Department of Energy
Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221

Steve 7

April 24, 1996

RECEIVED APR 1996

Mr. Benito Garcia, Chief
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, N.M. 87502

Dear Mr. Garcia:

This letter transmits certain information regarding comments provided against the Transuranic Waste Characterization Sampling And Analysis Methods Manual, Revision 0. Enclosed are copies of the six cycle summary reports for the cycles completed to date for the Analysis of Headspace Gas Performance Demonstration Program. in library

The Methods Manual is being finalized and will be provided to you in approximately one week. If you have any questions or require further information, please do not hesitate to contact me at (505) 234-7486 or Craig Snider at (505) 234-7452.

Sincerely,

Michael H. McFadden
Assistant Manager
Office of Regulatory Compliance

Enclosure

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Performance Demonstration Program
Lab Control Scoring Summary

Cycle	*Date/Analysis*	*Type Review*	*Labs Involved*
1	March 1991	VOC, Gas, NOx	(VOC) CA, DO, ZL, VG, OS; (GAS) CK, MD, HE, BT, YS; (NOx) CK
2	September 1991	VOC, Gas, NOx	(VOC) CA, DO, ZL, VG, OS; (GAS) CK, MD, HE, BT, YS; (NOx) CK
2A	January 1992	VOC	(VOC) OS
2A	January 1992	Non-VOC	(Non-VOC) MD, HE, HR
3	April 1992	Gas,	(Gas) MD, HR, HE, CK
3	April 1992	VOC	(VOC) CA, OS, ZL, DO
4	September 1992	VOC, Gas	(VOC) CA, OS, ZL, DO; (Gas) CK, HE, HR, MD
5	July 1993	VOC, Gas	(VOC) CA, DO, OS, ZL, YC; (Gas) CK, HE, HR, MD, PB
6	February 1995	VOC, Gas	(VOC) CA, DO, FI, OS, YC; (Gas) CA, CK, FI, MD, OS, YC

Contract Number 68D90170
Work Assignment Number 1-88

REV 1.0

WIPP Experimental Waste Characterization Program

Performance Demonstration Program

Scoring Report - March 1991 Distribution

Prepared by:

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Charles J. Marcinkiewicz
Task Manager

Prepared For:

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401 M Street, S.W.
Washington, D.C. 20460

Madeleine Nawar
Work Assignment Manager

April 1991

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - March 1991 Distribution

This report contains the results of the first cycle of blind sample distributions to laboratories participating in the Performance Demonstration Program for WIPP Waste Characterization. The distribution consisted of sets of canisters of simulated headspace gases of known composition. Separate sets were distributed for volatile organic compounds (VOCs) and for inorganic and permanent gases (Gases). Tables 1 and 2 list the canister identification numbers, their contents, and recipients. Canisters were received by the laboratories on March 11, 1991 and all data were to be returned on or before April 8, 1991. Two laboratories were unable to respond by the due date.

All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 0. This report consists of a summary of the results and separate appendices detailing each laboratory's performance. The appendices consist of a summary discussion and two kinds of tables. Data tables give the results of individual analyses and the calculated RPA, RSD and RPD (where applicable) for each analyte. A separate scoring table is included for each analytical method for which the laboratories sought approval for use in the WIPP Experimental Waste Characterization Program.

The appendices are suitable for attachment to the letters to individual laboratories notifying them of their pass/fail status.

Summary of Results

Table 3 summarizes the Pass/Fail status of the laboratories. Only a single laboratory passed for Gas analysis and one laboratory passed for VOC analysis. Generally, labs failed on the basis of being unable to quantitate critical target analytes, although two labs also failed the general scoring criteria for other (i.e. non-critical) target analytes.

Several laboratories submitted multiple sets of data for a given canister. How these data were treated is discussed in the appendix for the respective laboratory. Submission of multiple data sets is appropriate when a laboratory is seeking approval of more than one method. In that case separate data submissions are mandatory. Submission of analytical results for different dilutions of the same canister analyzed by the same method is not acceptable. This situation was not planned for in the scoring and places the program coordinator in the position of selecting data for use in scoring.

This is obviously not appropriate. The laboratories themselves must specify their best, reportable results and limit their submission to the PDP to that data. Where necessary, the laboratory may submit results from different dilutions for individual analytes. However the laboratory must make the decision as to the most appropriate data to use for each analyte.

In a few cases analytes were included in the canisters at concentrations lower than the required PRQLs or PRDLs. If a laboratory failed to detect or quantitate these analytes, they were not scored adversely. If a lab successfully analyzed these analytes they were included in the scoring.

Interpretation of the Appendix Tables

The data contained in the tables of the attached Appendices is straightforward. Scoring was based on the estimated concentration only and did not consider reported errors. The terms RPA, RSD and RPD are as defined in the Performance Demonstration Program Plan. RPA is the Relative Percent Accuracy and is calculated as a percent recovery of the known value. RSD is the Relative Standard Deviation calculated as the sample standard deviation from the replicate data submitted for each analyte. RPD is the Relative Percent Difference and is used only when duplicate canisters were submitted for analysis. Pass/Fail criteria are given in Table 4.

Data tables in the Appendices each have a column listing the known values for the analytes. On the data tables an entry "C" next to the column of known values indicates a critical target compound (CTC) or critical target analyte gas (CTAG). Table 5 lists the CTC and CTAG failures which occurred in this round of the PDP. An entry of "?" next to this column indicates that the analyte was not added to the canister. In this case, the numerical value in the column is the PRQL or PRDL against which any lab data are compared. The remaining entries on the tables are self-evident or discussed in the individual appendix.

Table 1

VOC Canister Identification

Lab	Low Conc. CC12776	High Conc. CC62359	Alcohol/Ketones CC81225	Balance N_2 CC63474
CA	04715 04700	04711	04428	04712
DO	04441 04704	04703	04707	04435
ZL	04438 04702	04442	04706	04699
VG	04437 04229	04714	04433	04713
OS	04709 04708	04701	04444	04443

Table 2

Gas Canister Identification

Lab	Low Conc. CC12009	High Conc. CC60383	Interference Test CC12600	Balance He CC73089	Special NOx CC40109	H_2 in N_2 CC60383
CK	04690 04685	04678	04670	04674	04687	04689 04671
MD	04692 04691	04673	04676	04672	04677	
HE	04694 04686	04668	04696	04663	04665	04667 04664
BT	04440 04427	04705	04431	04710	04432	04688 04679
YS	04693 04681	04662	04675	04684	04661	

Table 3

Pass/Fail Summary

Lab	Analysis	Status	Comments
CK (GC)	Gas	Pass	0 CTAG failures, 0.89 score
CK (Colorimetry)	NOx	Pass	0 CTAG failures, 1.00 score
MD	Gas	Fail	5 CTAG failures, 0.61 score
HE	Gas	Fail	6 CTAG failures, 0.51 score
BT	Gas	Fail	No data submitted
YS	Gas	Fail	No data submitted
CA (TO-14)	VOC	Fail	3 CTC failures; scores 0.90
CA (8240/8260)	VOC	Fail	1 CTC failure, score .96
DO	VOC	Pass	0 CTC failures, 0.98 score
ZL	VOC	Fail	1 CTC failure, 0.94 score
VG	VOC	Fail	3 CTC failures, 0.88 score

Table 4

Pass/Fail Criteria

	Gas	NOx	VOC
RPA	90-110%	50-150%	70-130%
RSD	±10%	±20%	±25%
RPD	±10%	±20%	±25%

Table 5

CTC/CTAG Failure Summary

Lab	Canister	CTAG	Parameter	Score
GAS Analyses				
MD	Low Conc.	Methane	RPA	73.62%
	Low Conc. Dupl.	Hydrogen	RPA	88.33%
	Low Conc. Dupl.	Methane	RPA	71.50%
	High Conc.	Hydrogen	RPA	73.02%
	Interference	Methane	RPA	72.93%
HE	Low Conc.	Hydrogen	RSD	21.14%
	Low Conc. Dupl.	Hydrogen	RSD	12.86%
	Low Conc. Dupl.	Methane	RSD	22.15%
	High Conc.	Hydrogen	RPA	61.26%
	High Conc.	Methane	RPA	114.88%
	Interference	Methane	RPA	81.70%
VOC Analyses				
CA (TO-14)	High Conc.	Trichloroethene	RPA	158.96%
	High Conc.	1,1,1-Trichloroethane	RPA	134.97%
	High Conc.	Carbon Tetrachloride	RPA	131.46%
CA (8240-8260)	High Conc.	1,1,2,2-Tetrachloroethane	RPA	213.89%
ZL	High Conc.	Methylene chloride	RPA	68.05%
EPA	Low Conc. Dupl.	Trichloroethene	RPA	69.44%
	High Conc.	Methylene chloride	RPA	58.58%
	High Conc.	Trichloroethene	RPA	58.58%

Appendix A

Lab CK - Gas Analysis

The special hydrogen distribution was scored in place of the hydrogen in the low concentration gas samples.

The hydrogen was not scored in the interference sample.

The rationale for these scoring differences was discussed in the PDP variance which was issued because of He interference.

The scoring for the separate NOx canister was performed separately because the analysis was performed by a completely different, colorimetric method. It was felt that this method should be qualified independently of the GC method used for the balance of the analytes.

TABLE A-1
WIPP PDP SCORE

LABORATORY: CK
ANALYSIS TYPE: Gases METHOD: W0660-0021-KP-00

STANDARD NO.:	CC12009	CC12009	CC60383	CC12600	CC73089
CANISTER NO.:	04690	04685	04678	04670	04674
COMMENT:	Low Conc.	Low Conc. Duplicate	High Conc.	Inter-ference	Blank
No. of CTAGs Present:	2	2	2	1	0
No. of CTAGs Reported:	2	2	2	1	
No. CTAGs Failing RPA:	0	0	0	0	
No. CTAGs Failing RSD:	0	0	0	0	
No. CTAGs Failing RPD:		0			

		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	7	70	0	0
No. of TAGs Reported:	7	70	7	105	7	70	7	70		0
No. TAGs Failing RPA:	0	0	2	-10	2	-10	2	-10		0
No. TAGs Failing RSD:	0	0	0	0	0	0	0	0		0
No. TAGs Failing RPD:			2	-10						
No. of CTAGs Reported in Blank > 0.7 * PRQL:		NA		NA		NA		NA	0	0
No. of TAGs Reported in Blank > 0.7 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRQL:		0		0		0		0	NA	
TOTALS:		70		85		60		60		50
MAXIMUM POINTS:		365								
SCORE:		0.89								

PLUS 0 FAILURES FOR CTAGs
OF 15 OPPORTUNITIES: 0.00%

TABLE A-2
WIPP PDP SCORE

LABORATORY: CK
ANALYSIS TYPE: Gases METHOD: W0660-0022-KP-00

STANDARD NO.: CC40109
CANISTER NO.: 04687
COMMENT: NOx

No. of CTAGs Present:	0		0		0		0		0			
No. of CTAGs Reported:	0		0		0		0					
No. CTAGs Failing RPA:	0		0		0		0					
No. CTAGs Failing RSD:	0		0		0		0					
No. CTAGs Failing RPD:			0									
		Points		Points		Points		Points		Points		
No. of TAGs Present:	1	10	0	0	0	0	0	0	0	0		
No. of TAGs Reported:	1	10	0	0	0	0	0	0		0		
No. TAGs Failing RPA:	0	0	0	0	0	0	0	0		0		
No. TAGs Failing RSD:	0	0	0	0	0	0	0	0		0		
No. TAGs Failing RPD:			0	0								
No. of CTAGs Reported in Blank > 0.7 * PRQL:		NA		NA		NA		NA	0	0		
No. of TAGs Reported in Blank > 0.7 * PRQL:		NA		NA		NA		NA	0	0		
Subtotal for Blank:										0		
No. of False CTAGs or TAGs in Spikes > PRQL:		0		0		0		0	NA			
TOTALS:		10		0		0		0		0		
MAXIMUM POINTS:		10										
SCORE:		1.00	PLUS	0 FAILURES FOR CTAGs								
			OF	0 OPPORTUNITIES								

TABLE A-3

STANDARD NUMBER	PDP12009	PDP12009						
CANISTER NUMBER		04690						
LAB IDENTIFICATION CODE		CK						
LABORATORY SAMPLE ID		65457						
ANALYTICAL METHOD		W0660-0021-KP-00						
REPLICATE		1		2		3	4 RPA	RSD
ANAYSIS DATE		03/26/91		03/26/91		03/26/91	03/26/91	
ANALYSIS TIME		10:12		11:18		12:05	12:51	

LOW

	KNOWN VALUE	FLAG						
NITROGEN	3.95		3.99	4.12	4.12	4.18	103.85%	1.91%
OXYGEN	0.39		0.38	0.39	0.40	0.41	102.21%	2.94%
HYDROGEN (1)	0.105	C	0.104	0.101	0.104	0.103	98.19%	1.37%
METHANE	0.47	C	0.43	0.44	0.45	0.46	94.07%	2.22%
ETHANE	0.41		0.37	0.38	0.39	0.39	93.64%	2.23%
PROPANE	0.52		0.52	0.53	0.54	0.54	102.80%	1.91%
NOX	0.07	?						
CARBON MONOXIDE	0.08		0.08	0.08	0.08	0.08	99.69%	1.19%
CARBON DIOXIDE	0.60		0.56	0.57	0.58	0.58	96.14%	2.01%
ARGON	0.37		0.36	0.36	0.37	0.37	99.04%	1.99%
HELIUM	93.05							

FLAG:

C = CRITICAL TARGET ANALYTE GAS
? = ANALYTE IS ABSENT; VALUE IS PRDL

Notes:

(1) = Hydrogen values are from the special hydrogen canister distribution.

TABLE A-4

STANDARD NUMBER	PDP12009	PDP12009							
CANISTER NUMBER		04685							
LAB IDENTIFICATION CODE		CK							
LABORATORY SAMPLE ID		65457							
ANALYTICAL METHOD		W0660-0021-KP-00							
REPLICATE		1		2		3		4 RPA	RSD	RPD
ANAYSIS DATE		03/26/91		03/26/91		03/27/91		03/27/91		
ANALYSIS TIME		14:01		14:48		12:45		13:32		
	KNOWN VALUE	FLAG								
NITROGEN	3.95		4.99	5.04	4.97	5.00	126.58%	0.60%	-13.60%
OXYGEN	0.39		0.64	0.65	0.62	0.65	165.71%	2.30%	-34.32%
HYDROGEN (1)	0.105	C	0.103	0.103	0.104	0.103	98.43%	0.48%	-0.16%
METHANE	0.47	C	0.44	0.44	0.44	0.44	93.27%	0.47%	0.56%
ETHANE	0.41		0.37	0.39	0.37	0.38	92.73%	1.69%	0.65%
PROPANE	0.52		0.52	0.53	0.52	0.53	101.35%	1.58%	0.95%
NOX	0.07	?							
CARBON MONOXIDE	0.08		0.08	0.08	0.08	0.08	98.77%	1.02%	0.62%
CARBON DIOXIDE	0.60		0.56	0.58	0.56	0.57	95.30%	1.39%	0.58%
ARGON	0.37		0.37	0.38	0.36	0.38	100.93%	1.85%	-1.27%
HELIUM	93.05								

FLAG:

C = CRITICAL TARGET ANALYTE GAS
? = ANALYTE IS ABSENT; VALUE IS PRDL

Notes:

(1) = Hydrogen values are from the special hydrogen canister distribution.

TABLE A-5

STANDARD NUMBER	CC60383		CC60383					
CANISTER NUMBER			04678					
LAB IDENTIFICATION CODE			CK					
LABORATORY SAMPLE ID			65457					
REPLICATE			1	2	3	4	RPA	RSD
ANALYTICAL METHOD			W0660-0021-KP-00					
ANALYSIS DATE			03/27/91	03/27/91	03/27/91	03/27/91		
ANALYSIS TIME			18:34	19:21	20:07	20:54		
	KNOWN VALUE	FLAG						
NITROGEN	87.46		72.948	72.976	72.695	72.564	83.24%	0.27%
OXYGEN	15.40		15.913	15.917	15.839	15.823	103.07%	0.31%
HYDROGEN	0.40	C	0.403	0.405	0.403	0.403	99.88%	0.25%
CARBON_MONOXIDE	0.19		0.196	0.198	0.196	0.195	101.26%	0.64%
CARBON_DIOXIDE	9.67		9.112	9.058	9.023	9.047	93.69%	0.42%
METHANE	0.17	C	0.178	0.177	0.173	0.177	101.23%	1.26%
ETHANE	0.60		0.497	0.497	0.488	0.49	81.89%	0.95%
PROPANE	0.27		0.296	0.295	0.293	0.291	108.92%	0.75%
ARGON	1.06		1.099	1.101	1.096	1.095	103.43%	0.25%
HELIUM	0.10	?						
NOX	0.07	?						

FLAGS:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE A-6

STANDARD NUMBER	CC12600	CC12600						
CANISTER NUMBER		04670						
LAB IDENTIFICATION CODE		CK						
LABORATORY SAMPLE ID		65457						
ANALYTICAL METHOD		W0660-0021-KP-00						
REPLICATE		1	2	3	4	RPA	RSD	
ANALYSIS DATE		03/27/91	03/27/91	03/27/91	03/27/91			
ANALYSIS TIME		15:24	16:10	16:57	17:43			

Special

	KNOWN VALUE	FLAG						
NITROGEN	8.38		8.006	8.136	8.216	8.229	97.22%	1.26%
OXYGEN	0.458		0.325	0.338	0.346	0.35	74.18%	3.25%
HYDROGEN	0.35	C						
METHANE	0.713	C	0.668	0.683	0.691	0.691	95.83%	1.59%
ETHANE	0.27		0.255	0.262	0.261	0.264	96.48%	1.49%
PROPANE	0.1385		0.14	0.142	0.143	0.142	102.35%	0.89%
CARBON_MONOXIDE	0.0704		0.066	0.066	0.068	0.068	95.17%	1.72%
CARBON_DIOXIDE	0.711		0.638	0.66	0.66	0.665	92.23%	1.84%
ARGON	0.293		0.332	0.342	0.345	0.349	116.72%	2.12%
HELIUM	88.45098							
NOX	0.07	?						

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE NOT PRESENT; VALUE IS PRDL

TABLE A-7

STANDARD NUMBER	CC40109	CC40109						
CANISTER NUMBER		04687						
LAB IDENTIFICATION CODE		CK						
LABORATORY SAMPLE ID		65458						
ANALYTICAL METHOD		W0660-0022-KP-00						
REPLICATE		1	2	3	4	RPA	RSD	
ANALYTICAL DATE		04/02/91	04/02/91	04/02/91	04/02/91			
ANALYTICAL TIME		13:44	14:10	14:45	15:10			

Not

	KNOWN VALUE	FLAG						
NITROGEN	99.091							
HYDROGEN	0	C						
OXYGEN	0							
CARBON_MONOXIDE	0							
CARBON_DIOXIDE	0							
METHANE	0	C						
ETHANE	0							
PROPANE	0							
ARGON	0							
HELIUM	0							
NOX	0.909		0.601	0.609	0.609	0.602	66.58%	0.72%

FLAGS:
C = CRITICAL TARGET ANALYTE GAS

Appendix B

Lab MD - Gas Analysis

The scoring for the separate NOx canister was included in the scoring for the Interference Test Gas canister.

No other special scoring was required.

TABLE B-1
WIPP PDP SCORE

LABORATORY: MD
ANALYSIS TYPE: Gases METHOD: GAS MASS SPECTROMETRY

STANDARD NO.:	CC12009		CC12009		CC60383		CC12600/40109		CC73089	
CANISTER NO.:	04691		04692		04673		04676/04677			
COMMENT:	Low Conc.		Low Conc. Duplicate		High Conc.		Interference		Blank	
No. of CTAGs Present:	2		2		2		2		0	
No. of CTAGs Reported:	2		2		2		2			
No. CTAGs Failing RPA:	1		2		1		1			
No. CTAGs Failing RSD:	0		0		0		0			
No. CTAGs Failing RPD:			0							
		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	8	80	0	0
No. of TAGs Reported:	7	70	7	105	7	70	8	80		0
No. TAGs Failing RPA:	6	-30	6	-30	5	-25	5	-25		0
No. TAGs Failing RSD:	1	-5	3	-15	0	0	1	-5		0
No. TAGs Failing RPD:			2	-10						
No. of CTAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		NA
TOTALS:		35		50		45		50		50
MAXIMUM POINTS:		375								
SCORE:		0.61								

PLUS 5 FAILURES FOR CTAGs
OF 17 OPPORTUNITIES: 29.41%

TABLE B-2

STANDARD NUMBER	PDP12009	PDP12009
CANISTER NUMBER		04691
LAB IDENTIFICATION CODE		MD
LABORATORY SAMPLE ID		91-8049-05
ANALYTICAL METHOD		GAS MASS SPECTROMETRY

REPLICATE	1	2	3	4	RPA	RSD
ANAYSIS DATE	04/05/91	04/06/91	04/06/91	04/06/91		
ANALYSIS TIME	17:59	9:35	9:53	10.21		

	KNOWN VALUE	FLAG						
NITROGEN	3.95		3.37	3.07	3.11	3.22	80.82%	4.21%
OXYGEN	0.39		0.28	0.26	0.27	0.28	70.78%	3.51%
HYDROGEN	0.11	C	0.11	0.10	0.09	0.11	97.86%	8.90%
METHANE	0.47	C	0.36	0.34	0.34	0.35	73.62%	2.76%
ETHANE	0.41		0.46	0.43	0.44	0.46	109.41%	3.35%
PROPANE	0.52		0.48	0.44	0.46	0.48	89.94%	4.12%
NOX	0.07	?	0.005	0.003	0.003	0.003	5.00%	28.57%
CARBON MONOXIDE	0.08		0.71	0.46	0.56	0.71	753.09%	20.08%
CARBON DIOXIDE	0.60		0.50	0.46	0.47	0.50	80.96%	4.27%
ARGON	0.37		0.32	0.29	0.30	0.32	83.15%	4.88%
HELIUM	93.05		93.40	94.20	94.00	93.60	100.81%	0.39%

FLAG:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE B-3

STANDARD NUMBER	PDP12009		PDP12009						
CANISTER NUMBER			04692						
LAB IDENTIFICATION CODE			MD						
LABORATORY SAMPLE ID			91-8049-06						
ANALYTICAL METHOD			GAS MASS SPECTROMETRY						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANAYSIS DATE			04/06/91	04/06/91	04/06/91	04/06/91			
ANALYSIS TIME			12:27		13:27	13:58			
	KNOWN VALUE	FLAG							
NITROGEN	3.95		5.68	5.84	5.98	6.02	148.86%	2.62%	-43.82%
OXYGEN	0.39		0.73	0.78	0.80	0.80	201.95%	4.25%	-76.37%
HYDROGEN	0.11	C	0.09	0.09	0.10	0.10	88.33%	4.35%	6.71%
METHANE	0.47	C	0.32	0.34	0.34	0.35	71.50%	3.73%	1.94%
ETHANE	0.41		0.28	0.44	0.45	0.46	99.63%	20.95%	6.14%
PROPANE	0.52		0.35	0.46	0.48	0.48	85.59%	14.10%	3.28%
NOX	0.07	?	0.003	0.003	0.003	0.003	4.29%	0.00%	10.00%
CARBON MONOXIDE	0.08		0.33	0.53	0.65	0.77	703.70%	32.92%	4.47%
CARBON DIOXIDE	0.60		0.45	0.48	0.50	0.50	80.96%	4.90%	0.00%
ARGON	0.37		0.31	0.33	0.34	0.34	89.24%	4.29%	-4.76%
HELIUM	93.05		91.40	90.70	90.40	90.20	97.45%	0.58%	2.25%

FLAG:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE B-4

STANDARD NUMBER	CC60383	CC60383					
CANISTER NUMBER		04673					
LAB IDENTIFICATION CODE		MD					
LABORATORY SAMPLE ID		91-8049-02					
REPLICATE		1	2	3	4	RPA	RSD
ANALYTICAL METHOD		GAS MASS SPECTROMETRY					
ANALYSIS DATE		04/04/91	04/04/91	04/04/91	04/04/91		
ANALYSIS TIME		15:46	16:17	16:50	17:17		

	KNOWN VALUE	FLAG						
NITROGEN	87.46		70.7	71	70.8	71.4	81.16%	0.44%
OXYGEN	15.40		16	16	16	15.8	103.57%	0.63%
HYDROGEN	0.40	C	0.33	0.28	0.28	0.29	73.02%	8.07%
CARBON_MONOXIDE	0.19		0.007	0.007	0.007	0.007	3.61%	0.00%
CARBON_DIOXIDE	9.67		10.8	10.6	10.7	10.3	109.62%	2.04%
METHANE	0.17	C	0.16	0.16	0.16	0.16	91.90%	0.00%
ETHANE	0.60		0.44	0.44	0.44	0.44	73.09%	0.00%
PROPANE	0.27		0.34	0.33	0.34	0.32	123.29%	2.88%
ARGON	1.06		1.19	1.19	1.19	1.17	111.66%	0.84%
HELIUM	0.10	?	0.007	0.007	0.007	0.007	7.00%	0.00%
NOX	0.07	?	0.003	0.003	0.003	0.003	4.29%	0.00%

FLAGS:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE B-5

STANDARD NUMBER	CC12600	CC12600
CANISTER NUMBER		04676
LAB IDENTIFICATION CODE		MD
LABORATORY SAMPLE ID		91-8049-03
ANALYTICAL METHOD		GAS MASS SPECTROMETRY

REPLICATE	1	2	3	4	RPA	RSD
ANALYSIS DATE	04/05/91	04-05-91	04/05/91	04/05/91		
ANALYSIS TIME	12:05	12:38	13:42	14.10		

	KNOWN VALUE	FLAG						
NITROGEN	8.38		7.32	7.46	7.49	7.61	89.14%	1.60%
OXYGEN	0.458		0.37	0.39	0.4	0.4	85.15%	3.63%
HYDROGEN	0.35	C	0.33	0.32	0.32	0.32	92.14%	1.55%
METHANE	0.713	C	0.51	0.52	0.52	0.53	72.93%	1.57%
ETHANE	0.27		0.29	0.3	0.3	0.31	111.11%	2.72%
PROPANE	0.1385		0.13	0.13	0.13	0.14	95.67%	3.77%
CARBON_MONOXIDE	0.0704		0.8	1.07	1	1.11	1413.35%	13.84%
CARBON_DIOXIDE	0.711		0.56	0.58	0.58	0.59	81.22%	2.18%
ARGON	0.293		0.3	0.3	0.31	0.31	104.10%	1.89%
HELIUM	88.45098		89.4	88.9	89	88.7	100.62%	0.33%
NOX	0.07	?	0.003	0.003	0.003	0.003	4.29%	0.00%

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE NOT PRESENT; VALUE IS PRDL

TABLE B-6

STANDARD NUMBER	CC40109	CC40109						
CANISTER NUMBER		04677						
LAB IDENTIFICATION CODE		MD						
LABORATORY SAMPLE ID		91-8049-04						
ANALYTICAL METHOD		GAS MASS SPECTROMETRY						
REPLICATE		1	2	3	4	RPA	RSD	
ANALYTICAL DATE		05/05/91	05/05/91	05/05/91	05/05/91			
ANALYTICAL TIME		14:51	15:18	15:49	16:05			

	KNOWN VALUE	FLAG						
NITROGEN	99.091							
HYDROGEN	0	C						
OXYGEN	0							
CARBON_MONOXIDE	0							
CARBON_DIOXIDE	0							
METHANE	0	C						
ETHANE	0							
PROPANE	0							
ARGON	0							
HELIUM	0							
NOX	0.909		0.8	0.79	0.78	0.78	86.63%	1.22%

FLAGS:
C = CRITICAL TARGET ANALYTE GAS

Appendix C

Lab HE - Gas Analysis

No data was reported for the NOx canister. This was not scored since this laboratory will not be performing NOx analyses for the WIPP as part of this program.

No other special scoring was required.

TABLE C-1
WIPP PDP SCORE

LABORATORY: HE
ANALYSIS TYPE: Gases METHOD: GC - TC/FID

STANDARD NO.:	CC12009	CC12009	CC60383	CC12600	CC73089
CANISTER NO.:	04694	04686	04668	04696	04663
COMMENT:	Low Conc.	Low Conc. Duplicate	High Conc.	Interference	Blank
No. of CTAGs Present:	2	2	2	2	0
No. of CTAGs Reported:	2	2	2	2	
No. CTAGs Failing RPA:	0	0	2	1	
No. CTAGs Failing RSD:	1	2	0	0	
No. CTAGs Failing RPD:		0			

		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	7	70	0	0
No. of TAGs Reported:	6	60	6	90	7	70	6	60		0
No. TAGs Failing RPA:	5	-25	4	-20	7	-35	6	-30		0
No. TAGs Failing RSD:	1	-5	3	-15	2	-10	0	0		0
No. TAGs Failing RPD:			1	-5						
No. of CTAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		NA
TOTALS:		30		50		25		30		50
MAXIMUM POINTS:		365								
SCORE:		0.51								

PLUS 6 FAILURES FOR CTAGs
OF 17 OPPORTUNITIES: 35.29%

TABLE C-2

STANDARD NUMBER	PDP12009	PDP12009						
CANISTER NUMBER		04694						
LAB IDENTIFICATION CODE		HE						
LABORATORY SAMPLE ID		XI-03-100-06A						
ANALYTICAL METHOD		GC - TC/FID						
REPLICATE		1	2	3	4	RPA	RSD	
ANAYSIS DATE		04-02-91	04/02/91	04/02/91	04/02/91			
ANALYSIS TIME		12:46	13:10	13:35	13:59			
	KNOWN VALUE	FLAG						
NITROGEN	3.95		4.40	4.20	4.20	4.10	106.96%	2.98%
OXYGEN	0.39		0.72	0.53	0.50	0.47	144.16%	20.31%
HYDROGEN	0.11	C	0.07	0.12	0.10	0.10	92.86%	21.14%
METHANE	0.47	C	0.46	0.46	0.46	0.47	97.99%	1.08%
ETHANE	0.41		0.14	0.14	0.13	0.14	33.62%	3.64%
PROPANE	0.52		0.40	0.40	0.39	0.39	76.40%	1.46%
NOX	0.07	?						
CARBON MONOXIDE	0.08							
CARBON DIOXIDE	0.60		0.49	0.48	0.48	0.47	80.54%	1.70%
ARGON	0.37		0.27	0.26	0.26	0.26	70.98%	1.90%
HELIUM	93.05							

FLAG:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE C-3

STANDARD NUMBER	PDP12009		PDP12009						
CANISTER NUMBER			04686						
LAB IDENTIFICATION CODE			HE						
LABORATORY SAMPLE ID			XI-03-100-07A						
ANALYTICAL METHOD			GC - TC/FID						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANAYSIS DATE			04/02/91	04/02/91	04-02-91	04/02/91			
ANALYSIS TIME			14:24	14:48	15:12	15:36			
	KNOWN VALUE	FLAG							
NITROGEN	3.95		3.80	3.60	5.20	5.20	112.66%	19.55%	-3.49%
OXYGEN	0.39		0.55	0.36	0.33	0.33	101.95%	26.99%	21.63%
HYDROGEN	0.11	C	0.12	0.12	0.11	0.09	104.76%	12.86%	-8.20%
METHANE	0.47	C	0.39	0.39	0.58	0.57	102.22%	22.15%	-2.84%
ETHANE	0.41		0.13	0.13	0.13	0.13	31.78%	0.00%	3.70%
PROPANE	0.52		0.36	0.36	0.36	0.36	69.63%	0.00%	6.09%
NOX	0.07	?							
CARBON MONOXIDE	0.08								
CARBON DIOXIDE	0.60		0.44	0.43	0.64	0.64	90.18%	22.03%	-7.68%
ARGON	0.37		0.26	0.26	0.25	0.26	69.63%	1.94%	1.28%
HELIUM	93.05								

FLAG:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE C-4

STANDARD NUMBER	CC60383	CC60383
CANISTER NUMBER		04668
LAB IDENTIFICATION CODE		HE
LABORATORY SAMPLE ID		XI-03-100-08A
REPLICATE		1 2 3 4 RPA RSD
ANALYTICAL METHOD		GC - TC/FID
ANALYSIS DATE		04/02/91 04/02/91 04/02/91 04/02/91
ANALYSIS TIME		16:24 16:49 17:16 17:40

	KNOWN VALUE	FLAG						
NITROGEN	87.46		66.2	62.5	65.7	65.4	74.27%	2.57%
OXYGEN	15.40		19	18.6	18.4	18.7	121.27%	1.34%
HYDROGEN	0.40	C	0.27	0.23	0.26	0.23	61.26%	8.33%
CARBON_MONOXIDE	0.19		0.0038		0.0034	0.0042	1.96%	10.53%
CARBON_DIOXIDE	9.67		7.47	7.04	7.38	7.35	75.59%	2.56%
METHANE	0.17	C	0.21	0.18	0.19	0.22	114.88%	9.13%
ETHANE	0.60		0.13	0.17	0.17	0.16	26.16%	12.02%
PROPANE	0.27		0.21	0.2	0.21	0.21	76.94%	2.41%
ARGON	1.06		0.65	0.64	0.63	0.67	61.01%	2.64%
HELIUM	0.10	?						
NOX	0.07	?						

FLAGS:

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE IS ABSENT; VALUE IS PRDL

TABLE C-5

STANDARD NUMBER	CC12600	CC12600
CANISTER NUMBER		04696
LAB IDENTIFICATION CODE		HE
LABORATORY SAMPLE ID		X1-03-100-09
ANALYTICAL METHOD		GC - TC/FID
REPLICATE		1 2 3 4 RPA RSD
ANALYSIS DATE		04/03/91 04/03/91 04/03/91 04/03/91
ANALYSIS TIME		11:30 11:56 12:21 12:46

	KNOWN VALUE	FLAG						
NITROGEN	8.38		11.3	11.1	11.1	10.9	132.46%	1.47%
OXYGEN	0.458		1.8	1.6	1.5	1.5	349.34%	8.84%
HYDROGEN	0.35	C	0.38	0.42	0.35	0.38	109.29%	7.51%
METHANE	0.713	C	0.59	0.58	0.58	0.58	81.70%	0.86%
ETHANE	0.27		0.087	0.087	0.086	0.087	32.13%	0.58%
PROPANE	0.1385		0.1	0.1	0.1	0.11	74.01%	4.88%
CARBON_MONOXIDE	0.0704							
CARBON_DIOXIDE	0.711		0.53	0.53	0.53	0.52	74.19%	0.95%
ARGON	0.293		0.25	0.25	0.24	0.24	83.62%	2.36%
HELIUM	88.45098							
NOX	0.07	?						

C = CRITICAL TARGET ANALYTE GAS

? = ANALYTE NOT PRESENT; VALUE IS PRDL

Appendix D

Lab CA - VOC Analysis

Two methods were submitted by this laboratory, a modified TO-14 method and a modified 8240/8260.

Data for alcohols and ketones were obtained from a third, GC method. These data were combined with that from the two candidate methods and used in the scoring of each method independently.

Three CTC failures were observed in the high concentration canister for the modified TO-14 method.

A single CTC failure was observed in the high concentration canister for the modified 8240/8260 method. A calibration problem was noted for this compound in the transmittal. The failure may have been caused by attempting to analyze the entire spectrum of compounds and concentrations present in a single dilution. This compound was at the low concentration end of the distribution in the high concentration canister. The concentrations of VOCs in this canister varied over a factor of almost 80. Despite the failure for the CTC in this method, it would be appropriate to authorize this laboratory to analyze headspace gases for VOCs by this method with the provision that when the CTC in question is identified in a given sample that it be confirmed by the alternate method submitted. This is only possible because this laboratory submitted data from two different methods, and the second method correctly quantitated the compound of interest.

TABLE D-1
WIPP PDP SCORE

LABORATORY: CA
ANALYSIS TYPE: VOCs METHOD: MODIFIED TO-14 + GC/FID

STANDARD NO.:	CC12776		CC12776		CC62359		CC81225		CC63474	
CANISTER NO.:	04700		04715		04711		04428		04712	
COMMENT:	Low Conc.		Low Conc. Duplicate		High Conc.		Alcohols & Ketones		Blank	
No. of CTCs Present:	4		4		5		0		0	
No. of CTCs Reported:	4		4		5		0			
No. CTCs Failing RPA:	0		0		3					
No. CTCs Failing RSD:	0		0		0					
No. CTCs Failing RPD:			0							
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	6	90	5	50	4	40	0	0
No. of TCs Reported:	6	60	6	90	5	50	4	40		0
No. TCs Failing RPA:	1	-5	0	0	4	-20	0	0		0
No. TCs Failing RSD:	0	0	0	0	1	-5	0	0		0
No. TCs Failing RPD:			0	0						
No. of TICs Present:	0	0	0	0	1	5	0	0	0	0
No. of TICs Reported:	0	0	0	0	1	5	0	0	0	0
No. of CTCs Reported in Blank > 0.5 * PRQL:	NA		NA		NA		NA		0	0
No. of TCs Reported in Blank > 0.5 * PRQL:	NA		NA		NA		NA		0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0	0	0	0	0	NA	
TOTALS:		55		90		30		40		61
MAXIMUM POINTS:		306								
SCORE:		0.9								

PLUS 3 FAILURES FOR CTCs
OF 27 OPPORTUNITIES: 11.11%

TABLE D-2
WIPP PDP SCORE

LABORATORY: CA
ANALYSIS TYPE: VOCs METHOD: MODIFIED 8240/8260 + GC/FID

STANDARD NO.:	CC12776		CC12776		CC62359		CC81225		CC63474	
CANISTER NO.:	04700		04715		04711		04428		04712	
COMMENT:	Low Conc.		Low Conc. Duplicate		High Conc.		Alcohols & Ketones		Blank	
No. of CTCs Present:	4		4		5		0		0	
No. of CTCs Reported:	4		4		5		0			
No. CTCs Failing RPA:	0		0		1					
No. CTCs Failing RSD:	0		0		0					
No. CTCs Failing RPD:			0							
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	6	90	5	50	4	40	0	0
No. of TCs Reported:	6	60	6	90	5	50	4	40		0
No. TCs Failing RPA:	0	0	0	0	1	-5	0	0		0
No. TCs Failing RSD:	0	0	0	0	1	-5	0	0		0
No. TCs Failing RPD:			0	0						
No. of TICs Present:	0	0	0	0	1	5	0		0	0
No. of TICs Reported:	0	0	0	0	1	5	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0	1	-1	0	0		NA
TOTALS:		60		90		44		40		61
MAXIMUM POINTS:		306								
SCORE:		0.96								

PLUS 1 FAILURES FOR CTCs
OF 27 OPPORTUNITIES: 3.70%

TABLE D-3

STANDARD NUMBER	CC12776							
CANISTER NUMBER			04700					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071002					
ANALYSIS METHOD			MODIFIED TO-14					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/27/91	03/27/91	03/27/91	03/28/91		
ANALYSIS TIME			15:53	16:30	17:02	14:01		
	KNOWN VALUE	FLAG						
ACETONE	5.08	C						
CARBON TETRACHLORIDE	3.10	C	2.88	2.97	2.97	3.60	100.16%	10.72%
METHYLENE CHLORIDE	1.98	C	2.07	2.16	2.16	2.34	110.23%	5.19%
1,1,1-TRICHLOROETHANE	10.60	C	10.80	10.80	10.80	12.60	106.13%	8.00%
TRICHLOROETHENE	7.20	C	8.91	9.00	8.55	9.00	123.13%	2.42%
BENZENE	5.28		5.13	5.13	5.31	5.40	99.29%	2.58%
CHLOROBENZENE	8.75		11.70	10.80	9.90	10.80	123.43%	6.80%
CHLOROFORM	4.12		3.78	3.96	3.87	4.32	96.66%	5.94%
ETHYL BENZENE	7.52		8.28	7.74	6.56	7.83	101.10%	9.65%
METHANOL	4.08							
FREON 113	10.40		10.80	10.80	10.80	11.70	106.01%	4.08%
p-XYLENE	6.03		9.90	8.19	7.38	7.74	137.69%	13.43%
BROMOFORM	1.00	?						
1-BUTANOL	100.00	?						
2-BUTANONE	100.00	?						
CYCLOHEXANE	1.00	?						
1,1-DICHLOROETHANE	1.00	?						
1,2-DICHLOROETHANE	1.00	?						
1,1-DICHLOROETHENE	1.00	?						
cis-DICHLOROETHENE	1.00	?						
ETHYL ETHER	1.00	?						
4-METHYL-2-PENTANONE	100.00	?						
1,1,2,2-TETRACHLOROETHANE	1.00	?						
TETRACHLOROETHENE	1.00	?						
1,3,5-TRIMETHYLBENZENE	1.00	?						
1,2,4-TRIMETHYLBENZENE	1.00	?						
m-XYLENE	1.00	?						
o-XYLENE	1.00	?						
TRICHLOROFLUROMETHANE	1.00	?						
TOLUENE	1.00	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-4

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04715						
LAB IDENTIFICATION CODE			CA						
LABORATORY SAMPLE ID			91071001						
ANALYSIS METHOD			MODIFIED TO-14						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE			04/02/91	04/02/91	04/02/91	04/02/91			
ANALYSIS TIME			14:04	14:42	15:27	16:05			
	KNOWN VALUE	FLAG							
ACETONE	5.08	C							
CARBON TETRACHLORIDE	3.10	C	3.33	3.06	3.33	3.06	103.06%	4.88%	-2.86%
METHYLENE CHLORIDE	1.98	C	2.16	2.07	2.25	2.07	107.95%	4.03%	2.08%
1,1,1-TRICHLOROETHANE	10.60	C	11.70	10.80	11.70	10.80	106.13%	4.62%	-0.00%
TRICHLOROETHENE	7.20	C	8.82	8.37	9.00	8.19	119.38%	4.40%	3.09%
BENZENE	5.28		5.13	4.95	5.31	4.86	95.88%	3.94%	3.49%
CHLOROBENZENE	8.75		9.90	9.90	10.80	9.00	113.14%	7.42%	8.70%
CHLOROFORM	4.12		4.05	3.87	4.14	3.87	96.66%	3.39%	0.00%
ETHYL BENZENE	7.52		7.38	7.11	7.74	7.02	97.24%	4.42%	3.89%
METHANOL	4.08								
FREON 113	10.40		10.80	9.90	10.80	10.80	101.68%	4.26%	4.17%
p-XYLENE	6.03		6.66	6.57	7.29	6.39	111.57%	5.82%	20.96%
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?							
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?							
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?							
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?							
TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-5

STANDARD NUMBER	CC12776		CC12776					
CANISTER NUMBER			04700					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071002					
ANALYSIS METHOD			MODIFIED 8240/8260					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/28/91	03/28/91	03/28/91	03/28/91		
ANALYSIS TIME			16:05	16:54	17:43	18:31		
	KNOWN VALUE	FLAG						
ACETONE	5.08	C						
CARBON TETRACHLORIDE	3.10	C	3.05	2.94	2.51	2.51	88.78%	10.42%
METHYLENE CHLORIDE	1.98	C	2.07	2.07	1.96	1.64	97.71%	10.66%
1,1,1-TRICHLOROETHANE	10.60	C	10.14	9.81	8.72	8.50	87.66%	8.64%
TRICHLOROETHENE	7.20	C	6.76	6.54	5.89	5.67	86.29%	8.35%
BENZENE	5.28		4.91	4.69	4.25	4.14	85.16%	8.01%
CHLOROBENZENE	8.75		7.63	7.30	6.87	6.54	80.97%	6.76%
CHLOROFORM	4.12		4.03	3.92	3.60	3.60	91.94%	5.93%
ETHYL BENZENE	7.52		6.00	5.67	5.23	4.91	72.47%	8.79%
METHANOL	4.08							
FREON 113	10.40		10.03	9.70	8.39	8.18	87.25%	10.21%
p-XYLENE	6.03		5.34	4.91	4.58	4.36	79.54%	8.90%
BROMOFORM	1.00	?						
1-BUTANOL	100.00	?						
2-BUTANONE	100.00	?						
CYCLOHEXANE	1.00	?						
1,1-DICHLOROETHANE	1.00	?						
1,2-DICHLOROETHANE	1.00	?						
1,1-DICHLOROETHENE	1.00	?	0.19	0.26	0.21	0.25	22.62%	15.92%
cis-DICHLOROETHENE	1.00	?						
ETHYL ETHER	1.00	?						
4-METHYL-2-PENTANONE	100.00	?						
1,1,2,2-TETRACHLOROETHANE	1.00	?						
TETRACHLOROETHENE	1.00	?						
1,3,5-TRIMETHYLBENZENE	1.00	?						
1,2,4-TRIMETHYLBENZENE	1.00	?						
m-XYLENE	1.00	?						
o-XYLENE	1.00	?						
TRICHLOROFLUROMETHANE	1.00	?						
TOLUENE	1.00	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-6

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04715						
LAB IDENTIFICATION CODE			CA						
LABORATORY SAMPLE ID			91071001						
ANALYSIS METHOD			MODIFIED 8240/8260						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE			03/29/91	03/29/91	03/29/91	03/29/91			
ANALYSIS TIME			17:49	18:36	19:23	20:10			
	KNOWN VALUE	FLAG							
ACETONE	5.08	C							
CARBON TETRACHLORIDE	3.10	C	2.83	2.73	2.62	2.94	89.66%	5.06%	-0.99%
METHYLENE CHLORIDE	1.98	C	1.96	1.85	1.85	1.96	96.34%	3.30%	1.42%
1,1,1-TRICHLOROETHANE	10.60	C	9.16	9.37	8.83	9.92	87.92%	4.92%	-0.29%
TRICHLOROETHENE	7.20	C	6.10	6.00	5.78	6.32	84.02%	3.75%	2.67%
BENZENE	5.28		4.36	4.25	4.03	4.47	81.03%	4.35%	4.97%
CHLOROBENZENE	8.75		6.87	6.76	6.54	7.09	77.86%	3.33%	3.92%
CHLOROFORM	4.12		3.71	3.60	3.60	3.92	89.95%	4.16%	2.18%
ETHYL BENZENE	7.52		5.34	5.34	5.01	5.56	70.66%	4.23%	2.53%
METHANOL	4.08								
FREON 113	10.40		9.16	9.27	8.61	9.48	87.78%	4.06%	-0.60%
p-XYLENE	6.03		4.69	4.58	4.36	4.80	76.37%	4.04%	4.06%
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?							
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?	0.37	0.23	0.24	0.22	26.43%	27.01%	ERR
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?							
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?							
TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-7

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04700						
LAB IDENTIFICATION CODE			CA						
LABORATORY SAMPLE ID			91071002						
ANALYSIS METHOD			GC/FID						
REPLICATE			1	2	3	4	RPA	RSD	
ANALYSIS DATE			04/01/91	04/01/91	04/01/91	04/01/91			
ANALYSIS TIME			9:19	10:16	11:40	12:56			
	KNOWN VALUE	FLAG							
1 ACETONE	5.08	C	6.30	11.70	3.60	12.60	168.31%	50.48%	
6 CARBON TETRACHLORIDE	3.10	C							
17 METHYLENE CHLORIDE	1.98	C							
22 1,1,1-TRICHLOROETHANE	10.60	C							
23 TRICHLOROETHENE	7.20	C							
2 BENZENE	5.28								
7 CHLOROBENZENE	8.75								
8 CHLOROFORM	4.12								
14 ETHYL BENZENE	7.52								
16 METHANOL	4.08								
24 FREON 113	10.40								
29 p-XYLENE	6.03								
3 BROMOFORM	1.00	?							
4 1-BUTANOL	100.00	?							
5 2-BUTANONE	100.00	?							
9 CYCLOHEXANE	1.00	?							
10 1,1-DICHLOROETHANE	1.00	?							
11 1,2-DICHLOROETHANE	1.00	?							
12 1,1-DICHLOROETHENE	1.00	?							
13 cis-DICHLOROETHENE	1.00	?							
15 ETHYL ETHER	1.00	?							
18 4-METHYL-2-PENTANONE	100.00	?							
19 1,1,2,2-TETRACHLOROETHANE	1.00	?							
20 TETRACHLOROETHENE	1.00	?							
25 1,3,5-TRIMETHYLBENZENE	1.00	?							
26 1,2,4-TRIMETHYLBENZENE	1.00	?							
27 m-XYLENE	1.00	?							
28 o-XYLENE	1.00	?							
30 TRICHLOROFLUROMETHANE	1.00	?							
31 TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-8

STANDARD NUMBER	CC12776		CC12776							
CANISTER NUMBER			04715							
LAB IDENTIFICATION CODE			CA							
LABORATORY SAMPLE ID			91071001							
ANALYSIS METHOD			GC/FID							
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE			03/28/91	03/28/91		03/28/91			
ANALYSIS TIME			8:39	9:43		11:52			
	KNOWN VALUE	FLAG							
ACETONE	5.08	C	8.10	9.90	7.83	9.90	175.84%	12.57%	-4.38%
CARBON TETRACHLORIDE	3.10	C							
METHYLENE CHLORIDE	1.98	C							
1,1,1-TRICHLOROETHANE	10.60	C							
TRICHLOROETHENE	7.20	C							
BENZENE	5.28								
CHLOROBENZENE	8.75								
CHLOROFORM	4.12								
ETHYL BENZENE	7.52								
METHANOL	4.08								
FREON 113	10.40								
p-XYLENE	6.03								
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?							
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?							
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?							
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?							
TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-9

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04711					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071003					
ANALYSIS METHOD			MODIFIED TO-14					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/04/91	04/04/91	04/04/91	04/04/91		
ANALYSIS TIME			10:54	11:30	12:12	12:59		
	KNOWN VALUE	FLAG						
6 CARBON_TETRACHLORIDE	284.0	C	364.8	364.8	376.2	387.6	131.46%	2.92%
17 METHYLENE_CHLORIDE	1204.0	C	1254.0	1254.0	1254.0	1254.0	104.15%	0.00%
20 1,1,2,2-TETRACHLOROETHANE	18.0	C	25.1	22.8	22.8	21.7	128.25%	6.21%
23 TRICHLOROETHENE	303.0	C	478.8	478.8	478.8	490.2	158.96%	1.18%
22 1,1,1-TRICHLOROETHANE	473.0	C	638.4	627.0	638.4	649.8	134.97%	1.46%
4 1-BUTANOL	14.2							
18 4-METHYL-2-PENTANONE	15.3							
28 TETRACHLOROETHENE	75.0		114.0	125.4	114.0	125.4	159.60%	5.50%
29 FREON 113	632.0		969.0	991.8	980.4	980.4	155.13%	0.95%
30 TRICHLOROFLUOROMETHANE	1018.0		1105.8	1071.6	1140.0	1105.8	108.62%	2.53%
21 TOLUENE	112.0		148.2	159.6	148.2	148.2	134.87%	3.77%
1 ACETONE	100	?						
2 BENZENE	1	?						
3 BROMOFORM	1	?						
5 2-BUTANONE	100	?						
7 CHLOROBENZENE	1	?						
8 CHLOROFORM	1	?						
9 CYCLOHEXANE	1	?						
10 1,1-DICHLOROETHANE	1	?						
11 1,2-DICHLOROETHANE	1	?						
12 1,1DICHLOROETHENE	1	?						
13 cis-DICHLOROETHENE	1	?						
14 ETHYL_BENZENE	1	?						
15 ETHYL_ETHER	1	?						
16 METHANOL	100	?						
25 1,3,5-TRIMETHYLBENZENE	1	?						
26 1,2,4-TRIMETHYLBENZENE	1	?						
27 m-XYLENE	1	?						
28 o-XYLENE	1	?						
29 p-XYLENE	1	?						
31 HEXANE	1	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-10

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04711					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071003					
ANALYSIS METHOD			MODIFIED 8240/8260					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE								
ANALYSIS TIME								
	KNOWN VALUE	FLAG						
CARBON_TETRACHLORIDE	284.0	C	345.0	358.8	358.8	345.0	123.91%	2.26%
METHYLENE_CHLORIDE	1204.0	C	993.6	1007.4	1021.2	979.8	83.10%	1.78%
1,1,2,2-TETRACHLOROETHANE	18.0	C	40.0	39.0	38.0	37.0	213.89%	3.35%
TRICHLOROETHENE	303.0	C	303.6	303.6	317.4	303.6	101.34%	2.25%
1,1,1-TRICHLOROETHANE	473.0	C	579.6	565.8	565.8	554.8	119.77%	1.80%
1-BUTANOL	14.2							
4-METHYL-2-PENTANONE	15.3							
TETRACHLOROETHENE	75.0		62.1	60.7	60.7	62.1	81.88%	1.30%
FREON 113	632.0		731.4	731.4	731.4	703.8	114.64%	1.90%
TRICHLOROFLUOROMETHANE	1018.0		966.0	966.0	952.2	966.0	94.55%	0.72%
TOLUENE	112.0		104.9	103.5	103.5	106.3	93.33%	1.26%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
2-BUTANONE	100	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1DICHLOROETHENE	1	?	16.6	19.3	15.2	20.7	1794.00%	14.04%
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHANOL	100	?						
1,3,5-TRIMETHYLBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
HEXANE	1	?						

TABLE D-11

STANDARD NUMBER	CC62359		CC62359						
CANISTER NUMBER			04711						
LAB IDENTIFICATION CODE			CA						
LABORATORY SAMPLE ID			91071003						
ANALYSIS METHOD			GC-FID						
REPLICATE				1	2	3	4	RPA	RSD
ANALYSIS DATE			04/01/91	04/01/91	04/02/91	04/02/91			
ANALYSIS TIME			1:53	2:58	12:09	1:05			
	KNOWN VALUE	FLAG							
CARBON_TETRACHLORIDE	284.0	C							
METHYLENE_CHLORIDE	1204.0	C							
1,1,2,2-TETRACHLOROETHANE	18.0	C							
TRICHLOROETHENE	303.0	C							
1,1,1-TRICHLOROETHANE	473.0	C							
1-BUTANOL	14.2			32.4	27.9	18.0	18.9	171.13%	28.85%
4-METHYL-2-PENTANONE	15.3			12.6	12.6	14.4	15.3	89.71%	9.84%
TETRACHLOROETHENE	75.0								
FREON 113	632.0								
TRICHLOROFLUOROMETHANE	1018.0								
TOLUENE	112.0								
ACETONE	100	?							
BENZENE	1	?							
BROMOFORM	1	?							
2-BUTANONE	100	?							
CHLOROBENZENE	1	?							
CHLOROFORM	1	?							
CYCLOHEXANE	1	?							
1,1-DICHLOROETHANE	1	?							
1,2-DICHLOROETHANE	1	?							
1,1DICHLOROETHENE	1	?							
cis-DICHLOROETHENE	1	?							
ETHYL_BENZENE	1	?							
ETHYL_ETHER	1	?							
METHANOL	100	?							
1,3,5-TRIMETHYLBENZENE	1	?							
1,2,4-TRIMETHYLBENZENE	1	?							
m-XYLENE	1	?							
o-XYLENE	1	?							
p-XYLENE	1	?							
HEXANE	1	?							

TABLE D-12

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04428					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071004					
ANALYTICAL METHOD			MODIFIED TO-14					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/27/91	03/27/91	03/27/91	03/27/91		
ANALYSIS TIME			11:14	11:51	12:39	13:18		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6							
2-BUTANONE	400							
METHANOL	172							
4-METHYL-2-PENTANONE	14.95							
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?	0.252	0.216	0.216	0.216	22.50%	8.00%
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?	0.306	0.306	0.297	0.306	30.38%	1.48%
1,1,2,2-TETRACHLOROETHANE	1	?	0.027	0.027	0.027	0.027	2.70%	0.00%
TETRACHLOROETHENE	1	?	0.144	0.144	0.144	0.153	14.63%	3.08%
TRICHLOROETHENE	1	?	0.396	0.387	0.387	0.396	39.15%	1.33%
1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0.144	0.153	0.153	0.153	15.08%	2.99%
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?	0.0324	0.0297	0.0351	0.0261	3.08%	12.47%
1,1,1-TRICHLOROETHANE	1	?	0.342	0.333	0.324	0.333	33.30%	2.21%
TOLUENE	1	?	0.198	0.198	0.198	0.207	20.03%	2.25%

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-13

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04428					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071004					
ANALYTICAL METHOD			MODIFIED 8240/8260					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/27/91	03/27/91	03/27/91	03/27/91		
ANALYSIS TIME			16:56	19:16	20:03	21:36		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6							
2-BUTANONE	400							
METHANOL	172							
4-METHYL-2-PENTANONE	14.95							
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?	0.2289	0.2071	0.1962	0.2071	20.98%	6.54%
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?	0.327	0.327	0.3597	0.3597	34.34%	5.50%
1,1,2,2-TETRACHLOROETHANE	1	?	0.02289	0.02071	0.01853	0.01744	1.99%	12.15%
TETRACHLOROETHENE	1	?	0.09919	0.09483	0.09483	0.09156	9.51%	3.29%
TRICHLOROETHENE	1	?	0.3379	0.3379	0.3379	0.3379	33.79%	0.00%
1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0.1744	0.1635	0.1526	0.1635	16.35%	5.44%
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?						
1,1,1-TRICHLOROETHANE	1	?	0.3488	0.3379	1.227	0.327	56.02%	79.38%
TOLUENE	1	?	0.1635	0.1526	0.1526	0.1635	15.81%	3.98%

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE D-14

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04428					
LAB IDENTIFICATION CODE			CA					
LABORATORY SAMPLE ID			91071004					
ANALYTICAL METHOD			GC/FID					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/29/91	03/29/91	03/29/91	03/29/91		
ANALYSIS TIME			01:00	02:03	03:16	04:12		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6		18.9	18	18	18	124.83%	2.47%
2-BUTANONE	400		360	360	360	360	90.00%	0.00%
METHANOL	172		162	153	162	162	92.88%	2.82%
4-METHYL-2-PENTANONE	14.95		17.1	17.1	18	18	117.39%	2.96%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?						
1,1,2,2-TETRACHLOROETHANE	1	?						
TETRACHLOROETHENE	1	?						
TRICHLOROETHENE	1	?						
1,1,2-CL3-1,2,2-F3-ETHANE	1	?						
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?						
1,1,1-TRICHLOROETHANE	1	?						
TOLUENE	1	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

Appendix E

Lab DO - VOC Analyses

Initially multiple dilutions were analyzed and reported for some canisters by this laboratory. This would have been problematic if one dilution had been analyzed correctly and one was incorrect. In actuality, the scoring was not affected. Only one dilution was scored, although all data appear on the data and results summary tables.

Alcohols and ketones were analyzed by a separate method and were scored as though the combined methods would be used on applicable samples.

TABLE E-1
WIPP PDP SCORE

LABORATORY: DO
ANALYSIS TYPE: VOCs METHOD: SOPs ACL-154 AND ACL-155

STANDARD NO.:	CC12776		CC12776		CC62359		CC81225		CC63474	
CANISTER NO.:	04441		04704		04703		04707		04435	
COMMENT:	Low Conc.		Low Conc. Duplicate		High Conc.		Alcohols & Ketones		Blank	
No. of CTCs Present:	5		5		5		0		0	
No. of CTCs Reported:	5		5		5		0		0	
No. CTCs Failing RPA:	0		0		0					
No. CTCs Failing RSD:	0		0		0					
No. CTCs Failing RPD:			0							
		Points		Points		Points		Points		Points
No. of TCs Present:	7	70	7	105	5	50	4	40	0	0
No. of TCs Reported:	7	70	7	105	5	50	4	40	0	0
No. TCs Failing RPA:	0	0	0	0	1	-5	0	0		0
No. TCs Failing RSD:	0	0	0	0	0	0	0	0		0
No. TCs Failing RPD:			0	0						
No. of TICs Present:	0	0	0	0	1	5	0	0	0	0
No. of TICs Reported:	0	0	0	0	1	5	0	0	0	0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0	0	0	1	-1		NA
TOTALS:		70		105		50		39		61
MAXIMUM POINTS:		331								
SCORE:		0.98								

PLUS 0 FAILURES FOR CTCs
OF 31 OPPORTUNITIES: 0.00%

TABLE E-2

STANDARD NUMBER	CC12776		CC12776					
CANISTER NUMBER			04441					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-01					
ANALYSIS METHOD			SOP: ACL-154					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/02/91	04/02/91	04/02/91	04/02/91		
ANALYSIS TIME			16:21	17:01	17:47	18:37		
	KNOWN VALUE	FLAG						
ACETONE	5.08	C						
CARBON TETRACHLORIDE	3.10	C	2.30	2.40	2.40	2.40	76.61%	2.11%
METHYLENE CHLORIDE	1.98	C	2.20	2.20	2.20	2.20	111.11%	0.00%
1,1,1-TRICHLOROETHANE	10.60	C	7.70	8.20	8.20	8.30	76.42%	3.34%
TRICHLOROETHENE	7.20	C	7.20	7.10	7.00	7.00	98.26%	1.35%
BENZENE	5.28		5.00	5.00	5.10	5.10	95.64%	1.14%
CHLOROBENZENE	8.75		9.80	9.60	10.00	9.70	111.71%	1.75%
CHLOROFORM	4.12		3.40	3.70	3.80	3.90	89.81%	5.84%
ETHYL BENZENE	7.52		7.20	7.10	7.10	7.20	95.08%	0.81%
METHANOL	4.08							
FREON 113	10.40		8.20	8.00	8.20	8.00	77.88%	1.43%
p-XYLENE	6.03		6.10	6.00	6.20	6.10	101.16%	1.34%
BROMOFORM	1.00	?						
1-BUTANOL	100.00	?						
2-BUTANONE	100.00	?						
CYCLOHEXANE	1.00	?						
1,1-DICHLOROETHANE	1.00	?						
1,2-DICHLOROETHANE	1.00	?						
1,1-DICHLOROETHENE	1.00	?						
cis-DICHLOROETHENE	1.00	?						
ETHYL ETHER	1.00	?						
4-METHYL-2-PENTANONE	100.00	?						
1,1,2,2-TETRACHLOROETHANE	1.00	?						
TETRACHLOROETHENE	1.00	?						
1,3,5-TRIMETHYLBENZENE	1.00	?						
1,2,4-TRIMETHYLBENZENE	1.00	?						
m-XYLENE	1.00	?						
o-XYLENE	1.00	?						
TRICHLOROFLUROMETHANE	1.00	?						
TOLUENE	1.00	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-3

STANDARD NUMBER	CC12776		CC12776					
CANISTER NUMBER			04441					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-01					
ANALYSIS METHOD			SOP: ACL-155					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/04/91	04/04/91	04/04/91	04/04/91		
ANALYSIS TIME			10:46	11:37	12:29	13:16		
	KNOWN VALUE	FLAG						
ACETONE	5.08	C	5.10	5.00	4.90	4.70	96.95%	3.47%
CARBON TETRACHLORIDE	3.10	C						
METHYLENE CHLORIDE	1.98	C						
1,1,1-TRICHLOROETHANE	10.60	C						
TRICHLOROETHENE	7.20	C						
BENZENE	5.28							
CHLOROBENZENE	8.75							
CHLOROFORM	4.12							
ETHYL BENZENE	7.52							
METHANOL	4.08		4.50	4.60	4.60	4.80	113.36%	2.72%
FREON 113	10.40							
p-XYLENE	6.03							
BROMOFORM	1.00	?						
1-BUTANOL	100.00	?						
2-BUTANONE	100.00	?						
CYCLOHEXANE	1.00	?						
1,1-DICHLOROETHANE	1.00	?						
1,2-DICHLOROETHANE	1.00	?						
1,1-DICHLOROETHENE	1.00	?						
cis-DICHLOROETHENE	1.00	?						
ETHYL ETHER	1.00	?						
4-METHYL-2-PENTANONE	100.00	?						
1,1,2,2-TETRACHLOROETHANE	1.00	?						
TETRACHLOROETHENE	1.00	?						
1,3,5-TRIMETHYLBENZENE	1.00	?						
1,2,4-TRIMETHYLBENZENE	1.00	?						
m-XYLENE	1.00	?						
o-XYLENE	1.00	?						
TRICHLOROFLUROMETHANE	1.00	?						
TOLUENE	1.00	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-4

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04704						
LAB IDENTIFICATION CODE			DO						
LABORATORY SAMPLE ID			91-8048-04						
ANALYSIS METHOD			SOP: ACL-154						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE			04/02/91	04/02/91	04/02/91	04/02/91			
ANALYSIS TIME			10:19	11:15	12:08	15:07			
	KNOWN VALUE	FLAG							
ACETONE	5.08	C							
CARBON TETRACHLORIDE	3.10	C	2.50	2.50	2.50	2.50	80.65%	0.00%	-5.13%
METHYLENE CHLORIDE	1.98	C	2.30	2.30	2.30	2.30	116.16%	0.00%	-4.44%
1,1,1-TRICHLOROETHANE	10.60	C	8.50	8.60	8.90	8.60	81.60%	2.00%	-6.57%
TRICHLOROETHENE	7.20	C	7.20	7.30	7.40	7.40	101.74%	1.31%	-3.47%
BENZENE	5.28		5.20	5.30	5.20	5.20	98.96%	0.96%	-3.41%
CHLOROBENZENE	8.75		10.00	10.00	10.00	10.00	114.29%	0.00%	-2.28%
CHLOROFORM	4.12		3.90	4.00	3.90	3.10	90.41%	11.26%	-0.67%
ETHYL BENZENE	7.52		7.60	7.20	7.30	7.40	98.07%	2.32%	-3.10%
METHANOL	4.08								
FREON 113	10.40		8.20	8.40	8.30	8.50	80.29%	1.55%	-3.04%
p-XYLENE	6.03		6.30	6.40	5.80	6.30	102.82%	4.37%	-1.63%
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?							
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?							
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?							
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?							
TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-5

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04704						
LAB IDENTIFICATION CODE			DO						
LABORATORY SAMPLE ID			91-8048-04						
ANALYSIS METHOD			SOP: ACL-155						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE			04/04/91	04/04/91	04/04/91	04/04/91			
ANALYSIS TIME			14:03	14:50	15:34	16:18			
	KNOWN VALUE	FLAG							
ACETONE	5.08	C	4.80	4.80	4.80	4.70	94.00%	1.05%	3.09%
CARBON TETRACHLORIDE	3.10	C							
METHYLENE CHLORIDE	1.98	C							
1,1,1-TRICHLOROETHANE	10.60	C							
TRICHLOROETHENE	7.20	C							
BENZENE	5.28								
CHLOROBENZENE	8.75								
CHLOROFORM	4.12								
ETHYL BENZENE	7.52								
METHANOL	4.08		4.60	4.80	4.70	4.70	115.20%	1.74%	-1.61%
FREON 113	10.40								
p-XYLENE	6.03								
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?							
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?							
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?							
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?							
TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-6

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04703					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-03					
ANALYSIS METHOD			SOP: ACL-154					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/03/91	04/03/91	04/04/91	04/04/91		
ANALYSIS TIME			17:20	17:55	10:54	11:41		
	KNOWN VALUE	FLAG						
CARBON_TETRACHLORIDE	284.0	C	300.0	301.0	280.0	300.0	103.96%	3.45%
METHYLENE_CHLORIDE	1204.0	C	850.0	850.0	840.0	860.0	70.60%	0.96%
1,1,2,2-TETRACHLOROETHANE	18.0	C	21.0	21.0	21.0	21.0	116.67%	0.00%
TRICHLOROETHENE	303.0	C	290.0	290.0	290.0	280.0	94.88%	1.74%
1,1,1-TRICHLOROETHANE	473.0	C	500.0	550.0	560.0	490.0	110.99%	6.69%
1-BUTANOL	14.2							
4-METHYL-2-PENTANONE	15.3							
TETRACHLOROETHENE	75.0		76.0	77.0	75.0	76.0	101.33%	1.07%
FREON 113	632.0		550.0	560.0	530.0	540.0	86.23%	2.37%
TRICHLOROFLUOROMETHANE	1018.0		1000.0	1000.0	1000.0	1000.0	98.23%	0.00%
TOLUENE	112.0		110.0	110.0	110.0	110.0	98.21%	0.00%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
2-BUTANONE	100	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?	0.6	0.6	0.5	0.5		
1,2-DICHLOROETHANE	1	?						
1,1DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHANOL	100	?						
1,3,5-TRIMETHYLBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
HEXANE	1	?						

TABLE E-7

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04703					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-03					
ANALYSIS METHOD			SOP: ACL-155					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/03/91	04/03/91	04/03/91	04/03/91		
ANALYSIS TIME			15:20	16:01	16:42	17:23		
	KNOWN VALUE	FLAG						
CARBON_TETRACHLORIDE	284.0	C						
METHYLENE_CHLORIDE	1204.0	C						
1,1,2,2-TETRACHLOROETHANE	18.0	C						
TRICHLOROETHENE	303.0	C						
1,1,1-TRICHLOROETHANE	473.0	C						
1-BUTANOL	14.2		21.0	20.0	20.0	20.0	142.61%	2.47%
4-METHYL-2-PENTANONE	15.3		17.0	18.0	17.0	18.0	114.38%	3.30%
TETRACHLOROETHENE	75.0							
FREON 113	632.0							
TRICHLOROFLUOROMETHANE	1018.0							
TOLUENE	112.0							
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
2-BUTANONE	100	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHANOL	100	?	0.84	0.65	0.72	0.61	0.71%	14.30%
1,3,5-TRIMETHYLBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
HEXANE	1	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-8

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04707					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-05					
ANALYTICAL METHOD			SOP: ACL-154					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/03/91	04/03/91	04/03/91	04/03/91		
ANALYSIS TIME			13:34	14:24	15:04	15:46		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6							
2-BUTANONE	400							
METHANOL	172							
4-METHYL-2-PENTANONE	14.95							
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?	0.37	0.4	0.39	0.4	39.00%	3.63%
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?	0.99	0.99	1	1.1	102.00%	5.25%
1,1,2,2-TETRACHLOROETHANE	1	?						
TETRACHLOROETHENE	1	?	0.22	0.22	0.23	0.23	22.50%	2.57%
TRICHLOROETHENE	1	?	0.61	0.63	0.64	0.65	63.25%	2.70%
1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0.53	0.55	0.55	0.56	54.75%	2.30%
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?	0.98	0.97	0.98	1	98.25%	1.28%
1,1,1-TRICHLOROETHANE	1	?	0.59	0.62	0.6	0.63	61.00%	2.99%
TOLUENE	1	?	0.26	0.27	0.26	0.26	26.25%	1.90%

FLAGS:
C = CRITICAL TARGET COMPOUND
? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-9

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04707					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-05					
ANALYTICAL METHOD			SOP: ACL-155					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/02/91	04/02/91	04/02/91	04/02/91		
ANALYSIS TIME			15:25	16:07	16:48	17:29		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6		14	15	16	14	101.03%	6.49%
2-BUTANONE	400		300	320	320	320	78.75%	3.17%
METHANOL	172		140	150	150	150	85.76%	3.39%
4-METHYL-2-PENTANONE	14.95		16	15	15	15	102.01%	3.28%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?						
1,1,2,2-TETRACHLOROETHANE	1	?						
TETRACHLOROETHENE	1	?						
TRICHLOROETHENE	1	?						
1,1,2-CL3-1,2,2-F3-ETHANE	1	?						
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?						
1,1,1-TRICHLOROETHANE	1	?						
TOLUENE	1	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE E-10

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04707					
LAB IDENTIFICATION CODE			DO					
LABORATORY SAMPLE ID			91-8048-05					
ANALYTICAL METHOD			SOP: ACL-155; DILUTION FOR 2-BUTANONE ONLY					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			04/03/91	04/03/91	04/03/91	04/03/91		
ANALYSIS TIME			10:58	11:39	12:20	12:58		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6		9.9	8.6	8.6	6.3	57.19%	17.94%
2-BUTANONE	400		380	380	390	390	96.25%	1.50%
METHANOL	172		150	140	150	150	85.76%	3.39%
4-METHYL-2-PENTANONE	14.95		14	14	14	14	93.65%	0.00%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?						
1,1,2,2-TETRACHLOROETHANE	1	?						
TETRACHLOROETHENE	1	?						
TRICHLOROETHENE	1	?						
1,1,2-CL3-1,2,2-F3-ETHANE	1	?						
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?						
1,1,1-TRICHLOROETHANE	1	?						
TOLUENE	1	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

Appendix F

Lab ZL - VOC Analyses

No special scoring considerations were used.

TABLE F-1
WIPP PDP SCORE

LABORATORY: ZL
ANALYSIS TYPE: VOCs
METHOD: MODIFIED TO2 + DIRECT MeOH INJECTION

STANDARD NO.:	CC12776		CC12776		CC62359		CC81225		CC63474	
CANISTER NO.:	04438		04702		04442		04706		04699	
COMMENT:	Low Conc.		Low Conc. Duplicate		High Conc.		Alcohols & Ketones		Blank	
No. of CTCs Present:	5		5		5		0		0	
No. of CTCs Reported:	5		5		5		0			
No. CTCs Failing RPA:	0		0		1					
No. CTCs Failing RSD:	0		0		0					
No. CTCs Failing RPD:			0							
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	6	90	5	50	4	40	0	0
No. of TCs Reported:	6	60	6	90	5	50	3	30		0
No. TCs Failing RPA:	0	0	0	0	0	0	0	0		0
No. TCs Failing RSD:	0	0	0	0	0	0	0	0		0
No. TCs Failing RPD:			0	0						
No. of TICs Present:	0	0	0	0	1	5	0	0	0	0
No. of TICs Reported:	0	0	0	0	1	5	0	0		0
No. of CTCs Reported in Blank > 0.5 * PRQL:	NA		NA		NA		NA		0	0
No. of TCs Reported in Blank > 0.5 * PRQL:	NA		NA		NA		NA		1	-1
Subtotal for Blank:										60
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0	1	-1	6	-6	NA	
TOTALS:		60		90		54		24		60
MAXIMUM POINTS:		306								
SCORE:		0.94								

PLUS 1 FAILURES FOR CTCs
OF 31 OPPORTUNITIES: 3.23%

TABLE F-2

STANDARD NUMBER	CC12776		CC12776					
CANISTER NUMBER			04438					
LAB IDENTIFICATION CODE			ZL					
LABORATORY SAMPLE ID			XI-03-100-01A					
ANALYSIS METHOD			MODIFIED TO2 + MeOH DIRECT INJECTION					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE								
ANALYSIS TIME								
	KNOWN VALUE	FLAG						
ACETONE	5.08	C	5.70	7.40	6.30	5.60	123.03%	13.23%
CARBON TETRACHLORIDE	3.10	C	3.50	3.50	3.50	3.50	112.90%	0.00%
METHYLENE CHLORIDE	1.98	C	2.80	2.50	2.30	2.30	125.00%	9.55%
1,1,1-TRICHLOROETHANE	10.60	C	11.30	11.80	11.30	11.30	107.78%	2.19%
TRICHLOROETHENE	7.20	C	8.50	8.60	8.40	8.50	118.06%	0.96%
BENZENE	5.28		5.10	5.40	5.30	5.20	99.43%	2.46%
CHLOROBENZENE	8.75		9.90	10.40	9.60	10.20	114.57%	3.49%
CHLOROFORM	4.12		4.50	4.60	4.40	4.40	108.62%	2.14%
ETHYL BENZENE	7.52		7.50	7.90	7.10	7.70	100.40%	4.52%
METHANOL	4.08							
FREON 113	10.40		11.60	11.70	11.60	11.50	111.54%	0.70%
p-XYLENE	6.03		6.50	6.90	6.10	6.60	108.21%	5.06%
BROMOFORM	1.00	?						
1-BUTANOL	100.00	?		0.90	0.50		0.70%	40.41%
2-BUTANONE	100.00	?						
CYCLOHEXANE	1.00	?						
1,1-DICHLOROETHANE	1.00	?						
1,2-DICHLOROETHANE	1.00	?						
1,1-DICHLOROETHENE	1.00	?						
cis-DICHLOROETHENE	1.00	?						
ETHYL ETHER	1.00	?						
4-METHYL-2-PENTANONE	100.00	?						
1,1,2,2-TETRACHLOROETHANE	1.00	?						
TETRACHLOROETHENE	1.00	?						
1,3,5-TRIMETHYLBENZENE	1.00	?						
1,2,4-TRIMETHYLBENZENE	1.00	?						
m-XYLENE	1.00	?						
o-XYLENE	1.00	?						
TRICHLOROFLUROMETHANE	1.00	?						
TOLUENE	1.00	?		0.20	0.30	0.20	23.33%	24.74%

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE F-3

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04702						
LAB IDENTIFICATION CODE			ZL						
LABORATORY SAMPLE ID			XI-03-100-02A						
ANALYSIS METHOD			MODIFIED TO2 + MeOH DIRECT INJECTION						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE									
ANALYSIS TIME									
	KNOWN VALUE	FLAG							
ACETONE	5.08	C	5.70	5.60	5.70	6.00	113.19%	3.01%	8.33%
CARBON TETRACHLORIDE	3.10	C	3.50	3.60	3.60	3.60	115.32%	1.40%	-2.12%
METHYLENE CHLORIDE	1.98	C	2.20	2.40	2.40	2.40	118.69%	4.26%	5.18%
1,1,1-TRICHLOROETHANE	10.60	C	11.40	10.70	10.90	10.70	103.07%	3.02%	4.47%
TRICHLOROETHENE	7.20	C	8.50	8.10	8.20	8.10	114.24%	2.30%	3.29%
BENZENE	5.28		5.20	5.20	5.40	5.40	100.38%	2.18%	-0.95%
CHLOROBENZENE	8.75		10.20	9.70	10.10	9.40	112.57%	3.75%	1.76%
CHLOROFORM	4.12		4.30	4.60	4.70	4.60	110.44%	3.81%	-1.66%
ETHYL BENZENE	7.52		7.70	7.20	7.40	6.90	97.07%	4.61%	3.37%
METHANOL	4.08								
FREON 113	10.40		11.20	10.70	10.90	10.70	104.57%	2.17%	6.45%
p-XYLENE	6.03		6.60	6.40	6.60	6.30	107.38%	2.32%	0.77%
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?	0.00	0.80	0.70	0.60	0.53%	68.46%	28.57%
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?							
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?							
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?							
TOLUENE	1.00	?	0.20	0.10	0.20	0.20	17.50%	28.57%	28.57%

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE F-4

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04442					
LAB IDENTIFICATION CODE			ZL					
LABORATORY SAMPLE ID			XI-03-100-03A					
ANALYSIS METHOD			MODIFIED TO2 + MeOH DIRECT INJECTION					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE								
ANALYSIS TIME								
	KNOWN VALUE	FLAG						
CARBON_TETRACHLORIDE	284.0	C	291.0	302.0	302.8	281.7	103.65%	3.40%
METHYLENE_CHLORIDE	1204.0	C	852.9	783.8	851.3	789.5	68.05%	4.62%
1,1,2,2-TETRACHLOROETHANE	18.0	C	16.9	17.2	17.3	17.6	95.83%	1.67%
TRICHLOROETHENE	303.0	C	295.0	283.5	302.1	277.9	95.59%	3.78%
1,1,1-TRICHLOROETHANE	473.0	C	447.9	467.5	471.6	438.9	96.51%	3.42%
1-BUTANOL	14.2		16.1	16.0	16.3	16.9	114.96%	2.47%
4-METHYL-2-PENTANONE	15.3		13.7	13.8	14.1	14.2	91.18%	1.71%
TETRACHLOROETHENE	75.0		77.7	73.1	75.7	70.6	99.03%	4.16%
FREON 113	632.0		664.4	631.3	657.4	625.0	101.98%	2.99%
TRICHLOROFLUOROMETHANE	1018.0		1183.0	1200.0	1200.0	1144.0	116.09%	2.23%
TOLUENE	112.0		112.4	99.5	108.9	100.4	94.02%	6.03%
ACETONE	100	?						
BENZENE	1	?	1.1	0.9	1.0	1.0		
BROMOFORM	1	?						
2-BUTANONE	100	?	0.6	0.6	0.6	0.6		
CHLOROBENZENE	1	?						
CHLOROFORM	1	?	0.2	0.2	0.3	0.3	25.00%	23.09%
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?	0.4	0.4	0.4	0.4	40.00%	0.00%
1,2-DICHLOROETHANE	1	?						
1,1DICHLOROETHENE	1	?	4.9	4.9	4.9	5.3		
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHANOL	100	?						
1,3,5-TRIMETHYLBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?	0.1	0.1	0.1	0.1	10.00%	0.00%
HEXANE	1	?						

TABLE F-5

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04706					
LAB IDENTIFICATION CODE			ZL					
LABORATORY SAMPLE ID			W1-03-100-04A					
ANALYTICAL METHOD			MODIFIED TO2 + DIRECT MeOH INJECTION					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE								
ANALYSIS TIME								
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6		13.8	14.1	14.2	14	96.06%	1.22%
2-BUTANONE	400		326.8	324.8	335.2	309.8	81.04%	3.26%
METHANOL	172							
4-METHYL-2-PENTANONE	14.95		13.2	12.5	12.7	12.8	85.62%	2.30%
ACETONE	100	?	0.8	1.3	1.2	1.3	1.15%	20.70%
BENZENE	1	?	0.7	1.1	1.2	1.1	102.50%	21.63%
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?	1.1	0.9	1	0.9	97.50%	9.82%
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?	2.1	2.4	2.4	2.4	232.50%	6.45%
1,1,2,2-TETRACHLOROETHANE	1	?	0.1	0.1	0.1	0.1	10.00%	0.00%
TETRACHLOROETHENE	1	?	0.3	0.4	0.4	0.4	37.50%	13.33%
TRICHLOROETHENE	1	?	1.3	1.3	1.3	1.2	127.50%	3.92%
1,1,2-CL3-1,2,2-F3-ETHANE	1	?	1.6	1.6	1.6	1.7	162.50%	3.08%
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?	0.1	0.1	0.1	0.1	10.00%	0.00%
TRICHLOROFLUOROMETHANE	1	?	13	14	14	14	1375.00%	3.64%
1,1,1-TRICHLOROETHANE	1	?	1.8	1.6	1.7	1.6	167.50%	5.72%
TOLUENE	1	?	0.6	0.7	0.8	0.7	70.00%	11.66%

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

Appendix G

Lab VG - VOC Analyses

No special scoring considerations were utilized.

Two of the CTC failures were for failure to quantitate trichloroethene within the acceptance criteria.

This lab had a higher than average incidence of false positive results.

TABLE G-1
WIPP PDP SCORE

LABORATORY: VG
ANALYSIS TYPE: VOCs METHOD: 3230.4A

STANDARD NO.:	CC12776	CC12776	CC62359	CC81225	CC63474
CANISTER NO.:	04437	04229	04714	04433	04713
COMMENT:	Low Conc.	Low Conc. Duplicate	High Conc.	Alcohols & Ketones	Blank
No. of CTCs Present:	5	5	5	0	0
No. of CTCs Reported:	5	5	5	0	0
No. CTCs Failing RPA:	0	1	2		
No. CTCs Failing RSD:	0	0	0		
No. CTCs Failing RPD:		0			

		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	6	90	4	40	2	20	0	0
No. of TCs Reported:	6	60	6	90	4	40	2	20	0	0
No. TCs Failing RPA:	1	-5	1	-5	2	-10	1	-5		0
No. TCs Failing RSD:	0	0	0	0	1	-5	0	0		0
No. TCs Failing RPD:			0	0						
No. of TICs Present:	0	0	0	0	1	5	0	0	0	0
No. of TICs Reported:	0	0	0	0	1	5	0	0	0	0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0	1	-1	1	-1		NA
TOTALS:		55		85		29		14		61
MAXIMUM POINTS:		276								
SCORE:		0.88								

PLUS 3 FAILURES FOR CTCs
OF 31 OPPORTUNITIES: 9.68%

TABLE G-2

STANDARD NUMBER	CC12776		CC12776					
CANISTER NUMBER			04437					
LAB IDENTIFICATION CODE			VG					
LABORATORY SAMPLE ID								
ANALYSIS METHOD			SOP 3230.4A					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/18/91	03/18/91	03/18/91	03/19/91		
ANALYSIS TIME			12:58	14:06	15:13	10:02		
	KNOWN VALUE	FLAG						
ACETONE	5.08	C	6.30	6.70	6.70	6.30	127.95%	3.55%
CARBON TETRACHLORIDE	3.10	C	3.70	3.80	4.00	4.10	125.81%	4.68%
METHYLENE CHLORIDE	1.98	C	1.80	2.10	2.00	2.00	99.75%	6.37%
1,1,1-TRICHLOROETHANE	10.60	C	9.30	9.90	9.30	10.00	90.80%	3.92%
TRICHLOROETHENE	7.20	C	5.00	5.40	5.20	5.20	72.22%	3.14%
BENZENE	5.28		4.40	4.70	4.40	4.70	86.17%	3.81%
CHLOROBENZENE	8.75		12.00	13.00	12.00	12.00	140.00%	4.08%
CHLOROFORM	4.12		3.90	4.10	3.90	4.30	98.30%	4.73%
ETHYL BENZENE	7.52		6.90	7.40	7.10	6.90	94.08%	3.34%
METHANOL	4.08		29.00	29.00	30.00	28.00	710.78%	2.82%
FREON 113	10.40		8.30	9.10	8.60	9.20	84.62%	4.82%
p-XYLENE	6.03		7.10	7.40	7.40	7.10	120.23%	2.39%
BROMOFORM	1.00	?						
1-BUTANOL	100.00	?						
2-BUTANONE	100.00	?						
CYCLOHEXANE	1.00	?						
1,1-DICHLOROETHANE	1.00	?						
1,2-DICHLOROETHANE	1.00	?						
1,1-DICHLOROETHENE	1.00	?	0.25	0.25	0.25	0.25	25.00%	0.00%
cis-DICHLOROETHENE	1.00	?						
ETHYL ETHER	1.00	?						
4-METHYL-2-PENTANONE	100.00	?						
1,1,2,2-TETRACHLOROETHANE	1.00	?						
TETRACHLOROETHENE	1.00	?						
1,3,5-TRIMETHYLBENZENE	1.00	?						
1,2,4-TRIMETHYLBENZENE	1.00	?						
m-XYLENE	1.00	?						
o-XYLENE	1.00	?						
TRICHLOROFLUROMETHANE	1.00	?						
TOLUENE	1.00	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE G-3

STANDARD NUMBER	CC12776		CC12776						
CANISTER NUMBER			04429						
LAB IDENTIFICATION CODE			VG						
LABORATORY SAMPLE ID									
ANALYSIS METHOD			SOP 3230.4A						
REPLICATE			1	2	3	4	RPA	RSD	RPD
ANALYSIS DATE			03/21/91	03/21/91	03/21/91	03/22/91			
ANALYSIS TIME			14:42	16:10	17:23	10:13			
	KNOWN VALUE	FLAG							
ACETONE	5.08	C	6.30	6.30	5.90	6.30	122.05%	3.23%	4.72%
CARBON TETRACHLORIDE	3.10	C	4.00	4.00	4.00	4.10	129.84%	1.24%	-3.15%
METHYLENE CHLORIDE	1.98	C	2.20	2.20	2.10	3.20	122.47%	21.39%	-20.45%
1,1,1-TRICHLOROETHANE	10.60	C	9.30	9.70	9.20	10.00	90.09%	3.87%	0.78%
TRICHLOROETHENE	7.20	C	4.80	5.00	4.80	5.40	69.44%	5.66%	3.92%
BENZENE	5.28		4.40	4.40	4.10	4.40	81.91%	3.47%	5.07%
CHLOROBENZENE	8.75		12.00	12.00	12.00	12.00	137.14%	0.00%	2.06%
CHLOROFORM	4.12		3.70	3.90	3.50	4.10	92.23%	6.79%	6.37%
ETHYL BENZENE	7.52		6.90	7.10	6.70	6.90	91.76%	2.37%	2.50%
METHANOL	4.08		24.00	30.00	28.00	25.00	655.64%	10.29%	8.07%
FREON 113	10.40		8.10	8.10	7.90	9.20	80.05%	7.10%	5.55%
p-XYLENE	6.03		7.10	7.60	6.90	7.40	120.23%	4.29%	0.00%
BROMOFORM	1.00	?							
1-BUTANOL	100.00	?							
2-BUTANONE	100.00	?							
CYCLOHEXANE	1.00	?							
1,1-DICHLOROETHANE	1.00	?							
1,2-DICHLOROETHANE	1.00	?							
1,1-DICHLOROETHENE	1.00	?	0.25	0.25	0.22	0.24	24.00%	5.89%	4.08%
cis-DICHLOROETHENE	1.00	?							
ETHYL ETHER	1.00	?							
4-METHYL-2-PENTANONE	100.00	?							
1,1,2,2-TETRACHLOROETHANE	1.00	?							
TETRACHLOROETHENE	1.00	?	0.05	0.05	0.05	0.03	4.33%	24.79%	ERR
1,3,5-TRIMETHYLBENZENE	1.00	?							
1,2,4-TRIMETHYLBENZENE	1.00	?							
m-XYLENE	1.00	?							
o-XYLENE	1.00	?							
TRICHLOROFLUROMETHANE	1.00	?	0.43	0.33	0.65	0.00	35.25%	76.70%	ERR
TOLUENE	1.00	?							

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

TABLE G-4

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04714					
LAB IDENTIFICATION CODE			VG					
LABORATORY SAMPLE ID								
ANALYSIS METHOD			SOP 3230.4A					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/20/91	03/20/91	03/21/91	03/21/91		
ANALYSIS TIME			16:32	17:44	10:04	11:13		
	KNOWN VALUE	FLAG						
CARBON_TETRACHLORIDE	284.0	C	320.0	320.0	330.0	330.0	114.44%	1.78%
METHYLENE_CHLORIDE	1204.0	C	720.0	750.0	630.0	630.0	56.69%	9.06%
1,1,2,2-TETRACHLOROETHANE	18.0	C	20.0	20.0	25.0	26.0	126.39%	14.07%
TRICHLOROETHENE	303.0	C	180.0	170.0	180.0	180.0	58.58%	2.82%
1,1,1-TRICHLOROETHANE	473.0	C	400.0	400.0	380.0	380.0	82.45%	2.96%
1-BUTANOL	14.2		530.0	530.0	170.0	240.0	2588.03%	51.65%
4-METHYL-2-PENTANONE	15.3		22.0	21.0	19.0	18.0	130.72%	9.13%
TETRACHLOROETHENE	75.0		68.0	66.0	75.0	75.0	94.67%	6.61%
FREON 113	632.0		510.0	530.0	460.0	480.0	78.32%	6.28%
TRICHLOROFLUOROMETHANE	1018.0		590.0	610.0	550.0	580.0	57.22%	4.29%
TOLUENE	112.0		100.0	100.0	100.0	110.0	91.52%	4.88%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
2-BUTANONE	100	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1DICHLOROETHENE	1	?	10.0	11.0	10.0	11.0	1050.00%	5.50%
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHANOL	100	?						
1,3,5-TRIMETHYLBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
HEXANE	1	?	12.0	21.0	14.0	14.0	1525.00%	25.89%

TABLE G-4

STANDARD NUMBER	CC62359		CC62359					
CANISTER NUMBER			04714					
LAB IDENTIFICATION CODE			VG					
LABORATORY SAMPLE ID								
ANALYSIS METHOD			SOP 3230.4A					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/20/91	03/20/91	03/21/91	03/21/91		
ANALYSIS TIME			16:32	17:44	10:04	11:13		
	KNOWN VALUE	FLAG						
	284.0						114.44%	
CARBON_TETRACHLORIDE	~~384.0~~	C	320.0	320.0	330.0	330.0	~~84.64~~%	1.78%
METHYLENE_CHLORIDE	1204.0	C	720.0	750.0	630.0	630.0	56.69%	9.06%
1,1,2,2-TETRACHLOROETHANE	18.0	C	20.0	20.0	25.0	26.0	126.39%	14.07%
TRICHLOROETHENE	303.0	C	180.0	170.0	180.0	180.0	58.58%	2.82%
1,1,1-TRICHLOROETHANE	473.0	C	400.0	400.0	380.0	380.0	82.45%	2.96%
	14.2						2588.03%	
1-BUTANOL	~~162.0~~		530.0	530.0	170.0	240.0	~~258.80~~%	51.65%
4-METHYL-2-PENTANONE	15.3		22.0	21.0	19.0	18.0	130.72%	9.13%
TETRACHLOROETHENE	75.0		68.0	66.0	75.0	75.0	94.67%	6.61%
FREON 113	632.0		510.0	530.0	460.0	480.0	78.32%	6.28%
TRICHLOROFLUOROMETHANE	1018.0		590.0	610.0	550.0	580.0	57.22%	4.29%
TOLUENE	112.0		100.0	100.0	100.0	110.0	91.52%	4.88%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
2-BUTANONE	100	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1DICHLOROETHENE	1	?	10.0	11.0	10.0	11.0	1050.00%	5.50%
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHANOL	100	?						
1,3,5-TRIMETHYLBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
HEXANE	1	?	12.0	21.0	14.0	14.0	1525.00%	25.89%

TABLE G-5

STANDARD NUMBER	CC81225		CC81225					
CANISTER NUMBER			04433					
LAB IDENTIFICATION CODE			VG					
LABORATORY SAMPLE ID								
ANALYTICAL METHOD			SOP 3230.4A					
REPLICATE			1	2	3	4	RPA	RSD
ANALYSIS DATE			03/20/91	03/20/91	03/20/91	03/20/91		
ANALYSIS TIME			10:14	11:27	12:45	13:57		
	KNOWN VALUE	FLAG						
1-BUTANOL	14.6		590	590	530	660	4058.22%	8.97%
2-BUTANONE	400		410	440	440	470	110.00%	5.57%
METHANOL	172		680	660	650	670	386.63%	1.94%
4-METHYL-2-PENTANONE	14.95		16	16	18	6.6	94.65%	36.19%
ACETONE	100	?						
BENZENE	1	?						
BROMOFORM	1	?						
CARBON_TETRACHLORIDE	1	?						
CHLOROBENZENE	1	?						
CHLOROFORM	1	?						
CYCLOHEXANE	1	?						
1,1-DICHLOROETHANE	1	?						
1,2-DICHLOROETHANE	1	?						
1,1-DICHLOROETHENE	1	?						
cis-DICHLOROETHENE	1	?						
ETHYL_BENZENE	1	?						
ETHYL_ETHER	1	?						
METHYLENE_CHLORIDE	1	?	11	2	0.9	2.5	410.00%	113.37%
1,1,2,2-TETRACHLOROETHANE	1	?						
TETRACHLOROETHENE	1	?						
TRICHLOROETHENE	1	?						
1,1,2-CL3-1,2,2-F3-ETHANE	1	?						
1,3,5-TRIMETHLYBENZENE	1	?						
1,2,4-TRIMETHYLBENZENE	1	?						
m-XYLENE	1	?						
o-XYLENE	1	?						
p-XYLENE	1	?						
TRICHLOROFLUOROMETHANE	1	?						
1,1,1-TRICHLOROETHANE	1	?						
TOLUENE	1	?						

FLAGS:

C = CRITICAL TARGET COMPOUND

? = COMPOUND ABSENT; VALUE IS PRQL

Table 0

Laboratory Code Identification

Laboratory	Analysis	Code
INEL	VOCs	CA
ANL-E	VOCs	DO
WIPP/IT	VOCs	ZL
EPA - Region 7	VOCs	VG
RFP	VOCs	OS
ANL-W	Gases	CK
ANL-E	Gases	MD
WIPP/IT	Gases	HE
EPA/MVEL	Gases	BT

Contract Number 68D90170

WIPP Experimental Waste Characterization Program

Performance Demonstration Program

Scoring Report - September 1991 Distribution

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Work Assignment Manager

November 1991

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - September 1991 Distribution

This report contains the results of the second cycle of blind sample distributions to laboratories participating in the Performance Demonstration Program for WIPP Waste Characterization. The distribution consisted of sets of canisters of simulated headspace gases of known composition. Separate sets were distributed for volatile organic compounds (VOCs) and for inorganic and permanent gases (Gases). Tables 1 and 2 list the canister identification numbers, their contents, and recipients. Canisters were received by the laboratories on September 23, 1991 and all data were to be returned on or before October 23 1991. One laboratory was unable to respond by the due date, and two laboratories submitted incomplete data.

All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 1. This report consists of a summary of the results and separate appendices detailing each laboratory's performance. The appendices consist of a summary discussion and two kinds of tables. Data tables give the results of individual analyses and the calculated RPA, RSD and RPD (where applicable) for each analyte. A separate scoring table is included for each analytical method for which the laboratories sought approval for use in the WIPP Experimental Waste Characterization Program.

The appendices are suitable for attachment to the letters to individual laboratories notifying them of their pass/fail status.

Summary of Results

Table 3 summarizes the Pass/Fail status of the laboratories. Only a single laboratory passed for Gas analysis. Three laboratories passed for VOC analysis. Two of these laboratories were able to qualify two different methods.

The laboratory which submitted data but failed to qualify for VOC analysis failed on the basis of being unable to quantitate critical target compounds.

The laboratories which failed to qualify for Gas analysis generally failed on the basis of being unable to quantitate critical target analyte gases; although two labs also failed the general scoring criteria for other (i.e. non-critical) target analytes.

Interpretation of the Appendix Tables

The data contained in the tables of the attached Appendices are straightforward. The terms RPA, RSD and RPD are as defined in the Performance Demonstration Program Plan. RPA is the Relative Percent Accuracy and is calculated as a percent recovery of the known value. RSD is the Relative Standard Deviation calculated as the sample standard deviation from the replicate data submitted for each analyte. RPD is the Relative Percent Difference and is used only when duplicate canisters were submitted for analysis. Pass/Fail criteria are given in Table 4.

Data tables in the Appendices each have a column listing the known values for the analytes. On the data tables an entry "C" next to the column of known values indicates a critical target compound (CTC) or critical target analyte gas (CTAG). An entry of "?" next to this column indicates that the analyte was not added to the canister. In this case, the numerical value in the column is the PRQL or PRDL against which any lab data are compared. The remaining entries on the tables are self-evident or discussed in the individual appendix.

Table 1

VOC Canister Identification

Lab	Low Conc. CC102652	High Conc. CC102273	Flammables CC102641	Balance N_2 CC63474
CA	04437	04705 04703	10844	04429
DO	04441	04432 04433	10841	04435
ZL	04442	04700 04702	10842	04428
VG	04440	04711 04710	10845	04699
OS	04706	04427 04431	10840	04438

Table 2

Gas Canister Identification

Lab	Low Conc. CC102194	High Conc. CC78945	Interference Test CC102192	Balance N_2 CC63474	Special NOx CC102490
CK	04676	04672 04679	04696	10851	04683
MD	10847	04667 04664	04697	04678	04666
HE	10846	04677 04665	04694	10850	04691
BT	04704	10843 04713	~~04615~~ 4715	04707	04714
HR	10849	04692 04663	04673	10848	04669

Table 3

Pass/Fail Summary

Lab	Analysis	Status	Comments
CK (GC)	Gas	Pass	0 CTAG failures, 0.97 score
CK (Colorimetry)	NOx	Pass	0 CTAG failures, 1.00 score
MD	Gas	Fail	4 CTAG failures, O.79 score
HE	Gas	Fail	6 CTAG failures, 0.49 score
BT	Gas	Fail	10 CTAG failures, 0.64 score
HR	Gas	Fail	2 CTAG failures, 0.88 score
CA (440.1,430.1)	VOC	Pass	0 CTC failures; 1.00 CTC score 1.00 TC score
CA (440.1,430.2)	VOC	Pass	1 CTC failure; 0.97 CTC score 0.95 TC score
DO (ACL-167/154)	VOC	Pass	0 CTC failures, 1.00 CTC score 0.99 TC score
DO (ACL-167/168)	VOC	Pass	0 CTC failures, 1.00 CTC score 0.99 TC score
OS	VOC	Fail	4 CTC failures, 0.90 CTC score 0.94 TC score
VG	VOC	Fail	No data submitted.
ZL	VOC	Pass	2 CTC failures, 0.95 CTC score 0.92 TC score

Table 4

Pass/Fail Criteria

	Gas	NOx	VOC
RPA	90-110%	50-150%	70-130%
RSD	±10%	±20%	±25%
RPD	±10%	±20%	±25%

Appendix A

Lab CK - Gas Analysis

The scoring for the separate NOx canister was included in the scoring for the Interference Test Gas canister.

The scoring for the separate NOx canister was listed separately in Table 3 because the analysis was performed by a completely different, colorimetric method. It was felt that this method should be qualified independently of the GC method used for the balance of the analytes.

WIPP PDP SCORING TABLE

LABORATORY:	CK														
ANALYSIS TYPE:	Gases														
STANDARD NO.:	CC78945			CC78945			CC102194			CC102192 & CC102490			CC63474		
CANISTER NO.:	4672			4679			4676			4696 & 4683			10851		
COMMENT:	High Conc.			High Conc. Duplicate			Low Conc.			Interference & NOx			Blank		
No. of CTAGs Present:	2			2			2			2			0		
No. of CTAGs Reported:	2			2			2			2					
No. CTAGs Failing RPA:															
No. CTAGs Failing RSD:															
No. CTAGs Failing RPD:															
			Points			Points			Points			Points			Points
No. of TAGs Present:	7		70	7		105	7		70	8		80	0		0
No. of TAGs Reported:	7		70	7		105	7		70	8		80			0
No. TAGs Failing RPA:	1		-5	1		-5			0			0			0
No. TAGs Failing RSD:			0			0			0			0			0
No. TAGs Failing RPD:						0									
No. of CTAGs Reported in Blank > 0.7 * PRDL:			NA			NA			NA			NA			0
No. of TAGs Reported in Blank > 0.7 * PRDL:			NA			NA			NA			NA			0
Subtotal for Blank:															50
No. of False CTAGs or TAGs in Spikes > PRDL:			0			0			0			0			NA
TOTALS:			65			100			70			80			50
MAXIMUM POINTS:			375												
SCORE:			0.97	PLUS		0	FAILURES FOR CTAGs								

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4672	4672	4672	4672	4672	4672
LAB IDENTIFICATION CODE			CK	CK	CK	CK	CK	CK
ANALYTICAL METHOD			W0660-0021-	W0660-0021-	W0660-0021-	W0660-0021-KP-00		
SAMPLE_ID			66275	66275	66275	66275		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	77.7		76.1	76.2	76.5	76.3	0.98	0.00
2 OXYGEN	20.5		20.2	20.2	20.2	20.2	0.99	0.00
3 HYDROGEN	0.149	C	0.149	0.151	0.152	0.151	1.01	0.01
4 METHANE	0.404	C	0.4	0.386	0.389	0.388	0.97	0.02
5 ETHANE	0.336		0.328	0.329	0.329	0.328	0.98	0.00
6 PROPANE	0.428		0.447	0.45	0.449	0.445	1.05	0.00
7 NOX	0.01	?	0	0	0	0	0.00	
8 CARBON MONOXIDE	0.0545		0.0567	0.0582	0.0577	0.0585	1.06	0.01
9 CARBON DIOXIDE	0.0315		0.035	0.035	0.035	0.035	1.11	0.00
10 ARGON	0.36		0.338	0.337	0.338	0.338	0.94	0.00

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4679	4679	4679	4679	4679	4679	
LAB IDENTIFICATION CODE			CK	CK	CK	CK	CK	CK	CK
ANALYTICAL METHOD			W0660-0021-	W0660-0021-	W0660-0021-	W0660-0021-KP-00			
SAMPLE_ID			66276	66276	66276	66276			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 NITROGEN	77.7		76	76.4	76.5	76.3	0.98	0.00	0.00
2 OXYGEN	20.5		20.1	20.3	20.3	20.2	0.99	0.00	0.00
3 HYDROGEN	0.149	C	0.152	0.154	0.154	0.155	1.03	0.01	0.02
4 METHANE	0.404	C	0.394	0.389	0.378	0.395	0.96	0.02	0.00
5 ETHANE	0.336		0.326	0.334	0.326	0.331	0.98	0.01	0.00
6 PROPANE	0.428		0.448	0.449	0.448	0.447	1.05	0.00	0.00
7 NOX	0.01	?	0	0	0	0	0.00		
8 CARBON MONOXIDE	0.0545		0.0584	0.0585	0.0582	0.0577	1.07	0.01	0.01
9 CARBON DIOXIDE	0.0315		0.034	0.035	0.036	0.035	1.11	0.02	0.00
10 ARGON	0.36		0.334	0.342	0.341	0.34	0.94	0.01	0.00

STANDARD NUMBER	CC102194		CC102194	CC102194	CC102194	CC102194	CC102194	CC102194
CANISTER NUMBER			4676	4676	4676	4676	4676	4676
LAB IDENTIFICATION CODE			CK	CK	CK	CK	CK	CK
ANALYTICAL METHOD			W0660-0021-	W0660-0021-	W0660-0021-	W0660-0021-KP-00		
SAMPLE_ID			66273	66273	66273	66273		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	97.4		95.7	96.1	95.9	95.9	0.98	0.00
2 OXYGEN	0.304		0.304	0.309	0.297	0.309	1.00	0.02
3 HYDROGEN	0.119	C	0.129	0.126	0.126	0.127	1.07	0.01
4 METHANE	0.429	C	0.419	0.421	0.412	0.417	0.97	0.01
5 ETHANE	0.347		0.344	0.344	0.339	0.341	0.99	0.01
6 PROPANE	0.434		0.457	0.461	0.458	0.453	1.05	0.01
7 NOX	0.01	?	0	0	0	0	0.00	
8 CARBON MONOXIDE	0.0608		0.0605	0.0601	0.0606	0.0611	1.00	0.01
9 CARBON DIOXIDE	0.548		0.52	0.528	0.525	0.525	0.96	0.01
10 ARGON	0.36		0.343	0.344	0.342	0.344	0.95	0.00

STANDARD NUMBER	CC102192		CC102192	CC102192	CC102192	CC102192	CC102192	CC102192
CANISTER NUMBER			4696	4696	4696	4696	4696	4696
LAB IDENTIFICATION CODE			CK	CK	CK	CK	CK	CK
ANALYTICAL METHOD			W0660-0021-	W0660-0021-	W0660-0021-	W0660-0021-KP-00		
SAMPLE_ID			66272	66272	66272	66272		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	96.6		94.5	95	95.4	95.5	0.98	0.00
2 OXYGEN	0.447		0.452	0.452	0.452	0.446	1.01	0.01
3 HYDROGEN	0.437	C	0.446	0.44	0.444	0.446	1.02	0.01
4 METHANE	0.638	C	0.618	0.624	0.625	0.624	0.98	0.01
5 ETHANE	0.402		0.375	0.379	0.384	0.384	0.95	0.01
6 PROPANE	0.196		0.201	0.202	0.204	0.201	1.03	0.01
7 NOX	0.01	?	0	0	0	0	0.00	
8 CARBON MONOXIDE	0.079		0.0789	0.0782	0.0785	0.0796	1.00	0.01
9 CARBON DIOXIDE	0.693		0.656	0.661	0.661	0.66	0.95	0.00
10 ARGON	0.37		0.356	0.359	0.361	0.359	0.97	0.01

STANDARD NUMBER	CC102490		CC102490	CC102490	CC102490	CC102490	CC102490	CC102490
CANISTER NUMBER			4683	4683	4683	4683	4683	4683
LAB IDENTIFICATION CODE			CK	CK	CK	CK	CK	CK
ANALYTICAL METHOD			W0630-0005-	W0630-0005-	W0630-0005-	W0630-0005-KP-00		
SAMPLE_ID			6277	6277	6277	6277		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	99.898		0	0	0	0	0.00	
2	OXYGEN	0.1	?	0	0	0	0	0.00	
3	HYDROGEN	0.1	C	0	0	0	0	0.00	
4	METHANE	0.1	C	0	0	0	0	0.00	
5	ETHANE	0.1	?	0	0	0	0	0.00	
6	PROPANE	0.1	?	0	0	0	0	0.00	
7	NOX	0.102		0.1054	0.1005	0.0998	0.1039	1.00	0.03
8	CARBON MONOXIDE	0.01	?	0	0	0	0	0.00	
9	CARBON DIOXIDE	0.1	?	0	0	0	0	0.00	
10	ARGON	0.1	?	0	0	0	0	0.00	

Appendix B

Lab MD - Gas Analysis

The scoring for the separate NOx canister was included in the scoring for the Interference Test Gas canister.

No other special scoring was required.

WIPP PDP SCORING TABLE

LABORATORY:	MD									
ANALYSIS TYPE:	Gases									
STANDARD NO.:	CC78945		CC78945		CC102194		CC102192 & CC102490		CC63474	
CANISTER NO.:	4667		4664		10847		4697 & 4666		4678	
COMMENT:	High Conc.		High Conc. Duplicate		Low Conc.		Interference & NOx		Blank	
No. of CTAGs Present:	2		2		2		2		0	
No. of CTAGs Reported:	2		2		2		2			
No. CTAGs Failing RPA:	1		1		1		1			
No. CTAGs Failing RSD:										
No. CTAGs Failing RPD:										
		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	8	80	0	0
No. of TAGs Reported:	7	70	7	105	7	70	8	80		0
No. TAGs Failing RPA:	5	-25	6	-30	2	-10	3	-15		0
No. TAGs Failing RSD:		0		0		0		0		0
No. TAGs Failing RPD:				0						
No. of CTAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		NA
TOTALS:		45		75		60		65		50
MAXIMUM POINTS:		375								
SCORE:		0.79	PLUS	4	FAILURES FOR CTAGs					

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4667	4667	4667	4667	4667	4667
LAB IDENTIFICATION CODE			MD	MD	MD	MD	MD	MD
ANALYTICAL METHOD			MS	MS	MS	MS		
SAMPLE_ID			91-8106-03	91-8106-03	91-8106-03	91-8106-03		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	77.7		77.3	77.3	77.2	77.3	0.99	0.00
2	OXYGEN	20.5		20.5	20.6	20.6	20.5	1.00	0.00
3	HYDROGEN	0.149	C	0.19	0.194	0.194	0.191	1.29	0.01
4	METHANE	0.404	C	0.402	0.406	0.405	0.403	1.00	0.00
5	ETHANE	0.336		0.53	0.529	0.532	0.532	1.58	0.00
6	PROPANE	0.428		0.634	0.634	0.636	0.635	1.48	0.00
7	NOX	0.01	?	0.0012	0.0011	0.001	0.0012	0.11	0.09
8	CARBON MONOXIDE	0.0545		0.0109	0.006	0.006	0.006	0.13	0.34
9	CARBON DIOXIDE	0.0315		0.0282	0.0248	0.0236	0.023	0.79	0.09
10	ARGON	0.36		0.354	0.354	0.354	0.353	0.98	0.00

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4664	4664	4664	4664	4664	4664	
LAB IDENTIFICATION CODE			MD	MD	MD	MD	MD	MD	MD
ANALYTICAL METHOD			MS	MS	MS	MS			
SAMPLE_ID			91-8106-01	91-8106-01	91-8106-01	91-8106-01			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 NITROGEN	77.7		77.3	77.3	77.3	77.3	0.99	0.00	0.00
2 OXYGEN	20.5		20.5	20.5	20.5	20.6	1.00	0.00	0.00
3 HYDROGEN	0.149	C	0.197	0.195	0.191	0.194	1.30	0.01	0.01
4 METHANE	0.404	C	0.404	0.403	0.403	0.405	1.00	0.00	0.00
5 ETHANE	0.336		0.531	0.534	0.534	0.536	1.59	0.00	0.01
6 PROPANE	0.428		0.633	0.636	0.634	0.635	1.48	0.00	0.00
7 NOX	0.01	?	0.0003	0.0007	0.0009	0.0007	0.07	0.39	0.54
8 CARBON MONOXIDE	0.0545		0.006	0.006	0.006	0.006	0.11	0.00	0.19
9 CARBON DIOXIDE	0.0315		0.0224	0.0222	0.0227	0.0213	0.70	0.03	0.12
10 ARGON	0.36		0.353	0.353	0.353	0.354	0.98	0.00	0.00

STANDARD NUMBER	CC102194		CC102194	CC102194	CC102194	CC102194	CC102194	CC102194
CANISTER NUMBER			10847	10847	10847	10847	10847	10847
LAB IDENTIFICATION CODE			MD	MD	MD	MD	MD	MD
ANALYTICAL METHOD			MS	MS	MS	MS	MS	MS
SAMPLE_ID			91-8106-06	91-8106-06	91-8106-06	91-8106-06	91-8106-06	91-8106-06
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	97.4		97.1	97.1	97.1	97.1	1.00	0.00
2	OXYGEN	0.304		0.304	0.31	0.308	0.308	1.01	0.01
3	HYDROGEN	0.119	C	0.15	0.154	0.158	0.157	1.30	0.02
4	METHANE	0.429	C	0.434	0.433	0.44	0.441	1.02	0.01
5	ETHANE	0.347		0.576	0.575	0.587	0.587	1.68	0.01
6	PROPANE	0.434		0.457	0.456	0.461	0.461	1.06	0.01
7	NOX	0.01	?	0.0003	0.0003	0.0005	0.0003	0.04	0.29
8	CARBON MONOXIDE	0.0608		0.0232	0.0259	0.0269	0.029	0.43	0.09
9	CARBON DIOXIDE	0.548		0.541	0.54	0.545	0.547	0.99	0.01
10	ARGON	0.36		0.36	0.362	0.366	0.367	1.01	0.01

STANDARD NUMBER	CC102192		CC102192	CC102192	CC102192	CC102192	CC102192	CC102192
CANISTER NUMBER			4697	4697	4697	4697	4697	4697
LAB IDENTIFICATION CODE			MD	MD	MD	MD	MD	MD
ANALYTICAL METHOD			MS	MS	MS	MS		
SAMPLE_ID			92-8000-01	92-8000-01	92-8000-01	92-8000-01		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	96.6		95.8	95.8	95.8	95.8	0.99	0.00
2	OXYGEN	0.447		1	1	1.01	1	2.24	0.00
3	HYDROGEN	0.437	C	0.558	0.565	0.564	0.563	1.29	0.01
4	METHANE	0.638	C	0.628	0.629	0.629	0.629	0.99	0.00
5	ETHANE	0.402		0.623	0.624	0.626	0.624	1.55	0.00
6	PROPANE	0.196		0.199	0.202	0.199	0.2	1.02	0.01
7	NOX	0.01	?	0.0007	0.0007	0.0007	0.0007	0.07	0.00
8	CARBON MONOXIDE	0.079		0.104	0.121	0.109	0.114	1.42	0.06
9	CARBON DIOXIDE	0.693		0.666	0.669	0.666	0.668	0.96	0.00
10	ARGON	0.37		0.391	0.395	0.395	0.394	1.06	0.00

STANDARD NUMBER	CC102490		CC102490	CC102490	CC102490	CC102490	CC102490	CC102490
CANISTER NUMBER			4666	4666	4666	4666	4666	4666
LAB IDENTIFICATION CODE			MD	MD	MD	MD	MD	MD
ANALYTICAL METHOD			MS	MS	MS	MS		
SAMPLE_ID			91-8106-02	91-8106-02	91-8106-02	91-8106-02		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	99.898		99.9	99.9	99.9	99.9	1.00	0.00
2 OXYGEN	0.1	?	0.0007	0.0007	0.0007	0.0007	0.01	0.00
3 HYDROGEN	0.1	C	0.007	0.01	0.007	0.007	0.08	0.19
4 METHANE	0.1	C	0.002	0.002	0.002	0.002	0.02	0.00
5 ETHANE	0.1	?	0.002	0.002	0.002	0.002	0.02	0.00
6 PROPANE	0.1	?	0.007	0.007	0.007	0.007	0.07	0.00
7 NOX	0.102		0.124	0.119	0.12	0.116	1.17	0.03
8 CARBON MONOXIDE	0.01	?	0.006	0.006	0.006	0.006	0.60	0.00
9 CARBON DIOXIDE	0.1	?	0.0025	0.0029	0.0028	0.0026	0.03	0.07
10 ARGON	0.1	?	0.0009	0.0009	0.0009	0.0009	0.01	0.00

Appendix C

Lab HE - Gas Analysis

No data was reported for hydrogen, ethane or argon. The failure to report hydrogen was treated as a CTAG failure for each canister.

No other special scoring was required.

WIPP PDP SCORING TABLE

LABORATORY:	HE									
ANALYSIS TYPE:	Gases									
STANDARD NO.:	CC78945		CC78945		CC102194		CC102192 & CC102490		CC63474	
CANISTER NO.:	4677		4665		10846		4694 & 4691		10850	
COMMENT:	High Conc.		High Conc. Duplicate		Low Conc.		Interference & NOx		Blank	
No. of CTAGs Present:	2		2		2		2		0	
No. of CTAGs Reported:	1		1		1		1			
No. CTAGs Failing RPA:	2		1		1		2			
No. CTAGs Failing RSD:										
No. CTAGs Failing RPD:										
		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	8	80	0	0
No. of TAGs Reported:	5	50	5	75	5	50	6	60		0
No. TAGs Failing RPA:	4	-20	5	-25	5	-25	5	-25		0
No. TAGs Failing RSD:		0		0		0		0		0
No. TAGs Failing RPD:			1	-5						
No. of CTAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		NA
TOTALS:		30		45		25		35		50
MAXIMUM POINTS:		375								
SCORE:		0.49	PLUS	6	FAILURES FOR CTAGs					

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4677	4677	4677	4677	4677	4677
LAB IDENTIFICATION CODE			HE	HE	HE	HE	HE	HE
ANALYTICAL METHOD								
SAMPLE_ID			X1-09-190-07	X1-09-190-07	X1-09-190-07	X1-09-190-07A		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	77.7		45.34	45.33	45.3	45.52	0.58	0.00
2	OXYGEN	20.5		12.93	12.93	12.42	12.99	0.63	0.02
3	HYDROGEN	0.149	C	0	0	0	0	0.00	
4	METHANE	0.404	C	0.5701	0.5768	0.5746	0.5769	1.42	0.01
5	ETHANE	0.336		0	0	0	0	0.00	
6	PROPANE	0.428		0.456	0.4454	0.445	0.4332	1.04	0.02
7	NOX	0.01	?	0	0	0	0	0.00	
8	CARBON MONOXIDE	0.0545		0.0256	0.0249	0.0258	0.0282	0.48	0.05
9	CARBON DIOXIDE	0.0315		0.0236	0.0253	0.0237	0.0228	0.76	0.04
10	ARGON	0.36		0	0	0	0	0.00	

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4665	4665	4665	4665	4665	4665	
LAB IDENTIFICATION CODE			HE	HE	HE	HE	HE	HE	HE
ANALYTICAL METHOD									
SAMPLE_ID			X1-09-190-08	X1-09-190-08	X1-09-190-08	X1-09-190-08A			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 NITROGEN	77.7		45.12	45.4	45.43	45.45	0.58	0.00	0.00
2 OXYGEN	20.5		12.88	12.97	12.98	12.98	0.63	0.00	0.01
3 HYDROGEN	0.149	C	0	0	0	0	0.00		
4 METHANE	0.404	C	0.5719	0.5733	0.5735	0.5739	1.42	0.00	0.00
5 ETHANE	0.336		0	0	0	0	0.00		
6 PROPANE	0.428		0.4866	0.5243	0.546	0.5453	1.23	0.05	0.17
7 NOX	0.01	?	0	0	0	0	0.00		
8 CARBON MONOXIDE	0.0545		0.0253	0.0233	0.0257	0.0257	0.46	0.05	0.04
9 CARBON DIOXIDE	0.0315		0.0234	0.0232	0.0241	0.0231	0.74	0.02	0.02
10 ARGON	0.36		0	0	0	0	0.00		

	STANDARD NUMBER	CC102194		CC102194	CC102194	CC102194	CC102194	CC102194	CC102194
	CANISTER NUMBER			10846	10846	10846	10846	10846	10846
	LAB IDENTIFICATION CODE			HE	HE	HE	HE	HE	HE
	ANALYTICAL METHOD								
	SAMPLE_ID			X1-09-190-06	X1-09-190-06	X1-09-190-06	X1-09-190-06A		
	REPLICATE			1	2	3	4		
		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	97.4		57.16	57.24	57.29	57.34	0.59	0.00
2	OXYGEN	0.304		0.5365	0.5425	0.5451	0.5484	1.79	0.01
3	HYDROGEN	0.119	C	0	0	0	0	0.00	
4	METHANE	0.429	C	0.5783	0.6003	0.6015	0.6069	1.39	0.02
5	ETHANE	0.347		0	0	0	0	0.00	
6	PROPANE	0.434		0.4231	0.4382	0.4557	0.4717	1.03	0.05
7	NOX	0.01	?	0	0	0	0	0.00	
8	CARBON MONOXIDE	0.0608		0.0281	0.0283	0.0304	0.0296	0.48	0.04
9	CARBON DIOXIDE	0.548		0.3214	0.3316	0.3364	0.338	0.61	0.02
10	ARGON	0.36		0	0	0	0	0.00	

STANDARD NUMBER	CC102192		CC102192	CC102192	CC102192	CC102192	CC102192	CC102192
CANISTER NUMBER			4694	4694	4694	4694	4694	4694
LAB IDENTIFICATION CODE			HE	HE	HE	HE	HE	HE
ANALYTICAL METHOD								
SAMPLE_ID			X1-09-190-09	X1-09-190-09	X1-09-190-09	X1-09-190-09A		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	96.6		56.39	56.37	56.19	56.35	0.58	0.00
2	OXYGEN	0.447		0.6407	0.6225	0.5882	0.6225	1.38	0.04
3	HYDROGEN	0.437	C	0	0	0	0	0.00	
4	METHANE	0.638	C	0.7613	0.7662	0.7727	0.7838	1.21	0.01
5	ETHANE	0.402		0	0	0	0	0.00	
6	PROPANE	0.196		0.4591	0.468	0.4523	0.4244	2.30	0.04
7	NOX	0.01	?	0	0	0	0	0.00	
8	CARBON MONOXIDE	0.079		0.0359	0.0367	0.0402	0.0356	0.47	0.06
9	CARBON DIOXIDE	0.693		0.4138	0.4194	0.422	0.4208	0.60	0.01
10	ARGON	0.37		0	0	0	0	0.00	

STANDARD NUMBER	CC102490		CC102490	CC102490	CC102490	CC102490	CC102490	CC102490
CANISTER NUMBER			4691	4691	4691	4691	4691	4691
LAB IDENTIFICATION CODE			HE	HE	HE	HE	HE	HE
ANALYTICAL METHOD			NIOSH 5320	NIOSH 5320	NIOSH 5320	NIOSH 5320		
SAMPLE_ID			X1-09-190-01	X1-09-190-01	X1-09-190-01	X1-09-190-011A		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	99.898		0	0	0	0	0.00	
2 OXYGEN	0.1	?	0	0	0	0	0.00	
3 HYDROGEN	0.1	C	0	0	0	0	0.00	
4 METHANE	0.1	C	0	0	0	0	0.00	
5 ETHANE	0.1	?	0	0	0	0	0.00	
6 PROPANE	0.1	?	0	0	0	0	0.00	
7 NOX	0.102		0.081	0.113	0.093	0.103	0.96	0.14
8 CARBON MONOXIDE	0.01	?	0	0	0	0	0.00	
9 CARBON DIOXIDE	0.1	?	0	0	0	0	0.00	
10 ARGON	0.1	?	0	0	0	0	0.00	

Appendix D

Lab BT - Gas Analysis

Only partial data was reported by this lab, including no hydrogen data. Severe problems are obvious.

WIPP PDP SCORING TABLE

LABORATORY:	BT									
ANALYSIS TYPE:	Gases									
STANDARD NO.:	CC78945		CC78945		CC102194		CC102192 & CC102490		CC63474	
CANISTER NO.:	10843		4713		4704		4715 & 4714		4707	
COMMENT:	High Conc.		High Conc. Duplicate		Low Conc.		Interference & NOx		Blank	
No. of CTAGs Present:	2		2		2		2		0	
No. of CTAGs Reported:	1		1		1		1			
No. CTAGs Failing RPA:	2		2		2		2			
No. CTAGs Failing RSD:							1			
No. CTAGs Failing RPD:			1							
		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	8	80	0	0
No. of TAGs Reported:	7	70	7	105	7	70	8	80		0
No. TAGs Failing RPA:	5	-25	5	-25	6	-30	8	-40		0
No. TAGs Failing RSD:		0		0		0		0		0
No. TAGs Failing RPD:			3	-15						
No. of CTAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		NA
TOTALS:		45		65		40		40		50
MAXIMUM POINTS:		375								
SCORE:		0.64	PLUS	10	FAILURES FOR CTAGs					

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			10843	10843	10843	10843	10843	10843
LAB IDENTIFICATION CODE			BT	BT	BT	BT	BT	BT
ANALYTICAL METHOD								
SAMPLE_ID								
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	77.7		73.3	73.7			0.95	0.00
2 OXYGEN	20.5		21.2	21.2			1.03	0.00
3 HYDROGEN	0.149	C	0	0			0.00	
4 METHANE	0.404	C	0.2932	0.295			0.73	0.00
5 ETHANE	0.336		0.1954	0.2113			0.61	0.06
6 PROPANE	0.428		0.3309	0.3346			0.78	0.01
7 NOX	0.01	?	0.5733	0.6134			59.34	0.05
8 CARBON MONOXIDE	0.0545		0.0204	0.0198			0.37	0.02
9 CARBON DIOXIDE	0.0315		0.0227	0.0229			0.72	0.01
10 ARGON	0.36		0.2935	0.2939			0.82	0.00

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4713	4713	4713	4713	4713	4713	
LAB IDENTIFICATION CODE			BT	BT	BT	BT	BT	BT	BT
ANALYTICAL METHOD			GC	GC					
SAMPLE_ID									
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 NITROGEN	77.7		71.5	71.4			0.92	0.00	0.03
2 OXYGEN	20.5		20.6	20.6			1.00	0.00	0.03
3 HYDROGEN	0.149	C	0	0			0.00		
4 METHANE	0.404	C	0.2312	0.2312			0.57	0.00	0.24
5 ETHANE	0.336		0.1993	0.1882			0.58	0.04	0.05
6 PROPANE	0.428		0.2867	0.2923			0.68	0.01	0.14
7 NOX	0.01	?	0.0388	0.043			4.09	0.07	1.74
8 CARBON MONOXIDE	0.0545		0.015	0.0151			0.28	0.00	0.29
9 CARBON DIOXIDE	0.0315		0.0213	0.0214			0.68	0.00	0.07
10 ARGON	0.36		0.2294	0.2299			0.64	0.00	0.24

	STANDARD NUMBER	CC102194		CC102194	CC102194	CC102194	CC102194	CC102194	CC102194
	CANISTER NUMBER			4704	4704	4704	4704	4704	4704
	LAB IDENTIFICATION CODE			BT	BT	BT	BT	BT	BT
	ANALYTICAL METHOD			GC	GC	GC			
	SAMPLE_ID								
	REPLICATE			1	2	3	4		
		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	97.4		90.9	92.5	92.2		0.94	0.01
2	OXYGEN	0.304		0.75	0.77	0.79		2.53	0.03
3	HYDROGEN	0.119	C	0	0	0		0.00	
4	METHANE	0.429	C	0.3224	0.3214	0.3145		0.74	0.01
5	ETHANE	0.347		0.2449	0.2378	0.2361		0.69	0.02
6	PROPANE	0.434		0.3319	0.3272	0.3301		0.76	0.01
7	NOX	0.01	?	0	0	0		0.00	
8	CARBON MONOXIDE	0.0608		0.0218	0.0216	0		0.24	0.87
9	CARBON DIOXIDE	0.548		0.0466	0.0481	0.0482		0.09	0.02
10	ARGON	0.36		0.3077	0.2957	0.2964		0.83	0.02

STANDARD NUMBER	CC102192		CC102192	CC102192	CC102192	CC102192	CC102192	CC102192
CANISTER NUMBER			4715	4715	4715	4715	4715	4715
LAB IDENTIFICATION CODE			BT	BT	BT	BT	BT	BT
ANALYTICAL METHOD								
SAMPLE_ID								
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	96.6		44.6	43.4			0.46	0.02
2 OXYGEN	0.447		1.5	1.5			3.36	0.00
3 HYDROGEN	0.437	C	0	0			0.00	
4 METHANE	0.638	C	0.2059	0.2711			0.37	0.19
5 ETHANE	0.402		0.239	0.2378			0.59	0.00
6 PROPANE	0.196		0.1415	0.1494			0.74	0.04
7 NOX	0.01	?	0	0			0.00	
8 CARBON MONOXIDE	0.079		0.0114	0.0111			0.14	0.02
9 CARBON DIOXIDE	0.693		0.0484	0.0479			0.07	0.01
10 ARGON	0.37		0.1796	0.1786			0.48	0.00

STANDARD NUMBER	CC102490		CC102490	CC102490	CC102490	CC102490	CC102490	CC102490
CANISTER NUMBER			4714	4714	4714	4714	4714	4714
LAB IDENTIFICATION CODE			BT	BT	BT	BT	BT	BT
ANALYTICAL METHOD			GC	GC				
SAMPLE_ID								
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	99.898		90.6	90.2			0.90	0.00
2	OXYGEN	0.1	?	0.06	0			0.30	1.41
3	HYDROGEN	0.1	C	0	0			0.00	
4	METHANE	0.1	C	0	0			0.00	
5	ETHANE	0.1	?	0	0			0.00	
6	PROPANE	0.1	?	0	0			0.00	
7	NOX	0.102		0.043	0.039			0.40	0.07
8	CARBON MONOXIDE	0.01	?	0	0			0.00	
9	CARBON DIOXIDE	0.1	?	0.00029	0.00022			0.00	0.19
10	ARGON	0.1	?	0	0			0.00	

Appendix E

Lab HR - Gas Analysis

This laboratory had problems in two areas.

Quantitation problems with carbon monoxide and carbon dioxide were evident throughout.

A severe problem seems to have been encountered with the interference canister. This laboratory may benefit most directly from this program if this cycle leads to the identification of the causes of the quantitation errors which may not have been suspected by the laboratory.

WIPP PDP SCORING TABLE

LABORATORY:	HR									
ANALYSIS TYPE:	Gases									
STANDARD NO.:	CC78945		CC78945		CC102194		CC102192 & CC102490		CC63474	
CANISTER NO.:	4692		4663		10849		4673 & 4669		10848	
COMMENT:	High Conc.		High Conc. Duplicate		Low Conc.		Interference & NOx		Blank	
No. of CTAGs Present:	2		2		2		2		0	
No. of CTAGs Reported:	2		2		2		2			
No. CTAGs Failing RPA:					0		2			
No. CTAGs Failing RSD:										
No. CTAGs Failing RPD:										
		Points		Points		Points		Points		Points
No. of TAGs Present:	7	70	7	105	7	70	8	80	0	0
No. of TAGs Reported:	7	70	7	105	7	70	8	80		0
No. TAGs Failing RPA:	2	-10	2	-10	0	0	5	-25		0
No. TAGs Failing RSD:		0		0		0		0		0
No. TAGs Failing RPD:				0						
No. of CTAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL:		NA		NA		NA		NA		0
Subtotal for Blank:										50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		NA
TOTALS:		60		95		70		55		50
MAXIMUM POINTS:		375								
SCORE:		0.88	PLUS	2	FAILURES FOR CTAGs					

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4692	4692	4692	4692	4692	4692
LAB IDENTIFICATION CODE			HR	HR	HR	HR	HR	HR
ANALYTICAL METHOD			L-2421-A	L-2421-A	L-2421-A	L-2421-A		
SAMPLE_ID			91-19	91-19	91-19	91-19		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	77.7		76.9078	76.9234	77.1886	77.0625	0.99	0.00
2	OXYGEN	20.5		21.3106	21.259	21.0431	21.1695	1.03	0.01
3	HYDROGEN	0.149	C	0.1529	0.1548	0.1532	0.1528	1.03	0.01
4	METHANE	0.404	C	0.3706	0.374	0.3761	0.3744	0.93	0.01
5	ETHANE	0.336		0.3593	0.3743	0.3322	0.3317	1.04	0.06
6	PROPANE	0.428		0.4276	0.4371	0.4333	0.4294	1.01	0.01
7	NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	0.00
8	CARBON MONOXIDE	0.0545		0.0699	0.0711	0.0683	0.0696	1.28	0.02
9	CARBON DIOXIDE	0.0315		0.0497	0.0498	0.0517	0.0553	1.64	0.05
10	ARGON	0.36		0.3516	0.3565	0.3535	0.3548	0.98	0.01

STANDARD NUMBER	CC78945		CC78945	CC78945	CC78945	CC78945	CC78945	CC78945	CC78945
CANISTER NUMBER			4663	4663	4663	4663	4663	4663	
LAB IDENTIFICATION CODE			HR	HR	HR	HR	HR	HR	HR
ANALYTICAL METHOD			L-2421-A	L-2421-A	L-2421-A	L-2421-A			
SAMPLE_ID			91-18	91-18	91-18	91-18			
REPLICATE			1	2	3	4			

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1	NITROGEN	77.7		77.0399	76.8531	77.1606	77.0259	0.99	0.00	0.00
2	OXYGEN	20.5		21.2007	21.3772	21.0725	21.2069	1.03	0.01	0.00
3	HYDROGEN	0.149	C	0.1529	0.1534	0.1521	0.154	1.03	0.01	0.00
4	METHANE	0.404	C	0.3769	0.3756	0.3777	0.3759	0.93	0.00	0.01
5	ETHANE	0.336		0.3338	0.3322	0.3355	0.3352	0.99	0.00	0.04
6	PROPANE	0.428		0.427	0.4329	0.4306	0.4247	1.00	0.01	0.01
7	NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	0.00	0.00
8	CARBON MONOXIDE	0.0545		0.0661	0.0679	0.0685	0.0698	1.25	0.02	0.02
9	CARBON DIOXIDE	0.0315		0.0473	0.0513	0.05	0.0522	1.59	0.04	0.03
10	ARGON	0.36		0.3553	0.3565	0.3525	0.3554	0.99	0.00	0.00

STANDARD NUMBER	CC102194		CC102194	CC102194	CC102194	CC102194	CC102194	CC102194
CANISTER NUMBER			10849	10849	10849	10849	10849	10849
LAB IDENTIFICATION CODE			HR	HR	HR	HR	HR	HR
ANALYTICAL METHOD			I-2421-A	I-2421-A	I-2421-A	I-2421-A		
SAMPLE_ID			91-26	91-26	91-26	91-26		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	97.4		97.3916	97.3938	97.3973	97.4061	1.00	0.00
2	OXYGEN	0.304		0.3167	0.3139	0.316	0.3142	1.04	0.00
3	HYDROGEN	0.119	C	0.1277	0.1307	0.1284	0.1305	1.09	0.01
4	METHANE	0.429	C	0.3884	0.3905	0.3989	0.3952	0.92	0.01
5	ETHANE	0.347		0.3756	0.3642	0.3637	0.3531	1.05	0.03
6	PROPANE	0.434		0.4416	0.4452	0.4409	0.4399	1.02	0.01
7	NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	0.00
8	CARBON MONOXIDE	0.0608		0.0649	0.0639	0.0638	0.0627	1.05	0.01
9	CARBON DIOXIDE	0.548		0.5349	0.5423	0.5366	0.5431	0.98	0.01
10	ARGON	0.36		0.3586	0.3555	0.3544	0.3553	0.99	0.01

STANDARD NUMBER	CC102192		CC102192	CC102192	CC102192	CC102192	CC102192	CC102192
CANISTER NUMBER			4673	4673	4673	4673	4673	4673
LAB IDENTIFICATION CODE			HR	HR	HR	HR	HR	HR
ANALYTICAL METHOD			L-2421-A	L-2421-A	L-2421-A	L-2421-A		
SAMPLE_ID			91-34	91-34	91-34	91-34		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	96.6		93.5021	93.4398	93.3962	93.5248	0.97	0.00
2	OXYGEN	0.447		4.1565	4.2206	4.259	4.1288	9.38	0.01
3	HYDROGEN	0.437	C	0.2237	0.2212	0.2201	0.2258	0.51	0.01
4	METHANE	0.638	C	0.4911	0.4889	0.4864	0.4874	0.77	0.00
5	ETHANE	0.402		0.3342	0.3285	0.3286	0.3343	0.82	0.01
6	PROPANE	0.196		0.1771	0.1776	0.1778	0.1753	0.90	0.01
7	NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	0.00
8	CARBON MONOXIDE	0.079		0.0634	0.0617	0.0636	0.0672	0.81	0.04
9	CARBON DIOXIDE	0.693		0.587	0.5941	0.5996	0.5944	0.86	0.01
10	ARGON	0.37		0.4649	0.4676	0.4687	0.462	1.26	0.01

STANDARD NUMBER	CC102490		CC102490	CC102490	CC102490	CC102490	CC102490	CC102490
CANISTER NUMBER			4669	4669	4669	4669	4669	4669
LAB IDENTIFICATION CODE			HR	HR	HR	HR	HR	HR
ANALYTICAL METHOD			L-2421-A	L-2421-A	L-2421-A	L-2421-A		
SAMPLE_ID			91-38	91-38	91-38	91-38		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	99.898		99.9244	99.9243	99.9262	99.9278	1.00	0.00
2 OXYGEN	0.1	?	0.0612	0.0612	0.0612	0.0612	0.61	0.00
3 HYDROGEN	0.1	C	0.0308	0.0308	0.0308	0.0308	0.31	0.00
4 METHANE	0.1	C	0.0285	0.0285	0.0285	0.0285	0.29	0.00
5 ETHANE	0.1	?	0.0514	0.0514	0.0514	0.0514	0.51	0.00
6 PROPANE	0.1	?	0.016	0.016	0.016	0.016	0.16	0.00
7 NOX	0.102		0.0756	0.0757	0.0738	0.0722	0.73	0.02
8 CARBON MONOXIDE	0.01	?	0.0088	0.0088	0.0088	0.0088	0.88	0.00
9 CARBON DIOXIDE	0.1	?	0.0196	0.0196	0.0196	0.0196	0.20	0.00
10 ARGON	0.1	?	0.0338	0.0338	0.0338	0.0338	0.34	0.00

Appendix F

Lab CA - VOC Analysis

Two methods were submitted by this laboratory, a modified TO-14 method and a modified 8240/8260. The methods were scored independently and both qualified.

WIPP PDP SCORING TABLE

LABORATORY: CA METHOD: 440.1/430.1
ANALYSIS TYPE: VOCs

STANDARD NO.:	CC102652		CC102273		CC102273		CC102641		CC63474	
CANISTER NO.:	4437		4705		4703		10844		4429	
COMMENT:	Low Conc.		High Conc.		High Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. of CTCs Present:	5	50	5	50	5	75	2	20	0	0
No. of CTCs Reported:	5	50	5	75	5	50	2	20		0
No. CTCs Failing RPA:	0	0	0	0	0	0	0	0		0
No. CTCs Failing RSD:	0	0	0	0	0	0	0	0		0
No. CTCs Failing RPD:					0	0				
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	10	100	10	150	6	60	0	0
No. of TCs Reported:	6	60	10	100	10	150	6	60		0
No. TCs Failing RPA:		0		0		0		0		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. of TICs Present:	0	0	0	0	0	0	0		0	0
No. of TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0		0	0	0		NA
TC TOTALS:		60		100		150		60		61
MAXIMUM POINTS:		431								
TC SCORE:		1								
CTC TOTALS:		50		75		50		20		
MAXIMUM POINTS:		195								
CTC SCORE:		1	PLUS	0	FAILURES FOR CTCs					

WIPP PDP SCORING TABLE

LABORATORY: CA METHOD: 440.1/430.2
ANALYSIS TYPE: VOCs

STANDARD NO.:	CC102652		CC102273		CC102273		CC102641		CC63474	
CANISTER NO.:	4437		4705		4703		10844		4429	
COMMENT:	Low Conc.		High Conc.		High Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. of CTCs Present:	5	50	5	50	5	75	2	20	0	0
No. of CTCs Reported:	5	50	5	50	5	75	2	20		0
No. CTCs Failing RPA:	1	-5		0		0		0		0
No. CTCs Failing RSD:		0		0		0		0		0
No. CTCs Failing RPD:						0				
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	10	100	10	150	6	60	0	0
No. of TCs Reported:	6	60	10	100	10	150	6	60		0
No. TCs Failing RPA:	1	-5	1	-5	2	-10		0		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. of TICs Present:		0		0	0	0	0		0	0
No. of TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0		0	0	0		NA
TC TOTALS:		55		95		140		60		61
MAXIMUM POINTS:		431								
TC SCORE:		0.95								
CTC TOTALS:		45		50		75		20		
MAXIMUM POINTS:		195								
CTC SCORE:		0.97	PLUS	1	FAILURES FOR CTCs					

STANDARD NUMBER	CC102652		CC102652	CC102652	CC102652	CC102652	CC102652	CC102652
CANISTER NUMBER			4437	4437	4437	4437	4437	4437
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			430.1	430.1	430.1	430.1		
SAMPLE_ID			91267019	91267019	91267019	91267019		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	ACETONE	100	?	0	0	0	0	0.00	
2	BENZENE	18.7		19	19	19	19	1.02	0.00
3	BROMOFORM	1	?	0	0	0	0	0.00	
4	1-BUTANOL	100	?	0	0	0	0	0.00	
5	2-BUTANONE	100	?	0	0	0	0	0.00	
6	CARBON_TETRACHLORIDE	19.3	C	18	17	17	17	0.89	0.03
7	CHLOROBENZENE	19		20	19	19	20	1.03	0.03
8	CHLOROFORM	18.8		17	17	18	17	0.92	0.03
9	CYCLOHEXANE	1	?	0	0	0	0	0.00	
10	1,1-DICHLOROETHANE	18.8		20	19	19	20	1.04	0.03
11	1,2-DICHLOROETHANE	18.8	C	19	18	19	18	0.98	0.03
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15	ETHYL_ETHER	1	?	0	0	0	0	0.00	
16	METHANOL	100	?	0	0	0	0	0.00	
17	METHYLENE_CHLORIDE	19.1	C	21	20	21	21	1.09	0.02
18	4-METHYL-2-PENTANONE	100	?	0	0	0	0	0.00	
19	1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20	TETRACHLOROETHENE	19		18	17	18	18	0.93	0.03
21	TOULENE	1	?	0	0	0	0	0.00	
22	1,1,1-TRICHLOROETHANE	18.9	C	18	17	17	17	0.91	0.03
23	TRICHLOROETHENE	18.9	C	18	18	18	18	0.95	0.00
24	1,1,2-CL3-1,2,2-F3-ETHANE	11.3		11	11	11	11	0.97	0.00
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27	m-XYLENE	1	?	0	0	0	0	0.00	
28	o-XYLENE	1	?	0	0	0	0	0.00	
29	p-XYLENE	1	?	0	0	0	0	0.00	

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4705	4705	4705	4705	4705	4705
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			440.1/430.1	440.1/430.1	440.1/430.1	440.1/430.1		
SAMPLE_ID			91267020	91267020	91267020	91267020		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	104	C	88	88	88	89	0.85	0.01
2 BENZENE	1	?	0	0	0	0	0.00	
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	103		88	88	87	88	0.85	0.01
6 CARBON_TETRACHLORIDE	103	C	87	89	87	83	0.84	0.03
7 CHLOROBENZENE	1	?	0	0	0	0	0.00	
8 CHLOROFORM	102		96	99	96	93	0.94	0.03
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	102		108	111	112	105	1.07	0.03
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	104		81	83	83	84	0.80	0.02
17 METHYLENE_CHLORIDE	103	C	108	104	108	101	1.02	0.03
18 4-METHYL-2-PENTANONE	103		84	84	82	84	0.81	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		86	89	87	88	0.85	0.01
20 TETRACHLOROETHENE	103		86	87	85	87	0.84	0.01
21 TOULENE	103		108	109	107	109	1.05	0.01
22 1,1,1-TRICHLOROETHANE	103	C	91	94	92	88	0.89	0.03
23 TRICHLOROETHENE	103	C	91	92	90	88	0.88	0.02
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		92	92	94	88	0.89	0.03
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	102		102	106	102	105	1.02	0.02

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4703	4703	4703	4703	4703	4703	
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			440.1/430.1	440.1/430.1	440.1/430.1	440.1/430.1			
SAMPLE_ID			91267021	91267021	91267021	91267021			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 ACETONE	104	C	88	88	87	88	0.84	0.01	0.01
2 BENZENE	1	?	0	0	0	0	0.00		
3 BROMOFORM	1	?	0	0	0	0	0.00		
4 1-BUTANOL	100	?	0	0	0	0	0.00		
5 2-BUTANONE	103		87	86	87	88	0.84	0.01	0.01
6 CARBON_TETRACHLORIDE	103	C	89	87	89	89	0.86	0.01	0.02
7 CHLOROBENZENE	1	?	0	0	0	0	0.00		
8 CHLOROFORM	102		97	96	94	95	0.94	0.01	0.01
9 CYCLOHEXANE	1	?	0	0	0	0	0.00		
10 1,1-DICHLOROETHANE	102		108	101	103	103	1.02	0.03	0.05
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00		
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00		
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00		
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00		
15 ETHYL_ETHER	1	?	0	0	0	0	0.00		
16 METHANOL	104		84	82	82	84	0.80	0.01	0.00
17 METHYLENE_CHLORIDE	103	C	106	105	104	107	1.02	0.01	0.00
18 4-METHYL-2-PENTANONE	103		83	82	83	84	0.81	0.01	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		92	96	98	93	0.92	0.03	0.08
20 TETRACHLOROETHENE	103		87	89	87	86	0.85	0.01	0.01
21 TOULENE	103		106	110	109	102	1.04	0.03	0.01
22 1,1,1-TRICHLOROETHANE	103	C	93	93	92	92	0.90	0.01	0.01
23 TRICHLOROETHENE	103	C	92	92	91	93	0.89	0.01	0.02
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		93	91	90	91	0.89	0.01	0.00
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
27 m-XYLENE	1	?	0	0	0	0	0.00		
28 o-XYLENE	1	?	0	0	0	0	0.00		
29 p-XYLENE	102		107	110	110	105	1.06	0.02	0.04

STANDARD NUMBER	CC102641		CC102641	CC102641	CC102641	CC102641	CC102641	CC102641
CANISTER NUMBER			10844	10844	10844	10844	10844	10844
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			440.1/430.1	440.1/430.1	440.1/430.1	440.1/430.1		
SAMPLE_ID			91267022	91267022	91267022	91267022		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	ACETONE	102	C	85	86	95	91	0.88	0.05
2	BENZENE	105		101	99	102	99	0.95	0.01
3	BROMOFORM	1	?	0	0	0	0	0.00	
4	1-BUTANOL	101		78	78	93	89	0.84	0.09
5	2-BUTANONE	100	?	0	0	0	0	0.00	
6	CARBON_TETRACHLORIDE	1	?	0	0	0	0	0.00	
7	CHLOROBENZENE	1	?	0	0	0	0	0.00	
8	CHLOROFORM	1	?	0	0	0	0	0.00	
9	CYCLOHEXANE	102	C	102	99	102	99	0.99	0.02
10	1,1-DICHLOROETHANE	103		105	104	105	102	1.01	0.01
11	1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15	ETHYL_ETHER	1	?	0	0	0	0	0.00	
16	METHANOL	106		82	83	93	90	0.82	0.06
17	METHYLENE_CHLORIDE	1	?	0	0	0	0	0.00	
18	4-METHYL-2-PENTANONE	103		82	82	90	86	0.83	0.05
19	1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20	TETRACHLOROETHENE	1	?	0	0	0	0	0.00	
21	TOULENE	102		97	101	103	97	0.98	0.03
22	1,1,1-TRICHLOROETHANE	1	?	0	0	0	0	0.00	
23	TRICHLOROETHENE	1	?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0	0	0	0	0.00	
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27	m-XYLENE	1	?	0	0	0	0	0.00	
28	o-XYLENE	1	?	0	0	0	0	0.00	
29	p-XYLENE	1	?	0	0	0	0	0.00	

STANDARD NUMBER	CC102652		CC102652	CC102652	CC102652	CC102652	CC102652	CC102652
CANISTER NUMBER			4437	4437	4437	4437	4437	4437
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			430.2	430.2	430.2	430.2		
SAMPLE_ID			91267019	91267019	91267019	91267019		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	ACETONE	100	?	0	0	0	0	0.00	
2	BENZENE	18.7		20	17	18	17	0.96	0.08
3	BROMOFORM	1	?	0	0	0	0	0.00	
4	1-BUTANOL	100	?	0	0	0	0	0.00	
5	2-BUTANONE	100	?	0	0	0	0	0.00	
6	CARBON_TETRACHLORIDE	19.3	C	27	25	25	24	1.31	0.05
7	CHLOROBENZENE	19		18	17	18	16	0.91	0.06
8	CHLOROFORM	18.8		24	22	24	22	1.22	0.05
9	CYCLOHEXANE	1	?	0	0	0	0	0.00	
10	1,1-DICHLOROETHANE	18.8		20	19	19	18	1.01	0.04
11	1,2-DICHLOROETHANE	18.8	C	23	21	22	21	1.16	0.04
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15	ETHYL_ETHER	1	?	0	0	0	0	0.00	
16	METHANOL	100	?	0	0	0	0	0.00	
17	METHYLENE_CHLORIDE	19.1	C	21	19	20	18	1.02	0.07
18	4-METHYL-2-PENTANONE	100	?	0	0	0	0	0.00	
19	1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20	TETRACHLOROETHENE	19		19	17	18	16	0.92	0.07
21	TOULENE	1	?	0	0	0	0	0.00	
22	1,1,1-TRICHLOROETHANE	18.9	C	23	21	22	21	1.15	0.04
23	TRICHLOROETHENE	18.9	C	20	18	19	17	0.98	0.07
24	1,1,2-CL3-1,2,2-F3-ETHANE	11.3		17	16	16	16	1.44	0.03
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27	m-XYLENE	1	?	0	0	0	0	0.00	
28	o-XYLENE	1	?	0	0	0	0	0.00	
29	p-XYLENE	1	?	0	0	0	0	0.00	

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4705	4705	4705	4705	4705	4705
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			440.1/430.2	440.1/430.2	440.1/430.2	440.1/430.2		
SAMPLE_ID			91267020	91267020	91267020	91267020		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	104	C	88	88	88	89	0.85	0.01
2 BENZENE	1	?	0	0	0	0	0.00	
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	103		88	88	87	88	0.85	0.01
6 CARBON_TETRACHLORIDE	103	C	114	106	124	127	1.14	0.08
7 CHLOROBENZENE	1	?	0	0	0	0	0.00	
8 CHLOROFORM	102		109	105	116	120	1.10	0.06
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	102		91	88	99	102	0.93	0.07
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	104		81	83	83	84	0.80	0.02
17 METHYLENE_CHLORIDE	103	C	101	97	106	109	1.00	0.05
18 4-METHYL-2-PENTANONE	103		84	84	82	84	0.81	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		60	62	64	67	0.61	0.05
20 TETRACHLOROETHENE	103		81	75	87	88	0.80	0.07
21 TOULENE	103		78	73	83	83	0.77	0.06
22 1,1,1-TRICHLOROETHANE	103	C	100	95	110	112	1.01	0.08
23 TRICHLOROETHENE	103	C	93	86	97	100	0.91	0.06
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		126	116	136	139	1.25	0.08
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	102		74	69	76	79	0.73	0.06

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4703	4703	4703	4703	4703	4703	
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			440.1/430.2	440.1/430.2	440.1/430.2	440.1/430.2			
SAMPLE_ID			91267021	91267021	91267021	91267021			
REPLICATE			1	2	3	4			

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1	ACETONE	104	C	88	88	87	88	0.84	0.01	0.01
2	BENZENE	1	?	0	0	0	0	0.00		
3	BROMOFORM	1	?	0	0	0	0	0.00		
4	1-BUTANOL	100	?	0	0	0	0	0.00		
5	2-BUTANONE	103		87	86	87	88	0.84	0.01	0.01
6	CARBON_TETRACHLORIDE	103	C	125	119	118	110	1.15	0.05	0.00
7	CHLOROBENZENE	1	?	0	0	0	0	0.00		
8	CHLOROFORM	102		123	114	112	103	1.11	0.07	0.00
9	CYCLOHEXANE	1	?	0	0	0	0	0.00		
10	1,1-DICHLOROETHANE	102		103	95	93	87	0.93	0.07	0.01
11	1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00		
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00		
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00		
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00		
15	ETHYL_ETHER	1	?	0	0	0	0	0.00		
16	METHANOL	104		84	82	82	84	0.80	0.01	0.00
17	METHYLENE_CHLORIDE	103	C	106	97	95	86	0.93	0.09	0.07
18	4-METHYL-2-PENTANONE	103		83	82	83	84	0.81	0.01	0.01
19	1,1,2,2-TETRACHLOROETHANE	103		57	50	53	45	0.50	0.10	0.21
20	TETRACHLOROETHENE	103		87	81	79	71	0.77	0.08	0.04
21	TOULENE	103		84	76	75	67	0.73	0.09	0.05
22	1,1,1-TRICHLOROETHANE	103	C	109	105	105	96	1.01	0.05	0.00
23	TRICHLOROETHENE	103	C	97	91	89	81	0.87	0.07	0.05
24	1,1,2-CL3-1,2,2-F3-ETHANE	103		138	129	128	120	1.25	0.06	0.00
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
27	m-XYLENE	1	?	0	0	0	0	0.00		
28	o-XYLENE	1	?	0	0	0	0	0.00		
29	p-XYLENE	102		78	71	69	64	0.69	0.08	0.06

STANDARD NUMBER	CC102641		CC102641	CC102641	CC102641	CC102641	CC102641	CC102641
CANISTER NUMBER			10844	10844	10844	10844	10844	10844
LAB IDENTIFICATION CODE			CA	CA	CA	CA	CA	CA
ANALYTICAL METHOD			440.1/430.2	440.1/430.2	440.1/430.2	440.1/430.2		
SAMPLE_ID			91267022	91267022	91267022	91267022		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	ACETONE	102	C	85	86	95	91	0.88	0.05
2	BENZENE	105		89	92	90	89	0.86	0.02
3	BROMOFORM	1	?	0	0	0	0	0.00	
4	1-BUTANOL	101		78	78	93	89	0.84	0.09
5	2-BUTANONE	100	?	0	0	0	0	0.00	
6	CARBON_TETRACHLORIDE	1	?	0	0	0	0	0.00	
7	CHLOROBENZENE	1	?	0	0	0	0	0.00	
8	CHLOROFORM	1	?	0	0	0	0	0.00	
9	CYCLOHEXANE	102	C	118	120	118	116	1.16	0.01
10	1,1-DICHLOROETHANE	103		89	93	92	92	0.89	0.02
11	1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15	ETHYL_ETHER	1	?	0	0	0	0	0.00	
16	METHANOL	106		82	83	93	90	0.82	0.06
17	METHYLENE_CHLORIDE	1	?	0	0	0	0	0.00	
18	4-METHYL-2-PENTANONE	103		82	82	90	86	0.83	0.05
19	1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20	TETRACHLOROETHENE	1	?	0	0	0	0	0.00	
21	TOULENE	102		76	77	76	74	0.74	0.02
22	1,1,1-TRICHLOROETHANE	1	?	0	0	0	0	0.00	
23	TRICHLOROETHENE	1	?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0	0	0	0	0.00	
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27	m-XYLENE	1	?	0	0	0	0	0.00	
28	o-XYLENE	1	?	0	0	0	0	0.00	
29	p-XYLENE	1	?	0	0	0	0	0.00	

Appendix G

Lab DO - VOC Analyses

Two methods were submitted by this laboratory. The methods were scored independently and both qualified.

WIPP PDP SCORING TABLE

LABORATORY: DO METHOD: ACL-167/154
ANALYSIS TYPE: VOCs

STANDARD NO.:	CC102652		CC102273		CC102273		CC102641		CC63474	
CANISTER NO.:	4441		4432		4433		10841		4435	
COMMENT:	Low Conc.		High Conc.		High Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. of CTCs Present:	5	50	5	50	5	75	2	20	0	0
No. of CTCs Reported:	5	50	5	50	5	75	2	20		0
No. CTCs Failing RPA:		0		0		0		0		0
No. CTCs Failing RSD:		0		0		0		0		0
No. CTCs Failing RPD:						0				
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	10	100	10	150	6	60	0	0
No. of TCs Reported:	6	60	10	100	10	150	6	60		0
No. TCs Failing RPA:		0		0		0	1	-5		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. of TICs Present:		0		0	0	0	0		0	0
No. of TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0		0	0	0		NA
TC TOTALS:		60		100		150		55		61
MAXIMUM POINTS:		431								
TC SCORE:		0.99								
CTC TOTALS:		50		50		75		20		
MAXIMUM POINTS:		195								
CTC SCORE:		1	PLUS	0	FAILURES FOR CTCs					

WIPP PDP SCORING TABLE

LABORATORY: DO METHOD: ACL-167/168
ANALYSIS TYPE: VOCs

STANDARD NO.:	CC102652		CC102273		CC102273		CC102641		CC63474	
CANISTER NO.:	4441		4432		4433		10841		4435	
COMMENT:	Low Conc.		High Conc.		High Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. of CTCs Present:	5	50	5	50	5	75	2	20	0	0
No. of CTCs Reported:	5	50	5	50	5	75	2	20		0
No. CTCs Failing RPA:		0		0		0		0		0
No. CTCs Failing RSD:		0		0		0		0		0
No. CTCs Failing RPD:						0				
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	10	100	10	150	6	60	0	0
No. of TCs Reported:	6	60	10	100	10	150	6	60		0
No. TCs Failing RPA:		0		0		0	1	-5		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. of TICs Present:		0		0	0	0	0		0	0
No. of TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0		0	0	0		NA
TC TOTALS:		60		100		150		55		61
MAXIMUM POINTS:		431								
TC SCORE:		0.99								
CTC TOTALS:		50		50		75		20		
MAXIMUM POINTS:		195								
CTC SCORE:		1	PLUS	0	FAILURES FOR CTCs					

STANDARD NUMBER	CC102652		CC102652	CC102652	CC102652	CC102652	CC102652	CC102652
CANISTER NUMBER			4441	4441	4441	4441	4441	4441
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-15	SOP:ACL-15	SOP:ACL-15	SOP:ACL-154		
SAMPLE_ID			91-8105-04	91-8105-04	91-8105-04	91-8105-04		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	100	?	0	0	0	0	0.00	
2 BENZENE	18.7		17	17.9	18.4	17.7	0.95	0.03
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	100	?	0	0	0	0	0.00	
6 CARBON_TETRACHLORIDE	19.3	C	19.1	22.3	21.4	20.9	1.08	0.06
7 CHLOROBENZENE	19		18.6	20.3	18.4	18.5	1.00	0.05
8 CHLOROFORM	18.8		17.8	18.4	19.2	18.6	0.98	0.03
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	18.8		18	19.5	19.8	19.2	1.02	0.04
11 1,2-DICHLOROETHANE	18.8	C	17.7	17.3	19.6	19.3	0.98	0.06
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	100	?	0	0	0	0	0.00	
17 METHYLENE_CHLORIDE	19.1	C	19	20.6	19.6	19.1	1.02	0.04
18 4-METHYL-2-PENTANONE	100	?	0	0	0	0	0.00	
19 1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20 TETRACHLOROETHENE	19		18.9	19.6	18.9	18.8	1.00	0.02
21 TOULENE	1	?	0	0	0	0	0.00	
22 1,1,1-TRICHLOROETHANE	18.9	C	17.8	19.1	19.7	19	1.00	0.04
23 TRICHLOROETHENE	18.9	C	17.5	18.5	18.5	17.8	0.96	0.03
24 1,1,2-CL3-1,2,2-F3-ETHANE	11.3		11.5	12.3	12	11.7	1.05	0.03
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	1	?	0	0	0	0	0.00	

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4432	4432	4432	4432	4432	4432
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-16	SOP:ACL-16	SOP:ACL-16	SOP:ACL-167/154		
SAMPLE_ID			91-8105-01	91-8105-01	91-8105-01	91-8105-01		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	104	C	112	111	108	108	1.06	0.02
2 BENZENE	1	?	0	0	0	0	0.00	
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	103		100	105	102	103	1.00	0.02
6 CARBON_TETRACHLORIDE	103	C	115	114	112	117	1.11	0.02
7 CHLOROBENZENE	1	?	0	0	0	0	0.00	
8 CHLOROFORM	102		105	103	103	104	1.02	0.01
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	102		108	108	106	108	1.05	0.01
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12 1,1-DICHLOROETHENE	1	?	2.6	2.3	2.4	2.2	2.38	0.07
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	104		91	94	105	103	0.94	0.07
17 METHYLENE_CHLORIDE	103	C	104	102	101	102	0.99	0.01
18 4-METHYL-2-PENTANONE	103		106	109	107	107	1.04	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		87.9	83.8	85.2	84.6	0.83	0.02
20 TETRACHLOROETHENE	103		94	93.6	93.5	94.7	0.91	0.01
21 TOULENE	103		89.5	88.7	88.7	89.7	0.87	0.01
22 1,1,1-TRICHLOROETHANE	103	C	107	106	106	109	1.04	0.01
23 TRICHLOROETHENE	103	C	105	106	105	106	1.02	0.01
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		106	105	103	105	1.02	0.01
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	102		97.5	95.6	96.5	97	0.95	0.01

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4433	4433	4433	4433	4433	4433	
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-167/	SOP:ACL-167/	SOP:ACL-167/	SOP:ACL-167/154			
SAMPLE_ID			91-8105-02	91-8105-02	91-8105-02	91-8105-02			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 ACETONE	104	C	106	110	106	110	1.04	0.02	0.02
2 BENZENE	1	?	0	0	0	0	0.00		
3 BROMOFORM	1	?	0	0	0	0	0.00		
4 1-BUTANOL	100	?	0	0	0	0	0.00		
5 2-BUTANONE	103		104	103	103	104	1.00	0.01	0.01
6 CARBON_TETRACHLORIDE	103	C	124	123	123	130	1.21	0.03	0.09
7 CHLOROBENZENE	1	?	0	0	0	0	0.00		
8 CHLOROFORM	102		111	111	111	117	1.10	0.03	0.08
9 CYCLOHEXANE	1	?	0	0	0	0	0.00		
10 1,1-DICHLOROETHANE	102		112	113	116	119	1.13	0.03	0.07
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00		
12 1,1-DICHLOROETHENE	1	?	2.2	2.4	2.6	2.5	2.43	0.07	0.02
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00		
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00		
15 ETHYL_ETHER	1	?	0	0	0	0	0.00		
16 METHANOL	104		95	89	100	100	0.92	0.05	0.02
17 METHYLENE_CHLORIDE	103	C	102	105	106	108	1.02	0.02	0.03
18 4-METHYL-2-PENTANONE	103		107	107	109	107	1.04	0.01	0.00
19 1,1,2,2-TETRACHLOROETHANE	103		95.4	95.5	94	95.9	0.92	0.01	0.11
20 TETRACHLOROETHENE	103		109	109	108	110	1.06	0.01	0.15
21 TOULENE	103		104	103	104	104	1.01	0.00	0.15
22 1,1,1-TRICHLOROETHANE	103	C	117	116	118	121	1.15	0.02	0.10
23 TRICHLOROETHENE	103	C	107	104	106	108	1.03	0.02	0.01
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		108	112	113	115	1.09	0.03	0.07
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
27 m-XYLENE	1	?	0	0	0	0	0.00		
28 o-XYLENE	1	?	0	0	0	0	0.00		
29 p-XYLENE	102		106	108	108	107	1.05	0.01	0.10

STANDARD NUMBER	CC102641		CC102641	CC102641	CC102641	CC102641	CC102641	CC102641
CANISTER NUMBER			10841	10841	10841	10841	10841	10841
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-16	SOP:ACL-16	SOP:ACL-16	SOP:ACL-167/154		
SAMPLE_ID			91-8105-05	91-8105-05	91-8105-05	91-8105-05		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	102	C	108	107	108	106	1.05	0.01
2 BENZENE	105		103	104	103	103	0.98	0.00
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	101		142	145	146	144	1.43	0.01
5 2-BUTANONE	100	?	0	0	0	0	0.00	
6 CARBON_TETRACHLORIDE	1	?	0	0	0	0	0.00	
7 CHLOROBENZENE	1	?	0	0	0	0	0.00	
8 CHLOROFORM	1	?	0	0	0	0	0.00	
9 CYCLOHEXANE	102	C	108	108	109	108	1.06	0.00
10 1,1-DICHLOROETHANE	103		106	109	109	107	1.05	0.01
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	106		93	92	93.6	90.9	0.87	0.01
17 METHYLENE_CHLORIDE	1	?	0	0	0	0	0.00	
18 4-METHYL-2-PENTANONE	103		110	111	112	110	1.08	0.01
19 1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20 TETRACHLOROETHENE	1	?	0	0	0	0	0.00	
21 TOULENE	102		93.9	92.9	93.2	94.4	0.92	0.01
22 1,1,1-TRICHLOROETHANE	1	?	0	0	0	0	0.00	
23 TRICHLOROETHENE	1	?	0	0	0	0	0.00	
24 1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0	0	0	0	0.00	
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	1	?	0	0	0	0	0.00	

STANDARD NUMBER	CC102652		CC102652	CC102652	CC102652	CC102652	CC102652	CC102652
CANISTER NUMBER			4441	4441	4441	4441	4441	4441
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-16	SOP:ACL-16	SOP:ACL-16	SOP:ACL-167/8		
SAMPLE_ID			91-8105-04	91-8105-04	91-8105-04	91-8105-04		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	100	?	0	0	0	0	0.00	
2 BENZENE	18.7		17	16.4	16.6	16.5	0.89	0.02
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	100	?	0	0	0	0	0.00	
6 CARBON_TETRACHLORIDE	19.3	C	18.7	14.5	14.8	14.9	0.81	0.13
7 CHLOROBENZENE	19		17.4	17.5	17.8	17.8	0.93	0.01
8 CHLOROFORM	18.8		16.9	17.4	17.4	17.2	0.92	0.01
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	18.8		16.2	17.3	17.4	17.2	0.91	0.03
11 1,2-DICHLOROETHANE	18.8	C	16.4	17.1	17	17	0.90	0.02
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	100	?	0	0	0	0	0.00	
17 METHYLENE_CHLORIDE	19.1	C	19.3	17.5	18.1	17.7	0.95	0.04
18 4-METHYL-2-PENTANONE	100	?	0	0	0	0	0.00	
19 1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20 TETRACHLOROETHENE	19		16.4	18.3	18.4	18.1	0.94	0.05
21 TOULENE	1	?	0	0	0	0	0.00	
22 1,1,1-TRICHLOROETHANE	18.9	C	21.9	16.4	17.1	17.3	0.96	0.14
23 TRICHLOROETHENE	18.9	C	18.3	18.4	18.6	18.3	0.97	0.01
24 1,1,2-CL3-1,2,2-F3-ETHANE	11.3		12.6	8.4	9	8.9	0.86	0.20
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	1	?	0	0	0	0	0.00	

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4432	4432	4432	4432	4432	4432
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-16	SOP:ACL-16	SOP:ACL-16	SOP:ACL-167/8		
SAMPLE_ID			91-8105-01	91-8105-01	91-8105-01	91-8105-01		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	104	C	112	111	108	108	1.06	0.02
2 BENZENE	1	?	0	0	0	0	0.00	
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	103		100	105	102	103	1.00	0.02
6 CARBON_TETRACHLORIDE	103	C	81	82	83	82	0.80	0.01
7 CHLOROBENZENE	1	?	0	0	0	0	0.00	
8 CHLOROFORM	102		97	98	97	96	0.95	0.01
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	102		97	99	99	98	0.96	0.01
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12 1,1-DICHLOROETHENE	1	?	4.1	3.9	4.1	4	4.03	0.02
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	104		91	94	105	103	0.94	0.07
17 METHYLENE_CHLORIDE	103	C	95	97	99	99	0.95	0.02
18 4-METHYL-2-PENTANONE	103		106	109	107	107	1.04	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		91	92	85	93	0.88	0.04
20 TETRACHLOROETHENE	103		102	102	100	100	0.98	0.01
21 TOULENE	103		99	99	98	97	0.95	0.01
22 1,1,1-TRICHLOROETHANE	103	C	96	96	97	95	0.93	0.01
23 TRICHLOROETHENE	103	C	101	102	103	102	0.99	0.01
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		81	81	85	83	0.80	0.02
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	102		100	100	100	100	0.98	0.00

STANDARD NUMBER	CC102641		CC102641	CC102641	CC102641	CC102641	CC102641	CC102641
CANISTER NUMBER			10841	10841	10841	10841	10841	10841
LAB IDENTIFICATION CODE			DO	DO	DO	DO	DO	DO
ANALYTICAL METHOD			SOP:ACL-16	SOP:ACL-16	SOP:ACL-16	SOP:ACL-167/8		
SAMPLE_ID			91-8105-05	91-8105-05	91-8105-05	91-8105-05		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	ACETONE	102	C	108	107	108	106	1.05	0.01
2	BENZENE	105		98	100	101	101	0.95	0.01
3	BROMOFORM	1	?	0	0	0	0	0.00	
4	1-BUTANOL	101		142	145	146	144	1.43	0.01
5	2-BUTANONE	100	?	0	0	0	0	0.00	
6	CARBON_TETRACHLORIDE	1	?	0	0	0	0	0.00	
7	CHLOROBENZENE	1	?	0	0	0	0	0.00	
8	CHLOROFORM	1	?	0	0	0	0	0.00	
9	CYCLOHEXANE	102	C	99	100	101	100	0.98	0.01
10	1,1-DICHLOROETHANE	103		103	104	108	106	1.02	0.02
11	1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15	ETHYL_ETHER	1	?	0	0	0	0	0.00	
16	METHANOL	106		93	92	93.6	90.9	0.87	0.01
17	METHYLENE_CHLORIDE	1	?	0	0	0	0	0.00	
18	4-METHYL-2-PENTANONE	103		110	111	112	110	1.08	0.01
19	1,1,2,2-TETRACHLOROETHANE	1	?	0.25	0.21	0.2	0.2	0.22	0.11
20	TETRACHLOROETHENE	1	?	0.26	0.27	0.24	0.23	0.25	0.07
21	TOULENE	102		85	85	85	85	0.83	0.00
22	1,1,1-TRICHLOROETHANE	1	?	0.38	0.37	0.36	0.37	0.37	0.02
23	TRICHLOROETHENE	1	?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0	0	0	0	0.00	
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27	m-XYLENE	1	?	0	0	0	0	0.00	
28	o-XYLENE	1	?	0	0	0	0	0.00	
29	p-XYLENE	1	?	0	0	0	0	0.00	

Appendix H

Lab ZL - VOC Analyses

This laboratory was able to qualify because of the relaxed criteria for scoring CTCs. Nevertheless, acetone appears to present an analytical problem which this laboratory should investigate.

WIPP PDP SCORING TABLE

LABORATORY: ZL
ANALYSIS TYPE: VOCs

STANDARD NO.:	CC102652		CC102273		CC102273		CC102641		CC63474	
CANISTER NO.:	4442		4700		4702		10842		4428	
COMMENT:	Low Conc.		High Conc.		High Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. of CTCs Present:	5	50	5	50	5	75	2	20	0	0
No. of CTCs Reported:	5	50	5	50	5	75	2	20		0
No. CTCs Failing RPA:	0	0	1	-5	1	-5		0		0
No. CTCs Failing RSD:		0		0		0		0		0
No. CTCs Failing RPD:						0				
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	10	100	10	150	6	60	0	0
No. of TCs Reported:	6	60	9	90	9	135	5	50		0
No. TCs Failing RPA:		0		0		0		0		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. of TICs Present:		0		0	0	0	0		0	0
No. of TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0		0	0	0		NA
TC TOTALS:		60		90		135		50		61
MAXIMUM POINTS:		431								
TC SCORE:		0.92								
CTC TOTALS:		50		45		70		20		
MAXIMUM POINTS:		195								
CTC SCORE:		0.95	PLUS	2	FAILURES FOR CTCs					

STANDARD NUMBER	CC102652		CC102652	CC102652	CC102652	CC102652	CC102652	CC102652
CANISTER NUMBER			4442	4442	4442	4442	4442	4442
LAB IDENTIFICATION CODE			ZL	ZL	ZL	ZL	ZL	ZL
ANALYTICAL METHOD			TO2	TO2	TO2	TO2		
SAMPLE_ID			X1-09-190-0	X1-09-190-0	X1-09-190-0	X1-09-190-01A		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	100	?	0	0	0	0	0.00	
2 BENZENE	18.7		15.8	15.8	15.5	15.9	0.84	0.01
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	100	?	0	0	0	0	0.00	
5 2-BUTANONE	100	?	0	0	0	0	0.00	
6 CARBON_TETRACHLORIDE	19.3	C	19.5	19	18.9	19.3	0.99	0.01
7 CHLOROBENZENE	19		16.7	16.9	16.3	16.6	0.88	0.02
8 CHLOROFORM	18.8		17.6	17.9	17.4	18	0.94	0.02
9 CYCLOHEXANE	1	?	0	0	0	0	0.00	
10 1,1-DICHLOROETHANE	18.8		18.2	18.3	17.7	18.2	0.96	0.01
11 1,2-DICHLOROETHANE	18.8	C	17.6	17.2	16.8	17.2	0.91	0.02
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	100	?	0	0	0	0	0.00	
17 METHYLENE_CHLORIDE	19.1	C	18.1	17.9	17.4	17.8	0.93	0.02
18 4-METHYL-2-PENTANONE	100	?	0	0	0	0	0.00	
19 1,1,2,2-TETRACHLOROETHANE	1	?	0	0	0	0	0.00	
20 TETRACHLOROETHENE	19		14.6	15	14.9	14.8	0.78	0.01
21 TOULENE	1	?	0.3	0.3	0.3	0.3	0.30	0.00
22 1,1,1-TRICHLOROETHANE	18.9	C	18.9	18.5	18.3	18.7	0.98	0.01
23 TRICHLOROETHENE	18.9	C	15.8	15.8	15.7	15.8	0.83	0.00
24 1,1,2-CL3-1,2,2-F3-ETHANE	11.3		11.1	11.1	10.9	11.2	0.98	0.01
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0	0	0	0	0.00	
29 p-XYLENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4700	4700	4700	4700	4700	4700
LAB IDENTIFICATION CODE			ZL	ZL	ZL	ZL	ZL	ZL
ANALYTICAL METHOD			TO2	TO2	TO2	TO2		
SAMPLE_ID			X1-09-190-0	X1-09-190-0	X1-09-190-0	X1-09-190-02A		
REPLICATE			1	2	3	4		

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	ACETONE	104	C	52.8	54.1	59.1	57.8	0.54	0.05
2	BENZENE	1	?	0.6	0.5	0.3	0.6	0.50	0.28
3	BROMOFORM	1	?	0	0	0	0	0.00	
4	1-BUTANOL	100	?	0	0	0	0	0.00	
5	2-BUTANONE	103		79.2	73.8	80.5	76.4	0.75	0.04
6	CARBON_TETRACHLORIDE	103	C	99.9	102.2	95.6	101.1	0.97	0.03
7	CHLOROBENZENE	1	?	0	0	0	0	0.00	
8	CHLOROFORM	102		93.7	93	93.9	93.8	0.92	0.00
9	CYCLOHEXANE	1	?	0	0	0	0	0.00	
10	1,1-DICHLOROETHANE	102		96	95.8	95.3	96.5	0.94	0.01
11	1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12	1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13	cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14	ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15	ETHYL_ETHER	1	?	0	0	0	0	0.00	
16	METHANOL	104		0	0	0	0	0.00	
17	METHYLENE_CHLORIDE	103	C	90.4	90.3	91.6	91	0.88	0.01
18	4-METHYL-2-PENTANONE	103		83	79.6	81.7	81.3	0.79	0.02
19	1,1,2,2-TETRACHLOROETHANE	103		77.3	75.4	77.5	75.2	0.74	0.02
20	TETRACHLOROETHENE	103		74	74.1	73	73.4	0.71	0.01
21	TOULENE	103		81.3	80.3	80	79.5	0.78	0.01
22	1,1,1-TRICHLOROETHANE	103	C	98.6	101	96.1	100.2	0.96	0.02
23	TRICHLOROETHENE	103	C	81.9	82.1	81.5	80.7	0.79	0.01
24	1,1,2-CL3-1,2,2-F3-ETHANE	103		88.7	88.2	89	88.8	0.86	0.00
25	1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26	1,2,4-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
27	m-XYLENE	1	?	0	0	0	0	0.00	
28	o-XYLENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00
29	p-XYLENE	102		77.2	76.4	74.5	75.5	0.74	0.02

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4702	4702	4702	4702	4702	4702	
LAB IDENTIFICATION CODE			ZL	ZL	ZL	ZL	ZL	ZL	ZL
ANALYTICAL METHOD			TO2	TO2	TO2	TO2			
SAMPLE_ID			X1-09-190-03A	X1-09-190-03A	X1-09-190-03A	X1-09-190-03A			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 ACETONE	104	C	62.6	64.6	65.3	65.3	0.62	0.02	0.14
2 BENZENE	1	?	0.6	0.6	0.6	0.6	0.60	0.00	0.18
3 BROMOFORM	1	?	0	0	0	0	0.00		
4 1-BUTANOL	100	?	0	5	3	0	0.02	1.22	2.00
5 2-BUTANONE	103		90	88.9	86.7	88.4	0.86	0.02	0.13
6 CARBON_TETRACHLORIDE	103	C	97	100.8	100.1	99.2	0.96	0.02	0.00
7 CHLOROBENZENE	1	?	0	0	0	0	0.00		
8 CHLOROFORM	102		94.2	95.7	95	94.7	0.93	0.01	0.01
9 CYCLOHEXANE	1	?	0	0	0	0	0.00		
10 1,1-DICHLOROETHANE	102		97.8	98.4	97.9	97.8	0.96	0.00	0.02
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00		
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00		
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00		
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00		
15 ETHYL_ETHER	1	?	0	0	0	0	0.00		
16 METHANOL	104		0	0	0	0	0.00		
17 METHYLENE_CHLORIDE	103	C	94.2	93.8	93.4	93	0.91	0.01	0.03
18 4-METHYL-2-PENTANONE	103		88.7	90.6	86.4	89.1	0.86	0.02	0.09
19 1,1,2,2-TETRACHLOROETHANE	103		77.6	78.3	76	77.3	0.75	0.01	0.01
20 TETRACHLOROETHENE	103		72.3	74.1	73.3	72.1	0.71	0.01	0.01
21 TOULENE	103		80.2	81.4	79.8	79	0.78	0.01	0.00
22 1,1,1-TRICHLOROETHANE	103	C	94.8	98.4	97.6	97	0.94	0.02	0.02
23 TRICHLOROETHENE	103	C	78.9	79.3	79.9	79.6	0.77	0.01	0.03
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		90.7	91.1	90.1	89.9	0.88	0.01	0.02
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00		
26 1,2,4-TRIMETHYLBENZENE	1	?	0.4	0.5	0.6	0.5	0.50	0.16	2.00
27 m-XYLENE	1	?	0	0	0	0	0.00		
28 o-XYLENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00	0.00
29 p-XYLENE	102		75	77.8	75.4	74.8	0.74	0.02	0.00

STANDARD NUMBER	CC102641		CC102641	CC102641	CC102641	CC102641	CC102641	CC102641
CANISTER NUMBER			10842	10842	10842	10842	10842	10842
LAB IDENTIFICATION CODE			ZL	ZL	ZL	ZL	ZL	ZL
ANALYTICAL METHOD			TO2	TO2	TO2	TO2		
SAMPLE_ID			X1-09-190-0	X1-09-190-0	X1-09-190-0	X1-09-190-04A		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	102	C	98	80.9	92.1	95.8	0.90	0.08
2 BENZENE	105		83.7	72.3	77.7	81.1	0.75	0.06
3 BROMOFORM	1	?	0	0	0	0	0.00	
4 1-BUTANOL	101		92.6	63.6	84.7	114.2	0.88	0.24
5 2-BUTANONE	100	?	0	0	0	0	0.00	
6 CARBON_TETRACHLORIDE	1	?	0	0	0	0	0.00	
7 CHLOROBENZENE	1	?	0	0	0	0	0.00	
8 CHLOROFORM	1	?	0.1	0.2	0.2	0.1	0.15	0.38
9 CYCLOHEXANE	102	C	103.1	81.7	90.4	90.7	0.90	0.10
10 1,1-DICHLOROETHANE	103		99.6	90.9	96.4	98.3	0.93	0.04
11 1,2-DICHLOROETHANE	1	?	0	0	0	0	0.00	
12 1,1-DICHLOROETHENE	1	?	0	0	0	0	0.00	
13 cis-DICHLOROETHENE	1	?	0	0	0	0	0.00	
14 ETHYL_BENZENE	1	?	0	0	0	0	0.00	
15 ETHYL_ETHER	1	?	0	0	0	0	0.00	
16 METHANOL	106		0	0	0	0	0.00	
17 METHYLENE_CHLORIDE	1	?	0	0	0	0	0.00	
18 4-METHYL-2-PENTANONE	103		100.6	92.9	102.5	111.9	0.99	0.08
19 1,1,2,2-TETRACHLOROETHANE	1	?	0.2	0.1	0.1	0.1	0.13	0.40
20 TETRACHLOROETHENE	1	?	0.3	0.3	0.3	0.2	0.28	0.18
21 TOULENE	102		84.4	72.4	80.2	81.2	0.78	0.06
22 1,1,1-TRICHLOROETHANE	1	?	0.3	0.3	0.3	0.3	0.30	0.00
23 TRICHLOROETHENE	1	?	0.2	0.2	0.2	0	0.15	0.67
24 1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0	0	0	0	0.00	
25 1,3,5-TRIMETHYLBENZENE	1	?	0	0	0	0	0.00	
26 1,2,4-TRIMETHYLBENZENE	1	?	0.1	0	0	0	0.03	2.00
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0.1	0.1	0.1	0.1	0.10	0.00
29 p-XYLENE	1	?	0.7	0.6	0.6	0.7	0.65	0.09

Appendix I

Lab OS - VOC Analyses

No special scoring considerations were utilized.

Two of the CTC failures were for failure to satisfactorily quantitate acetone in the duplicate high VOC canisters. Performance was not generally bad and some refinements in calibration may bring the system into conformance. Although not a CTC, p-xylene was not properly quantified and may also be a calibration problem.

WIPP PDP SCORING TABLE

LABORATORY: OS
ANALYSIS TYPE: VOCs

STANDARD NO.:	CC102652		CC102273		CC102273		CC102641		CC63474	
CANISTER NO.:	4706		4427		4431		10840		4438	
COMMENT:	Low Conc.		High Conc.		High Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. of CTCs Present:	5	50	5	50	5	75	2	20	0	0
No. of CTCs Reported:	5	50	5	50	5	75	2	20		0
No. CTCs Failing RPA:	1	-5	2	-10	1	-5		0		0
No. CTCs Failing RSD:		0		0		0		0		0
No. CTCs Failing RPD:						0				
		Points		Points		Points		Points		Points
No. of TCs Present:	6	60	10	100	10	150	6	60	0	0
No. of TCs Reported:	6	60	10	100	10	150	6	60		0
No. TCs Failing RPA:		0	2	-10	2	-10	1	-5		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. of TICs Present:		0		0	0	0	0		0	0
No. of TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 * PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TCs in Spikes > PRQL:	0	0	0	0		0	0	0		NA
TC TOTALS:		60		90		140		55		61
MAXIMUM POINTS:		431								
TC SCORE:		0.94								
CTC TOTALS:		45		40		70		20		
MAXIMUM POINTS:		195								
CTC SCORE:		0.9	PLUS	4	FAILURES FOR CTCs					

STANDARD NUMBER	CC102652		CC102652	CC102652	CC102652	CC102652	CC102652	CC102652
CANISTER NUMBER			4706	4706	4706	4706	4706	4706
LAB IDENTIFICATION CODE			OS	OS	OS	OS	OS	OS
ANALYTICAL METHOD								
SAMPLE_ID								
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	100	?	9.47	9.47	9.47	9.47	0.09	0.00
2 BENZENE	18.7		19.9	20.1	19.4	20.1	1.06	0.02
3 BROMOFORM	1	?	0.07	0.07	0.07	0.07	0.07	0.00
4 1-BUTANOL	100	?	40.24	40.24	40.24	40.24	0.40	0.00
5 2-BUTANONE	100	?	5.78	5.78	5.78	5.78	0.06	0.00
6 CARBON_TETRACHLORIDE	19.3	C	24.7	24.7	24.4	24.7	1.28	0.01
7 CHLOROBENZENE	19		20.4	20.6	20	20.6	1.07	0.01
8 CHLOROFORM	18.8		22.4	22.1	21.8	22.1	1.18	0.01
9 CYCLOHEXANE	1	?	0.14	0.14	0.14	0.14	0.14	0.00
10 1,1-DICHLOROETHANE	18.8		21.7	21.4	21	21.4	1.14	0.01
11 1,2-DICHLOROETHANE	18.8	C	25	24.9	23.9	24.9	1.31	0.02
12 1,1-DICHLOROETHENE	1	?	0.12	0.12	0.12	0.12	0.12	0.00
13 cis-DICHLOROETHENE	1	?	0.13	0.13	0.13	0.13	0.13	0.00
14 ETHYL_BENZENE	1	?	0.07	0.07	0.07	0.07	0.07	0.00
15 ETHYL_ETHER	1	?	0.23	0.23	0.23	0.23	0.23	0.00
16 METHANOL	100	?	52.86	52.86	52.86	52.86	0.53	0.00
17 METHYLENE_CHLORIDE	19.1	C	21	21	20.8	21.1	1.10	0.01
18 4-METHYL-2-PENTANONE	100	?	8.39	8.39	8.39	8.39	0.08	0.00
19 1,1,2,2-TETRACHLOROETHANE	1	?	0.06	0.06	0.06	0.06	0.06	0.00
20 TETRACHLOROETHENE	19		20.1	21.1	21.2	21.1	1.10	0.02
21 TOULENE	1	?	0.11	0.11	0.11	0.11	0.11	0.00
22 1,1,1-TRICHLOROETHANE	18.9	C	23.6	23.4	22.8	23.4	1.23	0.01
23 TRICHLOROETHENE	18.9	C	19.7	19.8	19.9	19.8	1.05	0.00
24 1,1,2-CL3-1,2,2-F3-ETHANE	11.3		9.3	9.4	9.4	9.5	0.83	0.01
25 1,3,5-TRIMETHYLBENZENE	1	?	0.18	0.18	0.18	0.18	0.18	0.00
26 1,2,4-TRIMETHYLBENZENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0.17	0.17	0.17	0.17	0.17	0.00
29 p-XYLENE	1	?	0.1	0.1	0.1	0.1	0.10	0.00

CANISTER NUMBER			4427	4427	4427	4427	4427	4427
LAB IDENTIFICATION CODE			OS	OS	OS	OS	OS	OS
ANALYTICAL METHOD			L-4147/11-A	L-4147/11-A	L-4147/11-A	L-4147/11-A		
SAMPLE_ID			AK1012/1014	AK1012/1014	AK1012/1014	AK1012/1014S5		
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	104	C	181.43	182.15	181.06	180.58	1.74	0.00
2 BENZENE	1	?	0.06	0.06	0.06	0.06	0.06	0.00
3 BROMOFORM	1	?	0.07	0.07	0.07	0.07	0.07	0.00
4 1-BUTANOL	100	?	40.24	40.24	40.24	40.24	0.40	0.00
5 2-BUTANONE	103		77.4	77.39	76.96	77.13	0.75	0.00
6 CARBON_TETRACHLORIDE	103	C	138.5	137.6	137.3	140.2	1.34	0.01
7 CHLOROBENZENE	1	?	0.06	0.06	0.06	0.06	0.06	0.00
8 CHLOROFORM	102		113.8	115.3	114.9	116	1.13	0.01
9 CYCLOHEXANE	1	?	0.14	0.14	0.14	0.14	0.14	0.00
10 1,1-DICHLOROETHANE	102		103.7	101.9	101.9	102.8	1.01	0.01
11 1,2-DICHLOROETHANE	1	?	0.16	0.16	0.16	0.16	0.16	0.00
12 1,1-DICHLOROETHENE	1	?	0.12	0.12	0.12	0.12	0.12	0.00
13 cis-DICHLOROETHENE	1	?	0.13	0.13	0.13	0.13	0.13	0.00
14 ETHYL_BENZENE	1	?	0.07	0.07	0.07	0.07	0.07	0.00
15 ETHYL_ETHER	1	?	0.23	0.23	0.23	0.23	0.23	0.00
16 METHANOL	104		130.48	123.37	124.55	131.11	1.22	0.03
17 METHYLENE_CHLORIDE	103	C	101.8	102.8	103.9	104.4	1.00	0.01
18 4-METHYL-2-PENTANONE	103		145.76	144.33	143.66	144.35	1.40	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		97.5	99.1	95.9	101.9	0.96	0.03
20 TETRACHLOROETHENE	103		126.3	128.7	124.2	130.8	1.24	0.02
21 TOULENE	103		103.4	104.8	101	106.7	1.01	0.02
22 1,1,1-TRICHLOROETHANE	103	C	123	121	121.6	123.6	1.19	0.01
23 TRICHLOROETHENE	103	C	117.8	116.1	116.5	121.2	1.14	0.02
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		78.6	77.4	78.1	78.6	0.76	0.01
25 1,3,5-TRIMETHYLBENZENE	1	?	0.18	0.18	0.18	0.18	0.18	0.00
26 1,2,4-TRIMETHYLBENZENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0.17	0.17	0.17	0.17	0.17	0.00
29 p-XYLENE	102		54.8	55.6	53.6	56.4	0.54	0.02

STANDARD NUMBER	CC102273		CC102273	CC102273	CC102273	CC102273	CC102273	CC102273	CC102273
CANISTER NUMBER			4431	4431	4431	4431	4431	4431	
LAB IDENTIFICATION CODE			OS	OS	OS	OS	OS	OS	OS
ANALYTICAL METHOD			L-4147/11-A	L-4147/11-A	L-4147/11-A	L-4147/11-A			
SAMPLE_ID			AK1003/1011S	AK1003/1011S	AK1003/1011S	AK1003/1011S6			
REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 ACETONE	104	C	180.99	183.01	179.34	180.84	1.74	0.01	0.00
2 BENZENE	1	?	0.06	0.06	0.06	0.06	0.06	0.00	0.00
3 BROMOFORM	1	?	0.07	0.07	0.07	0.07	0.07	0.00	0.00
4 1-BUTANOL	100	?	40.24	40.24	40.24	40.24	0.40	0.00	0.00
5 2-BUTANONE	103		77.54	77.98	76.44	77.19	0.75	0.01	0.00
6 CARBON_TETRACHLORIDE	103	C	126.7	129.6	128.2	127.9	1.24	0.01	0.08
7 CHLOROBENZENE	1	?	0.06	0.06	0.06	0.06	0.06	0.00	0.00
8 CHLOROFORM	102		117.1	118.2	118.6	118.6	1.16	0.01	0.03
9 CYCLOHEXANE	1	?	0.14	0.14	0.14	0.14	0.14	0.00	0.00
10 1,1-DICHLOROETHANE	102		111.9	114.2	113.3	112.8	1.11	0.01	0.10
11 1,2-DICHLOROETHANE	1	?	0.16	0.16	0.16	0.16	0.16	0.00	0.00
12 1,1-DICHLOROETHENE	1	?	0.12	0.12	0.12	0.12	0.12	0.00	0.00
13 cis-DICHLOROETHENE	1	?	0.13	0.13	0.13	0.13	0.13	0.00	0.00
14 ETHYL_BENZENE	1	?	0.07	0.07	0.07	0.07	0.07	0.00	0.00
15 ETHYL_ETHER	1	?	0.23	0.23	0.23	0.23	0.23	0.00	0.00
16 METHANOL	104		132.35	132.08	131	130.34	1.26	0.01	0.03
17 METHYLENE_CHLORIDE	103	C	107.5	111.6	110.6	110.6	1.07	0.02	0.06
18 4-METHYL-2-PENTANONE	103		145.95	147.56	144.1	145.65	1.42	0.01	0.01
19 1,1,2,2-TETRACHLOROETHANE	103		108.2	113.8	114.3	112.5	1.09	0.02	0.13
20 TETRACHLOROETHENE	103		106.9	108.5	109.6	109.6	1.05	0.01	0.16
21 TOULENE	103		104.8	108.2	107.7	106.7	1.04	0.01	0.03
22 1,1,1-TRICHLOROETHANE	103	C	121.3	124	124.3	122	1.19	0.01	0.00
23 TRICHLOROETHENE	103	C	107.7	108.4	109.4	109.4	1.06	0.01	0.08
24 1,1,2-CL3-1,2,2-F3-ETHANE	103		81.9	82.4	81.4	81.2	0.79	0.01	0.04
25 1,3,5-TRIMETHYLBENZENE	1	?	0.18	0.18	0.18	0.18	0.18	0.00	0.00
26 1,2,4-TRIMETHYLBENZENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00	0.00
27 m-XYLENE	1	?	0	0	0	0	0.00		
28 o-XYLENE	1	?	0.17	0.17	0.17	0.17	0.17	0.00	0.00
29 p-XYLENE	102		51	52.4	52.4	52.4	0.51	0.01	0.06

STANDARD NUMBER	CC102641		CC102641	CC102641	CC102641	CC102641	CC102641	CC102641
CANISTER NUMBER			10840	10840	10840	10840	10840	10840
LAB IDENTIFICATION CODE			OS	OS	OS	OS	OS	OS
ANALYTICAL METHOD			L-4147/11-A	L-4147/11-A	L-4147/11-A	L-4147/11-A		
SAMPLE_ID			AK-1017,101	AK-1017,101	AK-1017,101	AK-1017,1014	S9,1015S1,1014S1	
REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 ACETONE	102	C	98.95	97.91	97.6	96.65	0.96	0.01
2 BENZENE	105		96.9	96.9	97.8	96.9	0.93	0.00
3 BROMOFORM	1	?	0.07	0.07	0.07	0.07	0.07	0.00
4 1-BUTANOL	101		116.32	107.57	108	108.53	1.09	0.04
5 2-BUTANONE	100	?	5.78	5.78	5.78	5.78	0.06	0.00
6 CARBON_TETRACHLORIDE	1	?	0.5	0.5	0.5	0.5	0.50	0.00
7 CHLOROBENZENE	1	?	0.06	0.06	0.06	0.06	0.06	0.00
8 CHLOROFORM	1	?	0.4	0.4	0.4	0.4	0.40	0.00
9 CYCLOHEXANE	102	C	87.3	88.2	89.1	89.1	0.87	0.01
10 1,1-DICHLOROETHANE	103		99.3	100.1	101.6	102.4	0.98	0.01
11 1,2-DICHLOROETHANE	1	?	0.16	0.16	0.16	0.16	0.16	0.00
12 1,1-DICHLOROETHENE	1	?	0.12	0.12	0.12	0.12	0.12	0.00
13 cis-DICHLOROETHENE	1	?	0.13	0.13	0.13	0.13	0.13	0.00
14 ETHYL_BENZENE	1	?	0.07	0.07	0.07	0.07	0.07	0.00
15 ETHYL_ETHER	1	?	0.23	0.23	0.23	0.23	0.23	0.00
16 METHANOL	106		141.28	131.16	126.42	131.38	1.25	0.05
17 METHYLENE_CHLORIDE	1	?	0.3	0.3	0.3	0.3	0.30	0.00
18 4-METHYL-2-PENTANONE	103		147.92	145.45	145.52	143.89	1.41	0.01
19 1,1,2,2-TETRACHLOROETHANE	1	?	0.4	0.4	0.3	0.4	0.38	0.13
20 TETRACHLOROETHENE	1	?	0.7	0.6	0.5	0.5	0.58	0.17
21 TOULENE	102		93.3	90.9	90.9	91.7	0.90	0.01
22 1,1,1-TRICHLOROETHANE	1	?	0.8	0.7	0.7	0.7	0.73	0.07
23 TRICHLOROETHENE	1	?	0.6	0.5	0.5	0.5	0.53	0.10
24 1,1,2-CL3-1,2,2-F3-ETHANE	1	?	0.2	0.2	0.2	0.2	0.20	0.00
25 1,3,5-TRIMETHYLBENZENE	1	?	0.18	0.18	0.18	0.18	0.18	0.00
26 1,2,4-TRIMETHYLBENZENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00
27 m-XYLENE	1	?	0	0	0	0	0.00	
28 o-XYLENE	1	?	0.17	0.17	0.17	0.17	0.17	0.00
29 p-XYLENE	1	?	0.2	0.2	0.2	0.2	0.20	0.00

Table 0

Laboratory Code Identification

Laboratory	Analysis	Code
INEL, EG&G ECU	VOCs	CA
ANL-E	VOCs	DO
WIPP/IT	VOCs	ZL
EPA - Region 7	VOCs	VG
RFP	VOCs	OS
ANL-W	Gases	CK
ANL-E	Gases	MD
WIPP/IT	Gases	HE
EPA/MVEL	Gases	BT
RFP	Gases	HR

Cycle 2A - VOC

Contract Number 68D90170

WIPP Experimental Waste Characterization Program

Performance Demonstration Program Scoring Report - January 1992

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February 1992

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - February 1992

This report contains the results of the Backup Cycle of blind sample distribution to a single laboratory participating in the Performance Demonstration Program for WIPP Characterization. This distribution consisted of canisters of simulated headspace gases of known composition of volatile organic compounds (VOCs) only. This cycle was enacted to allow those laboratories who failed the previous cycle (Cycle 2) an additional opportunity to qualify, as described in the Performance Demonstration Program Plan, Section 5.0. Table 1 lists the canister identification numbers, their contents and recipient. Canisters were received by the laboratory on January 31, 1992.

All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 1. This report consists of a summary of the results and a separate appendix detailing the laboratory's performance. The appendix consists of a summary discussion and two kinds of tables. Data tables give the results of individual analyses and the calculated RPA, RSD and RPD (where applicable) for each analyte.

Summary of Results

Table 2 summarizes the Pass/Fail status of the one participating laboratory, which passed the overall scoring criteria. There were some difficulties in quantifying 3 target compounds, as discussed in the cover sheet of Appendix A.

Table 1
Gas Canister Identification

Laboratory Code	High Conc. CC102273	Low Conc. CC12776	Duplicate Low Conc. CC12776	Special Flammable CC102641	Blank N_2 CC63474
OS	4441	4715	4704	~~4732~~ 4432	4435

Table 2
Pass/Fail Summary

Laboratory Code	Analysis	Status	Comments
OS	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.94 TC Score

Table 3
Pass/Fail Criteria

Parameter	Acceptable Range
RPA	70% to 130%
RSD	+/- 25%
RPD	+/- 25%

Interpretation of the Appendix Tables

The data contained in the tables of the attached Appendix are straightforward. The terms RPA, RSD and RPD are defined in the Performance Demonstration Program Plan. RPA is the Relative Percent Accuracy and is calculated as a percent recovery of the known value. RSD is the Relative Standard Deviation calculated as the sample standard deviation from the replicate data submitted for each analyte. RPD is the Relative Percent Difference and is used only when duplicate canisters were submitted for analysis. Pass/Fail criteria are given in Table 3.

Data tables in the Appendices each have a column listing the known values for the analytes. On the data tables an entry "C" next to the column of known values indicates a critical target compound (CTC). An entry of "?" next to this column indicates that the analyte was not added to the canister. In this case, the numerical value in the column is the PRDL against which any lab data are compared. The remaining entries on the tables are self-evident or discussed in the individual appendix.

Appendix A

Laboratory OS-VOC Analysis

Two methods were submitted by this laboratory, a GCMS procedure for nonpolar compounds (Procedure No. L-4111-A) and a GC procedure (Procedure No. L-4147-A) for alcohols and ketones. Both were qualified. The laboratory correctly identified a problem in quantifying 1-butanol, a target compound, and failed the RPA on 2 other target compounds (methanol and 4-methyl-2-pentanone). However, this difficulty did not prevent the laboratory from passing the overall scoring criteria.

Acetone and methanol were not scored in the Low and Low Duplicate canisters, since it was present at a concentration less than the PRDL.

WIPP PDP SCORING TABLE

LABORATORY: OS
ANALYSIS TYPE VOC's

STANDARD NO:	CC102273		CC12776		CC12776		CC102641		CC63474	
CANSISTER NO:	4441		4715		4704		4432		4435	
COMMENT:	High Conc.		Low Conc.		Low Conc. Duplicate		Special Flammables		Blank	
		Points		Points		Points		Points		Points
No. CTCs Present:	5	50	4	40	4	60	2	20	0	0
No. CTCs Reported:	5	50	4	40	4	60	2	20		0
No. CTCs Failing RPA:	0	0	0	0	0	0		0		0
No. CTCs Failing RSD:		0		0		0		0		0
No. CTCs Failing RPD:						0				
		Points		Points		Points		Points		Points
No. TCs Present:	10	100	6	60	6	60	6	60	0	0
No. TCs Reported:	10	100	6	60	6	60	6	60		0
No. TCs Failing RPA:	2	-10	0	0	0	0	2	-10		0
No. TCs Failing RSD:		0		0		0		0		0
No. TCs Failing RPD:						0				
No. TICs Present:		0		0	0	0	0		0	0
No. TICs Reported:		0		0		0	0			0
No. of CTCs Reported in Blank > 0.5 PRQL:		NA		NA		NA		NA	0	0
No. of TCs Reported in Blank > 0.5 PRQL:		NA		NA		NA		NA	0	0
Subtotal for Blank:										61
No. of False CTCs or TOs in Spikes > PRQL:		0	0	0		0	0	0		NA
TCTOTALS:		90		60		60		50		61
MAXIMUM POINTS:		341								
TCSCORE:		0.94								
CTCTOTALS:		50		40		60		20		
MAXIMUM POINTS:		170								
CTCSCORE:		1.00		0 FAILURES FOR CTCs						

STANDARD NUMBER CC102273
CANISTER NUMBER 04441
LAB IDENTIFICATION CODE 05
ANALYTICAL METHOD
SAMPLE-ID
REPLICATE

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	ACETONE	104	C	77	77	77	66	0.71	0.06
2	BENZENE	1	?					0.00	ERR
3	BROMOFORM	1	?					0.00	ERR
4	1-BUTANOL	100	?					0.00	ERR
5	2-BUTANONE	103		75	76	76	75	0.73	0.01
6	CARBON-TETRACHLORIDE	103	C	91.91	93.73	90.69	91.84	0.89	0.01
7	CHLOROBENZENE	1	?					0.00	ERR
8	CHLOROFORM	102		91.81	94.12	89.89	92.43	0.90	0.02
9	CYCLOHEXANE	1	?					0.00	ERR
10	1,1-DICHLOROETHANE	102		100.46	100.18	98.74	100.18	0.98	0.01
11	1,2-DICHLOROETHANE	1	?					0.00	ERR
12	1,1-DICHLOROETHENE	1	?	1.42	1.29	1.29	1.32	1.33	0.04
13	cis-DICHLOROETHENE	1	?					ERR	ERR
14	ETHYL-BENZENE	1	?					ERR	ERR
15	ETHYL-ETHER	1	?					ERR	ERR
16	METHANOL	104		67	65	67	66	0.64	0.01
17	METHYLENE-CHLORIDE	103	C	105.98	107.39	105.22	105.23	1.03	0.01
18	4-METHYL-2-PENTANONE	103		71	71	72	71	0.69	0.01
19	1,1,2,2-TETRACHLOROETHANE	103		99.6	103.11	104.03	100.08	0.99	0.02
20	TETRACHLOROETHENE	103		92.41	91.88	92.76	92.04	0.90	0.00
21	TOULENE	103		97.88	97.87	98.39	96.09	0.95	0.01
22	1,1,1-TRICHLOROETHANE	103	C	95.11	96.35	93.9	94.9	0.92	0.01
23	TRICHLOROETHENE	103	C	94.71	94.77	94.59	93.84	0.92	0.00
24	1,1,2-CL3-1,2,2-F3-ETHANE	103		93.89	95.24	95.18	95.18	0.92	0.01
25	1,3,5-TRIMETHYLBENZENE	1	?					ERR	ERR
26	1,2,4-TRIMETHYLBENZENE	1	?					ERR	ERR
27	m-XYLENE	1	?					ERR	ERR
28	o-XYLENE	1	?					ERR	ERR
29	p-XYLENE	102		95.81	97.81	98.81	95.66	0.95	0.01

STANDARD NUMBER cc12776
CANISTER NUMBER 04715
LAB IDENTIFICATION CODE 05
ANALYTICAL METHOD
SAMPLE-ID
REPLICATE

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	ACETONE	5.08	C					0.00	ERR
2	BENZENE	5.28		5.19	5.33	5.32	4.75	0.97	0.05
3	BROMOFORM	1	?					0.00	ERR
4	1-BUTANOL	100	?					0.00	ERR
5	2-BUTANONE	100	?					0.00	ERR
6	CARBON-TETRACHLORIDE	3.1	C	3	3.05	3.06	2.62	0.95	0.06
7	CHLOROBENZENE	8.75		10.99	10.99	11.17	9.02	1.20	0.08
8	CHLOROFORM	4.12		3.97	4.01	4.02	3.6	0.95	0.04
9	CYCLOHEXANE	1	?					0.00	ERR
10	1,1-DICHLOROETHANE	1	?					0.00	ERR
11	1,2-DICHLOROETHANE	1	?					0.00	ERR
12	1,1-DICHLOROETHENE	1	?					0.00	ERR
13	cis-DICHLOROETHENE	1	?					ERR	ERR
14	ETHYL-BENZENE	7.52		8.16	8.05	8.15	6.63	1.03	0.08
15	ETHYL-ETHER	1	?					ERR	ERR
16	METHANOL	4.08						0.00	ERR
17	METHYLENE-CHLORIDE	1.98	C	2.33	2.27	2.33	2.12	1.14	0.04
18	4-METHYL-2-PENTANONE	100	?					0.00	ERR
19	1,1,2,2-TETRACHLOROETHANE	1	?					0.00	ERR
20	TETRACHLOROETHENE	1	?					0.00	ERR
21	TOULENE	1	?					0.00	ERR
22	1;1,1-TRICHLOROETHANE	10.6	C	9.9	10.14	10.12	8.8	0.92	0.06
23	TRICHLOROETHENE	7.2	C	7.42	7.5	7.57	6.69	1.01	0.05
24	1,1,2-CL3-1,2,2-F3-ETHANE	10.4		10.38	10.61	10.4	9.25	0.98	0.05
25	1,3,5-TRIMETHYLBENZENE	1	?					ERR	ERR
26	1,2,4-TRIMETHYLBENZENE	1	?					ERR	ERR
27	m-XYLENE	1	?					ERR	ERR
28	o-XYLENE	1	?					ERR	ERR
29	p-XYLENE	6.03		7.89	7.68	7.7	6.33	1.23	0.08

STANDARD NUMBER CC12776
CANISTER NUMBER 04704
LAB IDENTIFICATION CODE 05
ANALYTICAL METHOD
SAMPLE-ID
REPLICATE

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD	RPD
1	ACETONE	5.08	C					0.00	ERR	
2	BENZENE	5.28		5.1	5.14	5.13	5.03	0.97	0.01	0.01
3	BROMOFORM	1	?					0.00	ERR	
4	1-BUTANOL	100	?					0.00	ERR	
5	2-BUTANONE	100	?					0.00	ERR	
6	CARBON-TETRACHLORIDE	3.1	C	3	2.97	3.01	2.88	0.96	0.02	0.01
7	CHLOROBENZENE	8.75		10.94	10.9	10.88	10.87	1.25	0.00	0.03
8	CHLOROFORM	4.12		3.9	3.8	3.94	3.64	0.93	0.03	0.02
9	CYCLOHEXANE	1	?					0.00	ERR	
10	1,1-DICHLOROETHANE	1	?					0.00	ERR	
11	1,2-DICHLOROETHANE	1	?					0.00	ERR	
12	1,1-DICHLOROETHENE	1	?					0.00	ERR	
13	cis-DICHLOROETHENE	1	?					ERR	ERR	
14	ETHYL-BENZENE	7.52		7.98	7.91	8	7.9	1.06	0.01	0.03
15	ETHYL-ETHER	1	?					ERR	ERR	
16	METHANOL	4.08						0.00	ERR	
17	METHYLENE-CHLORIDE	1.98	C	2.19	2.25	2.2	2.17	1.11	0.01	0.03
18	4-METHYL-2-PENTANONE	100	?					0.00	ERR	
19	1,1,2,2-TETRACHLOROETHANE	1	?					0.00	ERR	
20	TETRACHLOROETHENE	1	?					0.00	ERR	
21	TOULENE	1	?					0.00	ERR	
22	1,1,1-TRICHLOROETHANE	10.6	C	9.94	9.67	9.96	9.44	0.92	0.02	0.01
23	TRICHLOROETHENE	7.2	C	7.29	7.37	7.38	7.31	1.02	0.01	0.01
24	1,1,2-CL3-1,2,2-F3-ETHANE	10.4		9.97	10.34	10.02	9.99	0.97	0.01	0.01
25	1,3,5-TRIMETHYLBENZENE	1	?					ERR	ERR	
26	1,2,4-TRIMETHYLBENZENE	1	?					ERR	ERR	
27	m-XYLENE	1	?					ERR	ERR	
28	o-XYLENE	1	?					ERR	ERR	
29	p-XYLENE	6.03		7.99	7.75	8	7.62	1.30	0.02	0.06

STANDARD NUMBER CC102641
CANISTER NUMBER 04432
LAB IDENTIFICATION CODE 05
ANALYTICAL METHOD
SAMPLE-ID
REPLICATE

		KNOWN VALUE	FLAG	RESULT 1	RESULT 2	RESULT 3	RESULT 4	RPA	RSD
1	ACETONE	102	C	76	76	76	76	0.75	0.00
2	BENZENE	105		98.18	99.99	100.03	108.1	0.97	0.04
3	BROMOFORM	1	?					0.00	ERR
4	1-BUTANOL	101		51	48	50	48	0.49	0.03
5	2-BUTANONE	100	?					0.00	ERR
6	CARBON-TETRACHLORIDE	1	?					0.00	ERR
7	CHLOROBENZENE	1	?					0.00	ERR
8	CHLOROFORM	1	?					0.00	ERR
9	CYCLOHEXANE	102	C	105.08	106.53	105.93	112.44	1.05	0.03
10	1,1-DICHLOROETHANE	103		95.94	99.64	99.11	107.65	0.98	0.04
11	1,2-DICHLOROETHANE	1	?					0.00	ERR
12	1,1-DICHLOROETHENE	1	?					0.00	ERR
13	cis-DICHLOROETHENE	1	?					ERR	ERR
14	ETHYL-BENZENE	1	?					ERR	ERR
15	ETHYL-ETHER	1	?					ERR	ERR
16	METHANOL	106		73	73	74	74	0.69	0.01
17	METHYLENE-CHLORIDE	1	?					0.00	ERR
18	4-METHYL-2-PENTANONE	103		75	74	74	74	0.72	0.01
19	1,1,2,2-TETRACHLOROETHANE	1	?					0.00	ERR
20	TETRACHLOROETHENE	1	?					0.00	ERR
21	TOULENE	102		95.76	96.9	94.58	120.27	1.00	0.10
22	1,1,1-TRICHLOROETHANE	1	?					0.00	ERR
23	TRICHLOROETHENE	1	?					0.00	ERR
24	1,1,2-CL3-1,2,2-F3-ETHANE	1	?					0.00	ERR
25	1,3,5-TRIMETHYLBENZENE	1	?					ERR	ERR
26	1,2,4-TRIMETHYLBENZENE	1	?					ERR	ERR
27	m-XYLENE	1	?					ERR	ERR
28	o-XYLENE	1	?					ERR	ERR
29	p-XYLENE	1	?					0.00	ERR

CYCLE 2A - NON-VOC

Contract Number 68D90170

WIPP Experimental Waste Characterization Program

Performance Demonstration Program Scoring Report - January 1992

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Madeleine Nawar
Work Assignment Manager

February 1992

Table 3

Pass/Fail Summary

Lab Code	Analysis	Status	Comments
MD	Gas	Pass	0 CTAG failures, 0.86 score
HE	Gas	Pass	0 CTAG failures, 0.98 score
HR	Gas	Pass	0 CTAG failures, 0.87 score

The blank canisters for all three laboratories showed oxygen concentrations of between 4200 and 5500 ppm. Section 5.2.1.4.1 of the Performance Demonstration Program Plan allows for disqualification of the blank canisters if all participating laboratories report a specific analyte to be present in the blank at levels exceeding 70% of the PRDL. Since that was clearly the case, the blank canisters are considered contaminated and the analyte data will be judged unusable and deleted as part of the performance criteria for this cycle. No blank data are scored.

The oxygen values for the low concentration and special canisters for all three laboratories showed oxygen recoveries of between 182% and 233%. Section 5.2.5.5 of the Performance Demonstration Plan allows for disqualification of a specific analyte if the preponderance of evidence from participating laboratories supports the conclusion that the concentration of that analyte has not been certified accurately enough to demonstrate compliance with PDP criteria. On the basis of both the blank and low concentration/special canisters, oxygen is disqualified from this cycle, and no oxygen data are scored.

Interpretation of Appendix Tables

The data contained in the tables are straightforward. The terms RPA, RSD and RPD are defined in the Performance Demonstration Program Plan. RPA is the Relative

Table 1

Gas Canister Identification

Lab Code	Low Conc.	High Conc.	Interference Test	Balance N_2	Special NOx
	CC102194	CC60383	CC102192	CC63474	CC102490
MD	04682	04690	04695	04686	10851
		04671			
HE	04688	04685	04689	04672	04676
		04674			
HR	04668	04698	04687	04696	04664
		04670			

Table 2

Pass/Fail Criteria

Parameter	GAS	NOx
RPA	90-110%	50-150%
RSD	±10%	±20%
RPD	±10%	±20%

Appendix A

Lab MD - Gas Analysis

As stated previously, the blank canister was disqualified from this cycle. Also, oxygen was disqualified in all canisters.

No other special scoring was required.

Percent Accuracy and is calculated as a percent recovery of the known value. RSD is the Relative Standard Deviation calculated as the sample standard deviation from the replicate data submitted for each analyte. RPD is the Relative Percent Difference and is used only when duplicate canisters were submitted for analysis. Pass/Fail criteria are given in Table 2.

Data tables each have a column listing the known values for the analytes. On the data tables an entry "C" next to the column of known values indicates a critical target analyte gas (CTAG). An entry of "?" next to this column indicates that the analyte was not added to the canister. In this case, the numerical value in the column is the PRDL against which any lab data are compared. The remaining entries on the tables are self-evident or discussed in the individual appendix.

Unlike the two previous scoring reports, a data table for each blank canister is included. This was done to provide a means to list the contamination each laboratory encountered in these canisters, as blank data were not scored. The only measurable analyte added to this canister was nitrogen, and all other analytes have a "?" in the flag column, as explained above.

Scoring for the NOx and Interference canisters are grouped under a single heading on each scoring table. The nitrogen data for the NOx canister were not scored, and all other analytes (except hydrogen and methane) are marked with a "?" in the flag column.

All data are listed as they were reported by each laboratory. Some laboratories reported a value (or detection limit) for every analyte on every run, others did not. Where a laboratory reported data for less than four replicates, gaps in the data tables occur.

	CC60383
CANISTER NUMBER	04671
LAB IDENTIFICATION CODE	MD
ANALYTICAL METHOD	MS
SAMPLE_ID	92-8029-01
REPLICATE	

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	72.22		72.5	72.5	72.4	72.4	1.00	0.00
2	OXYGEN	15.4		15.6	15.6	15.6	15.6	1.01	0.00
3	HYDROGEN	0.404	C	0.393	0.389	0.389	0.389	0.97	0.00
4	METHANE	0.174	C	0.174	0.174	0.174	0.174	1.00	0.00
5	ETHANE	0.602		0.486	0.486	0.487	0.487	0.81	0.00
6	PROPANE	0.269		0.267	0.27	0.267	0.267	1.00	0.00
7	NOX	0.01	?	0.003	0.0003	0.0003	0.0003	0.10	1.20
8	CARBON MONOXIDE	0.193		0.19	0.194	0.245	0.243	1.13	0.12
9	CARBON DIOXIDE	9.67		9.27	9.26	9.26	9.26	0.96	0.00
10	ARGON	1.06		1.14	1.13	1.13	1.13	1.07	0.00

WIPP PDP SCORING TABLE

LABORATORY: MD

ANALYSIS TYPE: Gases

STANDARD NO:	CC60383		CC60383		CC102194		CC102192 CC102490		CC63474
CANISTER NO:	4690		4671		4682		4695 & 10851		4686
COMMENT:	High Conc.		High Conc. Duplicate		Low Conc.		Interference & NOx		Blank
No. of CTAGs Present:	2		2		2		2		0
No. CTAGs Reported:	2		2		2		2		
No. CTAGs Failing RPA:	0		0		0		0		
No. CTAGs Failing RSD:	0		0		0		0		
No. CTAGs Failing RPD:	0		0		0		0		
	Points		Points		Points		Points		Points
No. of TAGs Present:	6	60	6	90	6	60	7	70	0 0
No. of TAGs Reported:	6	60	6	90	6	60	7	70	0
No. TAGs Failing RPA:	2	-10	2	-10	0	0	1	-5	0
No. TAGs Failing RSD:	1	-5	1	-5		0		0	0
No. TAGs Failing RPD:			1	-5					
No. of CTAGs Reported in Blank > 0.7 PRDL:	NA		NA		NA		NA		NA
No. of TAGs Reported in Blank > 0.7 PRDL:	NA		NA		NA		NA		NA
Subtotal for Blank:									0
No. of False CTAGs or TAGs in Spikes > PRDL:	0		0		0		0		NA
TOTALS:	45		70		60		65		0
MAXIMUM POINTS:	280								
SCORE:	0.86		PLUS 0 FAILURES FOR CTAGS						

STANDARD NUMBER CC102194
CANISTER NUMBER 04682
LAB IDENTIFICATION CODE MD
ANALYTICAL METHOD MS
SAMPLE_ID 92-8029-02

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	97.4		97	97	97	97	1.00	0.00
2	OXYGEN	0.304		0.713	0.708	0.708	0.708	2.33	0.00
3	HYDROGEN	0.119	C	0.115	0.116	0.115	0.115	0.97	0.00
4	METHANE	0.429	C	0.426	0.425	0.427	0.427	0.99	0.00
5	ETHANE	0.347		0.354	0.352	0.354	0.354	1.02	0.00
6	PROPANE	0.434		0.443	0.442	0.44	0.443	1.02	0.00
7	NOX	0.01	?	0.0003	0.0003	0.0003	0.0003	0.03	0.00
8	CARBON MONOXIDE	0.0608		0.059	0.0668	0.0662	0.061	1.04	0.05
9	CARBON DIOXIDE	0.548		0.545	0.543	0.546	0.545	0.99	0.00
10	ARGON	0.36		0.368	0.368	0.368	0.366	1.02	0.00

STANDARD NUMBER CC60383
CANISTER NUMBER 04690
LAB IDENTIFICATION CODE MD
ANALYTICAL METHOD MS
SAMPLE_ID 92-8029-04

REPLICATE	KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD	RPD
1 NITROGEN	72.22		72.7	72.2	72.6	72.5	1.00	0.00	0.00
2 OXYGEN	15.4		15.6	15.7	15.6	15.6	1.01	0.00	0.00
3 HYDROGEN	0.404	C	0.388	0.388	0.389	0.388	0.96	0.00	0.00
4 METHANE	0.174	C	0.175	0.176	0.175	0.175	1.01	0.00	0.00
5 ETHANE	0.602		0.484	0.486	0.486	0.484	0.81	0.00	0.00
6 PROPANE	0.269		0.269	0.271	0.267	0.267	1.00	0.01	0.00
7 NOX	0.01	?	0.003	0.003	0.003	0.003	0.30	ERR	0.00
8 CARBON MONOXIDE	0.193		0.056	0.267	0.042	0.153	0.67	0.70	0.25
9 CARBON DIOXIDE	9.67		9.23	9.31	9.25	9.24	0.96	0.00	0.00
10 ARGON	1.06		1.12	1.14	1.14	1.14	1.07	0.01	0.00

STANDARD NUMBER CC102490
CANISTER NUMBER 10851
LAB IDENTIFICATION CODE MD
ANALYTICAL METHOD MS
SAMPLE_ID 92-8029-06

REPLICATE	KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1 NITROGEN	99.8		99.6	99.6	99.6	99.6	1.00	0.00
2 OXYGEN	0.1	?	0.322	0.335	0.336	0.338	3.33	0.02
3 HYDROGEN	0.1	? C	0.0059	0.0059	0.0059	0.0059	0.06	0.00
4 METHANE	0.1	? C	0.0012	0.0012	0.0012	0.0012	0.01	0.00
5 ETHANE	0.1	?	0.0014	0.0014	0.0014	0.0014	0.01	0.00
6 PROPANE	0.1	?	0.0053	0.0053	0.0053	0.0053	0.05	0.00
7 NOX	0.102		0.0227	0.019	0.0187	0.0178	0.19	0.10
8 CARBON MONOXIDE	0.01	?	0.006	0.0074	0.0076	0.0073	0.71	0.09
9 CARBON DIOXIDE	0.1	?	0.0054	0.0058	0.006	0.0062	0.06	0.05
10 ARGON	0.1	?	0.174	0.0184	0.0185	0.0184	0.57	1.18

STANDARD NUMBER CC102192
CANISTER NUMBER 04695
LAB IDENTIFICATION CODE MD
ANALYTICAL METHOD MS
SAMPLE_ID 92-8029-05

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	96.6		96.3	96.3	96.3	96.3	1.00	0.00
2	OXYGEN	0.447		0.854	0.85	0.85	0.852	1.90	0.00
3	HYDROGEN	0.437	C	0.438	0.436	0.438	0.437	1.00	0.00
4	METHANE	0.638	C	0.626	0.628	0.628	0.627	0.98	0.00
5	ETHANE	0.402		0.391	0.393	0.394	0.394	0.98	0.00
6	PROPANE	0.196		0.199	0.199	0.199	0.2	1.02	0.00
7	NOX	0.01	?	0.0003	0.0003	0.0003	0.0003	0.03	0.00
8	CARBON MONOXIDE	0.079		0.0877	0.0689	0.0876	0.0801	1.03	0.09
9	CARBON DIOXIDE	0.693		0.683	0.683	0.682	0.684	0.99	0.00
10	ARGON	0.37		0.399	0.398	0.398	0.399	1.08	0.00

Appendix B

Lab HE - Gas Analysis

As stated previously, the blank canister was disqualified from this cycle. Also, oxygen was disqualified in all canisters.

No other special scoring was required.

STANDARD NUMBER CC63474
CANISTER NUMBER 04686
LAB IDENTIFICATION CODE MD
ANALYTICAL METHOD MS
SAMPLE_ID 92-8029-03

REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	99.979		99.5	99.5	99.5	99.5	1.00	0.00
2 OXYGEN	0.1	?	0.432	0.427	0.43	0.429	4.30	0.00
3 HYDROGEN	0.1	? C	0.0059	0.0059	0.0059	0.0059	0.06	0.00
4 METHANE	0.1	? C	0.0013	0.0013	0.0013	0.0013	0.01	0.00
5 ETHANE	0.1	?	0.0014	0.0014	0.0014	0.0014	0.01	0.00
6 PROPANE	0.1	?	0.0053	0.0053	0.0053	0.0053	0.05	0.00
7 NOX	0.01	?	0.0003	0.0003	0.0003	0.0003	0.03	0.00
8 CARBON MONOXIDE	0.01	?	0.0096	0.0059	0.0099	0.0081	0.84	0.19
9 CARBON DIOXIDE	0.1	?	0.0045	0.0033	0.0046	0.0045	0.04	0.13
10 ARGON	0.1	?	0.0232	0.023	0.0236	0.0236	0.23	0.01

STANDARD NUMBER CC60383
CANISTER NUMBER 04685
LAB IDENTIFICATION CODE HE
ANALYTICAL METHOD GC/TCD
SAMPLE_ID X2.01.064.02A

REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	72.22		69.0	69.0	69.0	69.3	0.96	0.00
2 OXYGEN	15.4		16.5	15.9	15.5	15.6	1.03	0.02
3 HYDROGEN	0.404	C	0.386	0.39	0.389	0.387	0.96	0.00
4 METHANE	0.174	C	0.168	0.194	0.165	0.165	0.99	0.07
5 ETHANE	0.602		0.455	0.46	0.465	0.457	0.76	0.01
6 PROPANE	0.269		0.243	0.245	0.248	0.246	0.91	0.01
7 NOX	0.01	?					0.00	
8 CARBON MONOXIDE	0.193		0.179	0.177	0.177	0.178	0.92	0.00
9 CARBON DIOXIDE	9.67		9.18	9.27	9.23	9.2	0.95	0.00
10 ARGON	1.06		1.09	1.08	1.07	1.07	1.02	0.01

WIPP PDP SCORING TABLE

LABORATORY: HE

ANALYSIS TYPE: Gases

STANDARD NO:	CC60383	CC60383	CC102194	CC102192 CC102490	CC63474
CANISTER NO:	4674	4685	4688	4689 & 4676	4672
COMMENT:	High Conc.	High Conc. Duplicate	Low Conc.	Interference & NOx	Blank
No. of CTAGs Present:	2	2	2	2	0
No. CTAGs Reported:	2	2	2	2	
No. CTAGs Failing RPA:	0	0	0	0	
No. CTAGs Failing RSD:	0	0	0	0	
No. CTAGs Failing RPD:	0	0	0	0	

	Points	Points	Points	Points	Points
No. of TAGs Present:	6 60	6 90	6 60	7 70	0 0
No. of TAGs Reported:	6 60	6 90	6 60	7 70	0
No. TAGs Failing RPA:	1 -5	1 -5	1 -5	0 0	0
No. TAGs Failing RSD:	0	0	0	0	0
No. TAGs Failing RPD:		0			
No. of CTAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA
No. of TAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA
Subtotal for Blank:					0
No. of False CTAGs or TAGs in Spikes > PRDL:	0	0	0	0	NA
TOTALS:	55	85	55	70	0
MAXIMUM POINTS:	280				
SCORE:	0.95	PLUS 0 FAILURES FOR CTAGS			

STANDARD NUMBER CC102194
CANISTER NUMBER 04688
LAB IDENTIFICATION CODE HE
ANALYTICAL METHOD GC/TCD
SAMPLE_ID X2.01.064.06A

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	97.4		91.7	91.3	92.3	91.8	0.94	0.00
2	OXYGEN	0.304		0.614	0.644	0.677	0.624	2.10	0.04
3	HYDROGEN	0.119	C	0.116	0.116	0.116	0.116	0.97	0.00
4	METHANE	0.429	C	0.404	0.404	0.399	0.404	0.94	0.01
5	ETHANE	0.347		0.313	0.323	0.326	0.329	0.93	0.02
6	PROPANE	0.434		0.381	0.392	0.395	0.4	0.90	0.02
7	NOX	0.01	?					0.00	
8	CARBON MONOXIDE	0.0608		0.054	0.054	0.053	0.051	0.87	0.02
9	CARBON DIOXIDE	0.548		0.52	0.527	0.526	0.526	0.96	0.01
10	ARGON	0.36		0.314	0.334	0.34	0.334	0.92	0.03

STANDARD NUMBER	CC60383
CANISTER NUMBER	04674
LAB IDENTIFICATION CODE	HE
ANALYTICAL METHOD	GC/TCD
SAMPLE_ID	X2.01.064.01A
REPLICATE	0.1

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD	RPD
1	NITROGEN	72.22		72.4	70	70.5	71	0.98	0.01	0.02
2	OXYGEN	15.4		17.1	16.7	15.7	15.3	1.05	0.04	0.02
3	HYDROGEN	0.404	C	0.382	0.38	0.384	0.377	0.94	0.01	0.01
4	METHANE	0.174	C	0.17	0.17	0.169	0.166	0.97	0.01	0.02
5	ETHANE	0.602		0.452	0.462	0.464	0.465	0.77	0.01	0.00
6	PROPANE	0.269		0.261	0.25	0.249	0.249	0.94	0.02	0.02
7	NOX	0.01	?					0.00		
8	CARBON MONOXIDE	0.193		0.184	0.182	0.182	0.177	0.94	0.01	0.01
9	CARBON DIOXIDE	9.67		8.91	8.96	9.04	8.97	0.93	0.01	0.02
10	ARGON	1.06		1.03	1.01	1.05	1.06	0.98	0.02	0.07

STANDARD NUMBER CC102490
CANISTER NUMBER 04676
LAB IDENTIFICATION CODE HE
ANALYTICAL METHOD NIOSH.5320
SAMPLE_ID X2.01.064.04A

		KNOWN VALUE	FLAG	RESULT 1	RESULT 2	RESULT 3	RESULT 4	RPA
1	NITROGEN	99.8						0.00
2	OXYGEN	0.1	?					0.00
3	HYDROGEN	0.1	? C					0.00
4	METHANE	0.1	? C					0.00
5	ETHANE	0.1	?					0.00
6	PROPANE	0.1	?					0.00
7	NOX	0.102		0.111	0.114	0.114	0.118	1.12
8	CARBON MONOXIDE	0.01	?					0.00
9	CARBON DIOXIDE	0.1	?					0.00
10	ARGON	0.1	?					0.00

STANDARD NUMBER CC102192
CANISTER NUMBER 04689
LAB IDENTIFICATION CODE HE
ANALYTICAL METHOD GC/TCD
SAMPLE_ID X2.01.064.03A

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	96.6		92.1	91.0	91.4	90.7	0.95	0.01
2	OXYGEN	0.447		0.867	0.83	0.813	0.752	1.82	0.05
3	HYDROGEN	0.437	C	0.438	0.439	0.44	0.437	1.00	0.00
4	METHANE	0.638	C	0.599	0.606	0.657	0.654	0.99	0.04
5	ETHANE	0.402		0.366	0.368	0.37	0.372	0.92	0.01
6	PROPANE	0.196		0.183	0.182	0.184	0.184	0.93	0.00
7	NOX	0.01	?					0.00	
8	CARBON MONOXIDE	0.079		0.073	0.072	0.072	0.071	0.91	0.01
9	CARBON DIOXIDE	0.693		0.683	0.676	0.679	0.694	0.99	0.01
10	ARGON	0.37		0.37	0.368	0.366	0.363	0.99	0.01

Appendix C

Lab HR - Gas Analysis

As stated previously, the blank canister was disqualified from this cycle. Also oxygen was disqualified in all canister.

No other special scoring was required.

STANDARD NUMBER CC63474
CANISTER NUMBER 04672
LAB IDENTIFICATION CODE HE
ANALYTICAL METHOD GC/TCD
SAMPLE_ID X2.01.064.05A

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	99.98		93.3	91.8	92	91.9	0.92	0.01
2	OXYGEN	0.1	?	0.497	0.559	0.62	0.537	0.54	0.08
3	HYDROGEN	0.1	? C	0.1	0.1	0.1	0.1	1.00	0.00
4	METHANE	0.1	? C	0.1	0.1	0.1	0.1	1.00	0.00
5	ETHANE	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6	PROPANE	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7	NOX	0.01	?					0.00	
8	CARBON MONOXIDE	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9	CARBON DIOXIDE	0.1	?	0.01	0.1	0.1	0.1	0.78	0.50
10	ARGON	0.1	?	0.01	0.1	0.1	0.1	0.78	0.50

STANDARD NUMBER CC60383
CANISTER NUMBER 04670
LAB IDENTIFICATION CODE HR
ANALYTICAL METHOD L.2421.A
SAMPLE_ID 9-12-92

REPLICATE			1	2	3	4		
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1 NITROGEN	72.22		72.0824	72.08	72.1763	72.5096	1.00	0.00
2 OXYGEN	15.4		15.9319	16.0435	15.9156	15.7036	1.03	0.01
3 HYDROGEN	0.404	C	0.3929	0.4043	0.3956	0.387	0.98	0.02
4 METHANE	0.1741	C	0.1656	0.1701	0.1572	0.1646	0.94	0.03
5 ETHANE	0.602		0.502	0.4852	0.4673	0.5053	0.81	0.03
6 PROPANE	0.2697		0.262	0.2609	0.2607	0.2571	0.96	0.01
7 NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	ERR
8 CARBON MONOXIDE	0.1938		0.1908	0.1615	0.2065	0.2086	0.99	0.10
9 CARBON DIOXIDE	9.67		9.3468	9.3091	9.3	9.1691	0.96	0.01
10 ARGON	1.061		1.1255	1.0781	1.1205	1.095	1.04	0.02

WIPP PDP SCORING TABLE

LABORATORY: HR

ANALYSIS TYPE: Gases

STANDARD NO:	CC60383		CC60383		CC102194		CC102192 CC102490		CC63474
CANISTER NO:	4698		4670		4668		4687 & 4664		4696
COMMENT:	High Conc.		High Conc. Duplicate		Low Conc.		Interference & NOx		Blank
No. of CTAGs Present:	2		2		2		2		N/A
No. CTAGs Reported:	2		2		2		2		
No. CTAGs Failing RPA:	0		0		0		0		
No. CTAGs Failing RSD:	0		0		0		0		
No. CTAGs Failing RPD:	0		0		0		0		
	Points		Points		Points		Points		Points
No. of TAGs Present:	6	60	6	90	6	60	7	70	N/A
No. of TAGs Reported:	6	60	6	90	6	60	0	70	
No. TAGs Failing RPA:	1	-5	1	-5	0	0	0	0	
No. TAGs Failing RSD:	1	-5	0		0		0		
No. TAGs Failing RPD:			0						
No. of CTAGs Reported in Blank > 0.7 PRDL:	NA		NA		NA		NA		NA
No. of TAGs Reported in Blank > 0.7 PRDL:	NA		NA		NA		NA		NA
Subtotal for Blank:									0
No. of False CTAGs or TAGs in Spikes > PRDL:	0		0		0		0		NA
TOTALS:	50		85		60		70		0
MAXIMUM POINTS:	280								
SCORE:	0.95		PLUS 0 FAILURES FOR CTAGS						

STANDARD NUMBER CC102194
CANISTER NUMBER 04668
LAB IDENTIFICATION CODE HR
ANALYTICAL METHOD L.2421.A
SAMPLE_ID 13-16-92
REPLICATE 1 2 3 4

		KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD
1	NITROGEN	97.4		97.003	97.0213	96.9754	97.0078	1.00	0.00
2	OXYGEN	0.304		0.6973	0.6906	0.6999	0.7042	2.30	0.01
3	HYDROGEN	0.119	C	0.1298	0.1165	0.1318	0.1228	1.05	0.05
4	METHANE	0.429	C	0.4087	0.4056	0.4081	0.424	0.96	0.02
5	ETHANE	0.347		0.3654	0.373	0.3774	0.3591	1.06	0.02
6	PROPANE	0.434		0.4332	0.4313	0.4304	0.4277	0.99	0.00
7	NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	0.00
8	CARBON MONOXIDE	0.0608		0.0492	0.06	0.0636	0.0605	0.96	0.09
9	CARBON DIOXIDE	0.548		0.5387	0.5381	0.5406	0.5353	0.98	0.00
10	ARGON	0.36		0.3747	0.3638	0.3727	0.3586	1.02	0.02

STANDARD NUMBER CC60383
CANISTER NUMBER 04698
LAB IDENTIFICATION CODE HR
ANALYTICAL METHOD L-2421-A
SAMPLE_ID 5-8-92

REPLICATE			1	2	3	4			
	KNOWN VALUE	FLAG	RESULT	RESULT	RESULT	RESULT	RPA	RSD	RPD
1 NITROGEN	72.22		72.85	72.3942	72.5146	72.1443	1.00	0.00	0.00
2 OXYGEN	15.4		15.4639	15.8284	15.707	15.9028	1.02	0.01	0.01
3 HYDROGEN	0.404	C	0.3719	0.4149	0.3834	0.3934	0.97	0.04	0.01
4 METHANE	0.1741	C	0.1655	0.1649	0.1635	0.1645	0.95	0.00	0.00
5 ETHANE	0.602		0.4631	0.4636	0.5137	0.5197	0.81	0.05	0.00
6 PROPANE	0.2697		0.2486	0.2578	0.2557	0.2605	0.95	0.02	0.01
7 NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	0.00	
8 CARBON MONOXIDE	0.1938		0.1732	0.1721	0.2382	0.242	1.06	0.16	0.07
9 CARBON DIOXIDE	9.67		9.2139	9.2213	9.1287	9.2548	0.95	0.01	0.00
10 ARGON	1.061		1.046	1.0828	1.0945	1.1178	1.02	0.02	0.01

STANDARD NUMBER CC102192
CANISTER NUMBER 04687
LAB IDENTIFICATION CODE MR
ANALYTICAL METHOD L-2421-A
SAMPLE_ID 17-20-92

		KNOWN VALUE	FLAG	1 RESULT	2 RESULT	3 RESULT	4 RESULT	RPA	RSD
1	NITROGEN	96.6		96.3848	96.4433	96.4621	96.4005	1.00	0.00
2	OXYGEN	0.447		0.8235	0.8091	0.8104	0.8189	1.82	0.01
3	HYDROGEN	0.437	C	0.4491	0.4401	0.4398	0.462	1.02	0.02
4	METHANE	0.638	C	0.6063	0.593	0.5925	0.5921	0.93	0.01
5	ETHANE	0.402		0.3996	0.3989	0.371	0.378	0.96	0.03
6	PROPANE	0.196		0.1906	0.1866	0.188	0.1883	0.96	0.01
7	NOX	0.01	?	0.0094	0.0094	0.0094	0.0094	0.94	ERR
8	CARBON MONOXIDE	0.079		0.0709	0.067	0.0789	0.0868	0.96	0.10
9	CARBON DIOXIDE	0.693		0.6874	0.6855	0.6797	0.6885	0.99	0.00
10	ARGON	0.37		0.3876	0.3765	0.3777	0.385	1.03	0.01

STANDARD NUMBER CC102490
CANISTER NUMBER 04664
LAB IDENTIFICATION CODE HR
ANALYTICAL METHOD L-2421-A
SAMPLE_ID 21-24-92

		KNOWN VALUE	FLAG	RESULT 1	RESULT 2	RESULT 3	RESULT 4	RPA	RSD
1	NITROGEN	99.898		99.9428	99.9423	99.9433	99.9432	1.00	0.00
2	OXYGEN	0.1	?					0.00	ERR
3	HYDROGEN	0.1	? C					0.00	ERR
4	METHANE	0.1	? C					0.00	ERR
5	ETHANE	0.1	?					0.00	ERR
6	PROPANE	0.1	?					0.00	ERR
7	NOX	0.102		0.0572	0.0577	0.0567	0.0568	0.56	0.01
8	CARBON MONOXIDE	0.01	?					0.00	ERR
9	CARBON DIOXIDE	0.1	?					0.00	ERR
10	ARGON	0.1	?					0.00	ERR

Contract Number 68D90170

WIPP Experimental Waste Characterization Program

Performance Demonstration Program Scoring Report - April 1992

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June 1992

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - April 1992

This report contains the results of Cycle 3 of the blind sample distributions to laboratories participating in the Performance Demonstration Program for WIPP Characterization. This distribution consisted of canisters of simulated headspace gases of known composition of inorganic and permanent gases (Gases) and volatile organic compounds (VOCs). This report contains only the gas data. The VOC data are scored in a separate report. Table 1 lists the canister identification numbers, their contents and recipients. Canisters were received by the laboratories on April 16 and 17, 1992, and all data were to be returned on or before May 15, 1992. One laboratory was unable to respond by the due date.

All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 2. This report consists of a summary of the results and separate appendices detailing each laboratory's performance. The appendices contain a summary discussion and two kinds of tables which list the results of individual analyses and the RPA, RSD and RPD values (where applicable) for each analyte.

The appendices are suitable for attachment to the letters to individual laboratories notifying them of their pass/fail status.

Summary of Results

Table 2 summarizes the Pass/Fail status of the laboratories. All four laboratories passed for Gas analysis. Two laboratories had minor difficulties quantifying target analytes, but these did not prevent either laboratory from receiving a passing score. The other two participants analyzed all parameters correctly and received a perfect score.

Table 1

Gas Canister Identification

Lab Code	Low Conc.	High Conc.	Interference Test	Balance N,	Special NO,
	CC109400	CC109376	CC102417	K140105	CC41560
MD	4675	4664	4692 4681	10847	4662
HR	4683	4670	4698 4687	4696	4671
HE	4666	4668	4695 10851	4679	4686
CK	4665	10848	4689 4688	4676	4685

Table 2

Pass/Fail Summary

Lab Code	Analysis	Status	Comments
MD	Gas	Pass	0 CTAG failures, 0.97 score
HR	Gas	Pass	0 CTAG failures, 1.00 score
HE	Gas	Pass	0 CTAG failures, 0.96 score
CK	Gas	Pass	0 CTAG failures, 1.00 score

Table 3

Pass/Fail Criteria

Parameter	GAS	NO,
RPA	90-110%	50-150%
RSD	±10%	±20%
RPD	±10%	±20%

Interpretation of the Appendix Tables

The data contained in the Appendices appear as they were reported by the laboratories. The terms RPA, RSD and RPD are defined in detail in the Performance Demonstration Program Plan. RPA is the Relative Percent Accuracy and is calculated as a percent recovery of the known value. RSD is the Relative Standard Deviation and is calculated using the sample standard deviation from the replicate data submitted for each analyte. RPD is the Relative Percent Difference and is used only when duplicate canisters were submitted for analysis, as with the Interference canister for this distribution. Pass/Fail criteria are given in Table 3.

Data tables in the Appendices each have a column listing the known values for each analyte. On the data tables an entry "C" in the "Flags" column indicates a critical target analyte gas (CTAG). An entry "?" indicates that the analyte was not added to the canister. In this case, the known value column contains the project required detection limit (PRDL) required by the Performance Demonstration Program Plan. In all cases, when a laboratory reported an analyte as not detected, the reported detection limit was less than the PRDL. As a convention, the data tables list the PRDL. The remaining table entries are self-evident or are discussed in the individual appendix.

Like the previous scoring report, a data table for each blank is included. The only measurable analyte in this canister is nitrogen, which is not scored. All other analytes are marked "?" in the "Flag" column, as explained above. Similarly, the data table for the NO_x canister, which also contains nitrogen but is scored only for NO_x, contains values for nitrogen if reported by the laboratory. If no nitrogen values were reported, the tables list the PRDL as described previously.

Previous scoring reports combined the NO_x and Interference canisters under a single heading for each scoring table. Since the Interference canister was chosen for the duplicate, the NO_x and Interference canisters have separate columns on each laboratory's summary page.

Appendix A

Lab MD - Gas Analysis

This laboratory reported methylene chloride and Freon-11 at an estimated concentration of 0.05 % volume each in the Interference and Interference Duplicate canisters. The laboratory also reported water in all four analyses of the High, Interference and Blank canisters (0.08%, 0.04% and 0.03%, respectively), in two analyses of the Low canister (0.02%), and three analyses of the Interference Duplicate canisters (0.02%).

This laboratory did not quantify carbon monoxide and ethane in the Interference duplicate canister. All other parameters were analyzed successfully. No special scoring was required.

WIPP PDP SCORING TABLE

LABORATORY: MD

ANALYSIS TYPE: Gases

STANDARD NO:	CC109376	CC109400	CC102417	CC102417	CC41560	K140105
CANSISTER NO:	4664	4675	4692	4681	4662	10847
COMMENT:	High Conc.	Low Conc.	Interference	Interference Duplicate	NO_x	Blank
No. of CTAGs Present:	2	2	2	2	0	0
No. CTAGs Reported:	2	2	2	2	0	0
No. CTAGs Failing RPA:	0	0	0	0	0	0
No. CTAGs Failing RSD:	0	0	0	0	0	0
No. CTAGs Failing RPD:	0	0	0	0	0	0

	Points	Points	Points	Points	Points	Points
No. of TAGs Present:	7 70	7 70	7 70	7 105	1 10	0 50
No. of TAGs Reported:	7 70	7 70	7 70	7 105	1 10	0 50
No. TAGs Failing RPA:	0 0	0 0	0 0	2 -10	0 0	0 0
No. TAGs Failing RSD:	0 0	0 0	0 0	0 0	0 0	0
No. TAGs Failing RPD:	NA	NA	NA	0 0	NA	NA
No. of CTAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA	0
Subtotal for Blank:	NA	NA	NA	NA	NA	50
No. of False CTAGs or TAGs in Spikes > PRDL:	0	0	0	0	0	NA
TOTALS:	70	70	70	95	10	50

MAXIMUM POINTS: 375

SCORE: 0.97 PLUS 0 FAILURES FOR CTAGS

Standard Number	CC109376
Canister Number	PE102-4664
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	928050-01

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	75.03		74.8	74.8	74.6	74.6	1.00	0.00
2 Oxygen	10.1		10.5	10.4	10.6	10.5	1.04	0.01
3 Hydrogen	1.98	C	2.11	2.11	2.09	2.11	1.06	0.00
4 Methane	0.496	C	0.501	0.503	0.497	0.502	1.01	0.00
5 Ethane	1		1.01	0.994	1	1.01	1.00	0.01
6 Propane	1.97		1.96	1.96	1.92	1.96	0.99	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	4.91		4.54	4.63	4.68	4.66	0.94	0.01
9 Carbon Dioxide	1.5		1.47	1.47	1.46	1.47	0.98	0.00
10 Argon	3.01		3.03	3.02	3.02	3.02	1.00	0.00

Standard Number	CC109400
Canister Number	PE139-4675
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	928050-05

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	92.712		92.5	92.5	92.4	92.4	1.00	0.00
2 Oxygen	1.57		1.65	1.64	1.65	1.65	1.05	0.00
3 Hydrogen	0.997	C	1.07	1.06	1.06	1.06	1.07	0.00
4 Methane	0.202	C	0.204	0.202	0.206	0.206	1.01	0.01
5 Ethane	0.59		0.617	0.611	0.624	0.618	1.05	0.01
6 Propane	0.972		1.01	1.01	1.02	1.02	1.04	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.887		0.851	0.9	0.907	0.953	1.02	0.04
9 Carbon Dioxide	1.04		1.03	1.03	1.03	1.03	0.99	0.00
10 Argon	1.03		1.04	1.04	1.02	1.04	1.00	0.01

Standard Number	CC102417
Canister Number	PE126-4692
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	928050-02

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	97.042		97.1	97.1	97	97.1	1.00	0.00
2 Oxygen	0.414		0.401	0.401	0.406	0.401	0.97	0.01
3 Hydrogen	0.512	C	0.518	0.527	0.532	0.523	1.03	0.01
4 Methane	0.2	C	0.209	0.209	0.21	0.21	1.05	0.00
5 Ethane	0.192		0.208	0.208	0.208	0.211	1.09	0.01
6 Propane	0.389		0.398	0.397	0.398	0.399	1.02	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.458		0.479	0.479	0.509	0.496	1.07	0.03
9 Carbon Dioxide	0.347		0.347	0.346	0.345	0.346	1.00	0.00
10 Argon	0.312		0.305	0.305	0.304	0.304	0.98	0.00

Standard Number	CC102417
Canister Number	PE138-4681
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	928050-04

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	97.042		97	97	97	97	1.00	0.00	0.01
2 Oxygen	0.414		0.405	0.406	0.405	0.406	0.98	0.00	0.02
3 Hydrogen	0.512	C	0.535	0.533	0.533	0.536	1.04	0.00	0.00
4 Methane	0.2	C	0.212	0.212	0.213	0.214	1.06	0.00	0.02
5 Ethane	0.192		0.211	0.212	0.213	0.214	1.11	0.01	0.01
6 Propane	0.389		0.399	0.401	0.402	0.406	1.03	0.01	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	NA
8 Carbon Monoxide	0.458		0.53	0.504	0.513	0.512	1.12	0.02	0.02
9 Carbon Dioxide	0.347		0.348	0.35	0.348	0.349	1.01	0.00	0.02
10 Argon	0.312		0.307	0.308	0.307	0.309	0.99	0.00	[illegible]

Standard Number	CC41560
Canister Number	PE140-4662
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	928050-06

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.7333		99.7	99.7	99.7	99.7	1.00	ERR
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.267		0.27	0.269	0.269	0.275	1.01	0.01
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Standard Number	K140105
Canister Number	PE132-10847
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	928050-03

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9995		99.95	99.98	99.96	99.98	1.00	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Appendix B

Lab HR - Gas Analysis

This laboratory successfully analyzed all canisters and obtained a perfect score. No special scoring was required.

WIPP PDP SCORING TABLE

LABORATORY: HR

ANALYSIS TYPE: Gases

STANDARD NO:	CC6109376	CC109400	CC102417	CC102417	CC41560	K140105
CANSISTER NO:	4670	4683	4698	4687	4671	4696
COMMENT:	High Conc.	Low Conc.	Interference	Interference Duplicate	NO_x	Blank
No. of CTAGs Present:	2	2	2	2	0	0
No. CTAGs Reported:	2	2	2	2	0	0
No. CTAGs Failing RPA:	0	0	0	0	0	0
No. CTAGs Failing RSD:	0	0	0	0	0	0
No. CTAGs Failing RPD:	0	0	0	0	0	0

	Points		Points		Points		Points		Points		Points	
No. of TAGs Present:	7	70	7	70	7	70	7	105	1	10	0	50
No. of TAGs Reported:	7	70	7	70	7	70	7	105	1	10	0	50
No. TAGs Failing RPA:	0	0	0	0	0	0	0	0	0	0	0	0
No. TAGs Failing RSD:	0	0	0	0	0	0	0	0	0	0	0	
No. TAGs Failing RPD:		NA		NA		NA	0	0		NA		NA
No. of CTAGs Reported in Blank > 0.7 PRDL:		NA		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 PRDL:		NA		NA		NA		NA		NA		0
Subtotal for Blank:		NA		NA		NA		NA		NA		50
No. of False CTAGs or TAGs in Spikes > PRDL:		0		0		0		0		0		NA
TOTALS:		70		70		70		105		10		50

MAXIMUM POINTS: 375

SCORE: 1.00 PLUS 0 FAILURES FOR CTAGS

Standard Number	CC109376
Canister Number	PE108-4670
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	62-92

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	75.03		74.991	75.168	75.119	75.27	1.00	0.00
2 Oxygen	10.1		10.464	10.383	10.416	10.306	1.03	0.01
3 Hydrogen	1.98	C	1.953	1.919	1.931	1.906	0.97	0.01
4 Methane	0.496	C	0.494	0.488	0.491	0.486	0.99	0.01
5 Ethane	1		0.946	0.968	0.973	0.968	0.96	0.01
6 Propane	1.97		1.94	1.922	1.916	1.914	0.96	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	4.91		4.672	4.674	4.664	4.668	0.95	0.00
9 Carbon Dioxide	1.5		1.514	1.488	1.492	1.484	1.00	0.01
10 Argon	3.01		3.027	2.99	2.999	2.979	1.00	0.01

Standard Number	CC109400
Canister Number	PE118-4683
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	58-92

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	92.712		92.778	92.799	92.861	92.789	1.00	0.00
2 Oxygen	1.57		1.625	1.632	1.607	1.626	1.03	0.01
3 Hydrogen	0.997	C	0.961	0.948	0.937	0.952	0.95	0.01
4 Methane	0.202	C	0.195	0.193	0.19	0.194	0.96	0.01
5 Ethane	0.59		0.577	0.58	0.586	0.574	0.98	0.01
6 Propane	0.972		0.979	0.974	0.963	0.98	1.00	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.887		0.831	0.833	0.835	0.832	0.94	0.00
9 Carbon Dioxide	1.04		1.034	1.028	1.02	1.033	0.99	0.01
10 Argon	1.03		1.02	1.012	1	1.019	0.98	0.01

Standard Number	CC102417
Canister Number	PE137-4698
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	54-92

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	97.042		97.233	97.255	97.266	97.257	1.00	0.00
2 Oxygen	0.414		0.421	0.418	0.414	0.414	1.01	0.01
3 Hydrogen	0.512	C	0.49	0.484	0.484	0.484	0.95	0.01
4 Methane	0.2	C	0.203	0.194	0.193	0.195	0.98	0.02
5 Ethane	0.192		0.185	0.187	0.184	0.187	0.97	0.01
6 Propane	0.389		0.395	0.3922	0.389	0.39	1.01	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.458		0.418	0.419	0.421	0.421	0.92	0.00
9 Carbon Dioxide	0.347		0.35	0.348	0.347	0.348	1.00	0.00
10 Argon	0.312		0.306	0.304	0.302	0.304	0.97	0.00

Standard Number	CC102417
Canister Number	PE121-4687
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	50-92

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	97.042		97.245	97.252	97.238	97.264	1.00	0.00	0.00
2 Oxygen	0.414		0.427	0.431	0.429	0.424	1.03	0.01	0.03
3 Hydrogen	0.512	C	0.486	0.482	0.487	0.477	0.94	0.01	0.00
4 Methane	0.2	C	0.202	0.193	0.195	0.192	0.98	0.02	0.00
5 Ethane	0.192		0.188	0.18	0.184	0.19	0.97	0.02	0.00
6 Propane	0.389		0.386	0.39	0.392	0.387	1.00	0.01	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	NA
8 Carbon Monoxide	0.458		0.419	0.421	0.421	0.421	0.92	0.00	0.00
9 Carbon Dioxide	0.347		0.345	0.348	0.349	0.345	1.00	0.01	0.00
10 Argon	0.312		0.302	0.304	0.305	0.301	0.97	0.01	0.00

Standard Number	CC41560
Canister Number	PE109-4671
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	42-92

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.7333		99.6009	99.6392	99.6313	99.6409	1.00	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.267		0.3991	0.3608	0.3687	0.3591	1.39	0.04
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Standard Number	K140105
Canister Number	PE129-4696
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	46-92

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9995		99.9855	99.985	99.986	99.9849	1.00	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Appendix C

Lab HE - Gas Analysis

This laboratory failed the scoring criteria for RPA on oxygen in the Interference and NO_x canisters. No special scoring was required.

WIPP PDP SCORING TABLE

LABORATORY: HE

ANALYSIS TYPE: Gases

STANDARD NO:	CC109376	CC109400	CC102417	CC102417	CC41560	K140105
CANISTER NO:	4668	4666	4695	10851	4686	4679
COMMENT:	High Conc.	Low Conc.	Interference	Interference Duplicate	NO_x	Blank
No. of CTAGs Present:	2	2	2	2	0	0
No. CTAGs Reported:	2	2	2	2	0	0
No. CTAGs Failing RPA:	0	0	0	0	0	0
No. CTAGs Failing RSD:	0	0	0	0	0	0
No. CTAGs Failing RPD:	0	0	0	0	0	0

	Points	Points	Points	Points	Points	Points
No. of TAGs Present:	7 70	7 70	7 70	7 105	1 10	0 50
No. of TAGs Reported:	7 70	7 70	7 70	7 105	1 10	0 50
No. TAGs Failing RPA:	0 0	0 0	1 -5	1 -5	1 -5	0
No. TAGs Failing RSD:	0 0	0 0	0 0	0 0	0 0	
No. TAGs Failing RPD:	NA	NA	NA	0 0	NA	NA
No. of CTAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA	0
Subtotal for Blank:	NA	NA	NA	NA	NA	50
No. of False CTAGs or TAGs in Spikes > PRDL:	0	0	0	0	0	NA
TOTALS:	70	70	65	100	5	50

MAXIMUM POINTS: 375

SCORE: 0.96 PLUS 0 FAILURES FOR CTAGS

Standard Number	CC109376
Canister Number	PE106-4668
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X204134-06A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	75.03		73.5	73	72.8	72.6	0.97	0.00
2 Oxygen	10.1		10.4	10.3	10.3	10.2	1.02	0.01
3 Hydrogen	1.98	C	1.95	1.96	1.95	1.95	0.99	0.00
4 Methane	0.496	C	0.51	0.521	0.52	0.52	1.04	0.01
5 Ethane	1		0.99	1.01	1.01	1.01	1.01	0.01
6 Propane	1.97		1.95	1.99	1.98	1.99	1.00	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	4.91		4.73	4.67	4.96	4.71	0.97	0.02
9 Carbon Dioxide	1.5		1.45	1.47	1.46	1.46	0.97	0.00
10 Argon	3.01		2.95	2.96	2.95	2.94	0.98	0.00

Standard Number	CC109400
Canister Number	PE104-4666
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X204134-07A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	92.712		90	89.6	89.6	88.7	0.97	0.01
2 Oxygen	1.57		1.54	1.46	1.46	1.44	0.94	0.03
3 Hydrogen	0.997	C	0.941	0.963	0.962	0.962	0.96	0.01
4 Methane	0.202	C	0.203	0.201	0.207	0.207	1.01	0.01
5 Ethane	0.59		0.59	0.58	0.599	0.602	1.00	0.01
6 Propane	0.972		0.994	0.969	1.01	1.01	1.02	0.02
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.887		0.879	0.872	0.884	0.894	0.99	0.01
9 Carbon Dioxide	1.04		0.979	1	1.01	1	0.96	0.01
10 Argon	1.03		0.993	0.995	0.989	0.963	0.96	0.00

Standard Number	CC102417
Canister Number	PE128-4695
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X204134-08A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	97.042		94.5	94.5	94.4	94.2	0.97	0.00
2 Oxygen	0.414		0.263	0.25	0.257	0.245	0.61	0.03
3 Hydrogen	0.512	C	0.483	0.488	0.493	0.485	0.95	0.01
4 Methane	0.2	C	0.208	0.207	0.206	0.209	1.04	0.01
5 Ethane	0.192		0.196	0.196	0.196	0.197	1.02	0.00
6 Propane	0.389		0.405	0.406	0.405	0.41	1.04	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.458		0.44	0.44	0.438	0.455	0.97	0.02
9 Carbon Dioxide	0.347		0.328	0.333	0.337	0.335	0.96	0.01
10 Argon	0.312		0.293	0.291	0.293	0.293	0.94	0.00

Standard Number	CC102417
Canister Number	PE136-10851
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X204134-09A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	97.042		94.5	94.3	94.1	93.9	0.97	0.00	0.00
2 Oxygen	0.414		0.25	0.246	0.24	0.246	0.59	0.01	0.03
3 Hydrogen	0.512	C	0.474	0.488	0.493	0.485	0.95	0.01	0.00
4 Methane	0.2	C	0.203	0.196	0.205	0.2	1.01	0.01	0.03
5 Ethane	0.192		0.193	0.193	0.193	0.195	1.01	0.00	0.01
6 Propane	0.389		0.402	0.388	0.401	0.404	1.03	0.02	0.02
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	NA
8 Carbon Monoxide	0.458		0.44	0.466	0.434	0.432	0.97	0.03	0.00
9 Carbon Dioxide	0.347		0.326	0.335	0.334	0.336	0.96	0.01	0.00
10 Argon	0.312		0.293	0.291	0.293	0.293	0.94	0.00	0.00

Standard Number	CC41560
Canister Number	PE120-4686
Laboratory ID Code	HE
Analytical Method	NIOSH S320
Sample ID	X204134-10A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.7333		1	1	1	1	0.01	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.267		0.521	0.496	0.494	0.484	1.87	0.03
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Standard Number	K140105
Canister Number	PE116-4679
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X204134-011A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9995		98.3	97.8	97.6	97.4	0.98	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	-0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

APPENDIX D

Lab CK - Gas Analysis

This laboratory successfully analyzed all canisters and obtained a perfect score. No special scoring was required.

WIPP PDP SCORING TABLE

LABORATORY: CK

ANALYSIS TYPE: Gases

STANDARD NO:	CC109376	CC109400	CC102417	CC102417	CC41560	K140105
CANSISTER NO:	10848	4665	4689	4688	4685	4676
COMMENT:	High Conc.	Low Conc.	Interference	Interference Duplicate	NO_x	Blank
No. of CTAGs Present:	2	2	2	2	0	0
No. CTAGs Reported:	2	2	2	2	0	0
No. CTAGs Failing RPA:	0	0	0	0	0	0
No. CTAGs Failing RSD:	0	0	0	0	0	0
No. CTAGs Failing RPD:	0	0	0	0	0	0

	Points	Points	Points	Points	Points	Points
No. of TAGs Present:	7 70	7 70	7 70	7 105	1 10	0 50
No. of TAGs Reported:	7 70	7 70	7 70	7 105	1 10	0 50
No. TAGs Failing RPA:	0 0	0 0	0 0	0 0	0 0	0 0
No. TAGs Failing RSD:	0 0	0 0	0 0	0 0	0 0	0
No. TAGs Failing RPD:	NA	NA	NA	0 0	NA	NA
No. of CTAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported in Blank > 0.7 PRDL:	NA	NA	NA	NA	NA	0
Subtotal for Blank:	NA	NA	NA	NA	NA	50
No. of False CTAGs or TAGs in Spikes > PRDL:	0	0	0	0	0	NA
TOTALS:	70	70	70	105	10	50
MAXIMUM POINTS:	375					
SCORE:	1.00	PLUS 0 FAILURES FOR CTAGS				

Standard Number	CC109376
Canister Number	PE133-10848
Laboratory ID Code	CK
Analytical Method	W06300004-KP01
Sample ID	67054

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	75.03		73.2	73.6	73.8	73.8	0.98	0.00
2 Oxygen	10.1		9.89	9.94	9.97	9.98	0.98	0.00
3 Hydrogen	1.98	C	1.98	1.98	1.97	1.97	1.00	0.00
4 Methane	0.496	C	0.482	0.488	0.484	0.484	0.98	0.00
5 Ethane	1		0.944	0.96	0.97	0.959	0.98	0.01
6 Propane	1.97		1.98	2	2	1.99	1.01	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	4.91		4.71	4.74	4.75	4.75	0.98	0.00
9 Carbon Dioxide	1.5		1.41	1.42	1.41	1.42	0.94	0.00
10 Argon	3.01		2.88	2.9	2.9	2.9	0.96	0.00

Standard Number	CC109400
Canister Number	PE103-4665
Laboratory ID Code	CK
Analytical Method	W06300004-KP01
Sample ID	67054

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	92.712		91.2	90.7	90.7	90.8	0.98	0.00
2 Oxygen	1.57		1.51	1.55	1.56	1.57	0.99	0.01
3 Hydrogen	0.997	C	0.993	0.984	0.986	0.976	0.99	0.01
4 Methane	0.202	C	0.196	0.19	0.193	0.194	0.96	0.01
5 Ethane	0.59		0.587	0.582	0.578	0.576	0.98	0.01
6 Propane	0.972		1.02	1.02	1.01	1.01	1.04	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.887		0.847	0.844	0.845	0.844	0.95	0.00
9 Carbon Dioxide	1.04		0.982	0.98	0.977	0.978	0.94	0.00
10 Argon	1.03		0.98	0.979	0.982	0.983	0.95	0.00

Standard Number	CC102417
Canister Number	PE123-4689
Laboratory ID Code	CK
Analytical Method	W06300004-KP01
Sample ID	67054

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	97.042		96.1	95.6	95.5	95.3	0.99	0.00
2 Oxygen	0.414		0.392	0.403	0.39	0.409	0.96	0.02
3 Hydrogen	0.512	C	0.509	0.508	0.507	0.5	0.99	0.01
4 Methane	0.2	C	0.192	0.19	0.192	0.193	0.96	0.01
5 Ethane	0.192		0.193	0.192	0.193	0.187	1.00	0.01
6 Propane	0.389		0.407	0.407	0.404	0.403	1.04	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.458		0.431	0.428	0.429	0.426	0.94	0.00
9 Carbon Dioxide	0.347		0.337	0.338	0.335	0.332	0.97	0.01
10 Argon	0.312		0.294	0.294	0.293	0.294	0.94	0.00

Standard Number	CC102417
Canister Number	PE122-4666
Laboratory ID Code	CK
Analytical Method	W06300004-KP01
Sample ID	67054

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	97.042		93.9	94.7	94.5	94.7	0.97	0.00	0.01
2 Oxygen	0.414		0.396	0.383	0.395	0.389	0.94	0.01	0.02
3 Hydrogen	0.512	C	0.505	0.503	0.503	0.507	0.99	0.00	0.02
4 Methane	0.2	C	0.182	0.189	0.185	0.189	0.99	0.02	0.02
5 Ethane	0.192		0.187	0.192	0.19	0.19	0.99	0.01	0.01
6 Propane	0.389		0.398	0.405	0.401	0.401	1.03	0.01	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	NA
8 Carbon Monoxide	0.458		0.42	0.422	0.42	0.424	0.92	0.00	0.05
9 Carbon Dioxide	0.347		0.326	0.334	0.329	0.33	0.95	0.01	0.01
10 Argon	0.312		0.269	0.287	0.29	0.29	0.93	0.00	0.01

Standard Number	K140105
Canister Number	PE113-4676
Laboratory ID Code	CK
Analytical Method	W06300004-KP01
Sample ID	67054

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9995		97.8	98.3	98.2	98	0.98	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Standard Number	CC41560
Canister Number	PE119-4685
Laboratory ID Code	CK
Analytical Method	W06300004-KP01
Sample ID	67054

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.7333		1	1	1	1	0.01	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.267		0.2181	0.2201	0.2204	0.2169	0.82	0.01
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

WIPP Experimental Waste Characterization Program

Performance Demonstration Program Scoring Report - April 1992

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July 1992

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - April 1992 Distribution
Volatile Organic Compounds

This report contains the results of Cycle 3 of the blind sample distributions to laboratories participating in the Performance Demonstration Program for WIPP Characterization. This distribution consisted of canisters of simulated headspace gases of known composition of inorganic and low molecular weight gases (Gases) and volatile organic compounds (VOCs). This report contains only the VOC data, the Gas data were scored in a previous report. Table 1 lists the canister identification numbers, their contents and recipients. Canisters were received by the laboratories on April 16 and 17, 1992, and all data were to be returned on or before May 15, 1992.

One laboratory received canisters that, upon receipt, were found to have damaged swagelok fittings which prevented the laboratory from obtaining an appropriate seal. The canisters were refurbished, returned for cleaning and filling at the respective locations and resubmitted to the laboratory. Scoring the VOC data and release of the Cycle 3 VOC Scoring Report was delayed to provide this laboratory the full time provided to all participants to analyze the new canisters.

All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 2. This report consists of a summary of all participants' performance and a separate, laboratory-specific appendix listing the participant's performance by canister. Each appendix contains the following:

- A synopsis of the laboratory's performance
- A scoring table detailing the point assignment for each of the five sample canisters, and the total score for Critical Target Compounds (CTCs) and Target Compounds (TCs).
- A set of four data tables, one for each sample canister (High, Low, Interference and Interference Duplicate), listing the analytical values reported by the laboratory. No data table is provided for the Blank canister.

For those laboratories attempting to qualify more than one analytical procedure, each procedure is treated in a sperate appendix. The same laboratory ID code is used for each, with a numerical suffix to differentiate them, eg, CA-01 and CA-02.

The appendices are suitable for attachment to the letters to individual laboratories notifying them of their pass/fail status.

Summary of Results

The Pass/Fail status of each Cycle 3 VOC participant is described below and summarized in Table 2.

- Two laboratories (CA & OS) submitted data for two different analytical procedures. CA used two combination gas chromatography (GC) and gas chromatography - mass spectrometry (GC/MS) procedures, both of which were qualified. OS used one combination GC-GC/MS procedure and a GC/MS only procedure. Both were qualified.

- A third laboratory (DO) submitted only GC/MS data for all compounds. They passed all scoring criteria and also qualified.

- The fourth laboratory (ZL) submitted only GC/MS data for all compounds. This laboratory had difficulty quantifying all analytes, and failed the scoring criteria for Critical Target Compounds (CTCs) and Target Compounds (TCs).

Table 1

Gas Canister Identification

Laboratory ID Code	Low Concentration CC109398	High Concentration CC110703	Special CC109381	Blank Nitrogen K140105
CA	4702	4709	4710 4707	10843
OS	10844	4705	4429 4703	4711
ZL	4708	10840	4444 4442	4706
DO	4699	4701	4712 4700	4443

Table 2

Pass/Fail Summary

Lab Code	Analysis	Status	Comments
CA-01	VOC	Pass	1 CTC Failure, 0.97 CTC Score 0.99 TC Score
CA-02	VOC	Pass	0 CTC Failures, 1.00 CTC Score 1.00 TC Score
DO	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.97 TC Score
OS-01	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.93 TC Score
OS-02	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.93 TC Score
ZL	VOC	Fail	9 CTC Failures, 0.70 CTC Score 0.73 TC Score

Table 3

Pass/Fail Summary

Parameter	Acceptance Range
Relative Percent Accuracy	70 - 130%
Relative Standard Deviation	± 25%
Relative Percent Difference	± 25%

Interpretation of the Appendix Tables

The data contained in the Appendices appear as they were reported by the laboratories. The terms Relative Percent Accuracy (RPA), Relative Standard Deviation (RSD) and Relative Percent Difference (RPD) are defined in detail in the Performance Demonstration Program Plan. The RPA is calculated as a percent recovery of the known value. The RSD is calculated using the sample standard deviation from the replicate data submitted for each analyte. The RPD is used only when duplicate canisters were submitted for analysis, as with the Interference canister for this distribution. Pass/Fail criteria are given in Table 3.

Data tables in the Appendices have a "Known Value" column which lists the concentration for each analyte in ppmv. The "Flags" column shows an entry of "C" for an analyte that is a critical target compound (CTC). An entry of "?" in this column indicates that an analyte was not added to the canister, and therefore should not be detected by the laboratory. In this case, the "Known Value" column lists the project required quantitation limit (PRQL) specified in the Performance Demonstration Program Plan. For all Cycle 3 participants, the detection limit achieved by the laboratory when reporting a compound as not detected was below the PRQL. As a convention, the data tables list a value of "0" for all analytes the laboratory reported as not detected.

In some cases, a laboratory reported values for analytes not added to a canister which were below or slightly above the PRQL. These are listed as the laboratory reported them, regardless of their effect on the numerical scoring. The remaining table entries are self-evident or are discussed in the individual appendix.

As stated previously, a data table for the blank canister is not supplied. Only one (ZL) of the four participants reported any detectable contamination which affected their blank score.

Appendix A

Laboratory CA-01

CA-01 represents the first of two analytical methodologies this laboratory submitted, GC/MS Procedure 430.2 and GC Procedure 440.1. There was a problem with 1,1,2,2-tetrachloroethane in the High canister and cyclohexane in the Interference canister. No other problems were encountered. This procedure passed all scoring criteria and was qualified.

WIPP PDP SCORING TABLE

LABORATORY	CA-01									
ANALYSIS TYPE	VOC's									
STANDARD #	CC110703		CC109398		CC109381		CC109381		K140105	
CANISTER #	4709		4702		4710		4707		10843	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	5	50	5	50	2	20	2	30	0	0
CTCs Reported	5	50	5	50	2	20	2	30		0
CTCs Failing RPA	0	0	0	0	1	-5	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0		
		Points		Points		Points		Points		Points
TCs Present	10	100	10	100	6	60	6	90	0	0
TCs Reported	10	100	10	100	6	60	6	90		0
TCs Failing RPA	1	-5	0	0	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	0
TICs Reported	0		0		0		0			0
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		50		50		15		30		
MAXIMUM POINTS		150								
CTC SCORE		0.97		1 Failure						
TC TOTALS		95		100		60		90		61
MAXIMUM POINTS		411								
TC SCORE		0.99								

Standard Number	CC110703
Canister Number	PE037-04709
Laboratory ID Code	CA-01
Analytical Method, GCMS	430.2
Analytical Method, GC	440.1
Sample ID Number	92136001

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	646	C	646	645	642	649	1.00	0.00
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	108		100	100	100	101	0.93	0.00
6 Carbon tetrachloride	201	C	228	234	217	228	1.13	0.03
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	748		858	911	818	874	1.16	0.04
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	798		792	852	804	832	1.03	0.03
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	591		575	577	573	581	0.98	0.01
17 Methylene chloride	721	C	742	769	708	711	1.02	0.03
18 4-Methyl-2-Pentanone	73		70	70	70	72	0.97	0.01
19 1,1,2,2-Tetrachloroethane	24.8		16	14	14	12	0.56	0.10
20 Tetrachloroethene	23.2		23	22	22	21	0.95	0.03
21 Toulene	174		159	151	151	143	0.87	0.04
22 1,1,1-Trichloroethane	352	C	366	380	353	358	1.03	0.03
23 Trichloroethene	120	C	120	123	116	114	0.99	0.03
24 1,1,2-CL3-1,2,2-F3-Ethane	614		1038	1066	983	1021	1.26	0.03
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	
28 o-Xylene	1	C ?	0	0	0	0	0.00	0.00
29 p-Xylene	30.9		32	26	27	25	0.89	0.00

Standard Number	CC109398
Canister Number	PE015-04702
Laboratory ID Code	CA-01
Analytical Method, GC/MS	430.2
Analytical Method, GC	440.1
Sample ID Number	92136005

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	403	C	391	407	400	400	0.99	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	202		188	195	192	192	0.95	0.01
6 Carbon tetrachloride	20.6	C	22	20	22	21	1.03	0.04
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	15.3		17	16	16	17	1.11	0.04
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	10.3		9.5	8.4	9.9	9.3	0.90	0.06
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	298		272	283	280	278	0.93	0.01
17 Methylene chloride	15.4	C	17	16	17	16	1.07	0.03
18 4-Methyl-2-Pentanone	121		122	127	126	127	1.04	0.02
19 1,1,2,2-Tetrachloroethane	2.1		2	2	2	2	0.95	0.00
20 Tetrachloroethene	8.2		8.4	7.8	8.3	7.8	0.98	0.03
21 Toulene	15.2		14	13	13	13	0.87	0.03
22 1,1,1-Trichloroethane	20.4	C	22	20	22	2	0.81	0.51
23 Trichloroethene	5.3	C	5.7	5.3	5.6	5.3	1.03	0.03
24 1,1,2-CL3-1,2,2-F3-Ethane	15.5		21	19.5	21	19	1.30	0.04
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	5.9		6	5.4	5.9	5.5	0.97	0.04

Standard Number	CC109381
Canister Number	PE021-04710
Laboratory ID Code	CA-01
Analytical Method, GCMS	430.2
Analytical Method, GC	440.1
Sample ID Number	92136002

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	627	C	655	630	649	669	1.04	0.02
2 Benzene	200		203	196	202	191	0.99	0.02
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	101		118	112	120	119	1.16	0.03
5 2-Butanone	100	?	0	0	0	0	0.00	ERR
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	403	C	565	528	544	515	1.33	0.03
10 1,1-Dichloroethane	807		847	856	857	818	1.05	0.02
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	806		833	802	826	848	1.03	0.02
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	151		156	150	157	160	1.03	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toulene	101		100	102	98	93	0.97	0.03
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Laboratory ID Code CX-01
Analytical Method, GCMS 430.2
Analytical Method, GC 440.1
Sample ID Number 92136003

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	627	C	652	648	651	646	1.04	0.00	0.00
2 Benzene	200		196	186	196	184	0.95	0.03	0.04
3 Bromoform	1	?	0	0	0	0	0.00	ERR	0.00
4 1-Butanol	101		118	118	119	118	1.17	0.00	0.00
5 2-Butanone	100	?	0	0	0	0	0.00	ERR	0.00
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR	0.00
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	0.00
9 Cyclohexane	403	C	535	515	530	486	1.28	0.04	0.04
10 1,1-Dichloroethane	807		890	905	914	883	1.11	0.01	0.06
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.00
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR	0.00
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	0.00
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	0.00
16 Methanol	806		822	823	823	821	1.02	0.00	0.00
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	0.00
18 4-Methyl-2-Pentanone	151		158	157	159	158	1.05	0.00	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	0.00
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	0.00
21 Toulene	101		94	92	95	67	0.91	0.03	0.03
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.00
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	0.00
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	0.00
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	0.00

Appendix B

Laboratory CA-02

CA-02 represents the second analytical methodology submitted by this laboratory, GC/MS Analytical Method 430.1 and GC Method 440.1. There were no problems for CTCs or TCs on any canisters and the laboratory received a perfect score. This analytical procedure was qualified.

WIPP POP SCORING TABLE

LABORATORY	CA-02									
ANALYSIS TYPE	VOC's									
STANDARD #	CC110703		CC109398		CC109381		CC109381		K140105	
CANISTER #	4709		4702		4710		4707		10843	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	5	50	5	50	2	20	2	30	0	0
CTCs Reported	5	50	5	50	5	20	2	30		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA	0	0	0		
		Points		Points		Points		Points		Points
TCs Present	10	100	10	100	6	60	6	90	0	0
TCs Reported	10	100	10	100	6	60	6	90		0
TCs Failing RPA	0	0	0	0	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		50		50		20		30		
MAXIMUM POINTS		150								
CTC SCORE		1.00		0 Failures						
TC TOTALS		100		100		60		90		61
MAXIMUM POINTS		411								
TC SCORE		1.00								

Standard Number	CC110703
Canister Number	PE037-04709
Laboratory ID Code	CA-02
Analytical Method GCMS	430.1
Analytical Method GC	440.1
Sample ID Number	92136001

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	646	C	646	645	642	649	1.00	0.00
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	108		100	100	100	101	0.93	0.00
6 Carbon tetrachloride	201	C	173	170	171	168	0.85	0.01
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
6 Chloroform	748		669	680	673	664	0.90	0.01
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	798		701	716	716	715	0.89	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	591		575	577	573	581	0.98	0.01
17 Methylene chloride	721	C	684	701	690	691	0.96	0.01
18 4-Methyl-2-Pentanone	73		70	70	70	72	0.97	0.01
19 1,1,2,2-Tetrachloroethane	24.8		21	21	21	21	0.85	0.00
20 Tetrachloroethene	23.2		21	21	21	21	0.91	0.00
21 Toulene	174		158	154	157	158	0.90	0.01
22 1,1,1-Trichloroethane	352	C	327	327	322	314	0.92	0.02
23 Trichloroethene	120	C	120	121	119	116	0.99	0.02
24 1,1,2-CL3-1,2,2-F3-Ethane	814		721	741	726	718	0.89	0.01
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
26 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	30.9		32	31	32	32	1.03	0.01

Standard Number	CC109398
Canister Number	PE015-04702
Laboratory ID Code	CA-02
Analytical Method, GC/MS	430.1
Analytical Method, GC	440.1
Sample ID Number	92136005

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	403	C	391	407	400	400	0.99	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	202		188	195	192	192	0.95	0.01
6 Carbon tetrachloride	20.6	C	17	18	17	17	0.84	0.03
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	15.3		17	18	17	17	1.13	0.03
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	10.3		9.6	9.9	9.8	9.9	0.95	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	298		272	283	280	278	0.93	0.01
17 Methylene chloride	15.4	C	15	16	15	15	0.99	0.03
18 4-Methyl-2-Pentanone	121		122	127	126	127	1.04	0.02
19 1,1,2,2-Tetrachloroethane	2.1		2	2.2	2.1	2.1	1.00	0.03
20 Tetrachloroethene	8.2		7.9	8.1	7.8	7.9	0.97	0.01
21 Toulene	15.2		14	14	14	14	0.92	0.00
22 1,1,1-Trichloroethane	20.4	C	20	20	20	19	0.97	0.02
23 Trichloroethene	5.3	C	5.3	5.5	5.4	5.2	1.01	0.02
24 1,1,2-CL3-1,2,2-F3-Ethane	15.5		15	15	15	14	0.95	0.03
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	5.9		6.5	6.6	6.8	6.7	1.12	0.01

Standard Number	CC109381
Canister Number	PE021-04710
Laboratory ID Code	CA-02
Analytical Method, GCMS	430.1
Analytical Method, GC	440.1
Sample ID Number	92136002

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	627	C	655	630	649	669	1.04	0.02
2 Benzene	200		201	209	202	204	1.02	0.02
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	101		116	112	120	119	1.16	0.03
5 2-Butanone	100	?	0	0	0	0	0.00	ERR
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	403	C	429	430	425	420	1.06	0.01
10 1,1-Dichloroethane	807		744	782	745	743	0.93	0.02
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	806		833	802	826	846	1.03	0.02
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	151		156	150	157	160	1.03	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toulene	101		100	98	93	101	0.97	0.03
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC109381-D
Canister Number	PE020-04707
Laboratory ID Code	CA-02
Analytical Method, GCMS	430.1
Analytical Method, GC	440.1
Sample ID Number	92136003

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	627	C	652	648	651	648	1.04	0.00	0.00
2 Benzene	200		220	214	206	209	1.06	0.03	0.04
3 Bromoform	1	?	0	0	0	0	0.00	ERR	0.00
4 1-Butanol	101		118	118	119	118	1.17	0.00	0.00
5 2-Butanone	100	?	0	0	0	0	0.00	ERR	0.00
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR	0.00
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	0.00
9 Cyclohexane	403	C	452	434	424	448	1.09	0.02	0.03
10 1,1-Dichloroethane	807		806	773	782	777	0.97	0.02	0.03
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.00
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR	0.00
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	0.00
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	0.00
16 Methanol	806		822	823	823	821	1.02	0.00	0.00
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	0.00
18 4-Methyl-2-Pentanone	151		158	157	159	158	1.05	0.00	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	0.00
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	0.00
21 Toulene	101		103	102	100	101	1.00	0.01	0.04
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.00
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	0.00
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	0.00
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	0.00

Appendix C

Laboratory DO

This laboratory submitted data for a single GC/MS procedure. There was a difficulty quantifying 1-butanol in the Interference and Interference Duplicate canisters, and false positive values for one CTC, 1,1,1-trichloroethane. These problems were minor and did not prevent the laboratory from passing all scoring criteria.

WIPP PDP SCORING TABLE

LABORATORY	DO									
ANALYSIS TYPE	VOC's									
STANDARD #	CC110703		CC109398		CC109381		CC109381		K140105	
CANISTER #	4701		4699		4712		4700		4443	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	5	50	5	50	2	20	2	30	0	0
CTCs Reported	5	50	5	50	2	20	2	20		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	10	100	6	60	6	90	0	0
TCs Reported	10	100	10	100	6	60	6	90		0
TCs Failing RPA	0	0	0	0	1	-5	1	-5		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0	0		1	-1	0			NA
CTC TOTALS		50		50		20		30		
MAXIMUM POINTS		150								
CTC SCORE		1.00		0 Failures						
TC TOTALS		100		100		54		85		61
MAXIMUM POINTS		411								
TC SCORE		0.97								

Standard Number	CC110703
Canister Number	PE035-04701
Laboratory ID Code	DO
Analytical Method	ACL-168
Sample ID Number	92-8049-05

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	646	C	593	583	581	563	0.90	0.02
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	108		122	121	120	120	1.12	0.01
6 Carbon tetrachloride	201	C	181	171	172	182	0.88	0.03
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	748		693	618	687	688	0.90	0.05
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	798		782	706	771	779	0.95	0.04
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	591		457	493	484	476	0.81	0.03
17 Methylene chloride	721	C	662	632	679	703	0.93	0.04
18 4-Methyl-2-Pentanone	73		84.4	85.6	85.1	84.7	1.16	0.01
19 1,1,2,2-Tetrachloroethane	24.8		21.2	21.3	21.4	21.3	0.86	0.00
20 Tetrachloroethene	23.2		20.3	20.3	20.6	20.4	0.88	0.01
21 Toulene	174		152	151	153	153	0.88	0.01
22 1,1,1-Trichloroethane	352	C	317	310	300	325	0.89	0.03
23 Trichloroethene	120	C	108	108	109	109	0.90	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	814		648	696	658	659	0.82	0.03
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	30.9		29.9	29.8	28.9	28.8	0.95	0.02

Standard Number	CC109398
Canister Number	PE013-04699
Laboratory ID Code	DO
Analytical Method	ACL:168
Sample ID Number	92-8049-01

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	403	C	454	412	415	408	1.05	0.04
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	202		225	191	221	187	1.02	0.08
6 Carbon tetrachloride	20.6	C	17.2	17	17.2	17	0.83	0.01
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	15.3		14.6	14.7	14.6	14.5	0.95	0.00
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	10.3		10.5	10.3	10.5	10.4	1.01	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	298		303	295	259	282	0.96	0.06
17 Methylene chloride	15.4	C	14.8	14.6	15	14.7	0.96	0.01
18 4-Methyl-2-Pentanone	121		142	148	139	147	1.19	0.03
19 1,1,2,2-Tetrachloroethane	2.1		2	2	2	2	0.95	0.00
20 Tetrachloroethene	8.2		7.2	7.5	7.3	7.3	0.89	0.01
21 Toulene	15.2		13.6	13.9	14	13.9	0.91	0.01
22 1,1,1-Trichloroethane	20.4	C	18.3	18.2	18.5	18.2	0.90	0.01
23 Trichloroethene	5.3	C	5	5	5	5	0.94	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	15.5		12.6	12.5	12.6	12.5	0.81	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	5.9		6.2	6.2	6.2	6.3	1.06	0.01

Standard Number	CC109381
Canister Number	PE023-04712
Laboratory ID Code	DO
Analytical Method	ACL-168
Sample ID Number	92-8049-03

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	627	C	644	711	689	726	1.10	0.04
2 Benzene	200		199	194	200	198	0.99	0.01
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	101		144	185	178	179	1.70	0.09
5 2-Butanone	100	?	0	0	0	0	0.00	ERR
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	403	C	414	397	417	422	1.02	0.02
10 1,1-Dichloroethane	807		783	771	775	772	0.96	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	806		748	707	705	705	0.89	0.02
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	151		187	181	181	180	1.21	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toulene	101		94.5	92.2	92.1	92.6	0.92	0.01
22 1,1,1-Trichloroethane	1	C ?	1.5	1.5	1.5	1.6	1.53	0.03
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC109381-D
Canister Number	PE014-04700
Laboratory ID Code	DO
Analytical Method	ACL-168
Sample ID Number	92-8049-02

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	627	C	641	653	667	662	1.05	0.02	0.05
2 Benzene	200		200	199	200	200	1.00	0.00	0.01
3 Bromoform	1	?	0	0	0	0	0.00	ERR	0.00
4 1-Butanol	101		168	136	178	143	1.55	0.11	0.11
5 2-Butanone	100	?	0	0	0	0	0.00	ERR	0.00
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR	0.00
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	0.00
9 Cyclohexane	403	C	427	412	412	416	1.03	0.01	0.00
10 1,1-Dichloroethane	807		774	789	779	785	0.97	0.01	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.00
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR	0.00
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	0.00
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	0.00
16 Methanol	806		718	625	698	855	0.96	0.09	0.08
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	0.00
18 4-Methyl-2-Pentanone	151		171	188	175	181	1.18	0.04	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	0.00
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	0.00
21 Toulene	101		91.1	92.5	91.2	90.6	0.90	0.01	0.02
22 1,1,1-Trichloroethane	1	C ?	1.4	1.6	1.5	1.6	1.53	0.05	0.00
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	0.00
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	0.00
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	0.00

Appendix D

Laboratory OS-01

This laboratory submitted data for two analytical procedures. OS-01 represents GC/MS Analytical Method L-4111 and GC Analytical Method L-4147. Using these procedures, the laboratory had minor difficulty quantifying p-xylene in the High canister, 1,1,2,2-tetrachloroethane in the High and Low canisters, and 1-butanol in the Interference and Interference Duplicate canisters. Additionally, the laboratory reported false positives for 1,1-dichloroethane, 1,2-dichloroethane 1,1,1-trichloroethane in three canisters. These did not prevent the laboratory from passing all scoring criteria and qualifying this procedure.

WIPP PDP SCORING TABLE

LABORATORY	OS-01									
ANALYSIS TYPE	VOC's									
STANDARD #	CC110703		CC109398		CC109381		CC109381		K140105	
CANISTER #	10844		4705		4429		4703		4711	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	5	50	5	50	2	20	2	30	0	0
CTCs Reported	5	50	5	50	2	20	2	30		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	10	100	6	60	6	90	0	0
TCs Reported	10	100	10	100	6	60	6	90		0
TCs Failing RPA	2	-10	1	-5	1	-5	1	-5		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL	1	-1		0	2	-2	2	-2		NA
CTC TOTALS		50		50		20		30		
MAXIMUM POINTS		150								
CTC SCORE		1.00		0 Failures						
TC TOTALS		89		95		53		83		61
MAXIMUM POINTS		411								
TC SCORE		0.93								

Standard Number	CC110703
Canister Number	PE031-10844
Laboratory ID Code	OS-01
Analytical Method, GC/MS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GC/MS	pdpG07, F01,E05
Sample ID Number, GC	42292A1028

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	646	C	606	604	608	605	0.94	0.00
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	108		98	98	98	98	0.91	0.00
6 Carbon tetrachloride	201	C	172	178	187	184	0.90	0.03
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	748		698	701	724	707	0.95	0.01
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	798		709	732	736	712	0.91	0.02
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	2.2	2.1	2	2.3	2.15	0.05
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	591		504	500	500	498	0.85	0.00
17 Methylene chloride	721	C	655	652	662	663	0.91	0.01
18 4-Methyl-2-Pentanone	73		62	62	62	61	0.85	0.01
19 1,1,2,2-Tetrachloroethane	24.8		32.7	34.1	33.5	34.3	1.36	0.02
20 Tetrachloroethene	23.2		22.8	23.4	23.4	23.1	1.00	0.01
21 Toulene	174		187	190	193	190	1.09	0.01
22 1,1,1-Trichloroethane	352	C	331	332	335	330	0.94	0.01
23 Trichloroethene	120	C	130	129	130	129	1.08	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	814		728	731	740	741	0.90	0.01
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	
28 o-Xylene	1	C ?	0	0	0	0	0.00	0.00
29 p-Xylene	30.9		41.1	41.3	41	40.9	1.33	0.00

Standard Number	CC109398
Canister Number	PE018-04705
Laboratory ID Code	OS-01
Analytical Method, GC/MS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GC/MS	pdpHO5, DO6
Sample ID Number, GC	42892AK1015

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	403	C	366	366	368	364	0.91	0.00
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	202		190	188	190	188	0.94	0.01
6 Carbon tetrachloride	20.6	C	18.9	19.3	19.2	19.7	0.94	0.01
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	15.3		14.8	14.9	15.4	25.1	1.15	0.25
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	10.3		10	10.1	8.9	9.3	0.93	0.05
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	298		252	250	264	254	0.86	0.02
17 Methylene chloride	15.4	C	16.1	16.1	15.8	15.5	1.03	0.02
18 4-Methyl-2-Pentanone	121		108	106	108	108	0.89	0.01
19 1,1,2,2-Tetrachloroethane	2.1		3.3	3.4	3.3	3.3	1.58	0.01
20 Tetrachloroethene	8.2		8.4	8.7	8.3	8.8	1.04	0.02
21 Toulene	15.2		15.4	15.7	15.4	16.1	1.03	0.02
22 1,1,1-Trichloroethane	20.4	C	20.2	20.4	20.2	20.4	1.00	0.00
23 Trichloroethene	5.3	C	5.8	5.8	5.7	5.8	1.08	0.01
24 1,1,2-CL3-1,2,2-F3-Ethane	15.5		15	15.1	15.1	15	0.97	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	5.9		7.2	7.1	7.1	7.1	1.21	0.01

Standard Number	CC109381
Canister Number	PE003-04429
Laboratory ID Code	OS-01
Analytical Method, GCMS	L-4111
Analytical Method, GC	L-4147
Sample ID Number	pdpKO1, MO5, E11, DO2
Sample ID Number, GC	4249AK1045 & 1043, 42392AK1033

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	627	C	586	588	586	588	0.94	0.00
2 Benzene	200		200	200	200	199	1.00	0.00
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	101		58	56	58	62	0.58	0.04
5 2-Butanone	100	?	0	0	0	0	0.00	ERR
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	403	C	416	416	420	406	1.03	0.01
10 1,1-Dichloroethane	807		801	797	762	784	0.98	0.01
11 1,2-Dichloroethane	1	C ?	3.9	3.9	3.9	3.9	3.90	ERR
12 1,1-Dichloroethane	1	?	0.7	0.7	0.7	0.5	0.65	0.13
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	806		756	759	762	762	0.94	0.00
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	151		140	140	138	140	0.92	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toulene	101		103	102	105	104	1.02	0.01
22 1,1,1-Trichloroethane	1	C ?	1.8	1.9	1.8	1.9	1.85	0.03
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC109381-D
Canister Number	PE016-04703
Laboratory ID Code	OS-01
Analytical Method, GC/MS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GC/MS	pdpJ02,N04,G03,D04
Sample ID Number, GC	5492AK1035, 5492AK1036

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	627	C	554	550	552	550	0.88	0.00	0.06
2 Benzene	200		198	197	193	192	0.96	0.01	0.03
3 Bromoform	1	?	0	0	0	0	0.00	ERR	0.00
4 1-Butanol	101		50	52	50	50	0.50	0.02	0.15
5 2-Butanone	100	?	0	0	0	0	0.00	ERR	0.00
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR	0.00
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	0.00
9 Cyclohexane	403	C	403	400	401	401	1.00	0.00	0.03
10 1,1-Dichloroethane	807		787	750	771	766	0.95	0.02	0.03
11 1,2-Dichloroethane	1	C ?	3.8	3.8	3.6	3.8	3.80	0.00	0.00
12 1,1-Dichloroethane	1	?	0.5	0.7	0.7	0.7	0.65	0.13	0.00
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	0.00
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	0.00
16 Methanol	806		753	756	753	759	0.94	0.00	0.00
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	0.00
18 4-Methyl-2-Pentanone	151		130	130	130	128	0.86	0.01	0.07
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	0.00
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	0.00
21 Toulene	101		103	102	98	97	0.99	0.03	0.04
22 1,1,1-Trichloroethane	1	C ?	1.8	1.9	1.8	1.8	1.83	0.02	0.00
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	0.00
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	0.00
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	0.00

Appendix E

Laboratory OS-02

OS-01 represents GC/MS Analytical Method L-4111 only, the second procedure submitted by this laboratory. Since the GC/MS analyses used for OS-01 were also used for this procedure, the same difficulty quantifying p-xylene in the High canister and 1,1,2,2-tetrachloroethane in the High and Low canisters were encountered, as were the false positives for 1,1-dichloroethane, 1,2-dichloroethane 1,1,1-trichloroethane in three canisters. There was also difficulty with 1-butanol in the Interference and Interference Duplicate canisters, however, the Interference canister's value was within the RPA criterion. The Interference Duplicate also failed RPA for methanol. These difficulties did not prevent the laboratory from passing all scoring criteria and qualifying this procedure.

WIPP PDP SCORING TABLE

LABORATORY	OS-02									
ANALYSIS TYPE	VOC's									
STANDARD #	CC110703		CC109398		CC109381		CC109381		K140105	
CANISTER #	10844		4705		4429		4703		4711	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	5	50	5	50	2	20	2	30	0	0
CTCs Reported	5	50	5	50	5	20	2	30		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	10	100	6	60	6	90	0	0
TCs Reported	10	100	10	100	6	60	6	90		0
TCs Failing RPA	2	-10	1	-5	0	0	2	-10		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL	1	-1	0		2	-2	2	-2		NA
CTC TOTALS		50		50		20		30		
MAXIMUM POINTS		150								
CTC SCORE		1.00		0 Failures						
TC TOTALS		89		95		58		78		61
MAXIMUM POINTS		411								
TC SCORE		0.93								

Standard Number	CC110703
Canister Number	PE031-10844
Laboratory ID Code	OS-02
Analytical Method, GC/MS Only	L-4111
Sample ID Number	pdpG07,F01,E05

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	646	C	809	810	834	818	1.27	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	108		104	103	106	105	0.97	0.01
6 Carbon tetrachloride	201	C	172	178	187	184	0.90	0.03
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	748		698	701	724	707	0.95	0.01
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	798		709	732	736	712	0.91	0.02
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	2.2	2.1	2	2.3	2.15	0.05
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	591		625	561	634	578	1.01	0.05
17 Methylene chloride	721	C	655	652	662	663	0.91	0.01
18 4-Methyl-2-Pentanone	73		84.2	85.2	84.3	83.9	1.16	0.01
19 1,1,2,2-Tetrachloroethane	24.8		32.7	34.1	33.5	34.3	1.36	0.02
20 Tetrachloroethene	23.2		22.8	23.4	23.4	23.1	1.00	0.01
21 Toulene	174		187	190	193	190	1.09	0.01
22 1,1,1-Trichloroethane	352	C	331	332	335	330	0.94	0.01
23 Trichloroethene	120	C	130	129	130	129	1.08	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	814		728	731	740	741	0.90	0.01
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	
28 o-Xylene	1	C ?	0	0	0	0	0.00	0.00
29 p-Xylene	30.9		41.1	41.3	41	40.9	1.33	0.00

Standard Number	CC109398
Canister Number	PE018-04705
Laboratory ID Code	OS-02
Analytical Method, GC/MS only	L-4111
Sample ID Number, GC/MS	pdpHO5,DO6

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	403	C	430	440	438	445	1.09	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	202		199	202	198	204	0.99	0.01
6 Carbon tetrachloride	20.6	C	18.9	19.3	19.2	19.7	0.94	0.01
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	15.3		14.8	14.9	15.4	15.1	0.98	0.02
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	10.3		10	10.1	8.9	9.3	0.93	0.05
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	298		366	376	344	366	1.22	0.03
17 Methylene chloride	15.4	C	16.1	16.1	15.6	15.5	1.03	0.02
18 4-Methyl-2-Pentanone	121		131	133	128	130	1.08	0.01
19 1,1,2,2-Tetrachloroethane	2.1		3.3	3.4	3.3	3.3	1.58	0.01
20 Tetrachloroethene	8.2		8.4	8.7	8.3	8.8	1.04	0.02
21 Toulene	15.2		15.4	15.7	15.4	16.1	1.03	0.02
22 1,1,1-Trichloroethane	20.4	C	20.2	20.4	20.2	20.4	1.00	0.00
23 Trichloroethene	5.3	C	5.8	5.8	5.7	5.6	1.08	0.01
24 1,1,2-CL3-1,2,2-F3-Ethane	15.5		15	15.1	15.1	15	0.97	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	
28 o-Xylene	1	C ?	0	0	0	0	0.00	0.00
29 p-Xylene	5.9		7.2	7.1	7.1	7.1	1.21	0.00

Standard Number	CC109381
Canister Number	PE003-04429
Laboratory ID Code	OS-02
Analytical Method, GC/MS	L-4111
Sample ID Number, GC/MS	pdpKO1, MO5, E11, 002

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	627	C	646	670	687	681	1.07	0.02
2 Benzene	200		200	200	200	199	1.00	0.00
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	101		137	133	125	126	1.29	0.04
5 2-Butanone	100	?	0	0	0	0	0.00	ERR
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	403	C	418	416	420	406	1.03	0.01
10 1,1-Dichloroethane	807		801	797	782	784	0.98	0.01
11 1,2-Dichloroethane	1	C ?	3.9	3.9	3.9	3.9	3.90	ERR
12 1,1-Dichloroethane	1	?	0.7	0.7	0.7	0.5	0.65	0.13
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	806		826	904	848	838	1.06	0.04
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	151		141	140	140	140	0.93	0.00
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toulene	101		103	102	105	104	1.02	0.01
22 1,1,1-Trichloroethane	1	C ?	1.8	1.9	1.8	1.9	1.85	0.03
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC109381-D
Canister Number	PE016-04703
Laboratory ID Code	OS-02
Analytical Method, GC/MS	L-4111
Sample ID Number	pdpJ02,N04,G03,D04

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	627	C	677	670	669	655	1.06	0.01	0.00
2 Benzene	200		198	197	193	192	0.98	0.01	0.03
3 Bromoform	1	?	0	0	0	0	0.00	ERR	0.00
4 1-Butanol	101		144.7	147	144	147	1.44	0.01	0.11
5 2-Butanone	100	?	0	0	0	0	0.00	ERR	0.00
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR	0.00
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	0.00
9 Cyclohexane	403	C	403	400	401	401	1.00	0.00	0.04
10 1,1-Dichloroethane	807		787	750	771	766	0.95	0.02	0.03
11 1,2-Dichloroethane	1	C ?	3.8	3.8	3.8	3.8	3.80	0.00	0.00
12 1,1-Dichloroethane	1	?	0.5	0.7	0.7	0.7	0.65	0.13	0.00
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	0.00
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	0.00
16 Methanol	806		1057	1053	1095	1080	1.33	0.02	0.23
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	0.00
18 4-Methyl-2-Pentanone	151		138	138	136	137	0.91	0.01	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	0.00
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	0.00
21 Toulene	101		103	102	98	97	0.99	0.03	0.03
22 1,1,1-Trichloroethane	1	C ?	1.8	1.8	1.8	1.8	1.80	0.00	0.00
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	0.00
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	0.00
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	0.00

Appendix F

Laboratory ZL

This laboratory submitted data for a single GC/MS procedure. There were problems with quantitation on all canisters and the laboratory failed the scoring criteria for CTCs and TCs.

WIPP PDP SCORING TABLE

LABORATORY	ZL									
ANALYSIS TYPE	VOC's									
STANDARD #	CC110703		CC109398		CC109381		CC109381		K140105	
CANISTER #	10840		4708		4444		4442		4706	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	5	50	5	50	2	20	2	30	0	0
CTCs Reported	5	50	5	50	2	20	2	30		0
CTCs Failing RPA	4	-20	0	0	2	-10	2	-10		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		1	-5	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	10	100	6	60	6	90	0	0
TCs Reported	10	100	10	100	6	60	6	90		0
TCs Failing RPA	5	-25	2	-10	6	-30	6	-30		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	2	-10
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	5	-5
Subtotal for Blank										46
False CTCs or TCs in Spikes > PRQL	1	-1		0		0		0		NA
CTC TOTALS		30		50		10		15		
MAXIMUM POINTS		150								
CTC SCORE		0.70		8 Failures						
TC TOTALS		74		90		30		60		46
MAXIMUM POINTS		411								
TC SCORE		0.73								

Standard Number	CC110703
Canister Number	PE027-10840
Laboratory ID Code	ZL
Analytical Method	GC/MS
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	646	C	770	650	880	810	1.20	0.11
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	108		130	110	150	140	1.23	0.11
6 Carbon tetrachloride	201	C	270	280	330	300	1.47	0.08
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	748		1000	950	1000	1000	1.32	0.02
9 Cyclohexane	1	C ?	1.3	1.4	1.3	1.3	1.33	0.03
10 1,1-Dichloroethane	798		1100	1000	1100	1100	1.35	0.04
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	591		250	210	280	260	0.42	0.10
17 Methylene chloride	721	C	1100	1100	1100	1100	1.53	0.00
18 4-Methyl-2-Pentanone	73		89	68	98	93	1.19	0.13
19 1,1,2,2-Tetrachloroethane	24.8		32	24	31	31	1.19	0.11
20 Tetrachloroethene	23.2		28	28	27	27	1.19	0.02
21 Toulene	174		220	210	260	240	1.34	0.08
22 1,1,1-Trichloroethane	352	C	470	490	570	500	1.44	0.07
23 Trichloroethene	120	C	150	180	190	170	1.40	0.09
24 1,1,2-CL3-1,2,2-F3-Ethane	814		1200	1200	1200	1200	1.47	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	30.9		38	40	37	37	1.23	0.03

Standard Number	CC109398
Canister Number	PE036-04708
Laboratory ID Code	ZL
Analytical Method	GC/MS
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	403	C	540	407	400	400	1.08	0.14
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	100	?	0	0	0	0	0.00	ERR
5 2-Butanone	202		270	195	192	192	1.05	0.16
6 Carbon tetrachloride	20.6	C	23	24	23	23	1.13	0.02
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	15.3		18	19	19	19	1.23	0.02
9 Cyclohexane	1	C ?	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	10.3		12	12	12	11	1.14	0.04
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	298		86	91	92	84	0.30	0.04
17 Methylene chloride	15.4	C	19	19	19	18	1.22	0.02
18 4-Methyl-2-Pentanone	121		160	210	170	160	1.45	0.12
19 1,1,2,2-Tetrachloroethane	2.1		2.5	2.5	2.5	2.5	1.19	0.00
20 Tetrachloroethene	8.2		9.7	10	10	9.9	1.21	0.01
21 Toulene	15.2		18	19	19	18	1.22	0.03
22 1,1,1-Trichloroethane	20.4	C	22	23	22	22	1.09	0.02
23 Trichloroethene	5.3	C	6.4	6.5	6.4	6.2	1.20	0.02
24 1,1,2-CL3-1,2,2-F3-Ethane	15.5		19	19	19	18	1.21	0.02
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	5.9		6.9	7.2	7.1	7.1	1.20	0.02

Standard Number	CC109381
Canister Number	PE034-04444
Laboratory ID Code	ZL
Analytical Method	GC/MS
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	627	C	1500	1600	1300	1300	2.27	0.09
2 Benzene	200		530	580	460	490	2.58	0.09
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	101		170	190	140	140	1.58	0.13
5 2-Butanone	100	?	0	0	0	0	0.00	ERR
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	403	C	1100	1200	1000	1000	2.67	0.08
10 1,1-Dichloroethane	807		2100	2300	2000	2100	2.63	0.05
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	806		290	570	450	490	0.56	0.23
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	151		440	380	270	290	2.28	0.20
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toulene	101		260	320	230	240	2.60	0.13
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC109381-D
Canister Number	PE012-04442
Laboratory ID Code	ZL
Analytical Method	GC/MS
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	627	C	2400	2300	2400	2300	3.75	0.02	0.49
2 Benzene	200		560	570	560	560	2.84	0.01	0.10
3 Bromoform	1	?	0	0	0	0	0.00	ERR	0.00
4 1-Butanol	101		190	160	180	160	1.71	0.06	0.06
5 2-Butanone	100	?	0	0	0	0	0.00	ERR	0.00
6 Carbon tetrachloride	1	C ?	0	0	0	0	0.00	ERR	0.00
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	0.00
9 Cyclohexane	403	C	1200	1200	1200	1200	2.96	0.00	0.11
10 1,1-Dichloroethane	807		2400	2300	2400	2300	2.91	0.02	0.10
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.00
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR	0.00
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	0.00
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	0.00
16 Methanol	806		590	560	550	540	0.69	0.03	0.22
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	0.00
18 4-Methyl-2-Pentanone	151		340	330	350	320	2.22	0.03	0.03
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	0.00
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	0.00
21 Toulene	101		290	280	280	270	2.77	0.03	0.00
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR	0.06
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	0.00
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	0.00
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	0.00
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	0.00
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	0.00
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	0.00

WIPP Experimental Waste Characterization Program

Performance Demonstration Program Scoring Report - September 1992

CYCLE 4

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November 1992

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - September 1992 Distribution

This report contains the results of Cycle 4 of the blind sample distributions to laboratories participating in the Performance Demonstration Program for WIPP Waste Characterization. This distribution consisted of canisters of simulated headspace gases of known composition of inorganic and low molecular weight gases (Gases) and volatile organic compounds (VOCs).

The verified time of sample receipt (VTSR) for Cycle 4 is October 13, 1992, and all reports were to be returned to the PDP Coordinator on or before November 10, 1992. All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 2.

This report is presented in two sections, the first for VOC and the second for GAS data, and each section consists of a summary of all participants' performance and a separate, laboratory-specific appendix listing each participant's performance by canister. The appendices are suitable for attachment to the letters to individual laboratories notifying them of their pass/fail status.

Each appendix contains the following:

- A synopsis of the laboratory's performance
- A scoring table detailing the point assignment for each sample canister, and the total score for Critical Target Compounds and Target Compounds (CTCs and TCs) for VOCs, and Critical Target Analyte Gases and Target Analyte Gases (CTAGs and TAGs) for GAS analyses
- A set of data tables, one for each sample canister, High, Low, Interference, Duplicate and NO_x, for GAS analysis, listing the known values of all analytes and the quadruplicate analyses reported by the laboratory. No data table is provided for the Blank canister

For VOCs, laboratories CA and OS submitted data for two analytical procedures, each of which is treated in a sperate appendix. The same laboratory ID code is used for each, with a numerical suffix to differentiate them, eg, CA-01 and CA-02.

Analytical Samples

As with previous Cycles, the VOC and GAS samples were prepared by an independent laboratory using SUMMA canisters provided by DOE and analytical grade gas standards procured specifically for this cycle. Table 1 in each section contains the canister identification numbers, their contents and recipient (listed by Laboratory Identification Code) for VOC and GAS analyses, respectively.

Prior to distribution, this laboratory performed confirmatory analyses of a set of VOC canisters. The results of these analyses are provided in Appendix G, under the Laboratory Identification Code JB.

Summary of Results

The Pass/Fail status of each Cycle 4 participant is described briefly below and presented in Table 2 of the VOC and GAS sections of this report.

VOC Analyses

- Laboratories CA & OS submitted data for two different analytical procedures. CA used two combination gas chromatography (GC) and gas chromatography - mass spectrometry (GC/MS) procedures, both of which were qualified. OS used one combination GC-GC/MS procedure and a GC/MS only procedure. Both were qualified.

- The two other laboratories, DO & ZL, submitted only GC/MS data for all compounds. These passed all scoring criteria and also qualified.

GAS Analyses

- All four laboratories submitting data for GAS analyses, MD, HE, HR & CK, passed all scoring criteria and qualified their procedures.

Interpretation of the Appendix Tables

The data contained in the Appendices appear as they were reported by the laboratories. The terms Relative Percent Accuracy (RPA), Relative Standard Deviation (RSD) and Relative Percent Difference (RPD) are defined in detail in the Performance Demonstration Program Plan. The RPA is calculated as a percent recovery of the known value. The RSD is calculated using the sample standard deviation from the replicate data submitted for each analyte. The RPD is applicable only when duplicate canisters were submitted for analysis, as with the Interference Cylinder for VOCs or the High Cylinder for GAS analysis. VOC and GAS Pass/Fail criteria for these parameters are given in Table 3.

Data tables in the Appendices have a "Known Value" column which lists the concentration for each analyte in ppmv for VOCs and percent for GAS analyses. The "Flags" column shows an entry of "C" for an analyte that is a CTC or CTAG, while TCs or TAGs have no entry.

For VOC analyses, each canister contains a subset of the 29 analytes on the target list. Accordingly, an entry of "?" in the "Flags" column indicates that the analyte was not added to the canister, and therefore should not be detected by the laboratory. In this case, the "Known Value" column lists the project required quantitation limit (PRQL), as specified in the Performance Demonstration Program Plan. For all Cycle 4 participants, the detection limit achieved by the laboratory when reporting a compound as not detected was less than or equal to the PRQL. As a convention, the VOC data tables list a value of "0" for all analytes the laboratory reported as not detected.

For VOC analyses, some laboratories reported values for analytes not added to a canister which were below or slightly above the PRQL. These are listed as the laboratories reported them, regardless of their effect on the numerical scoring. The remaining table entries are self-evident or are discussed in the individual appendix.

For GAS analyses, the High, Low, Special and Duplicate canisters contain the complete list of ten target compounds, with the exception of NO_x. The "Known Value" columns on these data tables list the actual concentrations of all nine analytes and the PRDL for NO_x. The "Flags" columns show an entry of "?" for NO_x, since it was added to only the NO_x canister.

Correspondingly, the NO_x data table lists the PRDL for all analytes except NO_x and Nitrogen. Nitrogen is used as a carrier gas for NO_x, and, while technically a TAG, it is not scored for the NO_x canister. The "Flags" column for all other analytes contains an entry of "?". For the NO_x canister, Nitrogen values are listed if they were reported by the laboratory.

For all Cycle 4 participants, the detection limit achieved by the laboratory when reporting a compound as not detected was less than or equal to the PRDL. As a convention, the NO_x data table lists the PRDL value for all analytes the laboratory reported as not detected.

All Cycle 4 participants reported acceptable blank results for both VOC and GAS analyses, and no data tables for the Blank canisters are included in this report.

CYCLE 4 VOC DATA

Table 1

VOC Canister Identification

Laboratory ID Code	Low Concentration CC115180	High Concentration CC113863	Special CC113589	Blank Nitrogen CC102583
CA	PE002-04428	PE014-04700	PE033-04443 PE023-04712	PE004-04431
OS	PE009-04438	PE026-04715	PE021-04710 PE001-04427	PE019-04706
ZL	PE010-04440	PE022-04711	PE027-10840 PE012-04442	PE030-10843
DO	PE015-04702	PE017-04704	PE037-04709 PE034-04444	PE005-04432

Table 2

Pass/Fail Summary

Lab Code	Analysis	Status	Comments
CA-01	VOC	Pass	0 CTC Failure, 1.00 CTC Score 1.00 TC Score
CA-02	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.98 TC Score
DO	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.90 TC Score
OS-01	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.96 TC Score
OS-02	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.98 TC Score
ZL	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.98 TC Score

Table 3

VOC Acceptance Criteria

Analytical Parameter	Acceptance Range
Relative Percent Accuracy	70 - 130 %
Relative Standard Deviation	+/- 25 %
Relative Percent Difference	+/- 25 %

Appendix A

Laboratory CA-01

CA-01 represents the first of two analytical methodologies this laboratory submitted, GC/MS Procedure 430.2 and GC Procedure 440.1. No problems were encountered and this laboratory achieved a perfect score for CTCs and TCs.

WIPP PDP SCORING TABLE

LABORATORY	CA-01									
ANALYSIS TYPE	VOC									
STANDARD #	CC113863		CC115180		CC113859		CC113859		CC102583	
CANISTER #	04700		04428		04443		04712		04431	
COMMENT	High Conc.		Low Conc.		Special		Special Dup		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	5	50	3	30	3	45	0	0
CTCs Reported	6	60	5	50	3	30	3	45		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	11	110	7	70	7	105	0	0
TCs Reported	10	100	11	110	7	70	7	105		0
TCs Failing RPA	0	0	0	0	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0		0		0		0		0	0
TICs Reported	0		0		0		0			0
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		60		50		30		45		
MAXIMUM		185								
CTC SCORE	185/185	1.00	0 CTC	Failures						
TC TOTALS		100		110		70		105		
MAXIMUM POINTS		456								
TOTAL SCORE	446/446	1.00								

Standard Number	CC113863
Canister Number	PE014-04700
Laboratory ID Code	CA-01
Analytical Method, GCMS	430.2
Analytical Method, GC	440.1
Sample ID Number	92287001

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	260	260	250	250	0.86	0.02
2 Benzene	147		148	141	141	146	0.98	0.02
3 Bromoform	25.5		23	22	23	22	0.88	0.02
4 1-Butanol	130		130	130	140	140	1.04	0.04
5 2-Butanone	392		340	340	340	340	0.87	0.00
6 Carbon tetrachloride	74.7	C	82	77	74	78	1.04	0.04
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		213	203	202	212	1.06	0.02
9 Cyclohexane	109	C	119	112	114	119	1.06	0.03
10 1,1-Dichloroethane	149		169	164	163	169	1.12	0.02
11 1,2-Dichloroethane	76.4	C	82	79	80	82	1.06	0.02
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		170	170	170	170	0.87	0.00
17 Methylene chloride	199	C	174	163	172	168	0.85	0.02
18 4-Methyl-2-Pentanone	134		110	110	110	110	0.82	0.00
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		85	82	82	82	0.92	0.02
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	109	C	117	110	107	113	1.03	0.03
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		50	48	49	47	0.96	0.02

Standard Number	CC115180
Canister Number	PE002-04428
Laboratory ID Code	CA-01
Analytical Method, GCMS	430.2
Analytical Method, GC	440.1
Sample ID Number	92287002

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	110	110	110	110	0.82	0.00
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		11	11	11	11	1.00	0.00
4 1-Butanol	124		160	160	140	160	1.25	0.06
5 2-Butanone	124		100	100	100	100	0.81	0.00
6 Carbon tetrachloride	11.9	C	12	12	12	12	1.01	0.00
7 Chlorobenzene	11		9.8	10	11	10	0.93	0.05
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	12	11	12	12	1.20	0.04
10 1,1-Dichloroethane	9.9		12	12	8.7	12	1.13	0.13
11 1,2-Dichloroethane	15.2	C	16	15	15	15	1.00	0.03
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		15	15	15	15	1.01	0.00
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		110	110	110	110	0.79	0.00
17 Methylene chloride	99.5	C	76	74	79	76	0.77	0.02
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		5.5	5.7	5.9	5.6	1.11	0.03
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		9.2	9.2	10	9.5	0.96	0.03
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		1.9	2	2.1	2	1.00	0.04
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		8.8	8.7	9.2	8.8	0.96	0.02

Standard Number	CC113859
Canister Number	PE033-04443
Laboratory ID Code	CA-01
Analytical Method, GCMS	430.2
Analytical Method, GC	440.1
Sample ID Number	92287003

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	200	200	200	200	0.80	0.00
2 Benzene	151		154	149	145	150	0.99	0.02
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		73	79	81	81	0.80	0.04
5 2-Butanone	396		340	340	340	340	0.86	0.00
6 Carbon tetrachloride	199	C	192	207	204	207	1.02	0.03
7 Chlorobenzene	30.3		29	29	29	29	0.96	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	140	C	159	171	164	168	1.18	0.03
10 1,1-Dichloroethane	150		137	144	174	176	1.05	0.11
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		87	89	90	89	0.82	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	296		255	267	261	270	0.89	0.02
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC113859D
Canister Number	PE023-04712
Laboratory ID Code	CA-01
Analytical Method, GCMS	430.2
Analytical Method, GC	440.1
Sample ID Number	92287004

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	249	C	200	210	205	300	0.92	0.18	0.13
2 Benzene	151		150	139	157	137	0.97	0.06	0.03
3 Bromoform	1	?	0	0	0	0	0.00	ERR	ERR
4 1-Butanol	98.7		76	82	83	84	0.62	0.04	0.04
5 2-Butanone	396		340	345	340	340	0.86	0.01	0.00
6 Carbon tetrachloride	199	C	200	192	218	185	1.00	0.06	0.02
7 Chlorobenzene	30.3		29	29	31	27	0.96	0.05	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	ERR
9 Cyclohexane	140	C	170	156	179	150	1.17	0.07	0.01
10 1,1-Dichloroethane	150		134	158	145	152	0.98	0.06	0.07
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	ERR
18 4-Methyl-2-Pentanone	108		89	91	91	91	0.84	0.01	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	ERR
21 Toluene	296		266	261	283	249	0.89	0.05	0.01
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	ERR

Appendix B

Laboratory CA-02

CA-02 represents the second analytical methodology submitted by this laboratory, GC/MS Analytical Method 430.1 and GC Method 440.1. This laboratory achieved a perfect score for CTCs and missed a single analyte, bromoform, in the High and Low canisters.

WIPP PDP SCORING TABLE

LABORATORY	CA-02									
ANALYSIS TYPE	VOC									
STANDARD #	CC113863		CC115180		CC113859		CC113859		CC102583	
CANISTER #	04700		04428		04443		04712		04431	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	5	50	3	30	3	45	0	0
CTCs Reported	6	60	5	50	3	30	3	45		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA	0	0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	11	110	7	70	7	105	0	0
TCs Reported	10	100	11	110	7	70	7	105		0
TCs Failing RPA	1	-5	1	-5	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0	NA	
CTC TOTALS		60		50		30		45		
MAXIMUM POINTS		185								
CTC SCORE	185/185	1.00	0 CTC	Failures						
TC TOTALS		95		105		70		105		
MAXIMUM POINTS		456								
TOTAL SCORE	436/446	0.98								

Standard Number	CC113863
Canister Number	PE014-04700
Laboratory ID Code	CA-02
Analytical Method GCMS	430.1
Analytical Method GC	440.1
Sample ID Number	92287001

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	260	260	250	250	0.86	0.02
2 Benzene	147		152	155	150	152	1.04	0.01
3 Bromoform	25.5		38	41	38	40	1.54	0.03
4 1-Butanol	130		130	130	140	140	1.04	0.04
5 2-Butanone	392		340	340	340	340	0.87	0.00
6 Carbon tetrachloride	74.7	C	75	78	76	77	1.02	0.01
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		181	192	189	190	0.96	0.02
9 Cyclohexane	109	C	111	116	112	113	1.04	0.02
10 1,1-Dichloroethane	149		145	153	147	149	1.00	0.02
11 1,2-Dichloroethane	76.4	C	75	80	76	79	1.01	0.03
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		170	170	170	170	0.87	0.00
17 Methylene chloride	199	C	205	218	208	213	1.06	0.02
18 4-Methyl-2-Pentanone	134		110	110	110	110	0.82	0.00
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		84	90	88	87	0.96	0.02
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	109	C	111	116	112	115	1.04	0.02
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		58	51	56	68	1.15	0.11

Standard Number	CC115180
Canister Number	PE002-04428
Laboratory ID Code	CA-02
Analytical Method GCMS	430.1
Analytical Method GC	440.1
Sample ID Number	92287002

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	110	110	110	110	0.82	0.00
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		17	17	17	16	1.52	0.03
4 1-Butanol	124		160	160	140	160	1.25	0.06
5 2-Butanone	124		100	100	100	100	0.81	0.00
6 Carbon tetrachloride	11.9	C	12	12	12	11	0.99	0.04
7 Chlorobenzene	11		12	12	12	12	1.09	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	11	11	11	11	1.12	0.00
10 1,1-Dichloroethane	9.9		9.8	9.7	9.7	9.5	0.98	0.01
11 1,2-Dichloroethane	15.2	C	16	16	15	15	1.02	0.03
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		16	16	15	15	1.05	0.03
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		110	110	110	110	0.79	0.00
17 Methylene chloride	99.5	C	99	99	97	97	0.98	0.01
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		5	5.1	4.8	4.8	0.97	0.03
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		10	10	9.7	9.7	0.99	0.02
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		2	2.2	2	2	1.03	0.04
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		11	11	10	10	1.14	0.05

Standard Number	CC113859
Canister Number	PE023-04712
Laboratory ID Code	CA-02
Analytical Method GCMS	430.1
Analytical Method GC	440.1
Sample ID Number	92287003

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	200	200	200	200	0.80	0.00
2 Benzene	151		169	162	159	161	1.08	0.02
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		73	79	81	81	0.80	0.04
5 2-Butanone	396		340	340	340	340	0.86	0.00
6 Carbon tetrachloride	199	C	213	213	212	211	1.07	0.00
7 Chlorobenzene	30.3		34	34	33	34	1.11	0.01
6 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	140	C	170	169	168	167	1.20	0.01
10 1,1-Dichloroethane	150		159	157	153	156	1.04	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		87	89	90	89	0.82	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	296		305	302	299	299	1.02	0.01
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC113859D
Canister Number	PE023-04712
Laboratory ID Code	CA-02
Analytical Method GCMS	430.1
Analytical Method GC	440.1
Sample ID Number	92287004

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	249	C	200	210	205	200	0.82	0.02	0.02
2 Benzene	151		165	168	159	166	1.09	0.02	0.01
3 Bromoform	1	?	0	0	0	0	0.00	ERR	ERR
4 1-Butanol	98.7		76	82	83	84	0.82	0.04	0.03
5 2-Butanone	396		340	345	340	340	0.86	0.01	0.00
6 Carbon tetrachloride	199	C	212	220	207	215	1.07	0.02	0.01
7 Chlorobenzene	30.3		34	34	32	33	1.10	0.02	0.00
8 Chloroform	1	?	0	0	0	0	0.00	ERR	ERR
9 Cyclohexane	140	C	165	171	183	167	1.19	0.02	0.01
10 1,1-Dichloroethane	150		155	157	152	157	1.04	0.01	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	ERR
18 4-Methyl-2-Pentanone	108		89	91	91	91	0.84	0.01	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	ERR
21 Toluene	296		300	306	274	287	0.99	0.04	0.03
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	ERR

Appendix C

Laboratory DO

This laboratory submitted data for a single GC/MS procedure, and achieved a perfect score for CTCs. There was difficulty quantifying 1-butanol and 4-methyl-2-pentanone in all canisters, and 2-butanone in the High, Low and Interference canisters. These problems did not prevent the laboratory from passing all scoring criteria.

WIPP PDP SCORING TABLE

LABORATORY	DO									
ANALYSIS TYPE	VOC									
STANDARD #	CC113863		CC115180		CC113859		CC113859		CC102583	
CANISTER #	04704		04702		04709		04444		04432	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	5	50	3	30	3	45	0	0
CTCs Reported	6	60	5	50	3	30	3	45		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	11	110	7	70	7	105	0	0
TCs Reported	10	100	11	110	7	70	7	105		0
TCs Failing RPA	3	-15	2	-10	2	-10	2	-10		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		60		50		30		45		
MAXIMUM POINTS		185								
CTC SCORE	185/185	1.00	0 CTC	Failures						
TC TOTALS		85		100		60		95		
MAXIMUM POINTS		456								
TOTAL SCORE	401/446	0.90								

Standard Number	CC113863
Canister Number	PE017-04704
Laboratory ID Code	DO
Analytical Method	SOP: ACL-168
Sample ID Number	93-8004-01

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	322	320	324	373	1.13	0.07
2 Benzene	147		149	150	148	148	1.01	0.01
3 Bromoform	25.5		102	101	100	100	3.95	0.01
4 1-Butanol	130		221	219	222	233	1.72	0.02
5 2-Butanone	392		375	374	380	413	0.98	0.04
6 Carbon tetrachloride	74.7	C	68.2	68	67.9	65.2	0.90	0.02
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		194	195	194	194	0.99	0.00
9 Cyclohexane	109	C	125	128	126	123	1.15	0.01
10 1,1-Dichloroethane	149		165	164	161	162	1.09	0.01
11 1,2-Dichloroethane	76.4	C	79.6	80.7	80.2	80	1.05	0.00
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		231	229	231	217	1.16	0.03
17 Methylene chloride	199	C	206	208	209	199	1.03	0.02
18 4-Methyl-2-Pentanone	134		184	183	184	178	1.36	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		88.5	88.6	88.7	88.2	0.98	0.00
22 1,1,1-Trichloroethane	1	C ?	0.46	0.46	0.47	0.47	0.47	0.01
23 Trichloroethene	109	C	93.8	93.5	92.8	92.5	0.85	0.01
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		54.4	54.8	54.8	53.2	1.08	0.01

Standard Number	CC115180
Canister Number	PE015-04702
Laboratory ID Code	DO
Analytical Method	SOP: ACL-168
Sample ID Number	93-8004-02

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	166	166	166	168	1.24	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		65.3	48	45.4	46.1	4.65	0.16
4 1-Butanol	124		226	228	226	228	1.83	0.00
5 2-Butanone	124		129	127	128	130	1.04	0.01
6 Carbon tetrachloride	11.9	C	11.2	11.4	11.2	11.6	0.95	0.01
7 Chlorobenzene	11		10.7	10.6	10.6	10.5	0.96	0.01
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	11.3	11.4	11.3	11.3	1.16	0.00
10 1,1-Dichloroethane	9.9		11	10.9	11	11	1.11	0.00
11 1,2-Dichloroethane	15.2	C	16.7	16.6	16.2	16.7	1.09	0.01
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		14.9	15.1	15.1	15.1	1.02	0.01
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		163	166	158	158	1.16	0.02
17 Methylene chloride	99.5	C	110	102	98.3	98.4	1.03	0.05
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		5.2	5.2	5.2	5.3	1.02	0.01
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		9.6	9.6	9.6	9.8	0.97	0.01
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		2.1	2.1	2.1	2.1	1.05	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		10.1	10.1	10.2	10.4	1.11	0.01

Standard Number	CC113859
Canister Number	PE037-04709
Laboratory ID Code	DO
Analytical Method	SOP: ACL-168
Sample ID Number	93-8004-03

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	318	325	319	321	1.29	0.01
2 Benzene	151		139	139	139	138	0.92	0.00
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		150	147	141	142	1.47	0.03
5 2-Butanone	396		400	397	396	399	1.01	0.00
6 Carbon tetrachloride	199	C	185	184	186	181	0.92	0.01
7 Chlorobenzene	30.3		28.4	28.8	29.4	29.6	0.96	0.02
8 Chloroform	1	?	0.74	0.73	0.72	0.72	0.73	0.01
9 Cyclohexane	140	C	153	153	152	153	1.09	0.00
10 1,1-Dichloroethane	150		166	166	168	167	1.11	0.00
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		143	144	154	154	1.38	0.04
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	296		294	296	294	298	1.00	0.01
22 1,1,1-Trichloroethane	1	C ?	0.32	0.32	0.31	0.3	0.31	0.03
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC113859D
Canister Number	PE034-04444
Laboratory ID Code	DO
Analytical Method	SOP: ACL-168
Sample ID Number	93-8004-04

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	249	C	312	311	311	313	1.25	0.00	0.03
2 Benzene	151		153	152	153	152	1.01	0.00	0.09
3 Bromoform	1	?	0	0	0	0	0.00	ERR	ERR
4 1-Butanol	98.7		144	135	134	132	1.38	0.03	0.06
5 2-Butanone	396		413	418	420	419	1.05	0.01	0.05
6 Carbon tetrachloride	199	C	185	178	171	180	0.90	0.03	0.03
7 Chlorobenzene	30.3		29.4	28.9	28.8	28.8	0.96	0.01	0.00
8 Chloroform	1	?	0.74	0.75	0.74	0.74	0.74	0.01	ERR
9 Cyclohexane	140	C	142	158	145	160	1.08	0.05	0.01
10 1,1-Dichloroethane	150		161	157	159	162	1.07	0.01	0.04
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	ERR
18 4-Methyl-2-Pentanone	108		143	142	145	144	1.33	0.01	0.04
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	ERR
21 Toluene	296		299	283	303	290	0.99	0.03	0.01
22 1,1,1-Trichloroethane	1	C ?	0.31	0.32	0.32	0.32	0.32	0.01	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	ERR

Appendix D

Laboratory OS-01

OS-01 represents the first of two analytical methodologies submitted by this laboratory, GC/MS Analytical Method L-4111 and GC Analytical Method L-4147. This laboratory achieved a perfect score for CTCs, and had difficulty quantifying 1-butanol and 2-butanone in the High and Low canisters. This did not prevent the laboratory from passing all scoring criteria and qualifying this procedure.

WIPP PDP SCORING TABLE

LABORATORY	OS-01									
ANALYSIS TYPE	VOC									
STANDARD #	CC113863		CC115180		CC113859		CC113859		CC102583	
CANISTER #	04715		04438		04710		04427		04706	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	5	50	3	30	3	45	0	0
CTCs Reported	6	60	5	50	3	30	3	45		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	11	110	7	70	7	105	0	0
TCs Reported	10	100	11	110	7	70	7	105		0
TCs Failing RPA	2	-10	2	-10	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		60		50		30		45		
MAXIMUM POINTS		185								
CTC SCORE	185/185	1.00	D CTC	Failures						
TC TOTALS		90		100		70		105		
MAXIMUM POINTS		456								
TOTAL SCORE	426/446	0.96								

Standard Number	CC113863
Canister Number	PE026-04715
Laboratory ID Code	OS-01
Analytical Method, GCMS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GCMS	PDPUO2,V11
Sample ID Number, GC	V920110

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	322	319	317	198	0.98	0.18
2 Benzene	147		144.4	146.6	146.2	145.6	0.99	0.01
3 Bromoform	25.5		38	38.4	41.2	41	1.55	0.04
4 1-Butanol	130		174	175	184	179	1.37	0.02
5 2-Butanone	392		378	375	374	380	0.96	0.01
6 Carbon tetrachloride	74.7	C	77.5	79.6	81.1	78.5	1.06	0.02
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		212.6	214	215.3	215.5	1.09	0.01
9 Cyclohexane	109	C	112.8	115.4	114.3	116.2	1.05	0.01
10 1,1-Dichloroethane	149		155.5	155.8	155.6	156.1	1.05	0.00
11 1,2-Dichloroethane	76.4	C	83.3	84.8	86	85.1	1.11	0.01
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		182	194	198	198	0.98	0.03
17 Methylene chloride	199	C	222.3	222	224	223.8	1.12	0.00
18 4-Methyl-2-Pentanone	134		121	123	123	124	0.92	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0.42	0	0	0.76	0.30	1.08
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		90.6	90.1	90.7	89.6	1.00	0.00
22 1,1,1-Trichloroethane	1	C ?	0.6	0.62	0.61	0.78	0.65	0.11
23 Trichloroethene	109	C	119.6	120.4	122.8	121.1	1.11	0.01
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		58.9	59.7	58.9	60.9	1.18	0.00

Standard Number	CC115180
Canister Number	PE009-04438
Laboratory ID Code	OS-01
Analytical Method, GCMS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GCMS	PDPQO4,RO4,TO5
Sample ID Number, GC	V920107

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	139	140	137	137	1.03	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		16.1	16.3	17.6	17.8	1.54	0.04
4 1-Butanol	124		177	172	175	173	1.41	0.01
5 2-Butanone	124		113	113	112	111	0.91	0.01
6 Carbon tetrachloride	11.9	C	12.1	12.2	12	12.2	1.02	0.01
7 Chlorobenzene	11		12.3	12.5	12.5	12.5	1.13	0.01
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	10.2	10.3	10.9	10.4	1.07	0.03
10 1,1-Dichloroethane	9.9		10.1	10.1	10.3	9.6	1.01	0.03
11 1,2-Dichloroethane	15.2	C	15.8	15.6	15.6	15.8	1.03	0.01
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		16.8	17	17.2	17.2	1.15	0.01
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		142	139	135	129	0.98	0.04
17 Methylene chloride	99.5	C	104.4	105	103.8	106.5	1.05	0.01
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		6.1	6.3	6.4	6.4	1.24	0.02
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		10.2	10.2	10.2	10.4	1.04	0.01
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		2.2	2.3	2.3	2.3	1.14	0.02
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		10.4	10.6	10.7	10.6	1.15	0.01

Standard Number	CC113859
Canister Number	PE021-04710
Laboratory ID Code	OS-01
Analytical Method, GCMS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GCMS	PDPUO6,XO7,ZO5,VOAZO4
Sample ID Number, GC	V920117

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	264	260	260	257	1.05	0.01
2 Benzene	151		144.9	145	135.5	146.1	0.95	0.03
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		99	99	108	104	1.04	0.04
5 2-Butanone	396		376	372	374	369	0.94	0.01
6 Carbon tetrachloride	199	C	219.3	216.2	217.8	220.6	1.10	0.01
7 Chlorobenzene	30.3		31.2	31.9	31.3	31.4	1.04	0.01
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	140	C	149.4	148	149	150.5	1.07	0.01
10 1,1-Dichloroethane	150		152.2	155.3	155.2	156.2	1.03	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		96	95	96	95	0.88	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	296		321	318.3	322.2	319.4	1.08	0.00
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC113859D
Canister Number	PE001-04427
Laboratory ID Code	OS-01
Analytical Method, GCMS	L-4111
Analytical Method, GC	L-4147
Sample ID Number, GCMS	PDPTO4,UO3,XO2,QO2
Sample ID Number, GC	V920113

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	249	C	265	262	262	262	1.06	0.00	0.01
2 Benzene	151		145.8	145.3	145.6	145.2	0.96	0.00	0.01
3 Bromoform	1	?	0	0	0	0	0.00	ERR	ERR
4 1-Butanol	98.7		90	90	85	100	0.92	0.06	0.00
5 2-Butanone	396		376	376	375	375	0.95	0.00	0.00
6 Carbon tetrachloride	199	C	212.8	220.9	221.4	219.2	1.10	0.02	0.00
7 Chlorobenzene	30.3		27.9	27.8	32.1	32.1	0.99	0.07	0.00
8 Chloroform	1	?	0.67	0.63	0.6	0.64	0.64	0.04	ERR
9 Cyclohexane	140	C	150.2	150.2	150.7	150.7	1.07	0.00	0.00
10 1,1-Dichloroethane	150		154	155.4	156.1	157.8	1.04	0.01	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
12 1,1-Dichloroethene	1	?	0.15	0	0	0	0.04	1.73	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	ERR
18 4-Methyl-2-Pentanone	108		95	95	97	97	0.89	0.01	0.00
19 1,1,2,2-Tetrachloroethane	1	?	0.06	0	0	0	0.02	1.73	ERR
20 Tetrachloroethene	1	?	0.11	0	0	0	0.03	1.73	ERR
21 Toluene	296		330.4	331.2	322.6	323.1	1.10	0.01	0.00
22 1,1,1-Trichloroethane	1	C ?	0.38	0.39	0.37	0.37	0.38	0.02	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
26 1,2,4-Trimethylbenzene	1	?	0.09	0	0	0	0.02	1.73	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	ERR

Appendix E

Laboratory OS-02

OS-02 represents the second analytical methodology this laboratory submitted, GC/MS Analytical Method L-4111 only. Since the GC/MS analyses submitted for OS-01 were also used for this procedure, a perfect score for CTCs was achieved. There was difficulty with bromoform in the High and Low canisters, but this did not prevent the laboratory from passing all scoring criteria and qualifying this procedure.

WIPP PDP SCORING TABLE

LABORATORY	OS-02									
ANALYSIS TYPE	VOC									
STANDARD #	CC113863		CC115180		CC113859		CC113859		CC102583	
CANISTER #	04715		04438		04710		04427		04706	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	5	50	3	30	3	45	0	0
CTCs Reported	6	60	5	50	3	30	3	45		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	11	110	7	70	7	105	0	0
TCs Reported	10	100	11	110	7	70	7	105		0
TCs Failing RPA	1	-5	1	-5	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0		
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		60		50		30		45		
MAXIMUM POINTS		185								
CTC SCORE	185/185	1.00	0 CTC	Failures						
TC TOTALS		95		105		70		105		
MAXIMUM POINTS		446								
TOTAL SCORE	436/446	0.98								

Standard Number	CC113863
Canister Number	PE026-04715
Laboratory ID Code	OS-02
Analytical Method, GCMS Only	L-4111
Sample ID Number	PDPUO2,V11

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	326.3	325.5	326.3	327.1	1.10	0.00
2 Benzene	147		144.4	146.6	146.2	145.6	0.99	0.01
3 Bromoform	25.5		38	38.4	41.2	41	1.55	0.04
4 1-Butanol	130		149.2	150.7	140.6	140.7	1.12	0.03
5 2-Butanone	392		456.6	456.3	459.7	455.5	1.17	0.00
6 Carbon tetrachloride	74.7	C	77.5	79.6	81.1	78.5	1.06	0.02
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		212.6	214	215.3	215.5	1.09	0.01
9 Cyclohexane	109	C	112.8	115.4	114.3	116.2	1.05	0.01
10 1,1-Dichloroethane	149		155.5	155.8	155.6	156.1	1.05	0.00
11 1,2-Dichloroethane	76.4	C	83.3	84.8	86	85.1	1.11	0.01
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		214.3	210.5	208.9	231.8	1.10	0.04
17 Methylene chloride	199	C	222.3	222	224	233.8	1.13	0.02
18 4-Methyl-2-Pentanone	134		138.8	139.6	136.2	146.8	1.05	0.03
19 1,1,2,2-Tetrachloroethane	1	?	0.42	0	0	0.76	0.30	1.08
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		90.6	90.1	90.7	89.6	1.00	0.00
22 1,1,1-Trichloroethane	1	C ?	0.6	0.62	0.61	0.78	0.65	0.11
23 Trichloroethene	109	C	119.6	120.4	122.8	121.12	1.11	0.01
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0.3	0.08	1.73
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		58.9	59.7	56.9	60.9	1.18	0.00

Standard Number	CC115180
Canister Number	PE009-04438
Laboratory ID Code	OS-02
Analytical Method, GCMS Only	L-4111
Sample ID Number	PDPQO4,RO4,TO5

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	144.7	143.6	147.4	147	1.09	0.01
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		16.1	16.3	17.6	17.8	1.54	0.04
4 1-Butanol	124		164.9	163.7	156.5	156.2	1.29	0.02
5 2-Butanone	124		143.8	145	147.3	147.3	1.18	0.01
6 Carbon tetrachloride	11.9	C	12.1	12.2	12	12.2	1.02	0.01
7 Chlorobenzene	11		12.3	12.5	12.5	12.5	1.13	0.01
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	10.2	10.3	10.9	10.4	1.07	0.03
10 1,1-Dichloroethane	9.9		10.1	10.1	10.3	9.6	1.01	0.03
11 1,2-Dichloroethane	15.2	C	15.8	15.6	15.6	15.8	1.03	0.01
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		16.8	17	17.2	17.2	1.15	0.01
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		150.7	150.9	141	145.4	1.06	0.03
17 Methylene chloride	99.5	C	104.4	105	103.8	106.5	1.05	0.01
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		6.1	6.3	6.4	6.4	1.24	0.02
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		10.2	10.2	10.2	10.4	1.04	0.01
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		2.2	2.3	2.3	2.3	1.14	0.02
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		10.4	10.6	10.7	10.6	1.15	0.01

Standard Number	CC113859
Canister Number	PE021-04710
Laboratory ID Code	OS-02
Analytical Method, GCMS Only	L-4111
Sample ID Number	PDPUO6,XO7,ZO5,VOAZO4

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	265.9	264.4	266.9	263.8	1.07	0.00
2 Benzene	151		144.9	145	145.5	146.1	0.96	0.00
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		69	78.3	78	68.1	0.74	0.07
5 2-Butanone	396		461.9	458.5	467.2	460.1	1.17	0.01
6 Carbon tetrachloride	199	C	219.3	216.2	217.8	220.6	1.10	0.01
7 Chlorobenzene	30.3		31.2	31.9	31.3	31.4	1.04	0.01
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	140	C	149.4	148	149	150.5	1.07	0.01
10 1,1-Dichloroethane	150		152.2	155.3	155.2	156.2	1.03	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		115.9	119.2	118.8	118.7	1.09	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	296		321	318.3	322.2	319.4	1.08	0.00
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC113859D
Canister Number	PE001-04427
Laboratory ID Code	OS-02
Analytical Method, GCMS Only	L-4111
Sample ID Number	PDPTO4,UO3,XO2,QO2

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	249	C	258.1	257.7	262.8	259.6	1.04	0.01	0.02
2 Benzene	151		134.8	145.3	145.6	145.2	0.95	0.03	0.02
3 Bromoform	1	?	0	0	0	0	0.00	ERR	ERR
4 1-Butanol	98.7		78.9	82.8	83.7	68.9	0.80	0.07	0.07
5 2-Butanone	396		442.3	444.7	457.2	455.2	1.14	0.01	0.00
6 Carbon tetrachloride	199	C	212.8	220.9	221.4	219.2	1.10	0.02	0.00
7 Chlorobenzene	30.3		27.9	27.8	32.1	32.1	0.99	0.07	0.05
8 Chloroform	1	?	0.67	0.63	0.6	0.64	0.64	0.04	ERR
9 Cyclohexane	140	C	150.2	150.2	150.7	150.7	1.07	0.00	0.01
10 1,1-Dichloroethane	150		154	155.4	156.1	157.8	1.04	0.01	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
12 1,1-Dichloroethene	1	?	0.15	0	0	0	0.04	1.73	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	ERR
18 4-Methyl-2-Pentanone	108		113	122.7	122.5	116.4	1.10	0.03	0.01
19 1,1,2,2-Tetrachloroethane	1	?	0.06	0	0	0	0.02	1.73	ERR
20 Tetrachloroethene	1	?	0.11	0	0	0	0.03	1.73	ERR
21 Toluene	296		330.4	331.2	322.6	323.1	1.10	0.01	0.00
22 1,1,1-Trichloroethane	1	C ?	0.38	0.39	0.37	0.37	0.38	0.02	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
26 1,2,4-Trimethylbenzene	1	?	0.09	0	0	0	0.02	1.73	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	ERR

Appendix F

Laboratory ZL

This laboratory submitted data for a single GC/MS procedure, and achieved a perfect score for CTCs. There was difficulty quantifying 1-butanol in the Interference and Interference Duplicate canisters which did not prevent the laboratory from passing all scoring criteria.

WIPP PDP SCORING TABLE

LABORATORY	ZL									
ANALYSIS TYPE	VOC									
STANDARD #	CC113863		CC11580		CC113859		CC11359		CC102583	
CANISTER #	04711		04440		10840		04442		10843	
COMMENT	High Conc.		Low Conc.		Interference		Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	5	50	3	30	3	45	0	0
CTCs Reported	6	60	5	50	3	30	3	45		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		NA		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	10	100	11	110	7	70	7	105	0	0
TCs Reported	10	100	11	110	7	70	7	105		0
TCs Failing RPA	0	0	0	0	1	-5	1	-5		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0		0		0		0		0	
TICs Reported	0		0		0		0		0	
CTCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank		NA		NA		NA		NA		61
False CTCs or TCs in Spikes > PRQL		0		0		0		0		NA
CTC TOTALS		60		50		30		45		
MAXIMUM POINTS		185								
CTC SCORE	185/185	1.00	0 CTC	Failures						
TC TOTALS		100		110		65		100		
MAXIMUM POINTS		456								
TOTAL SCORE	436/446	0.98								

Standard Number	CC113863
Canister Number	PE022-04711
Laboratory ID Code	ZL
Analytical Method	Not Specified
Sample ID Number	X1-10-089-01A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	304.8	322.4	306.9	339	1.08	0.04
2 Benzene	147		120.2	132.9	129	135.4	0.88	0.04
3 Bromoform	25.5		17.7	20.7	19.6	19.9	0.76	0.06
4 1-Butanol	130		98.3	100.2	99.4	101.2	0.77	0.01
5 2-Butanone	392		275.7	298.3	288.2	308.6	0.75	0.04
6 Carbon tetrachloride	74.7	C	57.4	62.3	60.5	64.2	0.82	0.04
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		155.2	159.1	157.7	165.7	0.81	0.02
9 Cyclohexane	109	C	0	0	0	0	0.00	ERR
10 1,1-Dichloroethane	149		126.5	135.8	129.6	138.6	0.89	0.04
11 1,2-Dichloroethane	76.4	C	57.3	62.9	63.6	65.6	0.82	0.05
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		140.7	185.5	181.7	169	0.86	0.10
17 Methylene chloride	199	C	158.5	168	159.4	172.8	0.83	0.04
18 4-Methyl-2-Pentanone	134		93.6	99.2	100.3	108.3	0.75	0.05
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		64	70.2	70.8	74.8	0.77	0.06
22 1,1,1-Trichloroethane	1	C ?	0.7	0.6	0.6	0.7	0.65	0.08
23 Trichloroethene	109	C	78.6	87.9	86.3	88	0.78	0.05
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		35	38.5	38.4	41.1	0.76	0.06

Standard Number	CC115180
Canister Number	PE010-04440
Laboratory ID Code	ZL
Analytical Method	Not Specified
Sample ID Number	X1-10-089-02A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	149.9	144.4	160.3	157.5	1.14	0.04
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		9.1	9.3	9.5	9.6	0.85	0.02
4 1-Butanol	124		108.7	103.3	120.6	116.1	0.90	0.06
5 2-Butanone	124		99.3	96.8	106.1	105.3	0.82	0.04
6 Carbon tetrachloride	11.9	C	10.3	10.4	10.4	10.3	0.87	0.00
7 Chlorobenzene	11		9.8	10	9.6	9.7	0.89	0.02
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	9.4	9.3	9.5	9.1	0.95	0.02
10 1,1-Dichloroethane	9.9		10.1	9.9	9.6	9.8	0.99	0.02
11 1,2-Dichloroethane	15.2	C	13.2	13.5	13.3	12.9	0.87	0.02
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		13.5	13.6	13.5	13.2	0.91	0.01
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		106.2	97.5	122.5	124.4	0.81	0.10
17 Methylene chloride	99.5	C	81.8	79.8	89.9	90.6	0.86	0.06
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		4.9	4.9	4.7	4.7	0.94	0.02
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		9.3	9.3	8.9	8.9	0.92	0.02
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0.4	0.3	0.3	0.3	0.33	0.13
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		1.9	2	1.9	1.9	0.96	0.02
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		8.3	8.4	8.1	8	0.89	0.02

Standard Number	CC113859
Canister Number	PE027-10840
Laboratory ID Code	ZL
Analytical Method	Not Specified
Sample ID Number	X1-10-089-03A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	264.2	272	266.2	275.8	1.08	0.02
2 Benzene	151		131.1	141.2	138.2	139.9	0.91	0.03
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		50.5	51.6	52.8	59.3	0.54	0.06
5 2-Butanone	396		308.4	320.3	320.7	325.4	0.80	0.02
6 Carbon tetrachloride	199	C	159.6	172.3	168.4	170.6	0.84	0.03
7 Chlorobenzene	30.3		27.7	28.8	28.4	28.4	0.93	0.01
8 Chloroform	1	?	0.7	0.7	0.7	0.8	0.73	0.06
9 Cyclohexane	140	C	120.6	126.4	125.4	133.5	0.90	0.04
10 1,1-Dichloroethane	150		152	155.5	155.3	156.9	1.03	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		87	97.2	96.6	97.9	0.88	0.05
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Touluene	296		215.7	241	239.2	238.8	0.79	0.04
22 1,1,1-Trichloroethane	1	C ?	0.4	0.5	0.4	0.5	0.45	0.11
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

Standard Number	CC113859D
Canister Number	PE012-04442
Laboratory ID Code	ZL
Analytical Method	Not Specified
Sample ID Number	X1-10-089-04A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Acetone	249	C	277.1	273.6	275	265.7	1.10	0.02	0.01
2 Benzene	151		135.6	140.7	138.4	143.6	0.92	0.02	0.01
3 Bromoform	1	?	0	0	0	0	0.00	ERR	ERR
4 1-Butanol	98.7		63.8	69.2	67.8	69.2	0.68	0.03	0.23
5 2-Butanone	396		336.3	337.8	340.1	333.6	0.85	0.01	0.06
6 Carbon tetrachloride	199	C	178.6	188	189.1	190.4	0.94	0.02	0.11
7 Chlorobenzene	30.3		31	32	31.2	32.5	1.05	0.02	0.11
8 Chloroform	1	?	0	0	0	0	0.00	ERR	ERR
9 Cyclohexane	140	C	135.3	136.7	137.4	138.4	0.98	0.01	0.08
10 1,1-Dichloroethane	150		163.6	161	182.5	159.1	1.08	0.01	0.04
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR	ERR
18 4-Methyl-2-Pentanone	108		103.3	107.8	107.1	110.2	0.99	0.02	0.13
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR	ERR
21 Toluene	296		246.4	253.3	247.5	260.1	0.85	0.02	0.07
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR	ERR

Appendix G

Laboratory JB

This laboratory provided confirmatory analyses of the VOC canisters they prepared prior to shipment to all Cycle 4 participants. Their data passed all scoring criteria.

Standard Number	CC113863
Canister Number	PE035-04701
Laboratory ID Code	JB
Analytical Method	FID/MSD
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	296	C	307	289	313	299	1.02	0.03
2 Benzene	147		149	139	151	145	0.99	0.03
3 Bromoform	25.5		29.5	26	28.6	27.7	1.10	0.05
4 1-Butanol	130		163	137	156	146	1.16	0.07
5 2-Butanone	392		402	374	408	390	1.00	0.03
6 Carbon tetrachloride	74.7	C	77.1	73.8	76.6	75.2	1.01	0.02
7 Chlorobenzene	1	?	0	0	0	0	0.00	ERR
8 Chloroform	196		199	188	203	194	1.00	0.03
9 Cyclohexane	109	C	111	104	113	108	1.00	0.03
10 1,1-Dichloroethane	149		151	144	155	148	1.00	0.03
11 1,2-Dichloroethane	76.4	C	77.8	72.4	78.9	75.3	1.00	0.03
12 1,1-Dichloroethane	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	196		248	214	243	235	1.20	0.06
17 Methylene chloride	199	C	202	193	207	197	1.00	0.03
18 4-Methyl-2-Pentanone	134		138	125	139	133	1.00	0.04
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	90.3		91.5	82.2	91.2	87.2	0.97	0.04
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	109	C	111	102	112	107	0.99	0.04
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	50.3		53.8	50.1	52.7	53.2	1.04	0.03

Standard Number	CC115180
Canister Number	PE007-04435
Laboratory ID Code	JB
Analytical Method	FID/MSD
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	134	C	130	135	129	136	0.99	0.02
2 Benzene	1	?	0	0	0	0	0.00	ERR
3 Bromoform	11		12.4	12.1	10.7	10.7	1.04	0.07
4 1-Butanol	124		152	145	121	123	1.09	0.10
5 2-Butanone	124		120	124	119	127	0.99	0.03
6 Carbon tetrachloride	11.9	C	12.4	12.2	11.5	11.9	1.01	0.03
7 Chlorobenzene	11		10.7	11.3	10.6	11.5	1.00	0.03
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	9.8	C	9.4	9.66	9.29	9.9	0.98	0.02
10 1,1-Dichloroethane	9.9		9.49	9.75	9.44	9.97	0.98	0.02
11 1,2-Dichloroethane	15.2	C	14.7	15.1	14.5	15.5	0.98	0.03
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	14.8		14.3	14.7	14.2	15	0.98	0.02
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	139		152	170	155	150	1.13	0.05
17 Methylene chloride	99.5	C	95.8	98.1	94.9	100	0.98	0.02
18 4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	ERR
19 1,1,2,2-Tetrachloroethane	5.1		4.65	5.01	4.57	5.51	0.97	0.08
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	9.9		9.12	9.55	9.04	10.1	0.95	0.04
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	2		2.03	2.12	1.98	2.18	1.04	0.04
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	9.2		10.3	10.1	9.49	9.24	1.06	0.04

Standard Number	CC113859
Canister Number	PE020-04707
Laboratory ID Code	JB
Analytical Method	FID/MSD
Sample ID Number	Not Specified

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	249	C	255	253	256	246	1.01	0.02
2 Benzene	151		151	150	153	147	1.00	0.01
3 Bromoform	1	?	0	0	0	0	0.00	ERR
4 1-Butanol	98.7		112	108	107	99.3	1.08	0.04
5 2-Butanone	396		403	398	404	389	1.01	0.01
6 Carbon tetrachloride	199	C	203	202	203	201	1.02	0.00
7 Chlorobenzene	30.3		30.9	29	30.1	29.3	0.98	0.02
8 Chloroform	1	?	0	0	0	0	0.00	ERR
9 Cyclohexane	140	C	139	140	142	136	0.99	0.02
10 1,1-Dichloroethane	150		149	151	153	147	1.00	0.01
11 1,2-Dichloroethane	1	C ?	0	0	0	0	0.00	ERR
12 1,1-Dichloroethene	1	?	0	0	0	0	0.00	ERR
13 cis-Dichloroethene	1	?	0	0	0	0	0.00	ERR
14 Ethyl benzene	1	?	0	0	0	0	0.00	ERR
15 Ethyl ether	1	?	0	0	0	0	0.00	ERR
16 Methanol	100	?	0	0	0	0	0.00	ERR
17 Methylene chloride	1	C ?	0	0	0	0	0.00	ERR
18 4-Methyl-2-Pentanone	108		110	107	109	105	1.00	0.02
19 1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	ERR
20 Tetrachloroethene	1	?	0	0	0	0	0.00	ERR
21 Toluene	296		297	289	296	287	0.99	0.01
22 1,1,1-Trichloroethane	1	C ?	0	0	0	0	0.00	ERR
23 Trichloroethene	1	C ?	0	0	0	0	0.00	ERR
24 1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	ERR
25 1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
26 1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	ERR
27 m-Xylene	1	?	0	0	0	0	0.00	ERR
28 o-Xylene	1	C ?	0	0	0	0	0.00	ERR
29 p-Xylene	1	?	0	0	0	0	0.00	ERR

CYCLE 4 GAS DATA

Table 1
Gas Canister Identification

Laboratory ID Code	High Cylinder No. CC115171	Low Cylinder No. CC115169	Special Cylinder No. CC82054	NOx Cylinder No. CC82053	Nitrogen Cylinder No. CC102583
CK	PE120–04686 PE102–04664	PE126–04692	PE128–04695	PE141–04680	PE133–10848
HE	PE115–04678 PE122–04688	PE132–10847	PE125–04691	PE101–04663	PE106–04668
HR	PE103–04665 PE139–04675	PE140–04662	PE113–04676	PE104–04666	PE136–10851
MD	PE142–04661 PE129–04696	PE107–04669	PE108–04670	PE116–04679	PE121–04687

Table 2
Pass – Fail Summary

Laboratory ID Code	Analysis Type	Status Based On This Cycle	Comments and Score
CK	GAS	Pass	0 CTAG Failures, 370/375 points, 0.99 Score
HE	GAS	Pass	0 CTAG Failures, 370/375 points, 0.99 Score
HR	GAS	Pass	0 CTAG Failures, 375/375 points, 1.00 Score
MD	GAS	Pass	0 CTAG Failures, 375/375 points, 1.00 Score

Table 3
Acceptance Criteria

Analytical Paramete	Gas Analysis	NOx Analysis
RPA	90 – 110 %	50 –150 %
RSD	90 – 110 %	80 – 120 %
RPD	90 – 110 %	80 – 120%

Appendix A

Laboratory CK

This laboratory achieved a perfect score for CTAGs and missed the RPA criterion for only one TAG, oxygen in the Low canister.

LABPORATORY CK
ANALYSIS TYPE: GAS

STANDARD NUMBER:	CC115171	CC115169	CC82054	CC115171	CC82053	CC102583
CANISTER NUMBER:	PE120-04686	PE126-04692	PE128-04695	PE102-04664	PE141-04680	PE133-10848
CANISTER CONTENTS:	High Gas	Low Gas	Special Gas	Duplicate High Gas	NOx	Blank Gas
No. of CTAGs Present:	2	2	2	2	0	0
No. of CTAGs Reported:	2	2	2	2	0	0
No. of CTAGs Failing RPA:	0	0	0	0	0	0
No. of CTAGs Failing RSD:	0	0	0	0	0	0
No. of CTAGs Failing RPD:	NA	NA	NA	0	NA	NA

	POINTS		POINTS		POINTS		POINTS		POINTS		POINTS	
No. of TAGs Present:	7	70	7	70	7	105	7	70	1	10	0	0
No. of TAGs Reported:	7	70	7	70	7	105	7	70	1	10	0	0
No. of TAGs Failing RPA:	0	0	1	-5	0	0	0	0	0	0	0	0
No. of TAGs Failing RSD:	0	0	0	0	0	0	0	0	0	0	0	0
No. of TAGs Failing RPD:	NA		NA		NA		0	0	NA		NA	

No. of False CTAGs or TAGs in Spikes at > PRDL:	0	0	0	0	0	NA
No. of CTAGs Reported In Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported In Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
Blank Subtotal:	NA	NA	NA	NA	NA	50
CANISTER TOTALS:	70	65	70	105	10	50

LABORATORY TOTAL: 370

MAXIMUM POINTS: 375

LABORATORY SCORE: 370/375, 0.99

Standard Number	CC115171
Canister Number	PE120/04686
Laboratory ID Code	CK
Analytical Method	W06300004-OP01
Sample ID	67765

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		89.2	89.2	88.7	88.5	0.98	0.00
2 Oxygen	1.62		1.648	1.646	1.627	1.619	1.01	0.01
3 Hydrogen	1.32	C	1.302	1.279	1.269	1.261	0.95	0.01
4 Methane	0.29	C	0.3	0.294	0.285	0.289	0.95	0.02
5 Ethane	1.19		1.135	1.131	1.12	1.123	0.95	0.01
6 Propane	1.9		1.928	1.956	1.945	1.922	1.02	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.49		1.461	1.4532	1.4442	1.4486	0.97	0.00
9 Carbon Dioxide	0.6		0.564	0.569	0.56	0.559	0.94	0.01
10 Argon	0.74		0.719	0.717	0.713	0.711	0.97	0.00

Standard Number	CC115169
Canister Number	PE126-04692
Laboratory ID Code	CK
Analytical Method	W06300004-OP01
Sample ID	67765

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	91.6		87	88	88.4	89.1	0.96	0.01
2 Oxygen	1.49		1.138	1.133	1.139	1.143	0.76	0.00
3 Hydrogen	1.21	C	0.505	0.503	0.503	0.507	0.93	0.00
4 Methane	0.27	C	0.254	0.266	0.26	0.26	0.93	0.02
5 Ethane	1.09		0.991	1.02	1.026	1.032	0.93	0.02
6 Propane	1.75		1.734	1.783	1.781	1.791	1.01	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.36		1.2945	1.0326	1.3202	1.3217	0.91	0.10
9 Carbon Dioxide	0.55		0.499	0.505	0.508	0.513	0.92	0.01
10 Argon	0.68		0.64	0.647	0.648	0.653	0.95	0.01

Standard Number	CC82054
Canister Number	PE128-04695
Laboratory ID Code	CK
Analytical Method	W06300004-OP01
Sample ID	67765

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		93.4	95.1	96	95.2	1.04	0.01
2 Oxygen	0.79		0.818	0.838	0.839	0.851	1.06	0.01
3 Hydrogen	0.89	C	0.876	0.897	0.908	0.899	0.99	0.01
4 Methane	0.2	C	0.182	0.189	0.185	0.189	0.99	0.02
5 Ethane	0.8		0.772	0.8	0.799	0.798	0.99	0.01
6 Propane	1.3		1.326	1.371	1.367	1.353	1.04	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.01		0.9895	1.0204	1.0272	1.0154	1.00	0.01
9 Carbon Dioxide	0.4		0.391	0.394	0.402	0.392	0.99	0.01
10 Argon	0.5		0.492	0.503	0.506	0.504	1.00	0.01

Standard Number	CC115171D
Canister Number	PE102-04664
Laboratory ID Code	CK
Analytical Method	W06300004-OP01
Sample ID	67765

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	90.85		88.1	89.1	89	88.5	0.98	0.00	0.00
2 Oxygen	1.62		1.628	1.643	1.635	1.612	1.01	0.01	0.00
3 Hydrogen	1.32	C	1.281	1.26	1.26	1.259	0.95	0.01	0.00
4 Methane	0.29	C	0.293	0.301	0.288	0.285	0.95	0.02	0.00
5 Ethane	1.19		1.123	1.14	1.131	1.12	0.95	0.01	0.00
6 Propane	1.9		1.912	1.961	1.952	1.934	1.02	0.01	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	0.00
8 Carbon Monoxide	1.49		1.4413	1.4577	1.4512	1.4491	0.97	0.00	0.00
9 Carbon Dioxide	0.6		0.554	0.567	0.575	0.564	0.94	0.01	0.00
10 Argon	0.74		0.709	0.717	0.715	0.711	0.96	0.00	0.00

Standard Number	CC82053
Canister Number	PE141-04680
Laboratory ID Code	CK
Analytical Method	W06300005-KP01
Sample ID	67766

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9514		1	1	1	1	0.01	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.0486		0.0488	0.0486	0.0454	0.0442	0.96	0.04
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Appendix B

Laboratory HE

This laboratory achieved a perfect score for CTAGs and missed the RPA criterion for only one TAG, NO_x.

LABPORATORY HE
ANALYSIS TYPE: GAS

STANDARD NUMBER:	CC115171	CC115169	CC82054	CC115171	CC82053	CC102583
CANISTER NUMBER:	PE115-04678	PE132-10847	PE125-04691	PE122-04688	PE101-04663	PE106-04668
CANISTER CONTENTS:	High Gas	Low Gas	Special Gas	Duplicate High Gas	NOx	Blank Gas
No. of CTAGs Present:	2	2	2	2	0	0
No. of CTAGs Reported:	2	2	2	2	0	0
No. of CTAGs Failing RPA:	0	0	0	0	0	0
No. of CTAGs Failing RSD:	0	0	0	0	0	0
No. of CTAGs Failing RPD:	NA	NA	NA	0	NA	NA

	POINTS		POINTS		POINTS		POINTS		POINTS		POINTS	
No. of TAGs Present:	7	70	7	70	7	70	7	105.	1	10	0	0
No. of TAGs Reported:	7	70	7	70	7	70	7	105	1	10	0	0
No. of TAGs Failing RPA:	0	0	0	0	0	0	0	0	1	-5	0	0
No. of TAGs Failing RSD:	0	0	0	0	0	0	0	0	0	0	0	0
No. of TAGs Failing RPD:	NA		NA		NA		0	0	NA		NA	

No. of False CTAGs or TAGs in Spikes at > PRDL:	0	0	0	0	0	NA
No. of CTAGs Reported in Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported in Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
Blank Subtotal:	NA	NA	NA	NA	NA	50
CANISTER TOTALS:	70	70	70	105	5	50
LABORATORY TOTAL:	370					
MAXIMUM POINTS:	375					

LABOR' 'TORY SCORE: 370/375, 0.99

Standard Number	CC115171
Canister Number	PE115-04678
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X2-10-089-06A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		84.2	85.3	84.4	83.9	0.93	0.01
2 Oxygen	1.62		1.55	1.67	1.57	1.56	0.98	0.03
3 Hydrogen	1.32	C	1.26	1.25	1.24	1.24	0.95	0.01
4 Methane	0.29	C	0.296	0.295	0.3	0.301	1.03	0.01
5 Ethane	1.19		1.18	1.16	1.19	1.2	0.99	0.01
6 Propane	1.9		1.91	1.87	1.92	1.93	1.00	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.49		1.47	1.48	1.46	1.45	0.98	0.01
9 Carbon Dioxide	0.6		0.578	0.574	0.568	0.567	0.95	0.01
10 Argon	0.74		0.715	0.725	0.719	0.715	0.97	0.01

Standard Number	CC115169
Canister Number	PE132-10847
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X2-10-089-07A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	91.6		86.7	86.1	85.8	85.2	0.94	0.01
2 Oxygen	1.49		1.44	1.42	1.43	1.4	0.95	0.01
3 Hydrogen	1.21	C	1.18	1.19	1.17	1.17	0.97	0.01
4 Methane	0.27	C	0.275	0.274	0.278	0.277	1.02	0.01
5 Ethane	1.09		1.1	1.09	1.11	1.11	1.01	0.01
6 Propane	1.75		1.79	1.79	1.81	1.81	1.03	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.36		1.37	1.35	1.35	1.34	0.99	0.01
9 Carbon Dioxide	0.55		0.541	0.535	0.534	0.533	0.97	0.01
10 Argon	0.68		0.669	0.661	0.662	0.654	0.97	0.01

Standard Number	CC82054
Canister Number	PE125-04691
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X2-10-089-08A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		87.9	86.9	86.6	86.3	0.96	0.01
2 Oxygen	0.79		0.758	0.747	0.733	0.74	0.94	0.01
3 Hydrogen	0.89	C	0.864	0.864	0.856	0.873	0.97	0.01
4 Methane	0.2	C	0.2	0.203	0.204	0.203	1.01	0.01
5 Ethane	0.8		0.801	0.81	0.818	0.817	1.01	0.01
6 Propane	1.3		1.3	1.31	1.33	1.32	1.01	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.01		0.997	0.976	0.969	0.959	0.97	0.01
9 Carbon Dioxide	0.4		0.396	0.392	0.383	0.373	0.97	0.02
10 Argon	0.5		0.49	0.482	0.475	0.479	0.96	0.01

Standard Number	CC115171D
Canister Number	PE122-04688
Laboratory ID Code	HE
Analytical Method	GC-TCD
Sample ID	X2-10-089-09A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	90.85		84.5	84.4	84	83.9	0.93	0.00	0.00
2 Oxygen	1.62		1.57	1.53	1.56	1.55	0.96	0.01	0.02
3 Hydrogen	1.32	C	1.25	1.25	1.28	1.27	0.96	0.01	0.00
4 Methane	0.29	C	0.293	0.3	0.299	0.302	1.03	0.01	0.00
5 Ethane	1.19		1.17	1.19	1.19	1.2	1.00	0.01	0.00
6 Propane	1.9		1.89	1.93	1.91	1.93	1.01	0.01	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	0.00
8 Carbon Monoxide	1.49		1.46	1.46	1.46	1.45	0.98	0.00	0.00
9 Carbon Dioxide	0.6		0.576	0.569	0.573	0.581	0.96	0.01	0.00
10 Argon	0.74		0.719	0.713	0.715	0.713	0.97	0.00	0.00

Standard Number	CC82053
Canister Number	PE101-04663
Laboratory ID Code	HE
Analytical Method	NIOSH S320
Sample ID	X2-10-089-10A

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9514		1	1	1	1	0.01	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.0486		0.081	0.082	0.082	0.08	1.67	0.01
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Appendix C

Laboratory HR

This laboratory correctly quantified all analytes and achieved a perfect score for CTAGs and TAGs.

LABPORATORY HR
ANALYSIS TYPE: GAS

STANDARD NUMBER:	CC115171	CC115169	CC82054	CC115171	CC82053	CC102583
CANISTER NUMBER:	PE103-04665	PE140-04662	PE113-04676	PE139-04675	PE104-04666	PE136-10851
CANISTER CONTENTS:	High Gas	Low Gas	Special Gas	Duplicate High Gas	NOx	Blank Gas
No. of CTAGs Present:	2	2	2	2	0	0
No. of CTAGs Reported:	2	2	2	2	0	0
No. of CTAGs Failing RPA:	0	0	0	0	0	0
No. of CTAGs Failing RSD:	0	0	0	0	0	0
No. of CTAGs Failing RPD:	NA	NA	NA	0	NA	NA

	POINTS		POINTS		POINTS		POINTS		POINTS		POINTS	
No. of TAGs Present:	7	70	7	70	7	70	7	105	1	10	0	0
No. of TAGs Reported:	7	70	7	70	7	70	7	105	1	10	0	0
No. of TAGs Failing RPA:	0	0	0	0	0	0	0	0	0	0	0	0
No. of TAGs Failing RSD:	0	0	0	0	0	0	0	0	0	0	0	0
No. of TAGs Failing RPD:	NA		NA		NA		0	0	NA		NA	

No. of False CTAGs or TAGs in Spikes at > PRDL:	0	0	0	0	0	NA
No. of CTAGs Reported in Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported in Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
Blank Subtotal:	NA	NA	NA	NA	NA	50
CANISTER TOTALS:	70	70	70	105	10	50
LABORATORY TOTAL:	375					
MAXIMUM POINTS:	375					

LABORATORY SCORE: 375/375, 1.00

Standard Number	CC115171
Canister Number	PE103/04665
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	92-73

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		90.9139	90.9294	90.9072	90.9188	1.00	0.00
2 Oxygen	1.62		1.6743	1.6754	1.6791	1.6779	1.03	0.00
3 Hydrogen	1.32	C	1.3229	1.3055	1.3229	1.311	1.00	0.01
4 Methane	0.29	C	0.2786	0.2796	0.2796	0.2807	0.96	0.00
5 Ethane	1.19		1.145	1.1456	1.143	1.1469	0.96	0.00
6 Propane	1.9		1.8991	1.8988	1.9024	1.8996	1.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.49		1.4534	1.4535	1.4529	1.4541	0.98	0.00
9 Carbon Dioxide	0.6		0.57	0.57	0.5703	0.5691	0.95	0.00
10 Argon	0.74		0.7427	0.7422	0.7426	0.742	1.00	0.00

Standard Number	CC115169
Canister Number	PE140-04662
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	92-65

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	91.6		91.6242	91.621	91.6428	91.671	1.00	0.00
2 Oxygen	1.49		1.541	1.5332	1.5337	1.5248	1.03	0.00
3 Hydrogen	1.21	C	1.1984	1.2196	1.1955	1.1908	0.99	0.01
4 Methane	0.27	C	0.2598	0.2569	0.2578	0.2556	0.95	0.01
5 Ethane	1.09		1.0423	1.0473	1.0525	1.0517	0.96	0.00
6 Propane	1.75		1.7811	1.7709	1.7676	1.7636	1.01	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.36		1.3293	1.3327	1.3339	1.3315	0.98	0.00
9 Carbon Dioxide	0.55		0.5372	0.5356	0.5339	0.5324	0.97	0.00
10 Argon	0.68		0.6869	0.6829	0.6821	0.6787	1.00	0.00

Standard Number	CC82054
Canister Number	PE113-04676
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	92-66

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		94.1658	94.1448	94.175	94.1726	1.04	0.00
2 Oxygen	0.79		0.8177	0.8192	0.8174	0.8162	1.03	0.00
3 Hydrogen	0.89	C	0.8767	0.8933	0.8694	0.8725	0.99	0.01
4 Methane	0.2	C	0.1906	0.1908	0.1897	0.1901	0.95	0.00
5 Ethane	0.8		0.7736	0.774	0.7755	0.7779	0.97	0.00
6 Propane	1.3		1.2989	1.2991	1.295	1.2939	1.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.01		0.9775	0.9794	0.981	0.9807	0.97	0.00
9 Carbon Dioxide	0.4		0.3936	0.394	0.3934	0.3929	0.98	0.00
10 Argon	0.5		0.5057	0.5055	0.5037	0.5033	1.01	0.00

Standard Number	CC115171D
Canister Number	PE139-04675
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	92-74

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	90.85		90.9065	90.9232	90.909	90.9047	1.00	0.00	0.00
2 Oxygen	1.62		1.6783	1.6713	1.6772	1.6851	1.04	0.00	0.00
3 Hydrogen	1.32	C	1.3222	1.3255	1.3239	1.3179	1.00	0.00	0.00
4 Methane	0.29	C	0.2794	0.2789	0.2795	0.2801	0.96	0.00	0.00
5 Ethane	1.19		1.1457	1.1481	1.1466	1.1449	0.96	0.00	0.00
6 Propane	1.9		1.9	1.892	1.8975	1.902	1.00	0.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	0.00
8 Carbon Monoxide	1.49		1.4546	1.4532	1.4557	1.4527	0.98	0.00	0.00
9 Carbon Dioxide	0.6		0.5708	0.5679	0.5699	0.5701	0.95	0.00	0.00
10 Argon	0.74		0.7425	0.7399	0.7406	0.7425	1.00	0.00	0.00

Standard Number	CC82053
Canister Number	PE104-04666
Laboratory ID Code	HR
Analytical Method	L-2421
Sample ID	92-81

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9514		99.9475	99.9491	99.9484	99.95	1.00	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.0486		0.0525	0.0509	0.0516	0.05	1.05	0.02
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

Appendix D

Laboratory MD

This laboratory correctly quantified all analytes and achieved a perfect score for CTAGs and TAGs.

LABPORATORY MD
ANALYSIS TYPE: GAS

STANDARD NUMBER:	CC115171	CC115169	CC82054	CC115171	CC82053	CC102583
CANISTER NUMBER:	PE142-04661	PE107-04669	PE108-04670	PE129-04696	PE116-04679	PE121-04687
CANISTER CONTENTS:	High Gas	Low Gas	Special Gas	Duplicate High Gas	NOx	Blank Gas
No. of CTAGs Present:	2	2	2	2	0	0
No. of CTAGs Reported:	2	2	2	2	0	0
No. of CTAGs Failing RPA:	0	0	0	0	0	0
No. of CTAGs Failing RSD:	0	0	0	0	0	0
No. of CTAGs Failing RPD:	NA	NA	NA	0	NA	NA

	POINTS		POINTS		POINTS		POINTS		POINTS		POINTS	
No. of TAGs Present:	7	70	7	70	7	70	7	105	1	10	0	0
No. of TAGs Reported:	7	70	7	70	7	70	7	105	1	10	0	0
No. of TAGs Failing RPA:	0	0	0	0	0	0	0	0	0	0	0	0
No. of TAGs Failing RSD:	0	0	0	0	0	0	0	0	0	0	0	0
No. of TAGs Failing RPD:	NA		NA		NA		0	0	NA		NA	

No. of False CTAGs or TAGs in Spikes at > PRDL:	0	0	0	0	0	NA
No. of CTAGs Reported in Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
No. of TAGs Reported in Blank at >0.7 PRDL:	NA	NA	NA	NA	NA	0
Blank Subtotal:	NA	NA	NA	NA	NA	50
CANISTER TOTALS:	70	70	70	105	10	50

LABORATORY TOTAL: 375

MAXIMUM POINTS: 375

LABO TORY SCORE: 375/375, 1.00

Standard Number	CC115171
Canister Number	PE142-04661
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	93-8005-01

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		90.8	90.8	90.8	90.8	1.00	ERR
2 Oxygen	1.62		1.69	1.68	1.71	1.7	1.05	0.01
3 Hydrogen	1.32	C	1.32	1.3	1.29	1.31	0.99	0.01
4 Methane	0.29	C	0.284	0.283	0.288	0.285	0.98	0.01
5 Ethane	1.19		1.18	1.18	1.15	1.15	0.98	0.01
6 Propane	1.9		1.96	1.95	1.96	1.94	1.03	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.49		1.38	1.43	1.41	1.4	0.94	0.01
9 Carbon Dioxide	0.6		0.592	0.59	0.6	0.594	0.99	0.01
10 Argon	0.74		0.759	0.749	0.763	0.76	1.02	0.01

Standard Number	CC115169
Canister Number	PE107-04669
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	93-8005-2

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	91.6		91.8	91.7	91.7	91.5	1.00	0.00
2 Oxygen	1.49		1.52	1.51	1.52	1.54	1.02	0.01
3 Hydrogen	1.21	C	1.15	1.16	1.17	1.18	0.96	0.01
4 Methane	0.27	C	0.256	0.257	0.257	0.257	0.95	0.00
5 Ethane	1.09		1.04	1.04	1.04	1.08	0.96	0.02
6 Propane	1.75		1.78	1.77	1.77	1.8	1.02	0.01
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.36		1.25	1.29	1.31	1.31	0.95	0.02
9 Carbon Dioxide	0.55		0.528	0.534	0.538	0.54	0.97	0.01
10 Argon	0.68		0.689	0.682	0.686	0.694	1.01	0.01

Standard Number	CC82054
Canister Number	PE108-04670
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	93-8005-03

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	90.85		94.1	94.1	94.1	94.1	1.04	0.00
2 Oxygen	0.79		0.822	0.819	0.804	0.807	1.03	0.01
3 Hydrogen	0.89	C	0.868	0.862	0.847	0.853	0.96	0.01
4 Methane	0.2	C	0.194	0.192	0.19	0.19	0.96	0.01
5 Ethane	0.8		0.78	0.78	0.808	0.803	0.99	0.02
6 Propane	1.3		1.332	1.32	1.33	1.32	1.02	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
8 Carbon Monoxide	1.01		0.948	0.971	0.996	0.966	0.96	0.02
9 Carbon Dioxide	0.4		0.404	0.403	0.401	0.402	1.01	0.00
10 Argon	0.5		0.518	0.515	0.51	0.514	1.03	0.01

Standard Number	CC115171D
Canister Number	PE129-04696
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	93-8005-04

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1 Nitrogen	90.85		90.8	90.8	90.8	90.8	1.00	ERR	0.00
2 Oxygen	1.62		1.69	1.69	1.7	1.68	1.04	0.00	0.00
3 Hydrogen	1.32	C	1.28	1.28	1.28	1.26	0.97	0.01	0.02
4 Methane	0.29	C	0.285	0.283	0.286	0.281	0.98	0.01	0.00
5 Ethane	1.19		1.15	1.15	1.15	1.18	0.97	0.01	0.00
6 Propane	1.9		1.97	1.96	1.97	1.97	1.04	0.00	0.00
7 NOx	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00	0.00
8 Carbon Monoxide	1.49		1.48	1.47	1.44	1.42	0.97	0.02	0.03
9 Carbon Dioxide	0.6		0.602	0.599	0.606	0.594	1.00	0.01	0.00
10 Argon	0.74		0.766	0.766	0.77	0.759	1.03	0.01	0.00

Standard Number	CC82053
Canister Number	PE116-04679
Laboratory ID Code	MD
Analytical Method	MS
Sample ID	93-8005-05

	Known Value	Flags	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Nitrogen	99.9514		99.9	99.9	99.9	99.9	1.00	0.00
2 Oxygen	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
3 Hydrogen	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
4 Methane	0.1	C ?	0.1	0.1	0.1	0.1	1.00	0.00
5 Ethane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
6 Propane	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
7 NOx	0.0486		0.0269	0.0269	0.026	0.0259	0.54	0.02
8 Carbon Monoxide	0.01	?	0.01	0.01	0.01	0.01	1.00	0.00
9 Carbon Dioxide	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00
10 Argon	0.1	?	0.1	0.1	0.1	0.1	1.00	0.00

WIPP Experimental Waste Characterization Program

Cycle 5

Performance Demonstration Program Scoring Report - July 1993 Distribution

Prepared by:

WIPP Technical Assistance Contractor

under

Contract No. DE-AC04-88CH10369

Prepared for:

WIPP Project Integration Office

September 1993

WIPP Waste Characterization

Performance Demonstration Program
Scoring Report - July 1993 Distribution

This report contains the results of Cycle 5 of the blind sample distributions to laboratories participating in the Performance Demonstration Program for WIPP Waste Characterization. This distribution consisted of canisters of simulated headspace gases of known composition of inorganic and low molecular weight gases (Gases) and volatile organic compounds (VOCs).

The verified time of sample receipt (VTSR) for Cycle 5 is July 20, 1993, and all data were to be returned to the PDP Coordinator on or before August 10, 1993. A two week extension for data submission was granted due to serious extenuating circumstances at one of the laboratories. The entire report was held until all data were received. All data were analyzed according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 2.

This report is presented in two sections, the first for VOC and the second for GAS data. Each section consists of a summary of all participants' performance and a separate, laboratory-specific appendix listing each participant's performance by canister.

Each appendix contains the following:

- A synopsis of the laboratory's performance

- A scoring table detailing the point assignment for each sample canister, and the total score for Critical Target Compounds and Target Compounds (CTCs and TCs) for VOCs, and Critical Target Analyte Gases and Target Analyte Gases (CTAGs and TAGs) for GAS analyses

- A set of data tables, one for each sample canister, High, Low, and Special. In this cycle the Low Concentration canister for VOCs and the Special canister for GAS analyses were submitted in duplicate. In addition, a special canister for NOx only was submitted to laboratories participating in the GAS analysis portion of the PDP. Each data table lists the known values of all analytes and the quadruplicate analytical results reported by the laboratory. No data tables are provided for the Blank canisters.

Analytical Samples

As with previous Cycles, the VOC and GAS samples were prepared by an independent laboratory using SUMMA canisters provided by DOE and analytical grade gas standards procured specifically for this cycle. Table 1 in each section contains the canister identification numbers, their contents and recipient (listed by Laboratory Identification Code) for VOC and GAS analyses, respectively.

Summary of Results

The Pass/Fail status of each Cycle 5 participant is described briefly below and presented in Table 2 of the VOC and GAS sections of this report.

VOC Analyses

- Four of the five laboratories submitting data for VOC analyses, CA, DO, OS, and ZL, passed all scoring criteria and qualified their procedures.

- Laboratory YC experienced problems with VOC analyses and failed the scoring criteria and have not qualified their procedure.

GAS Analyses

- All five laboratories submitting data for GAS analyses, MD, HE, HR, CK, and PB, passed all scoring criteria and qualified their procedures.

Interpretation of the Appendix Tables

The data contained in the Appendices appear as they were reported by the laboratories. The terms Relative Percent Accuracy (RPA), Relative Standard Deviation (RSD) and Relative Percent Difference (RPD) are defined in detail in the Performance Demonstration Program Plan. The RPA is calculated as a percent recovery of the known value. The RSD is calculated using the sample standard deviation from the replicate data submitted for each analyte. The RPD is applicable only when duplicate canisters were submitted for analysis, as with the Low Concentration canister for VOCs or the Special canister for GAS analysis. VOC and GAS Pass/Fail criteria for these parameters are given in Table 3.

Data tables in the Appendices have a "Known Value" column which lists the concentration for each analyte in ppmv for VOCs and percent for GAS analyses. The "Flags" column shows an entry of "C" for an analyte that is a CTC or CTAG, while TCs or TAGs have no entry.

For VOC analyses, each canister contains a subset of the 29 analytes on the target list. Accordingly, an entry of "?" in the "Flags" column indicates that the analyte was not added to the canister, and therefore should not be detected by the laboratory. In this case, the "Known Value" column lists the project required quantitation limit (PRQL), as specified in the Performance Demonstration Program Plan. For all Cycle 5 participants, the detection limit achieved by the laboratory when reporting a compound as not detected was less than or equal to the PRQL. As a convention, the data tables list a value of "0" for all analytes the laboratory reported as not detected.

For VOC analyses, some laboratories reported values for analytes not added to a canister which were below or slightly above the PRQL. These are listed as the laboratories reported them, regardless of their effect on the numerical scoring. The

remaining table entries are self-evident or are discussed in the individual appendix.

For GAS analyses, the High, Low, Special and Duplicate canisters contain the complete list of ten target compounds, with the exception of NO_x. The "Known Value" columns on these data tables list the actual concentrations of all nine analytes and the PRDL for NO_x. The "Flags" columns show an entry of "?" for NO_x, since it was added to only the NO_x canister.

Correspondingly, the NO_x data table lists the PRDL for all analytes except NO_x and Nitrogen. Nitrogen is used as a carrier gas for NO_x, and, while technically a TAG, it is not scored for the NO_x canister. The "Flags" column for all other analytes contains an entry of "?". For the NO_x canister, Nitrogen values are listed if they were reported by the laboratory.

For all Cycle 5 participants, the detection limit achieved by the laboratory when reporting a compound as not detected was less than or equal to the PRDL. As a convention, the NO_x data table lists the PRDL value for all analytes the laboratory reported as not detected.

All Cycle 5 participants reported acceptable blank results for both VOC and GAS analyses, and no data tables for the Blank canisters are included in this report.

SECTION 1

CYCLE 5 VOC DATA

Table 1

VOC Canister Identification

Laboratory ID Code	High Concentration CC36115	Special CC102412	Low Concentration CC36401	Low Conc. Duplicate CC36401	Blank Nitrogen CC102583
CA	PE023/04712	PE010/04440	PE029/10842	PE033/04443	PE027/10840
DO	PE036/04708	PE016/04703	PE007/04435	PE002/04428	PE035/04701
OS	PE006/04433	PE021/04710	PE012/04442	PE028/10841	PE014/04700
ZL	PE004/04431	PE025/04714	PE032/10845	PE024/04713	PE015/04702
YC	PE019/04706	PE013/04699	PE005/04432	PE017/04704	PE037/04709

Table 2

Pass/Fail Summary

Lab Code	Analysis	Status	Comments
CA	VOC	Pass	0 CTC Failure, 1.00 CTC Score 1.00 TC Score
DO	VOC	Pass	0 CTC Failures, 1.00 CTC Score 0.99 TC Score
OS	VOC	Pass	0 CTC Failures, 1.00 CTC Score 1.00 TC Score
ZL	VOC	Pass	1 CTC Failure, 0.98 CTC Score 0.99 TC Score
YC	VOC	Fail	8 CTC Failures, .83 CTC Score 0.62 TC Score

Table 3

VOC Acceptance Criteria

Analytical Parameter	Acceptance Range
Relative Percent Accuracy	70 - 130 %
Relative Standard Deviation	75 - 125 %
Relative Percent Difference	75 - 125 %

Appendix A

Laboratory CA

This laboratory submitted data for GC/MS Analytical Method 430.1 and GC Method 440.1. No problems were encountered and this laboratory received a perfect score for CTCs and TCs. The single, intentional non-target compound (trichlorofluoromethane) was correctly identified.

VOC

WIPP PDP Scoring Table

Laboratory	CA				
Analysis Type	VOC				
Standard No.	CC36115	CC102412	CC36401	CC36401	CC102583
Canister No.	PE023/04712	PE010/04440	PE029/10842	PE033/04443	PE027/10840
Comment	High Conc.	Special	Low Conc.	Low Conc. Duplicate	Blank

	#	Points	#	Points	#	Points	#	Points	<50 % #	Points
CTCs Present	6 ×10 =	60	2	20	6	60	6	90	(4 - 0) ×5	40
CTCs Reported	6	60	2	20	6	60	6	90	(4 - 0) ×5	40
CTCs Failing RPA >30%	0	0	0	0	0	0	0	0		0
CTCs Failing RSD >25%	0	0	0	0	0	0	0	0		0
CTCs Failing RPD <25%	NA		NA		N/A		0	0	NA	

		Points		Points		Points		Points		Points
TCs Present	5 ×10 =	50	6	60	10	100	10	150	(1 - 0) ×1 =	0 21
TCs Reported	5	50	6	60	10	100	10	150	(1 - 0) ×1 =	0 21
TCs Failing RPA	0	0	0	0	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	

TICs Present	0 ×5 =	0	1	5	0	0	0	0	0	0
TICs Reported	0	0	1	5	0	0	0	0	0	0

CTCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0 ×(-5)	0
TCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0 ×(-1)	0
Subtotal for Blank										61 - 0 = 61

FALSE CTCs or TCs in Spikes > PRQL	0 ×(-1)	0	0	0		0	0	0		NA

CTC TOTALS		60		20		60		90		
MAXIMUM POINTS		230								
CTC SCORE	230/230	1.00	0 CTC	Failures						

TC TOTALS		50		65		100		150		61
MAXIMUM POINTS		426								
TC SCORE	426/426	1.00	0 TC	Failures						

Standard Number	CC36115
Canister Number	PE023/04712
Lab Identification Code	CA
Analytical Method	440.1/430.1
Sample ID	93197001

RPA
70% ≤ x ≤ 130%

(270%, ≤130%) (±30%) (≤25%)

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	AVG	RPA	RSD (25%)
									90%	2%
1	Acetone	349	C	321	313	305	316	314	0.90	0.02
2	Benzene	150		152	150	152	146		1.00	0.02
3	Bromoform	1	?	0	0	0	0		0.00	
4	1-Butanol	200		265	255	252	263		1.29	0.02
5	2-Butanone	1	?	0	0	0	0		0.00	
6	Carbon Tetrachloride	197	C	198	195	197	193		0.99	0.01
7	Chlorobenzene	151		160	160	158	155		1.05	0.01
8	Chloroform	1	?	0	0	0	0		0.00	
9	Cyclohexane	492	C	501	489	491	479		1.00	0.02
10	1,1-Dichloroethane	1	?	0	0	0	0		0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0		0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0		0.00	
13	cis-Dichloroethene	1	?	0	0	0	0		0.00	
14	Ethyl benzene	177		186	187	181	177		1.03	0.03
15	Ethyl ether	1	?	0	0	0	0		0.00	
16	Methanol	1	?	0	0	0	0		0.00	
17	Methylene chloride	301	C	319	313	314	304		1.04	0.02
18	4-Methyl-2-Pentanone	1	?	0	0	0	0		0.00	
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0		0.00	
20	Tetrachloroethene	1	?	0	0	0	0		0.00	
21	Toluene	295		293	296	292	285		0.99	0.02
22	1,1,1-Trichloroethane	249	C	235	229	228	225		0.92	0.02
23	Trichloroethene	197	C	204	202	203	195		1.02	0.02
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0		0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0		0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0		0.00	
27	m-Xylene	1	?	0	0	0	0		0.00	
28	o-Xylene	1	C?	0	0	0	0		0.00	
29	p-Xylene	1	?	0	0	0	0		0.00	

314/349

Standard Number	CC102412
Canister Number	PE010/04440
Lab Identification Code	CA
Analytical Method	440.1/430.1
Sample ID	93197003

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	300	C	253	253	255	254	0.85	0.00
2	Benzene	1	?	0	0	0	0	0.00	
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	250		292	297	301	301	1.19	0.01
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	1	C?	0	0	0	0	0.00	
7	Chlorobenzene	1	?	0	0	0	0	0.00	
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	351	C	381	372	370	371	1.06	0.01
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	1	?	0	0	0	0	0.00	
15	Ethyl ether	103		106	103	102	103	1.00	0.02
16	Methanol	151		121	125	125	122	0.82	0.02
17	Methylene chloride	1	C?	0	0	0	0	0.00	
18	4-Methyl-2-Pentanone	200		220	222	223	222	1.11	0.01
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	101		106	104	101	102	1.02	0.02
22	1,1,1-Trichloroethane	1	C?	0	0	0	0	0.00	
23	Trichloroethene	1	C?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	151		167	165	164	164	1.09	0.01

Standard Number	CC36401
Canister Number	PE029/10842
Lab Identification Code	CA
Analytical Method	430.1
Sample ID	93197002

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	1	C?	0	0	0	0	0.00	
2	Benzene	4.9		5.1	5.0	5.0	4.9	1.02	0.02
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	1	?	0	0	0	0	0.00	
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	10.2	C	10	10	10	10	0.98	0.00
7	Chlorobenzene	2.0		2.3	2.3	2.2	2.1	1.11	0.04
8	Chloroform	1.9		2.0	2.0	2.0	2.0	1.05	0.00
9	Cyclohexane	10.0	C	10	10	10	10	1.00	0.00
10	1,1-Dichloroethane	2.0		2.1	2.1	2.1	2.1	1.05	0.00
11	1,2-Dichloroethane	10.0	C	9.3	9.3	9.3	9.2	0.93	0.01
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	9.9		10	10	10	10	1.01	0.00
14	Ethyl benzene	5.0		5.3	5.4	5.2	5.2	1.06	0.02
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	19.8	C	21	21	21	21	1.06	0.00
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	4.9		5.1	5.1	5.0	5.02	1.03	0.01
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	2.1		2.1	2.1	2.0	2.0	0.98	0.03
22	1,1,1-Trichloroethane	14.8	C	14	14	14	14	0.95	0.00
23	Trichloroethene	14.8	C	15	15	15	15	1.01	0.00
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.5	9.4	9.4	9.3	0.95	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	10.0		11	11	11	11	1.10	0.00

Standard Number	CC36401
Canister Number	PE033/04443
Lab Identification Code	CA
Analytical Method	430.1
Sample ID	93197004

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD (25%)
1	Acetone	1	C?	0	0	0	0	0.00		3%
2	Benzene	4.9		4.9	4.9	4.8	4.8	0.99	0.01	0.03
3	Bromoform	1	?	0	0	0	0	0.00		
4	1-Butanol	1	?	0	0	0	0	0.00		
5	2-Butanone	1	?	0	0	0	0	0.00		
6	Carbon Tetrachloride	10.2	C	9.9	10	9.9	10	0.98	0.01	0.01
7	Chlorobenzene	2.0		2.2	2.2	2.2	2.2	1.10	0.00	0.01
8	Chloroform	1.9		2.0	2.0	2.0	2.0	1.05	0.00	0.00
9	Cyclohexane	10.0	C	10	10	9.9	9.9	1.00	0.01	0.01
10	1,1-Dichloroethane	2.0		2.1	2.1	2.1	2.1	1.05	0.00	0.00
11	1,2-Dichloroethane	10.0	C	9.3	9.3	9.2	9.2	0.93	0.01	0.00
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00		
13	cis-Dichloroethene	9.9		10	10	9.8	9.7	1.00	0.02	0.01
14	Ethyl benzene	5.0		5.3	5.1	5.2	5.1	1.04	0.02	0.02
15	Ethyl ether	1	?	0	0	0	0	0.00		
16	Methanol	1	?	0	0	0	0	0.00		
17	Methylene chloride	19.8	C	21	21	20	20	1.04	0.03	0.02
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00		
19	1,1,2,2-Tetrachloroethane	4.9		4.8	4.7	4.7	4.8	0.97	0.01	0.06
20	Tetrachloroethene	1	?	0	0	0	0	0.00		
21	Toluene	2.1		2.0	2.0	2.0	2.0	0.95	0.00	0.02
22	1,1,1-Trichloroethane	14.8	C	14	14	13	14	0.93	0.04	0.02
23	Trichloroethene	14.8	C	15	15	15	15	1.01	0.00	0.00
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.5	9.4	9.2	9.0	0.94	0.02	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00		
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00		
27	m-Xylene	1	?	0	0	0	0	0.00		
28	o-Xylene	1	C?	0	0	0	0	0.00		
29	p-Xylene	10.0		11	11	11	11	1.10	0.00	0.00

Appendix B

Laboratory DO

This laboratory submitted data for a single GC/MS procedure, and achieved a perfect score for CTCs. This laboratory experienced only a single TC failure, 1-butanol in the High Concentration canister. Otherwise, the laboratory passed all scoring criteria. The single, intentional non-target compound (trichlorofluoromethane) was correctly identified.

WIPP PDP Scoring Table

Laboratory	DO									
Analysis Type	VOC									
Standard No.	CC36115		CC102412		CC36401		CC36401		CC102583	
Canister No.	PE036/04708		PE016/04703		PE007/04435		PE002/04428		PE035/04701	
Comment	High Conc.		Special		Low Conc.		Low Conc. Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	2	20	6	60	6	90	0	0
CTCs Reported	6	60	2	20	6	60	6	90		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		N/A		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	5	50	6	60	10	100	10	150	0	0
TCs Reported	5	50	6	60	10	100	10	150		0
TCs Failing RPA	1	-5	0	0	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0	0	1	5	0	0	0	0	0	0
TICs Reported	0	0	1	5	0	0	0	0	0	0
CTCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
FALSE CTCs or TCs in Spikes > PRQL	0	0	0	0		0	0	0		NA
CTC TOTALS		60		20		60		90		40
MAXIMUM POINTS		230								
CTC SCORE	230/230	1.00	0 CTC	Failures						
TC TOTALS		45		65		100		150		21 ~~61~~
MAXIMUM POINTS		426								
TC SCORE	421/426	0.99	1 TC	Failure						

Standard Number	CC36115
Canister Number	PE036/04708
Lab Identification Code	DO
Analytical Method	SOP: ACL-168
Sample ID	93-8151-01

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	349	C	414	417	414	416	1.19	0.00
2	Benzene	150		143	143	143	146	0.96	0.01
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	200		274	269	269	272	1.36	0.01
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	197	C	175	171	172	167	0.87	0.02
7	Chlorobenzene	151		127	126	127	127	0.84	0.00
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	492	C	469	458	456	457	0.93	0.01
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	177		146	146	146	146	0.82	0.00
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	301	C	313	318	317	319	1.05	0.01
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	295		259	257	259	255	0.87	0.01
22	1,1,1-Trichloroethane	249	C	250	247	246	243	0.99	0.01
23	Trichloroethene	197	C	166	163	166	164	0.84	0.01
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	1	?	0	0	0	0	0.00	

Standard Number	CC102412
Canister Number	PE016/04703
Lab Identification Code	DO
Analytical Method	SOP: ACL-168
Sample ID	93-8151-03

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	300	C	363	362	356	364	1.20	0.01
2	Benzene	1	?	0	0	0	0	0.00	
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	250		330	323	316	315	1.28	0.02
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	1	C?	0	0	0	0	0.00	
7	Chlorobenzene	1	?	0	0	0	0	0.00	
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	351	C	336	333	336	335	0.95	0.00
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	1	?	0	0	0	0	0.00	
15	Ethyl ether	103		102	99	99.4	99.5	0.97	0.01
16	Methanol	151		132	143	137	149	0.93	0.05
17	Methylene chloride	1	C?	0	0	0	0	0.00	
18	4-Methyl-2-Pentanone	200		212	211	212	213	1.06	0.00
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	101		82.4	82.6	82.3	82.3	0.82	0.00
22	1,1,1-Trichloroethane	1	C?	0	0	0	0	0.00	
23	Trichloroethene	1	C?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	151		119	118	118	118	0.78	0.00

Standard Number	CC36401
Canister Number	PE007/04435
Lab Identification Code	DO
Analytical Method	SOP: ACL-168
Sample ID	93-8151-02

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	1	C?	0	0	0	0	0.00	
2	Benzene	4.9		4.62	4.64	4.68	4.76	0.95	0.01
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	1	?	0	0	0	0	0.00	
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	10.2	C	8.62	8.54	8.43	8.47	0.83	0.01
7	Chlorobenzene	2.0		1.97	1.96	1.97	1.95	0.98	0.00
8	Chloroform	1.9		2.02	2.02	2.04	2.03	1.07	0.00
9	Cyclohexane	10.0	C	10.3	10.3	10.2	10.3	1.03	0.00
10	1,1-Dichloroethane	2.0		2.08	2.07	2.07	2.10	1.04	0.01
11	1,2-Dichloroethane	10.0	C	8.40	8.52	8.34	8.38	0.84	0.01
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	9.9		10.4	10.4	10.4	10.4	1.05	0.00
14	Ethyl benzene	5.0		4.75	4.67	4.71	4.67	0.94	0.01
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	19.8	C	21.3	21.2	21.3	21.4	1.08	0.00
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	4.9		4.43	4.54	4.52	4.52	0.92	0.01
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	2.1		1.92	1.91	1.94	1.94	0.92	0.01
22	1,1,1-Trichloroethane	14.8	C	14.0	14.0	13.9	14.0	0.94	0.00
23	Trichloroethene	14.8	C	12.1	12.2	12.0	12.1	0.82	0.01
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.02	9.00	9.12	9.20	0.92	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	10.0		9.56	9.40	9.50	9.40	0.95	0.01

Standard Number	CC36401
Canister Number	PE002/04428
Lab Identification Code	DO
Analytical Method	SOP: ACL-168
Sample ID	93-8151-04

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	1	C?	0	0	0	0	0.00		
2	Benzene	4.9		4.66	4.77	4.76	4.74	0.97	0.01	0.01
3	Bromoform	1	?	0	0	0	0	0.00		
4	1-Butanol	1	?	0	0	0	0	0.00		
5	2-Butanone	1	?	0	0	0	0	0.00		
6	Carbon Tetrachloride	10.2	C	7.96	8.22	8.18	8.22	0.80	0.02	0.04
7	Chlorobenzene	2.0		2.01	2.02	2.00	1.98	1.00	0.01	0.02
8	Chloroform	1.9		1.94	2.00	2.02	2.02	1.05	0.02	0.02
9	Cyclohexane	10.0	C	9.40	10.2	10.3	10.2	1.00	0.04	0.02
10	1,1-Dichloroethane	2.0		2.01	2.12	2.14	2.13	1.05	0.03	0.01
11	1,2-Dichloroethane	10.0	C	8.34	8.34	8.36	8.35	0.83	0.00	0.01
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00		
13	cis-Dichloroethene	9.9		10.3	10.5	10.6	10.5	1.06	0.01	0.01
14	Ethyl benzene	5.0		4.59	4.70	4.68	4.67	0.93	0.01	0.01
15	Ethyl ether	1	?	0	0	0	0	0.00		
16	Methanol	1	?	0	0	0	0	0.00		
17	Methylene chloride	19.8	C	18.5	21.4	21.3	21.5	1.04	0.07	0.03
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00		
19	1,1,2,2-Tetrachloroethane	4.9		4.42	4.66	4.65	4.68	0.94	0.03	0.02
20	Tetrachloroethene	1	?	0	0	0	0	0.00		
21	Toluene	2.1		1.98	1.97	1.97	1.98	0.94	0.00	0.02
22	1,1,1-Trichloroethane	14.8	C	13.0	13.9	13.9	13.9	0.92	0.03	0.02
23	Trichloroethene	14.8	C	12.1	11.8	11.8	11.8	0.80	0.01	0.02
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		8.11	9.07	9.10	9.08	0.89	0.06	0.03
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00		
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00		
27	m-Xylene	1	?	0	0	0	0	0.00		
28	o-Xylene	1	C?	0	0	0	0	0.00		
29	p-Xylene	10.0		9.70	10.0	9.75	9.89	0.98	0.01	0.04

Appendix C

Laboratory OS

This laboratory submitted data for GC/MS Analytical Method L-4111. No problems were encountered and this laboratory received a perfect score for CTCs and TCs. The single, intentional non-target compound (trichlorofluoromethane) was correctly identified.

WIPP PDP Scoring Table

Laboratory	OS									
Analysis Type	VOC									
Standard No.	CC36115		CC102412		CC36401		CC36401		CC102583	
Canister No.	PE006/04433		PE021/04710		PE012/04442		PE028/10841		PE014/04700	
Comment	High Conc.		Special		Low Conc.		Low Conc. Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	2	20	6	60	6	90	0	0
CTCs Reported	6	60	2	20	6	60	6	90		0
CTCs Failing RPA	0	0	0	0	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		N/A		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	5	50	6	60	10	100	10	150	0	0
TCs Reported	5	50	6	60	10	100	10	150		0
TCs Failing RPA	0	0	0	0	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0	0	1	5	0	0	0	0	0	0
TICs Reported	0	0	1	5	0	0	0	0	0	0
CTCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
FALSE CTCs or TCs in Spikes > PRQL	0	0	0	0		0	0	0		NA
CTC TOTALS		60		20		60		90		
MAXIMUM POINTS		230								
CTC SCORE	230/230	1.00	0 CTC	Failures						
TC TOTALS		50		65		100		150		61
MAXIMUM POINTS		426								
TC SCORE	426/426	1.00	0 TC	Failures						

Standard Number	CC36115
Canister Number	PE006/04433
Lab Identification Code	OS
Analytical Method	GCMS: L-4111
Sample ID	GCMS: VOAG02, B09, F02

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	349	C	421.3	413.6	405.8	424.3	1.19	0.02
2	Benzene	150		138.9	140.0	136.3	139.9	0.93	0.01
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	200		160.4	148.3	153.1	165.2	0.78	0.05
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	197	C	208.9	206.5	206.3	216.7	1.06	0.02
7	Chlorobenzene	151		152.7	157.0	156.5	147.6	1.02	0.03
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	492	C	498.8	478.5	473.8	505.2	0.99	0.03
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0.4	0.4	0.4	0.4	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	177		184.1	177.7	178.5	180.3	1.02	0.02
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	301	C	310.5	301.6	295.6	310.7	1.01	0.02
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	295		298.6	285.8	289.8	290.7	0.99	0.02
22	1,1,1-Trichloroethane	249	C	267.2	258.6	260.9	276.0	1.07	0.03
23	Trichloroethene	197	C	216.0	204.8	206.4	217.3	1.07	0.03
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	1	?	0	0	0	0	0.00	

Standard Number	CC102412
Canister Number	PE021/04710
Lab Identification Code	OS
Analytical Method	GCMS: L-4111
Sample ID	VOAG05, F11, E07, D05, G07

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	300	C	328.7	332.6	329.9	329.6	1.10	0.01
2	Benzene	1	?	0	0	0	0	0.00	
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	250		234.1	207.3	212.0	233.2	0.89	0.06
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	1	C?	0	0	0	0	0.00	
7	Chlorobenzene	1	?	0	0	0	0	0.00	
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	351	C	343.5	352.4	344.5	349.7	0.99	0.01
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	1	?	0	0	0	0	0.00	
15	Ethyl ether	103		108.9	104.2	102.8	105.9	1.02	0.02
16	Methanol	151		161.5	159.4	161.1	162.7	1.07	0.01
17	Methylene chloride	1	C?	0	0	0	0	0.00	
18	4-Methyl-2-Pentanone	200		235.7	240.7	240.9	233.8	1.19	0.02
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	101		97.9	95.1	94.2	95.1	0.95	0.02
22	1,1,1-Trichloroethane	1	C?	0	0	0	0	0.00	
23	Trichloroethene	1	C?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	151		125.1	130.3	131.1	130.1	0.86	0.02

Standard Number	CC36401
Canister Number	PE012/04442
Lab Identification Code	OS
Analytical Method	GCMS: L-4111
Sample ID	GCMS: V0AF06, D02

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	1	C?	0.7	0.7	0	0	0.00	
2	Benzene	4.9		4.8	4.9	4.9	4.9	0.99	0.01
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	1	?	0	0	0	0	0.00	
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	10.2	C	11.0	11.2	11.3	11.2	1.10	0.01
7	Chlorobenzene	2.0		2.2	2.2	2.2	2.2	1.10	0.00
8	Chloroform	1.9		2.0	2.0	2.0	2.0	1.05	0.00
9	Cyclohexane	10.0	C	10.3	10.4	10.3	10.3	1.03	0.00
10	1,1-Dichloroethane	2.0		2.4	2.3	2.4	2.3	1.18	0.02
11	1,2-Dichloroethane	10.0	C	10.5	10.4	10.3	10.3	1.04	0.01
12	1,1-Dichloroethene	1	?	0	0	0.1	0	0.00	
13	cis-Dichloroethene	9.9		9.7	9.8	9.6	9.5	0.97	0.01
14	Ethyl benzene	5.0		5.2	5.2	5.2	5.1	1.04	0.01
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	19.8	C	20.6	20.3	20.4	20.4	1.03	0.01
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	4.9		5.1	5.1	5.1	5.0	1.04	0.01
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	2.1		2.1	2.2	2.1	2.1	1.01	0.02
22	1,1,1-Trichloroethane	14.8	C	16.1	16.1	16.0	16.2	1.09	0.01
23	Trichloroethene	14.8	C	16.2	16.5	16.4	16.4	1.11	0.01
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.5	9.6	9.8	9.8	0.98	0.02
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	10.0		10.6	10.6	10.3	10.4	1.05	0.01

Standard Number	CC36401
Canister Number	PE028/10841
Lab Identification Code	OS
Analytical Method	GCMS: L-4111
Sample ID	GCMS: VOAE09, B02

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	1	C?	0	0	0	0	0.00		
2	Benzene	4.9		4.9	4.9	4.8	4.8	0.99	0.01	0.01
3	Bromoform	1	?	0	0	0	0	0.00		
4	1-Butanol	1	?	0	0	0	0	0.00		
5	2-Butanone	1	?	0	0	0	0	0.00		
6	Carbon Tetrachloride	10.2	C	10.9	11.3	11.3	11.4	1.10	0.02	0.00
7	Chlorobenzene	2.0		2.2	2.2	2.2	2.2	1.10	0.00	0.00
8	Chloroform	1.9		2.1	2.1	2.0	2.0	1.08	0.03	0.02
9	Cyclohexane	10.0	C	10.2	10.2	10.3	10.3	1.03	0.01	0.01
10	1,1-Dichloroethane	2.0		2.3	2.4	2.3	2.4	1.18	0.02	0.00
11	1,2-Dichloroethane	10.0	C	10.9	10.9	10.4	10.2	1.06	0.03	0.02
12	1,1-Dichloroethene	1	?	0.1	0.2	0.2	0.1	0.00		
13	cis-Dichloroethene	9.9		9.6	9.7	9.4	9.5	0.96	0.01	0.01
14	Ethyl benzene	5.0		5.1	5.1	5.0	5.0	1.01	0.01	0.02
15	Ethyl ether	1	?	0	0	0	0	0.00		
16	Methanol	1	?	0	0	0	0	0.00		
17	Methylene chloride	19.8	C	20.4	20.0	20.3	20.1	1.02	0.01	0.01
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00		
19	1,1,2,2-Tetrachloroethane	4.9		5.0	5.0	5.0	4.9	1.02	0.01	0.02
20	Tetrachloroethene	1	?	0	0	0	0	0.00		
21	Toluene	2.1		2.1	2.0	2.1	2.1	0.99	0.02	0.02
22	1,1,1-Trichloroethane	14.8	C	15.7	15.8	16.1	16.1	1.08	0.01	0.01
23	Trichloroethene	14.8	C	16.6	16.3	16.6	16.3	1.11	0.01	0.00
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.5	9.5	9.6	9.6	0.96	0.01	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00		
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00		
27	m-Xylene	1	?	0	0	0	0	0.00		
28	o-Xylene	1	C?	0	0	0	0	0.00		
29	p-Xylene	10.0		10.4	10.3	10.1	10.1	1.02	0.01	0.02

Appendix D

Laboratory ZL

This laboratory submitted data for a single GC/MS procedure. The laboratory experienced a single failure each for a CTC and a TC. These were the RPAs for acetone and methanol, respectively, in the Special canister. The single, intentional non-target compound (trichlorofluoromethane) was correctly identified.

Although the laboratory passed all other scoring criteria, the data indicate the possibility of a low bias. The average recovery from the High Concentration canister was 0.83 ± 4.5% (1 Relative Standard Deviation). The average recoveries from the duplicate Low Concentration canisters were 0.94 ± 6.0% (1 Relative Standard Deviation) and 0.91 ± 3.8% (1 Relative Standard Deviation). The Special canister had an average recovery of 0.91 but the high Relative Standard Deviation (25%) makes the data difficult to interpret. This lab should investigate the possibility of a low bias. The consistent, low bias among analytes in the same canister would indicate that it might be fruitful to look for physical loss of sample in transfer operations or incorrect volume measurement of the analytical aliquot. To reiterate, if the bias exists it is insufficient to cause the laboratory to fail the scoring criteria.

WIPP PDP Scoring Table

Laboratory	ZL									
Analysis Type	VOC									
Standard No.	CC36115		CC102412		CC36401		CC36401		CC102583	
Canister No.	PE004/04431		PE025/04714		PE032/10845		PE024/04713		PE015/04702	
Comment	High Conc.		Special		Low Conc.		Low Conc. Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	2	20	6	60	6	90	0	0
CTCs Reported	6	60	2	20	6	60	6	90		0
CTCs Failing RPA	0	0	1	-5	0	0	0	0		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		N/A		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	5	50	6	60	10	100	10	150	0	0
TCs Reported	5	50	6	60	10	100	10	150		0
TCs Failing RPA	0	0	1	-5	0	0	0	0		0
TCs Failing RSD	0	0	0	0	0	0	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0	0	1	5	0	0	0	0	0	0
TICs Reported	0	0	1	5	0	0	0	0	0	0
CTCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
FALSE CTCs or TCs in Spikes > PRQL	0	0	0	0		0	0	0		NA
CTC TOTALS		60		15		60		90		
MAXIMUM POINTS		230								
CTC SCORE	225/230	0.98	1 CTC	Failures						
TC TOTALS		50		60		100		150		61
MAXIMUM POINTS		426								
TC SCORE	421/426	0.99	1 TC	Failures						

Standard Number	CC36115
Canister Number	PE004/04431
Lab Identification Code	ZL
Analytical Method	TO14
Sample ID	AB1385

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	349	C	233.18	280.63	261.72	242.04	0.73	0.08
2	Benzene	150		122.68	121.45	128.57	124.45	0.83	0.03
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	200		166.61	165.04	164.07	160.30	0.82	0.02
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	197	C	165.11	165.76	175.12	169.99	0.86	0.03
7	Chlorobenzene	151		121.72	120.54	125.92	124.61	0.82	0.02
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	492	C	406.88	406.88	428.79	421.53	0.85	0.03
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	177		142.15	140.04	147.20	141.27	0.81	0.02
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	301	C	251.83	253.43	273.80	262.15	0.86	0.04
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	295		247.91	246.02	261.73	252.58	0.85	0.03
22	1,1,1-Trichloroethane	249	C	206.08	206.73	217.95	211.35	0.85	0.03
23	Trichloroethene	197	C	162.78	158.73	167.79	163.81	0.83	0.02
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	1	?	0	0	0	0	0.00	

Standard Number	CC102412
Canister Number	PE025/04714
Lab Identification Code	ZL
Analytical Method	TO14
Sample ID	AB1377

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	300	C	203.38	170.40	207.85	178.87	0.63	0.10
2	Benzene	1	?	0	0	0	0	0.00	
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	250		232.07	207.94	224.38	209.91	0.87	0.05
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	1	C?	0	0	0	0	0.00	
7	Chlorobenzene	1	?	0	0	0	0	0.00	
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	351	C	312.07	300.49	313.90	289.76	0.87	0.04
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	1	?	0	0	0	0	0.00	
15	Ethyl ether	103		102.83	95.02	100.02	91.65	0.95	0.05
16	Methanol	151		198.90	233.52	199.76	234.50	1.43	0.09
17	Methylene chloride	1	C?	0	0	0	0	0.00	
18	4-Methyl-2-Pentanone	200		181.82	162.77	179.20	161.99	0.86	0.06
19	1,1,2,2-Tetrachloroethane	1	?	0	0	0	0	0.00	
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	101		92.21	87.98	90.88	85.01	0.88	0.04
22	1,1,1-Trichloroethane	1	C?	0	0	0	0	0.00	
23	Trichloroethene	1	C?	0	0	0	0	0.00	
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	151		126.25	117.50	124.14	116.46	0.80	0.04

Standard Number	CC36401
Canister Number	PE032/10845
Lab Identification Code	ZL
Analytical Method	TO14
Sample ID	AB1386

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	1	C?	0	0	0	0	0.00	
2	Benzene	4.9		4.61	4.44	4.48	4.32	0.91	0.03
3	Bromoform	1	?	0	0	0	0	0.00	
4	1-Butanol	1	?	0	0	0	0	0.00	
5	2-Butanone	1	?	0	0	0	0	0.00	
6	Carbon Tetrachloride	10.2	C	9.73	9.42	9.53	9.19	0.93	0.02
7	Chlorobenzene	2.0		2.24	2.07	2.03	1.98	1.04	0.05
8	Chloroform	1.9		1.81	1.78	1.78	1.70	0.93	0.03
9	Cyclohexane	10.0	C	9.15	8.93	8.96	8.64	0.89	0.02
10	1,1-Dichloroethane	2.0		2.05	2.00	2.00	1.88	0.99	0.04
11	1,2-Dichloroethane	10.0	C	9.26	9.13	9.10	8.92	0.91	0.02
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	9.9		8.89	8.66	8.59	8.46	0.87	0.02
14	Ethyl benzene	5.0		5.14	4.89	4.71	4.68	0.97	0.04
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	19.8	C	17.95	16.69	17.19	17.62	0.88	0.03
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	4.9		4.46	4.32	4.23	4.14	0.88	0.03
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	2.1		2.36	2.25	2.23	2.14	1.07	0.04
22	1,1,1-Trichloroethane	14.8	C	14.09	13.53	13.70	13.14	0.92	0.03
23	Trichloroethene	14.8	C	14.50	14.00	13.90	13.41	0.94	0.03
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.67	9.41	9.45	9.49	0.96	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00	
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	10.0		9.93	9.43	8.94	9.05	0.93	0.05

Standard Number	CC36401
Canister Number	PE024/04713
Lab Identification Code	ZL
Analytical Method	TO14
Sample ID	AB1378

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	1	C?	0	0	0	0	0.00		
2	Benzene	4.9		4.29	4.24	4.30	4.43	0.88	0.02	0.03
3	Bromoform	1	?	0	0	0	0	0.00		
4	1-Butanol	1	?	0	0	0	0	0.00		
5	2-Butanone	1	?	0	0	0	0	0.00		
6	Carbon Tetrachloride	10.2	C	9.28	9.19	9.48	9.64	0.92	0.02	0.01
7	Chlorobenzene	2.0		1.80	1.77	1.82	1.86	0.91	0.02	0.14
8	Chloroform	1.9		1.73	1.71	1.77	1.80	0.92	0.02	0.01
9	Cyclohexane	10.0	C	8.73	8.50	8.84	8.97	0.88	0.02	0.02
10	1,1-Dichloroethane	2.0		1.87	1.86	2.01	2.02	0.97	0.04	0.02
11	1,2-Dichloroethane	10.0	C	8.91	8.91	9.03	9.18	0.90	0.01	0.01
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00		
13	cis-Dichloroethene	9.9		8.53	8.31	8.54	8.78	0.86	0.02	0.01
14	Ethyl benzene	5.0		4.68	4.54	4.50	4.73	0.92	0.02	0.05
15	Ethyl ether	1	?	0	0	0	0	0.00		
16	Methanol	1	?	0	0	0	0	0.00		
17	Methylene chloride	19.8	C	17.11	17.49	16.88	17.57	0.87	0.02	0.01
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00		
19	1,1,2,2-Tetrachloroethane	4.9		4.54	4.19	4.28	4.39	0.89	0.03	0.01
20	Tetrachloroethene	1	?	0	0	0	0	0.00		
21	Toluene	2.1		2.01	1.94	2.02	2.03	0.95	0.02	0.12
22	1,1,1-Trichloroethane	14.8	C	13.46	13.24	13.82	13.89	0.92	0.02	0.00
23	Trichloroethene	14.8	C	13.42	13.25	13.60	13.78	0.91	0.02	0.03
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		9.36	9.26	9.48	9.73	0.96	0.02	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00		
26	1,2,4-Trimethylbenzene	1	?	0	0	0	0	0.00		
27	m-Xylene	1	?	0	0	0	0	0.00		
28	o-Xylene	1	C?	0	0	0	0	0.00		
29	p-Xylene	10.0		9.97	9.47	9.20	10.02	0.97	0.04	0.03

Appendix E

Laboratory YC

This laboratory submitted data for a single GC/MS procedure. There were problems with quantitation on all canisters and the laboratory failed the scoring criteria for CTCs and TCs. No particular pattern of failure was evident with RPAs failing on both the high and low sides. There were several instances of non-detects of target analytes and numerous false positives. The single, intentional non-target compound (trichlorofluoromethane) was not identified.

WIPP PDP Scoring Table

Laboratory	YC									
Analysis Type	VOC									
Standard No.	CC36115		CC102412		CC36401		CC36401		CC102583	
Canister No.	PE019/04706		PE013/04699		PE005/04432		PE017/04704		PE037/04709	
Comment	High Conc.		Special		Low Conc.		Low Conc. Duplicate		Blank	
		Points		Points		Points		Points		Points
CTCs Present	6	60	2	20	6	60	6	90	0	0
CTCs Reported	6	60	2	20	6	60	6	90		0
CTCs Failing RPA	1	-5	0	0	4	-20	3	-15		0
CTCs Failing RSD	0	0	0	0	0	0	0	0		0
CTCs Failing RPD	NA		NA		N/A		0	0	NA	
		Points		Points		Points		Points		Points
TCs Present	5	50	6	60	10	100	10	150	0	0
TCs Reported	4	40	4	40	8	80	8	120		0
TCs Failing RPA	0	0	2	-10	4	-20	3	-15		0
TCs Failing RSD	0	0	0	0	1	-5	0	0		0
TCs Failing RPD	NA		NA		NA		0	0	NA	
TICs Present	0	0	1	5	0	0	0	0	0	0
TICs Reported	0	0	0	0	0	0	0	0	0	0
CTCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
TCs Reported in Blank > 0.5 * PRQL		NA		NA		NA		NA	0	0
Subtotal for Blank										61
FALSE CTCs or TCs in Spikes > PRQL	6	-6	10	-10	5	-5	4	-4		NA
CTC TOTALS		55		20		40		75		
MAXIMUM POINTS		230								
CTC SCORE	190/230	0.83	8 CTC Failures							
TC TOTALS		34		20		50		101		61
MAXIMUM POINTS		426								
TC SCORE	266/426	0.62	26 TC Failures							

Standard Number	CC36115
Canister Number	PE019/04706
Lab Identification Code	YC
Analytical Method	TO14
Sample ID	93-WL-0046

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	349	C	351.065	268.534	273.911	445.832	0.96	0.25
2	Benzene	150		126.43	128.529	120.281	125.234	0.83	0.03
3	Bromoform	1	?	11.971	12.013	12	11.971	11.99	0.00
4	1-Butanol	200		0	0	0	0	ND	ND
5	2-Butanone	1	?	7.704	10.23	12.532	6.86	9.33	0.28
6	Carbon Tetrachloride	197	C	190.562	199.113	184.146	195.61	0.98	0.03
7	Chlorobenzene	151		138.339	136.237	136.806	126.991	0.89	0.04
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	492	C	408.469	414.598	385.033	401.741	0.82	0.03
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	177		147.888	141.393	144.493	139.677	0.81	0.03
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	301	C	254.564	243.54	237.702	229.783	0.80	0.04
18	4-Methyl-2-Pentanone	1	?	0	0	0	0	0.00	
19	1,1,2,2-Tetrachloroethane	1	?	15.761	15.748	15.765	15.678	15.74	0.00
20	Tetrachloroethene	1	?	0.976	1.026	1.068	0.952	1.01	0.05
21	Toluene	295		245.793	243.449	220.878	256.737	0.82	0.06
22	1,1,1-Trichloroethane	249	C	219.183	224.227	211.304	204.706	0.86	0.04
23	Trichloroethene	197	C	122.732	128.205	112.552	123.592	0.62	0.05
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0	0	0	0	0.00	
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	18.466	18.557	18.549	18.412	18.50	0.00
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	1	?	31.322	31.43	31.343	31.206	31.33	0.00

Standard Number	CC102412
Canister Number	PE013/04699
Lab Identification Code	YC
Analytical Method	TO14
Sample ID	93-WL-0048

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	300	C	264.67	283.634	232.637	244.897	0.85	0.09
2	Benzene	1	?	7.149	8.743	8.612	9.083	8.40	0.10
3	Bromoform	1	?	5.979	5.983	5.981	5.973	5.98	0.00
4	1-Butanol	250		0	0	0	0	ND	ND
5	2-Butanone	1	?	4.089	5.564	6.083	6.308	5.51	0.18
6	Carbon Tetrachloride	1	C?	0	0	0	0	0.00	
7	Chlorobenzene	1	?	3.59	3.696	3.704	3.725	3.68	0.02
8	Chloroform	1	?	0	0	0	0	0.00	
9	Cyclohexane	351	C	259.224	259.006	252.042	244.157	0.72	0.03
10	1,1-Dichloroethane	1	?	0	0	0	0	0.00	
11	1,2-Dichloroethane	1	C?	0	0	0	0	0.00	
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	1	?	0	0	0	0	0.00	
14	Ethyl benzene	1	?	9.873	9.887	9.896	9.898	9.89	0.00
15	Ethyl ether	103		81.022	61.399	56.669	55.351	0.62	0.19
16	Methanol	151		0	0	0	0	ND	ND
17	Methylene chloride	1	C?	0	0	0	0	0.00	
18	4-Methyl-2-Pentanone	200		154.553	169.998	156.965	159.13	0.80	0.04
19	1,1,2,2-Tetrachloroethane	1	?	8.017	8.013	8.017	8.017	8.02	0.00
20	Tetrachloroethene	1	?	0.49	0.488	0.515	0.513	0.50	0.03
21	Toluene	101		74.037	75.999	68.615	73.852	0.72	0.04
22	1,1,1-Trichloroethane	1	C?	3.526	3.58	3.576	3.555	3.56	0.01
23	Trichloroethene	1	C?	6.58	6.628	6.598	6.601	6.60	0.00
24	1,1,2-CL3-1,2,2-F3-Ethane	1	?	0.719	0.92	1.097	1.348	1.02	0.26
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	9.173	9.187	9.177	9.183	9.18	0.00
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	151		59.309	58.919	59.581	57.859	0.39	0.01

Standard Number	CC36401
Canister Number	PE005/04432
Lab Identification Code	YC
Analytical Method	TO14
Sample ID	93-WL-0047

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	1	C?	0	0	0	0	0.00	
2	Benzene	4.9		6.256	6.339	6.104	7.834	1.35	0.12
3	Bromoform	1	?	2.394	2.396	2.394	2.397	2.40	0.00
4	1-Butanol	1	?	11.619	9.571	9.315	11.221	10.43	0.11
5	2-Butanone	1	?	2.017	2.322	2.357	2.133	2.21	0.07
6	Carbon Tetrachloride	10.2	C	7.015	6.691	6.354	7.795	0.68	0.09
7	Chlorobenzene	2.0		3.067	2.986	3.195	3.038	1.54	0.03
8	Chloroform	1.9		2.062	2.026	2.048	2.02	1.07	0.01
9	Cyclohexane	10.0	C	4.134	3.205	2.869	3.205	0.34	0.16
10	1,1-Dichloroethane	2.0		0	0	0	0	ND	ND
11	1,2-Dichloroethane	10.0	C	8.895	8.609	8.216	9.688	0.89	0.07
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00	
13	cis-Dichloroethene	9.9		7.245	8.017	7.932	7.999	0.79	0.05
14	Ethyl benzene	5.0		7.107	7.041	7.442	7.115	1.44	0.03
15	Ethyl ether	1	?	0	0	0	0	0.00	
16	Methanol	1	?	0	0	0	0	0.00	
17	Methylene chloride	19.8	C	10.704	9.163	9.474	9.43	0.49	0.07
18	4-Methyl-2-Pentanone	1	?	0.729	0	0	14.342	3.77	1.87
19	1,1,2,2-Tetrachloroethane	4.9		10.768	10.346	11.124	10.549	2.18	0.03
20	Tetrachloroethene	1	?	0	0	0	0	0.00	
21	Toluene	2.1		0	0	0	0	ND	ND
22	1,1,1-Trichloroethane	14.8	C	13.071	12.943	12.383	13.071	0.87	0.03
23	Trichloroethene	14.8	C	10.268	9.778	10.07	10.464	0.69	0.03
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		8.232	7.716	7.819	7.88	0.80	0.03
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00	
26	1,2,4-Trimethylbenzene	1	?	3.669	3.664	3.669	3.68	3.67	0.00
27	m-Xylene	1	?	0	0	0	0	0.00	
28	o-Xylene	1	C?	0	0	0	0	0.00	
29	p-Xylene	10.0		8.808	8.741	8.894	14.342	1.02	0.27

Standard Number	CC36401
Canister Number	PE017/04704
Lab Identification Code	YC
Analytical Method	TO14
Sample ID	93-WL-0049

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	1	C?	0	0	0	0	0.00		
2	Benzene	4.9		6.425	6.768	5.694	5.641	1.25	0.09	0.08
3	Bromoform	1	?	2.396	2.392	2.395	2.399	2.40	0.00	0.00
4	1-Butanol	1	?	10.24	5.24	5.288	3.425	6.05	0.48	0.53
5	2-Butanone	1	?	2.121	2.816	1.736	1.16	1.96	0.35	0.12
6	Carbon Tetrachloride	10.2	C	7.655	7.639	6.598	6.838	0.70	0.08	0.03
7	Chlorobenzene	2.0		3.208	3.091	3.136	3.04	1.56	0.02	0.02
8	Chloroform	1.9		2.059	2.116	1.954	2.057	1.08	0.03	0.00
9	Cyclohexane	10.0	C	3.641	4.566	3.762	2.682	0.37	0.21	0.09
10	1,1-Dichloroethane	2.0		0	0	0	0	ND	ND	ND
11	1,2-Dichloroethane	10.0	C	9.478	9.37	8.725	8.784	0.91	0.04	0.03
12	1,1-Dichloroethene	1	?	0	0	0	0	0.00		
13	cis-Dichloroethene	9.9		8.169	8.27	7.958	7.885	0.82	0.02	0.03
14	Ethyl benzene	5.0		7.467	7.096	7.211	7.263	1.45	0.02	0.01
15	Ethyl ether	1	?	0	0	0	0	0.00		
16	Methanol	1	?	0	0	0	0	0.00		
17	Methylene chloride	19.8	C	9.35	10.346	9.884	10.41	0.50	0.05	0.03
18	4-Methyl-2-Pentanone	1	?	0	0.057	0	0	0.01	0.00	
19	1,1,2,2-Tetrachloroethane	4.9		11.659	10.791	11.417	11.245	2.30	0.03	0.05
20	Tetrachloroethene	1	?	0	0	0	0	0.00		
21	Toluene	2.1		0	0	0	0	ND	ND	ND
22	1,1,1-Trichloroethane	14.8	C	13.112	13.2	13.07	12.9	0.88	0.01	0.02
23	Trichloroethene	14.8	C	10.341	10.516	9.758	9.789	0.68	0.04	0.00
24	1,1,2-CL3-1,2,2-F3-Ethane	9.9		7.914	8.072	7.768	7.476	0.79	0.03	0.01
25	1,3,5-Trimethylbenzene	1	?	0	0	0	0	0.00		
26	1,2,4-Trimethylbenzene	1	?	3.664	3.668	3.66	3.653	3.66	0.00	0.00
27	m-Xylene	1	?	0	0	0	0	0.00		
28	o-Xylene	1	C?	0	0	0	0	0.00		
29	p-Xylene	10.0		9.068	8.747	8.789	8.907	0.89	0.02	0.14

SECTION 2

CYCLE 5 GAS DATA

Table 1

Gas Canister Identification

Laboratory ID Code	Special CC36059	Special Duplicate CC36059	High Cylinder CC82056	Low Cylinder CC75315	NOx Cylinder AL0353	Nitrogen Cylinder CC102583
CK	PE116/04679	PE108/04670	PE113/04676	PE139/04675	PE141/04680	PE001/04427
HE	PE119/04685	PE128/04695	PE140/04662	PE121/04687	PE117/04682	PE030/10843
HR	PE109/04671	PE103/04665	PE132/10847	PE125/04691	PE131/10846	PE136/10851
MD	PE129/04696	PE126/04692	PE142/04661	PE138/04681	PE120/04686	PE102/04664
PB	PE107/04669	PE123/04689	PE122/04688	PE133/10848	PE106/04668	PE115/04678

Table 2

Pass/Fail Summary

Lab Code	Analysis	Status	Comments
CK	GAS	Pass	0 CTAG Failures, 1.00 CTAG Score 1.00 TAG Score
HE	GAS	Pass	0 CTAG Failures, 1.00 CTC Score 0.93 TAG Score
HR	GAS	Pass	0 CTAG Failures, 1.00 CTC Score .99 TAG Score
MD	GAS	Pass	0 CTAG Failures, 1.00 CTC Score 0.96 TAG Score
PB	GAS	Pass	0 CTAG Failures, 1.00 CTC Score 0.92 TAG Score

Table 3

Gas Acceptance Criteria

Analytical Parameter	Gas Analysis	NOx Analysis
Relative Percent Accuracy	90 - 110 %	50 - 150 %
Relative Standard Deviation	90 - 110 %	80 - 120 %
Relative Percent Difference	90 - 110 %	80 - 120 %

Appendix A

Laboratory CK

This laboratory correctly quantified all analytes and achieved a perfect score for CTAGs and TAGs.

WIPP PDP Scoring Table

Laboratory	CK											
Analysis Type	Gases											
Standard No.	CC36059		CC36059		CC82056		CC75315		AL0353		CC102583	
Canister No.	PE116/04679		PE108/04670		PE113/04676		PE139/04675		PE141/04680		PE001/04427	
Comment	Special		Special Duplicate		High Conc.		Low Conc.		NOx		Blank	
No. of CTAGs Present	2		2		2		2		0		0	
No. of CTAGs Reported	2		2		2		2		0		0	
No. CTAGs Failing RPA	0		0		0		0		0		0	
No. CTAGs Failing RSD	0		0		0		0		0		0	
No. CTAGs Failing RPD	NA		0		NA		NA		NA		NA	
		Points		Points		Points		Points		Points		Points
No. of TAGs Present	7	70	7	105	7	70	7	70	1	10	0	0
No. of TAGs Reported	7	70	7	105	7	70	7	70	1	10		0
No. TAGs Failing RPA		0		0		0		0		0		0
No. TAGs Failing RSD		0		0		0		0		0		0
No. TAGs Failing RPD	NA			0	NA		NA		NA		NA	
No. of CTAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
Subtotal for Blank												50
No. of False CTAGs or TAGs in Spikes > PRDL		0		0		0		0		0		NA
CANISTER TOTALS		70		105		70		70		10		50
MAXIMUM POINTS		375										
LABORATORY SCORE	375/375	1.00	0 CTAG	Failures	0 TAG	Failures						

Standard Number	CC36059
Canister Number	PE116/04679
Lab Identification Code	CK
Analytical Method	W0630-0004-OP-01
Sample ID	69215

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.40		91.3	91.2	91.0	91.0	1.00	0.00
2	Oxygen	0.75		0.806	0.828	0.821	0.812	1.09	0.01
3	Hydrogen	0.74	C	0.761	0.769	0.756	0.759	1.03	0.01
4	Methane	1.20	C	1.20	1.19	1.19	1.19	0.99	0.00
5	Ethane	0.50		0.495	0.491	0.484	0.488	0.98	0.01
6	Propane	0.80		0.818	0.818	0.818	0.811	1.02	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.20		1.20	1.19	1.19	1.19	0.99	0.00
9	Carbon Dioxide	0.90		0.865	0.863	0.859	0.857	0.96	0.00
10	Argon	0.51		0.488	0.488	0.485	0.486	0.95	0.00

PERFORMANCE DEMONSTRATION PROGRAM

Headspace VOC and Gas Determinations
Cycle 5 - July 1993

CONFIDENTIAL - DO NOT DISTRIBUTE

Laboratory Identification Codes

Laboratory	Type of Analysis	Code
INEL - ACU or ECL		LJ
ANL-E	Gases	MD
ANL-W	Gases	CK
RFP	Gases	HR
WIPP (ITAS)	Gases	HE
WIPP (WID)	Gases	PB
EPA / MVEL		BT
ANL-E	VOCs	DO
INEL-ECU — ACU ECL	VOCs	CA
RFP	VOCs	OS
WIPP (ITAS)	VOCs	ZL
WIPP (WID)	VOCs	YC
EPA - Region 7		VG
QUANTERRA =	VOCs	PI

Standard Number	CC36059
Canister Number	PE108/04670
Lab Identification Code	CK
Analytical Method	W0630-0004-OP-01
Sample ID	69216

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Nitrogen	91.40		89.0	89.1	88.6	89.0	0.97	0.00	0.02
2	Oxygen	0.75		0.805	0.810	0.797	0.792	1.07	0.01	0.02
3	Hydrogen	0.74	C	0.744	0.735	0.738	0.725	0.99	0.01	0.03
4	Methane	1.20	C	1.17	1.17	1.15	1.16	0.97	0.01	0.03
5	Ethane	0.50		0.482	0.477	0.475	0.482	0.96	0.01	0.02
6	Propane	0.80		0.798	0.807	0.797	0.800	1.00	0.01	0.02
7	NOx	0.01	?	0	0	0	0	0.00		
8	Carbon Monoxide	1.20		1.16	1.16	1.16	1.16	0.97	0.00	0.03
9	Carbon Dioxide	0.90		0.840	0.846	0.832	0.843	0.93	0.01	0.02
10	Argon	0.51		0.475	0.476	0.474	0.474	0.93	0.00	0.02

Standard Number	CC82056
Canister Number	PE113/04676
Lab Identification Code	CK
Analytical Method	W0630-0004-OP-01
Sample ID	69213

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	76.27		76.2	77.0	77.1	77.2	1.01	0.01
2	Oxygen	5.00		5.21	5.23	5.29	5.24	1.05	0.01
3	Hydrogen	2.01	C	2.00	2.01	2.03	2.03	1.00	0.01
4	Methane	0.50	C	0.497	0.493	0.486	0.493	0.98	0.01
5	Ethane	1.19		1.15	1.16	1.17	1.16	0.97	0.01
6	Propane	1.50		1.53	1.55	1.55	1.55	1.03	0.01
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	2.00		1.98	1.99	2.00	2.01	1.00	0.01
9	Carbon Dioxide	9.02		8.57	8.66	8.68	8.67	0.96	0.01
10	Argon	2.51		2.39	2.42	2.42	2.42	0.96	0.01

100

Standard Number	CC75315
Canister Number	PE139/04675
Lab Identification Code	CK
Analytical Method	W0630-0004-OP-01
Sample ID	69214

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		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.61		91.3	90.8	91.0	91.1	0.99	0.00
2	Oxygen	0.99		1.09	1.09	1.10	1.09	1.10	0.00
3	Hydrogen	0.50	C	0.509	0.511	0.511	0.510	1.02	0.00
4	Methane	1.00	C	0.985	0.987	0.983	0.995	0.99	0.01
5	Ethane	1.49		1.40	1.40	1.39	1.40	0.94	0.00
6	Propane	1.26		1.28	1.29	1.29	1.28	1.02	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.39		1.39	1.39	1.39	1.39	1.00	0.00
9	Carbon Dioxide	0.75		0.762	0.758	0.755	0.762	1.01	0.00
10	Argon	1.01		0.983	0.983	0.984	0.984	0.97	0.00

1.020

Standard Number	AL0353
Canister Number	PE141/04680
Lab Identification Code	CK
Analytical Method	W0630-0005-KP-01
Sample ID	69217

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	99.97		0	0	0	0	0.00	
2	Oxygen	0.1	?	0	0	0	0	0.00	
3	Hydrogen	0.1	C?	0	0	0	0	0.00	
4	Methane	0.1	C?	0	0	0	0	0.00	
5	Ethane	0.1	?	0	0	0	0	0.00	
6	Propane	0.1	?	0	0	0	0	0.00	
7	NOx	0.0300		0.0406	0.0344	0.0390	0.0356	1.25	0.08
8	Carbon Monoxide	0.01	?	0	0	0	0	0.00	
9	Carbon Dioxide	0.1	?	0	0	0	0	0.00	
10	Argon	0.1	?	0	0	0	0	0.00	

Appendix B

Laboratory HE

This laboratory achieved a perfect score for CTAGs. This laboratory missed the RPA criterion for oxygen in the Special, Special Duplicate, and Low canisters and for ethane in the Special and High canisters.

WIPP PDP Scoring Table

Laboratory	HE											
Analysis Type	Gases											
Standard No.	CC36059		CC36059		CC82056		CC75315		AL0353		CC102583	
Canister No.	PE119/04685		PE128/04695		PE140/04662		PE121/04687		PE117/04682		PE030/10843	
Comment	Special		Special Duplicate		High Conc.		Low Conc.		NOx		Blank	
No. of CTAGs Present	2		2		2		2		0		0	
No. of CTAGs Reported	2		2		2		2		0		0	
No. CTAGs Failing RPA	0		0		0		0		0		0	
No. CTAGs Failing RSD	0		0		0		0		0		0	
No. CTAGs Failing RPD	NA		0		NA		NA		NA		NA	
		Points		Points		Points		Points		Points		Points
No. of TAGs Present	7	70	7	105	7	70	7	70	1	10	0	0
No. of TAGs Reported	7	70	7	105	7	70	7	70	1	10		0
No. TAGs Failing RPA	2	-10	1	-5	1	-5	1	-5		0		0
No. TAGs Failing RSD		0		0		0		0		0		0
No. TAGs Failing RPD	NA			0	NA		NA		NA		NA	
No. of CTAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
Subtotal for Blank												50
No. of False CTAGs or TAGs in Spikes > PRDL		0		0		0		0		0		NA
CANISTER TOTALS		60		100		65		65		10		50
MAXIMUM POINTS		375										
LABORATORY SCORE	350/375	0.93	0 CTAG	Failures	5 TAG	Failures						

Standard Number	CC36059
Canister Number	PE119/04685
Lab Identification Code	HE
Analytical Method	GC-TCD, GC-FID
Sample ID	AB1382

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.40		91.4	91.1	90.9	90.6	1.00	0.00
2	Oxygen	0.75		0.853	0.850	0.841	0.835	1.13	0.01
3	Hydrogen	0.74	C	0.778	0.771	0.768	0.771	1.04	0.01
4	Methane	1.20	C	1.22	1.21	1.21	1.22	1.01	0.00
5	Ethane	0.50		0.598	0.598	0.585	0.584	1.18	0.01
6	Propane	0.80		0.861	0.857	0.848	0.853	1.07	0.01
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.20		1.18	1.17	1.17	1.18	0.98	0.00
9	Carbon Dioxide	0.90		0.935	0.921	0.922	0.915	1.03	0.01
10	Argon	0.51		0.509	0.501	0.504	0.501	0.99	0.01

Standard Number	CC36059
Canister Number	PE128/04695
Lab Identification Code	HE
Analytical Method	GC-TCD, GC-FID
Sample ID	AB1383

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Nitrogen	91.40		90.6	90.6	90.5	90.3	0.99	0.00	0.01
2	Oxygen	0.75		0.868	0.878	0.864	0.867	1.16	0.01	0.03
3	Hydrogen	0.74	C	0.765	0.762	0.759	0.765	1.03	0.00	0.01
4	Methane	1.20	C	1.12	1.10	1.16	1.21	0.96	0.04	0.06
5	Ethane	0.50		0.535	0.522	0.545	0.575	1.09	0.04	0.08
6	Propane	0.80		0.793	0.765	0.798	0.843	1.00	0.04	0.07
7	NOx	0.01	?	0	0	0	0	0.00		
8	Carbon Monoxide	1.20		1.17	1.16	1.16	1.16	0.97	0.00	0.01
9	Carbon Dioxide	0.90		0.916	0.911	0.906	0.906	1.01	0.01	0.01
10	Argon	0.51		0.497	0.496	0.499	0.494	0.97	0.00	0.01

Standard Number	CC82056
Canister Number	PE140/04662
Lab Identification Code	HE
Analytical Method	GC-TCD/GC-FID
Sample ID	AB1380

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	76.27		74.5	74.7	74.5	74.3	0.98	0.00
2	Oxygen	5.00		5.25	5.15	5.13	5.16	1.03	0.01
3	Hydrogen	2.01	C	2.06	2.05	2.09	2.06	1.03	0.01
4	Methane	0.50	C	0.521	0.529	0.531	0.528	1.05	0.01
5	Ethane	1.19		1.39	1.40	1.42	1.42	1.18	0.01
6	Propane	1.50		1.61	1.63	1.64	1.64	1.09	0.01
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	2.00		1.97	1.96	1.98	1.95	0.98	0.01
9	Carbon Dioxide	9.02		9.51	9.67	9.66	9.63	1.07	0.01
10	Argon	2.51		2.50	2.49	2.49	2.48	0.99	0.00

Standard Number	CC75315
Canister Number	PE121/04687
Lab Identification Code	HE
Analytical Method	GC-TCD, GC-FID
Sample ID	AB1381

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.61		88.7	88.7	88.4	88.2	0.97	0.00
2	Oxygen	0.99		1.17	1.10	1.08	1.09	1.12	0.04
3	Hydrogen	0.50	C	0.513	0.505	0.503	0.497	1.01	0.01
4	Methane	1.00	C	0.957	1.00	1.01	1.01	0.99	0.03
5	Ethane	1.49		1.56	1.63	1.64	1.65	1.09	0.03
6	Propane	1.26		1.25	1.31	1.31	1.32	1.03	0.02
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.39		1.40	1.35	1.37	1.25	0.97	0.05
9	Carbon Dioxide	0.75		0.874	0.784	0.797	0.799	1.08	0.05
10	Argon	1.01		1.02	1.01	1.01	1.01	1.00	0.00

Standard Number	AL0353
Canister Number	PE117/04682
Lab Identification Code	HE
Analytical Method	NIOSH 5320
Sample ID	AB1384

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	99.97		0	0	0	0	0.00	
2	Oxygen	0.1	?	0	0	0	0	0.00	
3	Hydrogen	0.1	C?	0	0	0	0	0.00	
4	Methane	0.1	C?	0	0	0	0	0.00	
5	Ethane	0.1	?	0	0	0	0	0.00	
6	Propane	0.1	?	0	0	0	0	0.00	
7	NOx	0.0300		0.0257	0.0272	0.0288	0.0288	0.92	0.05
8	Carbon Monoxide	0.01	?	0	0	0	0	0.00	
9	Carbon Dioxide	0.1	?	0	0	0	0	0.00	
10	Argon	0.1	?	0	0	0	0	0.00	

Appendix C

Laboratory HR

This laboratory achieved a perfect score for CTAGs and missed the RPA criterion for only one TAG, NOx.

WIPP PDP Scoring _able

Laboratory	HR											
Analysis Type	Gases											
Standard No.	CC36059		CC36059		CC82056		CC75315		AL0353		CC102583	
Canister No.	PE109/04671		PE103/04665		PE132/10847		PE125/04691		PE131/10846		PE136/10851	
Comment	Special		Special Duplicate		High Conc.		Low Conc.		NOx		Blank	
No. of CTAGs Present	2		2		2		2		0		0	
No. of CTAGs Reported	2		2		2		2		0		0	
No. CTAGs Failing RPA	0		0		0		0		0		0	
No. CTAGs Failing RSD	0		0		0		0		0		0	
No. CTAGs Failing RPD	NA		0		NA		NA		NA		NA	
		Points		Points		Points		Points		Points		Points
No. of TAGs Present	7	70	7	105	7	70	7	70	1	10	0	0
No. of TAGs Reported	7	70	7	105	7	70	7	70	1	10		0
No. TAGs Failing RPA		0		0		0		0	1	-5		0
No. TAGs Failing RSD		0		0		0		0		0		0
No. TAGs Failing RPD	NA			0	NA		NA		NA		NA	
No. of CTAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
Subtotal for Blank												50
No. of False CTAGs or TAGs in Spikes > PRDL		0		0		0		0		0		NA
CANISTER TOTALS		70		105		70		70		5		50
MAXIMUM POINTS		375										
LABORATORY SCORE	370/375	0.99	0 CTAG	Failures	1 TAG	Failure						

Standard Number	CC36059
Canister Number	PE109/04671
Lab Identification Code	HR
Analytical Method	MS: L-2421
Sample ID	93-173,174,175,176

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.40		93.3959	93.4025	93.4088	93.4051	1.02	0.00
2	Oxygen	0.75		0.7692	0.7705	0.7733	0.7725	1.03	0.00
3	Hydrogen	0.74	C	0.7376	0.7289	0.7285	0.7333	0.99	0.01
4	Methane	1.20	C	1.1650	1.1659	1.1637	1.1617	0.97	0.00
5	Ethane	0.50		0.4958	0.4973	0.4978	0.4961	0.99	0.00
6	Propane	0.80		0.7930	0.7931	0.7907	0.7929	0.99	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.20		1.2327	1.2307	1.2317	1.2308	1.03	0.00
9	Carbon Dioxide	0.90		0.9036	0.9040	0.8992	0.9021	1.00	0.00
10	Argon	0.51		0.5073	0.5071	0.5063	0.5055	0.99	0.00

Standard Number	CC36059
Canister Number	PE103/04665
Lab Identification Code	HR
Analytical Method	MS: L-2421
Sample ID	93-169,170,171,172

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Nitrogen	91.40		93.3697	93.3821	93.3745	93.3823	1.02	0.00	0.00
2	Oxygen	0.75		0.7827	0.7825	0.7838	0.7813	1.04	0.00	0.01
3	Hydrogen	0.74	C	0.7329	0.7285	0.7405	0.7378	0.99	0.01	0.00
4	Methane	1.20	C	1.1755	1.1739	1.1717	1.1704	0.98	0.00	0.01
5	Ethane	0.50		0.4940	0.4916	0.4881	0.4939	0.98	0.01	0.01
6	Propane	0.80		0.7968	0.7956	0.7939	0.7925	0.99	0.00	0.00
7	NOx	0.01	?	0	0	0	0	0.00		
8	Carbon Monoxide	1.20		1.2325	1.2313	1.2331	1.2321	1.03	0.00	0.00
9	Carbon Dioxide	0.90		0.9053	0.9046	0.9052	0.9017	1.00	0.00	0.00
10	Argon	0.51		0.5106	0.5099	0.5092	0.5081	1.00	0.00	0.01

Standard Number	CC82056
Canister Number	PE132/10847
Lab Identification Code	HR
Analytical Method	MS: L-2421
Sample ID	93-161,162,163,164

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	76.27		76.3111	76.3168	76.2791	76.2913	1.00	0.00
2	Oxygen	5.00		5.0465	5.0525	5.0587	5.0607	1.01	0.00
3	Hydrogen	2.01	C	1.9561	1.9411	1.9695	1.9435	0.97	0.01
4	Methane	0.50	C	0.4835	0.4841	0.4842	0.4847	0.97	0.00
5	Ethane	1.19		1.1214	1.1159	1.1184	1.1184	0.94	0.00
6	Propane	1.50		1.4762	1.4745	1.4757	1.4755	0.98	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	2.00		2.0518	2.0510	2.0520	2.0476	1.03	0.00
9	Carbon Dioxide	9.02		9.0201	9.0184	9.0167	9.0310	1.00	0.00
10	Argon	2.51		2.5333	2.5457	2.5458	2.5473	1.01	0.00

Standard Number	CC75315
Canister Number	PE125/04691
Lab Identification Code	HR
Analytical Method	MS: L-2421
Sample ID	93-165,166,167,168

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.61		91.7043	91.7274	91.7146	91.7214	1.00	0.00
2	Oxygen	0.99		1.0266	1.0187	1.0245	1.0252	1.03	0.00
3	Hydrogen	0.50	C	0.4838	0.4800	0.4781	0.4768	0.96	0.01
4	Methane	1.00	C	0.9565	0.9535	0.9584	0.9558	0.96	0.00
5	Ethane	1.49		1.4076	1.4086	1.4061	1.4074	0.94	0.00
6	Propane	1.26		1.2250	1.2207	1.2258	1.2214	0.97	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.39		1.3995	1.4006	1.3993	1.3996	1.01	0.00
9	Carbon Dioxide	0.75		0.7728	0.7698	0.7732	0.7709	1.03	0.00
10	Argon	1.01		1.0242	1.0208	1.0200	1.0215	1.01	0.00

Standard Number	AL0353
Canister Number	PE131/10846
Lab Identification Code	HR
Analytical Method	MS: L-2421
Sample ID	93-181,182,183,184

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	99.97		99.9885	99.9883	99.9867	99.9885	1.00	0.00
2	Oxygen	0.1	?	0	0	0	0	0.00	
3	Hydrogen	0.1	C?	0	0	0	0	0.00	
4	Methane	0.1	C?	0	0	0	0	0.00	
5	Ethane	0.1	?	0	0	0	0	0.00	
6	Propane	0.1	?	0	0	0	0	0.00	
7	NOx	0.0300		0.0115	0.0117	0.0133	0.0115	0.40	0.07
8	Carbon Monoxide	0.01	?	0	0	0	0	0.00	
9	Carbon Dioxide	0.1	?	0	0	0	0	0.00	
10	Argon	0.1	?	0	0	0	0	0.00	

Appendix D

Laboratory MD

This laboratory achieved a perfect score for CTAGs and missed the RPA criterion for NOx and for Carbon Monoxide in the Special and High Concentration canisters.

WIPP PDP Scoring Table

Laboratory	MD											
Analysis Type	Gases											
Standard No.	CC36059		CC36059		CC82056		CC75315		AL0353		CC102583	
Canister No.	PE129/04696		PE126/04692		PE142/04661		PE138/04681		PE120/04686		PE102/04664	
Comment	Special		Special Duplicate		High Conc.		Low Conc.		NOx		Blank	
No. of CTAGs Present	2		2		2		2		0		0	
No. of CTAGs Reported	2		2		2		2		0		0	
No. CTAGs Failing RPA	0		0		0		0		0		0	
No. CTAGs Failing RSD	0		0		0		0		0		0	
No. CTAGs Failing RPD	NA		0		NA		NA		NA		NA	
		Points		Points		Points		Points		Points		Points
No. of TAGs Present	7	70	7	105	7	70	7	70	1	10	0	0
No. of TAGs Reported	7	70	7	105	7	70	7	70	1	10		0
No. TAGs Failing RPA	1	-5		0	1	-5		0	1	-5		0
No. TAGs Failing RSD		0		0		0		0		0		0
No. TAGs Failing RPD	NA			0	NA		NA		NA		NA	
No. of CTAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
Subtotal for Blank												50
No. of False CTAGs or TAGs in Spikes > PRDL		0		0		0		0		0		NA
CANISTER TOTALS		65		105		65		70		5		50
MAXIMUM POINTS		375										
LABORATORY SCORE	360/375	0.96	0 CTAG	Failures	3 TAG	Failures						

Standard Number	CC36059
Canister Number	PE129/04696
Lab Identification Code	MD
Analytical Method	SOP: ACL-153
Sample ID	93-8152-03

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.40		91.1	91.1	91.1	91.0	1.00	0.00
2	Oxygen	0.75		0.765	0.766	0.761	0.764	1.02	0.00
3	Hydrogen	0.74	C	0.721	0.737	0.733	0.726	0.99	0.01
4	Methane	1.20	C	1.11	1.11	1.11	1.10	0.92	0.00
5	Ethane	0.50		0.524	0.527	0.524	0.532	1.05	0.01
6	Propane	0.80		0.751	0.749	0.747	0.745	0.94	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.20		1.33	1.34	1.35	1.31	1.11	0.01
9	Carbon Dioxide	0.90		0.901	0.898	0.896	0.892	1.00	0.00
10	Argon	0.51		0.526	0.522	0.519	0.524	1.03	0.01

Standard Number	CC36059
Canister Number	PE126/04692
Lab Identification Code	MD
Analytical Method	SOP: ACL-153
Sample ID	93-8152-04

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Nitrogen	91.40		91.0	91.0	91.1	91.1	1.00	0.00	0.00
2	Oxygen	0.75		0.775	0.780	0.780	0.782	1.04	0.00	0.02
3	Hydrogen	0.74	C	0.723	0.728	0.719	0.723	0.98	0.01	0.01
4	Methane	1.20	C	1.13	1.12	1.11	1.12	0.93	0.01	0.01
5	Ethane	0.50		0.535	0.541	0.537	0.539	1.08	0.00	0.02
6	Propane	0.80		0.750	0.746	0.751	0.745	0.94	0.00	0.00
7	NOx	0.01	?	0	0	0	0	0.00		
8	Carbon Monoxide	1.20		1.35	1.35	1.26	1.31	1.10	0.03	0.01
9	Carbon Dioxide	0.90		0.899	0.899	0.899	0.896	1.00	0.00	0.00
10	Argon	0.51		0.517	0.516	0.520	0.519	1.02	0.00	0.01

Standard Number	CC82056
Canister Number	PE142/04661
Lab Identification Code	MD
Analytical Method	SOP: ACL-153
Sample ID	93-8152-01

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	76.27		76.9	76.8	76.8	76.7	1.01	0.00
2	Oxygen	5.00		5.07	5.07	5.07	5.07	1.01	0.00
3	Hydrogen	2.01	C	2.02	2.01	2.01	1.97	1.00	0.01
4	Methane	0.50	C	0.478	0.476	0.476	0.477	0.95	0.00
5	Ethane	1.19		1.13	1.13	1.13	1.12	0.95	0.00
6	Propane	1.50		1.40	1.40	1.40	1.41	0.94	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	2.00		1.46	1.54	1.61	1.60	0.78	0.04
9	Carbon Dioxide	9.02		9.01	9.01	9.00	9.03	1.00	0.00
10	Argon	2.51		2.58	2.58	2.57	2.58	1.03	0.00

Standard Number	CC75315
Canister Number	PE138/04681
Lab Identification Code	MD
Analytical Method	SOP: ACL-153
Sample ID	93-8152-02

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.61		91.6	91.6	91.7	91.6	1.00	0.00
2	Oxygen	0.99		1.04	1.04	1.04	1.04	1.05	0.00
3	Hydrogen	0.50	C	0.487	0.481	0.483	0.486	0.97	0.01
4	Methane	1.00	C	0.943	0.942	0.943	0.942	0.94	0.00
5	Ethane	1.49		1.38	1.38	1.37	1.37	0.92	0.00
6	Propane	1.26		1.19	1.19	1.19	1.19	0.94	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.39		1.42	1.43	1.40	1.43	1.02	0.01
9	Carbon Dioxide	0.75		0.790	0.794	0.793	0.792	1.06	0.00
10	Argon	1.01		1.05	1.06	1.06	1.06	1.05	0.00

Standard Number	AL0353
Canister Number	PE120/04686
Lab Identification Code	MD
Analytical Method	SOP: ACL-153
Sample ID	93-8152-05

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	99.97		99.9	99.9	99.9	99.9	1.00	0.00
2	Oxygen	0.1	?	0	0	0	0	0.00	
3	Hydrogen	0.1	C?	0	0	0	0	0.00	
4	Methane	0.1	C?	0	0	0	0	0.00	
5	Ethane	0.1	?	0	0	0	0	0.00	
6	Propane	0.1	?	0	0	0	0	0.00	
7	NOx	0.0300		0.0136	0.0115	0.0125	0.0105	0.40	0.11
8	Carbon Monoxide	0.01	?	0	0	0	0	0.00	
9	Carbon Dioxide	0.1	?	0	0	0	0	0.00	
10	Argon	0.1	?	0	0	0	0	0.00	

Appendix E

Laboratory PB

This laboratory achieved a perfect score for CTAGs and missed the RPA criterion for NOx. In addition, RPA failures for ethane occurred in the Special, Special Duplicate, and High Concentration canisters, and for propane in the Special and Special Duplicate canisters.

WIPP PDP Scor...g Table

Laboratory	PB											
Analysis Type	Gases											
Standard No.	CC36059		CC36059		CC82056		CC75315		AL0353		CC102583	
Canister No.	PE107/04669		PE123/04689		PE122/04688		PE133/10848		PE106/04668		PE115/04678	
Comment	Special		Special Duplicate		High Conc.		Low Conc.		NOx		Blank	
No. of CTAGs Present	2		2		2		2		0		0	
No. of CTAGs Reported	2		2		2		2		0		0	
No. CTAGs Failing RPA	0		0		0		0		0		0	
No. CTAGs Failing RSD	0		0		0		0		0		0	
No. CTAGs Failing RPD	NA		0		NA		NA		NA		NA	
		Points		Points		Points		Points		Points		Points
No. of TAGs Present	7	70	7	105	7	70	7	70	1	10	0	0
No. of TAGs Reported	7	70	7	105	7	70	7	70	1	10		0
No. TAGs Failing RPA	2	-10	2	-10	1	-5		0	1	-5		0
No. TAGs Failing RSD		0		0		0		0		0		0
No. TAGs Failing RPD	NA			0	NA		NA		NA		NA	
No. of CTAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
No. of TAGs Reported in Blank > 0.7 * PRDL		NA		NA		NA		NA		NA		0
Subtotal for Blank												50
No. of False CTAGs or TAGs in Spikes > PRDL		0		0		0		0		0		NA
CANISTER TOTALS		60		95		65		70		5		50
MAXIMUM POINTS		375										
LABORATORY SCORE	345/375	0.92	0 CTAG	Failures	6 TAG	Failures						

Standard Number	CC36059
Canister Number	PE107/04669
Lab Identification Code	PB
Analytical Method	VG-3038
Sample ID	PE107/1, /2, /3, /4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.40		91.62	91.62	91.64	91.63	1.00	0.00
2	Oxygen	0.75		0.79	0.79	0.80	0.79	1.06	0.01
3	Hydrogen	0.74	C	0.74	0.72	0.71	0.71	0.97	0.02
4	Methane	1.20	C	1.22	1.22	1.22	1.21	1.01	0.00
5	Ethane	0.50		0.60	0.60	0.60	0.60	1.20	0.00
6	Propane	0.80		0.92	0.92	0.82	0.92	1.12	0.06
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.20		1.19	1.19	1.18	1.19	0.99	0.00
9	Carbon Dioxide	0.90		0.92	0.92	0.92	0.92	1.02	0.00
10	Argon	0.51		0.49	0.49	0.49	0.49	0.96	0.00

Standard Number	CC36059
Canister Number	PE123/04689
Lab Identification Code	PB
Analytical Method	VG-3038
Sample ID	PE123/1, /2, /3, /4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Nitrogen	91.40		91.48	91.61	91.61	91.63	1.00	0.00	0.00
2	Oxygen	0.75		0.81	0.82	0.81	0.81	1.08	0.01	0.02
3	Hydrogen	0.74	C	0.72	0.74	0.74	0.73	0.99	0.01	0.02
4	Methane	1.20	C	1.20	1.21	1.22	1.22	1.01	0.01	0.00
5	Ethane	0.50		0.60	0.61	0.60	0.60	1.21	0.01	0.00
6	Propane	0.80		0.91	0.91	0.93	0.93	1.15	0.01	0.03
7	NOx	0.01	?	0	0	0	0	0.00		
8	Carbon Monoxide	1.20		1.17	1.19	1.19	1.19	0.99	0.01	0.00
9	Carbon Dioxide	0.90		0.91	0.92	0.91	0.91	1.01	0.01	0.01
10	Argon	0.51		0.49	0.48	0.49	0.49	0.96	0.01	0.01

Standard Number	CC82056
Canister Number	PE122/04688
Lab Identification Code	PB
Analytical Method	VG-3038
Sample ID	PE122/1, /2, /3, /4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	76.27		75.90	75.87	75.92	75.88	1.00	0.00
2	Oxygen	5.00		5.20	5.20	5.20	5.20	1.04	0.00
3	Hydrogen	2.01	C	1.92	1.93	1.91	1.93	0.96	0.00
4	Methane	0.50	C	0.50	0.50	0.50	0.50	1.00	0.00
5	Ethane	1.19		1.33	1.32	1.32	1.33	1.11	0.00
6	Propane	1.50		1.61	1.61	1.61	1.61	1.07	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	2.00		1.95	1.95	1.95	1.96	0.98	0.00
9	Carbon Dioxide	9.02		9.16	9.16	9.15	9.15	1.01	0.00
10	Argon	2.51		2.44	2.44	2.44	2.44	0.97	0.00

Standard Number	CC75315
Canister Number	PE133/10848
Lab Identification Code	PB
Analytical Method	VG-3038
Sample ID	PE133/1, /2, /3, /4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	91.61		91.32	91.33	91.29	91.31	1.00	0.00
2	Oxygen	0.99		1.06	1.07	1.07	1.07	1.08	0.00
3	Hydrogen	0.50	C	0.50	0.48	0.49	0.50	0.99	0.02
4	Methane	1.00	C	1.01	1.00	1.00	1.00	1.00	0.00
5	Ethane	1.49		1.59	1.59	1.60	1.59	1.07	0.00
6	Propane	1.26		1.36	1.36	1.36	1.35	1.08	0.00
7	NOx	0.01	?	0	0	0	0	0.00	
8	Carbon Monoxide	1.39		1.37	1.37	1.37	1.37	0.99	0.00
9	Carbon Dioxide	0.75		0.80	0.80	0.81	0.81	1.07	0.01
10	Argon	1.01		1.00	1.00	1.00	1.00	0.99	0.00

Standard Number	AL0353
Canister Number	PE106/04668
Lab Identification Code	PB
Analytical Method	VG-3038
Sample ID	PE106/1, /2, /3, /4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Nitrogen	99.97		99.98	99.98	99.98	99.98	1.00	0.00
2	Oxygen	0.1	?	0	0	0	0	0.00	
3	Hydrogen	0.1	C?	0	0	0	0	0.00	
4	Methane	0.1	C?	0	0	0	0	0.00	
5	Ethane	0.1	?	0	0	0	0	0.00	
6	Propane	0.1	?	0	0	0	0	0.00	
7	NOx	0.0300		0.0105	0.0104	0.0103	0.0105	0.35	0.01
8	Carbon Monoxide	0.01	?	0	0	0	0	0.00	
9	Carbon Dioxide	0.1	?	0	0	0	0	0.00	
10	Argon	0.1	?	0	0	0	0	0.00	

WIPP TRU Waste Characterization Program

Performance Demonstration Program for the Analysis of Headspace Gases

Scoring Report - February 1995 Distribution

Cycle 6

Prepared by:

WIPP Technical Assistance Contractor

under

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Prepared for:

Carlsbad Area Office

April 1995

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WIPP TRU Waste Characterization Program

Performance Demonstration Program for the Analysis of Headspace Gases

Scoring Report - February 1995 Distribution

INTRODUCTION

This report contains the results of Cycle 6 of the blind sample distributions to laboratories participating in the headspace gas analysis portion of Performance Demonstration Program (PDP) for WIPP Waste Characterization. This distribution consisted of canisters of simulated headspace gases of known composition of flammable low molecular weight gases (hydrogen and methane) and volatile organic compounds (VOCs). The verified time of sample receipt (VTSR) for Cycle 6 is February 28, 1995, and all data were to be returned to the PDP Coordinator on or before March 28, 1995.

DATA EVALUATION METHODS

All data were analyzed according to the criteria set forth in the draft document "Performance Demonstration Program Plan for the Analysis of Simulated Headspace Gases for the TRU Waste Characterization Program", DOE/WPO 95-1076, Revision 0, Pre-Publication Draft. This document is scheduled to replace the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 2. The criteria used for scoring analytical data for accuracy and precision in this report are listed in Table 1. The criteria in the newer document were used because they better reflect the waste characterization requirements described in the TRU Waste Characterization Quality Assurance Program Plan, CAO-94-1010, Draft Revision B, July 1994 (QAPP). The relevant changes in the QAPP included:

- eliminating the analytical requirement for all the inorganic and low molecular weight gas analytes except hydrogen and methane;

- increasing the Quality Assurance Objective (QAO) acceptance ranges for accuracy and precision for the hydrogen and methane determinations; and,
- increasing the Program Required Detection Limits (PRQLs) for all of the VOCs except the alcohols and ketones to 10 ppmv.

To accommodate these changes in the QAPP, the new PDP was modified in several ways. These modifications are listed below.

- All the target gas analytes included in earlier cycles of the PDP were eliminated except for the two critical target gas analytes, hydrogen and methane.

- The hydrogen and methane blind standards were included in the same gas mix as the VOCs. This more than cut in half the number of standard mixes required and eliminated the separate distribution of a gas standard for NOx.

- For hydrogen and methane the acceptance criteria for accuracy (as percent recovery) and precision (as relative standard deviation or relative percent difference) were changed to $\pm 30\%$ and 25%, respectively.

- The PRQL for all VOCs on the target analyte list except the alcohols and ketones was changed to 10 ppmv. The PRQL for the alcohols and ketones remained at 100 ppmv.

For this cycle, the data were also scored according to the criteria set forth in the "Performance Demonstration Program Plan for the WIPP Experimental Waste Characterization Program", DOE/WPO 91-016, Revision 2. Differences in the scoring results obtained for the older criteria are discussed in the appendices to this report.

RESULTS PRESENTATION

Although the individual gas standards contained both the VOC mix and the hydrogen/methane mix, the principle of scoring these analyte groups separately was retained. Under the current scoring criteria it is still possible for a laboratory to qualify for either VOC analysis, or for hydrogen/methane analyses, or for both analyses. This report presents data for VOC and for hydrogen/methane separately. The presentation for each type of analysis consists of a table summarizing the performance of all the participants and separate, laboratory-specific appendices detailing each participant's performance by canister.

Each appendix contains the following:

- A synopsis of the laboratory's performance;

- A scoring table detailing the point assignment for each sample canister, and the total score for Critical Target Compounds (CTCs) and Target Compounds (TCs) for VOCs, or for hydrogen and methane gas analyses, as applicable; and,

- A set of data tables, one for each sample canister, High, Low, and Special. In this cycle the High concentration canister for VOCs and hydrogen/methane analyses were submitted in duplicate. Each data table lists the known values of all analytes and the quadruplicate analytical results reported by the laboratory. None of the laboratories reported detecting any of the target analytes in the blanks and no data tables are provided for the Blank canisters.

ANALYTICAL SAMPLES

As with previous Cycles, the VOC and hydrogen/methane samples were prepared by an independent laboratory using SUMMA canisters provided by DOE and analytical grade gas standards procured specifically for this cycle. In cycle 6 the VOCs, hydrogen, and methane were mixed in the same canisters. Table 2 contains the canister identification numbers, their contents and recipient (listed by Laboratory Identification Code) for Cycle 6.

SUMMARY OF RESULTS

The Pass/Fail status of each Cycle 6 participant is described briefly below and presented in Tables 3 and 4 for VOC and hydrogen/methane, respectively.

VOC Analyses

- All four of the laboratories submitting data for VOC analyses, CA, DO, OS, and FI, passed all scoring criteria and qualified their procedures.

- One laboratory, YC, did not submit analytical data for VOC analyses and has not qualified its procedure.

Hydrogen/methane Analyses

- All four of the laboratories submitting data for hydrogen/methane analyses, CA, FI, MD, and OS, passed all scoring criteria and qualified their procedures.

- Two laboratories, YC and CK, did not submit analytical data for hydrogen/methane analyses and have not qualified their procedures.

INTERPRETATION OF THE APPENDIX TABLES

The data contained in the Appendices appear as they were reported by the laboratories. The terms Relative Percent Accuracy (RPA), Relative Standard Deviation (RSD) and Relative Percent Difference (RPD) are defined in detail in the Performance Demonstration Program Plan. The RPA is calculated as a percent recovery of the known value. The RSD is calculated using the sample standard deviation from the replicate data submitted for each analyte. The RPD is applicable only when duplicate canisters were submitted for analysis, as with the High Concentration canister for VOCs and hydrogen/methane analysis in Cycle 6. VOC and hydrogen/methane Pass/Fail criteria for these parameters are given in Table 1.

Data tables in the Appendices have a "Known Value" column which lists the concentration for each analyte in ppmv for VOCs and percent for hydrogen/methane analyses. In the VOC data tables, the "Flags" column shows an entry of "C" for an analyte that is a CTC while TCs have no entry.

For VOC analyses, each canister contains a subset of the 29 analytes on the target list. Accordingly, an entry of "?" in the "Flags" column indicates that the analyte was not added to the canister, and therefore should not be detected by the laboratory. In this case, the "Known Value" column lists the PRQL, as specified in the Performance Demonstration Program Plan. For all Cycle 6 participants, the detection limit achieved by the laboratory when reporting a compound as not detected was less than or equal to the PRQL. As a convention, the data tables list a value of "0" for all analytes the laboratory reported as not detected.

For VOC analyses, some laboratories reported values for analytes not added to a canister which were below or slightly above the PRQL. These are listed as the laboratories reported them, regardless of their effect on the numerical scoring. The remaining table entries are self-evident or are discussed in the individual appendix.

For hydrogen/methane analyses, the High, Duplicate, Low, and Special canisters contain both of the target compounds. The hydrogen in the Low Concentration canister was below the required PRQL and was not used in the scoring although it was quantitated within accuracy and precision criteria by all of the reporting laboratories. The "Known Value" columns on these data tables list the actual concentrations of hydrogen and methane. The "Flags" column is not used for the hydrogen and methane canisters.

All Cycle 6 participants reported acceptable blank results for both VOC and hydrogen/methane analyses, and no data tables for the Blank canisters are included in this report.

Table 1 VOC and Hydrogen/Methane Acceptance Criteria	
Analytical Parameter	**Acceptance Range**
Relative Percent Accuracy	70 - 130 %
Relative Standard Deviation	75 - 125 %
Relative Percent Difference	75 - 125 %

Table 2

Canister Identification

Laboratory ID Code	High Concentration CC30491	High Conc. Duplicate CC30491	Low Concentration CC30485	Special CC30518	Blank 502554
CA	PE006/04433	PE002/04428	PE001/04427	PE024/04713	11533
CK[1]	PE137/04698	PE134/10849	PE122/04688	PE109/04671	PE142/04661
DO[2]	PE004/04431	PE016/04703	PE021/04710	PE029/10842	PE020/04707
FI	PE030/10843	PE035/04701	PE033/04443	PE027/10840	PE034/04444
MD[1]	PE104/04666	PE132/10847	PE136/10851	PE115/04678	PE120/04686
OS	PE018/04705	PE010/04440	PE005/04432	PE028/10841	PE014/04700
YC	PE102/04442	PE022/04711	PE013/04699	PE032/10845	PE036/04708

Notes: (1) These laboratories scheduled for analyses for hydrogen and methane only.

(2) This laboratory scheduled for analyses for VOCs only.

Table 3

VOC Pass/Fail Summary

Lab Code	Analysis	Status	Comments
CA	VOC	Pass	0 CTC Failure, 1.00 CTC Score 0 TC Failure, 1.00 TC Score
DO	VOC	Pass	0 CTC Failures, 1.00 CTC Score 1 TC Failure, 0.98 TC Score
FI	VOC	Pass	1 CTC Failure, 0.98 CTC Score 1 TC Failure, 0.98 TC Score
OS	VOC	Pass	0 CTC Failures, 1.00 CTC Score 1 TC Failure, 0.98 TC Score
YC	VOC	Fail	No data submitted.

Table 4

Hydrogen/Methane Pass/Fail Summary

Lab Code	Analysis	Status	Comments
CA	Hydrogen/ Methane	Pass	0 Hydrogen/Methane Failures 1.00 Score
CK	Hydrogen/ Methane	Fail	No data submitted.
FI	Hydrogen/ Methane	Pass	0 Hydrogen/Methane Failures 1.00 Score
MD	Hydrogen/ Methane	Pass	0 Hydrogen/Methane Failures 1.00 Score
OS	Hydrogen/ Methane	Pass	0 Hydrogen/Methane Failures 1.00 Score
YC	Hydrogen/ Methane	Fail	No data submitted.

Appendix A

Laboratory CA - VOC Data

This laboratory submitted data for GC/MS Analytical Method 430.1 and GC Method 440.1. Table A-1 summarizes the results of the performance scoring for this laboratory. No problems were encountered and this laboratory received a perfect score for CTCs and TCs.

The low concentration canister contained several compounds with known concentrations less than the required PRQL. This included three non-alcohol CTCs, one non-alcohol TC, and one non-alcohol, non-target compound (NTC). Each of these compounds was present at less than the current PRQL of 10 ppmv but greater than the old PRQL of 1 ppmv. In addition, two compounds in the alcohol/ketone group, 1-butanol and 4-methyl-2-pentanone, were also present in both the low concentration canister and the "special" canister at less than their PRQL of 100 ppmv. The PRQL for the alcohol/ketone group did not change between Cycles 5 and 6.

If all of these additional compounds had been included in the scoring based on the old criteria, laboratory CA would still have had a near perfect score. Table A-2 summarizes the results of the performance scoring for this laboratory under the old performance criteria. All RPA, RSD, and RPD would still have been met. The only point loss would have been scored because the laboratory failed to identify the single, intentional, NTC (1,2,4-trichlorobenzene).

TABLE A-1

WIPP VOC SCORING AGAINST CURRENT CRITERIA

Laboratory	CA									
Analysis Type	VOC									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE006/04433		PE002/04428		PE001/04427		PE024/04713		11533	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Special		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTCs Present	6	60	6	90	3	30	2	20	0	40
CTCs Reported	6	60	6	90	3	30	2	20	0	40
CTCs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
TCs Present	6	60	6	90	3	30	5	50	0	21
TCs Reported	6	60	6	90	3	30	5	50	0	21
TCs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RPD	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a
NTCs Present	0	0	0	0	0	0	0	0	0	0
NTCs Reported	0	0	0	0	0	0	0	0	0	0
False CTCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
False TCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTC TOTALS		60		90		30		20		40
TC TOTALS		60		90		30		50		21

CTC SCORE	Max Pts	240	Total Pts	240	Percent	100	Failures	0	PASSED	
TC SCORE	Max Pts	251	Total Pts	251	Percent	100	Failures	0	PASSED	

TABLE A-2

WIPP VOC SCORING AGAINST PRE-1995 CRITERIA

Laboratory	CA									
Analysis Type	VOC									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE006/04433		PE002/04428		PE001/04427		PE024/04713		11533	
Comment	High Conc.		High Conc. Duplicate		Low Conc. *		Special **		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTCs Present	6	60	6	90	6	60	2	20	0	40
CTCs Reported	6	60	6	90	6	60	2	20	0	40
CTCs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
TCs Present	6	60	6	90	6	60	7	70	0	21
TCs Reported	6	60	6	90	6	60	7	70	0	21
TCs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RPD	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a
NTCs Present	0	0	0	0	1	5	0	0	0	1
NTCs Reported	0	0	0	0	0	0	0	0	0	1
False CTCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
False TCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTC TOTALS		60		90		60		20		40
TC TOTALS		60		90		60		70		22

CTC SCORE	Max Pts	270	Total Pts	270	Percent	100	Failures	0	PASSED	
TC SCORE	Max Pts	307	Total Pts	302	Percent	98	Failures	0	PASSED	

* Includes 3 CTCs, 3 TCs and 1 NTC below the PRQL.
** Includes 2 TCs below the PRQL.

TABLE A-3

Standard Number	CC30491
Canister Number	PE006/04433
Lab Identification Code	CA
Analytical Method	440.1/430.1
Sample ID	95059004

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	558	C	491	491	493	481	0.88	0.01
2	Benzene	10	?	0	0	0	0		
3	Bromoform	10	?	0	0	0	0		
4	1-Butanol	100	?	0	0	0	0		
5	2-Butanone	100	?	0	0	0	0		
6	Carbon Tetrachloride	330	C	412	421	415	403	1.25	0.02
7	Chlorobenzene	10	?	0	0	0	0		
8	Chloroform	10	?	0	0	0	0		
9	Cyclohexane	335	C	332	336	331	322	0.99	0.02
10	1,1-Dichloroethane	10	?	0	0	0	0		
11	1,2-Dichloroethane	228	C	249	248	250	241	1.08	0.02
12	1,1-Dichloroethene	758		751	760	750	729	0.99	0.02
13	cis-Dichloroethene	459		463	463	462	445	1.00	0.02
14	Ethyl benzene	10	?	0	0	0	0		
15	Ethyl ether	290		268	272	264	256	0.91	0.03
16	Methanol	100	?	0	0	0	0		
17	Methylene chloride	10	C?	0	0	0	0		
18	4-Methyl-2-Pentanone	100	?	0	0	0	0		
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20	Tetrachloroethene	10	?	0	0	0	0		
21	Toluene	10	?	0	0	0	0		
22	1,1,1-Trichloroethane	445	C	513	521	514	500	1.15	0.02
23	Trichloroethene	10	C?	0	0	0	0		
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25	1,3,5-Trimethylbenzene	15		12	14	14	14	0.90	0.07
26	1,2,4-Trimethylbenzene	29		27	27	30	28	0.97	0.05
27	m-Xylene	21		21	20	21	20	0.98	0.03
28	o-Xylene	37	C	37	37	38	38	1.01	0.02
29	p-Xylene	10	?	0	0	0	0		

TABLE A-4

Standard Number	CC30491
Canister Number	PE002/04428
Lab Identification Code	CA
Analytical Method	440.1/430.1
Sample ID	95059005

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	558	C	475	499	498	496	0.88	0.02	0.01
2	Benzene	10	?	0	0	0	0			
3	Bromoform	10	?	0	0	0	0			
4	1-Butanol	100	?	0	0	0	0			
5	2-Butanone	100	?	0	0	0	0			
6	Carbon Tetrachloride	330	C	410	393	397	394	1.21	0.02	0.04
7	Chlorobenzene	10	?	0	0	0	0			
8	Chloroform	10	?	0	0	0	0			
9	Cyclohexane	335	C	328	320	324	315	0.96	0.02	0.03
10	1,1-Dichloroethane	10	?	0	0	0	0			
11	1,2-Dichloroethane	228	C	251	248	243	238	1.07	0.02	0.01
12	1,1-Dichloroethene	758		766	743	739	721	0.98	0.02	0.01
13	cis-Dichloroethene	459		473	460	444	445	0.99	0.03	0.01
14	Ethyl benzene	10	?	0	0	0	0			
15	Ethyl ether	290		267	264	259	252	0.90	0.03	0.02
16	Methanol	100	?	0	0	0	0			
17	Methylene chloride	10	C?	0	0	0	0			
18	4-Methyl-2-Pentanone	100	?	0	0	0	0			
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0			
20	Tetrachloroethene	10	?	0	0	0	0			
21	Toluene	10	?	0	0	0	0			
22	1,1,1-Trichloroethane	445	C	516	498	496	495	1.13	0.02	0.02
23	Trichloroethene	10	C?	0	0	0	0			
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0			
25	1,3,5-Trimethylbenzene	15		15	15	15	14	0.98	0.03	0.09
26	1,2,4-Trimethylbenzene	29		33	31	31	32	1.09	0.03	0.13
27	m-Xylene	21		23	21	21	21	1.02	0.05	0.05
28	o-Xylene	37	C	41	39	39	40	1.07	0.02	0.06
29	p-Xylene	10	?	0	0	0	0			

TABLE A-5

Standard Number	CC30485
Canister Number	PE001/04427
Lab Identification Code	CA
Analytical Method	440.1/430.1
Sample ID	95059002

	Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Acetone	132	C	122	117	118	117	0.90	0.02
Benzene	10	?	0	0	0	0		
Bromoform	19		19.9	19.7	19.5	19.1	1.03	0.02
1-Butanol	73		82	73	75	76	1.05	0.05
2-Butanone	100	?	0	0	0	0		
Carbon Tetrachloride	13	C	16	16	16	15	1.21	0.03
Chlorobenzene	10	?	0	0	0	0		
Chloroform	10	?	0	0	0	0		
Cyclohexane	4	C	4.2	4.0	4.0	4.0	1.01	0.02
1,1-Dichloroethane	10	?	0	0	0	0		
1,2-Dichloroethane	3	C	3.2	3.2	3.2	3.0	1.05	0.03
1,1-Dichloroethene	16		16.0	16.0	16.0	15.0	0.98	0.03
cis-Dichloroethene	10	?	0	0	0	0		
Ethyl benzene	10	?	0	0	0	0		
Ethyl ether	10	?	0	0	0	0		
Methanol	100	?	0	0	0	0		
Methylene chloride	10	C?	0	0	0	0		
4-Methyl-2-Pentanone	58		60	53	54	54	0.95	0.06
1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
Tetrachloroethene	10	?	0	0	0	0		
Toluene	10	?	0	0	0	0		
1,1,1-Trichloroethane	10	C?	0	0	0	0		
Trichloroethene	9	C	9.9	9.4	9.5	9.2	1.06	0.03
1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
1,3,5-Trimethylbenzene	5		4.7	4.6	4.7	4.6	0.93	0.01
1,2,4-Trimethylbenzene	10	?	0	0	0	0		
m-Xylene	5		4.8	4.6	4.8	4.7	0.95	0.02
o-Xylene	5	C	5.0	5.0	5.1	5.0	1.01	0.01
p-Xylene	10	?	0	0	0	0		
1,2,4-Trichlorobenzene	5		0	0	0	0		

TABLE A-6

Standard Number	CC30518
Canister Number	PE024/04713
Lab Identification Code	CA
Analytical Method	440.1/430.1
Sample ID	95059003

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	347	C	303	301	309	302	0.88	0.01
2	Benzene	100		97	101	101	95	0.99	0.03
3	Bromoform	10	?	0	0	0	0		
4	1-Butanol	80		87	86	95	92	1.13	0.05
5	2-Butanone	206		183	182	186	183	0.89	0.01
6	Carbon Tetrachloride	10	C?	0	0	0	0		
7	Chlorobenzene	10	?	0	0	0	0		
8	Chloroform	10	?	0	0	0	0		
9	Cyclohexane	31	C	30	31	31	29	0.98	0.03
10	1,1-Dichloroethane	80		80	83	83	79	1.02	0.03
11	1,2-Dichloroethane	10	C?	0	0	0	0		
12	1,1-Dichloroethene	10	?	0	0	0	0		
13	cis-Dichloroethene	10	?	0	0	0	0		
14	Ethyl benzene	10	?	0	0	0	0		
15	Ethyl ether	10	?	0	0	0	0		
16	Methanol	200		171	170	172	172	0.86	0.01
17	Methylene chloride	10	C?	0	0	0	0		
18	4-Methyl-2-Pentanone	80		78	77	81	79	0.98	0.02
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20	Tetrachloroethene	10	?	0	0	0	0		
21	Toluene	40		38	38	39	37	0.95	0.02
22	1,1,1-Trichloroethane	10	C?	0	0	0	0		
23	Trichloroethene	10	C?	0	0	0	0		
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25	1,3,5-Trimethylbenzene	10	?	0	0	0	0		
26	1,2,4-Trimethylbenzene	10	?	0	0	0	0		
27	m-Xylene	10	?	0	0	0	0		
28	o-Xylene	10	C?	0	0	0	0		
29	p-Xylene	10	?	0	0	0	0		

Appendix B

Laboratory DO - VOC Data

This laboratory submitted data for a single GC/MS procedure. The laboratory experienced a single failure for a TC. This was the RPA for bromoform in the low concentration canister. The laboratory passed the overall scoring criteria with 100% for the CTCs and 98% for the TCs. Table B-1 summarizes the results of the performance scoring for this laboratory.

The low concentration canister contained several compounds with known concentrations less than the required PRQL. This included three non-alcohol CTCs, one non-alcohol TC, and one non-alcohol, non-target compound (NTC). Each of these compounds was present at less than the current PRQL of 10 ppmv but greater than the old PRQL of 1 ppmv. In addition, two compounds in the alcohol/ketone group, 1-butanol and 4-methyl-2-pentanone, were also present in both the low concentration canister and the "special" canister at less than their PRQL of 100 ppmv. The PRQL for the alcohol/ketone group did not change between Cycles 5 and 6.

If all of these additional compounds had been included in the scoring based on the old criteria, laboratory DO would have had several more failures. In addition to the failure identified above, the laboratory failed the RPA criterion for 1-butanol in both the low concentration and special canisters. In addition, the lab reported a false positive for a chloroform, a TC, in both the high and duplicate high concentration canisters at over 6 ppmv. Finally, a point loss would also have been scored because the laboratory failed to identify the single, intentional, NTC (1,2,4-trichlorobenzene). Table B-2 summarizes the results of the performance scoring for this laboratory under the old performance criteria. Under the old criteria the laboratory would still have passed the overall scoring criteria with a 100% score for the CTCs and 93% for the TCs.

TABLE B-1

WIPP VOC SCORING AGAINST CURRENT CRITERIA

Laboratory	DO									
Analysis Type	VOC									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE004/04431		PE016/04703		PE021/04710		PE029/10842		PE020/04707	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Special		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTCs Present	6	60	6	90	3	30	2	20	0	40
CTCs Reported	6	60	6	90	3	30	2	20	0	40
CTCs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
TCs Present	6	60	6	90	3	30	5	50	0	21
TCs Reported	6	60	6	90	3	30	5	50	0	21
TCs Failing RPA	0	0	0	0	1	-5	0	0	n/a	n/a
TCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RPD	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a
NTCs Present	0	0	0	0	0	0	0	0	0	0
NTCs Reported	0	0	0	0	0	0	0	0	0	0
False CTCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
False TCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTC TOTALS		60		90		30		20		40
TC TOTALS		60		90		25		50		21

CTC SCORE	Max Pts	240	Total Pts	240	Percent	100	Failures	0	PASSED	
TC SCORE	Max Pts	251	Total Pts	246	Percent	98	Failures	1	PASSED	

TABLE B-4

Standard Number	CC30491
Canister Number	PE016/04703
Lab Identification Code	DO
Analytical Method	ACL-168
Sample ID	95804402

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	558	C	590	594	603	582	1.06	0.01	0.04
2	Benzene	10	?	0	0	0	0			
3	Bromoform	10	?	0.5	0.5	0.5	0.3	0.05	0.21	0.04
4	1-Butanol	100	?	0	0	0	0			
5	2-Butanone	100	?	0	0	0	0			
6	Carbon Tetrachloride	330	C	328	318	310	318	0.97	0.02	0.01
7	Chlorobenzene	10	?	0	0	0	0			
8	Chloroform	10	?	6	6.4	6	6	0.63	0.01	0.03
9	Cyclohexane	335	C	328	346	342	340	1.01	0.02	0.02
10	1,1-Dichloroethane	10	?	0	0	0	0			
11	1,2-Dichloroethane	228	C	196	193	194	189	0.85	0.02	0.07
12	1,1-Dichloroethene	758		782	788	798	770	1.03	0.01	0.02
13	cis-Dichloroethene	459		433	439	445	430	0.95	0.02	0.01
14	Ethyl benzene	10	?	0	0	0	0			
15	Ethyl ether	290		289	297	296	296	1.02	0.01	0.02
16	Methanol	100	?	0	0	0	0			
17	Methylene chloride	10	C?	0	0	0	0			
18	4-Methyl-2-Pentanone	100	?	0	0	0	0			
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0			
20	Tetrachloroethene	10	?	0	0	0	0			
21	Toluene	10	?	0	0	0	0			
22	1,1,1-Trichloroethane	445	C	397	398	392	380	0.88	0.02	0.02
23	Trichloroethene	10	C?	0	0	0	0			
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0			
25	1,3,5-Trimethylbenzene	15		11.0	11.0	10.9	11.0	0.73	0.00	0.15
26	1,2,4-Trimethylbenzene	29		22.9	22.8	22.4	22.6	0.78	0.01	0.18
27	m-Xylene	21		19.0	18.9	19.1	19.1	0.91	0.01	0.07
28	o-Xylene	37	C	36.3	35.6	36.0	36.3	0.97	0.01	0.09
29	p-Xylene	10	?	0	0	0	0			

TABLE B-3

Standard Number	CC30491
Canister Number	PE004/04431
Lab Identification Code	DO
Analytical Method	ACL-168
Sample ID	95804401

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	558	C	624	611	623	616	1.11	0.01
2	Benzene	10	?	0	0	0	0		
3	Bromoform	10	?	0.5	0.5	0.4	0.5	0.05	0.14
4	1-Butanol	100	?	0	0	0	0		
5	2-Butanone	100	?	0	0	0	0		
6	Carbon Tetrachloride	330	C	319	313	318	314	0.96	0.01
7	Chlorobenzene	10	?	0	0	0	0		
8	Chloroform	10	?	6.4	6.5	6.6	6.5	0.65	0.01
9	Cyclohexane	335	C	349	339	352	341	1.03	0.02
10	1,1-Dichloroethane	10	?	0	0	0	0		
11	1,2-Dichloroethane	228	C	215	207	200	203	0.90	0.03
12	1,1-Dichloroethene	758		780	779	769	754	1.02	0.02
13	cis-Dichloroethene	459		436	431	430	432	0.94	0.01
14	Ethyl benzene	10	?	0	0	0	0		
15	Ethyl ether	290		304	294	305	304	1.04	0.02
16	Methanol	100	?	0	0	0	0		
17	Methylene chloride	10	C?	0	0	0	0		
18	4-Methyl-2-Pentanone	100	?	0	0	0	0		
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20	Tetrachloroethene	10	?	0	0	0	0		
21	Toluene	10	?	0	0	0	0		
22	1,1,1-Trichloroethane	445	C	413	398	401	392	0.90	0.02
23	Trichloroethene	10	C?	0	0	0	0		
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25	1,3,5-Trimethylbenzene	15		12.6	12.9	12.9	12.7	0.85	0.01
26	1,2,4-Trimethylbenzene	29		26.6	27.5	27.7	27.1	0.94	0.02
27	m-Xylene	21		20.3	20.2	20.9	20.5	0.98	0.02
28	o-Xylene	37	C	38.7	39.5	40.6	38.4	1.06	0.03
29	p-Xylene	10	?	0	0	0	0		

TABLE B-6

Standard Number	CC30518
Canister Number	PE029/10842
Lab Identification Code	DO
Analytical Method	ACL-168
Sample ID	95804405

	Known Value	Flag	Analysis	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	347	C	392	385	374	378	1.10	0.02
2 Benzene	100		99.5	98.4	96.7	98.2	0.98	0.01
3 Bromoform	10	?	0	0	0	0		
4 1-Butanol	80		147	134	133	134	1.71	0.05
5 2-Butanone	206		228	221	219	221	1.08	0.02
6 Carbon Tetrachloride	10	C?	0	0	0	0		
7 Chlorobenzene	10	?	0	0	0	0		
8 Chloroform	10	?	0	0	0	0		
9 Cyclohexane	31	C	32.3	32.4	31.0	32.0	1.03	0.02
10 1,1-Dichloroethane	80		85.2	84.6	81.8	83.2	1.05	0.02
11 1,2-Dichloroethane	10	C?	0	0	0	0		
12 1,1-Dichloroethene	10	?	0	0	0	0		
13 cis-Dichloroethene	10	?	0	0	0	0		
14 Ethyl benzene	10	?	0	0	0	0		
15 Ethyl ether	10	?	0	0	0	0		
16 Methanol	200		238	226	211	222	1.12	0.05
17 Methylene chloride	10	C?	0	0	0	0		
18 4-Methyl-2-Pentanone	80		88.4	87.1	85.2	85.8	1.08	0.02
19 1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20 Tetrachloroethene	10	?	0	0	0	0		
21 Toluene	40		36.2	37.2	36.9	36.8	0.92	0.01
22 1,1,1-Trichloroethane	10	C?	0	0	0	0		
23 Trichloroethene	10	C?	0	0	0	0		
24 1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25 1,3,5-Trimethylbenzene	10	?	0	0	0	0		
26 1,2,4-Trimethylbenzene	10	?	0	0	0	0		
27 m-Xylene	10	?	0	0	0	0		
28 o-Xylene	10	C?	0	0	0	0		
29 p-Xylene	10	?	0	0	0	0		

TABLE B-5

Standard Number	CC30485
Canister Number	PE021/04710
Lab Identification Code	DO
Analytical Method	ACL-168
Sample ID	95804404

	Known Value	Flag	Analysis	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Acetone	132	C	152	154	153	153	1.16	0.01
Benzene	10	?	0	0	0	0		
Bromoform	19		488	475	426	473	24.50	0.06
1-Butanol	73		104	106	108	109	1.46	0.02
2-Butanone	100	?	0	0	0	0		
Carbon Tetrachloride	13	C	12.2	12.4	12.4	12.1	0.94	0.01
Chlorobenzene	10	?	0	0	0	0		
Chloroform	10	?	0	0	0	0		
Cyclohexane	4	C	4.1	4.3	4.3	4.2	1.05	0.02
1,1-Dichloroethane	10	?	0	0	0	0		
1,2-Dichloroethane	3	C	2.7	2.8	2.7	2.7	0.91	0.02
1,1-Dichloroethene	16		16.5	16.4	16.6	16.5	1.03	0.00
cis-Dichloroethene	10	?	0	0	0	0		
Ethyl benzene	10	?	0	0	0	0		
Ethyl ether	10	?	0	0	0	0		
Methanol	100	?	0	0	0	0		
Methylene chloride	10	C?	0	0	0	0		
4-Methyl-2-Pentanone	58		65.9	69.3	66.2	68.0	1.16	0.02
1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
Tetrachloroethene	10	?	0	0	0	0		
Toluene	10	?	0	0	0	0		
1,1,1-Trichloroethane	10	C?	0	0	0	0		
Trichloroethene	9	C	7.3	7.6	7.9	7.6	0.85	0.03
1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
1,3,5-Trimethylbenzene	5		4.4	4.6	4.5	4.5	0.90	0.02
1,2,4-Trimethylbenzene	10	?	0	0	0	0		
m-Xylene	5		4.9	4.9	4.9	4.9	0.98	0.00
o-Xylene	5	C	5.3	5.4	5.4	5.3	1.07	0.01
p-Xylene	10	?	0	0	0	0		
1,2,4-Trichlorobenzene	5		0	0	0	0		

however, since two of the CTCs were simply reported as less than 10 ppmv. It is at least possible that an analysis of the sample data with a required PRQL of 1 ppmv might have resulted in an accurate report for these two CTCs and consequently a passing score. The TC score would have been 93%, comfortably within the overall criteria for TC scoring.

Appendix C

Laboratory FI - VOC Data

This laboratory submitted data for a single GC/MS procedure, identified as TO-14. The laboratory experienced a single failure each for a CTC and a TC. These were the RPAs for cyclohexane and methanol, respectively, in the special canister. The laboratory passed the overall scoring criteria with 98% scores for both CTCs and TCs. Table C-1 summarizes the results of the performance scoring for this laboratory.

The low concentration canister contained several compounds with known concentrations less than the required PRQL. This included three non-alcohol CTCs, one non-alcohol TC, and one non-alcohol, non-target compound (NTC). Each of these compounds was present at less than the current PRQL of 10 ppmv but greater than the old PRQL of 1 ppmv. In addition, two compounds in the alcohol/ketone group, 1-butanol and 4-methyl-2-pentanone, were also present in both the low concentration canister and the special canister at less than their PRQL of 100 ppmv. The PRQL for the alcohol/ketone group did not change between Cycles 5 and 6.

If all of these additional compounds had been included in the scoring based on the old criteria, laboratory FI would have had significantly more failures. In addition to the failures identified above, the laboratory failed to identify two CTCs, cyclohexane and 1,2-dichloroethane, in the low concentration canister. This laboratory also experienced RPA failures for 1-butanol in the both the low concentration and special canisters. Laboratory FI also reported false positives for a TC, chloroform, in both the high and duplicate high concentration canisters at over 6 ppmv. Finally, a point loss would also have been scored because the laboratory failed to identify the single, intentional, NTC (1,2,4-trichlorobenzene). Table C-2 summarizes the results of the performance scoring for this laboratory under the old performance criteria. Under the old criteria this laboratory would have failed to obtain the required 95% score for CTCs. It is not possible to draw a firm conclusion from this scoring,

Canister Number	PE035/004701
Lab Identification Code	FI
Analytical Method	TO-14
Sample ID	AE3906R1 AE3906R2 AE3906R3 AE3906R4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	558	C	775	692	617	601	1.20	0.12	0.03
2	Benzene	10	?	0	0	0	0			
3	Bromoform	10	?	0	0	0	0			
4	1-Butanol	100	?	0	0	0	0			
5	2-Butanone	100	?	0	0	0	0			
6	Carbon Tetrachloride	330	C	303	308	312	318	0.94	0.02	0.01
7	Chlorobenzene	10	?	0	0	0	0			
8	Chloroform	10	?	7.0	6.8	6.3	6.4	0.66	0.05	0.02
9	Cyclohexane	335	C	301	301	297	302	0.90	0.01	0.00
10	1,1-Dichloroethane	10	?	0	0	0	0			
11	1,2-Dichloroethane	228	C	206	209	220	227	0.95	0.05	0.01
12	1,1-Dichloroethene	758		721	671	803	730	0.96	0.07	0.05
13	cis-Dichloroethene	459		422	424	399	405	0.90	0.03	0.02
14	Ethyl benzene	10	?	0	0	0	0			
15	Ethyl ether	290		410	378	329	331	1.25	0.11	0.02
16	Methanol	100	?	0	0	0	0			
17	Methylene chloride	10	C?	0	0	0	0			
18	4-Methyl-2-Pentanone	100	?	0	0	0	0			
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0			
20	Tetrachloroethene	10	?	0	0	0	0			
21	Toluene	10	?	0	0	0	0			
22	1,1,1-Trichloroethane	445	C	419	413	388	401	0.91	0.03	0.03
23	Trichloroethene	10	C?	0	0	0	0			
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0			
25	1,3,5-Trimethylbenzene	15		15.4	13.8	15.7	12.9	0.96	0.09	0.07
26	1,2,4-Trimethylbenzene	29		30.7	28.2	31.0	25.6	1.00	0.09	0.04
27	m-Xylene	21		21.0	20.8	19.6	19.3	0.96	0.04	0.01
28	o-Xylene	37	C	41.2	38.2	41.8	36.2	1.06	0.07	0.05
29	p-Xylene	10	?	0	0	0	0			

TABLE C-1

WIPP VOC SCORING AGAINST CURRENT CRITERIA

aboratory	FI									
nalysis Type	VOC									
tandard No.	CC30491		CC30491		CC30485		CC30518		502554	
anister No.	PE030/10843		PE035/04701		PE033/04443		PE027/10840		PE034/04444	
omment	High Conc.		High Conc. Duplicate		Low Conc.		Special		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTCs Present	6	60	6	90	3	30	2	20	0	40
CTCs Reported	6	60	6	90	3	30	2	20	0	40
CTCs Failing RPA	0	0	0	0	0	0	1	-5	n/a	n/a
CTCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
TCs Present	6	60	6	90	3	30	5	50	0	21
TCs R ed	6	60	6	90	3	30	5	50	0	21
TCs Fa g RPA	0	0	0	0	0	0	1	-5	n/a	n/a
TCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RPD	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a
NTCs Present	0	0	0	0	0	0	0	0	0	0
NTCs Reported	0	0	0	0	0	0	0	0	0	0
False CTCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
False TCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTC TOTALS		60		90		30		15		40
TC TOTALS		60		90		30		45		21

CTC SCORE	Max Pts	240	Total Pts	235	Percent	98	Failures	1	PASSED	
TC SCORE	Max Pts	251	Total Pts	246	Percent	98	Failures	1	PASSED	

TABLE C-2

WIPP VOC SCORING AGAINST PRE-1995 CRITERIA

Laboratory	FI											
Analysis Type	VOC											
Standard No.	CC30491		CC30491		CC30485		CC30518		502554			
Canister No.	PE030/10843		PE035/04701		PE033/04443		PE027/10840		PE034/04444			
Comment	High Conc.		High Conc. Duplicate		Low Conc. *		Special **		Blank			
	#	Points	#	Points	#	Points	#	Points	#	Points		
CTCs Present	6	60	6	90	6	60	2	20	0	40		
CTCs Reported	6	60	6	90	4	40	2	20	0	40		
CTCs Failing RPA	0	0	0	0	0	0	1	-5	n/a	n/a		
CTCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a		
CTCs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a		
TCs Present	6	60	6	90	6	60	7	70	0	21		
TCs Reported	6	60	6	90	6	60	7	70	0	21		
TCs Failing RPA	0	0	0	0	1	-5	2	-10	n/a	n/a		
TCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a		
TCs Failing RPD	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a		
NTCs Present	0	0	0	0	1	5	0	0	0	1		
NTCs Reported	0	0	0	0	0	0	0	0	0	1		
False CTCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a		
False TCs >PRQL	1	-1 +	1	-1 +	0	0	0	0	n/a	n/a		
CTC TOTALS		60		90		40		15		40		
TC TOTALS		59		89		55		60		22		

CTC SCORE	Max Pts	270	Total Pts	245	Percent	91	Failures	3	FAILED			
TC SCORE	Max Pts	307	Total Pts	285	Percent	93	Failures	3	PASSED			

* Includes 3 CTCs, 3 TCs and 1 NTC below the PRQL.

** Includes 2 TCs below the PRQL.

\+ False positives were less than 10 ppmv but greater than 5 ppmv.

TABLE C-5

Standard Number	CC30485
Canister Number	PE033/04443
Lab Identification Code	FI
Analytical Method	TO-14
Sample ID	AE3901R1 AE3901R2 AE3901R3 AE3901R4

	Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Acetone	132	C	158	152	147	141	1.13	0.05
Benzene	10	?	0	0	0	0		
Bromoform	19		14.9	14.3	13.2	12.9	0.73	0.07
1-Butanol	73		47.8	36.4	41.9	35.0	0.55	0.14
2-Butanone	100	?	0	0	0	0		
Carbon Tetrachloride	13	C	11.1	10.9	10.6	10.9	0.84	0.02
Chlorobenzene	10	?	0	0	0	0		
Chloroform	10	?	0	0	0	0		
Cyclohexane	4	C	0	0	0	0		
1,1-Dichloroethane	10	?	0	0	0	0		
1,2-Dichloroethane	3	C	0	0	0	0		
1,1-Dichloroethene	16		15.8	14.6	13.4	13.4	0.89	0.08
cis-Dichloroethene	10	?	0	0	0	0		
Ethyl benzene	10	?	0	0	0	0		
Ethyl ether	10	?	0	0	0	0		
Methanol	100	?	0	0	0	0		
Methylene chloride	10	C?	0	0	0	0		
4-Methyl-2-Pentanone	58		59.7	56.4	53.3	53.7	0.96	0.05
1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
Tetrachloroethene	10	?	0	0	0	0		
Toluene	10	?	0	0	0	0		
1,1,1-Trichloroethane	10	C?	0	0	0	0		
Trichloroethene	9	C	6.8	6.7	6.5	6.6	0.74	0.02
1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
1,3,5-Trimethylbenzene	5		4.7	4.5	4.6	4.7	0.92	0.03
1,2,4-Trimethylbenzene	10	?	0	0	0	0		
m-Xylene	5		4.7	4.5	4.3	4.2	0.88	0.06
o-Xylene	5	C	5.2	5.0	4.8	5.0	1.00	0.03
p-Xylene	10	?	0	0	0	0		
1,2,4-Trichlorobenzene	5		0	0	0	0		

TABLE C-6

Standard Number	CC30518
Canister Number	PE027/10840
Lab Identification Code	FI
Analytical Method	TO-14
Sample ID	AE3903R1 AE3903R2 AE3903R3 AE3903R4

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	347	C	388	440	376	382	1.14	0.07
2	Benzene	100		90.5	88.9	92.1	91.4	0.91	0.02
3	Bromoform	10	?	0	0	0	0		
4	1-Butanol	80		55.0	53.2	51.4	43.6	0.64	0.10
5	2-Butanone	206		225	220	195	200	1.02	0.07
6	Carbon Tetrachloride	10	C?	0	0	0	0		
7	Chlorobenzene	10	?	0	0	0	0		
8	Chloroform	10	?	0	0	0	0		
9	Cyclohexane	31	C	23.0	22.6	20.0	20.0	0.69	0.08
10	1,1-Dichloroethane	80		81.7	81.9	75.0	74.9	0.98	0.05
11	1,2-Dichloroethane	10	C?	0	0	0	0		
12	1,1-Dichloroethene	10	?	0	0	0	0		
13	cis-Dichloroethene	10	?	0	0	0	0		
14	Ethyl benzene	10	?	0	0	0	0		
15	Ethyl ether	10	?	0	0	0	0		
16	Methanol	200		111	94.5	82.3	71.4	0.45	0.19
17	Methylene chloride	10	C?	0	0	0	0		
18	4-Methyl-2-Pentanone	80		83.2	79.6	74.8	73.2	0.97	0.06
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20	Tetrachloroethene	10	?	0	0	0	0		
21	Toluene	40		42.5	41.3	43.4	43.8	1.07	0.03
22	1,1,1-Trichloroethane	10	C?	0	0	0	0		
23	Trichloroethene	10	C?	0	0	0	0		
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25	1,3,5-Trimethylbenzene	10	?	0	0	0	0		
26	1,2,4-Trimethylbenzene	10	?	0	0	0	0		
27	m-Xylene	10	?	0	0	0	0		
28	o-Xylene	10	C?	0	0	0	0		
29	p-Xylene	10	?	0	0	0	0		

Appendix D

Laboratory OS - VOC Data

This laboratory submitted data for GC/MS Analytical Method L-4111. The laboratory experienced a single failure for a TC. This was the RPA for bromoform in the low concentration canister. The laboratory passed the overall scoring criteria with 100% for the CTCs and 98% for the TCs. Table D-1 summarizes the results of the performance scoring for this laboratory.

The low concentration canister contained several compounds with known concentrations less than the required PRQL. This included three non-alcohol CTCs, one non-alcohol TC, and one non-alcohol, non-target compound (NTC). Each of these compounds was present at less than the current PRQL of 10 ppmv but greater than the old PRQL of 1 ppmv. In addition, two compounds in the alcohol/ketone group, 1-butanol and 4-methyl-2-pentanone, were also present in both the low concentration canister and the special canister at less than their PRQL of 100 ppmv. The PRQL for the alcohol/ketone group did not change between Cycles 5 and 6.

If all of these additional compounds had been included in the scoring based on the old criteria, laboratory OS would have had several more failures. In addition to the failure identified above, the laboratory failed the RPA criterion for a CTC, o-xylene, in the low concentration canister. In addition, the lab reported a false positive for a TC, chloroform, in both the high and duplicate high concentration canisters. Finally, a point loss would also have been scored because the laboratory failed to identify the single, intentional, NTC (1,2,4-trichlorobenzene). Table D-2 summarizes the results of the performance scoring for this laboratory under the old performance criteria. Under the old criteria the laboratory would still have passed the overall scoring criteria with a 98% score for the CTCs and 96% for the TCs.

TABLE D-1

WIPP VOC SCORING AGAINST CURRENT CRITERIA

Laboratory	OS									
Analysis Type	VOC									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE018/04705		PE010/04440		PE005/04432		PE028/10841		PE014/04700	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Special		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTCs Present	6	60	6	90	3	30	2	20	0	40
CTCs Reported	6	60	6	90	3	30	2	20	0	40
CTCs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTCs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
TCs Present	6	60	6	90	3	30	5	50	0	21
TCs Reported	6	60	6	90	3	30	5	50	0	21
TCs Failing RPA	0	0	0	0	1	-5	0	0	n/a	n/a
TCs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
TCs Failing RPD	n/a	n/a	n/a	n/a	n/a	n/a	0	0	n/a	n/a
NTCs Present	0	0	0	0	0	0	0	0	0	0
NTCs Reported	0	0	0	0	0	0	0	0	0	0
False CTCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
False TCs >PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTC TOTALS		60		90		30		20		40
TC TOTALS		60		90		25		50		21

CTC SCORE	Max Pt	240	Total Pt	240	Percent	100	Failures	0	PASSED	
TC SCORE	Max Pt	251	Total Pt	246	Percent	98	Failures	1	PASSED	

TABLE D-2

WIPP VOC SCORING AGAINST PRE-1995 CRITERIA

Laboratory	OS											
Analysis Type	VOC											
Standard No.	CC30491			CC30491			CC30485			CC30518			502554	
Canister No.	PE018/04705			PE010/04440			PE005/04432			PE028/10841			PE014/04700	
Comment	High Conc.			High Conc. Duplicate			Low Conc. *			Special **			Blank	
	#	Points		#	Points		#	Points		#	Points		#	Points
CTCs Present	6	60		6	90		6	60		2	20		0	40
CTCs Reported	6	60		6	90		6	60		2	20		0	40
CTCs Failing RPA	0	0		0	0		1	-5		0	0		n/a	n/a
CTCs Failing RSD	0	0		0	0		0	0		0	0		n/a	n/a
CTCs Failing RPD	n/a	n/a		0	0		n/a	n/a		n/a	n/a		n/a	n/a
TCs Present	6	60		6	90		6	60		7	70		0	21
TCs Reported	6	60		6	90		6	60		7	70		0	21
TCs Failing RPA	0	0		0	0		1	-5		0	0		n/a	n/a
TCs Failing RSD	0	0		0	0		0	0		0	0		n/a	n/a
TCs Failing RPD	n/a	n/a		n/a	n/a		n/a	n/a		0	0		n/a	n/a
NTCs Present	0	0		0	0		1	5		0	0		0	1
NTCs Reported	0	0		0	0		0	0		0	0		0	1
False CTCs >PRQL	0	0		0	0		0	0		0	0		n/a	n/a
False TCs >PRQL	1	-1	+	1	-1	+	0	0		0	0		n/a	n/a
CTC TOTALS		60			90			55			20			40
TC TOTALS		59			89			55			70			22

CTC SCORE	Max Pt	270	Total Pt	265	Percent	98	Failures	1	PASSED
TC SCORE	Max Pt	307	Total Pt	295	Percent	96	Failures	1	PASSED

* Includes 3 CTCs, 3 TCs and 1 NTC below the PRQL.

** Includes 2 TCs below the PRQL.

\+ False positives were less than 10 ppmv but greater than 5 ppmv.

TABLE D-3

Standard Number	CC30491
Canister Number	PE018/04705
Lab Identification Code	OS
Analytical Method	L-4111
Sample ID	VOAE03 VOAE04 VOAG04 VOAG06

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1	Acetone	558	C	581	571	568	529	1.01	0.04
2	Benzene	10	?	0	0	0	0		
3	Bromoform	10	?	0	0	0	0		
4	1-Butanol	100	?	0	0	0	0		
5	2-Butanone	100	?	0	0	0	0		
6	Carbon Tetrachloride	330	C	334	331	333	334	1.01	0.00
7	Chlorobenzene	10	?	0	0	0	0		
8	Chloroform	10	?	5.3	5.0	4.3	4.3	0.47	0.11
9	Cyclohexane	335	C	364	374	384	385	1.12	0.03
10	1,1-Dichloroethane	10	?	0	0	0	0		
11	1,2-Dichloroethane	228	C	201	219	222	222	0.95	0.05
12	1,1-Dichloroethene	758		720	667	740	716	0.94	0.04
13	cis-Dichloroethene	459		437	417	440	443	0.95	0.03
14	Ethyl benzene	10	?	0	0	0	0		
15	Ethyl ether	290		287	285	289	294	1.00	0.01
16	Methanol	100	?	0	0	1	0		
17	Methylene chloride	10	C?	0	0	0	0		
18	4-Methyl-2-Pentanone	100	?	0	0	0	0		
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20	Tetrachloroethene	10	?	0	0	0	0		
21	Toluene	10	?	0	0	0	0		
22	1,1,1-Trichloroethane	445	C	462	425	460	473	1.02	0.05
23	Trichloroethene	10	C?	0	0	0	0		
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25	1,3,5-Trimethylbenzene	15		17.4	16.3	16.4	16.1	1.10	0.04
26	1,2,4-Trimethylbenzene	29		35.2	32.5	35.1	32.6	1.17	0.04
27	m-Xylene	21		24.6	23.9	24.2	23.8	1.15	0.01
28	o-Xylene	37	C	47.2	45.4	47.3	46.5	1.25	0.02
29	p-Xylene	10	?	0	0	0	0		

TABLE D-4

Standard Number	CC30491
Canister Number	PE010/04440
Lab Identification Code	OS
Analytical Method	L-4111
Sample ID	VOAF07 VOAF08 VOAE06 VOAG02

		Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
1	Acetone	558	C	548	571	533	529	0.98	0.04	0.03
2	Benzene	10	?	0	0	0	0			
3	Bromoform	10	?	0	0	0	0			
4	1-Butanol	100	?	0	0	0	0			
5	2-Butanone	100	?	0	0	0	0			
6	Carbon Tetrachloride	330	C	310	321	327	327	0.97	0.02	0.03
7	Chlorobenzene	10	?	0	0	0	0			
8	Chloroform	10	?	5.0	4.2	4.7	4.3	0.46	0.08	0.04
9	Cyclohexane	335	C	391	389	383	395	1.16	0.01	0.03
10	1,1-Dichloroethane	10	?	0	0	0	0			
11	1,2-Dichloroethane	228	C	227	208	212	215	0.94	0.04	0.00
12	1,1-Dichloroethene	758		665	684	676	702	0.90	0.02	0.04
13	cis-Dichloroethene	459		383	405	408	436	0.89	0.05	0.06
14	Ethyl benzene	10	?	0	0	0	0			
15	Ethyl ether	290		289	286	285	295	1.00	0.02	0.00
16	Methanol	100	?	0.0	0.0	0.0	1.1	0.00		
17	Methylene chloride	10	C?	0	0	0	0			
18	4-Methyl-2-Pentanone	100	?	0	0	0	0			
19	1,1,2,2-Tetrachloroethane	10	?	0	0	0	0			
20	Tetrachloroethene	10	?	0	0	0	0			
21	Toluene	10	?	0	0	0	0			
22	1,1,1-Trichloroethane	445	C	415	429	422	462	0.97	0.05	0.05
23	Trichloroethene	10	C?	0	0	0	0			
24	1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0			
25	1,3,5-Trimethylbenzene	15		16.0	16.7	15.6	16.0	1.07	0.03	0.03
26	1,2,4-Trimethylbenzene	29		31.1	36.6	31.1	36.8	1.17	0.10	0.00
27	m-Xylene	21		24.4	25.1	24.0	24.2	1.16	0.02	0.01
28	o-Xylene	37	C	44.8	48.4	44.3	47.8	1.25	0.04	0.01
29	p-Xylene	10	?	0	0	0	0			

TABLE D-5

Standard Number	CC30485
Canister Number	PE005/04432
Lab Identification Code	OS
Analytical Method	L-4111
Sample ID	VOAG0 VOAG09 VOAG11 VOAG14

	Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Acetone	132	C	135	134	134	134	1.02	0.01
Benzene	10	?	0	0	0	0		
Bromoform	19		40.3	40.2	41.1	41.5	2.15	0.02
1-Butanol	73		68.0	65.9	67.9	67.8	0.92	0.01
2-Butanone	100	?	0	0	0	0		
Carbon Tetrachloride	13	C	13.6	12.6	12.7	13.1	1.00	0.03
Chlorobenzene	10	?	0	0	0	0		
Chloroform	10	?	0	0	0	0		
Cyclohexane	4	C	4.8	4.8	4.4	4.8	1.18	0.04
1,1-Dichloroethane	10	?	0	0	0	0		
1,2-Dichloroethane	3	C	3.0	3.2	3.4	3.0	1.05	0.06
1,1-Dichloroethene	16		16.2	16.4	15.6	15.3	0.99	0.03
cis-Dichloroethene	10	?	0	0	0	0		
Ethyl benzene	10	?	0	0	0	0		
Ethyl ether	10	?	0	0	0	0		
Methanol	100	?	0	0	0	0		
Methylene chloride	10	C?	0	0	0	0		
4-Methyl-2-Pentanone	58		63.7	66.3	68.4	66.3	1.14	0.03
1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
Tetrachloroethene	10	?	0	0	0	0		
Toluene	10	?	0	0	0	0		
1,1,1-Trichloroethane	10	C?	0	0	0	0		
Trichloroethene	9	C	8.9	9.4	9.9	8.6	1.02	0.06
1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
1,3,5-Trimethylbenzene	5		5.9	6.0	5.2	5.5	1.13	0.07
1,2,4-Trimethylbenzene	10	?	0	0	0	0		
m-Xylene	5		5.8	5.5	5.2	5.5	1.10	0.04
o-Xylene	5	C	6.9	6.4	6.3	6.7	1.32	0.04
p-Xylene	10	?	0	0	0	0		
1,2,4-Trichlorobenzene	5		0	0	0	0		

TABLE D-6

Standard Number	CC30518
Canister Number	PE028/10841
Lab Identification Code	OS
Analytical Method	L-4111
Sample ID	VOAE0 VOAE05 VOAE07 VOAE10

	Known Value	Flag	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
1 Acetone	347	C	340	345	362	370	1.02	0.04
2 Benzene	100		103	102	103	103	1.03	0.00
3 Bromoform	10	?	0	0	0	0		
4 1-Butanol	80		83.1	83.2	85.9	88.3	1.06	0.03
5 2-Butanone	206		206	203	197	204	0.98	0.02
6 Carbon Tetrachloride	10	C?	0	0	0	0		
7 Chlorobenzene	10	?	0	0	0	0		
8 Chloroform	10	?	0	0	0	0		
9 Cyclohexane	31	C	34.3	34.7	35.8	35.8	1.13	0.02
10 1,1-Dichloroethane	80		84.9	79.3	89.4	84.6	1.06	0.05
11 1,2-Dichloroethane	10	C?	0	0	0	0		
12 1,1-Dichloroethene	10	?	0	0	0	0		
13 cis-Dichloroethene	10	?	0	0	0	0		
14 Ethyl benzene	10	?	0	0	0	0		
15 Ethyl ether	10	?	0	0	0	0		
16 Methanol	200		230	232	248	244	1.19	0.04
17 Methylene chloride	10	C?	0	0	0	0		
18 4-Methyl-2-Pentanone	80		81.8	95.0	93.2	90.7	1.13	0.06
19 1,1,2,2-Tetrachloroethane	10	?	0	0	0	0		
20 Tetrachloroethene	10	?	0	0	0	0		
21 Toluene	40		38.6	40.0	41.5	42.3	1.02	0.04
22 1,1,1-Trichloroethane	10	C?	0	0	0	0		
23 Trichloroethene	10	C?	0	0	0	0		
24 1,1,2-CL3-1,2,2-F3-Ethane	10	?	0	0	0	0		
25 1,3,5-Trimethylbenzene	10	?	0	0	0	0		
26 1,2,4-Trimethylbenzene	10	?	0	0	0	0		
27 m-Xylene	10	?	0	0	0	0		
28 o-Xylene	10	C?	0	0	0	0		
29 p-Xylene	10	?	0	0	0	0		

Appendix E

Laboratory CA - Hydrogen and Methane Data

This laboratory submitted data for GC Analytical Method 520.1. The laboratory correctly quantified hydrogen and methane in all canisters and achieved a perfect score. Table E-1 summarizes the scoring for data reported for hydrogen and methane analyses. Table E-2 lists the data reported by the laboratory for the individual analyses.

Despite passing the existing criteria easily, the data seems to indicate a probable low bias. Under the old accuracy (RPA) and precision (RSD/RPD) criteria of ±10% and 10%, respectively, this laboratory would not have passed. Two of seven RPAs were below 90% and none of the remainder exceeded 91%. Nevertheless, the precision of the reported data was excellent and all the results are well within the current criterion for the RPA.

TABLE E-1

HYDROGEN AND METHANE SCORING

Laboratory	CA									
Analysis Type	Hydrogen/Methane									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE006/04433		PE002/04428		PE001/04427		PE024/04713		11533	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Moderate Conc.		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTAGs Present	2	20	2	30	1	10	2	20	0	10
CTAGs Reported	2	20	2	30	1	10	2	20	0	10
CTAGs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
False CTAGs > PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTAG TOTALS		20		30		10		20		10

CTAG SCORE	Max Pts	90	Total Pts	90	Percent	100	Failures	0	*PASSED*

Table E-2

Standard Number	CC30491
Canister Number	PE006/04433
Lab Identification Code	CA
Analytical Method	520.1
Sample ID	95059004

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	2.11%	1.88%	1.94%	1.91%	1.94%	0.91	0.01
Methane	1.68%	1.48%	1.53%	1.55%	1.47%	0.90	0.03

Standard Number	CC30491
Canister Number	PE002/04428
Lab Identification Code	CA
Analytical Method	520.1
Sample ID	95059005

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
Hydrogen	2.11%	1.86%	1.92%	1.96%	1.93%	0.91	0.02	0.00
Methane	1.68%	1.47%	1.52%	1.51%	1.55%	0.90	0.02	0.01

Standard Number	CC30485
Canister Number	PE001/04427
Lab Identification Code	CA
Analytical Method	520.1
Sample ID	95059002

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.05%	0.04%	0.04%	0.04%	0.04%	0.89	0.00
Methane	0.39%	0.35%	0.36%	0.36%	0.36%	0.91	0.00

Standard Number	CC30518
Canister Number	PE024/04713
Lab Identification Code	CA
Analytical Method	520.1
Sample ID	95059003

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.91%	0.77%	0.75%	0.76%	0.75%	0.83	0.01
Methane	0.80%	0.69%	0.71%	0.70%	0.70%	0.87	0.01

Appendix F

Laboratory FI - Hydrogen and Methane Data

This laboratory submitted data for a GC analytical method with TCD/FID detection, ASTM 3416. This laboratory correctly quantified hydrogen and methane in all canisters and achieved a perfect score. This score would have been unchanged under the old accuracy (RPA) and precision (RSD/RPD) criteria of ±10% and 10%, respectively. Table F-1 summarizes the scoring for data reported for hydrogen and methane analyses. Table F-2 lists the data reported by the laboratory for the individual analyses.

TABLE F-1

HYDROGEN AND METHANE SCORING

Laboratory	FI									
Analysis Type	Hydrogen/Methane									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE030/10843		PE035/04701		PE033/04443		PE027/10840		PE034/04444	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Moderate Conc.		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTAGs Present	2	20	2	30	1	10	2	20	0	10
CTAGs Reported	2	20	2	30	1	10	2	20	0	10
CTAGs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
False CTAGs > PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTAG TOTALS		20		30		10		20		10

CTAG SCORE	Max Pts	90	Total Pts	90	Percent	100	Failures	0	*PASSED*	

Table F-2

Standard Number	CC30491
Canister Number	PE030/10843
Lab Identification Code	FI
Analytical Method	TCD/FID
Sample ID	AE3905

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	2.11%	2.19%	2.19%	2.18%	2.18%	1.04	0.00
Methane	1.68%	1.72%	1.71%	1.72%	1.74%	1.03	0.01

Standard Number	CC30491
Canister Number	PE035/04701
Lab Identification Code	FI
Analytical Method	TCD/FID
Sample ID	AE3906

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
Hydrogen	2.11%	2.20%	2.20%	2.18%	2.18%	1.04	0.01	0.00
Methane	1.68%	1.64%	1.67%	1.73%	1.74%	1.01	0.03	0.02

Standard Number	CC30485
Canister Number	PE033/04443
Lab Identification Code	FI
Analytical Method	TCD/FID
Sample ID	AE3901

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.05%	0.05%	0.05%	0.05%	0.05%	1.04	0.01
Methane	0.39%	0.42%	0.42%	0.42%	0.42%	1.07	0.01

Standard Number	CC30518
Canister Number	PE027/10840
Lab Identification Code	FI
Analytical Method	TCD/FID
Sample ID	AE3903

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.91%	0.90%	0.89%	0.88%	0.89%	0.98	0.01
Methane	0.80%	0.83%	0.83%	0.84%	0.84%	1.04	0.00

Appendix G

Laboratory MD - Hydrogen and Methane Data

This laboratory submitted data for MS determination of hydrogen and methane. It correctly quantified hydrogen and methane in all canisters and achieved a perfect score. This score would have been unchanged under the old accuracy (RPA) and precision (RSD/RPD) criteria of $\pm 10\%$ and 10%, respectively. Table G-1 summarizes the scoring for data reported for hydrogen and methane analyses. Table G-2 lists the data reported by the laboratory for the individual analyses.

TABLE G-1

HYDROGEN AND METHANE SCORING

Laboratory	MD									
Analysis Type	Hydrogen/Methane									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE104/04666		PE132/10847		PE136/10851		PE115/04678		PE120/04686	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Moderate Conc.		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTAGs Present	2	20	2	30	1	10	2	20	0	10
CTAGs Reported	2	20	2	30	1	10	2	20	0	10
CTAGs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
False CTAGs > PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTAG TOTALS		20		30		10		20		10

CTAG SCORE	Max Pts	90	Total Pts	90	Percent	100	Failures	0	*PASSED*

Table G-2

Standard Number	CC30491
Canister Number	PE104/04666
Lab Identification Code	MD
Analytical Method	ACL-153
Sample ID	95-8045-01

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	2.11%	2.11%	2.10%	2.16%	2.17%	1.01	0.02
Methane	1.68%	1.66%	1.66%	1.66%	1.67%	0.99	0.00

Standard Number	CC30491
Canister Number	PE132/10847
Lab Identification Code	MD
Analytical Method	ACL-153
Sample ID	95-8045-04

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
Hydrogen	2.11%	2.14%	2.16%	2.18%	2.13%	1.02	0.01	0.01
Methane	1.68%	1.65%	1.65%	1.67%	1.65%	0.99	0.01	0.00

Standard Number	CC30485
Canister Number	PE136/10851
Lab Identification Code	MD
Analytical Method	ACL-153
Sample ID	95-8045-05

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.05%	0.04%	0.04%	0.05%	0.05%	0.93	0.03
Methane	0.39%	0.38%	0.38%	0.37%	0.38%	0.96	0.00

Standard Number	CC30518
Canister Number	PE115/04678
Lab Identification Code	MD
Analytical Method	ACL-153
Sample ID	95-8045-02

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.91%	0.83%	0.83%	0.83%	0.83%	0.92	0.00
Methane	0.80%	0.75%	0.75%	0.75%	0.75%	0.94	0.00

Appendix H

Laboratory OS - Hydrogen and Methane Data

This laboratory submitted data for MS Analytical Method L-2421. This laboratory correctly quantified hydrogen and methane in all canisters and achieved a perfect score. This score would have been unchanged under the old accuracy (RPA) and precision (RSD/RPD) criteria of ±10% and 10%, respectively. Table H-1 summarizes the scoring for data reported for hydrogen and methane analyses. Table H-2 lists the data reported by the laboratory for the individual analyses.

TABLE H-1

HYDROGEN AND METHANE SCORING

Laboratory	OS									
Analysis Type	Hydrogen/Methane									
Standard No.	CC30491		CC30491		CC30485		CC30518		502554	
Canister No.	PE018/04705		PE010/04440		PE005/04432		PE028/10841		PE014/04700	
Comment	High Conc.		High Conc. Duplicate		Low Conc.		Moderate Conc.		Blank	
	#	Points	#	Points	#	Points	#	Points	#	Points
CTAGs Present	2	20	2	30	1	10	2	20	0	10
CTAGs Reported	2	20	2	30	1	10	2	20	0	10
CTAGs Failing RPA	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RSD	0	0	0	0	0	0	0	0	n/a	n/a
CTAGs Failing RPD	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a	n/a
False CTAGs > PRQL	0	0	0	0	0	0	0	0	n/a	n/a
CTAG TOTALS		20		30		10		20		10

CTAG SCORE	Max Pts	90	Total Pt	90	Percent	100	Failures	0	*PASSED*	

Table H-2

Standard Number	CC30491
Canister Number	PE018/04705
Lab Identification Code	OS
Analytical Method	L-2421
Sample ID	95-171, 95-172, 95-173, 95-174

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	2.11%	2.14%	2.14%	2.15%	2.14%	1.02	0.00
Methane	1.68%	1.72%	1.74%	1.74%	1.73%	1.03	0.01

Standard Number	CC30491
Canister Number	PE010/04440
Lab Identification Code	OS
Analytical Method	L-2421
Sample ID	95-183, 95-184, 95-185, 95-186

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD	RPD
Hydrogen	2.11%	2.12%	2.13%	2.13%	2.15%	1.01	0.00	0.00
Methane	1.68%	1.73%	1.73%	1.74%	1.74%	1.03	0.00	0.00

Standard Number	CC30485
Canister Number	PE005/04432
Lab Identification Code	OS
Analytical Method	L-2421
Sample ID	95-167, 95-168, 95-169, 95-170

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.05%	0.05%	0.05%	0.05%	0.05%	0.97	0.02
Methane	0.39%	0.39%	0.40%	0.40%	0.41%	1.02	0.02

Standard Number	CC30518
Canister Number	PE0028/108841
Lab Identification Code	OS
Analytical Method	L-2421
Sample ID	95-175, 95-176, 95-177, 95-178

	Known Value	Analysis 1	Analysis 2	Analysis 3	Analysis 4	RPA	RSD
Hydrogen	0.91%	0.87%	0.86%	0.87%	0.87%	0.95	0.00
Methane	0.80%	0.81%	0.80%	0.81%	0.81%	1.01	0.01