SOIL VAPOR EXTRACTION SYSTEM EVALUATION
DELPHI ENERGY & ENGINE MANAGEMENT SYSTEMS
LEXINGTON AVENUE
ROCHESTER, NEW YORK

by

Haley & Aldrich of New York
Rochester, New York

for

Delphi Energy & Engine Management Systems
Rochester, New York

File No. 70014-051
April 1998

HALEY & ALDRICH

UNDERGROUND
ENGINEERING &
ENVIRONMENTAL
SOLUTIONS

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HALEY & ALDRICH

27 April 1998
File No. 70014-051

Delphi Energy & Engine Management Systems
1000 Lexington Avenue
P.O. Box 92700
Rochester, New York 14692-8800

Attention: Mr. Richard C. Eisenman
Senior Environmental Engineer

Subject: Soil Vapor Extraction System Evaluation
Delphi Energy & Engine Management Systems Facility
Lexington Avenue
Rochester, New York

Gentlemen:

This letter report presents an evaluation by Haley & Aldrich of New York of the results of pilot testing, start-up monitoring, and subsequent operational monitoring for a Soil Vapor Extraction (SVE) system at the Delphi Energy & Engine Management Systems (Delphi) facility in Rochester, New York.

The SVE system is located in Degreaser Investigation Study Area 5. The system was completed in 1996 to utilize a network of vapor monitoring wells which had been installed in Study Area 5 in 1990. A plan showing the location of the Study Area 5 wells and the vapor extraction piping network is presented on Figure 1.

Our evaluation is based on data provided to us by Delphi. The data includes reports prepared by Bergmann Associates of Rochester, New York. Bergmann Associates performed SVE pilot testing, designed the SVE system, and performed start-up and initial operational monitoring of the SVE system under direct contract with Delphi. The reports and data evaluated by us include the following:

- Vapor Extraction Remediation Pilot Test Results (Bergmann Associates, 13 April 1995)
- Vapor Extraction Remediation Start Up Data (Bergmann Associates, October 1996)
- Vapor Extraction Remediation O&M Manual (Bergmann Associates, September 1996)
- Delphi's summary of the results of monitoring of volatile organic compounds (VOCs) in the vapor stream at the influent point in the soil vapor treatment unit (Pre-Carbon Data)

- Laboratory analytical results for groundwater and product samples collected and analyzed by Free-Col Laboratories of Meadville, Pennsylvania from the vapor monitoring well network in December 1996 (Free-Col, 9 January 1997).

- Related information on operation of the system provided to us verbally by Rick Eisenman of Delphi.

With the exception of the Bergmann Associates O&M Manual, the documents described above are presented in appendices attached to this report.

PILOT TEST SUMMARY

A pilot test was performed by Bergmann Associates in late January and early February of 1995. The test was conducted on 16 vapor monitoring wells in Study Area 5. The objective of the pilot test was to measure and monitor the necessary paramenters for the design of a full scale SVE system. A regenerative-type vacuum blower was used with a knock-out tank for liquid effluent produced and carbon filters for treatment of the vapor-phase effluent. The pilot test report is included in Appendix A.

During the test several operational parameters were monitored. These included vacuum levels, air-flow rates, entrained-water-collection rates, and contaminant-removal rates. The pilot test was conducted at several blower vacuum levels including 15, 30 and 90 inches of water column (in.w.c.). The vapor stream was sampled and analyzed in the field using a GC-FID, and in addition vapor samples were collected from a selected well for laboratory analysis. During the 90 in.w.c. portion of the test, in which the majority of groundwater was collected, selected groundwater samples were collected by Free-Col for laboratory analysis.

Bergmann based the design of the full scale system on the results of the pilot test. The design parameters selected were 30 in.w.c. with a range of 15-90 in.w.c. and a flow rate of 422 cubic feet per minute (cfm). Mass removal had been highest at 90 in.w.c. during the pilot test, but a design vacuum of 30 in.w.c. was selected to minimize recovery of groundwater. The predicted long-term mass-removal rate was 10% of the removal rate observed at 30 in.w.c. during the pilot test; it was predicted that an initial mass-removal rate of approximately 16.5 lb/hr would tail off asymptotically to a rate of 1.7 lb/hr.

START UP DATA

The full scale system designed by Bergmann Associates was installed and started in June 1996. The Bergmann Associates Start Up Data report is included as Appendix B.

Prior to start up the Study Area 5 wells were monitored and those wells with groundwater and product were sampled and analyzed by Free Col. Product was detected in and sampled from VM-211, 218, and 223 and SR-216 and 230. Groundwater was sampled from VM-210, 211, 212, 219, 220, 222, 227, and 229 and SR-216 and 230. The analytical data is presented in the Bergmann Associates Start Up Data report and is summarized on Table 1.

The airflow rate through the SVE system calculated on the basis of start-up measurements was approximately 470 cfm. Airflow and VOC concentrations were monitored at the individual wellheads as well as at the SVE system blower and treatment equipment. To optimize performance of the system, the wells were ranked according to VOC concentration and airflow rate, and the system was balanced by adjusting the valving at the piping manifold upstream of the blower and treatment equipment.

OPERATIONAL MONITORING SUMMARY

Bergmann Associates and Delphi personnel performed periodic VOC monitoring of the influent vapor at the SVE treatment unit from start up in June 1996 through January 1998. Samples of the pre-carbon vapor phase were also collected periodically for laboratory analysis. A spreadsheet provided by Delphi summarizing the vapor monitoring and analysis results is included in Appendix C. Comments on system operation are also noted.

The vapor analysis results indicated an influent total-VOCs concentration of 1,800 milligrams per cubic meter (mg/m^3) at start up. This concentration is equivalent to a mass removal rate of approximately 79 lb/day at the approximate flow rate of 490 cfm (based on data provided by Delphi of 20,000 m^3/day). By July 1996, the mass removal rate had apparently decreased to approximately 10 lb/day. By December 1996 the mass removal rate was at approximately 4 to 5 lb/day, and it was in that range consistently since then through January 1998.

GROUNDWATER ANALYSIS RESULTS

Groundwater and product sample analysis results for April 1996 and December 1996 are summarized in Tables 1 and 2, respectively. Total VOC's for both dates are summarized on Table 3. The changes in the concentrations of VOCs in groundwater and product in Study Area 5 over the initial 6 months of operation of the SVE system were generally minor. Several overburden wells (those designated with a VM prefix) exhibited decreases in total VOCs in groundwater and/or product; one overburden well exhibited an increase in groundwater VOCs. No significant change was apparent in the product and groundwater from shallow bedrock monitoring wells SR-216 and 230.

CONCLUSIONS AND RECOMMENDATIONS

The soil vapor extraction system has removed source mass but at a lower than predicted removal rate. The mass removal rates (0.16 to 0.20 lb/hr) have been an order of magnitude lower than those which were predicted in the pilot test summary (1.7 lb/hr). The mass removal stabilized at a rate of approximately 4 to 5 lb/day after six months of operation and continued through January 1998. The data indicate that the total mass of VOCs removed during the period from June 1996 to January 1998 was in the range of 3,000 to 3,500 lbs. Our review of Delphi's analysis of carbon usage is consistent with the reported mass removal data.

The data and monitoring of free product levels appear to indicate that contaminant-mass removal using the SVE system may be restricted to the vadose zone. The available data suggests that during the first six months of operation the system did not significantly decrease the VOC

contamination in groundwater and product within Study Area 5. However, resampling and analysis of product and groundwater should be performed when the wells are next accessible to determine whether contaminant concentrations have changed since 1996.

A product-recovery pilot test was recently initiated in Study Area 5. The pilot test will attempt to recover product from the well using interface vacuum extraction. The results of the product-recovery pilot test should be evaluated with the data from the testing and operation of the SVE system to determine whether and how the performance of the Study Area 5 SVE system could be enhanced, and to determine whether other remedial approaches or a combination of approaches may be useful in addressing the product and groundwater contamination in Study Area 5.

CLOSING

Thank you for asking Haley & Aldrich to provide this report. If you have any questions or require further information, please call us.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Mark N. Ramsdell

Mark N. Ramsdell, P.E.
Senior Engineer

Jeffrey E. Loney
Vice President

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ATTACHMENTS

Table 1 Summary of Analytical Results for 8 April 1996
Table 2 Summary of Analytical Results for 24 December 1996
Table 3 Summary of Total VOC's for April and December 1996

Figure 1 Well Location Plan

Appendix A Bergmann Associates Pilot Test Results Report
Appendix B Bergmann Associates Start Up Data Report
Appendix C Study Area 5 SVE System Pre-Carbon Data Spreadsheet
Appendix D Free-Col Laboratories, Inc. Laboratory Analysis Report for 24 December 1996 sampling event

Appendix A

Bergmann Associates Pilot Test Results Report

VAPOR EXTRACTION REMEDIATION

PILOT TEST RESULTS

DELPHI AUTOMOTIVE SYSTEMS

Lexington Avenue Facility
Rochester, NY

Prepared for:
Delphi Automotive Sytems
1000 Lexington Avenue
P. O. Box 1790
Rochester, NY 14692

Prepared by:
Bergmann Associates
One South Washington Street
Rochester, NY 14614

Revised
April 13, 1995

MEMORANDUM

21 June 1995

TO: Rick Eisenman

FROM: Jeff Loney JSL

SUBJECT: Pilot Test Report -Study Area 5

H&A of New York appreciates the opportunity to review the Study Area 5 Pilot Test Report. We would like to offer the following comments and/or questions for your further consideration:

- What was the total operational time on each well, at each vacuum level?
- Air velocity measurements taken with a hot-wire anemometer. It is noted in the report that accuracy is questionable in the application due to high moisture content. Instrument calibration data should be provided in the report. Is there supporting documentation lending credibility to the "adjustments" made in the vapor velocity/flow readings?
- There is also no correction to the vapor flow figures for the applied vacuum from ACFM to Standard air or SCFM for mass removal calculations or blower sizing.
- The methodology for vapor flow measurement was to insert the hot-wire anemometer in the pipe through a 3/8 inch diameter hole in the pipe riser. Was the hole plugged with an appropriate stopper to eliminate any leakage into the pipe during measurement? If not, the measurements are impacted by the flow of air into the pipe riser through the 3/8 inch hole due to the pipe being under a vacuum.
- The methodology for water flow measurement is also questionable in that apparent measurements were made for only three wells and not others, and the total volume of water collected for the test period (which is not specified) is then arbitrarily divided among operational vacuum points at 15", 30" and 90" w.c.. most wells didn't generate H_2O
- Mass removal was highest at 90" w.c.. Why are they recommending that the system be designed for 30"w.c.? minimize H_2O production

- What is the basis for the sustained or long term mass removal estimate? In our experience the mass removal could go up before it drops off to some lower level. 72 hr test and literature
- Are there any conclusions in terms of the existing well spacing versus the vacuum area of influence? (i.e. will the existing wells provide adequate coverage to remediate the contaminated area?) It appears that there is very little vacuum area of influence at the operating vacuum levels utilized during the pilot test. True. Hopefully can will expand as soils dry. In any event, could drill more wells
- Analytical field data has limited correlation with the lab data. Several target analytes (cis 1,2-DCE), (1,1,1-TCA) were reported as ND (non-detect) by field GC analysis but exhibited high concentrations (> 500 mg/m3) by contract laboratory analysis. This is indicative of either analytical or field sampling QA\QC problems. DCE & TCA not important for sizing system.
- Mass removal calculations for 15", 30" W.C. vacuum conditions are based on un-confirmed field GC data of questionable quality. Mass removals are in the ballpark; based on carbon consumption. 77 kg of carbon was saturated, with some carryover & breakthrough. Assume 25% absorption, this would be ~ 20 kg of vapors.
- Example gas chromatographic data should be included in the report to evaluate the presence or absence of specific compounds.
- There is no apparent documentation of the impact of pilot system operation on surrounding water levels. not part of pilot test specification, would have been difficult to do because of well seals
- Study Area 5 remedial activities will be of limited value if residual contamination below the water table is not addressed along with the mitigation of the presence of light non-aqueous phase liquids (LNAPL) containing percentage levels of chlorinated solvents. The system proposed in Section 4.0 does not address either of these **critical** issues or include any substantive evaluation of subsurface parameters prior to the operational phase of the project.

VAPOR EXTRACTION REMEDIATION

PILOT TEST RESULTS

DELPHI AUTOMOTIVE SYSTEMS

Lexington Avenue Facility
Rochester, NY

Prepared for:
Delphi Automotive Sytems
1000 Lexington Avenue
P. O. Box 1790
Rochester, NY 14692

Prepared by:
Bergmann Associates
One South Washington Street
Rochester, NY 14614

Revised
April 13, 1995

TABLE OF CONTENTS

1.0 INTRODUCTION

A pilot test for a vacuum extraction remediation system (VES) has been completed at the former degreaser area within the DELPHI Automotive Systems Lexington Avenue facility. The objective of the pilot test was to provide parameters for the design of a full scale system. These parameters are:

1. Vacuum range,
2. Air flow rate range,
3. Entrained water collection rates, and
4. Contaminant removal rates.

Included in this report are pilot system details, test protocol, test results, and conclusions.

2.0 WORK SCOPE

This section of the report describes the work completed for the pilot test. Details of the system and test protocols are provided.

2.1 System Details

The following describes the components of the pilot test:

1. Sixteen (16) soil vapor extraction wells were included in the test. A map of the wells is included in Appendix A.

2. The pilot test vapor extraction system equipment details are shown in Appendix B. Photos of the system are shown in Appendix C.

3. Air flow measurements were taken at the extraction well riser with a Solomat®MPM 500e hot-wire anemometer, and recorded in feet per minute (fpm).

4. Vacuum readings were taken with Dwyer Magnahielic® differential pressure gauges.

5. Field vapor-analyses were completed with a Varian® 3400 GC-FID. Vapor samples were collected at the extraction well riser (i.e.: vacuum side of blower). The field data is presented in Appendix D.

2.2 Test Protocol

The following protocol was used during the pilot test:

1. Start VES at 15" H_2O vacuum.
2. Allow 1/2 hour to stabilize, then take reading of:
   a. Vapor flow rate,
   b. Vacuum at adjacent wells.
3. Sample the vapor stream and analyze on the field GC-FID.
4. Increase vacuum to 30" H_2O and repeat steps 2 and 3.
5. Increase vacuum to 90" and repeat steps 2 and 3 and:
   a. Record total water volume for well,
   b. Collect water sample for analysis by DELPHI.
6. Vapor samples were taken at selected wells for laboratory analysis.

3.0 RESULTS

The results of the pilot test are compiled in Tables 1 through 7 in Appendix D. These tables include field measurements and pertinent laboratory results. The laboratory reports are shown in Appendix E. For reference, the previously reported soil analytical data which had been completed for the project area is shown in Appendix F.

The following factors are included in the development of the tables shown in Appendix D:

Table 1 Vacuum Influence in Other Wells

- Vacuum measurements were taken only at wells which were in close proximity to the extraction point.
- Readings were taken at the well head risers.

Table 2 Flow Rates

- Flow rates were taken at the well head risers using a hot wire anemometer.

- Hot wire anemometers are effected by moisture (i.e. higher than actual flow rates can be indicated with high moisture content). Adjustments were made on flow rates which indicated rates in excess of blower capacity or water was observed in the extraction piping. Column (3) indicates if a flow adjustment had been completed on that well. Column (4) contains the flow rates which were used for the removal rate calculations.

  The adjustments were computed by averaging the flow rates from the unadjusted wells at the individual vacuums. The averages are: 81 cubic meters per hour (CMH)@ 90" H_2O, 45 CMH @ 30" H_2O, and 23 CMH @ 15" H_2O. A flow rate of 81 CMH was inserted at the 90" H_2O vacuum level reading which indicated higher than blower capacity(i.e. above 80 cubic feet per minute) or that air flow rates were not taken because of the presence of water in the pipe. The flow rates for the 30" & 15" vacuums were also replaced with the adjusted averages if they appeared to be elevated .

Table 3 Concentrations and Removal Rates

- The detection limit of the field GC-FID analysis was approximately 150 to 200 ppm. A value of 100 ppm was inserted for analysis which showed a trace response but was below quantifiable levels.

- The laboratory results were used for removal rate calculations on wells which were tested by the laboratory.

Table 4a Total mg/hr Removed at Different Vacuums

- The total contaminants removed is the concentration in mg/m^3 times the adjusted flow rate in m^3/hr. All of the extraction wells analyzed during the pilot test are included in the recorded totals.

Table 4b Total mg/hr Removed at Different Vacuums Without VM-214

- Same as table 4a without VM-214

Table 5a Concentration vs. Hours of Operation

- Laboratory analysis was completed for the three samples for VM-214. The sampling date is shown with the results. The magnitude of the concentration over time is calculated as a percentage of the start-up. The results are also graphed on Figure I, Appendix D.

Table 5b Predicted long-term Removal Rates

- A concentration level of 10% of the start-up is based on the predicted removal rate decrease illustrated in Figure I.

Table 6 Total Adjusted Flow Rate

- The total flow rates use the adjusted levels in CMH. All of the flow rates are added from each extraction well. The CFM rate is calculated from the adjusted rate totals and is provided for blower selection which typically read in CFM. For blower selection purposes, the given flow rate numbers are discharge rates.

Entrained water collection rates were monitored during the pilot test. Three (3) wells (VM-220, VM-219 and VM-229) were identified as having quantifiable water flow rates. In addition, analysis was completed on the entrained water for the three wells. The collected data is summarized in Table 7, Appendix D.

The total water collection rate for VM-219 was measured at 0.39 gpm. However, the collection rates for the two vacuum levels of 30" H_2O and 90" H_2O were not separately monitored. Field personnel reported water flow at both vacuums with a noticeable increase in water at the 90" H_2O vacuum. Therefore, the flow rate at 30" H_2O was assumed to be 1/3 of the total.

4.0 CONCLUSIONS

The presented data tabulated in Appendix D provides the information needed to design the full scale system. The major components of this system are:

1. Blower,
2. Entrained Water separator, and
3. Vapor Treatment/Discharge.

These components are discussed below.

Vacuum influence on other wells was measure during the pilot test (see Table 1, Appendix D). The evaluation of this data involves the review of area geologic conditions with comparison to the collected vacuum data. Data reduction and discussion will be completed in the system operation phase of this project.

BLOWER

The operating specifications (vacuum vs. flow rate) for a blower system operating on all the extraction wells are calculated and shown in Table 6, Appendix D. This table actually defines points on three different blower system curves. The selection of the blower system for the final design must take into account the contaminant removal rates at the different vacuum levels, entrained water flow rates at different vacuums, ease of operation and maintenance, and capital cost.

It is expected that the system will be operated in the range of 15" H_2O to 90" H_2O depending on the extraction/treatment needs. Therefore, a system should be designed for the pilot test's middle flow and vacuum rates, and have the capacity to operate within the stated vacuum range. The following parameters should be used for system design:

Blower Parameter	**Design Specification**
Vacuum Level	30" H_2O (w/15 -90" H_2O range)
Flow Rate	422 CFM

Assuming the use of a regenerative type blower, a system can be operated within the vacuum range of 15" to 90" H_2O. However, the flow rate capacity would decrease at

the higher vacuum level. Therefore, extraction wells would need to be valved off to obtain 90" H_2O (~200 cfm or 25% of the wells connected).

ENTRAINED WATER SEPARATOR

The entrained water flow rate was measured at 30" and 90" H_2O.

Water Flow Rate@ 30"H_2O:	0.13 gpm	187 gpd
Water Flow Rate@ 90"H_2O:	1.74 gpm	2505 gpd

The entrained water separator should be designed to handle the water flow rate of 2 gpm (~10 % SF of peak flow) and be able to withstand vacuums of at least 90" H_2O.

VAPOR TREATMENT/DISCHARGE

The contaminant removal rates are shown in Appendix D. These removal rates were tabulated in three different ways:

1. Start-up conditions for all extraction wells operating (Table 4a),

2. Start-up conditions for all extraction wells operating except VM-214(Table 4b), and

3. Predicted operating conditions for all extraction wells operating (Table 5b)

The engineering for the treatment (or discharge) of the vapor stream depends on several factors such as: available treatment technology, air discharge permit limits, program budgets, remediation schedules, and extraction system removal rates. The evaluation of all of these factors need to be addressed to reach a cost effective solution. The provided data in the aforementioned tables can be used to evaluate the vapor treatment/discharge.

APPENDIX A

SITE MAP

17 19 21 23 25 27 29

NN MM LL KK JJ

2" VM-218
2" VM-219
2" VM-229
2" VM-220
4" VM-215
2" VM-222
2" VM-224
2" VM-221
2" VM-223
4" VM-214
SR-216
4" VM-213
VM-225
4" VM-226
2" VM-227
2" VM-228
2" VM-210
VM-209
VM-211
VM-212
VM-217
SR-230

57,200E
50,900N
50,800N
50,700N
57,300E
50,900N

OUTLINE OF ASSEMBLY ROOM

PVC PIPING BELOW FINISHED FLOOR

PIPE RISERS
(4) 4" RISERS
(12) 2" RISERS

N

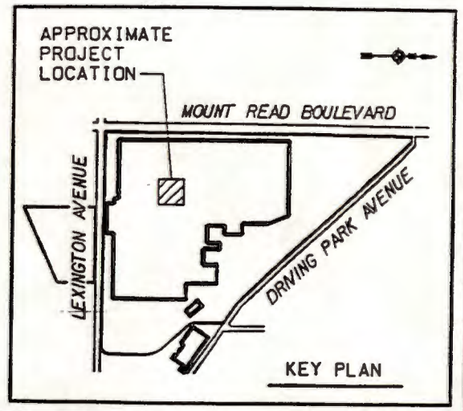
NOTE:

LOCATIONS SHOWN ARE ESTIMATED FROM MEASUREMENTS MADE BY H & A OF NEW YORK AND REFERENCED TO THE AC DELCO BUILDING COLUMN GRID.

CROSS REFERENCES TO LOCATIONS ON THE AC DELCO COORDINATE SYSTEM ARE PRESENTED IN TABLE 1.

LEGEND:

- SOIL VAPOR EXTRACTION WELL
- SHALLOW BEDROCK MONITORING WELL
- MONITORING WELL
- 57,200E - COORDINATE SYSTEM REFERENCE POINT



H & A OF NEW YORK
Geotechnical Engineers & Environmental Consultants

AC DELCO SYSTEMS
GENERAL MOTORS CORPORATION
DEGREASER INVESTIGATION

SOIL VAPOR EXTRACTION & MONITORING WELL LOCATION PLAN – STUDY AREA 5

SCALE: 1"=20'-0"

AUGUST 1994

FILENAME: 70014-048:PRF001B.DGN

FIGURE 1

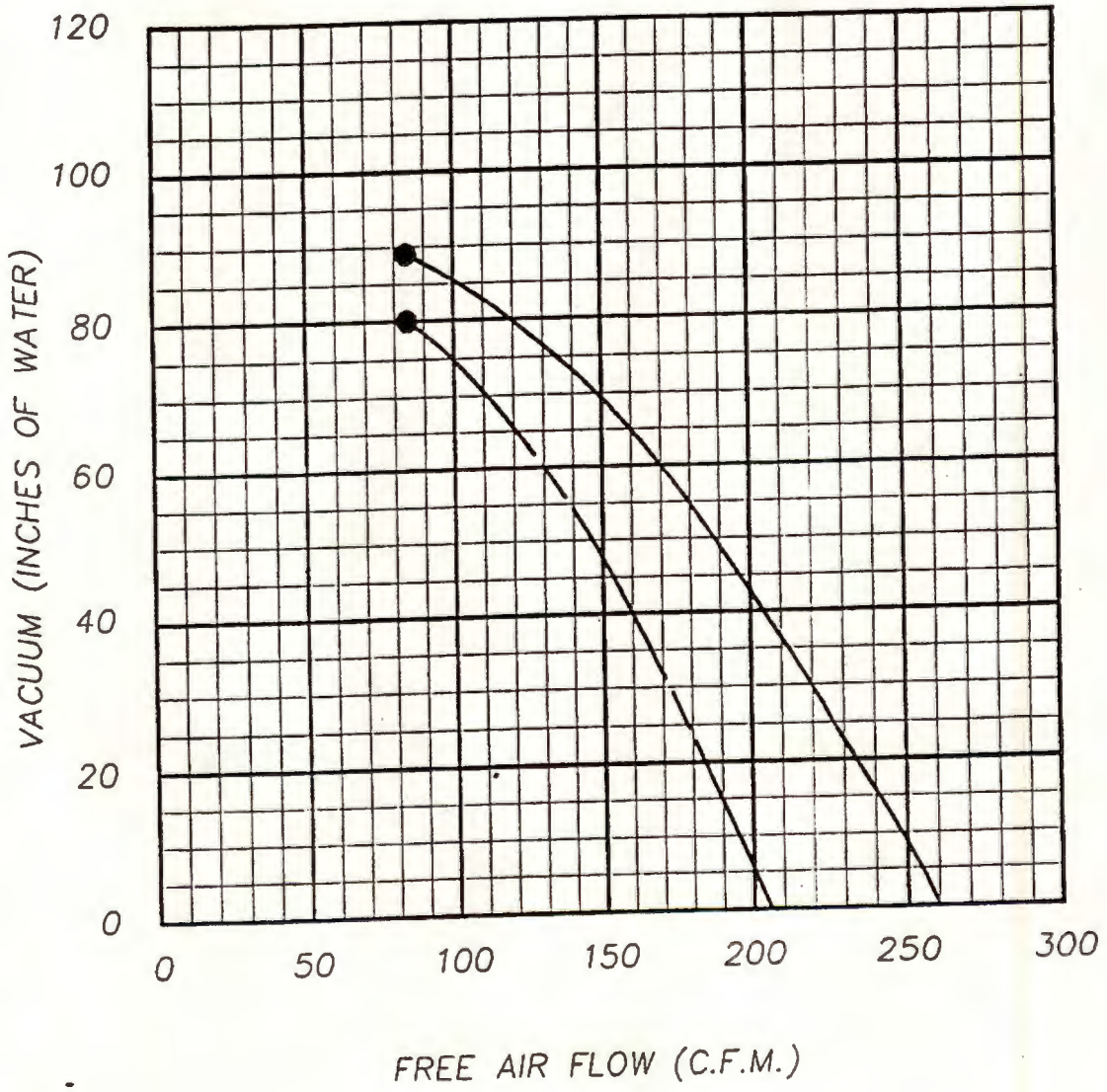
FILE No. 70014-048

APPENDIX B

PILOT SYSTEM SPECIFICATIONS

INLET AIR DENSITY .075 LBS. PER CUBIC FOOT.

● RECOMMENDED MAXIMUM DUTY FOR CONTINUOUS OPERATION.



---------- INTERMITTENT

———— VACUUM (BLOWER ONLY)

— - — - — VACUUM (COMPLETE SYSTEM WITH MOISTURE SEPARATOR AND 2" FILTER)

A.R.T.
ADVANCED REMEDIATION TECHNOLOGIES
APPLETON BUSINESS CENTER
NEW IPSWICH, NEW HAMPSHIRE 03071
TEL: (603) 878-2624

PERFORMANCE CURVE,
5 HP, 230V AC,
VACUUM SYSTEM

DWG. NO.: 1250454 REV. 0

Ask your Gast Representative about our higher pressure R6

- Maximum ambient 104°F. (40°C.)
- 2850 RPM @ 50 Hz.; 3450 RPM @ 60 Hz.
- Solid line on graph indicates continuous duty performance
- See graph for minimum air flow for continuous operation
- UL recognized and CSA certified motors
- Specifications subject to change without notice
- Net weight 2½ HP — 95 lbs. (43,1 kg.)
  3½ HP — 101 lbs. (45,8 kg.)
  5 HP — 131 lbs. (59,4 kg.)
- See page 21 for recommended accessories

GENERAL SPECIFICATIONS

Motor Specifications:

R6125

Single Phase Nominal Voltages: 115/208-230 60 Hz. • FLA @ 60 Hz. 20.8/10.4 • 2½ HP @ 60 Hz. • TEFC • Class B Insulation • Automatic Restart Thermal Protection

R6325A

Three Phase Nominal Voltages: 208-230/460 60 Hz: 190-220/380-415 50 Hz. • FLA @ 60 Hz. 6.9/3.45 • 2½ HP @ 60 Hz. • FLA @ 50 Hz. 6.7/3.3-3.5 • 1.85 HP @ 50 Hz. • TEFC • Class B Insulation • Automatic Restart Thermal Protection

R6335A

Three Phase Nominal Voltages: 208-230/460 60 Hz: 190-220/380-415 50 Hz. • FLA @ 60 Hz. 9.7-8.8/4.4 • 3½ HP @ 60 Hz. • FLA @ 50 Hz. 8.4-3.9 • 2.5 HP @ 50 Hz. • TEFC • Class F Insulation • Automatic Restart Thermal Protection

R6350A

Three Phase Nominal Voltages: 208-230/460 60 Hz: 190-220/380-415 50 Hz. • FLA @ 60 Hz. 11.3/5.6 • 5 HP @ 60 Hz. • FLA @ 50 Hz. 13.4/7.2-6.8 • 4.8 HP @ 50 Hz. • TEFC • Class F Insulation

Blower Limitations for Continuous Duty:

R6125

60 Hz. max. pressure/vacuum 35/45 in. H_2O
60 Hz. max. flow 206 cfm

R6325A

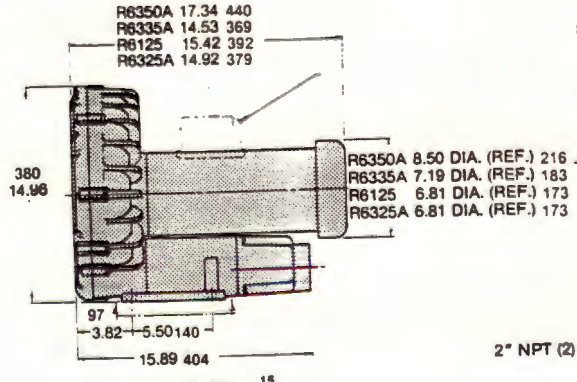
50 Hz. max. pressure/vacuum 40/50 in. H_2O
50 Hz. max. flow 172 cfm
60 Hz. max. pressure/vacuum 40/45 in. H_2O
60 Hz. max. flow 206 cfm

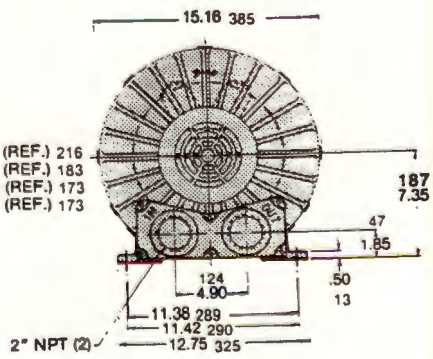
R6335A

50 Hz. max. pressure/vacuum 70/60 in. H_2O
50 Hz. max. flow 172 cfm
60 Hz. max. pressure/vacuum 70/75 in. H_2O
60 Hz. max. flow 206 cfm

R6350A

50 Hz. max. pressure/vacuum 85/70 in. H_2O
50 Hz. max. flow 172 cfm
60 Hz. max. pressure/vacuum 105/90 in. H_2O
60 Hz. max. flow 206 cfm

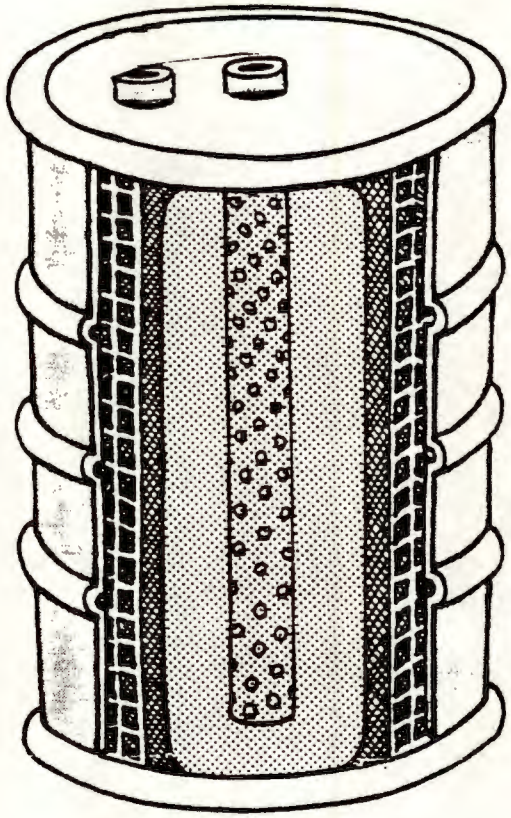




Note: On all drawings
Metric
U.S./Imperial

FILCORP
INDUSTRIES

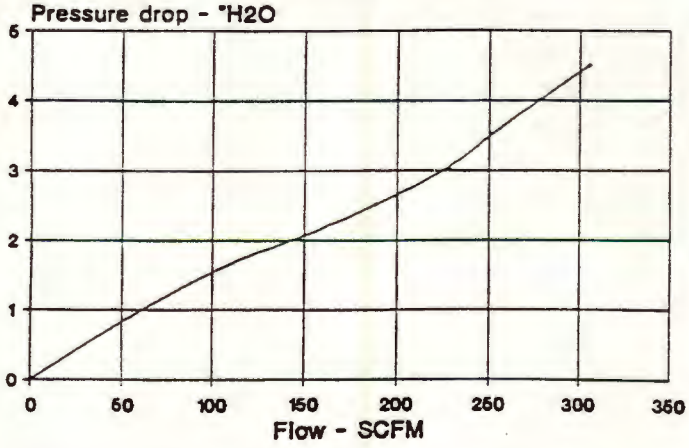
- ★ Contains 170 lbs. of activated carbon*
- ★ Design provides for equal ditribution of high C.F.M.
- ★ Canister conforms to D.O.T. 17H. Approved for hauling hazardous waste.
- ★ Serialized to help prevent wrongful liabilities
- ★ Soft white exterior
- ★ Plumbing available to run canisters in series
- ★ Includes access for pressure gauge and air vent
- ★ Certification available for drum and media
- ★ For an estimate of the expected service life of a Filcorp Filter, please contact our customer service department with your proposed operating conditions.



Filcorp Model AC-1

* Pelletized Carbon
Particle Size: (Diameter) 3 mm
(Length) 4.5 mm
Mean Particle Diameter: 3.75 mm
Hardness: 95 (min.)
Moisture: 3% (max.)
CCl4 Activity: 60 (min.)
Bulk Density: 27-30 lbs./cu. ft.
Iodine number: 1000
Ash (water soluable): 0.2% max.

Filcorp Filters



P.O. Box 2304
Concord, NH 03302
Tel: (603) 225-6638
Fax: (603) 224-1004

CUSTOMER SERVICE
(603) 225-6638

P.O. Box 802
Milton, VT 05468
Tel: (802) 893-1882
Fax: (802) 893-6374

CANISTERS
(Vapor Phase)

Quantities of 1-3
$625

Quantities of 4-6
$600

Quantities of 7 & Over
$575

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★

ACTIVATED CARBON*
(Vapor Phase)

55 lbs. up to 495 lbs.
$1.49/lb.

550 lbs. up to 1980 lbs.
$1.44/lb.

2,035 lbs. and up
$1.19/lb.

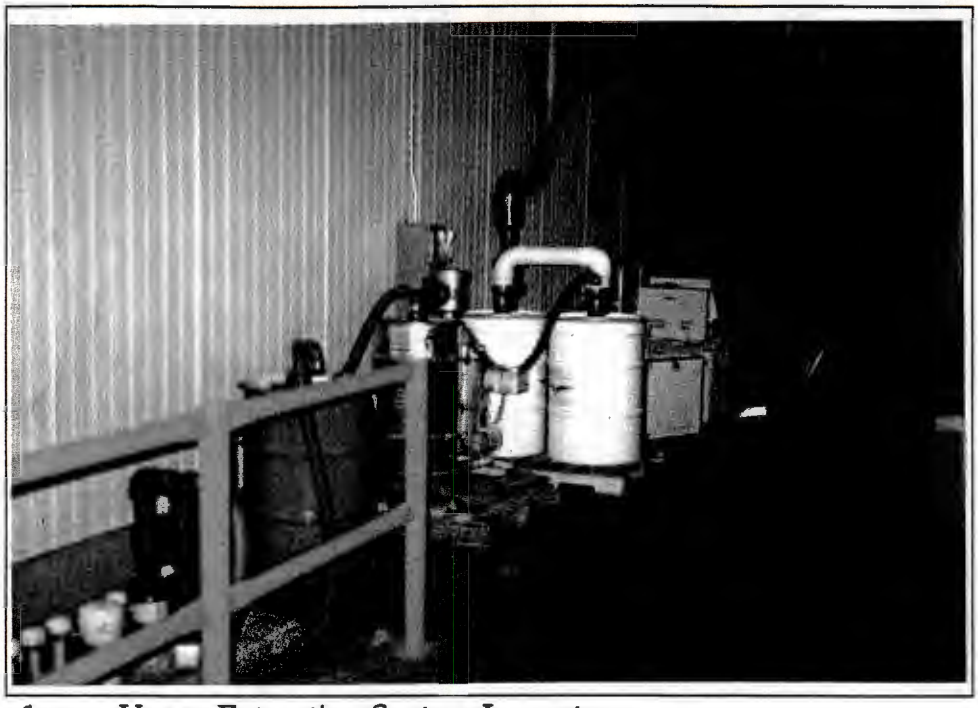
Carbon is Shipped in 55 lb. Containers

* Pelletized Carbon
Particle Size: (Diameter) 3 mm
(Length) 4.5 mm
Mean Particle Diameter: 3.75 mm
Hardness: 95 (min.)
Moisture: 3% (max.)
CCl_4 Activity: 60 (min.)
Bulk Density: 27-30 lbs./cu. ft.
Iodine number: 1000
Ash (water soluable): 0.2% max.

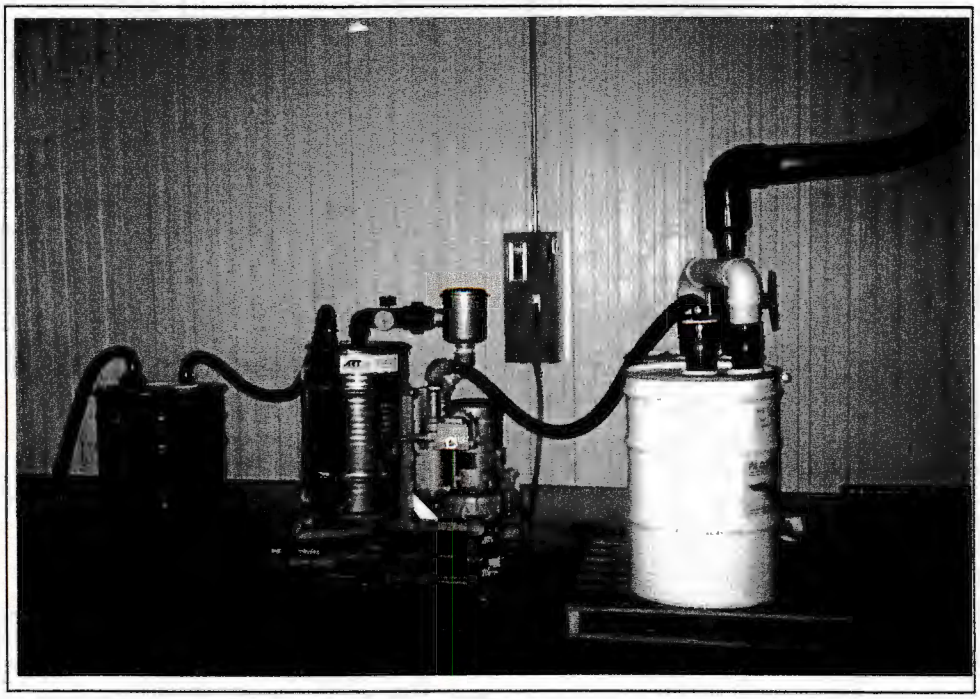
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

APPENDIX C

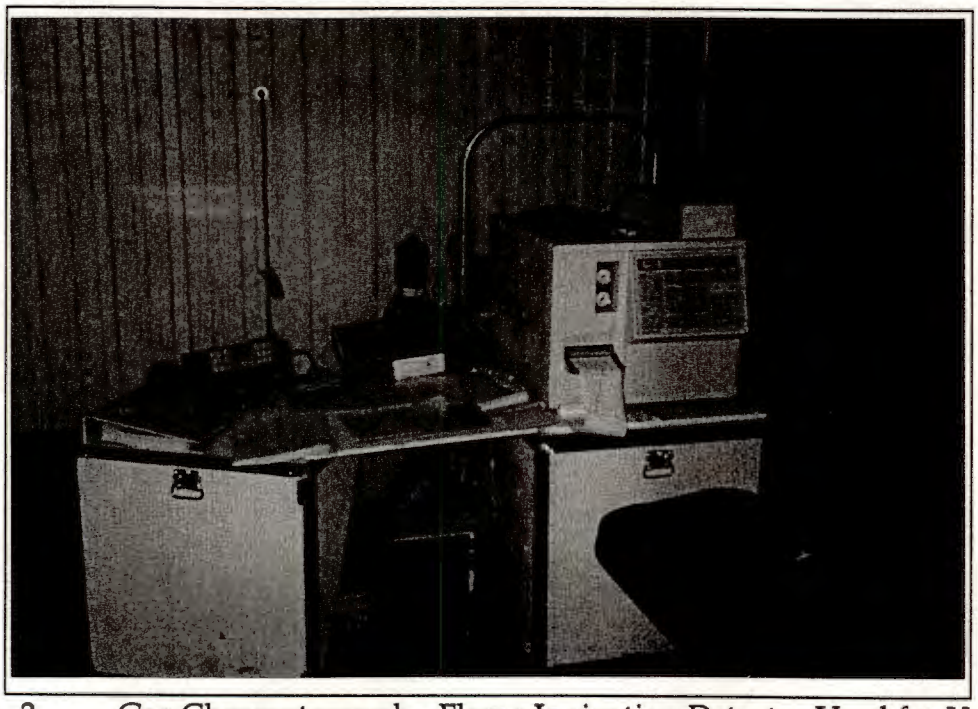
PHOTO DOCUMENTATION



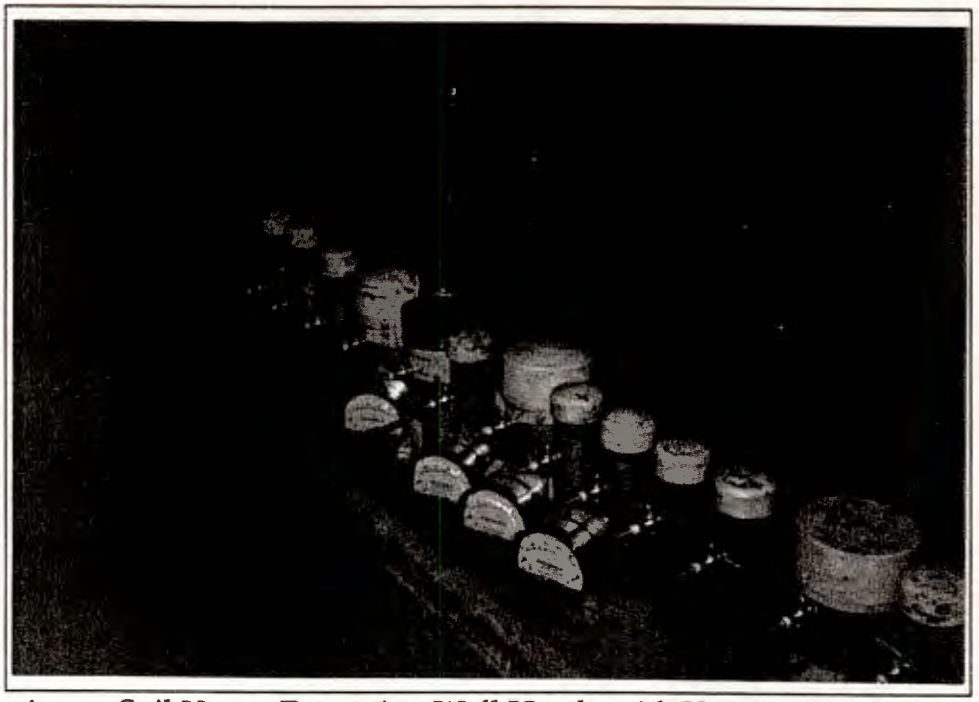
1. Vapor Extraction System Layout.



2. Vapor Extraction System Layout.



3. Gas Chromatograph - Flame Ionization Detector Used for Vapor Analysis.



4. Soil Vapor Extraction Well Heads with Vacuum Reading Gauges.

APPENDIX D

FIELD DATA

Table

Vacuum Influence on Other Wells

Well	Size	(1) Vacuum ("H2O)	Vacuum Influence "H2O															
			VM-218	VM-219	VM-220	VM-229	VM-215	VM-222	VM-223	VM-224	VM-221	VM-214	VM-225	VM-213	VM-226	VM-227	VM-228	VM-210
VM-218	2"	15		0	0	0												
		30		0	0	0												
		90		0	0.02	0.01												
VM-219	2"	15	0.015		0	0	0.01											
		30	0.015		0	0	0.01											
		90	0.1		0	0.04	0.095											
VM-220	2"	15	0.02	0		0.01	0.02	0.01	0	0								
		30	0.06	0.01		0.017	0.055	0.03	0	0								
		90	0.215	0.065		0.085	0.205	0.12	0	0								
VM-229	2"	15		0	0		0	0										
		30		0	0		0	0										
		90		0	0		0.035	0.04										
VM-215	4"	15/9		0	0.15	0		0.075	0									
		30/18		0	0.245	0		0.125	0									
		68		0	0.49	0		0.25	0									
VM-222	2"	15				0	0		0	0								
		30				0	0		0	0								
		90				0	0.01		0	0								
VM-223	2"	15					0	0		0	0							
		30					0	0		0	0							
		90					0	0		0	0							
VM-224	2"	15						0	0		0	0						
		30						0	0		0	0						
		90						0	0		0	0						
VM-221	2"	14								0		0	0					
		30								0		0	0					
		90								0		0	0					
VM-214	4"	15								0	0		0	0				
		30								0	0		0	0				
		90								0	0		0	0				
VM-225	2"	15									0	0		0	0			
		30									0	0		0	0			
		90									0	0		0	0			
VM-213	4"	15										0	0		0	0		
		30										0	0		0	0		
		90										0	0		0.005	0		
VM-226	4"	15											0	0.02		0.115	0	
		30											0	0.035		0.215	0.015	
		90										0	0.055	0.075		0.51	0.04	0
VM-227	2"	15												0	0		0	0
		30												0	0		0	0
		90												0	0		0	0
VM-228	2"	14													0	0		0
		30													0	0		0
		90													0	0		0
VM-210	2"	15													0	0	0	
		30													0	0	0	
		90													0	0	0	

(1) Vacuum readings were taken at the well heads

Table 2

Flow Rates

Delphi 2225.00

Test Order	Well	Size	(1) Vacuum ("H2O)	Vapor Flow Rate ft/min	CFM	(2) CMH	(3) Flow Adj.	(4) Adjusted CMH	Total Water	Exposed Well Screen	h-nu
2	VM-218	2"	15	560	12	20.4		20	0	4.45'	nr
			30	886	19	32.3		32			nr
			90	1435	31	52.7		53			450
10	VM-219	2"	15	1318	30	51.0	+	23	14"	4.64'	70
			30	water			+	45			84
			90	water			+	81			90
4	VM-220	2"	15	899	20	34.0		34	5"	4.2'	402
			30	1227	27	45.9		46			345
			90	water		0.0	+	81			218
11	VM-229	2"	15	1036	23	39.1	+	23	21.5" *	6.62'	nr
			30	1460	33	56.1	+	45			115
			90	water**			+	81			nr
13	VM-215	4"	15/9 ***	561	49	83.3	+	23	0	8.15'	298
			30/18	793	69	117.3	+	45			261
			68	1282	122	207.4	+	81			243
7	VM-222	2"	15	477	10	17.0		17	0	8.65'	230
			30	1042	23	39.1		39			261
			90	2001	44	74.8		75			210
16	VM-223	2"	15	623	14	23.8		24	0	8.6'	330
			30	1381	30	51.0		51			322
			90	2687	59	100.3		100			262
6	VM-224	2"	15	523	11	18.7		19	0	8.6'	296
			30	1017	22	37.4		37			180
			90	2012	44	74.8		75			101
1	VM-221	2"	14	827	18	30.6		30	0	9.1'	nr
			30	1194	26	44.2		44			nr
			90	1495	33	56.1		56			nr
12	VM-214	4"	15	405	53	90.1	+	23	0	7.5'	500
			30	1202	105	178.5	+	45			500
			90	1449	126	214.2	+	81			558
8	VM-225	2"	15	788	17	28.9		29	0	9.7'	348
			30	1268	28	47.6		48			394
			90	2071	45	76.5		77			408
15	VM-213	4"	15	383	33	56.1	+	23	0	6.98'	346
			30	1342	117	199.3	+	45			335
			90	2702	236	401.2	+	81			248
14	VM-226	4"	15	375	33	56.1	+	23	0	7.13'	293
			30	730	64	108.8	+	45			264
			90	1925	168	285.6	+	81			nr
5	VM-227	2"	15	828	18	30.6		30	0	5.33'	464
			30	1480	32	54.4		54			445
			90	2989	65	110.5		110			406
3	VM-228	2"	14	557	12	20.4		20	0	6.15'	90
			30	1376	30	51.0		51			80
			90	2644	58	98.6		99			153
9	VM-210	2"	15	102	2	3.4		4	0	6.12'	397
			30	1531	33	56.1	+	45			330
			90	4265	93	158.1	+	81			325

NOTES:
(1) Vacuum readings were taken at the blower, readings less than 15" H2O were verified at the well head
(2) CMH = Cubic Meters per Hour
(3) " + " indicates flow rate value adjusted
(4) Adjustments based on average of unadjusted flows
* Calculated by 9.25" in 13min.
** System shut down due to high water
*** 15" vacuum at blower / 9" vacuum at well head
nr No Readings

Table3

Concentrations and Removal Rate

A.C. Delco 2225.00

	TCE					PCE				
Well	Field GC mg/m3	Field GC ppm	Lab mg/m3	Lab ppm	Removal Rate mg/hr	Field GC mg/m3	Field GC ppm	Lab mg/m3	Lab ppm	Removal Rate mg/hr
VM-218	544	P	-	-	10880	18975	2750	-	-	379500
	544	P	-	-	17408	11516	1669	-	-	368515
	9221	1695	8600	1600	455800	13186	1911	8500	1400	450500
VM-219	544	P	-	-	12512	690	P	-	-	15870
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	na	nd	-	-	0
VM-220	2171	399	-	-	73799	2305	334	-	-	78356
	544	P	-	-	25024	876	127	-	-	40310
	544	P	2200	420	178200	911	132	2100	340	170100
VM-229	nd	nd	-	-	0	na	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	-	nd	-	-	0	-	nd	-	-	0
VM-215	544	P	-	-	12512	690	P	-	-	15870
	2247	413	-	-	101102	718	104	-	-	32292
	1909	351	-	-	154665	593	86	-	-	48065
VM-222	3906	718	-	-	66401	1083	157	-	-	18416
	544	P	-	-	21216	690	P	-	-	26910
	544	P	-	-	40800	690	P	-	-	51750
VM-223	1257	231	-	-	30159	2346	340	-	-	56304
	2290	421	-	-	116802	3657	530	-	-	186507
	nd	nd	1200	230	120000	nd	nd	3200	510	320000
VM-224	3095	569	-	-	58812	690	P	-	-	13110
	544	P	-	-	20128	690	P	-	-	25530
	544	P	-	-	40800	nd	nd	-	-	0
VM-221	544	P	-	-	16320	690	P	-	-	20700
	11152	2050	-	-	490688	9626	1395	-	-	423522
	544	P	3500	670	196000	690	P	3000	490	168000
VM-214	13132	2414	-	-	302040	130714	18944	-	-	3006413
	4988	917	-	-	224482	96055	13921	-	-	4322471
	2323	427	2700	510	218700	21632	3135	21000	3300	1701000
VM-225	544	P	-	-	15776	1118	162	-	-	32416
	544	P	-	-	26112	690	P	-	-	33120
	5201	956	-	-	400449	4837	701	-	-	372441
VM-213	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	1007	146	-	-	45333
	1806	332	-	-	146292	1470	213	-	-	119046
VM-226	1817	334	-	-	41790	4651	674	-	-	106964
	544	P	-	-	24480	690	P	-	-	31050
	nd	nd	-	-	0	690	P	-	-	55890
VM-227	2644	486	-	-	79315	2180	316	-	-	65412
	6702	1232	-	-	361912	5665	821	-	-	305905
	5103	938	5500	1100	605000	4016	582	4500	720	495000
VM-228	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	na	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-210	nd	nd	-	-	0	nd	nd	-	-	0
	544	P	-	-	24480	nd	nd	-	-	0
	3318	610	2400	460	194400	nd	nd	nd	nd	0

- = Not Analyzed
P = Analyte Present
nd = Not Detected

Table3 cont.

Concentrations and Removal Rate

A.C. Delco 2225.00

	cis-1,2-DCE					1,1,1-TCA				
Well	Field GC mg/m3	Field GC ppm	Lab mg/m3	Lab ppm	Removal Rate mg/hr	Field GC mg/m3	Field GC ppm	Lab mg/m3	Lab ppm	Removal Rate mg/hr
VM-218	390	P	-	-	7800	nd	nd	-	-	0
	390	P	-	-	12480	nd	nd	-	-	0
	nd	nd	3800	990	201400	nd	nd	nd	nd	0
VM-219	390	P	-	-	8970	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-220	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	390	P	430	110	34830	nd	nd	nd	nd	0
VM-229	390	P	-	-	8970	550	P	-	-	12650
	nd	nd	-	-	0	550	P	-	-	24750
	-	nd	-	-	0	-	nd	-	-	0
VM-215	nd	nd	-	-	0	nd	nd	-	-	0
	390	P	-	-	17550	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-222	390	P	-	-	6630	550	P	-	-	9350
	390	P	-	-	15210	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-223	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	140	37	14000	nd	nd	710	130	71000
VM-224	nd	nd	-	-	0	nd	nd	-	-	0
	390	P	-	-	14430	550	P	-	-	20350
	nd	nd	-	-	0	nd	nd	-	-	0
VM-221	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	180	47	10080	nd	nd	190	34	10640
VM-214	390	P	-	-	8970	nd	nd	-	-	0
	390	P	-	-	17550	550	P	-	-	24750
	390	P	nd	nd	31590	550	P	nd	nd	44550
VM-225	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	390	P	-	-	30030	550	P	-	-	42350
VM-213	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-226	390	P	-	-	8970	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-227	390	P	-	-	11700	550	P	-	-	16500
	390	P	-	-	21060	550	P	-	-	29700
	390	P	670	180	73700	550	P	nd	nd	60500
VM-228	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
VM-210	390	P	-	-	1560	nd	nd	-	-	0
	nd	nd	-	-	0	nd	nd	-	-	0
	390	P	580	150	46980	nd	nd	nd	nd	0

Table 4a
Total mg/hr Removed at Different Vacuums

	TCE	PCE	cis-1,2-DCE	1,1,1-TCA	Total	
at 15" H2O	720316	3809331	63570	38500	4631717	mg / hr
at 30" H2O	1453835	5841464	98280	99550	7493129	mg / hr
at 90" H2O	2751106	3951792	442610	229040	7374549	mg / hr

Table 4b
Total mg/hr Removed at Different Vacuums
Without VM-214

	TCE	PCE	cis-1,2-DCE	1,1,1-TCA	Total	
at 15" H2O	418276	802919	54600	38500	1314295	mg / hr
at 30" H2O	1229353	1518994	80730	74800	2903877	mg / hr
at 90" H2O	2532406	2250792	411020	184490	5378709	mg / hr

Table 5a

Concentration vs. Hours of Operation

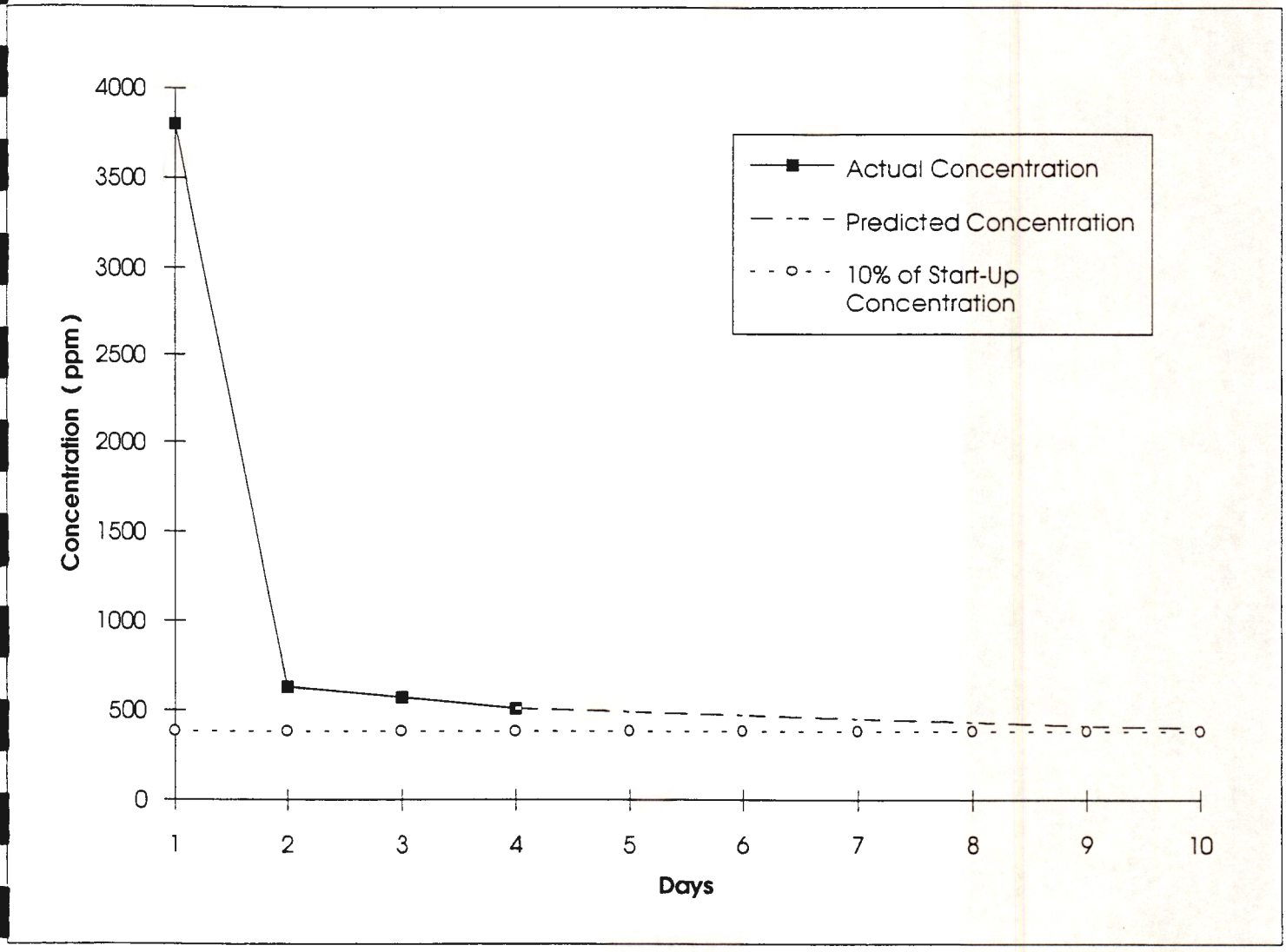
Well	Date	ppm TCE	ppm PCE	% of Start-up
VM-214	3-Feb-95	600	3200	100
	4-Feb-95	160	470	15
	6-Feb-95	130	380	12

Table 5b

Predicted Long-Term Removal Rates

at 30" H2O

	TCE	PCE	cis-1,2-DCE	1,1,1-TCA	Total	
All Wells	1453835	5841464	98280	99550	7493129	mg / hr
10% Operation	145383	584146	9828	9955	749313	mg / hr



Concentration data taken from VM-214 vapor analysis, completed over a four day period

Figure 1

Table 6
Total Adjusted Flow Rate at Different Vacuums

	Cubic Meters per Hour	Cubic Feet per Minute
at 15" H2O	365	215
at 30" H2O	717	422
at 90" H2O	1293	761

Table 7
Entrained Water Data

Well I.D.	Water Flow Rate (GPM)	Vacuum "H2O	TCE mg/L	PCE mg/L	DCE mg/L
VM-220	0.28	90	1.5	4	1.4
VM-219	0.13	30	-	-	-
	0.26	90	1.2	2	1.4
VM-229	1.20	90	1.4	7.4	0.75

APPENDIX E

LABORATORY DATA

General Testing Corporation

A Full Service Environmental Laboratory

Effective 10/1/91

GTC LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range and reanalysis could not be performed.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analytes only)

* - Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)

- Also used to qualify Organics QC data outside limits. (Only used on the QC summary sheets)

M - Duplication injection precision not met (GFA only).

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

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GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job. No. R95/382

Client Project No. 2225.00

Sample Origination & Shipping Information

Collection Site AC DELCO — AC Delco PO# RPS23971

Address _____ (Street) _____ (City) _____ (State) _____ (Zip)

Collector BRIAN RICCARDO (Print) _____ (Signature)

Bottles Prepared by _____ Rec'd by _____

Bottles Shipped to Client via _____ Seal/Shipping # _____

Samples Shipped via _____ Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign [signature] for CATS	1. Sign [signature] for GTC	1/30/95 15:55
2. Sign	2. Sign	/ / :
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by TH/VGardner 1/30/95 @15:55

	Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
1	CT 7215 / 5417	VM-224/221 / 1/30/95 12:35		EPA to 14					10
2	7512 / 5418	VM218 / / 1403		↓					↓
3		/ / :							
4		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	Airbags	
# of each										1	

Additional Analytes HNU READINGS ON BAGS = 450 ppm

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____(X), _____(Y).

GC/MS DATA SHEET

FILE XJ2630

AMPLE	R95/00382-001	CLIENT	DELCO
ATE	1/31/95	REFERENCE	VAPOR SAMPLES
ILUTION	10,25	LOCATION	VM-221
ATA FILE	>J2630	DATE SAMPLED	01/30/95
S NO.	MS#3	TIME SAMPLED	12:35

COMPOUND NAME	mg/m3	PPM
Chloromethane	50 U	24 U
Vinyl chloride	50 U	20 U
Bromomethane	50 U	13 U
Chloroethane	50 U	19 U
Trichlorofluoromethane	50 U	9.0 U
Acetone	100 U	42 U
1,1-Dichloroethene	50 U	13 U
Methylene chloride	50 U	15 U
Carbon Disulfide	100 U	32 U
trans-1,2-Dichloroethene	50 U	13 U
1,1-Dichloroethane	50 U	13 U
2-Butanone	10.0 U	34 U
cis-1,2-Dichloroethene	180	47
Chloroform	50 U	11 U
1,2-Dichloroethane	50 U	13 U
Vinyl Acetate	100 U	28 U
1,1,1-Trichloroethane	190	34
Carbon tetrachloride	50 U	8.0 U
Benzene	50 U	16 U
Trichloroethene	3500	670
1,2-Dichloropropane	50 U	11 U
Bromodichloromethane	50 U	9.0 U
cis-1,3-Dichloropropene	50 U	11 U
trans-1,3-Dichloropropene	50 U	11 U
1,1,2-Trichloroethane	50 U	9.0 U
Dibromochloromethane	50 U	6.0 U
Bromoform	50 U	5.0 U
4-Methyl-2-Pentanone	100 U	25 U
Toluene	50 U	14 U
2-Hexanone	100 U	4.9 U
Tetrachloroethene	3000	490
Chlorobenzene	50 U	11 U
Ethylbenzene	50 U	12 U
total-xylene (o+m+p)	50 U	12 U
Styrene	50 U	12 U
1,1,2,2-Tetrachloroethane	50 U	8.0 U

GC/MS DATA SHEET

FILE XJ2632

MPLE	R95/00382-002	CLIENT	DELCO
ATE	1/31/95	REFERENCE	VAPOR SAMPLES
ILUTION	50	LOCATION	VM-218
TA FILE	>J2632	DATE SAMPLED	01/30/95
NO.	MS#3	TIME SAMPLED	14:03

OMPOUND NAME	mg/m3	PPM
Chloromethane	250 U	120 U
Vinyl chloride	250 U	100 U
Bromomethane	250 U	65 U
Chloroethane	250 U	95 U
Trichlorofluoromethane	250 U	45 U
Acetone	1000 U	210 U
1,1-Dichloroethene	250 U	65 U
Methylene chloride	250 U	75 U
Carbon Disulfide	1000 U	32 U
trans-1,2-Dichloroethene	250 U	65 U
1,1-Dichloroethane	250 U	65 U
2-Butanone	1000 U	170 U
cis-1,2-Dichloroethene	3800	990
Chloroform	250 U	55 U
1,2-Dichloroethane	250 U	65 U
Vinyl Acetate	1000 U	140 U
1,1,1-Trichloroethane	250 U	45 U
Carbon tetrachloride	250 U	40 U
Benzene	250 U	80 U
Trichloroethene	8600	1600
1,2-Dichloropropane	250 U	55 U
Bromodichloromethane	250 U	45 U
cis-1,3-Dichloropropene	250 U	55 U
trans-1,3-Dichloropropene	250 U	55 U
1,1,2-Trichloroethane	250 U	45 U
Dibromochloromethane	250 U	30 U
Bromoform	250 U	25 U
4-Methyl-2-Pentanone	100 U	25 U
Toluene	250 U	70 U
2-Hexanone	1000 U	250 U
Tetrachloroethene	8500	1400
Chlorobenzene	250 U	55 U
Ethylbenzene	250 U	60 U
total-xylene (o+m+p)	250 U	60 U
Styrene	250 U	60 U
1,1,2,2-Tetrachloroethane	250 U	40 U

GC/MS DATA SHEET

FILE XJ2629

AMPLE	METHOD BLANK	CLIENT	DELCO
DATE	1/31/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	METHOD BLANK
ATA FILE	>J2629	DATE SAMPLED	--
S NO.	MS#3	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

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GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job. No. R95/397

Client Project No. 2225.00

Sample Origination & Shipping Information

Collection Site AC Delco

Address _____ Street _____ City _____ State _____ Zip _____

Collector BRIAN RICCARDO (Print) BERGMANN ASSOC. (Signature)

Bottles Prepared by Client — Rec'd by Client

Bottles Shipped to Client via _____ — Seal/Shipping # _____

Samples Shipped via _____ — Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign [signature] for [illegible]	1. Sign Tom Hastings for GTC	1 13 195 16:25
2. Sign	2. Sign	/ / :
for	for	
3. Sign	3. Sign	/ / :
for	for	

Sample(s) Received in Laboratory by Tom Hastings 1/31/95 @16:25

	Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
	87w	VM-220-90	W	ON HOLD					1
		1/31/ 11:00							
	87	VM-220-90	X	EPA to 14					10
2	5473 001	1/31/ 11:00							
	90	VM-220-90	X	↓					10
3	5474 002	1/31/ 14:19		↓					
		/ / :							
		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	TEDLAR 1L	
# of each	2									1	

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), VAPOR EXTRACT. (X), _____ (Y).

GC/MS DATA SHEET

FILE XJ2659

AMPLE	R95/00397-001	CLIENT	DELCO
ATE	2/01/95	REFERENCE	VAPOR SAMPLES
ILUTION	25	LOCATION	VM-220-90
TA FILE	>J2659	DATE SAMPLED	01/31/95
NO.	MS#3	TIME SAMPLED	11:00

COMPOUND NAME	mg/m3	PPM
Chloromethane	130 U	60 U
Vinyl chloride	130 U	50 U
Bromomethane	130 U	33 U
Chloroethane	130 U	48 U
Trichlorofluoromethane	130 U	23 U
Acetone	250 U	110 U
1,1-Dichloroethene	130 U	33 U
Methylene chloride	130 U	38 U
Carbon Disulfide	250 U	80 U
trans-1,2-Dichloroethene	130 U	33 U
1,1-Dichloroethane	130 U	33 U
2-Butanone	250 U	85 U
cis-1,2-Dichloroethene	430	110
Chloroform	130 U	28 U
1,2-Dichloroethane	130 U	33 U
Vinyl Acetate	250 U	70 U
1,1,1-Trichloroethane	130 U	23 U
Carbon tetrachloride	130 U	20 U
Benzene	130 U	40 U
Trichloroethene	2200	420
1,2-Dichloropropane	130 U	28 U
Bromodichloromethane	130 U	23 U
cis-1,3-Dichloropropene	130 U	28 U
trans-1,3-Dichloropropene	130 U	28 U
1,1,2-Trichloroethane	130 U	23 U
Dibromochloromethane	130 U	15 U
Bromoform	130 U	13 U
4-Methyl-2-Pentanone	250 U	63 U
Toluene	130 U	35 U
2-Hexanone	250 U	12 U
Tetrachloroethene	2100	340
Chlorobenzene	130 U	28 U
Ethylbenzene	130 U	30 U
total-xylene (o+m+p)	130 U	30 U
Styrene	130 U	30 U
1,1,2,2-Tetrachloroethane	130 U	20 U

GC/MS DATA SHEET

FILE XJ2660

MPLE	R95/00397-002	CLIENT	DELCO
TE	2/01/95	REFERENCE	VAPOR SAMPLES
ILUTION	50	LOCATION	VM-227-90
TA FILE	>J2660	DATE SAMPLED	01/31/95
NO.	MS#3	TIME SAMPLED	14:19

OMPOUND NAME	mg/m3	PPM
Chloromethane	250 U	120 U
Vinyl chloride	250 U	100 U
Bromomethane	250 U	66 U
Chloroethane	250 U	96 U
Trichlorofluoromethane	250 U	46 U
Acetone	500 U	220 U
1,1-Dichloroethene	250 U	66 U
Methylene chloride	250 U	76 U
Carbon Disulfide	500 U	160 U
trans-1,2-Dichloroethene	250 U	66 U
1,1-Dichloroethane	250 U	66 U
2-Butanone	500 U	170 U
cis-1,2-Dichloroethene	670	180
Chloroform	250 U	56 U
1,2-Dichloroethane	250 U	66 U
Vinyl Acetate	500 U	140 U
1,1,1-Trichloroethane	250 U	46 U
Carbon tetrachloride	250 U	40 U
Benzene	250 U	80 U
Trichloroethene	5500	1100
1,2-Dichloropropane	250 U	56 U
Bromodichloromethane	250 U	46 U
cis-1,3-Dichloropropene	250 U	56 U
trans-1,3-Dichloropropene	250 U	56 U
1,1,2-Trichloroethane	250 U	46 U
Dibromochloromethane	250 U	30 U
Bromoform	250 U	26 U
4-Methyl-2-Pentanone	500 U	130 U
Toluene	250 U	70 U
2-Hexanone	500 U	24 U
Tetrachloroethene	4500	720
Chlorobenzene	250 U	56 U
Ethylbenzene	250 U	60 U
total-xylene (o+m+p)	250 U	60 U
Styrene	250 U	60 U
1,1,2,2-Tetrachloroethane	250 U	40 U

GC/MS DATA SHEET

FILE XJ2658

SAMPLE	METHOD BLANK	CLIENT	DELCO
DATE	2/01/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	METHOD BLANK
DATA FILE	>J2658	DATE SAMPLED	--
MS NO.	MS#3	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

9502000020

GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job. No. R95/0425

Client Project No. 2225.0

Sample Origination & Shipping Information

Collection Site AC DELCO

Address _____ (Street / City / State / Zip)

Collector _____ (Print / Signature)

Bottles Prepared by Client — Rec'd by Client

Bottles Shipped to Client via _____ — Seal/Shipping # _____

Samples Shipped via ↓ — Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign [signature]	1. Sign [signature]	2/1/95
for CAS	for GTC	14:45
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by [signature] 2/1/95 @ 14:45

	Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
1	98 / 5570	VM 210-90 / 2/1 12:00	X	TCL-GCMSVOAS / EPA-14					10
2	~~102~~	~~VM 110-90~~ / ~~11:00~~	~~X~~						
3		/ / :							
4		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	1L TEDLAR	
# of each										1	

Additional Analytes HNV READING = 325 ppm

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), VAPOR EXTRACT (X), _____ (Y).

GC/MS DATA SHEET

FILE XJ2661

SAMPLE	R95/00425-001	CLIENT	DELCO
DATE	2/01/95	REFERENCE	VAPOR SAMPLES
DILUTION	20	LOCATION	VM210-90
DATA FILE	>J2661	DATE SAMPLED	02/01/95
MS NO.	MS#3	TIME SAMPLED	12:00

COMPOUND NAME	mg/m3	PPM
Chloromethane	100 U	48 U
Vinyl chloride	100 U	40 U
Bromomethane	100 U	26 U
Chloroethane	100 U	38 U
Trichlorofluoromethane	100 U	18 U
Acetone	200 U	84 U
1,1-Dichloroethene	100 U	26 U
Methylene chloride	100 U	20 U
Carbon Disulfide	200 U	64 U
trans-1,2-Dichloroethene	100 U	26 U
1,1-Dichloroethane	100 U	26 U
2-Butanone	200 U	68 U
cis-1,2-Dichloroethene	580	150
Chloroform	100 U	22 U
1,2-Dichloroethane	100 U	26 U
Vinyl Acetate	200 U	56 U
1,1,1-Trichloroethane	100 U	18 U
Carbon tetrachloride	100 U	16 U
Benzene	100 U	32 U
Trichloroethene	2400	460
1,2-Dichloropropane	100 U	22 U
Bromodichloromethane	100 U	18 U
cis-1,3-Dichloropropene	100 U	22 U
trans-1,3-Dichloropropene	100 U	22 U
1,1,2-Trichloroethane	100 U	18 U
Dibromochloromethane	100 U	12 U
Bromoform	100 U	10 U
4-Methyl-2-Pentanone	200 U	50 U
Toluene	100 U	28 U
2-Hexanone	200 U	9.8 U
Tetrachloroethene	100 U	16 U
Chlorobenzene	100 U	22 U
Ethylbenzene	100 U	24 U
total-xylene (o+m+p)	100 U	24 U
Styrene	100 U	24 U
1,1,2,2-Tetrachloroethane	100 U	16 U

GC/MS DATA SHEET

FILE XJ2658

SAMPLE	METHOD BLANK	CLIENT	DELCO
DATE	2/01/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	METHOD BLANK
DATA FILE	>J2658	DATE SAMPLED	--
IS NO.	MS#3	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

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GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job No. 95/438

Client Project No. 2225,00

Sample Origination & Shipping Information

Collection Site AC DELCO

Address _____ Street _____ City _____ State _____ Zip

Collector BRIAN D. RICCARDO (Print) _____ (Signature)

Bottles Prepared by _____ Rec'd by _____

Bottles Shipped to Client via _____ Seal/Shipping # _____

Samples Shipped via _____ Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign	1. Sign	
for	for	
2. Sign	2. Sign	/ / :
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by Tom Hastings 21295 @ 16:10

Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
107	VM214-90	X	EPA-1.14					10
5667	21 12:30							
	/ / :							
	/ / :							
	/ / :							
	/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	1 l TEDLAR	
# of each										1	

Additional Analytes ANV = 558 ppm

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), VAPOR EXTRACT (X), _____ (Y).

GC/MS DATA SHEET

FILE XQ3731

AMPLE	R95/00438-001	CLIENT	DELCO
ATE	2/03/95	REFERENCE	VAPOR SAMPLES
DILUTION	100	LOCATION	VM214-90
ATA FILE	>Q3731	DATE SAMPLED	02/02/95
S NO.	MS#5	TIME SAMPLED	12:30

COMPOUND NAME	mg/m3	PPM
Chloromethane	500 U	240 U
Vinyl chloride	500 U	200 U
Bromomethane	500 U	130 U
Chloroethane	500 U	190 U
Trichlorofluoromethane	500 U	92 U
Acetone	1000 U	440 U
1,1-Dichloroethene	500 U	130 U
Methylene chloride	500 U	150 U
Carbon Disulfide	1000 U	320 U
trans-1,2-Dichloroethene	500 U	130 U
1,1-Dichloroethane	500 U	130 U
2-Butanone	1000 U	340 U
cis-1,2-Dichloroethene	500 U	130 U
Chloroform	500 U	110 U
1,2-Dichloroethane	500 U	130 U
Vinyl Acetate	1000 U	240 U
1,1,1-Trichloroethane	500 U	92 U
Carbon tetrachloride	500 U	80 U
Benzene	500 U	160 U
Trichloroethene	2700	510
1,2-Dichloropropane	500 U	110 U
Bromodichloromethane	500 U	92 U
cis-1,3-Dichloropropene	500 U	110 U
trans-1,3-Dichloropropene	500 U	110 U
1,1,2-Trichloroethane	500 U	92 U
Dibromochloromethane	500 U	60 U
Bromoform	500 U	52 U
4-Methyl-2-Pentanone	1000 U	260 U
Toluene	500 U	140 U
2-Hexanone	1000 U	48 U
Tetrachloroethene	21000	3300
Chlorobenzene	500 U	110 U
Ethylbenzene	500 U	120 U
total-xylene (o+m+p)	500 U	120 U
Styrene	500 U	120 U
1,1,2,2-Tetrachloroethane	500 U	80 U

GC/MS DATA SHEET

FILE XQ3730

AMPLE	METHOD BLANK	CLIENT	DELCO
ATE	02/03/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	METHOD BLANK
ATA FILE	>Q3730	DATE SAMPLED	--
S NO.	MS#5	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

9502000046

GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job. No. 1295/458

Client Project No. 2225.00

Sample Origination & Shipping Information

Collection Site AC DELCO

Address _____ Street _____ City _____ State _____ Zip _____

Collector BRIAN RICCARDO (Print) _____ (Signature)

Bottles Prepared by _____ Rec'd by _____

Bottles Shipped to Client via _____ Seal/Shipping # _____

Samples Shipped via _____ Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign B. RICCARDO	1. Sign Deanna Delaney	2/13/95
for DELCO	for	13:54
2. Sign Deanna Delaney	2. Sign B. Bowe	2/13/95
for	for GTC	14:45
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by BB/Gardner 2/13/95 @ 14:45

	Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Sample Prep Preserved N	Sample Prep Filtered Y	Sample Prep Filtered N	Bottle Set(s) (see below)
1	121 / 5746-001	VM-223-90 / 2/13/11:20	X	EPA to 14					10
2	0.5 hr. / 5747-002	VM-214-30 / 2/13/12:30	X	"					10
3		/ / :							
4		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	1L TEDLAR	
# of each										1	

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), VAPOR EXTRACT (X), _____ (Y).

GC/MS DATA SHEET

FILE XQ3732

SAMPLE	R95/00458-001	CLIENT	DELCO
DATE	02/03/95	REFERENCE	VAPOR SAMPLES
DILUTION	20	LOCATION	VM-233-90
DATA FILE	>Q3732	DATE SAMPLED	02/03/95
MS NO.	MS#5	TIME SAMPLED	11:20

COMPOUND NAME	mg/m3	PPM
Chloromethane	100 U	48 U
Vinyl chloride	100 U	40 U
Bromomethane	100 U	26 U
Chloroethane	100 U	38 U
Trichlorofluoromethane	100 U	18 U
Acetone	200 U	84 U
1,1-Dichloroethene	100 U	26 U
Methylene chloride	100 U	20 U
Carbon Disulfide	200 U	64 U
trans-1,2-Dichloroethene	100 U	26 U
1,1-Dichloroethane	100 U	26 U
2-Butanone	200 U	68 U
cis-1,2-Dichloroethene	140	37
Chloroform	100 U	22 U
1,2-Dichloroethane	100 U	26 U
Vinyl Acetate	200 U	56 U
1,1,1-Trichloroethane	710	130
Carbon tetrachloride	100 U	16 U
Benzene	100 U	32 U
Trichloroethene	1200	230
1,2-Dichloropropane	100 U	22 U
Bromodichloromethane	100 U	18 U
cis-1,3-Dichloropropene	100 U	22 U
trans-1,3-Dichloropropene	100 U	22 U
1,1,2-Trichloroethane	100 U	18 U
Dibromochloromethane	100 U	12 U
Bromoform	100 U	10 U
4-Methyl-2-Pentanone	200 U	50 U
Toluene	100 U	28 U
2-Hexanone	200 U	9.8 U
Tetrachloroethene	3200	510
Chlorobenzene	100 U	22 U
Ethylbenzene	100 U	24 U
total-xylene (o+m+p)	100 U	24 U
Styrene	100 U	24 U
1,1,2,2-Tetrachloroethane	100 U	16 U

GC/MS DATA SHEET

FILE XQ3733

MPLE	R95/00458-002	CLIENT	DELCO
ATE	2/03/95	REFERENCE	VAPOR SAMPLES
LUTION	100	LOCATION	VM-214-30
TA FILE	>Q3733	DATE SAMPLED	02/03/95
S NO.	MS#5	TIME SAMPLED	12:30

COMPOUND NAME	mg/m3	PPM
Chloromethane	500 U	240 U
Vinyl chloride	500 U	200 U
Bromomethane	500 U	130 U
Chloroethane	500 U	190 U
Trichlorofluoromethane	500 U	92 U
Acetone	1000 U	440 U
1,1-Dichloroethene	500 U	130 U
Methylene chloride	500 U	150 U
Carbon Disulfide	1000 U	320 U
trans-1,2-Dichloroethene	500 U	130 U
1,1-Dichloroethane	500 U	130 U
2-Butanone	1000 U	340 U
cis-1,2-Dichloroethene	500 U	130 U
Chloroform	500 U	110 U
1,2-Dichloroethane	500 U	130 U
Vinyl Acetate	1000 U	240 U
1,1,1-Trichloroethane	550	99
Carbon tetrachloride	500 U	80 U
Benzene	500 U	160 U
Trichloroethene	3100	600
1,2-Dichloropropane	500 U	110 U
Bromodichloromethane	500 U	92 U
cis-1,3-Dichloropropene	500 U	110 U
trans-1,3-Dichloropropene	500 U	110 U
1,1,2-Trichloroethane	500 U	92 U
Dibromochloromethane	500 U	60 U
Bromoform	500 U	52 U
4-Methyl-2-Pentanone	1000 U	260 U
Toluene	500 U	140 U
2-Hexanone	1000 U	48 U
Tetrachloroethene	20000	3200
Chlorobenzene	500 U	110 U
Ethylbenzene	500 U	120 U
total-xylene (o+m+p)	500 U	120 U
Styrene	500 U	120 U
1,1,2,2-Tetrachloroethane	500 U	80 U

GC/MS DATA SHEET

FILE XQ3730

SAMPLE	METHOD BLANK	CLIENT	DELCO
DATE	02/03/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	METHOD BLANK
DATA FILE	>Q3730	DATE SAMPLED	--
MS NO.	MS#5	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

9502060052

GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job. No. R95/464

Client Project No. 2225.00

Sample Origination & Shipping Information

Collection Site AC DELCO

Address _____ Street _____ City _____ State _____ Zip _____

Collector JANA SPILKER (Print) Jana Spilker (Signature)

Bottles Prepared by Client Rec'd by Client

Bottles Shipped to Client via ? Seal/Shipping # _____

Samples Shipped via ? Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign Jana Spilker	1. Sign _____	2 14 95
for	for GTC	11:30
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by _____ 2 4 95 @ 11:30

	Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
	23 HR	VM-214-30	X	EPA-to 14					10
	#5760	2/4/(11:05							
2		/ / :							
		/ / :							
		/ / :							
		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	1L TEDLAR	
# of each										1	

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), VAPOR EXTRACT (X), _____ (Y).

GC/MS DATA SHEET

FILE XJ2684

AMPLE	R95/00464-001	CLIENT	DELCO
ATE	2/05/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	VM-214-30
ATA FILE	>J2684	DATE SAMPLED	02/04/95
S NO.	MS#3	TIME SAMPLED	11:05

COMPOUND NAME	mg/m3	PPM
Chloromethane	130 U	60 U
Vinyl chloride	130 U	50 U
Bromomethane	130 U	33 U
Chloroethane	130 U	48 U
Trichlorofluoromethane	130 U	23 U
Acetone	250 U	110 U
1,1-Dichloroethene	130 U	33 U
Methylene chloride	130 U	38 U
Carbon Disulfide	250 U	80 U
trans-1,2-Dichloroethene	130 U	33 U
1,1-Dichloroethane	130 U	33 U
2-Butanone	250 U	85 U
cis-1,2-Dichloroethene	130 U	33 U
Chloroform	130 U	28 U
1,2-Dichloroethane	130 U	33 U
Vinyl Acetate	250 U	70 U
1,1,1-Trichloroethane	130 U	23 U
Carbon tetrachloride	130 U	20 U
Benzene	130 U	40 U
Trichloroethene	830	160
1,2-Dichloropropane	130 U	28 U
Bromodichloromethane	130 U	23 U
cis-1,3-Dichloropropene	130 U	28 U
trans-1,3-Dichloropropene	130 U	28 U
1,1,2-Trichloroethane	130 U	23 U
Dibromochloromethane	130 U	15 U
Bromoform	130 U	13 U
4-Methyl-2-Pentanone	250 U	63 U
Toluene	130 U	35 U
2-Hexanone	250 U	12 U
Tetrachloroethene	2900	470
Chlorobenzene	130 U	28 U
Ethylbenzene	130 U	30 U
total-xylene (o+m+p)	130 U	30 U
Styrene	130 U	30 U
1,1,2,2-Tetrachloroethane	130 U	20 U

23 WR

GC/MS DATA SHEET

FILE XJ2682

AMPLE	METHOD BLANK	CLIENT	DELCO
ATE	02/05/95	REFERENCE	VAPOR SAMPLES
ILUTION	1.0	LOCATION	METHOD BLANK
ATA FILE	>J2682	DATE SAMPLED	--
S NO.	MS#3	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

GENERAL TESTING CORPORATION / CHAIN-OF-CUSTODY RECORD

710 Exchange Street Rochester, NY 14608 | 85 Trinity Place Hackensack, NJ 07601 | 435 Lawrence Bell Drive Amherst, NY 14221-7077

GTC Job. No. R95/468
Client Project No. 2225.00

Sample Origination & Shipping Information

Collection Site AC DELCO

Address _____
Street City State Zip

Collector: JANA SPILKER (Print) Jana C Spilker (Signature)

Bottles Prepared by Client Rec'd by Client
Bottles Shipped to Client via ↓ Seal/Shipping #
Samples Shipped via ↓ Seal/Shipping #

Sample(s) Relinquished by:	Received by:	Date//Time
1. Sign Jana Spilker	1. Sign Tom Hastings	2 16 95
for	for GTC	12 :00
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by Tom Hastings 2/6/95 @ 12:00

	Client I.D. # / Lab #	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Sample Prep Preserved N	Sample Prep Filtered Y	Sample Prep Filtered N	Bottle Set(s) (see below)
1	71 HR / 5781	VM-214-30 / 2/6/ 11:05	X	EPA to14					10
2		/ / :							
3		/ / :							
4		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	1L TEDLAR	
# of each										1	

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), VAPOR EXTRACT (X), _____ (Y).

GC/MS DATA SHEET

FILE XJ2687

MPLE	R95/00468-001	CLIENT	DELCO
TE	2/06/95	REFERENCE	VAPOR SAMPLES
ILUTION	20	LOCATION	VM-214-30
TA FILE	>J2687	DATE SAMPLED	02/06/95
NO.	MS#3	TIME SAMPLED	11:05

OMPOUND NAME	mg/m3	PPM
Chloromethane	100 U	48 U
Vinyl chloride	100 U	40 U
Bromomethane	100 U	26 U
Chloroethane	100 U	38 U
Trichlorofluoromethane	100 U	18 U
Acetone	200 U	84 U
1,1-Dichloroethene	100 U	26 U
Methylene chloride	100 U	20 U
Carbon Disulfide	200 U	64 U
trans-1,2-Dichloroethene	100 U	26 U
1,1-Dichloroethane	100 U	26 U
2-Butanone	200 U	68 U
cis-1,2-Dichloroethene	100 U	26 U
Chloroform	100 U	22 U
1,2-Dichloroethane	100 U	26 U
Vinyl Acetate	200 U	56 U
1,1,1-Trichloroethane	100 U	18 U
Carbon tetrachloride	100 U	16 U
Benzene	100 U	32 U
Trichloroethene	700	130
1,2-Dichloropropane	100 U	22 U
Bromodichloromethane	100 U	18 U
cis-1,3-Dichloropropene	100 U	22 U
trans-1,3-Dichloropropene	100 U	22 U
1,1,2-Trichloroethane	100 U	18 U
Dibromochloromethane	100 U	12 U
Bromoform	100 U	10 U
4-Methyl-2-Pentanone	200 U	50 U
Toluene	100 U	28 U
2-Hexanone	200 U	9.8 U
Tetrachloroethene	2400	380
Chlorobenzene	100 U	22 U
Ethylbenzene	100 U	24 U
total-xylene (o+m+p)	100 U	24 U
Styrene	100 U	24 U
1,1,2,2-Tetrachloroethane	100 U	16 U

GC/MS DATA SHEET

FILE XJ2682

AMPLE	METHOD BLANK	CLIENT	DELCO
ATE	02/05/95	REFERENCE	VAPOR SAMPLES
DILUTION	1.0	LOCATION	METHOD BLANK
ATA FILE	>J2682	DATE SAMPLED	--
S NO.	MS#3	TIME SAMPLED	--

COMPOUND NAME	mg/m3	PPM
Chloromethane	5.0 U	2.4 U
Vinyl chloride	5.0 U	2.0 U
Bromomethane	5.0 U	1.3 U
Chloroethane	5.0 U	1.9 U
Trichlorofluoromethane	5.0 U	.90 U
Acetone	10.0 U	4.2 U
1,1-Dichloroethene	5.0 U	1.3 U
Methylene chloride	5.0 U	1.5 U
Carbon Disulfide	10.0 U	3.2 U
trans-1,2-Dichloroethene	5.0 U	1.3 U
1,1-Dichloroethane	5.0 U	1.3 U
2-Butanone	10.0 U	3.4 U
cis-1,2-Dichloroethene	5.0 U	1.3 U
Chloroform	5.0 U	1.1 U
1,2-Dichloroethane	5.0 U	1.3 U
Vinyl Acetate	10.0 U	2.8 U
1,1,1-Trichloroethane	5.0 U	.90 U
Carbon tetrachloride	5.0 U	.80 U
Benzene	5.0 U	1.6 U
Trichloroethene	5.0 U	.95 U
1,2-Dichloropropane	5.0 U	1.1 U
Bromodichloromethane	5.0 U	.90 U
cis-1,3-Dichloropropene	5.0 U	1.1 U
trans-1,3-Dichloropropene	5.0 U	1.1 U
1,1,2-Trichloroethane	5.0 U	.90 U
Dibromochloromethane	5.0 U	.60 U
Bromoform	5.0 U	.50 U
4-Methyl-2-Pentanone	10.0 U	2.5 U
Toluene	5.0 U	1.4 U
2-Hexanone	10.0 U	.49 U
Tetrachloroethene	5.0 U	.80 U
Chlorobenzene	5.0 U	1.1 U
Ethylbenzene	5.0 U	1.2 U
total-xylene (o+m+p)	5.0 U	1.2 U
Styrene	5.0 U	1.2 U
1,1,2,2-Tetrachloroethane	5.0 U	.80 U

DELPHI
Automotive Systems

1000 Lexington Avenue
Rochester, NY 14606
fax (716) 647-4878

fax

to: Bill Corbett

fax #: (716) 232-4652

from: Jana Spilker

date: 08 March 1995

subject: SVE Pilot - Water Data

pages: 3 + header

NOTES:

FREE-COL LABORATORIES, INC.

P.O. BOX 557,COTTON ROAD
MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-6242
FAX: (814) 333-1466

5815 AIRPORT ROAD
ROANOKE, VIRGINIA 24012
PHONE: (703) 265-2544
FAX: (703) 362-1663

02/17/95

TO:

AC DELCO SYSTEMS
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER		SAMPLE ID : VM220-90 01/31/95	VM 219-90 02/01/95	VM 229-90 02/02/95
	LAB ID	50208420	50208421	50208422
	DATE RECEIVED:	02/08/95	02/08/95	02/08/95
VOLATILE COMPOUNDS	UNITS = MG/L			
CHLOROMETHANE		<0.10 D	<0.10 D	<0.10 D
BROMOMETHANE		<0.10 D	<0.10 D	<0.10 D
VINYL CHLORIDE		<0.10 D	<0.10 D	<0.10 D
CHLOROETHANE		<0.10 D	<0.10 D	<0.10 D
METHYLENE CHLORIDE		<0.05 D	<0.05 D	<0.05 D
ACETONE		<1.0 D	<1.0 D	<1.0 D
CARBON DISULFIDE		<0.05 D	<0.05 D	<0.05 D
1,1,-DICHLOROETHENE		<0.05 D	<0.05 D	<0.05 D
1,1,-DICHLOROETHANE		<0.05 D	<0.05 D	<0.05 D
1,2-DICHLORO***	1,2 DCE	1.5	1.2	1.4
CHLOROFORM		<0.05 D	<0.05 D	<0.05 D
1,2-DICHLOROETHANE		<0.05 D	<0.05 D	<0.05 D
2-BUTANONE		<1.0 D	<1.0 D	<1.0 D
1,1,1-TRICHLOROETHA*		<0.05 D	<0.05 D	<0.05 D
CARBON TETRACHLORIDE		<0.05 D	<0.05 D	<0.05 D
VINYL ACETATE		<0.50 D	<0.50 D	<0.50 D
BROMODICHLOROMETHANE		<0.05 D	<0.05 D	<0.05 D
1,1,2,2-TETRACHLORO*		<0.05 D	<0.05 D	<0.05 D
1,2-DICHLOROPROPANE		<0.05 D	<0.05 D	<0.05 D
TRANS-1,3-DICHLOROP*		<0.05 D	<0.05 D	<0.05 D
TRICHLOROETHENE	TCE	4.0	2.0	1.4
DIBROMOCHLOROMETHANE		<0.05 D	<0.05 D	<0.05 D
1,1,2-TRICHLOROETHA*		<0.05 D	<0.05 D	<0.05 D
BENZENE		<0.05 D	<0.05 D	<0.05 D
CIS-1,3-DICHLOROPRO*		<0.05 D	<0.05 D	<0.05 D

*Some of the above names have been abbreviated. Please reference the enclosed list for their complete names.

FREE-COL LABORATORIES, INC.

P.O. BOX 657,COTTON ROAD
MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-8242
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5815 AIRPORT ROAD
ROANOKE, VIRGINIA 24012
PHONE: (703) 265-2544
FAX: (703) 362-1863

02/17/95

TO:

AC DELCO SYSTEMS
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM220-90 01/31/95	VM 219-90 02/01/95	VM 229-90 02/02/95
	LAB ID	50208420	50208421	50208422
	DATE RECEIVED:	02/08/95	02/08/95	02/08/95
VOLATILE COMPOUNDS (Cont.)	UNITS = MG/L			
2-CHLOR* VINYL ETHER		<0.10 D	<0.10 D	<0.10 D
BROMOFORM		<0.05 D	<0.05 D	<0.05 D
2-HEXANONE		<0.50 D	<0.50 D	<0.50 D
4-METHYL-2-PENTANONE		<0.50 D	<0.50 D	<0.50 D
TETRACHLOROETHENE	PCE	5.8	7.4	0.75
TOLUENE		<0.05 D	<0.05 D	<0.05 D
CHLOROBENZENE		<0.05 D	<0.05 D	<0.05 D
ETHYL BENZENE		<0.05 D	<0.05 D	<0.05 D
STYRENE		<0.05 D	<0.05 D	<0.05 D
TOTAL XYLENES		<0.05 D	<0.05 D	<0.05 D

DATE AND ANALYST

02/15/95 ECKLUND/MAJOR

Andrew K. Ecklund
ASST. LABORATORY DIRECTOR

*Some of the above names have been abbreviated. Please reference the enclosed list for their complete names.

FREE-COL LABORATORIES, INC.
P.O. Box 557, Codon Road
Meadville, Pennsylvania 16335-0557
Phone: Area Code 814/724-6242
FAX: Area Code 814/333-1466

ENVIRONMENTAL
OCCUPATIONAL HEALTH
FOOD SCIENCE
SPECIALISTS

Unabbreviated Listing of Hazardous Substance List Compounds

VOLATILE COMPOUNDS

Chloromethane
Bromomethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Acetone
Carbon Disulfide
1,1-Dichloroethene
1,1-Dichloroethane
1,2-Dichloroethylenes (Total)***
Chloroform
1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Vinyl Acetate
Ethyl Benzene
Styrene
Total Xylenes

Bromodichloromethane
1,1,2,2-Tetrachloroethane
1,2-Dichloropropane
trans-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2-Trichloroethane
Benzene
cis-1,3-Dichloropropene
2-Chloroethyl Vinyl Ether
Bromoform
2-Hexanone
4-Methyl-2-pentanone
Tetrachloroethene
Toluene
Chlorobenzene

***EPA Methods 601 and 624 and SW 846 Methods 8010 and 8240 do not differentiate the co-eluting cis and trans-1,2-dichloroethenes. The result reported to you is the sum of both compounds.

APPENDIX F

SOIL DATA

TABLE 2
AC DELCO SYSTEMS

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL DATA
STUDY AREA 5

BORING/WELL NUMBER	SAMPLE NUMBER	VINYL CHLOR.	1,1-DCE	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PERC	ETHYLCHLORO-BENZ.	-BENZ.	XYLENE	Total VOC
B/VM-209	S1	---	---	---	---	---	95.000	---	---	---	---	95.000
	S2	---	---	---	3.400	---	850.000	1.400	---	---	---	854.800
SPLIT SPOON	S3	---	---	---	27.000	---	270.000	150.000	---	---	---	447.000
SOIL SAMPLES:	S4	---	---	---	4.400	---	160.000	20.000	---	---	---	184.400
	S5	---	---	---	16.000	---	170.000	140.000	---	---	---	326.000
	S6	---	---	---	28.000	---	180.000	120.000	---	---	---	328.000
	S7	---	---	---	11.000	---	280.000	490.000	---	---	---	781.000
B/VM-210	S1	---	---	---	---	---	29.000	---	---	---	---	29.000
	S2	---	---	---	0.800	---	240.000	2.100	---	---	---	242.900
SPLIT SPOON	S3	---	---	---	1.100	---	5.200	---	---	---	---	6.300
SOIL SAMPLES:	S4	---	---	---	1.800	---	---	---	---	---	---	1.800
	S5	---	---	---	---	---	4.900	---	---	---	---	4.900
	S6	---	---	---	---	---	---	---	---	---	---	---
GROUNDWATER, 9/13/90:		---	---	---	21.000	---	120.000	---	---	---	---	141.000
B/VM-211	S1	---	---	2.000	4.500	---	---	---	---	---	---	6.500
	S2	---	---	2.400	3.100	---	---	---	---	---	---	5.500
SPLIT SPOON	S3	---	---	1.200	1.200	---	---	---	---	---	---	2.400
SOIL SAMPLES:	S4	---	---	---	1.900	---	---	---	---	---	---	1.900
	S5	---	---	12.000	---	---	0.900	1.700	---	---	---	14.600
	S6	1.400	---	120.000	---	---	1.000	1.800	---	---	---	124.200
	S7	NO RECOVERY										
	S8	---	---	17.000	---	---	---	---	---	---	---	17.000
LIQUID FROM S6 SPOON:		2.900	---	100.000	1.000	---	---	---	---	---	---	103.900
B/VM-212	S1	---	---	---	---	---	90.000	---	---	---	---	90.000
	S2	---	---	---	2.700	---	80.000	0.700	---	---	---	83.400
SPLIT SPOON	S3	---	---	---	28.000	---	410.000	1.900	---	---	---	439.900
SOIL SAMPLES:	S4	---	---	---	18.000	---	58.000	0.700	---	---	---	76.700
	S5	---	---	---	44.000	---	18.000	---	---	---	---	62.000
	S6	1.100	---	---	59.000	---	2.300	---	---	---	---	62.400
	S7	---	---	---	7.100	---	---	---	---	---	---	7.100
	S8	---	---	---	4.700	---	---	---	---	---	---	4.700
B/VM-213	S1	---	---	---	---	---	---	1.200	---	---	---	1.200
	S2	---	---	---	6.200	---	1.100	5.600	---	---	---	12.900
SPLIT SPOON	S3	NO RECOVERY										
SOIL SAMPLES:	S4	---	---	---	4.700	---	1.300	5.900	---	---	---	11.900
	S5	0.110	---	0.030	0.082	---	---	---	---	---	---	0.222
	S6	---	---	0.019	0.015	---	---	---	---	---	---	0.034
B/VM-214	S1	---	---	---	---	34.000	170.000	5700.000	---	---	---	5904.000
	S2	---	---	---	---	---	2.000	120.000	---	---	---	122.000
SPLIT SPOON	S3	---	---	---	---	---	---	26.000	---	---	---	26.000
SOIL SAMPLES:	S4	---	---	---	---	---	0.500	6.200	---	---	---	6.700
	S5	---	---	---	---	---	---	66.000	---	---	---	66.000
	S6	---	---	---	2.400	---	---	---	---	---	---	2.400
	S7	---	---	---	0.800	---	0.800	47.000	---	---	---	48.600
GROUNDWATER, 9/13/90:		0.530	0.290	0.057	6.300	2.200	6.900	17.000	---	---	---	33.277
B/VM-215	S1	---	---	---	---	---	190.000	20.000	---	---	---	210.000
	S2	---	---	---	---	---	48.000	11.000	---	---	---	57.000
SPLIT SPOON	S3	---	---	---	---	---	810.000	110.000	---	---	---	920.000
SOIL SAMPLES:	S4	---	---	---	---	---	510.000	68.000	---	---	---	578.000
	S5	---	---	---	36.000	---	6.700	2.800	---	---	---	45.500
GROUNDWATER, 9/13/90:		---	---	---	79.000	---	450.000	37.000	---	---	---	566.000

TABLE 2, CONTINUED

BORING/WELL NUMBER	SAMPLE NUMBER	VINYL CHLOR.	1,1-DCE	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PERC	ETHYLCHLORO-BENZ.	-BENZ.	XYLENE	Total VOC
B/SR-216	S1	---	---	---	---	---	0.800	1.000	---	---	---	1.800
	S2	---	---	---	---	---	1.200	1.300	---	---	---	2.500
SPLIT SPOON	S3	---	---	---	---	---	---	4.200	---	---	---	4.200
SOIL SAMPLES:	S4	---	---	---	---	---	0.600	2.700	---	---	---	3.300
	S5	---	---	---	1.200	---	---	0.600	---	---	---	1.800
	S6	---	---	---	1.000	---	---	---	---	---	---	1.000
	S7	---	---	---	0.700	---	---	---	---	---	---	0.700
GROUNDWATER, 9/6/90:		6.800	---	---	100.000	---	66.000	48.000	---	---	---	220.800
9/13/90:		10.000	---	---	80.000	---	68.000	26.000	---	---	---	184.000
11/6/90:		0.029	---	0.240	92.000	---	51.000	19.000	---	---	0.016	162.285
FLOATING OIL, 9/13/90:		210.000	25.000	24.000	3800.000	---	35000.000	88000.000	---	---	38.000	127097.000
11/6/90:		240.000	26.000	17.000	4600.000	11.000	25000.000	57000.000	9.800	---	34.000	86939.800
B/VM-217	S1	---	---	---	---	---	2.600	10.000	---	---	---	12.600
	S2	---	---	---	4.500	---	95.000	370.000	---	---	---	469.500
SPLIT SPOON	S3	---	---	---	---	---	24.000	100.000	---	---	---	124.000
SOIL SAMPLES:	S4	---	---	---	---	---	---	3.900	---	---	---	3.900
	S5	---	---	---	---	---	---	0.006	---	---	---	0.006
	S6	---	---	---	0.056	---	0.042	0.420	---	---	---	0.518
	S7	---	---	---	---	---	---	0.006	---	---	0.020	0.026
	S7B	---	---	---	---	---	---	0.062	0.006	---	0.022	0.090
	S8	---	---	---	---	---	---	---	---	---	---	---
B/VM-218	S1	---	---	---	---	---	---	140.000	---	---	---	140.000
	S2	---	---	---	---	---	---	33.000	---	---	---	33.000
SPLIT SPOON	S3	---	---	---	9.000	---	8.100	54.000	---	---	---	71.100
SOIL SAMPLES:	S4	---	---	---	50.000	---	700.000	1200.000	---	---	---	1950.000
	S5	---	---	---	20.000	---	65.000	110.000	---	---	---	195.000
	S6	---	---	---	2.200	---	36.000	120.000	---	---	---	158.200
	S7	---	---	---	7.200	---	34.000	52.000	---	---	---	93.200
GROUNDWATER, 9/13/90:		---	---	---	320.000	---	240.000	90.000	---	---	---	650.000
LIQUID FROM S4 SPOON:		---	---	---	290.000	---	250.000	32.000	---	---	---	572.000
B/VM-219	S1	---	---	---	44.000	---	3.400	250.000	---	---	---	297.400
	S2	---	---	---	---	---	---	3.300	---	---	---	3.300
SPLIT SPOON	S3	---	---	---	---	---	---	1.500	---	---	---	1.500
SOIL SAMPLES:	S4	---	---	---	64.000	---	630.000	750.000	---	---	---	1444.000
	S5	---	---	---	5.000	---	7.500	11.000	---	---	---	23.500
	S6	---	---	---	4.000	---	27.000	110.000	---	---	---	141.000
GROUNDWATER, 9/13/90:		1.600	---	---	87.000	---	160.000	31.000	---	---	---	279.600
B/VM-220	S1	---	---	---	---	---	30.000	860.000	---	---	---	890.000
	S2	---	---	---	---	---	3.500	100.000	---	---	---	103.500
SPLIT SPOON	S3	---	---	---	---	---	9.100	16.000	---	---	---	25.100
SOIL SAMPLES:	S4	---	---	---	1.000	---	11.000	11.000	---	---	---	23.000
	S5	---	---	---	4.500	---	1.400	3.000	---	---	---	8.900
SPLIT OF S5 *		5.360	---	---	36.100	---	0.260	0.616	---	---	---	42.336
	S6	---	---	---	2.100	---	6.000	23.000	---	---	---	33.100
	S7	---	---	---	3.800	---	20.000	26.000	---	---	---	49.800
GROUNDWATER, 9/13/90:		11.000	---	---	110.000	---	200.000	33.000	---	---	---	354.000
AUGER SPOIL, 6-8 FT.:		---	---	---	97.000	---	610.000	460.000	---	---	---	1167.000
B/VM-222	S1	---	---	---	---	---	100.000	26.000	---	---	---	126.000
	S2	---	---	---	---	---	1.300	6.000	---	---	---	7.300
SPLIT SPOON	S3	---	---	---	---	---	2.300	2.800	---	---	---	5.100
SOIL SAMPLES:	S4	---	---	---	---	---	25.000	14.000	---	---	---	39.000
	S5	---	---	---	57.000	---	110.000	120.000	---	---	---	287.000
	S6	---	---	---	1.800	---	0.900	1.100	---	---	---	3.800
	S7	---	---	---	---	---	0.800	3.900	---	---	---	4.700
GROUNDWATER, 9/13/90:		23.000	---	---	210.000	---	36.000	8.700	---	---	---	277.700
B/VM-223	S1	---	---	---	---	---	---	0.800	---	---	---	0.800
	S2	---	---	---	1.300	---	5.600	240.000	---	---	---	246.900
SPLIT SPOON	S3	---	---	---	1.800	1.000	48.000	840.000	---	---	---	890.800
SOIL SAMPLES:	S4	---	---	---	1.200	---	110.000	640.000	---	---	---	751.200
	S4B	---	---	---	---	---	3.000	21.000	---	---	---	24.000
	S5	---	---	---	1.800	---	1.100	58.000	---	---	---	60.900
	S6	---	---	---	5.800	---	1.100	8.700	---	---	---	15.600

TABLE 2, CONTINUED

BORING/WELL NUMBER	SAMPLE NUMBER	VINYL CHLOR.	1,1-DCE	1,1-DCA	1,2-DCE	1,1,1-TCA	TCE	PERC	ETHYLCHLORO-BENZ.	-BENZ.	XYLENE	Total VOC
B/VM-224	S1	---	---	---	---	---	4.500	2.000	---	---	---	6.500
	S2	---	---	---	---	---	5.600	1.000	---	---	---	7.600
SPLIT SPOON	S3	---	---	---	0.700	---	4.400	8.900	---	---	---	14.000
SOIL SAMPLES:	S4	---	---	---	2.000	---	2.800	6.900	---	---	---	11.700
	S5	---	---	---	0.029	---	---	0.007	---	---	---	0.036
	S6	---	---	---	---	---	---	0.006	---	---	---	0.006
GROUNDWATER, 9/13/90:		0.430	---	---	0.480	0.068	4.600	0.430	---	---	---	6.008
B/VM-225	S1	---	---	---	---	---	8.000	14.000	---	---	---	22.000
	S2	---	---	---	---	1.100	20.000	44.000	---	---	---	65.100
SPLIT SPOON	S3	---	---	---	---	---	6.000	6.500	---	---	---	12.500
SOIL SAMPLES:	S4	---	---	---	---	---	7.400	11.000	---	---	---	18.400
	S5	---	---	---	7.000	---	0.600	0.800	---	---	---	8.400
	S6	---	---	---	1.300	---	---	---	---	---	---	1.300
B/VM-226	S1	---	---	---	---	---	0.700	8.200	---	---	---	8.900
	S2	---	---	---	---	---	---	2.400	---	---	---	2.400
SPLIT SPOON	S3	---	---	---	---	---	---	1.500	---	---	---	1.500
SOIL SAMPLES:	S4	---	---	---	---	---	---	2.900	---	---	---	2.900
	S5	---	---	---	0.900	---	---	---	---	---	---	0.900
	S6	---	---	---	0.058	---	---	0.007	---	---	---	0.065
GROUNDWATER, 9/13/90:		3.900	---	0.160	8.200	0.110	0.190	0.890	---	---	---	13.450
B/VM-227	S1	---	---	---	---	---	0.600	5.200	---	---	---	5.800
	S2	NO RECOVERY										
SPLIT SPOON	S3	---	---	---	---	---	---	0.800	---	---	---	0.800
SOIL SAMPLES:	S4	---	---	---	---	---	---	---	---	---	---	---
	S5	---	---	---	---	---	---	0.005	---	---	---	0.005
	S6	---	---	---	---	---	---	0.011	---	---	---	0.011
B/VM-228	S1	---	---	---	---	---	1.400	---	---	---	---	1.400
	S2	---	---	---	0.030	---	0.170	0.005	---	0.017	0.120	0.342
SPLIT SPOON	S3	---	---	---	0.042	---	0.018	0.020	0.018	---	0.110	0.208
SOIL SAMPLES:	S4	---	---	---	0.010	---	0.011	0.005	---	---	---	0.026
	S5	---	---	---	---	---	0.005	0.006	---	---	0.028	0.039
B/VM-229	S1	---	---	---	---	---	---	0.600	---	---	---	0.600
	S2	---	---	---	---	---	0.500	1.900	---	---	---	2.400
SPLIT SPOON	S3	---	---	---	1.000	---	---	---	---	---	---	1.000
SOIL SAMPLES:	S4	0.012	---	---	0.008	---	---	---	---	---	---	0.020
	S5	---	---	---	0.020	---	0.009	0.040	---	---	---	0.069
	S6	---	---	---	0.030	---	---	---	---	---	---	0.030
GROUNDWATER, 9/13/90:		3.500	---	0.019	1.800	---	0.035	---	---	---	---	5.354
LIQUID FROM S6 SPOON:		0.650	---	---	0.240	---	---	0.046	---	---	---	0.936
SR-230 GROUNDWATER, 11/5/90:		13.000	0.023	---	95.000	---	---	---	---	---	---	108.023

NOTES:

1. ALL ANALYSES PERFORMED BY FREE-COL LABORATORIES, MEADVILLE, PA., UNLESS OTHERWISE INDICATED.
   * - SPLIT OF SOIL SAMPLE S5 FROM BORING B-220 ANALYZED BY GENERAL TESTING CORP., ROCHESTER, NY.
2. ALL VALUES ARE REPORTED IN PARTS PER MILLION (PPM).
3. METHOD 8240 ANALYTES WHICH WERE NOT DETECTED IN SAMPLES ARE NOT REPORTED ON THIS TABLE. TOTAL VOC FOR SR-216 LNAPL ON 11/5/90 INCLUDES 2.000 PPM TOLUENE NOT SHOWN ON TABLE.
4. "---" INDICATES "BELOW DETECTION LIMIT."
5. REFER TO TEXT FOR ADDITIONAL INFORMATION.

Appendix B

Bergmann Associates Start Up Data Report

HALEY & ALDRICH

Vapor Extraction System

Start Up Data

Delphi Automotive Systems
1000 Lexington Avenue
Rochester, New York 14606

Prepared for:

Delphi Automotive Systems

Prepared by:

Bergmann Associates
One South Washington Street
Rochester, New York 14614

October 1996

Project No. 2225.00

Vapor Extraction System

Start Up Data

Delphi Automotive Systems
1000 Lexington Avenue
Rochester, New York 14606

Prepared for:

Delphi Automotive Systems

Prepared by:

Bergmann Associates
One South Washington Street
Rochester, New York 14614

October 1996

Project No. 2225.00

Start Up Data

Table of Contents

1.0
Well Gauging Data

1.1
Well Gauging Summary

Delphi Automotive

Summary of Monitoring Well Gauging
(April 8, 1996)

Well Number	Top of Casing	Bottom of Well	Top of Groundwater	Depth of Groundwater
VM- 218	516.85		*product*	-
VM- 229	516.85	505.23	509.21	7.65
VM- 220	516.85	504.00	506.18	10.67
VM- 219	516.85	503.74	508.42	8.43
VM- 215	516.85	505.28	*dry*	-
VM- 222	516.85	503.66	505.51	11.34
VM- 224	516.85	505.27	*dry*	-
VM- 221	516.85	505.01	*dry*	-
SR- 216	516.85	490.79	494.82	22.03
VM- 223	516.85	505.19	*product*	-
VM- 214	516.85	505.81	*dry*	-
VM- 213	516.85	504.64	*dry*	-
VM- 225	516.85	505.39	*dry*	-
VM- 226	516.85	506.41	*dry*	-
VM- 227	516.85	507.04	509.07	7.78
VM- 228	516.85	506.04	*dry*	-
VM- 210	516.85	505.17	508.39	8.46
VM- 217	516.85	502.11	*dry*	-
SR ~~VM-~~ 230	516.85	491.05	*product*	-
VM- 211	516.85	504.88	*product*	-
VM- 212	516.85	503.06	*product*	-
VM ~~SR-~~ 209	516.85	*nm*	-	-

Notes:

1 Top of casing elevation is assumed at finish floor elevation obtained from the study area 5 report by H&A of New York

2 *dry:* indicates groundwater is not present in the well
product: indicates water level indicator interfearence due to petroleum layer
nm: indicates well not measured due to access

2.0
Water Sampling

2.1
Water Sampling Summary

2.2
Lab Data

Groundwater Laboratory Summary

(April 8, 1996 - Sampling Data)

	Wells	VCl	1,2-DCE	TCE	PCE	1,1-DCE
Floating Product (mg/kg)	211	400	12000	-	-	
	216	-	2600	20000	45000	
	218	-	7700	29000	48000	
	223	-	500	1200	4900	
	230	300	2200	-	-	
Ground-Water (mg/l)	210	5.7	65	18	-	0.27
	211	28	310	-	-	0.63
	212	100	400	0.35	-	0.98
	216	11	83	48	21	0.28
	219	5.2	160	72	18	
	220	31	260	44	32	
	222	49	170	-	-	
	227	3.1	4.1	0.86	1.2	
	229	1.3	1.8	-	-	
	230	11	14	-	-	

Note: Listed above are the main contaminants, refer to the lab data for a complete listing.

Summary of Analytical Data
Volatile Compounds from Vacuum Monitoring Wells
Liquid Samples - April 8, 1996
(all data in mg/l)

Analyte	VMID:	210	211	212	(SR)216	219	220	222	227	229	230
Vinyl Chloride		5.7	28	100	11	5.2	31	49	3.1	1.3	11
Acetone	(50)	-	-	9.4	-	-	-	-	-	-	
1,1,-Dichloroethene	(2.5)	0.27	0.63	0.98	-	-	-	-	-	-	
1,2 Dichloroethene		65	310	400	83	160	260	170	4.1	1.8	14
Trichloroethene	(2.5)	18	-	0.35	48	72	44	-	0.86	-	-
4-Methyl-2-Pentanone	(2.5)	-	-	22	-	-	-	-	-	-	-
Tetrachlovoethene	(2.5)	-	-	-	21	18	32	-	1.2	-	-

Note:
- *undetected*
( ) *detection limits*

Summary of Analytical Data
Volatile Compounds from Vacuum Monitoring Wells
Product Samples - April 8, 1996
(all data in mg/kg)

Analyte	VM ID:	211	216	218	223	230
Vinyl Chloride	(200)	400	-	-	-	300
1,2 Dichloroethene		12,000	2,600	7,700	500	2,200
Trichloroethene	(100)	-	20,000	29,000	1,200	-
Tetrachlovoethene	(100)	-	45,000	48,000	4,900	-
Total Xylenes	(100)	200	-	-	-	200

Note:
- *undetected*
( ) *detection limits*

FREE-COL LABORATORIES, INC.
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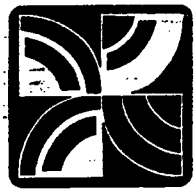
Meadville, Pennsylvania 16335-0557
Phone: Area Code 814/724-8242
FAX: Area Code 814/333-1466



ENVIRONMENTAL
OCCUPATIONAL HEALTH
FOOD SCIENCE
SPECIALISTS

DELPHI ENERGY & ENGINE
GENERAL MOTORS CORPORATION

VM-210
VM-211
VM-212
SR-216
VM-219
VM-220
VM-222
VM-227
VM-229
VM-230
VM-218
VM-223
VM-230

SAMPLE DATES: 04/08/96

FREE-COL LABORATORIES, INC.
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TO:

Results expressed as MG/KG or % are calculated on an as received weight basis, with two exceptions: % volatile solids and % fixed solids (% ash) are expressed on a dry weight basis.

ANALYTICAL REPORT FORM

CODE B: This analyte was detected in the associated blank as well as in the sample. It indicates possible/probable contamination. The data user may subtract the blank value from the sample value at his/her discretion.

CODE D: Detection limit change due to a dilution.

CODE R: The percent recovery on the spiked sample associated with this sample was not within the acceptance limits of 75% - 125%

CODE S: This result was obtained by Method of Standard Additions.

CODE NA: Not Applicable

CODE ND: Not Detectable

PRC: Preparation Reference Control

VOID: The sample plus spike concentration exceeded the linear range of the standard curve.

CODE Q: Values for parameters quantified in this sample have been adjusted for recoveries of the analytical matrix spike. The adjustments have been based on the matrix recoveries from this sample. Adjusted values are not given where sample values were less than the detection limit or where spike recoveries are equal to 100%

CODE J: This result is an estimated value. It indicates that the compound meets the mass spectral data identification criteria. The result is less than the quantitation limit but greater than zero.

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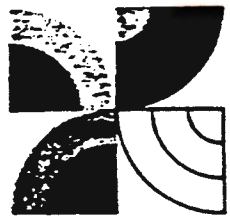

ENVIRONMENTAL
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FOOD SCIENCE
SPECIALISTS

Unabbreviated Listing of Hazardous Substance List Compounds

VOLATILE COMPOUNDS

Chloromethane
Bromomethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Acetone
Carbon Disulfide
1,1-Dichloroethene
1,1-Dichloroethane
1,2-Dichloroethylenes (Total)***
Chloroform
1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Vinyl Acetate
Ethyl Benzene
Styrene
Total Xylenes

Bromodichloromethane
1,1,2,2-Tetrachloroethane
1,2-Dichloropropane
trans-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2-Trichloroethane
Benzene
cis-1,3-Dichloropropene
2-Chloroethyl Vinyl Ether
Bromoform
2-Hexanone
4-Methyl-2-pentanone
Tetrachloroethene
Toluene
Chlorobenzene

***EPA Methods 601 and 624 and SW 846 Methods 8010 and 8240 do not differentiate the co-eluting cis and trans-1,2-dichloroethenes. The result reported to you is the sum of both compounds.

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04/24/96

TO: DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-210	VM-211	VM-212	SR-216
		04/08/96	04/08/96	04/08/96	04/08/96
	LAB ID	60412400	60412401	60412402	60412403
	DATE RECEIVED:	04/12/96	04/12/96	04/12/96	04/12/96
VOLATILE COMPOUNDS	UNITS = MG/L				
CHLOROMETHANE		<0.50 D	<0.50 D	<0.50 D	<0.50 D
BROMOMETHANE		<0.50 D	<0.50 D	<0.50 D	<0.50 D
VINYL CHLORIDE		5.7	28	100	11
CHLOROETHANE		<0.50 D	<0.50 D	<0.50 D	<0.50 D
METHYLENE CHLORIDE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
ACETONE		<5.0 D	<5.0 D	9.4	<5.0 D
CARBON DISULFIDE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
1,1,-DICHLOROETHENE		0.27	0.63	0.98	0.28
1,1,-DICHLOROETHANE		<0.25 D	<0.25 D	<0.25 D	0.43
1,2-DICHLORO***		65	310	400	83
CHLOROFORM		<0.25 D	<0.25 D	<0.25 D	<0.25 D
1,2-DICHLOROETHANE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
2-BUTANONE		<5.0 D	<5.0 D	<5.0 D	<5.0 D
1,1,1-TRICHLOROETHA*		<0.25 D	<0.25 D	<0.25 D	<0.25 D
CARBON TETRACHLORIDE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
VINYL ACETATE		<2.5 D	<2.5 D	<2.5 D	<2.5 D
BROMODICHLOROMETHANE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
1,1,2,2-TETRACHLORO*		<0.25 D	<0.25 D	<0.25 D	<0.25 D
1,2-DICHLOROPROPANE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
TRANS-1,3-DICHLOROP*		<0.25 D	<0.25 D	<0.25 D	<0.25 D
TRICHLOROETHENE		18	<0.25 D	0.35	48
DIBROMOCHLOROMETHANE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
1,1,2-TRICHLOROETHA*		<0.25 D	<0.25 D	<0.25 D	<0.25 D
BENZENE		<0.025 D	<0.25 D	<0.25 D	<0.25 D
CIS-1,3-DICHLOROPRO*		<0.025 D	<0.25 D	<0.25 D	<0.25 D

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P.O. # RPB00186

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ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-210	VM-211	VM-212	SR-216
		04/08/96	04/08/96	04/08/96	04/08/96
	LAB ID	60412400	60412401	60412402	60412403
	DATE RECEIVED:	04/12/96	04/12/96	04/12/96	04/12/96
VOLATILE COMPOUNDS (Cont.)	UNITS = MG/L				
2-CHLOR* VINYL ETHER		<0.50 D	<0.50 D	<0.50 D	<0.50 D
BROMOFORM		<0.25 D	<0.25 D	<0.25 D	<0.25 D
2-HEXANONE		<2.5 D	<2.5 D	<2.5 D	<2.5 D
4-METHYL-2-PENTANONE		<2.5 D	<2.5 D	22	<2.5 D
TETRACHLOROETHENE		<0.25 D	<0.25 D	<0.25 D	21
TOLUENE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
CHLOROBENZENE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
ETHYL BENZENE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
STYRENE		<0.25 D	<0.25 D	<0.25 D	<0.25 D
TOTAL XYLENES		<0.25 D	<0.25 D	<0.25 D	<0.25 D

Please reference the following page(s) for date and analyst.

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ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-219 04/08/96	VM-220 04/08/96	VM-222 04/08/96	VM-227 04/08/96
	LAB ID	60412404	60412405	60412406	60412407
	DATE RECEIVED:	04/12/96	04/12/96	04/12/96	04/12/96
VOLATILE COMPOUNDS	UNITS = MG/L				
CHLOROMETHANE		<5.0 D	<5.0 D	<5.0 D	<0.50 D
BROMOMETHANE		<5.0 D	<5.0 D	<5.0 D	<0.50 D
VINYL CHLORIDE		5.2	31	49	3.1
CHLOROETHANE		<5.0 D	<5.0 D	<5.0 D	<0.50 D
METHYLENE CHLORIDE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
ACETONE		<50 D	<50 D	<50 D	<5.0 D
CARBON DISULFIDE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,1,-DICHLOROETHENE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,1,-DICHLOROETHANE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,2-DICHLORO***		160	260	170	4.1
CHLOROFORM		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,2-DICHLOROETHANE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
2-BUTANONE		<5.0 D	<50 D	<50 D	<5.0 D
1,1,1-TRICHLOROETHA*		<2.5 D	<2.5 D	<2.5 D	<0.25 D
CARBON TETRACHLORIDE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
VINYL ACETATE		<25 D	<25 D	<25 D	<2.5 D
BROMODICHLOROMETHANE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,1,2,2-TETRACHLORO*		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,2-DICHLOROPROPANE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
TRANS-1,3-DICHLOROP*		<2.5 D	<2.5 D	<2.5 D	<0.25 D
TRICHLOROETHENE		72	44	<2.5 D	0.86
DIBROMOCHLOROMETHANE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
1,1,2-TRICHLOROETHA*		<2.5 D	<2.5 D	<2.5 D	<0.25 D
BENZENE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
CIS-1,3-DICHLOROPRO*		<2.5 D	<2.5 D	<2.5 D	<0.25 D

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P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-219 04/08/96	VM-220 04/08/96	VM-222 04/08/96	VM-227 04/08/96
	LAB ID	60412404	60412405	60412406	60412407
	DATE RECEIVED:	04/12/96	04/12/96	04/12/96	04/12/96
VOLATILE COMPOUNDS (Cont.)	UNITS =	MG/L			
2-CHLOR* VINYL ETHER		<5.0 D	<5.0 D	<5.0 D	<0.50 D
BROMOFORM		<2.5 D	<2.5 D	<2.5 D	<0.25 D
2-HEXANONE		<25 D	<25 D	<25 D	<2.5 D
4-METHYL-2-PENTANONE		<25 D	<25 D	<25 D	<2.5 D
TETRACHLOROETHENE		18	32	<2.5 D	1.2
TOLUENE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
CHLOROBENZENE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
ETHYL BENZENE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
STYRENE		<2.5 D	<2.5 D	<2.5 D	<0.25 D
TOTAL XYLENES		<2.5 D	<2.5 D	<2.5 D	<0.25 D

Please reference the following page(s) for date and analyst.

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04/24/96

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1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-229	VM-230
		04/08/96	04/08/96
	LAB ID	60412408	60412409
	DATE RECEIVED:	04/12/96	04/12/96
VOLATILE COMPOUNDS	UNITS = MG/L		
CHLOROMETHANE		<0.50 D	<0.50 D
BROMOMETHANE		<0.50 D	<0.50 D
VINYL CHLORIDE		1.3	11
CHLOROETHANE		<0.50 D	<0.50 D
METHYLENE CHLORIDE		<0.25 D	<0.25 D
ACETONE		<5.0 D	<5.0 D
CARBON DISULFIDE		<0.25 D	<0.25 D
1,1,-DICHLOROETHENE		<0.25 D	<0.25 D
1,1,-DICHLOROETHANE		<0.25 D	<0.25 D
1,2-DICHLORO***		1.8	14
CHLOROFORM		<0.25 D	<0.25 D
1,2-DICHLOROETHANE		<0.25 D	<0.25 D
2-BUTANONE		<5.0 D	<5.0 D
1,1,1-TRICHLOROETHA*		<0.25 D	<0.25 D
CARBON TETRACHLORIDE		<0.25 D	<0.25 D
VINYL ACETATE		<2.5 D	<2.5 D
BROMODICHLOROMETHANE		<0.25 D	<0.25 D
1,1,2,2-TETRACHLORO*		<0.25 D	<0.25 D
1,2-DICHLOROPROPANE		<0.25 D	<0.25 D
TRANS-1,3-DICHLOROP*		<0.25 D	<0.25 D
TRICHLOROETHENE		<0.25 D	<0.25 D
DIBROMOCHLOROMETHANE		<0.25 D	<0.25 D
1,1,2-TRICHLOROETHA*		<0.25 D	<0.25 D
BENZENE		<0.25 D	<0.25 D
CIS-1,3-DICHLOROPRO*		<0.25 D	<0.25 D

*Some of the above names have been abbreviated. Please reference the enclosed list for their complete names.

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MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-6242
FAX: (814) 333-1466

04/24/96

TO: DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-229	VM-230
		04/08/96	04/08/96
	LAB ID	60412408	60412409
	DATE RECEIVED:	04/12/96	04/12/96
VOLATILE COMPOUNDS (Cont.)	UNITS =	MG/L	
2-CHLOR* VINYL ETHER		<0.50 D	<0.50 D
BROMOFORM		<0.25 D	<0.25 D
2-HEXANONE		<2.5 D	<2.5 D
4-METHYL-2-PENTANONE		<2.5 D	<2.5 D
TETRACHLOROETHENE		<0.25 D	<0.25 D
TOLUENE		<0.25 D	<0.25 D
CHLOROBENZENE		<0.25 D	<0.25 D
ETHYL BENZENE		<0.25 D	<0.25 D
STYRENE		<0.25 D	<0.25 D
TOTAL XYLENES		<0.25 D	<0.25 D

DATE AND ANALYST
04/18/96 ECKLUND/MAJOR

*Some of the above names have been abbreviated. Please reference the enclosed list for their complete names.

FREE-COL LABORATORIES, INC.
P.O. BOX 557, COTTON ROAD
MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-6242
FAX: (814) 333-1466

04/24/96

TO: DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-211 PRODUCT	SR-216 PRODUCT	VM-218 PRODUCT	VM-223 PRODUCT
		04/08/96	04/08/96	04/08/96	04/08/96
	LAB ID	60412410	60412411	60412412	60412413
	DATE RECEIVED:	04/12/96	04/12/96	04/12/96	04/12/96
VOLATILE COMPOUNDS	UNITS = MG/KG				
CHLOROMETHANE		<200 D	<200 D	<200 D	<200 D
BROMOMETHANE		<200 D	<200 D	<200 D	<200 D
VINYL CHLORIDE		400	<200 D	<200 D	<200 D
CHLOROETHANE		<200 D	<200 D	<200 D	<200 D
METHYLENE CHLORIDE		<100 D	<100 D	<100 D	<100 D
ACETONE		<2,000 D	<2,000 D	<2,000 D	<2,000 D
CARBON DISULFIDE		<100 D	<100 D	<100 D	<100 D
1,1,-DICHLOROETHENE		<100 D	<100 D	<100 D	<100 D
1,1,-DICHLOROETHANE		<100 D	<100 D	<100 D	<100 D
1,2-DICHLORO***		12,000	2,600	7,700	500
CHLOROFORM		<100 D	<100 D	<100 D	<100 D
1,2-DICHLOROETHANE		<100 D	<100 D	<100 D	<100 D
2-BUTANONE		<2,000 D	<2,000 D	<2,000 D	<2,000 D
1,1,1-TRICHLOROETHA*		<100 D	<100 D	<100 D	<100 D
CARBON TETRACHLORIDE		<100 D	<100 D	<100 D	<100 D
VINYL ACETATE		<1,000 D	<1,000 D	<1,000 D	<1,000 D
BROMODICHLOROMETHANE		<100 D	<100 D	<100 D	<100 D
1,1,2,2-TETRACHLORO*		<100 D	<100 D	<100 D	<100 D
1,2-DICHLOROPROPANE		<100 D	<100 D	<100 D	<100 D
TRANS-1,3-DICHLOROP*		<100 D	<100 D	<100 D	<100 D
TRICHLOROETHENE		<100 D	20,000	29,000	1,200
DIBROMOCHLOROMETHANE		<100 D	<100 D	<100 D	<100 D
1,1,2-TRICHLOROETHA*		<100 D	<100 D	<100 D	<100 D
BENZENE		<100 D	<100 D	<100 D	<100 D
CIS-1,3-DICHLOROPRO*		<100 D	<100 D	<100 D	<100 D

*Some of the above names have been abbreviated. Please reference the enclosed list for their complete names.

FREE-COL LABORATORIES, INC.
P.O. BOX 557, COTTON ROAD
MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-6242
FAX: (814) 333-1466

04/24/96

TO: DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-211 PRODUCT	SR-216 PRODUCT	VM-218 PRODUCT	VM-223 PRODUCT
		04/08/96	04/08/96	04/08/96	04/08/96
	LAB ID	60412410	60412411	60412412	60412413
	DATE RECEIVED:	04/12/96	04/12/96	04/12/96	04/12/96
VOLATILE COMPOUNDS (Cont.)	UNITS =	MG/KG			
2-CHLOR* VINYL ETHER		<200 D	<200 D	<200 D	<200 D
BROMOFORM		<100 D	<100 D	<100 D	<100 D
2-HEXANONE		<1,000 D	<1,000 D	<1,000 D	<1,000 D
4-METHYL-2-PENTANONE		<1,000 D	<1,000 D	<1,000 D	<1,000 D
TETRACHLOROETHENE		<100 D	45,000	48,000	4,900
TOLUENE		<100 D	<100 D	<100 D	<100 D
CHLOROBENZENE		<100 D	<100 D	<100 D	<100 D
ETHYL BENZENE		<100 D	<100 D	<100 D	<100 D
STYRENE		<100 D	<100 D	<100 D	<100 D
TOTAL XYLENES		200	<100 D	<100 D	<100 D

Please reference the following page(s) for date and analyst.

*Some of the above names have been abbreviated. Please reference the enclosed list for their complete names.

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04/24/96

TO:
DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

SAMPLE ID : VM-230
PRODUCT
04/08/96
LAB ID 60412414
DATE RECEIVED: 04/12/96

PARAMETER	RESULTS	UNITS	DATE AND ANALYST
VOLATILE COMPOUNDS			
Chloromethane	<200 D	MG/KG	04/18/96 ECKLUND/
Bromomethane	<200 D		MAJOR
Vinyl Chloride	300		
Chloroethane	<200 D		
Methylene Chloride	<100 D		
Acetone	<2,000 D		
Carbon Disulfide	<100 D		
1,1-Dichloroethene	<100 D		
1,1-Dichloroethane	<100 D		
1,2-Dichloroethenes (Total)***	2,200		
Chloroform	<100 D		
1,2-Dichloroethane	<100 D		
2-Butanone	<2,000 D		
1,1,1-Trichloroethane	<100 D		
Carbon Tetrachloride	<100 D		
Vinyl Acetate	<1,000 D		
Bromodichloromethane	<100 D		
1,1,2,2-Tetrachloroethane	<100 D		
1,2-Dichloropropane	<100 D		
trans-1,3-Dichloropropene	<100 D		
Trichloroethene	<100 D		
Dibromochloromethane	<100 D		
1,1,2-Trichloroethane	<100 D		

***EPA Methods 601 and 624 and SW 846 Methods 8010 and 8240 do not differentiate the co-eluting cis and trans-1,2-dichloroethenes. The result reported is the sum of both compounds.

FREE-COL LABORATORIES, INC.
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MEADVILLE, PENNSYLVANIA 16335
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04/24/96

TO: DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
1000 LEXINGTON AVE.,DEPT.12820
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

SAMPLE ID : VM-230
PRODUCT
04/08/96
LAB ID 60412414
DATE RECEIVED: 04/12/96

PARAMETER	RESULTS	UNITS	DATE AND ANALYST
VOLATILE COMPOUNDS Continued			
Benzene	<100 D	MG/KG	04/18/96 ECKLUND/
cis-1,3-Dichloropropene	<100 D		MAJOR
2-Chloroethylvinyl ether	<200 D		
Bromoform	<100 D		
2-Hexanone	<1,000 D		
4-Methyl-2-pentanone	<1,000 D		
Tetrachloroethene	<100 D		
Toluene	<100 D		
Chlorobenzene	<100 D		
Ethylbenzene	<100 D		
Styrene	<100 D		
Total Xylenes	200		

Volatile Compounds - Method 8240A
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, Third Edition, U.S. Environmental Protection Agency. Revised 1986.

Andrew K. Ecklund
ASST. LABORATORY DIRECTOR

FREE-COL LABORATORIES, INC.
P.O. Box 557, Cotton Road
Meadville, Pennsylvania 16335-0557
Phone: Area Code 814/724-8242
FAX: Area Code 814/333-1466

ENVIRONMENTAL
OCCUPATIONAL HEALTH
FOOD SCIENCE
SPECIALISTS

QUALITY CONTROL INFORMATION

Free-Col Laboratories analyzes control samples at specified frequencies during the analyses for the purpose of evaluating and documenting the precision and accuracy of the results. The attached quality control data, prepared at the time of analysis, reflect the results obtained for the various types of controls from the batch of samples described as follows:

General Motors Sample Identification			Free-Col ID
VM-210	04/08/96		60412400
VM-211	04/08/96		60412401
VM-212	04/08/96		60412402
SR-216	04/08/96		60412403
VM-219	04/08/96		60412404
VM-220	04/08/96		60412405
VM-222	04/08/96		60412406
VM-227	04/08/96		60412407
VM-229	04/08/96		60412408
VM-230	04/08/96		60412409
VM-211	PRODUCT	04/08/96	60412410
SR-216	PRODUCT	04/08/96	60412411
VM-218	PRODUCT	04/08/96	60412412
VM-223	PRODUCT	04/08/96	60412413
VM-230	PRODUCT	04/08/96	60412414

Special Notes:

1. The results on the analytical report may be given as mg/kg and related control value results may be given on the quality control data sheet as mg/L. The reason for this difference is that many control values are expressed in terms of the final concentration of the solvent or acid extract of a solid waste or oil sample.

FREE-COL LABORATORIES, INC.
VOA BLANK INFORMATION
(CLP - CALIBRATION BLANK LIMITS)

Date 4-18-96 Analyst T. Lata

Samples associated with this blank:

6004-12-400+414

Parameter	Blank Value
Units = ug/l	
Chloromethane	<10
Bromomethane	<10
Vinyl chloride	<10
Chloroethane	<10
Methylene chloride	<5
Acrolein	—
Acrylonitrile	—
1,1-Dichloroethene	<5
1,1-Dichloroethane	<5
trans-1,2-Dichloroethene	<5
Chloroform	<5
1,2-Dichloroethane	<5
1,1,1-Trichloroethane	<5
Carbon tetrachloride	<5
Bromodichloromethane	<5
1,2-Dichloropropane	<5
trans-1,3-Dichloropropene	<5
Trichloroethene	<5
Benzene	<5
Dibromochloromethane	<5
1,1,2-Trichloroethane	<5
cis-1,3-Dichloropropene	<5
2-Chloroethyl vinyl ether	<10
Bromoform	<5
Tetrachloroethene	<5
1,1,2,2-Tetrachloroethane	<5
Toluene	<5
Chlorobenzene	<5
Ethyl benzene	<5
1,3-Dichlorobenzene	—
1,2-Dichlorobenzene	—
1,4-Dichlorobenzene	—
Xylene	<5
2-Butanone - MEK	<10
4-Methyl-2-pentanone	<50
Acetone	<100
Syrene	<5

FREE-COL LABORATORIES, INC.
VOA BLANK INFORMATION
(CLP - CALIBRATION BLANK LIMITS)

Date 4-18-96 Analyst T. Lata

Samples associated with this blank:

604-12-400 → 414

Parameter	Blank Value
Units = ug/l	
Carbon Disulfide	< 5
Vinyl Acetate	< 50
2-Hexanone - MBK	< 50
Dichlorofluoromethane	—
1,1,1,2-Tetrachloroethane	—
Trichlorofluoromethane	—
1,2,3-Trichloropropane	—
3-Chloro-1-propene	—
1,2-Dibrmomethane	—
cis,1,2-Dichloroethene	—

FREE-COL LABORATORIES, INC.
VOA BLANK INFORMATION
(CLP - CALIBRATION BLANK LIMITS)

Date 4-19-96 Analyst T. Lafy

Samples associated with this blank:

604-12-400→414

Parameter	Blank Value
Units = ug/L	
Chloromethane	<10
Bromomethane	<10
Vinyl chloride	<10
Chloroethane	<10
Methylene chloride	<5
Acrolein	—
Acrylonitrile	—
1,1-Dichloroethene	<5
1,1-Dichloroethane	<5
trans-1,2-Dichloroethene	<5
Chloroform	<5
1,2-Dichloroethane	<5
1,1,1-Trichloroethane	<5
Carbon tetrachloride	<5
Bromodichloromethane	<5
1,2-Dichloropropane	<5
trans-1,3-Dichloropropene	<5
Trichloroethene	<5
Benzene	<5
Dibromochloromethane	<5
1,1,2-Trichloroethane	<5
cis-1,3-Dichloropropene	<5
2-Chloroethyl vinyl ether	<10
Bromoform	<5
Tetrachloroethene	<5
1,1,2,2-Tetrachloroethane	<5
Toluene	<5
Chlorobenzene	<5
Ethyl benzene	<5
1,3-Dichlorobenzene	—
1,2-Dichlorobenzene	—
1,4-Dichlorobenzene	—
Xylene	<5
2-Butanone - MEK	<10
4-Methyl-2-pentanone	<50
Acetone	<100
Syrene	<5

FREE-COL LABORATORIES, INC.
VOA BLANK INFORMATION
(CLP - CALIBRATION BLANK LIMITS)

Date 4-19-96 Analyst T. Lata

Samples associated with this blank:

604 ~~13~~ 12 400 → 414

Parameter	Blank Value
Units = ug/L	
Carbon Disulfide	<5
Vinyl Acetate	<50
2-Hexanone - MBK	<50
Dichlorofluoromethane	—
1,1,1,2-Tetrachloroethane	—
Trichlorofluoromethane	—
1,2,3-Trichloropropane	—
3-Chloro-1-propene	—
1,2-Dibrmomethane	—
cis,1,2-Dichloroethene	—

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REFERENCE CONTROL INFORMATION
(CLP - CALIBRATION VERIFICATION LIMITS)

Date 4-19-96 Analyst T. Laty

Samples associated with this reference control:

CC04-#0-400 → 414
12

Parameter	Target Value ug/L	Acceptance Limits ug/L	Assayed Value ug/L	File#
Chloromethane	20	5.4-34.5	22.4	223
Bromomethane	20	8.1-39.8	17.6	222
Vinyl chloride	20	1.3-42.4	17.4	232
Chloroethane	20	4.0-36.9	17.6	209
Methylene chloride	20	11.5-31.4	16.8	224
Acrolein	62	4.2-105.4	39.6	201
Acrylonitrile	58	13.2-116.0	52.5	202
1,1-Dichloroethene	20	10.9-32.4	18.4	216
1,1-Dichloroethane	20	15.3-28.0	16.2	214
trans-1,2-Dichloroethene	20	13.6-28.3	18.8	217
Chloroform	20	15.5-26.2	19.0	211
1,2-Dichloroethane	20	7.5-34.5	21.6	215
1,1,1-Trichloroethane	20	13.6-29.8	16.2	228
Carbon tetrachloride	20	7.7-28.1	21.8	206
Bromodichloromethane	20	9.7-30.1	19.2	212
1,2-Dichloropropane	20	15.2-28.0	21.5	218
trans-1,3-Dichloropropene	20	12.7-25.6	18.9	220
Trichloroethene	20	14.0-27.3	22.8	230
Benzene	20	14.2-28.1	22.6	203
Dibromochloromethane	20	4.1-29.5	18.2	208
1,1,2-Trichloroethane	20	14.2-28.5	22.8	229
cis-1,3-Dichloropropene	20	10.1-27.2	18.3	219
2-Chloroethyl vinyl ether	20	9.9-32.5	23.3	210
Bromoform	20	2.3-31.1	20.6	205
Tetrachloroethene	20	13.0-28.7	23.9	226
1,1,2,2-Tetrachloroethane	20	14.7-26.1	21.4	225
Toluene	20	15.1-25.7	21.3	227
Chlorobenzene	20	11.1-28.9	20.5	207
Ethyl benzene	20	13.2-27.7	19.9	221
1,3-Dichlorobenzene	26	18.2-36.9	27.8	234
1,2-Dichlorobenzene	26	11.0-42.2	27.5	233
1,4-Dichlorobenzene	20	3.0-36.1	21.7	235
Diethyl Benzene	44	25.9-62.9	—	237
Ethyl Ether	35	26.9-49.4	—	236
Xylene	44	21.0-66.7	41.0	238
MEK	20	9.1-39.4	24.3	240
Acetone	20	9.6-38.0	30.2	242

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REFERENCE CONTROL INFORMATION
(CLP - CALIBRATION VERIFICATION LIMITS)

Date 4-19-96 Analyst T. Lata

Samples associated with this reference control:

(a04-MB-400 → 414
12

Parameter	Target Value ug/L	Acceptance Limits ug/L	Assayed Value ug/L	File#
MIBK	20	14.0-29.7	23.4	243
Tetrahydrofuran	45	34.8-60.3	~~49.2~~ 43.2	244
Carbondisulfide	20	11.0-30.4	17.1	245
Styrene	20	12.4-30.0	18.8	246
Vinyl Acetate	20	11.0-27.5	20.9	247
Amyl Acetate	44	14.7-64.6	—	248
Methyl Butyl Ketone	20	10.3-33.9	23.8	249
Dichlorodifluoromethane			15.5	
~~Trichlorofluoromethane~~				
1,1,2-Trichloro-1,2,2-Trifluoroethane			25.7	

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REFERENCE CONTROL INFORMATION
(CLP - CALIBRATION VERIFICATION LIMITS)

Date 4-18-96 Analyst ECKLUND

Samples associated with this reference control:

604-12-400 → 414

Parameter	Target Value ug/L	Acceptance Limits ug/L	Assayed Value ug/L	File#
Chloromethane	20	5.4-34.5	18.4	223
Bromomethane	20	8.1-39.8	19.0	222
Vinyl chloride	20	1.3-42.4	16.6	232
Chloroethane	20	4.0-36.9	17.8	209
Methylene chloride	20	11.5-31.4	16.8	224
Acrolein	62	4.2-105.4	44.3	201
Acrylonitrile	58	13.2-116.0	52.6	202
1,1-Dichloroethene	20	10.9-32.4	16.1	216
1,1-Dichloroethane	20	15.3-28.0	18.8	214
trans-1,2-Dichloroethene	20	13.6-28.3	20.9	217
Chloroform	20	15.5-26.2	22.8	211
1,2-Dichloroethane	20	7.5-34.5	18.5	215
1,1,1-Trichloroethane	20	13.6-29.8	17.9	228
Carbon tetrachloride	20	7.7-28.1	22.2	206
Bromodichloromethane	20	9.7-30.1	18.4	212
1,2-Dichloropropane	20	15.2-28.0	20.5	218
trans-1,3-Dichloropropene	20	12.7-25.6	18.3	220
Trichloroethene	20	14.0-27.3	21.3	230
Benzene	20	14.2-28.1	23.1	203
Dibromochloromethane	20	4.1-29.5	18.2	208
1,1,2-Trichloroethane	20	14.2-28.5	21.5	229
cis-1,3-Dichloropropene	20	10.1-27.2	17.5	219
2-Chloroethyl vinyl ether	20	9.9-32.5	23.1	210
Bromoform	20	2.3-31.1	19.4	205
Tetrachloroethene	20	13.0-28.7	23.7	226
1,1,2,2-Tetrachloroethane	20	14.7-26.1	20.0	225
Toluene	20	15.1-25.7	20.0	227
Chlorobenzene	20	11.1-28.9	19.9	207
Ethyl benzene	20	13.2-27.7	19.4	221
1,3-Dichlorobenzene	26	18.2-36.9	27.1	234
1,2-Dichlorobenzene	26	11.0-42.2	26.9	233
1,4-Dichlorobenzene	20	3.0-36.1	21.1	235
Diethyl Benzene	44	25.9-62.9	—	237
Ethyl Ether	35	26.9-49.4	—	236
Xylene	44	21.0-66.7	39.7	238
MEK	20	9.1-39.4	23.2	240
Acetone	20	9.6-38.0	20.8	242

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REFERENCE CONTROL INFORMATION
(CLP - CALIBRATION VERIFICATION LIMITS)

Date 4-18-96 Analyst _____

Samples associated with this reference control:

604-12-400→414

Parameter	Target Value ug/L	Acceptance Limits ug/L	Assayed Value ug/L	File#
MIBK	20	14.0-29.7	23.7	243
Tetrahydrofuran	45	34.8-60.3	—	244
Carbondisulfide	20	11.0-30.4	18.1	245
Styrene	20	12.4-30.0	18.8	246
Vinyl Acetate	20	11.0-27.5	21.9	247
Amyl Acetate	44	14.7-64.6	—	248
Methyl Butyl Ketone	20	10.3-33.9	21.6	249
Dichlorodifluoromethane	20		16.6	
Trichlorofluoromethane	20		17.7	

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REPEAT CONTROL INFORMATION
(CLP - DUPLICATE SAMPLE LIMITS)

Date 4-18-96 Analyst Eclund/Maja
Samples associated with this repeat control:

604-12-400 → 414

Sample used as repeat control: 604-12-409 (500x)
AD = Absolute Difference RPD = Relative Percent Difference

Parameter	Samp. Value	Repeat Value	Accept AD	Accept RPD	Assayd AD/RPD	File
Units = ug/L						
Chloromethane	<10	<10			Ø	820
Bromomethane	<10	<10				819
Vinyl chloride	22	22		27		828
Chloroethane	<10	<10				807
Methylene chloride	<5	<5		17		821
Acrolein	-	-			-	800
Acrylonitrile	-	-			-	801
1,1-Dichloroethene	<5	<5			Ø	813
1,1-Dichloroethane	<5	<5		41		811
~~trans~~-1,2-Dichloroethenes	28	28		28		814
Chloroform	<5	<5		14		809
1,2-Dichloroethane						812
1,1,1-Trichloroethane				27		825
Carbon tetrachloride						804
Bromodichloromethane				79		810
1,2-Dichloropropane						815
trans-1,3-Dichloropropene						817
Trichloroethene				32		827
Benzene				49		802
Dibromochloromethane				70		806
1,1,2-Trichloroethane						826
cis-1,3-Dichloropropene						816
2-Chloroethyl vinyl ether	<10	<10				808
Bromoform	<5	<5				803
Tetrachloroethene				33		823
1,1,2,2-Tetrachloroethane						822
Toluene				38		824
Chlorobenzene				24		805
Ethyl benzene				5		818
1,3-Dichlorobenzene	-	-			-	830
1,2-Dichlorobenzene	-	-			-	829
1,4-Dichlorobenzene	-	-		36	-	831
Acetone	<100	<100		26	Ø	836

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REPEAT CONTROL INFORMATION
(CLP - DUPLICATE SAMPLE LIMITS)

Date 4-18-96 Analyst Ecklund/Mayer
Samples associated with this repeat control:

604-12-400→414

Sample used as repeat control: 604-12409 (500x)
AD = Absolute Difference RPD = Relative Percent Difference

Parameter	Samp. Value	Repeat Value	Accept AD	Accept RPD	Assayd AD/RPD	File
Units = ug/L						
3-Chloro-1-propene						
Dichlorodifluoromethane						
Methyl Ethyl Ketone	<100	<100			Ø	
MIBK	<50	<50			Ø	
1,1,1,2-Tetrachloroethane						
Trichlorofluoromethane						
1,2,3-Trichloropropane						
1,2-Dibromomethane						
Cis-1.2-Dichloroethane						
Xylene	<5	<5			Ø	
Carbon Disulfide	↓	↓			↓	
Styrene	↓	↓			↓	
Vinyl Acetate	<50	<50			↓	
Methyl Butyl Ketone	<50	<50			↓	

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REPEAT CONTROL INFORMATION
(CLP - DUPLICATE SAMPLE LIMITS)

Date 4-19-96 Analyst Edlund/Majd
Samples associated with this repeat control:
604-12-400 → 414

Sample used as repeat control: 604-12-414
AD = Absolute Difference RPD = Relative Percent Difference

Units = ug/L

Parameter	Samp. Value	Repeat Value	Accept AD	Accept RPD	Assayd AD/RPD	File
Chloromethane	<10	<10			Ø	820
Bromomethane	<10	<10			Ø	819
Vinyl chloride	14	16		27	13%	828
Chloroethane	<10	<10			Ø	807
Methylene chloride	<5	<5		17	Ø	821
Acrolein	-	-			-	800
Acrylonitrile	-	-			-	801
1,1-Dichloroethene	<5	<5			Ø	813
1,1-Dichloroethane	<5	<5		41	Ø	811
~~trans~~-1,2-Dichloroethenes	90	86		28	4.5%	814
Chloroform	<5	<5		14	Ø	809
1,2-Dichloroethane						812
1,1,1-Trichloroethane				27		825
Carbon tetrachloride						804
Bromodichloromethane				79		810
1,2-Dichloropropane						815
trans-1,3-Dichloropropene						817
Trichloroethene				32		827
Benzene				49		802
Dibromochloromethane				70		806
1,1,2-Trichloroethane						826
cis-1,3-Dichloropropene						816
2-Chloroethyl vinyl ether	<10	<10				808
Bromoform	<5	<5				803
Tetrachloroethene				33		823
1,1,2,2-Tetrachloroethane						822
Toluene				38		824
Chlorobenzene				24		805
Ethyl benzene				5		818
1,3-Dichlorobenzene	-	-			-	830
1,2-Dichlorobenzene	-	-			-	829
1,4-Dichlorobenzene	-	-		36	-	831
Acetone	<100	<100		26	Ø	836

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA REPEAT CONTROL INFORMATION
(CLP - DUPLICATE SAMPLE LIMITS)

Date 4-19-96 Analyst Echelund/Major
Samples associated with this repeat control:

604-12-400→414

Sample used as repeat control: 604-12-414
AD = Absolute Difference RPD = Relative Percent Difference

Parameter	Samp. Value	Repeat Value	Accept AD	Accept RPD	Assayd AD/RPD	File
Units = µg/L						
3-Chloro-1-propene						
Dichlorodifluoromethane						
Methyl Ethyl Ketone	<100	<100			Ø	
MIBK	<50	<50			Ø	
1,1,1,2-Tetrachloroethane						
Trichlorofluoromethane						
1,2,3-Trichloropropane						
1,2-Dibromomethane						
Cis-1.2-Dichloroethane						
Xylene	8	7			13%	
Styrene	<5	<5			Ø	
Carbon Disulfide	<5	<5			Ø	
Vinyl Acetate	<50	<50			Ø	
Methyl Butyl Ketone	<50	<50			Ø	

Limits in effect as of May 18, 1995

FREE-COL LABORATORIES, INC.
VOA SPIKED CONTROL INFORMATION
(CLP - ANALYTICAL SPIKED SAMPLE LIMITS)

Date 4-19-96 Analyst Eckland/Mayo

Samples associated with this spiked control:

604-12-400 → 414

Sample used as spiked control: 604-17-059

PARAMETER	SPIKE ADDED UG/L	SPIKED RESULT UG/L	SAMPLE RESULT UG/L	ACCEPT. LIMITS % REC.	ASSYD % REC.	FILE
Chloromethane	20	23.6	<10	28-189	118	520
Bromomethane	20	16.6	"	31-212	83	519
Vinyl chloride	20	21.9	"	22-185	110	528
Chloroethane	20	24.8	"	52-170	124	507
Methylene chloride	20	17.9	<5	63-148	90	521
Acrolein	62	-	-	22-185	-	500
Acrylonitrile	58	-	-	53-187	-	501
1,1-Dichloroethene	20	18.3	<5	50-158	92	513
1,1-Dichloroethane	20	21.2	"	73-141	106	511
trans-1,2-Dichloroethenes	20	21.6	"	63-151	108	514
Chloroform	20	22.7	"	68-141	114	509
1,2-Dichloroethane	20	24.7	"	52-157	124	512
1,1,1-Trichloroethane	20	20.6	"	58-155	103	525
Carbon tetrachloride	20	25.9	"	40-141	130	504
Bromodichloromethane	20	24.8	"	46-150	124	510
1,2-Dichloropropane	20	25.1	"	67-145	126	515
trans-1,3-Dichloropropene	20	24.2	"	56-141	121	517
Trichloroethene	20	19.4	"	64-129	97	527
Benzene	20	20.0	"	70-144	100	502
Dibromochloromethane	20	24.8	"	27-158	124	506
1,1,2-Trichloroethane	20	25.5	"	59-149	128	526
cis-1,3-Dichloropropene	20	22.6	"	46-151	113	516
2-Chloroethyl vinyl ether	20	18.8	<10	4-186	94	508
Bromoform	20	26.4	<5	6-150	132	503
Tetrachloroethene	20	23.3	"	48-163	116	523
1,1,2,2-Tetrachloroethane	20	24.8	"	46-164	124	522
Toluene	20	22.5	"	72-131	112	524
Chlorobenzene	20	22.6	"	70-131	113	505
Ethyl benzene	20	22.2	"	61-140	111	518
1,3-Dichlorobenzene	26	31.5	"	58-163	121	530
1,2-Dichlorobenzene	26	31.5	"	42-159	121	529
1,4-Dichlorobenzene	20	24.6	"	33-177	123	531
Diethyl Benzene	44	-	-	71-137	-	533
Ethyl Ether	35	-	-	62-160	-	532
Xylenes	44	46.6	<5	72-130	106	534
MEK	20	21.4	<100	63-179	107	536

Limits in effect as of May 13, 1996

FREE-COL LABORATORIES, INC.
VOA SPIKED CONTROL INFORMATION
(CLP - ANALYTICAL SPIKED SAMPLE LIMITS)

Date 4-19-96 Analyst Edmund/Maja
Samples associated with this spiked control:

6C4-12.400 → 414

Sample used as spiked control: 6C4-17-059

PARAMETER	SPIKE ADDED UG/L	SPIKED RESULT UG/L	SAMPLE RESULT UG/L	ACCEPT. LIMITS % REC.	ASSYD % REC.	FILE
Acetone	20	16.0	<100	51-178	80	538
MIBK	20	19.9	<50	53-160	100	539
Ethyl Acetate	45	-	-	71-140	-	535
Tetrahydrofuran	45	-	-		-	
Carbondisulfide	20	18.8	<5		94	
Styrene	20	20.2	<5		101	
Vinyl Acetate	20	25.9	<50		130	
Amyl Acetate	44	-	-		-	
Methyl Butyl Ketone	20	25.7	~~<10~~ <50 pm		128	

Free-Col Laboratories, Inc.
Surrogate Spike Information
Method 8260

e: 4-18-96 Analyst: Ecklund

ts: % Recovery

pe: W = Low/Medium Water
S = Low/Medium Soil/Sediment

	Dibromofluoromethane	Toluene-d_8	4-Bromofluoro-benzene
Limits:			
Water	86-118	88-110	86-115
Soil/Sediment	80-120	81-117	74-121

pe (S/W)	Free-Col I.D.			
✓	60442-400	100	104	89
	401	97	90	97
	402	101	107	103
	403	109	107	100
	404	106	106	102
	405	96	90	101
	406	90	91	88
	407	91	90	100
	408	95	104	93
✓	409	107	96	96

Free-Col Laboratories, Inc.
Surrogate Spike Information
Method 8260

e: 4-19-96 Analyst: Echlund / Major

ts: % Recovery

pe: W = Low/Medium Water
S = Low/Medium Soil/Sediment

	Dibromofluoromethane	Toluene-d8	4-Bromofluoro-benzene
Limits:			
Water	86-118	88-110	86-115
Soil/Sediment	80-120	81-117	74-121

pe /W)	Free-Col I.D.			
	604-12-410	96	99	113
	604-12-411	87	103	104
	604-12-412	87	101	103
	604-12-413	92	104	106
	604-12-414	91	104	114

CHAIN OF CUSTODY RECORD

FREE-COL LABORATORIES, INC.
P.O. BOX 557 800 836 - 4130
COTTON ROAD 814 724 - 6242
MEADVILLE, PA 814 333 - 1466 Fax
16335-0557

1 CLIENT INFORMATION			
COMPANY	Delphi Automotive Systems		
CONTACT	Dan Coltoniaok		
ADDRESS	1000 Lexington Ave		
CITY	Rochester		
STATE	NY	ZIP CODE	14606
PHONE	(716)647-4468	FAX	(716) 647-~~9663~~ 2749
PURCHASE ORDER NUMBER			
CLIENT NUMBER			

2 TYPE	
Wastewater	
Monitoring Well	✓
Drinking Water	
PWS #	
NPDES / SPDES	
Solid Waste	
I. H.	
Other	

MISC.	
TCLP SPIKE	
YES NO	
SPIKE	
YES NO	
METHODS	
YES NO	
QA/QC	
YES NO	

3 PROJECT NAME / NUMBER

4 SAMPLER'S NAME / DATE
BRIAN D. TAGGERTY 8 APR 96

5 SAMPLE INFORMATION

	DATE	TIME	SAMPLE ID	TYPE	GRAB/COMP	ANALYSIS REQUESTED / COMMENTS
1	4/18/96	:	VM 210	WATER	GRAB	EPA 8240
2	4/18/96	:	VM 211	WATER		
3	4/18/96	:	VM 212	WATER		
4	4/18/96	:	SR 216	WATER		
5	4/18/96	:	VM 219	WATER		
6	4/18/96	:	VM 220	WATER		
7	4/18/96	:	VM 222	WATER		
8	4/18/96	:	VM 227	WATER		
9	4/18/96	:	VM 229	WATER		
10	4/18/96	:	VM 230	WATER		
11	~~4/18/96~~	:	~~TRIP BLANK~~			
12	/ /96	:				
13	/ /96	:				
14	/ /96	:				

6 SAMPLE TRACABILITY

	Received	SIGNATURE	ORGANIZATION	Relinquished
1	4/18/96	B D Taggerty	Bergmann Assoc	/ /96
2	4/12/96	Dan Coltoniaok	Delphi-E	4/12/96
3	4/12/96	Bill Slyt	Free Col	4/12/96
4	/ /96	Andrew Fahlund	Free Col	4/24/96
5	/ /96			/ /96
6	/ /96			/ /96
7	/ /96			/ /96

USE BY LABORATORY ONLY

	Date	Time
Samples rec. at lab	4/12/96	17:30
Means of del. to lab	Tech Service	
Sample cooler temp. upon receipt	5 (deg. C)	
Sample check in started		
Sample check in completed		
Samples refrigerated upon receipt at lab	(Yes)	No
Samples refrigerated upon receipt from client	(Yes)	No

CHAIN OF CUSTODY RECORD

FREE-COL LABORATORIES, INC.

P.O. BOX 557
COTTON ROAD
MEADVILLE, PA
16335-0557

800 836 - 4130
814 724 - 6242
814 333 - 1466 Fax

1 CLIENT INFORMATION			
COMPANY	Delphi Automotive Systems		
CONTACT	Dan Coltoniak		
ADDRESS	1000 Lexington Ave		
CITY	Rochester		
STATE	NY	ZIP CODE	14606
PHONE	(716)647-4468	FAX	(716) 647-~~7663~~ 7749
PURCHASE ORDER NUMBER			
CLIENT NUMBER			

2 TYPE		MISC.
Wastewater		TCLP SPIKE
Monitoring Well		YES NO
Drinking Water		SPIKE
PWS #		YES NO
NPDES / SPDES		METHODS
Solid Waste		YES NO
I. H.		QA/QC
Other		YES NO

3 PROJECT NAME / NUMBER

4 SAMPLER'S NAME / DATE

BRIAN D. TAGGERTY 8 APR 96

5 SAMPLE INFORMATION

	DATE	TIME	SAMPLE ID	TYPE	GRAB/COMP	ANALYSIS REQUESTED / COMMENTS
1	4/18/96	:	VM 211 PRODUCT	PRODUCT	GRAB	EPA 8240
2	4/18/96	:	~~BR~~ 216 PRODUCT	↓	↓	↓
3	4/18/96	:	VM 218 PRODUCT	↓	↓	↓
4	4/18/96	:	VM 223 PRODUCT	↓	↓	↓
5	4/18/96	:	VM 230 PRODUCT	↓	↓	↓
6	/ /96	:				
7	/ /96	:				
8	/ /96	:				
9	/ /96	:				
10	/ /96	:				
11	/ /96	:				
12	/ /96	:				
13	/ /96	:				
14	/ /96	:				

6 SAMPLE TRACABILITY

	Received	SIGNATURE	ORGANIZATION	Relinquished
1	4/18/96	Brian D. Taggerty	BERGMANN ASSOC.	/ /96
2	4/11/96	Dan Coltoniak	Delphi-E	4/12/96
3	4/12/96	Bill Slat	Free Col	4/12/96
4	/ /96	Andrew Schlund	Free Col	4/24/96
5	/ /96			/ /96
6	/ /96			/ /96
7	/ /96			/ /96

USE BY LABORATORY ONLY

	Date	Time
Samples rec. at lab	4/12/96	17:30
Means of del. to lab	Tech Service	
Sample cooler temp. upon receipt	5 (deg. C)	
Sample check in started		
Sample check in completed		
Samples refrigerated upon receipt at lab	(Yes)	No
Samples refrigerated upon receipt from client	(Yes)	No

3.0
Compliance Data

3.1
Air Flow Rates

BY _____ DATE _____ **BERGMANN ASSOCIATES** PROJ. NO. _____ SHT _____ OF _____

CKD _____ DATE _____ PROJ. NAME _____

COMPLIANCE DATA

AIR FLOW RATES

EQUIPMENT: TSI-8360 AIRSPEED INDICATOR
CALIBRATED: 18 JULY 1996
BY: RESPONSE RENTAL

READINGS: PRE CARBON ON 19 JULY 1996
0.39" H_2O WATER COLUMN
130.07° F

GIVEN: 6" SCH 80 PVC PIPE = 0.1777 ft^2 = AREA

SPECIFIC GRAVITY OF H_2O = $\frac{62.4 \text{ DENSITY OF } H_2O}{0.075 \text{ DENSITY OF AIR @ STP}}$ = 832 ft AIR

TEMP CORRECTION TO STP = $\frac{590°K (130°F \text{ READING} + 460°)}{528°K (68°F \text{ STD. TEMP} + 460°)}$ = 1.12

$\Delta P = 0.39" H_2O \times \frac{1 \text{ ft } H_2O}{12" H_2O} \frac{832 \text{ ft AIR}}{1 \text{ ft } H_2O} (1.12 \text{ TEMP CORR}) = 30.28 \text{ ft AIR}$

g = GRAVITY = 32.2 ft/sec^2

CALCULATE SCFM = V x A

WHERE V = VELOCITY IN ft/MIN = $\left(\sqrt{2g\Delta P}\right)(60 \text{ sec/min})$

A = AREA OF PIPE = 0.1777 ft^2

$$V = \left(\sqrt{2(32.2 \text{ ft/sec}^2)\ 30.28 \text{ ft AIR}}\right)(60 \text{ sec/min})$$

V = 2649.76 ft/min

SCFM = 2649.76 ft/min x 0.1777 ft^2 = **471.05 SCFM**

3.2
Daily Monitoring

Daily Monitoring

Well	18-Jun ●◆■	19-Jun ■	20-Jun ●■	21-Jun ■	24-Jun ◆●■	25-Jun ■	26-Jun ●■	27-Jun ■	28-Jun ◆■
218			593		147		129		
219									
220									
229									
215	123		106		33		35		
222			52						
223			128						
224			47						
221			342						
214	364		161		121		126		
225	193		825		436		454		
213	191		81		49		49		
226	199		134		69		72		
227	315		56		40		41		
228			17						
210	240		224		233		266		
Pre	164	53			52	51	48	54	42
Mid	0	0			0	15	0	0	0
Post	0	0			0	1	0	0	0

- ● Well Concentration by PID
- ◆ System Concentrations by lab (see section 3.2)
- ■ System Concentrations by PID

Note:
1. All concentrations in ppm of total VOCs
2. The Photoionization Detector used is an HNU DL-101 calibrated to 58.58 ppm Benzene using 101ppm Isobutylene

3.3
Air Sampling Concentration Summary

Air Sampling Concentrations

	Pre-Carbon					Mid-Carbon					Post-Carbon				
	18-Jun	24-Jun	25-Jun	28-Jun	19-Jul	18-Jun	24-Jun	25-Jun	28-Jun	19-Jul	18-Jun	24-Jun	25-Jun	28-Jun	19-Jul
VCl	1.4	<3.9		<3.9	<2.0	<.39	1.2	0.97	0.61	0.48	<.39			0.8	<.39
1,2-DCE	13	9		6.8	3.9	<.25	<.25	<.25	<.25	<.25	<.25			<.25	<.25
TCE	100	31		20	12	<.19	<.19	<.19	<.19	<.19	<.19			<.19	<.19
PCE	170	55		40	20	<.16	<.16	<.16	<.16	<.16	<.16			<.16	<.16
1,1,1-TCA	3.8	<1.8		<1.8	<.9	<.18	<.18	<.18	<.18	<.18	<.18			<.18	<.18
1,1-DCE	0.3	<2.5		<2.5	<1.3	<.25	<.25	<.25	<.25	<.25	<.25			<.25	<.25

Note: All Concentrations in ppm

3.4
Lab Data

Summary of Analytical Data
Volatile Organics in Air Samples
(all data in ppm)

Analyte	Date:	6/19	6/18	6/18	6/19	6/24	6/26	6/25	-	6/28	6/28	6/28	-	7/19	7/19	7/19	-
	Sample:	84381	84382	84383	85356	85550	85551	85592	85979	86563	86564	86566	86970	90522	90521	90520	90928
	Dilution:	1	1	1	1	10	1	1	1	10	1	1	1	5	1	1	1
1,1,-Dichloroethene		0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cis-1,2-Dichloroethene		13	-	-	-	9	-	-	-	6.8	-	-	-	3.9	-	-	-
Tetrachloroethene		170	-	-	-	55	-	-	-	-	-	-	-	20	-	-	-
1,1,1-Trichloroethane		3.8	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-
Trichloroethene		100	-	-	-	31	-	-	-	20	-	-	-	12	-	-	-
Vinyl Chloride		1.4	-	-	-	-	1.2	0.97	-	-	0.61	0.8	-	-	0.48	-	-

Note:

- *undetected*

( ) detection limits

Columbia Analytical Services Inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits.
(Flag the entire batch - Inorganic analysis only)

* - Duplicate analysis not within control limits.
(Flag the entire batch - Inorganic analysis only)

- Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145	NJ ID # in Rochester:	73004
CT ID # in Rochester:	PH0556	RI ID # in Rochester:	158
MA ID # in Rochester:	M-NY032		

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : PRE-C

Date Sampled : 06/18/96 **Order #:** 84381 **Sample Matrix:** AIR
Date Received: 06/18/96 **Submission #:** 9606000252 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/19/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.30	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	13	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	170	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	3.8	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	100	PPM
VINYL CHLORIDE	0.39	1.4	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : MID-C

Date Sampled : 06/18/96 **Order #:** 84382 **Sample Matrix:** AIR
Date Received: 06/18/96 **Submission #:** 9606000252 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/19/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : POST-C

Date Sampled : 06/18/96 **Order #:** 84383 **Sample Matrix:** AIR
Date Received: 06/18/96 **Submission #:** 9606000252 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/19/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services, Inc.

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 85356 **Sample Matrix:** AIR
Date Received: **Submission #:** **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/19/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : MID-C

Date Sampled : 06/25/96 **Order #:** 85592 **Sample Matrix:** AIR
Date Received: 06/25/96 **Submission #:** 9606000319 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/26/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.97	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 85979 **Sample Matrix:** AIR
Date Received: **Submission #:** **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/26/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

COLUMBIA ANALYTICAL SERVICES, INC.
700 Exchange Street, Rochester, New York 14608
(716) 454-6810 • FAX (716) 454-6825

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 25 Jun 96 PAGE 1 OF 1

PROJECT NAME DELPHI SVE
PROJECT MANAGER/CONTACT RICK EISENMAN
COMPANY/ADDRESS DELPHI
TEL ( ) 647-4766 FAX ( )
SAMPLER'S SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624	GC/MS SVOA's ☐ 8270A ☐ 625	GC VOA's ☐ 8010/8020 ☐ 601/602	PESTICIDES/PCB's ☐ 8080 ☐ 608	STARS LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STARS LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
MID-C	25 Jun	9:02	85592	AIR	1	X												

RELINQUISHED BY:
Signature
Printed Name BRIAN TAGGERTY
Firm TA
Date/Time 25 Jun 96 9:25

RECEIVED BY:
Signature Cindy Toomey
Printed Name Cindy Toomey
Firm CAS
Date/Time 6-25-96 9:25

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
24 hr. X 48 hr. 5 day
Standard (10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date

REPORT REQUIREMENTS
1. Routine Report
2. Routine Rep. w/CASE Narrative
3. EPA Level III Validatable Package
4. N.J. Reduced Deliverables Level IV
5. NY ASP/CLP Deliverables
6. Site specific QC.

INVOICE INFORMATION:
P.O. #: RPS 49238
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: NA
Submission No: 6-319

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List
RESULTS TO RICK EISENMAN CC TO BRIAN TAGGERTY
INVOICE DELPHI

65 RAMAPO VALLEY ROAD
MAHWAH, NJ 07430
201-512-3292
FAX 201-512-3362

435 LAWRENCE BELL DR.
AMHERST, NY 14221
716-634-0454
FAX 716-634-9019

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE
Client Sample ID : PRE-C

Date Sampled : 06/28/96 **Order #:** 86563 **Sample Matrix:** AIR
Date Received: 06/28/96 **Submission #:** 9606000435 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/28/96			
ANALYTICAL DILUTION: 10.0			
ACETONE	0.84	8.4 U	PPM
BENZENE	0.31	3.1 U	PPM
BROMODICHLOROMETHANE	0.15	1.5 U	PPM
BROMOFORM	0.10	1.0 U	PPM
BROMOMETHANE	0.26	2.6 U	PPM
2-BUTANONE (MEK)	0.68	6.8 U	PPM
CARBON DISULFIDE	0.64	6.4 U	PPM
CARBON TETRACHLORIDE	0.16	1.6 U	PPM
CHLOROBENZENE	0.22	2.2 U	PPM
CHLOROETHANE	0.38	3.8 U	PPM
CHLOROFORM	0.21	2.1 U	PPM
CHLOROMETHANE	0.48	4.8 U	PPM
DIBROMOCHLOROMETHANE	0.12	1.2 U	PPM
1,1-DICHLOROETHANE	0.25	2.5 U	PPM
1,2-DICHLOROETHANE	0.25	2.5 U	PPM
1,1-DICHLOROETHENE	0.25	2.5 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	2.5 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	6.8	PPM
1,2-DICHLOROPROPANE	0.21	2.1 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	2.2 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	2.2 U	PPM
ETHYLBENZENE	0.23	2.3 U	PPM
2-HEXANONE	0.48	4.8 U	PPM
METHYLENE CHLORIDE	0.29	2.9 U	PPM
4-METHYL-2-PENTANONE	0.48	4.8 U	PPM
STYRENE	0.24	2.4 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	1.6 U	PPM
TETRACHLOROETHENE	0.16	40	PPM
TOLUENE	0.27	2.7 U	PPM
1,1,1-TRICHLOROETHANE	0.18	1.8 U	PPM
1,1,2-TRICHLOROETHANE	0.18	1.8 U	PPM
TRICHLOROETHENE	0.19	20	PPM
VINYL CHLORIDE	0.39	3.9 U	PPM
O-XYLENE	0.23	2.3 U	PPM
M+P-XYLENE	0.23	2.3 U	PPM

Columbia Analytical Services inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE
Client Sample ID : MID-C

Date Sampled : 06/28/96 **Order #:** 86564 **Sample Matrix:** AIR
Date Received: 06/28/96 **Submission #:** 9606000435 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/28/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.61	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Delphi Automotive Systems
Project Reference: DELPHI SVE
Client Sample ID : POST-C

Date Sampled : 06/28/96 **Order #:** 86566 **Sample Matrix:** AIR
Date Received: 06/28/96 **Submission #:** 9606000435 **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/28/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.80	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/12/96

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 86970 **Sample Matrix:** AIR
Date Received: **Submission #:** **Analytical Run:** 0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/28/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

COLUMBIA ANALYTICAL SERVICES, INC.
700 Exchange Street, Rochester, New York 14608
(716) 454-6810 • FAX (716) 454-6825

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 28 Jun 96 PAGE 1 OF 1

PROJECT NAME DEPAU SVE
PROJECT MANAGER/CONTACT RICK EISENMAN
COMPANY/ADDRESS DEPAU
TEL ( ) 647-4766 FAX ( )
SAMPLER'S SIGNATURE Brian Haggerty

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624	GC/MS SVOA's ☐ 8270A ☐ 625	GC VOA's ☐ 8010/8020 ☐ 601/602	PESTICIDES/PCB's ☐ 8080 ☐ 608	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
PRE-C	28 Jun	14:30	86563	Air	1	X												
MID-C	↓	↓	86564	↓	1	X												
POST-C	↓	↓	86566	↓	1	X												

RELINQUISHED BY:
Signature: Brian Haggerty
Printed Name: Brian Haggerty
Firm: BERGMANN
Date/Time: 28 Jun 96 1520

RECEIVED BY:
Signature: V. Gardner
Printed Name: V. Gardner
Firm: CAS
Date/Time: 6/28/96 @ 1500

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature: Tom Hastings
Printed Name: Tom Hastings
Firm: CAS
Date/Time: 6/28/96 @ 1500

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. X 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date 7/2

REPORT REQUIREMENTS
✓ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #: 92700
Bill To:

SAMPLE RECEIPT:
Shipping Via:
Shipping #:
Temperature:
Submission No: 6-435

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List
48 hr. Holding Time

65 RAMAPO VALLEY ROAD, MAHWAH, NJ 07430 — 201-512-3292 — FAX 201-512-3362
435 LAWRENCE BELL DR., AMHERST, NY 14221 — 716-634-0454 — FAX 716-634-9019

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/24/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : PRE CARBON

Date Sampled : 07/19/96 **Order #:** 90522 **Sample Matrix:** AIR
Date Received: 07/19/96 **Submission #:** 9607000318 **Analytical Run:** 9900

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 07/22/96			
ANALYTICAL DILUTION: 5.0			
ACETONE	0.84	4.2 U	PPM
BENZENE	0.31	1.6 U	PPM
BROMODICHLOROMETHANE	0.15	0.75 U	PPM
BROMOFORM	0.10	0.50 U	PPM
BROMOMETHANE	0.26	1.3 U	PPM
2-BUTANONE (MEK)	0.68	3.4 U	PPM
CARBON DISULFIDE	0.64	3.2 U	PPM
CARBON TETRACHLORIDE	0.16	0.80 U	PPM
CHLOROBENZENE	0.22	1.1 U	PPM
CHLOROETHANE	0.38	1.9 U	PPM
CHLOROFORM	0.21	1.1 U	PPM
CHLOROMETHANE	0.48	2.4 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.60 U	PPM
1,1-DICHLOROETHANE	0.25	1.3 U	PPM
1,2-DICHLOROETHANE	0.25	1.3 U	PPM
1,1-DICHLOROETHENE	0.25	1.3 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	1.3 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	3.9	PPM
1,2-DICHLOROPROPANE	0.21	1.1 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	1.1 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	1.1 U	PPM
ETHYLBENZENE	0.23	1.2 U	PPM
2-HEXANONE	0.48	2.4 U	PPM
METHYLENE CHLORIDE	0.29	1.5 U	PPM
4-METHYL-2-PENTANONE	0.48	2.4 U	PPM
STYRENE	0.24	1.2 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.80 U	PPM
TETRACHLOROETHENE	0.16	20	PPM
TOLUENE	0.27	1.4 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.90 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.90 U	PPM
TRICHLOROETHENE	0.19	12	PPM
VINYL CHLORIDE	0.39	2.0 U	PPM
O-XYLENE	0.23	1.2 U	PPM
M+P-XYLENE	0.23	1.2 U	PPM

Columbia Analytical Services Inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/24/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : MID CARBON

Date Sampled : 07/19/96 **Order #:** 90521 **Sample Matrix:** AIR
Date Received: 07/19/96 **Submission #:** 9607000318 **Analytical Run:** 9900

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 07/22/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.48	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/24/96

Delphi Automotive Systems
Project Reference: DELPHI SVE PROJECT
Client Sample ID : POST CARBON

Date Sampled : 07/19/96 **Order #:** 90520 **Sample Matrix:** AIR
Date Received: 07/19/96 **Submission #:** 9607000318 **Analytical Run:** 9900

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 07/22/96			
ANALYTICAL DILUTION: 1.0			
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

Columbia Analytical Services inc

VOLATILE ORGANICS
METHOD TO-14 MODIFIED
Reported: 07/24/96

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 90928 **Sample Matrix:** AIR
Date Received: **Submission #:** **Analytical Run:** 9900

DATE ANALYZED : 07/22/96
ANALYTICAL DILUTION: 1.0

ANALYTE	PQL	RESULT	UNITS
ACETONE	0.84	0.84 U	PPM
BENZENE	0.31	0.31 U	PPM
BROMODICHLOROMETHANE	0.15	0.15 U	PPM
BROMOFORM	0.10	0.10 U	PPM
BROMOMETHANE	0.26	0.26 U	PPM
2-BUTANONE (MEK)	0.68	0.68 U	PPM
CARBON DISULFIDE	0.64	0.64 U	PPM
CARBON TETRACHLORIDE	0.16	0.16 U	PPM
CHLOROBENZENE	0.22	0.22 U	PPM
CHLOROETHANE	0.38	0.38 U	PPM
CHLOROFORM	0.21	0.21 U	PPM
CHLOROMETHANE	0.48	0.48 U	PPM
DIBROMOCHLOROMETHANE	0.12	0.12 U	PPM
1,1-DICHLOROETHANE	0.25	0.25 U	PPM
1,2-DICHLOROETHANE	0.25	0.25 U	PPM
1,1-DICHLOROETHENE	0.25	0.25 U	PPM
TRANS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
CIS-1,2-DICHLOROETHENE	0.25	0.25 U	PPM
1,2-DICHLOROPROPANE	0.21	0.21 U	PPM
CIS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
TRANS-1,3-DICHLOROPROPENE	0.22	0.22 U	PPM
ETHYLBENZENE	0.23	0.23 U	PPM
2-HEXANONE	0.48	0.48 U	PPM
METHYLENE CHLORIDE	0.29	0.29 U	PPM
4-METHYL-2-PENTANONE	0.48	0.48 U	PPM
STYRENE	0.24	0.24 U	PPM
1,1,2,2-TETRACHLOROETHANE	0.16	0.16 U	PPM
TETRACHLOROETHENE	0.16	0.16 U	PPM
TOLUENE	0.27	0.27 U	PPM
1,1,1-TRICHLOROETHANE	0.18	0.18 U	PPM
1,1,2-TRICHLOROETHANE	0.18	0.18 U	PPM
TRICHLOROETHENE	0.19	0.19 U	PPM
VINYL CHLORIDE	0.39	0.39 U	PPM
O-XYLENE	0.23	0.23 U	PPM
M+P-XYLENE	0.23	0.23 U	PPM

COLUMBIA ANALYTICAL SERVICES, INC.
700 Exchange Street, Rochester, New York 14608
(716) 454-6810 • FAX (716) 454-6825

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 19 July 96 PAGE 1 OF 1

PROJECT NAME DELPHI
PROJECT MANAGER/CONTACT RICK EISENMAN
COMPANY/ADDRESS
TEL ( ) FAX ( )
SAMPLER'S SIGNATURE D. Taggerty

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	TO-14	PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
POST C	19 Jul	12:22	90520	AIR	1	✓			
MID C	↓	12:24	90521	↓	1	✓			
PRE C	↓	12:25	90522	↓	1	✓			

RELINQUISHED BY:
Signature D. Taggerty
Printed Name D. TAGGERTY
Firm BERGMAN ASSOC
Date/Time 19 Jul 96 12:48

RECEIVED BY:
Signature Cindy Toomey
Printed Name CINDY TOOMEY
Firm EAS
Date/Time 7-19-96 12:48

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
24 hr ✓ 48 hr. 5 day
Standard (10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date

REPORT REQUIREMENTS
1. Routine Report
2. Routine Rep. w/CASE Narrative
3. EPA Level III Validatable Package
4. N.J. Reduced Deliverables Level IV
5. NY ASP/CLP Deliverables
6. Site specific QC.

INVOICE INFORMATION:
P.O. #: 92700
Bill To:

SAMPLE RECEIPT:
Shipping Via:
Shipping #:
Temperature:
Submission No: 7-318

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List
INVOICE DELPHI
COPY OF RESULTS TO BERGMAN ASSOC

65 RAMAPO VALLEY ROAD
MAHWAH, NJ 07430
201-512-3292
FAX 201-512-3362

435 LAWRENCE BELL DR.
AMHERST, NY 14221
716-634-0454
FAX 716-634-9019

4.0
Well Performance Data

4.1
Well Selection for Balancing

Well Selection for Balancing

Well	CFM @30" H2O	ppm	% Yield	Ranking	Yields H2O
218	19		0		●
219		84	0		●
220	27	345	4.7	9	●
229	33	115	1.9	12	●
215	69	261	9.1	3	
222	23	261	3.0	10	●
223	30	322	4.9	8	●
224	22	180	2.0	11	
221	26		0		
214	105	500	26.5	1	
225	28	394	5.6	6	
213	117	335	19.8	2	
226	64	264	8.5	4	
227	32	445	7.2	5	●
228	30	80	1.2	13	
210	33	330	5.5	7	●
	658		100.0		

[ ] = Selected Wells based on % yield

4.2
System Balancing

System Balancing

	Valve % Open								
Bleed	100	-	-						-
218	-	100	100						100
219	-	100	-						
220	-	100	100						
229	-	100	-						
215	-	100	100	100	100	50	50	50	50
222	-	100	100						
223	-	100	100						
224	-	100	100						
221	-	100	100						
214	-	100	100	100	100	100	100	100	100
225	-	100	100	-	-	-	25	25	100
213	-	100	100	100	100	50	50	100	100
226	-	100	100	100	100	50	50	50	50
227	-	100	100	-	100	25	25	25	25
228	-	100	100						
210	-	100	100				25	25	25
Vac "H2O	56	20.5	25	36.5	36.5	40	36.5	43	41
Press out						11	11	8.5	9
Conc.ppm				158	160	158	166	107	163

Appendix C

Study Area 5 SVE System Pre-Carbon Data Spreadsheet

STUDY AREA 5 SVE															
PRE-CARBON DATA															
DATE	Bergman	DELPHI	Total VOCs												
	PID	PID	ppmv	mg/m^3	VC	DCE	TCE	PCE	TCA	COMMENTS					
6/18/96	164		288	1800	1	13	100	170	4						
6/19/96	53														
6/24/96	52		95	586		9	31	55							
6/25/96	51	34													
6/26/96	48														
6/27/96	54														
6/28/96	42		67	414		7	20	40		System off 6/28-7/8.					
7/9/96		30													
7/11/96		27													
7/12/96		23													
7/15/96		21													
7/17/96		18													
7/19/96			36	220		4	12	20							
7/22/96										Broken belt					
8/7/96										Belt replaced; system restarted					
8/8/96		22								break-through @ mid-carbon; PID=2					
8/9/96										shutdown for carbon change					
8/14/96		27								restarted 7am after carbon change					
8/16/96		18													
8/21/96			38	234	0.6	4	13	21							
8/26/96		14													
8/30/96		12													
9/3/96		12													
9/9/96		11													
9/13/96		9													
9/16/96		9								Mid C reading 0.7; shut down for carbon change					
9/20/96										restarted 11 am after carbon change.					
9/24/96		11													
10/7/96		9								opened 221,222,223, and 224; PID increased to 11					
10/11/96			19.5	118	0	2.3	7.3	9.9							

10/23-30/									belt broke 10/23; replaced 10/31; found blower rotation reversed	
11/1/96		9								
11/4/96		9								
11/13/96		8.5							Mid C reading 0.7	
11/15/96		8.5							Mid C reading 1.5; carbon changed.	
11/22/96		8								
11/26/96		8								
12/2/96		8								
12/12/96		7								
12/18/96		7							Mid C reading 0.2	
12/23/96			18.17	109	0.57	2.6	6.2	8.8	0.4	Mid C 4.5 ppm total VOCs; shutdown for carbon change
1/7/97										carbon changed; system restarted
1/10/97		8								
1/17/97										blower belt broken
1/22/97										system re-started
1/24/97		8								
1/31/97		7								
2/7/97		7								Mid C reading 0.2
2/12/97		7								Mid C 1.2; shutdown for carbon change
2/13/97										system re-started
2/25/97		7								
2/26/97										system down - blower seized up
6/6/97										system re-started with new blower
6/13/97		11								(Running 218, 215, 225, 210, and 214)
6/20/97		8								added wells 227, 213, 224, and 229.
6/26/97		7								
7/14/97		5								mid C 1.5; shutdown for carbon change
7/16/97										system re-started
7/18/97		6								closed 227, 213, 224, and 229. Opened 219.
7/25/97		5								opened 223, 221, 226, 228
7/31/97		5								closed 219, 223, 221, 226, and 228; PID increased to 7
8/8/97		6								opened 221 & 223; PID unchanged; vacuum decreased 3".
8/15/97		6.5								Mid-C @ 1.0; asked RZ to change carbon ASAP
9/3/97										restarted with fresh carbon
9/19/97		5								

9/30/97		5													
10/7/97		5								mid-C @ 0.2					
10/14/97		4.8								mid-C @ 0.4					
10/17/97		5.2								mid-C @ 0.6					
10/21/97										fresh carbon					
10/27/97										belt broken					
10/28/94										belt replaced; system restarted					
11/3/97		4.5													
11/12/97		7								PID recalibrated since last check.					
11/25/97		6.5													
12/2/97		6.3								mid-C @ 0.6; requested carbon change					
12/3/97										fresh carbon					
12/8/97		6													
12/18/97		6													
1/5/98		5.5													
1/15/98										blower shut off - bearing noise					
1/21/98										blower replaced					
1/26/98		5.5								mid-C @ 0.5;					
	Note: blower discharges approximately 20,000 cubic meters per day @ 50" vacuum.														
	Delphi PID*15=mg/m^3 total VOCs; a PID reading of 6-7 is approximately 100mg/m^3 VOCs.														
	Therefore, approximately 2 kg/day are removed.														
	At a 20% loading, canisters should last at least 2 months.														

Appendix D

Free-Col Laboratory Analysis Report for 24 December 1996 sampling event

FREE-COL LABORATORIES, INC.
P.O. Box 557, Cotton Road
Meadville, Pennsylvania 16335-0557
Phone: Area Code 814/724-6242
FAX: Area Code 814/333-1466

ENVIRONMENTAL
OCCUPATIONAL HEALTH
FOOD SCIENCE
SPECIALISTS

DELPHI ENERGY & ENGINE
GENERAL MOTORS CORPORATION

MONITORING WELLS

SAMPLE DATES: 12/24/96

FREE-COL LABORATORIES, LTD.
P.O. BOX 557, 11618 COTTON ROAD
MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-6242
FAX: (814) 333-1466

01/09/97

TO: DELPHI ENERGY & ENGINE
ATTN: MR. DAN COLTONIAK
P.O. BOX 92700
ROCHESTER NY 14606

P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-229	VM-222	VM-224	VM-221
		12/24/96	12/24/96	12/24/96	12/24/96
	LAB ID	61226400	61226401	61226402	61226403
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS	UNITS = MG/L				
CHLOROMETHANE		<0.010	<10 D	<1 D	<0.1 D
BROMOMETHANE		<0.010	<10 D	<1 D	<0.1 D
VINYL CHLORIDE		<0.010	92	17	1.1
CHLOROETHANE		<0.010	<10 D	<1 D	<0.1 D
METHYLENE CHLORIDE		<0.005	<5 D	<0.5 D	<0.05 D
ACETONE		<0.10	<100 D	<10 D	<1.0 D
CARBON DISULFIDE		<0.005	<5 D	<0.5 D	<0.05 D
1,1,-DICHLOROETHENE		<0.005	<5 D	<0.5 D	<0.05 D
1,1,-DICHLOROETHANE		<0.005	<5 D	<0.5 D	<0.05 D
1,2-DICHLORO***		0.012	210	16	2.0
CHLOROFORM		<0.005	<5 D	<0.5 D	<0.05 D
1,2-DICHLOROETHANE		<0.005	<5 D	<0.5 D	<0.05 D
2-BUTANONE		<0.10	<100 D	<10 D	<1.0 D
1,1,1-TRICHLOROETHA*		<0.005	<5 D	<0.5 D	<0.05 D
CARBON TETRACHLORIDE		<0.005	<5 D	<0.5 D	<0.05 D
VINYL ACETATE		<0.050	<50 D	<5 D	<0.5 D
BROMODICHLOROMETHANE		<0.005	<5 D	<0.5 D	<0.05 D
1,1,2,2-TETRACHLORO*		<0.005	<5 D	<0.5 D	<0.05 D
1,2-DICHLOROPROPANE		<0.005	<5 D	<0.5 D	<0.05 D
TRANS-1,3-DICHLOROP*		<0.005	<5 D	<0.5 D	<0.05 D
TRICHLOROETHENE		<0.005	<5 D	<0.5 D	1.1
DIBROMOCHLOROMETHANE		<0.005	<5 D	<0.5 D	<0.05 D
1,1,2-TRICHLOROETHA*		<0.005	<5 D	<0.5 D	<0.05 D
BENZENE		<0.005	<5 D	<0.5 D	<0.05 D
CIS-1,3-DICHLOROPRO*		<0.005	<5 D	<0.5 D	<0.05 D

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PARAMETER	SAMPLE ID :	VM-229 12/24/96	VM-222 12/24/96	VM-224 12/24/96	VM-221 12/24/96
	LAB ID	61226400	61226401	61226402	61226403
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS (Cont.)	UNITS = MG/L				
2-CHLOR* VINYL ETHER		<0.010	<10 D	<1 D	<0.1 D
BROMOFORM		<0.005	<5 D	<0.5 D	<0.05 D
2-HEXANONE		<0.050	<50 D	<5 D	<0.5 D
4-METHYL-2-PENTANONE		<0.050	<50 D	<5 D	<0.5 D
TETRACHLOROETHENE		<0.005	<5 D	<0.5 D	0.30
TOLUENE		<0.005	<5 D	<0.5 D	<0.05 D
CHLOROBENZENE		<0.005	<5 D	<0.5 D	<0.05 D
ETHYL BENZENE		<0.005	<5 D	<0.5 D	<0.05 D
STYRENE		<0.005	<5 D	<0.5 D	<0.05 D
TOTAL XYLENES		<0.005	<5 D	<0.5 D	<0.05 D

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ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-213 12/24/96	VM-226 12/24/96	VM-227 12/24/96	VM-210 12/24/96
	LAB ID	61226404	61226405	61226406	61226407
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS	UNITS = MG/L				
CHLOROMETHANE		<0.1 D	<0.010	<0.1 D	<10 D
BROMOMETHANE		<0.1 D	<0.010	<0.1 D	<10 D
VINYL CHLORIDE		0.21	<0.010	0.35	2.9
CHLOROETHANE		<0.1 D	<0.010	<0.1 D	<10 D
METHYLENE CHLORIDE		<0.05 D	<0.005	<0.05 D	<5 D
ACETONE		<1.0 D	<0.10	<1.0 D	<100 D
CARBON DISULFIDE		<0.05 D	<0.005	<0.05 D	<5 D
1,1,-DICHLOROETHENE		<0.05 D	<0.005	<0.05 D	<5 D
1,1,-DICHLOROETHANE		0.09	<0.005	<0.05 D	<5 D
1,2-DICHLORO***		0.67	0.32	0.44	32
CHLOROFORM		<0.05 D	<0.005	<0.05 D	<5 D
1,2-DICHLOROETHANE		<0.05 D	<0.005	<0.05 D	<5 D
2-BUTANONE		<1.0 D	<0.10	<1.0 D	<100 D
1,1,1-TRICHLOROETHA*		<0.05 D	<0.005	<0.05 D	<5 D
CARBON TETRACHLORIDE		<0.05 D	<0.005	<0.05 D	<5 D
VINYL ACETATE		<0.5 D	<0.050	<0.5 D	<50 D
BROMODICHLOROMETHANE		<0.05 D	<0.005	<0.05 D	<5 D
1,1,2,2-TETRACHLORO*		<0.05 D	<0.005	<0.05 D	<5 D
1,2-DICHLOROPROPANE		<0.05 D	<0.005	<0.05 D	<5 D
TRANS-1,3-DICHLOROP*		<0.05 D	<0.005	<0.05 D	<5 D
TRICHLOROETHENE		0.11	0.076	0.24	42
DIBROMOCHLOROMETHANE		<0.05 D	<0.005	<0.05 D	<5 D
1,1,2-TRICHLOROETHA*		<0.05 D	<0.005	<0.05 D	<5 D
BENZENE		<0.05 D	<0.005	<0.05 D	<5 D
CIS-1,3-DICHLOROPRO*		<0.05 D	<0.005	<0.05 D	<5 D

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ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER					
	SAMPLE ID :	VM-213	VM-226	VM-227	VM-210
		12/24/96	12/24/96	12/24/96	12/24/96
	LAB ID	61226404	61226405	61226406	61226407
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS (Cont.)	UNITS = MG/L				
2-CHLOR* VINYL ETHER		<0.1 D	<0.010	<0.1 D	<10 D
BROMOFORM		<0.05 D	<0.005	<0.05 D	<5 D
2-HEXANONE		<0.5 D	<0.050	<0.5 D	<50 D
4-METHYL-2-PENTANONE		<0.5 D	<0.050	<0.5 D	<50 D
TETRACHLOROETHENE		0.08	0.050	0.14	<5 D
TOLUENE		<0.05 D	<0.005	<0.05 D	<5 D
CHLOROBENZENE		<0.05 D	<0.005	<0.05 D	<5 D
ETHYL BENZENE		<0.05 D	<0.005	<0.05 D	<5 D
STYRENE		<0.05 D	<0.005	<0.05 D	<5 D
TOTAL XYLENES		<0.05 D	<0.005	<0.05 D	<5 D

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ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-211 12/24/96	VM-212 12/24/96	SR-230 12/24/96	SR-216 12/24/96
	LAB ID	61226408	61226409	61226410	61226411
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS	UNITS = MG/L				
CHLOROMETHANE		<10 D	<10 D	<1 D	<1 D
BROMOMETHANE		<10 D	<10 D	<1 D	<1 D
VINYL CHLORIDE		43	99	14	12
CHLOROETHANE		<10 D	<10 D	<1 D	<1 D
METHYLENE CHLORIDE		<5 D	<5 D	<0.5 D	<0.5 D
ACETONE		<100 D	<100 D	<10 D	<10 D
CARBON DISULFIDE		<5 D	<5 D	<0.5 D	<0.5 D
1,1,-DICHLOROETHENE		<5 D	<5 D	<0.5 D	<0.5 D
1,1,-DICHLOROETHANE		<5 D	<5 D	<0.5 D	1.1
1,2-DICHLORO***		280	360	11	93
CHLOROFORM		<5 D	<5 D	<0.5 D	<0.5 D
1,2-DICHLOROETHANE		<5 D	<5 D	<0.5 D	<0.5 D
2-BUTANONE		<100 D	<100 D	<10 D	<10 D
1,1,1-TRICHLOROETHA*		<5 D	<5 D	<0.5 D	<0.5 D
CARBON TETRACHLORIDE		<5 D	<5 D	<0.5 D	<0.5 D
VINYL ACETATE		<50 D	<50 D	<5 D	<5 D
BROMODICHLOROMETHANE		<5 D	<5 D	<0.5 D	<0.5 D
1,1,2,2-TETRACHLORO*		<5 D	<5 D	<0.5 D	<0.5 D
1,2-DICHLOROPROPANE		<5 D	<5 D	<0.5 D	<0.5 D
TRANS-1,3-DICHLOROP*		<5 D	<5 D	<0.5 D	<0.5 D
TRICHLOROETHENE		<5 D	<5 D	<0.5 D	66
DIBROMOCHLOROMETHANE		<5 D	<5 D	<0.5 D	<0.5 D
1,1,2-TRICHLOROETHA*		<5 D	<5 D	<0.5 D	<0.5 D
BENZENE		<5 D	<5 D	<0.5 D	<0.5 D
CIS-1,3-DICHLOROPRO*		<5 D	<5 D	<0.5 D	<0.5 D

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P.O. # RPB00186

ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-211	VM-212	SR-230	SR-216
		12/24/96	12/24/96	12/24/96	12/24/96
	LAB ID	61226408	61226409	61226410	61226411
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS (COnt.)	UNITS = MG/L				
2-CHLOR* VINYL ETHER		<10 D	<10 D	<1 D	<1 D
BROMOFORM		<5 D	<5 D	<0.5 D	<0.5 D
2-HEXANONE		<50 D	<50 D	<5 D	<5 D
4-METHYL-2-PENTANONE		<50 D	<50 D	<5 D	<5 D
TETRACHLOROETHENE		<5 D	<5 D	<0.5 D	21
TOLUENE		<5 D	<5 D	<0.5 D	<0.5 D
CHLOROBENZENE		<5 D	<5 D	<0.5 D	<0.5 D
ETHYL BENZENE		<5 D	<5 D	<0.5 D	<0.5 D
STYRENE		<5 D	<5 D	<0.5 D	<0.5 D
TOTAL XYLENES		<5 D	<5 D	<0.5 D	<0.5 D

DATE AND ANALYST
01/03/97 ECKLUND

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ANALYTICAL REPORT FORM

PARAMETER		SAMPLE ID : VM-211P 12/24/96	SR-230P 12/24/96	VM-223P 12/24/96	SR-216P 12/24/96
	LAB ID	61226412	61226413	61226414	61226415
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS	UNITS = MG/KG				
CHLOROMETHANE		<205 D	<250 D	<25 D	<250 D
BROMOMETHANE		<250 D	<250 D	<25 D	<250 D
VINYL CHLORIDE		580	500	<25 D	<250 D
CHLOROETHANE		<250 D	<250 D	<25 D	<250 D
METHYLENE CHLORIDE		<120 D	<120 D	<12 D	<120 D
ACETONE		<2,500 D	<2,500 D	<250 D	<2,500 D
CARBON DISULFIDE		<120 D	<120 D	<12 D	<120 D
1,1,-DICHLOROETHENE		<120 D	<120 D	<12 D	<120 D
1,1,-DICHLOROETHANE		<120 D	<120 D	<12 D	<120 D
1,2-DICHLORO***		11,000	1,400	15	2,400
CHLOROFORM		<120 D	<120 D	<12 D	<120 D
1,2-DICHLOROETHANE		<120 D	<120 D	<12 D	<120 D
2-BUTANONE		<2,500 D	<2,500 D	<250 D	<2,500 D
1,1,1-TRICHLOROETHA*		<120 D	<120 D	<12 D	<120 D
CARBON TETRACHLORIDE		<120 D	<120 D	<12 D	<120 D
VINYL ACETATE		<1,200 D	<1,200 D	<120 D	<1,200 D
BROMODICHLOROMETHANE		<120 D	<120 D	<12 D	<120 D
1,1,2,2-TETRACHLORO*		<120 D	<120 D	<12 D	<120 D
1,2-DICHLOROPROPANE		<120 D	<120 D	<12 D	<120 D
TRANS-1,3-DICHLOROP*		<120 D	<120 D	<12 D	<120 D
TRICHLOROETHENE		<120 D	<120 D	14	20,000
DIBROMOCHLOROMETHANE		<120 D	<120 D	<12 D	<120 D
1,1,2-TRICHLOROETHA*		<120 D	<120 D	<12 D	<120 D
BENZENE		<120 D	<120 D	<12 D	<120 D
CIS-1,3-DICHLOROPRO*		<120 D	<120 D	<12 D	<120 D

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P.O. # RPB00186

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ANALYTICAL REPORT FORM

PARAMETER	SAMPLE ID :	VM-211P	SR-230P	VM-223P	SR-216P
		12/24/96	12/24/96	12/24/96	12/24/96
	LAB ID	61226412	61226413	61226414	61226415
	DATE RECEIVED:	12/26/96	12/26/96	12/26/96	12/26/96
VOLATILE COMPOUNDS (Cont.)	UNITS =	MG/KG			
2-CHLOR* VINYL ETHER		<250 D	<250 D	<250 D	<250 D
BROMOFORM		<120 D	<120 D	<12 D	<120 D
2-HEXANONE		<1,200 D	<1,200 D	<120 D	<1,200 D
4-METHYL-2-PENTANONE		<1,200 D	<1,200 D	<120 D	<1,200 D
TETRACHLOROETHENE		<120 D	<120 D	180	46,000
TOLUENE		<120 D	<120 D	<12 D	<120 D
CHLOROBENZENE		<120 D	<120 D	<12 D	<120 D
ETHYL BENZENE		<120 D	<120 D	<12 D	<120 D
STYRENE		<120 D	<120 D	<12 D	<120 D
TOTAL XYLENES		160	160	<12 D	<120 D

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ACCOUNT NO. 01267

ANALYTICAL REPORT FORM

SAMPLE ID : VM-218P
12/24/96

LAB ID 61226416
DATE RECEIVED: 12/26/96

PARAMETER	RESULTS	UNITS	DATE AND ANALYST
VOLATILE COMPOUNDS			
Chloromethane	<250 D	MG/KG	01/07/97 ECKLUND
Bromomethane	<250 D		
Vinyl Chloride	<250 D		
Chloroethane	<250 D		
Methylene Chloride	<120 D		
Acetone	<2,500 D		
Carbon Disulfide	<120 D		
1,1-Dichloroethene	<120 D		
1,1-Dichloroethane	<120 D		
1,2-Dichloroethenes (Total)***	6,000		
Chloroform	<120 D		
1,2-Dichloroethane	<120 D		
2-Butanone	<2,500 D		
1,1,1-Trichloroethane	<120 D		
Carbon Tetrachloride	<120 D		
Vinyl Acetate	<1,200 D		
Bromodichloromethane	<120 D		
1,1,2,2-Tetrachloroethane	<120 D		
1,2-Dichloropropane	<120 D		
trans-1,3-Dichloropropene	<120 D		
Trichloroethene	17,000		
Dibromochloromethane	<120 D		
1,1,2-Trichloroethane	<120 D		

***EPA Methods 601 and 624 and SW 846 Methods 8010 and 8240 do not differentiate the co-eluting cis and trans-1,2-dichloroethenes. The result reported is the sum of both compounds.

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ANALYTICAL REPORT FORM

SAMPLE ID : VM-218P
12/24/96

LAB ID 61226416
DATE RECEIVED: 12/26/96

PARAMETER	RESULTS	UNITS	DATE AND ANALYST
VOLATILE COMPOUNDS Continued			
Benzene	<120 D	MG/KG	01/07/97 ECKLUND
cis-1,3-Dichloropropene	<120 D		
2-Chloroethylvinyl ether	<250 D		
Bromoform	<120 D		
2-Hexanone	<1,200 D		
4-Methyl-2-pentanone	<1,200 D		
Tetrachloroethene	30,000		
Toluene	<120 D		
Chlorobenzene	<120 D		
Ethylbenzene	<120 D		
Styrene	<120 D		
Total Xylenes	<120 D		

Volatile Compounds - Method 8240A
"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, Third Edition, U.S. Environmental Protection Agency. Revised 1986.

John R Paraska
QUALITY ASSURANCE SUPERVISOR

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ENVIRONMENTAL
OCCUPATIONAL HEALTH
FOOD SCIENCE
SPECIALISTS

Unabbreviated Listing of Hazardous Substance List Compounds

VOLATILE COMPOUNDS

Chloromethane
Bromomethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Acetone
Carbon Disulfide
1,1-Dichloroethene
1,1-Dichloroethane
1,2-Dichloroethylenes (Total)***
Chloroform
1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Vinyl Acetate
Ethyl Benzene
Styrene
Total Xylenes

Bromodichloromethane
1,1,2,2-Tetrachloroethane
1,2-Dichloropropane
trans-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2-Trichloroethane
Benzene
cis-1,3-Dichloropropene
2-Chloroethyl Vinyl Ether
Bromoform
2-Hexanone
4-Methyl-2-pentanone
Tetrachloroethene
Toluene
Chlorobenzene

***EPA Methods 601 and 624 and SW 846 Methods 8010 and 8240 do not differentiate the co-eluting cis and trans-1,2-dichloroethenes. The result reported to you is the sum of both compounds.

FREE-COL LABORATORIES, INC.
P.O. BOX 557, COTTON ROAD
MEADVILLE, PENNSYLVANIA 16335
PHONE: (814) 724-6242
FAX: (814) 333-1466

TO:

Results expressed as MG/KG or % are calculated on an as received weight basis, with two exceptions: % volatile solids and % fixed solids (% ash) are expressed on a dry weight basis.

ANALYTICAL REPORT FORM

CODE B: This analyte was detected in the associated blank as well as in the sample. It indicates possible/probable contamination. The data user may subtract the blank value from the sample value at his/her discretion.

CODE D: Detection limit change due to a dilution.

CODE R: The percent recovery on the spiked sample associated with this sample was not within the acceptance limits of 75% - 125%

CODE S: This result was obtained by Method of Standard Additions.

CODE NA: Not Applicable

CODE ND: Not Detectable

PRC: Preparation Reference Control

VOID: The sample plus spike concentration exceeded the linear range of the standard curve.

CODE Q: Values for parameters quantified in this sample have been adjusted for recoveries of the analytical matrix spike. The adjustments have been based on the matrix recoveries from this sample. Adjusted values are not given where sample values were less than the detection limit or where spike recoveries are equal to 100%

CODE J: This result is an estimated value. It indicates that the compound meets the mass spectral data identification criteria. The result is less than the quantitation limit but greater than zero.

CHAIN OF CUSTODY RECORD

1 CLIENT INFORMATION

COMPANY	Delphi Automotive Systems
CONTACT	Dan Coltoniak
ADDRESS	1000 Lexington Ave
CITY	Rochester
STATE	NY
ZIP CODE	14606
PHONE	(716)647-4468
FAX	(716) 647-~~4663~~ 2749
PURCHASE ORDER NUMBER	
CLIENT NUMBER	

2 TYPE

Wastewater	
Monitoring Well	✓
Drinking Water	
PWS #	
NPDES / SPDES	
Solid Waste	
I. H.	
Other	

MISC.

TCLP SPIKE YES NO

SPIKE YES NO

METHODS YES NO

QA/QC YES NO

FREE-COL LABORATORIES, INC.
P.O. BOX 557
COTTON ROAD
MEADVILLE, PA
16335-0557
800 836-4130
814 724-6242
814 333-1466 Fax

3 PROJECT NAME / NUMBER

DELPHI

4 SAMPLER'S NAME / DATE

BRIAN D. TAGGERTY 24 DEC 96

5 SAMPLE INFORMATION

	DATE	TIME	SAMPLE ID	TYPE	GRAB/COMP	ANALYSIS REQUESTED / COMMENTS
1	12/24/96	9:00	VM-229	GW		
2	12/24/96	9:20	VM-222	↓		
3	12/24/96	9:28	VM-224			
4	12/24/96	9:30	VM-221			
5	12/24/96	9:37	VM-213			
6	12/24/96	9:42	VM-226			
7	12/24/96	9:47	VM-227			
8	12/24/96	9:53	VM-210			
9	12/24/96	10:00	VM-211			
10	12/24/96	10:15	VM-212			
11	12/24/96	10:42	SR-230			
12	12/24/96	11:10	SR-216			
13	12/24/96	~~11:20~~	~~VM-218~~			
14	12/24/96					

6 SAMPLE TRACABILITY

	Received	SIGNATURE	ORGANIZATION	Relinquished
1	~~12/24/96~~	Brian D Taggerty	Dedmann Assoc	12/24/96
2	12/24/96	Scott Cole	Dedmann Assoc	12/24/96
3	12/26/96	Bill Sato	Free Col	12/26/96
4	12/26/96	Darlene K Swoggen	Free-Col	12/26/96
5	12/26/96	Fed Ex	Free Col	1/9/97
6	1/9/97	John Kell	Free Col	1/9/97
7	1/96			1/96

USE BY LABORATORY ONLY

	Date	Time
Samples rec. at lab	12/26/96	16:05
Means of del. to lab	Tech Service	
Sample cooler temp. upon receipt	5 (deg. C)	
Sample check in started	12-26-96	
Sample check in completed	12-26-96	
Samples refrigerated upon receipt at lab	Yes / No	
Samples refrigerated upon receipt from client	(Yes) / No	

FREE-COL LABORATORIES, INC.

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MEADVILLE, PA
16335-0557

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1 CLIENT INFORMATION

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CITY	Rochester
STATE	NY
ZIP CODE	14606
PHONE	(716)647-4468
FAX	(716) 647-~~4663~~ 2749
PURCHASE ORDER NUMBER	
CLIENT NUMBER	

2 TYPE

	MISC.
Wastewater	TCLP SPIKE YES NO
Monitoring Well ✓	
Drinking Water	SPIKE YES NO
PWS #	
NPDES / SPDES	METHODS YES NO
Solid Waste	
I. H.	QA/QC YES NO
Other	

3 PROJECT NAME / NUMBER

DELPHI

4 SAMPLER'S NAME / DATE

BRIAN D. JAGGERS 24 DEC 96

5 SAMPLE INFORMATION

	DATE	TIME	SAMPLE ID	TYPE	GRAB/COMP	ANALYSIS REQUESTED / COMMENTS
1	12/96	10:10	VM-211P	GW		
2	12/96	10:45	SR-230P			
3	12/96	11:00	VM-223P			
4	12/96	11:15	SR-216P			
5	12/96	11:20	VM-218P			
6	12/96	:				
7	12/96	:				
8	12/96	:				
9	12/96	:				
10	12/96	:				
11	12/96	:				
12	12/96	:				
13	12/96	:				
14	12/96	:				

6 SAMPLE TRACABILITY

	Received	SIGNATURE	ORGANIZATION	Relinquished
1	12/96		REHMANN ASSOC	12/24/96
2	12/26/96		Brian Pty	12/26/96
3	12/26/96		FREE COL	12/26/96
4	12/26/96		Free-Col	12/26/96
5	12/26/96		Free Col	1/9/97
6	1/9/97		Free Col	1/9/97
7	1/96			1/96

USE BY LABORATORY ONLY

	Date	Time
Samples rec. at lab	12/26/96	16:05
Means of del. to lab	Tech Service	
Sample cooler temp. upon receipt	5 (deg. C)	
Sample check in started	12-26-96	
Sample check in completed	12-26-96	
Samples refrigerated upon receipt at lab	(Yes) No	
Samples refrigerated upon receipt from client	(Yes) No	