4, then a USQ Evaluation must be completed.</p> <p>The following guidance should be considered when completing this screening. This guidance should not be considered all-inclusive; additional factors may need to be considered depending on the nature of the proposed change.</p> <p>Does the proposed change:</p> <ol style="list-style-type: none"> 1) Modify, add, or delete a safety class function of a structure, system or component stated in the authorization basis? 2) Alter the design of a structure, system or component as described in the authorization basis? 3) Modify, add, or delete the description of operation, operating environment, or analyses of any system or component described in the authorization basis? 4) Modify, add, delete or conflict with any of the design bases stated in the authorization basis? 5) Conflict with the principle or general design criteria stated in the authorization basis? 6) Modify, add, or delete any plant design features described in the authorization basis? 7) Modify, add, or delete a flow diagram or facility drawing provided in the authorization basis? 8) Create the potential for new system or component interactions (e.g., seismic, electrical breaker coordination)? 		

UNREVIEWED SAFETY QUESTION SCREENING/DETERMINATION FORM (Continued)		Page 7 of 7
Identification Number: WS-99-00376		
Rev. 0		

Table 1. Ignition Source Control Evaluation Worksheet

Equipment, Materials, Work Practices (1)	Location (2)	Ignition Control Set (3)	IC Set Met (4)	FGEAB Safety Equivalence Rating (5)	Approved Exception (see HNF-2024, Appendix C, Table C-2) (6)
Nonconductive plastic tubing	Ex-tank intrusive Dome space intrusive	ICS 2	IC Set not met	N/A	Item #9
Use of Summa [®] canisters for vapor sampling	Ex-tank intrusive Dome space intrusive	ICS 2	IC Set met	N/A	N/A
Use of "u" fitting, port connectors, quick connects, connectors, ferrules, nuts, ball valves	Ex-tank intrusive Dome space intrusive	ICS 2	IC Set met	N/A	N/A
Gelman filter/filter housing	Ex-tank intrusive Dome space intrusive	ICS 2	IC Set not met, but use is allowed when filter changeout is outside of the Ex Tank region	FGEAB-97-027, Rev 3, (Requires filter changeout outside of the Ex Tank region.)	N/A

Example Entries:

- (1) Drill String, Sampler System, Power Connection, Foot Clamp, Ventilation Fan, Level Detector, Bonding, Grounding, Carbon Steel Camera Support Column, Non-conductive Polymer Receiver Bag, etc.
- (2) Non-Intrusive, Ex-Tank Intrusive, Dome Space Intrusive, Waste Intrusive
- (3) Ignition Control Set #1, Ignition Control Set #2, None
- (4) IC Set Met, IC Set Not Met
- (5) Is Equivalent per Ref. "X"
- (6) Reference appropriate item from exceptions list in JCO, HNF-2024, Appendix C, Table C-2

J-5		CRAFT/RESOURCE USAGE LOG AND MAINTENANCE RECORD		1. Document Number	
				WIS - 99 - 01037610	
Date	Turnover, Problem Description, Action Taken	Name	Craft/ Resource Type	Hours	
9-22-99	Held Pre-Job Briefing. ENTERED PFP AND STAGED EQUIPMENT. Performed Vapor Sampling Per Work Package. No problem encountered. No waste generated. Area cleaned up. Second Set of Summa Locked up in Support Trailer and Chain of Custody Relinquished To Jose Mejia. First Set Removed From PFP and Locked up in TC272HV.	2-ops 1-HPT 1-Super	11/hrs		
9-23-99	Shipped Filters To WSCF Lab for Analysis. No waste generated.	1-ops 1-HPT	1/hrs		
9-27-99	Held Pre-job Briefing. ENTERED PFP AND STAGED EQUIPMENT. Performed Vapor Sampling Per Work Package W110. No Problems Encountered. No Waste generated. Removed Sample Tee and GAVE To Core Truck Crew To SAVE. AREA CLEANED UP. Sample Removed From PFP AND STORED IN TC272HV UNT.1 Released for SHIPMENT.	2-ops 1-HPT 1-Super	2/hrs		
10-6-99	All Sample Summa Shipped To SAS Lab AT THE WEATHER STATION. All Summa's Fully Released.		2hrs/2ops		
Summary by Craft/Resource Type					
Craft/Resource Type	Total Hours	Craft/Resource Type	Total Hours		

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2.0 Analyses Section

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2.1 General Information

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2.1.1 SCOPE

The analyses section of this data package presents the results of the laboratory analyses of vapor samples collected on September 22 and 27, 1999, from Tank 241-Z-361. These analyses were performed for Lockheed Martin Hanford Corporation (LMHC) and the River Protection Project (RPP) in accordance with the analytical requirements specified in the *241-Z-361 Sludge Characterization Sampling and Analysis Plan*, HNF-4371, Rev. 1, (BWHC, 1999). Discussion and data from the collection of these samples are presented in the sampling section of this data package.

The analyses is presented in Section 2.2. This section is divided into subsections that contain the case narrative, analytical results summary, quality control summary, and supporting data.

2.1.2 ANALYTICAL LOGBOOKS

Table 2-1 provides a listing of the logbooks used during analysis and the corresponding page numbers that contain data and information relevant to this sampling event.

Table 2-1. Analytical Laboratory Project Logbooks.

Logbook Title	Logbook Number	Page Numbers
Maintenance and Run Log for Hewlett Packard GC/FTIR/MS	WHC-N-932-1	115 - 137

2.1.3 VAPOR PROGRAM REQUIRED QUANTITATION LIMITS

Table 2-2 contains a listing of the Vapor Program Required Quantitation Limit (VPRQL) and corresponding CAS number for each program target analyte.

Table 2-2. Vapor Program Required Quantitation Limits. (2 sheets)

Analyte	CAS Number	VPRQL (mg/m3)	VPRQL (ppbv)
VOCs in SUMMA Samples			
1,2,4-Trimethylbenzene	95-63-6	0.024	5.0
1-Hexene	592-41-6	0.017	5.0
1,4-Dioxane	123-91-1	0.018	5.0
1-Propanol	71-23-8	0.012	5.0
1-Butanol	71-36-3	0.015	5.0
2-Pentanone	107-87-9	0.018	5.0
2-Hexanone	591-78-6	0.020	5.0
2-Heptanone	110-43-0	0.023	5.0
2-Octanone	111-13-7	0.026	5.0
2-Propanol	67-63-0	0.012	5.0
2-Butanone	78-93-3	0.015	5.0
2-Methylpentane	107-83-5	0.018	5.0
3-Methyl hexane	589-34-4	0.020	5.0
3-Heptanone	106-35-4	0.023	5.0
4-Methyl-2-pentanone	108-10-1	0.020	5.0
Acetone	67-64-1	0.012	5.0
Acetonitrile	75-05-8	0.008	5.0
Benzene	71-43-2	0.016	5.0
Butanal	123-72-8	0.015	5.0
Butanenitrile	109-74-0	0.014	5.0
Carbon tetrachloride (tetrachloromethane)	56-23-5	0.031	5.0

Table 2-2. Vapor Program Required Quantitation Limits. (2 sheets)

Analyte	CAS Number	VPRQL (mg/m ³)	VPRQL (ppbv)
Chlorobenzene	108-90-7	0.023	5.0
Chloroethane	75-00-3	0.013	5.0
Chloroform (trichloromethane)	67-66-3	0.024	5.0
Chloromethane	74-87-3	0.010	5.0
Cyclohexanone	108-94-1	0.020	5.0
Decane	124-18-5	0.029	5.0
Dichloromethane (methylene chloride)	75-09-2	0.017	5.0
Ethanol	64-17-5	0.009	5.0
Ethylbenzene	100-41-4	0.022	5.0
Furan	110-00-9	0.014	5.0
m-Xylene	108-38-3	0.022	5.0
Methylbenzene (toluene)	108-88-3	0.019	5.0
n-Butane	106-97-8	0.012	5.0
n-Nonane	111-84-2	0.026	5.0
n-Heptane	142-72-5	0.020	5.0
o-Xylene	95-47-6	0.022	5.0
Octane	111-65-9	0.023	5.0
p-Xylene	106-42-3	0.022	5.0
Pentane	109-66-0	0.015	5.0
Propanenitrile	107-12-0	0.011	5.0
Styrene	100-42-5	0.021	5.0
Tetrachloroethylene	127-18-4	0.034	5.0
Tetrahydrofuran	109-99-9	0.015	5.0
Trichlorodifluoromethane (Freon 12)	75-71-8	0.025	5.0
Trichlorofluoromethane (Freon 11)	75-69-4	0.028	5.0

2.1.4 DATA QUALIFIER FLAGS

Table 2-3 contains a listing of each data qualifier flag and its corresponding definition.

Table 2-3. Data Qualifier Flag Translation Table.

Qualifier ("Q") Flag	Definition
T	Target analyte reported in sample was also found in trip blank above action limit.
F	Target analyte reported in sample was also found in field blank above action limit.
B	Target analyte reported in sample was also found in laboratory blank above action limit.
D	Target analyte reported is the result of a secondary dilution.
E	Target analyte concentration reported is greater than the highest calibration standard, but the analysis could not be repeated.
Q	Target analyte was detected, but at concentrations less than the Vapor Program Required Quantitation Limit.
J	Tentatively Identified Compound: Non-target analyte reported concentration is an estimate.
N	Tentatively Identified Compound: Non-target analyte reported is tentative, not confirmed with authentic standards.
M	Target analyte was absent (not detected) in sample.
*	Asteric: Data did not meet quality control requirements; refer to data package case narrative.

2.1.5 TANK VAPOR SAMPLE ANALYSIS PROCEDURES

All analyses were performed according to the procedures listed in Table 2-4. Any exceptions to these procedures are noted in the relevant analysis subsection.

Table 2-4. Summary of Tank Vapor Sample Analysis Procedures.

Procedure Title	Procedure #/Revision #
Determination of Volatile Organic Compounds in Hanford Waste Tank Headspace Samples Using SUMMA Passivated Canister Sampling and GC/MS Analysis	LA-523-404/A-1

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2.2 Volatile Organic Compounds in SUMMA Canister Samples (TO-14 Method)

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2.2.1 Narrative

This section contains descriptions of the analytical method and quality assurance used during analysis.

2.2.1.1 Determination of Volatile Organic Compounds in SUMMA Canister Samples (Modified TO-14 Method)

The SUMMA samples were analyzed for volatile organic compounds (VOCs) according to procedure LA-523-404, Rev. A-1, *Determination of Volatile Organic Compounds in Hanford Site Waste Tank Headspace Samples Using SUMMA Passivated Canister Sampling and GC/MS Analysis*. This method is based on a modified U. S. Environmental Protection Agency (EPA) method TO-14. The VOCs were concentrated from the tank headspace sample by cryogenic trapping with liquid argon and subsequently analyzed by gas chromatography-mass spectrometry (GC/MS). This method offers low ppbv instrument detection limits.

For target analytes, quantitation is performed based on a 5- or 6-point calibration with standard mixtures of the target analyte compounds. Non-target compounds detected in the vapor samples are qualitatively identified via computer-automated comparison of the compound's mass spectrum with the Wiley 138 and National Institute of Standards and Technology (NIST) libraries of mass spectra. They are designated as tentatively identified compounds (TICs) if the match quality meets certain criteria (70 % or better match). The concentration of a TIC is estimated using the response factor of the fluorobenzene internal standard.

The instrumentation consists of a Hewlett-Packard (Palo Alto, CA) model 5890 Series II gas chromatograph equipped with a Hewlett-Packard model 5972 bench top mass spectrometer. A 60 meter methylphenyl-type capillary column (DB-5, J & W Scientific, Folsom, CA) with an internal diameter of 0.32 mm and 1.0 μ m film thickness is used for compound separation.

The pressure of the SUMMA canisters was checked before analysis; all SUMMA canisters were at approximately ambient pressure. The canisters were then pressurized to twice their pressure when received (dilution factor=2.0) with Ultrapure air (Scott-Marrin) and allowed to equilibrate for 4 hours or longer. A 20 torr sample was withdrawn from the pressurized SUMMA canister for analysis. A fixed volume of an internal standard with 2 components was added to each sample prior to injection. For target compounds that exceeded the calibration range of the instrument, a second dilution was made by transferring 500 ml from the original, pressurized canister to another 6 L SUMMA canister and pressurizing to 2 atm. A 20 torr (total dilution factor = 48) sample was analyzed for the target analytes which exceeded the calibration range and the original concentration for these target compounds was calculated; the compounds determined with a secondary dilution are flagged "D" in the Target Analyte Concentration Tables.

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2.2.1.2 Volatile Organic Compound (Modified TO-14 Method) Analytical Quality Assurance

Method LA-523-404, Rev. A-1, is used for the qualitative and quantitative gas chromatography/mass spectrometry (GC/MS) determination of volatile target organic compounds in waste tank headspace samples collected in SUMMA passivated canisters. Non-target organic compounds detected during sample analysis must meet threshold levels prior to reporting. Non-target compounds are reported as "tentatively identified compounds (TICs)" and concentration estimates of TICs are made relative to internal standards.

The GC/MS system is tuned and calibrated initially prior to starting sample analysis, and each time continuing calibration criteria cannot be met for subsequent analysis. To ensure satisfactory initial performance, the GC/MS system must meet established tuning and analyte sensitivity criteria. At least 5 concentration levels are used for the initial calibration or ICAL of each target VOC. Internal standards are added to calibration standards and samples in order to compute analyte relative response factors (RRFs). Final computations of sample target analyte concentrations are made using RRFs. The validity of the initial calibration is demonstrated by meeting deviation or curve fit criteria and through the satisfactory measurement of a "check standard", the ICVS or LCS, for the target analytes. Initial calibration blanks are measured for target analyte levels to demonstrate satisfactory system cleanliness.

Each day the GC/MS is used for analysis, the continued performance and sensitivity of the system is verified through an "auto-tune" or the analysis of the tuning check compound. GC/MS tuning compound criteria must be met. Also, a mid-level check standard, or CCVS, is measured. Criteria for the CCVS that must be met are percent recovery of the CCVS analytes, response factor sensitivity, and internal standard area counts. Method blanks (MBs) are measured for target analytes to document the continued satisfactory cleanliness of the GC/MS system.

Each day before the analysis of samples, the analysis of an MB is conducted and reported. The MB cannot exceed maximum allowable contamination levels for target analytes. With each tank sample reporting batch, the analysis of a laboratory control sample (LCS) and LCS duplicate is conducted. The recovery of the LCS analytes must meet accuracy (percent recovery - %R) and precision (relative percent difference - RPD) requirements. Also, with each tank sample reporting batch, an actual tank sample is analyzed in duplicate, the "laboratory sample duplicate". The RPD between the sample analyte concentrations measured above reporting limits and its sample duplicate analyte concentrations must meet precision requirement or the resulting data is flagged.

The GC/MS system was calibrated according to procedure LA-523-404, Rev. A-1. Two certified gas standards prepared by Scott-Marrin (Riverside, CA) were used: A nonpolar standard with 35 compounds (certificate #CC88819) and a polar standard containing 23 compounds (certificate #CC12147). The calibration is documented in logbook WHC-N-932-1, pages 115 - 127. The compounds met the %RSD requirement of 25 % for both calibrations. The calibration for acetonitrile did not meet the 5-point calibration requirement, (it utilized a 4-point), and is flagged "*" in the Target Analyte Concentration Tables. The precision and accuracy of the calibration was checked after calibration and with the batch of samples by analyzing an independently prepared laboratory control standard (Scott-Merrin # CC12126). The recovery of

the analytes was within the required range of 65 - 135 % and the relative percent difference between the 2 analyses was < 25 %. This data is presented in the Laboratory Control Sample Results Table.

Two internal standards were used to calculate the RRF for each target compound. The recovery of the internal standards for all analyses relative to the CCVS was within the required 50 - 150 % range except chlorobenzene-D5 (most likely due to quenching of the detector from tetrachloroethylene) in the primary dilution runs. TIC concentrations were estimated using the fluorobenzene internal standard. The low recovery of chlorobenzene-D5 did not affect the quantitation of the target analytes present in these samples. This data is summarized in the Internal Standards Area Counts Table.

A continuing calibration verification standard (CCVS) was analyzed daily prior to analysis. The average response factors for these compounds from the initial calibration were compared with the current calibration response factors (CCRFs) on the day of analysis. All analytes in the CCVS met the required < 30 % Dev requirement except on 10/12/99 and 10/14/99 when Freon 11, chloroform, and tetrachloroethylene were quantitated from secondary dilution runs and these three analytes did not fail the criteria. This data is presented on the Evaluate Continuing Calibration Reports.

Sample V9018-023-00E-01 was analyzed in duplicate. All analytes met the required RPD of < 35 %. This data is presented in the Duplicate Analysis Table.

The laboratory blanks (method blanks) collected from a SUMMA canister filled with ultrapure air contained target analytes > 2.5 ppbv on 10/05/99, 10/06/99, 10/07/99, and 10/14/99. If quantitation of the corresponding target analyte was performed, the concentration is flagged "B" in the Target Analyte Concentration Tables. No TICs were found in the laboratory blanks. This data is summarized in the Laboratory Blank Summary Table.

Cyclotetrasiloxane, a contaminant, was detected in some of the secondary dilution runs with a retention time of approximately 35 minutes. This did not affect the data and its cause will be investigated.

Acetone was detected in the ambient field blank samples and is flagged "F" in the Target Analyte Concentration Tables.

TIC concentrations were estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of this internal standard.

The requirements stated in the SAP request analysis of 1,2,4-trichlorobenzene, pentachloroethane, and trichloroethylene as target analytes. Due to the special fabrication requirements of standard gases, these compounds were searched for as TICs. Trichloroethylene was detected and its concentration was estimated in the samples. For clarification, 1,1,2,2-Tetrachloroethene, a target analyte, was reported as its synonym, tetrachloroethylene (CAS # 127-18-4).

2.2.2 Result Summary Tables

The result summary tables list all analytes by increasing chromatographic retention times for both calibrations (nonpolars and polars) and TICs. Also listed are the results of the duplicate analysis using the same SUMMA sample and the relative percent difference (RPD) calculated from these values. All reported values have been corrected to 25 °C and 1 atmosphere pressure.

Z-361 Core Segment Removal Vapor Target Analyte Concentrations for SUMMA Analyses				Sample Number		V9018-021-AMB-01			V9018-023-00E-01			V9018-040-00E-02		
				Analysis Date		10/05/99			10/05/99			10/05/99		
				Analysis Time		11:13			12:15			13:16		
				Primary File ID		19100504.D			19100505.D			19100506.D		
				Secondary File ID		n/a			19100604.D			19100605.D		
Target Analyte	CAS Number	Mol. Wt.	Ret. Time	VPRQL mg/m ³	VPRQL ppbv	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²
Freon 12	75-71-8	120	8.32	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Methyl chloride	74-87-3	50	10.01	0.010	5.0	0.010	5.0	M	0.010	5.0	M	0.010	5.0	M
N-Butane	106-97-8	58	12.09	0.012	5.0	0.012	5.0	M	0.26	110		0.28	120	
Ethyl Chloride	75-00-3	64	14.32	0.013	5.0	0.013	5.0	M	0.013	5.0	Q	0.013	5.0	Q
Freon 11	75-69-4	136	16.21	0.028	5.0	0.028	5.0	M	4.2	760	D	4.6	820	D
N-Pentane	109-66-0	72	16.90	0.015	5.0	0.015	5.0	M	0.020	6.9		0.022	7.6	
Dichloromethane	75-09-2	84	18.57	0.017	5.0	0.017	5.0	M	0.062	18		0.067	19	
2-Methyl-Pentane	107-83-5	86	20.02	0.018	5.0	0.018	5.0	M	0.031	8.9		0.034	9.7	
1-Hexene	592-41-6	84	21.02	0.017	5.0	0.017	5.0	M	0.017	5.0	M	0.017	5.0	M
N-Hexane	110-54-3	86	21.38	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
Chloroform	67-66-3	118	22.20	0.024	5.0	0.024	5.0	M	5.0	1000	D	5.4	1100	D
Benzene	71-43-2	78	24.04	0.016	5.0	0.016	5.0	M	0.016	5.0	M	0.016	5.0	M
Carbon Tetrachloride	56-23-5	152	24.09	0.031	5.0	0.031	5.0	M	0.89	140		0.96	150	
3-Methyl-Hexane	589-34-4	100	24.15	0.020	5.0	0.020	5.0	M	0.020	5.0	Q	0.020	5.0	Q
N-Heptane	142-82-5	100	25.45	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
Toluene	108-88-3	92	28.12	0.019	5.0	0.019	5.0	M	0.019	5.0	M	0.019	5.0	M
N-Octane	111-65-9	114	29.12	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Tetrachloroethylene	127-18-4	164	29.73	0.034	5.0	0.034	5.0	M	13	1900	D	13	2000	D
Chlorobenzene	108-90-7	112	31.02	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Ethylbenzene	100-41-4	106	31.48	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
m,p-Xylene	108-38-3													
	106-42-3	106	31.75	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
Styrene	100-42-5	104	32.47	0.021	5.0	0.021	5.0	M	0.021	5.0	M	0.021	5.0	M
N-Nonane	111-84-2	128	32.48	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M
1,1,2,2-Tetrachloroethane	79-34-5	166	33.04	0.034	5.0	0.034	5.0	M	0.034	5.0	M	0.034	5.0	M
o-Xylene	95-47-6	106	32.59	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
N-Decane	124-18-5	142	35.56	0.029	5.0	0.029	5.0	M, B	0.029	5.0	M, B	0.029	5.0	M, B
1,2,4-Trimethylbenzene	95-63-6	120	35.75	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Ethanol	64-17-5	46	15.39	0.0094	5.0	0.0094	5.0	M	0.0094	5.0	M	0.0094	5.0	M
Acetonitrile	75-05-8	41	16.58	0.0084	5.0	0.0084	5.0	M, *	0.0084	5.0	M, *	0.0084	5.0	M, *
Acetone	67-64-1	58	16.68	0.012	5.0	0.022	9.1		0.016	6.7	F	0.012	5.0	Q, F
Furan	110-00-9	68	16.96	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
2-Propanol	67-63-0	60	17.18	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
1-Propanol	71-23-8	60	19.88	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
Propanenitrile	107-12-0	55	20.51	0.011	5.0	0.011	5.0	M	0.011	5.0	M	0.011	5.0	M
Butanal	123-72-8	72	21.08	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
2-Butanone	78-93-3	72	21.27	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
Tetrahydrofuran	109-99-9	72	22.63	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
1-Butanol	71-36-3	74	24.07	0.015	5.0	0.015	5.0	M	0.11	37		0.12	40	
Butanenitrile	109-74-0	69	24.34	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
2-Pentanone	107-87-9	86	24.92	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
1,4-Dioxane	123-91-1	88	25.75	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
4-Methyl-2-Pentanone	108-10-1	100	26.94	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Hexanone	591-78-6	100	28.70	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
3-Heptanone	106-35-4	114	32.03	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
2-Heptanone	110-43-3	114	32.15	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Cyclohexanone	108-94-1	98	32.57	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Octanone	111-13-7	128	35.29	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M

¹ mg/m³ calculated at 25 °C and 101.3 kPa (1 atmosphere)² Data Flags:

F: Target analyte reported in sample was also found in field blank above action limit.

B: Target analyte reported in sample was also found in laboratory blank above action limit.

D: Target analyte reported is the result of a secondary dilution.

M: Target analyte was absent (not detected) in sample.

Q: Target analyte was detected, but at concentrations less than the VPRQL.

*: Data did not meet quality control requirements; refer to data package case narrative.

Z-361 Core Segment Removal Vapor Target Analyte Concentrations for SUMMA Analyses				Sample Number		V9018-045-00E-03			V9018-068-00E-04			V9018-075-00E-05		
				Analysis Date		10/05/99			10/05/99			10/05/99		
				Analysis Time		14:18			15:21			16:20		
				Primary File ID		19100507.D			19100508.D			19100509.D		
				Secondary File ID		19100704.D			19100705.D			19100706.D		
Target Analyte	CAS Number	Mol. Wt.	Ret. Time	VPRQL mg/m ³	VPRQL ppbv	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²
Freon 12	75-71-8	120	8.32	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Methyl chloride	74-87-3	50	10.01	0.010	5.0	0.010	5.0	M	0.010	5.0	M	0.010	5.0	M
N-Butane	106-97-8	58	12.09	0.012	5.0	0.28	120		0.28	120		0.28	120	
Ethyl Chloride	75-00-3	64	14.32	0.013	5.0	0.013	5.0	Q	0.013	5.0	Q	0.013	5.0	Q
Freon 11	75-69-4	136	16.21	0.028	5.0	4.6	820	D	4.5	820	D	4.6	820	D
N-Pentane	109-66-0	72	16.90	0.015	5.0	0.024	8.0		0.023	7.9		0.025	8.6	
Dichloromethane	75-09-2	84	18.57	0.017	5.0	0.068	20		0.065	19		0.064	19	
2-Methyl-Pentane	107-83-5	86	20.02	0.018	5.0	0.036	10		0.035	10		0.037	10	
1-Hexene	592-41-6	84	21.02	0.017	5.0	0.017	5.0	M	0.017	5.0	M	0.017	5.0	M
N-Hexane	110-54-3	86	21.38	0.018	5.0	0.018	5.0	M	0.018	5.0	Q	0.018	5.0	Q
Chloroform	67-66-3	118	22.20	0.024	5.0	5.3	1100	D	5.3	1100	D	5.3	1100	D
Benzene	71-43-2	78	24.04	0.016	5.0	0.016	5.0	M	0.016	5.0	M	0.016	5.0	M
Carbon Tetrachloride	56-23-5	152	24.09	0.031	5.0	0.96	150		0.91	150		0.91	150	
3-Methyl-Hexane	589-34-4	100	24.15	0.020	5.0	0.020	5.0	Q	0.020	5.0	Q	0.020	5.0	Q
N-Heptane	142-82-5	100	25.45	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
Toluene	108-88-3	92	28.12	0.019	5.0	0.019	5.0	M	0.019	5.0	M	0.019	5.0	M
N-Octane	111-65-9	114	29.12	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Tetrachloroethylene	127-18-4	164	29.73	0.034	5.0	13	2000	D	13	2000	D	13	1900	D
Chlorobenzene	108-90-7	112	31.02	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Ethylbenzene	100-41-4	106	31.48	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
m,p-Xylene	108-38-3	106	31.75	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
Styrene	100-42-5	104	32.47	0.021	5.0	0.021	5.0	M	0.021	5.0	M	0.021	5.0	M
N-Nonane	111-84-2	128	32.48	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M
1,1,2,2-Tetrachloroethane	79-34-5	166	33.04	0.034	5.0	0.034	5.0	M	0.034	5.0	M	0.034	5.0	M
o-Xylene	95-47-6	106	32.59	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
N-Decane	124-18-5	142	35.56	0.029	5.0	0.029	5.0	M, B	0.029	5.0	M, B	0.029	5.0	M, B
1,2,4-Trimethylbenzene	95-63-6	120	35.75	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Ethanol	64-17-5	46	15.39	0.0094	5.0	0.0094	5.0	M	0.0094	5.0	M	0.0094	5.0	M
Acetonitrile	75-05-8	41	16.58	0.0084	5.0	0.0084	5.0	M, *	0.0084	5.0	M, *	0.0084	5.0	M, *
Acetone	67-64-1	58	16.68	0.012	5.0	0.012	5.0	Q, F	0.022	9.4	F	0.012	5.2	F
Furan	110-00-9	68	16.96	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
2-Propanol	67-63-0	60	17.18	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
1-Propanol	71-23-8	60	19.88	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
Propanenitrile	107-12-0	55	20.51	0.011	5.0	0.011	5.0	M	0.011	5.0	M	0.011	5.0	M
Butanal	123-72-8	72	21.08	0.015	5.0	0.015	5.0	Q	0.015	5.0	Q	0.015	5.0	Q
2-Butanone	78-93-3	72	21.27	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
Tetrahydrofuran	109-99-9	72	22.63	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
1-Butanol	71-36-3	74	24.07	0.015	5.0	0.12	40		0.11	38		0.11	38	
Butanenitrile	109-74-0	69	24.34	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
2-Pentanone	107-87-9	86	24.92	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
1,4-Dioxane	123-91-1	88	25.75	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
4-Methyl-2-Pentanone	108-10-1	100	26.94	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Hexanone	591-78-6	100	28.70	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
3-Heptanone	106-35-4	114	32.03	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
2-Heptanone	110-43-3	114	32.15	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Cyclohexanone	108-94-1	98	32.57	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Octanone	111-13-7	128	35.29	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M

¹ mg/m³ calculated at 25 °C and 101.3 kPa (1 atmosphere)² Data Flags:

F: Target analyte reported in sample was also found in field blank above action limit.

B: Target analyte reported in sample was also found in laboratory blank above action limit.

D: Target analyte reported is the result of a secondary dilution.

M: Target analyte was absent (not detected) in sample.

Q: Target analyte was detected, but at concentrations less than the VPRQL.

*: Data did not meet quality control requirements; refer to data package case narrative.

Z-361 Core Segment Removal Vapor Target Analyte Concentrations for SUMMA Analyses				Sample Number		V9019-091-AMB-01			V9019-097-00F-01			V9019-110-00F-02		
				Analysis Date		10/07/99			10/07/99			10/07/99		
				Analysis Time		14:02			15:05			16:10		
				Primary File ID		19100707.D			19100708.D			19100709.D		
				Secondary File ID		n/a			19101805.D			19101806.D		
Target Analyte	CAS Number	Mol. Wt.	Ret. Time	VPRQL mg/m ³	VPRQL ppbv	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²
Freon 12	75-71-8	120	8.32	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Methyl chloride	74-87-3	50	10.01	0.010	5.0	0.010	5.0	M	0.010	5.0	M	0.010	5.0	M
N-Butane	106-97-8	58	12.09	0.012	5.0	0.012	5.0	M	0.22	94		0.19	79	
Ethyl Chloride	75-00-3	64	14.32	0.013	5.0	0.013	5.0	M	0.013	5.0	Q	0.013	5.0	M
Freon 11	75-69-4	136	16.21	0.028	5.0	0.028	5.0	M	4.5	810	D	4.6	830	D
N-Pentane	109-66-0	72	16.90	0.015	5.0	0.015	5.0	M	0.017	5.6		0.016	5.3	
Dichloromethane	75-09-2	84	18.57	0.017	5.0	0.017	5.0	M	0.073	21		0.068	20	
2-Methyl-Pentane	107-83-5	86	20.02	0.018	5.0	0.018	5.0	M	0.024	6.8		0.023	6.5	
1-Hexene	592-41-6	84	21.02	0.017	5.0	0.017	5.0	M	0.017	5.0	M	0.017	5.0	M
N-Hexane	110-54-3	86	21.38	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
Chloroform	67-66-3	118	22.20	0.024	5.0	0.024	5.0	M	5.3	1100	D	5.3	1100	D
Benzene	71-43-2	78	24.04	0.016	5.0	0.016	5.0	M	0.016	5.0	M	0.016	5.0	M
Carbon Tetrachloride	56-23-5	152	24.09	0.031	5.0	0.031	5.0	M	0.85	140		0.85	140	
3-Methyl-Hexane	589-34-4	100	24.15	0.020	5.0	0.020	5.0	M	0.020	5.0	Q	0.020	5.0	M
N-Heptane	142-82-5	100	25.45	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
Toluene	108-88-3	92	28.12	0.019	5.0	0.019	5.0	M	0.019	5.0	Q	0.019	5.0	M
N-Octane	111-65-9	114	29.12	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Tetrachloroethylene	127-18-4	164	29.73	0.034	5.0	0.034	5.0	M	14	2000	D	14	2000	D
Chlorobenzene	108-90-7	112	31.02	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Ethylbenzene	100-41-4	106	31.48	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
m,p-Xylene	108-38-3	106	31.75	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
Styrene	100-42-5	104	32.47	0.021	5.0	0.021	5.0	M	0.021	5.0	M	0.021	5.0	M
N-Nonane	111-84-2	128	32.48	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M
1,1,2,2-Tetrachloroethane	79-34-5	166	33.04	0.034	5.0	0.034	5.0	M	0.034	5.0	M	0.034	5.0	M
o-Xylene	95-47-6	106	32.59	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
N-Decane	124-18-5	142	35.56	0.029	5.0	0.029	5.0	M, B	0.029	5.0	M, B	0.029	5.0	M, B
1,2,4-Trimethylbenzene	95-63-6	120	35.75	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Ethanol	64-17-5	46	15.39	0.0094	5.0	0.0094	5.0	M	0.0094	5.0	M	0.0094	5.0	M
Acetonitrile	75-05-8	41	16.58	0.0084	5.0	0.0084	5.0	M, *	0.0084	5.0	M, *	0.0084	5.0	M, *
Acetone	67-64-1	58	16.68	0.012	5.0	0.022	9.1		0.017	7.0	F	0.012	5.0	Q, F
Furan	110-00-9	68	16.96	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
2-Propanol	67-63-0	60	17.18	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
1-Propanol	71-23-8	60	19.88	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
Propanenitrile	107-12-0	55	20.51	0.011	5.0	0.011	5.0	M	0.011	5.0	M	0.011	5.0	M
Butanal	123-72-8	72	21.08	0.015	5.0	0.015	5.0	Q	0.015	5.0	Q	0.015	5.0	M
2-Butanone	78-93-3	72	21.27	0.015	5.0	0.015	5.0	Q	0.015	5.0	M	0.015	5.0	M
Tetrahydrofuran	109-99-9	72	22.63	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
1-Butanol	71-36-3	74	24.07	0.015	5.0	0.015	5.0	M	0.089	29		0.087	29	
Butanenitrile	109-74-0	69	24.34	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
2-Pentanone	107-87-9	86	24.92	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
1,4-Dioxane	123-91-1	88	25.75	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
4-Methyl-2-Pentanone	108-10-1	100	26.94	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Hexanone	591-78-6	100	28.70	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
3-Heptanone	106-35-4	114	32.03	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
2-Heptanone	110-43-3	114	32.15	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Cyclohexanone	108-94-1	98	32.57	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Octanone	111-13-7	128	35.29	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M

¹ mg/m³ calculated at 25 °C and 101.3 kPa (1 atmosphere)² Data Flags:

F: Target analyte reported in sample was also found in field blank above action limit.

B: Target analyte reported in sample was also found in laboratory blank above action limit.

D: Target analyte reported is the result of a secondary dilution.

M: Target analyte was absent (not detected) in sample.

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*: Data did not meet quality control requirements; refer to data package case narrative.

Z-361 Core Segment Removal Vapor Target Analyte Concentrations for SUMMA Analyses				Sample Number		V9019-112-00F-03			V9019-140-00F-04			V9019-141-00F-05		
				Analysis Date		10/13/99			10/13/99			10/13/99		
				Analysis Time		13:16			14:27			15:37		
				Primary File ID		19101305.D			19101306.D			19101307.D		
				Secondary File ID		n/a			19101405.D			19101406.D		
Target Analyte	CAS Number	Mol. Wt.	Ret. Time	VPRQL mg/m ³	VPRQL ppbv	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²	(mg/m ³) ¹	ppbv	Flag ²
Freon 12	75-71-8	120	8.32	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Methyl chloride	74-87-3	50	10.01	0.010	5.0	0.010	5.0	M	0.010	5.0	M	0.010	5.0	M
N-Butane	106-97-8	58	12.09	0.012	5.0	0.073	31		0.13	55		0.23	99	
Ethyl Chloride	75-00-3	64	14.32	0.013	5.0	0.013	5.0	M	0.013	5.0	M	0.013	5.0	Q
Freon 11	75-69-4	136	16.21	0.028	5.0	1.4	240		2.4	430	D	4.5	810	D
N-Pentane	109-66-0	72	16.90	0.015	5.0	0.015	5.0	Q	0.015	5.0	Q	0.022	7.4	
Dichloromethane	75-09-2	84	18.57	0.017	5.0	0.024	6.9		0.040	12		0.076	22	
2-Methyl-Pentane	107-83-5	86	20.02	0.018	5.0	0.018	5.0	Q	0.018	5.0		0.028	8.0	
1-Hexene	592-41-6	84	21.02	0.017	5.0	0.017	5.0	M	0.017	5.0	M	0.017	5.0	M
N-Hexane	110-54-3	86	21.38	0.018	5.0	0.018	5.0	Q	0.018	5.0	Q	0.018	5.0	M
Chloroform	67-66-3	118	22.20	0.024	5.0	1.6	320		2.8	570	D	5.2	1100	D
Benzene	71-43-2	78	24.04	0.016	5.0	0.016	5.0	Q	0.016	5.0	Q	0.016	5.0	M
Carbon Tetrachloride	56-23-5	152	24.09	0.031	5.0	0.30	49		0.49	79		0.90	150	
3-Methyl-Hexane	589-34-4	100	24.15	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	Q
N-Heptane	142-82-5	100	25.45	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
Toluene	108-88-3	92	28.12	0.019	5.0	0.019	5.0	Q	0.019	5.0	Q	0.019	5.0	Q
N-Octane	111-65-9	114	29.12	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Tetrachloroethylene	127-18-4	164	29.73	0.034	5.0	2.2	320		7.5	1100	D	14	2000	D
Chlorobenzene	108-90-7	112	31.02	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Ethylbenzene	100-41-4	106	31.48	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
m,p-Xylene	108-38-3													
Styrene	106-42-3	106	31.75	0.022	5.0	0.022	5.0	Q	0.022	5.0	M	0.022	5.0	M
N-Nonane	100-42-5	104	32.47	0.021	5.0	0.021	5.0	M	0.021	5.0	M	0.021	5.0	M
1,1,2,2-Tetrachloroethane	111-84-2	128	32.48	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M
o-Xylene	79-34-5	166	33.04	0.034	5.0	0.034	5.0	M	0.034	5.0	M	0.034	5.0	M
N-Decane	95-47-6	106	32.59	0.022	5.0	0.022	5.0	M	0.022	5.0	M	0.022	5.0	M
1,2,4-Trimethylbenzene	124-18-5	142	35.56	0.029	5.0	0.029	5.0	M	0.029	5.0	M	0.029	5.0	M
Ethanol	95-63-6	120	35.75	0.025	5.0	0.025	5.0	M	0.025	5.0	M	0.025	5.0	M
Acetonitrile	64-17-5	46	15.39	0.0094	5.0	0.0094	5.0	M	0.0094	5.0	M	0.0094	5.0	M
Acetone	75-05-8	41	16.58	0.0084	5.0	0.0084	5.0	M, *	0.0084	5.0	M, *	0.0084	5.0	M, *
Furan	67-64-1	58	16.68	0.012	5.0	0.021	8.8	F	0.037	16	F	0.012	5.0	Q, F
2-Propanol	110-00-9	68	16.96	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
1-Propanol	67-63-0	60	17.18	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
Propanenitrile	71-23-8	60	19.88	0.012	5.0	0.012	5.0	M	0.012	5.0	M	0.012	5.0	M
Butanal	107-12-0	55	20.51	0.011	5.0	0.011	5.0	M	0.011	5.0	M	0.011	5.0	M
2-Butanone	123-72-8	72	21.08	0.015	5.0	0.015	5.0	Q	0.015	5.0	Q	0.015	5.0	M
Tetrahydrofuran	78-93-3	72	21.27	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
1-Butanol	109-99-9	72	22.63	0.015	5.0	0.015	5.0	M	0.015	5.0	M	0.015	5.0	M
Butanenitrile	71-36-3	74	24.07	0.015	5.0	0.036	12		0.054	18		0.092	30	
2-Pentanone	109-74-0	69	24.34	0.014	5.0	0.014	5.0	M	0.014	5.0	M	0.014	5.0	M
1,4-Dioxane	107-87-9	86	24.92	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
4-Methyl-2-Pentanone	123-91-1	88	25.75	0.018	5.0	0.018	5.0	M	0.018	5.0	M	0.018	5.0	M
2-Hexanone	108-10-1	100	26.94	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
3-Heptanone	591-78-6	100	28.70	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
2-Heptanone	106-35-4	114	32.03	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
Cyclohexanone	110-43-3	114	32.15	0.023	5.0	0.023	5.0	M	0.023	5.0	M	0.023	5.0	M
2-Octanone	108-94-1	98	32.57	0.020	5.0	0.020	5.0	M	0.020	5.0	M	0.020	5.0	M
	111-13-7	128	35.29	0.026	5.0	0.026	5.0	M	0.026	5.0	M	0.026	5.0	M

¹ mg/m³ calculated at 25 °C and 101.3 kPa (1 atmosphere)

² Data Flags:

F: Target analyte reported in sample was also found in field blank above action limit.

B: Target analyte reported in sample was also found in laboratory blank above action limit.

D: Target analyte reported is the result of a secondary dilution.

M: Target analyte was absent (not detected) in sample.

Q: Target analyte was detected, but at concentrations less than the VPRQL.

*: Data did not meet quality control requirements; refer to data package case narrative.

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9018-021-AMB-01	
		Analysis Date		10/05/99	
		Data File ID		19100504.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
	(None detected)				

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9018-023-00E-01	
		Analysis Date		10/05/99	
		Data File ID		19100505.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
10.12	Isobutane	75-28-5	58	0.51	220
10.58	C4 aliphatic hydrocarbon		58	0.51	210
12.54	Propane, 2,2-dimethyl-	463-82-1	72	0.19	64
18.46	Butane, 2,2-dimethyl-	75-83-2	86	0.33	94
19.90	1,2-Dichloroethylene	540-59-0	96	0.25	63
22.65	Cyclopentane, methyl-	96-37-7	84	0.62	180
25.52	Trichloroethylene	79-01-6	130	4.5	850
27.09	Unknown		103	0.44	110

Notes: The concentration of each TIC was estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of the internal standard.

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses			Sample Number		V9018-040-00E-02	
			Analysis Date		10/05/99	
			Data File ID		19100506.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)	
10.23	Isobutane	75-28-5	58	1.2	520	
12.57	Propane, 2,2-dimethyl-	463-82-1	72	0.32	110	
14.92	Methane, dichlorofluoro-	75-43-4	102	0.24	58	
15.60	Butane, 2-methyl-	78-78-4	72	0.29	98	
18.45	Butane, 2,2-dimethyl-	75-83-2	86	0.35	100	
19.89	1,2-Dichloroethylene	540-59-0	96	0.26	67	
22.66	Cyclopentane, methyl-	96-37-7	84	0.67	200	
25.51	Trichloroethylene	79-01-6	130	4.7	880	
27.09	Unknown		103	0.46	110	

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses			Sample Number		V9018-045-00E-03	
			Analysis Date		10/05/99	
			Data File ID		19100507.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)	
9.45	C3 aliphatic hydrocarbon		42	0.22	130	
10.23	Isobutane	75-28-5	58	1.2	500	
12.58	Propane, 2,2-dimethyl-	463-82-1	72	0.36	120	
14.94	Methane, dichlorofluoro-	75-43-4	102	0.24	58	
15.62	Butane, 2-methyl-	78-78-4	72	0.27	92	
18.46	Butane, 2,2-dimethyl-	75-83-2	86	0.38	110	
19.90	1,2-Dichloroethylene	540-59-0	96	0.27	68	
22.67	Cyclopentane, methyl-	96-37-7	84	0.68	200	
25.53	Trichloroethylene	79-01-6	130	4.7	880	
27.10	Unknown		103	0.47	110	

Notes: The concentration of each TIC was estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of the internal standard.

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9018-068-00E-04	
		Analysis Date		10/05/99	
		Data File ID		19100508.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
10.12	Isobutane	75-28-5	58	0.51	220
10.59	C4 aliphatic hydrocarbon		58	0.67	280
12.75	Propane, 2,2-dimethyl-	463-82-1	72	0.22	74
18.47	Butane, 2,2-dimethyl-	75-83-2	86	0.35	100
19.91	1,2-Dichloroethylene	540-59-0	96	0.25	64
22.67	Cyclopentane, methyl-	96-37-7	84	0.64	190
25.53	Trichloroethylene	79-01-6	130	4.4	830
27.11	Unknown		103	0.46	110

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9018-075-00E-05	
		Analysis Date		10/05/99	
		Data File ID		19100509.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
9.46	C3 aliphatic hydrocarbon		42	0.35	200
10.24	Isobutane	75-28-5	58	1.1	460
10.64	C4 aliphatic hydrocarbon		58	0.26	110
12.59	Propane, 2,2-dimethyl-	463-82-1	72	0.32	110
14.94	Methane, dichlorofluoro-	75-43-4	102	0.23	55
15.62	Butane, 2-methyl-	78-78-4	72	0.27	93
18.47	Butane, 2,2-dimethyl-	75-83-2	86	0.37	100
19.91	1,2-Dichloroethylene	540-59-0	96	0.25	63
22.67	Cyclopentane, methyl-	96-37-7	84	0.64	190
25.53	Trichloroethylene	79-01-6	130	4.4	820
27.10	Unknown		103	0.45	110

Notes: The concentration of each TIC was estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of the internal standard.

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9019-091-AMB-01	
		Analysis Date		10/07/99	
		Data File ID		19100707.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
	(None detected)				

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9019-097-00F-01	
		Analysis Date		10/07/99	
		Data File ID		19100708.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
9.44	C3 aliphatic hydrocarbon		42	0.35	200
10.22	Isobutane	75-28-5	58	1.0	430
12.56	Propane, 2,2-dimethyl-	463-82-1	72	0.31	110
14.92	Methane, dichlorofluoro-	75-43-4	102	0.20	49
15.59	Butane, 2-methyl-	78-78-4	72	0.21	73
18.45	Butane, 2,2-dimethyl-	75-83-2	86	0.29	83
19.87	1,2-Dichloroethylene	540-59-0	96	0.23	58
22.64	Cyclopentane, methyl-	96-37-7	84	0.53	160
25.51	Trichloroethylene	79-01-6	130	3.9	740
27.07	Unknown		103	0.39	93

Notes: The concentration of each TIC was estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of the internal standard.

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9019-110-00F-02	
		Analysis Date		10/07/99	
		Data File ID		19100709.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
10.27	Isobutane	75-28-5	58	0.83	350
10.66	C4 aliphatic hydrocarbon		58	1.7	710
12.77	Propane, 2,2-dimethyl-	463-82-1	72	0.24	80
15.66	Butane, 2-methyl-	78-78-4	72	0.22	73
18.45	Butane, 2,2-dimethyl-	75-83-2	86	0.29	83
19.88	1,2-Dichloroethylene	540-59-0	96	0.21	54
22.64	Cyclopentane, methyl-	96-37-7	84	0.52	150
25.50	Trichloroethylene	79-01-6	130	3.9	730
27.08	Unknown		103	0.38	91

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9019-112-00F-03	
		Analysis Date		10/13/99	
		Data File ID		19101305.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
10.35	Isobutane	75-28-5	58	0.18	75
18.38	Ethane, 1,1,2-trichloro-1,2,2-trifluor	76-13-1	186	0.36	48
22.65	Cyclopentane, methyl-	96-37-7	84	0.19	55
25.51	Trichloroethylene	79-01-6	130	1.9	350

Notes: The concentration of each TIC was estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of the internal standard.

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9019-140-00F-04	
		Analysis Date		10/13/99	
		Data File ID		19101306.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
10.32	Isobutane	75-28-5	58	0.48	200
12.63	Propane, 2,2-dimethyl-	463-82-1	72	0.22	74
18.38	Ethane, 1,1,2-trichloro-1,2,2-trifluor	76-13-1	186	0.33	43
22.65	Cyclopentane, methyl-	96-37-7	84	0.29	85
25.51	Trichloroethylene	79-01-6	130	2.8	520
27.09	Unknown		103	0.19	45

Z-361 Core Segment Removal Vapor Tentatively Identified Compounds For SUMMA Analyses		Sample Number		V9019-141-00F-05	
		Analysis Date		10/13/99	
		Data File ID		19101307.D	
Retention Time (min)	Tentative ID	CAS #	Mol. Weight	Estimated Concentration (mg/m3)	Estimated Concentration (ppbv)
10.15	Isobutane	75-28-5	58	0.53	220
10.58	C4 aliphatic hydrocarbon		58	0.60	250
12.74	Propane, 2,2-dimethyl-	463-82-1	72	0.19	64
18.45	Butane, 2,2-dimethyl-	75-83-2	86	0.31	89
19.89	1,2-Dichloroethylene	540-59-0	96	0.25	63
22.65	Cyclopentane, methyl-	96-37-7	84	0.56	160
25.52	Trichloroethylene	79-01-6	130	4.0	750
27.09	Unknown		103	0.42	100

Notes: The concentration of each TIC was estimated using a relative response factor calculated from the total peak area of the fluorobenzene internal standard. TICs are reported with a response > 10 % of the internal standard.

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Z-361	Sample Number		V9018-023-00E-01	V9018-023-00E-01 Dup		
Duplicate Analysis	Anaysis Date		10/05 & 10/06/99	10/12 & 10/14/99		
	Date File IDs		19100505.D & 19100604.D	19101206.D & 19101409.D		
Target Analyte Name	VPROL (mg/m ³)	VPROL (ppbv)	(ppbv)	(ppbv)	RPD (%)	Comments
Freon 12	0.025	5.0	5.0 (M)	5.0 (M)		
Methyl chloride	0.010	5.0	5.0 (M)	5.0 (M)		
N-Butane	0.012	5.0	109.61	90.79	19	
Ethyl Chloride	0.013	5.0	5.0 (Q)	5.0 (Q)		
Freon 11	0.028	5.0	762.23	815.34	6.7	Secondary Dilution
N-Pentane	0.015	5.0	6.89	6.80	1.3	
Dichloromethane	0.017	5.0	17.91	15.47	15	
2-Methyl-Pentane	0.018	5.0	8.86	7.60	15	
1-Hexene	0.017	5.0	5.0 (M)	5.0 (M)		
N-Hexane	0.018	5.0	5.0 (M)	5.0 (M)		
Chloroform	0.024	5.0	1040.66	1050.73	1.0	Secondary Dilution
Benzene	0.016	5.0	5.0 (M)	5.0 (M)		
Carbon Tetrachloride	0.031	5.0	143.35	135.02	6.0	
3-Methyl-Hexane	0.020	5.0	5.0 (Q)	5.0 (Q)		
N-Heptane	0.020	5.0	5.0 (M)	5.0 (M)		
Toluene	0.019	5.0	5.0 (M)	5.0 (M)		
N-Octane	0.023	5.0	5.0 (M)	5.0 (M)		
Tetrachloroethylene	0.034	5.0	1880.45	1959.35	4.1	Secondary Dilution
Chlorobenzene	0.023	5.0	5.0 (M)	5.0 (M)		
Ethylbenzene	0.022	5.0	5.0 (M)	5.0 (M)		
m,p-Xylene	0.022	5.0	5.0 (M)	5.0 (M)		
Styrene	0.021	5.0	5.0 (M)	5.0 (M)		
N-Nonane	0.026	5.0	5.0 (M)	5.0 (M)		
1,1,2,2-Tetrachloroethane	0.034	5.0	5.0 (M)	5.0 (M)		
o-Xylene	0.022	5.0	5.0 (M)	5.0 (M)		
N-Decane	0.029	5.0	5.0 (M)	5.0 (M)		
1,2,4-Trimethylbenzene	0.025	5.0	5.0 (M)	5.0 (M)		
Ethanol	0.0094	5.0	5.0 (M)	5.0 (M)		
Acetonitrile	0.0084	5.0	5.0 (M)	5.0 (M)		
Acetone	0.012	5.0	6.68	5.38	22	
Furan	0.014	5.0	5.0 (M)	5.0 (M)		
2-Propanol	0.012	5.0	5.0 (M)	5.0 (M)		
1-Propanol	0.012	5.0	5.0 (M)	5.0 (M)		
Propanenitrile	0.011	5.0	5.0 (M)	5.0 (M)		
Butanal	0.015	5.0	5.0 (M)	5.0 (M)		
2-Butanone	0.015	5.0	5.0 (M)	5.0 (M)		
Tetrahydrofuran	0.015	5.0	5.0 (M)	5.0 (M)		
1-Butanol	0.015	5.0	36.86	30.43	19	
Butanenitrile	0.014	5.0	5.0 (M)	5.0 (M)		
2-Pentanone	0.018	5.0	5.0 (M)	5.0 (M)		
1,4-Dioxane	0.018	5.0	5.0 (M)	5.0 (M)		
4-Methyl-2-Pentanone	0.020	5.0	5.0 (M)	5.0 (M)		
2-Hexanone	0.020	5.0	5.0 (M)	5.0 (M)		
3-Heptanone	0.023	5.0	5.0 (M)	5.0 (M)		
2-Heptanone	0.023	5.0	5.0 (M)	5.0 (M)		
Cyclohexanone	0.020	5.0	5.0 (M)	5.0 (M)		
2-Octanone	0.026	5.0	5.0 (M)	5.0 (M)		

2.2.3 Quality Control Summary Tables

This section contains 4 tables that summarize the quality control parameters used during analysis:

- The Laboratory Blank Summary lists the target compounds above 2.5 ppbv and TICs found in analyzing the method blanks.
- A continuing calibration verification standard (CCVS) is analyzed before the analysis of the vapor samples to assure valid calibration. The Continuing Calibration Reports have the continuing calibration response factors (CCRF) for all target compounds and the percent deviation from the CCRFs calculated during initial calibration.
- The Internal Standards Area Counts Table lists the area counts of the 2 internal standards added during the analysis and % recoveries.
- Two laboratory control samples (LCSs) are analyzed with each batch of vapor samples to measure accuracy and precision. This table lists % recovery and %RPD for the 6 compounds in the LCS.

Laboratory Blank Summary (page 1 of 2)

Data File ID 19100503.D
 Analysis Date 10/05/99
 Associated Vapor Samples V9018: -AMB-01, -00E-01, -00E-02, -00E-03, -00E-04, -00E-05

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
n-Decane	124-18-5	35.55	4.6	0.027

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Data File ID 19100603.D
 Analysis Date 10/06/99
 Associated Vapor Samples V9018: -00E-01-2, -00E-02-2

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
n-Decane	124-18-5	35.60	4.2	0.024

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Data File ID 19100703.D
 Analysis Date 10/07/99
 Associated Vapor Samples V9018: -00E-03-2, -00E-04-2, -00E-05-2 V9019: -AMB-01, -00F-01, -00F-02

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
n-Decane	124-18-5	35.60	4.2	0.024

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Data File ID 19101205.D
 Analysis Date 10/12/99
 Associated Vapor Samples V9018: -00E-01 Dup

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
(None)				

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Laboratory Blank Summary (page 2 of 2)

Data File ID 19101304.D
 Analysis Date 10/13/99
 Associated Vapor Samples V9019: -00F-03, -00F-04, -00F-05

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
(None)				

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Data File ID 19101404.D
 Analysis Date 10/14/99
 Associated Vapor Samples V9018: -00E-01-2 Dup V9019: -00F-04-2, -00F-05-2

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
1-butanol	71-36-3	24.14	3.3	0.010
2-octanone	111-13-7	35.51	12	0.062

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Data File ID 19101803.D
 Analysis Date 10/18/99
 Associated Vapor Samples V9019: -00F-01-2, -00F-02-2

Target analyte	CAS Number	Retention Time (min)	Concentration (ppbv)	Concentration (mg/m ³)
(None)				

TIC Compound Name	CAS Number	Retention Time (min)	Estimated Concentration (ppbv)	Estimated Concentration (mg/m ³)
(None)				

Notes:

TIC estimation based on fluorobenzene internal standard.

Target compounds are reported above 2.5 ppbv (0.5 of the VPRQL of 5 ppbv) except for acetone, methylene chloride, and 2-butanone (12.5 ppbv).

TICs are reported above 5 ppbv (the VPRQL of the target compounds).

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Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19100501.D

Acq On : 5 Oct 1999 8:05 am

Sample : P-CCVS @ ~150 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	75	0.02
2	ETHANOL	0.172	0.172	0.0	79	0.00
3	ACETONITRILE	0.168	0.194	-15.5	86	0.02
4	ACETONE	0.241	0.217	10.0	81	0.02
5	FURAN	0.462	0.481	-4.1	80	0.02
6	2-PROPANOL	0.754	0.745	1.2	77	0.03
7	1-PROPANOL	0.772	0.771	0.1	75	0.04
8	PROPANENITRILE	0.312	0.324	-3.8	80	0.03
9	BUTANAL	0.148	0.145	2.0	80	0.02
10	2-BUTANONE	0.222	0.212	4.5	79	0.02
11	TETRAHYDROFURAN	0.212	0.211	0.5	79	0.02
12	1-BUTANOL	0.329	0.371	-12.8	77	0.03
13	BUTANENITRILE	0.781	0.778	0.4	82	0.03
14	2-PENTANONE	1.457	1.346	7.6	81	0.03
15	1,4-DIOXANE	0.304	0.289	4.9	77	0.02
16	4-METHYL-2-PENTANONE	0.152	0.139	8.6	77	0.02
17	CHLOROBENZENE-D5	1.000	1.000	0.0	69	0.02
18	2-HEXANONE	1.030	1.056	-2.5	80	0.03
19	3-HEPTANONE	0.255	0.233	8.6	74	0.03
20	2-HEPTANONE	1.898	1.802	5.1	78	0.03
21	CYCLOHEXANONE	0.522	0.527	-1.0	72	0.03
22	2-OCTANONE	3.385	3.413	-0.8	83	0.02

(#) = Out of Range
 19092905.D VAP_P10.M

SPCC's out = 0 CCC's out = 0
 Tue Oct 05 08:55:23 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19100502.D

Acq On : 5 Oct 1999 9:07 am

Sample : NP-CCVS @ ~100 PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	84	0.07
2	FREON 12	1.087	1.003	7.7	79	0.10
3	METHYL CHLORIDE	0.402	0.443	-10.2	91	0.08
4	N-BUTANE	0.729	0.804	-10.3	94	0.09
5	ETHYL CHLORIDE	0.268	0.290	-8.2	89	0.07
6	FREON 11	0.826	0.728	11.9	78	0.08
7	N-PENTANE	0.074	0.077	-4.1	87	0.08
8	DICHLOROMETHANE	0.493	0.551	-11.8	92	0.07
9	2-METHYL-PENTANE	1.019	1.089	-6.9	95	0.07
10	1-HEXENE	0.433	0.472	-9.0	94	0.08
11	N-HEXANE	0.647	0.690	-6.6	93	0.08
12	CHLOROFORM	0.677	0.639	5.6	83	0.07
13	BENZENE	1.204	1.223	-1.6	91	0.07
14	CARBON TETRACHLORIDE	0.614	0.540	12.1	81	0.08
15	3-METHYL-HEXANE	1.125	1.216	-8.1	104	0.08
16	N-HEPTANE	0.410	0.438	-6.8	95	0.08
17	TOLUENE	1.419	1.384	2.5	87	0.08
18	N-OCTANE	0.442	0.465	-5.2	96	0.07
19	TETRACHLOROETHYLENE	0.753	0.662	12.1	78	0.08
20	CHLOROBENZENE-D5	1.000	1.000	0.0	76	0.08
21	CHLOROBENZENE	1.735	1.783	-2.8	85	0.08
22	ETHYLBENZENE	2.481	2.549	-2.7	85	0.08
23	M,P-XYLENE	1.874	1.845	1.5	89	0.09
24	STYRENE	1.455	1.518	-4.3	92	0.08
25	N-NONANE	1.723	1.691	1.9	100	0.08
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.657	-0.5	89	0.08
27	O-XYLENE	2.086	2.119	-1.6	85	0.09
28	N-DECANE	1.442	1.828	-26.8	97	0.08
29	1,2,4-TRIMETHYLBENZENE	2.332	2.305	1.2	85	0.07

(#) = Out of Range
19092806.D VAP_NP10.M

SPCC's out = 0 CCC's out = 0
Tue Oct 05 09:57:12 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19100601.D

Acq On : 6 Oct 1999 11:58 am

Sample : P-CCVS @ ~150 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	97	0.03
2	ETHANOL	0.172	0.158	8.1	93	0.02
3	ACETONITRILE	0.168	0.160	4.8	90	0.03
4	ACETONE	0.241	0.199	17.4	95	0.03
5	FURAN	0.462	0.447	3.2	95	0.03
6	2-PROPANOL	0.754	0.691	8.4	92	0.03
7	1-PROPANOL	0.772	0.703	8.9	88	0.04
8	PROPANENITRILE	0.312	0.302	3.2	95	0.03
9	BUTANAL	0.148	0.133	10.1	93	0.02
10	2-BUTANONE	0.222	0.197	11.3	94	0.02
11	TETRAHYDROFURAN	0.212	0.198	6.6	95	0.03
12	1-BUTANOL	0.329	0.334	-1.5	89	0.03
13	BUTANENITRILE	0.781	0.706	9.6	95	0.03
14	2-PENTANONE	1.457	1.237	15.1	96	0.03
15	1,4-DIOXANE	0.304	0.272	10.5	93	0.03
16	4-METHYL-2-PENTANONE	0.152	0.130	14.5	93	0.02
17	CHLOROBENZENE-D5	1.000	1.000	0.0	95	0.03
18	2-HEXANONE	1.030	0.921	10.6	97	0.03
19	3-HEPTANONE	0.255	0.210	17.6	93	0.04
20	2-HEPTANONE	1.898	1.647	13.2	99	0.04
21	CYCLOHEXANONE	0.522	0.490	6.1	93	0.04
22	2-OCTANONE	3.385	2.907	14.1	98	0.03

(#) = Out of Range
 19092905.D VAP_P10.M

SPCC's out = 0 CCC's out = 0
 Wed Oct 06 12:46:50 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19100602.D

Acq On : 6 Oct 1999 12:58 pm

Sample : NP-CCVS @ ~100 PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	109	0.09
2	FREON 12	1.087	0.953	12.3	97	0.15
3	METHYL CHLORIDE	0.402	0.401	0.2	106	0.12
4	N-BUTANE	0.729	0.719	1.4	108	0.12
5	ETHYL CHLORIDE	0.268	0.268	0.0	106	0.09
6	FREON 11	0.826	0.690	16.5	95	0.09
7	N-PENTANE	0.074	0.071	4.1	104	0.09
8	DICHLOROMETHANE	0.493	0.497	-0.8	106	0.08
9	2-METHYL-PENTANE	1.019	0.970	4.8	109	0.08
10	1-HEXENE	0.433	0.426	1.6	109	0.10
11	N-HEXANE	0.647	0.629	2.8	109	0.10
12	CHLOROFORM	0.677	0.604	10.8	101	0.09
13	BENZENE	1.204	1.136	5.6	109	0.09
14	CARBON TETRACHLORIDE	0.614	0.508	17.3	98	0.10
15	3-METHYL-HEXANE	1.125	1.077	4.3	118	0.10
16	N-HEPTANE	0.410	0.395	3.7	110	0.09
17	TOLUENE	1.419	1.308	7.8	105	0.09
18	N-OCTANE	0.442	0.417	5.7	111	0.09
19	TETRACHLOROETHYLENE	0.753	0.643	14.6	98	0.09
20	CHLOROBENZENE-D5	1.000	1.000	0.0	105	0.08
21	CHLOROBENZENE	1.735	1.567	9.7	104	0.09
22	ETHYLBENZENE	2.481	2.248	9.4	104	0.09
23	M,P-XYLENE	1.874	1.599	14.7	107	0.09
24	STYRENE	1.455	1.305	10.3	110	0.08
25	N-NONANE	1.723	1.368	20.6	112	0.09
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.435	13.0	106	0.09
27	O-XYLENE	2.086	1.865	10.6	104	0.09
28	N-DECANE	1.442	1.467	-1.7	108	0.08
29	1,2,4-TRIMETHYLBENZENE	2.332	2.050	12.1	105	0.08

(#) = Out of Range

19092806.D VAP_NP10.M

SPCC's out = 0 CCC's out = 0

Wed Oct 06 13:47:52 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19100701.D

Acq On : 7 Oct 1999 7:52 am

Sample : P-CCVS @~150 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	89	0.00
2	ETHANOL	0.172	0.167	2.9	90	0.00
3	ACETONITRILE	0.168	0.174	-3.6	90	0.01
4	ACETONE	0.241	0.210	12.9	92	0.01
5	FURAN	0.462	0.458	0.9	89	0.00
6	2-PROPANOL	0.754	0.735	2.5	90	0.01
7	1-PROPANOL	0.772	0.775	-0.4	89	0.02
8	PROPANENITRILE	0.312	0.306	1.9	88	0.01
9	BUTANAL	0.148	0.136	8.1	88	0.00
10	2-BUTANONE	0.222	0.203	8.6	89	0.00
11	TETRAHYDROFURAN	0.212	0.201	5.2	88	0.00
12	1-BUTANOL	0.329	0.362	-10.0	88	0.01
13	BUTANENITRILE	0.781	0.737	5.6	91	0.01
14	2-PENTANONE	1.457	1.294	11.2	92	0.01
15	1,4-DIOXANE	0.304	0.280	7.9	88	0.00
16	4-METHYL-2-PENTANONE	0.152	0.132	13.2	87	0.00
17	CHLOROBENZENE-D5	1.000	1.000	0.0	87	0.00
18	2-HEXANONE	1.030	0.971	5.7	93	0.02
19	3-HEPTANONE	0.255	0.230	9.8	93	0.00
20	2-HEPTANONE	1.898	1.832	3.5	101	0.02
21	CYCLOHEXANONE	0.522	0.559	-7.1	97	0.02
22	2-OCTANONE	3.385	2.642	21.9	81	0.00

(#) = Out of Range
 19092905.D VAP_P10.M

SPCC's out = 0 CCC's out = 0
 Thu Oct 07 08:46:30 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19100702.D

Acq On : 7 Oct 1999 9:00 am

Sample : NP-CCVS @~100 PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	95	0.07
2	FREON 12	1.087	0.969	10.9	86	0.07
3	METHYL CHLORIDE	0.402	0.409	-1.7	94	0.06
4	N-BUTANE	0.729	0.725	0.5	95	0.08
5	ETHYL CHLORIDE	0.268	0.272	-1.5	94	0.06
6	FREON 11	0.826	0.704	14.8	85	0.06
7	N-PENTANE	0.074	0.072	2.7	92	0.06
8	DICHLOROMETHANE	0.493	0.499	-1.2	93	0.06
9	2-METHYL-PENTANE	1.019	0.973	4.5	96	0.07
10	1-HEXENE	0.433	0.429	0.9	96	0.07
11	N-HEXANE	0.647	0.630	2.6	96	0.08
12	CHLOROFORM	0.677	0.608	10.2	89	0.07
13	BENZENE	1.204	1.133	5.9	95	0.07
14	CARBON TETRACHLORIDE	0.614	0.515	16.1	87	0.07
15	3-METHYL-HEXANE	1.125	1.072	4.7	103	0.07
16	N-HEPTANE	0.410	0.395	3.7	96	0.07
17	TOLUENE	1.419	1.297	8.6	92	0.07
18	N-OCTANE	0.442	0.414	6.3	97	0.07
19	TETRACHLOROETHYLENE	0.753	0.637	15.4	85	0.07
20	CHLOROBENZENE-D5	1.000	1.000	0.0	91	0.06
21	CHLOROBENZENE	1.735	1.558	10.2	90	0.07
22	ETHYLBENZENE	2.481	2.251	9.3	90	0.07
23	M,P-XYLENE	1.874	1.603	14.5	93	0.07
24	STYRENE	1.455	1.293	11.1	95	0.06
25	N-NONANE	1.723	1.371	20.4	98	0.07
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.428	13.4	92	0.06
27	O-XYLENE	2.086	1.863	10.7	90	0.07
28	N-DECANE	1.442	1.468	-1.8	94	0.06
29	1,2,4-TRIMETHYLBENZENE	2.332	2.046	12.3	91	0.06

(#) = Out of Range
 19092806.D VAP_NP10.M

SPCC's out = 0 CCC's out = 0
 Thu Oct 07 09:48:49 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19101203.D

Acq On : 12 Oct 1999 11:27 am

Sample : P-CCVS @ 150 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	58	0.00
2	ETHANOL	0.172	0.148	14.0	52	-0.04
3	ACETONITRILE	0.168	0.170	-1.2	57	0.00
4	ACETONE	0.241	0.213	11.6	61	0.00
5	FURAN	0.462	0.454	1.7	58	0.00
6	2-PROPANOL	0.754	0.685	9.2	54	-0.02
7	1-PROPANOL	0.772	0.690	10.6	51	0.00
8	PROPANENITRILE	0.312	0.308	1.3	58	0.00
9	BUTANAL	0.148	0.132	10.8	55	-0.02
10	2-BUTANONE	0.222	0.214	3.6	61	-0.02
11	TETRAHYDROFURAN	0.212	0.200	5.7	57	0.00
12	1-BUTANOL	0.329	0.311	5.5	49#	0.00
13	BUTANENITRILE	0.781	0.729	6.7	58	0.00
14	2-PENTANONE	1.457	1.302	10.6	60	0.00
15	1,4-DIOXANE	0.304	0.285	6.3	58	0.00
16	4-METHYL-2-PENTANONE	0.152	0.135	11.2	58	0.00
17	CHLOROBENZENE-D5	1.000	1.000	0.0	56	-0.02
18	2-HEXANONE	1.030	1.007	2.2	62	0.00
19	3-HEPTANONE	0.255	0.260	-2.0	67	0.00
20	2-HEPTANONE	1.898	2.028	-6.8	71	0.00
21	CYCLOHEXANONE	0.522	0.527	-1.0	58	0.00
22	2-OCTANONE	3.385	1.681	50.3#	33#	-0.02

Evaluate Continuing Calibration Report

Betty
10/12/99

Data File : C:\HPCHEM\1\DATA\19101204.D

Vial: 1

Acq On : 12 Oct 1999 12:39 pm

Operator: BE HEY

Sample : NP-CCVS @ 100 PPBV

Inst : GC/MS Ins

Misc : 20 TORR

Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	63	0.05
2	FREON 12	1.087	0.960	11.7	57	0.18
3	METHYL CHLORIDE	0.402	0.394	2.0	61	0.12
4	N-BUTANE	0.729	0.691	5.2	60	0.10
5	ETHYL CHLORIDE	0.268	0.266	0.7	61	0.06
6	FREON 11	0.826	0.720	12.8	58	0.06
7	N-PENTANE	0.074	0.071	4.1	60	0.06
8	DICHLOROMETHANE	0.493	0.491	0.4	61	0.05
9	2-METHYL-PENTANE	1.019	0.944	7.4	62	0.05
10	1-HEXENE	0.433	0.418	3.5	62	0.05
11	N-HEXANE	0.647	0.614	5.1	62	0.06
12	CHLOROFORM	0.677	0.613	9.5	60	0.05
13	BENZENE	1.204	1.128	6.3	63	0.05
14	CARBON TETRACHLORIDE	0.614	0.530	13.7	60	0.06
15	3-METHYL-HEXANE	1.125	1.046	7.0	67	0.06
16	N-HEPTANE	0.410	0.389	5.1	63	0.05
17	TOLUENE	1.419	1.308	7.8	62	0.06
18	N-OCTANE	0.442	0.410	7.2	64	0.05
19	TETRACHLOROETHYLENE	0.753	0.662	12.1	59	0.05
20	CHLOROBENZENE-D5	1.000	1.000	0.0	61	0.05
21	CHLOROBENZENE	1.735	1.606	7.4	61	0.05
22	ETHYLBENZENE	2.481	2.298	7.4	61	0.05
23	M,P-XYLENE	1.874	1.638	12.6	63	0.06
24	STYRENE	1.455	1.301	10.6	63	0.05
25	N-NONANE	1.723	1.376	20.1	65	0.06
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.437	12.9	62	0.05
27	O-XYLENE	2.086	1.894	9.2	61	0.06
28	N-DECANE	1.442	1.478	-2.5	63	0.06
29	1,2,4-TRIMETHYLBENZENE	2.332	2.120	9.1	63	0.05

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19101302.D

Acq On : 13 Oct 1999 9:41 am

Sample : P-CCVS @ 200 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	72	0.00
2	ETHANOL	0.172	0.153	11.0	67	-0.04
3	ACETONITRILE	0.168	0.203	-20.8	77	0.00
4	ACETONE	0.241	0.208	13.7	74	0.00
5	FURAN	0.462	0.450	2.6	73	0.00
6	2-PROPANOL	0.754	0.701	7.0	70	0.02
7	1-PROPANOL	0.772	0.709	8.2	68	0.04
8	PROPANENITRILE	0.312	0.306	1.9	71	0.02
9	BUTANAL	0.148	0.134	9.5	74	0.00
10	2-BUTANONE	0.222	0.201	9.5	73	0.00
11	TETRAHYDROFURAN	0.212	0.196	7.5	71	0.00
12	1-BUTANOL	0.329	0.341	-3.6	71	0.03
13	BUTANENITRILE	0.781	0.700	10.4	71	0.03
14	2-PENTANONE	1.457	1.180	19.0	72	0.02
15	1,4-DIOXANE	0.304	0.270	11.2	70	0.00
16	4-METHYL-2-PENTANONE	0.152	0.122	19.7	68	0.00
17	CHLOROBENZENE-D5	1.000	1.000	0.0	70	0.01
18	2-HEXANONE	1.030	0.836	18.8	69	0.02
19	3-HEPTANONE	0.255	0.192	24.7	67	0.02
20	2-HEPTANONE	1.898	1.425	24.9	69	0.02
21	CYCLOHEXANONE	0.522	0.438	16.1	62	0.02
22	2-OCTANONE	3.385	2.732	19.3	65	0.02

(#) = Out of Range
19093003.D VAP_P10.M

SPCC's out = 0 CCC's out = 0
Wed Oct 13 10:30:01 1999

Evaluate Continuing Calibration Report

BEBby
10/13/99

Data File : C:\HPCHEM\1\DATA\19101303.D

Acq On : 13 Oct 1999 10:51 am

Sample : NP-CCVS @ 100 PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	75	0.08
2	FREON 12	1.087	0.997	8.3	70	0.11
3	METHYL CHLORIDE	0.402	0.418	-4.0	76	0.09
4	N-BUTANE	0.729	0.731	-0.3	76	0.09
5	ETHYL CHLORIDE	0.268	0.284	-6.0	77	0.07
6	FREON 11	0.826	0.731	11.5	69	0.07
7	N-PENTANE	0.074	0.075	-1.4	75	0.07
8	DICHLOROMETHANE	0.493	0.514	-4.3	76	0.06
9	2-METHYL-PENTANE	1.019	0.995	2.4	77	0.06
10	1-HEXENE	0.433	0.437	-0.9	77	0.07
11	N-HEXANE	0.647	0.641	0.9	77	0.07
12	CHLOROFORM	0.677	0.633	6.5	73	0.06
13	BENZENE	1.204	1.162	3.5	77	0.06
14	CARBON TETRACHLORIDE	0.614	0.532	13.4	71	0.07
15	3-METHYL-HEXANE	1.125	1.083	3.7	82	0.07
16	N-HEPTANE	0.410	0.404	1.5	78	0.08
17	TOLUENE	1.419	1.357	4.4	76	0.08
18	N-OCTANE	0.442	0.425	3.8	78	0.08
19	TETRACHLOROETHYLENE	0.753	0.671	10.9	71	0.08
20	CHLOROBENZENE-D5	1.000	1.000	0.0	72	0.07
21	CHLOROBENZENE	1.735	1.641	5.4	74	0.08
22	ETHYLBENZENE	2.481	2.374	4.3	75	0.07
23	M,P-XYLENE	1.874	1.675	10.6	76	0.08
24	STYRENE	1.455	1.323	9.1	76	0.07
25	N-NONANE	1.723	1.422	17.5	80	0.08
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.482	10.1	75	0.07
27	O-XYLENE	2.086	1.959	6.1	75	0.08
28	N-DECANE	1.442	1.621	-12.4	81	0.07
29	1,2,4-TRIMETHYLBENZENE	2.332	2.153	7.7	76	0.07

(#) = Out of Range
 19092806.D VAP_NP10.M

SPCC's out = 0 CCC's out = 0
 Wed Oct 13 11:38:56 1999

Evaluate Continuing Calibration Report

10/14/99

Data File : C:\HPCHEM\1\DATA\19101402.D

Acq On : 14 Oct 1999 9:41 am

Sample : NP-CCVS @ 100 PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	72	0.04
2	FREON 12	1.087	1.008	7.3	68	0.10
3	METHYL CHLORIDE	0.402	0.406	-1.0	71	0.07
4	N-BUTANE	0.729	0.708	2.9	70	0.07
5	ETHYL CHLORIDE	0.268	0.271	-1.1	71	0.04
6	FREON 11	0.826	0.752	9.0	68	0.04
7	N-PENTANE	0.074	0.073	1.4	70	0.04
8	DICHLOROMETHANE	0.493	0.502	-1.8	71	0.03
9	2-METHYL-PENTANE	1.019	0.949	6.9	70	0.03
10	1-HEXENE	0.433	0.418	3.5	71	0.04
11	N-HEXANE	0.647	0.618	4.5	71	0.04
12	CHLOROFORM	0.677	0.627	7.4	69	0.03
13	BENZENE	1.204	1.133	5.9	72	0.03
14	CARBON TETRACHLORIDE	0.614	0.547	10.9	70	0.05
15	3-METHYL-HEXANE	1.125	1.047	6.9	76	0.05
16	N-HEPTANE	0.410	0.385	6.1	71	0.04
17	TOLUENE	1.419	1.322	6.8	71	0.04
18	N-OCTANE	0.442	0.403	8.8	71	0.04
19	TETRACHLOROETHYLENE	0.753	0.663	12.0	67	0.04
20	CHLOROBENZENE-D5	1.000	1.000	0.0	71	0.04
21	CHLOROBENZENE	1.735	1.585	8.6	70	0.04
22	ETHYLBENZENE	2.481	2.288	7.8	71	0.04
23	M,P-XYLENE	1.874	1.625	13.3	73	0.05
24	STYRENE	1.455	1.282	11.9	72	0.04
25	N-NONANE	1.723	1.387	19.5	76	0.04
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.409	14.6	70	0.04
27	O-XYLENE	2.086	1.898	9.0	71	0.04
28	N-DECANE	1.442	1.555	-7.8	77	0.04
29	1,2,4-TRIMETHYLBENZENE	2.332	2.115	9.3	73	0.03

 (#) = Out of Range
 19092806.D VAP_NP10.M

 SPCC's out = 0 CCC's out = 0
 Thu Oct 14 10:29:24 1999

Evaluate Continuing Calibration Report

BEB
10/14/99

Data File : C:\HPCHEM\1\DATA\19101403.D

Acq On : 14 Oct 1999 10:47 am

Sample : P-CCVS @ 200 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	71	-0.03
2	ETHANOL	0.172	0.148	14.0	64	-0.06
3	ACETONITRILE	0.168	0.185	-10.1	69	-0.02
4	ACETONE	0.241	0.205	14.9	72	-0.03
5	FURAN	0.462	0.444	3.9	71	-0.03
6	2-PROPANOL	0.754	0.660	12.5	65	-0.02
7	1-PROPANOL	0.772	0.631	18.3	60	0.00
8	PROPANENITRILE	0.312	0.303	2.9	70	-0.02
9	BUTANAL	0.148	0.126	14.9	69	-0.03
10	2-BUTANONE	0.222	0.197	11.3	70	-0.03
11	TETRAHYDROFURAN	0.212	0.195	8.0	70	-0.03
12	1-BUTANOL	0.329	0.248	24.6	51	-0.02
13	BUTANENITRILE	0.781	0.672	14.0	67	-0.02
14	2-PENTANONE	1.457	1.155	20.7	70	-0.02
15	1,4-DIOXANE	0.304	0.264	13.2	68	-0.03
16	4-METHYL-2-PENTANONE	0.152	0.120	21.1	66	-0.03
17	CHLOROBENZENE-D5	1.000	1.000	0.0	69	-0.03
18	2-HEXANONE	1.030	0.796	22.7	65	-0.01
19	3-HEPTANONE	0.255	0.214	16.1	75	-0.03
20	2-HEPTANONE	1.898	0.696	63.3#	33#	-0.03
21	CYCLOHEXANONE	0.522	0.074	85.8#	10#	-0.04
22	2-OCTANONE	3.385	0.555	83.6#	13#	-0.04

(#) = Out of Range
19093003.D VAP_P10.M

SPCC's out = 0 CCC's out = 0
Thu Oct 14 11:36:04 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19101801.D

Acq On : 18 Oct 1999 10:08 am

Sample : NP-CCVS @ 100PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min

Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	64	0.01
2	FREON 12	1.087	1.041	4.2	63	0.01
3	METHYL CHLORIDE	0.402	0.421	-4.7	66	0.00
4	N-BUTANE	0.729	0.718	1.5	64	0.02
5	ETHYL CHLORIDE	0.268	0.274	-2.2	64	0.00
6	FREON 11	0.826	0.758	8.2	62	0.00
7	N-PENTANE	0.074	0.073	1.4	63	0.00
8	DICHLOROMETHANE	0.493	0.505	-2.4	64	0.00
9	2-METHYL-PENTANE	1.019	0.961	5.7	64	0.00
10	1-HEXENE	0.433	0.421	2.8	64	0.00
11	N-HEXANE	0.647	0.623	3.7	64	0.02
12	CHLOROFORM	0.677	0.634	6.4	63	0.00
13	BENZENE	1.204	1.142	5.1	65	0.00
14	CARBON TETRACHLORIDE	0.614	0.553	9.9	63	0.00
15	3-METHYL-HEXANE	1.125	1.055	6.2	69	0.00
16	N-HEPTANE	0.410	0.390	4.9	64	0.00
17	TOLUENE	1.419	1.332	6.1	64	0.01
18	N-OCTANE	0.442	0.407	7.9	64	0.01
19	TETRACHLOROETHYLENE	0.753	0.670	11.0	61	0.01
20	CHLOROBENZENE-D5	1.000	1.000	0.0	60	0.01
21	CHLOROBENZENE	1.735	1.660	4.3	63	0.01
22	ETHYLBENZENE	2.481	2.409	2.9	64	0.01
23	M,P-XYLENE	1.874	1.715	8.5	66	0.02
24	STYRENE	1.455	1.331	8.5	64	0.01
25	N-NONANE	1.723	1.439	16.5	68	0.02
26	1,1,2,2-TETRACHLOROETHANE	1.649	1.491	9.6	63	0.01
27	O-XYLENE	2.086	2.003	4.0	64	0.02
28	N-DECANE	1.442	1.560	-8.2	66	0.01
29	1,2,4-TRIMETHYLBENZENE	2.332	2.200	5.7	65	0.01

(#) = Out of Range
19092806.D VAP_NP10.M

SPCC's out = 0 CCC's out = 0
Mon Oct 18 12:09:00 1999

HNF-5367 Rev. 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\19101802.D

Acq On : 18 Oct 1999 11:14 am

Sample : P-CCVS @ 100 PPBV

Misc : 20 TORR

MS Integration Params: rteint.p

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Bky
10/18/99

Method : C:\HPCHEM\1\METHODS\VAP P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	FLUOROBENZENE	1.000	1.000	0.0	62	-0.05
2	ETHANOL	0.172	0.152	11.6	53	-0.10
3	ACETONITRILE	0.168	0.195	-16.1	66	-0.06
4	ACETONE	0.241	0.197	18.3	58	-0.07
5	FURAN	0.462	0.482	-4.3	62	-0.05
6	2-PROPANOL	0.754	0.662	12.2	51	-0.07
7	1-PROPANOL	0.772	0.659	14.6	48#	-0.06
8	PROPANENITRILE	0.312	0.315	-1.0	60	-0.06
9	BUTANAL	0.148	0.135	8.8	59	-0.06
10	2-BUTANONE	0.222	0.203	8.6	59	-0.06
11	TETRAHYDROFURAN	0.212	0.207	2.4	59	-0.05
12	1-BUTANOL	0.329	0.275	16.4	43#	-0.06
13	BUTANENITRILE	0.781	0.734	6.0	59	-0.05
14	2-PENTANONE	1.457	1.304	10.5	58	-0.05
15	1,4-DIOXANE	0.304	0.274	9.9	54	-0.05
16	4-METHYL-2-PENTANONE	0.152	0.133	12.5	55	-0.06
17	CHLOROBENZENE-D5	1.000	1.000	0.0	58	-0.06
18	2-HEXANONE	1.030	0.958	7.0	55	-0.05
19	3-HEPTANONE	0.255	0.201	21.2	49#	-0.06
20	2-HEPTANONE	1.898	1.557	18.0	49#	-0.06
21	CYCLOHEXANONE	0.522	0.422	19.2	44#	-0.06
22	2-OCTANONE	3.385	2.585	23.6	41#	-0.06

(#) = Out of Range

19093005.D VAP_P10.M

SPCC's out = 0 CCC's out = 0

Mon Oct 18 12:12:51 1999

Internal Standards Area Counts Table (page 1 of 2)

File:	19100502.D	19100504.D	19100505.D	19100506.D	19100507.D	19100508.D	19100509.D
Sample:	CCVS	V9018-021-AMB-01	V9018-023-00E-01	V9018-040-00E-02	V9018-045-00E-03	V9018-068-00E-04	V9018-075-00E-05
Method:	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M
Instrument:	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1

Internal Standard	Q Ion (amu)	Retention Time (min)	Area	Recovery %	Area	Recovery %	Area	Recovery %	Area	Recovery %	Area	Recovery %
Fluorobenzene	96	24.53	6296064	102	6288017	100	6129500	97	6144535	98	6561064	104
Chlorobenzene-d5	117	30.95	4909574	90	2196261	45	1943168	40	1840166	37	2458380	50
											2302296	47

File: 19100602.D
Sample: CCVS
Method: VAP_NP10.M
Instrument: GC-MS #1

Internal Standard	Q Ion (amu)	Retention Time (min)	Area	Recovery %	Area	Recovery %
Fluorobenzene	96	24.54	8771817	108	8665683	107
Chlorobenzene-d5	117	30.95	6815059	96	6339068	93

File: 19100702.D
Sample: CCVS
Method: VAP_NP10.M
Instrument: GC-MS #1

File:	19100702.D	19100704.D	19100705.D	19100706.D	19100707.D	19100708.D	19100709.D
Sample:	CCVS	V9018-045-00E-03-2	V9018-068-00E-04-2	V9018-075-00E-05-2	V9019-091-AMB-01	V9019-097-00F-01	V9019-110-00F-02
Method:	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M	VAP_NP10.M
Instrument:	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1	GC-MS #1

Internal Standard	Q Ion (amu)	Retention Time (min)	Area	Recovery %	Area	Recovery %	Area	Recovery %	Area	Recovery %	Area	Recovery %
Fluorobenzene	96	24.52	7090017	105	7446960	105	7422901	105	7328172	103	7197760	100
Chlorobenzene-d5	117	30.93	5922682	92	5419871	91	5381669	87	5141064	90	2845164	48
											5330959	96
											3164378	53

Notes:

- 1) Internal standards used to calculate Relative Response Factors for target compounds.
- 2) Recovery relative to the CCVS (CCVS = 100 %).

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Internal Standards Area Counts Table (page 2 of 2)

File: 19101204.D 19101206.D
Sample: CCVS V9018-023-00E-01 Dup
Method: VAP_NP10.M VAP_NP10.M
Instrument: GC-MS #1 GC-MS #1

Internal Standard	Q ion (amu)	Retention Time (min)	Area	Area	Recovery ² %
Fluorobenzene	96	24.51	4720333	4913958	104
Chlorobenzene-d5	117	30.92	3937839	2546387	65

File: 19101303.D 19101305.D 19101306.D 19101307.D
Sample: CCVS V9019-112-00F-03 V9019-140-00F-04 V9019-141-00F-05
Method: VAP_NP10.M VAP_NP10.M VAP_NP10.M VAP_NP10.M
Instrument: GC-MS #1 GC-MS #1 GC-MS #1 GC-MS #1

Internal Standard	Q ion (amu)	Retention Time (min)	Area	Area	Recovery ² %	Area	Recovery ² %	Area	Recovery ² %
Fluorobenzene	96	24.53	5604920	5618903	100	5614933	100	5683657	101
Chlorobenzene-d5	117	30.94	4667239	3147281	67	2977899	64	2713168	58

File: 19101402.D 19101405.D 19101406.D 19101409.D
Sample: CCVS V9019-140-00F-04-2 V9019-141-00F-05-2 V9018-023-00E-01-2 Dup
Method: VAP_NP10.M VAP_NP10.M VAP_NP10.M VAP_NP10.M
Instrument: GC-MS #1 GC-MS #1 GC-MS #1 GC-MS #1

Internal Standard	Q ion (amu)	Retention Time (min)	Area	Area	Recovery ² %	Area	Recovery ² %	Area	Recovery ² %
Fluorobenzene	96	24.49	5358099	5884710	110	5872045	110	5647587	105
Chlorobenzene-d5	117	30.91	4569203	4274363	94	4119649	90	4019358	88

File: 19101801.D 19101805.D 19101806.D
Sample: CCVS V9019-097-00F-01-2 V9019-110-00F-02-2
Method: VAP_NP10.M VAP_NP10.M VAP_NP10.M
Instrument: GC-MS #1 GC-MS #1 GC-MS #1

Internal Standard	Q ion (amu)	Retention Time (min)	Area	Area	Recovery ² %	Area	Recovery ² %
Fluorobenzene	96	24.47	4805020	4984283	104	4922358	102
Chlorobenzene-d5	117	30.88	3905156	3508529	90	3316056	85

Notes:

- 1) Internal standards used to calculate Relative Response Factors for target compounds.
- 2) Recovery relative to the CCVS (CCVS = 100 %).

Laboratory Control Sample Results Table

Laboratory name:

Instrument identification number:

Laboratory control sample analysis date and time:

Data file ID:

Analyte	Special Analytical Support			Special Analytical Support		
	Certified Concentration (ppbv)	Diluted Concentration (ppbv)	Measured Concentration (ppbv)	Recovery %	Measured Concentration (ppbv)	Recovery %
Chloromethane	2867	47.8	43.02	90.0	43.96	92.0
Tetrahydrofuran	2821	47.0	44.46	94.6	45.94	97.7
n-Pentane	3240	54.0	49.09	90.9	48.32	89.5
4-Methyl-2-pentanone	2603	43.4	40.94	94.3	35.36	81.5
Chlorobenzene	2222	37.0	45.31	122	46.29	125
1,2,4-Trimethylbenzene	2488	41.5	45.70	110	45.68	110
						0.044

2.2.4 Supporting Data

This section contains relevant information used for the tuning and calibration of the instrument, and the analysis and quantitation of the organic compounds. The following are included:

- Instrument tune reports
- Response Factor Reports with relative standard deviations (%RSD) for the target compounds from the initial calibration
- For each SUMMA sample received, the following information is included:
 - Chromatogram using the total ion chromatogram from the mass spectral analysis
 - The Quantitation Reports for both polar and nonpolar target compounds
 - A printout of the mass spectral library search using the NIST 98 or Wiley 138 database
 - Mass spectra for each listed tentatively identified compound (TIC).
- Duplicate and LCS data.

HP5972 Maximum Sensitivity Autotune
 Instrument: GC/MS Instrument #1
 Tue Sep 28 08:50:22 1999

09/28/99

C:\HPCHEM\1\5972\ATUNE.U

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
 151 peaks Base: 69.00 Abundance: 1078272

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	1078272	100.00	70.00	12426	1.15
219.00	495168	45.92	220.00	21648	4.37
502.00	13053	1.21	503.00	1320	10.11

07/29/99

275

Instrument: GC/MS Instrument #1
 Wed Sep 29 08:18:56 1999

C:\HPCHEM\1\5972\ATUNE.U

EMVolts	2000	AmuGain	549
Xray	55.6	AmuOffs	69
Emission	50.0	Wid219	-0.037
MS Temp	175	TTI	OFF
Vacuum	55	DC Pol	POS
Samples	8	Repeller	24.86
Averages	3	IonFocus	90.0
StepSize	0.10	EntLens	30.12
MassGain	225	EntOffs	15.06
MassOffs	14	Filament	2

PFTBA OPEN

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
 200 peaks Base: 69.00 Abundance: 1896960

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	1896960	100.00	70.00	22952	1.21
219.00	931200	49.09	220.00	41920	4.50
502.00	29544	1.56	503.00	3102	10.50

09/30/99

875

Instrument: GC/MS Instrument #1
 Thu Sep 30 07:54:42 1999

C:\HPCHEM\1\5972\ATUNE.U

EMVolts	2000	AmuGain	549
Xray	55.6	AmuOffs	69
Emission	50.0	Wid219	-0.037
MS Temp	176	TTI	OFF
Vacuum	56	DC Pol	POS
Samples	8	Repeller	24.86
Averages	3	IonFocus	90.0
StepSize	0.10	EntLens	30.12
MassGain	225	EntOffs	15.06
MassOffs	14	Filament	2

PFTBA OPEN

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
 195 peaks Base: 69.00 Abundance: 1768960

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	1768960	100.00	70.00	20672	1.17
219.00	858368	48.52	220.00	38048	4.43
502.00	25248	1.43	503.00	2732	10.82

HP5972 Maximum Sensitivity Autotune
Instrument: GC/MS Instrument #1
Tue Oct 05 07:46:50 1999

10/05/99
C:\HPCHEM\1\5972\ATUNE.U

HP5972 Maximum Sensitivity Autotune
Instrument: GC/MS Instrument #1
Wed Oct 06 11:33:52 1999

10/06/99
8/75
C:\HPCHEM\1\5972\ATUNE.U

10/06/99

275

Instrument: GC/MS Instrument #1
Wed Oct 06 14:58:41 1999

C:\HPCHEM\1\5972\ATUNE.U

EMVolts	2282	AmuGain	551
Xray	59.9	AmuOffs	68
Emission	50.0	Wid219	-0.042
MS Temp	179	TTI	OFF
Vacuum	47	DC Pol	POS
Samples	8	Repeller	25.03
Averages	3	IonFocus	90.0
StepSize	0.10	EntLens	32.63
MassGain	218	EntOffs	15.81
MassOffs	6	Filament	2

PFTBA OPEN

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
125 peaks Base: 69.10 Abundance: 1141248

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.10	1141248	100.00	70.10	12548	1.10
219.00	431168	37.78	220.00	18968	4.40
502.00	7933	0.70	503.05	778	9.81

HP5972 Maximum Sensitivity Autotune
 Instrument: GC/MS Instrument #1
 Thu Oct 07 07:38:20 1999

10/07/99
 275
 C:\HPCHEM\1\5972\ATUNE.U

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
 115 peaks Base: 69.10 Abundance: 925440

HP5972 Maximum Sensitivity Autotune
 Instrument: GC/MS Instrument #1
 Tue Oct 12 11:09:33 1999

C:\HPCHEM\1\5972\ATUNE.U

Butley
 10/12/99

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
 113 peaks Base: 69.05 Abundance: 944384

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	944384	100.00	70.05	10306	1.09
218.95	404032	42.78	219.95	17712	4.38
502.00	8372	0.89	503.00	855	10.21

HP5972 Maximum Sensitivity Autotune

Instrument: GC/MS Instrument #1

Wed Oct 13 08:18:47 1999

C:\HPCHEM\1\5972\ATUNE.U

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
119 peaks Base: 69.10 Abundance: 900480

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.10	900480	100.00	70.10	10207	1.13
219.00	382272	42.45	220.00	16704	4.37
502.00	8389	0.93	503.00	863	10.29

HP5972 Maximum Sensitivity Autotune
Instrument: GC/MS Instrument #1
Thu Oct 14 08:01:05 1999

C:\HPCHEM\1\5972\ATUNE.U

HP5972 Maximum Sensitivity Autotune
 Instrument: GC/MS Instrument #1
 Mon Oct 18 09:26:07 1999

C:\HPCHEM\1\5972\ATUNE.U

Setby
 10/13/99

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100
 128 peaks Base: 69.10 Abundance: 893376

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.10	893376	100.00	70.00	10451	1.17
218.95	373760	41.84	219.95	16720	4.47
502.00	8133	0.91	503.00	777	9.55

HNF-5367 Rev. 0

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Last Update : Mon Oct 04 12:50:45 1999
 Response via : Initial Calibration

Calibration Files

1 =19092802.D 2 =19092803.D 3 =19092804.D
 4 =19092805.D 5 =19092806.D 6 =19092807.D

Compound	1	2	3	4	5	6	Avg	%RSD
1) FLUOROBENZENE	-----ISTD-----							
2) FREON 12	1.080	1.055	1.043	1.054	1.069	1.220	1.087	6.13
3) METHYL CHLORIDE	0.363	0.376	0.387	0.393	0.412	0.479	0.402	10.27
4) N-BUTANE	0.715	0.710	0.694	0.717	0.725	0.812	0.729	5.75
5) ETHYL CHLORIDE	0.252	0.250	0.256	0.264	0.276	0.308	0.268	8.11
6) FREON 11	0.869	0.845	0.828	0.821	0.792	0.801	0.826	3.43
7) N-PENTANE	0.072	0.073	0.072	0.073	0.075	0.080	0.074	3.92
8) DICHLOROMETHANE	0.458	0.474	0.481	0.496	0.508	0.540	0.493	5.86
9) 2-METHYL-PENTANE	1.084	1.063	1.035	1.010	0.968	0.951	1.019	5.13
10) 1-HEXENE	0.439	0.439	0.433	0.431	0.425	0.433	0.433	1.22
11) N-HEXANE	0.680	0.667	0.649	0.639	0.624	0.622	0.647	3.58
12) CHLOROFORM	0.707	0.696	0.679	0.670	0.650	0.662	0.677	3.14
13) BENZENE	1.316	1.292	1.253	1.209	1.135	1.021	1.204	9.15
14) CARBON TETRACHLORID	0.708	0.650	0.643	0.642	0.564	0.475	0.614	13.36
15) 3-METHYL-HEXANE	1.361	1.272	1.129	1.084	0.987	0.918	1.125	14.91
16) N-HEPTANE	0.431	0.431	0.421	0.408	0.391	0.376	0.410	5.49
17) TOLUENE	1.522	1.503	1.469	1.426	1.346	1.248	1.419	7.38
18) N-OCTANE	0.483	0.488	0.459	0.436	0.408	0.379	0.442	9.69
19) TETRACHLOROETHYLENE	0.836	0.818	0.795	0.776	0.712	0.583	0.753	12.42
20) CHLOROBENZENE-D5	-----ISTD-----							
21) CHLOROBENZENE	1.960	1.928	1.859	1.768	1.590	1.306	1.735	14.34
22) ETHYLBENZENE	2.701	2.851	2.670	2.545	2.279	1.841	2.481	14.81
23) M, P-XYLENE	2.242	2.281	2.080	1.915	1.578	1.150	1.874	23.34
24) STYRENE	1.732	1.781	1.552	1.534	1.251	0.880	1.455	23.23
25) N-NONANE	1.835	2.087	1.818	1.592	1.284		1.723	17.52
26) 1,1,2,2-TETRACHLORO	1.930	1.925	1.745	1.669	1.417	1.206	1.649	17.47
27) O-XYLENE	2.353	2.377	2.222	2.114	1.885	1.567	2.086	14.92
28) N-DECANE	1.242		1.705	1.702	1.433	1.129	1.442	18.19
29) 1,2,4-TRIMETHYLBENZ	2.633	2.785	2.439	2.401	2.045	1.688	2.332	17.25

(#) = Out of Range

VAP_NP10.M

Mon Oct 04 13:45:45 1999

HNF-5367 Rev. 0

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
 Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
 Last Update : Mon Oct 04 12:57:00 1999
 Response via : Initial Calibration

Calibration Files

1 =19092902.D 2 =19092903.D 3 =19092904.D
 4 =19093005.D 5 =19092905.D 6 =19093003.D

Compound	1	2	3	4	5	6	Avg	%RSD
1) FLUOROBENZENE	-----ISTD-----							
2) ETHANOL	0.182	0.183	0.161	0.179	0.164	0.164	0.172	5.87
3) ACETONITRILE			0.124	0.184	0.171	0.191	0.168	17.96
4) ACETONE	0.321	0.268	0.238	0.213	0.202	0.203	0.241	19.28
5) FURAN	0.476	0.438	0.471	0.482	0.455	0.448	0.462	3.80
6) 2-PROPANOL	0.788	0.758	0.717	0.801	0.730	0.728	0.754	4.58
7) 1-PROPANOL	0.736	0.791	0.731	0.845	0.776	0.755	0.772	5.50
8) PROPANENITRILE	0.324	0.297	0.306	0.328	0.308	0.311	0.312	3.79
9) BUTANAL	0.168	0.158	0.149	0.144	0.138	0.131	0.148	9.01
10) 2-BUTANONE	0.259	0.228	0.226	0.216	0.203	0.200	0.222	9.65
11) TETRAHYDROFURAN	0.222	0.216	0.215	0.218	0.202	0.199	0.212	4.33
12) 1-BUTANOL	0.242	0.326	0.300	0.397	0.364	0.347	0.329	16.34
13) BUTANENITRILE	0.861	0.821	0.791	0.779	0.720	0.717	0.781	7.20
14) 2-PENTANONE	1.871	1.584	1.463	1.390	1.248	1.186	1.457	17.06
15) 1,4-DIOXANE	0.344	0.317	0.283	0.317	0.284	0.279	0.304	8.58
16) 4-METHYL-2-PENTANON	0.193	0.161	0.145	0.150	0.135	0.129	0.152	15.14
17) CHLOROBENZENE-D5	-----ISTD-----							
18) 2-HEXANONE		1.297	1.101	0.996	0.907	0.848	1.030	17.23
19) 3-HEPTANONE		0.336	0.291	0.236	0.216	0.199	0.255	22.17
20) 2-HEPTANONE	1.857	2.406	2.274	1.815	1.585	1.454	1.898	19.75
21) CYCLOHEXANONE		0.556	0.501	0.556	0.504	0.492	0.522	6.09
22) 2-OCTANONE	2.688	4.221	3.983	3.623	2.836	2.961	3.385	19.05

(#) = Out of Range

VAP_P10.M

Mon Oct 04 13:45:20 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100504.D
Operator : G. FIES
Acquired : 5 Oct 1999 11:13 am using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-021-AMB-01
Misc Info : 20 TORR, DF=2
Vial Number: 1

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100504.D

Acq On : 5 Oct 1999 11:13 am

Sample : V9018-021-AMB-01

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 12:16 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6391855	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.95	117	4396776	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.43	85	9291	N.D.		
3) METHYL CHLORIDE	10.12	50	4537	N.D.		
4) N-BUTANE	12.01	43	109	N.D.		
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.25	101	3476	N.D.		
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.40	49	1066	N.D.		
9) 2-METHYL-PENTANE	19.91	43	237	N.D.		
10) 1-HEXENE	20.64	56	97	N.D.		
11) N-HEXANE	21.24	57	209	N.D.		
12) CHLOROFORM	0.00	83	0	N.D.		
13) BENZENE	24.05	78	2763	N.D.		
14) CARBON TETRACHLORIDE	24.09	117	869	N.D.		
15) 3-METHYL-HEXANE	24.06	43	1963	N.D.		
16) N-HEPTANE	25.32	57	100	N.D.		
17) TOLUENE	28.13	91	6843	N.D.		
18) N-OCTANE	29.12	57	1979	N.D.		
19) TETRACHLOROETHYLENE	0.00	166	0	N.D.		
21) CHLOROBENZENE	31.02	112	402	N.D.		
22) ETHYLBENZENE	31.49	91	1612	N.D.		
23) M,P-XYLENE	31.77	91	2338	N.D.		
24) STYRENE	32.48	104	313	N.D.		
25) N-NONANE	32.25	43	138	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.59	91	1271	N.D.		
28) N-DECANE	35.45	43	235	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100504.D VAP_NP10.M Mon Nov 01 12:51:05 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100504.D

Vial: 1

Acq On : 5 Oct 1999 11:13 am

Operator: G. FIES

Sample : V9018-021-AMB-01

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Nov 1 12:19 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6327118	157.10	NG	0.03
17) CHLOROBENZENE-D5	30.95	117	4483190m	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.39	45	81	N.D.		
3) ACETONITRILE	16.86	40	136	N.D.		
4) ACETONE	16.98	58	44348m	4.57	PPB	
5) FURAN	0.00	68	0	N.D.		
6) 2-PROPANOL	17.14	45	151	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	0.00	54	0	N.D.		
9) BUTANAL	21.24	72	345	N.D.		
10) 2-BUTANONE	21.54	72	2189	N.D.		
11) TETRAHYDROFURAN	0.00	72	0	N.D.		
12) 1-BUTANOL	0.00	56	0	N.D.		
13) BUTANENITRILE	24.30	41	138	N.D.		
14) 2-PENTANONE	25.10	43	9170	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	32.01	58	101	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100504.D VAP_P10.M

Mon Nov 01 12:51:29 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100504.D

Vial: 1

Acq On : 5 Oct 1999 11:13 am

Operator: G. FIES

Sample : V9018-021-AMB-01

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 12:16 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6391855	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.95	117	4396776	193.30	NG	0.08

System Monitoring Compounds

Target Compounds					Qvalue
2) FREON 12	8.43	85	9291	N.D.	
3) METHYL CHLORIDE	10.12	50	4537	N.D.	
4) N-BUTANE	12.01	43	109	N.D.	
5) ETHYL CHLORIDE	0.00	64	0	N.D.	
6) FREON 11	16.25	101	3476	N.D.	
7) N-PENTANE	0.00	72	0	N.D.	
8) DICHLOROMETHANE	18.40	49	1066	N.D.	
9) 2-METHYL-PENTANE	19.91	43	237	N.D.	
10) 1-HEXENE	20.64	56	97	N.D.	
11) N-HEXANE	21.24	57	209	N.D.	
12) CHLOROFORM	0.00	83	0	N.D.	
13) BENZENE	24.05	78	2763	N.D.	
14) CARBON TETRACHLORIDE	24.09	117	869	N.D.	
15) 3-METHYL-HEXANE	24.06	43	1963	N.D.	
16) N-HEPTANE	25.32	57	100	N.D.	
17) TOLUENE	28.13	91	6843	N.D.	
18) N-OCTANE	29.12	57	1979	N.D.	
19) TETRACHLOROETHYLENE	0.00	166	0	N.D.	
21) CHLOROBENZENE	31.02	112	402	N.D.	
22) ETHYLBENZENE	31.49	91	1612	N.D.	
23) M,P-XYLENE	31.77	91	2338	N.D.	
24) STYRENE	32.48	104	313	N.D.	
25) N-NONANE	32.25	43	138	N.D.	
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.	
27) O-XYLENE	32.59	91	1271	N.D.	
28) N-DECANE	35.45	43	235	N.D.	
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.	

(#)=qualifier out of range (m)=manual integration

19100504.D VAP_NP10.M

Mon Nov 01 12:52:14 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100504.D

Vial: 1

Acq On : 5 Oct 1999 11:13 am

Operator: G. FIES

Sample : V9018-021-AMB-01

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: rteint.p

Quant Time: Nov 1 12:19 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6327118	157.10	NG	0.03
17) CHLOROBENZENE-D5	30.95	117	4483190m	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.39	45	81	N.D.		
3) ACETONITRILE	16.86	40	136	N.D.		
4) ACETONE	16.98	58	44348m	9.14	PPB	
5) FURAN	0.00	68	0	N.D.		
6) 2-PROPANOL	17.14	45	151	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	0.00	54	0	N.D.		
9) BUTANAL	21.24	72	345	N.D.		
10) 2-BUTANONE	21.54	72	2189	N.D.		
11) TETRAHYDROFURAN	0.00	72	0	N.D.		
12) 1-BUTANOL	0.00	56	0	N.D.		
13) BUTANENITRILE	24.30	41	138	N.D.		
14) 2-PENTANONE	25.10	43	9170	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	32.01	58	101	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100504.D VAP_P10.M

Mon Nov 01 12:52:02 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100504.D

Vial: 1

Acq On : 5 Oct 1999 11:13 am

Operator: G. FIES

Sample : V9018-021-AMB-01

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Method: C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Library : C:\DATABASE\NIST98.L

No Library Search Compounds Detected

19100504.D VAP_NP10.M Mon Nov 01 12:21:52 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100505.D
Operator : G. FIES
Acquired : 5 Oct 1999 12:15 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-023-00E-01
Misc Info : 20 TORR, DF=2
Vial Number: 1

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100505.D

Acq On : 5 Oct 1999 12:15 pm

Sample : V9018-023-00E-01

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 12:49 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	6288017	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.95	117	2196261	193.30	NG	0.08

System Monitoring Compounds

Target Compounds						Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.92	50	2139	N.D.		
4) N-BUTANE	11.92	43	1598432m	54.80	PPB	
5) ETHYL CHLORIDE	14.35	64	7349	N.D.		
6) FREON 11	16.21	101	12060124	364.80	PPB	97
7) N-PENTANE	16.89	72	10252	3.45	PPB	# 74
8) DICHLOROMETHANE	18.57	49	176583	8.95	PPB	97
9) 2-METHYL-PENTANE	20.02	43	180685	4.43	PPB	95
10) 1-HEXENE	20.98	56	7110	N.D.		
11) N-HEXANE	21.39	57	8672	N.D.		
12) CHLOROFORM	22.21	83	10886544	401.63	PPB	98
13) BENZENE	24.05	78	20574	N.D.		
14) CARBON TETRACHLORIDE	24.09	117	1760220	71.67	PPB	98
15) 3-METHYL-HEXANE	24.08	43	34698	N.D.		
16) N-HEPTANE	25.38	57	1875	N.D.		
17) TOLUENE	28.13	91	15637	N.D.		
18) N-OCTANE	29.04	57	532	N.D.		
19) TETRACHLOROETHYLENE	29.73	166	6997286m	232.10	PPB	
21) CHLOROBENZENE	31.01	112	116	N.D.		
22) ETHYLBENZENE	31.49	91	875	N.D.		
23) M,P-XYLENE	31.75	91	1916	N.D.		
24) STYRENE	32.48	104	494	N.D.		
25) N-NONANE	32.48	43	4792	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.05	83	882	N.D.		
27) O-XYLENE	32.59	91	1324	N.D.		
28) N-DECANE	35.55	43	726	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.77	105	1048	N.D.		

(#)=qualifier out of range (m)=manual integration

19100505.D VAP_NP10.M Mon Nov 01 12:50:41 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100505.D Vial: 1
 Acq On : 5 Oct 1999 12:15 pm Operator: G. FIES
 Sample : V9018-023-00E-01 Inst : GC/MS Ins
 Misc : 20 TORR, DF=2 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Nov 1 12:54 1999 Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
 Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
 Last Update : Mon Oct 04 12:57:00 1999
 Response via : Initial Calibration
 DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96	6253540	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.95	117	2159351	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.40	45	172	N.D.		
3) ACETONITRILE	16.59	40	133	N.D.		
4) ACETONE	16.86	58	32045m	3.34	PPB	
5) FURAN	16.94	68	480	N.D.		
6) 2-PROPANOL	17.15	45	42	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.65	54	1481	N.D.		
9) BUTANAL	21.13	72	1339	N.D.		
10) 2-BUTANONE	21.13	72	1339	N.D.		
11) TETRAHYDROFURAN	22.74	72	4140	N.D.		
12) 1-BUTANOL	24.08	56	241565	18.43	PPB	92
13) BUTANENITRILE	24.26	41	12448	N.D.		
14) 2-PENTANONE	24.94	43	5838	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	27.03	100	592	N.D.		
18) 2-HEXANONE	28.79	58	203	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
 19100505.D VAP_P10.M Mon Nov 01 12:55:47 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100505.D

Vial: 1

Acq On : 5 Oct 1999 12:15 pm

Operator: G. FIES

Sample : V9018-023-00E-01

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 12:49 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	6288017	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.95	117	2196261	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.92	50	2139	N.D.		
4) N-BUTANE	11.92	43	1598432m	109.61	PPB	
5) ETHYL CHLORIDE	14.35	64	7349m	1.37	PPB	
6) FREON 11	16.21	101	12060124	729.59	PPB	97
7) N-PENTANE	16.89	72	10252	6.89	PPB	# 74
8) DICHLOROMETHANE	18.57	49	176583	17.91	PPB	97
9) 2-METHYL-PENTANE	20.02	43	180685	8.86	PPB	95
10) 1-HEXENE	20.98	56	7110	N.D.		
11) N-HEXANE	21.39	57	8672	N.D.		
12) CHLOROFORM	22.21	83	10886544	803.25	PPB	98
13) BENZENE	24.05	78	20574	N.D.		
14) CARBON TETRACHLORIDE	24.09	117	1760220	143.35	PPB	98
15) 3-METHYL-HEXANE	24.08	43	34698	1.54	PPB	# 88
16) N-HEPTANE	25.38	57	1875	N.D.		
17) TOLUENE	28.13	91	15637	N.D.		
18) N-OCTANE	29.04	57	532	N.D.		
19) TETRACHLOROETHYLENE	29.73	166	6997286m	464.19	PPB	
21) CHLOROBENZENE	31.01	112	116	N.D.		
22) ETHYLBENZENE	31.49	91	875	N.D.		
23) M, P-XYLENE	31.75	91	1916	N.D.		
24) STYRENE	32.48	104	494	N.D.		
25) N-NONANE	32.48	43	4792	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.05	83	882	N.D.		
27) O-XYLENE	32.59	91	1324	N.D.		
28) N-DECANE	35.55	43	726	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.77	105	1048	N.D.		

(#)=qualifier out of range (m)=manual integration

19100505.D VAP_NP10.M

Mon Nov 01 12:50:54 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100505.D

Vial: 1

Acq On : 5 Oct 1999 12:15 pm

Operator: G. FIES

Sample : V9018-023-00E-01

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: rteint.p

Quant Time: Nov 1 12:54 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	6253540	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.95	117	2159351	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.40	45	172	N.D.		
3) ACETONITRILE	16.59	40	133	N.D.		
4) ACETONE	16.86	58	32045m	6.68	PPB	
5) FURAN	16.94	68	480	N.D.		
6) 2-PROPANOL	17.15	45	42	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.65	54	1481	N.D.		
9) BUTANAL	21.13	72	1339	N.D.		
10) 2-BUTANONE	21.13	72	1339	N.D.		
11) TETRAHYDROFURAN	22.74	72	4140	N.D.		
12) 1-BUTANOL	24.08	56	241565	36.86	PPB	92
13) BUTANENITRILE	24.26	41	12448	N.D.		
14) 2-PENTANONE	24.94	43	5838	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	27.03	100	592	N.D.		
18) 2-HEXANONE	28.79	58	203	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19100505.D VAP_P10.M Mon Nov 01 12:56:04 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100604.D
Operator : G. FIES
Acquired : 6 Oct 1999 3:10 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-023-00E-01-2
Misc Info : 20 TORR; 2ND DIL; DF=48
Vial Number: 1

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100604.D

Vial: 1

Acq On : 6 Oct 1999 3:10 pm

Operator: G. FIES

Sample : V9018-023-00E-01-2

Inst : GC/MS Ins

Misc : 20 TORR; 2ND DIL; DF=48

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Oct 7 7:58 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	8771817	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.95	117	6567508	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	85007	2.09	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	732354	15.88	PPB	99
7) N-PENTANE	16.91	72	434	N.D.		
8) DICHLOROMETHANE	18.59	49	6525	N.D.		
9) 2-METHYL-PENTANE	20.02	43	11166	N.D.		
10) 1-HEXENE	20.98	56	323	N.D.		
11) N-HEXANE	21.38	57	1457	N.D.		
12) CHLOROFORM	22.21	83	819807	21.68	PPB	99
13) BENZENE	24.05	78	2310	N.D.		
14) CARBON TETRACHLORIDE	24.09	117	92787	2.71	PPB	98
15) 3-METHYL-HEXANE	24.09	43	5010	N.D.		
16) N-HEPTANE	25.43	57	2079	N.D.		
17) TOLUENE	28.12	91	8179	N.D.		
18) N-OCTANE	29.12	57	1444	N.D.		
19) TETRACHLOROETHYLENE	29.74	166	1647628	39.18	PPB	99
21) CHLOROBENZENE	31.02	112	2769	N.D.		
22) ETHYLBENZENE	31.49	91	3742	N.D.		
23) M, P-XYLENE	31.76	91	8253	N.D.		
24) STYRENE	32.48	104	2336	N.D.		
25) N-NONANE	32.49	43	5975	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.06	83	2232	N.D.		
27) O-XYLENE	32.59	91	3926	N.D.		
28) N-DECANE	35.65	43	1490	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.99	105	243	N.D.		

(#)=qualifier out of range (m)=manual integration

19100604.D VAP_NP10.M Mon Nov 01 13:01:11 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100604.D

Vial: 1

Acq On : 6 Oct 1999 3:10 pm

Operator: G. FIES

Sample : V9018-023-00E-01-2

Inst : GC/MS Ins

Misc : 20 TORR; 2ND DIL; DF=48

Multiplr: 48.00

MS Integration Params: RTEINT.P

Quant Time: Oct 7 7:58 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	8771817	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.95	117	6567508	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	85007	100.29	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	732354	762.23	PPB	99
7) N-PENTANE	16.91	72	434	5.02	PPB	# 22
8) DICHLOROMETHANE	18.59	49	6525	11.38	PPB	99
9) 2-METHYL-PENTANE	20.02	43	11166	9.42	PPB	# 89
10) 1-HEXENE	20.98	56	323	N.D.		
11) N-HEXANE	21.38	57	1457	1.94	PPB	# 24
12) CHLOROFORM	22.21	83	819807	1040.66	PPB	99
13) BENZENE	24.05	78	2310	1.65	PPB	98
14) CARBON TETRACHLORIDE	24.09	117	92787	130.00	PPB	98
15) 3-METHYL-HEXANE	24.09	43	5010	3.83	PPB	# 47
16) N-HEPTANE	25.43	57	2079	4.36	PPB	# 1
17) TOLUENE	28.12	91	8179	4.96	PPB	91
18) N-OCTANE	29.12	57	1444	2.81	PPB	# 78
19) TETRACHLOROETHYLENE	29.74	166	1647628	1880.45	PPB	99
21) CHLOROBENZENE	31.02	112	2769	2.25	PPB	# 21
22) ETHYLBENZENE	31.49	91	3742	2.13	PPB	95
23) M,P-XYLENE	31.76	91	8253	6.22	PPB	96
24) STYRENE	32.48	104	2336	2.27	PPB	# 37
25) N-NONANE	32.49	43	5975	4.90	PPB	99
26) 1,1,2,2-TETRACHLOROETHANE	33.06	83	2232	1.91	PPB	# 73
27) O-XYLENE	32.59	91	3926	2.66	PPB	94
28) N-DECANE	35.65	43	1490	1.46	PPB	88
29) 1,2,4-TRIMETHYLBENZENE	35.99	105	243	N.D.		

(#)=qualifier out of range (m)=manual integration

19100604.D VAP_NP10.M Mon Nov 01 13:01:27 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100505.D Vial: 1
Acq On : 5 Oct 1999 12:15 pm Operator: G. FIES
Sample : V9018-023-00E-01 Inst : GC/MS Ins
Misc : 20 TORR, DF=2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Library : C:\DATABASE\NIST98.L

Peak Number 1 Isobutane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.12	41.09 NG	3705550	FLUOROBENZENE	24.54
Hit# of	3	Tentative ID	MW MolForm	CAS# Qual
1	Isobutane		58 C4H10	000075-28-5 80
2	Cyclobutylamine		71 C4H9N	002516-34-9 4
3	Methane, diazo-		42 CH2N2	000334-88-3 3

Peak Number 2 Isobutane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.58	40.56 NG	3658140	FLUOROBENZENE	24.54
Hit# of	3	Tentative ID	MW MolForm	CAS# Qual
1	Isobutane		58 C4H10	000075-28-5 86
2	Cyclobutylamine		71 C4H9N	002516-34-9 4
3	Ethenone		42 C2H2O	000463-51-4 3

C4 A1

Peak Number 3 Butane Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.18	18.61 NG	1677980	FLUOROBENZENE	24.54
Hit# of	3	Tentative ID	MW MolForm	CAS# Qual
1	Butane		58 C4H10	000106-97-8 72
2	Diazene, dimethyl-		58 C2H6N2	000503-28-6 5
3	Hydrogen azide		43 HN3	007782-79-8 4

Target

Peak Number 4 Propane, 2,2-dimethyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.54	15.02 NG	1354870	FLUOROBENZENE	24.54
Hit# of	3	Tentative ID	MW MolForm	CAS# Qual
1	Propane, 2,2-dimethyl-		72 C5H12	000463-82-1 78

HNF-5367 Rev. 0

2 Butane, 2-bromo- 136 C4H9Br 000078-76-2 40
 3 Propane, 2-[(1,1-dimethylethyl)sulf 178 C8H18O2S 001886-75-5 36

 Peak Number 5 Butane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.46	26.42 NG	2382420	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	86	
2	3-Hexanone, 2,5-dimethyl-4-nitro-	173	C8H15NO3	059906-54-6	36	
3	Hexane, 3-methyl-	100	C7H16	000589-34-4	25	

 Peak Number 6 Ethene, 1,2-dichloro-, (E)- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.90	19.73 NG	1779330	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	97	
2	Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95	
3	1,2-Dichloroethylene	96	C2H2Cl2	000540-59-0	94	

 Peak Number 7 Cyclopentane, methyl- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.65	49.65 NG	4477970	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91	
2	Cyclopropane, propyl-	84	C6H12	002415-72-7	78	
3	1H-Tetrazole, 5-methyl-	84	C2H4N4	004076-36-2	78	

 Peak Number 8 Trichloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
25.52	359.94 NG	32462500	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99	
2	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35	
3	Benzene, 1-chloro-4-fluoro-	130	C6H4ClF	000352-33-0	22	

 Peak Number 9 Propane, 2-methyl-2-nitro- Concentration Rank 5

HNF-5367 Rev. 0

R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.09	35.53 NG	3204570	FLUOROBENZENE	24.54	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	64
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	38
3	Butane, 2-nitro-	103	C4H9NO2	000600-24-8	38

19100505.D VAP_NP10.M Tue Nov 02 08:38:46 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 80
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 86
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 94
ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 72
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100506.D
Operator : G. FIES
Acquired : 5 Oct 1999 1:16 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-040-00E-02
Misc Info : 20 TORR, DF=2
Vial Number: 1

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100506.D

Acq On : 5 Oct 1999 1:16 pm

Sample : V9018-040-00E-02

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 13:24 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96	6129500	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	1943168	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.84	50	974	N.D.		
4) N-BUTANE	11.97	43	1648598m	57.99	PPB	
5) ETHYL CHLORIDE	14.28	64	7409	N.D.		
6) FREON 11	16.18	101	12434715	385.85	PPB	98
7) N-PENTANE	16.87	72	11040	3.81	PPB	85
8) DICHLOROMETHANE	18.56	49	186498	9.70	PPB	97
9) 2-METHYL-PENTANE	20.01	43	192771	4.85	PPB	96
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.38	57	9037	N.D.		
12) CHLOROFORM	22.20	83	11118391	420.79	PPB	98
13) BENZENE	24.04	78	22442	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	1853345	77.42	PPB	98
15) 3-METHYL-HEXANE	24.07	43	41148	N.D.		
16) N-HEPTANE	25.37	57	1392	N.D.		
17) TOLUENE	28.12	91	15069	N.D.		
18) N-OCTANE	29.01	57	200	N.D.		
19) TETRACHLOROETHYLENE	29.81	166	6991926m	237.91	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.48	91	852	N.D.		
23) M,P-XYLENE	31.74	91	1697	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.47	43	4962	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.01	83	408	N.D.		
27) O-XYLENE	32.58	91	1002	N.D.		
28) N-DECANE	35.49	43	713	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100506.D VAP_NP10.M Mon Nov 01 13:24:36 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100506.D

Acq On : 5 Oct 1999 1:16 pm

Sample : V9018-040-00E-02

Misc : 20 TORR, DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 13:25 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96	6110498	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	1920891	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.39	45	259	N.D.		
3) ACETONITRILE	16.57	40	377	N.D.		
4) ACETONE	16.93	58	12271m	1.31	PPB	
5) FURAN	16.94	68	736	N.D.		
6) 2-PROPANOL	17.16	45	95	N.D.		
7) 1-PROPANOL	19.91	31	359	N.D.		
8) PROPANENITRILE	20.64	54	1621	N.D.		
9) BUTANAL	21.13	72	1505	N.D.		
10) 2-BUTANONE	21.13	72	1505	N.D.		
11) TETRAHYDROFURAN	22.76	72	3394	N.D.		
12) 1-BUTANOL	24.07	56	253792	19.82	PPB	92
13) BUTANENITRILE	24.27	41	11226	N.D.		
14) 2-PENTANONE	24.93	43	9827	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.52	58	790	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100506.D VAP_P10.M

Mon Nov 01 13:26:33 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100506.D

Acq On : 5 Oct 1999 1:16 pm

Sample : V9018-040-00E-02

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 13:24 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	6129500	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	1943168	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.84	50	974	N.D.		
4) N-BUTANE	11.97	43	1648598m	115.97	PPB	
5) ETHYL CHLORIDE	14.28	64	7409m	1.42	PPB	
6) FREON 11	16.18	101	12434715	771.71	PPB	98
7) N-PENTANE	16.87	72	11040	7.61	PPB	85
8) DICHLOROMETHANE	18.56	49	186498	19.40	PPB	97
9) 2-METHYL-PENTANE	20.01	43	192771	9.70	PPB	96
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.38	57	9037	N.D.		
12) CHLOROFORM	22.20	83	11118391	841.57	PPB	98
13) BENZENE	24.04	78	22442	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	1853345	154.83	PPB	98
15) 3-METHYL-HEXANE	24.07	43	41148	1.87	PPB	89
16) N-HEPTANE	25.37	57	1392	N.D.		
17) TOLUENE	28.12	91	15069	N.D.		
18) N-OCTANE	29.01	57	200	N.D.		
19) TETRACHLOROETHYLENE	29.81	166	6991926m	475.83	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.48	91	852	N.D.		
23) M, P-XYLENE	31.74	91	1697	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.47	43	4962	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.01	83	408	N.D.		
27) O-XYLENE	32.58	91	1002	N.D.		
28) N-DECANE	35.49	43	713	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100506.D VAP_NP10.M Mon Nov 01 13:24:54 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100506.D

Acq On : 5 Oct 1999 1:16 pm

Sample : V9018-040-00E-02

Misc : 20 TORR, DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 13:25 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	6110498	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	1920891	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.39	45	259	N.D.		
3) ACETONITRILE	16.57	40	377	N.D.		
4) ACETONE	16.93	58	12271m	2.62	PPB	
5) FURAN	16.94	68	736	N.D.		
6) 2-PROPANOL	17.16	45	95	N.D.		
7) 1-PROPANOL	19.91	31	359	N.D.		
8) PROPANENITRILE	20.64	54	1621	N.D.		
9) BUTANAL	21.13	72	1505	N.D.		
10) 2-BUTANONE	21.13	72	1505	N.D.		
11) TETRAHYDROFURAN	22.76	72	3394	N.D.		
12) 1-BUTANOL	24.07	56	253792	39.64	PPB	92
13) BUTANENITRILE	24.27	41	11226	N.D.		
14) 2-PENTANONE	24.93	43	9827	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.52	58	790	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100506.D VAP_P10.M

Mon Nov 01 13:26:46 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100605.D
Operator : G. FIES
Acquired : 6 Oct 1999 4:11 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-040-00E-02-2
Misc Info : 20 TORR; 2ND DIL; DF=48
Vial Number: 1

HNF-5367 Rev.0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100605.D

Acq On : 6 Oct 1999 4:11 pm

Sample : V9018-040-00E-02-2

Misc : 20 TORR; 2ND DIL; DF=48

MS Integration Params: RTEINT.P

Quant Time: Nov 1 13:27 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96	8665683	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.96	117	6339068	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.15	43	87908	2.19	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.23	101	780489	17.13	PPB	100
7) N-PENTANE	16.92	72	226	N.D.		
8) DICHLOROMETHANE	18.61	49	7536	N.D.		
9) 2-METHYL-PENTANE	20.03	43	12175	N.D.		
10) 1-HEXENE	20.99	56	678	N.D.		
11) N-HEXANE	21.49	57	1482	N.D.		
12) CHLOROFORM	22.22	83	868216	23.24	PPB	98
13) BENZENE	24.05	78	2357	N.D.		
14) CARBON TETRACHLORIDE	24.09	117	95775	2.83	PPB	98
15) 3-METHYL-HEXANE	24.09	43	2890	N.D.		
16) N-HEPTANE	25.35	57	5955	N.D.		
17) TOLUENE	28.12	91	7235	N.D.		
18) N-OCTANE	29.12	57	3349	N.D.		
19) TETRACHLOROETHYLENE	29.74	166	1725934	41.54	PPB	99
21) CHLOROBENZENE	31.03	112	1286	N.D.		
22) ETHYLBENZENE	31.49	91	2311	N.D.		
23) M,P-XYLENE	31.75	91	5538	N.D.		
24) STYRENE	32.47	104	1084	N.D.		
25) N-NONANE	32.36	43	669	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.05	83	859	N.D.		
27) O-XYLENE	32.58	91	2563	N.D.		
28) N-DECANE	35.56	43	8726	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.76	105	4183	N.D.		

(#)=qualifier out of range (m)=manual integration

19100605.D VAP_NP10.M Mon Nov 01 13:29:10 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100605.D

Acq On : 6 Oct 1999 4:11 pm

Sample : V9018-040-00E-02-2

Misc : 20 TORR; 2ND DIL; DF=48

MS Integration Params: RTEINT.P

Quant Time: Nov 1 13:27 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	8665683	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.96	117	6339068	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.15	43	87908	104.98	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.23	101	780489	822.27	PPB	100
7) N-PENTANE	16.92	72	226	2.65	PPB	# 1
8) DICHLOROMETHANE	18.61	49	7536	13.31	PPB	92
9) 2-METHYL-PENTANE	20.03	43	12175	10.40	PPB	89
10) 1-HEXENE	20.99	56	678	1.36	PPB	95
11) N-HEXANE	21.49	57	1482	1.99	PPB	91
12) CHLOROFORM	22.22	83	868216	1115.61	PPB	98
13) BENZENE	24.05	78	2357	1.70	PPB	94
14) CARBON TETRACHLORIDE	24.09	117	95775	135.83	PPB	98
15) 3-METHYL-HEXANE	24.09	43	2890	2.24	PPB	95
16) N-HEPTANE	25.35	57	5955	12.65	PPB	# 1
17) TOLUENE	28.12	91	7235	4.44	PPB	93
18) N-OCTANE	29.12	57	3349	6.59	PPB	# 13
19) TETRACHLOROETHYLENE	29.74	166	1725934	1993.94	PPB	99
21) CHLOROBENZENE	31.03	112	1286	1.08	PPB	# 21
22) ETHYLBENZENE	31.49	91	2311	1.36	PPB	# 76
23) M,P-XYLENE	31.75	91	5538	4.32	PPB	92
24) STYRENE	32.47	104	1084	1.09	PPB	# 29
25) N-NONANE	32.36	43	669	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.05	83	859	N.D.		
27) O-XYLENE	32.58	91	2563	1.80	PPB	88
28) N-DECANE	35.56	43	8726	8.86	PPB	94
29) 1,2,4-TRIMETHYLBENZENE	35.76	105	4183	2.63	PPB	97

(#) = qualifier out of range (m) = manual integration

19100605.D VAP_NP10.M Mon Nov 01 13:29:30 1999

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100506.D Vial: 1
 Acq On : 5 Oct 1999 1:16 pm Operator: G. FIES
 Sample : V9018-040-00E-02 Inst : GC/MS Ins
 Misc : 20 TORR, DF=2 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Library : C:\DATABASE\NIST98.L

 Peak Number 1 Isobutane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.23	98.89 NG	8719830	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	72	
2	Cyclobutylamine	71	C4H9N	002516-34-9	4	
3	Ethenone	42	C2H2O	000463-51-4	3	

 Peak Number 2 Propane, 2,2-dimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.57	25.65 NG	2261900	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-	72	C5H12	000463-82-1	78	
2	Propane, 2-bromo-2-methyl-	136	C4H9Br	000507-19-7	40	
3	Butane, 2-bromo-	136	C4H9Br	000078-76-2	40	

 Peak Number 3 Methane, dichlorofluoro- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.92	19.20 NG	1692620	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Methane, dichlorofluoro-	102	CHCl2F	000075-43-4	94	
2	1-Butyne, 3,3-dimethyl-	82	C6H10	000917-92-0	7	
3	1-Hexyne	82	C6H10	000693-02-7	7	

 Peak Number 4 Butane, 2-methyl- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.60	23.00 NG	2028280	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	87	

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2 1-Propene, 2-methyl-
3 Methane, isocyanato-

56 C4H8
57 C2H3NO

000115-11-7 9
000624-83-9 9

Peak Number 5 Butane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.45	28.29 NG	2494730	FLUOROBENZENE	24.54

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	86
2	Pentane, 2,3,4-trimethyl-	114	C8H18	000565-75-3	38
3	Pentane, 2,2,4,4-tetramethyl-	128	C9H20	001070-87-7	27

Peak Number 6 1,2-Dichloroethylene Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.89	21.13 NG	1863440	FLUOROBENZENE	24.54

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	1,2-Dichloroethylene	96	C2H2Cl2	000540-59-0	97
2	Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	96
3	Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95

Peak Number 7 Cyclopentane, methyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.66	53.72 NG	4736250	FLUOROBENZENE	24.54

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91
2	1H-Tetrazole, 5-methyl-	84	C2H4N4	004076-36-2	86
3	Cyclobutane, ethyl-	84	C6H12	004806-61-5	78

Peak Number 8 Trichloroethylene Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
25.51	373.19 NG	32905200	FLUOROBENZENE	24.54

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99
2	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35
3	Benzene, 1-chloro-2-fluoro-	130	C6H4ClF	000348-51-6	25

Peak Number 9 Propane, 2-methyl-2-nitro- Concentration Rank 5

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R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.09	36.63 NG	3229570	FLUOROBENZENE	24.54	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	64
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	42
3	Butane, 2-nitro-	103	C4H9NO2	000600-24-8	38

 Peak Number 10 Tetrachloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.	
29.74	780.20 NG	26218100	CHLOROBENZENE-D5	30.94	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetrachloroethylene	164	C2Cl4	000127-18-4	99
2	2,4-Dichloro-6-fluoropyrimidine	166	C4HCl2FN2	1000146-93-0	27
3	Pyrimidine, 5-fluoro-2,4-dichloro-	166	C4HCl2FN2	002927-71-1	16

Target
 19100506.D VAP_NP10.M Mon Nov 01 13:27:12 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 86
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 94
ID : Methane, dichlorofluoro-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Butane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 86
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 97
ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 91
 ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100507.D
Operator : G. FIES
Acquired : 5 Oct 1999 2:18 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-045-00E-03
Misc Info : 20 TORR, DF=2
Vial Number: 1

2B-98

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100507.D

Acq On : 5 Oct 1999 2:18 pm

Sample : V9018-045-00E-03

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 14:17 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6144535	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.95	117	1840166	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.03	85	6965	N.D.		
3) METHYL CHLORIDE	9.85	50	798	N.D.		
4) N-BUTANE	11.98	43	1709450m	59.98	PPB	
5) ETHYL CHLORIDE	14.29	64	7935	N.D.		
6) FREON 11	16.19	101	11396768	352.78	PPB	97
7) N-PENTANE	16.89	72	11646	4.01	PPB	83
8) DICHLOROMETHANE	18.57	49	189499	9.83	PPB	96
9) 2-METHYL-PENTANE	20.03	43	204126	5.12	PPB	95
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.40	57	10633	N.D.		
12) CHLOROFORM	22.22	83	11197705	422.75	PPB	98
13) BENZENE	24.06	78	23124	N.D.		
14) CARBON TETRACHLORIDE	24.10	117	1848926	77.04	PPB	98
15) 3-METHYL-HEXANE	24.10	43	38088	N.D.		
16) N-HEPTANE	25.38	57	1952	N.D.		
17) TOLUENE	28.13	91	20633	N.D.		
18) N-OCTANE	29.04	57	455	N.D.		
19) TETRACHLOROETHYLENE	29.75	166	6958959m	236.21	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.50	91	696	N.D.		
23) M, P-XYLENE	31.76	91	1735	N.D.		
24) STYRENE	32.48	104	289	N.D.		
25) N-NONANE	32.49	43	6929	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.06	83	612	N.D.		
27) O-XYLENE	32.59	91	935	N.D.		
28) N-DECANE	35.57	43	2486	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.77	105	2632	N.D.		

(#) = qualifier out of range (m) = manual integration
19100507.D VAP_NP10.M Mon Nov 01 14:18:16 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100507.D

Acq On : 5 Oct 1999 2:18 pm

Sample : V9018-045-00E-03

Misc : 20 TORR, DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 14:21 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6109006	157.10	NG	0.03
17) CHLOROBENZENE-D5	30.95	117	1825918	193.30	NG	0.03

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.40	45	179	N.D.		
3) ACETONITRILE	16.58	40	167	N.D.		
4) ACETONE	16.92	58	14732m	1.57	PPB	
5) FURAN	16.95	68	313	N.D.		
6) 2-PROPANOL	17.18	45	92	N.D.		
7) 1-PROPANOL	19.90	31	393	N.D.		
8) PROPANENITRILE	20.67	54	1896	N.D.		
9) BUTANAL	21.14	72	2953	N.D.		
10) 2-BUTANONE	21.14	72	2953	N.D.		
11) TETRAHYDROFURAN	22.75	72	1047	N.D.		
12) 1-BUTANOL	24.10	56	255841	19.98	PPB	93
13) BUTANENITRILE	0.00	41	0	N.D.	d	
14) 2-PENTANONE	24.95	43	5907	N.D.		
15) 1,4-DIOXANE	25.89	88	115	N.D.		
16) 4-METHYL-2-PENTANONE	27.03	100	209	N.D.		
18) 2-HEXANONE	28.80	58	2346	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19100507.D VAP_P10.M Mon Nov 01 14:21:39 1999

Data File : C:\HPCHEM\1\DATA\19100507.D
Acq On : 5 Oct 1999 2:18 pm
Sample : V9018-045-00E-03
Misc : 20 TORR, DF=2
MS Integration Params: RTEINT.P
Quant Time: Nov 1 14:17 1999

Vial: 1
Operator: G. FIES
Inst : GC/MS Ins
Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6144535	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.95	117	1840166	193.30	NG	0.08

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.03	85	6965	N.D.		
3) METHYL CHLORIDE	9.85	50	798	N.D.		
4) N-BUTANE	11.98	43	1709450m	119.96	PPB	
5) ETHYL CHLORIDE	14.29	64	7935	1.52	PPB	100
6) FREON 11	16.19	101	11396768	705.56	PPB	97
7) N-PENTANE	16.89	72	11646	8.01	PPB	83
8) DICHLOROMETHANE	18.57	49	189499	19.66	PPB	96
9) 2-METHYL-PENTANE	20.03	43	204126	10.25	PPB	95
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.40	57	10633	N.D.		
12) CHLOROFORM	22.22	83	11197705	845.50	PPB	98
13) BENZENE	24.06	78	23124	N.D.		
14) CARBON TETRACHLORIDE	24.10	117	1848926	154.09	PPB	98
15) 3-METHYL-HEXANE	24.10	43	38088	1.73	PPB	# 80
16) N-HEPTANE	25.38	57	1952	N.D.		
17) TOLUENE	28.13	91	20633	N.D.		
18) N-OCTANE	29.04	57	455	N.D.		
19) TETRACHLOROETHYLENE	29.75	166	6958959m	472.43	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.50	91	696	N.D.		
23) M,P-XYLENE	31.76	91	1735	N.D.		
24) STYRENE	32.48	104	289	N.D.		
25) N-NONANE	32.49	43	6929	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.06	83	612	N.D.		
27) O-XYLENE	32.59	91	935	N.D.		
28) N-DECANE	35.57	43	2486	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.77	105	2632	N.D.		

(#) = qualifier out of range (m) = manual integration
19100507.D VAP_NP10.M Mon Nov 01 14:18:45 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100507.D

Vial: 1

Acq On : 5 Oct 1999 2:18 pm

Operator: G. FIES

Sample : V9018-045-00E-03

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: rteint.p

Quant Time: Nov 1 14:21 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6109006	157.10	NG	0.03
17) CHLOROBENZENE-D5	30.95	117	1825918	193.30	NG	0.03

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.40	45	179	N.D.		
3) ACETONITRILE	16.58	40	167	N.D.		
4) ACETONE	16.92	58	14732m	3.14	PPB	
5) FURAN	16.95	68	313	N.D.		
6) 2-PROPANOL	17.18	45	92	N.D.		
7) 1-PROPANOL	19.90	31	393	N.D.		
8) PROPANENITRILE	20.67	54	1896	N.D.		
9) BUTANAL	21.14	72	2953	1.03	PPB	86
10) 2-BUTANONE	21.14	72	2953	N.D.		
11) TETRAHYDROFURAN	22.75	72	1047	N.D.		
12) 1-BUTANOL	24.10	56	255841	39.97	PPB	93
13) BUTANENITRILE	0.00	41	0	N.D.	d	
14) 2-PENTANONE	24.95	43	5907	N.D.		
15) 1,4-DIOXANE	25.89	88	115	N.D.		
16) 4-METHYL-2-PENTANONE	27.03	100	209	N.D.		
18) 2-HEXANONE	28.80	58	2346	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100507.D VAP_P10.M

Mon Nov 01 14:21:55 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100704.D
Operator : G. FIES
Acquired : 7 Oct 1999 11:01 am using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-045-00E-03-2
Misc Info : 20 TORR; 2ND DIL.; DF=48
Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100704.D

Acq On : 7 Oct 1999 11:01 am

Sample : V9018-045-00E-03-2

Misc : 20 TORR; 2ND DIL.; DF=48

MS Integration Params: RTEINT.P

Quant Time: Nov 1 14:23 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	7446960	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5419871	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.27	85	92	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.09	43	75929	2.20	PPB	# 41
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.21	101	668191	17.07	PPB	100
7) N-PENTANE	16.89	72	400	N.D.		
8) DICHLOROMETHANE	18.57	49	6729	N.D.		
9) 2-METHYL-PENTANE	20.01	43	9255	N.D.		
10) 1-HEXENE	21.37	56	340	N.D.		
11) N-HEXANE	21.31	57	909	N.D.		
12) CHLOROFORM	22.19	83	735709	22.92	PPB	100
13) BENZENE	24.03	78	2024	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	83910	2.88	PPB	98
15) 3-METHYL-HEXANE	24.07	43	1397	N.D.		
16) N-HEPTANE	25.31	57	8360	N.D.		
17) TOLUENE	28.10	91	6747	N.D.		
18) N-OCTANE	29.09	57	5503	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	1491964	41.79	PPB	99
21) CHLOROBENZENE	31.00	112	1377	N.D.		
22) ETHYLBENZENE	31.46	91	2667	N.D.		
23) M, P-XYLENE	31.71	91	5646	N.D.		
24) STYRENE	32.45	104	1826	N.D.		
25) N-NONANE	32.46	43	5002	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	1854	N.D.		
27) O-XYLENE	32.56	91	2793	N.D.		
28) N-DECANE	35.54	43	15227	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.74	105	9157	N.D.		

(#) = qualifier out of range (m) = manual integration

19100704.D VAP_NP10.M Mon Nov 01 14:24:22 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100704.D

Vial: 1

Acq On : 7 Oct 1999 11:01 am

Operator: G. FIES

Sample : V9018-045-00E-03-2

Inst : GC/MS Ins

Misc : 20 TORR; 2ND DIL.; DF=48

Multiplr: 48.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 14:23 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.52	96	7446960	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5419871	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.27	85	92	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.09	43	75929	105.51	PPB #	41
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.21	101	668191	819.17	PPB	100
7) N-PENTANE	16.89	72	400	5.45	PPB #	1
8) DICHLOROMETHANE	18.57	49	6729	13.83	PPB	88
9) 2-METHYL-PENTANE	20.01	43	9255	9.20	PPB	95
10) 1-HEXENE	21.37	56	340	N.D.		
11) N-HEXANE	21.31	57	909	1.42	PPB #	1
12) CHLOROFORM	22.19	83	735709	1100.05	PPB	100
13) BENZENE	24.03	78	2024	1.70	PPB #	84
14) CARBON TETRACHLORIDE	24.07	117	83910	138.48	PPB	98
15) 3-METHYL-HEXANE	24.07	43	1397	1.26	PPB #	22
16) N-HEPTANE	25.31	57	8360	20.66	PPB #	1
17) TOLUENE	28.10	91	6747	4.81	PPB	99
18) N-OCTANE	29.09	57	5503	12.60	PPB #	21
19) TETRACHLOROETHYLENE	29.72	166	1491964	2005.72	PPB	99
21) CHLOROBENZENE	31.00	112	1377	1.36	PPB #	21
22) ETHYLBENZENE	31.46	91	2667	1.84	PPB #	82
23) M,P-XYLENE	31.71	91	5646	5.16	PPB	94
24) STYRENE	32.45	104	1826	2.15	PPB #	58
25) N-NONANE	32.46	43	5002	4.97	PPB	84
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	1854	1.93	PPB #	67
27) O-XYLENE	32.56	91	2793	2.29	PPB	96
28) N-DECANE	35.54	43	15227	18.08	PPB	99
29) 1,2,4-TRIMETHYLBENZENE	35.74	105	9157	6.72	PPB	99

(#) = qualifier out of range (m) = manual integration

19100704.D VAP_NP10.M Mon Nov 01 14:24:38 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100507.D Vial: 1
 Acq On : 5 Oct 1999 2:18 pm Operator: G. FIES
 Sample : V9018-045-00E-03 Inst : GC/MS Ins
 Misc : 20 TORR, DF=2 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Library : C:\DATABASE\NIST98.L

 Peak Number 1 Cyclopropane Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.45	17.21 NG	1525980	FLUOROBENZENE	24.55

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopropane	42	C3H6	000075-19-4	86
2	Propene	42	C3H6	000115-07-1	78
3	Cyclopropanecarboxaldehyde	70	C4H6O	001489-69-6	64

C3 A4

 Peak Number 2 Isobutane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.23	94.16 NG	8348620	FLUOROBENZENE	24.55

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	72
2	Cyclobutylamine	71	C4H9N	002516-34-9	4
3	Ethenone	42	C2H2O	000463-51-4	3

 Peak Number 3 Propane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.58	29.07 NG	2577360	FLUOROBENZENE	24.55

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-	72	C5H12	000463-82-1	78
2	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	40
3	Propane, 2-bromo-2-methyl-	136	C4H9Br	000507-19-7	40

 Peak Number 4 Methane, dichlorofluoro- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.94	19.33 NG	1713550	FLUOROBENZENE	24.55

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Methane, dichlorofluoro-	102	CHCl2F	000075-43-4	94

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2 1-Butyne, 3,3-dimethyl- 82 C6H10 000917-92-0 7
 3 Methanamine, N,N-difluoro- 67 CH3F2N 000753-58-2 5

 Peak Number 5 Butane, 2-methyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.62	21.72 NG	1926080	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	91	
2	1-Propene, 2-methyl-	56	C4H8	000115-11-7	9	
3	Methane, isocyanato-	57	C2H3NO	000624-83-9	9	

 Peak Number 6 Butane, 2,2-dimethyl- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.46	30.28 NG	2685020	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	80	
2	3-Hexanone, 2,5-dimethyl-4-nitro-	173	C8H15NO3	059906-54-6	33	
3	Butane, 2-bromo-2-methyl-	150	C5H11Br	000507-36-8	32	

 Peak Number 7 Ethene, 1,2-dichloro-, (E)- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.90	21.22 NG	1881720	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	96	
2	Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95	
3	Ethene, 1,1-dichloro-	96	C2H2Cl2	000075-35-4	91	

 Peak Number 8 Cyclopentane, methyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.67	54.09 NG	4796000	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91	
2	Cyclohexane	84	C6H12	000110-82-7	78	
3	Cyclobutane, ethyl-	84	C6H12	004806-61-5	78	

 Peak Number 9 Trichloroethylene Concentration Rank 1

HNF-5367 Rev. 0

R.T.	EstConc	Area	Relative to ISTD	R.T.	
25.53	373.68 NG	33131200	FLUOROBENZENE	24.55	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99
2	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35
3	Benzene, 1-chloro-2-fluoro-	130	C6H4ClF	000348-51-6	25

Peak Number 10 Propane, 2-methyl-2-nitro- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.10	37.23 NG	3300740	FLUOROBENZENE	24.55	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	64
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	42
3	Butane, 2-nitro-	103	C4H9NO2	000600-24-8	38

unknown

19100507.D VAP_NP10.M Mon Nov 01 14:12:43 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 90
ID : Cyclopropane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 72
 ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 94
 ID : Methane, dichlorofluoro-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Butane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 80
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 91
 ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 78
ID : Butane, 2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100508.D
Operator : G. FIES
Acquired : 5 Oct 1999 3:21 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-068-00E-04
Misc Info : 20 TORR, DF=2
Vial Number: 1

2B-119

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100508.D

Vial: 1

Acq On : 5 Oct 1999 3:21 pm

Operator: G. FIES

Sample : V9018-068-00E-04

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 14:46 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6564064	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.96	117	2458380	193.30	NG	0.09

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.93	50	146	N.D.		
4) N-BUTANE	12.18	43	1770406m	58.15	PPB	
5) ETHYL CHLORIDE	14.28	64	8019	N.D.		
6) FREON 11	16.19	101	12652178	366.61	PPB	97
7) N-PENTANE	16.89	72	12334	3.97	PPB	# 55
8) DICHLOROMETHANE	18.58	49	194909	9.47	PPB	96
9) 2-METHYL-PENTANE	20.03	43	212962	5.00	PPB	95
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.39	57	13844	N.D.		
12) CHLOROFORM	22.22	83	11179175	395.08	PPB	98
13) BENZENE	24.06	78	23992	N.D.		
14) CARBON TETRACHLORIDE	24.10	117	1874597	73.12	PPB	99
15) 3-METHYL-HEXANE	24.09	43	37672	N.D.		
16) N-HEPTANE	25.37	57	4699	N.D.		
17) TOLUENE	28.13	91	27071	N.D.		
18) N-OCTANE	29.02	57	206	N.D.		
19) TETRACHLOROETHYLENE	29.82	166	7056919m	224.23	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.50	91	1044	N.D.		
23) M,P-XYLENE	31.74	91	2077	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.30	43	6124	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	416	N.D.		
27) O-XYLENE	32.60	91	1273	N.D.		
28) N-DECANE	35.39	43	111	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.89	105	92	N.D.		

(#) = qualifier out of range (m) = manual integration

19100508.D VAP_NP10.M

Mon Nov 01 14:46:30 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100508.D

Vial: 1

Acq On : 5 Oct 1999 3:21 pm

Operator: G. FIES

Sample : V9018-068-00E-04

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Nov 1 14:47 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6546864	157.10	NG	0.04
17) CHLOROBENZENE-D5	30.96	117	2432474	193.30	NG	0.03

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.39	45	503	N.D.		
3) ACETONITRILE	16.53	40	258	N.D.		
4) ACETONE	16.84	58	47362m	4.72	PPB	
5) FURAN	16.93	68	212	N.D.		
6) 2-PROPANOL	17.14	45	66	N.D.		
7) 1-PROPANOL	19.92	31	512	N.D.		
8) PROPANENITRILE	20.66	54	1791	N.D.		
9) BUTANAL	21.12	72	6523	1.06	PPB	91
10) 2-BUTANONE	21.36	72	4142	N.D.		
11) TETRAHYDROFURAN	22.73	72	2147	N.D.		
12) 1-BUTANOL	24.09	56	258461	18.84	PPB	94
13) BUTANENITRILE	24.28	41	14602	N.D.		
14) 2-PENTANONE	25.03	43	10788	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	27.04	100	311	N.D.		
18) 2-HEXANONE	28.54	58	2295	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100508.D VAP_P10.M

Mon Nov 01 14:53:15 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100508.D

Acq On : 5 Oct 1999 3:21 pm

Sample : V9018-068-00E-04

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 14:46 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6564064	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.96	117	2458380	193.30	NG	0.09

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.93	50	146	N.D.		
4) N-BUTANE	12.18	43	1770406m	116.29	PPB	
5) ETHYL CHLORIDE	14.28	64	8019m	1.43	PPB	
6) FREON 11	16.19	101	12652178	733.22	PPB	97
7) N-PENTANE	16.89	72	12334	7.94	PPB	# 55
8) DICHLOROMETHANE	18.58	49	194909	18.93	PPB	96
9) 2-METHYL-PENTANE	20.03	43	212962	10.01	PPB	95
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.39	57	13844	1.02	PPB	97
12) CHLOROFORM	22.22	83	11179175	790.16	PPB	98
13) BENZENE	24.06	78	23992	N.D.		
14) CARBON TETRACHLORIDE	24.10	117	1874597	146.24	PPB	99
15) 3-METHYL-HEXANE	24.09	43	37672	1.60	PPB	# 74
16) N-HEPTANE	25.37	57	4699	N.D.		
17) TOLUENE	28.13	91	27071	N.D.		
18) N-OCTANE	29.02	57	206	N.D.		
19) TETRACHLOROETHYLENE	29.82	166	7056919m	448.46	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.50	91	1044	N.D.		
23) M,P-XYLENE	31.74	91	2077	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.30	43	6124	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	416	N.D.		
27) O-XYLENE	32.60	91	1273	N.D.		
28) N-DECANE	35.39	43	111	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.89	105	92	N.D.		

(#)=qualifier out of range (m)=manual integration

19100508.D VAP_NP10.M Mon Nov 01 14:46:44 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100508.D

Vial: 1

Acq On : 5 Oct 1999 3:21 pm

Operator: G. FIES

Sample : V9018-068-00E-04

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: rteint.p

Quant Time: Nov 1 14:47 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6546864	157.10	NG	0.04
17) CHLOROBENZENE-D5	30.96	117	2432474	193.30	NG	0.03

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.39	45	503	N.D.		
3) ACETONITRILE	16.53	40	258	N.D.		
4) ACETONE	16.84	58	47362m	9.43	PPB	
5) FURAN	16.93	68	212	N.D.		
6) 2-PROPANOL	17.14	45	66	N.D.		
7) 1-PROPANOL	19.92	31	512	N.D.		
8) PROPANENITRILE	20.66	54	1791	N.D.		
9) BUTANAL	21.12	72	6523	2.12	PPB	91
10) 2-BUTANONE	21.36	72	4142	N.D.		
11) TETRAHYDROFURAN	22.73	72	2147	N.D.		
12) 1-BUTANOL	24.09	56	258461	37.68	PPB	94
13) BUTANENITRILE	24.28	41	14602	N.D.		
14) 2-PENTANONE	25.03	43	10788	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	27.04	100	311	N.D.		
18) 2-HEXANONE	28.54	58	2295	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100508.D VAP_P10.M Mon Nov 01 14:49:09 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100705.D
Operator : G. FIES
Acquired : 7 Oct 1999 12:01 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-068-00E-04-2
Misc Info : 20 TORR; 2ND DIL.; DF=48
Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100705.D

Acq On : 7 Oct 1999 12:01 pm

Sample : V9018-068-00E-04-2

Misc : 20 TORR; 2ND DIL.; DF=48

MS Integration Params: RTEINT.P

Quant Time: Nov 1 14:41 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	7422901	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5381669	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.13	43	87233	2.53	PPB	100
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	662779	16.98	PPB	100
7) N-PENTANE	16.89	72	430	N.D.		
8) DICHLOROMETHANE	18.57	49	6211	N.D.		
9) 2-METHYL-PENTANE	20.01	43	13655	N.D.		
10) 1-HEXENE	20.96	56	305	N.D.		
11) N-HEXANE	21.37	57	1266	N.D.		
12) CHLOROFORM	22.19	83	729750	22.81	PPB	99
13) BENZENE	24.03	78	2144	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	83812	2.89	PPB	98
15) 3-METHYL-HEXANE	23.99	43	2757	N.D.		
16) N-HEPTANE	25.38	57	1703	N.D.		
17) TOLUENE	28.10	91	7376	N.D.		
18) N-OCTANE	29.11	57	2275	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	1448250	40.69	PPB	99
21) CHLOROBENZENE	31.01	112	1537	N.D.		
22) ETHYLBENZENE	31.47	91	2498	N.D.		
23) M,P-XYLENE	31.72	91	5660	N.D.		
24) STYRENE	32.46	104	1060	N.D.		
25) N-NONANE	32.46	43	6087	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	914	N.D.		
27) O-XYLENE	32.57	91	2525	N.D.		
28) N-DECANE	35.55	43	7508	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.74	105	3989	N.D.		

(#) = qualifier out of range (m) = manual integration

19100705.D VAP_NP10.M Mon Nov 01 14:42:28 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100705.D
Acq On : 7 Oct 1999 12:01 pm
Sample : V9018-068-00E-04-2
Misc : 20 TORR; 2ND DIL.; DF=48
MS Integration Params: RTEINT.P
Quant Time: Nov 1 14:41 1999

Vial: 1
Operator: G. FIES
Inst : GC/MS Ins
Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	7422901	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5381669	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.13	43	87233	121.61	PPB	100
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	662779	815.17	PPB	100
7) N-PENTANE	16.89	72	430	5.88	PPB	# 1
8) DICHLOROMETHANE	18.57	49	6211	12.80	PPB	96
9) 2-METHYL-PENTANE	20.01	43	13655	13.62	PPB	97
10) 1-HEXENE	20.96	56	305	N.D.		
11) N-HEXANE	21.37	57	1266	1.99	PPB	# 11
12) CHLOROFORM	22.19	83	729750	1094.68	PPB	99
13) BENZENE	24.03	78	2144	1.81	PPB	# 85
14) CARBON TETRACHLORIDE	24.07	117	83812	138.77	PPB	98
15) 3-METHYL-HEXANE	23.99	43	2757	2.49	PPB	95
16) N-HEPTANE	25.38	57	1703	4.22	PPB	# 1
17) TOLUENE	28.10	91	7376	5.28	PPB	95
18) N-OCTANE	29.11	57	2275	5.23	PPB	# 47
19) TETRACHLOROETHYLENE	29.72	166	1448250	1953.26	PPB	99
21) CHLOROBENZENE	31.01	112	1537	1.53	PPB	# 21
22) ETHYLBENZENE	31.47	91	2498	1.74	PPB	# 80
23) M,P-XYLENE	31.72	91	5660	5.21	PPB	97
24) STYRENE	32.46	104	1060	1.26	PPB	# 47
25) N-NONANE	32.46	43	6087	6.09	PPB	83
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	914	N.D.		
27) O-XYLENE	32.57	91	2525	2.09	PPB	89
28) N-DECANE	35.55	43	7508	8.98	PPB	90
29) 1,2,4-TRIMETHYLBENZENE	35.74	105	3989	2.95	PPB	97

(#) = qualifier out of range (m) = manual integration
19100705.D VAP_NP10.M Mon Nov 01 14:42:44 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100508.D Vial: 1
 Acq On : 5 Oct 1999 3:21 pm Operator: G. FIES
 Sample : V9018-068-00E-04 Inst : GC/MS Ins
 Misc : 20 TORR, DF=2 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Library : C:\DATABASE\NIST98.L

 Peak Number 1 Isobutane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.12	40.99 NG	3884230	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	80
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Butane		58	C4H10	000106-97-8	2

 Peak Number 2 Isobutane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.59	53.50 NG	5070360	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	86
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Ethenone		42	C2H2O	000463-51-4	3

C4 A11

 Peak Number 3 Butane Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
11.91	23.60 NG	2236540	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane		58	C4H10	000106-97-8	59
2	Isobutane		58	C4H10	000075-28-5	9
3	Diazene, dimethyl-		58	C2H6N2	000503-28-6	4

Target

 Peak Number 4 Propane, 2,2-dimethyl- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.75	17.46 NG	1654870	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-		72	C5H12	000463-82-1	72

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2 Pentane, 2,2,4-trimethyl- 114 C8H18 000540-84-1 42
 3 Butane, 2-bromo- 136 C4H9Br 000078-76-2 39

 Peak Number 5 Butane, 2,2-dimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.47	28.16 NG	2669080	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	86	
2	Hexane, 2,2,5,5-tetramethyl-	142	C10H22	001071-81-4	25	
3	Hexane, 3-methyl-	100	C7H16	000589-34-4	25	

 Peak Number 6 Ethene, 1,2-dichloro-, (E)- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.91	20.16 NG	1910140	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	96	
2	Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95	
3	1,2-Dichloroethylene	96	C2H2Cl2	000540-59-0	91	

 Peak Number 7 Cyclopentane, methyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.67	50.97 NG	4830370	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91	
2	Cyclopropane, propyl-	84	C6H12	002415-72-7	78	
3	Cyclobutane, ethyl-	84	C6H12	004806-61-5	78	

 Peak Number 8 Trichloroethylene Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
25.53	351.03 NG	33266300	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99	
2	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35	
3	Benzene, 1-chloro-2-fluoro-	130	C6H4ClF	000348-51-6	25	

 Peak Number 9 Propane, 2-methyl-2-nitro- Concentration Rank 6

HNF-5367 Rev. 0

R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.11	36.90 NG	3497270	FLUOROBENZENE	24.55	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	64
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	38
3	Butane, 2-nitro- <i>known</i>	103	C4H9NO2	000600-24-8	38

 Peak Number 10 Tetrachloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.	
29.75	625.29 NG	26237600	CHLOROBENZENE-D5	30.96	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Tetrachloroethylene	164	C2Cl4	000127-18-4	99
2	2,4-Dichloro-6-fluoropyrimidine	166	C4HCl2FN2	1000146-93-0	27
3	2-Chloroquinoxaline	164	C8H5ClN2	001448-87-9	12

19100508.D VAP_NP10.M Mon Nov 01 14:49:37 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 80
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 72
 ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 72
 ID : Propane, 2,2-dimethyl-

HNF-5367 Rev.0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 86
 ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 99
 ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100509.D
Operator : G. FIES
Acquired : 5 Oct 1999 4:20 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-075-00E-05
Misc Info : 20 TORR, DF=2
Vial Number: 1

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100509.D

Acq On : 5 Oct 1999 4:20 pm

Sample : V9018-075-00E-05

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 15:20 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6509280	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.96	117	2302296	193.30	NG	0.09

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.03	85	5175	N.D.		
3) METHYL CHLORIDE	9.83	50	2516	N.D.		
4) N-BUTANE	11.98	43	1758285m	58.24	PPB	
5) ETHYL CHLORIDE	14.29	64	7754	N.D.		
6) FREON 11	16.20	101	12157429	355.24	PPB	98
7) N-PENTANE	16.89	72	13198	4.29	PPB	# 72
8) DICHLOROMETHANE	18.58	49	190628	9.34	PPB	96
9) 2-METHYL-PENTANE	20.03	43	220187	5.22	PPB	95
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.40	57	14929	N.D.		
12) CHLOROFORM	22.22	83	11058863	394.11	PPB	98
13) BENZENE	24.05	78	24669	N.D.		
14) CARBON TETRACHLORIDE	24.10	117	1859313	73.14	PPB	98
15) 3-METHYL-HEXANE	24.09	43	36118	N.D.		
16) N-HEPTANE	25.38	57	2670	N.D.		
17) TOLUENE	28.14	91	25033	N.D.		
18) N-OCTANE	29.14	57	2399	N.D.		
19) TETRACHLOROETHYLENE	29.74	166	6964482m	223.15	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.49	91	981	N.D.		
23) M,P-XYLENE	31.76	91	1644	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.31	43	4849	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	93	N.D.		
27) O-XYLENE	32.59	91	1278	N.D.		
28) N-DECANE	35.67	43	223	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100509.D VAP_NP10.M Mon Nov 01 15:20:37 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100509.D

Acq On : 5 Oct 1999 4:20 pm

Sample : V9018-075-00E-05

Misc : 20 TORR, DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 15:11 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6488752	157.10	NG	0.03
17) CHLOROBENZENE-D5	30.96	117	2280897	193.30	NG	0.03

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	218	N.D.		
3) ACETONITRILE	16.55	40	221	N.D.		
4) ACETONE	16.88	58	25885m	2.60	PPB	
5) FURAN	16.94	68	973	N.D.		
6) 2-PROPANOL	17.14	45	255	N.D.		
7) 1-PROPANOL	19.86	31	292	N.D.		
8) PROPANENITRILE	20.66	54	1952	N.D.		
9) BUTANAL	21.14	72	3554	N.D.		
10) 2-BUTANONE	21.51	72	94	N.D.		
11) TETRAHYDROFURAN	22.74	72	434	N.D.		
12) 1-BUTANOL	24.09	56	256580	18.87	PPB	94
13) BUTANENITRILE	24.27	41	13614	N.D.		
14) 2-PENTANONE	24.95	43	7909	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.54	58	1436	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100509.D VAP_P10.M

Mon Nov 01 15:12:33 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100509.D

Acq On : 5 Oct 1999 4:20 pm

Sample : V9018-075-00E-05

Misc : 20 TORR, DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 15:20 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.55	96	6509280	157.10	NG	0.09
20) CHLOROBENZENE-D5	30.96	117	2302296	193.30	NG	0.09

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.03	85	5175	N.D.		
3) METHYL CHLORIDE	9.83	50	2516	N.D.		
4) N-BUTANE	11.98	43	1758285m	116.47	PPB	
5) ETHYL CHLORIDE	14.29	64	7754m	1.40	PPB	
6) FREON 11	16.20	101	12157429	710.48	PPB	98
7) N-PENTANE	16.89	72	13198	8.57	PPB	# 72
8) DICHLOROMETHANE	18.58	49	190628	18.67	PPB	96
9) 2-METHYL-PENTANE	20.03	43	220187	10.43	PPB	95
10) 1-HEXENE	0.00	56	0	N.D.	d	
11) N-HEXANE	21.40	57	14929	1.11	PPB	99
12) CHLOROFORM	22.22	83	11058863	788.23	PPB	98
13) BENZENE	24.05	78	24669	N.D.		
14) CARBON TETRACHLORIDE	24.10	117	1859313	146.27	PPB	98
15) 3-METHYL-HEXANE	24.09	43	36118	1.55	PPB	# 71
16) N-HEPTANE	25.38	57	2670	N.D.		
17) TOLUENE	28.14	91	25033	N.D.		
18) N-OCTANE	29.14	57	2399	N.D.		
19) TETRACHLOROETHYLENE	29.74	166	6964482m	446.31	PPB	
21) CHLOROBENZENE	0.00	112	0	N.D.		
22) ETHYLBENZENE	31.49	91	981	N.D.		
23) M,P-XYLENE	31.76	91	1644	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.31	43	4849	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	93	N.D.		
27) O-XYLENE	32.59	91	1278	N.D.		
28) N-DECANE	35.67	43	223	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100509.D VAP_NP10.M Mon Nov 01 15:20:51 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100509.D

Vial: 1

Acq On : 5 Oct 1999 4:20 pm

Operator: G. FIES

Sample : V9018-075-00E-05

Inst : GC/MS Ins

Misc : 20 TORR, DF=2

Multiplr: 2.00

MS Integration Params: rteint.p

Quant Time: Nov 1 15:11 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.55	96	6488752	157.10	NG	0.03
17) CHLOROBENZENE-D5	30.96	117	2280897	193.30	NG	0.03

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	218	N.D.		
3) ACETONITRILE	16.55	40	221	N.D.		
4) ACETONE	16.88	58	25885m	5.20	PPB	
5) FURAN	16.94	68	973	N.D.		
6) 2-PROPANOL	17.14	45	255	N.D.		
7) 1-PROPANOL	19.86	31	292	N.D.		
8) PROPANENITRILE	20.66	54	1952	N.D.		
9) BUTANAL	21.14	72	3554	1.16	PPB	# 85
10) 2-BUTANONE	21.51	72	94	N.D.		
11) TETRAHYDROFURAN	22.74	72	434	N.D.		
12) 1-BUTANOL	24.09	56	256580	37.74	PPB	94
13) BUTANENITRILE	24.27	41	13614	N.D.		
14) 2-PENTANONE	24.95	43	7909	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.54	58	1436	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100509.D VAP_P10.M

Mon Nov 01 15:12:50 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100706.D
Operator : G. FIES
Acquired : 7 Oct 1999 12:59 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-075-00E-05-2
Misc Info : 20 TORR; 2ND DIL.; DF=48
Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100706.D
Acq On : 7 Oct 1999 12:59 pm
Sample : V9018-075-00E-05-2
Misc : 20 TORR; 2ND DIL.; DF=48
MS Integration Params: RTEINT.P
Quant Time: Nov 1 15:21 1999

Vial: 1
Operator: G. FIES
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.52	96	7328172	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5141064	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.42	85	99	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	74955	2.21	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	658093	17.08	PPB	100
7) N-PENTANE	16.90	72	321	N.D.		
8) DICHLOROMETHANE	18.58	49	6243	N.D.		
9) 2-METHYL-PENTANE	20.01	43	13287	N.D.		
10) 1-HEXENE	20.95	56	309	N.D.		
11) N-HEXANE	21.38	57	1456	N.D.		
12) CHLOROFORM	22.19	83	722605	22.87	PPB	99
13) BENZENE	24.02	78	2058	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	82457	2.88	PPB	97
15) 3-METHYL-HEXANE	24.05	43	1208	N.D.		
16) N-HEPTANE	25.37	57	2218	N.D.		
17) TOLUENE	28.10	91	6364	N.D.		
18) N-OCTANE	29.10	57	1035	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	1424157	40.53	PPB	99
21) CHLOROBENZENE	31.00	112	1061	N.D.		
22) ETHYLBENZENE	31.47	91	1718	N.D.		
23) M,P-XYLENE	31.73	91	3568	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.36	43	92	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.02	83	101	N.D.		
27) O-XYLENE	32.57	91	1796	N.D.		
28) N-DECANE	35.54	43	5432	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19100706.D VAP_NP10.M Mon Nov 01 15:22:19 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100706.D

Acq On : 7 Oct 1999 12:59 pm

Sample : V9018-075-00E-05-2

Misc : 20 TORR; 2ND DIL.; DF=48

MS Integration Params: RTEINT.P

Quant Time: Nov 1 15:21 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	7328172	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5141064	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.42	85	99	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	74955	105.85	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	658093	819.87	PPB	100
7) N-PENTANE	16.90	72	321	4.44	PPB	# 1
8) DICHLOROMETHANE	18.58	49	6243	13.04	PPB	91
9) 2-METHYL-PENTANE	20.01	43	13287	13.42	PPB	92
10) 1-HEXENE	20.95	56	309	N.D.		
11) N-HEXANE	21.38	57	1456	2.32	PPB	# 59
12) CHLOROFORM	22.19	83	722605	1097.97	PPB	99
13) BENZENE	24.02	78	2058	1.76	PPB	# 87
14) CARBON TETRACHLORIDE	24.07	117	82457	138.29	PPB	97
15) 3-METHYL-HEXANE	24.05	43	1208	1.10	PPB	# 7
16) N-HEPTANE	25.37	57	2218	5.57	PPB	# 1
17) TOLUENE	28.10	91	6364	4.62	PPB	91
18) N-OCTANE	29.10	57	1035	2.41	PPB	# 37
19) TETRACHLOROETHYLENE	29.72	166	1424157	1945.60	PPB	99
21) CHLOROBENZENE	31.00	112	1061	1.10	PPB	# 21
22) ETHYLBENZENE	31.47	91	1718	1.25	PPB	# 63
23) M,P-XYLENE	31.73	91	3568	3.44	PPB	95
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.36	43	92	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.02	83	101	N.D.		
27) O-XYLENE	32.57	91	1796	1.55	PPB	# 83
28) N-DECANE	35.54	43	5432	6.80	PPB	# 66
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19100706.D VAP_NP10.M Mon Nov 01 15:22:34 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100509.D Vial: 1
Acq On : 5 Oct 1999 4:20 pm Operator: G. FIES
Sample : V9018-075-00E-05 Inst : GC/MS Ins
Misc : 20 TORR, DF=2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Library : C:\DATABASE\NIST98.L

Peak Number 1 Cyclopropane Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.46	27.64 NG	2587590	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopropane		42	C3H6	000075-19-4	90
2	Propene		42	C3H6	000115-07-1	83
3	Furan, 2,5-dihydro-		70	C4H6O	001708-29-8	45

C3 AH

Peak Number 2 Isobutane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.24	88.22 NG	8258730	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	72
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Ethenone		42	C2H2O	000463-51-4	3

Peak Number 3 Isobutane Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.64	20.86 NG	1953250	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	64
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Propane, 1-nitro-		89	C3H7NO2	000108-03-2	4

C4 AH

Peak Number 4 Propane, 2,2-dimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.59	25.23 NG	2361810	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-		72	C5H12	000463-82-1	78

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2 Pentane, 2,2,4-trimethyl-	114 C8H18	000540-84-1 40
3 Propane, 2-bromo-2-methyl-	136 C4H9Br	000507-19-7 40

 Peak Number 5 Methane, dichlorofluoro- Concentration Rank 11

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.94	18.39 NG	1721920	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Methane, dichlorofluoro-	102	CHCl2F	000075-43-4	94
2		1-Butyne, 3,3-dimethyl-	82	C6H10	000917-92-0	7
3		Methanamine, N,N-difluoro-	67	CH3F2N	000753-58-2	5

 Peak Number 6 Butane, 2-methyl- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.62	21.90 NG	2050440	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Butane, 2-methyl-	72	C5H12	000078-78-4	91
2		Methane, isocyanato-	57	C2H3NO	000624-83-9	9
3		2(3H)-Furanone, dihydro-4-methyl-	100	C5H8O2	001679-49-8	9

 Peak Number 7 Butane, 2,2-dimethyl- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.47	29.36 NG	2748440	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	86
2		Heptane, 3,3-dimethyl-	128	C9H20	004032-86-4	53
3		Pentane, 2-methyl-	86	C6H14	000107-83-5	40

 Peak Number 8 Ethene, 1,2-dichloro-, (E)- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.91	19.94 NG	1866750	FLUOROBENZENE	24.55

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	96
2		Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95
3		1,2-Dichloroethylene	96	C2H2Cl2	000540-59-0	95

 Peak Number 9 Cyclopentane, methyl- Concentration Rank 3

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R.T.	EstConc	Area	Relative to ISTD	R.T.	
22.67	50.94 NG	4769120	FLUOROBENZENE	24.55	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91
2	Cyclopropane, propyl-	84	C6H12	002415-72-7	78
3	Cyclobutane, ethyl-	84	C6H12	004806-61-5	78

 Peak Number 10 Trichloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.	
25.53	350.84 NG	32845300	FLUOROBENZENE	24.55	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99
2	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35
3	Benzene, 1-chloro-2-fluoro-	130	C6H4ClF	000348-51-6	25

 Peak Number 11 Propane, 2-methyl-2-nitro- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.10	36.31 NG	3399370	FLUOROBENZENE	24.55	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	78
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	42
3	Butane, 2-nitro-	103	C4H9NO2	000600-24-8	38

unknown

19100509.D VAP_NP10.M Mon Nov 01 15:14:33 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Cyclopropane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 56
ID : Propane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 94
ID : Methane, dichlorofluoro-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Butane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 86
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 95
ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 78
ID : Butane, 2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100707.D
Operator : G. FIES
Acquired : 7 Oct 1999 2:02 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-091-AMB-01
Misc Info : 20 TORR; DF=2
Vial Number: 1

HNF-5367 Rev. 0
 Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100707.D Vial: 1
 Acq On : 7 Oct 1999 2:02 pm Operator: G. FIES
 Sample : V9019-091-AMB-01 Inst : GC/MS Ins
 Misc : 20 TORR; DF=2 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Nov 1 15:42 1999 Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Last Update : Mon Oct 04 12:50:45 1999
 Response via : Initial Calibration
 DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.53	96	7197760	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5330959	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.34	85	10096	N.D.		
3) METHYL CHLORIDE	10.05	50	4234	N.D.		
4) N-BUTANE	12.06	43	92	N.D.		
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	3565	N.D.		
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.37	49	602	N.D.		
9) 2-METHYL-PENTANE	19.93	43	234	N.D.		
10) 1-HEXENE	0.00	56	0	N.D.		
11) N-HEXANE	21.37	57	568	N.D.		
12) CHLOROFORM	0.00	83	0	N.D.		
13) BENZENE	24.03	78	2197	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	1131	N.D.		
15) 3-METHYL-HEXANE	24.02	43	4957	N.D.		
16) N-HEPTANE	25.38	57	7954	N.D.		
17) TOLUENE	28.11	91	6545	N.D.		
18) N-OCTANE	29.12	57	2701	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	918	N.D.		
21) CHLOROBENZENE	31.00	112	373	N.D.		
22) ETHYLBENZENE	31.48	91	1425	N.D.		
23) M,P-XYLENE	31.75	91	2274	N.D.		
24) STYRENE	32.47	104	105	N.D.		
25) N-NONANE	32.47	43	2691	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.58	91	1208	N.D.		
28) N-DECANE	35.50	43	233	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration
 19100707.D VAP_NP10.M Mon Nov 01 15:43:43 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100707.D

Vial: 1

Acq On : 7 Oct 1999 2:02 pm

Operator: G. FIES

Sample : V9019-091-AMB-01

Inst : GC/MS Ins

Misc : 20 TORR; DF=2

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Nov 1 15:48 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.53	96	7160450	157.10	NG	0.01
17) CHLOROBENZENE-D5	30.93	117	5221103	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.36	45	97	N.D.		
3) ACETONITRILE	16.55	40	321	N.D.		
4) ACETONE	16.96	58	50028m	4.56	PPB	
5) FURAN	0.00	68	0	N.D.		
6) 2-PROPANOL	17.14	45	344	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	0.00	54	0	N.D.		
9) BUTANAL	21.19	72	4411	N.D.		
10) 2-BUTANONE	21.47	72	7022	N.D.		
11) TETRAHYDROFURAN	0.00	72	0	N.D.		
12) 1-BUTANOL	24.31	56	6110	N.D.		
13) BUTANENITRILE	24.32	41	4506	N.D.		
14) 2-PENTANONE	25.06	43	22849	N.D.		
15) 1,4-DIOXANE	25.89	88	302	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.78	58	873	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	32.14	58	196	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100707.D VAP_P10.M

Mon Nov 01 15:48:19 1999

HNF-5367 Rev.0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100707.D

Acq On : 7 Oct 1999 2:02 pm

Sample : V9019-091-AMB-01

Misc : 20 TORR; DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 15:42 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.53	96	7197760	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	5330959	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.34	85	10096	N.D.		
3) METHYL CHLORIDE	10.05	50	4234	N.D.		
4) N-BUTANE	12.06	43	92	N.D.		
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.22	101	3565	N.D.		
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.37	49	602	N.D.		
9) 2-METHYL-PENTANE	19.93	43	234	N.D.		
10) 1-HEXENE	0.00	56	0	N.D.		
11) N-HEXANE	21.37	57	568	N.D.		
12) CHLOROFORM	0.00	83	0	N.D.		
13) BENZENE	24.03	78	2197	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	1131	N.D.		
15) 3-METHYL-HEXANE	24.02	43	4957	N.D.		
16) N-HEPTANE	25.38	57	7954	N.D.		
17) TOLUENE	28.11	91	6545	N.D.		
18) N-OCTANE	29.12	57	2701	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	918	N.D.		
21) CHLOROBENZENE	31.00	112	373	N.D.		
22) ETHYLBENZENE	31.48	91	1425	N.D.		
23) M,P-XYLENE	31.75	91	2274	N.D.		
24) STYRENE	32.47	104	105	N.D.		
25) N-NONANE	32.47	43	2691	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.58	91	1208	N.D.		
28) N-DECANE	35.50	43	233	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#)= qualifier out of range (m)= manual integration

19100707.D VAP_NP10.M Mon Nov 01 15:44:00 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100707.D

Acq On : 7 Oct 1999 2:02 pm

Sample : V9019-091-AMB-01

Misc : 20 TORR; DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 15:48 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.53	96	7160450	157.10	NG	0.01
17) CHLOROBENZENE-D5	30.93	117	5221103	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.36	45	97	N.D.		
3) ACETONITRILE	16.55	40	321	N.D.		
4) ACETONE	16.96	58	50028m	9.11	PPB	
5) FURAN	0.00	68	0	N.D.		
6) 2-PROPANOL	17.14	45	344	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	0.00	54	0	N.D.		
9) BUTANAL	21.19	72	4411	1.31	PPB	99
10) 2-BUTANONE	21.47	72	7022m	1.39	PPB	
11) TETRAHYDROFURAN	0.00	72	0	N.D.		
12) 1-BUTANOL	24.31	56	6110	N.D.		
13) BUTANENITRILE	24.32	41	4506	N.D.		
14) 2-PENTANONE	25.06	43	22849	N.D.		
15) 1,4-DIOXANE	25.89	88	302	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.78	58	873	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	32.14	58	196	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100707.D VAP_P10.M

Mon Nov 01 15:48:35 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100707.D Vial: 1
Acq On : 7 Oct 1999 2:02 pm Operator: G. FIES
Sample : V9019-091-AMB-01 Inst : GC/MS Ins
Misc : 20 TORR; DF=2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Library : C:\DATABASE\NIST98.L

No Library Search Compounds Detected

19100707.D VAP_NP10.M Mon Nov 01 15:41:56 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100708.D
Operator : G. FIES
Acquired : 7 Oct 1999 3:05 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-097-00F-01
Misc Info : 20 TORR; DF=2
Vial Number: 1

2B-166

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100708.D

Acq On : 7 Oct 1999 3:05 pm

Sample : V9019-097-00F-01

Misc : 20 TORR; DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 16:09 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.52	96	7098895	157.10	NG	0.06
20) CHLOROBENZENE-D5	30.94	117	2845164	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.81	50	1945	N.D.		
4) N-BUTANE	11.96	43	1551263m	47.11	PPB	
5) ETHYL CHLORIDE	14.26	64	7977	N.D.		
6) FREON 11	16.16	101	11317803	303.24	PPB	98
7) N-PENTANE	16.86	72	9425	2.81	PPB	# 62
8) DICHLOROMETHANE	18.55	49	238165	10.70	PPB	100
9) 2-METHYL-PENTANE	20.00	43	156365	3.40	PPB	100
10) 1-HEXENE	20.96	56	4987	N.D.		
11) N-HEXANE	21.37	57	6604	N.D.		
12) CHLOROFORM	22.19	83	10612182	346.78	PPB	98
13) BENZENE	24.03	78	22074	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	1898181	68.46	PPB	98
15) 3-METHYL-HEXANE	24.06	43	29066	N.D.		
16) N-HEPTANE	25.43	57	1040	N.D.		
17) TOLUENE	28.11	91	49350	N.D.		
18) N-OCTANE	28.99	57	193	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	7112787m	208.98	PPB	
21) CHLOROBENZENE	31.00	112	97	N.D.		
22) ETHYLBENZENE	31.47	91	3008	N.D.		
23) M,P-XYLENE	31.72	91	8225	N.D.		
24) STYRENE	32.45	104	94	N.D.		
25) N-NONANE	32.46	43	5038	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	441	N.D.		
27) O-XYLENE	32.56	91	3803	N.D.		
28) N-DECANE	35.51	43	568	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.76	105	2754	N.D.		

(#) = qualifier out of range (m) = manual integration

19100708.D VAP_NP10.M Mon Nov 01 16:10:13 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100708.D
Acq On : 7 Oct 1999 3:05 pm
Sample : V9019-097-00F-01
Misc : 20 TORR; DF=2
MS Integration Params: rteint.p
Quant Time: Nov 1 16:04 1999

Vial: 1
Operator: G. FIES
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.52	96	7066994	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.94	117	2817882	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.41	45	307	N.D.		
3) ACETONITRILE	16.57	40	58	N.D.		
4) ACETONE	16.84	58	37750m	3.48	PPB	
5) FURAN	16.95	68	19	N.D.		
6) 2-PROPANOL	17.15	45	193	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.63	54	1545	N.D.		
9) BUTANAL	21.10	72	3439	N.D.		
10) 2-BUTANONE	21.35	72	1770	N.D.		
11) TETRAHYDROFURAN	22.73	72	4007	N.D.		
12) 1-BUTANOL	24.07	56	217461	14.68	PPB	91
13) BUTANENITRILE	24.25	41	10692	N.D.		
14) 2-PENTANONE	24.92	43	10161	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.52	58	2196	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19100708.D VAP_P10.M Mon Nov 01 16:07:12 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100708.D

Acq On : 7 Oct 1999 3:05 pm

Sample : V9019-097-00F-01

Misc : 20 TORR; DF=2

MS Integration Params: RTEINT.P

Quant Time: Nov 1 16:09 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	7098895	157.10	NG	0.06
20) CHLOROBENZENE-D5	30.94	117	2845164	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.81	50	1945	N.D.		
4) N-BUTANE	11.96	43	1551263m	94.22	PPB	
5) ETHYL CHLORIDE	14.26	64	7977	1.32	PPB	100
6) FREON 11	16.16	101	11317803	606.48	PPB	98
7) N-PENTANE	16.86	72	9425	5.61	PPB	# 62
8) DICHLOROMETHANE	18.55	49	238165	21.39	PPB	100
9) 2-METHYL-PENTANE	20.00	43	156365	6.79	PPB	100
10) 1-HEXENE	20.96	56	4987	N.D.		
11) N-HEXANE	21.37	57	6604	N.D.		
12) CHLOROFORM	22.19	83	10612182	693.57	PPB	98
13) BENZENE	24.03	78	22074	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	1898181	136.93	PPB	98
15) 3-METHYL-HEXANE	24.06	43	29066	1.14	PPB	# 84
16) N-HEPTANE	25.43	57	1040	N.D.		
17) TOLUENE	28.11	91	49350	1.54	PPB	96
18) N-OCTANE	28.99	57	193	N.D.		
19) TETRACHLOROETHYLENE	29.72	166	7112787m	417.95	PPB	
21) CHLOROBENZENE	31.00	112	97	N.D.		
22) ETHYLBENZENE	31.47	91	3008	N.D.		
23) M, P-XYLENE	31.72	91	8225	N.D.		
24) STYRENE	32.45	104	94	N.D.		
25) N-NONANE	32.46	43	5038	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	441	N.D.		
27) O-XYLENE	32.56	91	3803	N.D.		
28) N-DECANE	35.51	43	568	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.76	105	2754	N.D.		

(#) = qualifier out of range (m) = manual integration

19100708.D VAP_NP10.M Mon Nov 01 16:10:26 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100708.D

Acq On : 7 Oct 1999 3:05 pm

Sample : V9019-097-00F-01

Misc : 20 TORR; DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 16:04 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	7066994	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.94	117	2817882	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.41	45	307	N.D.		
3) ACETONITRILE	16.57	40	58	N.D.		
4) ACETONE	16.84	58	37750m	6.97	PPB	
5) FURAN	16.95	68	19	N.D.		
6) 2-PROPANOL	17.15	45	193	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.63	54	1545	N.D.		
9) BUTANAL	21.10	72	3439	1.03	PPB	93
10) 2-BUTANONE	21.35	72	1770	N.D.		
11) TETRAHYDROFURAN	22.73	72	4007	N.D.		
12) 1-BUTANOL	24.07	56	217461	29.37	PPB	91
13) BUTANENITRILE	24.25	41	10692	N.D.		
14) 2-PENTANONE	24.92	43	10161	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.52	58	2196	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100708.D VAP_P10.M

Mon Nov 01 16:07:28 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101805.D
Operator : BE HEY
Acquired : 18 Oct 1999 2:34 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-097-00F-01-2: SECONDARY DILUTION
Misc Info : 20 TORR: DF = 48
Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101805.D Vial: 1
Acq On : 18 Oct 1999 2:34 pm Operator: BE HEY
Sample : V9019-097-00F-01-2: SECONDARY DILUTION Inst : GC/MS Ins
Misc : 20 TORR: DF = 48 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 1 16:11 1999 Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.46	96	4984283	157.10	NG	0.00
20) CHLOROBENZENE-D5	30.87	117	3508529	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.04	43	40869	1.77	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.14	101	442851	16.90	PPB	99
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.50	49	4406	N.D.		
9) 2-METHYL-PENTANE	19.94	43	4727	N.D.		
10) 1-HEXENE	20.58	56	4745	N.D.		
11) N-HEXANE	21.30	57	974	N.D.		
12) CHLOROFORM	22.12	83	492508	22.92	PPB	100
13) BENZENE	23.97	78	1254	N.D.		
14) CARBON TETRACHLORIDE	24.01	117	38321	1.97	PPB	99
15) 3-METHYL-HEXANE	24.06	43	505	N.D.		
16) N-HEPTANE	25.35	57	2262	N.D.		
17) TOLUENE	28.04	91	5255	N.D.		
18) N-OCTANE	29.03	57	104	N.D.		
19) TETRACHLOROETHYLENE	29.66	166	1011703	42.34	PPB	99
21) CHLOROBENZENE	30.93	112	894	N.D.		
22) ETHYLBENZENE	31.41	91	1500	N.D.		
23) M,P-XYLENE	31.68	91	3335	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.62	43	124	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.52	91	1321	N.D.		
28) N-DECANE	35.41	43	93	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101805.D VAP_NP10.M Mon Nov 01 16:12:41 1999

HNF-5367 Rev.0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101805.D

Acq On : 18 Oct 1999 2:34 pm

Sample : V9019-097-00F-01-2: SECONDARY DILUTION

Misc : 20 TORR: DF = 48

MS Integration Params: RTEINT.P

Quant Time: Nov 1 16:11 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.46	96	4984283	157.10	NG	0.00
20) CHLOROBENZENE-D5	30.87	117	3508529	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.04	43	40869	84.85	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.14	101	442851	811.16	PPB	99
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.50	49	4406	13.53	PPB	97
9) 2-METHYL-PENTANE	19.94	43	4727	7.02	PPB	# 87
10) 1-HEXENE	20.58	56	4745	16.56	PPB	# 66
11) N-HEXANE	21.30	57	974	2.28	PPB	# 5
12) CHLOROFORM	22.12	83	492508	1100.26	PPB	100
13) BENZENE	23.97	78	1254	1.58	PPB	# 52
14) CARBON TETRACHLORIDE	24.01	117	38321	94.49	PPB	99
15) 3-METHYL-HEXANE	24.06	43	505	N.D.		
16) N-HEPTANE	25.35	57	2262	8.35	PPB	# 1
17) TOLUENE	28.04	91	5255	5.60	PPB	92
18) N-OCTANE	29.03	57	104	N.D.		
19) TETRACHLOROETHYLENE	29.66	166	1011703	2032.08	PPB	99
21) CHLOROBENZENE	30.93	112	894	1.36	PPB	# 21
22) ETHYLBENZENE	31.41	91	1500	1.60	PPB	# 70
23) M,P-XYLENE	31.68	91	3335	4.71	PPB	91
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.62	43	124	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.52	91	1321	1.67	PPB	# 84
28) N-DECANE	35.41	43	93	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19101805.D VAP_NP10.M

Mon Nov 01 16:13:03 1999

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100708.D Vial: 1
 Acq On : 7 Oct 1999 3:05 pm Operator: G. FIES
 Sample : V9019-097-00F-01 Inst : GC/MS Ins
 Misc : 20 TORR; DF=2 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Library : C:\DATABASE\NIST98.L

 Peak Number 1 Cyclopropane Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
9.44	27.60 NG	2732560	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopropane	42	C3H6	000075-19-4	90
2	Propene	42	C3H6	000115-07-1	83
3	Furan, 2,5-dihydro-	70	C4H6O	001708-29-8	45

C3 AH

 Peak Number 2 Isobutane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.22	81.22 NG	8041160	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	72
2	Cyclobutylamine	71	C4H9N	002516-34-9	4
3	Ethenone	42	C2H2O	000463-51-4	3

 Peak Number 3 Propane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.56	25.08 NG	2482740	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-	72	C5H12	000463-82-1	72
2	Pentane, 2,2,4-trimethyl-	114	C8H18	000540-84-1	40
3	Propane, 2-bromo-2-methyl-	136	C4H9Br	000507-19-7	40

 Peak Number 4 Methane, dichlorofluoro- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
14.92	16.31 NG	1614420	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Methane, dichlorofluoro-	102	CHCl2F	000075-43-4	94

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2 1-Butyne, 3,3-dimethyl- 82 C6H10 000917-92-0 7
 3 1-Hexyne 82 C6H10 000693-02-7 7

 Peak Number 5 Butane, 2-methyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.59	17.10 NG	1693510	FLUOROBENZENE	24.52

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	91
2	Methane, isocyanato-	57	C2H3NO	000624-83-9	9
3	1-Butene	56	C4H8	000106-98-9	9

 Peak Number 6 Butane, 2,2-dimethyl- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.45	23.28 NG	2304930	FLUOROBENZENE	24.52

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	90
2	Hexane, 2,2,5,5-tetramethyl-	142	C10H22	001071-81-4	35
3	Pentane, 3-bromo-	150	CSH11Br	001809-10-5	25

 Peak Number 7 Ethene, 1,2-dichloro-, (E)- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.87	18.16 NG	1798400	FLUOROBENZENE	24.52

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	96
2	Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95
3	1,2-Dichloroethylene	96	C2H2Cl2	000540-59-0	91

 Peak Number 8 Cyclopentane, methyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.64	42.77 NG	4234230	FLUOROBENZENE	24.52

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91
2	Cyclobutane, ethyl-	84	C6H12	004806-61-5	78
3	1H-Tetrazole, 5-methyl-	84	C2H4N4	004076-36-2	72

 Peak Number 9 Trichloroethylene Concentration Rank 1

HNF-5367 Rev. 0

R.T.	EstConc	Area	Relative to ISTD	R.T.	
25.51	312.92 NG	30982000	FLUOROBENZENE	24.52	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99
2	2-Fluoro-5-chloropyrimidine	132	C4H2ClFN2	062802-37-3	35
3	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35

 Peak Number 10 Propane, 2-methyl-2-nitro- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.07	31.33 NG	3102370	FLUOROBENZENE	24.52	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	64
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	42
3	Butane, 2-nitro-	103	C4H9NO2	000600-24-8	38

unknown

19100708.D VAP_NP10.M Tue Nov 02 10:33:07 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 90
ID : Cyclopropane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched.: C:\DATABASE\NIST98.L
Quality : 94
ID : Methane, dichlorofluoro-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Butane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 90
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 91
 ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 72
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19100709.D
 Operator : G. FIES
 Acquired : 7 Oct 1999 4:10 pm using AcqMethod VAP_AQ
 Instrument : GC/MS Ins
 Sample Name: V9019-110-00F-02
 Misc Info : 20 TORR; DF=2
 Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100709.D Vial: 1
Acq On : 7 Oct 1999 4:10 pm Operator: G. FIES
Sample : V9019-110-00F-02 Inst : GC/MS Ins
Misc : 20 TORR; DF=2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 1 16:53 1999 Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	6803528	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	3164378	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.14	85	8370	N.D.		
3) METHYL CHLORIDE	9.87	50	806	N.D.		
4) N-BUTANE	11.98	43	1251810m	39.67	PPB	
5) ETHYL CHLORIDE	14.36	64	6899	N.D.		
6) FREON 11	16.22	101	11478362	320.89	PPB	98
7) N-PENTANE	16.90	72	8509	2.64	PPB	80
8) DICHLOROMETHANE	18.56	49	210624	9.87	PPB	98
9) 2-METHYL-PENTANE	20.01	43	142930	3.24	PPB	99
10) 1-HEXENE	20.96	56	4985	N.D.		
11) N-HEXANE	21.37	57	5387	N.D.		
12) CHLOROFORM	22.19	83	10181608	347.16	PPB	99
13) BENZENE	24.03	78	18976	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	1817189	68.39	PPB	98
15) 3-METHYL-HEXANE	24.06	43	22943	N.D.		
16) N-HEPTANE	25.36	57	967	N.D.		
17) TOLUENE	28.10	91	28953	N.D.		
18) N-OCTANE	29.02	57	198	N.D.		
19) TETRACHLOROETHYLENE	29.79	166	6751425m	206.97	PPB	
21) CHLOROBENZENE	31.00	112	109	N.D.		
22) ETHYLBENZENE	31.47	91	1007	N.D.		
23) M,P-XYLENE	31.73	91	1756	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.29	43	751	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	201	N.D.		
27) O-XYLENE	32.58	91	997	N.D.		
28) N-DECANE	0.00	43	0	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	36.00	105	92	N.D.		

(#) = qualifier out of range (m) = manual integration
19100709.D VAP_NP10.M Mon Nov 01 16:53:42 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100709.D

Acq On : 7 Oct 1999 4:10 pm

Sample : V9019-110-00F-02

Misc : 20 TORR; DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 16:55 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.52	96	6764252	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.93	117	3246222m	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	382	N.D.		
3) ACETONITRILE	16.58	40	111	N.D.		
4) ACETONE	16.89	58	20717m	2.00	PPB	
5) FURAN	16.94	68	247	N.D.		
6) 2-PROPANOL	17.15	45	164	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.62	54	1159	N.D.		
9) BUTANAL	21.11	72	2577	N.D.		
10) 2-BUTANONE	21.36	72	1476	N.D.		
11) TETRAHYDROFURAN	22.75	72	2167	N.D.		
12) 1-BUTANOL	24.06	56	204237	14.41	PPB	91
13) BUTANENITRILE	24.25	41	9897	N.D.		
14) 2-PENTANONE	0.00	43	0	N.D.	d	
15) 1,4-DIOXANE	25.87	88	202	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	31.68	58	202	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19100709.D VAP_P10.M Mon Nov 01 16:56:00 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100709.D

Vial: 1

Acq On : 7 Oct 1999 4:10 pm

Operator: G. FIES

Sample : V9019-110-00F-02

Inst : GC/MS Ins

Misc : 20 TORR; DF=2

Multiplr: 2.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 16:53 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	6803528	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	3164378	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.14	85	8370	N.D.		
3) METHYL CHLORIDE	9.87	50	806	N.D.		
4) N-BUTANE	11.98	43	1251810m	79.33	PPB	
5) ETHYL CHLORIDE	14.36	64	6899m	1.19	PPB	
6) FREON 11	16.22	101	11478362	641.78	PPB	98
7) N-PENTANE	16.90	72	8509	5.29	PPB	80
8) DICHLOROMETHANE	18.56	49	210624	19.74	PPB	98
9) 2-METHYL-PENTANE	20.01	43	142930	6.48	PPB	99
10) 1-HEXENE	20.96	56	4985	N.D.		
11) N-HEXANE	21.37	57	5387	N.D.		
12) CHLOROFORM	22.19	83	10181608	694.32	PPB	99
13) BENZENE	24.03	78	18976	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	1817189	136.77	PPB	98
15) 3-METHYL-HEXANE	24.06	43	22943	N.D.		
16) N-HEPTANE	25.36	57	967	N.D.		
17) TOLUENE	28.10	91	28953	N.D.		
18) N-OCTANE	29.02	57	198	N.D.		
19) TETRACHLOROETHYLENE	29.79	166	6751425m	413.94	PPB	
21) CHLOROBENZENE	31.00	112	109	N.D.		
22) ETHYLBENZENE	31.47	91	1007	N.D.		
23) M,P-XYLENE	31.73	91	1756	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.29	43	751	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	201	N.D.		
27) O-XYLENE	32.58	91	997	N.D.		
28) N-DECANE	0.00	43	0	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	36.00	105	92	N.D.		

(#)=qualifier out of range (m)=manual integration

19100709.D VAP_NP10.M

Mon Nov 01 16:53:58 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19100709.D

Acq On : 7 Oct 1999 4:10 pm

Sample : V9019-110-00F-02

Misc : 20 TORR; DF=2

MS Integration Params: rteint.p

Quant Time: Nov 1 16:55 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.52	96	6764252	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.93	117	3246222m	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	382	N.D.		
3) ACETONITRILE	16.58	40	111	N.D.		
4) ACETONE	16.89	58	20717m	3.99	PPB	
5) FURAN	16.94	68	247	N.D.		
6) 2-PROPANOL	17.15	45	164	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.62	54	1159	N.D.		
9) BUTANAL	21.11	72	2577	N.D.		
10) 2-BUTANONE	21.36	72	1476	N.D.		
11) TETRAHYDROFURAN	22.75	72	2167	N.D.		
12) 1-BUTANOL	24.06	56	204237	28.81	PPB	91
13) BUTANENITRILE	24.25	41	9897	N.D.		
14) 2-PENTANONE	0.00	43	0	N.D.	d	
15) 1,4-DIOXANE	25.87	88	202	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	31.68	58	202	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19100709.D VAP_P10.M

Mon Nov 01 16:56:13 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101806.D
Operator : BE HEY
Acquired : 18 Oct 1999 3:42 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-110-00F-02-2: SECONDARY DILUTION
Misc Info : 20 TORR: DF = 48
Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101806.D Vial: 1
Acq On : 18 Oct 1999 3:42 pm Operator: BE HEY
Sample : V9019-110-00F-02-2: SECONDARY DILUTION Inst : GC/MS Ins
Misc : 20 TORR: DF = 48 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 16:56 1999

Quant Results File: VAP_NP10.RES

Quant Method: C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.47	96	4922358	157.10	NG	0.01
20) CHLOROBENZENE-D5	30.87	117	3316056	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.09	43	40796	1.79	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.16	101	445195	17.20	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.51	49	4759	N.D.		
9) 2-METHYL-PENTANE	19.95	43	4609	N.D.		
10) 1-HEXENE	20.58	56	4561	N.D.		
11) N-HEXANE	21.32	57	600	N.D.		
12) CHLOROFORM	22.13	83	487378	22.97	PPB	100
13) BENZENE	23.96	78	1186	N.D.		
14) CARBON TETRACHLORIDE	24.01	117	38530	2.00	PPB	98
15) 3-METHYL-HEXANE	24.07	43	197	N.D.		
16) N-HEPTANE	24.95	57	509	N.D.		
17) TOLUENE	28.05	91	4302	N.D.		
18) N-OCTANE	0.00	57	0	N.D.		
19) TETRACHLOROETHYLENE	29.67	166	1005737	42.61	PPB	99
21) CHLOROBENZENE	30.95	112	457	N.D.		
22) ETHYLBENZENE	31.42	91	532	N.D.		
23) M,P-XYLENE	31.42	91	532	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	0.00	43	0	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	0.00	91	0	N.D.		
28) N-DECANE	0.00	43	0	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19101806.D VAP_NP10.M Mon Nov 01 16:57:49 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101806.D Vial: 1
Acq On : 18 Oct 1999 3:42 pm Operator: BE HEY
Sample : V9019-110-00F-02-2: SECONDARY DILUTION Inst : GC/MS Ins
Misc : 20 TORR: DF = 48 Multiplr: 48.00

MS Integration Params: RTEINT.P

Quant Time: Nov 1 16:56 1999

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.47	96	4922358	157.10	NG	0.01
20) CHLOROBENZENE-D5	30.87	117	3316056	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.09	43	40796	85.77	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.16	101	445195	825.71	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.51	49	4759	14.80	PPB	91
9) 2-METHYL-PENTANE	19.95	43	4609	6.93	PPB	91
10) 1-HEXENE	20.58	56	4561	16.12	PPB	# 69
11) N-HEXANE	21.32	57	600	1.42	PPB	# 11
12) CHLOROFORM	22.13	83	487378	1102.50	PPB	100
13) BENZENE	23.96	78	1186	1.51	PPB	# 52
14) CARBON TETRACHLORIDE	24.01	117	38530	96.20	PPB	98
15) 3-METHYL-HEXANE	24.07	43	197	N.D.		
16) N-HEPTANE	24.95	57	509	1.90	PPB	# 1
17) TOLUENE	28.05	91	4302	4.64	PPB	97
18) N-OCTANE	0.00	57	0	N.D.		
19) TETRACHLOROETHYLENE	29.67	166	1005737	2045.51	PPB	99
21) CHLOROBENZENE	30.95	112	457	N.D.		
22) ETHYLBENZENE	31.42	91	532	N.D.		
23) M, P-XYLENE	31.42	91	532	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	0.00	43	0	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	0.00	91	0	N.D.		
28) N-DECANE	0.00	43	0	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19101806.D VAP_NP10.M Mon Nov 01 16:58:07 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19100709.D Vial: 1
 Acq On : 7 Oct 1999 4:10 pm Operator: G. FIES
 Sample : V9019-110-00F-02 Inst : GC/MS Ins
 Misc : 20 TORR; DF=2 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Library : C:\DATABASE\NIST98.L

 Peak Number 1 Isobutane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.27	66.00 NG	6212560	FLUOROBENZENE	24.52

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	64
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Butane		58	C4H10	000106-97-8	4

 Peak Number 2 Isobutane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.66	134.57 NG	12667500	FLUOROBENZENE	24.52

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	53
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Butane		58	C4H10	000106-97-8	4

CY AH

 Peak Number 3 Butane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.20	22.85 NG	2151110	FLUOROBENZENE	24.52

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane		58	C4H10	000106-97-8	59
2	Isobutane		58	C4H10	000075-28-5	7
3	Diazene, dimethyl-		58	C2H6N2	000503-28-6	5

Target

 Peak Number 4 Propane, 2,2-dimethyl- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.77	18.91 NG	1779770	FLUOROBENZENE	24.52

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-		72	C5H12	000463-82-1	72

HNF-5367 Rev. 0

2 Pentane, 2,2,4-trimethyl- 114 C8H18 000540-84-1 45
 3 Butane, 2-bromo- 136 C4H9Br 000078-76-2 39

 Peak Number 5 Butane, 2-methyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
15.66	17.28 NG	1626670	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2-methyl-	72	C5H12	000078-78-4	83
2	Butanal, 2-methyl-	86	C5H10O	000096-17-3	10
3	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	10

 Peak Number 6 Butane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.45	23.28 NG	2191190	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	90
2	Butane, 2-bromo-2-methyl-	150	C5H11Br	000507-36-8	33
3	Pentane, 3-bromo-	150	C5H11Br	001809-10-5	25

 Peak Number 7 Ethene, 1,2-dichloro-, (E)- Concentration Rank 10

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.88	16.93 NG	1593890	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethene, 1,2-dichloro-, (E)- } both	96	C2H2Cl2	000156-60-5	97
2	Ethene, 1,2-dichloro-, (Z)- }	96	C2H2Cl2	000156-59-2	95
3	Ethene, 1,1-dichloro-	96	C2H2Cl2	000075-35-4	91

 Peak Number 8 Cyclopentane, methyl- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.64	41.78 NG	3933040	FLUOROBENZENE	24.52

Hit# of	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91
2	1H-Tetrazole, 5-methyl-	84	C2H4N4	004076-36-2	80
3	Cyclopropane, propyl-	84	C6H12	002415-72-7	78

 Peak Number 9 Trichloroethylene Concentration Rank 1

HNF-5367 Rev. 0

R.T.	EstConc	Area	Relative to ISTD	R.T.	
25.50	311.60 NG	29332100	FLUOROBENZENE	24.52	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	98
2	Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35
3	2-Fluoro-5-chloropyrimidine	132	C4H2ClFN2	062802-37-3	25

 Peak Number 10 Propane, 2-methyl-2-nitro- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.08	30.53 NG	2873620	FLUOROBENZENE	24.52	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	72
2	Butane, 2-bromo-	136	C4H9Br	000078-76-2	42
3	Butane, 2-nitro- <i>unknown</i>	103	C4H9NO2	000600-24-8	38

19100709.D VAP_NP10.M Mon Nov 01 16:50:28 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 64
ID : Propane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L

Quality : 83

ID : Butane, 2-methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 90
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 97
ID : Ethene, 1,2-dichloro-, (E)-

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Please view the native document
for the original page.

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101305.D
Operator : BE HEY
Acquired : 13 Oct 1999 1:16 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-112-00F-03
Misc Info : 20 TORR
Vial Number: 1

Data File : C:\HPCHEM\1\DATA\19101305.D
Acq On : 13 Oct 1999 1:16 pm
Sample : V9019-112-00F-03
Misc : 20 TORR
MS Integration Params: RTEINT.P
Quant Time: Nov 1 17:19 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	5618903	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	3147281	193.30	NG	0.07

System Monitoring Compounds

Target Compounds						Qvalue
2) FREON 12	8.21	85	6276	N.D.		
3) METHYL CHLORIDE	9.95	50	2557	N.D.		
4) N-BUTANE	12.06	43	402343	15.44	PPB	98
5) ETHYL CHLORIDE	14.32	64	2010	N.D.		
6) FREON 11	16.21	101	3603483	121.98	PPB	99
7) N-PENTANE	16.89	72	3835	1.44	PPB #	52
8) DICHLOROMETHANE	18.57	49	61011	3.46	PPB	94
9) 2-METHYL-PENTANE	20.02	43	65808	1.81	PPB	98
10) 1-HEXENE	20.98	56	3233	N.D.		
11) N-HEXANE	21.38	57	20174	N.D.		
12) CHLOROFORM	22.20	83	3929295	162.22	PPB	99
13) BENZENE	24.04	78	21748	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	534169	24.34	PPB	98
15) 3-METHYL-HEXANE	24.15	43	15173	N.D.		
16) N-HEPTANE	25.38	57	2765	N.D.		
17) TOLUENE	28.12	91	101189	1.99	PPB	98
18) N-OCTANE	29.12	57	2692	N.D.		
19) TETRACHLOROETHYLENE	29.77	166	4366233	162.07	PPB #	11
21) CHLOROBENZENE	31.00	112	968	N.D.		
22) ETHYLBENZENE	31.49	91	9513	N.D.		
23) M,P-XYLENE	31.74	91	28820	N.D.		
24) STYRENE	32.47	104	1629	N.D.		
25) N-NONANE	32.47	43	2477	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	1467	N.D.		
27) O-XYLENE	32.58	91	11962	N.D.		
28) N-DECANE	35.93	43	40	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.54	105	285	N.D.		

(#) = qualifier out of range (m) = manual integration
19101305.D VAP_NP10.M Mon Nov 01 17:22:36 1999

Data File : C:\HPCHEM\1\DATA\19101305.D
Acq On : 13 Oct 1999 1:16 pm
Sample : V9019-112-00F-03
Misc : 20 TORR
MS Integration Params: rteint.p
Quant Time: Nov 1 17:32 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96	5603974	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	3259946m	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.41	45	132	N.D.		
3) ACETONITRILE	16.56	40	263	N.D.		
4) ACETONE	16.86	58	37991m	4.42	PPB	
5) FURAN	16.84	68	431	N.D.		
6) 2-PROPANOL	0.00	45	0	N.D.	d	
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	0.00	54	0	N.D.		
9) BUTANAL	21.14	72	2699	N.D.		
10) 2-BUTANONE	21.14	72	2699	N.D.		
11) TETRAHYDROFURAN	22.78	72	2301	N.D.		
12) 1-BUTANOL	24.07	56	70305m	5.99	PPB	
13) BUTANENITRILE	24.27	41	11948	N.D.		
14) 2-PENTANONE	24.93	43	2670	N.D.		
15) 1,4-DIOXANE	25.87	88	561	N.D.		
16) 4-METHYL-2-PENTANONE	27.02	100	879	N.D.		
18) 2-HEXANONE	28.54	58	290	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	35.45	58	4033	N.D.		

(#) = qualifier out of range (m) = manual integration
19101305.D VAP_P10.M Mon Nov 01 17:32:22 1999

Data File : C:\HPCHEM\1\DATA\19101305.D
Acq On : 13 Oct 1999 1:16 pm
Sample : V9019-112-00F-03
Misc : 20 TORR
MS Integration Params: RTEINT.P
Quant Time: Nov 1 17:19 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96	5618903	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	3147281	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.21	85	6276	N.D.		
3) METHYL CHLORIDE	9.95	50	2557	N.D.		
4) N-BUTANE	12.06	43	402343	30.87	PPB	98
5) ETHYL CHLORIDE	14.32	64	2010	N.D.		
6) FREON 11	16.21	101	3603483	243.96	PPB	99
7) N-PENTANE	16.89	72	3835	2.89	PPB	# 52
8) DICHLOROMETHANE	18.57	49	61011	6.92	PPB	94
9) 2-METHYL-PENTANE	20.02	43	65808	3.61	PPB	98
10) 1-HEXENE	20.98	56	3233	N.D.		
11) N-HEXANE	21.38	57	20174	1.74	PPB	90
12) CHLOROFORM	22.20	83	3929295	324.44	PPB	99
13) BENZENE	24.04	78	21748	1.01	PPB	94
14) CARBON TETRACHLORIDE	24.08	117	534169	48.68	PPB	98
15) 3-METHYL-HEXANE	24.15	43	15173	N.D.		
16) N-HEPTANE	25.38	57	2765	N.D.		
17) TOLUENE	28.12	91	101189	3.99	PPB	98
18) N-OCTANE	29.12	57	2692	N.D.		
19) TETRACHLOROETHYLENE	29.77	166	4366233	324.14	PPB	# 11
21) CHLOROBENZENE	31.00	112	968	N.D.		
22) ETHYLBENZENE	31.49	91	9513	N.D.		
23) M,P-XYLENE	31.74	91	28820	1.89	PPB	98
24) STYRENE	32.47	104	1629	N.D.		
25) N-NONANE	32.47	43	2477	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	33.04	83	1467	N.D.		
27) O-XYLENE	32.58	91	11962	N.D.		
28) N-DECANE	35.93	43	40	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.54	105	285	N.D.		

(#) = qualifier out of range (m) = manual integration
19101305.D VAP_NP10.M Mon Nov 01 17:22:55 1999

Data File : C:\HPCHEM\1\DATA\19101305.D
Acq On : 13 Oct 1999 1:16 pm
Sample : V9019-112-00F-03
Misc : 20 TORR
MS Integration Params: rteint.p
Quant Time: Nov 1 17:32 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	5603974	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	3259946m	193.30	NG	0.02

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.41	45	132	N.D.		
3) ACETONITRILE	16.56	40	263	N.D.		
4) ACETONE	16.86	58	37991m	8.84	PPB	
5) FURAN	16.84	68	431	N.D.		
6) 2-PROPANOL	0.00	45	0	N.D.	d	
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	0.00	54	0	N.D.		
9) BUTANAL	21.14	72	2699	1.02	PPB	# 51
10) 2-BUTANONE	21.14	72	2699	N.D.		
11) TETRAHYDROFURAN	22.78	72	2301	N.D.		
12) 1-BUTANOL	24.07	56	70305m	11.97	PPB	
13) BUTANENITRILE	24.27	41	11948	N.D.		
14) 2-PENTANONE	24.93	43	2670	N.D.		
15) 1,4-DIOXANE	25.87	88	561	N.D.		
16) 4-METHYL-2-PENTANONE	27.02	100	879	N.D.		
18) 2-HEXANONE	28.54	58	290	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	35.45	58	4033	N.D.		

(#) = qualifier out of range (m) = manual integration
19101305.D VAP_P10.M Mon Nov 01 17:32:41 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19101305.D

Acq On : 13 Oct 1999 1:16 pm

Sample : V9019-112-00F-03

Misc : 20 TORR

MS Integration Params: RTEINT.P

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Library : C:\DATABASE\NIST98.L

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

 Peak Number 1 Isobutane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.	
10.35	14.22 NG	1084140	FLUOROBENZENE	24.54	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane	58	C4H10	000075-28-5	72
2	Cyclobutylamine	71	C4H9N	002516-34-9	9
3	Acetic acid, 2-propenyl ester	100	C5H8O2	000591-87-7	4

 Peak Number 2 Ethane, 1,1,2-trichloro-1,2,2- Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.	
18.38	29.09 NG	2218020	FLUOROBENZENE	24.54	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,1,2-trichloro-1,2,2-trifl	186	C2Cl3F3	000076-13-1	91
2	Butane, 1,1,3,4-tetrachloro-1,2,2,3	302	C4Cl4F6	000423-38-1	35
3	Methane, bromodichlorofluoro-	180	CBrCl2F	000353-58-2	35

 Peak Number 3 Cyclopentane, methyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.	
22.65	15.24 NG	1161830	FLUOROBENZENE	24.54	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	90
2	1H-Tetrazole, 5-methyl-	84	C2H4N4	004076-36-2	72
3	Cyclohexane	84	C6H12	000110-82-7	64

 Peak Number 4 Trichloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.	
25.51	150.06 NG	11439900	FLUOROBENZENE	24.54	
Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	99

2 Propene, 2-chloro-3,3,3-trifluoro- 130 C3H2ClF3
3 Benzene, 1-chloro-4-fluoro- 130 C6H4ClF

002730-62-3 35
000352-33-0 22

HNF-5367 Rev. 0

19101305.D VAP_NP10.M Mon Nov 01 17:33:15 1999

Library Searched : C:\DATABASE\NIST98.L
Quality : 78 HNF-5367 Rev. 0
ID : Isobutane

Library Searched : C:\DATABASE\NIST98.L

Quality : 91

HNF-5367 Rev. 0

ID : Ethane, 1,1,2-trichloro-1,2,2-trifluoro-

Library Searched : C:\DATABASE\NIST98.L
Quality : 91 **HNF-5367 Rev. 0**
ID : Cyclopentane, methyl-

Library Searched : C:\DATABASE\NIST98.L
Quality : 99 HNF-5367 Rev. 0
ID : Trichloroethylene

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101306.D
Operator : BE HEY
Acquired : 13 Oct 1999 2:27 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-140-00F-04
Misc Info : 20 TORR
Vial Number: 1

2B-218

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101306.D

Acq On : 13 Oct 1999 2:27 pm

Sample : V9019-140-00F-04

Misc : 20 TORR

MS Integration Params: RTEINT.P

Quant Time: Nov 1 18:05 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	5638077	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	2997255	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.19	85	8046	N.D.		
3) METHYL CHLORIDE	9.92	50	1685	N.D.		
4) N-BUTANE	12.03	43	722181m	27.61	PPB	
5) ETHYL CHLORIDE	14.31	64	3835	N.D.		
6) FREON 11	16.20	101	5582830	188.34	PPB	98
7) N-PENTANE	16.89	72	5877	2.20	PPB	# 15
8) DICHLOROMETHANE	18.56	49	101664	5.75	PPB	92
9) 2-METHYL-PENTANE	20.01	43	91866	2.51	PPB	98
10) 1-HEXENE	21.38	56	7593	N.D.		
11) N-HEXANE	21.38	57	16744	N.D.		
12) CHLOROFORM	22.20	83	5779700	237.80	PPB	98
13) BENZENE	24.03	78	22655	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	871023	39.56	PPB	98
15) 3-METHYL-HEXANE	24.14	43	13489	N.D.		
16) N-HEPTANE	25.44	57	4510	N.D.		
17) TOLUENE	28.12	91	77998	1.53	PPB	98
18) N-OCTANE	29.12	57	1869	N.D.		
19) TETRACHLOROETHYLENE	29.78	166	4855067m	179.60	PPB	
21) CHLOROBENZENE	31.01	112	392	N.D.		
22) ETHYLBENZENE	31.48	91	4292	N.D.		
23) M,P-XYLENE	31.74	91	9936	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.38	43	112	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.57	91	4529	N.D.		
28) N-DECANE	35.38	43	101	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.38	105	392	N.D.		

(#) = qualifier out of range (m) = manual integration

19101306.D VAP_NP10.M

Mon Nov 01 18:05:48 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101306.D Vial: 1
Acq On : 13 Oct 1999 2:27 pm Operator: BE HEY
Sample : V9019-140-00F-04 Inst : GC/MS Ins
Misc : 20 TORR Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 1 18:08 1999 Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	5614933	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	2977899m	193.30	NG	0.01

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.37	45	20	N.D.		
3) ACETONITRILE	16.54	40	39	N.D.		
4) ACETONE	16.83	58	67054m	7.79	PPB	
5) FURAN	16.92	68	202	N.D.		
6) 2-PROPANOL	17.21	45	141	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.64	54	590	N.D.		
9) BUTANAL	21.13	72	4681	N.D.		
10) 2-BUTANONE	21.47	72	3482	N.D.		
11) TETRAHYDROFURAN	22.77	72	745	N.D.		
12) 1-BUTANOL	24.07	56	105437	8.96	PPB	93
13) BUTANENITRILE	24.26	41	10414	N.D.		
14) 2-PENTANONE	24.86	43	230	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	31.68	58	208	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101306.D VAP_P10.M Mon Nov 01 18:08:30 1999

Data File : C:\HPCHEM\1\DATA\19101306.D
Acq On : 13 Oct 1999 2:27 pm
Sample : V9019-140-00F-04
Misc : 20 TORR
MS Integration Params: RTEINT.P
Quant Time: Nov 1 18:05 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.54	96	5638077	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	2997255	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.19	85	8046	N.D.		
3) METHYL CHLORIDE	9.92	50	1685	N.D.		
4) N-BUTANE	12.03	43	722181m	55.23	PPB	
5) ETHYL CHLORIDE	14.31	64	3835	N.D.		
6) FREON 11	16.20	101	5582830	376.67	PPB	98
7) N-PENTANE	16.89	72	5877	4.41	PPB	# 15
8) DICHLOROMETHANE	18.56	49	101664	11.50	PPB	92
9) 2-METHYL-PENTANE	20.01	43	91866	5.03	PPB	98
10) 1-HEXENE	21.38	56	7593	N.D.		
11) N-HEXANE	21.38	57	16744	1.44	PPB	91
12) CHLOROFORM	22.20	83	5779700	475.61	PPB	98
13) BENZENE	24.03	78	22655	1.05	PPB	91
14) CARBON TETRACHLORIDE	24.08	117	871023	79.11	PPB	98
15) 3-METHYL-HEXANE	24.14	43	13489	N.D.		
16) N-HEPTANE	25.44	57	4510	N.D.		
17) TOLUENE	28.12	91	77998	3.06	PPB	98
18) N-OCTANE	29.12	57	1869	N.D.		
19) TETRACHLOROETHYLENE	29.78	166	4855067m	359.21	PPB	
21) CHLOROBENZENE	31.01	112	392	N.D.		
22) ETHYLBENZENE	31.48	91	4292	N.D.		
23) M,P-XYLENE	31.74	91	9936	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.38	43	112	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.57	91	4529	N.D.		
28) N-DECANE	35.38	43	101	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.38	105	392	N.D.		

(#) = qualifier out of range (m) = manual integration
19101306.D VAP_NP10.M Mon Nov 01 18:06:03 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101306.D
Acq On : 13 Oct 1999 2:27 pm
Sample : V9019-140-00F-04
Misc : 20 TORR
MS Integration Params: rteint.p
Quant Time: Nov 1 18:08 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	Q	Ion	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.54	96		5614933	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117		2977899m	193.30	NG	0.01

System Monitoring Compounds

Target Compounds	R.T.	Q	Ion	Response	Conc	Units	Qvalue
2) ETHANOL	15.37	45		20	N.D.		
3) ACETONITRILE	16.54	40		39	N.D.		
4) ACETONE	16.83	58		67054m	15.57	PPB	
5) FURAN	16.92	68		202	N.D.		
6) 2-PROPANOL	17.21	45		141	N.D.		
7) 1-PROPANOL	0.00	31		0	N.D.		
8) PROPANENITRILE	20.64	54		590	N.D.		
9) BUTANAL	21.13	72		4681	1.77	PPB	94
10) 2-BUTANONE	21.47	72		3482	N.D.		
11) TETRAHYDROFURAN	22.77	72		745	N.D.		
12) 1-BUTANOL	24.07	56		105437	17.92	PPB	93
13) BUTANENITRILE	24.26	41		10414	N.D.		
14) 2-PENTANONE	24.86	43		230	N.D.		
15) 1,4-DIOXANE	0.00	88		0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100		0	N.D.		
18) 2-HEXANONE	0.00	58		0	N.D.		
19) 3-HEPTANONE	0.00	114		0	N.D.		
20) 2-HEPTANONE	31.68	58		208	N.D.		
21) CYCLOHEXANONE	0.00	98		0	N.D.		
22) 2-OCTANONE	0.00	58		0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101306.D VAP_P10.M Mon Nov 01 18:08:46 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101405.D
Operator : BE HEY
Acquired : 14 Oct 1999 1:05 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-140-00F-04-2
Misc Info : 20 TORR; 2ND DILUTION; DF = 48
Vial Number: 1

2B-223

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101405.D
Acq On : 14 Oct 1999 1:05 pm
Sample : V9019-140-00F-04-2
Misc : 20. TORR; 2ND DILUTION; DF = 48
MS Integration Params: RTEINT.P
Quant Time: Nov 1 18:11 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.50	96	5884710	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.92	117	4274363	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	26458	N.D.		
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.20	101	276791	8.95	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.57	49	2852	N.D.		
9) 2-METHYL-PENTANE	20.00	43	5156	N.D.		
10) 1-HEXENE	20.62	56	3653	N.D.		
11) N-HEXANE	21.35	57	1206	N.D.		
12) CHLOROFORM	22.17	83	303384	11.96	PPB	99
13) BENZENE	24.01	78	4354	N.D.		
14) CARBON TETRACHLORIDE	24.05	117	36295	1.58	PPB	100
15) 3-METHYL-HEXANE	24.04	43	1226	N.D.		
16) N-HEPTANE	25.42	57	583	N.D.		
17) TOLUENE	28.09	91	10052	N.D.		
18) N-OCTANE	29.09	57	538	N.D.		
19) TETRACHLOROETHYLENE	29.70	166	659151	23.36	PPB	100
21) CHLOROBENZENE	30.99	112	10074	N.D.		
22) ETHYLBENZENE	31.46	91	12878	N.D.		
23) M, P-XYLENE	31.72	91	14055	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.37	43	494	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.57	91	6144	N.D.		
28) N-DECANE	35.48	43	92	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.50	105	104	N.D.		

(#) = qualifier out of range (m) = manual integration
19101405.D VAP_NP10.M Mon Nov 01 18:12:48 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101405.D
Acq On : 14 Oct 1999 1:05 pm
Sample : V9019-140-00F-04-2
Misc : 20 TORR; 2ND DILUTION; DF = 48
MS Integration Params: RTEINT.P
Quant Time: Nov 1 18:11 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.50	96	5884710	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.92	117	4274363	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	26458	46.53	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.20	101	276791	429.42	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.57	49	2852	7.42	PPB	99
9) 2-METHYL-PENTANE	20.00	43	5156	6.49	PPB	89
10) 1-HEXENE	20.62	56	3653	10.80	PPB	# 67
11) N-HEXANE	21.35	57	1206	2.39	PPB	# 27
12) CHLOROFORM	22.17	83	303384	574.06	PPB	99
13) BENZENE	24.01	78	4354	4.63	PPB	96
14) CARBON TETRACHLORIDE	24.05	117	36295	75.80	PPB	100
15) 3-METHYL-HEXANE	24.04	43	1226	1.40	PPB	# 47
16) N-HEPTANE	25.42	57	583	1.82	PPB	# 34
17) TOLUENE	28.09	91	10052	9.08	PPB	93
18) N-OCTANE	29.09	57	538	1.56	PPB	# 74
19) TETRACHLOROETHYLENE	29.70	166	659151	1121.38	PPB	100
21) CHLOROBENZENE	30.99	112	10074	12.60	PPB	94
22) ETHYLBENZENE	31.46	91	12878	11.27	PPB	98
23) M,P-XYLENE	31.72	91	14055	16.28	PPB	97
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.37	43	494	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.57	91	6144	6.39	PPB	94
28) N-DECANE	35.48	43	92	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.50	105	104	N.D.		

(#) = qualifier out of range (m) = manual integration

19101405.D VAP_NP10.M Mon Nov 01 18:13:04 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19101306.D Vial: 1
 Acq On : 13 Oct 1999 2:27 pm Operator: BE HEY
 Sample : V9019-140-00F-04 Inst : GC/MS Ins
 Misc : 20 TORR Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
 Title : NONPOLAR VAPOR STANDARD CALIBRATION
 Library : C:\DATABASE\NIST98.L

 Peak Number 1 Isobutane Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.32	38.29 NG	2945080	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	64
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Ethenone		42	C2H2O	000463-51-4	3

 Peak Number 2 Propane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.63	17.34 NG	1333310	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-		72	C5H12	000463-82-1	78
2	Pentane, 2,2,4-trimethyl-		114	C8H18	000540-84-1	42
3	Propane, 2-bromo-2-methyl-		136	C4H9Br	000507-19-7	40

 Peak Number 3 Ethane, 1,1,2-trichloro-1,2,2- Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.38	26.15 NG	2011280	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethane, 1,1,2-trichloro-1,2,2-trifl		186	C2Cl3F3	000076-13-1	91
2	Butane, 1,1,3,4-tetrachloro-1,2,2,3		302	C4Cl4F6	000423-38-1	35
3	Methane, bromodichlorofluoro-		180	CBrCl2F	000353-58-2	35

 Peak Number 4 Cyclopentane, methyl- Concentration Rank 5

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.65	23.46 NG	1804320	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-		84	C6H12	000096-37-7	91

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2 Cyclobutane, ethyl-	84 C6H12	004806-61-5 72
3 1H-Tetrazole, 5-methyl-	84 C2H4N4	004076-36-2 72

Peak Number 5 Trichloroethylene Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
25.51	222.71 NG	17128500	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Trichloroethylene	130	C2HCl3	000079-01-6	99
2		Propene, 2-chloro-3,3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35
3		Benzene, 1-chloro-4-fluoro-	130	C6H4ClF	000352-33-0	22

Peak Number 6 Propane, 2-methyl-2-nitro- Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
27.09	15.02 NG	1155480	FLUOROBENZENE	24.54

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Propane, 2-methyl-2-nitro-	103	C4H9NO2	000594-70-7	64
2		Butane, 2-bromo-	136	C4H9Br	000078-76-2	42
3		Butane, 2-nitro- <i>unknown</i>	103	C4H9NO2	000600-24-8	38

Peak Number 7 Tetrachloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
29.73	662.42 NG	31000300	CHLOROBENZENE-D5	30.94

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1		Tetrachloroethylene	164	C2Cl4	000127-18-4	99
2		Pyrimidine, 5-fluoro-2,4-dichloro-	166	C4HCl2FN2	002927-71-1	25
3		2,4-Dichloro-6-fluoropyrimidine	166	C4HCl2FN2	1000146-93-0	14

19101306.D VAP_NP10.M *Target* Mon Nov 01 17:55:48 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 86
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 64
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Ethane, 1,1,2-trichloro-1,2,2-trifluoro-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 99
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\WILEY138.L
Quality : 83
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101307.D
Operator : BE HEY
Acquired : 13 Oct 1999 3:37 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-141-00F-05
Misc Info : 20 TORR
Vial Number: 1

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101307.D

Acq On : 13 Oct 1999 3:37 pm

Sample : V9019-141-00F-05

Misc : 20 TORR

MS Integration Params: RTEINT.P

Quant Time: Nov 2 7:25 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.53	96	5683657	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	2713168	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.89	50	1712	N.D.		
4) N-BUTANE	11.93	43	1305520m	49.52	PPB	
5) ETHYL CHLORIDE	14.26	64	6557	N.D.		
6) FREON 11	16.18	101	10048581	336.27	PPB	98
7) N-PENTANE	16.88	72	9923	3.69	PPB	95
8) DICHLOROMETHANE	18.56	49	197142	11.06	PPB	93
9) 2-METHYL-PENTANE	20.01	43	147000	3.99	PPB	98
10) 1-HEXENE	21.39	56	3593	N.D.		
11) N-HEXANE	21.38	57	8183	N.D.		
12) CHLOROFORM	22.20	83	8498236	346.85	PPB	98
13) BENZENE	24.04	78	19818	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	1609910	72.52	PPB	98
15) 3-METHYL-HEXANE	24.08	43	24285	N.D.		
16) N-HEPTANE	25.43	57	2079	N.D.		
17) TOLUENE	28.11	91	31864	N.D.		
18) N-OCTANE	29.13	57	760	N.D.		
19) TETRACHLOROETHYLENE	29.77	166	6044242m	221.80	PPB	
21) CHLOROBENZENE	31.02	112	95	N.D.		
22) ETHYLBENZENE	31.48	91	1368	N.D.		
23) M,P-XYLENE	31.74	91	2820	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.46	43	585	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.58	91	1335	N.D.		
28) N-DECANE	35.62	43	876	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19101307.D VAP_NP10.M Tue Nov 02 07:26:00 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101307.D
Acq On : 13 Oct 1999 3:37 pm
Sample : V9019-141-00F-05
Misc : 20 TORR
MS Integration Params: rteint.p
Quant Time: Nov 2 7:28 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.53	96	5661998	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	2793216m	193.30	NG	0.01

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.36	45	38	N.D.		
3) ACETONITRILE	16.58	40	151	N.D.		
4) ACETONE	16.98	58	9343m	1.08	PPB	
5) FURAN	16.93	68	250	N.D.		
6) 2-PROPANOL	17.13	45	198	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.63	54	1059	N.D.		
9) BUTANAL	21.12	72	248	N.D.		
10) 2-BUTANONE	21.14	72	100	N.D.		
11) TETRAHYDROFURAN	22.75	72	2224	N.D.		
12) 1-BUTANOL	24.07	56	179632	15.14	PPB	90
13) BUTANENITRILE	24.26	41	9970	N.D.		
14) 2-PENTANONE	24.93	43	7357	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.54	58	188	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	31.79	58	225	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101307.D VAP_P10.M Tue Nov 02 07:28:43 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101307.D

Acq On : 13 Oct 1999 3:37 pm

Sample : V9019-141-00F-05

Misc : 20 TORR

MS Integration Params: RTEINT.P

Quant Time: Nov 2 7:25 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.53	96	5683657	157.10	NG	0.08
20) CHLOROBENZENE-D5	30.94	117	2713168	193.30	NG	0.07

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	9.89	50	1712	N.D.		
4) N-BUTANE	11.93	43	1305520m	99.04	PPB	
5) ETHYL CHLORIDE	14.26	64	6557m	1.35	PPB	
6) FREON 11	16.18	101	10048581	672.54	PPB	98
7) N-PENTANE	16.88	72	9923	7.38	PPB	95
8) DICHLOROMETHANE	18.56	49	197142	22.12	PPB	93
9) 2-METHYL-PENTANE	20.01	43	147000	7.98	PPB	98
10) 1-HEXENE	21.39	56	3593	N.D.		
11) N-HEXANE	21.38	57	8183	N.D.		
12) CHLOROFORM	22.20	83	8498236	693.71	PPB	98
13) BENZENE	24.04	78	19818	N.D.		
14) CARBON TETRACHLORIDE	24.08	117	1609910	145.05	PPB	98
15) 3-METHYL-HEXANE	24.08	43	24285	1.19	PPB	# 81
16) N-HEPTANE	25.43	57	2079	N.D.		
17) TOLUENE	28.11	91	31864	1.24	PPB	97
18) N-OCTANE	29.13	57	760	N.D.		
19) TETRACHLOROETHYLENE	29.77	166	6044242m	443.60	PPB	
21) CHLOROBENZENE	31.02	112	95	N.D.		
22) ETHYLBENZENE	31.48	91	1368	N.D.		
23) M, P-XYLENE	31.74	91	2820	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.46	43	585	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.58	91	1335	N.D.		
28) N-DECANE	35.62	43	876	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19101307.D VAP_NP10.M

Tue Nov 02 07:26:13 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101307.D

Acq On : 13 Oct 1999 3:37 pm

Sample : V9019-141-00F-05

Misc : 20 TORR

MS Integration Params: rteint.p

Quant Time: Nov 2 7:28 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 2.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.53	96	5661998	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.94	117	2793216m	193.30	NG	0.01

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.36	45	38	N.D.		
3) ACETONITRILE	16.58	40	151	N.D.		
4) ACETONE	16.98	58	9343m	2.15	PPB	
5) FURAN	16.93	68	250	N.D.		
6) 2-PROPANOL	17.13	45	198	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.63	54	1059	N.D.		
9) BUTANAL	21.12	72	248	N.D.		
10) 2-BUTANONE	21.14	72	100	N.D.		
11) TETRAHYDROFURAN	22.75	72	2224	N.D.		
12) 1-BUTANOL	24.07	56	179632	30.28	PPB	90
13) BUTANENITRILE	24.26	41	9970	N.D.		
14) 2-PENTANONE	24.93	43	7357	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	28.54	58	188	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	31.79	58	225	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19101307.D VAP_P10.M

Tue Nov 02 07:28:57 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101406.D
Operator : BE HEY
Acquired : 14 Oct 1999 2:11 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9019-141-00F-05-2
Misc Info : 20 TORR; 2ND DILUTION; DF = 48
Vial Number: 1

2B-239

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101406.D
Acq On : 14 Oct 1999 2:11 pm
Sample : V9019-141-00F-05-2
Misc : 20 TORR; 2ND DILUTION; DF = 48
MS Integration Params: RTEINT.P
Quant Time: Nov 2 7:29 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.50	96	5872045	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.92	117	4119649	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.10	43	49744	1.83	PPB	97
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.20	101	520927	16.87	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.56	49	5126	N.D.		
9) 2-METHYL-PENTANE	19.99	43	6828	N.D.		
10) 1-HEXENE	20.62	56	5915	N.D.		
11) N-HEXANE	21.28	57	657	N.D.		
12) CHLOROFORM	22.17	83	572261	22.61	PPB	100
13) BENZENE	24.01	78	1917	N.D.		
14) CARBON TETRACHLORIDE	24.05	117	69951	3.05	PPB	99
15) 3-METHYL-HEXANE	24.04	43	1766	N.D.		
16) N-HEPTANE	25.36	57	1824	N.D.		
17) TOLUENE	28.08	91	5965	N.D.		
18) N-OCTANE	29.09	57	306	N.D.		
19) TETRACHLOROETHYLENE	29.70	166	1188328	42.21	PPB	99
21) CHLOROBENZENE	30.98	112	2589	N.D.		
22) ETHYLBENZENE	31.45	91	3725	N.D.		
23) M,P-XYLENE	31.71	91	6659	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.39	43	575	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.56	91	3502	N.D.		
28) N-DECANE	35.50	43	187	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	36.00	105	1705	N.D.		

(#) = qualifier out of range (m) = manual integration
19101406.D VAP_NP10.M Tue Nov 02 07:30:35 1999

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101406.D
Acq On : 14 Oct 1999 2:11 pm
Sample : V9019-141-00F-05-2
Misc : 20 TORR; 2ND DILUTION; DF = 48
MS Integration Params: RTEINT.P
Quant Time: Nov 2 7:29 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.50	96	5872045	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.92	117	4119649	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.10	43	49744	87.66	PPB	97
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.20	101	520927	809.92	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.56	49	5126	13.36	PPB	92
9) 2-METHYL-PENTANE	19.99	43	6828	8.61	PPB	90
10) 1-HEXENE	20.62	56	5915	17.52	PPB	# 68
11) N-HEXANE	21.28	57	657	1.30	PPB	# 5
12) CHLOROFORM	22.17	83	572261	1085.15	PPB	100
13) BENZENE	24.01	78	1917	2.04	PPB	# 88
14) CARBON TETRACHLORIDE	24.05	117	69951	146.40	PPB	99
15) 3-METHYL-HEXANE	24.04	43	1766	2.02	PPB	# 47
16) N-HEPTANE	25.36	57	1824	5.72	PPB	# 1
17) TOLUENE	28.08	91	5965	5.40	PPB	96
18) N-OCTANE	29.09	57	306	N.D.		
19) TETRACHLOROETHYLENE	29.70	166	1188328	2025.99	PPB	99
21) CHLOROBENZENE	30.98	112	2589	3.36	PPB	# 21
22) ETHYLBENZENE	31.45	91	3725	3.38	PPB	92
23) M,P-XYLENE	31.71	91	6659	8.00	PPB	93
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.39	43	575	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.56	91	3502	3.78	PPB	91
28) N-DECANE	35.50	43	187	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	36.00	105	1705	1.65	PPB	# 30

(#) = qualifier out of range (m) = manual integration
19101406.D VAP_NP10.M Tue Nov 02 07:30:55 1999

HNF-5367 Rev. 0

Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\19101307.D Vial: 1
Acq On : 13 Oct 1999 3:37 pm Operator: BE HEY
Sample : V9019-141-00F-05 Inst : GC/MS Ins
Misc : 20 TORR Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Library : C:\DATABASE\NIST98.L

Peak Number 1 Isobutane Concentration Rank 4

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.15	42.37 NG	3310920	FLUOROBENZENE	24.53

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	72
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Methane, diazo-		42	CH2N2	000334-88-3	3

Peak Number 2 Isobutane Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.58	47.61 NG	3720230	FLUOROBENZENE	24.53

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Isobutane		58	C4H10	000075-28-5	59
2	Cyclobutylamine		71	C4H9N	002516-34-9	4
3	Ethenone		42	C2H2O	000463-51-4	3

C4 AH

Peak Number 3 Butane Concentration Rank 7

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.16	20.77 NG	1623500	FLUOROBENZENE	24.53

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane		58	C4H10	000106-97-8	64
2	1-Propen-2-ol, acetate		100	C5H8O2	000108-22-5	38
3	Formic acid, chloro, (3,4,4-trimethoxy)		194	C7H11ClO4	107323-92-2	38

Tarsol

Peak Number 4 Propane, 2,2-dimethyl- Concentration Rank 9

R.T.	EstConc	Area	Relative to ISTD	R.T.
12.74	15.09 NG	1178870	FLUOROBENZENE	24.53

Hit# of	3	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane, 2,2-dimethyl-		72	C5H12	000463-82-1	78

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2 Propane, 2-methyl-2-nitro- 103 C4H9NO2 000594-70-7 42
 3 Butane, 2-bromo- 136 C4H9Br 000078-76-2 39

 Peak Number 5 Butane, 2,2-dimethyl- Concentration Rank 6

R.T.	EstConc	Area	Relative to ISTD	R.T.
18.45	25.14 NG	1964850	FLUOROBENZENE	24.53

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Butane, 2,2-dimethyl-	86	C6H14	000075-83-2	90
2	Hexane, 2,2,5,5-tetramethyl-	142	C10H22	001071-81-4	35
3	Furan, 2-butyltetrahydro-	128	C8H16O	001004-29-1	25

 Peak Number 6 Ethene, 1,2-dichloro-, (E)- Concentration Rank 8

R.T.	EstConc	Area	Relative to ISTD	R.T.
19.89	19.88 NG	1553400	FLUOROBENZENE	24.53

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Ethene, 1,2-dichloro-, (E)-	96	C2H2Cl2	000156-60-5	96
2	Ethene, 1,2-dichloro-, (Z)-	96	C2H2Cl2	000156-59-2	95
3	1,2-Dichloroethylene	96	C2H2Cl2	000540-59-0	91

 Peak Number 7 Cyclopentane, methyl- Concentration Rank 3

R.T.	EstConc	Area	Relative to ISTD	R.T.
22.65	44.47 NG	3475570	FLUOROBENZENE	24.53

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Cyclopentane, methyl-	84	C6H12	000096-37-7	91
2	1H-Tetrazole, 5-methyl-	84	C2H4N4	004076-36-2	72
3	Cyclobutane, ethyl-	84	C6H12	004806-61-5	72

 Peak Number 8 Trichloroethylene Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
25.52	318.93 NG	24923200	FLUOROBENZENE	24.53

Hit# of 3	Tentative ID	MW	MolForm	CAS#	Qual
1	Trichloroethylene	130	C2HCl3	000079-01-6	98
2	Propene, 2-chloro-3,3-trifluoro-	130	C3H2ClF3	002730-62-3	35
3	2-Fluoro-5-chloropyrimidine	132	C4H2ClFN2	062802-37-3	35

 Peak Number 9 Propane, 2-methyl-2-nitro- Concentration Rank 5

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R.T.	EstConc	Area	Relative to ISTD	R.T.	
27.09	33.83 NG	2643880	FLUOROBENZENE	24.53	
Hit# of	3	Tentative ID	MW MolForm	CAS#	Qual
1	Propane, 2-methyl-2-nitro-	103 C4H9NO2	000594-70-7	78	
2	Butane, 2-bromo-	136 C4H9Br	000078-76-2	45	
3	Butane, 2-nitro-	103 C4H9NO2	000600-24-8	42	

unknown

19101307.D VAP_NP10.M Tue Nov 02 07:26:32 1999

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 72
ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
 Quality : 72
 ID : Isobutane

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 90
ID : Butane, 2,2-dimethyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : 1,2-Dichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 91
ID : Cyclopentane, methyl-

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 98
ID : Trichloroethylene

HNF-5367 Rev. 0

Library Searched : C:\DATABASE\NIST98.L
Quality : 78
ID : Propane, 2-methyl-2-nitro-

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101206.D
Operator : BE HEY
Acquired : 12 Oct 1999 3:06 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: FIELD DUPLICATE: V9018-023-00E-01
Misc Info : 20 TORR
Vial Number: 1

2B-253

HNF-5367 Rev. 0
Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101206.D
Acq On : 12 Oct 1999 3:06 pm
Sample : FIELD DUPLICATE: V9018-023-00E-01
Misc : 20 TORR
MS Integration Params: RTEINT.P
Quant Time: Nov 2 17:21 1999

Vial: 1
Operator: BE HEY
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.51	96	4913958	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.93	117	2546387	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.09	85	3478	N.D.		
3) METHYL CHLORIDE	9.87	50	1050	N.D.		
4) N-BUTANE	11.97	43	1034674m	45.39	PPB	
5) ETHYL CHLORIDE	14.26	64	5138	N.D.		
6) FREON 11	16.16	101	8653610	334.95	PPB	98
7) N-PENTANE	16.85	72	7900	3.40	PPB	82
8) DICHLOROMETHANE	18.54	49	119193	7.73	PPB	91
9) 2-METHYL-PENTANE	19.99	43	121098	3.80	PPB	97
10) 1-HEXENE	21.36	56	2877	N.D.		
11) N-HEXANE	21.36	57	6110	N.D.		
12) CHLOROFORM	22.18	83	7188814	339.37	PPB	99
13) BENZENE	24.02	78	14925	N.D.		
14) CARBON TETRACHLORIDE	24.06	117	1295645	67.51	PPB	98
15) 3-METHYL-HEXANE	24.05	43	19327	N.D.		
16) N-HEPTANE	25.36	57	1069	N.D.		
17) TOLUENE	28.09	91	12949	N.D.		
18) N-OCTANE	29.11	57	338	N.D.		
19) TETRACHLOROETHYLENE	29.78	166	5019918m	213.07	PPB	
21) CHLOROBENZENE	30.99	112	208	N.D.		
22) ETHYLBENZENE	31.47	91	909	N.D.		
23) M,P-XYLENE	31.72	91	1539	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.48	43	223	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.55	91	949	N.D.		
28) N-DECANE	35.62	43	191	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101206.D VAP_NP10.M Tue Nov 02 17:21:38 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101206.D Vial: 1
Acq On : 12 Oct 1999 3:06 pm Operator: BE HEY
Sample : FIELD DUPLICATE: V9018-023-00E-01 Inst : GC/MS Ins
Misc : 20 TORR Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 2 16:33 1999 Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.51	96	4874683	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.93	117	2521428m	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	187	N.D.		
3) ACETONITRILE	16.58	40	145	N.D.		
4) ACETONE	16.88	58	20093m	2.69	PPB	
5) FURAN	16.93	68	326	N.D.		
6) 2-PROPANOL	17.14	45	456	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.61	54	1014	N.D.		
9) BUTANAL	21.11	72	1219	N.D.		
10) 2-BUTANONE	21.38	72	563	N.D.		
11) TETRAHYDROFURAN	22.76	72	1787	N.D.		
12) 1-BUTANOL	24.05	56	155414	15.21	PPB	90
13) BUTANENITRILE	24.24	41	6953	N.D.		
14) 2-PENTANONE	24.90	43	3149	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101206.D VAP_P10.M Tue Nov 02 16:33:32 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101206.D Vial: 1
Acq On : 12 Oct 1999 3:06 pm Operator: BE HEY
Sample : FIELD DUPLICATE: V9018-023-00E-01 Inst : GC/MS Ins
Misc : 20 TORR Multiplr: 2.00
MS Integration Params: RTEINT.P
Quant Time: Nov 2 17:21 1999 Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)
Title : NONPOLAR VAPOR STANDARD CALIBRATION
Last Update : Mon Oct 04 12:50:45 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.51	96	4913958	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.93	117	2546387	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	8.09	85	3478	N.D.		
3) METHYL CHLORIDE	9.87	50	1050	N.D.		
4) N-BUTANE	11.97	43	1034674m	90.79	PPB	
5) ETHYL CHLORIDE	14.26	64	5138m	1.23	PPB	
6) FREON 11	16.16	101	8653610	669.90	PPB	98
7) N-PENTANE	16.85	72	7900	6.80	PPB	82
8) DICHLOROMETHANE	18.54	49	119193	15.47	PPB	91
9) 2-METHYL-PENTANE	19.99	43	121098	7.60	PPB	97
10) 1-HEXENE	21.36	56	2877	N.D.		
11) N-HEXANE	21.36	57	6110	N.D.		
12) CHLOROFORM	22.18	83	7188814	678.74	PPB	99
13) BENZENE	24.02	78	14925	N.D.		
14) CARBON TETRACHLORIDE	24.06	117	1295645	135.02	PPB	98
15) 3-METHYL-HEXANE	24.05	43	19327	1.10	PPB	# 70
16) N-HEPTANE	25.36	57	1069	N.D.		
17) TOLUENE	28.09	91	12949	N.D.		
18) N-OCTANE	29.11	57	338	N.D.		
19) TETRACHLOROETHYLENE	29.78	166	5019918m	426.13	PPB	
21) CHLOROBENZENE	30.99	112	208	N.D.		
22) ETHYLBENZENE	31.47	91	909	N.D.		
23) M, P-XYLENE	31.72	91	1539	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	32.48	43	223	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	32.55	91	949	N.D.		
28) N-DECANE	35.62	43	191	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101206.D VAP_NP10.M Tue Nov 02 17:21:54 1999

HNF-5367 Rev. 0
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101206.D Vial: 1
Acq On : 12 Oct 1999 3:06 pm Operator: BE HEY
Sample : FIELD DUPLICATE: V9018-023-00E-01 Inst : GC/MS Ins
Misc : 20 TORR Multiplr: 2.00
MS Integration Params: rteint.p
Quant Time: Nov 2 16:33 1999 Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)
Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES
Last Update : Mon Oct 04 12:57:00 1999
Response via : Initial Calibration
DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.51	96	4874683	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.93	117	2521428m	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	187	N.D.		
3) ACETONITRILE	16.58	40	145	N.D.		
4) ACETONE	16.88	58	20093m	5.38	PPB	
5) FURAN	16.93	68	326	N.D.		
6) 2-PROPANOL	17.14	45	456	N.D.		
7) 1-PROPANOL	0.00	31	0	N.D.		
8) PROPANENITRILE	20.61	54	1014	N.D.		
9) BUTANAL	21.11	72	1219	N.D.		
10) 2-BUTANONE	21.38	72	563	N.D.		
11) TETRAHYDROFURAN	22.76	72	1787	N.D.		
12) 1-BUTANOL	24.05	56	155414	30.43	PPB	90
13) BUTANENITRILE	24.24	41	6953	N.D.		
14) 2-PENTANONE	24.90	43	3149	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	0.00	100	0	N.D.		
18) 2-HEXANONE	0.00	58	0	N.D.		
19) 3-HEPTANONE	0.00	114	0	N.D.		
20) 2-HEPTANONE	0.00	58	0	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	0.00	58	0	N.D.		

(#) = qualifier out of range (m) = manual integration
19101206.D VAP_P10.M Tue Nov 02 16:33:48 1999

HNF-5367 Rev. 0

File : C:\HPCHEM\1\DATA\19101409.D
Operator : BE HEY
Acquired : 14 Oct 1999 5:32 pm using AcqMethod VAP_AQ
Instrument : GC/MS Ins
Sample Name: V9018-023-00E-01-2
Misc Info : 20 TORR; DF = 48
Vial Number: 1

2B-258

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101409.D

Acq On : 14 Oct 1999 5:32 pm

Sample : V9018-023-00E-01-2 D-1

Misc : 20 TORR; DF = 48

MS Integration Params: RTEINT.P

Quant Time: Nov 2 16:36 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.50	96	5647587	157.10	NG	0.04
20) CHLOROBENZENE-D5	30.91	117	4019358	193.30	NG	0.04

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	52006	1.99	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.19	101	504369	16.99	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.54	49	4185	N.D.		
9) 2-METHYL-PENTANE	19.99	43	6091	N.D.		
10) 1-HEXENE	20.62	56	5994	N.D.		
11) N-HEXANE	21.35	57	548	N.D.		
12) CHLOROFORM	22.17	83	532926	21.89	PPB	99
13) BENZENE	24.00	78	1279	N.D.		
14) CARBON TETRACHLORIDE	24.05	117	63989	2.90	PPB	98
15) 3-METHYL-HEXANE	24.05	43	1491	N.D.		
16) N-HEPTANE	25.10	57	314	N.D.		
17) TOLUENE	28.08	91	4458	N.D.		
18) N-OCTANE	0.00	57	0	N.D.		
19) TETRACHLOROETHYLENE	29.70	166	1105307	40.82	PPB	100
21) CHLOROBENZENE	30.97	112	1365	N.D.		
22) ETHYLBENZENE	31.46	91	789	N.D.		
23) M,P-XYLENE	31.72	91	117	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	0.00	43	0	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	0.00	91	0	N.D.		
28) N-DECANE	0.00	43	0	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#) = qualifier out of range (m) = manual integration

19101409.D VAP_NP10.M Tue Nov 02 16:36:57 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19101409.D

Acq On : 14 Oct 1999 5:32 pm

Sample : V9018-023-00E-01-2

Misc : 20 TORR; DF = 48

MS Integration Params: RTEINT.P

Quant Time: Nov 2 16:36 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 48.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.50	96	5647587	157.10	NG	0.04
20) CHLOROBENZENE-D5	30.91	117	4019358	193.30	NG	0.04

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	0.00	50	0	N.D.		
4) N-BUTANE	12.11	43	52006	95.29	PPB	99
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.19	101	504369	815.34	PPB	100
7) N-PENTANE	0.00	72	0	N.D.		
8) DICHLOROMETHANE	18.54	49	4185	11.34	PPB	92
9) 2-METHYL-PENTANE	19.99	43	6091	7.98	PPB	93
10) 1-HEXENE	20.62	56	5994	18.46	PPB	# 64
11) N-HEXANE	21.35	57	548	1.13	PPB	# 51
12) CHLOROFORM	22.17	83	532926	1050.73	PPB	99
13) BENZENE	24.00	78	1279	1.42	PPB	# 52
14) CARBON TETRACHLORIDE	24.05	117	63989	139.25	PPB	98
15) 3-METHYL-HEXANE	24.05	43	1491	1.77	PPB	# 47
16) N-HEPTANE	25.10	57	314	1.02	PPB	# 1
17) TOLUENE	28.08	91	4458	4.19	PPB	97
18) N-OCTANE	0.00	57	0	N.D.		
19) TETRACHLOROETHYLENE	29.70	166	1105307	1959.35	PPB	100
21) CHLOROBENZENE	30.97	112	1365	1.82	PPB	# 21
22) ETHYLBENZENE	31.46	91	789	N.D.		
23) M, P-XYLENE	31.72	91	117	N.D.		
24) STYRENE	0.00	104	0	N.D.		
25) N-NONANE	0.00	43	0	N.D.		
26) 1,1,2,2-TETRACHLOROETHANE	0.00	83	0	N.D.		
27) O-XYLENE	0.00	91	0	N.D.		
28) N-DECANE	0.00	43	0	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	0.00	105	0	N.D.		

(#)=qualifier out of range (m)=manual integration

19101409.D VAP_NP10.M Tue Nov 02 16:37:13 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19093006.D

Acq On : 30 Sep 1999 4:39 pm

Sample : VAPOR - LCS @ 37-54 PPBV

Misc : 20 TORR

MS Integration Params: RTEINT.P

Quant Time: Oct 4 14:01 1999

Vial: 1

Operator: G. FIES

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.53	96	8274285	157.10	NG	0.07
20) CHLOROBENZENE-D5	30.93	117	6418564	193.30	NG	0.06

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	10.00	50	910145	43.02	PPB	97
4) N-BUTANE	12.11	43	861	N.D.		
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.21	101	1008	N.D.		
7) N-PENTANE	16.90	72	192137	49.09	PPB	98
8) DICHLOROMETHANE	18.38	49	796	N.D.		
9) 2-METHYL-PENTANE	20.02	43	4891	N.D.		
10) 1-HEXENE	20.64	56	793	N.D.		
11) N-HEXANE	21.31	57	4593	N.D.		
12) CHLOROFORM	22.21	83	768	N.D.		
13) BENZENE	24.03	78	2751	N.D.		
14) CARBON TETRACHLORIDE	24.07	117	496	N.D.		
15) 3-METHYL-HEXANE	24.10	43	24599	0.42	PPB #	47
16) N-HEPTANE	25.31	57	3241	N.D.		
17) TOLUENE	28.11	91	11639	N.D.		
18) N-OCTANE	29.10	57	5014	0.22	PPB #	52
19) TETRACHLOROETHYLENE	29.72	166	5769	N.D.		
21) CHLOROBENZENE	31.01	112	2610724	45.31	PPB	98
22) ETHYLBENZENE	31.47	91	9839	N.D.		
23) M,P-XYLENE	31.73	91	21810	0.35	PPB	97
24) STYRENE	32.45	104	8907	N.D.		
25) N-NONANE	32.46	43	14207	0.25	PPB	99
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	5133	N.D.		
27) O-XYLENE	32.56	91	9783	N.D.		
28) N-DECANE	35.55	43	114754	2.40	PPB #	24
29) 1,2,4-TRIMETHYLBENZENE	35.75	105	3538593	45.70	PPB	97

(#)=qualifier out of range (m)=manual integration

19093006.D VAP_NP10.M Mon Oct 04 14:06:28 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\19093006.D

Vial: 1

Acq On : 30 Sep 1999 4:39 pm

Operator: G. FIES

Sample : VAPOR - LCS @ 37-54 PPBV

Inst : GC/MS Ins

Misc : 20 TORR

Multiplr: 1.00

MS Integration Params: rteint.p

Quant Time: Oct 4 14:00 1999

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) FLUOROBENZENE	24.53	96	8243069	157.10	NG	0.02
17) CHLOROBENZENE-D5	30.93	117	6314176	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	15.38	45	189	N.D.		
3) ACETONITRILE	16.58	40	752	N.D.		
4) ACETONE	16.89	58	38731	3.06	PPB	# 1
5) FURAN	16.96	68	5391	N.D.		
6) 2-PROPANOL	16.94	45	127	N.D.		
7) 1-PROPANOL	20.12	31	25840	0.64	PPB	# 69
8) PROPANENITRILE	20.65	54	80	N.D.		
9) BUTANAL	21.14	72	1460	N.D.		
10) 2-BUTANONE	21.31	72	10636	0.91	PPB	78
11) TETRAHYDROFURAN	22.63	72	495027	44.46	PPB	93
12) 1-BUTANOL	24.11	56	38231	2.21	PPB	95
13) BUTANENITRILE	24.32	41	51536	1.26	PPB	# 100
14) 2-PENTANONE	24.92	43	45654	0.60	PPB	99
15) 1,4-DIOXANE	25.78	88	10021	0.63	PPB	85
16) 4-METHYL-2-PENTANONE	26.92	100	326916	40.94	PPB	85
18) 2-HEXANONE	28.70	58	35267	1.05	PPB	98
19) 3-HEPTANONE	32.00	114	27772	3.33	PPB	92
20) 2-HEPTANONE	32.12	58	129048	2.08	PPB	94
21) CYCLOHEXANONE	32.55	98	33338	1.96	PPB	93
22) 2-OCTANONE	35.32	58	206548	1.87	PPB	95

(#)=qualifier out of range (m)=manual integration

19093006.D VAP_P10.M

Mon Oct 04 14:01:19 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

BETLEY
10/13/99

Data File : C:\HPCHEM\1\DATA\19101207.D

Acq On : 12 Oct 1999 4:12 pm

Sample : LCS: 2ND RUN

Misc : 20 TORR

MS Integration Params: RTEINT.P

Quant Time: Oct 13 7:39 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_NP10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_NP10.M (RTE Integrator)

Title : NONPOLAR VAPOR STANDARD CALIBRATION

Last Update : Mon Oct 04 12:50:45 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.51	96	4896258	157.10	NG	0.05
20) CHLOROBENZENE-D5	30.92	117	3625397	193.30	NG	0.05

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) FREON 12	0.00	85	0	N.D.		
3) METHYL CHLORIDE	10.08	50	550255	43.96	PPB	97
4) N-BUTANE	0.00	43	0	N.D.		
5) ETHYL CHLORIDE	0.00	64	0	N.D.		
6) FREON 11	16.20	101	1627	N.D.		
7) N-PENTANE	16.88	72	111916	48.32	PPB	96
8) DICHLOROMETHANE	18.37	49	336	N.D.		
9) 2-METHYL-PENTANE	19.90	43	324	N.D.		
10) 1-HEXENE	0.00	56	0	N.D.		
11) N-HEXANE	21.29	57	3280	N.D.		
12) CHLOROFORM	22.19	83	2586	N.D.		
13) BENZENE	24.01	78	1466	N.D.		
14) CARBON TETRACHLORIDE	24.06	117	357	N.D.		
15) 3-METHYL-HEXANE	24.05	43	110	N.D.		
16) N-HEPTANE	25.41	57	788	N.D.		
17) TOLUENE	28.09	91	6718	N.D.		
18) N-OCTANE	29.09	57	3306	0.24	PPB #	54
19) TETRACHLOROETHYLENE	29.71	166	15789	0.67	PPB	100
21) CHLOROBENZENE	30.99	112	1506328	46.29	PPB	99
22) ETHYLBENZENE	31.46	91	5732	N.D.		
23) M,P-XYLENE	31.71	91	12370	0.35	PPB	98
24) STYRENE	32.44	104	5024	N.D.		
25) N-NONANE	32.44	43	8046	0.25	PPB #	70
26) 1,1,2,2-TETRACHLOROETHANE	33.03	83	2222	N.D.		
27) O-XYLENE	32.55	91	5288	N.D.		
28) N-DECANE	35.44	43	135	N.D.		
29) 1,2,4-TRIMETHYLBENZENE	35.73	105	1998000	45.68	PPB	98

(#)= qualifier out of range (m)= manual integration

19101207.D VAP_NP10.M Wed Oct 13 07:41:12 1999

HNF-5367 Rev. 0

Quantitation Report

(QT Reviewed)

B. E. Hey
(10/13/99)

Data File : C:\HPCHEM\1\DATA\19101207.D

Acq On : 12 Oct 1999 4:12 pm

Sample : LCS: 2ND RUN

Misc : 20 TORR

MS Integration Params: rteint.p

Quant Time: Oct 13 7:42 1999

Vial: 1

Operator: BE HEY

Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: VAP_P10.RES

Quant Method : C:\HPCHEM\1\METHODS\VAP_P10.M (RTE Integrator)

Title : POLAR TARGET COMPOUNDS FOR TANK VAPOR ANALYSES

Last Update : Mon Oct 04 12:57:00 1999

Response via : Initial Calibration

DataAcq Meth : VAP_AQ

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) FLUOROBENZENE	24.51	96	4874311	157.10	NG	0.00
17) CHLOROBENZENE-D5	30.92	117	3554805	193.30	NG	0.00

System Monitoring Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) ETHANOL	0.00	45	0	N.D.		
3) ACETONITRILE	16.65	40	298	N.D.		
4) ACETONE	16.88	58	20430	2.73	PPB	# 1
5) FURAN	0.00	68	0	N.D.		
6) 2-PROPANOL	16.88	45	712	N.D.		
7) 1-PROPANOL	20.14	31	156	N.D.		
8) PROPANENITRILE	20.61	54	3049	N.D.		
9) BUTANAL	21.11	72	2905	0.63	PPB	# 49
10) 2-BUTANONE	21.30	72	5863	0.85	PPB	89
11) TETRAHYDROFURAN	22.61	72	302485	45.94	PPB	91
12) 1-BUTANOL	24.17	56	902	N.D.		
13) BUTANENITRILE	24.31	41	20643	0.85	PPB	# 100
14) 2-PENTANONE	24.91	43	13205	N.D.		
15) 1,4-DIOXANE	0.00	88	0	N.D.		
16) 4-METHYL-2-PENTANONE	26.91	100	166975	35.36	PPB	99
18) 2-HEXANONE	28.70	58	5348	N.D.		
19) 3-HEPTANONE	32.33	114	22	N.D.		
20) 2-HEPTANONE	32.41	58	92	N.D.		
21) CYCLOHEXANONE	0.00	98	0	N.D.		
22) 2-OCTANONE	35.32	58	206	N.D.		

(#)=qualifier out of range (m)=manual integration

19101207.D VAP_P10.M

Wed Oct 13 07:43:53 1999

3.0 References

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3.0 REFERENCES

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