LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

ADMINISTRATIVE RECORD

VOLUME 9 of 13

1994

Bate Stamp Numbers
010285 - 010908

Prepared for:

Department of the Army
Longhorn Army Ammunition Plant
Marshall, Texas 75671-1059

1995

VOLUME 9 of 13

1994

O. **Title:** **Final Analytical Data - Interim Remedial Action (RFI) Burning Ground 3 & Unlined Evaporation Pond**
Volume 3 of 4 - Chemical Data QA / QC Validation Summary Reports
Group(s): **Early Interim Action At Burning Ground No. 3**
Site(s): **LHAAP-18 & LHAAP-24 Burning Ground / Washout Pond & Evaporation Pond**
Location: **Longhorn Army Ammunition Plant, Marshall, Texas**
Company: **AWD Technologies, Inc.**
Author(s): **AWD Technologies, Inc.**
Recipient: **U.S. Army Corps Of Engineers, Tulsa District**
Date: **September 6, 1994**
Bate Stamp: **010285 - 010908**

010285

FINAL

CHEMICAL DATA QA/QC VALIDATION REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

VOLUME 3 OF 4

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

SEPTEMBER 6, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
MODIFICATION 000203
AWD PROJECT 2379

FINAL

CHEMICAL DATA QA\QC
VALIDATION SUMMARY REPORT
Longhorn Army Ammunition Plant
Karnack, Texas

The Longhorn Army Ammunition Plant (LHAAP) Phase I and II analytical data for the Interim Remedial Action of Burning Ground 3 and Unlined Evaporation Pond (LHAAP Units 18 and 24), which were generated by PDP Analytical Services and Inchcape Testing Services, have been validated by AWD Technologies, Inc. (AWD) in accordance with the U.S. EPA's National Functional Guidelines for Organic Data Review (June 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to appropriate method requirements. The resulting reports were produced by AWD in March and August of 1994 and are in accordance with the U.S. Army Corps of Engineers' (USACE) Regulation 1110-1-263 and Minimum Data Reporting Requirements, as well as with the Chemical Data Acquisition Plan (CDAP) for this site. The associated USACE Contract Number is DACA56-93-D-0016 and the Delivery Order Number is 0002.

The validated analytical results are reported in the data summary section of each validation or chemical data QA/QC report and should be accepted as qualified. With the exception of the relatively very few chemical concentrations that were qualified as unusable, "R", all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

Among the criteria used to evaluate the data are accuracy, precision, and representativeness. Each of these criteria were examined for each type of analysis reported in each laboratory data package. The percent recoveries of laboratory control samples, surrogates, and matrix spike/matrix spike duplicates were evaluated under accuracy, which is the determination of how close a concentration is to its true value. Under precision, the relative percent differences (RPDs) between batch spikes and batch spike duplicates, laboratory control samples and laboratory control sample duplicates, matrix spikes and matrix spike duplicates, and site samples and their associated laboratory duplicates were evaluated. These measure the laboratory's ability to reproduce a chemical concentration. The criteria considered under representativeness include: holding times, sample preservation, laboratory and field blank contamination, and field duplicate comparisons. These enable the validator to further assess the chemical data and to decide the extent to which the chemical concentrations are acceptable, reliable, and appropriate.

010287

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2001
INCHCAPE TESTING SERVICES -- Job Number H93-8130

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2001
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8130

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 2, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2001. Included in this work order are three (3) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-109-1001
LH18,24-124-1001
LH18,24-MW3-1001

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively.

Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8130. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the metal results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and laboratory control sample (LCS) percent recoveries were within control limits.

The percent recovery of trichloroethene in the matrix spike and matrix spike duplicate (MS/MSD) was low. Since qualification is not based on MS/MSD criteria alone, no action was taken.

2.2 Precision. The relative percent difference (RPD) between the MS/MSD percent recoveries for trichloroethene exceeded control limits. Since qualification is not based on MS/MSD criteria alone, no action was taken. All other RPDs were within control.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

Blank contamination for methylene chloride was found in both method blanks. As a result, all sample concentrations less than 10 times (since this is a common laboratory

contaminant) the associated blank results were qualified as non-detects, "U". Note that the dilution of sample LH18,24-MW3-1001 contained a level of methylene chloride roughly 5 times higher than the original analysis. The diluted analysis result was qualified due to blank contamination and therefore considered to be compromised. As a result, the original analysis result was not subject to qualification and is reported on the validated data summary.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site-related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

3.0 Semivolatiles.

3.1 Accuracy. Acid and base/neutral extractable surrogates for the original analysis of sample LH18,24-124-1001 had percent recoveries less than 10 percent. As a result, all compounds in the original analysis of sample LH18,24-124-1001 have been rejected, "R", and should be considered unreliable as they are all non-detects. Where there are two sets of data available for a sample due to re-extraction based on surrogate recoveries outside control limits only the best data has been reported in the validated data summary.

The laboratory control sample (LCS) extracted on December 7, 1993 had a low percent recovery for n-nitroso-di-n-propylamine. As a result, all associated sample concentrations have been qualified as estimated, "UJ", as they were all non-detects. All other LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPDs between the matrix spike and matrix spike duplicate for several compounds were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved.

The recommended holding time was exceeded for the re-extraction of sample LH18,24-124-1001. Therefore, all results in this sample were qualified, "UJ", estimated, as they were all non-detect. The method blank extracted on December 7, 1993 was free of target compound contamination. The method blank extracted on December 20, 1993 was not provided with this data package. Since all the sample results were non-detect, no action was necessary.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 20 percent. Therefore, all sample results for selenium have been rejected, "R", and should be considered unreliable as they were all non-detects.

5.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were received in good condition and preserved upon receipt by the laboratory. It was assumed that since only one day elapsed between sample collection and receipt the sample integrity was maintained. All samples were analyzed within appropriate holding times.

All blanks were free of target analyte contamination.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

The semivolatile method blank and LCS associated with the re-extraction of sample LH18,24-124-1001 were not provided with the sample data package. Since all the sample results were non-detect and the results were previously qualified due to holding time criteria, no further action was taken.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for furnace elements and mercury were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	109-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.01	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7047	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7047
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6 a
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	4 J
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	94
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010297

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	124.1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.02	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7068	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7068
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
?-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW3-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.03	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7049	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7049
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	9	Chloroform	5	ND
1,1-Dichloroethene	5	7	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	50
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~5~~ 50	~~730 E~~ 740
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	32

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.04	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7050	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7050
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010300

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	109-1009	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.01	Date Received:	12/03/93
Project No.:	NA	Report No.:	D2038	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2038
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND uj
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	54	Phenol-d5	75	(10-94)	21
2-Fluorobiphenyl	50	(43-116)	48	2-Fluorophenol	75	(21-100)	36
Terphenyl-d14	50	(33-141)	62	2,4,6-Tribromphenol	75	(10-123)	61

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010301

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: 124-1001 (RA)
PDP Sample ID: 2001.02
Report No.: A5255

Date Sampled: 12/02/93
Date Received: 12/03/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/27/93

Method Ref.: SW846-8270
GC/MS File ID: A5255
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
...robenzene-d5	50	(35-114)	79	Phenol-d5	75	(10-94)	22
2-Fluorobiphenyl	50	(43-116)	59	2-Fluorophenol	75	(21-100)	59
Terphenyl-d14	50	(33-141)	89	2,4,6-Tribromphenol	75	(10-123)	71

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010302

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW3-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.03	Date Received:	12/03/93
Project No.:	NA	Report No.:	A5156	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5156
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	53	Phenol-d5	75	(10-94)	28
2-Fluorobiphenyl	50	(43-116)	56	2-Fluorophenol	75	(21-100)	41
Terphenyl-d14	50	(33-141)	60	2,4,6-Tribromphenol	75	(10-123)	59

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010303

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 109-1001
PDP Sample ID: 2001.01
Report Number: I00101

Date Sampled: 12-02-93
Date Received: 12-03-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	1.3	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.66	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	0.007	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	86.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.012	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	0.020	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.84	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.025	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	65.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.159	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	446	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.039	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 124-1001
PDP Sample ID: 2001.02
Report Number: I00102

Date Sampled: 12-02-93
Date Received: 12-03-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	32.8	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	0.011	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.295	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	5.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.034	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.019	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	0.031	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	32.0	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	0.029	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	6.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.378	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	15.4	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.01	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.054	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.118	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW3-1001
PDP Sample ID: 2001.03
Report Number: I00103

Date Sampled: 12-02-93
Date Received: 12-03-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND		MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND		HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.59		MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	36.8		MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND		MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.022		MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.21		MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND		HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	33.1		MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	4.87		MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND		MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND		MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	255		MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND		HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND		MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.10		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-03-93
Date Reported: 12-18-93
Report Number: I001CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2001.01	109-1001	WATER	12-02-93	12-03-93	1	986			
2001.02	124-1001	WATER	12-02-93	12-03-93	1	5.3			
2001.03	MW3-1001	WATER	12-02-93	12-03-93	1	377			
			QUALITY ASSURANCE/QUALITY CONTROL						
2001.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
2001.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
2001.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-03-93
Date Reported: 12-18-93
Report Number: I001NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2001.01	109-1001	WATER	12-02-93	12-03-93	0.1	1.3			
2001.02	124-1001	WATER	12-02-93	12-03-93	0.1	1.3			
2001.03	MW3-1001	WATER	12-02-93	12-03-93	0.1	0.3			
			QUALITY ASSURANCE/QUALITY CONTROL						
2001.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	0.1	ND			
2001.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.33	0.40		82
2001.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.37	0.40	11.4	92
1990.01	MW17-1001	WATER	11-23-93	11-24-93	0.1	0.22			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	11-24-93	0.1	0.22		0.0	
990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	11-24-93	0.1	0.57	0.40		88

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-03-93
Date Reported: 12-18-93
Report Number: I001SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2001.01	109-1001	WATER	12-02-93	12-07-93	5	15			
2001.02	124-1001	WATER	12-02-93	12-07-93	5	140			
2001.03	MW3-1001	WATER	12-02-93	12-07-93	5	9			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.3	110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

010309

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 3-DEC-1993

REPORT NUMBER : H93-8130-1
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : 109-1001
PROJECT : PDP Analytical
DATE SAMPLED : 2-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	95.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010310

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 3-DEC-1993

REPORT NUMBER : H93-8130-2
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : 124-1001
PROJECT : PDP Analytical
DATE SAMPLED : 2-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010311

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 3-DEC-1993

REPORT NUMBER : H93-8130-3
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW3-1001
PROJECT : PDP Analytical
DATE SAMPLED : 2-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	104 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	109-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.01	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7047	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7047
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	4 J
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	94
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	124.1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.02	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7068	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7068
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW3-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.03	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7049	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7049
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	9	Chloroform	5	ND
1,1-Dichloroethene	5	7	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	50
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	730 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	32

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW3-1001 (DL)	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.03DL (DILUTION)	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7075	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7075
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	280
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	740
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: 2009V.WBLK1 LCS ID: 2009V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010317

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.04	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7050	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7050
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010318

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	109-1009	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.01	Date Received:	12/03/93
Project No.:	NA	Report No.:	D2038	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2038
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	54	Phenol-d5	75	(10-94)	21
2-Fluorobiphenyl	50	(43-116)	48	2-Fluorophenol	75	(21-100)	36
Terphenyl-d14	50	(33-141)	62	2,4,6-Tribromphenol	75	(10-123)	61

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

000017

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010319

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:124-1001 (RA)
PDP Sample ID: 2001.02
Report No.: A5255

Date Sampled: 12/02/93
Date Received: 12/03/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/27/93

Method Ref.: SW846-8270
GC/MS File ID: A5255
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	79	Phenol-d5	75	(10-94)	22
2-Fluorobiphenyl	50	(43-116)	59	2-Fluorophenol	75	(21-100)	59
Terphenyl-d14	50	(33-141)	89	2,4,6-Tribromphenol	75	(10-123)	71

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010320

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW3-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.03	Date Received:	12/03/93
Project No.:	NA	Report No.:	A5156	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5156
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	53	Phenol-d5	75	(10-94)	28
2-Fluorobiphenyl	50	(43-116)	56	2-Fluorophenol	75	(21-100)	41
Terphenyl-d14	50	(33-141)	60	2,4,6-Tribromphenol	75	(10-123)	59

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 109-1001
PDP Sample ID: 2001.01
Report Number: I00101

Date Sampled: 12-02-93
Date Received: 12-03-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	1.3	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.66	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	0.007	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	86.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.012	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	0.020	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.84	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.025	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	65.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.159	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	446	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.039	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 124-1001
PDP Sample ID: 2001.02
Report Number: I00102

Date Sampled: 12-02-93
Date Received: 12-03-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	32.8	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	0.011	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.295	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	5.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.034	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.019	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	0.031	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	32.0	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	0.029	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	6.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.378	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	15.4	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.01	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.054	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.118	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010323

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW3-1001
PDP Sample ID: 2001.03
Report Number: I00103

Date Sampled: 12-02-93
Date Received: 12-03-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: ug/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.59	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	36.8	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.022	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.21	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	33.1	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	4.87	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	255	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.10	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-03-93
Date Reported: 12-18-93
Report Number: I001CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2001.01	109-1001	WATER	12-02-93	12-03-93	1	986			
2001.02	124-1001	WATER	12-02-93	12-03-93	1	5.3			
2001.03	MW3-1001	WATER	12-02-93	12-03-93	1	377			
			QUALITY ASSURANCE/QUALITY CONTROL						
2001.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
2001.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
2001.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:12-03-93
Date Reported:12-18-93
Report Number:I001NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2001.01	109-1001	WATER	12-02-93	12-03-93	0.1	1.3			
2001.02	124-1001	WATER	12-02-93	12-03-93	0.1	1.3			
2001.03	MW3-1001	WATER	12-02-93	12-03-93	0.1	0.3			
			QUALITY ASSURANCE/QUALITY CONTROL						
2001.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	0.1	ND			
2001.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.33	0.40		82
2001.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.37	0.40	11.4	92
1990.01	MW17-1001	WATER	11-23-93	11-24-93	0.1	0.22			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	11-24-93	0.1	0.22		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	11-24-93	0.1	0.57	0.40		88

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-03-93
Date Reported: 12-18-93
Report Number: I001SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2001.01	109-1001	WATER	12-02-93	12-07-93	5	15			
2001.02	124-1001	WATER	12-02-93	12-07-93	5	140			
2001.03	MW3-1001	WATER	12-02-93	12-07-93	5	9			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.3	110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

Inchcape Testing Services
NDRC Laboratories

010327

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 3-DEC-1993

REPORT NUMBER : H93-8130-1
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : 109-1001
PROJECT : PDP Analytical
DATE SAMPLED : 2-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	95.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010328

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
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DATE RECEIVED : 3-DEC-1993

REPORT NUMBER : H93-8130-2
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : 124-1001
PROJECT : PDP Analytical
DATE SAMPLED : 2-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Narang
Vice President, General Manager

010329

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 3-DEC-1993

REPORT NUMBER : H93-8130-3
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW3-1001
PROJECT : PDP Analytical
DATE SAMPLED : 2-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	104 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: NA
PDP Sample ID: 1999V.WBLK1 (METHOD BLANK)
Report No.: B7043

Date Sampled: NA
Date Received: NA
Date Reported: 12/21/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7043
Date Analyzed: 12/15/93
Analyst: NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2009V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7064	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7064
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	1
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 12/02/93
Date Reported: 12/20/93
Report No.: B703233

GC/MS-VOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8240 Sample Matrix: WATER Analyst: MA

SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1999.04	MS Sample ID:	1999.04MS	MSD Sample ID:	1999.04MSD
Date Analyzed:	12/14/93	Date Analyzed:	12/14/93	Date Analyzed:	12/14/93
GC/MS File ID:	B7030	GC/MS File ID:	B7032	GC/MS File ID:	B7033

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	(61-145)
Benzene	50	ND	53	106	(76-127)
Chlorobenzene	50	ND	56	112	(75-130)
Toluene	50	ND	54	108	(76-125)
Trichloroethene	50	140	170	60 *	(71-120)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	0.0	14	(61-145)
Benzene	50	ND	51	102	3.8	11	(76-127)
Chlorobenzene	50	ND	53	106	5.5	13	(75-130)
Toluene	50	ND	53	106	1.9	13	(76-125)
Trichloroethene	50	140	160	40 *	40.0 *	14	(71-120)

* = Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 2 out of 10 outside limits

PDP Analytical Services

'01033

SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 2001 DATE/TIME REC'D: 12-3-93 0830 # OF COOLERS REC'D: 2 COOLER TEMP.: ICED

CLIENT NAME: AWD TECH # OF AQUEOUS SAMPLES RECEIVED:

PROJECT NAME/NUMBER: LONGHORN AAP # OF SOIL SAMPLES RECEIVED: 0

DESCRIBE PACKING USED IN COOLER: PEANUTS, SPILL PADS # OF OTHER (SPECIFY): 0

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: 2 FRONT & BACK SEAL DATE: 12-2-93 SEAL NAME: ILLEGIBLE

SAMPLE CONTAINER SEALS: PRESENT (ABSENT) INTACT BROKEN

SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FED X AIRBILL NO.: 9743847621 9743847632 ~~7088713930~~ BM 12-2-93

	YES	NO
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?	✓	
CHAIN OF CUSTODY PRESENT?		✓
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND ~~TAPED INSIDE THE LID~~?	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?	✓	
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?		✓
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	
BOTTLES BROKEN OR LEAKING?	✓	
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?		✓
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?	✓	
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S:	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?	✓	
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		✓
WHO WAS CALLED? BY WHOM? DATE:		

COMMENTS & RESOLUTIONS: ~1% SEDIMENT IN 124-1001, METALS SAMPLE CONTAINERS REQUIRED REPRESERVATION UPON RECEIPT.

LOGGED IN BY: Bruce A. Hewlett DATE: 12-2-93

000008

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2001S.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	A5154	Date Reported:	12/28

GC/MS-SEMIVOLATILES

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.0	Date Extracted:	12/07/93	GC/MS File ID:	A5154
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	36	72	(39-98)
1,4-Dichlorobenzene	50	32	64	(36-97)
2,4-Dinitrotoluene	50	34	68	(24-96)
2-Chlorophenol	75	49	65	(27-123)
4-Chloro-3-methylphenol	75	39	52	(23-97)
4-Nitrophenol	75	45	60	(10-80)
Acenaphthene	50	36	72	(46-118)
.-Nitroso-Di-N-propylamine	50	7	14 *	(41-116)
Pentachlorophenol	75	29	39	(9-103)
Phenol	75	43	57	(12-110)
Pyrene	50	28	56	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	67	Phenol-d5	75	(10-94)	66
2-Fluorobiphenyl	50	(43-116)	72	2-Fluorophenol	75	(21-100)	66
Terphenyl-d14	50	(33-141)	69	2,4,6-Tribromophenol	75	(10-123)	58

Method Blank: 2001S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
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010336

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MS (MATRIX SPIKE)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5162	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5162
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	9	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	8	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	20	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	14	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	19	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	30	Nitrobenzene	10	ND
Acenaphthene	10	16	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	3
Anthracene	10	ND	Pentachlorophenol	30	21
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	15
			Pyrene	10	15

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	20 *	Penol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	26 *	2-Fluorophenol	75	(21-100)	15 *
Terphenyl-d14	50	(33-141)	36	2,4,6-Tribromphenol	75	(10-123)	29

Method Blank: 1986S.WBLK1 LCS ID: 1986S.WLCS1 MS ID: NA MSD ID: NA DUP ID: NA

000040

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010337

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MSD (MATRIX SPIKE DUP)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5163	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5163
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	20	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	18	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	0	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	12	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	5	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	14	Nitrobenzene	10	ND
Acenaphthene	10	19	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	7
Anthracene	10	ND	Pentachlorophenol	30	14
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	12
			Pyrene	10	14

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	32 *	Penol-d5	75	(10-94)	17
2-Fluorobiphenyl	50	(43-116)	35 *	2-Fluorophenol	75	(21-100)	18 *
Terphenyl-d14	50	(33-141)	35	2,4,6-Tribromphenol	75	(10-123)	19

Method Blank: 1986S.WBLK1 LCS ID: 1986S.WLCS1 MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
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010938

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Date Received:	11/30/93
Project Name:	LONGHORN AAP	Date Reported:	12/28/93
Project No.:	NA	Report No.:	A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.:	SW846-8270	Sample Matrix:	WATER	Analyst:	HZZ
SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1998.01	MS Sample ID:	1998.01MS	MSD Sample ID:	1998.01MSD
Date Analyzed:	12/27/93	Date Analyzed:	12/16/93	Date Analyzed:	12/16/93
GC/MS File ID:	A5250	GC/MS File ID:	A5162	GC/MS File ID:	A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	66.0 *	~~40~~ 28	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ 50	(10-80)
Acenapthene	50	ND	19	38 *	17.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~38~~ 50	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ 42	(12-110)
Pyrene	50	ND	14	28	6.9	31	(26-127)

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001-QC (MS/DUP)
PDP Sample ID: 1987.07 (MS/DUP)
Report Number: I987MSD

Date Sampled: 11-22-93
Date Received:11-23-93
Date Reported:12-20-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER — Units mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-20-93	0.3	0.2	40	2.00	2.15	92
Antimony	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-13-93	12-15-93	ND	ND	NC	0.040	0.036	90
Barium	SW-846 6010	12-15-93	12-20-93	0.244	0.244	0	2.00	2.14	95
Beryllium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Cadmium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Calcium	SW-846 6010	12-15-93	12-20-93	7.6	7.5	1.3	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-20-93	0.016	0.015	6.5	0.20	0.20	92
Cobalt	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Copper	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-20-93	23.4	22.4	4.4	1.00	24.60	NC* 120
Lead	SW-846 7421	12-13-93	12-14-93	ND	ND	NC	0.020	0.020	100
Magnesium	SW-846 6010	12-15-93	12-20-93	4.1	4.0	2.5	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-20-93	0.513	0.503	2.0	0.50	0.99	95
Mercury	SW-846 7470	11-29-93	11-29-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.51	102
Potassium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-13-93	12-15-93	ND	ND	NC	0.010	0.002	(20)
Silver	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-20-93	61.9	63.6	2.7	NA	NA	NA
Thallium	SW-846 7841	12-13-93	12-14-93	ND	ND	NC	0.050	0.044	88
Vanadium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	12-15-93	12-20-93	ND	0.020	NC	0.50	0.50	100

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 — LCS ID: 1987.LCSW1

TCLP Blank ID: NA — LCSD ID: 1987.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW3-1001 (DL)	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2001.03DL (DILUTION)	Date Received:	12/03/93
Project No.:	NA	Report No.:	B7075	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7075
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	280 a
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	740
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: 2009V.WBLK1 LCS ID: 2009V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

[illegible] ANALYTICAL SERVICES
8400 Pickle Drive, Suite 308; Boring, Texas 77386; Phone 713/368-2228

010341

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	124-1001	Date Sampled:	12/02/93
Project Name:	LONGHORN AAP	PSP Sample ID:	2001.02	Date Received:	12/03/93
Project No.:	NA	Report No.:	02039	Date Reported:	12/23/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2039
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND R	Benzo(a)pyrene	10	ND R
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits Recovery	% Recovery
Nitrobenzene-d5	50	(35-114)	4 *	Phenol-d5	75	(10-94)	3 *
2-Fluorobiphenyl	50	(43-116)	0 *	2-Fluorophenol	75	(21-100)	5 *
Terphenyl-d14	50	(33-141)	0 *	2,4,6-Tribromophenol	75	(10-123)	0 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010342

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2005
INCHCAPE TESTING SERVICES -- Job Number H93-8169

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2005
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8169

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 3, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2005. Included in this work order are five (5) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-123-1001
LH18,24-AWD4-1001
LH18,24-MW6-1001
LH18,24-MW22-1001
LH18,24-MW21-1001

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively.

Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8169. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the metal results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and laboratory control sample (LCS) percent recoveries were within control limits.

The percent recovery of trichloroethene in the matrix spike and matrix spike duplicate (MS/MSD) was low. Since qualification is not based on MS/MSD criteria alone, no action was taken.

2.2 Precision. The relative percent difference (RPD) between the MS/MSD percent recoveries for trichloroethene exceeded control limits. Since qualification is not based on MS/MSD criteria alone, no action was taken. All other RPDs were within control.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

Blank contamination was found for 2-butanone and acetone in the trip blank. In addition, methylene chloride contamination was found in all method blanks. As a result, all sample

concentrations less than 10 times (since these are all common laboratory contaminants) the associated blank results were qualified as non-detects, "U". Note that sample LH18,24-MW22-1001 contained a high level of methylene chloride which was qualified due to blank contamination in the diluted analysis but remained a positive hit above the highest calibration standard in the original analysis. Since the original analysis contained a high level of methylene chloride and this compound was found in other site samples, the original result was retained on the validated data summary and qualified as estimated, "J".

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing the results; it is difficult to be certain that they are not attributable to blank contamination.

3.0 Semivolatiles.

3.1 Accuracy. Acid and base/neutral extractable surrogates for the original analysis of sample LH18,24-123-1001 and acid extractable surrogates for the re-extraction and re-extraction/reanalysis of sample LH18,24-AWD4-1001 had percent recoveries less than 10 percent. As a result, all acid extractable compounds in these samples and all base/neutral compounds in the original analysis of sample LH18,24-123-1001 have been rejected, "R", and should be considered unreliable as they are all non-detects. In addition, the original analysis of sample LH18,24-AWD4-1001 had surrogate recoveries for nitrobenzene-d5, 2-fluorobiphenyl, and terphyl-d14, that were blow control limits. Therefore, all base/neutral compounds in this sample, being non-detects, were qualified as estimated, "UJ". Where there are two (or three) sets of data available for a sample due to re-extraction (or re-extraction/reanalysis) based on surrogate recoveries outside control limits only the best data has been reported in the validated data summary. Note that while surrogate recoveries of 2-fluorobiphenyl and terphyl-d14 were above control limits for the re-extraction of sample LH18,24-123-1001, no action on the data was warranted since all sample results were non-detect.

The laboratory control sample (LCS) extracted on December 7, 1993 had a low percent recovery for n-nitroso-di-n-propylamine. As a result, all associated sample concentrations have been qualified as estimated, "UJ", except for the values that have already been rejected. Note that while the percent recovery of 2,4-dinitrotoluene in the LCS extracted on December 20, 1993 was high the data were not impacted since they were all non-detect.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

Note that the case narrative reports that the quality of the internal standards were compromised in the re-extraction of sample LH18,24-123-1001. Since the re-extraction/reanalysis of this sample was already qualified due to holding time exceedance, showed acceptable surrogate recoveries, and the impact of these exceedances could not ascertained, no action was taken.

3.2 Precision. The RPDs between the matrix spike and matrix spike duplicate for several compounds were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved. Both method blanks were free of target compound contamination.

The recommended holding time was exceeded for the re-extractions and re-extraction/reanalyses of samples LH18,24-123-1001 and LH18,24-AWD4-1001. Therefore, all results in these samples were qualified, "UJ", estimated, as they were all non-detect.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 20 percent. Therefore, all sample results for selenium have been rejected, "R", and should be considered unreliable since they are all non-detect.

5.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times.

Note that blank contamination was found for lead in the preparation blank digested on December 14, 1993. Since all samples with positive results for lead were reported from a re-digestion performed on December 20, 1993 and the new preparation blank showed no contamination, no action was necessary. All other blanks were free of target analyte contamination.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were

evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for furnace elements and mercury were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	123-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.01	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7051	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7051
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.02	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7052	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7052
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	210 J	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	35	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD4-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.03	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7053	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7053
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	46
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	83
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW6-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.04	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7054	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7054
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	5	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	110
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	190
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	16

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

010956

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW22-1001
PDP Sample ID: 2005.05
Report No.: B7055

Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7055
Date Analyzed: 12/15/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	213 B J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~25~~	~~920~~ ~~406~~ E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

010357

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID:MW21-1001
PDP Sample ID: 2005.06
Report No.: B7056
Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0
Method Ref.: SW846-8240
GC/MS File ID: B7056
Date Analyzed: 12/15/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	6	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	83
1,1-Dichloroethene	5	47	Chloromethane	10	ND
1,2-Dichloroethane	5	17	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	25000 5	432000 ~~41000 E~~
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	7
Benzene	5	5	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	7
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	250 5	4850 ~~3900 E~~
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	9

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010358

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID:123-1001
PDP Sample ID: 2005.01 RA RE
Report No.: D2165
Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/28/93
Method Ref.: SW846-8270
GC/MS File ID: D2165
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	37	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	101	2-Fluorophenol	75	(21-100)	56
Terphenyl-d14	50	(33-141)	116	2,4,6-Tribromphenol	75	(10-123)	115

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 0002

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010359

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD4-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.03	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5167	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5167
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND uJ	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND uJ	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND uJ	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND uJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND uJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND uJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND uJ	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND uJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND uJ
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND uJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	25 J	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	22 J	2-Fluorophenol	75	(21-100)	16 J
Terphenyl-d14	50	(33-141)	21 J	2,4,6-Tribromphenol	75	(10-123)	24

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010029

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010360

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW6-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.04	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5164	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5164
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND us
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	52	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	50	2-Fluorophenol	75	(21-100)	25
Terphenyl-d14	50	(33-141)	57	2,4,6-Tribromphenol	75	(10-123)	53

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010361

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW22-1001
PDP Sample ID: 2005.05
Report No.: A5166

Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/16/93

Method Ref.: SW846-8270
GC/MS File ID: A5166
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND uJ
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	43	Phenol-d5	75	(10-94)	49
2-Fluorobiphenyl	50	(43-116)	46	2-Fluorophenol	75	(21-100)	65
Terphenyl-d14	50	(33-141)	51	2,4,6-Tribromphenol	75	(10-123)	81

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 00030

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010362

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW21-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.06	Date Received:	12/04/93
Project No.:	NA	Report No.:	D2043	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2043
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	49	Phenol-d5	75	(10-94)	16
2-Fluorobiphenyl	50	(43-116)	47	2-Fluorophenol	75	(21-100)	27
Terphenyl-d14	50	(33-141)	55	2,4,6-Tribromphenol	75	(10-123)	57

010003

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010363

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 123-1001
PDP Sample ID: 2005.01
Report Number: I00501

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	32.5	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.420	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	16.7	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.031	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.023	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	29.0	MBB
Lead	SW-846 7421	12-20-93	12-21-93	0.005	0.013	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	12.8	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.244	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	16.8	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.053	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.105	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Pb Method Blank ID: 2005.PB1

Extraction Blank ID: NA

LCS ID: 1987.LCSW1
Pb LCS ID: 2005.LCS1
LCSD ID: 1987.LCSW2
Pb LCSD ID:2005.LCS2

MS ID: 1987.07MS

DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD4-1001
PDP Sample ID: 2005.03
Report Number: I00503

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	24.4	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.818	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	24.5	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.099	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.024	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.041	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	34.5	MBB
Lead	SW-846 7421	12-20-93	12-21-93	0.005	0.012	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	22.0	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.639	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.090	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	94.2	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.054	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.099	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Pb Method Blank ID: 2005.PB1

Extraction Blank ID: NA

LCS ID: 1987.LCSW1
Pb LCS ID: 2005.LCS1

LCSD ID: 1987.LCSW2
Pb LCSD ID:2005.LCS2

MS ID: 1987.07MS

DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW6-1001
PDP Sample ID: 2005.04
Report Number: I00504

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.86	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	1.32	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	62.3	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.579	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.013	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	7.67	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	44.3	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.334	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.062	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	191	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.016	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.044	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW22-1001
PDP Sample ID: 2005.05
Report Number: I00505

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	1.7	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	2.12	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	156	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	1.10	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.018	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.048	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	8.74	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	21.8	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.178	MBB
Mercury	SW-846 7470	12-21-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.752	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	5	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.01	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	335	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.018	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.028	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Hg Method Blank ID: 2005.PBW1

Extraction Blank ID: NA

LCS ID: 1987.LCSW1
Hg LCS ID: 2005.LCSW1
LCSD ID: 1987.LCSW2
Hg LCSD ID:2005.LCSW2

MS ID: 1987.07MS

DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW21-1001
PDP Sample ID: 2005.06
Report Number: I00506

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	5.0	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	6.9	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	183	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.531	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.066	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	6.2	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	144	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	3.14	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.353	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	412	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.064	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-04-93
Date Reported: 12-20-93
Report Number: I005CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2005.01	123-1001	WATER	12-03-93	12-07-93	1	5			
2005.03	AWD4-1001	WATER	12-03-93	12-07-93	1	216			
2005.04	MW6-1001	WATER	12-03-93	12-07-93	1	470			
2005.05	MW22-1001	WATER	12-03-93	12-07-93	1	851			
2005.06	MW21-1001	WATER	12-03-93	12-07-93	1	1430			
				QUALITY ASSURANCE/QUALITY CONTROL					
2009.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	1	ND			
2009.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152		95
2009.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152	0.0	95
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-04-93
Date Reported: 12-20-93
Report Number: I005NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2005.01	123-1001	WATER	12-03-93	12-05-93	1	17.1			
2005.03	AWD4-1001	WATER	12-03-93	12-05-93	0.5	3.9			
2005.04	MW6-1001	WATER	12-03-93	12-05-93	0.1	ND			
2005.05	MW22-1001	WATER	12-03-93	12-05-93	0.1	ND			
2005.06	MW21-1001	WATER	12-03-93	12-05-93	0.1	0.2			
			QUALITY ASSURANCE/QUALITY CONTROL						
2005.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-05-93	0.1	ND			
2005.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-05-93	0.1	0.35	0.40		88
2005.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-05-93	0.1	0.37	0.40	5.6	92
1990.01	MW17-1001	WATER	11-23-93	11-24-93	0.1	0.22			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	11-24-93	0.1	0.22		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	11-24-93	0.1	0.57	0.40		88

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-04-93
Date Reported: 12-20-93
Report Number: I005SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2005.01	123-1001	WATER	12-03-93	12-07-93	5	37			
2005.03	AWD4-1001	WATER	12-03-93	12-07-93	5	13			
2005.04	MW6-1001	WATER	12-03-93	12-07-93	5	11			
2005.05	MW22-1001	WATER	12-03-93	12-07-93	5	6			
2005.06	MW21-1001	WATER	12-03-93	12-07-93	5	ND			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.3	110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

010371

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-1
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.01/123-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010372

Inchcape Testing Services
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11155 South Main
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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-2
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.03/AWD4-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	71.0 %

Inchcape Testing Services

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-3
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.04/MW6-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	92.0 %

Inchcape Testing Services

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-4
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.05/MW22-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	102 %

Inchcape Testing Services

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-5
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.06/MW21-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	96.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	123-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.01	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7051	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7051
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.02	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7052	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7052
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	210 E	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	35	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD4-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.03	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7053	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7053
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	46
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	83
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW6-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.04	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7054	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7054
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	5	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	110
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	190
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	16

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW22-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.05	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7055	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7055
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	213 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	406 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

010382

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW22-1001 (DL)	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.05DL (DILUTION)	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7072	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7072
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	5.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	210
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	420
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2009V.MBLK1 LCS ID: 2009V.MLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW21-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.06	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7056	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7056
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	6	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	83
1,1-Dichloroethene	5	47	Chloromethane	10	ND
1,2-Dichloroethane	5	17	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	44000 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	7
Benzene	5	5	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	7
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3900 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	9

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW21-1001 (DL1)	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.06DL1 (DILUTION)	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7073	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7073
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	415000 E
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	4850
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 2009V.WBLK1 LCS ID: 2009V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

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010385

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW21-1001 (DL2)	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.06DL2 (DILUTION)	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7080	Date Reported:	12/78/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5000.00	GC/MS File ID:	B7080
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	5000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25000	ND	Carbon tetrachloride	25000	ND
1,1,2,2-Tetrachloroethane	25000	ND	Chlorobenzene	25000	ND
1,1,2-Trichloroethane	25000	ND	Chloroethane	50000	ND
1,1-Dichloroethane	25000	ND	Chloroform	25000	ND
1,1-Dichloroethene	25000	ND	Chloromethane	50000	ND
1,2-Dichloroethane	25000	ND	Cis-1,3-Dichloropropene	25000	ND
1,2-Dichloropropane	25000	ND	Dibromochloromethane	25000	ND
2-Butanone	50000	ND	Ethylbenzene	25000	ND
2-Chloroethyl vinyl ether	50000	ND	Methylene chloride	25000	432000
2-Hexanone	50000	ND	Styrene	25000	ND
4-Methyl-2-pentanone	50000	ND	Tetrachloroethene	25000	ND
Acetone	50000	ND	Toluene	25000	ND
Benzene	25000	ND	Total xylenes	25000	ND
Bromodichloromethane	25000	ND	Total-1,2-Dichloroethene	25000	ND
Bromoform	25000	ND	Trans-1,3-Dichloropropene	25000	ND
Bromomethane	50000	ND	Trichloroethene	25000	ND
Carbon disulfide	25000	ND	Vinyl acetate	50000	ND
			Vinylchloride	50000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

000021

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010386

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	123-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.01	Date Received:	12/04/93
Project No.:	NA	Report No.:	D2042	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2042
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	12 *	Phenol-d5	75	(10-94)	5 *
2-Fluorobiphenyl	50	(43-116)	6 *	2-Fluorophenol	75	(21-100)	9 *
Terphenyl-d14	50	(33-141)	8 *	2,4,6-Tribromphenol	75	(10-123)	7 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010023

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010387

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	123-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.01 RA	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5249	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	A5249
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	49	Phenol-d5	75	(10-94)	12
2-Fluorobiphenyl	50	(43-116)	136 *	2-Fluorophenol	75	(21-100)	67
Terphenyl-d14	50	(33-141)	328 *	2,4,6-Tribromphenol	75	(10-123)	135 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010388

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	123-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.01 RA RE	Date Received:	12/04/93
Project No.:	NA	Report No.:	D2165	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2165
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	37	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	101	2-Fluorophenol	75	(21-100)	56
Terphenyl-d14	50	(33-141)	116	2,4,6-Tribromphenol	75	(10-123)	115

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 0002

PDP ANALYTICAL SERVICES
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010389

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD4-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.03	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5167	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5167
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	25 *	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	22 *	2-Fluorophenol	75	(21-100)	16 *
Terphenyl-d14	50	(33-141)	21 *	2,4,6-Tribromphenol	75	(10-123)	24

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010029

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010390

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD4-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.03 RA	Date Received:	12/04/93
Project No.:	NA	Report No.:	D2166	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2166
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	112	2-Fluorophenol	75	(21-100)	41
Terphenyl-d14	50	(33-141)	96	2,4,6-Tribromphenol	75	(10-123)	136 *

Method Blank:	1999S.WBLK1	LCS ID:	1999S.WLCS1	MS ID:	1998.01MS	MSD ID:	1998.01MSD	DUP ID:	N/A

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010391

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD4-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.03 RA RE	Date Received:	12/04/93
Project No.:	NA	Report No.:	D2176	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2176
Sample Volume:	1000 ml	Date Analyzed:	12/29/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	95	2-Fluorophenol	75	(21-100)	32
Terphenyl-d14	50	(33-141)	77	2,4,6-Tribromphenol	75	(10-123)	117

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: N/A

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010392

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW6-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.04	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5164	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5164
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	52	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	50	2-Fluorophenol	75	(21-100)	25
Terphenyl-d14	50	(33-141)	57	2,4,6-Tribromphenol	75	(10-123)	53

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010393

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW22-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.05	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5166	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5166
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	43	Phenol-d5	75	(10-94)	49
2-Fluorobiphenyl	50	(43-116)	46	2-Fluorophenol	75	(21-100)	65
Terphenyl-d14	50	(33-141)	51	2,4,6-Tribromphenol	75	(10-123)	81

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010394

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:MW21-1001 Date Sampled: 12/03/93
Project Name: LONGHORN AAP PDP Sample ID: 2005.06 Date Received: 12/04/93
Project No.: NA Report No.: D2043 Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-8270
Multiplying Factor: 1.00 Date Extracted: 12/07/93 GC/MS File ID: D2043
Sample Volume: 1000 ml Date Analyzed: 12/16/93 Analyst: HZZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	49	Phenol-d5	75	(10-94)	16
2-Fluorobiphenyl	50	(43-116)	47	2-Fluorophenol	75	(21-100)	27
Terphenyl-d14	50	(33-141)	55	2,4,6-Tribromphenol	75	(10-123)	57

110003

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 123-1001
PDP Sample ID: 2005.01
Report Number: I00501

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	32.5	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.420	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	16.7	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.031	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.023	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	29.0	MBB
Lead	SW-846 7421	12-20-93	12-21-93	0.005	0.013	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	12.8	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.244	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	16.8	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.053	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.105	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Pb Method Blank ID: 2005.PB1

Extraction Blank ID: NA

LCS ID: 1987.LCSW1
Pb LCS ID: 2005.LCS1
LCSD ID: 1987.LCSW2
Pb LCSD ID:2005.LCS2

MS ID: 1987.07MS

DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
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010396

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD4-1001
PDP Sample ID: 2005.03
Report Number: I00503

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	24.4	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.818	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	24.5	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.099	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.024	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.041	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	34.5	MBB
Lead	SW-846 7421	12-20-93	12-21-93	0.005	0.012	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	22.0	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.639	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.090	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	94.2	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.054	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.099	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Pb Method Blank ID: 2005.PB1
Extraction Blank ID: NA

LCS ID: 1987.LCSW1
Pb LCS ID: 2005.LCS1
LCSD ID: 1987.LCSW2
Pb LCSD ID:2005.LCS2

MS ID: 1987.07MS
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010397

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW6-1001
PDP Sample ID: 2005.04
Report Number: I00504

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.86	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	1.32	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	62.3	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.579	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.013	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	7.67	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	44.3	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.334	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.062	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	191	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.016	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.044	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW22-1001
PDP Sample ID: 2005.05
Report Number: I00505

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	1.7	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	2.12	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	156	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	1.10	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.018	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.048	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	8.74	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	21.8	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.178	MBB
Mercury	SW-846 7470	12-21-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.752	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	5	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.01	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	335	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.018	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.028	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Hg Method Blank ID: 2005.PBW1
Extraction Blank ID: NA

LCS ID: 1987.LCSW1
Hg LCS ID: 2005.LCSW1
LCSD ID: 1987.LCSW2
Hg LCSD ID:2005.LCSW2

MS ID: 1987.07MS
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW21-1001
PDP Sample ID: 2005.06
Report Number: I00506

Date Sampled: 12-03-93
Date Received: 12-04-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	5.0	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	6.9	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	183	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.531	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.066	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	6.2	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	144	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	3.14	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.353	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	412	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.064	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

010400

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:12-04-93
Date Reported:12-20-93
Report Number:I005CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2005.01	123-1001	WATER	12-03-93	12-07-93	1	5			
2005.03	AWD4-1001	WATER	12-03-93	12-07-93	1	216			
2005.04	MW6-1001	WATER	12-03-93	12-07-93	1	470			
2005.05	MW22-1001	WATER	12-03-93	12-07-93	1	851			
2005.06	MW21-1001	WATER	12-03-93	12-07-93	1	1430			
				QUALITY ASSURANCE/QUALITY CONTROL					
2009.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	1	ND			
2009.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152		95
2009.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152	0.0	95
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-04-93
Date Reported: 12-20-93
Report Number: I005NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2005.01	123-1001	WATER	12-03-93	12-05-93	1	17.1			
2005.03	AWD4-1001	WATER	12-03-93	12-05-93	0.5	3.9			
2005.04	MW6-1001	WATER	12-03-93	12-05-93	0.1	ND			
2005.05	MW22-1001	WATER	12-03-93	12-05-93	0.1	ND			
2005.06	MW21-1001	WATER	12-03-93	12-05-93	0.1	0.2			
			QUALITY ASSURANCE/QUALITY CONTROL						
2005.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-05-93	0.1	ND			
2005.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-05-93	0.1	0.35	0.40		88
2005.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-05-93	0.1	0.37	0.40	5.6	92
1990.01	MW17-1001	WATER	11-23-93	11-24-93	0.1	0.22			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	11-24-93	0.1	0.22		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	11-24-93	0.1	0.57	0.40		88

010402

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-04-93
Date Reported: 12-20-93
Report Number: I005SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2005.01	123-1001	WATER	12-03-93	12-07-93	5	37			
2005.03	AWD4-1001	WATER	12-03-93	12-07-93	5	13			
2005.04	MW6-1001	WATER	12-03-93	12-07-93	5	11			
2005.05	MW22-1001	WATER	12-03-93	12-07-93	5	6			
2005.06	MW21-1001	WATER	12-03-93	12-07-93	5	ND			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197		110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

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NDRC Laboratories

010403

11155 South Main
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Fax. 713-661-2661

DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-1
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.01/123-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

Inchcape Testing Services
NDRC Laboratories

010404

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-2
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.03/AWD4-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	71.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010405

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-3
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.04/MW6-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	92.0 %

Inchcape Testing Services

Raj Naran
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010406

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-4
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.05/MW22-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	102 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010407

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NDRC Laboratories

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DATE RECEIVED : 6-DEC-1993

REPORT NUMBER : H93-8169-5
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 2005.06/MW21-1001
PROJECT : 2005
DATE SAMPLED : 3-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	96.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES

24900 Pitkin Drive, Suite 300 • Spring, Texas 77386 • Phone (713)363-2233

Client: AWD TECHNOLOGIES, INC. Episode No.: 2005	Project Name: LONGHORN AAP Project No.: NA

CASE NARRATIVE

Six water samples were received for analysis on 12/04/93. All holding times were met.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

VOLATILES:

Samples "MW22-1001" and "MW21-1001" were high in methylene chloride and trichlorethene and required dilution. The dilution for "MW22-1001" was 1:5 and for "MW21-1001" 1:50 and 1:5000.

SEMIVOLATILES:

Samples "123-1001" and "AWD4-1001" were re-extracted because of low surrogate recovery; the re-extraction was performed out of holding time. Upon re-extraction and analysis of "123-1001", the internal standards were affected and also the surrogates were high in number. This could be a matrix effect. The first extraction of "123-1001" showed a clean chromotogram but all surrogates were lost. Sample loss suspected during the first extraction.

INORGANICS:

Due to the high concentrations of iron present in the sample, the matrix spike added to the sample was saturated, preventing accurate determination of the recovery.

High RPD was noted in the duplicate determinations of total aluminum due to the results being close to the reporting limit.

Matrix interferences are suspected for total selenium by graphite furnace atomic absorption analyses based on the matrix spike recovery. A post digestion spike was added to each determination to compensate for potential matrix interferences.

The original preparation blank for total lead was noted to be high. This was not considered significant due to good laboratory control sample recoveries and the fact that no lead was detected in three of the five samples. Those samples that lead was detected in were reprepared and reanalyzed for confirmation purposes.

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1999V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7043	Date Reported:	12/21/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7043
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2009V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7064	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7064
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	7
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2011V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7078	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7078
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010413

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 12/02/93
Date Reported: 12/20/93
Report No.: B703233

GC/MS-VOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8240
Sample Matrix: WATER
Analyst: MA

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1999.04	MS Sample ID: 1999.004MS	MSD Sample ID: 1999.04MSD
Date Analyzed: 12/14/93	Date Analyzed: 12/14/93	Date Analyzed: 12/14/93
GC/MS File ID: B7030	GC/MS File ID: B7032	GC/MS File ID: B7033

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	(61-145)
Benzene	50	ND	53	106	(76-127)
Chlorobenzene	50	ND	56	112	(75-130)
Toluene	50	ND	54	108	(76-125)
Trichloroethene	50	140	170	60 *	(71-120)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	0.0	14	(61-145)
Benzene	50	ND	51	102	3.8	11	(76-127)
Chlorobenzene	50	ND	53	106	5.5	13	(75-130)
Toluene	50	ND	53	106	1.9	13	(76-125)
Trichloroethene	50	140	160	40 *	40.0 *	14	(71-120)

* = Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 2 out of 10 outside limits

000052

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: NA
PDP Sample ID: 1999S.WLCS1 (LAB CONTROL SAMPLE)
Report No.: A5256
Date Sampled: NA
Date Received: NA
Date Reported: 12/28

GC/MS-SEMIVOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.0
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/27/93
Method Ref.: SW846-8270
GC/MS File ID: A5256
Analyst: HZZ

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	45	90	(39-98)
1,4-Dichlorobenzene	50	40	80	(36-97)
2,4-Dinitrotoluene	50	50	100	(24-96)
2-Chlorophenol	75	69	92	(27-123)
4-Chloro-3-methylphenol	75	27	36	(23-97)
4-Nitrophenol	75	19	25	(10-80)
Acenaphthene	50	52	104	(46-118)
N-Nitroso-Di-N-propylamine	50	37	74	(41-116)
Pentachlorophenol	75	16	21	(9-103)
Phenol	75	26	35	(12-110)
Pyrene	50	43	86	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	88	Phenol-d5	75	(10-94)	40
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	71
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromophenol	75	(10-123)	80

Method Blank: 1999S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2001S.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	A5154	Date Reported:	12/28

GC/MS-SEMIVOLATILES

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.0	Date Extracted:	12/07/93	GC/MS File ID:	A5154
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	36	72	(39-98)
1,4-Dichlorobenzene	50	32	64	(36-97)
2,4-Dinitrotoluene	50	34	68	(24-96)
2-Chlorophenol	75	49	65	(27-123)
4-Chloro-3-methylphenol	75	39	52	(23-97)
4-Nitrophenol	75	45	60	(10-80)
Acenaphthene	50	36	72	(46-118)
N-Nitroso-Di-N-propylamine	50	7	14 *	(41-116)
Pentachlorophenol	75	29	39	(9-103)
Phenol	75	43	57	(12-110)
Pyrene	50	28	56	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	67	Phenol-d5	75	(10-94)	66
2-Fluorobiphenyl	50	(43-116)	72	2-Fluorophenol	75	(21-100)	66
Terphenyl-d14	50	(33-141)	69	2,4,6-Tribromophenol	75	(10-123)	58

Method Blank: 2001S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010416

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/30/93
Date Reported: 12/28/93
Report No.: A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZZ

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1998.01	MS Sample ID: 1998.01MS	MSD Sample ID: 1998.01MSD
Date Analyzed: 12/27/93	Date Analyzed: 12/16/93	Date Analyzed: 12/16/93
GC/MS File ID: A5250	GC/MS File ID: A5162	GC/MS File ID: A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	66.0 *	~~40~~ 28	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ 50	(10-80)
Acenapthene	50	ND	19	38 *	17.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~38~~ 50	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ 42	(12-110)
Pyrene	50	ND	14	28	6.9	31	(26-127)

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: NA
PDP Sample ID: 1987.PBW1 (PREPARATION BLANK)
Report Number: I987PBW

Date Sampled: NA
Date Received: NA
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	0.093	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Mercury	SW-846 7470	12-08-93	12-08-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.005	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:NA
LCS ID: NA
MS ID: NA

Extraction Blank ID: NA
LCSD ID: NA
DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010418

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001-QC (MS/DUP)
PDP Sample ID: 1987.07 (MS/DUP)
Report Number: I987MSD

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: ug/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-20-93	0.3	0.2	40	2.00	2.15	92
Antimony	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-13-93	12-15-93	ND	ND	NC	0.040	0.036	90
Barium	SW-846 6010	12-15-93	12-20-93	0.244	0.244	0	2.00	2.14	95
Beryllium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Cadmium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Calcium	SW-846 6010	12-15-93	12-20-93	7.6	7.5	1.3	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-20-93	0.016	0.015	6.5	0.20	0.20	92
Cobalt	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Copper	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-20-93	23.4	22.4	4.4	1.00	24.60	NC* 1 2 3
Lead	SW-846 7421	12-13-93	12-14-93	ND	ND	NC	0.020	0.020	100
Magnesium	SW-846 6010	12-15-93	12-20-93	4.1	4.0	2.5	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-20-93	0.513	0.503	2.0	0.50	0.99	95
Mercury	SW-846 7470	11-29-93	11-29-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.51	102
Potassium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-13-93	12-15-93	ND	ND	NC	0.010	0.002	20
Silver	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-20-93	61.9	63.6	2.7	NA	NA	NA
Thallium	SW-846 7841	12-13-93	12-14-93	ND	ND	NC	0.050	0.044	88
Vanadium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	12-15-93	12-20-93	ND	0.020	NC	0.50	0.50	100

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1

LCS ID: 1987.LCSW1

TCLP Blank ID: NA

LCSD ID: 1987.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.02	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7052	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7052
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	210 J	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	35	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

010420

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW22-1001 (DL)
PDP Sample ID: 2005.05DL (DILUTION)
Report No.: B7072

Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 5.00
Sample Volume: 5.0 ml
Dilution: 5.0

Method Ref.: SW846-8240
GC/MS File ID: B7072
Date Analyzed: 12/16/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	210 u
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	420
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2009V.WBLK1 LCS ID: 2009V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW21-1001 (DL1)	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.06DL1 (DILUTION)	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7073	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7073
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	415000 E
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	4850
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 2009V.WBLK1 LCS ID: 2009V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW21-1001 (DL2)	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.06DL2 (DILUTION)	Date Received:	12/04/93
Project No.:	NA	Report No.:	B7080	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5000.00	GC/MS File ID:	B7080
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	5000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25000	ND	Carbon tetrachloride	25000	ND
1,1,2,2-Tetrachloroethane	25000	ND	Chlorobenzene	25000	ND
1,1,2-Trichloroethane	25000	ND	Chloroethane	50000	ND
1,1-Dichloroethane	25000	ND	Chloroform	25000	ND
1,1-Dichloroethene	25000	ND	Chloromethane	50000	ND
1,2-Dichloroethane	25000	ND	Cis-1,3-Dichloropropene	25000	ND
1,2-Dichloropropane	25000	ND	Dibromochloromethane	25000	ND
2-Butanone	50000	ND	Ethylbenzene	25000	ND
2-Chloroethyl vinyl ether	50000	ND	Methylene chloride	25000	432000
2-Hexanone	50000	ND	Styrene	25000	ND
4-Methyl-2-pentanone	50000	ND	Tetrachloroethene	25000	ND
Acetone	50000	ND	Toluene	25000	ND
Benzene	25000	ND	Total xylenes	25000	ND
Bromodichloromethane	25000	ND	Total-1,2-Dichloroethene	25000	ND
Bromoform	25000	ND	Trans-1,3-Dichloropropene	25000	ND
Bromomethane	50000	ND	Trichloroethene	25000	ND
Carbon disulfide	25000	ND	Vinyl acetate	50000	ND
			Vinylchloride	50000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010423

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:123-1001
PDP Sample ID: 2005.01
Report No.: D2042

Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/16/93

Method Ref.: SW846-8270
GC/MS File ID: D2042
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND R	Benzo(a)pyrene	10	ND R
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	12 *	Phenol-d5	75	(10-94)	5 *
2-Fluorobiphenyl	50	(43-116)	6 *	2-Fluorophenol	75	(21-100)	9 *
Terphenyl-d14	50	(33-141)	8 *	2,4,6-Tribromphenol	75	(10-123)	1 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010023

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010424

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	123-1001	Date Sampled:	12/03/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2005.01 RA	Date Received:	12/04/93
Project No.:	NA	Report No.:	A5249	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	A5249
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	49	Phenol-d5	75	(10-94)	12
2-Fluorobiphenyl	50	(43-116)	136 *	2-Fluorophenol	75	(21-100)	67
Terphenyl-d14	50	(33-141)	328 *	2,4,6-Tribromphenol	75	(10-123)	135 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010424

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010425

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:AWD4-1001 Date Sampled: 12/03/93
Project Name: LONGHORN AAP PDP Sample ID: 2005.03 RA Date Received: 12/04/93
Project No.: NA Report No.: D2166 Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-8270
Multiplying Factor: 1.00 Date Extracted: 12/20/93 GC/MS File ID: D2166
Sample Volume: 1000 ml Date Analyzed: 12/28/93 Analyst: HZZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND uJ	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND uJ	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND uJ	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND uJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND uJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND uJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND uJ	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND uJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND uJ
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND uJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	112	2-Fluorophenol	75	(21-100)	41
Terphenyl-d14	50	(33-141)	96	2,4,6-Tribromphenol	75	(10-123)	136 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID:

010002

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010426

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID:AWD4-1001
PDP Sample ID: 2005.03 RA RE
Report No.: D2176
Date Sampled: 12/03/93
Date Received: 12/04/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/29/93
Method Ref.: SW846-8270
GC/MS File ID: D2176
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND uJ	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND uJ	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND uJ	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND uJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND uJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND uJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND uJ	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND uJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND uJ
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND uJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	95	2-Fluorophenol	75	(21-100)	32
Terphenyl-d14	50	(33-141)	77	2,4,6-Tribromphenol	75	(10-123)	117

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010427

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2009

SEPTEMBER 7, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP Analytical Services -- Episode 2009

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 6, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2009. Included in this work order are five (5) groundwater samples, including one (1) field duplicate pair, and one (1) trip blank.

Groundwater Samples

LH18,24-MW1-1001
LH18,24-MW1-1001-QC
LH18,24-AWD2-1001
LH18,24-EW1-1001
LH18,24-AWD3-1001

Field Duplicate

LH18,24-MW1-1001-QC is a field duplicate of LH18,24-MW1-1001.

Trip Blank

TRIP BLANK

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, and sulfate. The trip blank was only analyzed for VOCs. All VOC, SVOC, and metals analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, and

6000/7000 series, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the semivolatile and selenium results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits, except for the high percent recovery of trichloroethene in the LCS analyzed on 12/20/93. As a result, all associated positive sample concentrations have been qualified as estimated, "J".

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were properly preserved, were received in good condition by the laboratory, and were analyzed within the appropriate holding times.

There were low level concentrations of methylene chloride found in the trip blank and two of the method blanks. As a result, all associated sample results less than ten (10) times the highest amount of methylene chloride found in any blank have been qualified as non-detect, "U". Furthermore, there appears to be a very serious methylene chloride and acetone contamination problem introduced by the dilution water used by PDP. In several instances, an undiluted

sample had non-detect results for these two compounds, but upon reanalysis after a substantial dilution, these concentrations were elevated to a very high level. Therefore, it is recommended that this problem be addressed to the laboratory.

The trichloroethene and 1,2-dichloroethane results in samples LH18,24-MW1-1001-QC and LH18,24-AWD2-1001, respectively, have been qualified as estimated, "J", since they both exceed the calibration range in the original undiluted analysis. Note that the laboratory failed to perform appropriate dilutions to accommodate the concentration levels of these compounds; dilution analyses were run, but the samples were over-diluted and these compounds appeared as non-detects. Thus, it was more appropriate to report the estimated positive concentrations on the validated data summary. The estimated values for these compounds reflect the minimum concentrations of these compounds present in the samples. Actual concentrations may be greater than those reported.

All volatile organic compounds were found to be comparable in the field duplicate pair except for the methylene chloride and trichloroethene results, as evidenced by the following table.

	LH18,24-MW1-1001	LH18,24-MW1-1001-QC	RPD	Control Limit
Methylene chloride	328,400 UJ	5 UJ	NA	±10
Trichloroethene	16,500 J	7,670 J	73.1%	NA

NA = Not applicable.
Concentrations are in μg/L.

As a result, both of these compounds in both samples of the duplicate pair have been qualified as estimated, "J" or "UJ".

3.0 Semivolatiles.

3.1 Accuracy. One of the semivolatile acid surrogate recoveries was less than 10 percent in both the original and re-extraction analyses of LH18,24-AWD3-1001. As a result,

all acid extractable SVOC compounds in this sample have been rejected, "R", as they were all non-detects.

Samples LH18,24-MW1-1001 and LH18,24-MW1-1001-QC both had very low semivolatile acid extractable surrogate recoveries, so they were both re-extracted and reanalyzed. Although acceptable recoveries were obtained upon reanalysis, the samples were re-extracted outside the holding time. So, in order to utilize the best results of all analyses performed for these two samples, the base/neutral fraction was used from the original analysis of each sample, and the acid fraction compounds were reported from the reanalysis of each sample and qualified as estimated, "UJ". In this way, the acid fraction compounds did not have to be rejected due to the low surrogate recoveries. Furthermore, sample LH18,24-AWD2-1001 had two very high base/neutral surrogate recoveries, one very high acid surrogate recovery, and one acid surrogate recovery of zero. This sample was also reanalyzed at a ten-fold dilution, where the surrogates were reported by the laboratory as being diluted out. Thus, to save the acid fraction data for LH18,24-AWD2-1001, the dilution results had to be reported. Although the acid compounds were not qualified, their quantitation limits had to be raised by a factor of ten. The original undiluted base/neutral results for this sample were usable even though the associated surrogates were high, since all the data were non-detect.

One of the semivolatile laboratory control samples (LCSs) had a low percent recovery for N-nitroso-di-N-propylamine. Thus, all associated sample results have been qualified as estimated, "UJ", as they were all non-detects. Likewise, another semivolatile LCS had a high percent recovery for 2,4-dinitrotoluene. However, the associated data were not impacted since they were all non-detects.

Many of the aqueous semivolatile MS/MSD percent recoveries were out of control. However, no action was necessary since qualification of data should not be based on MS/MSD criteria alone.

3.2 Precision. Many of the RPDs between the matrix spike and matrix spike duplicate percent recoveries were high, but no action was taken since data qualification should not be based solely on MS/MSD criteria.

3.3 Representativeness. All samples were received in good condition by the laboratory and they were all properly preserved. Other than the holding time exceedances

mentioned under Section "3.1 Accuracy," the samples were prepared and analyzed within appropriate holding times. All method blanks were also free of target compound contamination.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS and laboratory duplicate RPDs were all within acceptable control limits for all three parameters, except for the nitrate sample duplicate RPD. As a result, all positive sample concentrations of nitrate as nitrogen have been qualified as estimated, "J".

4.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recoveries of selenium, lead, and thallium. The selenium matrix spike recovery was less than 30 percent. Thus, all associated results have been rejected, "R", since they were all non-detect. The matrix spike percent recoveries for lead and thallium were both low (less than 75 percent but greater than 30 percent). As a result, all associated positive concentrations and non-detect values for these two analytes have been qualified as estimated, "J" and "UJ", respectively.

5.2 Precision. All LCS and laboratory duplicate RPDs were within acceptable quality control ranges, except for the chromium sample duplicate RPD which exceeded the 20 percent limit. As a result, all sample concentrations of chromium have been qualified as estimated, "J", since they are all positive values.

5.3 **Representativeness.** All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times and all blanks were free of target analyte contamination.

6.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

The criteria used to evaluate the field duplicate data was a control of plus or minus two (2) times the reporting limit when one or both compounds or analytes of the duplicate pair were less than five (5) times the reporting limit or an upper bound of 35 percent RPD when both compounds or analytes of the pair were greater than or equal to five (5) times the reporting limit.

Please note that all transcription and calculation errors found in all fractions have been corrected and initialed in the support documentation of this report. Some small rounding differences were also found, but these were not adjusted.

7.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

8.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

010437

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW1-1001	Date Sampled:	12 16 93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.01	Date Received:	12.17 93
Project No.:	NA	Report No.:	B7083	Date Reported:	12 29 93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7083
Sample Volume:	5.0 ml	Date Analyzed:	12.17.93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	150
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	9	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	3 J
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	32400 ~~41000 E~~ UJ
2-Hexanone	10	ND	Styrene	5	5
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	9
Acetone	10	ND	Toluene	5	4 J
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	24
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	16500 ~~21000 E~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	17

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010438

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW1-1001-QC	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.02	Date Received:	12/07/93
Project No.:	NA	Report No.:	87084	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7084
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	8	Chloroethane	10	ND
1,1-Dichloroethane	5	5	Chloroform	5	140
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	5	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	[illegible]
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND UJ
2-Hexanone	10	ND	Styrene	5	[illegible]
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	[illegible]
Acetone	10	ND	Toluene	5	[illegible]
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	20
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	7670 E J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	10

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: AWD2-1001
PDP Sample ID: 2009.03
Report No.: B7085

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7085
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	6
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	520 ~~X~~ J	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	19200 ~~15720 B~~ U
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	33
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	5
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	6600 ~~1760 B~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: EW1-1001
PDP Sample ID: 2009.04
Report No.: B7034

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7034
Date Analyzed: 12/14/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	35	Chloroform	5	26
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	64
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	11
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	6570 ~~4520 E~~
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: AWD3-1001
PDP Sample ID: 2009.05
Report No.: B7086

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7086
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	10
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	8
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	47	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3760 ~~3000 B~~ U
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	5
Acetone	10	ND	Toluene	5	ND
Benzene	5	4 J	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3000 ~~2330 B~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	101
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	107

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: TRIP-BLANK
PDP Sample ID: 2009.06
Report No.: B7087
Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0
Method Ref.: SW846-8240
GC/MS File ID: B7087
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	113
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	107

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010443

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW1-1001
PDP Sample ID: 2009.01
Report No.: A5177

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93 + 12/20/93
Date Analyzed: 12/17/93 + 12/28/93

Method Ref.: SW846-8270
GC/MS File ID: A5177
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
2,4,5-Tricholorophenol	10	ND UJ
2,4,6-Trichlorophenol	10	ND
2,4-Dichlorophenol	10	ND
2,4-Dimethylphenol	10	ND
2,4-Dinitrophenol	30	ND
2,4-Dinitrotoluene	10	ND
2,6-Dinitrotoluene	10	ND
2-Chloronaphthalene	10	ND
2-Chlorophenol	10	ND UJ
2-Methylnaphthalene	10	ND
2-Methylphenol	10	ND UJ
2-Nitroaniline	30	ND
2-Nitrophenol	10	ND UJ
3,3-Dichlorobenzidine	10	ND
3-Nitroaniline	30	ND
4,6-Dinitro 2-methylphenol	30	ND UJ
4-Bromophenyl-phenylether	10	ND
4-Chloroaniline	10	ND
4-Chlorophenyl-phenylether	10	ND
4-Chloro-3-methylphenol	10	ND UJ
4-Methylphenol	10	ND UJ
4-Nitroaniline	30	ND
4-Nitrophenol	30	ND UJ
Acenaphthene	10	ND
Acenaphthylene	10	ND
Anthracene	10	ND
Benzoic Acid	10	ND UJ
Benzo(a)anthracene	10	ND
Benzo(a)pyrene	10	ND
Benzo(b)fluroanthene	10	ND
Benzo(g,h,i)perylene	10	ND
Benzo(k)fluroanthene	10	ND
Benzyl Alcohol	10	ND UJ
Bis(2-chloroethoxy)methane	10	ND
Bis(2-chloroethyl) ether	10	ND
Bis(2-chloroisopropyl)ether	10	ND
Bis(2-ethylhexyl)phthalate	10	ND
Butylbenzylphthalate	10	ND
Chrysene	10	ND
Dibenzofuran	10	ND
Dibenzo(a,h)anthracene	10	ND
Diethylphthalate	10	ND
Dimethyl phthalate	10	ND
Di-n-Butylphthalate	10	ND
Di-n-octylphthalate	10	ND
Fluoranthene	10	ND
Fluorene	10	ND
Hexachlorobenzene	10	ND
Hexachlorobutadiene	10	ND
Hexachlorocyclopentadiene	10	ND
Hexachloroethane	10	ND
Indeno(1,2,3-cd)pyrene	10	ND
Isophorone	10	ND
Naphthalene	10	ND
Nitrobenzene	10	ND
N-Nitrosodiphenylamine	10	ND
N-Nitroso-Di-N-propylamine	10	ND UJ
Pentachlorophenol	30	ND UJ
Phenanthrene	10	ND
Phenol	10	ND UJ
Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

urrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	23 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	85	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	112	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010444

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW1-1001 QC
PDP Sample ID: 2009.02
Report No.: A5178

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93 + 12/20/93
Date Analyzed: 12/17/93 + 12/28/93

Method Ref.: SW846-8270
GC/MS File ID: A5178
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND UJ	Benzyl Alcohol	10	ND UJ
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND UJ	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND UJ	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND UJ	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND UJ	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND UJ	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND UJ	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND UJ	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND UJ
Anthracene	10	ND	Pentachlorophenol	30	ND UJ
Benzoic Acid	10	ND UJ	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND UJ
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	59	Phenol-d5	75	(10-94)	
2-Fluorobiphenyl	50	(43-116)	82	2-Fluorophenol	75	(21-100)	
Terphenyl-d14	50	(33-141)	107	2,4,6-Tribromphenol	75	(10-123)	

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010445

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:AWD2-1001
PDP Sample ID: 2009.03
Report No.: A5179

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/17/93

Method Ref.: SW846-8270
GC/MS File ID: A5179
Analyst: HZS

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	~~10~~ 100	ND	Benzyl Alcohol	~~10~~ 100	ND
2,4,6-Trichlorophenol	~~10~~ 100	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	~~10~~ 100	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	~~10~~ 100	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	~~30~~ 250	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	~~10~~ 100	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	~~10~~ 100	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	~~10~~ 100	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	~~30~~ 250	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	~~10~~ 100	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	~~10~~ 100	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	~~30~~ 250	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND UJ
Anthracene	10	ND	Pentachlorophenol	~~30~~ 250	ND
Benzoic Acid	~~10~~ 100	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	~~10~~ 100	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	85	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	1060 *	2-Fluorophenol	75	(21-100)	35
Terphenyl-d14	50	(33-141)	1100 *	2,4,6-Tribromphenol	75	(10-123)	496 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010446

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	EW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.04	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2177	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2177
Sample Volume:	1000 ml	Date Analyzed:	12/29/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND UJ
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	76	Phenol-d5	75	(10-94)	31
2-Fluorobiphenyl	50	(43-116)	65	2-Fluorophenol	75	(21-100)	58
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromphenol	75	(10-123)	105

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010447

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD3-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.05	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2102	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	Sw846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2102
Sample Volume:	1000 ml	Date Analyzed:	12/22/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND R
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND UJ
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND R	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	62	2-Fluorophenol	75	(21-100)	12 *
Terphenyl-d14	50	(33-141)	94	2,4,6-Tribromphenol	75	(10-123)	7 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 060036

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010448

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001
PDP Sample ID: 2009.01
Report Number: I00901

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	4.18	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	120	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.080 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.033	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.33	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	106	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	2.18	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	339	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001-QC
PDP Sample ID: 2009.02
Report Number: I00902

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	BM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	4.31	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	124	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.080 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.034	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.22	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND UJ	BM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	110	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	2.23	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAC
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	BM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	347	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND UJ	BM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD2-1001
PDP Sample ID: 2009.03
Report Number: I00903

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	3.64	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.143	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	3.5	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.043 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	2.84	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	2.67	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.107	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.043	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	76.2	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.026	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010451

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: EW1-1001
PDP Sample ID: 2009.04
Report Number: I00904

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	5.51	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.406	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	11.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.046 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	4.92	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	7.9	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.302	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.040	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	107	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.029	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010452

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD3-1001
PDP Sample ID: 2009.05
Report Number: I00905

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	9.73	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.376	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	15.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.032 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	8.01	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	0.005 J	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	11.2	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.132	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	74.7	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.017	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.02	MW1-1001-QC	WATER	12-06-93	12-07-93	1	957			
2009.03	AWD2-1001	WATER	12-06-93	12-07-93	1	77			
2009.04	EW1-1001	WATER	12-06-93	12-07-93	1	124			
2009.05	AWD3-1001	WATER	12-06-93	12-07-93	1	186			
				QUALITY ASSURANCE/QUALITY CONTROL					
2009.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	1	ND			
2009.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152		95
2009.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152	0.0	95
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009N1*

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7 J			
2009.02	MW1-1001-QC	WATER	12-06-93	12-08-93	0.1	0.8 J			
2009.03	AWD2-1001	WATER	12-06-93	12-08-93	0.1	0.2 J			
2009.04	EW1-1001	WATER	12-06-93	12-08-93	0.5	2.2 J			
2009.05	AWD3-1001	WATER	12-06-93	12-08-93	0.1	1.4 J			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-08-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40		100
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40	0.0	100
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		25	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.02	MW1-1001-QC	WATER	12-06-93	12-07-93	5	8			
2009.03	AWD2-1001	WATER	12-06-93	12-07-93	5	79			
2009.04	EW1-1001	WATER	12-06-93	12-07-93	5	11			
2009.05	AWD3-1001	WATER	12-06-93	12-07-93	5	26			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.3	110
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

010457

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC. Client Sample ID:MW1-1001 Date Sampled: 12/06/93
Project Name: LONGHORN AAP PDP Sample ID: 2009.01 Date Received: 12/07/93
Project No.: NA Report No.: B7083 Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER Method Ref.: SW846-8240
Multiplying Factor: 1.00 GC/MS File ID: B7083
Sample Volume: 5.0 ml Date Analyzed: 12/17/93
Dilution: 1.0 Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	150
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	9	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	3 J
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	41390 E
2-Hexanone	10	ND	Styrene	5	5
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	9
Acetone	10	ND	Toluene	5	4 J
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	24
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	7740 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	17

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

000014

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.01 DL	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7105	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100	GC/MS File ID:	B7105
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	100	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
2-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	292200 E
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	16500
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	82
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.01 DL1	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7124	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5000	GC/MS File ID:	B7124
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	5000	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25000	ND	Carbon tetrachloride	25000	ND
1,1,2,2-Tetrachloroethane	25000	ND	Chlorobenzene	25000	ND
1,1,2-Trichloroethane	25000	ND	Chloroethane	50000	ND
1,1-Dichloroethane	25000	ND	Chloroform	25000	ND
1,1-Dichloroethene	25000	ND	Chloromethane	50000	ND
1,2-Dichloroethane	25000	ND	Cis-1,3-Dichloropropene	25000	ND
1,2-Dichloropropane	25000	ND	Dibromochloromethane	25000	ND
2-Butanone	50000	ND	Ethylbenzene	25000	ND
2-Chloroethyl vinyl ether	50000	ND	Methylene chloride	25000	328400
2-Hexanone	50000	ND	Styrene	25000	ND
4-Methyl-2-pentanone	50000	ND	Tetrachloroethene	25000	ND
Acetone	50000	ND	Toluene	25000	ND
Benzene	25000	ND	Total xylenes	25000	ND
Bromodichloromethane	25000	ND	Total-1,2-Dichloroethene	25000	ND
Bromoform	25000	ND	Trans-1,3-Dichloropropene	25000	ND
Bromomethane	50000	ND	Trichloroethene	25000	ND
Carbon disulfide	25000	ND	Vinyl acetate	50000	ND
			Vinylchloride	50000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	85
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW1-1001-QC	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.02	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7084	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7084
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	8	Chloroethane	10	ND
1,1-Dichloroethane	5	5	Chloroform	5	140
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	5	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	3 J
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	5
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	7
Acetone	10	ND	Toluene	5	4 J
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	20
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	7670 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	10

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2009V.MBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW1-1001-QC	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.02 DL	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7125	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5000	GC/MS File ID:	B7125
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	5000	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25000	ND	Carbon tetrachloride	25000	ND
1,1,2,2-Tetrachloroethane	25000	ND	Chlorobenzene	25000	ND
1,1,2-Trichloroethane	25000	ND	Chloroethane	50000	ND
1,1-Dichloroethane	25000	ND	Chloroform	25000	ND
1,1-Dichloroethene	25000	ND	Chloromethane	50000	ND
1,2-Dichloroethane	25000	ND	Cis-1,3-Dichloropropene	25000	ND
1,2-Dichloropropane	25000	ND	Dibromochloromethane	25000	ND
2-Butanone	50000	ND	Ethylbenzene	25000	ND
2-Chloroethyl vinyl ether	50000	ND	Methylene chloride	25000	312400
2-Hexanone	50000	ND	Styrene	25000	ND
4-Methyl-2-pentanone	50000	ND	Tetrachloroethene	25000	ND
Acetone	50000	ND	Toluene	25000	ND
Benzene	25000	ND	Total xylenes	25000	ND
Bromodichloromethane	25000	ND	Total-1,2-Dichloroethene	25000	ND
Bromoform	25000	ND	Trans-1,3-Dichloropropene	25000	ND
Bromomethane	50000	ND	Trichloroethene	25000	ND
Carbon disulfide	25000	ND	Vinyl acetate	50000	ND
			Vinylchloride	50000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	85
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010462

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: AWD2-1001
PDP Sample ID: 2009.03
Report No.: B7085

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7085
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	6
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	520 E	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	15720 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	33
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	5
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	4780 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

000019

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	AWD2-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.03 DL	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7126	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	200	GC/MS File ID:	B7126
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	200	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	1000	ND	Carbon tetrachloride	1000	ND
1,1,2,2-Tetrachloroethane	1000	ND	Chlorobenzene	1000	ND
1,1,2-Trichloroethane	1000	ND	Chloroethane	2000	ND
1,1-Dichloroethane	1000	ND	Chloroform	1000	ND
1,1-Dichloroethene	1000	ND	Chloromethane	2000	ND
1,2-Dichloroethane	1000	ND	Cis-1,3-Dichloropropene	1000	ND
1,2-Dichloropropane	1000	ND	Dibromochloromethane	1000	ND
2-Butanone	2000	ND	Ethylbenzene	1000	ND
2-Chloroethyl vinyl ether	2000	ND	Methylene chloride	1000	19200
2-Hexanone	2000	ND	Styrene	1000	ND
4-Methyl-2-pentanone	2000	ND	Tetrachloroethene	1000	ND
Acetone	2000	ND	Toluene	1000	ND
Benzene	1000	ND	Total xylenes	1000	ND
Bromodichloromethane	1000	ND	Total-1,2-Dichloroethene	1000	ND
Bromoform	1000	ND	Trans-1,3-Dichloropropene	1000	ND
Bromomethane	2000	ND	Trichloroethene	1000	6600
Carbon disulfide	1000	ND	Vinyl acetate	2000	ND
			Vinylchloride	2000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	84
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	EW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.04	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7034	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7034
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	35	Chloroform	5	26
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	64
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	11
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	4520 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010465

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	EW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.04 DL	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7057	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50	GC/MS File ID:	B7057
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	50	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	63190 E
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	5200	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	6570
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	EW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.04 DL2	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7127	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1000	GC/MS File ID:	B7127
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	1000	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5000	ND	Carbon tetrachloride	5000	ND
1,1,2,2-Tetrachloroethane	5000	ND	Chlorobenzene	5000	ND
1,1,2-Trichloroethane	5000	ND	Chloroethane	10000	ND
1,1-Dichloroethane	5000	ND	Chloroform	5000	ND
1,1-Dichloroethene	5000	ND	Chloromethane	10000	ND
1,2-Dichloroethane	5000	ND	Cis-1,3-Dichloropropene	5000	ND
1,2-Dichloropropane	5000	ND	Dibromochloromethane	5000	ND
2-Butanone	10000	ND	Ethylbenzene	5000	ND
2-Chloroethyl vinyl ether	10000	ND	Methylene chloride	5000	58000
2-Hexanone	10000	ND	Styrene	5000	ND
4-Methyl-2-pentanone	10000	ND	Tetrachloroethene	5000	ND
Acetone	10000	ND	Toluene	5000	ND
Benzene	5000	ND	Total xylenes	5000	ND
Bromodichloromethane	5000	ND	Total-1,2-Dichloroethene	5000	ND
Bromoform	5000	ND	Trans-1,3-Dichloropropene	5000	ND
Bromomethane	10000	ND	Trichloroethene	5000	9000
Carbon disulfide	5000	ND	Vinyl acetate	10000	ND
			Vinylchloride	10000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	86
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010467

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: AWD3-1001
PDP Sample ID: 2009.05
Report No.: B7086

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7086
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	10
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	8
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	47	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3000 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	5
Acetone	10	ND	Toluene	5	ND
Benzene	5	4 J	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	2330 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	101
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	107

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	AWD3-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.05 DL	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7128	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100	GC/MS File ID:	B7128
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	100	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	3760
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	3000
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	83
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	92

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010469

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC. Client Sample ID:TRIP-BLANK Date Sampled: 12/06/93
Project Name: LONGHORN AAP PDP Sample ID: 2009.06 Date Received: 12/07/93
Project No.: NA Report No.: B7087 Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER Method Ref.: SW846-8240
Multiplying Factor: 1.00 GC/MS File ID: B7087
Sample Volume: 5.0 ml Date Analyzed: 12/17/93
Dilution: 1.0 Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	113
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	107

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

000028

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010470

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.01	Date Received:	12/07/93
Project No.:	NA	Report No.:	A5177	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5177
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	23 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	85	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	112	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010471

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.01 RA	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2142	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2142
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	75	Phenol-d5	75	(10-94)	56
2-Fluorobiphenyl	50	(43-116)	130 *	2-Fluorophenol	75	(21-100)	90
Terphenyl-d14	50	(33-141)	130	2,4,6-Tribromphenol	75	(10-123)	150 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010472

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW1-1001
PDP Sample ID: 2009.01 RA RE
Report No.: A5265

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/28/93

Method Ref.: SW846-8270
GC/MS File ID: A5265
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	48
2-Fluorobiphenyl	50	(43-116)	81	2-Fluorophenol	75	(21-100)	70
Terphenyl-d14	50	(33-141)	89	2,4,6-Tribromphenol	75	(10-123)	84

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: N

PDP ANALYTICAL SERVICES
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010473

LABORATORY REPORT

ient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW1-1001 QC	Date Sampled:	12/06/93
roject Name:	LONGHORN AAP	PDP Sample ID:	2009.02	Date Received:	12/07/93
Project No.:	NA	Report No.:	A5178	Date Reported:	12/23/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5178
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

urrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	59	Phenol-d5	75	(10-94)	[illegible]
2-Fluorobiphenyl	50	(43-116)	82	2-Fluorophenol	75	(21-100)	[illegible]
Terphenyl-d14	50	(33-141)	107	2,4,6-Tribromphenol	75	(10-123)	[illegible]

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: [illegible]

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

010474

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW1-1001 QC
PDP Sample ID: 2009.02 RA RE
Report No.: D2168

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/28/93

Method Ref.: SW846-8270
GC/MS File ID: D2168
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	72	Phenol-d5	75	(10-94)	53
2-Fluorobiphenyl	50	(43-116)	115	2-Fluorophenol	75	(21-100)	86
Terphenyl-d14	50	(33-141)	130	2,4,6-tribromphenol	75	(10-123)	137 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010475

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD2-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.03	Date Received:	12/07/93
Project No.:	NA	Report No.:	A5179	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5179
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZE
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	85	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	1060 *	2-Fluorophenol	75	(21-100)	35
Terphenyl-d14	50	(33-141)	1100 *	2,4,6-Tribromphenol	75	(10-123)	496 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010476

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:AWD2-1001
PDP Sample ID: 2009.03 DL
Report No.: D2100

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 10.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 10.0
Date Extracted: 12/07/93
Date Analyzed: 12/17/93

Method Ref.: SW846-8270
GC/MS File ID: D2100
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	100	ND	Benzo(a)pyrene	100	ND
1,2-Dichlorobenzene	100	ND	Benzo(b)fluroanthene	100	ND
1,3-Dichlorobenzene	100	ND	Benzo(g,h,i)perylene	100	ND
1,4-Dichlorobenzene	100	ND	Benzo(k)fluroanthene	100	ND
2,4,5-Tricholorophenol	100	ND	Benzyl Alcohol	100	ND
2,4,6-Trichlorophenol	100	ND	Bis(2-chloroethoxy)methane	100	ND
2,4-Dichlorophenol	100	ND	Bis(2-chloroethyl) ether	100	ND
2,4-Dimethylphenol	100	ND	Bis(2-chloroisopropyl)ether	100	ND
2,4-Dinitrophenol	250	ND	Bis(2-ethylhexyl)phthalate	100	ND
2,4-Dinitrotoluene	100	ND	Butylbenzylphthalate	100	ND
2,6-Dinitrotoluene	100	ND	Chrysene	100	ND
2-Chloronaphthalene	100	ND	Dibenzofuran	100	ND
2-Chlorophenol	100	ND	Dibenzo(a,h)anthracene	100	ND
2-Methylnaphthalene	100	ND	Diethylphthalate	100	ND
2-Methylphenol	100	ND	Dimethyl phthalate	100	ND
2-Nitroaniline	250	ND	Di-n-Butylphthalate	100	ND
2-Nitrophenol	100	ND	Di-n-octylphthalate	100	ND
3,3-Dichlorobenzidine	100	ND	Fluoranthene	100	ND
3-Nitroaniline	250	ND	Fluorene	100	ND
4,6-Dinitro 2-methylphenol	250	ND	Hexachlorobenzene	100	ND
4-Bromophenyl-phenylether	100	ND	Hexachlorobutadiene	100	ND
4-Chloroaniline	100	ND	Hexachlorocyclopentadiene	100	ND
4-Chlorophenyl-phenylether	100	ND	Hexachloroethane	100	ND
4-Chloro-3-methylphenol	100	ND	Indeno(1,2,3-cd)pyrene	100	ND
4-Methylphenol	100	ND	Isophorone	100	ND
4-Nitroaniline	250	ND	Naphthalene	100	ND
4-Nitrophenol	250	ND	Nitrobenzene	100	ND
Acenaphthene	100	ND	N-Nitrosodiphenylamine	100	ND
Acenaphthylene	100	ND	N-Nitroso-Di-N-propylamine	100	ND
Anthracene	100	ND	Pentachlorophenol	250	ND
Benzoic Acid	100	ND	Phenanthrene	100	ND
Benzo(a)anthracene	100	ND	Phenol	100	ND
			Pyrene	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	500	(35-114)	D	Phenol-d5	750	(10-94)	D
2-Fluorobiphenyl	500	(43-116)	D	2-Fluorophenol	750	(21-100)	D
Terphenyl-d14	500	(33-141)	D	2,4,6-Tribromphenol	750	(10-123)	D

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: N

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010477

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	EW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.04	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2177	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2177
Sample Volume:	1000 ml	Date Analyzed:	12/29/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	76	Phenol-d5	75	(10-94)	31
2-Fluorobiphenyl	50	(43-116)	65	2-Fluorophenol	75	(21-100)	58
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromphenol	75	(10-123)	105

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010478

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID:AWD3-1001
PDP Sample ID: 2009.05
Report No.: D2102
Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/22/93
Method Ref.: Sw846-8270
GC/MS File ID: D2102
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

urrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	62	2-Fluorophenol	75	(21-100)	12 *
Terphenyl-d14	50	(33-141)	94	2,4,6-Tribromphenol	75	(10-123)	7 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 00036

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010479

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:AWD3-1001
PDP Sample ID: 2009.05 RA
Report No.: D2146

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/23/93
Date Analyzed: 12/27/93

Method Ref.: SW846-8270
GC/MS File ID: D2146
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	84	Phenol-d5	75	(10-94)	7 *
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	11 *
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromphenol	75	(10-123)	12

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

400037

010480

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001
PDP Sample ID: 2009.01
Report Number: I00901

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	4.18	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	120	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.080	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.033	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.33	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	106	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	2.18	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	339	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001-QC
PDP Sample ID: 2009.02
Report Number: I00902

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: ug/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	BM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	4.31	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	124	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.080	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.034	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.22	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	BM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	110	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	2.23	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAC
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	BM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	347	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	BM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD2-1001
PDP Sample ID: 2009.03
Report Number: I00903

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	3.64	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.143	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	3.5	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.043	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	2.84	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	2.67	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.107	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.043	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	76.2	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.026	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010483

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: EW1-1001
PDP Sample ID: 2009.04
Report Number: I00904

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	5.51	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	EM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.406	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	11.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.046	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	4.92	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	EM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	7.9	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.302	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.040	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	EM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	107	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	EM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.029	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010484

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD3-1001
PDP Sample ID: 2009.05
Report Number: I00905

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	9.73	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.376	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	15.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.032	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	8.01	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	0.005	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	11.2	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.132	MBB
Mercury	SW-846 7470	12-20-93	12-21-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	74.7	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.017	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.02	MW1-1001-QC	WATER	12-06-93	12-07-93	1	957			
2009.03	AWD2-1001	WATER	12-06-93	12-07-93	1	77			
2009.04	EW1-1001	WATER	12-06-93	12-07-93	1	124			
2009.05	AWD3-1001	WATER	12-06-93	12-07-93	1	186			
				QUALITY ASSURANCE/QUALITY CONTROL					
2009.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	1	ND			
2009.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152		95
2009.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	1	145	152	0.0	95
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.02	MW1-1001-QC	WATER	12-06-93	12-08-93	0.1	0.8			
2009.03	AWD2-1001	WATER	12-06-93	12-08-93	0.1	0.2			
2009.04	EW1-1001	WATER	12-06-93	12-08-93	0.5	2.2			
2009.05	AWD3-1001	WATER	12-06-93	12-08-93	0.1	1.4			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-08-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40		100
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40	0.0	100
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		25	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.02	MW1-1001-QC	WATER	12-06-93	12-07-93	5	8			
2009.03	AWD2-1001	WATER	12-06-93	12-07-93	5	79			
2009.04	EW1-1001	WATER	12-06-93	12-07-93	5	11			
2009.05	AWD3-1001	WATER	12-06-93	12-07-93	5	26			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.3	110
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

APPENDIX B
SUPPORT DOCUMENTATION

010489

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2009V.WLCS3 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	B7123	Date Reported.	12/29/93

GC/MS-VOLATILES

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7123
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	1.0	Analyst:	NA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	51	102	(61-145)
Benzene	50	47	94	(76-127)
Chlorobenzene	50	50	100	(75-130)
Toluene	50	47	94	(76-125)
Trichloroethene	50	73	146 *	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	83
Toluene-d8	50	(88-110)	89
Bromofluorobenzene	50	(86-115)	90

Method Blank: 2009V.WBLK3 LCS ID: NA MS ID: NA MSD ID: NA DUP ID:NA

000056

010490

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP-BLANK	Date Sampled:	12.16/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.06	Date Received:	12.17/93
Project No.:	NA	Report No.:	B7087	Date Reported:	12.29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7087
Sample Volume:	5.0 ml	Date Analyzed:	12.17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	113
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	107

Method Blank ID: 2009V.WBLK2 LCS ID: 2009V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

000028

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2011V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7078	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7078
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1999V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7043	Date Reported:	12/21/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7043
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010493

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	EW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.04 DL	Date Received:	12/07/93
Project No.:	NA	Report No.:	B7057	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50	GC/MS File ID:	B7057
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	50	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
.-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	63190 E
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	5200	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	6570
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

acetone + methylene chloride results not detected in original sample (undiluted)
=> lab contamination

000022

010494

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: EW1-1001
PDP Sample ID: 2009.04 DL2
Report No.: B7127

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1000
Sample Volume: 5.0 ml
Dilution: 1000

Method Ref.: SW846-8240
GC/MS File ID: B7127
Date Analyzed: 12/20/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5000	ND	Carbon tetrachloride	5000	ND
1,1,2,2-Tetrachloroethane	5000	ND	Chlorobenzene	5000	ND
1,1,2-Trichloroethane	5000	ND	Chloroethane	10000	ND
1,1-Dichloroethane	5000	ND	Chloroform	5000	ND
1,1-Dichloroethene	5000	ND	Chloromethane	10000	ND
1,2-Dichloroethane	5000	ND	Cis-1,3-Dichloropropene	5000	ND
1,2-Dichloropropane	5000	ND	Dibromochloromethane	5000	ND
2-Butanone	10000	ND	Ethylbenzene	5000	ND
2-Chloroethyl vinyl ether	10000	ND	Methylene chloride	5000	58000
2-Hexanone	10000	ND	Styrene	5000	ND
4-Methyl-2-pentanone	10000	ND	Tetrachloroethene	5000	ND
Acetone	10000	ND	Toluene	5000	ND
Benzene	5000	ND	Total xylenes	5000	ND
Bromodichloromethane	5000	ND	Total-1,2-Dichloroethene	5000	ND
Bromoform	5000	ND	Trans-1,3-Dichloropropene	5000	ND
Bromomethane	10000	ND	Trichloroethene	5000	9000
Carbon disulfide	5000	ND	Vinyl acetate	10000	ND
			Vinylchloride	10000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	86
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

methylene chloride not detected in original sample (undiluted)
⇒ lab contamination

000023

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010495

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW1-1001-QC
PDP Sample ID: 2009.02 DL
Report No.: B7125

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 5000
Sample Volume: 5.0 ml
Dilution: 5000

Method Ref.: SW846-8240
GC/MS File ID: B7125
Date Analyzed: 12/20/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25000	ND	Carbon tetrachloride	25000	ND
1,1,2,2-Tetrachloroethane	25000	ND	Chlorobenzene	25000	ND
1,1,2-Trichloroethane	25000	ND	Chloroethane	50000	ND
1,1-Dichloroethane	25000	ND	Chloroform	25000	ND
1,1-Dichloroethene	25000	ND	Chloromethane	50000	ND
1,2-Dichloroethane	25000	ND	Cis-1,3-Dichloropropene	25000	ND
1,2-Dichloropropane	25000	ND	Dibromochloromethane	25000	ND
2-Butanone	50000	ND	Ethylbenzene	25000	ND
2-Chloroethyl vinyl ether	50000	ND	Methylene chloride	25000	312400
2-Hexanone	50000	ND	Styrene	25000	ND
4-Methyl-2-pentanone	50000	ND	Tetrachloroethene	25000	ND
Acetone	50000	ND	Toluene	25000	ND
Benzene	25000	ND	Total xylenes	25000	ND
Bromodichloromethane	25000	ND	Total-1,2-Dichloroethene	25000	ND
Bromoform	25000	ND	Trans-1,3-Dichloropropene	25000	ND
Bromomethane	50000	ND	Trichloroethene	25000	ND
Carbon disulfide	25000	ND	Vinyl acetate	50000	ND
			Vinylchloride	50000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	85
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

methylene chloride not detected in original sample (undiluted)
⇒ lab contamination

000018

010496

Field Duplicate Comparison Table

	MW1-1001	MW1-1001-QC	RPD	Control Limit
methylene chloride	328,400 UJ	5 UJ	NA	± 10
trichloroethene	16,500 J	7670 J	73.1%	NA

NA = Not Applicable.
Concentrations are in µg/L.

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Client: AWD TECHNOLOGIES, INC. Episode No.: 2009	Project Name: LONGHORN AAP Project No.: NA

CASE NARRATIVE

Six water samples were received for analysis on 12/07/93. All holding times were met.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

VOLATILES:

Samples 1-5 needed dilutions to get the analyte concentrations within the calibration range. All diluted and undiluted reports are submitted.

SEMIVOLATILES:

Samples "MW1-1001", "MW1-1001-QC" and "AWD3-1001" needed to be re-extracted for low surrogate recoveries. The re-extraction and analysis showed poor recovery of internal standards and surrogates. The re-analysis of re-extraction showed a similar pattern; matrix effect is suspected. The holding times expired upon re-extraction.

INORGANICS:

High RPD was noted in the duplicate determinations of total chromium.

Matrix interferences are suspected for total selenium, thallium and lead by graphite furnace atomic absorption analyses based on the matrix spike recoveries. A post-digestion spike was added to each determination to compensate for potential matrix interferences.

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010498

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD3-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.05	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2102	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	Sw846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2102
Sample Volume:	1000 ml	Date Analyzed:	12/22/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	13
2-Fluorobiphenyl	50	(43-116)	62	2-Fluorophenol	75	(21-100)	12 *
Terphenyl-d14	50	(33-141)	94	2,4,6-Tribromphenol	75	(10-123)	7 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 000036

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010499

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD3-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.05 RA	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2146	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/23/93	GC/MS File ID:	D2146
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	84	Phenol-d5	75	(10-94)	7 *
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	11 *
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromphenol	75	(10-123)	12

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

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010500

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW1-1001	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.01	Date Received:	12/07/93
Project No.:	NA	Report No.:	A5177	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5177
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	23 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	85	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	112	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

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010501

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW1-1001
PDP Sample ID: 2009.01 RA
Report No.: D2142

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/27/93

Method Ref.: SW846-8270
GC/MS File ID: D2142
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	75	Phenol-d5	75	(10-94)	56
2-Fluorobiphenyl	50	(43-116)	130 *	2-Fluorophenol	75	(21-100)	90
Terphenyl-d14	50	(33-141)	130	2,4,6-Tribromphenol	75	(10-123)	150 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: MS

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010502

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW1-1001
PDP Sample ID: 2009.01 RA RE
Report No.: A5265

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/28/93

Method Ref.: SW846-8270
GC/MS File ID: A5265
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	48
2-Fluorobiphenyl	50	(43-116)	81	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	89	2,4,6-Tribromphenol	75	(10-123)	84

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010503

LABORATORY REPORT

lient: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW1-1001 QC
PDP Sample ID: 2009.02
Report No.: A5178

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/23/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/17/93

Method Ref.: SW846-8270
GC/MS File ID: A5178
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	59	Phenol-d5	75	(10-94)	[illegible]
2-Fluorobiphenyl	50	(43-116)	82	2-Fluorophenol	75	(21-100)	[illegible]
Terphenyl-d14	50	(33-141)	107	2,4,6-Tribromphenol	75	(10-123)	[illegible]

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010504

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW1-1001 QC	Date Sampled:	12/06/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2009.02 RA RE	Date Received:	12/07/93
Project No.:	NA	Report No.:	D2168	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2168
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	72	Phenol-d5	75	(10-94)	53
2-Fluorobiphenyl	50	(43-116)	115	2-Fluorophenol	75	(21-100)	86
Terphenyl-d14	50	(33-141)	130	2,4,6-Tribromphenol	75	(10-123)	137 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010505

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:AWD2-1001
PDP Sample ID: 2009.03
Report No.: A5179

Date Sampled: 12/06/93
Date Received: 12/07/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/17/93

Method Ref.: SW846-8270
GC/MS File ID: A5179
Analyst: HZX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	85	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	1060 *	2-Fluorophenol	75	(21-100)	35
Terphenyl-d14	50	(33-141)	1100 *	2,4,6-Tribromphenol	75	(10-123)	496 *

Method Blank: 2001S.WBLK1 LCS ID: 2001S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: NA
PDP Sample ID: 2001S.WLCS1 (LAB CONTROL SAMPLE)
Report No.: A5154

Date Sampled: NA
Date Received: NA
Date Reported: 12/28

GC/MS-SEMIVOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.0
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/15/93

Method Ref.: SW846-8270
GC/MS File ID: A5154
Analyst: HZZ

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	36	72	(39-98)
1,4-Dichlorobenzene	50	32	64	(36-97)
2,4-Dinitrotoluene	50	34	68	(24-96)
2-Chlorophenol	75	49	65	(27-123)
4-Chloro-3-methylphenol	75	39	52	(23-97)
4-Nitrophenol	75	45	60	(10-80)
Acenaphthene	50	36	72	(46-118)
N-Nitroso-Di-N-propylamine	50	7	14 *	(41-116)
Pentachlorophenol	75	29	39	(9-103)
Phenol	75	43	57	(12-110)
Pyrene	50	28	56	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	67	Phenol-d5	75	(10-94)	66
2-Fluorobiphenyl	50	(43-116)	72	2-Fluorophenol	75	(21-100)	66
Terphenyl-d14	50	(33-141)	69	2,4,6-Tribromophenol	75	(10-123)	58

Method Blank: 2001S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010507

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: NA
PDP Sample ID: 1999S.WLCS1 (LAB CONTROL SAMPLE)
Report No.: A5256
Date Sampled: NA
Date Received: NA
Date Reported: 12/28

GC/MS-SEMIVOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.0
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/27/93
Method Ref.: SW846-8270
GC/MS File ID: A5256
Analyst: HZZ

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	45	90	(39-98)
1,4-Dichlorobenzene	50	40	80	(36-97)
2,4-Dinitrotoluene	50	50	100	(24-96)
2-Chlorophenol	75	69	92	(27-123)
4-Chloro-3-methylphenol	75	27	36	(23-97)
4-Nitrophenol	75	19	25	(10-80)
Acenaphthene	50	52	104	(46-118)
N-Nitroso-Di-N-propylamine	50	37	74	(41-116)
Pentachlorophenol	75	16	21	(9-103)
Phenol	75	26	35	(12-110)
Pyrene	50	43	86	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	88	Phenol-d5	75	(10-94)	40
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	71
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromophenol	75	(10-123)	80

Method Blank: 1999S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

000066

PDP ANALYTICAL SERVICES
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010508

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/30/93
Date Reported: 12/28/93
Report No.: A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZZ

SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1998.01	MS Sample ID:	1998.01MS	MSD Sample ID:	1998.01MSD
Date Analyzed:	12/27/93	Date Analyzed:	12/16/93	Date Analyzed:	12/16/93
GC/MS File ID:	A5250	GC/MS File ID:	A5162	GC/MS File ID:	A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	77 ~~66.0~~ *	~~40~~ 28	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ 50	(10-80)
Acenapthene	50	ND	19	38 *	17.0	~~31~~ 31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~28~~ 50	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ 42	(12-110)
Pyrene	50	ND	14	28	6.9	~~31~~ 31	(26-127)

all corrections by JJS 3/11/94

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

batch MS/MSD + no flags based on MS/MSD alone.

000068

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-07-93
Date Reported: 12-18-93
Report Number: I009N1T

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.02	MW1-1001-QC	WATER	12-06-93	12-08-93	0.1	0.8			
2009.03	AWD2-1001	WATER	12-06-93	12-08-93	0.1	0.2			
2009.04	EW1-1001	WATER	12-06-93	12-08-93	0.5	2.2			
2009.05	AWD3-1001	WATER	12-06-93	12-08-93	0.1	1.4			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-08-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40		100
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40	0.0	100
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		(25)	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001 (MS/DUP)
PDP Sample ID: 2009.01 (MS/DUP)
Report Number: I009MSD

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: ug/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	2.00	1.84	92
Antimony	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-14-93	12-20-93	ND	ND	NC	0.040	0.041	103
Barium	SW-846 6010	12-15-93	12-17-93	4.18	4.25	1.7	2.00	5.89	86
Beryllium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.047	94
Cadmium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.048	96
Calcium	SW-846 6010	12-15-93	12-17-93	120	122	1.7	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-17-93	0.080	0.108	(30)	0.20	0.28	100
Cobalt	SW-846 6010	12-15-93	12-17-93	0.033	0.030	9.5	0.50	0.50	93
Copper	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-17-93	1.33	1.51	13	1.00	2.29	96
Lead	SW-846 7421	12-14-93	12-17-93	ND	ND	NC	0.020	0.006	(30)
Magnesium	SW-846 6010	12-15-93	12-17-93	106	108	1.9	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-17-93	2.18	2.20	0.9	0.50	2.62	88
Mercury	SW-846 7470	12-20-93	12-21-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.50	100
Potassium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-14-93	12-21-93	ND	ND	NC	0.010	ND	(0)
Silver	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-17-93	339	348	2.6	NA	NA	NA
Thallium	SW-846 7841	12-14-93	12-20-93	ND	ND	NC	0.050	0.035	(70)
Vanadium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.47	94
Zinc	SW-846 6010	12-15-93	12-17-93	0.032	0.029	9.8	0.50	0.51	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1

LCS ID: 2001.LCSW1

TCLP Blank ID: NA

LCSD ID: 2001.LCSW2

010511

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

INCHCAPE TESTING SERVICES -- Job Number H93-8253

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
Inchcape Testing Services -- Job Numbers H93-8253

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 6, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to PDP Analytical Services in Spring, Texas where the explosive analyses were subcontracted to Inchcape Testing Services in Houston, Texas. The samples were subsequently placed under the above job number. Included in this set of data are the results of five (5) aqueous samples, including one (1) duplicate pair.

Groundwater Samples

MW1-1001	AWD2-1001	AWD3-1001
MW1-1001-QC	EW1-1001	

Field Duplicates

MW1-1001-QC is a field duplicate of MW1-1001

All samples were analyzed for explosives by U.S. EPA SW-846 Method 8330. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the

010513

U. S. ARMY CORPS OF ENGINEERS

TULSA DISTRICT

QA/QC REPORT

LONGHORN ARMY AMMUNITION PLANT, TEXAS

BURNING GROUND 3 AND UNLINED EVAPORATION POND INTERIM REMEDIAL ACTION

Inchcape Testing Services -- Job Number H93-8253

December 6, 1993 Chemical Data

Prepared by: AWD Technologies, Inc.

AUGUST 29, 1994

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
Inchcape Testing Services -- Job Numbers H93-8253

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 6, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by the U.S. Army Corps of Engineers (COE). After collection, the samples were sent to PDP Analytical Services in Spring, Texas where the explosive analyses were subcontracted to Inchcape Testing Services in Houston, Texas. The samples were subsequently placed under the above job number. Included in this set of data are the results of five (5) aqueous samples, including one (1) duplicate pair.

Groundwater Samples

MW1-1001	AWD2-1001	AWD3-1001
MW1-1001-QC	EW1-1001	

Field Duplicates

MW1-1001-QC is a field duplicate of MW1-1001

All samples were analyzed for explosives by U.S. EPA SW-846 Method 8330. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the

attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Explosives.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within acceptable quality control limits.

2.2 Precision. All MS/MSD relative percent differences (RPDs) were within acceptable quality control limits.

2.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory.

All samples were extracted outside of the recommended holding time. Therefore, all positive and non-detect results were qualified as estimated, "J" and "UJ", respectively.

The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data and the positive results for 1,3,5-trinitrobenzene should be used with caution.

All field duplicate results were found to be comparable.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

3.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

4.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. All results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

5.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

Inchcape Testing Services
NDRC Laboratories

010519
11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW1-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES			
TEST REQUESTED	DETECTION LIMIT	RESULTS	
1,3-DNB	0.10 µg/L	< 0.10 µg/L	uJ
2,4-DNT	0.10 µg/L	< 0.10 µg/L	
2,6-DNT	0.10 µg/L	< 0.10 µg/L	
HMX	0.10 µg/L	< 0.10 µg/L	
NB	0.10 µg/L	< 0.10 µg/L	
2-NT	0.10 µg/L	< 0.10 µg/L	
3-NT	0.10 µg/L	< 0.10 µg/L	
4-NT	0.10 µg/L	< 0.10 µg/L	
RDX	0.10 µg/L	< 0.10 µg/L	
Tetryl	0.10 µg/L	< 0.10 µg/L	
1,3,5-TNB	0.10 µg/L	0.81 µg/L	J
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L	uJ

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	112 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010520

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
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Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW1-1001-QC
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES			
TEST REQUESTED	DETECTION LIMIT	RESULTS	
1,3-DNB	0.10 µg/L	< 0.10 µg/L	U5
2,4-DNT	0.10 µg/L	< 0.10 µg/L	
2,6-DNT	0.10 µg/L	< 0.10 µg/L	
HMX	0.10 µg/L	< 0.10 µg/L	
NB	0.10 µg/L	< 0.10 µg/L	
2-NT	0.10 µg/L	< 0.10 µg/L	
3-NT	0.10 µg/L	< 0.10 µg/L	
4-NT	0.10 µg/L	< 0.10 µg/L	
RDX	0.10 µg/L	< 0.10 µg/L	
Tetryl	0.10 µg/L	< 0.10 µg/L	
1,3,5-TNB	0.10 µg/L	0.73 µg/L	J
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L	U5

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	114 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010521

Inchcape Testing Services
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11155 South Main
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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : AWD2-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

US

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	78.0 %

Inchcape Testing Services

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010522

Inchcape Testing Services
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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : EW1-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES			
TEST REQUESTED	DETECTION LIMIT	RESULTS	
1,3-DNB	0.10 µg/L	< 0.10 µg/L	UJ
2,4-DNT	0.10 µg/L	< 0.10 µg/L	
2,6-DNT	0.10 µg/L	< 0.10 µg/L	
HMX	0.10 µg/L	< 0.10 µg/L	
NB	0.10 µg/L	0.70 µg/L	J
2-NT	0.10 µg/L	< 0.10 µg/L	UJ
3-NT	0.10 µg/L	< 0.10 µg/L	
4-NT	0.10 µg/L	< 0.10 µg/L	
RDX	0.10 µg/L	< 0.10 µg/L	
Tetryl	0.10 µg/L	< 0.10 µg/L	
1,3,5-TNB	0.10 µg/L	0.39 µg/L	J
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L	UJ

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	91.0 %

Inchcape Testing Services

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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-5
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : AWD3-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES			
TEST REQUESTED	DETECTION LIMIT	RESULTS	
1,3-DNB	0.10 µg/L	< 0.10 µg/L	UJ
2,4-DNT	0.10 µg/L	< 0.10 µg/L	
2,6-DNT	0.10 µg/L	< 0.10 µg/L	
HMX	0.10 µg/L	< 0.10 µg/L	
NB	0.10 µg/L	< 0.10 µg/L	
2-NT	0.10 µg/L	< 0.10 µg/L	
3-NT	0.10 µg/L	< 0.10 µg/L	
4-NT	0.10 µg/L	< 0.10 µg/L	
RDX	0.10 µg/L	< 0.10 µg/L	
Tetryl	0.10 µg/L	< 0.10 µg/L	
1,3,5-TNB	0.10 µg/L	0.34 µg/L	J
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L	UJ

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	87.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

010525

Inchcape Testing Services
NDRC Laboratories

11155 South Main
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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW1-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	0.81 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	112 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010526

Inchcape Testing Services
NDRC Laboratories

11155 South Main
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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW1-1001-QC
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	0.73 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	114 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010527

Inchcape Testing Services
NDRC Laboratories

11155 South Main
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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : AWD2-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	78.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010528

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : EW1-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	0.70 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	0.39 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	91.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010529

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8253-5
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : AWD3-1001
DATE SAMPLED : 6-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	0.34 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	87.0 %

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APPENDIX B
SUPPORT DOCUMENTATION

010531

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED: 9-DEC-1993

REPORT NUMBER: H93-8253:1-6
REPORT DATE: 27-DEC-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	HMX	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	5.0%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	120%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	< 0.10 µg/L
QC Sample Number:	8253-1	LCS Recovery:	108%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---
ANALYSIS:	TNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	1.1%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	94%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	103%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---
ANALYSIS:	2,4-DNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	4.6%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	108%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	< 0.10 µg/L
QC Sample Number:	8253-1	LCS Recovery:	100%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---
ANALYSIS:	Nitrobenzene	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	9.3%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	108%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	98%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

Inchcape Testing Services

Raj Naran
Vice President, General Manager

Sampled December 6, 1993

010532

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED: 9-DEC-1993

REPORT NUMBER: H93-8253:1-6
REPORT DATE: 27-DEC-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	m-Nitrotoluene	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	2.0%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	99%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	101%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010533

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2011
INCHCAPE TESTING SERVICES -- Job Number H93-8254

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2011
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8254

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 7, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2011. Included in this work order are five (5) groundwater samples and one (1) trip blank.

Groundwater Samples

LH18,24-MW23-1001
LH18,24-MW23-1001-QC
LH18,24-C4A-1001
LH18,24-C5-1002
LH18,24-C3-1002

Trip Blank

Trip Blank

Field Duplicates

Sample LH18,24-MW23-1001-QC in a field duplicate of LH18,24-MW23-1001

Samples LH18,24-MW23-1001, LH18,24-MW23-1001-QC, and LH18,24-C4A-1001 were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. In

addition, sample LH18,24-C3-1002 was analyzed for SVOCs and sample LH18,24-C5-1002 for SVOCs and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8254. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the semivolatile and metal results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. Surrogate 1,2-dichloroethane-d4 had a high percent recovery for sample LH18,24-MW23-1001. Therefore, all positive results for this sample were qualified "J", estimated, while the remaining non-detects were not impacted. In addition, the percent recovery of trichloroethene in the laboratory control sample (LCS) analyzed on December 20, 1994 was high. As a result, all associated positive hits were qualified as estimated, "J". All remaining surrogate, LCS, and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 **Representativeness.** All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

The method blank analyzed on December 20, 1994 contained contamination for methylene chloride. Since all associated sample results exceeded ten times the blank result, the data was not impacted.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

An examination of the field duplicate results found them to be comparable.

3.0 Semivolatiles.

3.1 **Accuracy.** Acid extractable surrogates had percent recoveries less than 10 percent for the original analyses of samples LH18,24-MW23-1001, LH18,24-MW23-1001-QC, LH18,24-C5-1002, LH18,24-C3-1002, and the re-extraction of sample LH18,24-C3-1002. As a result, all acid extractable compounds in these samples have been rejected, "R", and should be considered unreliable as they are all non-detects. In addition, the re-extraction of sample LH18,24-C5-1002 had surrogate recoveries for nitrobenzene-d5 and 2-fluorobiphenyl that were below control limits. Therefore, all base/neutral compounds in this sample, being non-detects, were qualified as estimated, "UJ". Where there are two sets of data available for a sample due to re-extraction based on surrogate recoveries outside control limits only the best data has been reported in the validated data summary. Note that while surrogate recoveries of 2-fluorobiphenyl and terphyl-d14 were above control limits for the original analysis of sample LH18,24-MW23-1001, no action on the data was warranted since all sample results were non-detect.

All LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 **Precision.** The RPDs between the matrix spike and matrix spike duplicate for several compounds were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 **Representativeness.** All samples were received in good condition and they were all properly preserved. Both method blanks were free of target compound contamination.

The re-extractions of samples LH18,24-MW23-1001, LH18,24-MW23-1001-QC, LH18,24-C5-1002, and LH18,24-C3-1002 were performed outside of the recommended holding time. Therefore, results for these analyses not previously rejected due to other QC criteria were qualified "UJ", estimated, as they were all non-detect.

All field duplicate results were found to be comparable.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 **Accuracy.** The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 **Precision.** The RPD between the sample duplicates exceeded 20 percent in the analysis for nitrate as nitrogen. As a result, all values for this compound were qualified "J", estimated. All remaining LCS and sample duplicate RPDs were within acceptable control limits.

4.3 **Representativeness.** All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

All field duplicate results were found to be comparable.

5.0 TAL Metals.

5.1 Accuracy. Matrix spike percent recoveries for lead and thallium were below control limits. In addition, the percent recovery for selenium was less than 30 percent. As a result, the results for lead and thallium were qualified as estimated, "UJ", and the results for selenium were rejected, "R", as they were all non-detect. All other LCS and matrix spike percent recoveries were within acceptable quality control limits.

5.2 Precision. The RPD between the duplicate samples for chromium exceeded 20 percent. Therefore, all chromium results were qualified, "J" and "UJ", estimated, for positive and non-detect results, respectively. The remaining LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were received in good condition and preserved upon receipt by the laboratory. It was assumed that since only 1 day elapsed between sample collection and receipt, the sample integrity was maintained. All samples were analyzed within appropriate holding times.

All blanks were free of target analyte contamination.

All field duplicate results were found to be comparable.

6.0 Explosives.

6.1 Accuracy. The percent recovery of surrogate 3,4-dinitrotoluene exceeded control limits for sample LH18,24-C4A-1001. Thus, the positive hit for 1,3,5-trinitrobenzene in this sample was qualified as estimated, "J", while the remaining non-detects were not impacted.

All remaining surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory.

All samples were extracted outside of the recommended holding time. Therefore, all positive and non-detect results were qualified as estimated, "J" and "UJ", respectively.

The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data and the positive hit for 1,3,5-trinitrobenzene in sample LH18,24-C4A-1001 should be used with caution.

All field duplicate results were found to be comparable.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Note that an undiluted sample analysis was not provided for sample LH18,24-C4A-1001 in the volatile organics analysis. As a result, the reported quantitation limits for this sample were elevated.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for mercury were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG).

Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

010543

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW23-1001
PDP Sample ID: 2011.01
Report No.: B7088

Date Sampled: 12/07/93
Date Received: 12/08/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7088
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	3 J
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	43 J	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	~~500~~ 5	65 30 ~~1870 B~~
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	4 J
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~500~~ 5	2930 ~~2090 E~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	118 *
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	110

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010544

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC. Client Sample ID:MW23-1001-QC
Project Name: LONGHORN AAP PDP Sample ID: 2011.02
Project No.: NA Report No.: B7089

Date Sampled: 12/07/93
Date Received: 12/08/93
Date Reported: 12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7089
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	3 J
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	45	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	~~500~~ 5	6600 ~~5450 E~~
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~500~~ 5	2660 ~~2170 E~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010545

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C4A-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.03	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7133	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	40.00	GC/MS File ID:	B7133
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	40.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,1,1-Trichloroethane	200	ND	Carbon tetrachloride	200	ND	
1,1,2,2-Tetrachloroethane	200	ND	Chlorobenzene	200	ND	
1,1,2-Trichloroethane	200	ND	Chloroethane	400	ND	
1,1-Dichloroethane	200	ND	Chloroform	200	ND	
1,1-Dichloroethene	200	ND	Chloromethane	400	ND	
1,2-Dichloroethane	200	ND	Cis-1,3-Dichloropropene	200	ND	
1,2-Dichloropropane	200	ND	Dibromochloromethane	200	ND	
2-Butanone	400	ND	Ethylbenzene	200	ND	
2-Chloroethyl vinyl ether	400	ND	Methylene chloride	200	2630	
2-Hexanone	400	ND	Styrene	200	ND	
4-Methyl-2-pentanone	400	ND	Tetrachloroethene	200	ND	
Acetone	400	ND	Toluene	200	ND	
Benzene	200	ND	Total xylenes	200	ND	
Bromodichloromethane	200	ND	Total-1,2-Dichloroethene	200	ND	
Bromoform	200	ND	Trans-1,3-Dichloropropene	200	ND	
Bromomethane	400	ND	Trichloroethene	200	930	J
Carbon disulfide	200	ND	Vinyl acetate	400	ND	
			Vinylchloride	400	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

000018

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010546

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW23-1001
PDP Sample ID: 2011.01 RA
Report No.: D2147

Date Sampled: 12/07/93
Date Received: 12/08/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/23/93
Date Analyzed: 12/27/93

Method Ref.: SW846-8270
GC/MS File ID: D2147
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	84	2-Fluorophenol	75	(21-100)	35
Terphenyl-d14	50	(33-141)	101	2,4,6-Tribromphenol	75	(10-123)	84

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

PDP ANALYTICAL SERVICES
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010547

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: MW23-1001 QC
PDP Sample ID: 2011.02 RA
Report No.: D2148
Date Sampled: 12/07/93
Date Received: 12/08/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/23/93
Date Analyzed: 12/27/93
Method Ref.: SW846-8270
GC/MS File ID: D2148
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	15
2-Fluorobiphenyl	50	(43-116)	53	2-Fluorophenol	75	(21-100)	29
Terphenyl-d14	50	(33-141)	70	2,4,6-Tribromphenol	75	(10-123)	75

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD (D(1)(1)(2)-1

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010548

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C4A-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.03	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2158	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2158
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	44	Phenol-d5	75	(10-94)	14
2-Fluorobiphenyl	50	(43-116)	53	2-Fluorophenol	75	(21-100)	28
Terphenyl-d14	50	(33-141)	69	2,4,6-Tribromphenol	75	(10-123)	71

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

000025

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010549

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C5-1002	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.04 RA	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2149	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/23/93	GC/MS File ID:	D2149
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	22	Phenol-d5	75	(10-94)	28
2-Fluorobiphenyl	50	(43-116)	30	2-Fluorophenol	75	(21-100)	48
Terphenyl-d14	50	(33-141)	82	2,4,6-Tribromphenol	75	(10-123)	83

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

PDP ANALYTICAL SERVICES
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010550

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: C3-100
PDP Sample ID: 2011.05
Report No.: D2104

Date Sampled: 12/07/93
Date Received: 12/08/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/09/93
Date Analyzed: 12/22/93

Method Ref.: SW846-8270
GC/MS File ID: D2104
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
..itrobenzene-d5	50	(35-114)	46	Phenol-d5	75	(10-94)	0
2-Fluorobiphenyl	50	(43-116)	68	2-Fluorophenol	75	(21-100)	0
Terphenyl-d14	50	(33-141)	97	2,4,6-Tribromphenol	75	(10-123)	0

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW23-1001
PDP Sample ID: 2011.01
Report Number: I01101

Date Sampled: 12-07-93
Date Received: 12-08-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	0.25	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.85	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	55.3	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.336 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.76	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	43.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.219	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.28	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	247	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
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010552

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW23-1001-QC
PDP Sample ID: 2011.02
Report Number: I01102

Date Sampled: 12-07-93
Date Received: 12-08-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	0.25	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	MBB
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.86	HM
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	56.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.307 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.69	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	43.4	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.218	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.27	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.025	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	249	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.026	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010553

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C4A-1001
PDP Sample ID: 2011.03
Report Number: I01103

Date Sampled: 12-07-93
Date Received: 12-08-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.104	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	12.9	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.012 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	4.12	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	2.5	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.166	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.025	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	92.7	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-08-93
Date Reported: 12-18-93
Report Number: I011CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2011.01	MW23-1001	WATER	12-07-93	12-13-93	1	554			
2011.02	MW23-1001-QC	WATER	12-07-93	12-13-93	1	558			
2011.03	C4A-1001	WATER	12-07-93	12-13-93	1	75			
				QUALITY ASSURANCE/QUALITY CONTROL					
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	1	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105		94
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105	0.0	94
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
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010555

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-08-93
Date Reported: 12-18-93
Report Number: I011NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2011.01	MW23-1001	WATER	12-07-93	12-08-93	0.1	1.4	J		
2011.02	MW23-1001-QC	WATER	12-07-93	12-08-93	0.1	1.6	J		
2011.03	C4A-1001	WATER	12-07-93	12-08-93	0.1	0.2	J		
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-08-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40		100
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40	0.0	100
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		(25)	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

000038

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-08-93
Date Reported: 12-18-93
Report Number: I011SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2011.01	MW23-1001	WATER	12-07-93	12-13-93	5	16			
2011.02	MW23-1001-QC	WATER	12-07-93	12-13-93	5	15			
2011.03	C4A-1001	WATER	12-07-93	12-13-93	5	13			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	5	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	269	292		92
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	271	292	0.7	93
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

010557

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW23-1001
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	89.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

Inchcape Testing Services
NDRC Laboratories

010558

11103 Steubner Airline
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW23-1001-QC
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	111 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010559

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C4A-1001
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	0.28 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

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QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	118 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C5-1002
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

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QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	108 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW23-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.01	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7088	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7088
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	3 J
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	43	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	4870 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	4 J
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	2090 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	118 *
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	110

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010563

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW23-1001 (DL)	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.01 DL	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7130	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B7130
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	100.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
2-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	6530
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	2930
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW23-1001-QC	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.02	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7089	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7089
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	3 J
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	45	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5450 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	2170 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW23-1001-QC (DL)	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.02 DL	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7132	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B7132
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	100.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
2-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	6600
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	2660
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	84
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	92

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C4A-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.03	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7133	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	40.00	GC/MS File ID:	B7133
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	40.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	200	ND	Carbon tetrachloride	200	ND
1,1,2,2-Tetrachloroethane	200	ND	Chlorobenzene	200	ND
1,1,2-Trichloroethane	200	ND	Chloroethane	400	ND
1,1-Dichloroethane	200	ND	Chloroform	200	ND
1,1-Dichloroethene	200	ND	Chloromethane	400	ND
1,2-Dichloroethane	200	ND	Cis-1,3-Dichloropropene	200	ND
1,2-Dichloropropane	200	ND	Dibromochloromethane	200	ND
2-Butanone	400	ND	Ethylbenzene	200	ND
2-Chloroethyl vinyl ether	400	ND	Methylene chloride	200	2630
2-Hexanone	400	ND	Styrene	200	ND
4-Methyl-2-pentanone	400	ND	Tetrachloroethene	200	ND
Acetone	400	ND	Toluene	200	ND
Benzene	200	ND	Total xylenes	200	ND
Bromodichloromethane	200	ND	Total-1,2-Dichloroethene	200	ND
Bromoform	200	ND	Trans-1,3-Dichloropropene	200	ND
Bromomethane	400	ND	Trichloroethene	200	930
Carbon disulfide	200	ND	Vinyl acetate	400	ND
			Vinylchloride	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010567

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.06	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7134	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7134
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010568

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW23-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.01	Date Received:	12/08/93
Project No.:	NA	Report No.:	A5186	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5186
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	114	Phenol-d5	75	(10-94)	4 *
2-Fluorobiphenyl	50	(43-116)	126 *	2-Fluorophenol	75	(21-100)	8 *
Terphenyl-d14	50	(33-141)	158 *	2,4,6-Tribromphenol	75	(10-123)	2 *

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: [illegible]

PDP ANALYTICAL SERVICES
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010569

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW23-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.01 RA	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2147	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/23/93	GC/MS File ID:	D2147
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	84	2-Fluorophenol	75	(21-100)	35
Terphenyl-d14	50	(33-141)	101	2,4,6-Tribromphenol	75	(10-123)	84

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

010022

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010570

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW23-1001 QC	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.02	Date Received:	12/08/93
Project No.:	NA	Report No.:	A5187	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5187
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	36
2-Fluorobiphenyl	50	(43-116)	101	2-Fluorophenol	75	(21-100)	20
Terphenyl-d14	50	(33-141)	117	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

010023

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010571

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW23-1001 QC	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.02 RA	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2148	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/23/93	GC/MS File ID:	D2148
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	15
2-Fluorobiphenyl	50	(43-116)	53	2-Fluorophenol	75	(21-100)	29
Terphenyl-d14	50	(33-141)	70	2,4,6-Tribromphenol	75	(10-123)	75

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010572

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C4A-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.03	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2158	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2158
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	44	Phenol-d5	75	(10-94)	14
2-Fluorobiphenyl	50	(43-116)	53	2-Fluorophenol	75	(21-100)	28
Terphenyl-d14	50	(33-141)	69	2,4,6-Tribromphenol	75	(10-123)	71

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

000025

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010573

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C5-1002	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.04	Date Received:	12/08/93
Project No.:	NA	Report No.:	A5189	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5189
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	53	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	130	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010026

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C5-1002	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.04 RA	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2149	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/23/93	GC/MS File ID:	D2149
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	22	Phenol-d5	75	(10-94)	28
2-Fluorobiphenyl	50	(43-116)	30	2-Fluorophenol	75	(21-100)	48
Terphenyl-d14	50	(33-141)	82	2,4,6-Tribromphenol	75	(10-123)	83

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

010575

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:C3-1001
PDP Sample ID: 2011.05
Report No.: D2104

Date Sampled: 12/07/93
Date Received: 12/08/93
Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/09/93
Date Analyzed: 12/22/93

Method Ref.: SW846-8270
GC/MS File ID: D2104
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	46	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	68	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	97	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010576

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C3-1002	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.05 RA	Date Received:	12/08/93
Project No.:	NA	Report No.:	D2150	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix.	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/23/93	GC/MS File ID:	D2150
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	79	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	83	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	102	2,4,6-Tribromphenol	75	(10-123)	13

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

100029

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010577

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW23-1001
PDP Sample ID: 2011.01
Report Number: I01101

Date Sampled: 12-07-93
Date Received: 12-08-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	0.25	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.85	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	55.3	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.336	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.76	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	43.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.219	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.28	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	247	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW23-1001-QC
PDP Sample ID: 2011.02
Report Number: I01102

Date Sampled: 12-07-93
Date Received: 12-08-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	0.25	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	1.86	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	56.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.307	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.69	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	43.4	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.218	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.27	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.025	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	249	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.026	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C4A-1001
PDP Sample ID: 2011.03
Report Number: I01103

Date Sampled: 12-07-93
Date Received: 12-08-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.104	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	12.9	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.012	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	4.12	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	2.5	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.166	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.025	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	92.7	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-08-93
Date Reported: 12-18-93
Report Number: I011CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2011.01	MW23-1001	WATER	12-07-93	12-13-93	1	554			
2011.02	MW23-1001-QC	WATER	12-07-93	12-13-93	1	558			
2011.03	C4A-1001	WATER	12-07-93	12-13-93	1	75			
				QUALITY ASSURANCE/QUALITY CONTROL					
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	1	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105		94
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105	0.0	94
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-08-93
Date Reported: 12-18-93
Report Number: I011NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2011.01	MW23-1001	WATER	12-07-93	12-08-93	0.1	1.4			
2011.02	MW23-1001-QC	WATER	12-07-93	12-08-93	0.1	1.6			
2011.03	C4A-1001	WATER	12-07-93	12-08-93	0.1	0.2			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-08-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40		100
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-08-93	0.1	0.4	0.40	0.0	100
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		25	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

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24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:12-08-93
Date Reported:12-18-93
Report Number:I011SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2011.01	MW23-1001	WATER	12-07-93	12-13-93	5	16			
2011.02	MW23-1001-QC	WATER	12-07-93	12-13-93	5	15			
2011.03	C4A-1001	WATER	12-07-93	12-13-93	5	13			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	5	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	269	292		92
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	271	292	0.7	93
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW23-1001
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	89.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010584

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW23-1001-QC
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	111 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010585

Inchcape Testing Services
NDRC Laboratories

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Houston, TX 77025
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Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C4A-1001
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	0.28 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	118 %

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Raj Naran
Vice President, General Manager

010586

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 8-DEC-1993

REPORT NUMBER : H93-8254-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C5-1002
DATE SAMPLED : 7-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	108 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP Analytical Services

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SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 2011 DATE/TIME REC'D: 12-8-93 1000 # OF COOLERS REC'D: 3 COOLER TEMP.: ICED

CLIENT NAME: AWD TECHNOLOGIES # OF AQUEOUS SAMPLES RECEIVED:

PROJECT NAME/NUMBER: LONGHORN AAP # OF SOIL SAMPLES RECEIVED: 0

DESCRIBE PACKING USED IN COOLER: SPILL PADS, PEANUTS # OF OTHER (SPECIFY): 0

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: 3 FRONT + BACK SEAL DATE: 12-7-93 SEAL NAME: ILLEGIBLE

SAMPLE CONTAINER SEALS: PRESENT (ABSENT) INTACT BROKEN

SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FED X AIRBILL NO.: 9743849006 9743849010 9743848995

	YES	NO
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND ~~TAPED INSIDE THE LID?~~	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?		✓
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	✓	
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	
BOTTLES BROKEN OR LEAKING?		✓
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?		✓
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S:	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?		✓
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		
WHO WAS CALLED? BY WHOM? DATE:		

COMMENTS & RESOLUTIONS: METALS CONTAINERS WERE REPRESERVED UPON RECEIPT.

LOGGED IN BY: Bruce D. Howard DATE: 12-8-93

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2011V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7078	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7078
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	1.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2009V.WLCS3 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	B7123	Date Reported:	12/29/93

GC/MS-VOLATILES

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7123
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	1.0	Analyst:	MA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	51	102	(61-145)
Benzene	50	47	94	(76-127)
Chlorobenzene	50	50	100	(75-130)
Toluene	50	47	94	(76-125)
Trichloroethene	50	73	146 *	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	83
Toluene-d8	50	(88-110)	89
Bromofluorobenzene	50	(86-115)	90

Method Blank: 2009V.WBLK3 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010591

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/30/93
Date Reported: 12/28/93
Report No.: A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZK

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1998.01	MS Sample ID: 1998.01MS	MSD Sample ID: 1998.01MSD
Date Analyzed: 12/27/93	Date Analyzed: 12/16/93	Date Analyzed: 12/16/93
GC/MS File ID: A5250	GC/MS File ID: A5162	GC/MS File ID: A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~47~~ 29	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	66.0 *	~~40~~ 25	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ 50	(10-80)
Acenapthene	50	ND	19	38 *	17.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~38~~ 50	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ 42	(12-110)
Pyrene	50	ND	14	28	6.9	31	(26-127)

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

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010592

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001 (MS/DUP)
PDP Sample ID: 2009.01 (MS/DUP)
Report Number: I009MSD

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	2.00	1.84	92
Antimony	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-14-93	12-20-93	ND	ND	NC	0.040	0.041	103
Barium	SW-846 6010	12-15-93	12-17-93	4.18	4.25	1.7	2.00	5.89	86
Beryllium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.047	94
Cadmium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.048	96
Calcium	SW-846 6010	12-15-93	12-17-93	120	122	1.7	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-17-93	0.080	0.108	(30)	0.20	0.28	100
Cobalt	SW-846 6010	12-15-93	12-17-93	0.033	0.030	9.5	0.50	0.50	93
Copper	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-17-93	1.33	1.51	13	1.00	2.29	96
Lead	SW-846 7421	12-14-93	12-17-93	ND	ND	NC	0.020	0.006	(30)
Magnesium	SW-846 6010	12-15-93	12-17-93	106	108	1.9	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-17-93	2.18	2.20	0.9	0.50	2.62	88
Mercury	SW-846 7470	12-20-93	12-21-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.50	100
Potassium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-14-93	12-21-93	ND	ND	NC	0.010	ND	(0)
Silver	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-17-93	339	348	2.6	NA	NA	NA
Thallium	SW-846 7841	12-14-93	12-20-93	ND	ND	NC	0.050	0.035	(70)
Vanadium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.47	94
Zinc	SW-846 6010	12-15-93	12-17-93	0.032	0.029	9.8	0.50	0.51	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1

LCS ID: 2001.LCSW1

TCLP Blank ID: NA

LCSD ID: 2001.LCSW2

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.06	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7134	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7134
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: ~~2011V.WBLK1~~ 2009V.WBLK3 LCS ID: ~~2011V.WLCS1~~ 2009V.~~WBLK3~~ WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW23-1001-QC (DL)	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.02 DL	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7132	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B7132
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	100.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND	
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND	
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND	
1,1-Dichloroethane	500	ND	Chloroform	500	ND	
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND	
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND	
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND	
2-Butanone	1000	ND	Ethylbenzene	500	ND	
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	6600	
2-Hexanone	1000	ND	Styrene	500	ND	
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND	
Acetone	1000	ND	Toluene	500	ND	
Benzene	500	ND	Total xylenes	500	ND	
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND	
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND	
Bromomethane	1000	ND	Trichloroethene	500	2660	J
Carbon disulfide	500	ND	Vinyl acetate	1000	ND	
			Vinylchloride	1000	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	84
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	92

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW23-1001 (DL)	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.01 DL	Date Received:	12/08/93
Project No.:	NA	Report No.:	B7130	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B7130
Sample Volume:	5.0 ml	Date Analyzed:	12/20/93
Dilution:	100.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
?-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	6530
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	2930 J
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 2009V.WBLK3 LCS ID: 2009V.WLCS3 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010596

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW23-1001	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.01	Date Received:	12/08/93
Project No.:	NA	Report No.:	A5186	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5186
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	114	Phenol-d5	75	(10-94)	4 *
2-Fluorobiphenyl	50	(43-116)	126 *	2-Fluorophenol	75	(21-100)	8 *
Terphenyl-d14	50	(33-141)	158 *	2,4,6-Tribromphenol	75	(10-123)	2 *

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

PDP ANALYTICAL SERVICES
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010597

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW23-1001 QC	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.02	Date Received:	12/08/93
Project No.:	NA	Report No.:	A5187	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5187
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	36
2-Fluorobiphenyl	50	(43-116)	101	2-Fluorophenol	75	(21-100)	20
Terphenyl-d14	50	(33-141)	117	2,4,6-Tribromphenol	75	(10-123)	0

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD

010023

PDP ANALYTICAL SERVICES
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010598

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C5-1002	Date Sampled:	12/07/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2011.04	Date Received:	12/08/93
Project No.:	NA	Report No.:	A5189	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5189
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	53	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	130	2,4,6-Tribromphenol	75	(10-123)	0 *

Method Blank: 2009S.WBLK1 LCS ID: 2009S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

4UQU26

PDP ANALYTICAL SERVICES
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010599

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:C3-1002 Date Sampled: 12/07/93
Project Name: LONGHORN AAP PDP Sample ID: 2011.05 RA Date Received: 12/08/93
Project No.: NA Report No.: D2150 Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix. WATER Dilution: 1.0 Method Ref.: SW846-8270
Multiplying Factor: 1.00 Date Extracted: 12/23/93 GC/MS File ID: D2150
Sample Volume: 1000 ml Date Analyzed: 12/27/93 Analyst: HZZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND UJ	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND UJ	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND UJ	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND UJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND UJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND UJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND UJ	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND UJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND UJ
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	79	Phenol-d5	75	(10-94)	0 R
2-Fluorobiphenyl	50	(43-116)	83	2-Fluorophenol	75	(21-100)	0 R
Terphenyl-d14	50	(33-141)	102	2,4,6-Tribromphenol	75	(10-123)	13

Method Blank: 1998S.WBLK1 LCS ID: 1998S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010600

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED: 9-DEC-1993

REPORT NUMBER: H93-8254:1-3
REPORT DATE: 27-DEC-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	HMX	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	5.0%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	120%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	< 0.10 µg/L
QC Sample Number:	8253-1	LCS Recovery:	108%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

ANALYSIS:	TNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	1.1%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	94%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	103%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

ANALYSIS:	2,4-DNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	4.6%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	108%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	< 0.10 µg/L
QC Sample Number:	8253-1	LCS Recovery:	100%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

ANALYSIS:	Nitrobenzene	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	9.3%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	108%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	98%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

Inchcape Testing Services

Raj Narang
Vice President, General Manager

Sampled 12/7/93

010601

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED: 9-DEC-1993

REPORT NUMBER: H93-8254:1-3
REPORT DATE: 27-DEC-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	m-Nitrotoluene	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	2.0%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	99%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	101%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010602

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2015
INCHCAPE TESTING SERVICES -- Job Number H93-8274

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2015
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8274

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 8, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2015. Included in this work order are four (4) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-126-1001	LH18,24-C1-1001
LH18,24-MW15-1001	LH18,24-MW2-1001

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing

Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8274. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the selenium results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved and received in good condition.

Blank contamination was found for trichloroethene and methylene chloride in the trip blank. In addition, methylene chloride was found in the method blanks pertaining to analyses performed on December 17, 1993 and December 23, 1993. As a result, sample concentrations less than 5 times (10 times for methylene chloride) the associated blank results were qualified as non-detects, "U". Note that values reported at concentrations less than the contract required quantitation limit (CRQL) were first raised to the CRQL before being qualified "U". Samples LH18,24-MW15-1001 and LH18,24-MW2-1001 had large concentrations of methylene chloride which were qualified due to blank contamination in the diluted analyses but remained positive hits above the highest calibration standard in the undiluted analyses. Since the original runs

contained such high concentrations of methylene chloride, and methylene chloride was found in other site samples, the original results were qualified as estimated "J", and are reported on the validated data summary.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

Note that the value for trichloroethene in the first dilution of sample LH18,24-MW2-1001 exceeded the highest calibration standard while it was a non-detect in the second dilution. Therefore, the initial result was qualified as estimated, "J", and is the concentration reported in the validated data summary.

The dilution run for sample LH18,24-C1-1001, the second dilution run for sample LH18,24-MW2-1001, and the trip blank were all analyzed outside of holding time. Thus, all positive hits in these analyses were qualified "J", estimated, and the remaining non-detects, "UJ".

3.0 Semivolatiles.

3.1 Accuracy. All surrogate and LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPDs between the matrix spike and matrix spike duplicate for several compounds were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved. The method blank was free of target compound contamination.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The RPD between the sample and duplicate analysis for nitrate as nitrogen exceeded 20 percent. As a result, all sample concentrations were qualified, "J" and "UJ", estimated, for positive and non-detect results, respectively. The remaining LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. Matrix spike percent recoveries for lead and thallium were below control limits. In addition, the percent recovery for selenium was less than 30 percent. As a result, the results for lead and thallium were qualified as estimated, "UJ", and the results for selenium were rejected, "R", as they were all non-detects. All other LCS and matrix spike percent recoveries were within acceptable quality control limits.

5.2 Precision. The RPD between the duplicate sample results for chromium exceeded 20 percent. Therefore, all chromium results were qualified as estimated, "J" and "UJ", for positive and non-detect results, respectively. The remaining LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were received in good condition and preserved upon receipt by the laboratory. It was assumed that since only 1 day elapsed between sample collection and receipt, the sample integrity was maintained. All samples were analyzed within appropriate holding times.

All blanks were free of target analyte contamination.

6.0 Explosives.

6.1 Accuracy. The surrogate percent recovery of 3,4-dinitrotoluene in sample LH18,24-MW2-1001 was above quality control limits. As a result, all positive hits in this sample were qualified as estimated, "J", while the remaining non-detects were not impacted.

All LCS and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory.

All samples were extracted outside of the recommended holding time. Therefore, all sample values were qualified, "J" and "UJ", estimated, for positive and non-detect results, respectively.

The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data and positive hits should be used with caution.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Note that the volatile method blank and LCS for samples LH18,24-MW2-1001(DL) and LH18,24-C1-1001, analyzed on December 21, 1993, were not provided with the data package. In addition, the method blank and LCS provided for the analyses on December 23, 1993 were actually analyzed after the samples on December 24, 1993 and December 25, 1993, respectively. Since no problems were found with the LCSs and a trip blank was analyzed with the samples, no action was taken.

Note that an undiluted sample analysis was not provided for sample LH18,24-MW2-1001 in the volatile analysis. As a result, the reported quantitation limits for this sample were elevated.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for mercury were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

010612

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:126-1001
PDP Sample ID: 2015.01
Report No.: B7092

Date Sampled: 12/08/93
Date Received: 12/09/93
Date Reported: 12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7092
Date Analyzed: 12/17/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	~~3 J~~ 4
Carbon disulfide	5	4 J	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	105
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW15-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.02	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7093	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7093
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	550 X J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	100
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW2-1001 (DL)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.03DL (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7152	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1000.00	GC/MS File ID:	B7152
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	1000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5000	ND	Carbon tetrachloride	5000	ND
1,1,2,2-Tetrachloroethane	5000	ND	Chlorobenzene	5000	ND
1,1,2-Trichloroethane	5000	ND	Chloroethane	10000	ND
1,1-Dichloroethane	5000	ND	Chloroform	5000	ND
1,1-Dichloroethene	5000	ND	Chloromethane	10000	ND
1,2-Dichloroethane	5000	ND	Cis-1,3-Dichloropropene	5000	ND
1,2-Dichloropropane	5000	ND	Dibromochloromethane	5000	ND
2-Butanone	10000	ND	Ethylbenzene	5000	ND
2-Chloroethyl vinyl ether	10000	ND	Methylene chloride	5000	6870000 J
2-Hexanone	10000	ND	Styrene	5000	ND
4-Methyl-2-pentanone	10000	ND	Tetrachloroethene	5000	ND
Acetone	10000	ND	Toluene	5000	ND
Benzene	5000	ND	Total xylenes	5000	ND
Bromodichloromethane	5000	ND	Total-1,2-Dichloroethene	5000	ND
Bromoform	5000	ND	Trans-1,3-Dichloropropene	5000	ND
Bromomethane	10000	ND	Trichloroethene	5000	238000 J
Carbon disulfide	5000	ND	Vinyl acetate	10000	ND
			Vinylchloride	10000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010615

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:C1-1001
PDP Sample ID: 2015.04
Report No.: B7138

Date Sampled: 12/08/93
Date Received: 12/09/93
Date Reported: 12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7138
Date Analyzed: 12/21/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	~~5~~ 25	6000 ~~B~~ J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~5~~ 25	~~410 B~~ 475 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	82
Toluene-d8	50	(88-110)	90
Bromofluorobenzene	50	(86-115)	90

Method Blank ID: ~~2011V~~.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA
2015V.

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:TRIP BLANK
PDP Sample ID: 2015.05
Report No.: B7184

Date Sampled: 12/08/93
Date Received: 12/09/93
Date Reported: 12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7184
Date Analyzed: 12/23/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND UJ	Carbon tetrachloride	5	ND UJ
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	21 J
2-Hexanone	10	ND	Styrene	5	ND UJ
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND UJ
			Vinylchloride	10	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010617

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	126-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.01	Date Received:	12/09/93
Project No.:	NA	Report No.:	A5182	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5182
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	81	Phenol-d5	75	(10-94)	23
2-Fluorobiphenyl	50	(43-116)	89	2-Fluorophenol	75	(21-100)	34
Terphenyl-d14	50	(33-141)	96	2,4,6-Tribromphenol	75	(10-123)	89

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010618

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW15-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.02	Date Received:	12/09/93
Project No.:	NA	Report No.:	D2097	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2097
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	58	Phenol-d5	75	(10-94)	11
2-Fluorobiphenyl	50	(43-116)	63	2-Fluorophenol	75	(21-100)	28
Terphenyl-d14	50	(33-141)	78	2,4,6-Tribromphenol	75	(10-123)	78

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010022

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010619

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW2-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.03	Date Received:	12/09/93
Project No.:	NA	Report No.:	D2098	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2098
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	12
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	7 J
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	15
2-Fluorobiphenyl	50	(43-116)	73	2-Fluorophenol	75	(21-100)	25
Terphenyl-d14	50	(33-141)	87	2,4,6-Tribromphenol	75	(10-123)	81

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010620

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C1-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.04	Date Received:	12/09/93
Project No.:	NA	Report No.:	D2099	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2099
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	72	Phenol-d5	75	(10-94)	30
2-Fluorobiphenyl	50	(43-116)	70	2-Fluorophenol	75	(21-100)	55
Terphenyl-d14	50	(33-141)	92	2,4,6-Tribromphenol	75	(10-123)	103

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: N/A

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010621

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 126-1001
PDP Sample ID: 2015.01
Report Number: I01501

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	10.7		MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND		HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	2.65		MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	88.1		MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.015	J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.016		MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	7.5		MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	UJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	69.1		MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.209		MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND		MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND		MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	238		MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.05	ND	UJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.020		MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.056		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010622

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW15-1001
PDP Sample ID: 2015.02
Report Number: I01502

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.24	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	12.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.015 J	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.1	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND [illegible]	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	7.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.351	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.044	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	64.8	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND [illegible]	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.038	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010623

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW2-1001
PDP Sample ID: 2015.03
Report Number: I01503

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	1.0		MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND		HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	3.43		MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	93.0		MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	uJ	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.016		MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.88		MBB
Lead	SW-846 7421	12-14-93	12-20-93	0.025	ND	uJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	76.9		MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.928		MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND		MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND		MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	263		MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	uJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND		MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.020		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010624

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C1-1001
PDP Sample ID: 2015.04
Report Number: I01504

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	0.26	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.483	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	67.9	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.43	MBB
Lead	SW-846 7421	12-14-93	12-20-93	0.025	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	51.7	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.034	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	296	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:12-09-93
Date Reported:12-18-93
Report Number:I015CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2015.01	126-1001	WATER	12-08-93	12-13-93	1	1480			
2015.02	MW15-1001	WATER	12-08-93	12-13-93	1	142			
2015.03	MW2-1001	WATER	12-08-93	12-13-93	1	696			
2015.04	C1-1001	WATER	12-08-93	12-13-93	1	675			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	1	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105		94
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105	0.0	94
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-09-93
Date Reported: 12-18-93
Report Number: I015NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2015.01	126-1001	WATER	12-08-93	12-10-93	0.1	0.2	J			
2015.02	MW15-1001	WATER	12-08-93	12-10-93	0.1	0.1				
2015.03	MW2-1001	WATER	12-08-93	12-10-93	2	35				
2015.04	C1-1001	WATER	12-08-93	12-10-93	0.1	0.3				
				QUALITY ASSURANCE/QUALITY CONTROL						
2015.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-10-93	0.1	ND				
2015.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4		0.40		100
2015.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4		0.40	0.0	100
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7				
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9			25	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1		0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:12-09-93
Date Reported:12-18-93
Report Number:I015SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2015.01	126-1001	WATER	12-08-93	12-13-93	5	63			
2015.02	MW15-1001	WATER	12-08-93	12-13-93	5	ND			
2015.03	MW2-1001	WATER	12-08-93	12-13-93	5	5			
2015.04	C1-1001	WATER	12-08-93	12-13-93	5	16			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	5	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	269	292		92
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	271	292	0.7	93
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

010628

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 126-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010629

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW15-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

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QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	114 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010630

Inchcape Testing Services
NDRC Laboratories

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DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW2-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES			
TEST REQUESTED	DETECTION LIMIT	RESULTS	
1,3-DNB	0.10 µg/L	< 0.10 µg/L	uJ
2,4-DNT	0.10 µg/L	1.17 µg/L	J
2,6-DNT	0.10 µg/L	1.82 µg/L	J
HMX	0.10 µg/L	< 0.10 µg/L	uJ
NB	0.10 µg/L	< 0.10 µg/L	
2-NT	0.10 µg/L	< 0.10 µg/L	
3-NT	0.10 µg/L	< 0.10 µg/L	
4-NT	0.10 µg/L	< 0.10 µg/L	
RDX	0.10 µg/L	< 0.10 µg/L	
Tetryl	0.10 µg/L	< 0.10 µg/L	
1,3,5-TNB	0.10 µg/L	3.22 µg/L	J
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L	uJ

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	125 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010631

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C1-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

uJ

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	96.0 %

Inchcape Testing Services

Raj Narain
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	126-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.01	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7092	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7092
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	4 J	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	105
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW15-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.02	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7093	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7093
Sample Volume:	5.0 ml	Date Analyzed:	12/17/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	550 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	100
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW15-1001 (DL)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.02DL (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7144	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7144
Sample Volume:	1.0 ml	Date Analyzed:	12/21/93
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	605
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	130
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	250	(76-114)	102
Toluene-d8	250	(88-110)	100
Bromofluorobenzene	250	(86-115)	102

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW2-1001 (DL)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.03DL (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7152	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1000.00	GC/MS File ID:	B7152
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	1000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5000	ND	Carbon tetrachloride	5000	ND
1,1,2,2-Tetrachloroethane	5000	ND	Chlorobenzene	5000	ND
1,1,2-Trichloroethane	5000	ND	Chloroethane	10000	ND
1,1-Dichloroethane	5000	ND	Chloroform	5000	ND
1,1-Dichloroethene	5000	ND	Chloromethane	10000	ND
1,2-Dichloroethane	5000	ND	Cis-1,3-Dichloropropene	5000	ND
1,2-Dichloropropane	5000	ND	Dibromochloromethane	5000	ND
2-Butanone	10000	ND	Ethylbenzene	5000	ND
2-Chloroethyl vinyl ether	10000	ND	Methylene chloride	5000	6870000 E
2-Hexanone	10000	ND	Styrene	5000	ND
4-Methyl-2-pentanone	10000	ND	Tetrachloroethene	5000	ND
Acetone	10000	ND	Toluene	5000	ND
Benzene	5000	ND	Total xylenes	5000	ND
Bromodichloromethane	5000	ND	Total-1,2-Dichloroethene	5000	ND
Bromoform	5000	ND	Trans-1,3-Dichloropropene	5000	ND
Bromomethane	10000	ND	Trichloroethene	5000	238000 E
Carbon disulfide	5000	ND	Vinyl acetate	10000	ND
			Vinylchloride	10000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW2-1001 (DL2)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.03DL2 (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7182	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100000.00	GC/MS File ID:	B7182
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	100000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500000	ND	Carbon tetrachloride	500000	ND
1,1,2,2-Tetrachloroethane	500000	ND	Chlorobenzene	500000	ND
1,1,2-Trichloroethane	500000	ND	Chloroethane	*******	ND
1,1-Dichloroethane	500000	ND	Chloroform	500000	ND
1,1-Dichloroethene	500000	ND	Chloromethane	*******	ND
1,2-Dichloroethane	500000	ND	Cis-1,3-Dichloropropene	500000	ND
1,2-Dichloropropane	500000	ND	Dibromochloromethane	500000	ND
2-Butanone	*******	ND	Ethylbenzene	500000	ND
2-Chloroethyl vinyl ether	*******	ND	Methylene chloride	500000	8000000
2-Hexanone	*******	ND	Styrene	500000	ND
4-Methyl-2-pentanone	*******	ND	Tetrachloroethene	500000	ND
Acetone	*******	ND	Toluene	500000	ND
Benzene	500000	ND	Total xylenes	500000	ND
Bromodichloromethane	500000	ND	Total-1,2-Dichloroethene	500000	ND
Bromoform	500000	ND	Trans-1,3-Dichloropropene	500000	ND
Bromomethane	*******	ND	Trichloroethene	500000	ND
Carbon disulfide	500000	ND	Vinyl acetate	*******	ND
			Vinylchloride	*******	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2025V.WBLK1 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C1-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.04	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7138	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7138
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6000 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	410 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	82
Toluene-d8	50	(88-110)	90
Bromofluorobenzene	50	(86-115)	90

Method Blank ID: 2011V.WBLK1 LCS ID: 2011V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C1-1001 (DL)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.04DL (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7183	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7183
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	6000 E
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	475
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.05	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7184	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7184
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	21
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010641

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW2-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.03	Date Received:	12/09/93
Project No.:	NA	Report No.:	D2098	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2098
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	12
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	7 J
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	15
2-Fluorobiphenyl	50	(43-116)	73	2-Fluorophenol	75	(21-100)	25
Terphenyl-d14	50	(33-141)	87	2,4,6-Tribromphenol	75	(10-123)	81

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010642

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	126-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.01	Date Received:	12/09/93
Project No.:	NA	Report No.:	A5182	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	A5182
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	81	Phenol-d5	75	(10-94)	23
2-Fluorobiphenyl	50	(43-116)	89	2-Fluorophenol	75	(21-100)	34
Terphenyl-d14	50	(33-141)	96	2,4,6-Tribromphenol	75	(10-123)	89

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010643

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW15-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.02	Date Received:	12/09/93
Project No.:	NA	Report No.:	D2097	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2097
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	58	Phenol-d5	75	(10-94)	11
2-Fluorobiphenyl	50	(43-116)	63	2-Fluorophenol	75	(21-100)	28
Terphenyl-d14	50	(33-141)	78	2,4,6-Tribromphenol	75	(10-123)	78

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010644

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C1-1001	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.04	Date Received:	12/09/93
Project No.:	NA	Report No.:	D2099	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/09/93	GC/MS File ID:	D2099
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	72	Phenol-d5	75	(10-94)	30
2-Fluorobiphenyl	50	(43-116)	70	2-Fluorophenol	75	(21-100)	55
Terphenyl-d14	50	(33-141)	92	2,4,6-Tribromphenol	75	(10-123)	103

Method Blank: 2011S.WBLK1 LCS ID: 2011S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 126-1001
PDP Sample ID: 2015.01
Report Number: I01501

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	10.7	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	2.65	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	88.1	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.015	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.016	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	7.5	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	69.1	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.209	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	238	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	0.020	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.056	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010646

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW15-1001
PDP Sample ID: 2015.02
Report Number: I01502

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.24	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	12.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	0.015	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.1	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	7.0	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.351	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	0.044	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	64.8	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.038	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS
Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

000027

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW2-1001
PDP Sample ID: 2015.03
Report Number: I01503

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	1.0	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	3.43	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	93.0	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	0.016	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.88	MBB
Lead	SW-846 7421	12-14-93	12-20-93	0.025	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	76.9	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.928	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	263	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.020	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C1-1001
PDP Sample ID: 2015.04
Report Number: I01504

Date Sampled: 12-08-93
Date Received: 12-09-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	0.26	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.483	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	67.9	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.43	MBB
Lead	SW-846 7421	12-14-93	12-20-93	0.025	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	51.7	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.034	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	296	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-09-93
Date Reported: 12-18-93
Report Number: I015CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2015.01	126-1001	WATER	12-08-93	12-13-93	1	1480			
2015.02	MW15-1001	WATER	12-08-93	12-13-93	1	142			
2015.03	MW2-1001	WATER	12-08-93	12-13-93	1	696			
2015.04	C1-1001	WATER	12-08-93	12-13-93	1	675			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	1	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105		94
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105	0.0	94
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-09-93
Date Reported: 12-18-93
Report Number: I015NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2015.01	126-1001	WATER	12-08-93	12-10-93	0.1	0.2			
2015.02	MW15-1001	WATER	12-08-93	12-10-93	0.1	0.1			
2015.03	MW2-1001	WATER	12-08-93	12-10-93	2	35			
2015.04	C1-1001	WATER	12-08-93	12-10-93	0.1	0.3			
			QUALITY ASSURANCE/QUALITY CONTROL						
2015.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-10-93	0.1	ND			
2015.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4	0.40		100
2015.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4	0.40	0.0	100
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		25	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:12-09-93
Date Reported:12-18-93
Report Number:I015SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2015.01	126-1001	WATER	12-08-93	12-13-93	5	63			
2015.02	MW15-1001	WATER	12-08-93	12-13-93	5	ND			
2015.03	MW2-1001	WATER	12-08-93	12-13-93	5	5			
2015.04	C1-1001	WATER	12-08-93	12-13-93	5	16			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	5	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	269	292		92
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	271	292	0.7	93
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

Inchcape Testing Services
NDRC Laboratories

11155 Southwest
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

010652

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 126-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

Inchcape Testing Services
NDRC Laboratories

11155 South Wilcrest
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

010653

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW15-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	114 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010654

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW2-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	1.17 µg/L
2,6-DNT	0.10 µg/L	1.82 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	3.22 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	125 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010655

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 9-DEC-1993

REPORT NUMBER : H93-8274-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C1-1001
DATE SAMPLED : 8-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	96.0 %

Inchcape Testing Services

Raj Narang
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP Analytical Services

010657

SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 2015 DATE/TIME REC'D: 12-9-93 1000 # OF COOLERS REC'D: 2 COOLER TEMP.: ICED

CLIENT NAME: AWD TECHNOLOGIES # OF AQUEOUS SAMPLES RECEIVED: 4

PROJECT NAME/NUMBER: LONGHORN AAP # OF SOIL SAMPLES RECEIVED: 0

DESCRIBE PACKING USED IN COOLER: SPILL PAD/NEWSPAPER # OF OTHER (SPECIFY): 0

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: 3 FRONT + BACK SEAL DATE: 12/8/93 SEAL NAME: ILLEGIBLE

SAMPLE CONTAINER SEALS: PRESENT (ABSENT) INTACT BROKEN

SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FED X AIRBILL NO.: 9743848203 9743848192

	YES	NO
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND ~~TAPED INSIDE THE LID~~?	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?		✓
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	✓	
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	
BOTTLES BROKEN OR LEAKING?		✓
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?		✓
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S:	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?	✓	
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.	✓	
WHO WAS CALLED? BY WHOM? DATE:		

COMMENTS & RESOLUTIONS: METALS CONTAINERS WERE ~~PRESERVED~~ UPON RECEIPT, ~1% SEDIMENT IN "126-1001".

LOGGED IN BY: Bruce W. Monkhouse DATE: 12-9-93

000009

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2011V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7078	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7078
Sample Volume:	5.0 ml	Date Analyzed:	12/16/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2025V.WBLK2 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7223	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7223
Sample Volume:	5.0 ml	Date Analyzed:	12/24/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	9
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010660

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:TRIP BLANK Date Sampled: 12/08/93
Project Name: LONGHORN AAP PDP Sample ID: 2015.05 Date Received: 12/09/93
Project No.: NA Report No.: B7184 Date Reported: 12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER Method Ref.: SW846-8240
Multiplying Factor: 1.00 GC/MS File ID: B7184
Sample Volume: 5.0 ml Date Analyzed: 12/23/93
Dilution: 1.0 Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	21 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

000019

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 12/09/93
Date Reported: 12/27/93
Report No.: B713536

GC/MS-VOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8240 Sample Matrix: WATER Analyst: MA

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 2015.01	MS Sample ID: 2015.01MS	MSD Sample ID: 2015.01MSD
Date Analyzed: 12/17/93	Date Analyzed: 12/21/93	Date Analyzed: 12/21/93
GC/MS File ID: B7092	GC/MS File ID: B7135	GC/MS File ID: B7136

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	53	106	(61-145)
Benzene	50	ND	49	98	(76-127)
Chlorobenzene	50	ND	54	108	(75-130)
Toluene	50	ND	51	102	(76-125)
Trichloroethene	50	3 ~~ND~~	50	94 ~~100~~	(71-120)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	50	100	5.8	14	(61-145)
Benzene	50	ND	49	98	0.0	11	(76-127)
Chlorobenzene	50	ND	54	108	0.0	13	(75-130)
Toluene	50	ND	50	100	2.0	13	(76-125)
Trichloroethene	50	3 ~~ND~~	49	92 ~~98~~	~~2.0~~ 2.2	14	(71-120)

* = Values outside of QC limits

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

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

010662

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MS (MATRIX SPIKE)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5162	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5162
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	9	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	8	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	20	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	14	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	19	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	30	Nitrobenzene	10	ND
Acenaphthene	10	16	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	3
Anthracene	10	ND	Pentachlorophenol	30	21
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	15
			Pyrene	10	15

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	20 *	Phenol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	26 *	2-Fluorophenol	75	(21-100)	15 *
Terphenyl-d14	50	(33-141)	36	2,4,6-Tribromphenol	75	(10-123)	29

Method Blank: 1986S.WBLK1 LCS ID: 1986S.WLCS1 MS ID: NA MSD ID: NA DUP: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010663

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MSD (MATRIX SPIKE DUP)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5163	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5163
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	20	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	18	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	0	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	12	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	5	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	14	Nitrobenzene	10	ND
Acenaphthene	10	19	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	7
Anthracene	10	ND	Pentachlorophenol	30	14
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	12
			Pyrene	10	14

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	32 *	Phenol-d5	75	(10-94)	17
2-Fluorobiphenyl	50	(43-116)	35 *	2-Fluorophenol	75	(21-100)	18 *
Terphenyl-d14	50	(33-141)	35	2,4,6-Tribromphenol	75	(10-123)	19

Method Blank: 1986S.WBLK1 LCS ID: 1986S.WLCS1 MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

010664

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/30/93
Date Reported: 12/28/93
Report No.: A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZZ

SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1998.01	MS Sample ID:	1998.01MS	MSD Sample ID:	1998.01MSD
Date Analyzed:	12/27/93	Date Analyzed:	12/16/93	Date Analyzed:	12/16/93
GC/MS File ID:	A5250	GC/MS File ID:	A5162	GC/MS File ID:	A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	66.0 *	~~40~~ 27	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ 58	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~20~~ 42	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ 50	(10-80)
Acenapthene	50	ND	19	38 *	17.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ 35	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~38~~ 50	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ 42	(12-110)
Pyrene	50	ND	14	28	6.9	31	(26-127)

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

010665

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001 (MS/DUP)
PDP Sample ID: 2009.01 (MS/DUP)
Report Number: I009MSD

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	2.00	1.84	92
Antimony	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-14-93	12-20-93	ND	ND	NC	0.040	0.041	103
Barium	SW-846 6010	12-15-93	12-17-93	4.18	4.25	1.7	2.00	5.89	86
Beryllium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.047	94
Cadmium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.048	96
Calcium	SW-846 6010	12-15-93	12-17-93	120	122	1.7	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-17-93	0.080	0.108	(30)	0.20	0.28	100
Cobalt	SW-846 6010	12-15-93	12-17-93	0.033	0.030	9.5	0.50	0.50	93
Copper	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-17-93	1.33	1.51	13	1.00	2.29	96
Lead	SW-846 7421	12-14-93	12-17-93	ND	ND	NC	0.020	0.006	(30)
Magnesium	SW-846 6010	12-15-93	12-17-93	106	108	1.9	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-17-93	2.18	2.20	0.9	0.50	2.62	88
Mercury	SW-846 7470	12-20-93	12-21-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.50	100
Potassium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-14-93	12-21-93	ND	ND	NC	0.010	ND	(0)
Silver	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-17-93	339	348	2.6	NA	NA	NA
Thallium	SW-846 7841	12-14-93	12-20-93	ND	ND	NC	0.050	0.035	(70)
Vanadium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.47	94
Zinc	SW-846 6010	12-15-93	12-17-93	0.032	0.029	9.8	0.50	0.51	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1

LCS ID: 2001.LCSW1

TCLP Blank ID: NA

LCSD ID: 2001.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW15-1001 (DL)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.02DL (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7144	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7144
Sample Volume:	1.0 ml	Date Analyzed:	12/21/93
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND	
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND	
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND	
1,1-Dichloroethane	25	ND	Chloroform	25	ND	
1,1-Dichloroethene	25	ND	Chloromethane	50	ND	
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND	
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND	
2-Butanone	50	ND	Ethylbenzene	25	ND	
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	605	B
2-Hexanone	50	ND	Styrene	25	ND	
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND	
Acetone	50	ND	Toluene	25	ND	
Benzene	25	ND	Total xylenes	25	ND	
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND	
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND	
Bromomethane	50	ND	Trichloroethene	25	130	
Carbon disulfide	25	ND	Vinyl acetate	50	ND	
			Vinylchloride	50	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	250	(76-114)	102
Toluene-d8	250	(88-110)	100
Bromofluorobenzene	250	(86-115)	102

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW2-1001 (DL2)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.03DL2 (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7182	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100000.00	GC/MS File ID:	B7182
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	100000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500000	ND UJ	Carbon tetrachloride	500000	ND UJ
1,1,2,2-Tetrachloroethane	500000	ND	Chlorobenzene	500000	ND
1,1,2-Trichloroethane	500000	ND	Chloroethane	*******	ND
1,1-Dichloroethane	500000	ND	Chloroform	500000	ND
1,1-Dichloroethene	500000	ND	Chloromethane	*******	ND
1,2-Dichloroethane	500000	ND	Cis-1,3-Dichloropropene	500000	ND
1,2-Dichloropropane	500000	ND	Dibromochloromethane	500000	ND
2-Butanone	*******	ND	Ethylbenzene	500000	ND
2-Chloroethyl vinyl ether	*******	ND	Methylene chloride	500000	8000000 UJ
2-Hexanone	*******	ND	Styrene	500000	ND UJ
4-Methyl-2-pentanone	*******	ND	Tetrachloroethene	500000	ND
Acetone	*******	ND	Toluene	500000	ND
Benzene	500000	ND	Total xylenes	500000	ND
Bromodichloromethane	500000	ND	Total-1,2-Dichloroethene	500000	ND
Bromoform	500000	ND	Trans-1,3-Dichloropropene	500000	ND
Bromomethane	*******	ND	Trichloroethene	500000	ND
Carbon disulfide	500000	ND	Vinyl acetate	*******	ND
			Vinylchloride	*******	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2025V.WBLK1 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010668

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C1-1001 (DL)	Date Sampled:	12/08/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2015.04DL (DILUTION)	Date Received:	12/09/93
Project No.:	NA	Report No.:	B7183	Date Reported:	12/27/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7183
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND UJ	Carbon tetrachloride	25	ND UJ
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	6000 J
2-Hexanone	50	ND	Styrene	25	ND UJ
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	475 J
Carbon disulfide	25	ND	Vinyl acetate	50	ND UJ
			Vinylchloride	50	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS2 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010669

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED: 9-DEC-1993

REPORT NUMBER: H93-8274:1-3
REPORT DATE: 27-DEC-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	HMX	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	5.0%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	120%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	< 0.10 µg/L
QC Sample Number:	8253-1	LCS Recovery:	108%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

ANALYSIS:	TNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	1.1%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	94%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	103%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

ANALYSIS:	2,4-DNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	4.6%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	108%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	< 0.10 µg/L
QC Sample Number:	8253-1	LCS Recovery:	100%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

ANALYSIS:	Nitrobenzene	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	9.3%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	108%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 µg/L
QC Sample Number:	8253-1	LCS Recovery:	98%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

Inchcape Testing Services

Raj Naran
Vice President, General Manager

Sampled 12/8/93

010670

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED: 9-DEC-1993

REPORT NUMBER: H93-8274
REPORT DATE: 27-DEC-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	m-Nitrotoluene	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	16-DEC-1993	MS/MSD RPD:	2.0%
QC Extracted:	16-DEC-1993	Average Spike Recovery:	99%
Sample Analyzed:	17-DEC-1993	Duplicate RPD:	---
QC Analyzed:	17-DEC-1993	Method Blank:	<0.1 ug/L
QC Sample Number:	8253-1	LCS Recovery:	101%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010671

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2016
INCHCAPE TESTING SERVICES -- Job Number H93-8330

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2016
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8330

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 9, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2016. Included in this work order are three (3) groundwater samples, one (1) equipment rinsate blank, and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-C7-1001
LH18,24-C9-1001
LH18,24-C10-1001

Equipment Rinsate Blank

LH18,24-C7-1001-EB

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as

nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8330. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the semivolatile and metal results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All laboratory control sample (LCS) and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits. However, the percent recovery of surrogate 1,2-dichloroethane-d4 in sample LH18,24-C10-1001 was low. Therefore, results for the sample were qualified as estimated, "J" and "UJ", for positive and non-detect results, respectively. All other surrogate recoveries were acceptable.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

Blank contamination was found in the equipment, trip, and method blanks for methylene chloride. As a result, sample values less than 10 times those found in the blanks were qualified as non-detects, "U". Note that while the value obtained during the 50 times dilution for sample LH18,24-C10-1001 was qualified due to blank contamination the original analysis was not. Since the original run contained such a high concentration of methylene chloride, and methylene chloride was found in other site samples, this result was qualified as estimated, "J", and is the number reported on the validated data summary.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

3.0 Semivolatiles.

3.1 Accuracy. The surrogate percent recovery for 2-fluorophenol in the re-extraction of sample LH18,24-C9-1001 was low while the percent recovery of phenol-d5 in the same sample was less than 10 percent. As a result, all acid extractable concentrations in this sample have been rejected, "R", and should be considered unreliable as they were all non-detect.

The LCS extracted on December 14, 1993 had a high percent recovery for 4-chloro-3-methylphenol. Since all associated sample results are non-detect, no action was necessary.

Several MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPDs between the matrix spike and matrix spike duplicate for 2-chlorophenol, 4-chloro-3-methylphenol, 4-nitrophenol, and pentachlorophenol were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved.

The re-extraction of sample LH18,24-C9-1001 was performed outside the seven day holding time. As a result, all base/neutral extractable compounds for this sample were qualified "UJ", estimated, as they were all non-detects, while the acid extractable compounds having already been rejected due to surrogate exceedances, required no further qualification.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The RPD between the sample and duplicate analysis for nitrate as nitrogen exceeded 20 percent. As a result, all sample concentrations were qualified, "J" and "UJ", estimated, for positive and non-detect results, respectively. The remaining LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. Matrix spike percent recoveries for lead and thallium were below control limits. In addition, the percent recovery for selenium was less than 30 percent. As a result, the results for lead and thallium were qualified as estimated, "UJ", and the results for selenium were rejected, "R", as they were all non-detects. All other LCS and matrix spike percent recoveries were within acceptable quality control limits.

5.2 Precision. The RPD between the duplicate sample results for chromium exceeded 20 percent. Therefore, all chromium results were qualified "UJ", estimated, as they were all non-detect. The remaining LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were received in good condition and preserved upon receipt by the laboratory. It was assumed that since only 1 day elapsed between sample collection and receipt, the sample integrity was maintained. All samples were analyzed within appropriate holding times.

Blank contamination was found for calcium and zinc in the equipment rinsate blank. As a result, all sample concentrations less than five times the blank values were qualified as non-detects "U". The preparation blanks were free of target analyte contamination.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Blank contamination was found for RDX in the equipment rinsate blank, but since all sample results for this compound were non-detect, no action was warranted.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Note that undiluted sample analyses were not provided for samples LH18,24-C7-1001, LH18,24-C9-1001 and LH18,24-C10-1001 in the volatile organics analyses. As a result, the reported quantitation limits for these samples were elevated.

The original semivolatile analysis for sample LH18,24-C9-1001 was not provided with the data package. Therefore, the only results reported are those from the re-extraction.

Note that the method blank and LCS pertaining to the re-extraction of sample LH18,24-C9-1001 in the semivolatile analysis were not provided. The re-extraction took place on December 22, 1993 while the provided QC data was extracted on December 14, 1993. Since all the results were non-detect and previously qualified due to other QC criteria, no further action was deemed necessary.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for mercury were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and

data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.01	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7185	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7185
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	620 J
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	150
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	111
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C9-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.02	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7186	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7186
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	250 ~~50~~	8560 ~~2360 B~~
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	420
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C10-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.03	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7187	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7187
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND UJ	Carbon tetrachloride	50	ND UJ
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	3100 BJ
2-Hexanone	100	ND	Styrene	50	ND UJ
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	290 J
Carbon disulfide	50	ND	Vinyl acetate	100	ND UJ
			Vinylchloride	100	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	49
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001-EB	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.04	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7188	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7188
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	10
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.05	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7189	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7189
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	11
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	93
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010686

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.01	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2055	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2055
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	94	Phenol-d5	75	(10-94)	30
2-Fluorobiphenyl	50	(43-116)	100	2-Fluorophenol	75	(21-100)	49
Terphenyl-d14	50	(33-141)	126	2,4,6-Tribromphenol	75	(10-123)	72

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010687

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC. Client Sample ID:C9-1001 (RE-EXTRACT) Date Sampled: 12/09/93
Project Name: LONGHORN AAP PDP Sample ID: 2016.02RA (RE-EXTRACT) Date Received: 12/10/93
Project No.: NA Report No.: D2140 Date Reported: 12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-8270
Multiplying Factor: 1.00 Date Extracted: 12/22/93 GC/MS File ID: D2140
Sample Volume: 1000 ml Date Analyzed: 12/22/93 Analyst: HZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND UJ	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND UJ	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND UJ	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND UJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND UJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND UJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND UJ	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND UJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND UJ
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	91	Phenol-d5	75	(10-94)	7 *
2-Fluorobiphenyl	50	(43-116)	93	2-Fluorophenol	75	(21-100)	12 *
Terphenyl-d14	50	(33-141)	108	2,4,6-Tribromphenol	75	(10-123)	74

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010688

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C10-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.03	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2141	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2141
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	8 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	66	Phenol-d5	75	(10-94)	16
2-Fluorobiphenyl	50	(43-116)	81	2-Fluorophenol	75	(21-100)	29
Terphenyl-d14	50	(33-141)	101	2,4,6-Tribromphenol	75	(10-123)	88

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD DUP ID: NA

JUQD22

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010689

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001--EB	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.04	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2095	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2095
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	68	Phenol-d5	75	(10-94)	10
2-Fluorobiphenyl	50	(43-116)	70	2-Fluorophenol	75	(21-100)	23
Terphenyl-d14	50	(33-141)	83	2,4,6-Tribromphenol	75	(10-123)	53

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD 010023

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C7-1001
PDP Sample ID: 2016.01
Report Number: I01601

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	1.4	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.114	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	14.3	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND ST	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.2	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND ST	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	8.3	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.011	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	99.1	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND ST	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C9-1001
PDP Sample ID: 2016.02
Report Number: I01602

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	1	3.8	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.6	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.1	0.29	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.05	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.05	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	2	532	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.1	ND LT	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	1	2.4	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND LT	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	2	374	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.1	0.75	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.4	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	50	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	5	1230	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.05	ND LT	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C10-1001
PDP Sample ID: 2016.03
Report Number: I01603

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.580	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	79.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND uJ	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.426	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND uJ	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	30.6	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.145	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	221	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND uJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.030 U	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C7-1001-EB
PDP Sample ID: 2016.04
Report Number: I01604

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	0.39	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.005	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-10-93
Date Reported: 12-18-93
Report Number: I016CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

Units: mg/L

Analyst: RM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2016.01	C7-1001	WATER	12-09-93	12-13-93	1	77			
2016.02	C9-1001	WATER	12-09-93	12-13-93	1	3670			
2016.03	C10-1001	WATER	12-09-93	12-13-93	1	510			
2016.04	C7-1001-EB	WATER	12-09-93	12-13-93	1	ND			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	1	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105		94
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105	0.0	94
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-10-93
Date Reported: 12-18-93
Report Number: I015NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2016.01	C7-1001	WATER	12-09-93	12-10-93	0.1	2.0 J			
2016.02	C9-1001	WATER	12-09-93	12-10-93	0.1	0.3 ↓			
2016.03	C10-1001	WATER	12-09-93	12-10-93	0.1	1.2 ↓			
2016.04	C7-1001-EB	WATER	12-09-93	12-10-93	0.1	ND UJ			
				QUALITY ASSURANCE/QUALITY CONTROL					
2015.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-10-93	0.1	ND			
2015.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4	0.40		100
2015.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4	0.40	0.0	100
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		(25)	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-10-93
Date Reported: 12-18-93
Report Number: I016SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2016.01	C7-1001	WATER	12-09-93	12-13-93	5	29			
2016.02	C9-1001	WATER	12-09-93	12-13-93	50	115			
2016.03	C10-1001	WATER	12-09-93	12-13-93	5	5			
2016.04	C7-1001-EB	WATER	12-09-93	12-13-93	5	ND			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	5	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	269	292		92
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	271	292	0.7	93
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

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NDRC Laboratories

010697

11155 South Main
Houston, TX 77025
Tel. 713-661-8151
Fax. 713-661-2641

DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C7-1001
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	101 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C9-1001
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	94.0 %

Inchcape Testing Services

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Vice President, General Manager

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DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C10-1001
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	107 %

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DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C7-1001-EB
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	2.13 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

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Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.01	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7185	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7185
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	620
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	150
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	111
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C9-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.02	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7186	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7186
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	2360 E
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	420
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C9-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.02 DL	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7148	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7148
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	5560
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	760
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	111
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C10-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.03	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7187	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7187
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	3100 E
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	290
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	49
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C10-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.03 DL	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7149	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7149
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	5370
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	440
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	109
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001-EB	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.04	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7188	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7188
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	10
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.05	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7189	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7189
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	11
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	93
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010709

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.01	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2055	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2055
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	94	Phenol-d5	75	(10-94)	30
2-Fluorobiphenyl	50	(43-116)	100	2-Fluorophenol	75	(21-100)	49
Terphenyl-d14	50	(33-141)	126	2,4,6-Tribromphenol	75	(10-123)	72

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010710

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C9-1001 (RE-EXTRACT)	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.02RA (RE-EXTRACT)	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2140	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/22/93	GC/MS File ID:	D2140
Sample Volume:	1000 ml	Date Analyzed:	12/22/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	91	Phenol-d5	75	(10-94)	7 *
2-Fluorobiphenyl	50	(43-116)	93	2-Fluorophenol	75	(21-100)	12 *
Terphenyl-d14	50	(33-141)	108	2,4,6-Tribromphenol	75	(10-123)	74

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010711

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C10-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.03	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2141	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2141
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	8 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	66	Phenol-d5	75	(10-94)	16
2-Fluorobiphenyl	50	(43-116)	81	2-Fluorophenol	75	(21-100)	29
Terphenyl-d14	50	(33-141)	101	2,4,6-Tribromphenol	75	(10-123)	88

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD DUP ID: NA

JUQP22

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010712

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001--RB	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.04	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2095	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2095
Sample Volume:	1000 ml	Date Analyzed:	12/21/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	68	Phenol-d5	75	(10-94)	10
2-Fluorobiphenyl	50	(43-116)	70	2-Fluorophenol	75	(21-100)	23
Terphenyl-d14	50	(33-141)	83	2,4,6-Tribromphenol	75	(10-123)	53

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD DUP ID: NA

400023

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C7-1001
PDP Sample ID: 2016.01
Report Number: I01601

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	1.4	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.114	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	14.3	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	1.2	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	8.3	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.011	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	99.1	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C9-1001
PDP Sample ID: 2016.02
Report Number: I01602

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	1	3.8	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.6	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.1	0.29	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.05	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.05	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	2	532	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	1	2.4	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	2	374	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.1	0.75	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.4	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	50	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	5	1230	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C10-1001
PDP Sample ID: 2016.03
Report Number: I01603

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	0.580	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	79.6	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	0.426	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	30.6	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	0.145	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	221	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C7-1001-EB
PDP Sample ID: 2016.04
Report Number: I01604

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	0.39	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.005	ND	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1 | LCS ID: 2001.LCSW1 | MS ID: 2009.01MS

Extraction Blank ID: NA | LCSD ID: 2001.LCSW2 | DUP ID: 2009.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-10-93
Date Reported: 12-18-93
Report Number: I016CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2016.01	C7-1001	WATER	12-09-93	12-13-93	1	77			
2016.02	C9-1001	WATER	12-09-93	12-13-93	1	3670			
2016.03	C10-1001	WATER	12-09-93	12-13-93	1	510			
2016.04	C7-1001-EB	WATER	12-09-93	12-13-93	1	ND			
			QUALITY ASSURANCE/QUALITY CONTROL						
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	1	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105		94
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	1	99	105	0.0	94
2009.01	MW1-1001	WATER	12-06-93	12-07-93	1	988			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	1	988		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	1	1032	44.3		99

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-10-93
Date Reported: 12-18-93
Report Number: I015NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2016.01	C7-1001	WATER	12-09-93	12-10-93	0.1	2.0			
2016.02	C9-1001	WATER	12-09-93	12-10-93	0.1	0.3			
2016.03	C10-1001	WATER	12-09-93	12-10-93	0.1	1.2			
2016.04	C7-1001-EB	WATER	12-09-93	12-10-93	0.1	ND			
			QUALITY ASSURANCE/QUALITY CONTROL						
2015.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-10-93	0.1	ND			
2015.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4	0.40		100
2015.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-10-93	0.1	0.4	0.40	0.0	100
2009.01	MW1-1001	WATER	12-06-93	12-08-93	0.1	0.7			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-08-93	0.1	0.9		25	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-08-93	0.1	1.1	0.40		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-10-93
Date Reported: 12-18-93
Report Number: I016SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
2016.01	C7-1001	WATER	12-09-93	12-13-93	5	29			
2016.02	C9-1001	WATER	12-09-93	12-13-93	50	115			
2016.03	C10-1001	WATER	12-09-93	12-13-93	5	5			
2016.04	C7-1001-EB	WATER	12-09-93	12-13-93	5	ND			
				QUALITY ASSURANCE/QUALITY CONTROL					
2011.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-13-93	5	ND			
2011.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	269	292		92
2011.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-13-93	5	271	292	0.7	93
2009.01	MW1-1001	WATER	12-06-93	12-07-93	5	8			
2009.01 (DUP)	MW1-1001 (DUP)	WATER	12-06-93	12-07-93	5	8		0.0	
2009.01 (MS)	MW1-1001 (MS)	WATER	12-06-93	12-07-93	5	15	8.0		88

010720

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-1
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C7-1001
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	101 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010721

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-2
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C9-1001
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	94.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010722

Inchcape Testing Services
NDRC Laboratories

11455 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-3
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C10-1001
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	107 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010723

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C7-1001-EB
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	2.13 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP Analytical Services

010725

SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 2016 DATE/TIME REC'D: 12/6 9:10 # OF COOLERS REC'D: 2 COOLER TEMP.: ICE

CLIENT NAME: AWD Technologies, Inc # OF AQUEOUS SAMPLES RECEIVED: 4

PROJECT NAME/NUMBER: Longhorn AAP # OF SOIL SAMPLES RECEIVED: 0

DESCRIBE PACKING USED IN COOLER: Newspaper, cardboard # OF OTHER (SPECIFY): 0

COOLER CHAIN OF CUSTODY SEALS: PRESENT / ABSENT INTACT / BROKEN

HOW MANY & WHERE: 2 on each cooler lid SEAL DATE: 12-9-93 SEAL NAME: ILLEGIBLE

SAMPLE CONTAINER SEALS: PRESENT / ABSENT INTACT BROKEN

	YES	NO
SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FedX AIRBILL NO.: 9743848181 9743848063	✓	
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND ~~TAPED~~ INSIDE THE LID?	✓	
CHAIN OF CUSTODY SIGNED AND ~~DATED~~?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?		✓
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	✓	
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	
BOTTLES BROKEN OR LEAKING?		✓
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?		✓
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S:	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?		
SEDIMENT PRESENT IN AQUEOUS SAMPLES?	✓	
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		
WHO WAS CALLED? BY WHOM? DATE:		

COMMENTS & RESOLUTIONS: Preserved in lab upon receiving for metals only
1% Sediment

LOGGED IN BY: Victoria A Pearson DATE: 12-10-93

000009

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2025V.WBLK2 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7180	Date Reported:	12/30/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7180
Sample Volume:	5.0 ml	Date Analyzed:	12/22/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	11
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2015V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7141	Date Reported:	12/28/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7141
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
.-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	113
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	106

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001-EB	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.04	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7188	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7188
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	10
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2025V.MBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.05	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7189	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7189
Sample Volume:	5.0 ml	Date Analyzed:	12/23/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	11
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	93
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 2025V.WBLK2 LCS ID: 2025V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C7-1001-EB
PDP Sample ID: 2016.04
Report Number: I01604

Date Sampled: 12-09-93
Date Received: 12-10-93
Date Reported: 12-18-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-17-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-20-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-17-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-17-93	0.2	0.39	MBB
Chromium	SW-846 6010	12-15-93	12-17-93	0.01	ND ut	MBB
Cobalt	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-17-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-17-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND ut	HM
Magnesium	SW-846 6010	12-15-93	12-17-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Mercury	SW-846 7470	12-16-93	12-16-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-17-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-17-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-21-93	0.005	ND R	HM
Silver	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-17-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-20-93	0.005	ND uJ	HM
Vanadium	SW-846 6010	12-15-93	12-17-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-17-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1
LCS ID: 2001.LCSW1
MS ID: 2009.01MS

Extraction Blank ID: NA
LCSD ID: 2001.LCSW2
DUP ID: 2009.01D

010731

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 10-DEC-1993

REPORT NUMBER : H93-8330-4
REPORT DATE : 27-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Ms. Deborah O'Connor

SAMPLE MATRIX : Water
ID MARKS : C7-1001-EB
PURCHASE ORDER NO : 94201
DATE SAMPLED : 9-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	2.13 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	2016S.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	D2053	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2053
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HX
Extract Volume:	1.0 ml				

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	47	94	(39-98)
1,4-Dichlorobenzene	50	42	84	(36-97)
2,4-Dinitrotoluene	50	48	96	(24-96)
2-Chlorophenol	75	74	99	(27-123)
4-Chloro-3-methylphenol	75	76	101	(23-97)
4-Nitrophenol	75	16	21	(10-80)
Acenaphthene	50	49	98	(46-118)
N-Nitroso-Di-N-propylamine	50	32	64	(41-116)
Pentachlorophenol	75	63	84	(9-103)
Phenol	75	32	43	(12-110)
Pyrene	50	47	94	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	78	Phenol-d5	75	(10-94)	43
2-Fluorobiphenyl	50	(43-116)	84	2-Fluorophenol	75	(21-100)	69
Terphenyl-d14	50	(33-141)	107	2,4,6-Tribromophenol	75	(10-123)	123

Method Blank: 2016S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010733

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001 (MS)	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.01MS (MATRIX SPIKE)	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2054	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2054
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	56	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	53	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	53	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	10	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	5 J	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	55	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	17	N-Nitroso-Di-N-propylamine	10	32
Anthracene	10	ND	Pentachlorophenol	30	5 J
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	53

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	93	Phenol-d5	75	(10-94)	7 *
2-Fluorobiphenyl	50	(43-116)	97	2-Fluorophenol	75	(21-100)	8 *
Terphenyl-d14	50	(33-141)	115	2,4,6-Tribromphenol	75	(10-123)	11

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010734

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C7-1001 (MSD)	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.01MSD (MATRIX SPIKE DUPLICATE)	Date Received:	12/10/93
Project No.:	NA	Report No.:	D2056	Date Reported:	12/29/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/14/93	GC/MS File ID:	D2056
Sample Volume:	1000 ml	Date Analyzed:	12/17/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	60	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	53	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	63	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	43	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	42	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	63	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	19	N-Nitroso-Di-N-propylamine	10	39
Anthracene	10	ND	Pentachlorophenol	30	7
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	16
			Pyrene	10	66

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	100	Phenol-d5	75	(10-94)	23
2-Fluorobiphenyl	50	(43-116)	108	2-Fluorophenol	75	(21-100)	31
Terphenyl-d14	50	(33-141)	137	2,4,6-Tribromphenol	75	(10-123)	54

Method Blank: 2016S.WBLK1 LCS ID: 2016S.WLCS1 MS ID: 2016.01MS MSD ID: 2016.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010735

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 12/10/93
Date Reported: 12/29/93
Report No.: D205456

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZ

SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	2016.01	MS Sample ID:	2016.01MS	MSD Sample ID:	2016.01MSD
Date Analyzed:	12/17/93	Date Analyzed:	12/17/93	Date Analyzed:	12/17/93
GC/MS File ID:	D2055	GC/MS File ID:	D2054	GC/MS File ID:	D2056

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	56	112	(39-98)
1,4-Dichlorobenzene	50	ND	53	106	(36-97)
2,4-Dinitrotoluene	50	ND	53	106 *	(24-96)
2-Chlorophenol	75	ND	10	13 *	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7	(23-97)
4-Nitrophenol	75	ND	ND	0 *	(10-80)
Acenapthene	50	ND	55	110	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	32	64	(41-116)
Pentachlorophenol	75	ND	5	7	(9-103)
Phenol	75	ND	~~53~~ ND	~~71~~ 0	(12-110)
Pyrene	50	ND	53	106	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	60	120	6.9	~~42~~ 29	(39-98)
1,4-Dichlorobenzene	50	ND	53	106 *	0.0	~~40~~ 29	(36-97)
2,4-Dinitrotoluene	50	ND	63	126 *	17.2	~~28~~ 88	(24-96)
2-Chlorophenol	75	ND	43	57	126.1 *	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	42	56	155.6 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	ND	0	NC *	~~42~~ 50	(10-80)
Acenapthene	50	ND	63	126 *	13.6	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	39	78	19.7	~~50~~ 88	(41-116)
Pentachlorophenol	75	ND	7	9	28.6	~~38~~ 50	(9-103)
Phenol	75	ND	16	21	~~107.6 *~~ 200	~~50~~ 42	(12-110)
Pyrene	50	ND	66	132 *	21.8	31	(26-127)

* = Values outside of QC limits

RPD: 4 out of 11 outside limits
Spike Recovery: 12 out of 22 outside limits

000045

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW1-1001 (MS/DUP)
PDP Sample ID: 2009.01 (MS/DUP)
Report Number: I009MSD

Date Sampled: 12-06-93
Date Received: 12-07-93
Date Reported: 12-18-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	2.00	1.84	92
Antimony	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-14-93	12-20-93	ND	ND	NC	0.040	0.041	103
Barium	SW-846 6010	12-15-93	12-17-93	4.18	4.25	1.7	2.00	5.89	86
Beryllium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.047	94
Cadmium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.048	96
Calcium	SW-846 6010	12-15-93	12-17-93	120	122	1.7	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-17-93	0.080	0.108	30	0.20	0.28	100
Cobalt	SW-846 6010	12-15-93	12-17-93	0.033	0.030	9.5	0.50	0.50	93
Copper	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-17-93	1.33	1.51	13	1.00	2.29	96
Lead	SW-846 7421	12-14-93	12-17-93	ND	ND	NC	0.020	0.006	30
Magnesium	SW-846 6010	12-15-93	12-17-93	106	108	1.9	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-17-93	2.18	2.20	0.9	0.50	2.62	88
Mercury	SW-846 7470	12-20-93	12-21-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.50	100
Potassium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-14-93	12-21-93	ND	ND	NC	0.010	ND	0
Silver	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-17-93	339	348	2.6	NA	NA	NA
Thallium	SW-846 7841	12-14-93	12-20-93	ND	ND	NC	0.050	0.035	70
Vanadium	SW-846 6010	12-15-93	12-17-93	ND	ND	NC	0.50	0.47	94
Zinc	SW-846 6010	12-15-93	12-17-93	0.032	0.029	9.8	0.50	0.51	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:2001.PBW1

LCS ID: 2001.LCSW1

TCLP Blank ID: NA

LCSD ID: 2001.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C9-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.02 DL	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7148	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7148
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	5560
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	760
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	111
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C10-1001	Date Sampled:	12/09/93
Project Name:	LONGHORN AAP	PDP Sample ID:	2016.03 DL	Date Received:	12/10/93
Project No.:	NA	Report No.:	B7149	Date Reported:	12/29/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7149
Sample Volume:	5.0 ml	Date Analyzed:	12/21/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	5370 S
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	440
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	109
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 2015V.WBLK1 LCS ID: 2015V.WLCS1 MS ID: 2015.01MS MSD ID: 2015.01MSD DUP ID: NA

010739

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2069

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2069

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on January 28, 1994 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2069. Included in this work order are four (4) groundwater samples, one (1) field duplicate pair, and one (1) trip blank.

Groundwater Samples

LH18,24-MW15	LH18,24-MW125
LH18,24-MW15QC	LH18,24-MW22

Trip Blank

TB

Field Duplicates

Sample LH18,24-MW15QC is a field duplicate of LH18,24-MW15.

All samples were analyzed for volatile organic chemicals (VOCs). All VOC analyses were performed by U.S. EPA SW-846 Method 8240. Since the laboratory did not supply any of the analytical raw data in their deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were received chilled, although not acid preserved, in good condition, and were analyzed within the proper holding times.

Blank contamination was found in both the trip and method blanks for methylene chloride. As a result, sample values less than 10 times those found in the blanks were qualified as non-detects, "U". Note that while the value obtained during the 25 times dilution run for sample LH18,24-MW22 was qualified due blank contamination the original analysis was not. Since the original run contained such a high concentration of methylene chloride, and methylene chloride was found in other site samples, this result was qualified as estimated "J", and is the number reported on the validated data summary.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

The RPDs between results for sample LH18,24-MW15 and its field duplicate, were outside the 35 percent control limit for methylene chloride and trichloroethene. Therefore, the results for these compounds in these samples were qualified as estimated, "J". Note that the

result for methylene chloride in sample LH18,24-MW15 which was previously qualified "U" due to blank contamination was requalified "UJ", estimated.

Compound	Sample MW15	Duplicate MW15QC	RPD
Methylene chloride	685	1,085	45.2%
Trichloroethene	94	150	45.9%

All other field duplicate results were found to be comparable.

3.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Note that undiluted sample analyses were not provided for samples LH18,24-MW15, LH18,24-MW15QC, and LH18,24-MW22. As a result, the reported quantitation limits from these samples were elevated.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile fraction of any sample.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

4.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

5.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW15	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.01	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7701	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7701
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	685 B U J
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	94 J
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW15QC	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.02	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7702	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7702
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	1085 B J
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	150 J
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW22	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.03	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7703	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7703
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	3100 ~~B~~ J
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	~~25~~ 1307	~~1358 E~~
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	39 J

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW125	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.04	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7704	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7704
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	22 B S
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	114
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	TB	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.05	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7699	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7699
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW15	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.01	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7701	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7701
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	685 B
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	94
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW15QC	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.02	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7702	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7702
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	1085 B
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	150
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW22	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.03	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7703	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B7703
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
2-Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	3100 B,E
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	ND	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	ND
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	1358 E
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	39 J

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW22 (DL)	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.03DL (DILUTION)	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7708	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	25.00	GC/MS File ID:	B7708
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	25.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	125	ND	Carbon tetrachloride	125	ND
1,1,2,2-Tetrachloroethane	125	ND	Chlorobenzene	125	ND
1,1,2-Trichloroethane	125	ND	Chloroethane	250	ND
1,1-Dichloroethane	125	ND	Chloroform	125	ND
1,1-Dichloroethene	125	ND	Chloromethane	250	ND
1,2-Dichloroethane	125	ND	Cis-1,3-Dichloropropene	125	ND
1,2-Dichloropropane	125	ND	Dibromochloromethane	125	ND
2-Butanone	250	ND	Ethylbenzene	125	ND
2-Chloroethyl vinyl ether	250	ND	Methylene chloride	125	3244 B
2-Hexanone	250	ND	Styrene	125	ND
4-Methyl-2-pentanone	250	ND	Tetrachloroethene	125	ND
Acetone	250	ND	Toluene	125	ND
Benzene	125	ND	Total xylenes	125	ND
Bromodichloromethane	125	ND	Total-1,2-Dichloroethene	125	ND
Bromoform	125	ND	Trans-1,3-Dichloropropene	125	ND
Bromomethane	250	ND	Trichloroethene	125	1307
Carbon disulfide	125	ND	Vinyl acetate	250	ND
			Vinylchloride	250	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	109
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW125	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.04	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7704	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7704
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	22 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	114
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	TB	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.05	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7699	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7699
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	2379-262	Report No.:	B7697	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7697
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	7
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	TB	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.05	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7699	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7699
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW22 (DL)	Date Sampled:	01/28/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069.03DL (DILUTION)	Date Received:	01/29/94
Project No.:	2379-262	Report No.:	B7708	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	25.00	GC/MS File ID:	B7708
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	25.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	125	ND	Carbon tetrachloride	125	ND
1,1,2,2-Tetrachloroethane	125	ND	Chlorobenzene	125	ND
1,1,2-Trichloroethane	125	ND	Chloroethane	250	ND
1,1-Dichloroethane	125	ND	Chloroform	125	ND
1,1-Dichloroethene	125	ND	Chloromethane	250	ND
1,2-Dichloroethane	125	ND	Cis-1,3-Dichloropropene	125	ND
1,2-Dichloropropane	125	ND	Dibromochloromethane	125	ND
2-Butanone	250	ND	Ethylbenzene	125	ND
2-Chloroethyl vinyl ether	250	ND	Methylene chloride	125	3244 B U
2-Hexanone	250	ND	Styrene	125	ND
4-Methyl-2-pentanone	250	ND	Tetrachloroethene	125	ND
Acetone	250	ND	Toluene	125	ND
Benzene	125	ND	Total xylenes	125	ND
Bromodichloromethane	125	ND	Total-1,2-Dichloroethene	125	ND
Bromoform	125	ND	Trans-1,3-Dichloropropene	125	ND
Bromomethane	250	ND	Trichloroethene	125	1307
Carbon disulfide	125	ND	Vinyl acetate	250	ND
			Vinylchloride	250	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	109
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

010762

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2071

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2071

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on January 29, 1994 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2071. Included in this work order are three (3) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-C1
LH18,24-C4A
LH18,24-MW7

Trip Blank

TB

All samples were analyzed for volatile organic chemicals (VOCs). The VOC analyses were performed by U.S. EPA SW-846 Method 8240. Since the laboratory did not supply any of the analytical raw data in their deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory

control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were received chilled, although not acid preserved, in good condition, and were analyzed within the proper holding times.

Blank contamination was found for methylene chloride in both the trip and method blanks. As a result, values less than ten times the blank results were qualified as non-detects "U".

3.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Note that undiluted sample analyses were not provided for samples LH18,24-C1 LH18,24-C4A, and LH18,24-MW7. As a result, the reported quantitation limits from these samples were elevated.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile fraction of any sample.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

4.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. All results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

5.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	C1	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.01	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7705	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	20.00	GC/MS File ID:	B7705
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	20.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	100	ND	Carbon tetrachloride	100	ND
1,1,2,2-Tetrachloroethane	100	ND	Chlorobenzene	100	ND
1,1,2-Trichloroethane	100	ND	Chloroethane	200	ND
1,1-Dichloroethane	100	ND	Chloroform	100	ND
1,1-Dichloroethene	100	ND	Chloromethane	200	ND
1,2-Dichloroethane	100	ND	Cis-1,3-Dichloropropene	100	ND
1,2-Dichloropropane	100	ND	Dibromochloromethane	100	ND
2-Butanone	200	ND	Ethylbenzene	100	ND
2-Chloroethyl vinyl ether	200	ND	Methylene chloride	100	990 B U
2-Hexanone	200	ND	Styrene	100	ND
4-Methyl-2-pentanone	200	ND	Tetrachloroethene	100	ND
Acetone	200	ND	Toluene	100	ND
Benzene	100	ND	Total xylenes	100	ND
Bromodichloromethane	100	ND	Total-1,2-Dichloroethene	100	ND
Bromoform	100	ND	Trans-1,3-Dichloropropene	100	ND
Bromomethane	200	ND	Trichloroethene	100	339
Carbon disulfide	100	ND	Vinyl acetate	200	ND
			Vinylchloride	200	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	C4A	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.02	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7706	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	40.00	GC/MS File ID:	B7706
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	40.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	200	ND	Carbon tetrachloride	200	ND
1,1,2,2-Tetrachloroethane	200	ND	Chlorobenzene	200	ND
1,1,2-Trichloroethane	200	ND	Chloroethane	400	ND
1,1-Dichloroethane	200	ND	Chloroform	200	ND
1,1-Dichloroethene	200	ND	Chloromethane	400	ND
1,2-Dichloroethane	200	ND	Cis-1,3-Dichloropropene	200	ND
1,2-Dichloropropane	200	ND	Dibromochloromethane	200	ND
2-Butanone	400	ND	Ethylbenzene	200	ND
2-Chloroethyl vinyl ether	400	ND	Methylene chloride	200	3615 B
2-Hexanone	400	ND	Styrene	200	ND
4-Methyl-2-pentanone	400	ND	Tetrachloroethene	200	ND
Acetone	400	ND	Toluene	200	ND
Benzene	200	ND	Total xylenes	200	ND
Bromodichloromethane	200	ND	Total-1,2-Dichloroethene	200	ND
Bromoform	200	ND	Trans-1,3-Dichloropropene	200	ND
Bromomethane	400	ND	Trichloroethene	200	590
Carbon disulfide	200	ND	Vinyl acetate	400	ND
			Vinylchloride	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	105
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2069V.MBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW7	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.03	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7707	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B7707
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	100.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
2-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	1574 B U
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	12647
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	111
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	TB	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.04	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7700	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7700
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	C1	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.01	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7705	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	20.00	GC/MS File ID:	B7705
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	20.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	100	ND	Carbon tetrachloride	100	ND
1,1,2,2-Tetrachloroethane	100	ND	Chlorobenzene	100	ND
1,1,2-Trichloroethane	100	ND	Chloroethane	200	ND
1,1-Dichloroethane	100	ND	Chloroform	100	ND
1,1-Dichloroethene	100	ND	Chloromethane	200	ND
1,2-Dichloroethane	100	ND	Cis-1,3-Dichloropropene	100	ND
1,2-Dichloropropane	100	ND	Dibromochloromethane	100	ND
2-Butanone	200	ND	Ethylbenzene	100	ND
2-Chloroethyl vinyl ether	200	ND	Methylene chloride	100	990 B
2-Hexanone	200	ND	Styrene	100	ND
4-Methyl-2-pentanone	200	ND	Tetrachloroethene	100	ND
Acetone	200	ND	Toluene	100	ND
Benzene	100	ND	Total xylenes	100	ND
Bromodichloromethane	100	ND	Total-1,2-Dichloroethene	100	ND
Bromoform	100	ND	Trans-1,3-Dichloropropene	100	ND
Bromomethane	200	ND	Trichloroethene	100	339
Carbon disulfide	100	ND	Vinyl acetate	200	ND
			Vinylchloride	200	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	110
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	C4A	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.02	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7706	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	40.00	GC/MS File ID:	B7706
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	40.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	200	ND	Carbon tetrachloride	200	ND
1,1,2,2-Tetrachloroethane	200	ND	Chlorobenzene	200	ND
1,1,2-Trichloroethane	200	ND	Chloroethane	400	ND
1,1-Dichloroethane	200	ND	Chloroform	200	ND
1,1-Dichloroethene	200	ND	Chloromethane	400	ND
1,2-Dichloroethane	200	ND	Cis-1,3-Dichloropropene	200	ND
1,2-Dichloropropane	200	ND	Dibromochloromethane	200	ND
2-Butanone	400	ND	Ethylbenzene	200	ND
2-Chloroethyl vinyl ether	400	ND	Methylene chloride	200	3615 B
2-Hexanone	400	ND	Styrene	200	ND
4-Methyl-2-pentanone	400	ND	Tetrachloroethene	200	ND
Acetone	400	ND	Toluene	200	ND
Benzene	200	ND	Total xylenes	200	ND
Bromodichloromethane	200	ND	Total-1,2-Dichloroethene	200	ND
Bromoform	200	ND	Trans-1,3-Dichloropropene	200	ND
Bromomethane	400	ND	Trichloroethene	200	590
Carbon disulfide	200	ND	Vinyl acetate	400	ND
			Vinylchloride	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	105
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW7	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.03	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7707	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B7707
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	100.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
1,2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
2-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	1574 B
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	12647
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	111
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	TB	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.04	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7700	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7700
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2069V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	2379-262	Report No.:	B7697	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7697
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	7
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	100
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	TB	Date Sampled:	01/29/94
Project Name:	LONGHORN AAP 18 & 24	PDP Sample ID:	2071.04	Date Received:	01/31/94
Project No.:	2379-262	Report No.:	B7700	Date Reported:	01/31/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7700
Sample Volume:	5.0 ml	Date Analyzed:	01/31/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	104
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 2069V.WBLK1 LCS ID: 2069V.WLCS1 MS ID: 2051.01MS MSD ID: 2051.01MSD DUP ID: NA

010780

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2189

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2189

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on March 29, 1994 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2189. Included in this work order is one (1) groundwater sample. There were no field duplicates in this set of samples.

Groundwater Sample

LH18,24-C1-1001

The sample was analyzed for volatile organic chemicals (VOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, and sulfate. The VOC and metals analyses were performed by U.S. EPA SW-846 methodologies: 8240 and 6000/7000 series, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds and analytes were successfully analyzed in the site sample. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control

samples, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. The sample was preserved, was received in good condition, and was analyzed within the proper holding times. Blank contamination of methylene chloride (4 ug/l) and trichloroethene (3 ug/l) was found in the method blank. The result for methylene chloride was qualified "U", nondetect, because the result is less than ten (10) times the value of the blank contamination. The result for trichlorethene was not qualified because the result was greater than five (5) times the value of the blank contamination.

3.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

3.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

3.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

3.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

4.0 TAL Metals.

4.1 Accuracy. The LCS/LCSD percent recoveries of selenium were greater than the quality control limit. The sample result for selenium is less than the IDL, therefore, qualification is not necessary.

The percent recoveries of aluminum, antimony, iron, selenium, and silver in the matrix spike/matrix spike duplicate samples were below the quality control limits. All associated data less than the IDL were qualified "UJ", estimated, and all associated data greater than the IDL were qualified "J", estimated.

4.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges, except antimony and selenium. The LCS RPDs were greater than the quality control limit. The associated results have been previously qualified "J", estimated, so no further action was necessary.

4.3 Representativeness. The sample was properly preserved and was received in good condition by the laboratory. The sample was prepared and analyzed within appropriate holding times and all blanks were free of target analyte contamination.

5.0 Notes.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

Note that the reporting limits for some metals analyzed by graphite furnace atomic absorption were elevated due to dilutions performed for low recoveries of post-digest spike additions.

6.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be

accepted as qualified. All results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

7.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

010787

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-C1-1001	Date Sampled:	03/29/94
Project Name:	LAAP	PDP Sample ID:	2189.01	Date Received:	03/30/94
Project No.:	2379-352	Report No.:	B8386	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8386
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	33 B U
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	30
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	112
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2176.07MS MSD ID: 2176.07MSD DUP ID: MA

00009

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project Number: 2379-352

Client Sample ID: LH18&24-C1-1001
PDP Sample ID: 2189.01
Report Number: I18901

Date Sampled: 03-29-94
Date Received: 03-30-94
Date Reported: 04-12-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	03-31-94	04-05-94	0.1	0.30 J	MBB
Antimony	SW-846 6010	03-31-94	04-05-94	0.06	ND UJ	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	ND	MBB
Barium	SW-846 6010	03-31-94	04-05-94	0.01	0.546	MBB
Beryllium	SW-846 6010	03-31-94	04-05-94	0.005	ND	MBB
Cadmium	SW-846 6010	03-31-94	04-05-94	0.005	ND	MBB
Calcium	SW-846 6010	03-31-94	04-05-94	0.2	72.5	MBB
Chromium	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Cobalt	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Copper	SW-846 6010	03-31-94	04-05-94	0.02	0.045	MBB
Iron	SW-846 6010	03-31-94	04-05-94	0.1	0.55 J	MBB
Lead	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
Magnesium	SW-846 6010	03-31-94	04-05-94	0.2	54.6	MBB
Manganese	SW-846 6010	03-31-94	04-05-94	0.01	0.042	MBB
Mercury	SW-846 7470	03-30-94	03-31-94	0.0002	ND	DOC
Nickel	SW-846 6010	03-31-94	04-05-94	0.04	ND	MBB
Potassium	SW-846 6010	03-31-94	04-05-94	5	ND	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.01	ND UJ	MBB
Silver	SW-846 6010	03-31-94	04-05-94	0.01	ND UJ	MBB
Sodium	SW-846 6010	03-31-94	04-05-94	0.5	329	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Zinc	SW-846 6010	03-31-94	04-05-94	0.02	0.049	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2189.PBW2
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2176.PBW1

ICP LCS ID: 2189.LCSW3
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2176.LCSW1

ICP LCSD ID: 2189.LCSW4
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2176.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2176.02MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA DUP ID: 2176.02D

010789

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project No.: 2373-352

Date Reported: 04-12-94
Report No.: I189CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2189.01	LH1&&24-C1-1001	WATER	03-29-94	03-30-94	04-05-94	2	762			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-05-94	2	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-05-94	2	135	125		108
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-05-94	2	138	125	2.2	110
2176.01	NA	NA	NA	NA	04-05-94	2	21.3			
2176.01D	NA (DUP)	NA	NA	NA	04-05-94	2	21.3		0.0	
2176.01MS	NA (MS)	NA	NA	NA	04-05-94	2	39.0	17.7		100

000013

010790

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project No.: 2379-352

Date Reported: 04-12-94
Report No.: I189S04
Analyst: HM

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2189.01	LH18&24-C1-1001	WATER	03-29-94	03-30-94	04-06-94	5	20			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2176.01	NA	NA	NA	NA	04-06-94	50	ND			
2176.01D	NA (DUP)	NA	NA	NA	04-06-94	50	250	200		125
2176.01MS	NA (MS)	NA	NA	NA	04-06-94	50	231	200	7.9	116

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project No.: 2379-352

Date Reported: 04-12-94
Report No.: I189N03
Analyst: HM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2189.01	LH18&24-C1-1001	WATER	03-29-94	03-30-94	03-31-94	0.1	0.16			
				QUALITY ASSURANCE/QUALITY CONTROL						
2189.PB1	PREPARATION BLANK	NA	NA	NA	03-31-94	0.1	ND			
2189.LCS1	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40		88
2189.LCS2	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40	0.0	88
2188.05	NA	NA	NA	NA	03-31-94	0.1	0.12			
2188.05D	NA (DUP)	NA	NA	NA	03-31-94	0.1	0.11		8.7	
2188.05MS	NA (MS)	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

010793

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LAAP
Project No.: 2379-352

Client Sample ID: LH18&24-C1-1001
PDP Sample ID: 2189.01
Report No.: B8386

Date Sampled: 03/29/94
Date Received: 03/30/94
Date Reported: 04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B8386
Date Analyzed: 04/01/94
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	33 B
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	30
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	112
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2176.07MS MSD ID: 2176.07MSD DUP ID: NA

DNNNA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010794

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project Number: 2379-352

Client Sample ID: LH1&24-C1-1001
PDP Sample ID: 2189.01
Report Number: I18901

Date Sampled: 03-29-94
Date Received: 03-30-94
Date Reported: 04-12-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	03-31-94	04-05-94	0.1	0.30	MBB
Antimony	SW-846 6010	03-31-94	04-05-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	ND	MBB
Barium	SW-846 6010	03-31-94	04-05-94	0.01	0.546	MBB
Beryllium	SW-846 6010	03-31-94	04-05-94	0.005	ND	MBB
Cadmium	SW-846 6010	03-31-94	04-05-94	0.005	ND	MBB
Calcium	SW-846 6010	03-31-94	04-05-94	0.2	72.5	MBB
Chromium	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Cobalt	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Copper	SW-846 6010	03-31-94	04-05-94	0.02	0.045	MBB
Iron	SW-846 6010	03-31-94	04-05-94	0.1	0.55	MBB
‘ead	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
‚gnesium	SW-846 6010	03-31-94	04-05-94	0.2	54.6	MBB
Manganese	SW-846 6010	03-31-94	04-05-94	0.01	0.042	MBB
Mercury	SW-846 7470	03-30-94	03-31-94	0.0002	ND	DOC
Nickel	SW-846 6010	03-31-94	04-05-94	0.04	ND	MBB
Potassium	SW-846 6010	03-31-94	04-05-94	5	ND	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.01	ND	MBB
Silver	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Sodium	SW-846 6010	03-31-94	04-05-94	0.5	329	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	03-31-94	04-05-94	0.01	ND	MBB
Zinc	SW-846 6010	03-31-94	04-05-94	0.02	0.049	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2189.PBW2
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2176.PBW1

ICP LCS ID: 2189.LCSW3
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2176.LCSW1

ICP LCSD ID: 2189.LCSW4
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2176.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2176.02MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA DUP ID: 2176.02D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project No.: 2373-352

Date Reported: 04-12-94
Report No.: I189CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2189.01	LH18&24-C1-1001	WATER	03-29-94	03-30-94	04-05-94	2	762			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-05-94	2	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-05-94	2	135	125		108
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-05-94	2	138	125	2.2	110
2176.01	NA	NA	NA	NA	04-05-94	2	21.3			
2176.01D	NA (DUP)	NA	NA	NA	04-05-94	2	21.3		0.0	
2176.01MS	NA (MS)	NA	NA	NA	04-05-94	2	39.0	17.7		100

010796

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project No.: 2379-352

Date Reported: 04-12-94
Report No.: I189S04
Analyst: HM

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2189.01	LH18&24-C1-1001	WATER	03-29-94	03-30-94	04-06-94	5	20			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2176.01	NA	NA	NA	NA	04-06-94	50	ND			
2176.01D	NA (DUP)	NA	NA	NA	04-06-94	50	250	200		125
2176.01MS	NA (MS)	NA	NA	NA	04-06-94	50	231	200	7.9	116

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN
Project No.: 2379-352

Date Reported: 04-12-94
Report No.: I189N03
Analyst: HM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2189.01	LH18&24-C1-1001	WATER	03-29-94	03-30-94	03-31-94	0.1	0.16			
				QUALITY ASSURANCE/QUALITY CONTROL						
2189.PB1	PREPARATION BLANK	NA	NA	NA	03-31-94	0.1	ND			
2189.LCS1	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40		88
2189.LCS2	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40	0.0	88
2188.05	NA	NA	NA	NA	03-31-94	0.1	0.12			
2188.05D	NA (DUP)	NA	NA	NA	03-31-94	0.1	0.11		8.7	
2188.05MS	NA (MS)	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

Client Sample ID: NA (MS/MSD)
PDP MS ID: 2193.01MS
PDP MSD ID: 2193.01MSD
Report Number: 1193MS01

Date Sampled: NA
Date Received: NA
Date Reported: 04-13-94

TOTAL METALS (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)	MATRIX SPIKE DUP VALUE	PERCENT RECOVERY (75-125)	RPD (20)
Aluminum	SW-846 6010	03-31-94	04-05-94	3.62	2.00	4.14	26*	4.15	26*	0.2
Antimony	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.41	82	0.37	74*	10
Arsenic	SW-846 7060	04-06-94	04-08-94	ND	0.040	0.037	93	0.036	90	2.7
Barium	SW-846 6010	03-31-94	04-05-94	0.177	2.00	2.07	95	1.88	85	9.6
Beryllium	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.048	96	0.044	88	8.7
Cadmium	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.046	92	0.042	84	9.1
Calcium	SW-846 6010	03-31-94	04-05-94	4.3	NA	NA	NA	NA	NA	NA
Chromium	SW-846 6010	03-31-94	04-05-94	0.018	0.20	0.21	96	0.19	86	10
Cobalt	SW-846 6010	03-31-94	04-05-94	0.011	0.50	0.50	98	0.46	90	8.3
Copper	SW-846 6010	03-31-94	04-05-94	ND	0.25	0.25	100	0.23	92	8.3
Iron	SW-846 6010	03-31-94	04-05-94	3.78	1.00	4.14	36*	4.02	24*	2.9
Lead	SW-846 7421	04-06-94	04-07-94	ND	0.020	0.019	95	0.019	95	0.0
Magnesium	SW-846 6010	03-31-94	04-05-94	3.58	NA	NA	NA	NA	NA	NA
Manganese	SW-846 6010	03-31-94	04-05-94	0.140	0.50	0.62	96	0.57	86	8.4
Nickel	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.50	100	0.46	92	8.3
Potassium	SW-846 6010	03-31-94	04-05-94	ND	NA	NA	NA	NA	NA	NA
Selenium	SW-846 7740	04-06-94	04-08-94	ND	0.010	0.007	70*	0.009	90	25*
Silver	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.021	42*	0.019	38*	10
Sodium	SW-846 6010	03-31-94	04-05-94	79.4	NA	NA	NA	NA	NA	NA
Thallium	SW-846 7841	04-06-94	04-07-94	ND	0.050	0.047	94	0.045	90	4.3
Vanadium	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.49	98	0.45	90	8.5
Zinc	SW-846 6010	03-31-94	04-05-94	0.061	0.50	0.54	96	0.50	88	7.7

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA | LCS ID: NA | LCSD ID: NA

010800

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project No.: NA

Client Sample ID:NA
PDP Sample ID: 2188V.WBLK1 (METHOD BLANK)
Report No.: M8382

Date Sampled: NA
Date Received: NA
Date Reported: 04/05/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: M8382
Date Analyzed: 04/01/94
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	4 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

LCS ID: 2189.LCSW3
LCSD ID: 2189.LCSW4

Date Reported: 04-12-94
Report Number: 1189LCSW

METALS (LABORATORY CONTROL SAMPLE AND LABORATORY CONTROL SAMPLE DUPLICATE)

Sample Matrix: AQUEOUS

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	TRUE VALUE	LCS FOUND VALUE	LCS % RECOVERY (80-120)	LCSD FOUND VALUE	LCSD % RECOVERY (80-120)	RPD (20)	ANALYST
Aluminum	SW-846 6010	03-31-94	04-05-94	10.0	9.8	98	9.6	96	2.1	MBB
Antimony	SW-846 6010	03-31-94	04-05-94	5.00	4.12	82	5.07	101	21*	MBB
Barium	SW-846 6010	03-31-94	04-05-94	10.0	9.9	99	9.6	96	3.2	MBB
Beryllium	SW-846 6010	03-31-94	04-05-94	0.25	0.25	100	0.25	100	0.0	MBB
Cadmium	SW-846 6010	03-31-94	04-05-94	2.50	2.41	96	2.35	94	2.5	MBB
Calcium	SW-846 6010	03-31-94	04-05-94	25.0	24.5	98	24.5	98	0.0	MBB
Chromium	SW-846 6010	03-31-94	04-05-94	1.00	1.00	100	0.99	99	1.0	MBB
Cobalt	SW-846 6010	03-31-94	04-05-94	2.50	2.49	100	2.48	99	0.4	MBB
Copper	SW-846 6010	03-31-94	04-05-94	1.25	1.25	100	1.24	99	0.8	MBB
Iron	SW-846 6010	03-31-94	04-05-94	5.00	4.96	99	4.91	98	1.0	MBB
`gnesium	SW-846 6010	03-31-94	04-05-94	25.0	24.4	98	24.5	98	0.4	MBB
.anganese	SW-846 6010	03-31-94	04-05-94	2.50	2.48	99	2.45	98	1.2	MBB
Nickel	SW-846 6010	03-31-94	04-05-94	2.50	2.50	100	2.50	100	0.0	MBB
Potassium	SW-846 6010	03-31-94	04-05-94	25.0	25.1	100	23.4	94	7.0	MBB
Silver	SW-846 6010	03-31-94	04-05-94	1.25	1.16	93	1.22	98	5.0	MBB
Sodium	SW-846 6010	03-31-94	04-05-94	25.0	24.2	97	23.7	95	2.1	MBB
Vanadium	SW-846 6010	03-31-94	04-05-94	2.50	2.48	99	2.43	97	2.0	MBB
Zinc	SW-846 6010	03-31-94	04-05-94	2.50	2.44	98	2.45	98	0.4	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: 2189.PBW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

LCS ID: 2188.LCSW1
LCSD ID: 2188.LCSW2

Date Reported: 04-12-94
Report Number: 1188LCSW

METALS (LABORATORY CONTROL SAMPLE AND LABORATORY CONTROL SAMPLE DUPLICATE)

Sample Matrix: AQUEOUS

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	TRUE VALUE	LCS FOUND VALUE	LCS % RECOVERY (80-120)	LCSD FOUND VALUE	LCSD % RECOVERY (80-120)	RPD (20)	ANALYST
Arsenic	SW-846 7060	04-06-94	04-08-94	0.050	0.047	94	0.048	96	2.1	MBB
Lead	SW-846 7421	04-06-94	04-07-94	0.050	0.053	106	0.051	102	3.8	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.050	0.067	134*	0.070	140*	4.4	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.050	0.052	104	0.051	102	1.9	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: 2188.PBW1

010803

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2193

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2193

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on March 30, 1994 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2193. Included in this work order are two (2) groundwater samples, including one (1) field duplicate, and one (1) trip blank.

Groundwater Samples

LH18,24-AWD2-1001
LH18,24-AWD2-1001(QC)

Trip Blank

LH18,24-AWD2-1001-TB

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, and sulfate. The trip blank was only analyzed for VOCs. All VOC and metals analyses were performed by U.S. EPA SW-846 methodologies: 8240 and 6000/7000 series, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality

assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits, except for trichloroethene in the LCS. The percent recovery of trichloroethene was greater than quality control limits in the LCS. All associated positive results were qualified "J", estimated. The results that were qualified "U" due to blank contamination were requalified "UJ", estimated.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

Blank contamination was identified in laboratory and field blanks for acetone (11 μg/L), methylene chloride (6 μg/L), and trichloroethene (6 μg/L). Associated sample results less than ten (10) times the amount of contamination for acetone and methylene chloride and five (5) times the amount of contamination for trichloroethene were qualified "U", non-detect.

Note that the value found for trichloroethene in the dilution run for sample LH18,24-AWD2-1001-QC was qualified due to blank contamination while the original analysis result was not. Since such a large value was reported in the original analysis and the dilution result was compromised due to the blank contamination, the original analysis result was retained on the validated data summary and is qualified as estimated, "J".

The dilutions of samples LH18,24-AWD2-1001 and LH18,24-AWD2-1001-QC were large enough that compounds that were found above the highest calibration standard in the original analyses were diluted out. As a result, the original sample results are reported in these instances and were qualified "J", estimated.

Please note that although the values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

The RPDs of field duplicates were within quality control limits except for methylene chloride and trichloroethene in the diluted samples. All associated data were qualified "J", estimated in both the sample and the sample duplicate.

Sample	Compound	Concentration (μg/L)	RPD
LH18,24-AWD2-1001(DL)	Methylene Chloride Trichloroethene	28000 11400	
LH18,24-AWD2-1001-QC(DL)	Methylene Chloride trichloroethene	19400 7200	36 45

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. All laboratory duplicate, LCS, and MS/MSD RPDs were within acceptable control limits.

4.3 **Representativeness.** All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

An examination of the field duplicates found them to be comparable.

5.0 TAL Metals.

5.1 **Accuracy.** The percent recovery for silver in the LCS sample was less than fifty (50) percent and below quality control limits, therefore, all associated results were qualified "R", unusable, as they were all non-detect.

The percent recovery for selenium was greater than quality control limits. All results were greater than the IDL, therefore, no qualification of the data was necessary.

The percent recoveries for aluminum, antimony, iron, selenium, and silver, were outside of quality control limits in the matrix spike/matrix spike duplicate sample. All associated results greater than the IDL were qualified "J", estimated. All associated results less than the IDL were qualified "UJ", estimated. The only exception is the results for silver that have previously been qualified "R", unusable.

5.2 **Precision.** The RPD of silver in the LCS was greater than quality control limits. This would indicate a qualification of results with a "J", estimated, however, this data has been previously qualified "R", unusable.

The RPD of selenium in the MS/MSD sample was greater than quality control limits. Associated results, all being less than the IDL, were qualified "UJ", estimated.

5.3 **Representativeness.** All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times.

The RPD of field duplicate samples was greater than quality control limits for zinc. All associated results in the sample and the duplicate were qualified "J", estimated.

Sample	Element	Concentration (mg/l)	RPD
LH18,24-AWD2-1001	Zinc	0.061	
LH18,24-AWD2-1001(QC)	Zinc	0.034	56

6.0 Notes.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

Samples LH18,24-AWD2-1001 and LH18,24-AWD2-1001 (QC) were analyzed at a 1:250 dilution due to high analyte concentrations.

RPDs of field duplicates were calculated by comparing sample to sample QC, and to diluted sample to diluted sample QC.

Sample LH18,24-AWD2-1001-LD (lab duplicate) is listed on the chain-of-custody, but no analyses were performed.

7.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

8.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

010811

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18424-AWD2-1001	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2193.01	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8389	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8389
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	10
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
?-Dichloroethane	5	620 J	Cis-1,3-Dichloropropene	5	ND
.,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	1250 5	25000 ~~5700 J~~
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	38 U	Toluene	5	25
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	20
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	1250 5	11400 ~~3300 J~~
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	107
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	90

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001-QC	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2193.02	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8393	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8393
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	8
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
',2-Dichloroethane	5	450 K J	Cis-1,3-Dichloropropene	5	ND
.,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	1200 5	19400 ~~5200 K J~~
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	30 U	Toluene	5	17
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	17
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	2900 ~~2900 K J~~
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	105
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	92

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010813

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001-TB	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2193.04	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8519	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8519
Sample Volume:	5.0 ml	Date Analyzed:	04/12/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	11	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	6
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010814

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project Number: 2379

Client Sample ID: LH18&24-AWD2-1001
PDP Sample ID: 2193.01
Report Number: I19301

Date Sampled: 03-30-94
Date Received: 03-31-94
Date Reported: 04-12-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	0.1	3.62 J	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	0.06	ND UJ	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	ND	MBB
Barium	SW-846 6010	04-06-94	04-08-94	0.01	0.177	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	0.2	4.3	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	0.01	0.018	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	0.01	0.011	MBB
Copper	SW-846 6010	04-06-94	04-08-94	0.02	ND	MBB
Iron	SW-846 6010	04-06-94	04-08-94	0.1	3.78 J	MBB
d	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
agnesium	SW-846 6010	04-06-94	04-08-94	0.2	3.6	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	0.01	0.140	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-06-94	04-08-94	0.04	ND	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	5	ND	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.005	ND UJ	MBB
Silver	SW-846 6010	04-06-94	04-08-94	0.01	ND R	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	0.5	79.4	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	0.02	0.061 J	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2188.PBW1
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2188.LCSW1
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2188.LCSW2
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA MSD ID: 2193.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project Number: 2379

Client Sample ID: LH18&24-AWD2-1001-QC
PDP Sample ID: 2193.02
Report Number: I19302

Date Sampled: 03-30-94
Date Received: 03-31-94
Date Reported: 04-12-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	0.1	2.88 J	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	0.06	ND UJ	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	ND	MBB
Barium	SW-846 6010	04-06-94	04-08-94	0.01	0.167	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	0.2	3.9	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	0.01	0.016	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	0.01	0.013	MBB
Copper	SW-846 6010	04-06-94	04-08-94	0.02	ND	MBB
[illegible]	SW-846 6010	04-06-94	04-08-94	0.1	3.33 J	MBB
[illegible]	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
Magnesium	SW-846 6010	04-06-94	04-08-94	0.2	3.4	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	0.01	0.130	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-06-94	04-08-94	0.04	ND	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	5	ND	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.01	ND UJ	MBB
Silver	SW-846 6010	04-06-94	04-08-94	0.01	ND R	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	0.5	80.1	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	0.02	0.034 J	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2188.PBW1
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2188.LCSW1
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2188.LCSW2
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA MSD ID: 2193.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.:2379

Date Reported: 04-13-94
Report No.: I193CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2193.01	LH18&24-AWD2-1001	WATER	03-30-94	03-31-94	04-05-94	2	99			
2193.02	LH18&24-AWD2-1001-QC	WATER	03-30-94	03-31-94	04-05-94	2	92			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-05-94	2	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-05-94	2	135	125		108
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-05-94	2	138	125	2.2	110
2193.01D	LH18&24-AWD2-1001(DUP)	NA	NA	NA	04-05-94	2	99		0.0	
2193.01MS	LH18&24-AWD2-1001(MS)	NA	NA	NA	04-05-94	2	120	17.7		119

010817

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I193N03
Analyst: HM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2193.01	LH18&24-AWD2-1001	WATER	03-30-94	03-31-94	03-31-94	0.1	0.45			
2193.02	LH18&24-AWD2-1001-QC	WATER	03-30-94	03-31-94	03-31-94	0.1	0.36			
				QUALITY ASSURANCE/QUALITY CONTROL						
2189.PB1	PREPARATION BLANK	NA	NA	NA	03-31-94	0.1	ND			
2189.LCS1	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40		88
2189.LCS2	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40	0.0	88
2188.05	NA	NA	NA	NA	03-31-94	0.1	0.12			
2188.05D	NA (DUP)	NA	NA	NA	03-31-94	0.1	0.11		8.7	
88.05MS	NA (MS)	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

010818

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name:LHAAP-18+24 PHASE I
Project No.:2379

Date Reported: 04-13-94
Report No.: I193S04
Analyst. HM

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2193.01	LH18&24-AWD2-1001	WATER	03-30-94	03-31-94	04-06-94	25	41			
2193.02	LH18&24-AWD2-1001-QC	WATER	03-30-94	03-31-94	04-06-94	10	49			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2193.01MS	LH18&24-AWD2-1001(MS)	NA	NA	NA	04-06-94	25	133	100		92
2193.01MSD	LH18&24-AWD2-1001(MSD)	NA	NA	NA	04-06-94	25	132	100	0.8	91

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

010820

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2193.01	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8389	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8389
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	10
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	620 E	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5700 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	38	Toluene	5	25
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	20
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3300 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	107
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	90

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001(DL)	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE 1	PDP Sample ID:	2193.01 (DILUTION)	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8487	Date Reported:	04/08/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	250.00	GC/MS File ID:	B8487
Sample Volume:	20.0 UL	Date Analyzed:	04/08/94
Dilution:	250.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	1250	ND	Carbon tetrachloride	1250	ND
1,1,2,2-Tetrachloroethane	1250	ND	Chlorobenzene	1250	ND
1,1,2-Trichloroethane	1250	ND	Chloroethane	2500	ND
1,1-Dichloroethane	1250	ND	Chloroform	1250	ND
1,1-Dichloroethene	1250	ND	Chloromethane	2500	ND
1,2-Dichloroethane	1250	ND	Cis-1,3-Dichloropropene	1250	ND
? ?-Dichloropropane	1250	ND	Dibromochloromethane	1250	ND
Butanone	2500	ND	Ethylbenzene	1250	ND
2-Chloroethyl vinyl ether	2500	ND	Methylene chloride	1250	28000
2-Hexanone	2500	ND	Styrene	1250	ND
4-Methyl-2-pentanone	2500	ND	Tetrachloroethene	1250	ND
Acetone	2500	ND	Toluene	1250	ND
Benzene	1250	ND	Total xylenes	1250	ND
Bromodichloromethane	1250	ND	Total-1,2-Dichloroethene	1250	ND
Bromoform	1250	ND	Trans-1,3-Dichloropropene	1250	ND
Bromomethane	2500	ND	Trichloroethene	1250	11400
Carbon disulfide	1250	ND	Vinyl acetate	2500	ND
			Vinylchloride	2500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	12500	(76-114)	89
Toluene-d8	12500	(88-110)	90
Bromofluorobenzene	12500	(86-115)	97

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001-QC	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2193.02	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8393	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8393
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	8
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	450 E	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5200 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	30	Toluene	5	17
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	17
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	2900 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	105
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	92

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010823

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001-QC(DL)	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE 1	PDP Sample ID:	2193.02 (DILUTION)	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8487	Date Reported:	04/08/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	250.00	GC/MS File ID:	B8488
Sample Volume:	20.0 UL	Date Analyzed:	04/08/94
Dilution:	250.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	1250	ND	Carbon tetrachloride	1250	ND
1,1,2,2-Tetrachloroethane	1250	ND	Chlorobenzene	1250	ND
1,1,2-Trichloroethane	1250	ND	Chloroethane	2500	ND
1,1-Dichloroethane	1250	ND	Chloroform	1250	ND
1,1-Dichloroethene	1250	ND	Chloromethane	2500	ND
1,2-Dichloroethane	1250	ND	Cis-1,3-Dichloropropene	1250	ND
1,2-Dichloropropane	1250	ND	Dibromochloromethane	1250	ND
-Butanone	2500	ND	Ethylbenzene	1250	ND
2-Chloroethyl vinyl ether	2500	ND	Methylene chloride	1250	19400
2-Hexanone	2500	ND	Styrene	1250	ND
4-Methyl-2-pentanone	2500	ND	Tetrachloroethene	1250	ND
Acetone	2500	ND	Toluene	1250	ND
Benzene	1250	ND	Total xylenes	1250	ND
Bromodichloromethane	1250	ND	Total-1,2-Dichloroethene	1250	ND
Bromoform	1250	ND	Trans-1,3-Dichloropropene	1250	ND
Bromomethane	2500	ND	Trichloroethene	1250	7200
Carbon disulfide	1250	ND	Vinyl acetate	2500	ND
			Vinylchloride	2500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	12500	(76-114)	93
Toluene-d8	12500	(88-110)	97
Bromofluorobenzene	12500	(86-115)	104

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

000013

010824

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001-TB	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2193.04	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8519	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8519
Sample Volume:	5.0 ml	Date Analyzed:	04/12/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	11	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	6
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010825

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project Number: 2379

Client Sample ID: LH18&24-AWD2-1001
PDP Sample ID: 2193.01
Report Number: I19301

Date Sampled: 03-30-94
Date Received: 03-31-94
Date Reported: 04-12-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	0.1	3.62	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	ND	MBB
Barium	SW-846 6010	04-06-94	04-08-94	0.01	0.177	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	0.2	4.3	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	0.01	0.018	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	0.01	0.011	MBB
Copper	SW-846 6010	04-06-94	04-08-94	0.02	ND	MBB
Iron	SW-846 6010	04-06-94	04-08-94	0.1	3.78	MBB
Lead	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
Magnesium	SW-846 6010	04-06-94	04-08-94	0.2	3.6	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	0.01	0.140	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-06-94	04-08-94	0.04	ND	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	5	ND	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.005	ND	MBB
Silver	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	0.5	79.4	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	0.02	0.061	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2188.PBW1
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2188.LCSW1
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2188.LCSW2
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA MSD ID: 2193.01MSD

010826

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project Number: 2379

Client Sample ID: LH18&24-AWD2-1001-QC
PDP Sample ID: 2193.02
Report Number: I19302

Date Sampled: 03-30-94
Date Received: 03-31-94
Date Reported: 04-12-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	0.1	2.88	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	ND	MBB
Barium	SW-846 6010	04-06-94	04-08-94	0.01	0.167	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	0.2	3.9	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	0.01	0.016	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	0.01	0.013	MBB
Copper	SW-846 6010	04-06-94	04-08-94	0.02	ND	MBB
Iron	SW-846 6010	04-06-94	04-08-94	0.1	3.33	MBB
d	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
Magnesium	SW-846 6010	04-06-94	04-08-94	0.2	3.4	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	0.01	0.130	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-06-94	04-08-94	0.04	ND	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	5	ND	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.01	ND	MBB
Silver	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	0.5	80.1	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	0.02	0.034	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2188.PBW1
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2188.LCSW1
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2188.LCSW2
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA MSD ID: 2193.01MSD

010827

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.:2379

Date Reported: 04-13-94
Report No.: I193CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2193.01	LH18&24-AWD2-1001	WATER	03-30-94	03-31-94	04-05-94	2	99			
2193.02	LH18&24-AWD2-1001-QC	WATER	03-30-94	03-31-94	04-05-94	2	92			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-05-94	2	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-05-94	2	135	125		108
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-05-94	2	138	125	2.2	110
2193.01D	LH18&24-AWD2-1001(DUP)	NA	NA	NA	04-05-94	2	99		0.0	
2193.01MS	LH18&24-AWD2-1001(MS)	NA	NA	NA	04-05-94	2	120	17.7		119

010828

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I193H03
Analyst: HM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2193.01	LH18&24-AWD2-1001	WATER	03-30-94	03-31-94	03-31-94	0.1	0.45			
2193.02	LH18&24-AWD2-1001-QC	WATER	03-30-94	03-31-94	03-31-94	0.1	0.36			
			QUALITY ASSURANCE/QUALITY CONTROL							
2189.PB1	PREPARATION BLANK	NA	NA	NA	03-31-94	0.1	ND			
2189.LCS1	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40		88
2189.LCS2	LAB CONTROL STD	NA	NA	NA	03-31-94	0.1	0.35	0.40	0.0	88
2188.05	NA	NA	NA	NA	03-31-94	0.1	0.12			
2188.05D	NA (DUP)	NA	NA	NA	03-31-94	0.1	0.11		8.7	
88.05MS	NA (MS)	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

010829

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name:LHAAP-18+24 PHASE I
Project No.:2379

Date Reported: 04-13-94
Report No.: I193S04
Analyst. HM

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2193.01	LH18&24-AWD2-1001	WATER	03-30-94	03-31-94	04-06-94	25	41			
2193.02	LH18&24-AWD2-1001-QC	WATER	03-30-94	03-31-94	04-06-94	10	49			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2193.01MS	LH18&24-AWD2-1001(MS)	NA	NA	NA	04-06-94	25	133	100		92
2193.01MSD	LH18&24-AWD2-1001(MSD)	NA	NA	NA	04-06-94	25	132	100	0.8	91

APPENDIX B
SUPPORT DOCUMENTATION

010831

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

Client Sample ID: NA (MS/MSD)
PDP MS ID: 2193.01MS
PDP MSD ID: 2193.01MSD
Report Number: I193MS01

Date Sampled: NA
Date Received: NA
Date Reported: 04-12-94

TOTAL METALS (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)	MATRIX SPIKE DUP VALUE	PERCENT RECOVERY (75-125)	RPD (20)
Aluminum	SW-846 6010	03-31-94	04-05-94	3.62	2.00	4.14	26*	4.15	26*	0.2
Antimony	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.41	82	0.37	74*	10
Arsenic	SW-846 7060	04-06-94	04-08-94	ND	0.040	0.037	93	0.036	90	2.7
Barium	SW-846 6010	03-31-94	04-05-94	0.177	2.00	2.07	95	1.88	85	9.6
Beryllium	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.048	96	0.044	88	8.7
Cadmium	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.046	92	0.042	84	9.1
Calcium	SW-846 6010	03-31-94	04-05-94	4.3	NA	NA	NA	NA	NA	NA
Chromium	SW-846 6010	03-31-94	04-05-94	0.018	0.20	0.21	96	0.19	86	10
Cobalt	SW-846 6010	03-31-94	04-05-94	0.011	0.50	0.50	98	0.46	90	8.3
Copper	SW-846 6010	03-31-94	04-05-94	ND	0.25	0.25	100	0.23	92	8.3
Iron	SW-846 6010	03-31-94	04-05-94	3.78	1.00	4.14	36*	4.02	24*	2.9
Lead	SW-846 7421	04-06-94	04-07-94	ND	0.020	0.019	95	0.019	95	0.0
Magnesium	SW-846 6010	03-31-94	04-05-94	3.58	NA	NA	NA	NA	NA	NA
Manganese	SW-846 6010	03-31-94	04-05-94	0.140	0.50	0.62	96	0.57	86	8.4
Mercury	SW-846 7470	04-07-94	04-08-94	ND	0.0010	0.0009	90	0.0010	100	10.5
Nickel	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.50	100	0.46	92	8.3
Potassium	SW-846 6010	03-31-94	04-05-94	ND	NA	NA	NA	NA	NA	NA
Selenium	SW-846 7740	04-06-94	04-08-94	ND	0.010	0.007	70*	0.009	90	25*
Silver	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.021	42*	0.019	38*	10
Sodium	SW-846 6010	03-31-94	04-05-94	79.4	NA	NA	NA	NA	NA	NA
Thallium	SW-846 7841	04-06-94	04-07-94	ND	0.050	0.047	94	0.045	90	4.3
Vanadium	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.49	98	0.45	90	8.5
Zinc	SW-846 6010	03-31-94	04-05-94	0.061	0.50	0.54	96	0.50	88	7.7

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA

LCS ID: NA

LCSD ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010832

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

LCS ID: 2188.LCSW1
LCSD ID: 2188.LCSW2

Date Reported: 04-12-94
Report Number: I188LCSW

METALS (LABORATORY CONTROL SAMPLE AND LABORATORY CONTROL SAMPLE DUPLICATE)

Sample Matrix: AQUEOUS

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	TRUE VALUE	LCS FOUND VALUE	LCS % RECOVERY (80-120)	LCSD FOUND VALUE	LCSD % RECOVERY (80-120)	RPD (20)	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	10.0	9.27	93	9.03	90	2.6	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	5.00	4.72	94	4.61	92	2.4	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.050	0.047	94	0.048	96	2.1	MBB
Barium	SW-846 6010	04-06-94	04-08-94	10.0	9.24	92	8.98	90	2.9	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.25	0.24	96	0.23	92	4.3	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	2.50	2.33	93	2.27	91	2.6	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	25.0	23.7	95	23.1	92	2.6	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	1.00	0.96	96	0.94	94	2.1	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	2.50	2.38	95	2.33	93	2.1	MBB
Copper	SW-846 6010	04-06-94	04-08-94	1.25	1.17	94	1.14	91	2.6	MBB
	SW-846 6010	04-06-94	04-08-94	5.00	4.68	94	4.56	91	2.6	MBB
Lead	SW-846 7421	04-06-94	04-07-94	0.050	0.053	106	0.051	102	3.8	MBB
Magnesium	SW-846 6010	04-06-94	04-08-94	25.0	23.4	94	22.8	91	2.6	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	2.50	2.35	94	2.29	92	2.6	MBB
Nickel	SW-846 6010	04-06-94	04-08-94	2.50	2.39	96	2.33	93	2.5	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	25.0	24.4	98	23.5	94	3.8	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.050	0.067	134*	0.070	140*	4.4	MBB
Silver	SW-846 6010	04-06-94	04-08-94	1.25	0.77	62*	0.46	37*	50*	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	25.0	23.2	93	22.7	91	2.2	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.050	0.052	104	0.051	102	1.9	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	2.50	2.35	94	2.29	92	2.6	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	2.50	2.34	94	2.29	92	2.2	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: 2188.PBW1

010833

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379
Client Sample ID: LH18&24-AWD2-1001-TB
PDP Sample ID: 2193.04
Report No.: B8519
Date Sampled: 03/30/94
Date Received: 03/31/94
Date Reported: 04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0
Method Ref.: SW846-8240
GC/MS File ID: B8519
Date Analyzed: 04/12/94
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	11	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	6
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010834

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project No.: NA

Client Sample ID: NA
PDP Sample ID: 2188V.WBLK1 (METHOD BLANK)
Report No.: M8382

Date Sampled: NA
Date Received: NA
Date Reported: 04/05/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: M8382
Date Analyzed: 04/01/94
Analyst: NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
' 2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	4 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010024

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2196V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B8473	Date Reported:	04/11/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8473
Sample Volume:	5.0 ml	Date Analyzed:	04/07/94
Dilution:	1.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010836

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project No.: NA

Client Sample ID: LH18824-AWD2-1001(MSD)
PDP Sample ID: 2193.01(MATRIX SPIKE DUP)
Report No.: B8391

Date Sampled: NA
Date Received: NA
Date Reported: 04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B8391
Date Analyzed: 04/01/94
Analyst: NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	46
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	10
1,1-Dichloroethene	5	58	Chloromethane	10	ND
1,2-Dichloroethane	5	620 E	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5800 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	38	Toluene	5	75
Benzene	5	55	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	20
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3200 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: NA MSD ID: NA DUP ID: ND

000031

010837

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	LH18&24-AWD2-1001(MS)	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2193.01(MATRIX SPIKE)	Date Received:	NA
Project No.:	NA	Report No.:	B8390	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8390
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	44
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	10
1,1-Dichloroethene	5	57	Chloromethane	10	ND
1,2-Dichloroethane	5	640 E	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
4-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6000 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	38	Toluene	5	73
Benzene	5	54	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	20
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3340 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	103
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010838

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project No.: NA

Date Received: NA
Date Reported: 04/12/94
Report No.: B839091QC

GC/MS-VOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8240 Sample Matrix: WATER Analyst: NA

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 2193.01	MS Sample ID: 2193.01MS	MSD Sample ID: 2193.01MSD
Date Analyzed: 04/01/94	Date Analyzed: 04/01/94	Date Analyzed: 04/01/94
GC/MS File ID: B8389	GC/MS File ID: B8390	GC/MS File ID: B8391

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,-Dichloroethene	50	ND	57	114	(61-145)
..zene	50	ND	54	108	(76-127)
Chlorobenzene	50	ND	44	88	(75-130)
Toluene	50	25	134 96	96	(76-125)
Trichloroethene	50	3300	**	**	(71-120)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	58	116	1.7	14	(61-145)
Benzene	50	ND	55	110	1.8	11	(76-127)
Chlorobenzene	50	ND	46	92	4.4	13	(75-130)
Toluene	50	25	154 98	98	2.1	13	(76-125)
Trichloroethene	50	3300	**	**	NC	14	(71-120)

* = Values outside of QC limits
** = High analyte concentration in the sample prevented an accurate determination of the spike recovery.

RPD: 1 out of 5 outside limits
Spike Recovery: 1 out of 10 outside limits

010839

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2195V.WLCS1(LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	B8516	Date Reported:	04/18/94

GC/MS-VOLATILES

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8516
Sample Volume:	5.0 ml	Date Analyzed:	04/12/94
Dilution:	1.0	Analyst:	NA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	60	120	(61-145)
Benzene	50	60	120	(76-127)
Chlorobenzene	50	56	112	(75-130)
Toluene	50	59	118	(76-125)
Trichloroethene	50	61	122 *	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	106

Method Blank: 2195V.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project No.: NA

Client Sample ID: NA
PDP Sample ID: 2196V.WLCS1 (LAB CONTROL SAMPLE)
Report No.: B8474

Date Sampled: NA
Date Received: NA
Date Reported: 04/11/94

GC/MS-VOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B8474
Date Analyzed: 04/07/94
Analyst: MA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	60	120	(61-145)
Benzene	50	63	126	(76-127)
Chlorobenzene	50	58	116	(75-130)
Toluene	50	61	122	(76-125)
Trichloroethene	50	62	124 *	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	99

Method Blank: 2196V.WLCS1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010841

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD2-1001(DL)	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE 1	PDP Sample ID:	2193.01 (DILUTION)	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8487	Date Reported:	04/08/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	250.00	GC/MS File ID:	B8487
Sample Volume:	20.0 UL	Date Analyzed:	04/08/94
Dilution:	250.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	1250	ND	Carbon tetrachloride	1250	ND
1,1,2,2-Tetrachloroethane	1250	ND	Chlorobenzene	1250	ND
1,1,2-Trichloroethane	1250	ND	Chloroethane	2500	ND
1,1-Dichloroethane	1250	ND	Chloroform	1250	ND
1,1-Dichloroethene	1250	ND	Chloromethane	2500	ND
1,2-Dichloroethane	1250	ND	Cis-1,3-Dichloropropene	1250	ND
2-Dichloropropane	1250	ND	Dibromochloromethane	1250	ND
Butanone	2500	ND	Ethylbenzene	1250	ND
2-Chloroethyl vinyl ether	2500	ND	Methylene chloride	1250	28000 J
2-Hexanone	2500	ND	Styrene	1250	ND
4-Methyl-2-pentanone	2500	ND	Tetrachloroethene	1250	ND
Acetone	2500	ND	Toluene	1250	ND
Benzene	1250	ND	Total xylenes	1250	ND
Bromodichloromethane	1250	ND	Total-1,2-Dichloroethene	1250	ND
Bromoform	1250	ND	Trans-1,3-Dichloropropene	1250	ND
Bromomethane	2500	ND	Trichloroethene	1250	11400 J
Carbon disulfide	1250	ND	Vinyl acetate	2500	ND
			Vinylchloride	2500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	12500	(76-114)	89
Toluene-d8	12500	(88-110)	90
Bromofluorobenzene	12500	(86-115)	97

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010842

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18424-AWD2-1001-QC(DL)	Date Sampled:	03/30/94
Project Name:	LHAAP-18+24 PHASE 1	PDP Sample ID:	2193.02 (DILUTION)	Date Received:	03/31/94
Project No.:	2379	Report No.:	B8487	Date Reported:	04/08/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	250.00	GC/MS File ID:	B8488
Sample Volume:	20.0 UL	Date Analyzed:	04/08/94
Dilution:	250.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	1250	ND	Carbon tetrachloride	1250	ND
1,1,2,2-Tetrachloroethane	1250	ND	Chlorobenzene	1250	ND
1,1,2-Trichloroethane	1250	ND	Chloroethane	2500	ND
1,1-Dichloroethane	1250	ND	Chloroform	1250	ND
1,1-Dichloroethene	1250	ND	Chloromethane	2500	ND
1,2-Dichloroethane	1250	ND	Cis-1,3-Dichloropropene	1250	ND
1,2-Dichloropropane	1250	ND	Dibromochloromethane	1250	ND
-Butanone	2500	ND	Ethylbenzene	1250	ND
2-Chloroethyl vinyl ether	2500	ND	Methylene chloride	1250	19400 J
2-Hexanone	2500	ND	Styrene	1250	ND
4-Methyl-2-pentanone	2500	ND	Tetrachloroethene	1250	ND
Acetone	2500	ND	Toluene	1250	ND
Benzene	1250	ND	Total xylenes	1250	ND
Bromodichloromethane	1250	ND	Total-1,2-Dichloroethene	1250	ND
Bromoform	1250	ND	Trans-1,3-Dichloropropene	1250	ND
Bromomethane	2500	ND	Trichloroethene	1250	7200 UJ
Carbon disulfide	1250	ND	Vinyl acetate	2500	ND
			Vinylchloride	2500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	12500	(76-114)	93
Toluene-d8	12500	(88-110)	97
Bromofluorobenzene	12500	(86-115)	104

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

000013

010843

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2195

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2195

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on March 31, 1994 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2195. Included in this work order are one (1) water sample and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-AWD1-1001

Trip Blank

LH18,24-AWD1-TB

The sample was analyzed for volatile organic chemicals (VOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, and sulfate. The trip blank was only analyzed for VOCs. All VOC and metals analyses were performed by U.S. EPA SW-846 methodologies: 8240 and 6000/7000 series, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the

following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits. The percent recovery of the surrogate spike for 1,2-dichloroethane-d4, a system monitoring compound, was greater than quality control limits. This result affected only the undiluted sample of LH18,24-AWD1-1001. Therefore, all associated detected volatile target compounds were qualified "J", estimated.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved and were received in good condition.

All samples were analyzed within the proper holding times, except for the dilution run on sample LH18,24-AWD1-1001. As a result, all diluted sample results were qualified as estimated, "J" and "UJ", for the positive and non-detect results, respectively.

Blank contaminaton was found for methylene chloride (4 ug/L) and trichloroethene (3 ug/L) in the method blank associated with the undiluted analysis of sample LH18,24-AWD1-1001. Since the sample results were greater than five times (ten times for methylene cloride) those found in the blank, the data was not impacted.

Note that the value found for methylene chloride in the diluted sample analysis was over five times higher than that found in the original. Given the extreme dilution factor (1000X) and the fact that methylene chloride is such a prevalent laboratory contaminant, the discrepancy

between the two values can be reasonably attributed to blank contamination even though contamination was not found in any blanks associated with the diluted run. As a result, the original analysis result was retained on the validated data summary and is qualified as estimated, "J".

The dilution of sample LH18,24-AWD1-1001 was large enough that many compounds that were found above the highest calibration standard in the original analysis were diluted out. As a result, the original sample results are reported in these instances and were qualified "J", estimated.

3.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

3.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

3.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

3.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

4.0 TAL Metals.

4.1 Accuracy. All LCS recoveries were within acceptable control limits, except for LCS percent recoveries of selenium and silver. The recovery for silver is much lower than quality control limits, therefore, the sample result for silver, being non-detect, was qualified "R", unusable. The LCS percent recovery of selenium is greater than quality control limits. The sample result is less than the IDL, therefore, no qualification of this data is necessary.

Several compounds have matrix spike recoveries out of quality control ranges. Aluminum, antimony, iron, selenium, and silver have matrix spike recoveries less than quality

control limits. All associated data less than the IDL was qualified "UJ", estimated, and all associated data greater than the IDL was qualified "J", estimated. One exception is the result for silver; this result was previously qualified as "R", unusable, due to a low LCS recovery.

4.2 Precision. LCS and MS/MSD RPDs were within acceptable quality control ranges, except for silver and selenium. Associated data were previously qualified due to percent recoveries in LCS and/or MS/MSD samples.

4.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times.

5.0 Notes.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile fraction of this sample.

Sample LH18,24-AWD1-1001 (1:1000) was diluted and reanalyzed because several compounds exceeded calibration ranges.

6.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

7.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

010851

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD1-1001	Date Sampled:	03/31/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2195.01	Date Received:	04/01/94
Project No.:	2379	Report No.:	B8395	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8395
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	370 ~~X~~ J	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	5 J	Chloroethane	10	ND
1,1-Dichloroethane	5	44 J	Chloroform	5	15 J
1,1-Dichloroethene	5	1100 ~~X~~ J	Chloromethane	10	ND
1,2-Dichloroethane	5	5 J	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
_ dutanone	10	ND	Ethylbenzene	5	1000 ~~X~~ J
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3750 ~~X~~ J
2-Hexanone	10	ND	Styrene	5	170 J
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	30 J
Acetone	10	ND	Toluene	5	40 J
Benzene	5	10 J	Total xylenes	5	80 J
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	~~5000~~ 5	109000 ~~11000 E~~ J
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~5000~~ 5	69000 ~~7400 E~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	560 ~~X~~ J

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	118
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

01085?

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD1-TB	Date Sampled:	03/31/94
Project Name:	LHAAP-18+24 PHASE 1	PDP Sample ID:	2195.02	Date Received:	04/01/94
Project No.:	2379	Report No.:	B8520	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8520
Sample Volume:	5.0 ml	Date Analyzed:	04/12/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project Number: 2379

Client Sample ID: LH18&24-AWD1-1001
PDP Sample ID: 2195.01
Report Number: I19501

Date Sampled: 03-31-94
Date Received: 04-01-94
Date Reported: 04-13-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	0.1	5.69 J	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	0.06	ND UJ	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	0.013	MBB
Barium	SW-846 6010	04-06-94	04-08-94	0.01	0.915	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	0.2	2.8	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	0.01	0.053	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Copper	SW-846 6010	04-06-94	04-08-94	0.02	ND	MBB
Iron	SW-846 6010	04-06-94	04-08-94	0.1	5.7 J	MBB
ad	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
..agnesium	SW-846 6010	04-06-94	04-08-94	0.2	7.5	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	0.01	0.358	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-06-94	04-08-94	0.04	ND	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	5	8.7	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.01	ND UJ	MBB
Silver	SW-846 6010	04-06-94	04-08-94	0.01	ND R	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	0.5	92.4	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	0.01	0.011	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	0.02	0.040	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2188.PBW1
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2188.LCSW1
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2188.LCSW2
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA MSD ID: 2193.01MSD

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I195CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2195.01	LH18&24-AWD1-1001	WATER	03-31-94	04-01-94	04-08-94	2	74			
				QUALITY ASSURANCE/QUALITY CONTROL						
2193.PB1	PREPARATION BLANK	NA	NA	NA	04-08-94	2	ND			
2193.LCS1	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125		109
2193.LCS2	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125	0.0	109
2193.01	SAMPLE	NA	NA	NA	04-05-94	2	99			
2193.01D	DUPLICATE	NA	NA	NA	04-05-94	2	99		0.0	
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-05-94	2	120	17.7		119

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I193S04
Analyst: HK

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2195.01	LH18&24-AWD1-1001	WATER	03-31-94	04-01-94	04-06-94	5	21			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2193.01	SAMPLE	NA	NA	NA	04-06-94	25	41			
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-06-94	25	133	100		92
2193.01MSD	MATRIX SPIKE DUP	NA	NA	NA	04-06-94	25	132	100	0.8	91

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I195N03
Analyst: HM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2195.01	LH18&24-AWD1-1001	WATER	03-31-94	04-01-94	04-02-94	0.5	1.3			
				QUALITY ASSURANCE/QUALITY CONTROL						
2195.PB1	PREPARATION BLANK	NA	NA	NA	04-02-94	0.1	ND			
2195.LCS1	LAB CONTROL STD	NA	NA	NA	04-02-94	0.1	0.39	0.40		98
2195.LCS2	LAB CONTROL STD	NA	NA	NA	04-02-94	0.1	0.38	0.40	2.6	95
2188.05	SAMPLE	NA	NA	NA	03-31-94	0.1	0.12			
2188.05D	DUPLICATE	NA	NA	NA	03-31-94	0.1	0.11		8.7	
`88.05MS	MATRIX SPIKE	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD1-1001	Date Sampled:	03/31/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2195.01	Date Received:	04/01/94
Project No.:	2379	Report No.:	B8395	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8395
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	370 E	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	5	Chloroethane	10	ND
1,1-Dichloroethane	5	44	Chloroform	5	15
1,1-Dichloroethene	5	1100 E	Chloromethane	10	ND
1,2-Dichloroethane	5	5	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	1000 E
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3750 E
2-Hexanone	10	ND	Styrene	5	170
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	30
Acetone	10	ND	Toluene	5	40
Benzene	5	10	Total xylenes	5	80
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	11000 E
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	7400 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	560 E

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	118
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 2188V.WBLK1 LCS ID: 2188V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010859

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD1-1001(DL)	Date Sampled:	03/31/94
Project Name:	LHAAP-18+24 PHASE I	PDP Sample ID:	2195.01 (DILUTION)	Date Received:	04/01/94
Project No.:	2379	Report No.:	B8543	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1000.00	GC/MS File ID:	B8543
Sample Volume:	5.0 UL	Date Analyzed:	04/14/94
Dilution:	1000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5000	ND	Carbon tetrachloride	5000	ND
1,1,2,2-Tetrachloroethane	5000	ND	Chlorobenzene	5000	ND
1,1,2-Trichloroethane	5000	ND	Chloroethane	10000	ND
1,1-Dichloroethane	5000	ND	Chloroform	5000	ND
1,1-Dichloroethene	5000	ND	Chloromethane	10000	ND
1,2-Dichloroethane	5000	ND	Cis-1,3-Dichloropropene	5000	ND
2-Dichloropropane	5000	ND	Dibromochloromethane	5000	ND
Butanone	10000	ND	Ethylbenzene	5000	ND
2-Chloroethyl vinyl ether	10000	ND	Methylene chloride	5000	19300
2-Hexanone	10000	ND	Styrene	5000	ND
4-Methyl-2-pentanone	10000	ND	Tetrachloroethene	5000	ND
Acetone	10000	ND	Toluene	5000	ND
Benzene	5000	ND	Total xylenes	5000	ND
Bromodichloromethane	5000	ND	Total-1,2-Dichloroethene	5000	109000
Bromoform	5000	ND	Trans-1,3-Dichloropropene	5000	ND
Bromomethane	10000	ND	Trichloroethene	5000	69000
Carbon disulfide	5000	ND	Vinyl acetate	10000	ND
			Vinylchloride	10000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	109
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	112

Method Blank ID: 2202V.MBLK1 LCS ID: 2202V.MLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010860

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC	Client Sample ID:	LH18&24-AWD1-TB	Date Sampled:	03/31/94
Project Name:	LHAAP-18+24 PHASE 1	PDP Sample ID:	2195.02	Date Received:	04/01/94
Project No.:	2379	Report No.:	B8520	Date Reported:	04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8520
Sample Volume:	5.0 ml	Date Analyzed:	04/12/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	102
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	109

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010861

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project Number: 2379

Client Sample ID: LH18&24-AWD1-1001
PDP Sample ID: 2195.01
Report Number: I19501

Date Sampled: 03-31-94
Date Received: 04-01-94
Date Reported: 04-13-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	0.1	5.69	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.005	0.013	MBB
Barium	SW-846 6010	04-06-94	04-08-94	0.01	0.915	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	0.005	ND	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	0.2	2.8	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	0.01	0.053	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Copper	SW-846 6010	04-06-94	04-08-94	0.02	ND	MBB
Iron	SW-846 6010	04-06-94	04-08-94	0.1	5.7	MBB
[illegible]d	SW-846 7421	04-06-94	04-07-94	0.005	ND	MBB
[illegible]gnesium	SW-846 6010	04-06-94	04-08-94	0.2	7.5	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	0.01	0.358	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-06-94	04-08-94	0.04	ND	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	5	8.7	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.01	ND	MBB
Silver	SW-846 6010	04-06-94	04-08-94	0.01	ND	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	0.5	92.4	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	0.01	0.011	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	0.02	0.040	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2188.PBW1
GFAA Method Blank ID: 2188.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2188.LCSW1
GFAA LCS ID: 2188.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2188.LCSW2
GFAA LCSD ID: 2188.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2193.01MS
GFAA MS ID: 2193.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2193.01MSD
GFAA MSD ID: 2193.01MSD
CVAA MSD ID: 2193.01MSD

010862

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I195CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2195.01	LH18&24-AWD1-1001	WATER	03-31-94	04-01-94	04-08-94	2	74			
				QUALITY ASSURANCE/QUALITY CONTROL						
2193.PB1	PREPARATION BLANK	NA	NA	NA	04-08-94	2	ND			
2193.LCS1	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125		109
2193.LCS2	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125	0.0	109
2193.01	SAMPLE	NA	NA	NA	04-05-94	2	99			
2193.01D	DUPLICATE	NA	NA	NA	04-05-94	2	99		0.0	
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-05-94	2	120	17.7		119

010863

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I193S04
Analyst: HH

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2195.01	LH18&24-AWD1-1001	WATER	03-31-94	04-01-94	04-06-94	5	21			
				QUALITY ASSURANCE/QUALITY CONTROL						
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2193.01	SAMPLE	NA	NA	NA	04-06-94	25	41			
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-06-94	25	133	100		92
2193.01MSD	MATRIX SPIKE DUP	NA	NA	NA	04-06-94	25	132	100	0.8	91

010864

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379

Date Reported: 04-13-94
Report No.: I195N03
Analyst: HM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2195.01	LH18&24-AWD1-1001	WATER	03-31-94	04-01-94	04-02-94	0.5	1.3			
				QUALITY ASSURANCE/QUALITY CONTROL						
2195.PB1	PREPARATION BLANK	NA	NA	NA	04-02-94	0.1	ND			
2195.LCS1	LAB CONTROL STD	NA	NA	NA	04-02-94	0.1	0.39	0.40		98
2195.LCS2	LAB CONTROL STD	NA	NA	NA	04-02-94	0.1	0.38	0.40	2.6	95
2188.05	SAMPLE	NA	NA	NA	03-31-94	0.1	0.12			
2188.05D	DUPLICATE	NA	NA	NA	03-31-94	0.1	0.11		8.7	
2188.05MS	MATRIX SPIKE	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

Client Sample ID: NA (MS/MSD)
PDP MS ID: 2193.01MS
PDP MSD ID: 2193.01MSD
Report Number: I193MS01

Date Sampled: NA
Date Received: NA
Date Reported: 04-12-94

TOTAL METALS (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE)

Sample Matrix: WATER — Units: ug/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)	MATRIX SPIKE DUP VALUE	PERCENT RECOVERY (75-125)	RPD (20)
Aluminum	SW-846 6010	03-31-94	04-05-94	3.62	2.00	4.14	26*	4.15	26*	0.2
Antimony	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.41	82	0.37	74*	10
Arsenic	SW-846 7060	04-06-94	04-08-94	ND	0.040	0.037	93	0.036	90	2.7
Barium	SW-846 6010	03-31-94	04-05-94	0.177	2.00	2.07	95	1.88	85	9.6
Beryllium	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.048	96	0.044	88	8.7
Cadmium	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.046	92	0.042	84	9.1
Calcium	SW-846 6010	03-31-94	04-05-94	4.3	NA	NA	NA	NA	NA	NA
Chromium	SW-846 6010	03-31-94	04-05-94	0.018	0.20	0.21	96	0.19	86	10
Cobalt	SW-846 6010	03-31-94	04-05-94	0.011	0.50	0.50	98	0.46	90	8.3
[illegible]per	SW-846 6010	03-31-94	04-05-94	ND	0.25	0.25	100	0.23	92	8.3
[illegible]	SW-846 6010	03-31-94	04-05-94	3.78	1.00	4.14	36*	4.02	24*	2.9
Lead	SW-846 7421	04-06-94	04-07-94	ND	0.020	0.019	95	0.019	95	0.0
Magnesium	SW-846 6010	03-31-94	04-05-94	3.58	NA	NA	NA	NA	NA	NA
Manganese	SW-846 6010	03-31-94	04-05-94	0.140	0.50	0.62	96	0.57	86	8.4
Mercury	SW-846 7470	04-07-94	04-08-94	ND	0.0010	0.0009	90	0.0010	100	10.5
Nickel	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.50	100	0.46	92	8.3
Potassium	SW-846 6010	03-31-94	04-05-94	ND	NA	NA	NA	NA	NA	NA
Selenium	SW-846 7740	04-06-94	04-08-94	ND	0.010	0.007	70*	0.009	90	25*
Silver	SW-846 6010	03-31-94	04-05-94	ND	0.050	0.021	42*	0.019	38*	10
Sodium	SW-846 6010	03-31-94	04-05-94	79.4	NA	NA	NA	NA	NA	NA
Thallium	SW-846 7841	04-06-94	04-07-94	ND	0.050	0.047	94	0.045	90	4.3
Vanadium	SW-846 6010	03-31-94	04-05-94	ND	0.50	0.49	98	0.45	90	8.5
Zinc	SW-846 6010	03-31-94	04-05-94	0.061	0.50	0.54	96	0.50	88	7.7

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA — LCS ID: NA — LCSD ID: NA

010867

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

LCS ID: 2188.LCSW1
LCSD ID: 2188.LCSW2

Date Reported: 04-12-94
Report Number: I188LCSW

METALS (LABORATORY CONTROL SAMPLE AND LABORATORY CONTROL SAMPLE DUPLICATE)

Sample Matrix: AQUEOUS

Units: ug/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	TRUE VALUE	LCS FOUND VALUE	LCS % RECOVERY (80-120)	LCSD FOUND VALUE	LCSD % RECOVERY (80-120)	RPD (20)	ANALYST
Aluminum	SW-846 6010	04-06-94	04-08-94	10.0	9.27	93	9.03	90	2.6	MBB
Antimony	SW-846 6010	04-06-94	04-08-94	5.00	4.72	94	4.61	92	2.4	MBB
Arsenic	SW-846 7060	04-06-94	04-08-94	0.050	0.047	94	0.048	96	2.1	MBB
Barium	SW-846 6010	04-06-94	04-08-94	10.0	9.24	92	8.98	90	2.9	MBB
Beryllium	SW-846 6010	04-06-94	04-08-94	0.25	0.24	96	0.23	92	4.3	MBB
Cadmium	SW-846 6010	04-06-94	04-08-94	2.50	2.33	93	2.27	91	2.6	MBB
Calcium	SW-846 6010	04-06-94	04-08-94	25.0	23.7	95	23.1	92	2.6	MBB
Chromium	SW-846 6010	04-06-94	04-08-94	1.00	0.96	96	0.94	94	2.1	MBB
Cobalt	SW-846 6010	04-06-94	04-08-94	2.50	2.38	95	2.33	93	2.1	MBB
Copper	SW-846 6010	04-06-94	04-08-94	1.25	1.17	94	1.14	91	2.6	MBB
[illegible]n	SW-846 6010	04-06-94	04-08-94	5.00	4.68	94	4.56	91	2.6	MBB
[illegible]ad	SW-846 7421	04-06-94	04-07-94	0.050	0.053	106	0.051	102	3.8	MBB
Magnesium	SW-846 6010	04-06-94	04-08-94	25.0	23.4	94	22.8	91	2.6	MBB
Manganese	SW-846 6010	04-06-94	04-08-94	2.50	2.35	94	2.29	92	2.6	MBB
Nickel	SW-846 6010	04-06-94	04-08-94	2.50	2.39	96	2.33	93	2.5	MBB
Potassium	SW-846 6010	04-06-94	04-08-94	25.0	24.4	98	23.5	94	3.8	MBB
Selenium	SW-846 7740	04-06-94	04-08-94	0.050	0.067	134*	0.070	140*	4.4	MBB
Silver	SW-846 6010	04-06-94	04-08-94	1.25	0.77	62*	0.46	37*	50*	MBB
Sodium	SW-846 6010	04-06-94	04-08-94	25.0	23.2	93	22.7	91	2.2	MBB
Thallium	SW-846 7841	04-06-94	04-07-94	0.050	0.052	104	0.051	102	1.9	MBB
Vanadium	SW-846 6010	04-06-94	04-08-94	2.50	2.35	94	2.29	92	2.6	MBB
Zinc	SW-846 6010	04-06-94	04-08-94	2.50	2.34	94	2.29	92	2.2	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: 2188.PBW1

010868

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2188V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	M8382	Date Reported:	04/05/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	M8382
Sample Volume:	5.0 ml	Date Analyzed:	04/01/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
[illegible] Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
[illegible] Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	4 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	95

[illegible] od Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

010869

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC
Project Name: LHAAP-18+24 PHASE I
Project No.: 2379
Client Sample ID: LH18&24-AWD1-1001(DL)
PDP Sample ID: 2195.01 (DILUTION)
Report No.: B8543
Date Sampled: 03/31/94
Date Received: 04/01/94
Date Reported: 04/07/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1000.00
Sample Volume: 5.0 UL
Dilution: 1000.0
Method Ref.: SW846-8240
GC/MS File ID: B8543
Date Analyzed: 04/14/94
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5000	ND UJ	Carbon tetrachloride	5000	ND UJ
1,1,2,2-Tetrachloroethane	5000	ND	Chlorobenzene	5000	ND
1,1,2-Trichloroethane	5000	ND	Chloroethane	10000	ND
1,1-Dichloroethane	5000	ND	Chloroform	5000	ND
1,1-Dichloroethene	5000	ND	Chloromethane	10000	ND
1,2-Dichloroethane	5000	ND	Cis-1,3-Dichloropropene	5000	ND
',2-Dichloropropane	5000	ND	Dibromochloromethane	5000	ND
_-Butanone	10000	ND	Ethylbenzene	5000	ND
2-Chloroethyl vinyl ether	10000	ND	Methylene chloride	5000	19300 J
2-Hexanone	10000	ND	Styrene	5000	ND UJ
4-Methyl-2-pentanone	10000	ND	Tetrachloroethene	5000	ND
Acetone	10000	ND	Toluene	5000	ND
Benzene	5000	ND	Total xylenes	5000	ND
Bromodichloromethane	5000	ND	Total-1,2-Dichloroethene	5000	109000 J
Bromoform	5000	ND	Trans-1,3-Dichloropropene	5000	ND UJ
Bromomethane	10000	ND	Trichloroethene	5000	69000 J
Carbon disulfide	5000	ND	Vinyl acetate	10000	ND UJ
			Vinylchloride	10000	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	109
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	112

Method Blank ID: 2202V.MBLK1 LCS ID: 2202V.MLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: ND

010870

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 2200

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 2200

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on April 1, 1994 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 2200. Included in this work order are four (4) groundwater samples. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-AWD3-1001	LH18,24-120-1001
LH18,24-124-1001	LH18,24-123-1001

All samples were analyzed for volatile organic chemicals (VOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, and sulfate. All VOC and metals analyses were performed by U.S. EPA SW-846 methodologies: 8240 and 6000/7000 series, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the results that were rejected "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, and

transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits, except trichloroethene in the LCS. Trichloroethene had a percent recovery of 124 percent in the LCS. All associated results greater than the IDL were qualified "J", estimated.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

Blank contamination for methylene chloride (5 ug/l) and trichloroethene (3 ug/l) was found in the method blank. Associated methylene chloride results were qualified "U", nondetect, if they were less than ten (10) times the amount of the blank contamination. Associated trichloroethene results were qualified "U", nondetect, if they were less than five (5) times the amount of the blank contamination.

The dilution of sample LH18,24-120-1001 was large enough that compounds that were found above the highest calibration standard in the original anlaysis were diluted out. As a result, the original sample results are reported in these instances and were qualified "J", estimated.

Please note that although the values reported for methylene chloride and acetone are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS, MS/MSD, and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. All LCS percent recoveries were within acceptable control limits, except for the LCS recovery of selenium which was 124 percent. All associated results are less than the IDL, therefore, no qualification is necessary. The matrix spike percent recovery for lead is greater than the quality control limits. All associated data is less than the IDL, therefore, it is acceptable for use. The matrix spike percent recovery for selenium is very low and less than the quality control limits. All associated data is less than the IDL, therefore, all data is qualified "R", unusable.

5.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges, except for lead. All associated results are less than the IDL, therefore, all results are qualified "UJ", estimated.

5.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times.

6.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Samples LH18,24-AWD3-1001 and LH18,24-120-1001 were analyzed at a dilution because of high analyte concentrations. Some inconsistency is noted in diluted and undiluted samples.

7.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

8.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

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

(NO CODE) = Confirmed identification.

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

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

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

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

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18424-AWD3-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.01	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8418	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8418
Sample Volume:	5.0 ml	Date Analyzed:	04/04/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	6	Chloromethane	10	ND
1,2-Dichloroethane	5	4 J	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
utanone	10	ND	Ethylbenzene	5	3 J
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	65
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	50 ~~10~~	130 ~~280 E~~	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	25 ~~5~~	610 ~~210 E~~
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	25 ~~5~~	775 ~~430 E~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 2193V.WBLK1 LCS ID: 2193V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010878

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-124-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.02	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8419	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8419
Sample Volume:	5.0 ml	Date Analyzed:	04/04/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	31 U
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	14	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	~~5~~ ~~3~~ U
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2193V.WBLK1 LCS ID: 2193V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010879

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-120-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.03	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8420	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8420
Sample Volume:	5.0 ml	Date Analyzed:	04/04/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	27	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	8	Chloroethane	10	ND
1,1-Dichloroethane	5	62	Chloroform	5	70
1,1-Dichloroethene	5	310 X J	Chloromethane	10	ND
1,2-Dichloroethane	5	44	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	10000 X	273000 ~~12400 E~~
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	35	Toluene	5	42
Benzene	5	7	Total xylenes	5	4 J
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	940 X J
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	10000 X	42000 ~~5800 X~~ J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2193V.WBLK1 LCS ID: 2193V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010880

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-123-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.04	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8485	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8485
Sample Volume:	5.0 ml	Date Analyzed:	04/08/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	40 U
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	16 J
Carbon disulfide	5	10	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010881

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-AWD3-1001
PDP Sample ID: 2200.01
Report Number: I20001

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-19-94	0.1	0.18	MBB
Antimony	SW-846 6010	04-13-94	04-19-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	ND	MBB
Barium	SW-846 6010	04-13-94	04-19-94	0.01	0.253	MBB
Beryllium	SW-846 6010	04-13-94	04-19-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-13-94	04-19-94	0.005	ND	MBB
Calcium	SW-846 6010	04-13-94	04-19-94	0.2	36.2	MBB
Chromium	SW-846 6010	04-13-94	04-19-94	0.01	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-19-94	0.01	0.033	MBB
Copper	SW-846 6010	04-13-94	04-19-94	0.02	ND	MBB
Iron	SW-846 6010	04-13-94	04-19-94	0.1	66.5	MBB
[illegible]d	SW-846 7421	04-13-94	04-15-94	0.005	ND UJ	MBB
[illegible]agnesium	SW-846 6010	04-13-94	04-19-94	0.2	22.9	MBB
Manganese	SW-846 6010	04-13-94	04-19-94	0.01	1.89	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-19-94	0.04	0.066	MBB
Potassium	SW-846 6010	04-13-94	04-19-94	5	ND	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.01	ND R	MBB
Silver	SW-846 6010	04-13-94	04-19-94	0.01	ND	MBB
Sodium	SW-846 6010	04-13-94	04-19-94	0.5	187	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-19-94	0.01	ND	MBB
Zinc	SW-846 6010	04-13-94	04-19-94	0.02	0.219	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

010882

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-124-1001
PDP Sample ID: 2200.02
Report Number: I20002

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	0.1	2.2	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	0.011	MBB
Barium	SW-846 6010	04-13-94	04-18-94	0.01	0.815	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.005	0.0067	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	0.005	ND	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	0.2	19.8	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	0.01	0.045	MBB
Copper	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Iron	SW-846 6010	04-13-94	04-18-94	0.1	60.8	MBB
[illegible]d	SW-846 7421	04-13-94	04-15-94	0.005	ND UJ	MBB
[illegible]gnesium	SW-846 6010	04-13-94	04-18-94	0.2	17.2	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	0.01	1.5	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-18-94	0.04	ND	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	5	ND	MBB
Selenium	SW-846 7740	04-13-94	04-19-94	0.01	ND R	MBB
Silver	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	0.5	19.4	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	0.01	0.059	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	0.02	0.13	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

010883

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-120-1001
PDP Sample ID: 2200.03
Report Number: I20003

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	0.2	0.93	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	0.12	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	ND	MBB
Barium	SW-846 6010	04-13-94	04-18-94	0.02	0.27	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	0.4	31.6	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	0.02	0.184	MBB
Copper	SW-846 6010	04-13-94	04-18-94	0.04	ND	MBB
Iron	SW-846 6010	04-13-94	04-18-94	0.2	3.34	MBB
‘ad	SW-846 7421	04-13-94	04-15-94	0.01	ND UJ	MBB
..agnesium	SW-846 6010	04-13-94	04-18-94	0.4	44.1	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	0.02	1.6	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-18-94	0.08	0.084	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	10	ND	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.01	ND R	MBB
Silver	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	1	1080	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	0.04	0.165	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

010884

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-123-1001
PDP Sample ID: 2200.04
Report Number: I20004

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	0.1	0.54	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	ND	MBB
Barium	SW-846 6010	04-13-94	04-18-94	0.01	0.165	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	0.005	ND	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	0.2	16.3	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Copper	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Iron	SW-846 6010	04-13-94	04-18-94	0.1	0.464	MBB
ad	SW-846 7421	04-13-94	04-15-94	0.005	ND UJ	MBB
agnesium	SW-846 6010	04-13-94	04-18-94	0.2	9.3	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	0.01	0.012	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-18-94	0.04	ND	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	5	ND	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.01	ND R	MBB
Silver	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	0.5	10.2	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	0.02	0.083	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project No.: 2379

Date Reported: 04-19-94
Report No.: I200CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2200.01	LH18&24-AWD3-1001	WATER	04-01-94	04-02-94	04-08-94	2	18			
2200.02	LH18&24-124-1001	WATER	04-01-94	04-02-94	04-08-94	2	7			
2200.03	LH18&24-120-1001	WATER	04-01-94	04-02-94	04-08-94	2	518			
2200.04	LH18&24-123-1001	WATER	04-01-94	04-02-94	04-08-94	2	7			
			QUALITY ASSURANCE/QUALITY CONTROL							
2193.PB1	PREPARATION BLANK	NA	NA	NA	04-08-94	2	ND			
2193.LCS1	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125		109
2193.LCS2	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125	0.0	109
[illegible]3.01	SAMPLE	NA	NA	NA	04-05-94	2	99			
[illegible]3.01D	DUPLICATE	NA	NA	NA	04-05-94	2	99		0.0	
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-05-94	2	120	17.7		119

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18\24
Project No.: 2379

Date Reported: 04-19-94
Report No.: I200S04
Analyst: HM

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2200.01	LH18&24-AWD3-1001	WATER	04-01-94	04-02-94	04-06-94	25	77			
2200.02	LH18&24-124-1001	WATER	04-01-94	04-02-94	04-06-94	25	113			
2200.03	LH18&24-120-1001	WATER	04-01-94	04-02-94	04-06-94	25	55			
2200.04	LH18&24-123-1001	WATER	04-01-94	04-02-94	04-06-94	5	9			
			QUALITY ASSURANCE/QUALITY CONTROL							
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
2193.01	SAMPLE	NA	NA	NA	04-06-94	25	41			
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-06-94	25	133	100		92
2193.01MSD	MATRIX SPIKE DUP	NA	NA	NA	04-06-94	25	132	100	0.8	91

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-AWD3-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.01	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8418	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8418
Sample Volume:	5.0 ml	Date Analyzed:	04/04/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	6	Chloromethane	10	ND
1,2-Dichloroethane	5	4 J	Cis-1,3-Dichloropropene	5	ND
' ?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
.tanone	10	ND	Ethylbenzene	5	3 J
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	65
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	280 E	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	210 E
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	430 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 2193V.WBLK1 LCS ID: 2193V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-AWD3-1001(DL)	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.01 (DILUTION)	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8482	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B8482
Sample Volume:	1.0 ml	Date Analyzed:	04/07/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	175
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	130	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	610
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	775
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	250	(76-114)	91
Toluene-d8	250	(88-110)	94
Bromofluorobenzene	250	(86-115)	97

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-124-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.02	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8419	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8419
Sample Volume:	5.0 ml	Date Analyzed:	04/04/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
' .2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	31
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	14	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	106
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 2193V.WBLK1 LCS ID: 2193V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:LH18&24-120-1001 Date Sampled: 04/01/94
Project Name: LHAAP-18/24 PDP Sample ID: 2200.03 Date Received: 04/02/94
Project No.: 2379 Report No.: B8420 Date Reported: 04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER Method Ref.: SW846-8240
Multiplying Factor: 1.00 GC/MS File ID: B8420
Sample Volume: 5.0 ml Date Analyzed: 04/04/94
Dilution: 1.0 Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	27	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	8	Chloroethane	10	ND
1,1-Dichloroethane	5	62	Chloroform	5	70
1,1-Dichloroethene	5	310 E	Chloromethane	10	ND
1,2-Dichloroethane	5	44	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	12400 E
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	35	Toluene	5	42
Benzene	5	7	Total xylenes	5	4 J
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	940 E
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	5800 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	108
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 2193V.WBLK1 LCS ID: 2193V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010892

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-120-1001(DL)	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.03 (DILUTION)	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8522	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	2000.00	GC/MS File ID:	B8522
Sample Volume:	5 ML	Date Analyzed:	04/12/94
Dilution:	2000.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	10000	ND	Carbon tetrachloride	10000	ND
1,1,2,2-Tetrachloroethane	10000	ND	Chlorobenzene	10000	ND
1,1,2-Trichloroethane	10000	ND	Chloroethane	20000	ND
1,1-Dichloroethane	10000	ND	Chloroform	10000	ND
1,1-Dichloroethene	10000	ND	Chloromethane	20000	ND
1,2-Dichloroethane	10000	ND	Cis-1,3-Dichloropropene	10000	ND
2-Dichloropropane	10000	ND	Dibromochloromethane	10000	ND
-Butanone	20000	ND	Ethylbenzene	10000	ND
2-Chloroethyl vinyl ether	20000	ND	Methylene chloride	10000	273000
2-Hexanone	20000	ND	Styrene	10000	ND
4-Methyl-2-pentanone	20000	ND	Tetrachloroethene	10000	ND
Acetone	20000	ND	Toluene	10000	ND
Benzene	10000	ND	Total xylenes	10000	ND
Bromodichloromethane	10000	ND	Total-1,2-Dichloroethene	10000	ND
Bromoform	10000	ND	Trans-1,3-Dichloropropene	10000	ND
Bromomethane	20000	ND	Trichloroethene	10000	42000
Carbon disulfide	10000	ND	Vinyl acetate	20000	ND
			Vinylchloride	20000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	100000	(76-114)	100
Toluene-d8	100000	(88-110)	102
Bromofluorobenzene	100000	(86-115)	106

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010893

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-123-1001	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.04	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8485	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8485
Sample Volume:	5.0 ml	Date Analyzed:	04/08/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
' 2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	40
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	16
Carbon disulfide	5	10	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-AWD3-1001
PDP Sample ID: 2200.01
Report Number: I20001

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-19-94	0.1	0.18	MBB
Antimony	SW-846 6010	04-13-94	04-19-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	ND	MBB
Barium	SW-846 6010	04-13-94	04-19-94	0.01	0.253	MBB
Beryllium	SW-846 6010	04-13-94	04-19-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-13-94	04-19-94	0.005	ND	MBB
Calcium	SW-846 6010	04-13-94	04-19-94	0.2	36.2	MBB
Chromium	SW-846 6010	04-13-94	04-19-94	0.01	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-19-94	0.01	0.033	MBB
Copper	SW-846 6010	04-13-94	04-19-94	0.02	ND	MBB
Iron	SW-846 6010	04-13-94	04-19-94	0.1	66.5	MBB
ld	SW-846 7421	04-13-94	04-15-94	0.005	ND	MBB
...gnesium	SW-846 6010	04-13-94	04-19-94	0.2	22.9	MBB
Manganese	SW-846 6010	04-13-94	04-19-94	0.01	1.89	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-19-94	0.04	0.066	MBB
Potassium	SW-846 6010	04-13-94	04-19-94	5	ND	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.01	ND	MBB
Silver	SW-846 6010	04-13-94	04-19-94	0.01	ND	MBB
Sodium	SW-846 6010	04-13-94	04-19-94	0.5	187	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-19-94	0.01	ND	MBB
Zinc	SW-846 6010	04-13-94	04-19-94	0.02	0.219	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-124-1001
PDP Sample ID: 2200.02
Report Number: I20002

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	0.1	2.2	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	0.011	MBB
Barium	SW-846 6010	04-13-94	04-18-94	0.01	0.815	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.005	0.0067	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	0.005	ND	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	0.2	19.8	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	0.01	0.045	MBB
Copper	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Iron	SW-846 6010	04-13-94	04-18-94	0.1	60.8	MBB
ld	SW-846 7421	04-13-94	04-15-94	0.005	ND	MBB
...gnesium	SW-846 6010	04-13-94	04-18-94	0.2	17.2	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	0.01	1.5	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-18-94	0.04	ND	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	5	ND	MBB
Selenium	SW-846 7740	04-13-94	04-19-94	0.01	ND	MBB
Silver	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	0.5	19.4	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	0.01	0.059	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	0.02	0.13	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC	Client Sample ID:	LH18&24-120-1001	Date Sampled:	04-01-94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.03	Date Received:	04-02-94
Project Number:	2379	Report Number:	I20003	Date Reported:	04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER — Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	0.2	0.93	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	0.12	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	ND	MBB
Barium	SW-846 6010	04-13-94	04-18-94	0.02	0.27	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	0.4	31.6	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	0.02	0.184	MBB
Copper	SW-846 6010	04-13-94	04-18-94	0.04	ND	MBB
Iron	SW-846 6010	04-13-94	04-18-94	0.2	3.34	MBB
ad	SW-846 7421	04-13-94	04-15-94	0.01	ND	MBB
agnesium	SW-846 6010	04-13-94	04-18-94	0.4	44.1	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	0.02	1.6	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-18-94	0.08	0.084	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	10	ND	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.01	ND	MBB
Silver	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	1	1080	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	0.04	0.165	MBB

QUALITY ASSURANCE/QUALITY CONTROL

		ICP LCS ID: 2200.LCSW1	ICP MS ID: 2211.01MS
		GFAA LCS ID: 2200.LCSW1	GFAA MS ID: 2211.01MS
ICP Method Blank ID:	2200.PBW1	CVAA LCS ID: 2192.LCSW1	CVAA MS ID: 2193.01MS
GFAA Method Blank ID:	2200.PBW1		
CVAA Method Blank ID:	2192.PBW1	ICP LCSD ID: 2200.LCSW2	ICP MSD ID: 2211.01MSD
		GFAA LCSD ID: 2200.LCSW2	GFAA MSD ID: 2211.01MSD
		CVAA LCSD ID: 2192.LCSW2	CVAA MSD ID: 2193.01MSD

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project Number: 2379

Client Sample ID: LH18&24-123-1001
PDP Sample ID: 2200.04
Report Number: I20004

Date Sampled: 04-01-94
Date Received: 04-02-94
Date Reported: 04-19-94

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	0.1	0.54	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	0.06	ND	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.005	ND	MBB
Barium	SW-846 6010	04-13-94	04-18-94	0.01	0.165	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.005	ND	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	0.005	ND	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	0.2	16.3	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Copper	SW-846 6010	04-13-94	04-18-94	0.02	ND	MBB
Iron	SW-846 6010	04-13-94	04-18-94	0.1	0.464	MBB
‹ad	SW-846 7421	04-13-94	04-15-94	0.005	ND	MBB
‹agnesium	SW-846 6010	04-13-94	04-18-94	0.2	9.3	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	0.01	0.012	MBB
Mercury	SW-846 7470	04-07-94	04-08-94	0.0002	ND	DOC
Nickel	SW-846 6010	04-13-94	04-18-94	0.04	ND	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	5	ND	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.01	ND	MBB
Silver	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	0.5	10.2	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.005	ND	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	0.01	ND	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	0.02	0.083	MBB

QUALITY ASSURANCE/QUALITY CONTROL

ICP LCS ID: 2200.LCSW1
GFAA LCS ID: 2200.LCSW1
CVAA LCS ID: 2192.LCSW1

ICP MS ID: 2211.01MS
GFAA MS ID: 2211.01MS
CVAA MS ID: 2193.01MS

ICP Method Blank ID: 2200.PBW1
GFAA Method Blank ID: 2200.PBW1
CVAA Method Blank ID: 2192.PBW1

ICP LCSD ID: 2200.LCSW2
GFAA LCSD ID: 2200.LCSW2
CVAA LCSD ID: 2192.LCSW2

ICP MSD ID: 2211.01MSD
GFAA MSD ID: 2211.01MSD
CVAA MSD ID: 2193.01MSD

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18/24
Project No.: 2379

Date Reported: 04-19-94
Report No.: I200CL
Analyst: HM

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2200.01	LH18&24-AWD3-1001	WATER	04-01-94	04-02-94	04-08-94	2	18			
2200.02	LH18&24-124-1001	WATER	04-01-94	04-02-94	04-08-94	2	7			
2200.03	LH18&24-120-1001	WATER	04-01-94	04-02-94	04-08-94	2	518			
2200.04	LH18&24-123-1001	WATER	04-01-94	04-02-94	04-08-94	2	7			
			QUALITY ASSURANCE/QUALITY CONTROL							
2193.PB1	PREPARATION BLANK	NA	NA	NA	04-08-94	2	ND			
2193.LCS1	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125		109
2193.LCS2	LAB CONTROL STD	NA	NA	NA	04-08-94	2	136	125	0.0	109
93.01	SAMPLE	NA	NA	NA	04-05-94	2	99			
93.01D	DUPLICATE	NA	NA	NA	04-05-94	2	99		0.0	
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-05-94	2	120	17.7		119

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18\24
Project No.: 2379

Date Reported: 04-19-94
Report No.: I200N03
Analyst: MM

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2200.01	LH18&24-AWD3-1001	WATER	04-01-94	04-02-94	04-02-94	0.1	0.98			
2200.02	LH18&24-124-1001	WATER	04-01-94	04-02-94	04-02-94	0.1	0.66			
2200.03	LH18&24-120-1001	WATER	04-01-94	04-02-94	04-02-94	0.1	0.60			
2200.04	LH18&24-123-1001	WATER	04-01-94	04-02-94	04-02-94	0.5	2.77			
				QUALITY ASSURANCE/QUALITY CONTROL						
2195.PB1	PREPARATION BLANK	NA	NA	NA	04-02-94	0.1	ND			
2195.LCS1	LAB CONTROL STD	NA	NA	NA	04-02-94	0.1	0.39	0.40		98
2195.LCS2	LAB CONTROL STD	NA	NA	NA	04-02-94	0.1	0.38	0.40	2.6	95
[illegible]8.05	SAMPLE	NA	NA	NA	03-31-94	0.1	0.12			
8.05D	DUPLICATE	NA	NA	NA	03-31-94	0.1	0.11		8.7	
2188.05MS	MATRIX SPIKE	NA	NA	NA	03-31-94	0.1	0.44	0.40		80

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LHAAP-18\24
Project No.: 2379

Date Reported: 04-19-94
Report No.: I200S04
Analyst: HM

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

UNITS: mg/L

PDP LABORATORY ID	CLIENT ID	MATRIX	DATE SAMPLED	DATE RECEIVED	DATE ANALYZED	QUANT LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFF(20)	PERCENT RECOVERY (75-125)
2200.01	LH18&24-AWD3-1001	WATER	04-01-94	04-02-94	04-06-94	25	77			
2200.02	LH18&24-124-1001	WATER	04-01-94	04-02-94	04-06-94	25	113			
2200.03	LH18&24-120-1001	WATER	04-01-94	04-02-94	04-06-94	25	55			
2200.04	LH18&24-123-1001	WATER	04-01-94	04-02-94	04-06-94	5	9			
			QUALITY ASSURANCE/QUALITY CONTROL							
2176.PB1	PREPARATION BLANK	NA	NA	NA	04-06-94	5	ND			
2176.LCS1	LAB CONTROL STD	NA	NA	NA	04-06-94	5	99.8	109		92
2176.LCS2	LAB CONTROL STD	NA	NA	NA	04-06-94	5	103.5	109	3.6	95
93.01	SAMPLE	NA	NA	NA	04-06-94	25	41			
2193.01MS	MATRIX SPIKE	NA	NA	NA	04-06-94	25	133	100		92
2193.01MSD	MATRIX SPIKE DUP	NA	NA	NA	04-06-94	25	132	100	0.8	91

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2196V.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	B8474	Date Reported:	04/11/94

GC/MS-VOLATILES

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8474
Sample Volume:	5.0 ml	Date Analyzed:	04/07/94
Dilution:	1.0	Analyst:	NA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	60	120	(61-145)
Benzene	50	63	126	(76-127)
Chlorobenzene	50	58	116	(75-130)
Toluene	50	61	122	(76-125)
Trichloroethene	50	62	124 *	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	99

)d Blank: 2196V.WLCS1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID:NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2195V.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	B8516	Date Reported:	04/18/94

GC/MS-VOLATILES

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8516
Sample Volume:	5.0 ml	Date Analyzed:	04/12/94
Dilution:	1.0	Analyst:	MA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	60	120	(61-145)
Benzene	50	60	120	(76-127)
Chlorobenzene	50	56	112	(75-130)
Toluene	50	59	118	(76-125)
Trichloroethene	50	61	122 *	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
	1,2-Dichloroethane-d4	50	(76-114)	97
	Toluene-d8	50	(88-110)	101
	Bromofluorobenzene	50	(86-115)	106

od Blank: 2195V.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

LCS ID: 2200.LCSW1
LCSD ID: 2200.LCSW2

Date Reported: 04-19-94
Report Number: I200LCSW

METALS (LABORATORY CONTROL SAMPLE AND LABORATORY CONTROL SAMPLE DUPLICATE)

Sample Matrix: AQUEOUS

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	TRUE VALUE	LCS FOUND VALUE	LCS % RECOVERY (80-120)	LCSD FOUND VALUE	LCSD % RECOVERY (80-120)	RPD (20)	ANALYST
Aluminum	SW-846 6010	04-13-94	04-18-94	10.0	9.58	96	9.57	96	0.1	MBB
Antimony	SW-846 6010	04-13-94	04-18-94	5.00	4.86	97	4.92	98	1.2	MBB
Arsenic	SW-846 7060	04-13-94	04-18-94	0.050	0.046	92	0.047	94	2.2	MBB
Barium	SW-846 6010	04-13-94	04-18-94	10.0	9.54	95	9.53	95	0.1	MBB
Beryllium	SW-846 6010	04-13-94	04-18-94	0.25	0.24	96	0.24	96	0.0	MBB
Cadmium	SW-846 6010	04-13-94	04-18-94	2.50	2.37	95	2.39	96	0.8	MBB
Calcium	SW-846 6010	04-13-94	04-18-94	25.0	24.2	97	24.3	97	0.4	MBB
Chromium	SW-846 6010	04-13-94	04-18-94	1.00	0.98	98	0.99	99	1.0	MBB
Cobalt	SW-846 6010	04-13-94	04-18-94	2.50	2.44	98	2.45	98	0.4	MBB
C er	SW-846 6010	04-13-94	04-18-94	1.25	1.22	98	1.21	97	0.8	MBB
	SW-846 6010	04-13-94	04-18-94	5.00	4.82	96	4.84	97	0.4	MBB
Lead	SW-846 7421	04-13-94	04-15-94	0.050	0.049	98	0.050	100	2.0	MBB
Magnesium	SW-846 6010	04-13-94	04-18-94	25.0	24.0	96	24.1	96	0.4	MBB
Manganese	SW-846 6010	04-13-94	04-18-94	2.50	2.42	97	2.42	97	0.0	MBB
Nickel	SW-846 6010	04-13-94	04-18-94	2.50	2.45	98	2.46	98	0.4	MBB
Potassium	SW-846 6010	04-13-94	04-18-94	25.0	23.7	95	23.5	94	0.8	MBB
Selenium	SW-846 7740	04-13-94	04-18-94	0.050	0.060	120	0.062	124*	3.3	MBB
Silver	SW-846 6010	04-13-94	04-18-94	1.25	1.13	90	1.15	92	1.8	MBB
Sodium	SW-846 6010	04-13-94	04-18-94	25.0	23.8	95	23.7	95	0.4	MBB
Thallium	SW-846 7841	04-13-94	04-14-94	0.050	0.052	104	0.047	94	10.1	MBB
Vanadium	SW-846 6010	04-13-94	04-18-94	2.50	2.40	96	2.40	96	0.0	MBB
Zinc	SW-846 6010	04-13-94	04-18-94	2.50	2.40	96	2.41	96	0.4	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: 2200.PBW1

010905

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	2196V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B8473	Date Reported:	04/11/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B8473
Sample Volume:	5.0 ml	Date Analyzed:	04/07/94
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	5
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	3 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	99

od Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

0011128

010906

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: NA
Project Name: NA
Project Number: NA

Client Sample ID: NA (MS/MSD)
PDP MS ID: 2211.01MS
PDP MSD ID: 2211.01MSD
Report Number: I211MS01

Date Sampled: NA
Date Received: NA
Date Reported: 04-19-94

TOTAL METALS (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)	MATRIX SPIKE DUP VALUE	PERCENT RECOVERY (75-125)	RPD (20)
Aluminum	SW-846 6010	04-13-94	04-18-94	ND	2.00	1.90	95	1.87	94	1.6
Antimony	SW-846 6010	04-13-94	04-18-94	ND	0.50	0.47	94	0.49	98	4.2
Arsenic	SW-846 7060	04-13-94	04-18-94	ND	0.040	0.038	95	0.038	95	0.0
Barium	SW-846 6010	04-13-94	04-18-94	1.65	2.00	3.63	99	3.47	91	4.5
Beryllium	SW-846 6010	04-13-94	04-18-94	ND	0.050	0.047	94	0.046	92	2.2
Cadmium	SW-846 6010	04-13-94	04-18-94	ND	0.050	0.049	98	0.047	94	4.2
Calcium	SW-846 6010	04-13-94	04-18-94	78.8	NA	NA	NA	NA	NA	NA
Chromium	SW-846 6010	04-13-94	04-18-94	ND	0.20	0.20	100	0.19	95	5.1
Cobalt	SW-846 6010	04-13-94	04-18-94	ND	0.50	0.49	98	0.48	96	2.1
Copper	SW-846 6010	04-13-94	04-18-94	ND	0.25	0.25	100	0.24	96	4.1
Iron	SW-846 6010	04-13-94	04-18-94	159	1.00	162	**	159	**	1.9
Lead	SW-846 7421	04-13-94	04-15-94	ND	0.020	0.032	160*	0.024	120	29*
Magnesium	SW-846 6010	04-13-94	04-18-94	46.8	NA	NA	NA	NA	NA	NA
Manganese	SW-846 6010	04-13-94	04-18-94	3.52	0.50	4.05	106	3.95	86	2.5
Nickel	SW-846 6010	04-13-94	04-18-94	ND	0.50	0.51	102	0.49	98	4.0
Potassium	SW-846 6010	04-13-94	04-18-94	7.6	NA	NA	NA	NA	NA	NA
Selenium	SW-846 7740	04-13-94	04-18-94	ND	0.010	0.001	10*	ND	0*	NC
Silver	SW-846 6010	04-13-94	04-18-94	ND	0.050	0.042	84	0.042	84	0.0
Sodium	SW-846 6010	04-13-94	04-18-94	407	NA	NA	NA	NA	NA	NA
Thallium	SW-846 7841	04-13-94	04-14-94	ND	0.050	0.042	84	0.043	86	2.4
Vanadium	SW-846 6010	04-13-94	04-18-94	ND	0.50	0.49	98	0.47	94	4.2
Zinc	SW-846 6010	04-13-94	04-18-94	0.066	0.50	0.55	97	0.54	95	1.8

** High analyte concentration prevented accurate determination of the percent recovery.

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA

LCS ID: NA

LCSD ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010907

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	LH18&24-AWD3-1001(DL)	Date Sampled:	04/01/94
Project Name:	LHAAP-18/24	PDP Sample ID:	2200.01 (DILUTION)	Date Received:	04/02/94
Project No.:	2379	Report No.:	B8482	Date Reported:	04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	5.00	GC/MS File ID:	B8482
Sample Volume:	1.0 ml	Date Analyzed:	04/07/94
Dilution:	5.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	25	ND	Carbon tetrachloride	25	ND
1,1,2,2-Tetrachloroethane	25	ND	Chlorobenzene	25	ND
1,1,2-Trichloroethane	25	ND	Chloroethane	50	ND
1,1-Dichloroethane	25	ND	Chloroform	25	ND
1,1-Dichloroethene	25	ND	Chloromethane	50	ND
1,2-Dichloroethane	25	ND	Cis-1,3-Dichloropropene	25	ND
1,2-Dichloropropane	25	ND	Dibromochloromethane	25	ND
Butanone	50	ND	Ethylbenzene	25	ND
2-Chloroethyl vinyl ether	50	ND	Methylene chloride	25	175 U
2-Hexanone	50	ND	Styrene	25	ND
4-Methyl-2-pentanone	50	ND	Tetrachloroethene	25	ND
Acetone	50	130	Toluene	25	ND
Benzene	25	ND	Total xylenes	25	ND
Bromodichloromethane	25	ND	Total-1,2-Dichloroethene	25	610
Bromoform	25	ND	Trans-1,3-Dichloropropene	25	ND
Bromomethane	50	ND	Trichloroethene	25	775 J
Carbon disulfide	25	ND	Vinyl acetate	50	ND
			Vinylchloride	50	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	250	(76-114)	91
Toluene-d8	250	(88-110)	94
Bromofluorobenzene	250	(86-115)	97

Method Blank ID: 2196V.WBLK1 LCS ID: 2196V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA

010908

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:LH18&24-120-1001(DL) Date Sampled: 04/01/94
Project Name: LHAAP-18/24 PDP Sample ID: 2200.03 (DILUTION) Date Received: 04/02/94
Project No.: 2379 Report No.: B8522 Date Reported: 04/18/94

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER Method Ref.: SW846-8240
Multiplying Factor: 2000.00 GC/MS File ID: B8522
Sample Volume: 5 ML Date Analyzed: 04/12/94
Dilution: 2000.0 Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	10000	ND	Carbon tetrachloride	10000	ND
1,1,2,2-Tetrachloroethane	10000	ND	Chlorobenzene	10000	ND
1,1,2-Trichloroethane	10000	ND	Chloroethane	20000	ND
1,1-Dichloroethane	10000	ND	Chloroform	10000	ND
1,1-Dichloroethene	10000	ND	Chloromethane	20000	ND
1,2-Dichloroethane	10000	ND	Cis-1,3-Dichloropropene	10000	ND
2-Dichloropropane	10000	ND	Dibromochloromethane	10000	ND
-Butanone	20000	ND	Ethylbenzene	10000	ND
2-Chloroethyl vinyl ether	20000	ND	Methylene chloride	10000	273000
2-Hexanone	20000	ND	Styrene	10000	ND
4-Methyl-2-pentanone	20000	ND	Tetrachloroethene	10000	ND
Acetone	20000	ND	Toluene	10000	ND
Benzene	10000	ND	Total xylenes	10000	ND
Bromodichloromethane	10000	ND	Total-1,2-Dichloroethene	10000	ND
Bromoform	10000	ND	Trans-1,3-Dichloropropene	10000	ND
Bromomethane	20000	ND	Trichloroethene	10000	42000 J
Carbon disulfide	10000	ND	Vinyl acetate	20000	ND
			Vinylchloride	20000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	100000	(76-114)	100
Toluene-d8	100000	(88-110)	102
Bromofluorobenzene	100000	(86-115)	106

Method Blank ID: 2195V.WBLK1 LCS ID: 2195V.WLCS1 MS ID: 2193.01MS MSD ID: 2193.01MSD DUP ID: NA