RCRA FACILITY INVESTIGATION
FOR AOC #1 AND AOC #2

ALCATEL NETWORK SYSTEMS, INC.
2912 WAKE FOREST ROAD
RALEIGH, NORTH CAROLINA 27609

NCD 003 185 238

VOLUME 2 of 2

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Prepared for:

ALCATEL NETWORK SYSTEMS, INC.
2912 Wake Forest Road
Raleigh, North Carolina 27609

Prepared by:

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
295-A North Green Meadows Drive
Wilmington, North Carolina 28405
910/392-1747

Project No. 058010

February 1996

APPENDIX A

LABORATORY ANALYTICAL DATA

Soil Analytical Results

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

JUN 12 1995

Mr. Joe Beaman
National Environmental Technologies
295-A N. Green Meadows Drive
Wilmington,NC 28405

Date 06-07-95

Report Number: G104-11

Client Project Number : 058010

Dear Mr. Beaman:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Mark Randall

Laboratory Director
Mark Randall

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-13sA			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1737			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	82.4	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	61	BQL
Acrylonitrile	61	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: Ogd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-13sA			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1737			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	82.4	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ngd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-13sB			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1738			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	84.6	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	59	BQL
Acrylonitrile	59	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-13sB			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1738			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	84.6	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ggd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-1A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1739			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	79.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	13	BQL
Acrolein	63	BQL
Acrylonitrile	63	BQL
Benzene	13	BQL
Bromobenzene	13	BQL
Bromochloromethane	13	BQL
Bromodichloromethane	13	BQL
Bromoform	13	BQL
Bromomethane	13	BQL
2-Butanone	13	BQL
n-Butylbenzene	13	BQL
sec-Butylbenzene	13	BQL
tert-Butylbenzene	13	BQL
Carbon disulfide	13	BQL
Carbon tetrachloride	13	BQL
Chlorobenzene	13	BQL
Chloroethane	13	BQL
2-Chloroethyl vinyl ether	13	BQL
Chloroform	13	BQL
Chloromethane	13	BQL
2-Chlorotoluene	13	BQL
4-Chlorotoluene	13	BQL
Dibromochloromethane	13	BQL
1,2-Dibromo-3-chloropropane	13	BQL
Dibromomethane	13	BQL
1,2-Dibromoethane	13	BQL
1,2-Dichlorobenzene	13	BQL
1,3-Dichlorobenzene	13	BQL
1,4-Dichlorobenzene	13	BQL
trans-1,4-Dichloro-2-butene	13	BQL
1,1-Dichloroethane	13	BQL
1,1-Dichloroethene	13	BQL
1,2-Dichloroethane	13	BQL
cis-1,2-Dichloroethene	13	BQL
trans-1,2-dichloroethene	13	BQL
1,2-Dichloropropane	13	BQL
1,3-Dichloropropane	13	BQL
2,2-Dichloropropane	13	BQL
1,1-Dichloropropene	13	BQL
cis-1,3-Dichloropropene	13	BQL
trans-1,3-dichloropropene	13	BQL
Dichlorodifluoromethane	13	BQL

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-1A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1739			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	79.0	Dilution:	1.0

Ethylbenzene	13	BQL
Hexachlorobutadiene	13	BQL
2-Hexanone	13	BQL
Iodomethane	13	BQL
Isopropylbenzene	13	BQL
4-Isopropyltoluene	13	BQL
Methylene chloride	13	BQL
4-Methyl-2-pentanone	13	BQL
Naphthalene	13	BQL
n-Propyl benzene	13	BQL
Styrene	13	BQL
1,1,1,2-Tetrachloroethane	13	BQL
1,1,2,2-Tetrachloroethane	13	BQL
Tetrachloroethene	13	BQL
Toluene	13	BQL
1,2,3-Trichlorobenzene	13	BQL
1,2,4-Trichlorobenzene	13	BQL
Trichloroethene	13	BQL
1,1,1-Trichloroethane	13	BQL
1,1,2-Trichloroethane	13	BQL
Trichlorofluoromethane	13	BQL
1,2,3-Trichloropropane	13	BQL
1,2,4-Trimethylbenzene	13	BQL
1,3,5-Trimethylbenzene	13	BQL
Vinyl acetate	13	BQL
Vinyl chloride	13	BQL
m-,p-Xylene	25	BQL
o-Xylene	13	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-1C			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1740			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	83.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	60	BQL
Acrylonitrile	60	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-1C			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1740			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	83.0	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ayd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-2A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1741			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	82.7	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	60	BQL
Acrylonitrile	60	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: aad

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-2A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1741			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	82.7	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-3A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1742			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	94.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	11	BQL
Acrolein	53	BQL
Acrylonitrile	53	BQL
Benzene	11	BQL
Bromobenzene	11	BQL
Bromochloromethane	11	BQL
Bromodichloromethane	11	BQL
Bromoform	11	BQL
Bromomethane	11	BQL
2-Butanone	11	BQL
n-Butylbenzene	11	BQL
sec-Butylbenzene	11	BQL
tert-Butylbenzene	11	BQL
Carbon disulfide	11	BQL
Carbon tetrachloride	11	BQL
Chlorobenzene	11	BQL
Chloroethane	11	BQL
2-Chloroethyl vinyl ether	11	BQL
Chloroform	11	BQL
Chloromethane	11	BQL
2-Chlorotoluene	11	BQL
4-Chlorotoluene	11	BQL
Dibromochloromethane	11	BQL
1,2-Dibromo-3-chloropropane	11	BQL
Dibromomethane	11	BQL
1,2-Dibromoethane	11	BQL
1,2-Dichlorobenzene	11	BQL
1,3-Dichlorobenzene	11	BQL
1,4-Dichlorobenzene	11	BQL
trans-1,4-Dichloro-2-butene	11	BQL
1,1-Dichloroethane	11	BQL
1,1-Dichloroethene	11	BQL
1,2-Dichloroethane	11	BQL
cis-1,2-Dichloroethene	11	BQL
trans-1,2-dichloroethene	11	BQL
1,2-Dichloropropane	11	BQL
1,3-Dichloropropane	11	BQL
2,2-Dichloropropane	11	BQL
1,1-Dichloropropene	11	BQL
cis-1,3-Dichloropropene	11	BQL
trans-1,3-dichloropropene	11	BQL
Dichlorodifluoromethane	11	BQL

Reviewed by: aad

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-3A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1742			Date Collected:	05/26/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	94.0	Dilution:	1.0

Ethylbenzene	11	BQL
Hexachlorobutadiene	11	BQL
2-Hexanone	11	BQL
Iodomethane	11	BQL
Isopropylbenzene	11	BQL
4-Isopropyltoluene	11	BQL
Methylene chloride	11	BQL
4-Methyl-2-pentanone	11	BQL
Naphthalene	11	BQL
n-Propyl benzene	11	BQL
Styrene	11	BQL
1,1,1,2-Tetrachloroethane	11	BQL
1,1,2,2-Tetrachloroethane	11	BQL
Tetrachloroethene	11	BQL
Toluene	11	BQL
1,2,3-Trichlorobenzene	11	BQL
1,2,4-Trichlorobenzene	11	BQL
Trichloroethene	11	BQL
1,1,1-Trichloroethane	11	BQL
1,1,2-Trichloroethane	11	BQL
Trichlorofluoromethane	11	BQL
1,2,3-Trichloropropane	11	BQL
1,2,4-Trimethylbenzene	11	BQL
1,3,5-Trimethylbenzene	11	BQL
Vinyl acetate	11	BQL
Vinyl chloride	11	BQL
m-,p-Xylene	21	BQL
o-Xylene	11	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-3C			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1743			Date Collected:	05/27/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	79.4	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	63	BQL
Acrylonitrile	63	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: ugl

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-3C			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1743			Date Collected:	05/27/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	79.4	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	25	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: gcl

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-4A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1744			Date Collected:	05/27/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	86.8	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	58	BQL
Acrylonitrile	58	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: ugd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-4A			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1744			Date Collected:	05/27/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	86.8	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	23	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ugd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-4C			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1745			Date Collected:	05/27/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	85.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	59	BQL
Acrylonitrile	59	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-4C			Date Analyzed:	06/02/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	1745			Date Collected:	05/27/95
Lab Project ID:	G104-11			Date Received:	05/28/95
Matrix:	Soil	%SOLIDS	85.0	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	MW-13sA	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/26/95
Lab Sample ID:	01737	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**1.5**	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: NW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	MW-13sB	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/26/95
Lab Sample ID:	01738	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**0.49**	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: VW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-1A	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/26/95
Lab Sample ID:	01739	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**2.7**	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: WM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-1C	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/26/95
Lab Sample ID:	01740	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**0.72**	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: JM

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-2A	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/26/95
Lab Sample ID:	01741	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	1.7	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-3A	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/26/95
Lab Sample ID:	01742	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	1.6	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-3C	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/27/95
Lab Sample ID:	01743	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	1.3	0.11	mg/KG	6010	06/02/95
Lead	BQL	5.1	mg/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-4A	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/27/95
Lab Sample ID:	01744	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**0.61**	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: JW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-4C	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/27/95
Lab Sample ID:	01745	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	1.6	0.11	MG/KG	6010	06/02/95
Lead	BQL	5.1	MG/KG	6010	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES

Chain-of-Custody Record & Analytical Request

2627 Northchase Parkway SE. Wilmington, NC 28405 Phone: (910)-350-1903 FAX: (910)-350-1557

Client:
Company: NET
Address: 295-A N Green Meadows Dr
Wilmington, NC 28405

Project ID: 058010
P.O. Number: Call
Contact: J. Beaman / H. Lyon
Phone: (910) 392-1747

Date: 5/28/95
Turnaround: Standard
Job Number:
Page: 1 of 2

Sample ID	Date	Time	Matrix	# of Bottles	Preservative	Analyses: 8260	Cu, Pb							Comments
MW-13S	5/28	0830	W	3	HNO_3	✓	✓							
MW-13S	5/28	0830	W	1	HCL	✓	✓							
MW-13SA	5/26	1900	S	2	—	✓	✓							
MW-13SB	5/26	1930	S	2	—	✓	✓							
SBR-1A	5/26	2045	S	2	—	✓	✓							
SBR-1BC agd 5-30	5/26	2120	S	2	—	✓	✓							
SBR-2A	5/26	2215	S	2	—	✓	✓							
~~SBR-2B~~	~~5/26~~													
SBR-3A	5/26	2220	S	2	—	✓	✓							
SBR-3BC agd 5-30	5/27	0010	S	2	—	✓	✓							

Relinquished By	Date	Time	Received By	Date	Time	Temperature		Sampled By	Airbill #
Bobby A. Beaman	5/28/95	1230	[illegible]	1230					

PARADIGM ANALYTICAL LABORATORIES

Chain-of-Custody Record & Analytical Request

2627 Northchase Parkway SE. Wilmington, NC 28405 Phone: (910)-350-1903 FAX: (910)-350-1557

Client:
Company: NET
Address: 295-A N Green Meadows Dr.
Wilm, NC 28405

Project ID: 058010
P.O. Number: call
Contact: J. Beaman / H. Lyon
Phone: (910) 392-1747

Date: 5/28/95
Turnaround: Std.
Job Number:
Page: 2 of 2

Sample ID	Date	Time	Matrix	# of Bottles	Preservative	Analysis: 8260	Analysis: Cu, Pb							Comments
~~SBR-3A~~														
~~SBR-3B~~														
SBR-4A	5/27	1140	S	2	–	✓	✓							
SBR-4BC agd 5-30	5/27	1240	S	2	–	✓	✓							

Relinquished By	Date	Time	Received By	Date	Time	Temperature	Sampled By	Airbill #
Billy T Beaman	5/28/95	1230	[illegible]	5/28/95	12:30			

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Joe Beaman
National Environmental Technologies
295-A N. Green Meadows Drive
Wilmington,NC 28405

Date 07-12-95

JUL 21 1995

Report Number: G104-12

Client Project Number : 058010

Dear Mr. Beaman:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Mark Randall

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-5			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2084			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	94.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	11	BQL
Acrolein	53	BQL
Acrylonitrile	53	BQL
Benzene	11	BQL
Bromobenzene	11	BQL
Bromochloromethane	11	BQL
Bromodichloromethane	11	BQL
Bromoform	11	BQL
Bromomethane	11	BQL
2-Butanone	11	BQL
n-Butylbenzene	11	BQL
sec-Butylbenzene	11	BQL
tert-Butylbenzene	11	BQL
Carbon disulfide	11	BQL
Carbon tetrachloride	11	BQL
Chlorobenzene	11	BQL
Chloroethane	11	BQL
2-Chloroethyl vinyl ether	11	BQL
Chloroform	11	BQL
Chloromethane	11	BQL
2-Chlorotoluene	11	BQL
4-Chlorotoluene	11	BQL
Dibromochloromethane	11	BQL
1,2-Dibromo-3-chloropropane	11	BQL
Dibromomethane	11	BQL
1,2-Dibromoethane	11	BQL
1,2-Dichlorobenzene	11	BQL
1,3-Dichlorobenzene	11	BQL
1,4-Dichlorobenzene	11	BQL
trans-1,4-Dichloro-2-butene	11	BQL
1,1-Dichloroethane	11	BQL
1,1-Dichloroethene	11	BQL
1,2-Dichloroethane	11	BQL
cis-1,2-Dichloroethene	11	BQL
trans-1,2-dichloroethene	11	BQL
1,2-Dichloropropane	11	BQL
1,3-Dichloropropane	11	BQL
2,2-Dichloropropane	11	BQL
1,1-Dichloropropene	11	BQL
cis-1,3-Dichloropropene	11	BQL
trans-1,3-dichloropropene	11	BQL
Dichlorodifluoromethane	11	BQL

Reviewed by: Agd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-5			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2084			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	94.0	Dilution:	1.0

Ethylbenzene	11	BQL
Hexachlorobutadiene	11	BQL
2-Hexanone	11	BQL
Iodomethane	11	BQL
Isopropylbenzene	11	BQL
4-Isopropyltoluene	11	BQL
Methylene chloride	11	BQL
4-Methyl-2-pentanone	11	BQL
Naphthalene	11	BQL
n-Propyl benzene	11	BQL
Styrene	11	BQL
1,1,1,2-Tetrachloroethane	11	BQL
1,1,2,2-Tetrachloroethane	11	BQL
Tetrachloroethene	11	BQL
Toluene	11	BQL
1,2,3-Trichlorobenzene	11	BQL
1,2,4-Trichlorobenzene	11	BQL
Trichloroethene	11	BQL
1,1,1-Trichloroethane	11	BQL
1,1,2-Trichloroethane	11	BQL
Trichlorofluoromethane	11	BQL
1,2,3-Trichloropropane	11	BQL
1,2,4-Trimethylbenzene	11	BQL
1,3,5-Trimethylbenzene	11	BQL
Vinyl acetate	11	BQL
Vinyl chloride	11	BQL
m-,p-Xylene	21	BQL
o-Xylene	11	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ayd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-6			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2085			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	87.7	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	11	BQL
Acrolein	57	BQL
Acrylonitrile	57	BQL
Benzene	11	BQL
Bromobenzene	11	BQL
Bromochloromethane	11	BQL
Bromodichloromethane	11	BQL
Bromoform	11	BQL
Bromomethane	11	BQL
2-Butanone	11	BQL
n-Butylbenzene	11	BQL
sec-Butylbenzene	11	BQL
tert-Butylbenzene	11	BQL
Carbon disulfide	11	BQL
Carbon tetrachloride	11	BQL
Chlorobenzene	11	BQL
Chloroethane	11	BQL
2-Chloroethyl vinyl ether	11	BQL
Chloroform	11	BQL
Chloromethane	11	BQL
2-Chlorotoluene	11	BQL
4-Chlorotoluene	11	BQL
Dibromochloromethane	11	BQL
1,2-Dibromo-3-chloropropane	11	BQL
Dibromomethane	11	BQL
1,2-Dibromoethane	11	BQL
1,2-Dichlorobenzene	11	BQL
1,3-Dichlorobenzene	11	BQL
1,4-Dichlorobenzene	11	BQL
trans-1,4-Dichloro-2-butene	11	BQL
1,1-Dichloroethane	11	BQL
1,1-Dichloroethene	11	BQL
1,2-Dichloroethane	11	BQL
cis-1,2-Dichloroethene	11	BQL
trans-1,2-dichloroethene	11	BQL
1,2-Dichloropropane	11	BQL
1,3-Dichloropropane	11	BQL
2,2-Dichloropropane	11	BQL
1,1-Dichloropropene	11	BQL
cis-1,3-Dichloropropene	11	BQL
trans-1,3-dichloropropene	11	BQL
Dichlorodifluoromethane	11	BQL

Reviewed by: Qgd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-6			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2085			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	87.7	Dilution:	1.0

Ethylbenzene	11	BQL
Hexachlorobutadiene	11	BQL
2-Hexanone	11	BQL
Iodomethane	11	BQL
Isopropylbenzene	11	BQL
4-Isopropyltoluene	11	BQL
Methylene chloride	11	BQL
4-Methyl-2-pentanone	11	BQL
Naphthalene	11	BQL
n-Propyl benzene	11	BQL
Styrene	11	BQL
1,1,1,2-Tetrachloroethane	11	BQL
1,1,2,2-Tetrachloroethane	11	BQL
Tetrachloroethene	11	BQL
Toluene	11	BQL
1,2,3-Trichlorobenzene	11	BQL
1,2,4-Trichlorobenzene	11	BQL
Trichloroethene	11	BQL
1,1,1-Trichloroethane	11	BQL
1,1,2-Trichloroethane	11	BQL
Trichlorofluoromethane	11	BQL
1,2,3-Trichloropropane	11	BQL
1,2,4-Trimethylbenzene	11	BQL
1,3,5-Trimethylbenzene	11	BQL
Vinyl acetate	11	BQL
Vinyl chloride	11	BQL
m-,p-Xylene	23	BQL
o-Xylene	11	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ayd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-7			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2086			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	91.3	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	11	BQL
Acrolein	55	BQL
Acrylonitrile	55	BQL
Benzene	11	BQL
Bromobenzene	11	BQL
Bromochloromethane	11	BQL
Bromodichloromethane	11	BQL
Bromoform	11	BQL
Bromomethane	11	BQL
2-Butanone	11	BQL
n-Butylbenzene	11	BQL
sec-Butylbenzene	11	BQL
tert-Butylbenzene	11	BQL
Carbon disulfide	11	BQL
Carbon tetrachloride	11	BQL
Chlorobenzene	11	BQL
Chloroethane	11	BQL
2-Chloroethyl vinyl ether	11	BQL
Chloroform	11	BQL
Chloromethane	11	BQL
2-Chlorotoluene	11	BQL
4-Chlorotoluene	11	BQL
Dibromochloromethane	11	BQL
1,2-Dibromo-3-chloropropane	11	BQL
Dibromomethane	11	BQL
1,2-Dibromoethane	11	BQL
1,2-Dichlorobenzene	11	BQL
1,3-Dichlorobenzene	11	BQL
1,4-Dichlorobenzene	11	BQL
trans-1,4-Dichloro-2-butene	11	BQL
1,1-Dichloroethane	11	BQL
1,1-Dichloroethene	11	BQL
1,2-Dichloroethane	11	BQL
cis-1,2-Dichloroethene	11	BQL
trans-1,2-dichloroethene	11	BQL
1,2-Dichloropropane	11	BQL
1,3-Dichloropropane	11	BQL
2,2-Dichloropropane	11	BQL
1,1-Dichloropropene	11	BQL
cis-1,3-Dichloropropene	11	BQL
trans-1,3-dichloropropene	11	BQL
Dichlorodifluoromethane	11	BQL

Reviewed by: ad

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-7			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2086			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	91.3	Dilution:	1.0

Ethylbenzene	11	BQL
Hexachlorobutadiene	11	BQL
2-Hexanone	11	BQL
Iodomethane	11	BQL
Isopropylbenzene	11	BQL
4-Isopropyltoluene	11	BQL
Methylene chloride	11	BQL
4-Methyl-2-pentanone	11	BQL
Naphthalene	11	BQL
n-Propyl benzene	11	BQL
Styrene	11	BQL
1,1,1,2-Tetrachloroethane	11	BQL
1,1,2,2-Tetrachloroethane	11	BQL
Tetrachloroethene	11	BQL
Toluene	11	BQL
1,2,3-Trichlorobenzene	11	BQL
1,2,4-Trichlorobenzene	11	BQL
Trichloroethene	11	BQL
1,1,1-Trichloroethane	11	BQL
1,1,2-Trichloroethane	11	BQL
Trichlorofluoromethane	11	BQL
1,2,3-Trichloropropane	11	BQL
1,2,4-Trimethylbenzene	11	BQL
1,3,5-Trimethylbenzene	11	BQL
Vinyl acetate	11	BQL
Vinyl chloride	11	BQL
m-,p-Xylene	22	BQL
o-Xylene	11	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agl

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-8A			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2087			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	85.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	59	BQL
Acrylonitrile	59	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: cgd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-8A			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2087			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	85.0	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: aqd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-8B			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2088			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	83.7	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	12	BQL
Acrolein	60	BQL
Acrylonitrile	60	BQL
Benzene	12	BQL
Bromobenzene	12	BQL
Bromochloromethane	12	BQL
Bromodichloromethane	12	BQL
Bromoform	12	BQL
Bromomethane	12	BQL
2-Butanone	12	BQL
n-Butylbenzene	12	BQL
sec-Butylbenzene	12	BQL
tert-Butylbenzene	12	BQL
Carbon disulfide	12	BQL
Carbon tetrachloride	12	BQL
Chlorobenzene	12	BQL
Chloroethane	12	BQL
2-Chloroethyl vinyl ether	12	BQL
Chloroform	12	BQL
Chloromethane	12	BQL
2-Chlorotoluene	12	BQL
4-Chlorotoluene	12	BQL
Dibromochloromethane	12	BQL
1,2-Dibromo-3-chloropropane	12	BQL
Dibromomethane	12	BQL
1,2-Dibromoethane	12	BQL
1,2-Dichlorobenzene	12	BQL
1,3-Dichlorobenzene	12	BQL
1,4-Dichlorobenzene	12	BQL
trans-1,4-Dichloro-2-butene	12	BQL
1,1-Dichloroethane	12	BQL
1,1-Dichloroethene	12	BQL
1,2-Dichloroethane	12	BQL
cis-1,2-Dichloroethene	12	BQL
trans-1,2-dichloroethene	12	BQL
1,2-Dichloropropane	12	BQL
1,3-Dichloropropane	12	BQL
2,2-Dichloropropane	12	BQL
1,1-Dichloropropene	12	BQL
cis-1,3-Dichloropropene	12	BQL
trans-1,3-dichloropropene	12	BQL
Dichlorodifluoromethane	12	BQL

Reviewed by: ayd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-8B			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2088			Date Collected:	06/27/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	83.7	Dilution:	1.0

Ethylbenzene	12	BQL
Hexachlorobutadiene	12	BQL
2-Hexanone	12	BQL
Iodomethane	12	BQL
Isopropylbenzene	12	BQL
4-Isopropyltoluene	12	BQL
Methylene chloride	12	BQL
4-Methyl-2-pentanone	12	BQL
Naphthalene	12	BQL
n-Propyl benzene	12	BQL
Styrene	12	BQL
1,1,1,2-Tetrachloroethane	12	BQL
1,1,2,2-Tetrachloroethane	12	BQL
Tetrachloroethene	12	BQL
Toluene	12	BQL
1,2,3-Trichlorobenzene	12	BQL
1,2,4-Trichlorobenzene	12	BQL
Trichloroethene	12	BQL
1,1,1-Trichloroethane	12	BQL
1,1,2-Trichloroethane	12	BQL
Trichlorofluoromethane	12	BQL
1,2,3-Trichloropropane	12	BQL
1,2,4-Trimethylbenzene	12	BQL
1,3,5-Trimethylbenzene	12	BQL
Vinyl acetate	12	BQL
Vinyl chloride	12	BQL
m-,p-Xylene	24	BQL
o-Xylene	12	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: aqd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-9A			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2089			Date Collected:	06/28/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	89.2	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	11	BQL
Acrolein	56	BQL
Acrylonitrile	56	BQL
Benzene	11	BQL
Bromobenzene	11	BQL
Bromochloromethane	11	BQL
Bromodichloromethane	11	BQL
Bromoform	11	BQL
Bromomethane	11	BQL
2-Butanone	11	BQL
n-Butylbenzene	11	BQL
sec-Butylbenzene	11	BQL
tert-Butylbenzene	11	BQL
Carbon disulfide	11	BQL
Carbon tetrachloride	11	BQL
Chlorobenzene	11	BQL
Chloroethane	11	BQL
2-Chloroethyl vinyl ether	11	BQL
Chloroform	11	BQL
Chloromethane	11	BQL
2-Chlorotoluene	11	BQL
4-Chlorotoluene	11	BQL
Dibromochloromethane	11	BQL
1,2-Dibromo-3-chloropropane	11	BQL
Dibromomethane	11	BQL
1,2-Dibromoethane	11	BQL
1,2-Dichlorobenzene	11	BQL
1,3-Dichlorobenzene	11	BQL
1,4-Dichlorobenzene	11	BQL
trans-1,4-Dichloro-2-butene	11	BQL
1,1-Dichloroethane	11	BQL
1,1-Dichloroethene	11	BQL
1,2-Dichloroethane	11	BQL
cis-1,2-Dichloroethene	11	BQL
trans-1,2-dichloroethene	11	BQL
1,2-Dichloropropane	11	BQL
1,3-Dichloropropane	11	BQL
2,2-Dichloropropane	11	BQL
1,1-Dichloropropene	11	BQL
cis-1,3-Dichloropropene	11	BQL
trans-1,3-dichloropropene	11	BQL
Dichlorodifluoromethane	11	BQL

Reviewed by: ayd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-9A			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2089			Date Collected:	06/28/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	89.2	Dilution:	1.0

Ethylbenzene	11	BQL
Hexachlorobutadiene	11	BQL
2-Hexanone	11	BQL
Iodomethane	11	BQL
Isopropylbenzene	11	BQL
4-Isopropyltoluene	11	BQL
Methylene chloride	11	BQL
4-Methyl-2-pentanone	11	BQL
Naphthalene	11	BQL
n-Propyl benzene	11	BQL
Styrene	11	BQL
1,1,1,2-Tetrachloroethane	11	BQL
1,1,2,2-Tetrachloroethane	11	BQL
Tetrachloroethene	11	BQL
Toluene	11	BQL
1,2,3-Trichlorobenzene	11	BQL
1,2,4-Trichlorobenzene	11	BQL
Trichloroethene	11	BQL
1,1,1-Trichloroethane	11	BQL
1,1,2-Trichloroethane	11	BQL
Trichlorofluoromethane	11	BQL
1,2,3-Trichloropropane	11	BQL
1,2,4-Trimethylbenzene	11	BQL
1,3,5-Trimethylbenzene	11	BQL
Vinyl acetate	11	BQL
Vinyl chloride	11	BQL
m-,p-Xylene	22	BQL
o-Xylene	11	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-9C			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2090			Date Collected:	06/28/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	79.1	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	13	BQL
Acrolein	63	BQL
Acrylonitrile	63	BQL
Benzene	13	BQL
Bromobenzene	13	BQL
Bromochloromethane	13	BQL
Bromodichloromethane	13	BQL
Bromoform	13	BQL
Bromomethane	13	BQL
2-Butanone	13	BQL
n-Butylbenzene	13	BQL
sec-Butylbenzene	13	BQL
tert-Butylbenzene	13	BQL
Carbon disulfide	13	BQL
Carbon tetrachloride	13	BQL
Chlorobenzene	13	BQL
Chloroethane	13	BQL
2-Chloroethyl vinyl ether	13	BQL
Chloroform	13	BQL
Chloromethane	13	BQL
2-Chlorotoluene	13	BQL
4-Chlorotoluene	13	BQL
Dibromochloromethane	13	BQL
1,2-Dibromo-3-chloropropane	13	BQL
Dibromomethane	13	BQL
1,2-Dibromoethane	13	BQL
1,2-Dichlorobenzene	13	BQL
1,3-Dichlorobenzene	13	BQL
1,4-Dichlorobenzene	13	BQL
trans-1,4-Dichloro-2-butene	13	BQL
1,1-Dichloroethane	13	BQL
1,1-Dichloroethene	13	BQL
1,2-Dichloroethane	13	BQL
cis-1,2-Dichloroethene	13	BQL
trans-1,2-dichloroethene	13	BQL
1,2-Dichloropropane	13	BQL
1,3-Dichloropropane	13	BQL
2,2-Dichloropropane	13	BQL
1,1-Dichloropropene	13	BQL
cis-1,3-Dichloropropene	13	BQL
trans-1,3-dichloropropene	13	BQL
Dichlorodifluoromethane	13	BQL

Reviewed by: aad

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	SBR-9C			Date Analyzed:	07/06/95
Client Project ID:	058010			Analyzed By:	WML
Lab Sample ID:	2090			Date Collected:	06/28/95
Lab Project ID:	G104-12			Date Received:	06/28/95
Matrix:	Soil	%SOLIDS	79.1	Dilution:	1.0

Ethylbenzene	13	BQL
Hexachlorobutadiene	13	BQL
2-Hexanone	13	BQL
Iodomethane	13	BQL
Isopropylbenzene	13	BQL
4-Isopropyltoluene	13	BQL
Methylene chloride	13	BQL
4-Methyl-2-pentanone	13	BQL
Naphthalene	13	BQL
n-Propyl benzene	13	BQL
Styrene	13	BQL
1,1,1,2-Tetrachloroethane	13	BQL
1,1,2,2-Tetrachloroethane	13	BQL
Tetrachloroethene	13	BQL
Toluene	13	BQL
1,2,3-Trichlorobenzene	13	BQL
1,2,4-Trichlorobenzene	13	BQL
Trichloroethene	13	BQL
1,1,1-Trichloroethane	13	BQL
1,1,2-Trichloroethane	13	BQL
Trichlorofluoromethane	13	BQL
1,2,3-Trichloropropane	13	BQL
1,2,4-Trimethylbenzene	13	BQL
1,3,5-Trimethylbenzene	13	BQL
Vinyl acetate	13	BQL
Vinyl chloride	13	BQL
m-,p-Xylene	25	BQL
o-Xylene	13	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: agd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-5	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/27/95
Lab Sample ID:	02084	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	16	0.11	mg/KG	6010	07/06/95
Lead	BQL	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-6	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/27/95
Lab Sample ID:	02085	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	16	0.11	mg/KG	6010	07/06/95
Lead	BQL	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-7	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/27/95
Lab Sample ID:	02086	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	13	0.11	mg/KG	6010	07/06/95
Lead	BQL	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-8A	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/27/95
Lab Sample ID:	02087	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**50**	0.11	mg/KG	6010	07/06/95
Lead	BQL	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-8B	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/27/95
Lab Sample ID:	02088	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**74**	0.11	mg/KG	6010	07/06/95
Lead	**9.5**	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-9A	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/28/95
Lab Sample ID:	02089	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**16**	0.11	mg/KG	6010	07/06/95
Lead	BQL	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	SBR-9C	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/28/95
Lab Sample ID:	02090	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Soil

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	BQL	0.11	mg/KG	6010	07/06/95
Lead	BQL	5.1	mg/KG	6010	07/06/95

Note

BQL = Below Quantitation Limit

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES

Chain-of-Custody Record & Analytical Request

2627 Northchase Parkway SE. Wilmington, NC 28405 Phone: (910)-350-1903 FAX: (910)-350-1557

Client: _____
Company: NET
Address: 295-A N. Green Meadows Dr.
Wilm. NC 28405

Project ID: 058010
P.O. Number: _____
Contact: Joe Beaman / Hank Lyon
Phone: (910) 392-1747

Date: 6-28-95
Turnaround: Std.
Job Number: _____
Page: ____ of ____

Sample ID	Date	Time	Matrix	# of Bottles	Preservative	Analyses: 8260	Analyses: Cu & Pb							Comments
SBR-5	6/27	2010	Soil	2	—	✓	✓							Composite
SBR-6	6/27	2115 ~~2050~~	"	2	—	✓	✓							Composite
SBR-7	6/27	2230 ~~2030~~	"	2	—	✓	✓							Composite
SBR-8A	6/27	2310	"	2	—	✓	✓							
SBR-8B	6/27	2330	"	2	—	✓	✓							
SBR-9A	6/28	0130	"	2	—	✓	✓							
SBR-9C	6/28	0230	"	2	—	✓	✓							
CS-1	6/28	0705	Water	3	HCl / HNO_3	✓	✓							
CS-2	6/28	0715	"	3	HCl / HNO_3	✓	✓							

Relinquished By	Date	Time	Received By	Date	Time	Temperature		Sampled By	Airbill #
Billy T. Beaman	6/28/95	1108	[illegible signature]	6/28/95	1108				

Ground Water Analytical Results

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

DEC 16 1994

Mr. Henry Lyon
National Environmental Technologies
295-A North Green Meadows
Wilmington, NC 28405

Date 12-12-94

Report Number: G104-4

Client Project Number : Alcatel

Job Number : 058010

Dear Mr. Lyon:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs foryour analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Mark Randall

Laboratory Director
Mark Randall

Project Narrative

Client: National and Environmental Technologies, Inc.

Date: 12/12/94

Project: Alcatel

Lab Project: G104-4

Thirty-two samples were received on December 01, 1994 from the Alcatel site to be analyzed for SW-846 8260 and Total Metals. All samples were received intact and were preserved correctly. An air bubble was found in the third vial for MW-10S volatile sample. This vial was not used for analysis. The sample vial labeled MS-1 was labeled MS-1S on the original COC. MW-1S was used on the final report.

The metals samples were subcontracted to Research and Analytical Labs. From a discussion with the project officer, the following differences in client identifications should be noted and used as a crossreference for reviewing the metals results:

Original Sample IDs	Changed Sample IDs
MW-7DK	MW-7IK
MW-8DK	MW-8IK
MW-9DK	MW-9IK
MW-12s	MW-12DK

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-1S	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00072	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.0	80
Toluene-d8	5.00	4.5	90
Bromofluorobenzene	5.00	4.7	94

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-2S	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00073	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	5.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	5	5	U
1,2-Dichloroethane	5	5	U
1,1-Dichloroethene	5	**16**	
Tetrachloroethene	5	**6.4**	
1,1,2-Trichloroethane	5	5	U
1,1,1-Trichloroethane	5	**43**	
Trichloroethene	5	5	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.1	102
Toluene-d8	5.00	4.7	94
Bromofluorobenzene	5.00	4.9	98

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-2D	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00074	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	250.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	250	250	U
1,2-Dichloroethane	250	250	U
1,1-Dichloroethene	250	**1600**	
Tetrachloroethene	250	**540**	
1,1,2-Trichloroethane	250	250	U
1,1,1-Trichloroethane	250	**2800**	
Trichloroethene	250	250	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.8	96
Toluene-d8	5.00	4.6	92
Bromofluorobenzene	5.00	5.1	102

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-3S	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00075	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	**2.7**	

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.5	110
Toluene-d8	5.00	5.1	102
Bromofluorobenzene	5.00	5.4	108

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-3D	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00076	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	3.5	70
Toluene-d8	5.00	4.3	86
Bromofluorobenzene	5.00	4.7	94

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-4S	Date Analyzed:	12/03/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00077	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	5.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	5	5	U
1,2-Dichloroethane	5	5	U
1,1-Dichloroethene	5	5	U
Tetrachloroethene	5	**54**	
1,1,2-Trichloroethane	5	5	U
1,1,1-Trichloroethane	5	**8.3**	
Trichloroethene	5	5	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.8	96
Toluene-d8	5.00	4.6	92
Bromofluorobenzene	5.00	4.6	92

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-4D	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00078	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	20.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	20	20	U
1,2-Dichloroethane	20	20	U
1,1-Dichloroethene	20	**230**	
Tetrachloroethene	20	**240**	
1,1,2-Trichloroethane	20	20	U
1,1,1-Trichloroethane	20	**130**	
Trichloroethene	20	20	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.2	104
Toluene-d8	5.00	4.9	98
Bromofluorobenzene	5.00	4.9	98

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-5S	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00079	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	**3**	
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.2	104
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5	100

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-7S	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00080	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.7	94
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.6	112

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-7D	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00081	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.2	84
Toluene-d8	5.00	4.7	94
Bromofluorobenzene	5.00	5	100

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-9S	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00082	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	3.8	76
Toluene-d8	5.00	4.2	84
Bromofluorobenzene	5.00	4.8	96

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-10S	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00083	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.4	88
Toluene-d8	5.00	5	100
Bromofluorobenzene	5.00	5.3	106

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-11S	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00084	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	10.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	10	10	U
1,2-Dichloroethane	10	10	U
1,1-Dichloroethene	10	10	U
Tetrachloroethene	10	**120**	
1,1,2-Trichloroethane	10	10	U
1,1,1-Trichloroethane	10	10	U
Trichloroethene	10	10	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.3	106
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.8	116

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-12S	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00085	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	**11**	
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	**11**	
Tetrachloroethene	1	**2.6**	
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	**3.1**	

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.3	86
Toluene-d8	5.00	5	100
Bromofluorobenzene	5.00	5.5	110

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-1SK	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00088	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.6	112
Toluene-d8	5.00	5.5	110
Bromofluorobenzene	5.00	5.6	112

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-1IK	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00089	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	6.1	122
Toluene-d8	5.00	6.1	122
Bromofluorobenzene	5.00	5.7	114

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-2SK	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00090	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	200.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	200	200	U
1,2-Dichloroethane	200	200	U
1,1-Dichloroethene	200	**940**	
Tetrachloroethene	200	**240**	
1,1,2-Trichloroethane	200	200	U
1,1,1-Trichloroethane	200	200	U
Trichloroethene	200	200	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.0	100
Toluene-d8	5.00	4.8	96
Bromofluorobenzene	5.00	5.2	104

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-2IK	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00091	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	100.0

Compound	**Quantitation Limit (ug/L)**	**Result (ug/L)**	
1,1-Dichloroethane	100	100	U
1,2-Dichloroethane	100	100	U
1,1-Dichloroethene	100	**1500**	
Tetrachloroethene	100	**260**	
1,1,2-Trichloroethane	100	100	U
1,1,1-Trichloroethane	100	**220**	
Trichloroethene	100	100	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.1	102
Toluene-d8	5.00	4.9	98
Bromofluorobenzene	5.00	5	100

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-3SK	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00092	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	20.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	20	20	U
1,2-Dichloroethane	20	20	U
1,1-Dichloroethene	20	**38**	
Tetrachloroethene	20	**300**	
1,1,2-Trichloroethane	20	**20**	
1,1,1-Trichloroethane	20	**65**	
Trichloroethene	20	20	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.3	106
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.2	104

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-4SK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00093	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result (ug/L)**	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.3	86
Toluene-d8	5.00	4.6	92
Bromofluorobenzene	5.00	5.1	102

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-5SK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00094	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	**2.5**	
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	**2.5**	
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	**3.1**	

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.0	100
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.9	118

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-6SK	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00095	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	5.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	5	**6.8**	
1,2-Dichloroethane	5	5	U
1,1-Dichloroethene	5	**58**	
Tetrachloroethene	5	**19**	
1,1,2-Trichloroethane	5	5	U
1,1,1-Trichloroethane	5	**5.4**	
Trichloroethene	5	**34**	

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.3	106
Toluene-d8	5.00	4.9	98
Bromofluorobenzene	5.00	4.8	96

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-6IK	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00096	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	**15**	
Tetrachloroethene	1	**5.8**	
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	**2**	
Trichloroethene	1	**4.6**	

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.9	98
Toluene-d8	5.00	5.1	102
Bromofluorobenzene	5.00	5.3	106

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-7SK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00097	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	5.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	5	5	U
1,2-Dichloroethane	5	5	U
1,1-Dichloroethene	5	**79**	
Tetrachloroethene	5	**110**	
1,1,2-Trichloroethane	5	**7.1**	
1,1,1-Trichloroethane	5	**28**	
Trichloroethene	5	5	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.2	104
Toluene-d8	5.00	4.9	98
Bromofluorobenzene	5.00	5.3	106

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-7DK (MW-7ik)	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00098	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	200.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	200	200	U
1,2-Dichloroethane	200	200	U
1,1-Dichloroethene	200	**400**	
Tetrachloroethene	200	**3200**	
1,1,2-Trichloroethane	200	200	U
1,1,1-Trichloroethane	200	**230**	
Trichloroethene	200	200	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.2	104
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.7	114

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-8SK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00099	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	4.0	80
Toluene-d8	5.00	4.1	82
Bromofluorobenzene	5.00	4.6	92

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-8DK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00100	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	5.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	5	5	U
1,2-Dichloroethane	5	5	U
1,1-Dichloroethene	5	**32**	
Tetrachloroethene	5	**76**	
1,1,2-Trichloroethane	5	5	U
1,1,1-Trichloroethane	5	**13**	
Trichloroethene	5	5	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.4	108
Toluene-d8	5.00	5.1	102
Bromofluorobenzene	5.00	5.5	110

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-9SK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00101	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	5.00	5.0	100
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.7	114

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-9DK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00102	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	10.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	10	10	U
1,2-Dichloroethane	10	10	U
1,1-Dichloroethene	10	**180**	
Tetrachloroethene	10	**41**	
1,1,2-Trichloroethane	10	10	U
1,1,1-Trichloroethane	10	**27**	
Trichloroethene	10	10	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.1	102
Toluene-d8	5.00	4.6	92
Bromofluorobenzene	5.00	4.9	98

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-12DK	Date Analyzed:	12/05/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00103	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	5.00	4.5	90
Toluene-d8	5.00	4.8	96
Bromofluorobenzene	5.00	5.1	102

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	RW-1	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00086	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	10.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	10	10	U
1,2-Dichloroethane	10	10	U
1,1-Dichloroethene	10	**12**	
Tetrachloroethene	10	**160**	
1,1,2-Trichloroethane	10	**10**	
1,1,1-Trichloroethane	10	**30**	
Trichloroethene	10	10	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.4	108
Toluene-d8	5.00	5.2	104
Bromofluorobenzene	5.00	5.4	108

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	RW-2	Date Analyzed:	12/04/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00087	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	50.0

Compound	**Quantitation Limit (ug/L)**	**Result** (ug/L)	
1,1-Dichloroethane	50	50	U
1,2-Dichloroethane	50	50	U
1,1-Dichloroethene	50	**500**	
Tetrachloroethene	50	**220**	
1,1,2-Trichloroethane	50	50	U
1,1,1-Trichloroethane	50	**200**	
Trichloroethene	50	50	U

Surrogate Spike Recoveries	**Spike Added**	**Spike Result**	**Percent Recovered**
1,2-Dichloroethane-d4	5.00	5.2	104
Toluene-d8	5.00	4.9	98
Bromofluorobenzene	5.00	5.2	104

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	TB112394	Date Analyzed:	12/02/94
Client Project ID:	Alcatel	Analyzed By:	RNP
Lab Sample ID:	00104	Date Collected:	11/23/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)	
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
Tetrachloroethene	1	1	U
1,1,2-Trichloroethane	1	1	U
1,1,1-Trichloroethane	1	1	U
Trichloroethene	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	5.00	4.4	88
Toluene-d8	5.00	4.6	92
Bromofluorobenzene	5.00	4.8	96

Comments:

U = Not detected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-1S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00072	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**
Lead	5	6
Copper	20	85

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-2S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00073	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-2D	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00074	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-3S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00075	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-3D	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00076	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-4S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00077	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	9	
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-4D	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00078	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-5S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00079	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-7S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00080	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-7D	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00081	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-9S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00082	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**
Lead	5	53
Copper	20	157

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-10S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00083	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-11S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00084	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	12	
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-12S	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00085	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	18	
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	RW-1	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00086	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	RW-2	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00087	Date Collected:	11/30/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-1SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00088	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	8	
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-1IK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00089	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-2SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00090	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-2IK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00091	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-3SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00092	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**
Lead	5	57
Copper	20	55

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-4SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00093	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-5SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00094	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	11	
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-6SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00095	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-6IK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00096	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-7SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00097	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	8	
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-7DK (MW-7ik)	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00098	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-8SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00099	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-8DK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00100	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-9SK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00101	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-9DK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00102	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	Quantitation Limit (ug/L)	Result (ug/L)	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Metals

Client Sample ID:	MW-12DK	Date Analyzed:	12/08/94
Client Project ID:	Alcatel	Analyzed By:	RAL
Lab Sample ID:	00103	Date Collected:	12/01/94
Lab Project ID:	G104-4	Date Received:	12/01/94
Matrix:	Water	Dilution:	1.0

Metal	**Quantitation Limit** (ug/L)	**Result** **(ug/L)**	
Lead	5	5	U
Copper	20	20	U

Comments:

Flags = U - Undetected

B - Detected but less than report limit

PARADIGM ANALYTICAL

Custody Transfer Record/ Lab Work Request

2627 Northchase Parkway S.E. Wilmington, N.C. 28405 Phone: (910)-350-1903

Client: NET
Address: 295-A N. Green Meadows Dr.
Wilmington NC
Phone: 910-392-1747

Project ID: Akzotel
P.O. Number:
Contact Person: Henry Lyon
Date Collected: 11/30/94

Date: 12/1/94
Turnaround:
Job Number: 058010
Page: 1 of 2

Lab ID	Sample ID	Sample Type	Container Type	Number of Containers	Preservation	Analyses Requested: 8260	Analyses Requested: Total + Metals						Comments Date/Time	
00072	MW-1S	H_2O	Glass	4		–	–						11/30	9:20
00073	MW-2S	↓	↓	↓		–	–						11/30	9:30
00074	MW-2D					–	–						11/30	9:26
00075	MW-3S					–	–						11/30	9:00
00076	MW-3D					–	–						11/30	9:09
00077	MW-4S					–	–						11/30	10:53
00078	MW-4D					–	–						11/30	10:26
00079	MW-5S					–	–						11/30	10:00
00080	MW-7S					–	–						11/30	9:43
00081	MW-7D	↓	↓	↓		–	–						11/30	9:53

Custody Record (Signature Required)

	Relinquished By	Date	Time	Received By	Date	Time
1	Billy A. Pearson	12-1-94	11:12	Matt Burns	12-1-94	11:12
2						
3						
4						
5						

Remarks:
*Do not lab filter.
Do not run method 3030C

PARADIGM ANALYTICAL

Custody Transfer Record/ Lab Work Request

2627 Northchase Parkway S.E. Wilmington, N.C. 28405 Phone: (910)-350-1903

Client: NET
Address: 235-A N. Green Meadows Dr.
Wilmington NC
Phone: 910-392-1747

Project ID: Alcatel
P.O. Number:
Contact Person: Henry Lyon
Date Collected: 11/30/94

Date: 12/1/94
Turnaround:
Job Number: 058010
Page: 2 of 2

Lab ID	Sample ID	Sample Type	Container Type	Number of Containers	Preservation	Analyses Requested: 8260	Analyses Requested: Total Metals *						Comments
00082	MW-9S	H_2O	Glass	4		–	–						11/30 8:35
00083	MW-10S	↓	↓	↓		–	–						11/30 11:15
00084	MW-11S					–	–						11/30 10:14
00085	MW-12S					–	–						11/30 11:40
00086	RW-1					–	–						11/30 10:41
00087	RW-2	↓	↓	↓		–	–						11/30 10:55

Custody Record (Signature Required)

	Relinquished By	Date	Time	Received By	Date	Time
1	Billy A. Beam	12-1-94	11:12	[illegible]	12-1-94	11:12
2						
3						
4						
5						

Remarks:
* Do not lab filter
Do not run method 3030c

PARADIGM ANALYTICAL

Custody Transfer Record/ Lab Work Request

2627 Northchase Parkway S.E. Wilmington, N.C. 28405 Phone: (910)-350-1903

Client: NET
Address: 295-A N. Green Meadows Dr.
Wilmington NC
Phone: 910-392-1747

Project ID: Alcatel
P.O. Number:
Contact Person: Henry Lyon
Date Collected: 12/1/94

Date: 12/1/94
Turnaround:
Job Number: 058010
Page: 1 of 2

Lab ID	Sample ID	Sample Type	Container Type	Number of Containers	Preservation	Analyses Requested: 8260	Total Metals *						Comments Date / Time
00088	MW-1SK	H_2O	Glass	4		✓	✓						12/1 1431
00089	MW-1IK					✓	✓						12/1 1425
00090	MW-2SK					✓	✓						12/1 1449
00091	MW-2IK					✓	✓						12/1 1445
00092	MW-3SK					✓	✓						12/1 1456
00093	MW-4SK					✓	✓						12/1 1500
00094	MW-5SK					✓	✓						12/1 1622
00095	MW-6SK					✓	✓						12/1 1535
00096	MW-6IK					✓	✓						12/1 1525
00097	MW-7SK					✓	✓						12/1 1543

Custody Record (Signature Required)

	Relinquished By	Date	Time	Received By	Date	Time
1	Billy A. Beaver	12/1/94	18:18	Matt Kerr	6:10	12-1-94
2						
3						
4						
5						

Remarks:

* No lab Filter
No Method 3030C

PARADIGM ANALYTICAL

Custody Transfer Record/ Lab Work Request

2627 Northchase Parkway S.E. Wilmington, N.C. 28405 Phone: (910)-350-1903

Client: NET
Address: 295-A N. Greenfield Dr.
Wilmington NC
Phone: 910-392-1747

Project ID: Alcatel
P.O. Number:
Contact Person: Henry Lyon
Date Collected: 12/1/94

Date: 12/1/94
Turnaround:
Job Number: 058010
Page: 2 of 2

Lab ID	Sample ID	Sample Type	Container Type	Number of Containers	Preservation	Analyses Requested: 8260	Total Metals *						Comments
00098	MW-7DK	H_2O	Glass	4		✓	✓						12/1 1550
00099	MW-8SK	↓	↓	↓									12/1 1515
00100	MW-8DK												12/1 1508
00101	MW-9SK												12/1 1614
00102	MW-9DK												12/1 1609
00103	MW-12DK	↓	↓	↓									12/1 1437

Custody Record (Signature Required)

	Relinquished By	Date	Time	Received By	Date	Time
1	Billy A. Beam	12/1/94	1818	Matt Bo[illegible]	6:10	12/1/94
2						
3						
4						
5						

Remarks:

* No lab filter
No method 3030C

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-13s	Date Analyzed:	06/07/95
Client Project ID:	058010	Analyzed By:	WML
Lab Sample ID:	1736	Date Collected:	05/28/95
Lab Project ID:	G104-11	Date Received:	05/28/95
Matrix:	Water	Dilution:	200.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	1000	BQL
Acrolein	1000	BQL
Acrylonitrile	1000	BQL
Benzene	200	BQL
Bromobenzene	200	BQL
Bromochloromethane	200	BQL
Bromodichloromethane	200	BQL
Bromoform	200	BQL
Bromomethane	200	BQL
2-Butanone	1000	BQL
n-Butylbenzene	200	BQL
sec-Butylbenzene	200	BQL
tert-Butylbenzene	200	BQL
Carbon disulfide	200	BQL
Carbon tetrachloride	200	BQL
Chlorobenzene	200	BQL
Chloroethane	200	BQL
2-Chloroethyl vinyl ether	200	BQL
Chloroform	200	BQL
Chloromethane	200	BQL
2-Chlorotoluene	200	BQL
4-Chlorotoluene	200	BQL
Dibromochloromethane	200	BQL
1,2-Dibromo-3-chloropropane	200	BQL
Dibromomethane	200	BQL
1,2-Dibromoethane	200	BQL
1,2-Dichlorobenzene	200	BQL
1,3-Dichlorobenzene	200	BQL
1,4-Dichlorobenzene	200	BQL
trans-1,4-Dichloro-2-butene	200	BQL
1,1-Dichloroethane	200	BQL
1,1-Dichloroethene	200	**2000**
1,2-Dichloroethane	200	BQL
cis-1,2-Dichloroethene	200	BQL
trans-1,2-dichloroethene	200	BQL
1,2-Dichloropropane	200	BQL
1,3-Dichloropropane	200	BQL
2,2-Dichloropropane	200	BQL
1,1-Dichloropropene	200	BQL
cis-1,3-Dichloropropene	200	BQL
trans-1,3-dichloropropene	200	BQL
Dichlorodifluoromethane	200	BQL

Reviewed by: Cgd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	MW-13s	Date Analyzed:	06/07/95
Client Project ID:	058010	Analyzed By:	WML
Lab Sample ID:	1736	Date Collected:	05/28/95
Lab Project ID:	G104-11	Date Received:	05/28/95
Matrix:	Water	Dilution:	200.0

Ethylbenzene	200	BQL
Hexachlorobutadiene	200	BQL
2-Hexanone	1000	BQL
Iodomethane	200	BQL
Isopropylbenzene	200	BQL
4-Isopropyltoluene	200	BQL
Methylene chloride	1000	BQL
4-Methyl-2-pentanone	1000	BQL
Naphthalene	200	BQL
n-Propyl benzene	200	BQL
Styrene	200	BQL
1,1,1,2-Tetrachloroethane	200	BQL
1,1,2,2-Tetrachloroethane	200	BQL
Tetrachloroethene	200	BQL
Toluene	200	BQL
1,2,3-Trichlorobenzene	200	BQL
1,2,4-Trichlorobenzene	200	BQL
Trichloroethene	200	BQL
1,1,1-Trichloroethane	200	**390**
1,1,2-Trichloroethane	200	BQL
Trichlorofluoromethane	200	BQL
1,2,3-Trichloropropane	200	BQL
1,2,4-Trimethylbenzene	200	BQL
1,3,5-Trimethylbenzene	200	BQL
Vinyl acetate	200	BQL
Vinyl chloride	200	BQL
m-,p-Xylene	400	BQL
o-Xylene	200	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ggd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	MW-13s	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	05/28/95
Lab Sample ID:	01736	Date Received:	05/28/95
Lab Project ID:	G104-11	Matrix:	Water

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	BQL	0.2	ug/L	200.8	06/02/95
Lead	**6.6**	0.25	ug/L	200.8	06/02/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	Trip Blank	Date Analyzed:	06/06/95
Client Project ID:	058010	Analyzed By:	WML
Lab Sample ID:	1746	Date Collected:	05/28/95
Lab Project ID:	G104-11	Date Received:	05/28/95
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	5	BQL
Acrolein	5	BQL
Acrylonitrile	5	BQL
Benzene	1	BQL
Bromobenzene	1	BQL
Bromochloromethane	1	BQL
Bromodichloromethane	1	BQL
Bromoform	1	BQL
Bromomethane	1	BQL
2-Butanone	5	BQL
n-Butylbenzene	1	BQL
sec-Butylbenzene	1	BQL
tert-Butylbenzene	1	BQL
Carbon disulfide	1	BQL
Carbon tetrachloride	1	BQL
Chlorobenzene	1	BQL
Chloroethane	1	BQL
2-Chloroethyl vinyl ether	1	BQL
Chloroform	1	BQL
Chloromethane	1	BQL
2-Chlorotoluene	1	BQL
4-Chlorotoluene	1	BQL
Dibromochloromethane	1	BQL
1,2-Dibromo-3-chloropropane	1	BQL
Dibromomethane	1	BQL
1,2-Dibromoethane	1	BQL
1,2-Dichlorobenzene	1	BQL
1,3-Dichlorobenzene	1	BQL
1,4-Dichlorobenzene	1	BQL
trans-1,4-Dichloro-2-butene	1	BQL
1,1-Dichloroethane	1	BQL
1,1-Dichloroethene	1	BQL
1,2-Dichloroethane	1	BQL
cis-1,2-Dichloroethene	1	BQL
trans-1,2-dichloroethene	1	BQL
1,2-Dichloropropane	1	BQL
1,3-Dichloropropane	1	BQL
2,2-Dichloropropane	1	BQL
1,1-Dichloropropene	1	BQL
cis-1,3-Dichloropropene	1	BQL
trans-1,3-dichloropropene	1	BQL
Dichlorodifluoromethane	1	BQL

Reviewed by: ugd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	Trip Blank	Date Analyzed:	06/06/95
Client Project ID:	058010	Analyzed By:	WML
Lab Sample ID:	1746	Date Collected:	05/28/95
Lab Project ID:	G104-11	Date Received:	05/28/95
Matrix:	Water	Dilution:	1.0

Ethylbenzene	1	BQL
Hexachlorobutadiene	1	BQL
2-Hexanone	5	BQL
Iodomethane	1	BQL
Isopropylbenzene	1	BQL
4-Isopropyltoluene	1	BQL
Methylene chloride	5	BQL
4-Methyl-2-pentanone	5	BQL
Naphthalene	1	BQL
n-Propyl benzene	1	BQL
Styrene	1	BQL
1,1,1,2-Tetrachloroethane	1	BQL
1,1,2,2-Tetrachloroethane	1	BQL
Tetrachloroethene	1	BQL
Toluene	1	BQL
1,2,3-Trichlorobenzene	1	BQL
1,2,4-Trichlorobenzene	1	BQL
Trichloroethene	1	BQL
1,1,1-Trichloroethane	1	BQL
1,1,2-Trichloroethane	1	BQL
Trichlorofluoromethane	1	BQL
1,2,3-Trichloropropane	1	BQL
1,2,4-Trimethylbenzene	1	BQL
1,3,5-Trimethylbenzene	1	BQL
Vinyl acetate	1	BQL
Vinyl chloride	1	BQL
m-,p-Xylene	2	BQL
o-Xylene	1	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: Ogel

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES

Chain-of-Custody Record & Analytical Request

2627 Northchase Parkway SE. Wilmington, NC 28405 Phone: (910)-350-1903 FAX: (910)-350-1557

Client:
Company: NET
Address: 295-A N Green Meadows Dr
Wilmington, NC 28405

Project ID: 058010
P.O. Number: Call
Contact: J. Braman / H. Lyon
Phone: (910) 392-1747

Date: 5/28/95
Turnaround: Standard
Job Number:
Page: 1 of 2

Sample ID	Date	Time	Matrix	# of Bottles	Preservative	Analyses: 8260	Cu, Pb							Comments
MW-13S	5/28	0830	W	3	HNO_3	✓	✓							
MW-13S	5/28	0830	W	1	HCL	✓	✓							
MW-13SA	5/26	1900	S	2	—	✓	✓							
MW-13SB	5/26	1930	S	2	—	✓	✓							
SBR-1A	5/26	2045	S	2	—	✓	✓							
SBR-1BC agd 5-30	5/26	2120	S	2	—	✓	✓							
SBR-2A	5/26	2215	S	2	—	✓	✓							
~~SBR-2B~~	~~5/26~~													
SBR-3A	5/26	2220	S	2	—	✓	✓							
SBR-3BC agd 5-30	5/27	0010	S	2	—	✓	✓							

Relinquished By	Date	Time	Received By	Date	Time	Temperature		Sampled By	Airbill #
Bobby A. Braman	5/28/95	1230	[illegible]	1230					

PARADIGM ANALYTICAL LABORATORIES

Chain-of-Custody Record & Analytical Request

2627 Northchase Parkway SE. Wilmington, NC 28405 Phone: (910)-350-1903 FAX: (910)-350-1557

Client:
Company: NET
Address: 295-A N Green Meadows Dr.
Wilm, NC 28405

Project ID: 058010
P.O. Number: call
Contact: J. Beaman / H. Lyon
Phone: (910) 392-1747

Date: 5/28/95
Turnaround: Std.
Job Number:
Page: 2 of 2

Sample ID	Date	Time	Matrix	# of Bottles	Preservative	8260	Cu, Pb							Comments
~~SBR-3A~~														
~~SBR-3B~~														
SBR-4A	5/27	1140	S	2	–	/	/							
SBR-4BC agd 5-30	5/27	1240	S	2	–	/	/							

Relinquished By	Date	Time	Received By	Date	Time	Temperature		Sampled By	AirBill #
Billy C. Beaman	5/28/95	1230	[illegible]	5/28/95	12:30				

Creek Analytical Results

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	CS-1	Date Analyzed:	07/05/95
Client Project ID:	058010	Analyzed By:	wml
Lab Sample ID:	2091	Date Collected:	06/28/95
Lab Project ID:	G104-12	Date Received:	06/28/95
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	5	BQL
Acrolein	5	BQL
Acrylonitrile	5	BQL
Benzene	1	BQL
Bromobenzene	1	BQL
Bromochloromethane	1	BQL
Bromodichloromethane	1	BQL
Bromoform	1	BQL
Bromomethane	1	BQL
2-Butanone	5	BQL
n-Butylbenzene	1	BQL
sec-Butylbenzene	1	BQL
tert-Butylbenzene	1	BQL
Carbon disulfide	1	11
Carbon tetrachloride	1	BQL
Chlorobenzene	1	BQL
Chloroethane	1	BQL
2-Chloroethyl vinyl ether	1	BQL
Chloroform	1	BQL
Chloromethane	1	BQL
2-Chlorotoluene	1	BQL
4-Chlorotoluene	1	BQL
Dibromochloromethane	1	BQL
1,2-Dibromo-3-chloropropane	1	BQL
Dibromomethane	1	BQL
1,2-Dibromoethane	1	BQL
1,2-Dichlorobenzene	1	BQL
1,3-Dichlorobenzene	1	BQL
1,4-Dichlorobenzene	1	BQL
trans-1,4-Dichloro-2-butene	1	BQL
1,1-Dichloroethane	1	BQL
1,1-Dichloroethene	1	BQL
1,2-Dichloroethane	1	BQL
cis-1,2-Dichloroethene	1	BQL
trans-1,2-dichloroethene	1	BQL
1,2-Dichloropropane	1	BQL
1,3-Dichloropropane	1	BQL
2,2-Dichloropropane	1	BQL
1,1-Dichloropropene	1	BQL
cis-1,3-Dichloropropene	1	BQL
trans-1,3-dichloropropene	1	BQL
Dichlorodifluoromethane	1	BQL

Reviewed by: Cgd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	CS-1	Date Analyzed:	07/05/95
Client Project ID:	058010	Analyzed By:	wml
Lab Sample ID:	2091	Date Collected:	06/28/95
Lab Project ID:	G104-12	Date Received:	06/28/95
Matrix:	Water	Dilution:	1.0

Ethylbenzene	1	BQL
Hexachlorobutadiene	1	BQL
2-Hexanone	5	BQL
Iodomethane	1	BQL
Isopropylbenzene	1	BQL
4-Isopropyltoluene	1	BQL
Methylene chloride	5	BQL
4-Methyl-2-pentanone	5	BQL
Naphthalene	1	BQL
n-Propyl benzene	1	BQL
Styrene	1	BQL
1,1,1,2-Tetrachloroethane	1	BQL
1,1,2,2-Tetrachloroethane	1	BQL
Tetrachloroethene	1	BQL
Toluene	1	BQL
1,2,3-Trichlorobenzene	1	BQL
1,2,4-Trichlorobenzene	1	BQL
Trichloroethene	1	BQL
1,1,1-Trichloroethane	1	BQL
1,1,2-Trichloroethane	1	BQL
Trichlorofluoromethane	1	BQL
1,2,3-Trichloropropane	1	BQL
1,2,4-Trimethylbenzene	1	BQL
1,3,5-Trimethylbenzene	1	BQL
Vinyl acetate	1	BQL
Vinyl chloride	1	BQL
m-,p-Xylene	2	BQL
o-Xylene	1	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: GGd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260

Client Sample ID:	CS-2	Date Analyzed:	07/03/95
Client Project ID:	058010	Analyzed By:	WML
Lab Sample ID:	2092	Date Collected:	06/28/95
Lab Project ID:	G104-12	Date Received:	06/28/95
Matrix:	Water	Dilution:	1.0

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acetone	5	BQL
Acrolein	5	BQL
Acrylonitrile	5	BQL
Benzene	1	BQL
Bromobenzene	1	BQL
Bromochloromethane	1	BQL
Bromodichloromethane	1	BQL
Bromoform	1	BQL
Bromomethane	1	BQL
2-Butanone	5	BQL
n-Butylbenzene	1	BQL
sec-Butylbenzene	1	BQL
tert-Butylbenzene	1	BQL
Carbon disulfide	1	**14**
Carbon tetrachloride	1	BQL
Chlorobenzene	1	BQL
Chloroethane	1	BQL
2-Chloroethyl vinyl ether	1	BQL
Chloroform	1	BQL
Chloromethane	1	BQL
2-Chlorotoluene	1	BQL
4-Chlorotoluene	1	BQL
Dibromochloromethane	1	BQL
1,2-Dibromo-3-chloropropane	1	BQL
Dibromomethane	1	BQL
1,2-Dibromoethane	1	BQL
1,2-Dichlorobenzene	1	BQL
1,3-Dichlorobenzene	1	BQL
1,4-Dichlorobenzene	1	BQL
trans-1,4-Dichloro-2-butene	1	BQL
1,1-Dichloroethane	1	BQL
1,1-Dichloroethene	1	BQL
1,2-Dichloroethane	1	BQL
cis-1,2-Dichloroethene	1	BQL
trans-1,2-dichloroethene	1	BQL
1,2-Dichloropropane	1	BQL
1,3-Dichloropropane	1	BQL
2,2-Dichloropropane	1	BQL
1,1-Dichloropropene	1	BQL
cis-1,3-Dichloropropene	1	BQL

Reviewed by: aqd

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260

Client Sample ID:	CS-2	Date Analyzed:	07/03/95
Client Project ID:	058010	Analyzed By:	WML
Lab Sample ID:	2092	Date Collected:	06/28/95
Lab Project ID:	G104-12	Date Received:	06/28/95
Matrix:	Water	Dilution:	1.0

trans-1,3-dichloropropene	1	BQL
Dichlorodifluoromethane	1	BQL
Ethylbenzene	1	BQL
Hexachlorobutadiene	1	BQL
2-Hexanone	5	BQL
Iodomethane	1	BQL
Isopropylbenzene	1	BQL
4-Isopropyltoluene	1	BQL
Methylene chloride	5	BQL
4-Methyl-2-pentanone	5	BQL
Naphthalene	1	BQL
n-Propyl benzene	1	BQL
Styrene	1	BQL
1,1,1,2-Tetrachloroethane	1	BQL
1,1,2,2-Tetrachloroethane	1	BQL
Tetrachloroethene	1	BQL
Toluene	1	BQL
1,2,3-Trichlorobenzene	1	BQL
1,2,4-Trichlorobenzene	1	BQL
Trichloroethene	1	BQL
1,1,1-Trichloroethane	1	BQL
1,1,2-Trichloroethane	1	BQL
Trichlorofluoromethane	1	BQL
1,2,3-Trichloropropane	1	BQL
1,2,4-Trimethylbenzene	1	BQL
1,3,5-Trimethylbenzene	1	BQL
Vinyl acetate	1	BQL
Vinyl chloride	1	BQL
m-,p-Xylene	2	BQL
o-Xylene	1	BQL

Comments:

All results are corrected for dilution and %solids.

Reviewed by: ayd

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	CS-1	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/28/95
Lab Sample ID:	02091	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Water

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**2.5**	1.1	ug/L	200.7	07/05/95
Lead	**1.7**	0.76	ug/L	239.2	07/05/95

Note

BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	CS-2	Analyzed By:	CAE
Client Project ID:	058010	Date Collected:	06/28/95
Lab Sample ID:	02092	Date Received:	06/28/95
Lab Project ID:	G104-12	Matrix:	Water

Metals	Result	Detection Limit	Units	Procedure	Date Analyzed
Copper	**3.5**	1.1	ug/L	200.7	07/05/95
Lead	**1.1**	0.76	ug/L	239.2	07/05/95

Note

BQL = Below Quantitation Limit

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES

Chain-of-Custody Record & Analytical Request

2627 Northchase Parkway SE. Wilmington, NC 28405 Phone: (910)-350-1903 FAX: (910)-350-1557

Client:
Company: NET
Address: 295-A N. Green Meadows Dr.
Wilm, NC 28405

Project ID: 058010
P.O. Number:
Contact: Joe Beaman / Hank Lyon
Phone: (910) 392-1747

Date: 6-28-95
Turnaround: Std.
Job Number:
Page: ____ of ____

Sample ID	Date	Time	Matrix	# of Bottles	Preservative	8260	Cu & Pb							Comments
SBR-5	6/27	2010	Soil	2	—	✓	✓							Composite
SBR-6	6/27	2115 ~~2050~~	"	2	—	✓	✓							Composite
SBR-7	6/27	2230 ~~2050~~	"	2	—	✓	✓							Composite
SBR-8A	6/27	2310	"	2	—	✓	✓							
SBR-8B	6/27	2330	"	2	—	✓	✓							
SBR-9A	6/28	0130	"	2	—	✓	✓							
SBR-9C	6/28	0230	"	2	—	✓	✓							
CS-1	6/28	0705	Water	3	HCl / HNO_3	✓	✓							
CS-2	6/28	0715	"	3	HCl / HNO_3	✓	✓							

Relinquished By	Date	Time	Received By	Date	Time	Temperature		Sampled By	Airbill #
Bobby T. Beam	6/28/95	1108	[illegible]	6/28/95	1108				

APPENDIX B

BORING LOGS and WELL CONSTRUCTION RECORDS

BORING LOG

BORING NO. *MW-2D*		PAGE *1* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-13-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *65 Ft.*	GRDWTR. DEPTH: *9.57 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *TGW*
GROUND ELEV. (MSL): *226.14 Ft.*	T/C ELEV (MSL): *225.81 Ft.*	SCREEN INTER. *55-65 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Asphalt*					
5							
10		*Tan Sandy Clay (CL)*					*Water Table 216.24'*
15		*Gravelly Sandy Clay (GC)*					
	208.14						
20		*Tan Felsic Granite*					
25							
30							*Fracture*
35		*Gray Mafic Bedrock*					
40							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI – SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL – MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

		BORING NO. *MW-2D*	PAGE *2* OF *2*
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-13-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *65 Ft.*	GRDWTR. DEPTH:*9.57 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *TGW*
GROUND ELEV. (MSL): *226.14 Ft.*	T/C ELEV (MSL):*225.81 Ft.*	SCREEN INTER. *55-65 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
41							
45							
50		*Gray Micaceous Granite*					
55							*Fractured Area*
		Gray to Pink Felsic Granite					
60							
65	*161.14*	*Boring Terminated @ 65' in Rock*					
70							
75							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long. PO
Minor Basin
Basin Code
Header Ent. GWell Ent.

DEC 14 1994

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER:

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alactel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh N.C. 27609
   City or Town State Zip Code
3. DATE DRILLED 11-12-94 USE OF WELL monitor
4. TOTAL DEPTH 65.0 feet
5. CUTTINGS COLLECTED YES [ ] NO [x]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [x]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. CHLORINATION: Type N/A Amount N/A
12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	55.0	2 inch	Sch 40	PVC
	0.0	38.0	6 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	49.0	Portland	Bentonite Slurry
	0.0	38.0	Portland	Bentonite Slurry

14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	55.0	65.0	2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

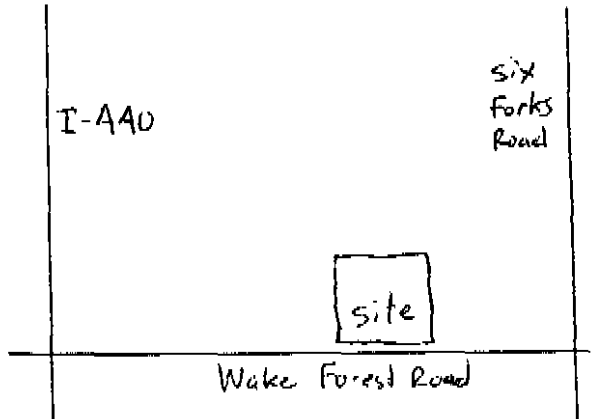
	Depth From	Depth To	Size	Material
	53.0	65.0	20-60	Fine Silica Sand

16. REMARKS: MW-2D Bentonite seal from 49.0 to 53.0 feet.

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	18.0'	Light tan sandy clay
18.0'	20.0'	Brown grey sandy silt
20.0'	65.0'	Grey granite with fractures at 28.0' and 57.0

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT — DATE 12-01-94

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW-3D*		PAGE *1* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-13-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *70 Ft.*	GRDWTR. DEPTH: *11.42 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *TGW*
GROUND ELEV. (MSL): *228.64 Ft.*	T/C ELEV (MSL): *228.48 Ft.*	SCREEN INTER. *55-70 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Gray Sandy Clay w/Rock Fragments (GC)*					
5							
10							*Water Table Elev. 217.06'*
15							
	210.64						
20		*Tan Felsic Granite*					
25							
30							
35							
40		*Tan to Pink Felsic Granite*					

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

BORING NO. *MW-3D*		PAGE *2* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-13-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *70 Ft.*	GRDWTR. DEPTH: *11.42 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *TGW*
GROUND ELEV. (MSL): *228.64 Ft.*	T/C ELEV (MSL): *228.48 Ft.*	SCREEN INTER. *55-70 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
41							
45							
50		*Tan to Pink Felsic Granite*					*Fractured Area*
55							
60		*Gray Mafic Bedrock*					*Fractured Area*
65							
70	*158.64*	*Boring Terminated @ 70' in Rock*					
75							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long. FO
Minor Basin
Basin Code
Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER:

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alactel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh N.C. 27609
   City or Town State Zip Code
3. DATE DRILLED 11-12-94 USE OF WELL monitor
4. TOTAL DEPTH 70.0 ft
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*
   * Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	5.0'	Brown orange silty cla
5.0'	15.0'	Light tan silty clay
15.0'	25.0'	Grey clay
25.0'	35.0'	Brown sandy silt
35.0'	43.0'	Grey Granite
43.0'	52.0'	Light tan silty stone
52.0'	70.0'	Grey Granite
		Fractures at 52.0,60.0 and 69.0 feet.

If additional space is needed use back of form

CHLORINATION: Type N/A Amount N/A

CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	55.0	2 inch	Sch 40	PVC
	0.0	43.0	6 inch	Sch 40	PVC

13. GROUT:

Depth From	Depth To	Material	Method
0.0	49.0	Portland Bentonite Slurry	
0.0	43.0	Portland Bentonite Slurry	

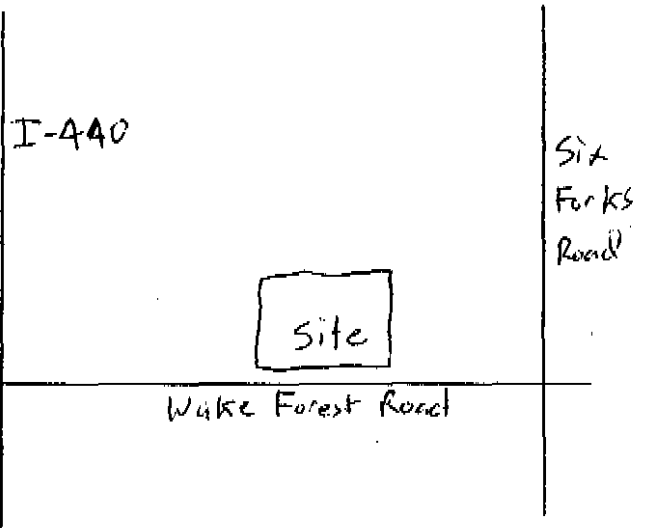
14. SCREEN:

Depth From	Depth To	Diameter	Slot Size	Material
55.0	70.0	2 in.	.010 in.	PVC
		in.	in.	
		in.	in.	

15. SAND/GRAVEL PACK:

Depth From	Depth To	Size	Material
53.0	70.0	20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



16. REMARKS: MW-3D Bentonite seal from 49.0 to 53.0 feet.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT 12-01-94 DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW-4D*		PAGE *1* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-10-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *67 Ft.*	GRDWTR. DEPTH: *13.31 Ft.*	SCREEN DEPTH: *37 Ft.*	LOGGED BY: *HWL*
GROUND ELEV. (MSL): *227.42 Ft.*	T/C ELEV (MSL): *227.20 Ft.*	SCREEN INTER. *37-67 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Asphalt*					
		Tan Silty Sand (SM)					
5							
10							
		Gravelly Gray Silty Sand (GM)					*Water Table Elev. 213.89'*
15							
20							
	203.42						
25							
		Tan Granite					
30							*Fractured Area*
35							
40							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

BORING NO. *MW-4D*		PAGE *2* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-10-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *67 Ft.*	GRDWTR. DEPTH: *13.31 Ft.*	SCREEN DEPTH: *37 Ft.*	LOGGED BY: *HWL*
GROUND ELEV. (MSL): *227.42 Ft.*	T/C ELEV (MSL): *227.20 Ft.*	SCREEN INTER. *37-67 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
41		*Felsic Granite*					
45							
50							
55		*White to Pink Granite*					
60							*Fractured Area*
65							
	160.42	*Boring Terminated @ 67' in Rock*					
70							
75							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI – SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL – MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD. NO. _____ SERIAL NO. _____
Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alactel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh N.C. 27609
   City or Town State Zip Code
3. DATE DRILLED 11-10-94 USE OF WELL monitor
4. TOTAL DEPTH 67.0 feet
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	1.0'	Asphalt stone
1.0'	3.0'	Grey silty sand
3.0'	36.0'	Tan orange silty sand
36.0'	67.0'	Grey pink orange white granite

If additional space is needed use back of form

CHLORINATION: Type N/A Amount N/A

12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	37.0	2 inch	Sch 40	PVC
	0.0	36.0	4 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	31.0	Portland Bentonite Slurry	
	0.0	36.0	Portland Bentonite Slurry	

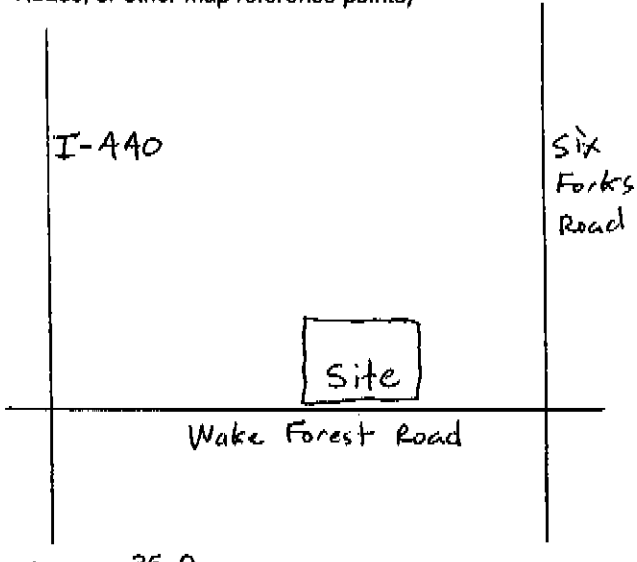
14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	37.0	67.0	2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

	Depth From	Depth To	Size	Material
	36.0	67.0	20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



16. REMARKS: MW-4D Bentonite seal from 31.0 to 36.0 feet.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT — DATE 12-01-94

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW-7D*		PAGE *1* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-9-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *70 Ft.*	GRDWTR. DEPTH: *7.05 Ft.*	SCREEN DEPTH: *50 Ft.*	LOGGED BY: *HWL*
GROUND ELEV. (MSL): *229.53 Ft.*	T/C ELEV (MSL): *229.35 Ft.*	SCREEN INTER. *50-70 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Asphalt*					
5		*Gray Silty Sand (SM)*					
10							*Water Table Elev. 222.30'*
15		*Gravelly Brown Silty Sand (GM)*					
20							
25							
	202.59						
30		*Gray Mafic Bedrock*					*Fractured Area*
35							
40							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

BORING NO. *MW-7D*		PAGE *2* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-9-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *70 Ft.*	GRDWTR. DEPTH: *7.05 Ft.*	SCREEN DEPTH: *50 Ft.*	LOGGED BY: *HWL*
GROUND ELEV. (MSL): *229.53 Ft.*	T/C ELEV (MSL): *229.35 Ft.*	SCREEN INTER. *50-70 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
41							
45							*Fracture*
50							
55							*Fracture*
60							*Fractured Area*
		White to Gray Granite					
65							
70	*159.53*	*Boring Terminated @ 70' in Rock*					
75							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long. RO
Minor Basin
Basin Code
Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER:

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh County: Wake
Wake Forest Road
(Road, Community, or Subdivision and Lot No.)

2. OWNER Alactel Network Systems
ADDRESS 2912 Wake Forest Road
(Street or Route No.)
Raleigh N.C. 27609
City or Town State Zip Code

3. DATE DRILLED 11-9-94 USE OF WELL monitor
4. TOTAL DEPTH 70.0 feet
5. CUTTINGS COLLECTED YES [ ] NO [x]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [x]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*
* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	15.0'	Light tan sandy silty clay
15.0'	26.0'	Dark brown grey clayey sandy silt
26.0'	63.0'	Grey granite
63.0'	66.0'	White quartz(slightly fractured)
66.0'	70.0'	Grey Granite

If additional space is needed use back of form

CHLORINATION: Type N/A Amount N/A

CASING:

	Depth From	Depth To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	50.0		2inch	Sch 40	PVC
	0.0	40.0		6 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Ft.	Material	Method
	0.0	44.0		Portland Bentonite Slurry	
	0.0	40.0		Portland Bentonite Slurry	

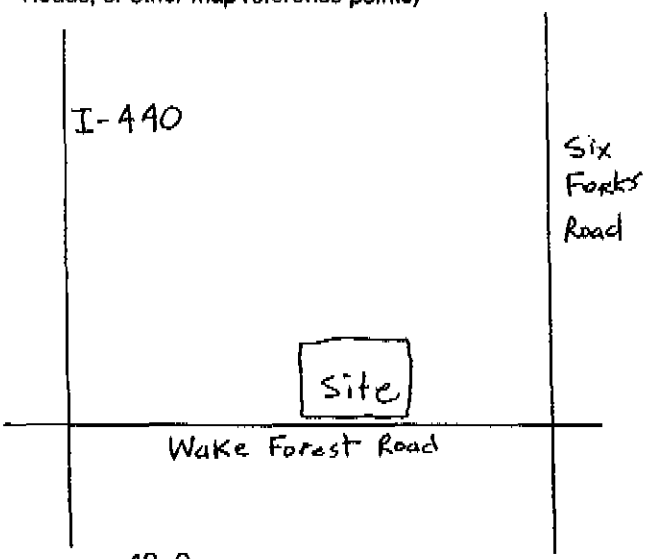
14. SCREEN:

	Depth From	Depth To	Ft	Diameter	in.	Slot Size	in.	Material
	50.0	70.0		2		.010		PVC

15. SAND/GRAVEL PACK:

	Depth From	Depth To	Ft.	Size	Material
	48.0	70.0		20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



16. REMARKS: MW-7D Bentonite seal from 44.0 to 48.0 feet.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW8SK*		PAGE *1* OF *1*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-14-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *20 Ft.*	GRDWTR. DEPTH: *12.99 Ft.*	SCREEN DEPTH: *10 Ft.*	LOGGED BY: *HWL*
GROUND ELEV. (MSL): *224.37 Ft.*	T/C ELEV (MSL): *224.31 Ft.*	SCREEN INTER. *10-20 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
		Asphalt					
1		*Brown Micaceous Sandy Clay (CL)*					
5	*219.37*			*3 6 9*			
		Gray Gravely Clayey Sand (GC)					
10	*214.37*			*4 4 7*			
		Brown to Tan Micaceous Silty Sandy Clay (CL)					*Water Table Elev. 211.32'*
15	*209.37*			*13 23 28*			
		Brown Silty Sand (SM)					
20	*204.37*			*40 50 3*			
		Boring Terminated @ 20' in White to Brown Micaceous Silty Sand (SM)					
25							

EQUIPMENT: *Mobile B-61 w/ 6.25" I.D. hollow stem augers, split spoon sampler*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long.
Minor Basin
Basin Code
Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER: WM-05-0041

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road/Six Forks Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alcatel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh NC 27609
   City or Town State Zip Code
3. DATE DRILLED 11-14-94 USE OF WELL monitor
4. TOTAL DEPTH 20.0 ft
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. CHLORINATION: Type N/A Amount N/A
12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	10.0	2 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	6.0	Portland Bentonite Slurry	

14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	10.0	20.0	2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

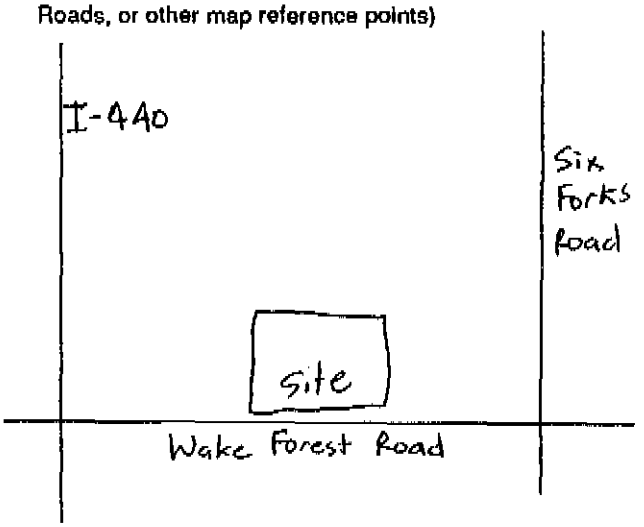
	Depth From	Depth To	Size	Material
	8.0	20.0	20-60	Fine Silica Sand

16. REMARKS: MW-8SK Bentonite seal from 6.0 to 8.0 feet

Depth From	Depth To	Formation Description
0.0'	1.0'	Asphalt stone
1.0'	3.0'	Grey silty sand
3.0'	20.0'	Tan orange silty sand

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

		BORING NO. *MW-8DK*	PAGE *1* OF *2*
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-14-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *82 Ft.*	GRDWTR. DEPTH: *14.83 Ft.*	SCREEN DEPTH: *50 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *224.74 Ft.*	T/C ELEV (MSL): *224.31 Ft.*	SCREEN INTER. *50-80 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Asphalt*					
5							
10		*Tan Silty to Clayey Sand (SC)*					
15							▼ *Water Table Elev. 209.48'*
20	*204.74*						
		Brown to Light Brown Granite					*Fractured Area*
25							
30		*Felsic Granite*					
35							
40							
42							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI – SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL – MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

		BORING NO. *MW-8DK*	PAGE *2* OF *2*
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-14-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *82 Ft.*	GROWTR. DEPTH: *14.83 Ft.*	SCREEN DEPTH: *50 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *224.74 Ft.*	T/C ELEV (MSL): *224.31 Ft.*	SCREEN INTER. *50-80 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
43							
45							
50		*Pink Felsic Granite*					*Fractured Area*
55							
60		*Gray Mafic Bedrock*					
65							
70		*Pink Granite*					
75							
80		*Gray Mafic Bedrock*					
	142.74	*Boring Terminates @ 82' in Rock*					
84							

EQUIPMENT: *Drilltech Inc. D25K w/10.0" O.D. hammer for 6.0" O.D. outer casing, 6.75" O.D. hammer for 2.0" O.D. inner casing.*

NOTES: SI – SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL – MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long.
Minor Basin
Basin Code
Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER: WM-05-0041

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alactel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh N.C. 27609
   City or Town State Zip Code
3. DATE DRILLED 11-14-94 USE OF WELL monitor
4. TOTAL DEPTH 80.0 feet
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0116

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	3.0'	Asphalt gravel
3.0'	8.0'	Brown grey sandy silty clay
8.0'	20.0'	Brown white sandy clay
20.0'	39.0'	Brown white silty stor
39.0	55.0'	Light grey white grani with fracture (dry) at 53.0 feet
55.0'	65.0'	Grey granite
65.0'	82.0'	Light grey white grani

If additional space is needed use back of form

11. CHLORINATION: Type N/A Amount N/A
12. CASING:

Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
0.0	50.0		2 inch	Sch 40	PVC
0.0	39.0		6 inch	Sch 40	PVC

13. GROUT:

Depth From	To	Ft.	Material	Method
0.0	44.0		Portland Bentonite Slurry	
0.0	39.0		Portland Bentonite Slurry	

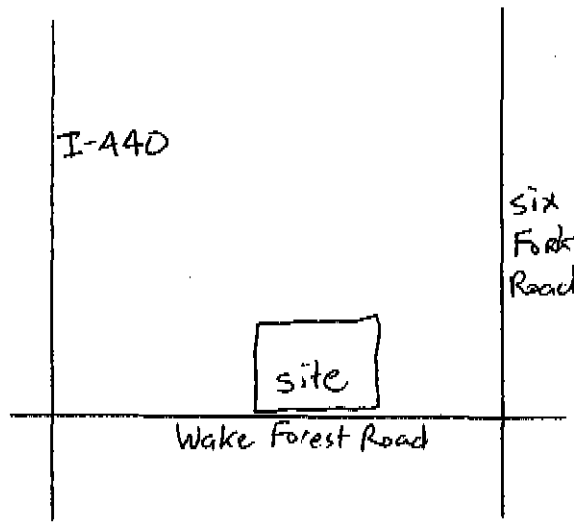
14. SCREEN:

Depth From	To	Ft.	Diameter	Slot Size	Material
50.0	80.0		2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

Depth From	To	Ft.	Size	Material
48.0	80.0		20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



16. REMARKS: MW-8DK Bentonite seal from 44.0 to 48.0 feet.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94

SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW-9SK*	PAGE *1* OF *1*		
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-15-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *48 Ft.*	GRDWTR. DEPTH: *10.70 Ft.*	SCREEN DEPTH: *6 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *216.34 Ft.*	T/C ELEV (MSL): *216.00 Ft.*	SCREEN INTER. *6-46 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Orange Silty Clay (CL)*					
		Gray to Green Micaceous Sandy Silt		2			
5				2			
				4			
		Green to Black Organic Rich Clayey Sand (SC)					
10				6			*Water Table Elev. 205.30'*
				4			
				5			
15							*Sparse Semi-rounded Quartz Pebbles*
		Black Gravelly Clay (GC)					
20							
25							
30		*Tan Gravelly Sandy Clay (GC)*					
35							
40							
45							*Well Set @ 46.0 Feet*
	168.34	*Boring Terminated @ 48' at Top of Compentent Bedrock*					*48' Top of Competent Bedrock*

EQUIPMENT: *Mobil B-61 w/6.25" I.D. Hollow Stem Augers, Split Spoon Sampler.*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long.
Minor Basin
Basin Code
Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER: WM-05-0041

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road/Six Forks Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alcatel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh NC 27609
   City or Town State Zip Code
3. DATE DRILLED 11-15-94 USE OF WELL monitor
4. TOTAL DEPTH 46.0 ft
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. CHLORINATION: Type N/A Amount N/A
12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	6.0	2 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	2.0	Portland Bentonite Slurry	

14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	6.0	46.0	2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

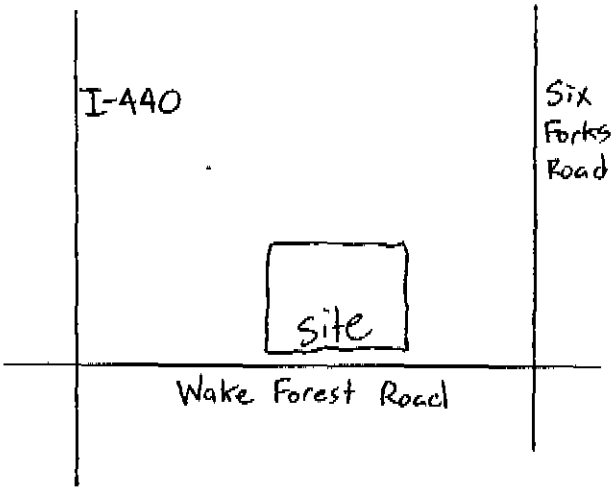
	Depth From	Depth To	Size	Material
	4.0	46.0	20-60	Fine Silica Sand

16. REMARKS: MW-9 SK Bentonite seal from 2.0 to 4.0 feet

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	1.0'	Asphalt stone
1.0'	3.0'	Grey silty sand
3.0	35.0'	Tan orange silty sand
35.0'	46.0'	Tan silty sand with rock fragment

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW-9DK*		PAGE *1* OF *2*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-17-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *70 Ft.*	GRDWTR. DEPTH: *11.78 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *216.42 Ft.*	T/C ELEV (MSL): *215.94 Ft.*	SCREEN INTER. *55-70 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Asphalt*					
5							
10							▼ *Water Table 204.16'*
		Orange Silty Clay (CL)					
15							
20							
25							
30	*186.42*	*Brownish Gray Silty Clay with Rock Fragments (GC)*					
35							
40		*Orange to Brown Silty Clay w/ Rock Fragments (GC)*					

EQUIPMENT: *Driltech Inc., D25K with 10.0" Hammer for 6.0" O.D.*

NOTES: SI – SCREEN INTERVAL –
ALL DEPTHS SHOWN IN FEET. –
MSL – MEAN SEA LEVEL (FT.) –
–

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

		BORING NO. *MW-9DK*	PAGE *2* OF *2*
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-17-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *70 Ft.*	GRDWTR. DEPTH: *11.78 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *216.42 Ft.*	T/C ELEV (MSL): *215.94 Ft.*	SCREEN INTER. *55-70 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
41							
45		*Orange to Brown Silty Clay w/Rock Fragments (GC)*					
	168.42	*Gray Mafic Bedrock*					
50							
55							*Fracture*
60		*Gray to Green Mafic Bedrock*					
65		*Pink Felsic Granite*					
70	*146.42*	*Boring Terminates @ 70' in Rock*					
75							

EQUIPMENT: *Driltech Inc., D25K with 10.0" Hammer for 6.0" O.D.*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

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Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER:

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh County: Wake
Wake Forest Road
(Road, Community, or Subdivision and Lot No.)

2. OWNER Alactel Network Systems
ADDRESS 2912 Wake Forest Road
(Street or Route No.)
Raleigh N.C. 27609
City or Town State Zip Code

3. DATE DRILLED 11-17-94 USE OF WELL monitor
4. TOTAL DEPTH 70.0
5. CUTTINGS COLLECTED YES [ ] NO [x]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [x]
7. STATIC WATER LEVEL Below Top of Casing: FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*
* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	1.0'	Asphalt/Stone
1.0'	3.0'	Grey silty sand
3.0'	35.0'	Tan orange silty sand
35.0'	51.0'	Tan silty sand
51.0'	55.0'	Grey granite
55.0'	57.0'	Light grey brown sandy silt with fractures and rock fragments
57.0'	70.0'	Light grey granite

If additional space is needed use back of form

CHLORINATION: Type N/A Amount N/A

CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	55.0	2 inch	Sch 40	PVC
	0.0	51.0	6 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	49.0	Portland Bentonite Slurry	
	0.0	51.0	Portland Bentonite Slurry	

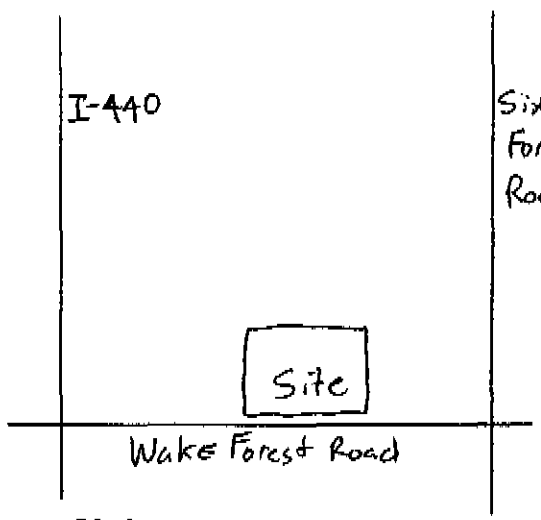
14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	55.0	70.0	2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

	Depth From	Depth To	Size	Material
	53.0	70.0	20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



16. REMARKS: MW-9DK Bentonite seal from 49.0 to 53.0 feet.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *MW-12DK*	PAGE *1* OF *2*		
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-17-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *66 Ft.*	GRDWTR. DEPTH: *10.30 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *221.84 Ft.*	T/C ELEV (MSL): *221.59 Ft.*	SCREEN INTER. *55-65 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1							
5							
10							▼ *Water Table Elev. 221.29'*
		Tan to Orange Sandy Clay (CL)					
15							
20							
25							
		Dark Gray Sandy Clay with Rock Fragments (GC)					
30							
35							
40							

EQUIPMENT: *Drilltech Inc. D25K with 6.75" O.D. Hammer for 2.0' O.D. Inner Casing*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

BORING NO. *MW-12DK*	PAGE 2 OF 2		
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-17-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *66 Ft.*	GRDWTR. DEPTH: *10.30 Ft.*	SCREEN DEPTH: *55 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *221.84 Ft.*	T/C ELEV (MSL): *221.59 Ft.*	SCREEN INTER. *55-65 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
41							
45		*Dark Gray Sandy Clay w/Rock Fragment (GC)*					*Semi-Competent Rock* *Fracture*
50	*171.94*						
55		*Gray Mafic Bedrock*					*Competent Rock* *Fracture Area*
60		*Gray to Green Mafic Bedrock*					*Fracture*
65	*155.94*	*Pink Felsic Granite*					*Fracture* *Fractured Area*
		Boring Terminates @66' in Rock					
70							
75							

EQUIPMENT: *Drilltech Inc. D25K with 6.75" O.D. Hammer for 2.0" O.D. Inner Casing*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long. RO
Minor Basin
Basin Code
Header Ent. GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER: WM-05-0041

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh County: Wake
Wake Forest Road/Six Forks Road
(Road, Community, or Subdivision and Lot No.)

2. OWNER Alcatel Network Systems
ADDRESS 2912 Wake Forest Road
(Street or Route No.)
Raleigh NC 27609
City or Town State Zip Code

3. DATE DRILLED 11-14-94 USE OF WELL monitor
4. TOTAL DEPTH 65.0 ft
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A

11. CHLORINATION: Type N/A Amount N/A

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	22.0'	Light tan orange sandy clay
22.0'	44.0'	Dark grey sandy clay with gravel zones
44.0'	51.0'	Grey Granite
53.0'	65.0'	Grey black granite

If additional space is needed use back of form

12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	55.0	2 inch	Sch 40	PVC
	0.0	53.0	6 1/4 in	.188	carbon steel

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	50.0	Portland Bentonite Slurry	
	0.0	53.0	Portland Bentonite Slurry	

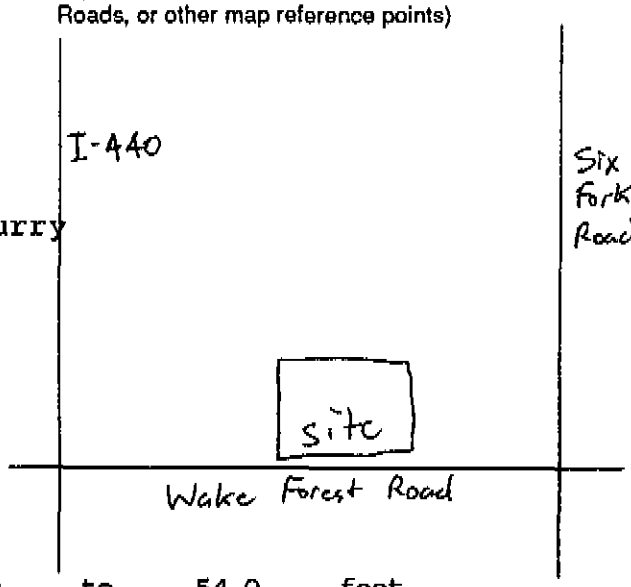
14. SCREEN:

Depth From	Depth To	Diameter	Slot Size	Material
55.0	65.0	2 in.	.010 in.	PVC
		in.	in.	
		in.	in.	

15. SAND/GRAVEL PACK:

Depth From	Depth To	Size	Material
54.0	65.0	20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



16. REMARKS: MW-12DK Bentonite seal from 50.0 to 54.0 feet

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

		BORING NO. *MW-13S*	PAGE *1* OF *1*
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *5-26-95*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *15 Ft.*	GRDWTR. DEPTH: *11.0 Ft.*	SCREEN DEPTH: *10 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *229.80 Ft.*	T/C ELEV (MSL): *229.72 Ft.*	SCREEN INTER. *10-20 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
							Gravel Base Coarse for Bldg.
1							
		Tan Silty Clay (CL)					
5							
9	*220.80*						
10		*Orange Clayey Sand (SC)*					▼ *Water Table Elev. 218.72*
14	*215.80*	*Tan to White, Gravelly, Clayey, Sand (GM)*					*Partially Weathered Rock*
15	*214.80*	*Boring Terminated @ 15' at Auger Refusal.*					
20							
25							

EQUIPMENT: *Boring Advanced With Hand Auger.*

NOTES: SI – SCREEN INTERVAL –
ALL DEPTHS SHOWN IN FEET. –
MSL – MEAN SEA LEVEL (FT.) –

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

Boring /Well Construction Log

Well Construction Permit Number *NA* ***Aquaterra, Inc.***

I. D. Number	*MW - 1sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107600*			Registration No.	*763*
Geologist	*Matt Tischler*			Driller	*Tony Debetsky*
Start Date	*8/17/94*	Complete Date	*8/18/94*	Equipment	*CME-75*

Drilling Method	*4 1/4" ID hollow stem augers*
Comments	*5' interval split-spoon sampling; well installed initially to 16', then removed and redrilled to 20'.*

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	*8"*	*0" - 3"*	*Topsoil*	
Riser Type	*Sch. 40 PVC*	*3" - 11'*	*Dark gray slightly clayey silty micaceous fine to*	*0 @ 5*
Diameter	*2"*	-	*medium sand - probable fill*	*0 @ 10*
Screen Type	*Sch. 40 PVC*	*11' - 15'*	*Gray slightly clayey silty micaceous fine to*	*0 @ 15*
Diameter	*2"*	-	*medium SAND (SM)*	
Riser Interval	*0'-10'*	*15' - 16'*	*Gray slightly clayey silty micaceous fine to*	
Screen Interval	*10'-20'*	-	*medium SAND (SM) with rock fragments*	
Slot Size	*0.010"*	*16' - 20'*	*Greenish gray silty CLAY (CL) with minor*	*0 @ 20*
Grout Type	*Portland #1*	-	*organic debris (very stiff)*	
Interval	*0'-6'*	-		
Bentonite Type	*3/8" Pellets*	-	*Boring terminated @ 20'*	
Interval	*6'-8'*	-		
Filter Pack	*Coarse Sand*	-		
Interval	*8'-20'*	-		
Total Depth	*20'*	-		
R.P. Elevation	*95.29'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
8/18/94	*Dry*	-		
8/22/94	*19.80'*	-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* ***Aquaterra, I***

I. D. Number	*MW - 1ik*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107601*			Registration No.	*763*
Geologist	*Tom Taylor*			Driller	*Tony Debetsky*
Start Date	*9/26/94*	Complete Date	*9/27/94*	Equipment	*CME-75*

Drilling Method	*4 1/4" ID hollow stem augers to refusal at 32.5'; 4" air hammer to*
Comments	*42.5'; very high flow of water during drilling; install 5' screen with*
	filter sock (no sand pack) to 42.5'; time release bentonite placed in
	top of sock above screen with hose clamps. No split-spoon samples
	taken.

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PI (ppm) @ Depth (
Borehole Dia.	*8" / 4"*	*0' - 3"*	*Topsoil*	
Riser Type	*PVC*	*3" - 11'*	*Dark gray slightly clayey silty micaceous fine*	
Diameter	*2"*		*fine to medium sand - possible fill*	
Screen Type	*PVC*	*11' - 15'*	*Gray slightly clayey silty micaceous fine to medium*	
Diameter	*2"*	-	*SAND (SM)*	
Riser Interval	*0' - 37.5'*	*15' - 16'*	*Gray slightly clayey silty micaceous fine to medium*	
Screen Interval	*37.5' - 42.5'*	-	*SAND (SM) with rock fragments*	
Slot Size	*0.010"*	*16' - 25'*	*Greenish gray silty CLAY (CL) with minor organic*	
Grout Type	*Portland #1*	-	*debris (very stiff)*	
Interval	*0' - 33'*	*25' - 32.5'*	*Silty fine to medium micaceous SAND (SM) with*	
Bentonite Type	*Time Release*	-	*rock fragments*	
Interval	*33' - 37.5'*	*32.5' - 42.5'*	*Gneissic bedrock (fracture noted from 38.8' to*	
Filter Pack	*Screen Sock*	-	*40.0')*	
Interval	*37.5' - 42.5'*	-		
Total Depth	*42.5'*	-	*Auger refusal @ 32.5'*	
R.P. Elevation	*95.17'*	-	*Boring terminated @ 42.5'*	
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
10/11/94	*16.16'*	-		
		-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* ***Aquaterra, Inc.***

I. D. Number	*MW - 2sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107600*			Registration No.	*763*
Geologist	*Doug Rakoczy*			Driller	*Robert Cassell*
Start Date	*8/16/94*	Complete Date	*8/16/94*	Equipment	*Failing F-7*

Drilling Method	*4 1/4" ID hollow stem augers*
Comments	*No split-spoons taken (see MW-2i)*

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	*8"*	*0" - 3"*	*Topsoil*	
Riser Type	*Sch. 40 PVC*	*3" - 2.5'*	*Red-brown micaceous sandy clayey silt -*	
Diameter	*2"*	-	*probable fill*	
Screen Type	*Sch. 40 PVC*	*2.5' - 5'*	*Tan slightly micaceous silty fine SAND (SM)*	
Diameter	*2"*	*5' - 16'*	*Tan and white micaceous slightly silty fine*	
Riser Interval	*0'-10'*		*SAND (SM), with small rock fragments*	
Screen Interval	*10'-20'*	*16' - 20'*	*Tan and white slightly silty slightly micaceous*	
Slot Size	*0.010"*	-	*fine to coarse SAND (SM) - very dense*	
Grout Type	*Portland #1*	-	*from 18' to 20'*	
Interval	*0'-6'*	-		
Bentonite Type	*3/8" Pellets*	-	*Boring terminated @ 20'*	
Interval	*6'-8'*	-		
Filter Pack	*Fine Sand*	-		
Interval	*8'-20'*	-		
Total Depth	*20'*	-		
R.P. Elevation	*99.24'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
8/17/94	*13.50*	-		
8/22/94	*14.10*	-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* *Aquate*

I. D. Number	*MW - 21k*			Purpose	*Ground Water Monito*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107600*			Registration No.	*763*
Geologist	*Doug Rakoczy/Matt Tischler*			Driller	*Robert Cassell*
Start Date	*8/15/94*	Complete Date	*8/17/94*	Equipment	*Failing F-7*

Drilling Method	*4 1/4" ID hollow stem augers to 21' w/split-spoon sampling (5' interval),*
Comments	*pull augers; 8 1/4" ID augers to 14' (refusal); 7 7/8" air Tricone bit from*
	14' to 29'; set 6" PVC surface casing to 29' and grout in-place; 5 7/8"
	air bit to 42'; set 2" well to 42'.

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	F @
Borehole Dia.	*6"*	*0" - 3"*	*Topsoil*	
Riser Type	*Sch. 40 PVC*	*3" - 2.5'*	*Red-brown micaceous sandy clayey silt -*	
Diameter	*2"*	-	*probable fill*	
Screen Type	*Sch. 40 PVC*	*2.5' - 5'*	*Tan slightly micaceous silty fine SAND (SM)*	
Diameter	*2"*	*5' - 16'*	*Tan and white micaceous slightly silty fine*	
Riser Interval	*0'-32'*	-	*SAND (SM), with rock fragments*	
Screen Interval	*32'-42'*	*16' - 21'*	*Tan and white slightly silty slightly micaceous*	
Slot Size	*0.010"*	-	*fine to coarse SAND (SM), with rock fragments*	
Grout Type	*Portland #1*	*21' - 24.5'*	*Slightly weathered and highly fractured bedrock*	
Interval	*0'-28'*	-	*(gneissic or granitic)*	
Bentonite Type	*3/8" Pellets*	*24.5' - 42'*	*Fairly competent bedrock with few fractures*	
Interval	*28'-30.5'*	-	*(fracture from 32 to 32.5)*	
Filter Pack	*Coarse Sand*	-		
Interval	*30.5'-42'*	-	*Auger refusal @ 21'*	
Total Depth	*42'*	-	*Boring terminated @ 42'*	
R.P. Elevation	*98.47'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
8/17/94	*23'*	-		
8/22/94	*13.56'*	-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Le*

Refer to Standard Well Construction Schematic Style 4.

Boring /Well Construction Log

Well Construction Permit Number NA

Aquaterra, Inc

I.D. Number	BORING MW-2dk	Purpose	GROUND WATER MONITORING
Project Name	KEERSLER COMPANY - RALEIGH	Contractor	BORE & CORE, INC.
Project No.	4107601	Registration No.	763
Geologist	TOM TAYLOR / DAVE STEWART	Driller	ROBERT / JIM / BUCK
Start Date	10-1-94 Complete Date 10-6-94	Equipment	CME-75

Drilling Method: 7 7/8" ~~AIR HAMMER TO~~ TRICONE ROLLER BIT TO 28.5'; 6" PVC

Comments: SURFACE CASING INSTALLED AND TREMIE GROUTED TO 28.5'; 5 7/8" AIR HAMMER TO 80'; 4" PVC SURFACE CASING INSTALLED AND TREMIE GROUTED TO 80'; 4" AIR HAMMER TO 150'. NO SPLIT-SPOON SAMPLES TAKEN. WELL NOT CONSTRUCTED DUE TO TOOLS STUCK IN HOLE. BORING GROUTED ON 10-24-94

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	8"/6"/4"	0 - 3"	TOPSOIL	
Riser Type	PVC	3" - 2.5'	RED-BROWN MICACEOUS SANDY CLAYEY	
Diameter	6"/4"	-	SILT - PROBABLE FILL	
Screen Type	NA	2.5' - 5'	TAN SLIGHTLY MICACEOUS SILTY FINE	
Diameter	NA	-	SAND (SM)	
Riser Interval	0-28.5'/0-80'	5' - 16'	TAN AND WHITE MICACEOUS SLIGHTLY	
Screen Interval	NA	-	SILTY FINE SAND (SM) WITH ROCK	
Slot Size	NA	-	FRAGMENTS	
Grout Type	PORTLAND #1	16' - 21'	TAN AND WHITE SLIGHTLY SILTY MICACEOUS	
Interval	0 - 80'	-	FINE TO COARSE SAND (SM) WITH	
Bentonite Type	NA	-	ROCK FRAGMENTS	
Interval	NA	21' - 28.5'	SLIGHTLY WEATHERED AND HIGHLY	
Filter Pack	NA	-	FRACTURED ~~BEDROCK~~ GNEISSIC BEDROCK	
Interval	NA	28.5' - 150'	FAIRLY COMPETENT BEDROCK WITH	
Total Depth	150'	-	FEW FRACTURES NEAR TOP TO VERY	
R.P. Elevation	NA	-	COMPETENT BEDROCK WITH NO	
Datum	NA	-	FRACTURES AT DEPTH	
Water Level Information		-		
Date	W.L. Below R.P.	-		
10-11-94	DRY @ 80'	-	BORING TERMINATED @ 150'	
10-8-94	DRY	-		
		-		

R.P. = Reference Point W.L. = Water Level

~~Refer to Standard Well Construction Schematic Sty~~

WELL NOT CONSTRUCTED

Post-it™ brand fax transmittal memo 7671 # of pages ▸ 1

To JOE BEAMON	From
Co. NET	Co.
Dept.	Phone #
Fax # 910-392-8654	Fax #

Boring /Well Construction Log

Well Construction Permit Number *NA* *Aquaterra, I*

I. D. Number	*MW - 3sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107600*			Registration No.	*763*
Geologist	*Matt Tischler*			Driller	*Robert Cassell*
Start Date	*8/16/94*	Complete Date	*8/18/94*	Equipment	*Failing F-7*

Drilling Method	*4 1/4" ID hollow stem augers*
Comments	*5' interval split-spoon sampling*

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PI (ppm) @ Depth (f
Borehole Dia.	*8"*	*0" - 3"*	*Topsoil*	*0 @ 5*
Riser Type	*Sch. 40 PVC*	*3" - 17'*	*Tan micaceous silty fine to coarse SAND (SM),*	*0 @ 10*
Diameter	*2"*		*very dense*	*0 @ 15*
Screen Type	*Sch. 40 PVC*			
Diameter	*2"*	-	*Auger refusal @ 17'*	
Riser Interval	*0'-7'*			
Screen Interval	*7'-17'*	-		
Slot Size	*0.010"*			
Grout Type	*Portland #1*	-		
Interval	*0'-3'*	-		
Bentonite Type	*3/8" Pellets*	-		
Interval	*3'-5'*	-		
Filter Pack	*Coarse Sand*	-		
Interval	*5'-17'*	-		
Total Depth	*17'*	-		
R.P. Elevation	*98.84'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
8/17/94	*12'*	-		
8/22/94	*12.05'*	-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* *Aquaterra, Inc.*

I. D. Number	*MW - 4sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107600*			Registration No.	*763*
Geologist	*Doug Rakoczy*			Driller	*Robert Cassell*
Start Date	*8/16/94*	Complete Date	*8/16/94*	Equipment	*Failing F-7*

Drilling Method	*4 1/4" ID hollow stem augers*
Comments	*5' interval split-spoon sampling*

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	*8"*	*0' - 2.5'*	*Brown micaceous silty fine SAND (SM) with*	
Riser Type	*Sch. 40 PVC*	-	*gravel - possible fill*	
Diameter	*2"*	*2.5' - 8'*	*Orange-brown and tan fine sandy micaceous*	*0 @ 5*
Screen Type	*Sch. 40 PVC*	-	*SILT (ML)*	
Diameter	*2"*	*8' - 17'*	*Red-brown micaceous fine to medium sandy*	*0 @ 10*
Riser Interval	*0'-9'*	-	*SILT (ML) with rock fragments, quartz vein from*	*0 @ 15*
Screen Interval	*9'-19'*	-	*14' to 14.5'*	
Slot Size	*0.010"*	*17 - 21'*	*Brownish-tan micaceous silty fine to medium*	*0 @ 20*
Grout Type	*Portland #1*	-	*SAND (SM)*	
Interval	*0'-5'*	-		
Bentonite Type	*3/8" Pellets*	-	*Boring terminated @ 21'*	
Interval	*5'-7'*	-		
Filter Pack	*Coarse Sand*	-		
Interval	*7'-19'*	-		
Total Depth	*19'*	-		
R.P. Elevation	*99.98'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
8/17/94	*10.5'*	-		
8/22/94	*10.53'*	-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* ***Aquaterra, Inc.***

I. D. Number	*MW - 5sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107600*			Registration No.	*763*
Geologist	*Matt Tischler*			Driller	*Tony Debetsky*
Start Date	*8/17/94*	Complete Date	*8/18/94*	Equipment	*CME-75*

Drilling Method	*4 1/4" ID hollow stem augers, 5' interval split-spoon sampling;*
Comments	*well installed initially to 14' (auger refusal), then removed and redrilled*
	to 27' with 6 1/4" air Tricone bit; hole collapses, install 4 1/4" ID HSA
	as casing ; then set well at 24'

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	*8"*	*0' - 7'*	*Light brown silty micaceous fine to medium*	*0 @ 5*
Riser Type	*Sch. 40 PVC*	-	*sand FILL*	
Diameter	*2"*	*7' - 14'*	*Brown fine sandy micaceous silt - FILL*	*0 @ 10*
Screen Type	*Sch. 40 PVC*	*14' - 16'*	*Granitic bedrock ledge*	
Diameter	*2"*	*16' - 27'*	*Tan micaceous silty SAND (SM) with*	
Riser Interval	*0'-14'*	-	*boulders and cobbles*	
Screen Interval	*14'-24'*	-		
Slot Size	*0.010"*	-	*Auger refusal @ 14'*	
Grout Type	*Portland #1*	-	*Boring terminated @ 27'*	
Interval	*0'-10'*	-		
Bentonite Type	*3/8" Pellets*	-		
Interval	*10'-12'*	-		
Filter Pack	*Coarse Sand*	-		
Interval	*12'-24'*	-		
Total Depth	*24'*	-		
R.P. Elevation	*93.99'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
8/18/94	*16.5'*	-		
8/22/94	*14.75'*	-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA*

Aquaterra, Inc.

I. D. Number	*MW - 6sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107601*			Registration No.	*763*
Geologist	*Dave Stewart*			Driller	*Robert Cassell*
Start Date	*10/2/94*	Complete Date	*10/2/94*	Equipment	*Mobile B-53 ATV*

Drilling Method	*4 1/4" ID hollow stem augers.*
Comments	*No split-spoon samples taken; well installed inside warehouse.*

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	*8"*	*0' - 7"*	*Concrete Slab*	
Riser Type	*PVC*	*7" - 1'*	*Gravel Subbase*	
Diameter	*2"*	*1' - 15'*	*Reddish-brown fine sandy silt - Probable Fill*	
Screen Type	*PVC*	*15' - 23'*	*Gray silty fine SAND (SM)*	
Diameter	*2"*	-		
Riser Interval	*0' - 13'*	-		
Screen Interval	*13' - 23'*	-	*Boring terminated @ 23'*	
Slot Size	*0.010"*	-		
Grout Type	*Portland #1*	-		
Interval	*0' - 9'*	-		
Bentonite Type	*Pellets*	-		
Interval	*9' - 11'*	-		
Filter Pack	*Coarse Sand*	-		
Interval	*11' - 23'*	-		
Total Depth	*23'*	-		
R.P. Elevation	*99.80'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
10/11/94	~~82.59'~~ 17.21	-		
		-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* ***Aquaterra, I***

I. D. Number	*MW - 6ik*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107601*			Registration No.	*763*
Geologist	*Tom Taylor/Dave Stewart*			Driller	*Tony Debetsky*
Start Date	*9/27/94*	Complete Date	*10/2/94*	Equipment	*Mobile B-53 ATV*

Drilling Method	*4 1/4" ID hollow stem augers to refusal at 51'; 4" air hammer to*
Comments	*58'; well installed inside warehouse; 5' screen with filter sock (no*
	sand pack); time release bentonite placed in top of sock above
	screen with hose clamps. No split-spoon samples taken.

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (f
Borehole Dia.	*8" / 4"*	*0' - 7"*	*Concrete slab*	
Riser Type	*PVC*	*7" - 1'*	*Gravel subbase*	
Diameter	*2"*	*1' - 15'*	*Reddish-brown fine sandy silt - probable fill*	
Screen Type	*PVC*	*15' - 28.5'*	*Gray silty fine SAND (SM)*	
Diameter	*2"*	*28.5' - 51'*	*Layers of weathered rock and clayey fine to*	
Riser Interval	*0' - 53'*	-	*medium sand*	
Screen Interval	*53' - 58'*	*51' - 58'*	*Competent gneissic bedrock (4" fracture noted*	
Slot Size	*0.010"*	-	*at about 53')*	
Grout Type	*Portland #1*	-		
Interval	*0' - 51'*	-		
Bentonite Type	*Time Release*	-	*Auger refusal @ 51'*	
Interval	*51' - 53'*	-	*Boring terminated @ 58'*	
Filter Pack	*Screen Sock*	-		
Interval	*53' - 58'*	-		
Total Depth	*58'*	-		
R.P. Elevation	*99.80'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
10/11/94	*15.74'*	-		
		-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* *Aquaterra,*

I. D. Number	*MW - 7sk*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107601*			Registration No.	*763*
Geologist	*Dave Stewart*			Driller	*Robert Cassell*
Start Date	*10/3/94*	Complete Date	*10/3/94*	Equipment	*CME-45 ATV*

Drilling Method	*4 1/4" ID hollow stem augers.*
Comments	*No split-spoon samples taken; well installed inside plant building.*

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PI (ppm) @ Depth (
Borehole Dia.	*8"*	*0' - 7"*	*Concrete slab*	
Riser Type	*PVC*	*7" - 1'*	*Gravel Subbase*	
Diameter	*2"*	*1' - 7'*	*Reddish-brown to dark brown slightly clayey*	
Screen Type	*PVC*	-	*silt with wood debris - probable fill*	
Diameter	*2"*	*7' - 12'*	*Reddish-brown fine sandy clayey micaceous SILT*	
Riser Interval	*0' - 13'*	-	*(ML) - possible fill*	
Screen Interval	*13' - 23'*	*12' - 23'*	*Orange-brown fine sandy SILT (ML)*	
Slot Size	*0.010"*	-		
Grout Type	*Portland #1*	-		
Interval	*0' - 9'*	-		
Bentonite Type	*Pellets*	-	*Boring terminated @ 23'*	
Interval	*9' - 11'*	-		
Filter Pack	*Coarse Sand*	-		
Interval	*11' - 23'*	-		
Total Depth	*23'*	-		
R.P. Elevation	*99.88'*	-		
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
10/11/94	*14.87'*	-		
		-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

Boring /Well Construction Log

Well Construction Permit Number *NA* ***Aquaterra, I***

I. D. Number	*MW - 7ik*			Purpose	*Ground Water Monitoring*
Project Name	*Keebler Company - Raleigh*			Contractor	*Bore & Core, Inc.*
Project No.	*4107601*			Registration No.	*763*
Geologist	*T. Taylor/M. Tischler/D. Stewart*			Driller	*Tony, Larry, Jim*
Start Date	*9/29/94*	Complete Date	*10/2/94*	Equipment	*CME-45 ATV*

Drilling Method	*4 1/4" ID hollow stem augers to refusal at 54'; core rock from 54'*
Comments	*to 73'; well installed inside plant building. 15' screen with filter sock*
	(no sand pack); time release bentonite placed in top of sock above
	screen with hose clamps. No split-spoon samples taken.

Well Construction Information		Depth From - To	Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (f
Borehole Dia.	*8" / 4"*	*0' - 7"*	*Concrete slab*	
Riser Type	*PVC*	*7" - 1'*	*Gravel subbase*	
Diameter	*2"*	*1' - 7'*	*Reddish-brown to dark brown slightly clayey*	
Screen Type	*PVC*	-	*silt with wood debris - probable fill*	
Diameter	*2"*	*7' - 12'*	*Reddish-brown fine sandy clayey micaceous SILT*	
Riser Interval	*0' - 58'*	-	*(ML) - possible fill*	
Screen Interval	*58' - 73'*	*12' - 25'*	*Orange-brown fine sandy SILT (ML)*	
Slot Size	*0.010"*	*25' - 54'*	*Layers of weathered rock and clayey fine to*	
Grout Type	*Portland #1*	-	*medium sandy silt*	
Interval	*0' - 56'*	*54' - 73'*	*Competent gneissic bedrock (few small seams*	
Bentonite Type	*Time Release*	-	*noted @ 69' and 71', 1/2" each)*	
Interval	*56' - 58'*	-		
Filter Pack	*Screen Sock*	-		
Interval	*58' - 73'*	-		
Total Depth	*73'*	-	*Auger refusal @ 54'*	
R.P. Elevation	*99.76'*	-	*Boring terminated @ 73'*	
Datum	*TBM*	-		
Water Level Information		-		
Date	**W.L. Below R.P.**	-		
10/11/94	*15.16'*	-		
		-		
		-		

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *MSL = Mean Sea Level*

Refer to Standard Well Construction Schematic Style 2.

BORING LOG

BORING NO. *RW-1*		PAGE *1* OF *1*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *10-10-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *24 Ft.*	GRDWTR. DEPTH: *12.19 Ft.*	SCREEN DEPTH: *9.0 Ft.*	LOGGED BY: *HWL*
GROUND ELEV. (MSL): *227.12 Ft.*	T/C ELEV (MSL): *226.59 Ft.*	SCREEN INTER. *9.0-24.0 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
		Asphalt					
1		*Tan to Medium Coarse Sand (SP)*					
	224.12						
5							
		Tan Sand & Clay (SC)					
10							*Water Table Elev. 214.40'*
15							
	211.12						
20		*Tan Felsic Granite*					*Fractured Area*
	203.12						
25		*Boring Terminated @ 24' in Rock*					

EQUIPMENT: *Driltech Inc., D25K with 10.0" Hammer*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -
Form Prepared By KF -

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD NO. SERIAL NO.
Lat. Long. FC
Mile/Leagh
Basin Code
Header Ent. GW Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER:

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alcatel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh N.C. 27609
   City or Town State Zip Code
3. DATE DRILLED 11-10-94 USE OF WELL Monitor
4. TOTAL DEPTH 24.0 Feet
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. CHLORINATION: Type N/A Amount N/A
12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	9.0	6 inch	Sch.40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	5.0	Portland Bentonite Slurry	

14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	9.0	24.0	6 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

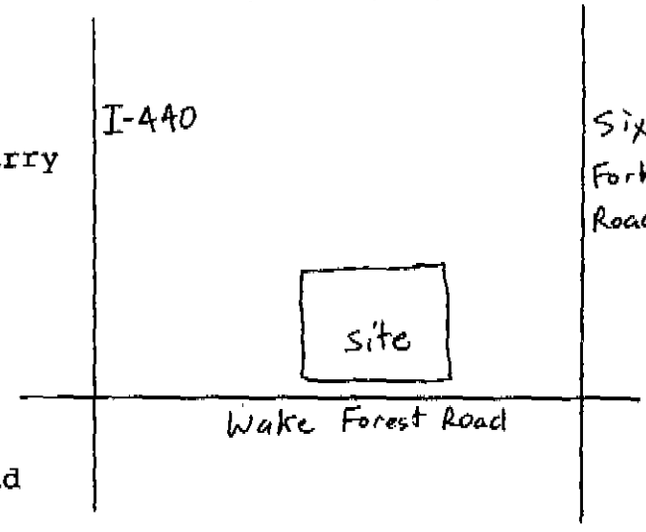
	Depth From	Depth To	Size	Material
	7.0	24.0	20-60	Fine Silica Sand

16. REMARKS: RW-1 Bentonite Seal from 5.0 to 7.0 feet

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	12.0'	Light tan sandy CLA
12.0'	16.0'	Light tan white sandy clayey SILT
16.0'	20.0'	Light tan gray GRANITE
20.0'	24.0'	Light tan white GRANITE with fractures at 20.0' and 23.0'

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [illegible] 12-01-94

SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

BORING LOG

BORING NO. *RW-2*		PAGE *1* OF *1*	
LOCATION: *Alcatel Network Sys.,Raleigh, NC*	DATE COMPLETED: *11-16-94*	NET PROJECT NO: *058010*	
TOTAL DEPTH (FT.): *40 Ft.*	GRDWTR. DEPTH: *13.30 Ft.*	SCREEN DEPTH: *25 Ft.*	LOGGED BY: *BJB*
GROUND ELEV. (MSL): *225.27 Ft.*	T/C ELEV (MSL): *224.85 Ft.*	SCREEN INTER. *15-40 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1							
5		*Brown Sandy Clay (SC)*					
10		*Tan Sandy Clay (SC)*					*Water Table elev. 211.55'*
15	209.27'						*Partially Weathered Rock*
20		*Light Gray & Brown Saprolite (SC)*					
	203.27'	*Gray Mafic Bedrock*					
25		*Pink Felsic Granite*					*Fractured Area*
							Fractured Area
30		*Gray Mafic Bedrock*					
35		*Pink Felsic Granite*					
		Gray Mafic Bedrock					
40		*Boring Terminated @40' in Rock*					

EQUIPMENT: *Driltech Inc., D25K with 10.0" Hammer*

NOTES: SI - SCREEN INTERVAL -
ALL DEPTHS SHOWN IN FEET. -
MSL - MEAN SEA LEVEL (FT.) -

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY	
QUAD. NO.	SERIAL NO.
Lat.	Long.
Minor Basin	
Basin Code	
Header Ent.	GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Geologic Exploration, Inc.

DRILLER REGISTRATION NUMBER: 1175

STATE WELL CONSTRUCTION PERMIT NUMBER: WM-05-0041

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: Raleigh County: Wake
   Wake Forest Road/Six Forks Road
   (Road, Community, or Subdivision and Lot No.)
2. OWNER Alcatel Network Systems
   ADDRESS 2912 Wake Forest Road
   (Street or Route No.)
   Raleigh NC 27609
   City or Town State Zip Code
3. DATE DRILLED 11-16-94 USE OF WELL Recovery
4. TOTAL DEPTH 40.0 ft
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: _____ FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 0.0 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): N/A
11. CHLORINATION: Type N/A Amount N/A
12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	15.0	6 inch	Sch 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0.0	10.0	Portland Bentonite Slurry	

14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	15.0	40.0	6 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

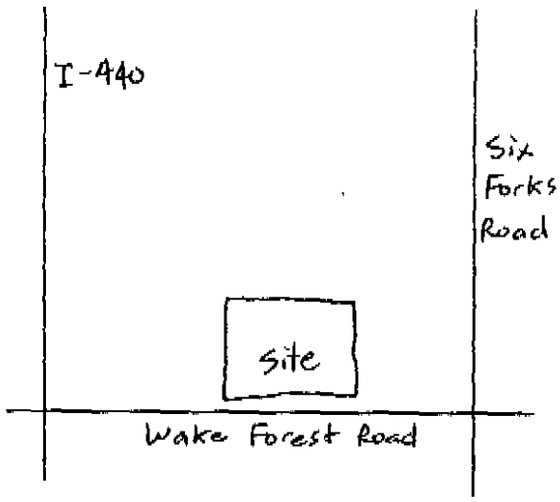
	Depth From	Depth To	Size	Material
	13.0	40.0	20-60	Fine Silica Sand

16. REMARKS: RW-2 Bentonite seal from 10.0 to 13.0 feet

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0'	17.0'	Brown tan sandy clay
17.0	22.0'	Light grey to dark brown clayey sandy sil
22.0'	30.0'	Dark grey granite with fractures at 24.0' and 27.0'
30.0'	40.0'	Light brown silt stone

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Steve [signature] 12-01-94

SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

APPENDIX C

AQUIFER TEST DATA and WELL HYDROGRAPHS

Aquifer Test Data

SE2000
Environmental Logger
01/13 19:36

Unit# 657 Test 0

Setups:	INPUT 1	INPUT 2	INPUT 3
Type	Level (F)	Level (F)	Level (F)
Mode	TOC	TOC	TOC
I.D.	RW2	RW1	MW2IK
Reference	0.000	0.000	0.000
PSI at Ref.	11.030	4.810	10.009
SG	1.000	1.000	1.000
Linearity	0.122	0.144	0.127
Scale factor	19.997	20.055	19.865
Offset	-0.216	0.090	0.031
Delay mSEC	50.000	50.000	50.000

Step 0 01/10 11:10:27

Elapsed Time	INPUT 1	INPUT 2	INPUT 3
0.0000	0.019	-0.006	-0.012
0.0083	0.031	0.000	-0.012
0.0166	0.044	0.000	-0.012
0.0250	0.063	0.000	-0.012
0.0333	0.076	0.000	-0.012
0.0416	0.095	0.000	-0.006
0.0500	0.114	-0.006	-0.012
0.0583	0.127	-0.006	-0.012
0.0666	0.171	0.000	-0.012
0.0750	0.190	0.000	-0.012
0.0833	0.209	0.000	-0.012
0.0916	0.228	0.000	-0.012
0.1000	0.247	0.000	-0.012
0.1083	0.266	-0.006	-0.012
0.1166	0.279	-0.006	-0.012
0.1250	0.330	0.000	-0.012
0.1333	0.317	-0.006	-0.012
0.1416	0.368	0.000	-0.012
0.1500	0.374	0.000	-0.012
0.1583	0.368	-0.006	-0.012
0.1666	0.400	-0.006	-0.012
0.1750	0.406	-0.006	-0.012
0.1833	0.419	0.000	-0.012
0.1916	0.438	-0.006	-0.012
0.2000	0.457	0.000	-0.012
0.2083	0.451	-0.006	-0.012
0.2166	0.476	-0.006	-0.012
0.2250	0.463	-0.006	-0.012
0.2333	0.470	-0.006	-0.012
0.2416	0.495	0.000	-0.012
0.2500	0.502	-0.006	-0.012
0.2583	0.521	0.000	-0.012
0.2666	0.521	0.000	-0.006
0.2750	0.546	-0.006	-0.006
0.2833	0.565	0.000	-0.006

0.2916	0.571	0.000	-0.012
0.3000	0.578	0.000	-0.006
0.3083	0.590	0.000	-0.012
0.3166	0.590	-0.006	-0.006
0.3250	0.584	0.000	-0.006
0.3333	0.616	-0.006	-0.012
0.3500	0.610	0.000	-0.012
0.3666	0.629	0.000	-0.006
0.3833	0.635	0.000	-0.012
0.4000	0.648	0.000	-0.012
0.4166	0.660	-0.006	-0.012
0.4333	0.686	0.000	-0.012
0.4500	0.705	-0.006	-0.012
0.4666	0.705	-0.006	-0.012
0.4833	0.698	-0.006	-0.006
0.5000	0.730	0.000	-0.012
0.5166	0.743	-0.006	-0.012
0.5333	0.743	0.000	-0.012
0.5500	0.762	0.000	-0.012
0.5666	0.756	-0.006	-0.012
0.5833	0.775	-0.006	-0.012
0.6000	0.787	-0.006	-0.006
0.6166	0.781	-0.006	-0.012
0.6333	0.787	-0.006	-0.012
0.6500	0.800	0.000	-0.012
0.6666	0.826	0.000	-0.012
0.6833	0.807	0.000	-0.012
0.7000	0.826	-0.006	-0.012
0.7166	0.851	-0.006	-0.006
0.7333	0.832	-0.006	-0.012
0.7500	0.845	-0.006	-0.012
0.7666	0.851	0.000	-0.006
0.7833	0.851	0.000	-0.012
0.8000	0.876	0.000	-0.012
0.8166	0.864	-0.006	-0.006
0.8333	0.876	-0.006	-0.006
0.8500	0.883	-0.006	-0.012
0.8666	0.895	-0.006	-0.006
0.8833	0.889	0.000	-0.012
0.9000	0.895	0.000	-0.006
0.9166	0.908	-0.006	0.000
0.9333	0.915	0.000	-0.006
0.9500	0.927	0.000	-0.006
0.9666	0.921	0.000	-0.012
0.9833	0.934	-0.006	-0.006
1.0000	0.934	0.000	0.000
1.2000	0.997	-0.006	-0.006
1.4000	1.061	-0.006	0.000
1.6000	1.080	-0.006	0.000
1.8000	1.124	-0.006	0.000
2.0000	1.143	0.000	0.006
2.2000	1.169	-0.006	0.006
2.4000	1.207	-0.006	0.012
2.6000	1.219	-0.006	0.012
2.8000	1.239	-0.006	0.018
3.0000	1.258	-0.006	0.025
3.2000	1.251	0.000	0.031
3.4000	1.289	-0.006	0.031
3.6000	1.308	0.000	0.037
3.8000	1.321	-0.006	0.044

4.0000	1.340	0.000	0.044
4.2000	1.334	0.000	0.050
4.4000	1.366	0.000	0.050
4.6000	1.366	0.000	0.050
4.8000	1.372	0.000	0.050
5.0000	1.397	-0.006	0.056
5.2000	1.385	-0.006	0.056
5.4000	1.410	0.000	0.063
5.6000	1.410	0.000	0.069
5.8000	1.416	0.000	0.069
6.0000	1.429	0.000	0.069
6.2000	1.435	0.000	0.075
6.4000	1.455	0.000	0.075
6.6000	1.467	0.000	0.082
6.8000	1.474	0.000	0.082
7.0000	1.455	0.000	0.082
7.2000	1.455	0.000	0.082
7.4000	1.474	0.000	0.088
7.6000	1.461	0.000	0.094
7.8000	1.480	0.000	0.094
8.0000	1.486	0.000	0.088
8.2000	1.480	-0.006	0.094
8.4000	1.499	-0.006	0.094
8.6000	1.493	0.000	0.094
8.8000	1.512	0.000	0.107
9.0000	1.524	0.000	0.113
9.2000	1.524	0.000	0.113
9.4000	1.537	0.000	0.107
9.6000	1.550	0.000	0.113
9.8000	1.537	0.000	0.113
10.0000	1.537	0.000	0.113
11.0000	1.569	0.000	0.119
12.0000	1.563	0.000	0.132
13.0000	1.594	0.000	0.132
14.0000	1.601	0.006	0.145
15.0000	1.607	0.000	0.145
16.0000	1.613	0.006	0.151
17.0000	1.645	0.006	0.157
18.0000	1.645	0.000	0.157
19.0000	1.645	0.000	0.157
20.0000	1.651	0.006	0.170
21.0000	1.677	0.006	0.170
22.0000	1.683	0.000	0.170
23.0000	1.702	0.000	0.170
24.0000	1.696	0.006	0.176
25.0000	1.690	0.006	0.176
26.0000	1.702	0.006	0.182
27.0000	1.721	0.006	0.189
28.0000	1.734	0.006	0.189
29.0000	1.715	0.006	0.189
30.0000	1.734	0.006	0.189
31.0000	1.734	0.006	0.189
32.0000	1.759	0.006	0.201
33.0000	1.753	0.006	0.195
34.0000	1.772	0.006	0.195
35.0000	1.772	0.006	0.201
36.0000	1.772	0.006	0.208
37.0000	1.766	0.006	0.214
38.0000	1.772	0.006	0.195
39.0000	1.778	0.006	0.201

40.0000	1.791	0.006	0.214
41.0000	1.804	0.006	0.214
42.0000	1.810	0.006	0.220
43.0000	1.823	0.006	0.214
44.0000	1.798	0.006	0.214
45.0000	1.836	0.006	0.220
46.0000	1.817	0.006	0.220
47.0000	1.829	0.006	0.227
48.0000	1.836	0.006	0.220
49.0000	1.836	0.006	0.227
50.0000	1.823	0.006	0.227
51.0000	1.829	0.006	0.220
52.0000	1.836	0.006	0.233
53.0000	1.842	0.006	0.233
54.0000	1.855	0.006	0.227
55.0000	1.848	0.006	0.233
56.0000	1.855	0.006	0.233
57.0000	1.855	0.012	0.233
58.0000	1.855	0.006	0.239
59.0000	1.861	0.006	0.233
60.0000	1.874	0.006	0.239
61.0000	1.867	0.006	0.233
62.0000	1.874	0.006	0.239
63.0000	1.880	0.006	0.246
64.0000	1.874	0.006	0.239
65.0000	1.893	0.006	0.246
66.0000	1.880	0.006	0.246
67.0000	1.886	0.000	0.252
68.0000	1.880	0.000	0.246
69.0000	1.893	0.006	0.252
70.0000	1.912	0.006	0.258
71.0000	1.899	0.006	0.258
72.0000	1.906	0.006	0.252
73.0000	1.912	0.006	0.252
74.0000	1.893	0.006	0.252
75.0000	1.906	0.006	0.258
76.0000	1.918	0.006	0.265
77.0000	1.899	0.012	0.265
78.0000	1.912	0.012	0.265
79.0000	1.906	0.012	0.258
80.0000	1.912	0.012	0.265
81.0000	1.931	0.012	0.265
82.0000	1.918	0.012	0.265
83.0000	1.906	0.012	0.271
84.0000	1.944	0.006	0.265
85.0000	1.925	0.006	0.271
86.0000	1.950	0.012	0.271
87.0000	1.925	0.012	0.265
88.0000	1.931	0.012	0.265
89.0000	1.944	0.012	0.271
90.0000	1.931	0.012	0.277
91.0000	1.925	0.012	0.265
92.0000	1.937	0.012	0.265
93.0000	1.950	0.012	0.277
94.0000	1.944	0.012	0.283
95.0000	1.937	0.012	0.277
96.0000	1.963	0.012	0.283
97.0000	1.937	0.012	0.277
98.0000	1.969	0.012	0.277
99.0000	1.950	0.006	0.277

100.000	1.963	0.012	0.283
101.000	1.956	0.012	0.283
102.000	1.956	0.012	0.283
103.000	1.963	0.006	0.283
104.000	1.969	0.012	0.290
105.000	1.956	0.012	0.283
106.000	1.988	0.012	0.290
107.000	1.988	0.012	0.283
108.000	1.988	0.012	0.290
109.000	1.969	0.012	0.290
110.000	1.963	0.012	0.283
111.000	1.969	0.012	0.290
112.000	1.975	0.012	0.290
113.000	1.963	0.012	0.290
114.000	1.982	0.012	0.296
115.000	1.994	0.012	0.290
116.000	2.001	0.012	0.296
117.000	2.007	0.012	0.296
118.000	1.982	0.012	0.296
119.000	1.994	0.012	0.296
120.000	1.994	0.012	0.302
121.000	1.994	0.012	0.296
122.000	1.988	0.012	0.296
123.000	1.988	0.012	0.302
124.000	2.001	0.012	0.296
125.000	1.988	0.006	0.290
126.000	1.994	0.012	0.296
127.000	2.001	0.012	0.296
128.000	1.975	0.012	0.296
129.000	2.007	0.012	0.302
130.000	2.020	0.012	0.302
131.000	1.988	0.012	0.309
132.000	2.014	0.012	0.309
133.000	1.994	0.012	0.302
134.000	2.001	0.012	0.302
135.000	2.007	0.012	0.309
136.000	2.020	0.012	0.309
137.000	2.014	0.012	0.309
138.000	2.020	0.012	0.309
139.000	2.020	0.012	0.302
140.000	2.020	0.019	0.309
141.000	2.020	0.012	0.309
142.000	2.020	0.012	0.309
143.000	2.020	0.012	0.315
144.000	2.007	0.012	0.309
145.000	2.033	0.012	0.309
146.000	2.039	0.019	0.309
147.000	2.039	0.012	0.309
148.000	2.026	0.019	0.309
149.000	2.045	0.012	0.315
150.000	2.014	0.012	0.309
151.000	2.026	0.012	0.315
152.000	2.039	0.012	0.315
153.000	2.039	0.012	0.315
154.000	2.052	0.012	0.321
155.000	2.039	0.012	0.315
156.000	2.033	0.012	0.315
157.000	2.033	0.012	0.315
158.000	2.026	0.019	0.315
159.000	2.052	0.012	0.321

160.000	2.052	0.012	0.321
161.000	2.039	0.012	0.321
162.000	2.058	0.019	0.315
163.000	2.033	0.019	0.315
164.000	2.033	0.019	0.321
165.000	2.039	0.019	0.321
166.000	2.039	0.019	0.321
167.000	2.064	0.019	0.321
168.000	2.039	0.012	0.321
169.000	2.058	0.019	0.334
170.000	2.045	0.019	0.321
171.000	2.052	0.019	0.328
172.000	2.071	0.019	0.328
173.000	2.058	0.012	0.334
174.000	2.058	0.019	0.328
175.000	2.045	0.019	0.328
176.000	2.058	0.019	0.321
177.000	2.064	0.019	0.328
178.000	2.064	0.019	0.328
179.000	2.090	0.019	0.328
180.000	2.052	0.019	0.328
181.000	2.064	0.019	0.334
182.000	2.052	0.019	0.328
183.000	2.064	0.019	0.328
184.000	2.052	0.019	0.328
185.000	2.077	0.012	0.334
186.000	2.071	0.012	0.334
187.000	2.077	0.012	0.334
188.000	2.071	0.019	0.334
189.000	2.064	0.019	0.334
190.000	2.077	0.019	0.321
191.000	2.083	0.019	0.328
192.000	2.071	0.019	0.340
193.000	2.096	0.019	0.340
194.000	2.077	0.019	0.334
195.000	2.090	0.019	0.340
196.000	2.071	0.019	0.340
197.000	2.102	0.012	0.340
198.000	2.096	0.019	0.340
199.000	2.102	0.019	0.340
200.000	2.102	0.019	0.340
201.000	2.077	0.019	0.334
202.000	2.077	0.019	0.328
203.000	2.096	0.019	0.340
204.000	2.090	0.019	0.340
205.000	2.083	0.019	0.340
206.000	2.115	0.019	0.340
207.000	2.090	0.019	0.334
208.000	2.096	0.019	0.340
209.000	2.083	0.019	0.340
210.000	2.109	0.019	0.340
211.000	2.115	0.019	0.340
212.000	2.109	0.019	0.340
213.000	2.090	0.019	0.340
214.000	2.096	0.019	0.347
215.000	2.115	0.019	0.347
216.000	2.102	0.019	0.347
217.000	2.096	0.019	0.340
218.000	2.090	0.019	0.347
219.000	2.083	0.019	0.334

220.000	2.083	0.019	0.328
221.000	2.064	0.019	0.340
222.000	2.077	0.019	0.347
223.000	2.071	0.019	0.340
224.000	2.052	0.019	0.347
225.000	2.052	0.019	0.347
226.000	2.045	0.019	0.347
227.000	2.045	0.019	0.347
228.000	2.058	0.019	0.347
229.000	2.045	0.012	0.353
230.000	2.052	0.019	0.353
231.000	2.045	0.019	0.353
232.000	2.039	0.019	0.353
233.000	2.045	0.019	0.353
234.000	2.039	0.019	0.353
235.000	2.026	0.019	0.347
236.000	2.020	0.019	0.353
237.000	2.014	0.019	0.347
238.000	2.014	0.019	0.353
239.000	2.007	0.019	0.347
240.000	2.001	0.019	0.353
241.000	1.994	0.019	0.353
242.000	1.994	0.019	0.353
243.000	1.982	0.019	0.347
244.000	1.975	0.019	0.359
245.000	1.975	0.019	0.353
246.000	1.975	0.019	0.359
247.000	1.975	0.019	0.359
248.000	1.975	0.019	0.353
249.000	1.969	0.019	0.347
250.000	1.975	0.019	0.353
251.000	1.969	0.012	0.347
252.000	1.969	0.019	0.347
253.000	1.969	0.019	0.359
254.000	1.975	0.019	0.353
255.000	1.969	0.019	0.353
256.000	1.969	0.019	0.353
257.000	1.956	0.019	0.353
258.000	1.956	0.019	0.347
259.000	1.956	0.019	0.353
260.000	1.950	0.019	0.347
261.000	1.944	0.019	0.353
262.000	1.950	0.019	0.353
263.000	1.956	0.019	0.353
264.000	1.956	0.019	0.365
265.000	1.956	0.019	0.353
266.000	1.956	0.012	0.347
267.000	1.944	0.012	0.353
268.000	1.956	0.019	0.359
269.000	1.950	0.019	0.359
270.000	1.982	0.019	0.359
271.000	2.039	0.012	0.353
272.000	2.052	0.019	0.353
273.000	2.052	0.012	0.359
274.000	2.083	0.019	0.359
275.000	2.071	0.012	0.359
276.000	2.071	0.012	0.359
277.000	2.096	0.019	0.365
278.000	2.102	0.012	0.359
279.000	2.090	0.019	0.359

280.000	2.121	0.019	0.359
281.000	2.102	0.019	0.353
282.000	2.109	0.019	0.353
283.000	2.115	0.019	0.347
284.000	2.128	0.019	0.353
285.000	2.115	0.019	0.353
286.000	2.128	0.019	0.359
287.000	2.134	0.019	0.353
288.000	2.134	0.012	0.359
289.000	2.121	0.019	0.359
290.000	2.121	0.019	0.365
291.000	2.141	0.019	0.365
292.000	2.134	0.019	0.372
293.000	2.153	0.012	0.365
294.000	2.153	0.019	0.365
295.000	2.166	0.019	0.372
296.000	2.147	0.019	0.365
297.000	2.134	0.019	0.378
298.000	2.141	0.019	0.372
299.000	2.153	0.019	0.372
300.000	2.166	0.012	0.372
301.000	2.147	0.019	0.378
302.000	2.166	0.019	0.378
303.000	2.160	0.019	0.372
304.000	2.153	0.019	0.372
305.000	2.166	0.019	0.372
306.000	2.147	0.019	0.372
307.000	2.166	0.019	0.378
308.000	2.179	0.019	0.378
309.000	2.166	0.019	0.372
310.000	2.160	0.019	0.372
311.000	2.153	0.019	0.372
312.000	2.172	0.012	0.378
313.000	2.172	0.019	0.378
314.000	2.179	0.019	0.378
315.000	2.185	0.019	0.378
316.000	2.172	0.019	0.378
317.000	2.166	0.019	0.378
318.000	2.191	0.019	0.372
319.000	2.185	0.019	0.372
320.000	2.160	0.019	0.378
321.000	2.191	0.019	0.384
322.000	2.179	0.019	0.378
323.000	2.179	0.019	0.384
324.000	2.185	0.019	0.384
325.000	2.185	0.019	0.378
326.000	2.185	0.019	0.384
327.000	2.185	0.019	0.384
328.000	2.179	0.012	0.384
329.000	2.172	0.019	0.378
330.000	2.179	0.019	0.378
331.000	2.179	0.019	0.378
332.000	2.185	0.012	0.384
333.000	2.191	0.019	0.378
334.000	2.191	0.012	0.384
335.000	2.198	0.012	0.384
336.000	2.198	0.019	0.384
337.000	2.198	0.019	0.384
338.000	2.204	0.012	0.384
339.000	2.210	0.019	0.384

340.000	2.210	0.019	0.384
341.000	2.204	0.019	0.391
342.000	2.210	0.012	0.384
343.000	2.210	0.012	0.391
344.000	2.210	0.006	0.384
345.000	2.210	0.012	0.384
346.000	2.191	0.019	0.384
347.000	2.198	0.012	0.391
348.000	2.223	0.019	0.384
349.000	2.217	0.019	0.384
350.000	2.204	0.012	0.384
351.000	2.217	0.012	0.391
352.000	2.210	0.012	0.391
353.000	2.204	0.012	0.391
354.000	2.223	0.019	0.391
355.000	2.204	0.012	0.391
356.000	2.229	0.012	0.391
357.000	2.223	0.012	0.391
358.000	2.236	0.012	0.384
359.000	2.210	0.019	0.391
360.000	2.204	0.012	0.391
361.000	2.242	0.019	0.397
362.000	2.223	0.012	0.391
363.000	2.217	0.019	0.391
364.000	2.217	0.019	0.391
365.000	2.217	0.012	0.397
366.000	2.229	0.012	0.397
367.000	2.223	0.019	0.403
368.000	2.229	0.012	0.391
369.000	2.229	0.012	0.397
370.000	2.236	0.012	0.397
371.000	2.223	0.012	0.397
372.000	2.236	0.019	0.397
373.000	2.229	0.012	0.397
374.000	2.229	0.012	0.397
375.000	2.229	0.012	0.397
376.000	2.236	0.012	0.403
377.000	2.236	0.012	0.403
378.000	2.236	0.012	0.397
379.000	2.242	0.012	0.397
380.000	2.236	0.012	0.403
381.000	2.229	0.012	0.397
382.000	2.229	0.012	0.397
383.000	2.242	0.012	0.397
384.000	2.210	0.012	0.397
385.000	2.249	0.012	0.403
386.000	2.236	0.012	0.403
387.000	2.223	0.012	0.403
388.000	2.223	0.019	0.403
389.000	2.242	0.012	0.403
390.000	2.242	0.012	0.410
391.000	2.229	0.019	0.403
392.000	2.249	0.012	0.403
393.000	2.255	0.012	0.403
394.000	2.249	0.012	0.403
395.000	2.255	0.012	0.403
396.000	2.242	0.012	0.403
397.000	2.255	0.012	0.403
398.000	2.268	0.012	0.403
399.000	2.274	0.019	0.403

400.000	2.255	0.012	0.410
401.000	2.261	0.012	0.410
402.000	2.249	0.012	0.403
403.000	2.249	0.012	0.403
404.000	2.255	0.012	0.403
405.000	2.249	0.012	0.410
406.000	2.280	0.019	0.410
407.000	2.261	0.012	0.410
408.000	2.255	0.012	0.410
409.000	2.249	0.012	0.403
410.000	2.261	0.019	0.410
411.000	2.255	0.019	0.410
412.000	2.280	0.012	0.410
413.000	2.274	0.012	0.410
414.000	2.268	0.012	0.410
415.000	2.261	0.012	0.410
416.000	2.287	0.012	0.410
417.000	2.268	0.012	0.410
418.000	2.261	0.012	0.410
419.000	2.287	0.019	0.410
420.000	2.249	0.019	0.416
421.000	2.261	0.012	0.416
422.000	2.261	0.012	0.416
423.000	2.261	0.012	0.416
424.000	2.268	0.012	0.416
425.000	2.274	0.012	0.416
426.000	2.293	0.012	0.416
427.000	2.255	0.012	0.416
428.000	2.268	0.012	0.416
429.000	2.280	0.012	0.416
430.000	2.280	0.012	0.416
431.000	2.293	0.012	0.416
432.000	2.287	0.012	0.416
433.000	2.293	0.012	0.416
434.000	2.299	0.012	0.416
435.000	2.280	0.012	0.416
436.000	2.293	0.012	0.416
437.000	2.287	0.012	0.416
438.000	2.287	0.012	0.416
439.000	2.293	0.012	0.416
440.000	2.293	0.012	0.416
441.000	2.306	0.012	0.422
442.000	2.293	0.012	0.416
443.000	2.299	0.012	0.416
444.000	2.280	0.012	0.416
445.000	2.312	0.012	0.416
446.000	2.287	0.012	0.416
447.000	2.287	0.012	0.416
448.000	2.299	0.012	0.416
449.000	2.306	0.012	0.422
450.000	2.318	0.012	0.422
451.000	2.293	0.012	0.416
452.000	2.306	0.012	0.416
453.000	2.293	0.012	0.422
454.000	2.306	0.012	0.422
455.000	2.293	0.012	0.422
456.000	2.331	0.012	0.422
457.000	2.312	0.012	0.422
458.000	2.312	0.012	0.422
459.000	2.306	0.012	0.422

460.000	2.312	0.012	0.422
461.000	2.318	0.012	0.422
462.000	2.306	0.012	0.422
463.000	2.299	0.012	0.422
464.000	2.287	0.012	0.429
465.000	2.312	0.012	0.429
466.000	2.306	0.012	0.429
467.000	2.293	0.012	0.429
468.000	2.318	0.012	0.429
469.000	2.293	0.019	0.429
470.000	2.306	0.012	0.422
471.000	2.312	0.012	0.422
472.000	2.312	0.012	0.422
473.000	2.325	0.012	0.422
474.000	2.318	0.019	0.429
475.000	2.312	0.012	0.429
476.000	2.331	0.012	0.429
477.000	2.325	0.012	0.429
478.000	2.325	0.012	0.429
479.000	2.325	0.012	0.429
480.000	2.312	0.012	0.429
481.000	2.318	0.012	0.429
482.000	2.325	0.012	0.429
483.000	2.318	0.012	0.429
484.000	2.312	0.012	0.429
485.000	2.318	0.012	0.429
486.000	2.331	0.012	0.429
487.000	2.325	0.012	0.429
488.000	2.331	0.012	0.429
489.000	2.331	0.012	0.429
490.000	2.312	0.012	0.429
491.000	2.318	0.012	0.429
492.000	2.318	0.012	0.429
493.000	2.350	0.012	0.429
494.000	2.331	0.012	0.429
495.000	2.331	0.012	0.429
496.000	2.344	0.012	0.429
497.000	2.344	0.019	0.429
498.000	2.337	0.012	0.435
499.000	2.356	0.012	0.429
500.000	2.331	0.012	0.435
501.000	2.344	0.012	0.435
502.000	2.337	0.012	0.429
503.000	2.356	0.012	0.435
504.000	2.344	0.012	0.435
505.000	2.318	0.012	0.435
506.000	2.344	0.012	0.435
507.000	2.350	0.012	0.435
508.000	2.337	0.019	0.435
509.000	2.344	0.012	0.435
510.000	2.344	0.012	0.435
511.000	2.356	0.012	0.441
512.000	2.337	0.012	0.435
513.000	2.344	0.019	0.435
514.000	2.344	0.019	0.435
515.000	2.363	0.012	0.435
516.000	2.363	0.012	0.441
517.000	2.350	0.019	0.441
518.000	2.356	0.019	0.435
519.000	2.363	0.019	0.441

520.000	2.356	0.012	0.435
521.000	2.363	0.012	0.435
522.000	2.356	0.019	0.441
523.000	2.369	0.019	0.441
524.000	2.363	0.019	0.441
525.000	2.363	0.012	0.441
526.000	2.363	0.012	0.441
527.000	2.363	0.019	0.441
528.000	2.356	0.012	0.441
529.000	2.356	0.019	0.441
530.000	2.376	0.012	0.441
531.000	2.369	0.012	0.441
532.000	2.369	0.012	0.441
533.000	2.369	0.012	0.441
534.000	2.369	0.012	0.441
535.000	2.388	0.012	0.441
536.000	2.369	0.012	0.441
537.000	2.388	0.012	0.441
538.000	2.363	0.012	0.441
539.000	2.350	0.012	0.441
540.000	2.369	0.012	0.441
541.000	2.376	0.006	0.441
542.000	2.363	0.012	0.441
543.000	2.363	0.012	0.441
544.000	2.382	0.012	0.441
545.000	2.356	0.012	0.441
546.000	2.369	0.012	0.441
547.000	2.382	0.012	0.441
548.000	2.376	0.012	0.441
549.000	2.382	0.012	0.447
550.000	2.395	0.012	0.447
551.000	2.382	0.012	0.441
552.000	2.388	0.012	0.441
553.000	2.369	0.012	0.447
554.000	2.363	0.012	0.441
555.000	2.388	0.012	0.447
556.000	2.376	0.012	0.441
557.000	2.376	0.012	0.441
558.000	2.369	0.012	0.447
559.000	2.369	0.012	0.447
560.000	2.376	0.012	0.447
561.000	2.382	0.012	0.447
562.000	2.363	0.012	0.447
563.000	2.395	0.012	0.441
564.000	2.376	0.012	0.447
565.000	2.407	0.012	0.447
566.000	2.388	0.012	0.447
567.000	2.382	0.012	0.447
568.000	2.395	0.012	0.447
569.000	2.369	0.012	0.447
570.000	2.382	0.012	0.447
571.000	2.382	0.012	0.447
572.000	2.388	0.012	0.447
573.000	2.388	0.012	0.447
574.000	2.401	0.012	0.447
575.000	2.376	0.012	0.447
576.000	2.382	0.012	0.447
577.000	2.388	0.012	0.447
578.000	2.382	0.012	0.447
579.000	2.395	0.012	0.447

580.000	2.388	0.012	0.447
581.000	2.376	0.012	0.447
582.000	2.395	0.012	0.447
583.000	2.382	0.012	0.447
584.000	2.382	0.012	0.447
585.000	2.376	0.019	0.454
586.000	2.395	0.019	0.447
587.000	2.395	0.012	0.454
588.000	2.401	0.012	0.454
589.000	2.395	0.012	0.454
590.000	2.388	0.012	0.454
591.000	2.401	0.012	0.454
592.000	2.401	0.019	0.454
593.000	2.382	0.019	0.454
594.000	2.401	0.019	0.454
595.000	2.407	0.012	0.454
596.000	2.388	0.012	0.454
597.000	2.414	0.019	0.454
598.000	2.401	0.019	0.454
599.000	2.401	0.019	0.460
600.000	2.401	0.019	0.460
601.000	2.388	0.012	0.460
602.000	2.426	0.019	0.454
603.000	2.395	0.019	0.460
604.000	2.414	0.019	0.460
605.000	2.395	0.012	0.454
606.000	2.401	0.019	0.460
607.000	2.426	0.019	0.454
608.000	2.420	0.019	0.460
609.000	2.395	0.019	0.460
610.000	2.420	0.019	0.460
611.000	2.401	0.019	0.460
612.000	2.407	0.019	0.460
613.000	2.426	0.019	0.460
614.000	2.388	0.019	0.460
615.000	2.414	0.019	0.460
616.000	2.414	0.012	0.460
617.000	2.401	0.019	0.460
618.000	2.407	0.012	0.460
619.000	2.407	0.012	0.460
620.000	2.407	0.012	0.460
621.000	2.407	0.019	0.460
622.000	2.420	0.012	0.460
623.000	2.388	0.012	0.460
624.000	2.420	0.012	0.460
625.000	2.420	0.012	0.460
626.000	2.439	0.012	0.460
627.000	2.407	0.012	0.460
628.000	2.407	0.012	0.460
629.000	2.414	0.012	0.460
630.000	2.414	0.012	0.460
631.000	2.414	0.012	0.460
632.000	2.426	0.012	0.460
633.000	2.414	0.012	0.460
634.000	2.426	0.012	0.460
635.000	2.414	0.012	0.460
636.000	2.414	0.012	0.460
637.000	2.433	0.012	0.460
638.000	2.420	0.019	0.460
639.000	2.420	0.012	0.460

640.000	2.414	0.019	0.460
641.000	2.407	0.019	0.460
642.000	2.420	0.012	0.460
643.000	2.407	0.012	0.466
644.000	2.420	0.012	0.466
645.000	2.414	0.012	0.460
646.000	2.420	0.019	0.460
647.000	2.426	0.019	0.460
648.000	2.420	0.012	0.466
649.000	2.426	0.012	0.460
650.000	2.426	0.012	0.460
651.000	2.414	0.019	0.460
652.000	2.426	0.019	0.460
653.000	2.407	0.019	0.460
654.000	2.414	0.012	0.460
655.000	2.426	0.012	0.466
656.000	2.426	0.019	0.460
657.000	2.433	0.019	0.466
658.000	2.439	0.019	0.466
659.000	2.420	0.019	0.466
660.000	2.426	0.019	0.466
661.000	2.420	0.012	0.466
662.000	2.439	0.019	0.466
663.000	2.407	0.019	0.466
664.000	2.445	0.019	0.466
665.000	2.445	0.019	0.466
666.000	2.420	0.019	0.466
667.000	2.433	0.019	0.466
668.000	2.433	0.019	0.466
669.000	2.433	0.019	0.466
670.000	2.433	0.019	0.466
671.000	2.439	0.019	0.466
672.000	2.439	0.019	0.466
673.000	2.426	0.019	0.466
674.000	2.458	0.019	0.473
675.000	2.452	0.019	0.466
676.000	2.445	0.019	0.473
677.000	2.433	0.019	0.473
678.000	2.445	0.019	0.473
679.000	2.433	0.019	0.473
680.000	2.452	0.012	0.473
681.000	2.439	0.019	0.473
682.000	2.458	0.019	0.473
683.000	2.452	0.019	0.473
684.000	2.458	0.019	0.473
685.000	2.445	0.019	0.473
686.000	2.445	0.019	0.473
687.000	2.439	0.019	0.473
688.000	2.439	0.019	0.473
689.000	2.445	0.019	0.473
690.000	2.458	0.019	0.473
691.000	2.445	0.019	0.473
692.000	2.452	0.019	0.473
693.000	2.464	0.019	0.473
694.000	2.458	0.019	0.473
695.000	2.445	0.019	0.473
696.000	2.452	0.019	0.473
697.000	2.458	0.019	0.473
698.000	2.445	0.019	0.473
699.000	2.452	0.019	0.473

700.000	2.458	0.019	0.473
701.000	2.471	0.019	0.473
702.000	2.445	0.019	0.473
703.000	2.458	0.019	0.473
704.000	2.458	0.019	0.473
705.000	2.445	0.019	0.473
706.000	2.464	0.019	0.473
707.000	2.458	0.019	0.479
708.000	2.458	0.019	0.479
709.000	2.471	0.019	0.479
710.000	2.452	0.019	0.479
711.000	2.471	0.019	0.479
712.000	2.477	0.019	0.479
713.000	2.471	0.019	0.479
714.000	2.445	0.019	0.479
715.000	2.458	0.019	0.479
716.000	2.464	0.019	0.479
717.000	2.458	0.019	0.479
718.000	2.458	0.019	0.479
719.000	2.477	0.019	0.479
720.000	2.464	0.012	0.479
721.000	2.477	0.019	0.479
722.000	2.509	0.019	0.479
723.000	2.471	0.019	0.479
724.000	2.471	0.019	0.479
725.000	2.458	0.019	0.479
726.000	2.484	0.019	0.479
727.000	2.464	0.019	0.479
728.000	2.458	0.019	0.479
729.000	2.471	0.019	0.479
730.000	2.464	0.019	0.479
731.000	2.490	0.019	0.479
732.000	2.477	0.019	0.479
733.000	2.471	0.012	0.479
734.000	2.477	0.019	0.479
735.000	2.477	0.019	0.479
736.000	2.484	0.019	0.479
737.000	2.484	0.019	0.479
738.000	2.490	0.019	0.479
739.000	2.484	0.019	0.479
740.000	2.477	0.019	0.479
741.000	2.464	0.019	0.479
742.000	2.464	0.019	0.479
743.000	2.484	0.019	0.479
744.000	2.490	0.019	0.479
745.000	2.503	0.019	0.485
746.000	2.503	0.019	0.479
747.000	2.484	0.012	0.479
748.000	2.484	0.019	0.485
749.000	2.490	0.019	0.479
750.000	2.471	0.019	0.485
751.000	2.484	0.019	0.479
752.000	2.496	0.019	0.485
753.000	2.496	0.012	0.485
754.000	2.484	0.019	0.485
755.000	2.496	0.019	0.485
756.000	2.496	0.019	0.485
757.000	2.477	0.019	0.485
758.000	2.484	0.019	0.479
759.000	2.484	0.019	0.485

760.000	2.496	0.019	0.479
761.000	2.503	0.019	0.479
762.000	2.509	0.019	0.485
763.000	2.503	0.019	0.485
764.000	2.509	0.019	0.485
765.000	2.503	0.019	0.485
766.000	2.490	0.019	0.485
767.000	2.490	0.019	0.485
768.000	2.496	0.019	0.485
769.000	2.496	0.019	0.485
770.000	2.490	0.019	0.485
771.000	2.503	0.019	0.485
772.000	2.503	0.019	0.485
773.000	2.496	0.019	0.485
774.000	2.503	0.019	0.485
775.000	2.496	0.019	0.485
776.000	2.496	0.019	0.485
777.000	2.490	0.019	0.485
778.000	2.490	0.019	0.485
779.000	2.522	0.019	0.485
780.000	2.496	0.019	0.485
781.000	2.490	0.019	0.485
782.000	2.496	0.019	0.485
783.000	2.515	0.019	0.485
784.000	2.503	0.019	0.485
785.000	2.528	0.019	0.485
786.000	2.496	0.019	0.492
787.000	2.528	0.019	0.485
788.000	2.509	0.019	0.492
789.000	2.496	0.019	0.492
790.000	2.509	0.019	0.485
791.000	2.515	0.019	0.492
792.000	2.522	0.019	0.492
793.000	2.503	0.019	0.492
794.000	2.509	0.012	0.492
795.000	2.515	0.019	0.492
796.000	2.528	0.019	0.492
797.000	2.515	0.019	0.492
798.000	2.522	0.019	0.492
799.000	2.509	0.019	0.492
800.000	2.528	0.019	0.492
801.000	2.528	0.019	0.492
802.000	2.522	0.019	0.492
803.000	2.528	0.019	0.492
804.000	2.534	0.019	0.492
805.000	2.515	0.019	0.492
806.000	2.522	0.019	0.492
807.000	2.522	0.019	0.492
808.000	2.509	0.019	0.492
809.000	2.515	0.012	0.492
810.000	2.522	0.019	0.492
811.000	2.534	0.019	0.492
812.000	2.547	0.019	0.492
813.000	2.547	0.019	0.492
814.000	2.534	0.019	0.492
815.000	2.522	0.019	0.492
816.000	2.522	0.019	0.492
817.000	2.522	0.019	0.492
818.000	2.509	0.019	0.492
819.000	2.541	0.019	0.492

820.000	2.515	0.019	0.492
821.000	2.534	0.019	0.492
822.000	2.541	0.019	0.492
823.000	2.534	0.019	0.492
824.000	2.534	0.019	0.492
825.000	2.547	0.019	0.492
826.000	2.528	0.019	0.492
827.000	2.541	0.019	0.492
828.000	2.534	0.019	0.492
829.000	2.528	0.019	0.492
830.000	2.509	0.019	0.498
831.000	2.528	0.019	0.498
832.000	2.534	0.019	0.498
833.000	2.528	0.019	0.498
834.000	2.522	0.019	0.498
835.000	2.534	0.019	0.498
836.000	2.528	0.019	0.498
837.000	2.528	0.019	0.498
838.000	2.522	0.019	0.498
839.000	2.534	0.019	0.498
840.000	2.534	0.019	0.498
841.000	2.547	0.019	0.498
842.000	2.547	0.019	0.498
843.000	2.560	0.019	0.498
844.000	2.553	0.019	0.498
845.000	2.547	0.019	0.498
846.000	2.534	0.019	0.498
847.000	2.553	0.019	0.498
848.000	2.572	0.019	0.498
849.000	2.566	0.019	0.498
850.000	2.566	0.019	0.498
851.000	2.541	0.019	0.498
852.000	2.547	0.019	0.498
853.000	2.560	0.019	0.498
854.000	2.541	0.019	0.498
855.000	2.534	0.019	0.498
856.000	2.522	0.019	0.504
857.000	2.553	0.019	0.504
858.000	2.541	0.019	0.504
859.000	2.534	0.019	0.504
860.000	2.553	0.019	0.504
861.000	2.553	0.019	0.504
862.000	2.560	0.019	0.504
863.000	2.541	0.019	0.504
864.000	2.534	0.019	0.504
865.000	2.560	0.019	0.504
866.000	2.553	0.019	0.504
867.000	2.566	0.019	0.504
868.000	2.547	0.019	0.504
869.000	2.560	0.019	0.504
870.000	2.534	0.019	0.504
871.000	2.553	0.012	0.504
872.000	2.553	0.019	0.504
873.000	2.553	0.019	0.504
874.000	2.547	0.019	0.504
875.000	2.566	0.019	0.504
876.000	2.560	0.019	0.504
877.000	2.553	0.019	0.504
878.000	2.579	0.019	0.504
879.000	2.566	0.019	0.504

880.000	2.572	0.019	0.504
881.000	2.560	0.019	0.504
882.000	2.572	0.019	0.504
883.000	2.566	0.019	0.504
884.000	2.572	0.019	0.504
885.000	2.553	0.019	0.504
886.000	2.553	0.019	0.504
887.000	2.566	0.019	0.504
888.000	2.553	0.019	0.504
889.000	2.560	0.019	0.504
890.000	2.560	0.019	0.504
891.000	2.579	0.019	0.511
892.000	2.572	0.019	0.511
893.000	2.553	0.019	0.504
894.000	2.560	0.019	0.511
895.000	2.585	0.019	0.511
896.000	2.579	0.019	0.504
897.000	2.572	0.019	0.504
898.000	2.579	0.019	0.511
899.000	2.547	0.019	0.504
900.000	2.566	0.019	0.511
901.000	2.572	0.019	0.511
902.000	2.572	0.019	0.511
903.000	2.572	0.019	0.511
904.000	2.566	0.019	0.511
905.000	2.585	0.019	0.511
906.000	2.591	0.019	0.511
907.000	2.572	0.019	0.511
908.000	2.560	0.019	0.511
909.000	2.572	0.019	0.511
910.000	2.585	0.019	0.511
911.000	2.585	0.019	0.511
912.000	2.579	0.019	0.511
913.000	2.579	0.019	0.511
914.000	2.591	0.019	0.511
915.000	2.579	0.025	0.511
916.000	2.604	0.019	0.511
917.000	2.591	0.019	0.511
918.000	2.591	0.019	0.511
919.000	2.579	0.019	0.511
920.000	2.591	0.019	0.511
921.000	2.572	0.019	0.511
922.000	2.579	0.019	0.511
923.000	2.604	0.019	0.511
924.000	2.585	0.019	0.511
925.000	2.572	0.019	0.517
926.000	2.585	0.019	0.511
927.000	2.591	0.019	0.511
928.000	2.585	0.019	0.511
929.000	2.591	0.019	0.511
930.000	2.579	0.025	0.511
931.000	2.572	0.019	0.511
932.000	2.598	0.019	0.511
933.000	2.598	0.019	0.511
934.000	2.585	0.019	0.511
935.000	2.598	0.019	0.511
936.000	2.585	0.019	0.511
937.000	2.611	0.019	0.511
938.000	2.598	0.019	0.511
939.000	2.585	0.019	0.511

940.000	2.598	0.019	0.511
941.000	2.598	0.019	0.511
942.000	2.591	0.019	0.511
943.000	2.598	0.019	0.517
944.000	2.579	0.019	0.511
945.000	2.591	0.019	0.517
946.000	2.598	0.019	0.511
947.000	2.591	0.019	0.517
948.000	2.591	0.019	0.517
949.000	2.591	0.019	0.517
950.000	2.604	0.019	0.517
951.000	2.598	0.019	0.517
952.000	2.617	0.019	0.511
953.000	2.598	0.019	0.511
954.000	2.611	0.019	0.511
955.000	2.585	0.025	0.517
956.000	2.604	0.025	0.517
957.000	2.604	0.019	0.517
958.000	2.598	0.019	0.517
959.000	2.604	0.019	0.517
960.000	2.598	0.025	0.517
961.000	2.598	0.019	0.517
962.000	2.591	0.019	0.517
963.000	2.604	0.019	0.517
964.000	2.598	0.019	0.517
965.000	2.617	0.019	0.517
966.000	2.623	0.019	0.517
967.000	2.611	0.019	0.517
968.000	2.598	0.019	0.517
969.000	2.604	0.019	0.517
970.000	2.598	0.019	0.517
971.000	2.611	0.019	0.517
972.000	2.604	0.019	0.517
973.000	2.623	0.019	0.517
974.000	2.604	0.019	0.517
975.000	2.623	0.019	0.517
976.000	2.617	0.019	0.517
977.000	2.604	0.019	0.517
978.000	2.611	0.019	0.517
979.000	2.598	0.019	0.517
980.000	2.611	0.019	0.517
981.000	2.617	0.019	0.517
982.000	2.611	0.019	0.517
983.000	2.604	0.019	0.517
984.000	2.585	0.019	0.517
985.000	2.604	0.019	0.523
986.000	2.611	0.019	0.517
987.000	2.611	0.019	0.523
988.000	2.604	0.019	0.523
989.000	2.611	0.019	0.523
990.000	2.598	0.019	0.523
991.000	2.591	0.025	0.523
992.000	2.598	0.019	0.517
993.000	2.611	0.025	0.523
994.000	2.604	0.019	0.523
995.000	2.623	0.019	0.523
996.000	2.604	0.025	0.523
997.000	2.636	0.019	0.523
998.000	2.623	0.025	0.523
999.000	2.611	0.025	0.523

1000.00	2.604	0.019	0.523
1001.00	2.642	0.019	0.523
1002.00	2.630	0.019	0.523
1003.00	2.611	0.019	0.523
1004.00	2.623	0.019	0.523
1005.00	2.598	0.019	0.523
1006.00	2.623	0.025	0.523
1007.00	2.617	0.025	0.523
1008.00	2.623	0.019	0.523
1009.00	2.630	0.025	0.523
1010.00	2.617	0.025	0.523
1011.00	2.623	0.025	0.523
1012.00	2.623	0.019	0.523
1013.00	2.630	0.019	0.523
1014.00	2.630	0.025	0.523
1015.00	2.636	0.025	0.530
1016.00	2.623	0.019	0.523
1017.00	2.617	0.019	0.523
1018.00	2.623	0.019	0.523
1019.00	2.630	0.019	0.530
1020.00	2.623	0.019	0.523
1021.00	2.623	0.019	0.523
1022.00	2.630	0.019	0.523
1023.00	2.617	0.019	0.523
1024.00	2.611	0.019	0.523
1025.00	2.630	0.025	0.523
1026.00	2.636	0.019	0.523
1027.00	2.623	0.019	0.523
1028.00	2.611	0.025	0.523
1029.00	2.636	0.025	0.530
1030.00	2.617	0.025	0.523
1031.00	2.617	0.025	0.530
1032.00	2.636	0.019	0.523
1033.00	2.617	0.025	0.530
1034.00	2.617	0.019	0.530
1035.00	2.630	0.019	0.523
1036.00	2.630	0.025	0.530
1037.00	2.636	0.025	0.530
1038.00	2.649	0.025	0.530
1039.00	2.623	0.025	0.530
1040.00	2.636	0.025	0.523
1041.00	2.636	0.025	0.530
1042.00	2.642	0.019	0.523
1043.00	2.642	0.025	0.530
1044.00	2.623	0.025	0.530
1045.00	2.642	0.025	0.530
1046.00	2.636	0.025	0.530
1047.00	2.636	0.025	0.530
1048.00	2.636	0.025	0.530
1049.00	2.642	0.025	0.530
1050.00	2.642	0.025	0.530
1051.00	2.630	0.025	0.530
1052.00	2.636	0.025	0.530
1053.00	2.630	0.025	0.530
1054.00	2.661	0.019	0.530
1055.00	2.630	0.019	0.530
1056.00	2.636	0.019	0.530
1057.00	2.630	0.025	0.530
1058.00	2.636	0.025	0.530
1059.00	2.617	0.025	0.530

1060.00	2.649	0.025	0.530
1061.00	2.642	0.019	0.530
1062.00	2.649	0.019	0.530
1063.00	2.630	0.019	0.530
1064.00	2.655	0.019	0.530
1065.00	2.655	0.025	0.530
1066.00	2.649	0.025	0.530
1067.00	2.636	0.025	0.530
1068.00	2.630	0.019	0.530
1069.00	2.649	0.025	0.530
1070.00	2.655	0.025	0.530
1071.00	2.642	0.019	0.530
1072.00	2.636	0.025	0.530
1073.00	2.642	0.025	0.530
1074.00	2.661	0.025	0.530
1075.00	2.649	0.025	0.530
1076.00	2.661	0.025	0.536
1077.00	2.649	0.025	0.530
1078.00	2.642	0.025	0.536
1079.00	2.642	0.019	0.536
1080.00	2.661	0.025	0.536
1081.00	2.655	0.025	0.536
1082.00	2.661	0.025	0.536
1083.00	2.649	0.025	0.536
1084.00	2.661	0.025	0.536
1085.00	2.649	0.025	0.536
1086.00	2.642	0.025	0.530
1087.00	2.661	0.025	0.536
1088.00	2.649	0.025	0.536
1089.00	2.642	0.025	0.536
1090.00	2.649	0.025	0.536
1091.00	2.649	0.025	0.536
1092.00	2.655	0.025	0.536
1093.00	2.642	0.025	0.536
1094.00	2.655	0.025	0.536
1095.00	2.655	0.025	0.536
1096.00	2.642	0.025	0.536
1097.00	2.674	0.025	0.536
1098.00	2.655	0.025	0.536
1099.00	2.655	0.019	0.542
1100.00	2.668	0.025	0.542
1101.00	2.661	0.025	0.536
1102.00	2.655	0.025	0.542
1103.00	2.661	0.025	0.542
1104.00	2.674	0.025	0.542
1105.00	2.655	0.025	0.542
1106.00	2.680	0.025	0.536
1107.00	2.680	0.025	0.536
1108.00	2.674	0.025	0.536
1109.00	2.668	0.025	0.536
1110.00	2.674	0.025	0.536
1111.00	2.636	0.025	0.536
1112.00	2.655	0.025	0.536
1113.00	2.674	0.025	0.542
1114.00	2.661	0.025	0.536
1115.00	2.655	0.025	0.536
1116.00	2.668	0.025	0.536
1117.00	2.655	0.025	0.542
1118.00	2.674	0.025	0.536
1119.00	2.674	0.025	0.536

1120.00	2.661	0.025	0.536
1121.00	2.668	0.025	0.536
1122.00	2.649	0.025	0.542
1123.00	2.661	0.025	0.536
1124.00	2.668	0.025	0.542
1125.00	2.668	0.025	0.542
1126.00	2.668	0.025	0.542
1127.00	2.674	0.025	0.542
1128.00	2.655	0.025	0.542
1129.00	2.668	0.025	0.542
1130.00	2.674	0.025	0.542
1131.00	2.661	0.025	0.542
1132.00	2.668	0.025	0.542
1133.00	2.680	0.025	0.542
1134.00	2.668	0.025	0.542
1135.00	2.668	0.025	0.542
1136.00	2.661	0.025	0.542
1137.00	2.687	0.025	0.542
1138.00	2.661	0.025	0.542
1139.00	2.674	0.025	0.542
1140.00	2.668	0.025	0.542
1141.00	2.674	0.025	0.542
1142.00	2.668	0.025	0.542
1143.00	2.680	0.025	0.542
1144.00	2.674	0.025	0.542
1145.00	2.668	0.025	0.542
1146.00	2.680	0.025	0.542
1147.00	2.674	0.025	0.542
1148.00	2.680	0.025	0.542
1149.00	2.661	0.025	0.542
1150.00	2.680	0.025	0.542
1151.00	2.674	0.025	0.542
1152.00	2.674	0.025	0.542
1153.00	2.674	0.025	0.542
1154.00	2.680	0.025	0.542
1155.00	2.687	0.025	0.542
1156.00	2.649	0.025	0.542
1157.00	2.680	0.025	0.542
1158.00	2.668	0.025	0.542
1159.00	2.668	0.025	0.542
1160.00	2.687	0.025	0.542
1161.00	2.668	0.025	0.542
1162.00	2.680	0.025	0.542
1163.00	2.668	0.025	0.542
1164.00	2.693	0.025	0.542
1165.00	2.668	0.025	0.542
1166.00	2.687	0.025	0.542
1167.00	2.687	0.025	0.542
1168.00	2.655	0.025	0.542
1169.00	2.693	0.025	0.542
1170.00	2.687	0.025	0.542
1171.00	2.674	0.025	0.542
1172.00	2.680	0.025	0.542
1173.00	2.674	0.025	0.548
1174.00	2.680	0.025	0.548
1175.00	2.706	0.031	0.542
1176.00	2.699	0.025	0.548
1177.00	2.680	0.025	0.548
1178.00	2.674	0.025	0.548
1179.00	2.668	0.025	0.548

1180.00	2.680	0.025	0.548
1181.00	2.693	0.025	0.548
1182.00	2.706	0.025	0.548
1183.00	2.712	0.025	0.548
1184.00	2.687	0.025	0.548
1185.00	2.687	0.025	0.548
1186.00	2.687	0.025	0.548
1187.00	2.687	0.025	0.548
1188.00	2.706	0.025	0.548
1189.00	2.680	0.025	0.548
1190.00	2.693	0.025	0.548
1191.00	2.680	0.025	0.548
1192.00	2.687	0.025	0.548
1193.00	2.699	0.025	0.548
1194.00	2.680	0.025	0.548
1195.00	2.693	0.025	0.548
1196.00	2.699	0.025	0.548
1197.00	2.706	0.025	0.548
1198.00	2.718	0.025	0.548
1199.00	2.687	0.025	0.548
1200.00	2.699	0.031	0.548
1201.00	2.718	0.025	0.548
1202.00	2.731	0.025	0.548
1203.00	2.699	0.025	0.548
1204.00	2.699	0.025	0.555
1205.00	2.718	0.025	0.548
1206.00	2.731	0.025	0.548
1207.00	2.712	0.025	0.548
1208.00	2.725	0.025	0.548
1209.00	2.718	0.025	0.548
1210.00	2.725	0.031	0.548
1211.00	2.706	0.025	0.548
1212.00	2.718	0.031	0.548
1213.00	2.718	0.025	0.548
1214.00	2.718	0.025	0.548
1215.00	2.693	0.025	0.555
1216.00	2.712	0.025	0.548
1217.00	2.718	0.025	0.555
1218.00	2.712	0.025	0.548
1219.00	2.725	0.025	0.548
1220.00	2.731	0.025	0.548
1221.00	2.706	0.025	0.548
1222.00	2.706	0.025	0.548
1223.00	2.725	0.025	0.555
1224.00	2.731	0.025	0.555
1225.00	2.725	0.025	0.548
1226.00	2.731	0.025	0.548
1227.00	2.725	0.025	0.548
1228.00	2.744	0.025	0.548
1229.00	2.738	0.025	0.548
1230.00	2.744	0.025	0.548
1231.00	2.712	0.025	0.555
1232.00	2.731	0.031	0.555
1233.00	2.712	0.025	0.555
1234.00	2.744	0.025	0.555
1235.00	2.731	0.025	0.555
1236.00	2.738	0.025	0.555
1237.00	2.731	0.025	0.555
1238.00	2.718	0.025	0.555
1239.00	2.738	0.025	0.555

1240.00	2.712	0.025	0.555
1241.00	2.738	0.025	0.555
1242.00	2.738	0.025	0.555
1243.00	2.744	0.025	0.555
1244.00	2.731	0.025	0.555
1245.00	2.725	0.025	0.555
1246.00	2.744	0.025	0.555
1247.00	2.757	0.025	0.555
1248.00	2.738	0.025	0.555
1249.00	2.757	0.025	0.555
1250.00	2.744	0.025	0.555
1251.00	2.738	0.025	0.555
1252.00	2.757	0.025	0.555
1253.00	2.744	0.025	0.555
1254.00	2.738	0.025	0.555
1255.00	2.763	0.025	0.555
1256.00	2.763	0.025	0.555
1257.00	2.750	0.025	0.561
1258.00	2.750	0.025	0.561
1259.00	2.763	0.025	0.561
1260.00	2.744	0.025	0.561
1261.00	2.757	0.025	0.561
1262.00	2.738	0.025	0.561
1263.00	2.757	0.025	0.561
1264.00	2.757	0.025	0.555
1265.00	2.750	0.025	0.555
1266.00	2.744	0.025	0.555
1267.00	2.750	0.025	0.561
1268.00	2.763	0.025	0.555
1269.00	2.757	0.025	0.561
1270.00	2.763	0.025	0.555
1271.00	2.757	0.025	0.555
1272.00	2.763	0.025	0.555
1273.00	2.763	0.025	0.561
1274.00	2.763	0.031	0.561
1275.00	2.757	0.025	0.561
1276.00	2.776	0.025	0.561
1277.00	2.763	0.025	0.561
1278.00	2.750	0.031	0.561
1279.00	2.757	0.031	0.561
1280.00	2.763	0.025	0.561
1281.00	2.782	0.025	0.561
1282.00	2.757	0.025	0.561
1283.00	2.769	0.025	0.561
1284.00	2.769	0.031	0.561
1285.00	2.776	0.031	0.561
1286.00	2.769	0.025	0.561
1287.00	2.763	0.031	0.561
1288.00	2.782	0.031	0.567
1289.00	2.776	0.031	0.567
1290.00	2.757	0.031	0.561
1291.00	2.782	0.031	0.567
1292.00	2.782	0.025	0.561
1293.00	2.782	0.025	0.567
1294.00	2.757	0.025	0.567
1295.00	2.782	0.031	0.561
1296.00	2.776	0.025	0.567
1297.00	2.776	0.031	0.561
1298.00	2.769	0.031	0.561
1299.00	2.757	0.031	0.567

1300.00	2.769	0.031	0.567
1301.00	2.763	0.031	0.567
1302.00	2.788	0.025	0.567
1303.00	2.776	0.031	0.567
1304.00	2.795	0.031	0.567
1305.00	2.769	0.031	0.567
1306.00	2.782	0.038	0.567
1307.00	2.776	0.031	0.567
1308.00	2.776	0.031	0.567
1309.00	2.776	0.031	0.567
1310.00	2.757	0.031	0.567
1311.00	2.763	0.031	0.574
1312.00	2.776	0.031	0.567
1313.00	2.763	0.031	0.567
1314.00	2.776	0.031	0.567
1315.00	2.788	0.031	0.567
1316.00	2.801	0.031	0.574
1317.00	2.795	0.031	0.567
1318.00	2.782	0.031	0.574
1319.00	2.776	0.031	0.574
1320.00	2.763	0.031	0.574
1321.00	2.776	0.031	0.567
1322.00	2.763	0.031	0.567
1323.00	2.782	0.031	0.567
1324.00	2.807	0.031	0.574
1325.00	2.782	0.031	0.574
1326.00	2.782	0.031	0.574
1327.00	2.795	0.031	0.574
1328.00	2.795	0.031	0.574
1329.00	2.782	0.031	0.574
1330.00	2.776	0.031	0.574
1331.00	2.782	0.031	0.574
1332.00	2.776	0.031	0.574
1333.00	2.801	0.031	0.574
1334.00	2.776	0.038	0.574
1335.00	2.769	0.031	0.574
1336.00	2.801	0.031	0.574
1337.00	2.757	0.031	0.574
1338.00	2.801	0.038	0.574
1339.00	2.788	0.038	0.574
1340.00	2.788	0.031	0.580
1341.00	2.801	0.038	0.580
1342.00	2.801	0.038	0.574
1343.00	2.801	0.031	0.580
1344.00	2.801	0.038	0.580
1345.00	2.801	0.038	0.580
1346.00	2.795	0.038	0.580
1347.00	2.795	0.038	0.574
1348.00	2.788	0.038	0.580
1349.00	2.801	0.038	0.580
1350.00	2.782	0.031	0.580
1351.00	2.801	0.038	0.580
1352.00	2.801	0.038	0.580
1353.00	2.788	0.038	0.580
1354.00	2.801	0.038	0.580
1355.00	2.788	0.038	0.580
1356.00	2.795	0.038	0.580
1357.00	2.788	0.038	0.580
1358.00	2.814	0.038	0.586
1359.00	2.782	0.038	0.580

1360.00	2.801	0.038	0.586
1361.00	2.795	0.038	0.586
1362.00	2.795	0.038	0.586
1363.00	2.807	0.038	0.580
1364.00	2.801	0.038	0.586
1365.00	2.801	0.038	0.586
1366.00	2.801	0.038	0.586
1367.00	2.788	0.038	0.580
1368.00	2.782	0.038	0.586
1369.00	2.801	0.038	0.586
1370.00	2.801	0.038	0.586
1371.00	2.807	0.038	0.586
1372.00	2.807	0.038	0.586
1373.00	2.807	0.038	0.586
1374.00	2.801	0.038	0.580
1375.00	2.788	0.038	0.586
1376.00	2.807	0.038	0.586
1377.00	2.820	0.038	0.586
1378.00	2.826	0.038	0.580
1379.00	2.795	0.044	0.586
1380.00	2.788	0.038	0.586
1381.00	2.776	0.038	0.586
1382.00	2.807	0.038	0.586
1383.00	2.801	0.031	0.580
1384.00	2.807	0.038	0.586
1385.00	2.782	0.038	0.586
1386.00	2.814	0.038	0.586
1387.00	2.814	0.038	0.586
1388.00	2.807	0.038	0.580
1389.00	2.807	0.038	0.586
1390.00	2.820	0.038	0.586
1391.00	2.820	0.038	0.586
1392.00	2.814	0.038	0.586
1393.00	2.807	0.038	0.586
1394.00	2.814	0.038	0.593
1395.00	2.807	0.038	0.586
1396.00	2.807	0.038	0.580
1397.00	2.820	0.038	0.586
1398.00	2.826	0.038	0.586
1399.00	2.807	0.038	0.586
1400.00	2.826	0.038	0.586
1401.00	2.788	0.038	0.580
1402.00	2.795	0.038	0.580
1403.00	2.814	0.038	0.580
1404.00	2.807	0.038	0.580
1405.00	2.801	0.038	0.586
1406.00	2.826	0.038	0.586
1407.00	2.807	0.038	0.593
1408.00	2.820	0.038	0.593
1409.00	2.820	0.038	0.599
1410.00	2.807	0.038	0.593
1411.00	2.807	0.038	0.593
1412.00	2.814	0.044	0.586
1413.00	2.807	0.038	0.586
1414.00	2.807	0.038	0.593
1415.00	2.833	0.038	0.599
1416.00	2.814	0.038	0.593
1417.00	2.795	0.044	0.580
1418.00	2.782	0.038	0.580
1419.00	2.807	0.038	0.586

1420.00	2.814	0.038	0.580
1421.00	2.814	0.038	0.586
1422.00	2.820	0.044	0.593
1423.00	2.826	0.044	0.599
1424.00	2.826	0.038	0.599
1425.00	2.814	0.038	0.593
1426.00	2.833	0.038	0.593
1427.00	2.820	0.044	0.593
1428.00	2.801	0.038	0.586
1429.00	2.814	0.038	0.593
1430.00	2.820	0.038	0.586
1431.00	2.807	0.038	0.580
1432.00	2.820	0.038	0.593
1433.00	2.826	0.038	0.593
1434.00	2.820	0.038	0.593
1435.00	2.839	0.044	0.586
1436.00	2.814	0.038	0.593
1437.00	2.820	0.038	0.593
1438.00	2.833	0.038	0.586
1439.00	2.826	0.038	0.586
1440.00	2.820	0.038	0.593
1441.00	2.820	0.044	0.593
1442.00	2.839	0.038	0.593
1443.00	2.807	0.044	0.580
1444.00	2.820	0.044	0.593
1445.00	2.839	0.044	0.593
1446.00	2.833	0.038	0.593
1447.00	2.839	0.044	0.593
1448.00	2.833	0.044	0.593
1449.00	2.826	0.038	0.593
1450.00	2.845	0.044	0.593
1451.00	2.826	0.044	0.586
1452.00	2.845	0.044	0.586
1453.00	2.833	0.038	0.599
1454.00	2.845	0.044	0.599
1455.00	2.839	0.044	0.599
1456.00	2.833	0.044	0.599
1457.00	2.858	0.044	0.593
1458.00	2.839	0.044	0.599
1459.00	2.826	0.044	0.593
1460.00	2.845	0.038	0.599
1461.00	2.833	0.044	0.599
1462.00	2.852	0.038	0.593
1463.00	2.839	0.044	0.599
1464.00	2.852	0.044	0.593
1465.00	2.820	0.044	0.593
1466.00	2.839	0.044	0.599
1467.00	2.845	0.044	0.593
1468.00	2.852	0.044	0.593
1469.00	2.852	0.044	0.599
1470.00	2.839	0.044	0.593
1471.00	2.839	0.044	0.599
1472.00	2.839	0.044	0.599
1473.00	2.845	0.038	0.599
1474.00	2.852	0.044	0.593
1475.00	2.852	0.044	0.605
1476.00	2.839	0.044	0.605
1477.00	2.845	0.044	0.599
1478.00	2.845	0.044	0.605
1479.00	2.852	0.044	0.599

1480.00	2.852	0.044	0.599
1481.00	2.833	0.038	0.593
1482.00	2.833	0.044	0.599
1483.00	2.858	0.044	0.599
1484.00	2.858	0.044	0.599
1485.00	2.845	0.044	0.605
1486.00	2.839	0.044	0.593
1487.00	2.839	0.044	0.599
1488.00	2.820	0.044	0.599
1489.00	2.852	0.044	0.599
1490.00	2.852	0.044	0.599
1491.00	2.858	0.044	0.605
1492.00	2.839	0.044	0.599
1493.00	2.826	0.044	0.599
1494.00	2.852	0.044	0.599
1495.00	2.852	0.044	0.599
1496.00	2.865	0.044	0.605
1497.00	2.858	0.044	0.605
1498.00	2.871	0.044	0.599
1499.00	2.858	0.044	0.605
1500.00	2.833	0.044	0.599
1501.00	2.852	0.044	0.605
1502.00	2.858	0.044	0.605
1503.00	2.852	0.044	0.605
1504.00	2.845	0.044	0.599
1505.00	2.845	0.044	0.593
1506.00	2.839	0.044	0.599
1507.00	2.858	0.044	0.605
1508.00	2.858	0.044	0.605
1509.00	2.877	0.044	0.599
1510.00	2.852	0.044	0.605
1511.00	2.871	0.044	0.599
1512.00	2.852	0.044	0.599
1513.00	2.858	0.044	0.593
1514.00	2.877	0.044	0.605
1515.00	2.839	0.038	0.605
1516.00	2.865	0.044	0.605
1517.00	2.865	0.044	0.605
1518.00	2.858	0.044	0.605
1519.00	2.877	0.044	0.605
1520.00	2.845	0.044	0.605
1521.00	2.845	0.044	0.599
1522.00	2.845	0.044	0.599
1523.00	2.858	0.044	0.605
1524.00	2.858	0.044	0.599
1525.00	2.865	0.044	0.605
1526.00	2.852	0.044	0.605
1527.00	2.852	0.044	0.605
1528.00	2.852	0.044	0.599
1529.00	2.845	0.044	0.605
1530.00	2.852	0.044	0.599
1531.00	2.852	0.044	0.599
1532.00	2.839	0.044	0.605
1533.00	2.852	0.044	0.605
1534.00	2.858	0.044	0.605
1535.00	2.858	0.044	0.599
1536.00	2.852	0.044	0.605
1537.00	2.852	0.044	0.605
1538.00	2.839	0.050	0.612
1539.00	2.852	0.044	0.605

1540.00	2.871	0.044	0.605
1541.00	2.865	0.044	0.612
1542.00	2.858	0.044	0.612
1543.00	2.833	0.044	0.599
1544.00	2.845	0.044	0.599
1545.00	2.852	0.044	0.605
1546.00	2.865	0.044	0.605
1547.00	2.865	0.044	0.605
1548.00	2.877	0.044	0.612
1549.00	2.858	0.044	0.612
1550.00	2.858	0.044	0.605
1551.00	2.852	0.044	0.605
1552.00	2.865	0.044	0.605
1553.00	2.852	0.044	0.605
1554.00	2.852	0.050	0.612
1555.00	2.871	0.044	0.618
1556.00	2.865	0.044	0.612
1557.00	2.877	0.044	0.612
1558.00	2.871	0.044	0.612
1559.00	2.845	0.050	0.605
1560.00	2.852	0.044	0.612
1561.00	2.852	0.044	0.605
1562.00	2.858	0.044	0.605
1563.00	2.852	0.050	0.605
1564.00	2.865	0.044	0.612
1565.00	2.871	0.044	0.612
1566.00	2.852	0.050	0.612
1567.00	2.833	0.050	0.605
1568.00	2.858	0.050	0.605
1569.00	2.871	0.044	0.612
1570.00	2.858	0.050	0.612
1571.00	2.877	0.050	0.612
1572.00	2.890	0.050	0.612
1573.00	2.865	0.050	0.605
1574.00	2.871	0.044	0.605
1575.00	2.865	0.044	0.612
1576.00	2.871	0.050	0.605
1577.00	2.884	0.050	0.605
1578.00	2.871	0.050	0.612
1579.00	2.871	0.050	0.612
1580.00	2.852	0.050	0.605
1581.00	2.871	0.050	0.605
1582.00	2.852	0.050	0.612
1583.00	2.877	0.050	0.612
1584.00	2.884	0.044	0.612
1585.00	2.865	0.044	0.612
1586.00	2.884	0.044	0.612
1587.00	2.890	0.050	0.612
1588.00	2.884	0.050	0.612
1589.00	2.896	0.050	0.612
1590.00	2.884	0.050	0.612
1591.00	2.871	0.050	0.612
1592.00	2.871	0.050	0.605
1593.00	2.871	0.050	0.605
1594.00	2.877	0.050	0.612
1595.00	2.890	0.050	0.605
1596.00	2.890	0.050	0.605
1597.00	2.909	0.050	0.612
1598.00	2.871	0.050	0.605
1599.00	2.890	0.044	0.612

1600.00	2.871	0.050	0.605
1601.00	2.890	0.050	0.618
1602.00	2.903	0.050	0.612
1603.00	2.890	0.050	0.612
1604.00	2.890	0.050	0.612
1605.00	2.884	0.050	0.612
1606.00	2.903	0.050	0.612
1607.00	2.915	0.044	0.612
1608.00	2.871	0.044	0.612
1609.00	2.871	0.050	0.612
1610.00	2.884	0.044	0.612
1611.00	2.890	0.050	0.605
1612.00	2.896	0.050	0.612
1613.00	2.903	0.050	0.612
1614.00	2.884	0.050	0.612
1615.00	2.877	0.050	0.612
1616.00	2.871	0.050	0.612
1617.00	2.884	0.050	0.612
1618.00	2.871	0.050	0.612
1619.00	2.884	0.050	0.612
1620.00	2.896	0.050	0.618
1621.00	2.903	0.050	0.612
1622.00	2.928	0.050	0.612
1623.00	2.903	0.050	0.618
1624.00	2.877	0.050	0.618
1625.00	2.884	0.050	0.618
1626.00	2.890	0.050	0.612
1627.00	2.890	0.050	0.618
1628.00	2.890	0.050	0.612
1629.00	2.896	0.050	0.612
1630.00	2.890	0.050	0.612
1631.00	2.877	0.050	0.612
1632.00	2.896	0.050	0.605
1633.00	2.890	0.050	0.618
1634.00	2.909	0.050	0.612
1635.00	2.896	0.050	0.612
1636.00	2.903	0.050	0.618
1637.00	2.890	0.050	0.618
1638.00	2.890	0.050	0.618
1639.00	2.903	0.050	0.612
1640.00	2.903	0.050	0.612
1641.00	2.903	0.050	0.612
1642.00	2.909	0.050	0.624
1643.00	2.896	0.050	0.618
1644.00	2.903	0.050	0.618
1645.00	2.909	0.050	0.618
1646.00	2.915	0.050	0.612
1647.00	2.884	0.050	0.612
1648.00	2.896	0.050	0.618
1649.00	2.903	0.050	0.618
1650.00	2.896	0.050	0.618
1651.00	2.909	0.050	0.612
1652.00	2.896	0.050	0.618
1653.00	2.903	0.050	0.618
1654.00	2.896	0.050	0.612
1655.00	2.909	0.050	0.618
1656.00	2.909	0.050	0.618
1657.00	2.909	0.050	0.618
1658.00	2.922	0.050	0.612
1659.00	2.896	0.050	0.612

1660.00	2.903	0.050	0.612
1661.00	2.903	0.050	0.618
1662.00	2.903	0.050	0.618
1663.00	2.877	0.050	0.612
1664.00	2.915	0.050	0.618
1665.00	2.890	0.044	0.618
1666.00	2.903	0.050	0.618
1667.00	2.896	0.050	0.618
1668.00	2.903	0.050	0.618
1669.00	2.896	0.050	0.624
1670.00	2.909	0.050	0.624
1671.00	2.915	0.050	0.612
1672.00	2.915	0.050	0.618
1673.00	2.896	0.050	0.618
1674.00	2.909	0.050	0.618
1675.00	2.896	0.050	0.624
1676.00	2.922	0.050	0.624
1677.00	2.903	0.050	0.618
1678.00	2.922	0.050	0.618
1679.00	2.909	0.050	0.624
1680.00	2.909	0.050	0.618
1681.00	2.922	0.050	0.618
1682.00	2.909	0.050	0.618
1683.00	2.915	0.050	0.618
1684.00	2.915	0.050	0.618
1685.00	2.909	0.050	0.618
1686.00	2.922	0.050	0.612
1687.00	2.903	0.050	0.605
1688.00	2.915	0.050	0.605
1689.00	2.903	0.050	0.612
1690.00	2.922	0.050	0.605
1691.00	2.915	0.050	0.618
1692.00	2.922	0.050	0.630
1693.00	2.922	0.050	0.630
1694.00	2.934	0.050	0.624
1695.00	2.915	0.050	0.618
1696.00	2.922	0.050	0.624
1697.00	2.928	0.050	0.630
1698.00	2.928	0.050	0.630
1699.00	2.941	0.050	0.624
1700.00	2.941	0.050	0.630
1701.00	2.922	0.050	0.630
1702.00	2.934	0.050	0.630
1703.00	2.915	0.050	0.624
1704.00	2.928	0.050	0.624
1705.00	2.941	0.050	0.630
1706.00	2.928	0.050	0.618
1707.00	2.941	0.050	0.618
1708.00	2.928	0.050	0.612
1709.00	2.934	0.050	0.618
1710.00	2.922	0.050	0.618
1711.00	2.922	0.050	0.618
1712.00	2.915	0.050	0.618
1713.00	2.915	0.050	0.612
1714.00	2.934	0.050	0.612
1715.00	2.928	0.050	0.618
1716.00	2.922	0.050	0.618
1717.00	2.922	0.050	0.618
1718.00	2.934	0.050	0.618
1719.00	2.928	0.050	0.624

1720.00	2.941	0.050	0.618
1721.00	2.934	0.050	0.624
1722.00	2.953	0.050	0.624
1723.00	2.928	0.050	0.624
1724.00	2.915	0.050	0.624
1725.00	2.922	0.050	0.624
1726.00	2.947	0.050	0.618
1727.00	2.922	0.050	0.618
1728.00	2.941	0.050	0.624
1729.00	2.934	0.050	0.618
1730.00	2.934	0.050	0.618
1731.00	2.934	0.050	0.618
1732.00	2.941	0.050	0.624
1733.00	2.934	0.050	0.624
1734.00	2.947	0.050	0.624
1735.00	2.934	0.050	0.624
1736.00	2.928	0.050	0.624
1737.00	2.922	0.050	0.618
1738.00	2.941	0.050	0.624
1739.00	2.934	0.050	0.624
1740.00	2.941	0.050	0.624
1741.00	2.941	0.050	0.624
1742.00	2.941	0.050	0.624
1743.00	2.941	0.050	0.630
1744.00	2.934	0.044	0.624
1745.00	2.947	0.044	0.618
1746.00	2.934	0.050	0.618
1747.00	2.947	0.044	0.624
1748.00	2.947	0.050	0.624
1749.00	2.934	0.050	0.624
1750.00	2.934	0.044	0.624
1751.00	2.947	0.050	0.618
1752.00	2.934	0.044	0.618
1753.00	2.934	0.050	0.624
1754.00	2.947	0.044	0.624
1755.00	2.934	0.050	0.618
1756.00	2.960	0.050	0.624
1757.00	2.953	0.044	0.618
1758.00	2.953	0.044	0.624
1759.00	2.953	0.050	0.618
1760.00	2.941	0.050	0.630
1761.00	2.941	0.050	0.630
1762.00	2.941	0.044	0.624
1763.00	2.941	0.050	0.618
1764.00	2.934	0.044	0.618
1765.00	2.941	0.044	0.624
1766.00	2.960	0.050	0.624
1767.00	2.928	0.044	0.624
1768.00	2.960	0.044	0.624
1769.00	2.953	0.044	0.630
1770.00	2.947	0.044	0.624
1771.00	2.947	0.044	0.624
1772.00	2.953	0.050	0.618
1773.00	2.934	0.044	0.624
1774.00	2.934	0.044	0.624
1775.00	2.947	0.044	0.624
1776.00	2.953	0.044	0.618
1777.00	2.953	0.050	0.618
1778.00	2.941	0.050	0.618
1779.00	2.947	0.044	0.618

1780.00	2.934	0.044	0.624
1781.00	2.960	0.044	0.630
1782.00	2.947	0.044	0.630
1783.00	2.941	0.044	0.630
1784.00	2.972	0.050	0.630
1785.00	2.972	0.044	0.624
1786.00	2.953	0.044	0.630
1787.00	2.960	0.050	0.624
1788.00	2.941	0.044	0.624
1789.00	2.966	0.044	0.624
1790.00	2.953	0.044	0.624
1791.00	2.953	0.044	0.624
1792.00	2.960	0.044	0.624
1793.00	2.979	0.044	0.624
1794.00	2.960	0.044	0.624
1795.00	2.972	0.044	0.630
1796.00	2.947	0.044	0.630
1797.00	2.960	0.044	0.630
1798.00	2.941	0.044	0.624
1799.00	2.947	0.044	0.624
1800.00	2.953	0.044	0.624
1801.00	2.960	0.044	0.624
1802.00	2.966	0.044	0.624
1803.00	2.972	0.044	0.624
1804.00	2.966	0.044	0.624
1805.00	2.953	0.044	0.624
1806.00	2.953	0.044	0.624
1807.00	2.966	0.044	0.624
1808.00	2.966	0.044	0.618
1809.00	2.979	0.044	0.624
1810.00	2.979	0.044	0.637
1811.00	2.960	0.044	0.624
1812.00	2.941	0.044	0.624
1813.00	2.960	0.044	0.624
1814.00	2.972	0.044	0.624
1815.00	2.985	0.044	0.624
1816.00	2.960	0.044	0.624
1817.00	2.972	0.044	0.618
1818.00	2.947	0.044	0.624
1819.00	2.960	0.044	0.630
1820.00	2.972	0.044	0.624
1821.00	2.972	0.044	0.624
1822.00	2.966	0.044	0.630
1823.00	2.960	0.044	0.630
1824.00	2.972	0.044	0.630
1825.00	2.979	0.044	0.630
1826.00	2.966	0.044	0.630
1827.00	2.960	0.044	0.630
1828.00	2.966	0.044	0.630
1829.00	2.966	0.044	0.624
1830.00	2.979	0.044	0.624
1831.00	2.972	0.044	0.630
1832.00	2.979	0.044	0.630
1833.00	2.972	0.044	0.630
1834.00	2.966	0.044	0.630
1835.00	2.966	0.044	0.630
1836.00	2.979	0.044	0.630
1837.00	2.966	0.044	0.624
1838.00	2.960	0.044	0.637
1839.00	2.953	0.044	0.630

1840.00	2.947	0.050	0.624
1841.00	2.985	0.050	0.630
1842.00	2.953	0.044	0.630
1843.00	2.960	0.044	0.630
1844.00	2.966	0.038	0.637
1845.00	2.985	0.044	0.630
1846.00	2.972	0.044	0.630
1847.00	2.966	0.044	0.630
1848.00	2.979	0.044	0.630
1849.00	2.972	0.044	0.630
1850.00	2.972	0.044	0.630
1851.00	2.941	0.044	0.630
1852.00	2.966	0.044	0.630
1853.00	2.966	0.044	0.637
1854.00	2.960	0.044	0.630
1855.00	2.979	0.044	0.630
1856.00	2.979	0.044	0.630
1857.00	2.972	0.044	0.630
1858.00	2.953	0.044	0.630
1859.00	2.985	0.044	0.630
1860.00	2.992	0.044	0.630
1861.00	2.966	0.044	0.630
1862.00	2.979	0.050	0.630
1863.00	2.972	0.044	0.630
1864.00	2.966	0.044	0.637
1865.00	2.947	0.044	0.630
1866.00	2.979	0.044	0.630
1867.00	2.960	0.044	0.630
1868.00	2.985	0.044	0.630
1869.00	2.979	0.044	0.630
1870.00	2.998	0.044	0.630
1871.00	2.966	0.044	0.637
1872.00	2.960	0.044	0.630
1873.00	2.972	0.044	0.630
1874.00	2.979	0.044	0.630
1875.00	2.972	0.044	0.630
1876.00	2.966	0.044	0.630
1877.00	2.985	0.044	0.630
1878.00	2.960	0.044	0.630
1879.00	2.979	0.044	0.630
1880.00	2.966	0.044	0.630
1881.00	2.966	0.044	0.630
1882.00	2.985	0.044	0.630
1883.00	2.992	0.044	0.630
1884.00	2.998	0.044	0.630
1885.00	2.985	0.044	0.630
1886.00	2.972	0.044	0.630
1887.00	2.992	0.044	0.637
1888.00	2.972	0.044	0.637
1889.00	2.979	0.044	0.637
1890.00	2.985	0.044	0.637
1891.00	2.998	0.044	0.637
1892.00	2.979	0.044	0.637
1893.00	2.972	0.044	0.637
1894.00	2.979	0.044	0.637
1895.00	2.992	0.044	0.637
1896.00	2.979	0.044	0.637
1897.00	3.004	0.044	0.637
1898.00	2.992	0.044	0.637
1899.00	2.985	0.044	0.637

1900.00	2.985	0.044	0.637
1901.00	2.979	0.044	0.637
1902.00	2.979	0.044	0.637
1903.00	3.004	0.044	0.637
1904.00	2.992	0.044	0.637
1905.00	2.992	0.044	0.637
1906.00	2.998	0.044	0.637
1907.00	2.985	0.044	0.637
1908.00	2.992	0.044	0.637
1909.00	2.972	0.044	0.637
1910.00	2.992	0.044	0.637
1911.00	2.972	0.044	0.637
1912.00	2.992	0.044	0.637
1913.00	2.998	0.044	0.637
1914.00	2.992	0.044	0.637
1915.00	2.979	0.044	0.637
1916.00	3.004	0.044	0.637
1917.00	3.011	0.044	0.637
1918.00	2.998	0.044	0.637
1919.00	2.998	0.044	0.637
1920.00	2.985	0.044	0.637
1921.00	2.998	0.044	0.637
1922.00	2.998	0.044	0.637
1923.00	2.979	0.044	0.637
1924.00	2.979	0.044	0.637
1925.00	2.992	0.044	0.637
1926.00	2.998	0.044	0.637
1927.00	2.979	0.044	0.637
1928.00	2.992	0.044	0.637
1929.00	2.992	0.044	0.637
1930.00	3.004	0.044	0.637
1931.00	2.998	0.044	0.630
1932.00	2.998	0.044	0.637
1933.00	3.004	0.044	0.637
1934.00	3.011	0.044	0.637
1935.00	3.004	0.044	0.637
1936.00	2.998	0.044	0.637
1937.00	2.998	0.044	0.637
1938.00	3.023	0.044	0.637
1939.00	2.985	0.044	0.637
1940.00	2.972	0.044	0.637
1941.00	3.011	0.044	0.637
1942.00	2.998	0.044	0.637
1943.00	2.998	0.044	0.637
1944.00	2.985	0.044	0.637
1945.00	2.998	0.044	0.637
1946.00	2.998	0.044	0.637
1947.00	3.004	0.044	0.637
1948.00	2.992	0.044	0.637
1949.00	2.992	0.044	0.637
1950.00	3.011	0.044	0.643
1951.00	2.998	0.044	0.637
1952.00	3.004	0.044	0.637
1953.00	2.992	0.044	0.637
1954.00	3.017	0.044	0.637
1955.00	3.004	0.044	0.637
1956.00	3.017	0.044	0.637
1957.00	3.017	0.044	0.637
1958.00	2.998	0.044	0.637
1959.00	3.004	0.044	0.637

1960.00	2.998	0.044	0.637
1961.00	2.998	0.044	0.637
1962.00	2.998	0.044	0.637
1963.00	2.992	0.044	0.637
1964.00	3.023	0.044	0.637
1965.00	3.017	0.044	0.637
1966.00	3.023	0.044	0.637
1967.00	3.017	0.044	0.637
1968.00	3.017	0.044	0.637
1969.00	3.017	0.044	0.637
1970.00	3.023	0.044	0.637
1971.00	2.998	0.044	0.637
1972.00	3.036	0.044	0.637
1973.00	3.023	0.044	0.637
1974.00	2.998	0.044	0.643
1975.00	3.017	0.044	0.637
1976.00	3.011	0.044	0.643
1977.00	3.017	0.044	0.643
1978.00	3.023	0.044	0.643
1979.00	3.011	0.044	0.637
1980.00	3.011	0.044	0.637
1981.00	3.017	0.044	0.637
1982.00	3.023	0.044	0.637
1983.00	3.011	0.044	0.643
1984.00	3.004	0.044	0.637
1985.00	3.030	0.044	0.637
1986.00	3.017	0.044	0.643
1987.00	3.011	0.044	0.637
1988.00	3.017	0.044	0.643
1989.00	3.023	0.044	0.637
1990.00	3.004	0.044	0.643
1991.00	3.030	0.044	0.643
1992.00	3.017	0.044	0.643
1993.00	3.017	0.044	0.643
1994.00	3.017	0.044	0.643
1995.00	3.023	0.044	0.643
1996.00	3.030	0.044	0.643
1997.00	3.030	0.044	0.643
1998.00	3.030	0.044	0.643
1999.00	3.011	0.044	0.643
2000.00	3.023	0.044	0.643
2001.00	3.030	0.044	0.643
2002.00	3.023	0.044	0.643
2003.00	3.023	0.044	0.643
2004.00	3.011	0.044	0.643
2005.00	3.023	0.044	0.643
2006.00	3.023	0.044	0.643
2007.00	2.998	0.044	0.643
2008.00	3.023	0.044	0.643
2009.00	3.017	0.044	0.643
2010.00	3.036	0.044	0.643
2011.00	3.030	0.038	0.643
2012.00	3.030	0.044	0.643
2013.00	3.030	0.044	0.643
2014.00	3.023	0.044	0.643
2015.00	3.036	0.044	0.643
2016.00	3.036	0.044	0.643
2017.00	3.023	0.044	0.643
2018.00	3.036	0.044	0.643
2019.00	3.030	0.044	0.643

2020.00	3.017	0.044	0.649
2021.00	3.023	0.044	0.643
2022.00	3.042	0.044	0.643
2023.00	3.042	0.044	0.643
2024.00	3.017	0.044	0.643
2025.00	3.030	0.044	0.643
2026.00	3.030	0.044	0.643
2027.00	3.023	0.044	0.649
2028.00	3.042	0.044	0.643
2029.00	3.042	0.044	0.643
2030.00	3.036	0.044	0.643
2031.00	3.030	0.044	0.643
2032.00	3.049	0.038	0.643
2033.00	3.017	0.044	0.643
2034.00	3.036	0.044	0.649
2035.00	3.036	0.044	0.643
2036.00	3.042	0.044	0.643
2037.00	3.030	0.044	0.643
2038.00	3.055	0.044	0.643
2039.00	3.023	0.044	0.649
2040.00	3.049	0.044	0.643
2041.00	3.030	0.044	0.643
2042.00	3.036	0.044	0.643
2043.00	3.030	0.044	0.643
2044.00	3.042	0.044	0.649
2045.00	3.036	0.044	0.643
2046.00	3.042	0.044	0.643
2047.00	3.036	0.044	0.643
2048.00	3.030	0.044	0.643
2049.00	3.036	0.044	0.643
2050.00	3.049	0.044	0.643
2051.00	3.049	0.044	0.649
2052.00	3.023	0.044	0.649
2053.00	3.042	0.044	0.649
2054.00	3.049	0.044	0.643
2055.00	3.036	0.044	0.643
2056.00	3.023	0.044	0.643
2057.00	3.036	0.044	0.643
2058.00	3.049	0.044	0.649
2059.00	3.042	0.044	0.643
2060.00	3.036	0.044	0.643
2061.00	3.049	0.044	0.649
2062.00	3.055	0.050	0.649
2063.00	3.042	0.044	0.649
2064.00	3.049	0.044	0.649
2065.00	3.042	0.044	0.649
2066.00	3.023	0.044	0.643
2067.00	3.030	0.044	0.643
2068.00	3.049	0.044	0.643
2069.00	3.042	0.044	0.649
2070.00	3.049	0.044	0.643
2071.00	3.042	0.044	0.649
2072.00	3.030	0.044	0.649
2073.00	3.042	0.044	0.649
2074.00	3.030	0.044	0.643
2075.00	3.036	0.044	0.649
2076.00	3.036	0.044	0.649
2077.00	3.061	0.050	0.649
2078.00	3.042	0.050	0.649
2079.00	3.049	0.050	0.649

2080.00	3.042	0.044	0.649
2081.00	3.049	0.044	0.649
2082.00	3.055	0.044	0.649
2083.00	3.042	0.044	0.649
2084.00	3.042	0.050	0.649
2085.00	3.042	0.050	0.649
2086.00	3.068	0.044	0.649
2087.00	3.049	0.050	0.649
2088.00	3.042	0.050	0.649
2089.00	3.055	0.044	0.649
2090.00	3.049	0.050	0.649
2091.00	3.055	0.050	0.649
2092.00	3.055	0.050	0.649
2093.00	3.042	0.050	0.649
2094.00	3.036	0.050	0.649
2095.00	3.055	0.050	0.649
2096.00	3.061	0.050	0.649
2097.00	3.061	0.050	0.649
2098.00	3.055	0.050	0.649
2099.00	3.055	0.044	0.649
2100.00	3.068	0.044	0.649
2101.00	3.055	0.044	0.649
2102.00	3.049	0.050	0.656
2103.00	3.061	0.050	0.649
2104.00	3.074	0.050	0.649
2105.00	3.074	0.044	0.649
2106.00	3.055	0.044	0.649
2107.00	3.055	0.050	0.649
2108.00	3.087	0.050	0.656
2109.00	3.049	0.050	0.649
2110.00	3.061	0.050	0.649
2111.00	3.055	0.044	0.649
2112.00	3.049	0.044	0.649
2113.00	3.055	0.044	0.649
2114.00	3.068	0.050	0.649
2115.00	3.049	0.044	0.649
2116.00	3.049	0.044	0.649
2117.00	3.068	0.050	0.656
2118.00	3.061	0.050	0.649
2119.00	3.055	0.044	0.649
2120.00	3.061	0.044	0.656
2121.00	3.074	0.050	0.656
2122.00	3.061	0.050	0.656
2123.00	3.074	0.044	0.656
2124.00	3.093	0.044	0.656
2125.00	3.055	0.050	0.656
2126.00	3.068	0.050	0.656
2127.00	3.068	0.044	0.656
2128.00	3.087	0.044	0.656
2129.00	3.068	0.050	0.656
2130.00	3.068	0.050	0.656
2131.00	3.068	0.050	0.656
2132.00	3.074	0.044	0.656
2133.00	3.049	0.044	0.656
2134.00	3.074	0.044	0.656
2135.00	3.061	0.050	0.656
2136.00	3.074	0.044	0.656
2137.00	3.068	0.050	0.656
2138.00	3.074	0.050	0.656
2139.00	3.061	0.044	0.656

2140.00	3.061	0.044	0.656
2141.00	3.068	0.044	0.656
2142.00	3.049	0.050	0.656
2143.00	3.074	0.050	0.656
2144.00	3.049	0.050	0.656
2145.00	3.061	0.050	0.656
2146.00	3.080	0.050	0.656
2147.00	3.080	0.044	0.656
2148.00	3.061	0.044	0.656
2149.00	3.074	0.050	0.656
2150.00	3.074	0.044	0.656
2151.00	3.068	0.044	0.656
2152.00	3.068	0.050	0.656
2153.00	3.061	0.050	0.656
2154.00	3.055	0.050	0.656
2155.00	3.068	0.050	0.656
2156.00	3.055	0.044	0.656
2157.00	3.061	0.050	0.656
2158.00	3.074	0.050	0.656
2159.00	3.055	0.050	0.656
2160.00	3.074	0.050	0.656
2161.00	3.074	0.050	0.656
2162.00	3.042	0.044	0.656
2163.00	3.055	0.050	0.656
2164.00	3.074	0.044	0.656
2165.00	3.068	0.050	0.656
2166.00	3.093	0.050	0.656
2167.00	3.055	0.050	0.656
2168.00	3.074	0.050	0.656
2169.00	3.087	0.044	0.656
2170.00	3.068	0.050	0.656
2171.00	3.080	0.050	0.656
2172.00	3.042	0.050	0.656
2173.00	3.055	0.050	0.656
2174.00	3.068	0.050	0.656
2175.00	3.074	0.050	0.656
2176.00	3.080	0.050	0.656
2177.00	3.080	0.050	0.656
2178.00	3.080	0.044	0.656
2179.00	3.074	0.050	0.656
2180.00	3.087	0.050	0.656
2181.00	3.074	0.050	0.656
2182.00	3.093	0.044	0.656
2183.00	3.074	0.050	0.656
2184.00	3.068	0.044	0.656
2185.00	3.061	0.050	0.656
2186.00	3.099	0.050	0.656
2187.00	3.080	0.050	0.656
2188.00	3.074	0.050	0.656
2189.00	3.074	0.044	0.656
2190.00	3.099	0.044	0.656
2191.00	3.074	0.050	0.656
2192.00	3.068	0.050	0.656
2193.00	3.080	0.044	0.656
2194.00	3.061	0.050	0.656
2195.00	3.093	0.050	0.662
2196.00	3.087	0.050	0.656
2197.00	3.074	0.050	0.662
2198.00	3.093	0.050	0.662
2199.00	3.080	0.044	0.656

2200.00	3.080	0.050	0.656
2201.00	3.080	0.050	0.656
2202.00	3.087	0.050	0.662
2203.00	3.080	0.050	0.656
2204.00	3.074	0.050	0.656
2205.00	3.087	0.050	0.662
2206.00	3.099	0.050	0.662
2207.00	3.093	0.050	0.656
2208.00	3.080	0.050	0.662
2209.00	3.093	0.050	0.662
2210.00	3.080	0.050	0.662
2211.00	3.080	0.050	0.656
2212.00	3.087	0.050	0.662
2213.00	3.093	0.050	0.662
2214.00	3.080	0.050	0.662
2215.00	3.080	0.050	0.662
2216.00	3.093	0.050	0.662
2217.00	3.099	0.050	0.662
2218.00	3.093	0.050	0.662
2219.00	3.074	0.050	0.662
2220.00	3.093	0.050	0.662
2221.00	3.099	0.050	0.662
2222.00	3.093	0.050	0.662
2223.00	3.080	0.050	0.662
2224.00	3.087	0.050	0.662
2225.00	3.093	0.050	0.662
2226.00	3.106	0.050	0.662
2227.00	3.106	0.050	0.662
2228.00	3.099	0.050	0.662
2229.00	3.087	0.050	0.662
2230.00	3.087	0.050	0.662
2231.00	3.087	0.050	0.662
2232.00	3.099	0.050	0.662
2233.00	3.093	0.050	0.662
2234.00	3.093	0.050	0.662
2235.00	3.093	0.050	0.662
2236.00	3.080	0.050	0.662
2237.00	3.080	0.050	0.662
2238.00	3.099	0.050	0.662
2239.00	3.099	0.050	0.662
2240.00	3.099	0.050	0.662
2241.00	3.093	0.044	0.662
2242.00	3.093	0.050	0.662
2243.00	3.099	0.050	0.662
2244.00	3.106	0.050	0.662
2245.00	3.106	0.050	0.662
2246.00	3.068	0.050	0.662
2247.00	3.087	0.050	0.662
2248.00	3.099	0.050	0.662
2249.00	3.106	0.050	0.662
2250.00	3.099	0.050	0.662
2251.00	3.106	0.050	0.662
2252.00	3.106	0.050	0.662
2253.00	3.106	0.050	0.662
2254.00	3.093	0.050	0.662
2255.00	3.087	0.050	0.662
2256.00	3.106	0.050	0.662
2257.00	3.093	0.050	0.662
2258.00	3.106	0.050	0.662
2259.00	3.099	0.050	0.662

2260.00	3.093	0.050	0.662
2261.00	3.112	0.050	0.662
2262.00	3.099	0.050	0.662
2263.00	3.099	0.050	0.662
2264.00	3.106	0.044	0.662
2265.00	3.119	0.044	0.662
2266.00	3.106	0.050	0.662
2267.00	3.106	0.050	0.662
2268.00	3.099	0.050	0.662
2269.00	3.106	0.050	0.662
2270.00	3.093	0.050	0.668
2271.00	3.106	0.050	0.662
2272.00	3.106	0.050	0.662
2273.00	3.106	0.050	0.668
2274.00	3.106	0.050	0.662
2275.00	3.112	0.050	0.668
2276.00	3.099	0.050	0.668
2277.00	3.119	0.050	0.668
2278.00	3.106	0.050	0.668
2279.00	3.093	0.050	0.668
2280.00	3.112	0.050	0.668
2281.00	3.112	0.050	0.668
2282.00	3.099	0.050	0.668
2283.00	3.099	0.044	0.668
2284.00	3.131	0.050	0.668
2285.00	3.119	0.050	0.668
2286.00	3.106	0.044	0.668
2287.00	3.099	0.050	0.662
2288.00	3.112	0.050	0.662
2289.00	3.099	0.050	0.662
2290.00	3.087	0.050	0.662
2291.00	3.112	0.050	0.662
2292.00	3.112	0.050	0.662
2293.00	3.119	0.050	0.662
2294.00	3.112	0.050	0.662
2295.00	3.106	0.050	0.668
2296.00	3.099	0.050	0.668
2297.00	3.093	0.050	0.668
2298.00	3.125	0.050	0.668
2299.00	3.131	0.050	0.668
2300.00	3.112	0.050	0.668
2301.00	3.099	0.050	0.668
2302.00	3.125	0.050	0.668
2303.00	3.119	0.050	0.668
2304.00	3.119	0.050	0.668
2305.00	3.119	0.050	0.668
2306.00	3.119	0.050	0.668
2307.00	3.119	0.050	0.668
2308.00	3.119	0.050	0.668
2309.00	3.125	0.050	0.668
2310.00	3.106	0.050	0.668
2311.00	3.119	0.050	0.668
2312.00	3.112	0.050	0.668
2313.00	3.125	0.050	0.668
2314.00	3.119	0.050	0.668
2315.00	3.119	0.050	0.668
2316.00	3.106	0.050	0.668
2317.00	3.093	0.050	0.668
2318.00	3.119	0.050	0.668
2319.00	3.119	0.050	0.675

2320.00	3.125	0.050	0.668
2321.00	3.119	0.050	0.675
2322.00	3.131	0.050	0.668
2323.00	3.131	0.050	0.668
2324.00	3.112	0.050	0.668
2325.00	3.119	0.050	0.668
2326.00	3.093	0.050	0.668
2327.00	3.125	0.050	0.668
2328.00	3.131	0.050	0.668
2329.00	3.131	0.050	0.668
2330.00	3.125	0.050	0.668
2331.00	3.119	0.050	0.668
2332.00	3.125	0.050	0.668
2333.00	3.144	0.050	0.668
2334.00	3.106	0.050	0.675
2335.00	3.131	0.050	0.668
2336.00	3.125	0.050	0.668
2337.00	3.125	0.050	0.668
2338.00	3.119	0.050	0.675
2339.00	3.125	0.050	0.668
2340.00	3.119	0.050	0.668
2341.00	3.125	0.050	0.675
2342.00	3.131	0.050	0.675
2343.00	3.112	0.050	0.675
2344.00	3.125	0.050	0.668
2345.00	3.131	0.050	0.668
2346.00	3.150	0.050	0.675
2347.00	3.119	0.050	0.668
2348.00	3.119	0.050	0.668
2349.00	3.125	0.050	0.668
2350.00	3.131	0.050	0.668
2351.00	3.125	0.050	0.675
2352.00	3.131	0.050	0.675
2353.00	3.138	0.050	0.675
2354.00	3.125	0.050	0.675
2355.00	3.131	0.050	0.675
2356.00	3.144	0.050	0.668
2357.00	3.144	0.050	0.668
2358.00	3.131	0.050	0.675
2359.00	3.131	0.050	0.675
2360.00	3.125	0.050	0.668
2361.00	3.144	0.050	0.675
2362.00	3.131	0.050	0.668
2363.00	3.150	0.050	0.668
2364.00	3.150	0.050	0.668
2365.00	3.131	0.050	0.675
2366.00	3.144	0.050	0.675
2367.00	3.125	0.050	0.668
2368.00	3.138	0.050	0.675
2369.00	3.131	0.050	0.675
2370.00	3.131	0.050	0.675
2371.00	3.150	0.050	0.675
2372.00	3.144	0.044	0.668
2373.00	3.150	0.050	0.675
2374.00	3.163	0.050	0.675
2375.00	3.138	0.050	0.675
2376.00	3.131	0.050	0.675
2377.00	3.138	0.050	0.675
2378.00	3.157	0.050	0.675
2379.00	3.163	0.050	0.675

2380.00	3.150	0.057	0.668
2381.00	3.150	0.050	0.675
2382.00	3.157	0.050	0.675
2383.00	3.138	0.050	0.675
2384.00	3.150	0.057	0.675
2385.00	3.144	0.050	0.675
2386.00	3.150	0.050	0.675
2387.00	3.131	0.050	0.675
2388.00	3.150	0.050	0.675
2389.00	3.150	0.050	0.675
2390.00	3.163	0.050	0.675
2391.00	3.163	0.057	0.675
2392.00	3.157	0.050	0.675
2393.00	3.138	0.057	0.675
2394.00	3.169	0.057	0.675
2395.00	3.157	0.050	0.675
2396.00	3.150	0.050	0.675
2397.00	3.169	0.050	0.675
2398.00	3.157	0.050	0.675
2399.00	3.157	0.050	0.675
2400.00	3.163	0.050	0.675
2401.00	3.157	0.050	0.675
2402.00	3.157	0.050	0.675
2403.00	3.157	0.050	0.675
2404.00	3.163	0.050	0.675
2405.00	3.150	0.050	0.675
2406.00	3.157	0.050	0.675
2407.00	3.157	0.050	0.675
2408.00	3.163	0.050	0.675
2409.00	3.150	0.050	0.675
2410.00	3.169	0.050	0.675
2411.00	3.169	0.050	0.675
2412.00	3.169	0.050	0.675
2413.00	3.144	0.050	0.675
2414.00	3.138	0.050	0.675
2415.00	3.163	0.050	0.675
2416.00	3.157	0.050	0.675
2417.00	3.169	0.050	0.675
2418.00	3.169	0.050	0.675
2419.00	3.169	0.057	0.675
2420.00	3.163	0.057	0.675
2421.00	3.163	0.050	0.675
2422.00	3.163	0.057	0.675
2423.00	3.150	0.050	0.675
2424.00	3.169	0.050	0.681
2425.00	3.157	0.050	0.675
2426.00	3.157	0.050	0.681
2427.00	3.157	0.050	0.675
2428.00	3.144	0.050	0.675
2429.00	3.169	0.050	0.675
2430.00	3.157	0.050	0.675
2431.00	3.157	0.050	0.675
2432.00	3.169	0.057	0.681
2433.00	3.169	0.057	0.675
2434.00	3.169	0.050	0.681
2435.00	3.157	0.050	0.675
2436.00	3.144	0.050	0.675
2437.00	3.169	0.050	0.675
2438.00	3.176	0.057	0.681
2439.00	3.176	0.057	0.681

2440.00	3.157	0.050	0.681
2441.00	3.195	0.050	0.675
2442.00	3.176	0.050	0.675
2443.00	3.169	0.057	0.681
2444.00	3.176	0.050	0.681
2445.00	3.163	0.050	0.675
2446.00	3.176	0.050	0.675
2447.00	3.169	0.050	0.675
2448.00	3.169	0.050	0.681
2449.00	3.169	0.050	0.675
2450.00	3.182	0.050	0.681
2451.00	3.169	0.050	0.681
2452.00	3.182	0.050	0.681
2453.00	3.188	0.050	0.675
2454.00	3.176	0.050	0.681
2455.00	3.176	0.050	0.681
2456.00	3.176	0.050	0.681
2457.00	3.188	0.057	0.681
2458.00	3.188	0.057	0.681
2459.00	3.188	0.050	0.681
2460.00	3.169	0.057	0.681
2461.00	3.176	0.050	0.681
2462.00	3.169	0.050	0.681
2463.00	3.169	0.057	0.681
2464.00	3.182	0.050	0.681
2465.00	3.176	0.057	0.681
2466.00	3.188	0.057	0.681
2467.00	3.182	0.057	0.681
2468.00	3.163	0.050	0.681
2469.00	3.188	0.057	0.681
2470.00	3.188	0.057	0.681
2471.00	3.195	0.050	0.681
2472.00	3.188	0.050	0.681
2473.00	3.169	0.057	0.681
2474.00	3.188	0.057	0.681
2475.00	3.169	0.057	0.681
2476.00	3.195	0.057	0.681
2477.00	3.176	0.057	0.681
2478.00	3.182	0.050	0.681
2479.00	3.176	0.050	0.681
2480.00	3.163	0.050	0.681
2481.00	3.169	0.057	0.681
2482.00	3.188	0.057	0.681
2483.00	3.182	0.057	0.681
2484.00	3.182	0.057	0.681
2485.00	3.195	0.057	0.681
2486.00	3.176	0.050	0.681
2487.00	3.188	0.057	0.681
2488.00	3.195	0.057	0.681
2489.00	3.188	0.057	0.687
2490.00	3.195	0.057	0.681
2491.00	3.182	0.057	0.681
2492.00	3.188	0.050	0.681
2493.00	3.188	0.057	0.681
2494.00	3.188	0.057	0.681
2495.00	3.195	0.057	0.681
2496.00	3.169	0.057	0.687
2497.00	3.188	0.057	0.681
2498.00	3.195	0.057	0.681
2499.00	3.207	0.057	0.681

2500.00	3.176	0.057	0.687
2501.00	3.182	0.050	0.681
2502.00	3.188	0.050	0.681
2503.00	3.188	0.057	0.687
2504.00	3.188	0.057	0.681
2505.00	3.188	0.057	0.681
2506.00	3.195	0.057	0.681
2507.00	3.195	0.057	0.687
2508.00	3.207	0.057	0.687
2509.00	3.176	0.057	0.681
2510.00	3.195	0.057	0.687
2511.00	3.201	0.057	0.687
2512.00	3.195	0.057	0.687
2513.00	3.188	0.057	0.687
2514.00	3.188	0.057	0.687
2515.00	3.188	0.057	0.687
2516.00	3.195	0.057	0.687
2517.00	3.188	0.057	0.687
2518.00	3.195	0.057	0.687
2519.00	3.195	0.057	0.687
2520.00	3.201	0.057	0.687
2521.00	3.195	0.057	0.687
2522.00	3.195	0.057	0.687
2523.00	3.195	0.050	0.687
2524.00	3.201	0.057	0.687
2525.00	3.188	0.057	0.687
2526.00	3.214	0.057	0.687
2527.00	3.207	0.057	0.687
2528.00	3.195	0.057	0.687
2529.00	3.201	0.057	0.687
2530.00	3.201	0.057	0.687
2531.00	3.195	0.057	0.687
2532.00	3.195	0.057	0.687
2533.00	3.201	0.057	0.687
2534.00	3.188	0.057	0.687
2535.00	3.188	0.057	0.687
2536.00	3.201	0.057	0.687
2537.00	3.220	0.057	0.687
2538.00	3.195	0.057	0.687
2539.00	3.201	0.057	0.687
2540.00	3.207	0.057	0.687
2541.00	3.201	0.057	0.687
2542.00	3.195	0.057	0.687
2543.00	3.195	0.057	0.687
2544.00	3.214	0.057	0.687
2545.00	3.207	0.057	0.687
2546.00	3.188	0.057	0.687
2547.00	3.201	0.057	0.694
2548.00	3.195	0.057	0.694
2549.00	3.201	0.057	0.694
2550.00	3.201	0.057	0.687
2551.00	3.195	0.057	0.687
2552.00	3.195	0.057	0.687
2553.00	3.188	0.057	0.687
2554.00	3.188	0.050	0.694
2555.00	3.207	0.050	0.687
2556.00	3.214	0.057	0.694
2557.00	3.188	0.057	0.694
2558.00	3.201	0.057	0.694
2559.00	3.201	0.057	0.687

2560.00	3.207	0.057	0.694
2561.00	3.201	0.057	0.687
2562.00	3.195	0.057	0.694
2563.00	3.207	0.057	0.694
2564.00	3.207	0.057	0.694
2565.00	3.195	0.057	0.694
2566.00	3.201	0.057	0.694
2567.00	3.188	0.057	0.694
2568.00	3.195	0.057	0.694
2569.00	3.207	0.057	0.694
2570.00	3.201	0.057	0.694
2571.00	3.195	0.057	0.694
2572.00	3.214	0.057	0.694
2573.00	3.201	0.057	0.694
2574.00	3.214	0.057	0.694
2575.00	3.195	0.057	0.694
2576.00	3.214	0.057	0.694
2577.00	3.195	0.057	0.694
2578.00	3.207	0.057	0.694
2579.00	3.195	0.057	0.694
2580.00	3.214	0.057	0.694
2581.00	3.214	0.057	0.694
2582.00	3.214	0.057	0.694
2583.00	3.233	0.057	0.694
2584.00	3.207	0.057	0.694
2585.00	3.214	0.057	0.694
2586.00	3.214	0.057	0.694
2587.00	3.207	0.057	0.694
2588.00	3.207	0.057	0.694
2589.00	3.207	0.057	0.694
2590.00	3.207	0.057	0.694
2591.00	3.207	0.057	0.694
2592.00	3.220	0.057	0.694
2593.00	3.207	0.057	0.694
2594.00	3.220	0.057	0.694
2595.00	3.220	0.057	0.694
2596.00	3.214	0.057	0.694
2597.00	3.239	0.057	0.694
2598.00	3.226	0.057	0.694
2599.00	3.226	0.057	0.694
2600.00	3.220	0.057	0.694
2601.00	3.201	0.057	0.694
2602.00	3.201	0.057	0.694
2603.00	3.207	0.057	0.694
2604.00	3.201	0.057	0.694
2605.00	3.207	0.057	0.694
2606.00	3.220	0.057	0.694
2607.00	3.220	0.057	0.694
2608.00	3.220	0.057	0.694
2609.00	3.214	0.057	0.694
2610.00	3.233	0.057	0.694
2611.00	3.214	0.057	0.700
2612.00	3.207	0.057	0.694
2613.00	3.220	0.057	0.694
2614.00	3.207	0.057	0.700
2615.00	3.207	0.057	0.700
2616.00	3.226	0.057	0.694
2617.00	3.226	0.057	0.694
2618.00	3.220	0.057	0.694
2619.00	3.214	0.057	0.694

2620.00	3.226	0.057	0.700
2621.00	3.220	0.057	0.694
2622.00	3.214	0.057	0.694
2623.00	3.214	0.057	0.694
2624.00	3.220	0.057	0.700
2625.00	3.214	0.057	0.700
2626.00	3.214	0.057	0.700
2627.00	3.220	0.057	0.700
2628.00	3.220	0.057	0.694
2629.00	3.214	0.057	0.700
2630.00	3.214	0.057	0.700
2631.00	3.233	0.057	0.700
2632.00	3.214	0.057	0.700
2633.00	3.201	0.057	0.700
2634.00	3.220	0.057	0.700
2635.00	3.214	0.063	0.700
2636.00	3.233	0.057	0.700
2637.00	3.246	0.057	0.700
2638.00	3.214	0.057	0.700
2639.00	3.226	0.057	0.700
2640.00	3.233	0.057	0.700
2641.00	3.239	0.057	0.700
2642.00	3.246	0.057	0.700
2643.00	3.220	0.057	0.700
2644.00	3.239	0.057	0.700
2645.00	3.220	0.057	0.700
2646.00	3.239	0.057	0.700
2647.00	3.233	0.057	0.700
2648.00	3.233	0.057	0.700
2649.00	3.246	0.057	0.700
2650.00	3.246	0.057	0.700
2651.00	3.226	0.057	0.700
2652.00	3.239	0.057	0.700
2653.00	3.239	0.057	0.700
2654.00	3.239	0.057	0.700
2655.00	3.239	0.057	0.700
2656.00	3.246	0.057	0.700
2657.00	3.252	0.057	0.700
2658.00	3.246	0.057	0.700
2659.00	3.258	0.057	0.700
2660.00	3.239	0.057	0.700
2661.00	3.239	0.057	0.700
2662.00	3.239	0.057	0.700
2663.00	3.258	0.057	0.700
2664.00	3.233	0.057	0.700
2665.00	3.239	0.057	0.700
2666.00	3.246	0.057	0.700
2667.00	3.252	0.057	0.700
2668.00	3.246	0.057	0.700
2669.00	3.252	0.063	0.700
2670.00	3.252	0.063	0.700
2671.00	3.239	0.057	0.700
2672.00	3.246	0.057	0.700
2673.00	3.265	0.057	0.700
2674.00	3.226	0.057	0.700
2675.00	3.246	0.057	0.700
2676.00	3.258	0.057	0.700
2677.00	3.258	0.057	0.700
2678.00	3.246	0.057	0.700
2679.00	3.252	0.057	0.700

2680.00	3.246	0.057	0.700
2681.00	3.246	0.057	0.700
2682.00	3.246	0.063	0.700
2683.00	3.252	0.057	0.700
2684.00	3.265	0.063	0.700
2685.00	3.265	0.057	0.700
2686.00	3.233	0.057	0.700
2687.00	3.246	0.057	0.700
2688.00	3.265	0.063	0.700
2689.00	3.233	0.057	0.700
2690.00	3.258	0.057	0.700
2691.00	3.246	0.063	0.700
2692.00	3.265	0.057	0.700
2693.00	3.258	0.057	0.700
2694.00	3.265	0.057	0.700
2695.00	3.252	0.063	0.700
2696.00	3.252	0.057	0.700
2697.00	3.258	0.057	0.700
2698.00	3.258	0.063	0.700
2699.00	3.252	0.057	0.700
2700.00	3.258	0.057	0.700
2701.00	3.252	0.063	0.700
2702.00	3.233	0.057	0.700
2703.00	3.258	0.063	0.700
2704.00	3.252	0.057	0.700
2705.00	3.258	0.057	0.700
2706.00	3.252	0.057	0.700
2707.00	3.252	0.057	0.700
2708.00	3.246	0.057	0.700
2709.00	3.246	0.057	0.700
2710.00	3.265	0.057	0.700
2711.00	3.271	0.057	0.700
2712.00	3.258	0.057	0.700
2713.00	3.258	0.057	0.700
2714.00	3.258	0.057	0.700
2715.00	3.258	0.057	0.700
2716.00	3.265	0.063	0.700
2717.00	3.271	0.063	0.700
2718.00	3.271	0.057	0.706
2719.00	3.265	0.057	0.700
2720.00	3.258	0.057	0.706
2721.00	3.271	0.063	0.700
2722.00	3.265	0.063	0.700
2723.00	3.277	0.063	0.700
2724.00	3.252	0.057	0.706
2725.00	3.258	0.057	0.706
2726.00	3.258	0.063	0.706
2727.00	3.246	0.063	0.706
2728.00	3.265	0.063	0.706
2729.00	3.265	0.057	0.706
2730.00	3.252	0.063	0.706
2731.00	3.258	0.063	0.706
2732.00	3.265	0.057	0.706
2733.00	3.271	0.063	0.706
2734.00	3.271	0.063	0.706
2735.00	3.284	0.063	0.706
2736.00	3.258	0.063	0.706
2737.00	3.277	0.057	0.706
2738.00	3.265	0.057	0.706
2739.00	3.258	0.057	0.706

2740.00	3.265	0.057	0.706
2741.00	3.284	0.057	0.706
2742.00	3.271	0.063	0.706
2743.00	3.271	0.057	0.706
2744.00	3.271	0.063	0.706
2745.00	3.258	0.057	0.706
2746.00	3.258	0.063	0.706
2747.00	3.277	0.063	0.706
2748.00	3.271	0.057	0.706
2749.00	3.271	0.063	0.706
2750.00	3.271	0.057	0.706
2751.00	3.284	0.057	0.706
2752.00	3.277	0.057	0.706
2753.00	3.277	0.063	0.706
2754.00	3.258	0.063	0.706
2755.00	3.265	0.063	0.706
2756.00	3.277	0.063	0.706
2757.00	3.277	0.063	0.706
2758.00	3.284	0.063	0.706
2759.00	3.271	0.057	0.712
2760.00	3.284	0.057	0.706
2761.00	3.265	0.063	0.706
2762.00	3.290	0.063	0.712
2763.00	3.265	0.063	0.706
2764.00	3.284	0.063	0.706
2765.00	3.284	0.063	0.712
2766.00	3.277	0.063	0.712
2767.00	3.271	0.063	0.706
2768.00	3.290	0.063	0.706
2769.00	3.265	0.063	0.706
2770.00	3.271	0.063	0.712
2771.00	3.265	0.063	0.712
2772.00	3.296	0.063	0.712
2773.00	3.258	0.063	0.712
2774.00	3.271	0.063	0.706
2775.00	3.277	0.063	0.712
2776.00	3.284	0.063	0.712
2777.00	3.277	0.063	0.712
2778.00	3.271	0.063	0.712
2779.00	3.284	0.063	0.712
2780.00	3.284	0.063	0.712
2781.00	3.265	0.063	0.712
2782.00	3.271	0.063	0.712
2783.00	3.277	0.063	0.712
2784.00	3.296	0.063	0.712
2785.00	3.271	0.057	0.706
2786.00	3.290	0.063	0.706
2787.00	3.265	0.063	0.706
2788.00	3.265	0.063	0.712
2789.00	3.284	0.063	0.712
2790.00	3.277	0.063	0.712
2791.00	3.271	0.063	0.712
2792.00	3.271	0.063	0.712
2793.00	3.284	0.063	0.712
2794.00	3.284	0.063	0.712
2795.00	3.277	0.063	0.712
2796.00	3.290	0.063	0.712
2797.00	3.284	0.063	0.712
2798.00	3.277	0.063	0.712
2799.00	3.284	0.057	0.712

2800.00	3.284	0.063	0.712
2801.00	3.290	0.063	0.712
2802.00	3.284	0.063	0.712
2803.00	3.284	0.063	0.712
2804.00	3.284	0.063	0.719
2805.00	3.277	0.063	0.712
2806.00	3.284	0.063	0.712
2807.00	3.277	0.057	0.712
2808.00	3.290	0.063	0.712
2809.00	3.284	0.063	0.712
2810.00	3.284	0.063	0.712
2811.00	3.290	0.063	0.712
2812.00	3.284	0.063	0.712
2813.00	3.284	0.063	0.712
2814.00	3.290	0.063	0.706
2815.00	3.277	0.063	0.712
2816.00	3.284	0.063	0.712
2817.00	3.284	0.063	0.712
2818.00	3.277	0.063	0.712
2819.00	3.284	0.063	0.712
2820.00	3.290	0.063	0.712
2821.00	3.296	0.063	0.712
2822.00	3.290	0.057	0.712
2823.00	3.303	0.063	0.712
2824.00	3.303	0.063	0.712
2825.00	3.290	0.063	0.712
2826.00	3.290	0.057	0.712
2827.00	3.290	0.063	0.712
2828.00	3.296	0.063	0.712
2829.00	3.284	0.063	0.719
2830.00	3.277	0.063	0.719
2831.00	3.290	0.057	0.719
2832.00	3.296	0.057	0.719
2833.00	3.296	0.057	0.719
2834.00	3.303	0.057	0.719
2835.00	3.284	0.063	0.719
2836.00	3.290	0.063	0.719
2837.00	3.315	0.063	0.719
2838.00	3.277	0.063	0.719
2839.00	3.290	0.063	0.719
2840.00	3.296	0.063	0.719
2841.00	3.296	0.063	0.719
2842.00	3.296	0.063	0.719
2843.00	3.290	0.063	0.719
2844.00	3.296	0.057	0.725
2845.00	3.303	0.063	0.719
2846.00	3.290	0.063	0.719
2847.00	3.284	0.063	0.719
2848.00	3.303	0.057	0.719
2849.00	3.315	0.063	0.725
2850.00	3.303	0.063	0.719
2851.00	3.322	0.063	0.719
2852.00	3.303	0.057	0.719
2853.00	3.296	0.063	0.725
2854.00	3.284	0.057	0.725
2855.00	3.303	0.063	0.725
2856.00	3.290	0.057	0.719
2857.00	3.296	0.063	0.719
2858.00	3.296	0.057	0.719
2859.00	3.303	0.063	0.719

2860.00	3.303	0.063	0.719
2861.00	3.309	0.057	0.719
2862.00	3.303	0.063	0.719
2863.00	3.290	0.063	0.712
2864.00	3.303	0.057	0.712
2865.00	3.296	0.057	0.719
2866.00	3.277	0.063	0.719
2867.00	3.277	0.057	0.712
2868.00	3.309	0.057	0.712
2869.00	3.290	0.057	0.719
2870.00	3.303	0.057	0.719
2871.00	3.303	0.057	0.712
2872.00	3.296	0.063	0.712
2873.00	3.296	0.057	0.719
2874.00	3.296	0.057	0.719
2875.00	3.296	0.057	0.719
2876.00	3.284	0.057	0.719
2877.00	3.284	0.057	0.719
2878.00	3.303	0.057	0.719
2879.00	3.303	0.057	0.712
2880.00	3.303	0.057	0.719
2881.00	3.309	0.057	0.719
2882.00	3.309	0.057	0.719
2883.00	3.296	0.057	0.719
2884.00	3.303	0.057	0.719
2885.00	3.303	0.057	0.719
2886.00	3.303	0.057	0.719
2887.00	3.309	0.057	0.719
2888.00	3.309	0.057	0.719
2889.00	3.309	0.057	0.719
2890.00	3.284	0.057	0.719
2891.00	3.303	0.057	0.719
2892.00	3.315	0.057	0.719
2893.00	3.309	0.057	0.719
2894.00	3.309	0.057	0.725
2895.00	3.309	0.057	0.725
2896.00	3.309	0.057	0.725
2897.00	3.309	0.057	0.725
2898.00	3.315	0.057	0.725
2899.00	3.303	0.057	0.725
2900.00	3.296	0.063	0.725
2901.00	3.303	0.057	0.725
2902.00	3.296	0.057	0.725
2903.00	3.303	0.057	0.725
2904.00	3.309	0.057	0.725
2905.00	3.303	0.057	0.725
2906.00	3.322	0.057	0.725
2907.00	3.309	0.057	0.725
2908.00	3.303	0.057	0.725
2909.00	3.315	0.057	0.719
2910.00	3.315	0.057	0.725
2911.00	3.303	0.057	0.725
2912.00	3.303	0.063	0.725
2913.00	3.303	0.057	0.725
2914.00	3.290	0.057	0.731
2915.00	3.334	0.057	0.744
2916.00	3.334	0.050	0.744
2917.00	3.315	0.057	0.744
2918.00	3.334	0.057	0.738
2919.00	3.328	0.057	0.738

2920.00	3.334	0.057	0.738
2921.00	3.322	0.057	0.738
2922.00	3.315	0.057	0.738
2923.00	3.328	0.057	0.731
2924.00	3.315	0.057	0.738
2925.00	3.315	0.063	0.725
2926.00	3.322	0.057	0.725
2927.00	3.315	0.057	0.731
2928.00	3.315	0.057	0.738
2929.00	3.315	0.057	0.738
2930.00	3.328	0.057	0.738
2931.00	3.322	0.063	0.731
2932.00	3.315	0.063	0.731
2933.00	3.322	0.063	0.738
2934.00	3.309	0.063	0.725
2935.00	3.303	0.063	0.719
2936.00	3.309	0.063	0.725
2937.00	3.309	0.063	0.712
2938.00	3.296	0.057	0.712
2939.00	3.303	0.063	0.719
2940.00	3.322	0.063	0.731
2941.00	3.328	0.063	0.738
2942.00	3.322	0.063	0.738
2943.00	3.322	0.063	0.738
2944.00	3.315	0.063	0.731
2945.00	3.341	0.063	0.731
2946.00	3.328	0.057	0.738
2947.00	3.315	0.063	0.738
2948.00	3.334	0.063	0.744
2949.00	3.328	0.063	0.738
2950.00	3.334	0.063	0.738
2951.00	3.334	0.063	0.744
2952.00	3.347	0.063	0.738
2953.00	3.315	0.063	0.744
2954.00	3.328	0.063	0.744
2955.00	3.322	0.063	0.744
2956.00	3.328	0.063	0.738
2957.00	3.296	0.063	0.731
2958.00	3.284	0.063	0.719
2959.00	3.315	0.063	0.725
2960.00	3.309	0.063	0.731
2961.00	3.322	0.063	0.725
2962.00	3.309	0.063	0.738
2963.00	3.309	0.063	0.731
2964.00	3.309	0.063	0.725
2965.00	3.309	0.063	0.725
2966.00	3.309	0.063	0.731
2967.00	3.328	0.063	0.744
2968.00	3.315	0.063	0.725
2969.00	3.315	0.063	0.725
2970.00	3.328	0.063	0.731
2971.00	3.315	0.063	0.731
2972.00	3.328	0.057	0.731
2973.00	3.341	0.063	0.738
2974.00	3.315	0.063	0.738
2975.00	3.322	0.063	0.731
2976.00	3.322	0.063	0.731
2977.00	3.315	0.063	0.731
2978.00	3.309	0.063	0.738
2979.00	3.322	0.063	0.731

2980.00	3.322	0.063	0.738
2981.00	3.309	0.063	0.731
2982.00	3.315	0.063	0.738
2983.00	3.322	0.063	0.738
2984.00	3.322	0.063	0.744
2985.00	3.322	0.063	0.731
2986.00	3.334	0.063	0.750
2987.00	3.341	0.063	0.750
2988.00	3.334	0.063	0.750
2989.00	3.322	0.063	0.738
2990.00	3.334	0.063	0.738
2991.00	3.322	0.063	0.738
2992.00	3.328	0.063	0.738
2993.00	3.328	0.063	0.731
2994.00	3.334	0.063	0.731
2995.00	3.328	0.063	0.731
2996.00	3.328	0.063	0.719
2997.00	3.309	0.063	0.712
2998.00	3.315	0.063	0.719
2999.00	3.303	0.063	0.725
3000.00	3.309	0.063	0.738
3001.00	3.341	0.063	0.738
3002.00	3.322	0.063	0.731
3003.00	3.309	0.063	0.731
3004.00	3.315	0.063	0.738
3005.00	3.334	0.063	0.731
3006.00	3.328	0.069	0.738
3007.00	3.315	0.063	0.731
3008.00	3.334	0.063	0.731
3009.00	3.328	0.063	0.731
3010.00	3.341	0.063	0.738
3011.00	3.328	0.063	0.744
3012.00	3.341	0.063	0.738
3013.00	3.322	0.063	0.738
3014.00	3.334	0.063	0.738
3015.00	3.347	0.063	0.744
3016.00	3.341	0.063	0.744
3017.00	3.334	0.063	0.738
3018.00	3.334	0.063	0.738
3019.00	3.328	0.063	0.744
3020.00	3.328	0.063	0.738
3021.00	3.334	0.063	0.738
3022.00	3.328	0.063	0.738
3023.00	3.328	0.063	0.738
3024.00	3.334	0.063	0.738
3025.00	3.334	0.063	0.731
3026.00	3.322	0.063	0.738
3027.00	3.315	0.063	0.731
3028.00	3.315	0.063	0.738
3029.00	3.334	0.063	0.738
3030.00	3.309	0.063	0.731
3031.00	3.334	0.063	0.731
3032.00	3.328	0.063	0.731
3033.00	3.341	0.063	0.738
3034.00	3.328	0.063	0.738
3035.00	3.347	0.063	0.738
3036.00	3.341	0.063	0.738
3037.00	3.322	0.063	0.738
3038.00	3.328	0.063	0.738
3039.00	3.341	0.063	0.744

3040.00	3.328	0.063	0.744
3041.00	3.322	0.063	0.731
3042.00	3.334	0.063	0.738
3043.00	3.334	0.063	0.744
3044.00	3.347	0.063	0.738
3045.00	3.328	0.063	0.738
3046.00	3.315	0.063	0.731
3047.00	3.347	0.063	0.744
3048.00	3.315	0.063	0.744
3049.00	3.328	0.063	0.731
3050.00	3.353	0.063	0.738
3051.00	3.328	0.063	0.738
3052.00	3.328	0.063	0.738
3053.00	3.322	0.063	0.738
3054.00	3.328	0.063	0.738
3055.00	3.341	0.063	0.738
3056.00	3.328	0.063	0.744
3057.00	3.347	0.063	0.738
3058.00	3.341	0.063	0.744
3059.00	3.341	0.063	0.744
3060.00	3.328	0.063	0.744
3061.00	3.353	0.063	0.750
3062.00	3.353	0.063	0.757
3063.00	3.341	0.063	0.750
3064.00	3.353	0.063	0.757
3065.00	3.347	0.063	0.744
3066.00	3.328	0.063	0.744
3067.00	3.328	0.063	0.738
3068.00	3.341	0.063	0.738
3069.00	3.334	0.063	0.731
3070.00	3.334	0.063	0.738
3071.00	3.341	0.063	0.738
3072.00	3.347	0.063	0.744
3073.00	3.353	0.063	0.757
3074.00	3.347	0.063	0.757
3075.00	3.347	0.063	0.750
3076.00	3.347	0.063	0.744
3077.00	3.334	0.063	0.750
3078.00	3.373	0.063	0.750
3079.00	3.328	0.063	0.738
3080.00	3.334	0.063	0.750
3081.00	3.322	0.063	0.731
3082.00	3.322	0.063	0.731
3083.00	3.334	0.063	0.738
3084.00	3.341	0.069	0.738
3085.00	3.328	0.057	0.738
3086.00	3.353	0.069	0.738
3087.00	3.353	0.069	0.744
3088.00	3.341	0.063	0.738
3089.00	3.341	0.063	0.738
3090.00	3.347	0.063	0.744
3091.00	3.341	0.063	0.738
3092.00	3.334	0.063	0.744
3093.00	3.341	0.063	0.744
3094.00	3.334	0.069	0.744
3095.00	3.328	0.063	0.738
3096.00	3.360	0.063	0.744
3097.00	3.334	0.063	0.744
3098.00	3.353	0.069	0.750
3099.00	3.366	0.063	0.744

3100.00	3.341	0.063	0.744
3101.00	3.353	0.069	0.744
3102.00	3.347	0.063	0.744
3103.00	3.347	0.063	0.744
3104.00	3.366	0.063	0.744
3105.00	3.341	0.069	0.744
3106.00	3.353	0.063	0.744
3107.00	3.341	0.069	0.744
3108.00	3.360	0.063	0.744
3109.00	3.353	0.063	0.744
3110.00	3.347	0.063	0.744
3111.00	3.341	0.069	0.744
3112.00	3.360	0.063	0.750
3113.00	3.353	0.069	0.750
3114.00	3.328	0.069	0.750
3115.00	3.360	0.063	0.750
3116.00	3.366	0.069	0.750
3117.00	3.347	0.063	0.750
3118.00	3.341	0.063	0.750
3119.00	3.341	0.069	0.750
3120.00	3.347	0.069	0.744
3121.00	3.341	0.069	0.744
3122.00	3.353	0.069	0.744
3123.00	3.341	0.063	0.738
3124.00	3.341	0.069	0.738
3125.00	3.366	0.069	0.744
3126.00	3.360	0.063	0.744
3127.00	3.347	0.063	0.744
3128.00	3.360	0.063	0.750
3129.00	3.353	0.063	0.757
3130.00	3.379	0.069	0.757
3131.00	3.373	0.069	0.763
3132.00	3.360	0.069	0.757
3133.00	3.341	0.069	0.757
3134.00	3.360	0.069	0.750
3135.00	3.366	0.069	0.750
3136.00	3.353	0.069	0.750
3137.00	3.373	0.069	0.750
3138.00	3.353	0.063	0.744
3139.00	3.347	0.069	0.750
3140.00	3.347	0.069	0.750
3141.00	3.353	0.069	0.750
3142.00	3.334	0.069	0.750
3143.00	3.360	0.069	0.750
3144.00	3.373	0.069	0.750
3145.00	3.341	0.069	0.744
3146.00	3.334	0.069	0.757
3147.00	3.360	0.069	0.750
3148.00	3.341	0.063	0.750
3149.00	3.353	0.069	0.744
3150.00	3.360	0.069	0.750
3151.00	3.347	0.069	0.744
3152.00	3.366	0.069	0.750
3153.00	3.360	0.069	0.750
3154.00	3.347	0.069	0.757
3155.00	3.347	0.069	0.750
3156.00	3.360	0.069	0.750
3157.00	3.366	0.069	0.750
3158.00	3.353	0.069	0.744
3159.00	3.360	0.069	0.744

3160.00	3.353	0.069	0.750
3161.00	3.360	0.069	0.750
3162.00	3.347	0.069	0.757
3163.00	3.366	0.063	0.750
3164.00	3.366	0.069	0.750
3165.00	3.360	0.063	0.750
3166.00	3.353	0.069	0.757
3167.00	3.341	0.069	0.750
3168.00	3.366	0.063	0.750
3169.00	3.366	0.069	0.750
3170.00	3.360	0.069	0.744
3171.00	3.360	0.069	0.744
3172.00	3.353	0.069	0.757
3173.00	3.373	0.069	0.750
3174.00	3.366	0.069	0.750
3175.00	3.360	0.069	0.757
3176.00	3.353	0.069	0.757
3177.00	3.366	0.069	0.757
3178.00	3.366	0.069	0.757
3179.00	3.360	0.069	0.750
3180.00	3.379	0.069	0.750
3181.00	3.360	0.069	0.750
3182.00	3.373	0.069	0.750
3183.00	3.373	0.069	0.750
3184.00	3.360	0.069	0.757
3185.00	3.353	0.069	0.757
3186.00	3.373	0.069	0.757
3187.00	3.360	0.069	0.757
3188.00	3.360	0.069	0.750
3189.00	3.373	0.069	0.750
3190.00	3.379	0.069	0.757
3191.00	3.360	0.069	0.750
3192.00	3.373	0.063	0.757
3193.00	3.373	0.069	0.750
3194.00	3.360	0.069	0.757
3195.00	3.353	0.069	0.750
3196.00	3.353	0.069	0.750
3197.00	3.366	0.069	0.763
3198.00	3.373	0.069	0.757
3199.00	3.366	0.069	0.750
3200.00	3.353	0.069	0.757
3201.00	3.379	0.069	0.757
3202.00	3.366	0.069	0.757
3203.00	3.360	0.069	0.750
3204.00	3.373	0.069	0.757
3205.00	3.366	0.069	0.757
3206.00	3.373	0.069	0.757
3207.00	3.373	0.069	0.750
3208.00	3.360	0.063	0.750
3209.00	3.366	0.069	0.750
3210.00	3.373	0.069	0.757
3211.00	3.373	0.069	0.750
3212.00	3.360	0.063	0.750
3213.00	3.366	0.069	0.750
3214.00	3.379	0.069	0.757
3215.00	3.360	0.069	0.757
3216.00	3.373	0.069	0.750
3217.00	3.379	0.069	0.750
3218.00	3.373	0.069	0.750
3219.00	3.366	0.069	0.757

3220.00	3.353	0.069	0.750
3221.00	3.360	0.069	0.750
3222.00	3.373	0.069	0.750
3223.00	3.366	0.069	0.757
3224.00	3.366	0.069	0.750
3225.00	3.366	0.069	0.750
3226.00	3.379	0.069	0.757
3227.00	3.366	0.069	0.750
3228.00	3.360	0.069	0.750
3229.00	3.385	0.069	0.757
3230.00	3.360	0.069	0.757
3231.00	3.385	0.069	0.757
3232.00	3.366	0.069	0.750
3233.00	3.385	0.069	0.757
3234.00	3.373	0.069	0.763
3235.00	3.392	0.069	0.757
3236.00	3.373	0.069	0.750
3237.00	3.373	0.069	0.757
3238.00	3.373	0.069	0.750
3239.00	3.392	0.069	0.750
3240.00	3.385	0.069	0.757
3241.00	3.392	0.069	0.757
3242.00	3.379	0.069	0.757
3243.00	3.373	0.069	0.750
3244.00	3.373	0.069	0.750
3245.00	3.360	0.069	0.757
3246.00	3.373	0.069	0.757
3247.00	3.366	0.069	0.757
3248.00	3.373	0.069	0.750
3249.00	3.373	0.069	0.757
3250.00	3.366	0.069	0.757
3251.00	3.373	0.069	0.750
3252.00	3.379	0.069	0.757
3253.00	3.366	0.069	0.757
3254.00	3.366	0.069	0.757
3255.00	3.373	0.069	0.757
3256.00	3.385	0.069	0.763
3257.00	3.373	0.069	0.757
3258.00	3.373	0.069	0.750
3259.00	3.385	0.069	0.757
3260.00	3.379	0.069	0.757
3261.00	3.385	0.069	0.757
3262.00	3.360	0.069	0.750
3263.00	3.373	0.069	0.757
3264.00	3.366	0.069	0.757
3265.00	3.379	0.069	0.763
3266.00	3.366	0.069	0.757
3267.00	3.366	0.069	0.757
3268.00	3.373	0.069	0.757
3269.00	3.366	0.069	0.757
3270.00	3.379	0.069	0.750
3271.00	3.373	0.069	0.757
3272.00	3.373	0.069	0.757
3273.00	3.379	0.069	0.757
3274.00	3.379	0.069	0.757
3275.00	3.373	0.069	0.750
3276.00	3.366	0.069	0.757
3277.00	3.360	0.069	0.757
3278.00	3.366	0.069	0.763
3279.00	3.360	0.069	0.757

3280.00	3.379	0.069	0.757
3281.00	3.373	0.069	0.757
3282.00	3.373	0.069	0.757
3283.00	3.373	0.069	0.757
3284.00	3.385	0.069	0.757
3285.00	3.360	0.069	0.763
3286.00	3.373	0.069	0.757
3287.00	3.379	0.069	0.757
3288.00	3.379	0.069	0.757
3289.00	3.379	0.069	0.757
3290.00	3.379	0.069	0.757
3291.00	3.392	0.069	0.763
3292.00	3.379	0.069	0.763
3293.00	3.366	0.069	0.757
3294.00	3.366	0.069	0.757
3295.00	3.385	0.069	0.769
3296.00	3.392	0.069	0.763
3297.00	3.392	0.069	0.763
3298.00	3.385	0.069	0.763
3299.00	3.385	0.069	0.757
3300.00	3.385	0.069	0.763
3301.00	3.392	0.069	0.763
3302.00	3.385	0.069	0.757
3303.00	3.385	0.069	0.757
3304.00	3.373	0.069	0.757
3305.00	3.385	0.069	0.763
3306.00	3.379	0.069	0.769
3307.00	3.385	0.069	0.757
3308.00	3.398	0.069	0.757
3309.00	3.392	0.069	0.757
3310.00	3.392	0.069	0.763
3311.00	3.379	0.069	0.763
3312.00	3.392	0.069	0.757
3313.00	3.385	0.069	0.757
3314.00	3.366	0.069	0.757
3315.00	3.373	0.069	0.757
3316.00	3.366	0.069	0.763
3317.00	3.385	0.069	0.763
3318.00	3.385	0.069	0.763
3319.00	3.379	0.069	0.763
3320.00	3.385	0.069	0.757
3321.00	3.385	0.069	0.763
3322.00	3.379	0.069	0.763
3323.00	3.366	0.069	0.763
3324.00	3.373	0.069	0.769
3325.00	3.398	0.069	0.757
3326.00	3.366	0.069	0.757
3327.00	3.373	0.069	0.763
3328.00	3.392	0.069	0.757
3329.00	3.373	0.069	0.763
3330.00	3.379	0.069	0.757
3331.00	3.392	0.069	0.763
3332.00	3.385	0.069	0.763
3333.00	3.404	0.069	0.769
3334.00	3.385	0.069	0.769
3335.00	3.385	0.069	0.763
3336.00	3.385	0.069	0.763
3337.00	3.392	0.069	0.763
3338.00	3.398	0.069	0.763
3339.00	3.398	0.069	0.763

3340.00	3.379	0.069	0.769
3341.00	3.379	0.069	0.763
3342.00	3.398	0.069	0.769
3343.00	3.392	0.069	0.763
3344.00	3.392	0.069	0.763
3345.00	3.385	0.069	0.763
3346.00	3.398	0.069	0.763
3347.00	3.379	0.069	0.763
3348.00	3.404	0.069	0.763
3349.00	3.404	0.069	0.763
3350.00	3.392	0.069	0.763
3351.00	3.385	0.069	0.763
3352.00	3.398	0.069	0.763
3353.00	3.392	0.069	0.763
3354.00	3.392	0.069	0.763
3355.00	3.385	0.069	0.763
3356.00	3.392	0.069	0.763
3357.00	3.404	0.069	0.763
3358.00	3.392	0.069	0.763
3359.00	3.385	0.069	0.763
3360.00	3.398	0.069	0.763
3361.00	3.392	0.069	0.769
3362.00	3.373	0.069	0.769
3363.00	3.392	0.069	0.769
3364.00	3.392	0.069	0.763
3365.00	3.385	0.069	0.763
3366.00	3.398	0.069	0.763
3367.00	3.392	0.069	0.763
3368.00	3.404	0.069	0.769
3369.00	3.392	0.069	0.763
3370.00	3.398	0.069	0.763
3371.00	3.404	0.069	0.763
3372.00	3.385	0.069	0.763
3373.00	3.398	0.069	0.763
3374.00	3.385	0.069	0.763
3375.00	3.398	0.069	0.769
3376.00	3.385	0.069	0.763
3377.00	3.379	0.069	0.763
3378.00	3.411	0.069	0.763
3379.00	3.379	0.069	0.763
3380.00	3.398	0.069	0.763
3381.00	3.392	0.069	0.763
3382.00	3.385	0.069	0.763
3383.00	3.398	0.069	0.763
3384.00	3.392	0.069	0.763
3385.00	3.404	0.069	0.763
3386.00	3.411	0.069	0.763
3387.00	3.385	0.069	0.763
3388.00	3.392	0.069	0.763
3389.00	3.385	0.069	0.763
3390.00	3.398	0.069	0.769
3391.00	3.411	0.069	0.769
3392.00	3.398	0.069	0.769
3393.00	3.398	0.069	0.769
3394.00	3.392	0.069	0.769
3395.00	3.411	0.069	0.763
3396.00	3.404	0.069	0.769
3397.00	3.392	0.069	0.769
3398.00	3.392	0.076	0.769
3399.00	3.385	0.069	0.763

3400.00	3.404	0.069	0.769
3401.00	3.385	0.069	0.769
3402.00	3.379	0.069	0.769
3403.00	3.404	0.069	0.763
3404.00	3.404	0.069	0.769
3405.00	3.398	0.069	0.769
3406.00	3.411	0.069	0.763
3407.00	3.398	0.069	0.769
3408.00	3.392	0.069	0.769
3409.00	3.404	0.069	0.763
3410.00	3.392	0.069	0.763
3411.00	3.404	0.069	0.763
3412.00	3.398	0.069	0.769
3413.00	3.385	0.069	0.769
3414.00	3.404	0.069	0.769
3415.00	3.404	0.069	0.769
3416.00	3.392	0.069	0.769
3417.00	3.404	0.069	0.769
3418.00	3.411	0.069	0.769
3419.00	3.392	0.069	0.769
3420.00	3.404	0.069	0.763
3421.00	3.411	0.069	0.763
3422.00	3.417	0.069	0.763
3423.00	3.398	0.069	0.769
3424.00	3.392	0.069	0.763
3425.00	3.404	0.069	0.763
3426.00	3.392	0.069	0.763
3427.00	3.398	0.069	0.769
3428.00	3.392	0.069	0.763
3429.00	3.398	0.069	0.769
3430.00	3.404	0.069	0.769
3431.00	3.398	0.069	0.769
3432.00	3.398	0.069	0.769
3433.00	3.392	0.069	0.769
3434.00	3.398	0.069	0.769
3435.00	3.398	0.069	0.769
3436.00	3.398	0.069	0.769
3437.00	3.404	0.069	0.769
3438.00	3.385	0.069	0.769
3439.00	3.404	0.069	0.769
3440.00	3.398	0.069	0.769
3441.00	3.398	0.069	0.769
3442.00	3.404	0.069	0.769
3443.00	3.398	0.069	0.769
3444.00	3.417	0.069	0.769
3445.00	3.392	0.069	0.769
3446.00	3.411	0.069	0.769
3447.00	3.392	0.069	0.769
3448.00	3.398	0.069	0.769
3449.00	3.404	0.069	0.763
3450.00	3.392	0.069	0.763
3451.00	3.404	0.069	0.769
3452.00	3.398	0.069	0.769
3453.00	3.404	0.069	0.769
3454.00	3.398	0.069	0.769
3455.00	3.398	0.069	0.769
3456.00	3.398	0.069	0.769
3457.00	3.411	0.069	0.769
3458.00	3.398	0.069	0.769
3459.00	3.411	0.069	0.769

3460.00	3.404	0.069	0.769
3461.00	3.385	0.069	0.769
3462.00	3.398	0.069	0.769
3463.00	3.404	0.069	0.769
3464.00	3.411	0.069	0.769
3465.00	3.404	0.069	0.769
3466.00	3.417	0.069	0.769
3467.00	3.411	0.069	0.769
3468.00	3.404	0.069	0.769
3469.00	3.411	0.069	0.776
3470.00	3.411	0.069	0.769
3471.00	3.411	0.069	0.769
3472.00	3.373	0.069	0.769
3473.00	3.392	0.069	0.769
3474.00	3.398	0.069	0.769
3475.00	3.392	0.069	0.769
3476.00	3.392	0.069	0.769
3477.00	3.411	0.069	0.769
3478.00	3.417	0.069	0.769
3479.00	3.398	0.069	0.769
3480.00	3.411	0.069	0.769
3481.00	3.404	0.069	0.769
3482.00	3.392	0.069	0.769
3483.00	3.411	0.069	0.769
3484.00	3.404	0.069	0.769
3485.00	3.398	0.069	0.769
3486.00	3.404	0.069	0.769
3487.00	3.411	0.069	0.769
3488.00	3.392	0.069	0.769
3489.00	3.423	0.069	0.769
3490.00	3.404	0.069	0.769
3491.00	3.411	0.069	0.769
3492.00	3.411	0.069	0.769
3493.00	3.417	0.069	0.769
3494.00	3.404	0.069	0.769
3495.00	3.423	0.069	0.769
3496.00	3.404	0.069	0.769
3497.00	3.417	0.069	0.769
3498.00	3.404	0.069	0.769
3499.00	3.411	0.069	0.769
3500.00	3.404	0.069	0.769
3501.00	3.411	0.069	0.769
3502.00	3.404	0.069	0.769
3503.00	3.385	0.069	0.769
3504.00	3.411	0.069	0.769
3505.00	3.398	0.069	0.769
3506.00	3.411	0.069	0.769
3507.00	3.398	0.069	0.769
3508.00	3.404	0.069	0.769
3509.00	3.392	0.069	0.769
3510.00	3.398	0.069	0.776
3511.00	3.411	0.069	0.769
3512.00	3.411	0.069	0.769
3513.00	3.423	0.069	0.776
3514.00	3.404	0.069	0.776
3515.00	3.398	0.069	0.776
3516.00	3.417	0.069	0.776
3517.00	3.411	0.069	0.769
3518.00	3.404	0.069	0.769
3519.00	3.411	0.069	0.769

3520.00	3.417	0.069	0.776
3521.00	3.404	0.069	0.769
3522.00	3.411	0.069	0.776
3523.00	3.398	0.069	0.769
3524.00	3.404	0.069	0.769
3525.00	3.411	0.069	0.769
3526.00	3.411	0.069	0.769
3527.00	3.430	0.069	0.769
3528.00	3.398	0.069	0.776
3529.00	3.404	0.069	0.776
3530.00	3.404	0.069	0.769
3531.00	3.404	0.069	0.776
3532.00	3.404	0.069	0.776
3533.00	3.411	0.069	0.776
3534.00	3.417	0.076	0.776
3535.00	3.423	0.069	0.776
3536.00	3.423	0.069	0.776
3537.00	3.411	0.069	0.776
3538.00	3.417	0.076	0.776
3539.00	3.417	0.069	0.776
3540.00	3.417	0.069	0.776
3541.00	3.430	0.069	0.776
3542.00	3.430	0.069	0.776
3543.00	3.430	0.069	0.769
3544.00	3.423	0.069	0.776
3545.00	3.430	0.069	0.776
3546.00	3.404	0.069	0.769
3547.00	3.411	0.069	0.776
3548.00	3.423	0.069	0.776
3549.00	3.430	0.069	0.776
3550.00	3.411	0.069	0.776
3551.00	3.411	0.069	0.776
3552.00	3.430	0.076	0.776
3553.00	3.404	0.069	0.776
3554.00	3.430	0.069	0.776
3555.00	3.423	0.069	0.776
3556.00	3.404	0.069	0.776
3557.00	3.423	0.069	0.776
3558.00	3.430	0.069	0.776
3559.00	3.417	0.069	0.776
3560.00	3.411	0.069	0.776
3561.00	3.417	0.069	0.776
3562.00	3.411	0.069	0.776
3563.00	3.430	0.069	0.776
3564.00	3.423	0.069	0.776
3565.00	3.423	0.069	0.776
3566.00	3.430	0.069	0.776
3567.00	3.436	0.069	0.776
3568.00	3.417	0.069	0.776
3569.00	3.423	0.069	0.776
3570.00	3.430	0.069	0.776
3571.00	3.417	0.069	0.776
3572.00	3.417	0.069	0.776
3573.00	3.436	0.069	0.776
3574.00	3.417	0.069	0.776
3575.00	3.417	0.069	0.776
3576.00	3.430	0.069	0.776
3577.00	3.430	0.069	0.776
3578.00	3.423	0.069	0.776
3579.00	3.423	0.069	0.776

3580.00	3.417	0.069	0.776
3581.00	3.423	0.069	0.776
3582.00	3.436	0.069	0.776
3583.00	3.411	0.069	0.776
3584.00	3.442	0.069	0.776
3585.00	3.417	0.069	0.776
3586.00	3.430	0.069	0.776
3587.00	3.417	0.069	0.776
3588.00	3.430	0.069	0.776
3589.00	3.430	0.069	0.776
3590.00	3.436	0.069	0.776
3591.00	3.430	0.069	0.776
3592.00	3.442	0.069	0.776
3593.00	3.417	0.076	0.776
3594.00	3.423	0.069	0.776
3595.00	3.423	0.069	0.776
3596.00	3.417	0.076	0.776
3597.00	3.430	0.076	0.776
3598.00	3.423	0.069	0.776
3599.00	3.417	0.069	0.776
3600.00	3.436	0.069	0.782
3601.00	3.442	0.069	0.776
3602.00	3.417	0.069	0.782
3603.00	3.442	0.069	0.776
3604.00	3.436	0.069	0.782
3605.00	3.430	0.069	0.782
3606.00	3.430	0.069	0.782
3607.00	3.430	0.069	0.776
3608.00	3.430	0.076	0.776
3609.00	3.430	0.069	0.776
3610.00	3.423	0.069	0.776
3611.00	3.430	0.069	0.776
3612.00	3.430	0.069	0.776
3613.00	3.436	0.069	0.782
3614.00	3.430	0.069	0.782
3615.00	3.436	0.069	0.776
3616.00	3.430	0.069	0.776
3617.00	3.436	0.069	0.782
3618.00	3.436	0.069	0.782
3619.00	3.436	0.069	0.776
3620.00	3.442	0.076	0.776
3621.00	3.436	0.069	0.776
3622.00	3.442	0.069	0.776
3623.00	3.436	0.069	0.776
3624.00	3.449	0.069	0.776
3625.00	3.449	0.069	0.776
3626.00	3.442	0.069	0.782
3627.00	3.449	0.069	0.776
3628.00	3.436	0.069	0.776
3629.00	3.436	0.069	0.776
3630.00	3.430	0.069	0.776
3631.00	3.430	0.069	0.782
3632.00	3.436	0.069	0.776
3633.00	3.436	0.069	0.776
3634.00	3.430	0.069	0.776
3635.00	3.436	0.069	0.776
3636.00	3.436	0.069	0.776
3637.00	3.423	0.069	0.782
3638.00	3.449	0.069	0.782
3639.00	3.436	0.069	0.782

3640.00	3.436	0.069	0.782
3641.00	3.430	0.069	0.782
3642.00	3.423	0.069	0.782
3643.00	3.442	0.069	0.782
3644.00	3.423	0.069	0.782
3645.00	3.436	0.069	0.782
3646.00	3.449	0.069	0.782
3647.00	3.449	0.069	0.782
3648.00	3.449	0.069	0.782
3649.00	3.449	0.069	0.782
3650.00	3.449	0.069	0.782
3651.00	3.449	0.069	0.782
3652.00	3.442	0.069	0.776
3653.00	3.430	0.076	0.776
3654.00	3.449	0.069	0.776
3655.00	3.436	0.069	0.776
3656.00	3.449	0.069	0.782
3657.00	3.436	0.069	0.782
3658.00	3.430	0.069	0.782
3659.00	3.442	0.069	0.782
3660.00	3.449	0.069	0.782
3661.00	3.449	0.076	0.782
3662.00	3.430	0.069	0.782
3663.00	3.442	0.069	0.782
3664.00	3.449	0.069	0.782
3665.00	3.430	0.069	0.782
3666.00	3.430	0.069	0.782
3667.00	3.449	0.069	0.782
3668.00	3.442	0.069	0.782
3669.00	3.436	0.069	0.782
3670.00	3.436	0.069	0.782
3671.00	3.455	0.069	0.782
3672.00	3.449	0.069	0.782
3673.00	3.430	0.069	0.782
3674.00	3.442	0.069	0.782
3675.00	3.430	0.069	0.782
3676.00	3.455	0.069	0.782
3677.00	3.455	0.069	0.782
3678.00	3.449	0.069	0.782
3679.00	3.455	0.069	0.782
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3681.00	3.430	0.069	0.782
3682.00	3.449	0.069	0.788
3683.00	3.455	0.069	0.782
3684.00	3.449	0.069	0.782
3685.00	3.442	0.069	0.782
3686.00	3.436	0.076	0.782
3687.00	3.455	0.069	0.782
3688.00	3.430	0.069	0.782
3689.00	3.455	0.069	0.782
3690.00	3.461	0.069	0.782
3691.00	3.455	0.069	0.788
3692.00	3.455	0.069	0.782
3693.00	3.461	0.069	0.782
3694.00	3.468	0.069	0.782
3695.00	3.449	0.069	0.782
3696.00	3.449	0.069	0.782
3697.00	3.442	0.069	0.782
3698.00	3.455	0.069	0.782
3699.00	3.461	0.069	0.782

3700.00	3.449	0.069	0.782
3701.00	3.461	0.069	0.782
3702.00	3.461	0.076	0.782
3703.00	3.449	0.069	0.782
3704.00	3.455	0.069	0.782
3705.00	3.449	0.069	0.782
3706.00	3.455	0.069	0.782
3707.00	3.455	0.069	0.782
3708.00	3.455	0.069	0.782
3709.00	3.449	0.076	0.782
3710.00	3.455	0.069	0.788
3711.00	3.455	0.069	0.788
3712.00	3.468	0.069	0.788
3713.00	3.468	0.069	0.788
3714.00	3.461	0.069	0.782
3715.00	3.449	0.069	0.782
3716.00	3.455	0.069	0.782
3717.00	3.455	0.069	0.782
3718.00	3.455	0.076	0.782
3719.00	3.461	0.069	0.782
3720.00	3.461	0.076	0.782
3721.00	3.461	0.076	0.782
3722.00	3.461	0.069	0.782
3723.00	3.474	0.076	0.782
3724.00	3.461	0.069	0.782
3725.00	3.480	0.069	0.782
3726.00	3.461	0.076	0.788
3727.00	3.468	0.069	0.788
3728.00	3.468	0.069	0.788
3729.00	3.468	0.069	0.788
3730.00	3.468	0.076	0.788
3731.00	3.449	0.076	0.788
3732.00	3.468	0.069	0.788
3733.00	3.461	0.069	0.795
3734.00	3.461	0.069	0.788
3735.00	3.474	0.069	0.788
3736.00	3.461	0.069	0.788
3737.00	3.468	0.069	0.782
3738.00	3.461	0.076	0.788
3739.00	3.461	0.069	0.788
3740.00	3.468	0.069	0.788
3741.00	3.474	0.069	0.788
3742.00	3.461	0.076	0.788
3743.00	3.461	0.069	0.788
3744.00	3.461	0.069	0.788
3745.00	3.468	0.069	0.788
3746.00	3.474	0.069	0.788
3747.00	3.474	0.076	0.788
3748.00	3.461	0.076	0.788
3749.00	3.474	0.069	0.788
3750.00	3.461	0.069	0.788
3751.00	3.455	0.069	0.788
3752.00	3.474	0.069	0.788
3753.00	3.474	0.069	0.788
3754.00	3.455	0.069	0.788
3755.00	3.487	0.076	0.788
3756.00	3.468	0.069	0.788
3757.00	3.480	0.069	0.788
3758.00	3.461	0.069	0.788
3759.00	3.474	0.069	0.788

3760.00	3.474	0.069	0.788
3761.00	3.480	0.076	0.788
3762.00	3.474	0.069	0.795
3763.00	3.468	0.069	0.788
3764.00	3.455	0.069	0.788
3765.00	3.468	0.069	0.788
3766.00	3.480	0.069	0.788
3767.00	3.474	0.069	0.788
3768.00	3.468	0.076	0.788
3769.00	3.468	0.076	0.795
3770.00	3.468	0.076	0.788
3771.00	3.468	0.069	0.788
3772.00	3.468	0.076	0.788
3773.00	3.487	0.069	0.788
3774.00	3.468	0.069	0.788
3775.00	3.468	0.076	0.788
3776.00	3.468	0.069	0.788
3777.00	3.468	0.069	0.795
3778.00	3.468	0.069	0.788
3779.00	3.474	0.076	0.788
3780.00	3.480	0.076	0.795
3781.00	3.468	0.069	0.788
3782.00	3.455	0.076	0.788
3783.00	3.449	0.069	0.788
3784.00	3.480	0.069	0.788
3785.00	3.474	0.069	0.788
3786.00	3.474	0.069	0.788
3787.00	3.480	0.076	0.788
3788.00	3.474	0.076	0.788
3789.00	3.461	0.076	0.788
3790.00	3.468	0.069	0.788
3791.00	3.487	0.069	0.788
3792.00	3.468	0.069	0.788
3793.00	3.474	0.076	0.788
3794.00	3.487	0.076	0.788
3795.00	3.461	0.076	0.788
3796.00	3.468	0.069	0.795
3797.00	3.493	0.069	0.795
3798.00	3.474	0.076	0.788
3799.00	3.474	0.076	0.788
3800.00	3.493	0.076	0.795
3801.00	3.480	0.069	0.788
3802.00	3.487	0.076	0.795
3803.00	3.493	0.069	0.788
3804.00	3.480	0.069	0.788
3805.00	3.487	0.076	0.788
3806.00	3.480	0.076	0.788
3807.00	3.480	0.069	0.788
3808.00	3.480	0.076	0.788
3809.00	3.480	0.076	0.795
3810.00	3.474	0.076	0.795
3811.00	3.474	0.076	0.795
3812.00	3.474	0.076	0.795
3813.00	3.474	0.069	0.788
3814.00	3.480	0.076	0.795
3815.00	3.474	0.069	0.788
3816.00	3.480	0.076	0.788
3817.00	3.493	0.076	0.795
3818.00	3.487	0.076	0.795
3819.00	3.468	0.076	0.788

3820.00	3.480	0.069	0.795
3821.00	3.468	0.076	0.795
3822.00	3.480	0.076	0.795
3823.00	3.487	0.076	0.795
3824.00	3.487	0.069	0.795
3825.00	3.474	0.069	0.788
3826.00	3.500	0.069	0.795
3827.00	3.487	0.076	0.795
3828.00	3.487	0.076	0.795
3829.00	3.474	0.076	0.795
3830.00	3.487	0.069	0.795
3831.00	3.480	0.069	0.795
3832.00	3.474	0.076	0.795
3833.00	3.487	0.076	0.788
3834.00	3.480	0.076	0.795
3835.00	3.474	0.069	0.795
3836.00	3.474	0.076	0.795
3837.00	3.487	0.069	0.795
3838.00	3.506	0.076	0.795
3839.00	3.480	0.076	0.795
3840.00	3.480	0.076	0.795
3841.00	3.493	0.076	0.795
3842.00	3.493	0.069	0.795
3843.00	3.487	0.069	0.795
3844.00	3.493	0.076	0.795
3845.00	3.474	0.076	0.795
3846.00	3.480	0.076	0.795
3847.00	3.480	0.069	0.795
3848.00	3.480	0.069	0.795
3849.00	3.493	0.069	0.795
3850.00	3.493	0.069	0.795
3851.00	3.500	0.076	0.795
3852.00	3.474	0.076	0.795
3853.00	3.487	0.076	0.795
3854.00	3.487	0.069	0.795
3855.00	3.506	0.069	0.795
3856.00	3.480	0.069	0.795
3857.00	3.487	0.069	0.795
3858.00	3.500	0.076	0.795
3859.00	3.487	0.076	0.795
3860.00	3.487	0.069	0.795
3861.00	3.500	0.069	0.795
3862.00	3.493	0.076	0.795
3863.00	3.487	0.076	0.795
3864.00	3.487	0.076	0.795
3865.00	3.493	0.069	0.795
3866.00	3.493	0.069	0.795
3867.00	3.500	0.069	0.795
3868.00	3.500	0.076	0.795
3869.00	3.487	0.076	0.795
3870.00	3.480	0.076	0.795
3871.00	3.487	0.069	0.795
3872.00	3.493	0.069	0.795
3873.00	3.500	0.069	0.795
3874.00	3.487	0.076	0.795
3875.00	3.487	0.076	0.795
3876.00	3.500	0.076	0.795
3877.00	3.506	0.069	0.795
3878.00	3.500	0.069	0.795
3879.00	3.493	0.076	0.795

3880.00	3.500	0.076	0.795
3881.00	3.500	0.076	0.795
3882.00	3.493	0.076	0.795
3883.00	3.493	0.076	0.801
3884.00	3.487	0.076	0.795
3885.00	3.493	0.076	0.795
3886.00	3.487	0.076	0.795
3887.00	3.500	0.076	0.795
3888.00	3.480	0.076	0.795
3889.00	3.500	0.076	0.795
3890.00	3.493	0.076	0.795
3891.00	3.506	0.076	0.801
3892.00	3.493	0.076	0.795
3893.00	3.493	0.076	0.801
3894.00	3.487	0.076	0.795
3895.00	3.493	0.076	0.801
3896.00	3.500	0.076	0.801
3897.00	3.487	0.076	0.801
3898.00	3.487	0.076	0.795
3899.00	3.500	0.076	0.795
3900.00	3.506	0.076	0.801
3901.00	3.474	0.076	0.795
3902.00	3.487	0.076	0.801
3903.00	3.487	0.076	0.801
3904.00	3.493	0.076	0.801
3905.00	3.493	0.076	0.801
3906.00	3.500	0.076	0.801
3907.00	3.493	0.076	0.801
3908.00	3.493	0.076	0.801
3909.00	3.500	0.076	0.801
3910.00	3.512	0.076	0.801
3911.00	3.500	0.076	0.801
3912.00	3.500	0.076	0.801
3913.00	3.506	0.076	0.801
3914.00	3.500	0.076	0.801
3915.00	3.500	0.076	0.801
3916.00	3.493	0.076	0.801
3917.00	3.506	0.076	0.801
3918.00	3.500	0.076	0.801
3919.00	3.506	0.076	0.801
3920.00	3.487	0.076	0.801
3921.00	3.506	0.076	0.801
3922.00	3.493	0.076	0.801
3923.00	3.487	0.076	0.801
3924.00	3.500	0.076	0.801
3925.00	3.525	0.076	0.801
3926.00	3.500	0.076	0.801
3927.00	3.506	0.076	0.801
3928.00	3.506	0.076	0.801
3929.00	3.506	0.076	0.801
3930.00	3.500	0.076	0.801
3931.00	3.506	0.076	0.801
3932.00	3.512	0.076	0.801
3933.00	3.500	0.076	0.801
3934.00	3.506	0.076	0.801
3935.00	3.493	0.076	0.801
3936.00	3.493	0.076	0.801
3937.00	3.512	0.076	0.801
3938.00	3.506	0.076	0.801
3939.00	3.500	0.076	0.801

3940.00	3.493	0.076	0.801
3941.00	3.500	0.076	0.801
3942.00	3.500	0.076	0.801
3943.00	3.493	0.076	0.801
3944.00	3.487	0.076	0.801
3945.00	3.512	0.076	0.801
3946.00	3.512	0.076	0.801
3947.00	3.512	0.076	0.801
3948.00	3.519	0.076	0.801
3949.00	3.500	0.076	0.801
3950.00	3.506	0.076	0.801
3951.00	3.512	0.076	0.801
3952.00	3.506	0.076	0.801
3953.00	3.512	0.076	0.801
3954.00	3.512	0.076	0.801
3955.00	3.500	0.076	0.801
3956.00	3.487	0.076	0.801
3957.00	3.519	0.076	0.801
3958.00	3.512	0.076	0.801
3959.00	3.506	0.076	0.801
3960.00	3.493	0.076	0.801
3961.00	3.487	0.076	0.807
3962.00	3.500	0.076	0.801
3963.00	3.500	0.076	0.801
3964.00	3.500	0.076	0.801
3965.00	3.506	0.076	0.801
3966.00	3.500	0.076	0.801
3967.00	3.493	0.076	0.801
3968.00	3.487	0.076	0.801
3969.00	3.506	0.076	0.801
3970.00	3.512	0.076	0.801
3971.00	3.500	0.076	0.807
3972.00	3.506	0.076	0.807
3973.00	3.487	0.076	0.801
3974.00	3.506	0.076	0.801
3975.00	3.512	0.076	0.801
3976.00	3.506	0.076	0.801
3977.00	3.506	0.076	0.807
3978.00	3.487	0.076	0.801
3979.00	3.512	0.076	0.801
3980.00	3.493	0.076	0.801
3981.00	3.512	0.076	0.801
3982.00	3.512	0.076	0.801
3983.00	3.512	0.076	0.807
3984.00	3.500	0.076	0.801
3985.00	3.500	0.076	0.801
3986.00	3.506	0.076	0.801
3987.00	3.500	0.076	0.807
3988.00	3.500	0.076	0.807
3989.00	3.500	0.076	0.801
3990.00	3.506	0.076	0.801
3991.00	3.500	0.076	0.801
3992.00	3.493	0.076	0.801
3993.00	3.500	0.076	0.801
3994.00	3.487	0.076	0.801
3995.00	3.506	0.076	0.801
3996.00	3.500	0.076	0.807
3997.00	3.506	0.076	0.807
3998.00	3.506	0.076	0.807
3999.00	3.512	0.076	0.801

4000.00	3.519	0.076	0.807
4001.00	3.512	0.076	0.807
4002.00	3.506	0.076	0.807
4003.00	3.506	0.076	0.807
4004.00	3.525	0.076	0.807
4005.00	3.506	0.076	0.807
4006.00	3.506	0.076	0.807
4007.00	3.506	0.076	0.807
4008.00	3.500	0.076	0.807
4009.00	3.512	0.076	0.807
4010.00	3.506	0.076	0.807
4011.00	3.506	0.076	0.807
4012.00	3.506	0.076	0.807
4013.00	3.493	0.076	0.807
4014.00	3.506	0.076	0.807
4015.00	3.500	0.076	0.807
4016.00	3.512	0.076	0.807
4017.00	3.500	0.076	0.807
4018.00	3.487	0.076	0.807
4019.00	3.519	0.076	0.807
4020.00	3.512	0.076	0.807
4021.00	3.506	0.076	0.807
4022.00	3.512	0.076	0.807
4023.00	3.512	0.076	0.807
4024.00	3.493	0.076	0.807
4025.00	3.506	0.076	0.807
4026.00	3.506	0.076	0.807
4027.00	3.512	0.076	0.813
4028.00	3.506	0.076	0.807
4029.00	3.519	0.076	0.813
4030.00	3.506	0.076	0.807
4031.00	3.519	0.076	0.813
4032.00	3.500	0.076	0.807
4033.00	3.506	0.076	0.807
4034.00	3.519	0.076	0.807
4035.00	3.512	0.076	0.807
4036.00	3.506	0.076	0.807
4037.00	3.512	0.076	0.807
4038.00	3.506	0.076	0.807
4039.00	3.512	0.076	0.813
4040.00	3.512	0.076	0.807
4041.00	3.493	0.076	0.813
4042.00	3.500	0.076	0.807
4043.00	3.531	0.076	0.807
4044.00	3.506	0.076	0.807
4045.00	3.512	0.076	0.807
4046.00	3.512	0.076	0.807
4047.00	3.512	0.076	0.807
4048.00	3.512	0.076	0.807
4049.00	3.512	0.076	0.807
4050.00	3.519	0.076	0.807
4051.00	3.512	0.076	0.807
4052.00	3.512	0.076	0.813
4053.00	3.506	0.076	0.807
4054.00	3.512	0.076	0.807
4055.00	3.525	0.076	0.807
4056.00	3.512	0.076	0.807
4057.00	3.506	0.076	0.813
4058.00	3.506	0.076	0.807
4059.00	3.512	0.076	0.807

4060.00	3.512	0.076	0.813
4061.00	3.519	0.082	0.807
4062.00	3.519	0.076	0.813
4063.00	3.519	0.076	0.813
4064.00	3.512	0.076	0.813
4065.00	3.519	0.076	0.813
4066.00	3.525	0.076	0.813
4067.00	3.506	0.076	0.813
4068.00	3.519	0.076	0.813
4069.00	3.506	0.076	0.813
4070.00	3.512	0.076	0.813
4071.00	3.512	0.076	0.807
4072.00	3.512	0.076	0.807
4073.00	3.525	0.076	0.807
4074.00	3.531	0.076	0.807
4075.00	3.525	0.076	0.807
4076.00	3.512	0.076	0.807
4077.00	3.506	0.076	0.813
4078.00	3.512	0.076	0.813
4079.00	3.519	0.082	0.813
4080.00	3.531	0.076	0.813
4081.00	3.519	0.076	0.813
4082.00	3.519	0.076	0.813
4083.00	3.525	0.076	0.813
4084.00	3.519	0.076	0.813
4085.00	3.525	0.076	0.813
4086.00	3.519	0.076	0.813
4087.00	3.512	0.076	0.813
4088.00	3.519	0.076	0.813
4089.00	3.519	0.076	0.813
4090.00	3.525	0.076	0.807
4091.00	3.519	0.076	0.807
4092.00	3.512	0.076	0.807
4093.00	3.525	0.076	0.813
4094.00	3.531	0.076	0.813
4095.00	3.519	0.076	0.813
4096.00	3.525	0.076	0.813
4097.00	3.531	0.076	0.813
4098.00	3.525	0.076	0.813
4099.00	3.525	0.076	0.813
4100.00	3.519	0.076	0.813
4101.00	3.538	0.076	0.813
4102.00	3.525	0.076	0.813
4103.00	3.538	0.082	0.813
4104.00	3.519	0.082	0.813
4105.00	3.525	0.076	0.813
4106.00	3.525	0.076	0.813
4107.00	3.519	0.076	0.813
4108.00	3.538	0.076	0.813
4109.00	3.525	0.076	0.813
4110.00	3.531	0.076	0.813
4111.00	3.519	0.076	0.813
4112.00	3.531	0.076	0.813
4113.00	3.531	0.076	0.813
4114.00	3.544	0.076	0.813
4115.00	3.531	0.076	0.813
4116.00	3.512	0.076	0.813
4117.00	3.531	0.076	0.813
4118.00	3.531	0.076	0.813
4119.00	3.531	0.076	0.813

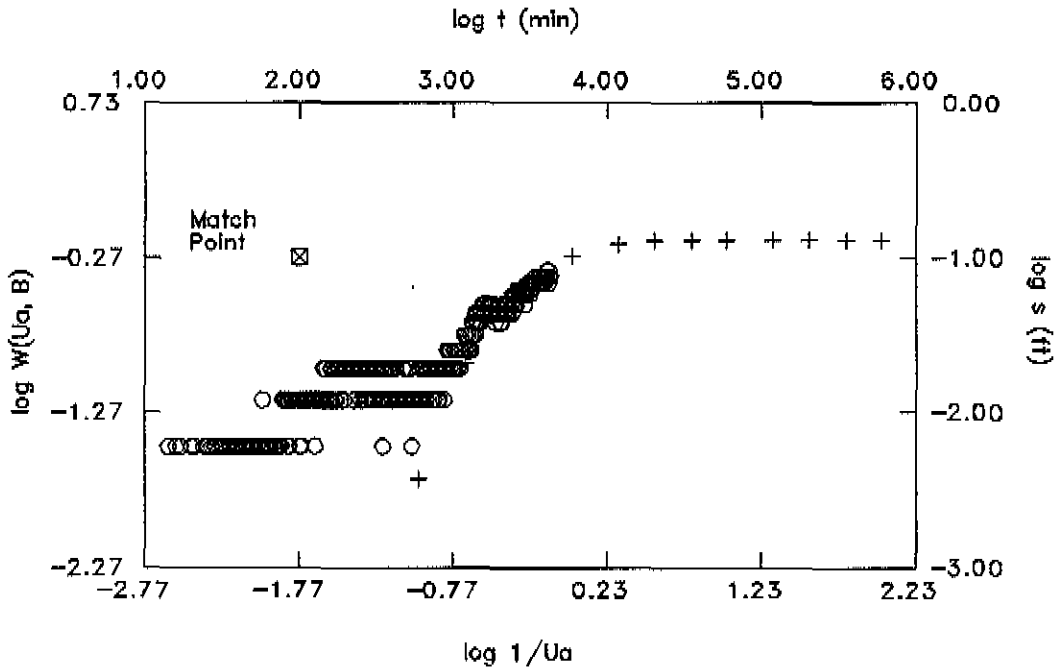
4120.00	3.531	0.076	0.813
4121.00	3.525	0.076	0.813
4122.00	3.531	0.076	0.813
4123.00	3.531	0.076	0.813
4124.00	3.538	0.076	0.813
4125.00	3.531	0.082	0.813
4126.00	3.525	0.076	0.813
4127.00	3.538	0.076	0.813
4128.00	3.550	0.076	0.813
4129.00	3.538	0.076	0.813
4130.00	3.544	0.076	0.813
4131.00	3.525	0.076	0.813
4132.00	3.525	0.082	0.813
4133.00	3.544	0.076	0.813
4134.00	3.569	0.076	0.820
4135.00	3.557	0.076	0.813
4136.00	3.576	0.076	0.813
4137.00	3.582	0.082	0.820
4138.00	3.601	0.076	0.813
4139.00	3.620	0.076	0.820
4140.00	3.601	0.076	0.820
4141.00	3.607	0.076	0.820
4142.00	3.614	0.076	0.820
4143.00	3.626	0.076	0.820
4144.00	3.626	0.076	0.820
4145.00	3.646	0.076	0.820
4146.00	3.620	0.076	0.820
4147.00	3.646	0.076	0.820
4148.00	3.652	0.076	0.820
4149.00	3.639	0.076	0.820
4150.00	3.639	0.076	0.820
4151.00	3.652	0.076	0.820
4152.00	3.646	0.076	0.820
4153.00	3.639	0.076	0.826
4154.00	3.633	0.076	0.820
4155.00	3.652	0.076	0.820
4156.00	3.652	0.076	0.820
4157.00	3.665	0.076	0.820
4158.00	3.652	0.076	0.820
4159.00	3.646	0.076	0.820
4160.00	3.652	0.076	0.820
4161.00	3.671	0.076	0.826
4162.00	3.677	0.076	0.820
4163.00	3.677	0.076	0.820
4164.00	3.690	0.076	0.826
4165.00	3.696	0.076	0.826
4166.00	3.690	0.076	0.826
4167.00	3.696	0.076	0.826
4168.00	3.696	0.076	0.826
4169.00	3.709	0.076	0.826
4170.00	3.703	0.076	0.826
4171.00	3.715	0.076	0.826
4172.00	3.722	0.076	0.826
4173.00	3.722	0.076	0.826
4174.00	3.722	0.069	0.826
4175.00	3.728	0.069	0.826
4176.00	3.728	0.069	0.826
4177.00	3.715	0.069	0.826
4178.00	3.715	0.076	0.826
4179.00	3.779	0.069	0.826

4180.00	3.785	0.069	0.826
4181.00	3.823	0.069	0.826
4182.00	3.766	0.069	0.826
4183.00	3.766	0.069	0.826
4184.00	3.773	0.076	0.826
4185.00	3.753	0.069	0.826
4186.00	3.773	0.069	0.826
4187.00	3.747	0.069	0.826
4188.00	3.779	0.069	0.826
4189.00	3.753	0.069	0.832
4190.00	3.760	0.069	0.826
4191.00	3.760	0.069	0.826
4192.00	3.773	0.076	0.826
4193.00	3.760	0.069	0.832
4194.00	3.779	0.076	0.832
4195.00	3.766	0.069	0.832
4196.00	3.760	0.069	0.832
4197.00	3.773	0.069	0.832
4198.00	3.785	0.069	0.832
4199.00	3.753	0.069	0.832
4200.00	3.773	0.069	0.832
4201.00	3.766	0.069	0.832
4202.00	3.753	0.076	0.832
4203.00	3.760	0.076	0.832
4204.00	3.779	0.069	0.832
4205.00	3.785	0.069	0.832
4206.00	3.760	0.076	0.839
4207.00	3.773	0.076	0.839
4208.00	3.792	0.076	0.839
4209.00	3.804	0.076	0.839
4210.00	3.798	0.069	0.839
4211.00	3.785	0.069	0.839
4212.00	3.811	0.069	0.839
4213.00	3.785	0.069	0.839
4214.00	3.773	0.076	0.839
4215.00	3.804	0.076	0.839
4216.00	3.773	0.069	0.839
4217.00	3.792	0.076	0.832
4218.00	3.773	0.076	0.832
4219.00	3.785	0.076	0.839
4220.00	3.785	0.076	0.839
4221.00	3.804	0.076	0.845
4222.00	3.817	0.076	0.839
4223.00	3.804	0.076	0.839
4224.00	3.817	0.076	0.845
4225.00	3.811	0.076	0.845
4226.00	3.804	0.076	0.845
4227.00	3.811	0.076	0.845
4228.00	3.811	0.076	0.845
4229.00	3.798	0.076	0.839
4230.00	3.811	0.076	0.839
4231.00	3.798	0.076	0.839
4232.00	3.798	0.076	0.845
4233.00	3.798	0.076	0.832
4234.00	3.792	0.076	0.832
4235.00	3.804	0.076	0.839
4236.00	3.798	0.076	0.839
4237.00	3.804	0.076	0.839
4238.00	3.804	0.076	0.839
4239.00	3.811	0.076	0.839

4240.00	3.785	0.076	0.839
4241.00	3.798	0.076	0.839
4242.00	3.817	0.076	0.839
4243.00	3.830	0.076	0.845
4244.00	3.830	0.076	0.845
4245.00	3.849	0.076	0.851
4246.00	3.817	0.076	0.851
4247.00	3.836	0.076	0.845
4248.00	3.830	0.076	0.845
4249.00	3.823	0.076	0.851
4250.00	3.855	0.076	0.845
4251.00	3.836	0.076	0.845
4252.00	3.823	0.082	0.851
4253.00	3.842	0.082	0.845
4254.00	3.830	0.082	0.851
4255.00	3.842	0.082	0.845
4256.00	3.830	0.082	0.851
4257.00	3.830	0.088	0.851
4258.00	3.836	0.076	0.845
4259.00	3.823	0.082	0.845
4260.00	3.823	0.082	0.845
4261.00	3.823	0.095	0.851
4262.00	3.823	0.082	0.845
4263.00	3.842	0.082	0.851
4264.00	3.842	0.082	0.851
4265.00	3.842	0.082	0.851
4266.00	3.836	0.082	0.851
4267.00	3.836	0.082	0.845
4268.00	3.836	0.082	0.851
4269.00	3.842	0.082	0.851
4270.00	3.855	0.082	0.845
4271.00	3.868	0.082	0.845
4272.00	3.861	0.082	0.851
4273.00	3.868	0.082	0.845
4274.00	3.868	0.082	0.845
4275.00	3.861	0.082	0.851
4276.00	3.868	0.082	0.851
4277.00	3.849	0.082	0.858
4278.00	3.874	0.082	0.851
4279.00	3.887	0.082	0.851
4280.00	3.855	0.082	0.845
4281.00	3.880	0.076	0.851
4282.00	3.861	0.082	0.851
4283.00	3.855	0.082	0.845
4284.00	3.868	0.082	0.858
4285.00	3.868	0.082	0.858
4286.00	3.861	0.082	0.851
4287.00	3.874	0.082	0.845
4288.00	3.880	0.082	0.858
4289.00	3.874	0.082	0.851
4290.00	3.868	0.088	0.851
4291.00	3.887	0.088	0.851
4292.00	3.880	0.088	0.845
4293.00	3.893	0.088	0.858
4294.00	3.893	0.088	0.851
4295.00	3.893	0.088	0.851
4296.00	3.868	0.088	0.858
4297.00	3.893	0.088	0.858
4298.00	3.887	0.088	0.851
4299.00	3.880	0.088	0.851

4300.00	3.893	0.088	0.851
4301.00	3.861	0.088	0.851
4302.00	3.861	0.088	0.851
4303.00	3.880	0.088	0.858
4304.00	3.880	0.088	0.858
4305.00	3.868	0.088	0.858
4306.00	3.887	0.088	0.858
4307.00	3.874	0.088	0.858
4308.00	3.874	0.088	0.851
4309.00	3.874	0.088	0.851
4310.00	3.880	0.088	0.858
4311.00	3.880	0.088	0.858
4312.00	3.880	0.088	0.858
4313.00	3.887	0.088	0.858
4314.00	3.861	0.088	0.858
4315.00	3.849	0.088	0.858
4316.00	3.868	0.088	0.858
4317.00	3.849	0.088	0.864
4318.00	3.842	0.088	0.858
4319.00	3.836	0.088	0.851
4320.00	3.836	0.088	0.851
4321.00	3.836	0.088	0.845
4322.00	3.830	0.088	0.845
4323.00	3.823	0.095	0.851
4324.00	3.823	0.088	0.845
4325.00	3.830	0.088	0.851
4326.00	3.842	0.088	0.858
4327.00	3.836	0.088	0.858
4328.00	3.811	0.088	0.851
4329.00	3.817	0.088	0.858
4330.00	3.811	0.088	0.851
4331.00	3.811	0.088	0.858
4332.00	3.817	0.088	0.864
4333.00	3.817	0.088	0.858
4334.00	3.804	0.088	0.858
4335.00	3.811	0.088	0.858
4336.00	3.792	0.088	0.858
4337.00	3.792	0.088	0.864
4338.00	3.798	0.088	0.851
4339.00	3.773	0.088	0.839
4340.00	3.747	0.095	0.832
4341.00	3.766	0.095	0.845
4342.00	3.773	0.095	0.851
4343.00	3.773	0.095	0.851
4344.00	3.760	0.095	0.845
4345.00	3.753	0.095	0.845
4346.00	3.753	0.095	0.845
4347.00	3.760	0.095	0.851
4348.00	3.760	0.095	0.839
4349.00	3.741	0.095	0.845

Alcatel Network Systems



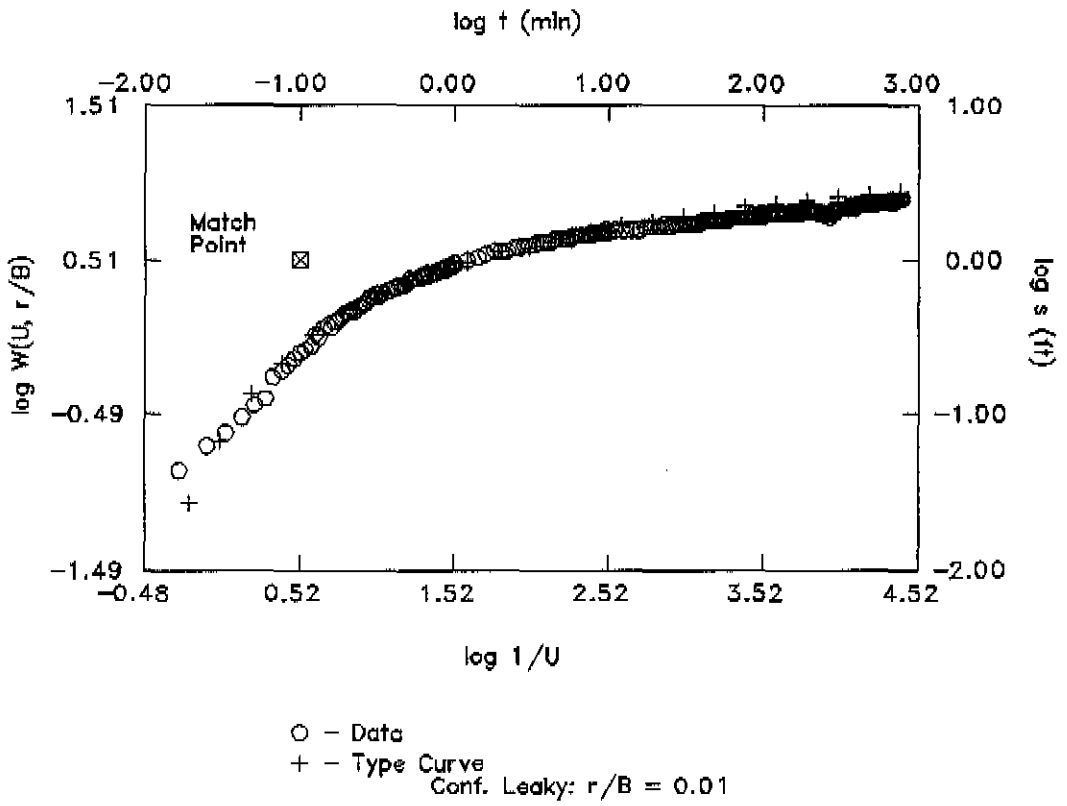
○ – Data
+ – Type Curve
Unconf. Elastic: beta = 0.40

MATCH POINT			SOLUTION		
t	=	1.000E+0002	Transmissivity (T)	=	4.142E-0001 sq ft/min
s	=	1.000E-0001	Hydraulic Conductivity (K)	=	1.381E-0002 ft/min
1/Ua	=	1.698E-0002	Storativity (S)	=	1.561E-0001
W(Ua, B)	=	5.370E-0001			

WELL INFORMATION	
WELL IDENTIFICATION	: RW-1
DATE OF AQUIFER TEST	: 1/10/95
AQUIFER THICKNESS (b)	: 3.000E+0001 ft
DISCHARGE RATE (Q)	: 7.250E+0000 gpm
PUMPING WELL RADIUS (r)	: 2.500E-0001 ft
DISTANCE OF OBSERVATION WELL FROM PUMPING WELL (d)	: 1.250E+0002 ft

ok)

Alcatel Network Systems

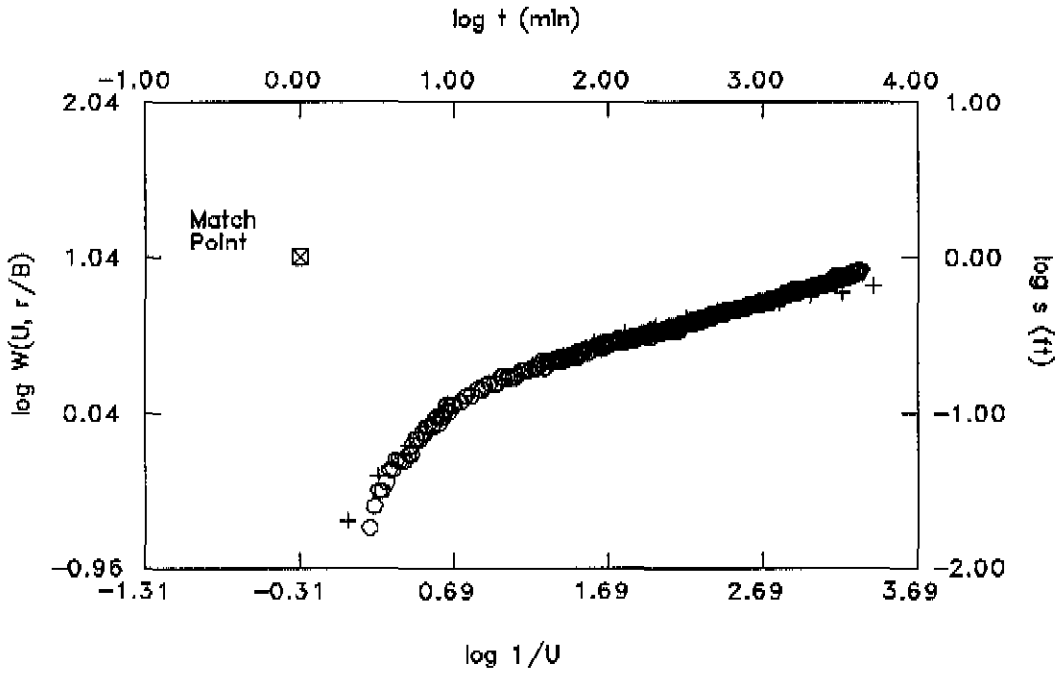


MATCH POINT			SOLUTION		
t	=	1.000E-0001	Transmissivity (T)	=	2.496E-0001 sq ft/min
s	=	1.000E+0000	Hydraulic Conductivity (K)	=	1.248E-0002 ft/min
1/U	=	3.311E+0000	Storativity (S)	=	3.015E-0002
W(U, r/B)	=	3.236E+0000	Leakage Factor (B)	=	1.000E+0002 ft

WELL INFORMATION

WELL IDENTIFICATION	: RW2
DATE OF AQUIFER TEST	: 1/10/95
AQUIFER THICKNESS (b)	: 2.000E+0001 ft
DISCHARGE RATE (Q)	: 7.250E+0000 gpm
PUMPING WELL RADIUS (r)	: 2.500E-0001 ft
DISTANCE OF OBSERVATION WELL FROM PUMPING WELL (d)	: 1.000E+0000 ft

Alcatel Network Systems



○ – Data
+ – Type Curve
Conf. Leaky: r/B = 0.01

MATCH POINT			SOLUTION		
t	=	1.000E+0000	Transmissivity (T)	=	8.457E-0001 sq ft/min
s	=	1.000E+0000	Hydraulic Conductivity (K)	=	2.819E-0002 ft/min
1/U	=	4.898E-0001	Storativity (S)	=	1.409E-0003
W(U, r/B)	=	1.096E+0001	Leakage Factor (B)	=	7.000E+0003 ft

WELL INFORMATION

WELL IDENTIFICATION	: MW-21k
DATE OF AQUIFER TEST	: 1/10/95
AQUIFER THICKNESS (b)	: 3.000E+0001 ft
DISCHARGE RATE (Q)	: 7.250E+0000 gpm
PUMPING WELL RADIUS (r)	: 2.500E-0001 ft
DISTANCE OF OBSERVATION WELL FROM PUMPING WELL (d)	: 7.000E+0001 ft

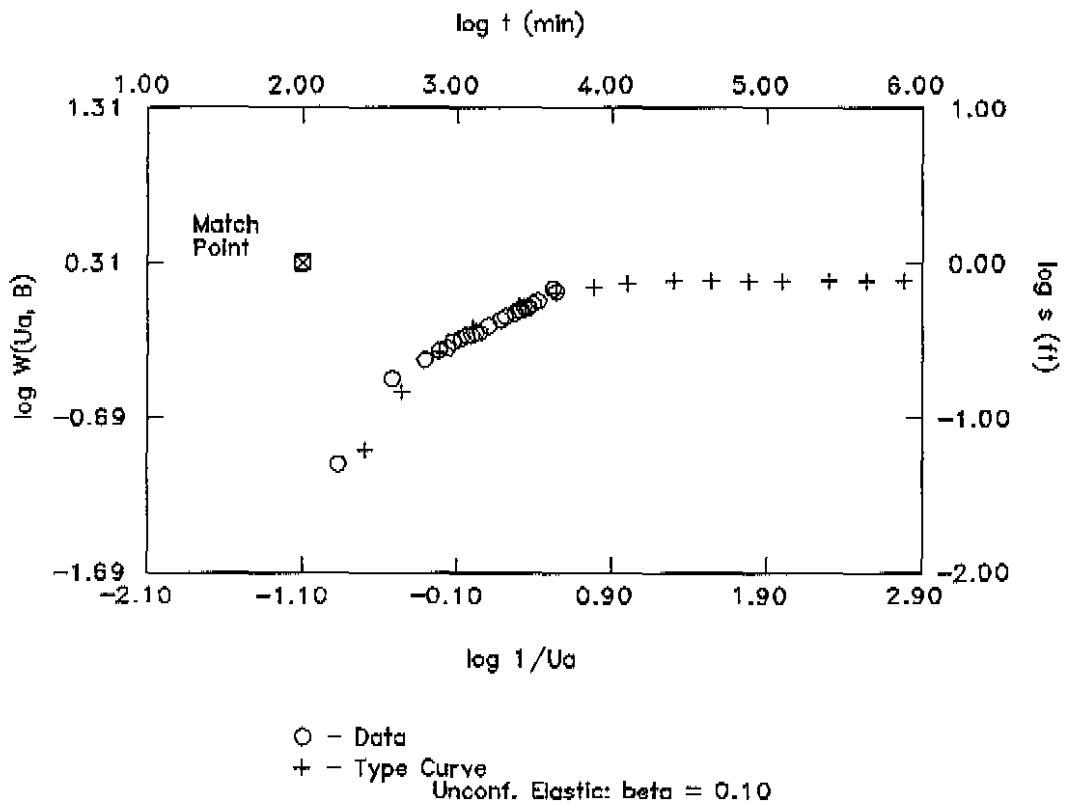
ok! AB

Data for Pump Test

Well Name: MW-2SK Date of Test: 1/10/95
Aquifer Thickness (b): 18.000 ft
Pumped Well Discharge(Q) = 7.250 gpm
Radius of Pumping Well = 0.250 ft
Distance of Observation Well from Pumping Well = 71.000 ft

Entry No.	Time(t) (min)	Drawdown(s) (ft)	t / d^2 (min/sq ft)
1	0.000	0.000	
2	170.000	0.050	3.372E-0002
3	380.000	0.180	7.538E-0002
4	620.000	0.240	1.230E-0001
5	750.000	0.270	1.488E-0001
6	860.000	0.290	1.706E-0001
7	935.000	0.310	1.855E-0001
8	1050.000	0.330	2.083E-0001
9	1160.000	0.350	2.301E-0001
10	1240.000	0.350	2.460E-0001
11	1310.000	0.370	2.599E-0001
12	1395.000	0.370	2.767E-0001
13	1580.000	0.390	3.134E-0001
14	1910.000	0.430	3.789E-0001
15	2060.000	0.450	4.086E-0001
16	2350.000	0.480	4.662E-0001
17	2480.000	0.490	4.920E-0001
18	2585.000	0.500	5.128E-0001
19	2720.000	0.520	5.396E-0001
20	2810.000	0.530	5.574E-0001
21	2900.000	0.530	5.753E-0001
22	3080.000	0.550	6.110E-0001
23	3275.000	0.570	6.497E-0001
24	4205.000	0.680	8.342E-0001
25	4390.000	0.670	8.709E-0001

Alcatel Network Systems



MATCH POINT			SOLUTION		
t	=	1.000E+0002	Transmissivity (T)	=	1.575E-0001 sq ft/min
s	=	1.000E+0000	Hydraulic Conductivity (K)	=	8.748E-0003 ft/min
1/Ua	=	7.943E-0002	Storativity (S)	=	3.933E-0002
W(Ua, B)	=	2.042E+0000			

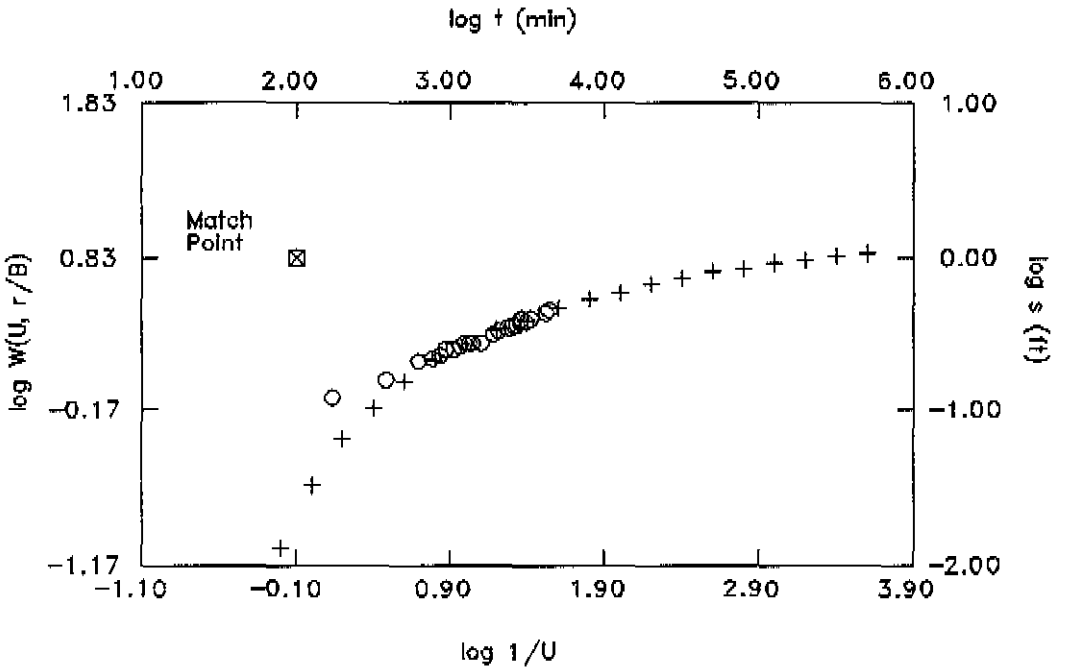
WELL INFORMATION	
WELL IDENTIFICATION	: MW-2SK
DATE OF AQUIFER TEST	: 1/10/95
AQUIFER THICKNESS (b)	: 1.800E+0001 ft
DISCHARGE RATE (Q)	: 7.250E+0000 gpm
PUMPING WELL RADIUS (r)	: 2.500E-0001 ft
DISTANCE OF OBSERVATION WELL FROM PUMPING WELL (d)	: 7.100E+0001 ft

Data for Pump Test

Well Name: MW-4D Date of Test: 1/15/95
Aquifer Thickness (b): 50.000 ft
Pumped Well Discharge(Q) = 7.250 gpm
Radius of Pumping Well = 0.250 ft
Distance of Observation Well from Pumping Well = 142.000 ft

Entry No.	Time(t) (min)	Drawdown(s) (ft)	t / d^2 (min/sq ft)
1	0.000	0.000	
2	170.000	0.120	8.431E-0003
3	380.000	0.160	1.885E-0002
4	620.000	0.210	3.075E-0002
5	750.000	0.220	3.720E-0002
6	860.000	0.230	4.265E-0002
7	935.000	0.250	4.637E-0002
8	1050.000	0.250	5.207E-0002
9	1160.000	0.260	5.753E-0002
10	1240.000	0.270	6.150E-0002
11	1310.000	0.270	6.497E-0002
12	1395.000	0.280	6.918E-0002
13	1580.000	0.280	7.836E-0002
14	1910.000	0.320	9.472E-0002
15	2060.000	0.330	1.022E-0001
16	2350.000	0.350	1.165E-0001
17	2480.000	0.350	1.230E-0001
18	2585.000	0.360	1.282E-0001
19	2720.000	0.370	1.349E-0001
20	2810.000	0.380	1.394E-0001
21	2900.000	0.390	1.438E-0001
22	3080.000	0.380	1.527E-0001
23	3275.000	0.400	1.624E-0001
24	4205.000	0.440	2.085E-0001
25	4390.000	0.460	2.177E-0001

Alcatel Network Systems



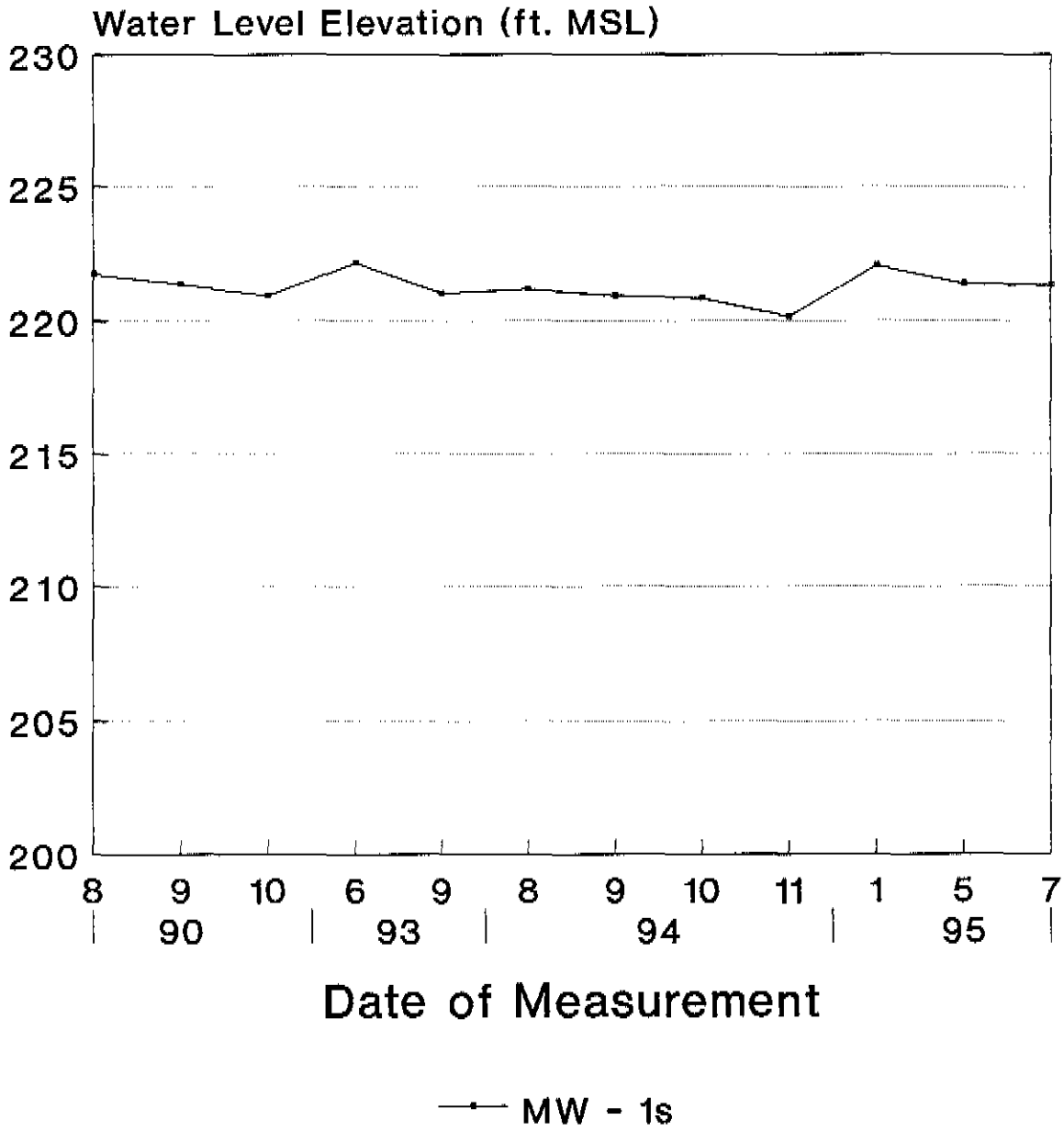
○ – Data
+ – Type Curve
Conf. Leaky: r/B = 0.02

MATCH POINT			SOLUTION		
t	=	1.000E+0002	Transmissivity (T)	=	5.214E-0001 sq ft/min
s	=	1.000E+0000	Hydraulic Conductivity (K)	=	1.043E-0002 ft/min
1/U	=	7.943E-0001	Storativity (S)	=	1.302E-0002
W(U, r/B)	=	6.761E+0000	Leakage Factor (B)	=	7.100E+0003 ft

WELL INFORMATION	
WELL IDENTIFICATION	: MW-4D
DATE OF AQUIFER TEST	: 1/15/95
AQUIFER THICKNESS (b)	: 5.000E+0001 ft
DISCHARGE RATE (Q)	: 7.250E+0000 gpm
PUMPING WELL RADIUS (r)	: 2.500E-0001 ft
DISTANCE OF OBSERVATION WELL FROM PUMPING WELL (d)	: 1.420E+0002 ft

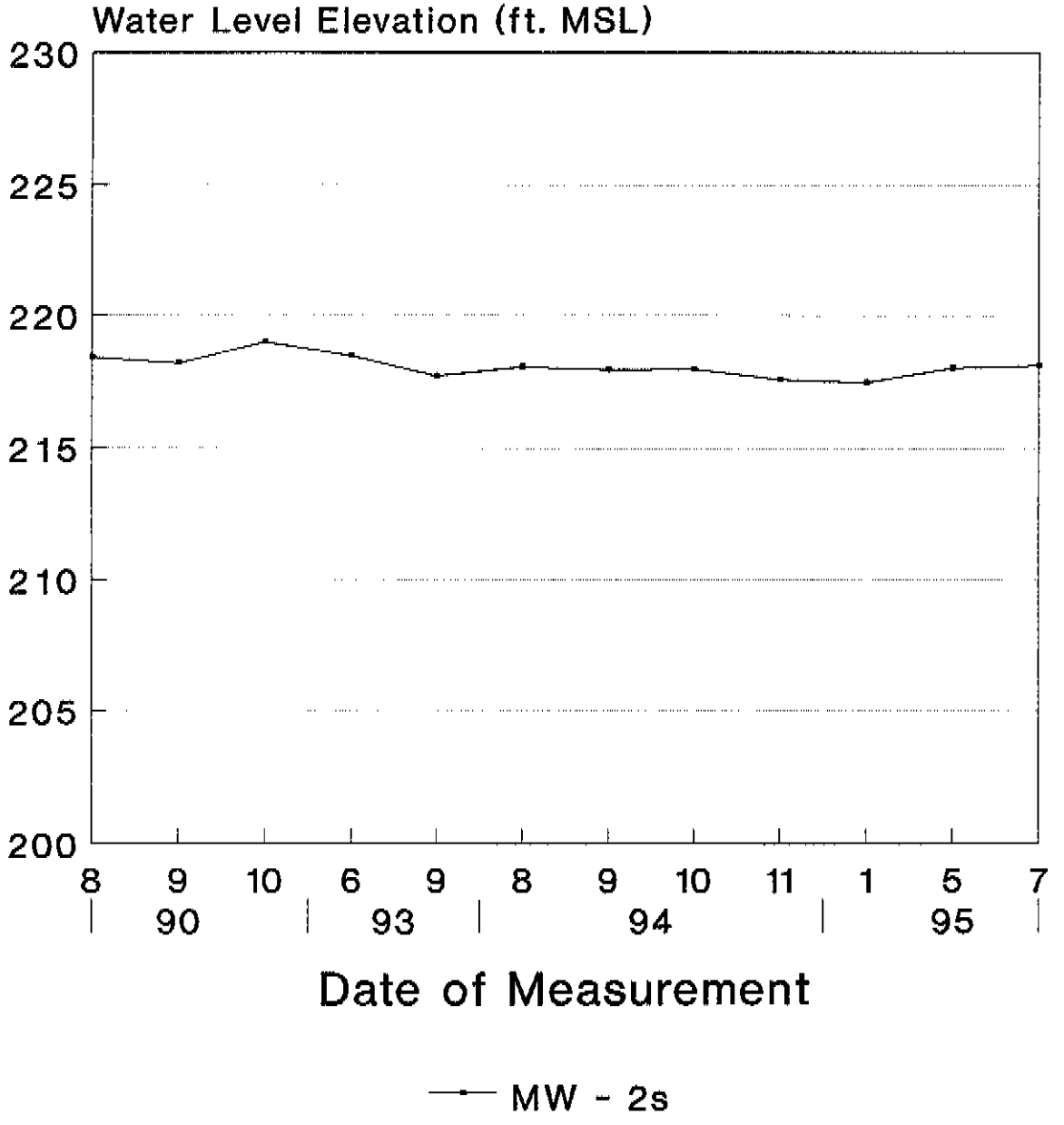
Well Hydrographs

Alcatel Network System
MW - 1s



NCD 003 185 238

Alcatel Network System
MW - 2s



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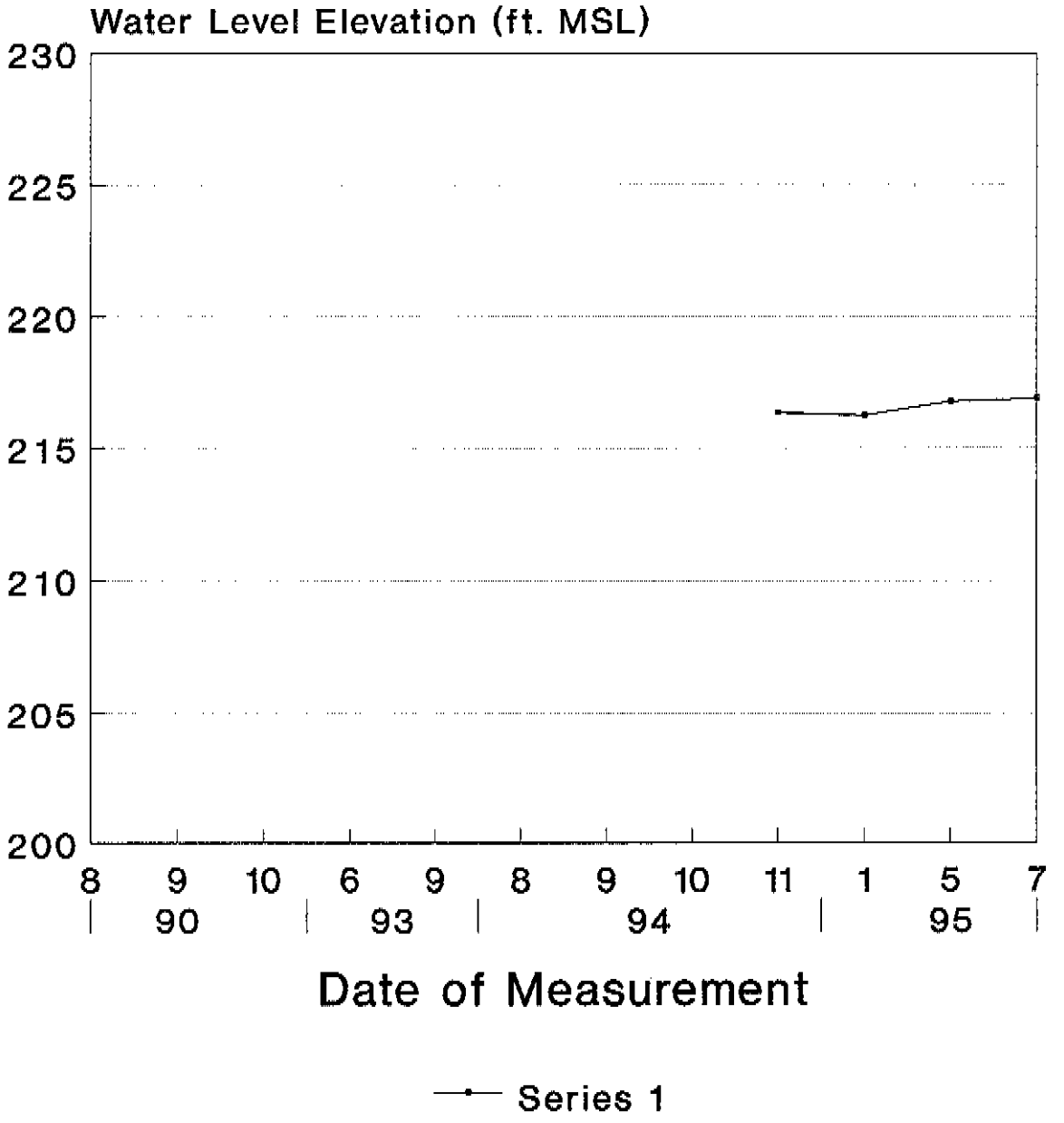
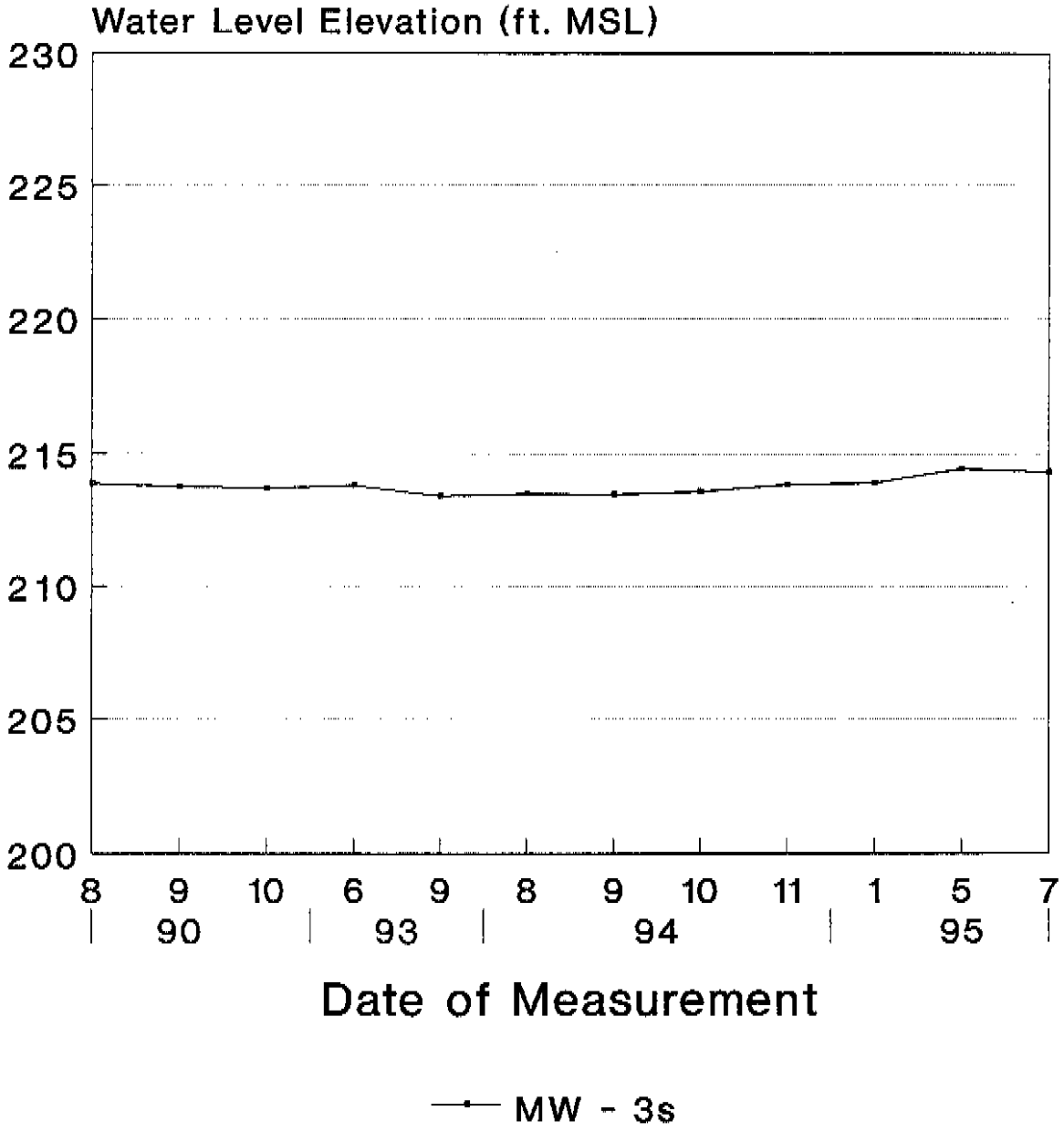
Alcatel Network System
MW - 2d



NCD 003 185 238

Alcatel Network System
MW - 3s



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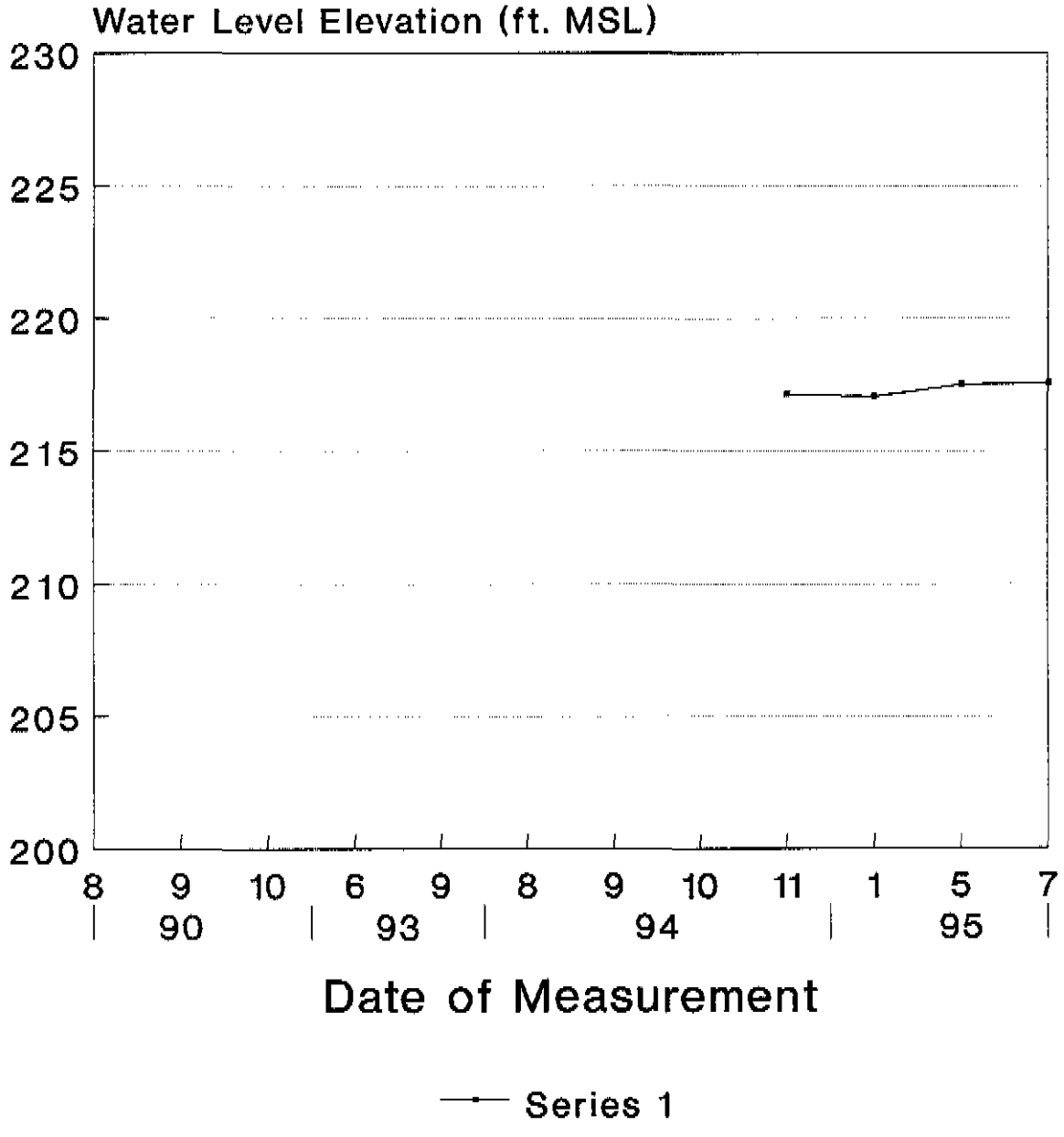
Alcatel Network System
MW - 3d



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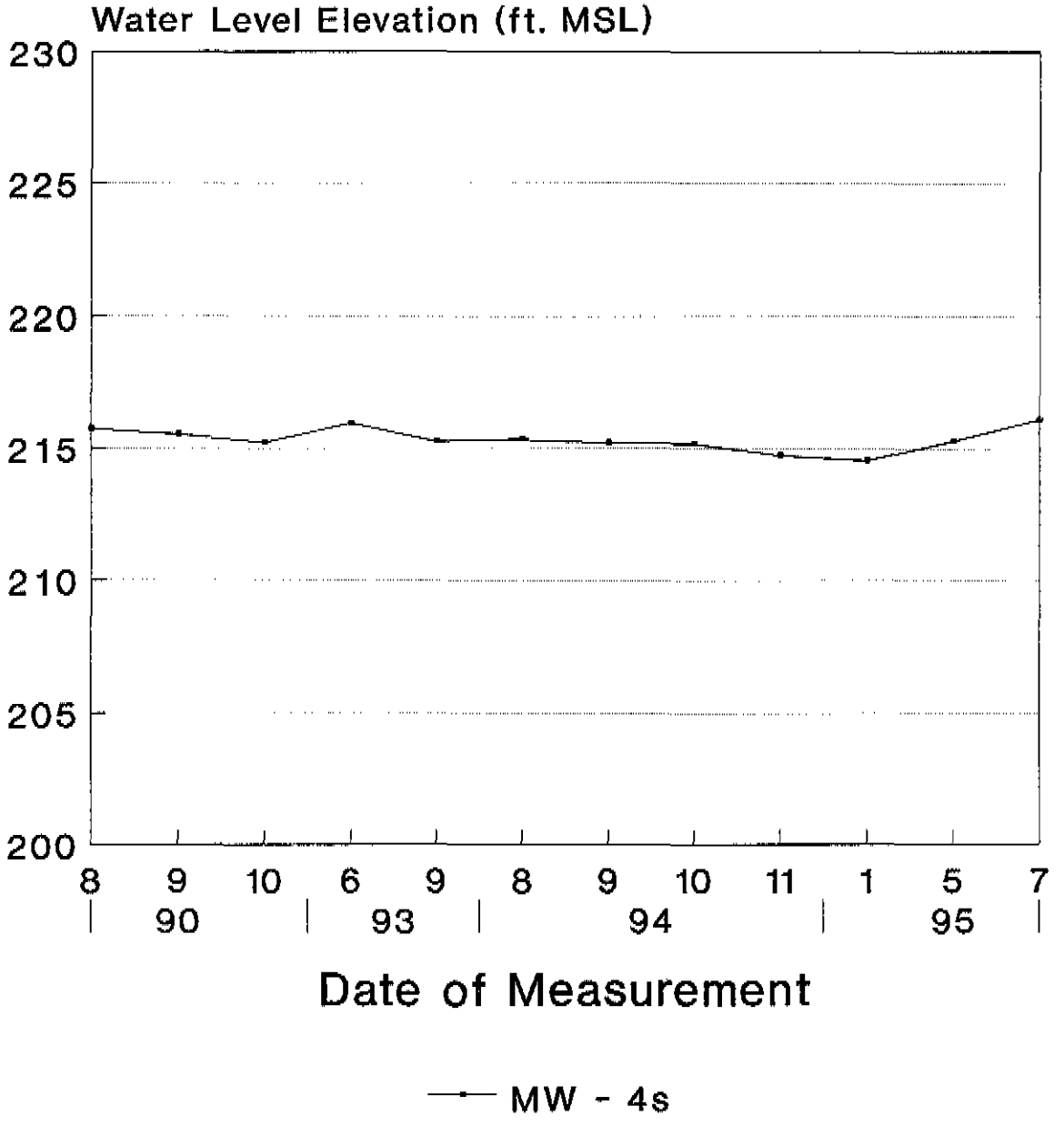
Alcatel Network System
MW - 4s



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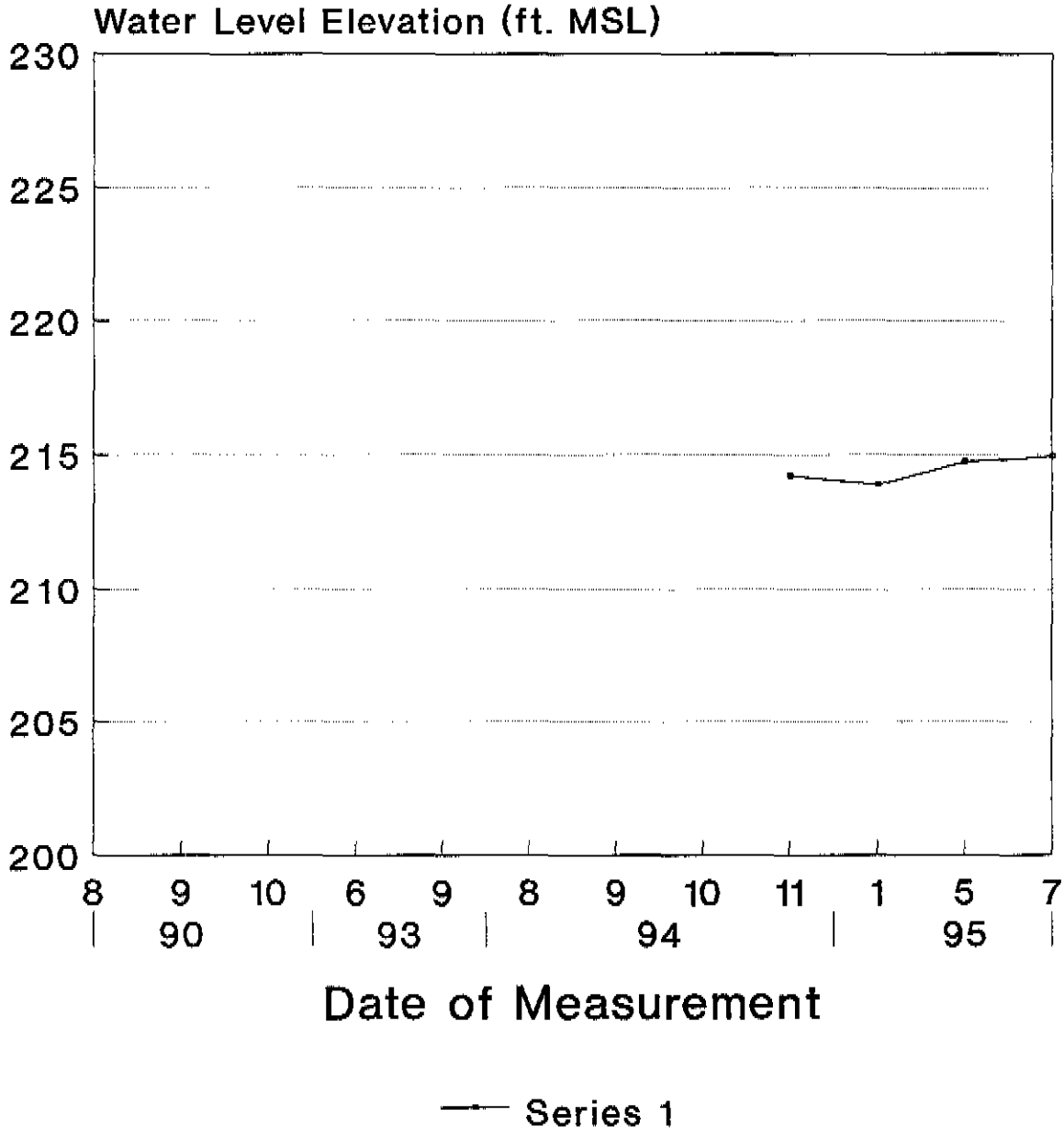
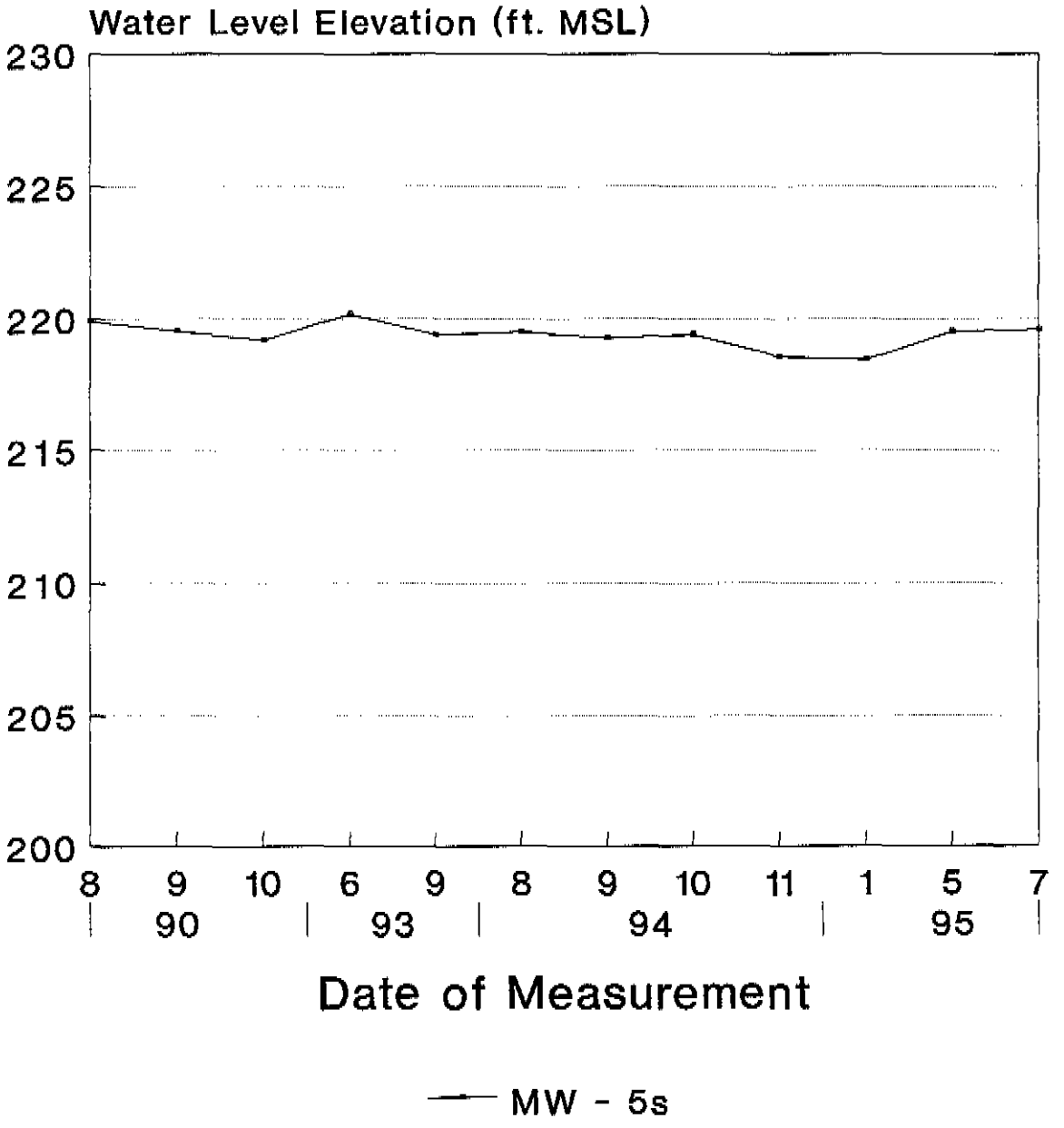
Alcatel Network System
MW - 4d



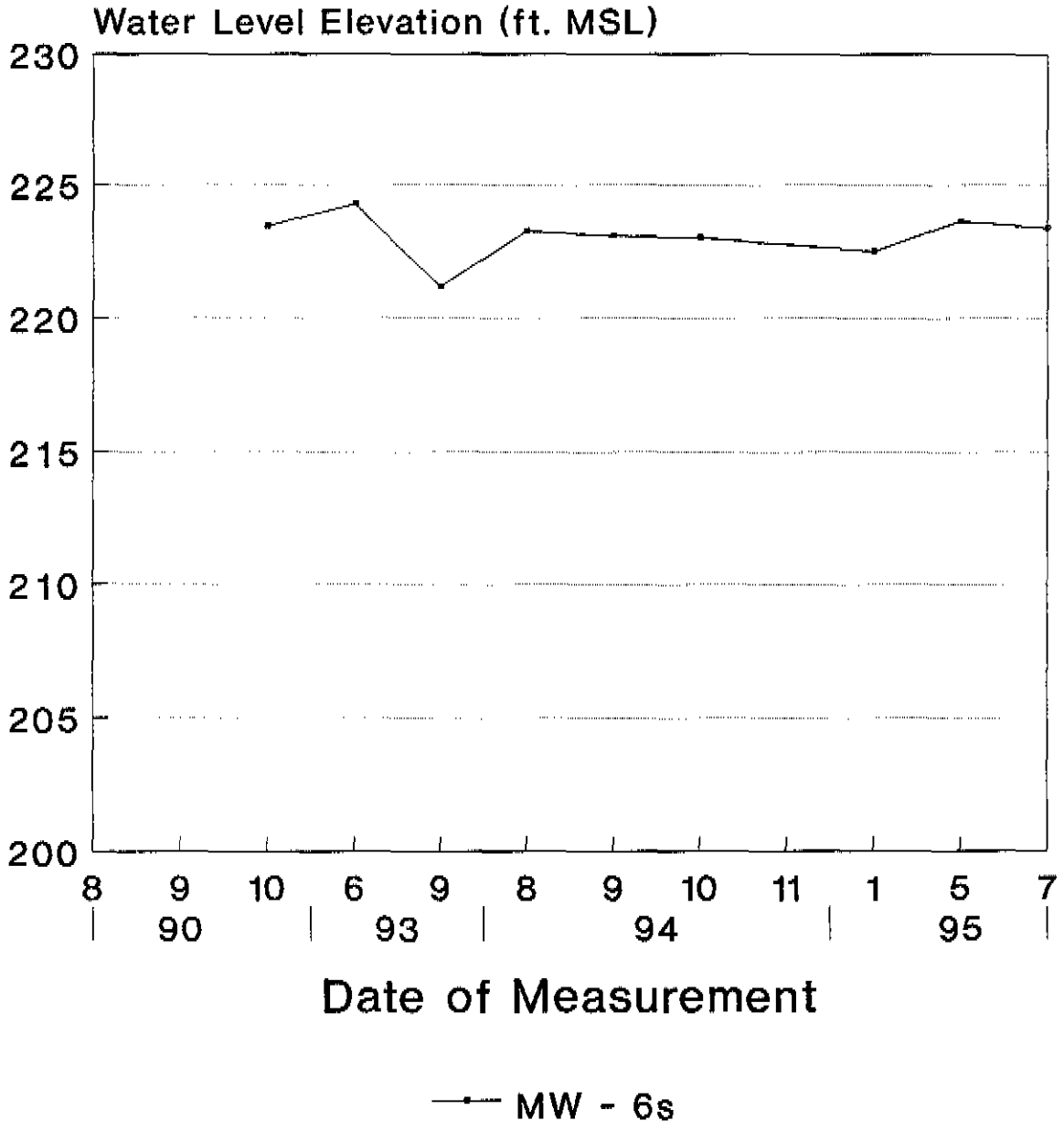
NCD 003 185 238

Alcatel Network System
MW - 5s



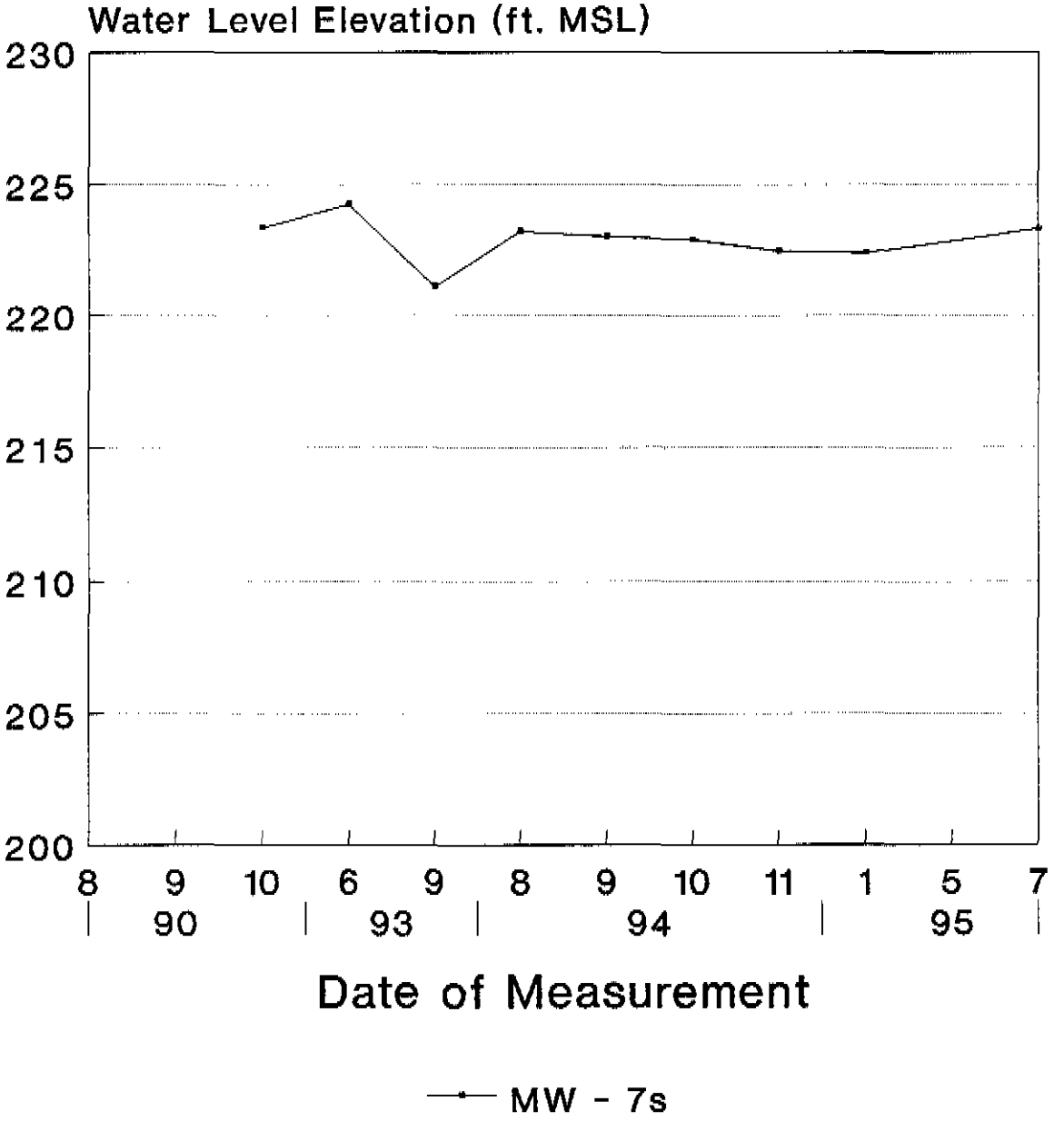
NCD 003 185 238

Alcatel Network System
MW - 6s



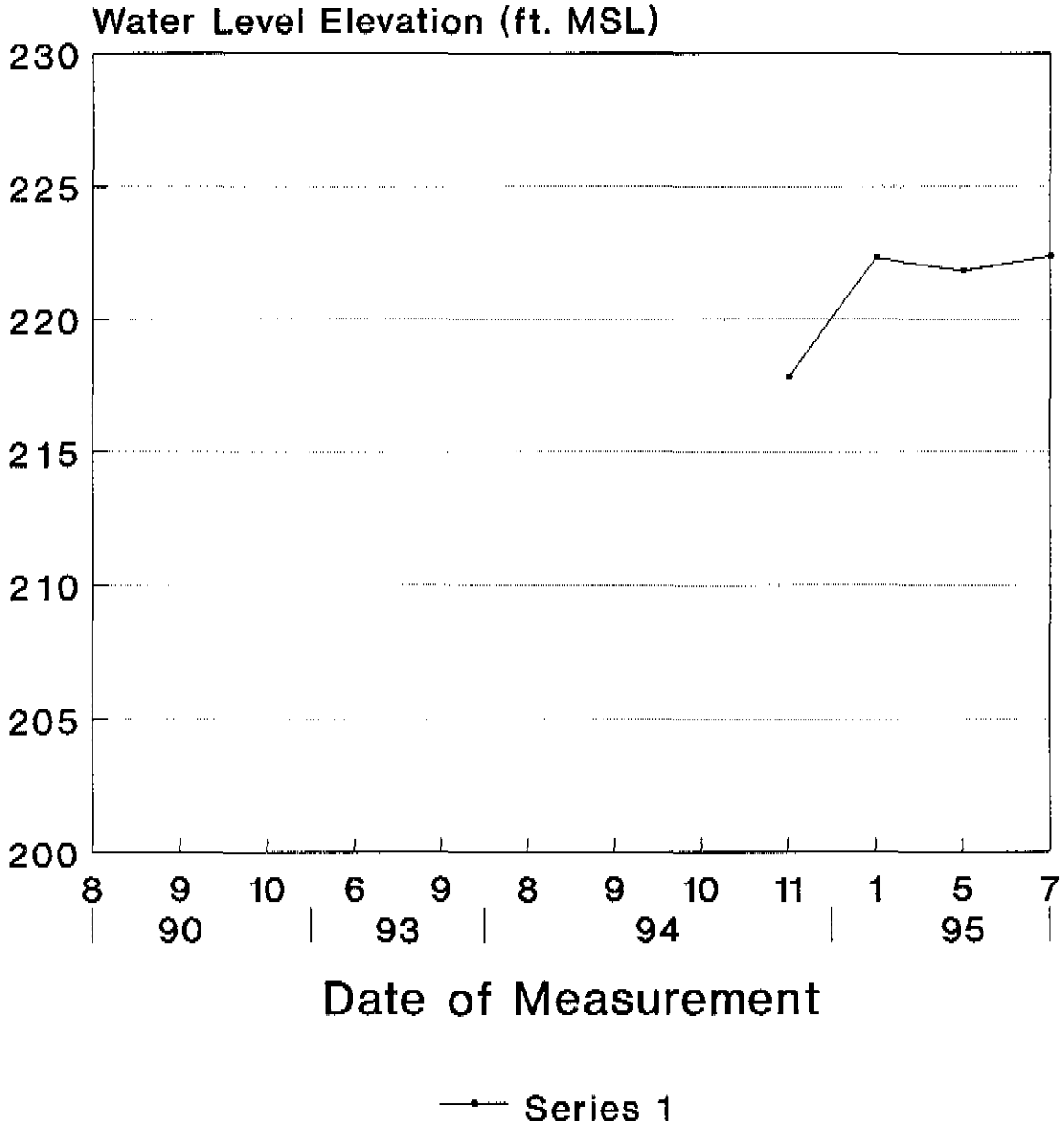
NCD 003 185 238

Alcatel Network System
MW - 7s



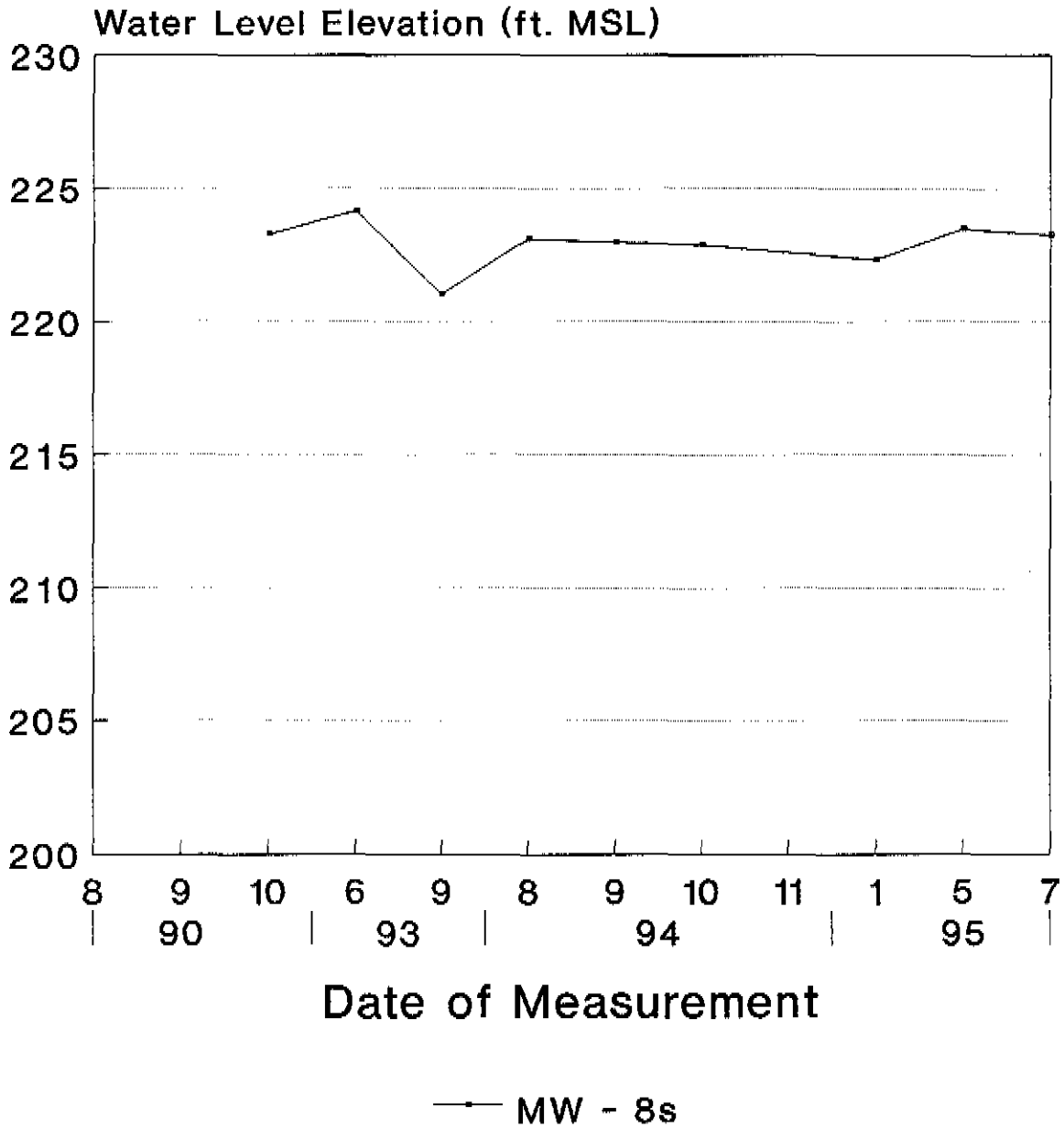
NCD 003 185 238

Alcatel Network System
MW - 7d



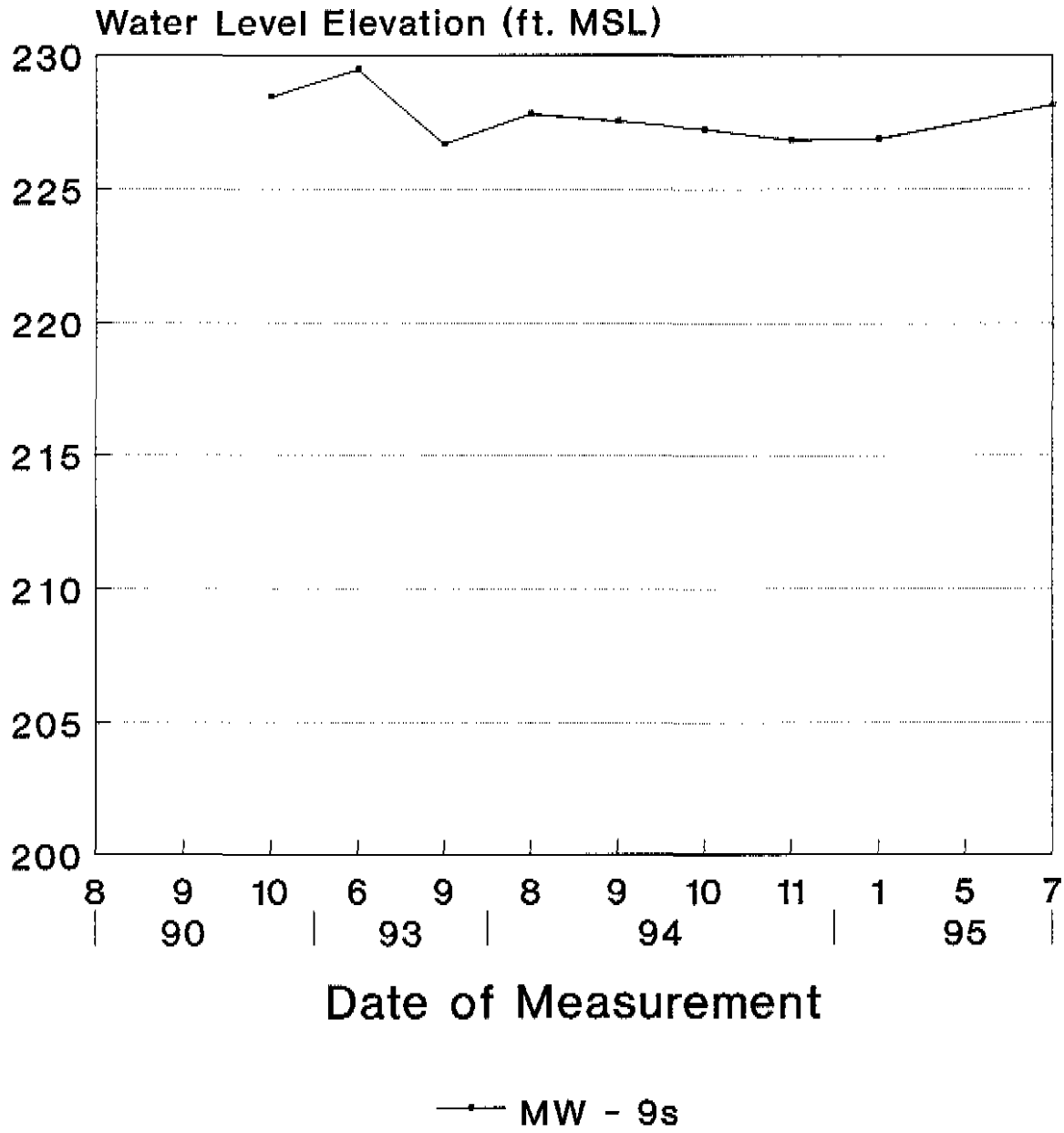
NCD 003 185 238

Alcatel Network System
MW - 8s



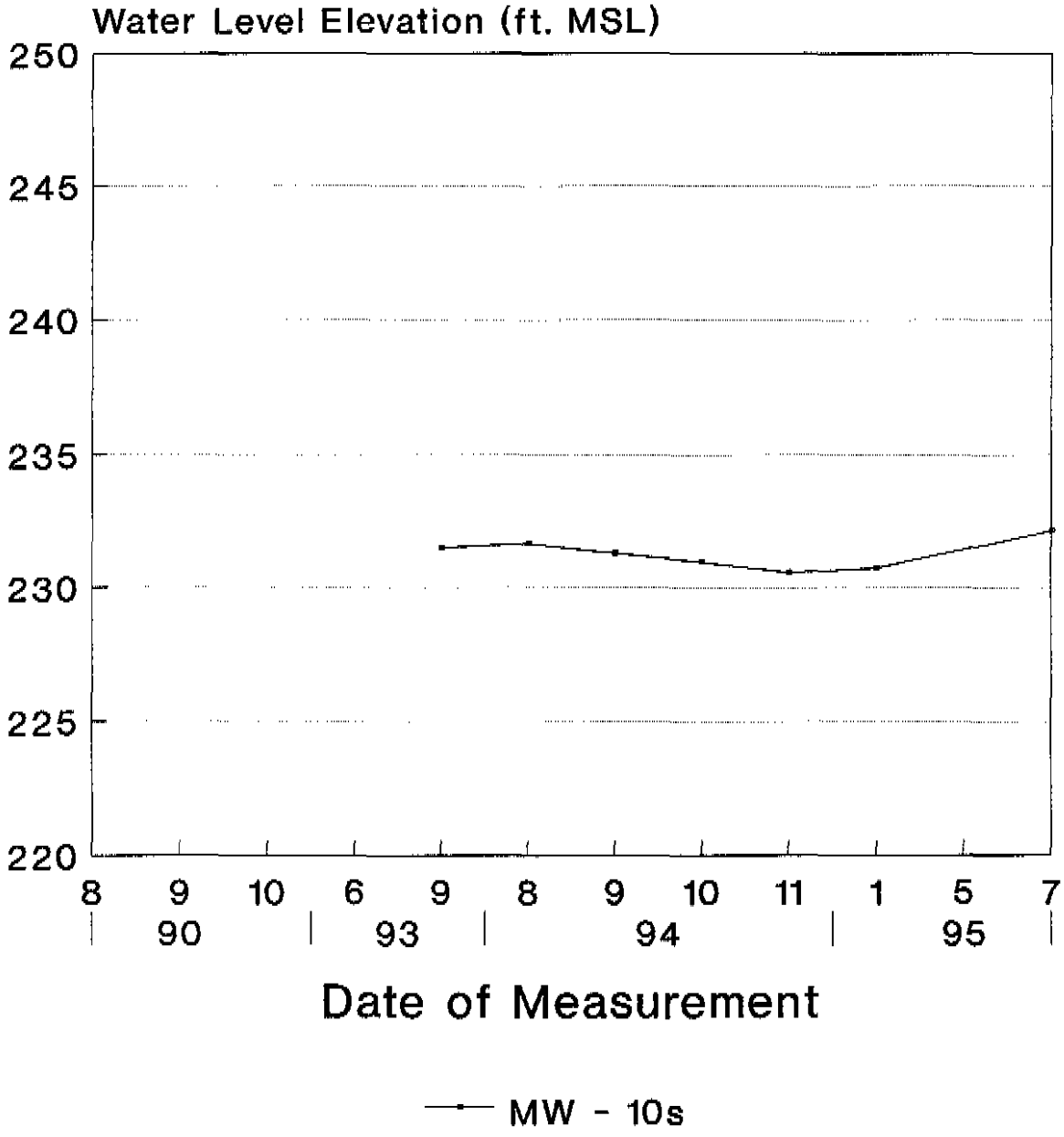
NCD 003 185 238

Alcatel Network System
MW - 9s



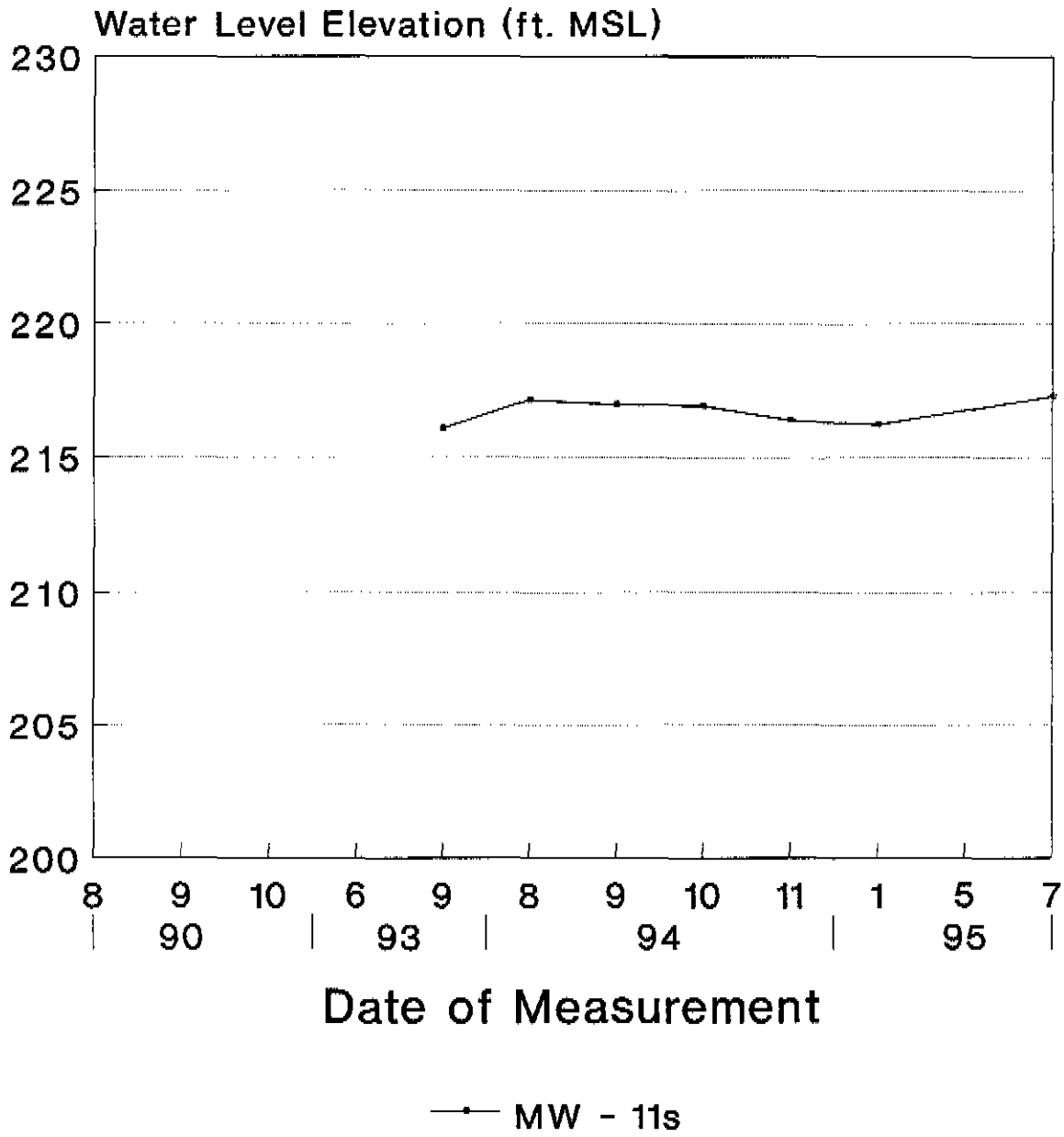
NCD 003 185 238

Alcatel Network System
MW - 10s



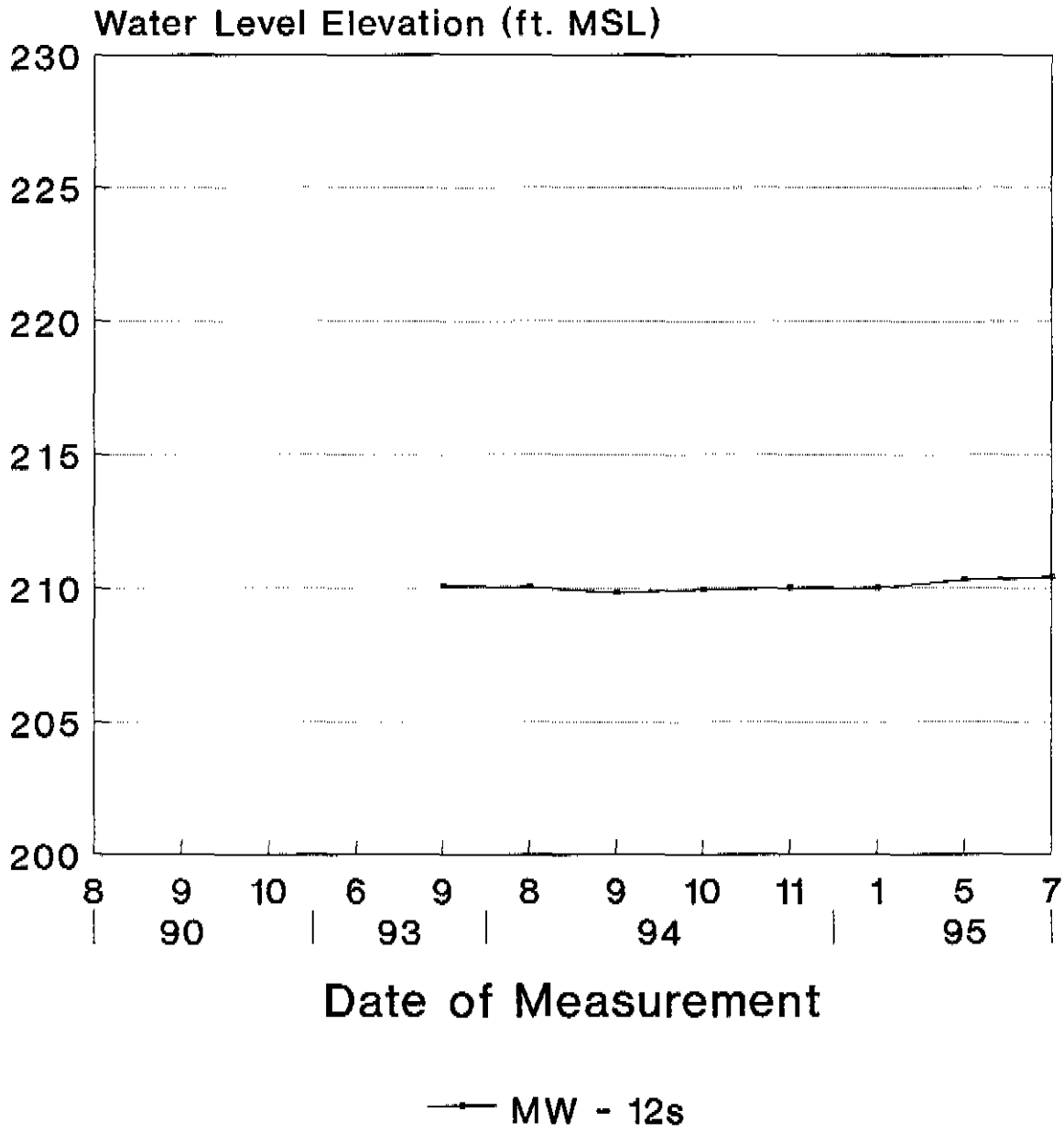
NCD 003 185 238

Alcatel Network System
MW - 11s



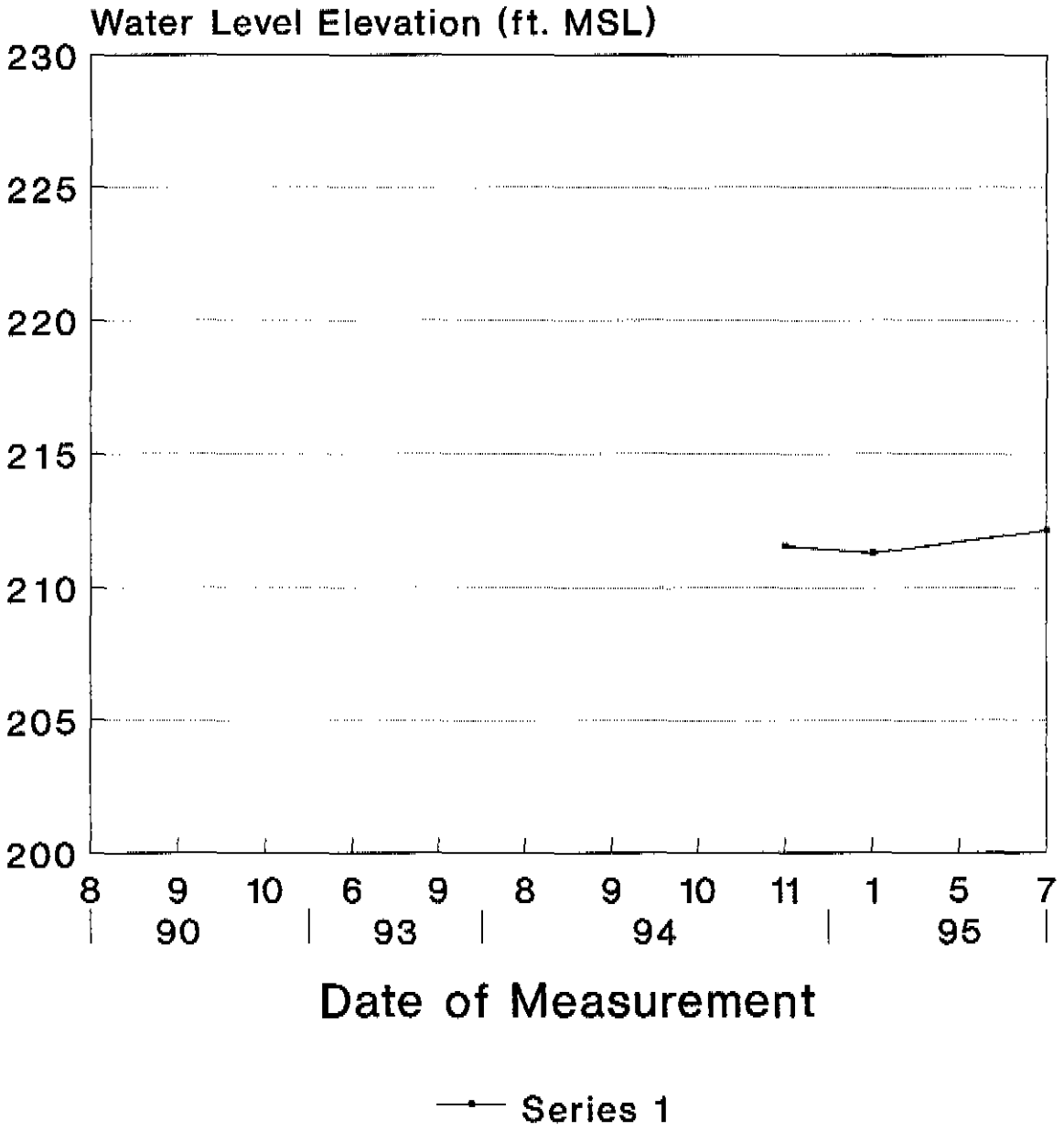
NCD 003 185 238

Alcatel Network System
MW - 12s



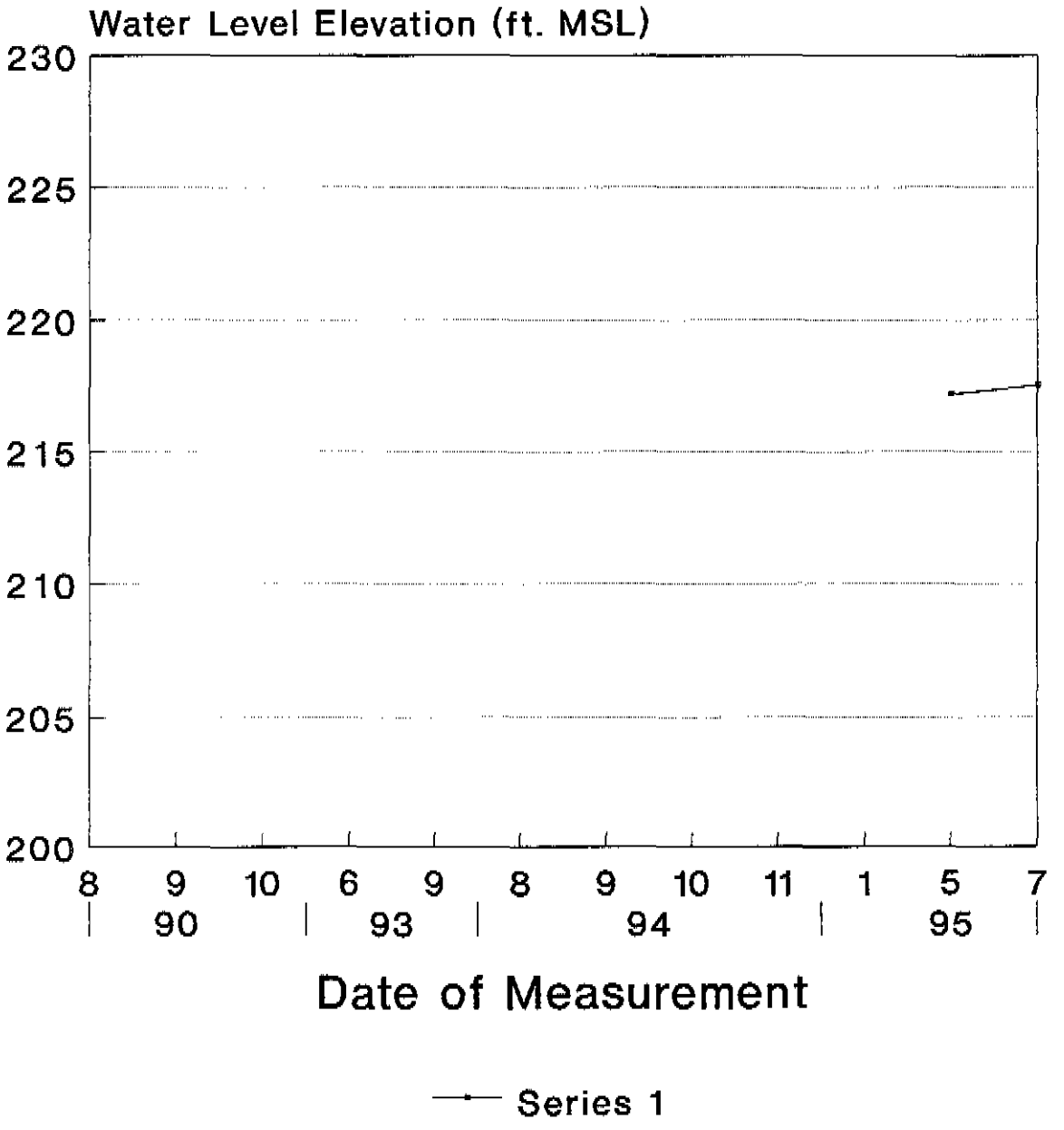
NCD 003 185 238

Alcatel Network System
MW - 12dk



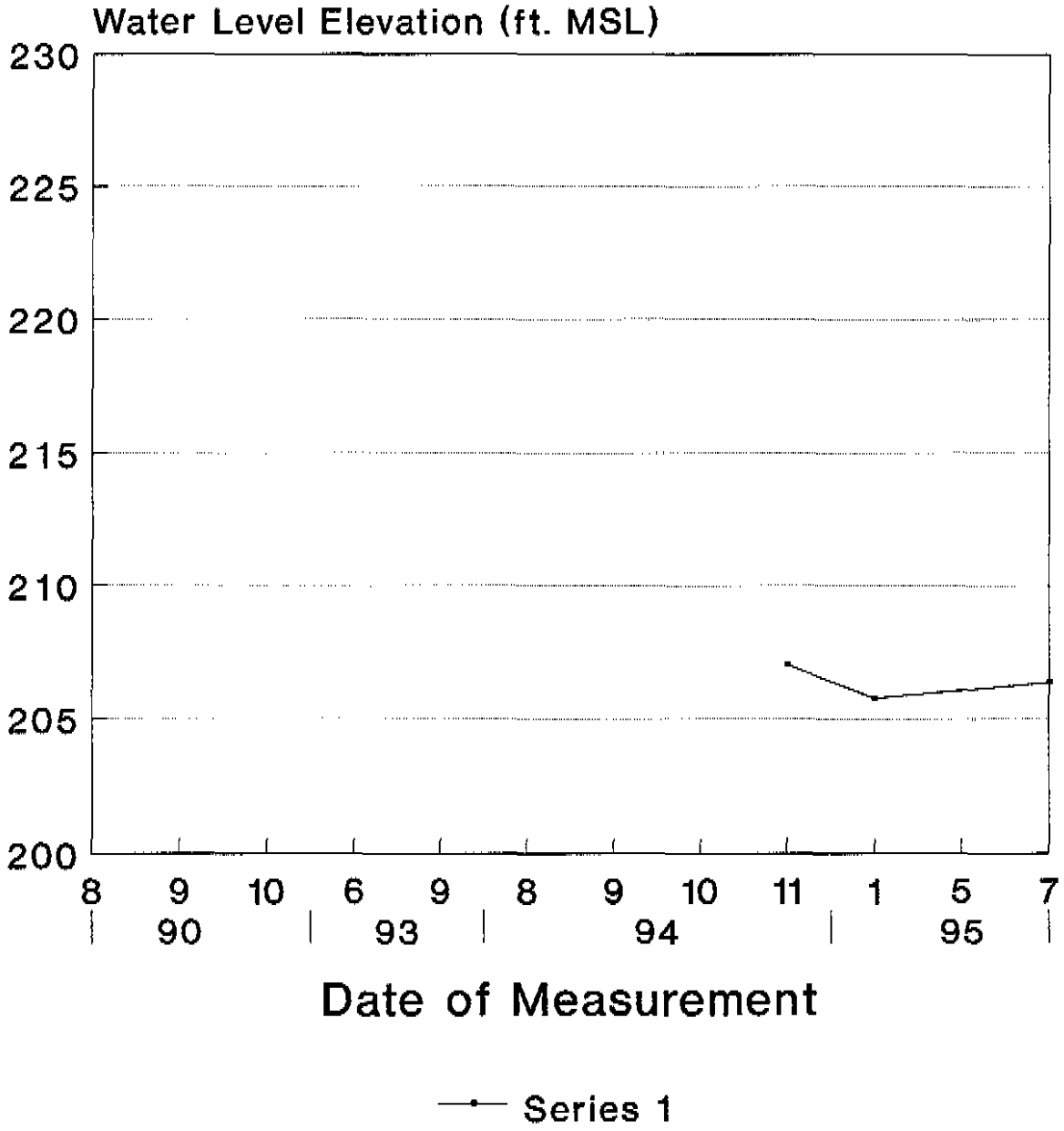
NCD 003 185 238

Alcatel Network System
MW - 13s



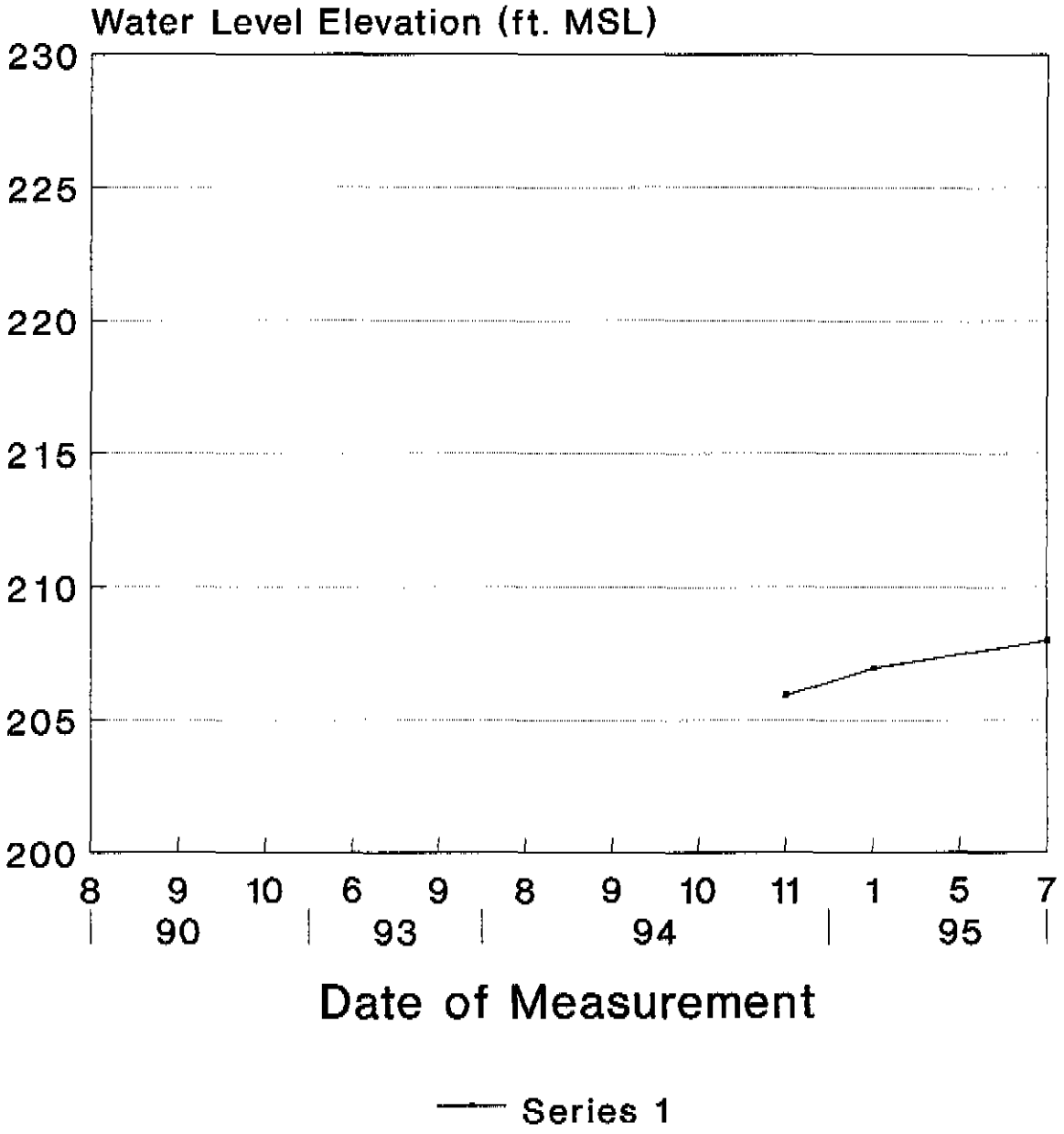
NCD 003 185 238

Alcatel Network System
MW - 1sk



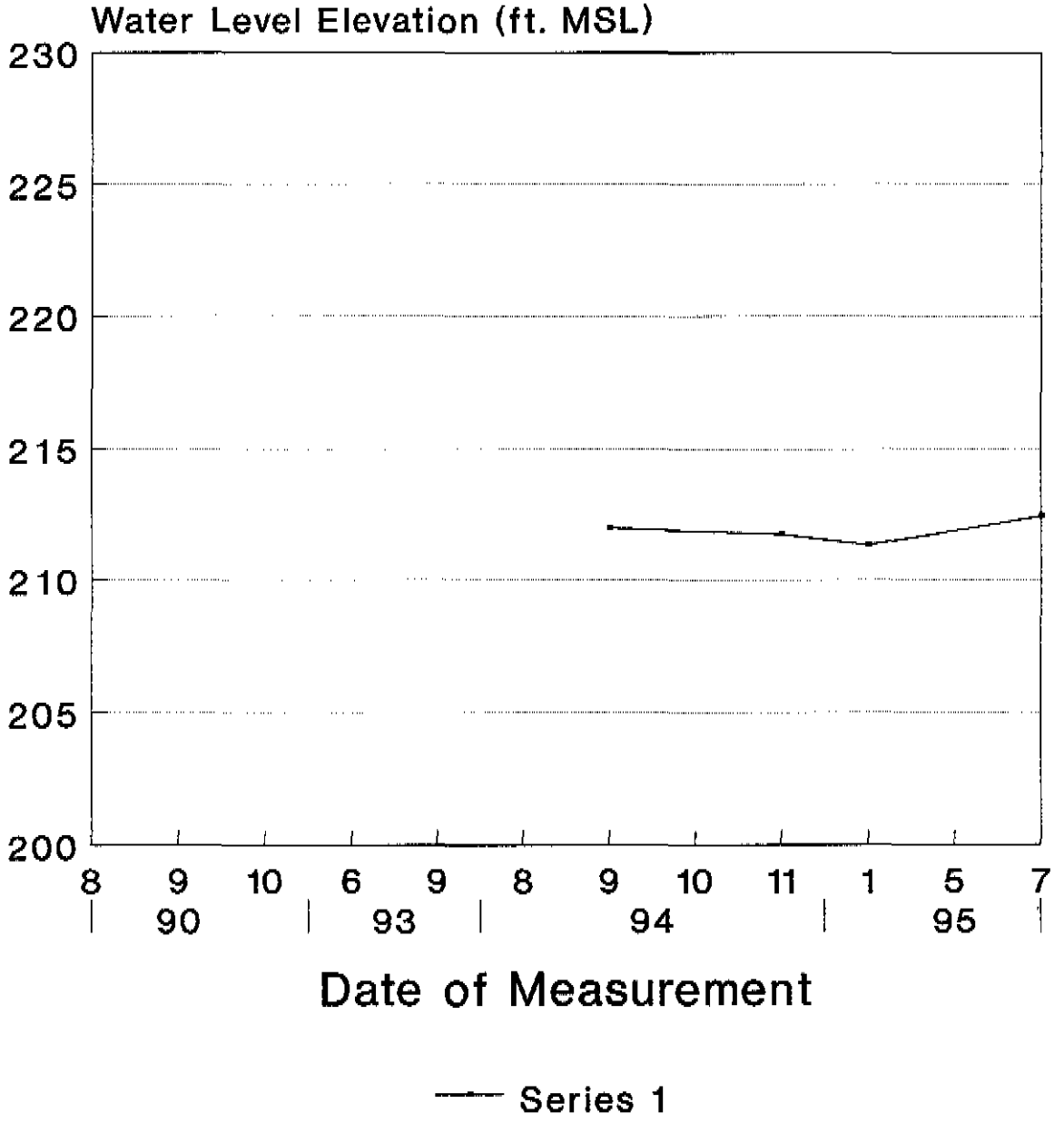
NCD 003 185 238

Alcatel Network System
MW - 1ik



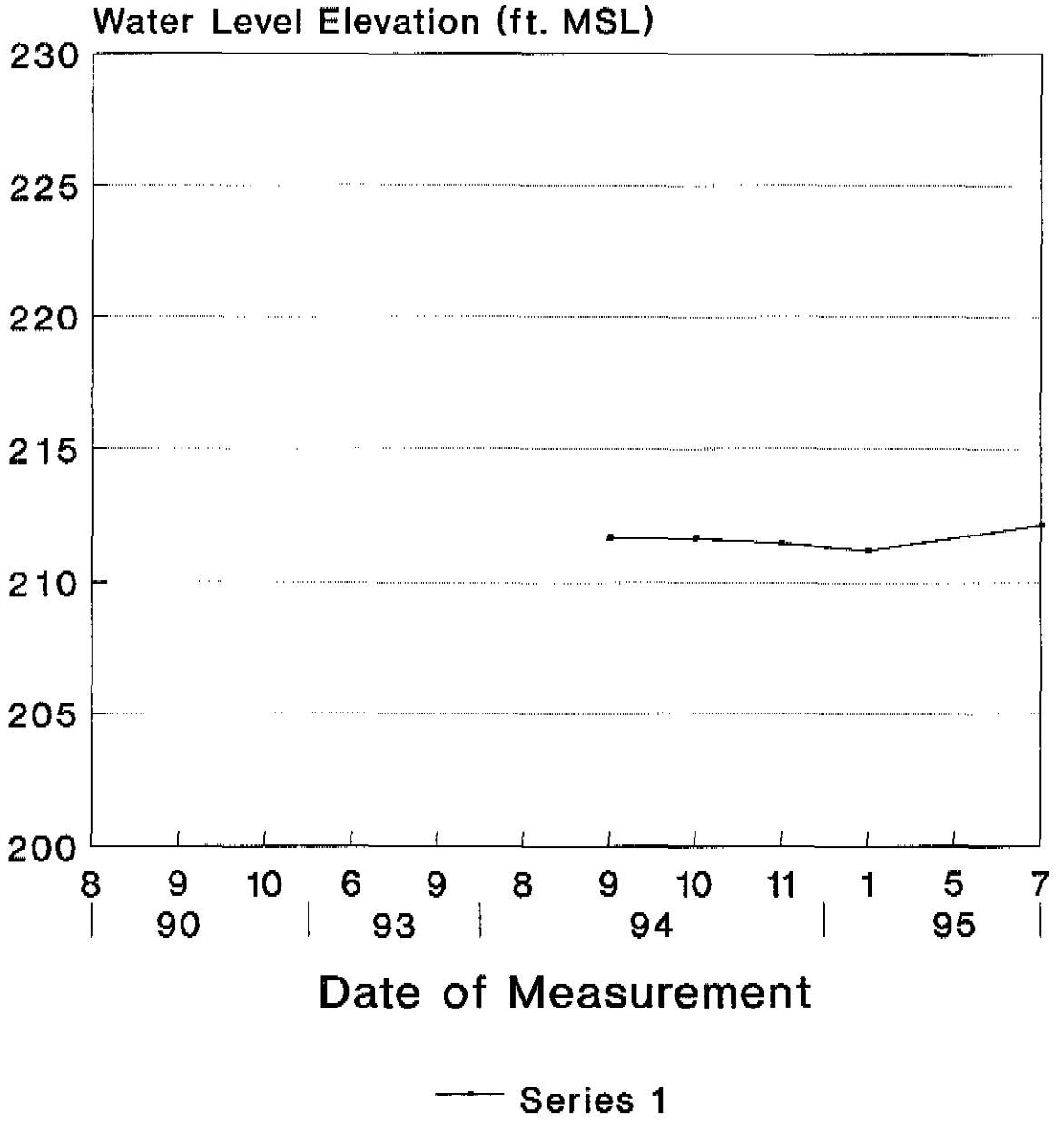
NCD 003 185 238

Alcatel Network System
MW - 2sk



NCD 003 185 238

Alcatel Network System
MW - 2ik



NCD 003 185 238

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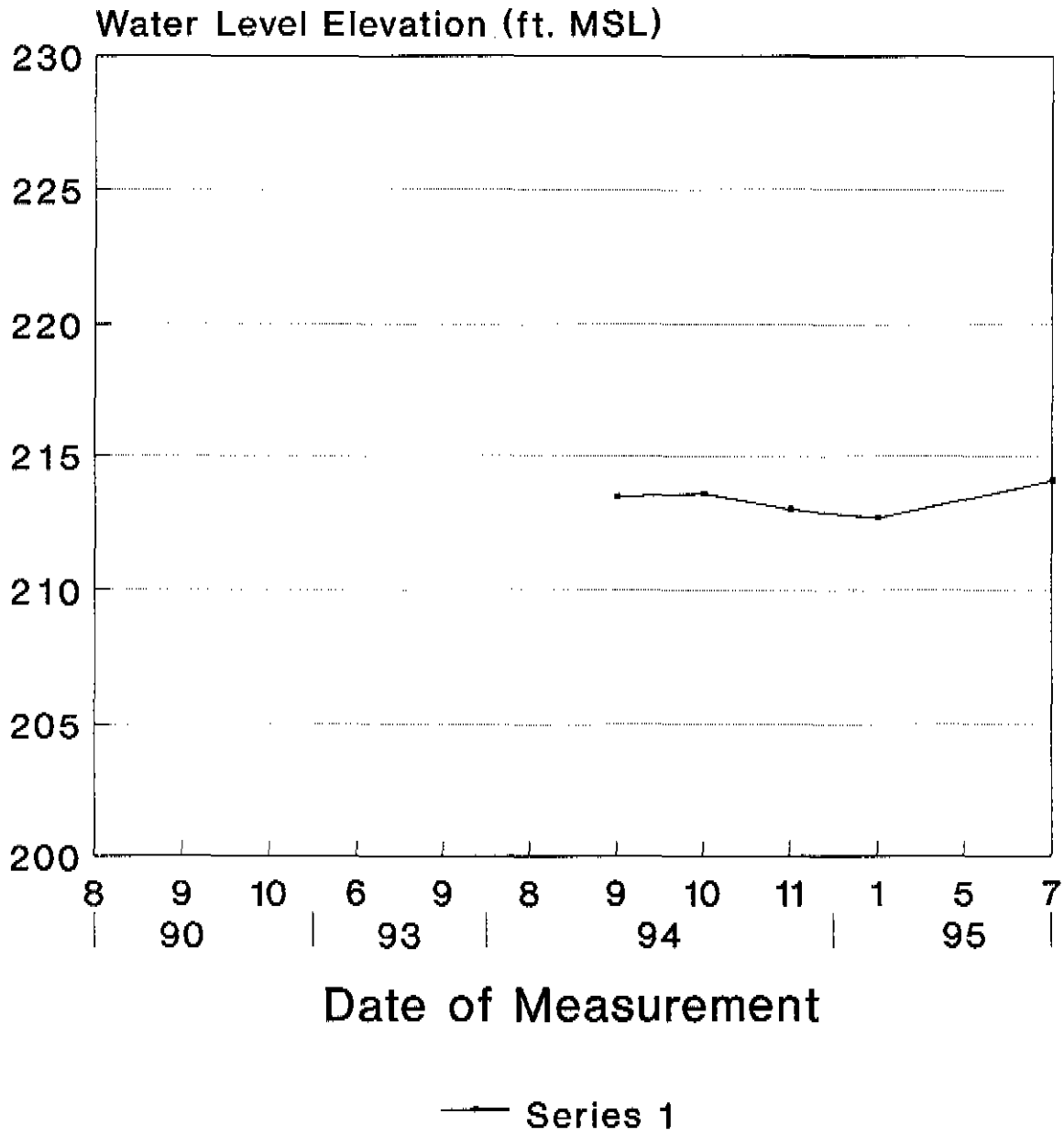
MW - 3sk



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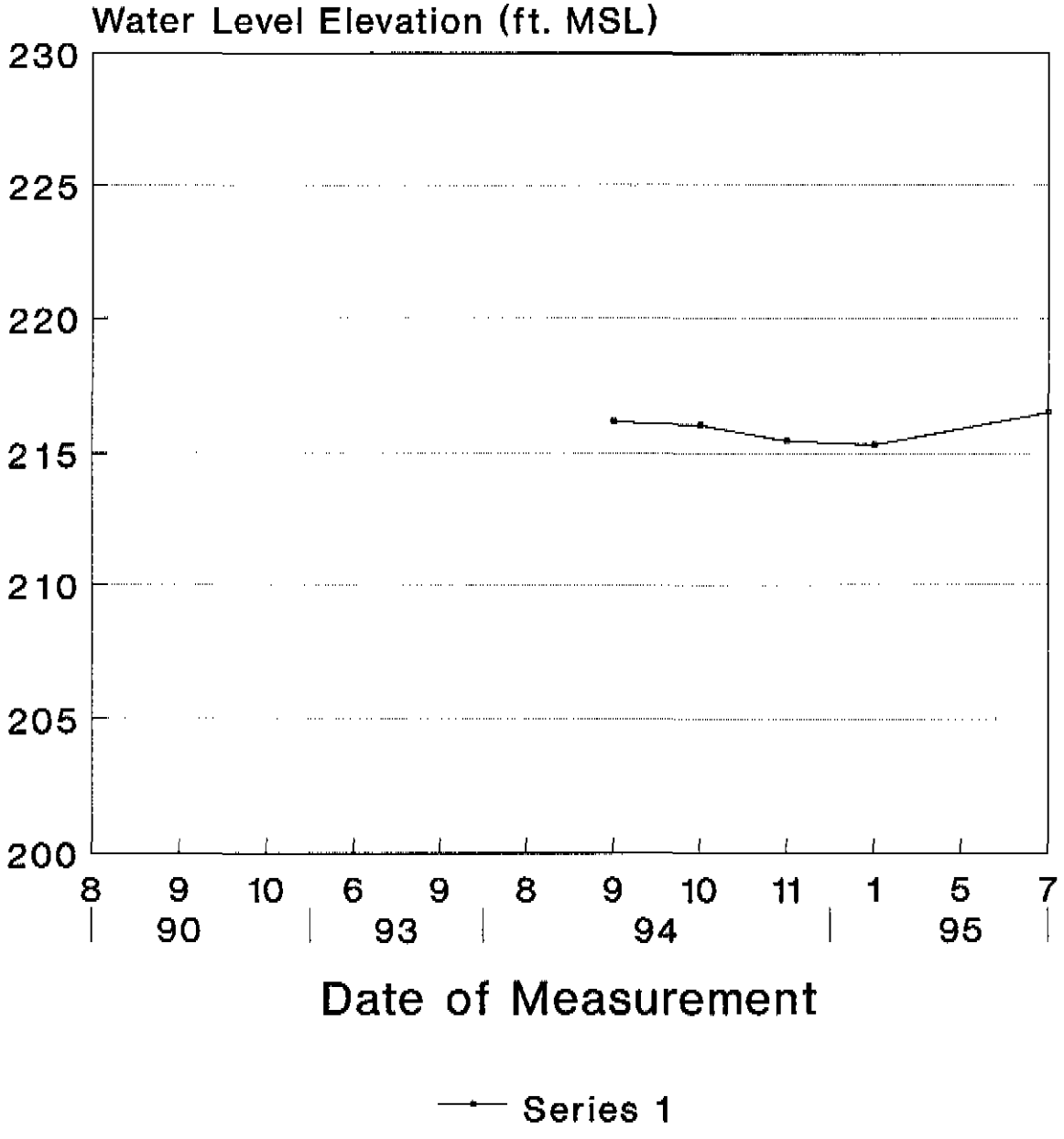

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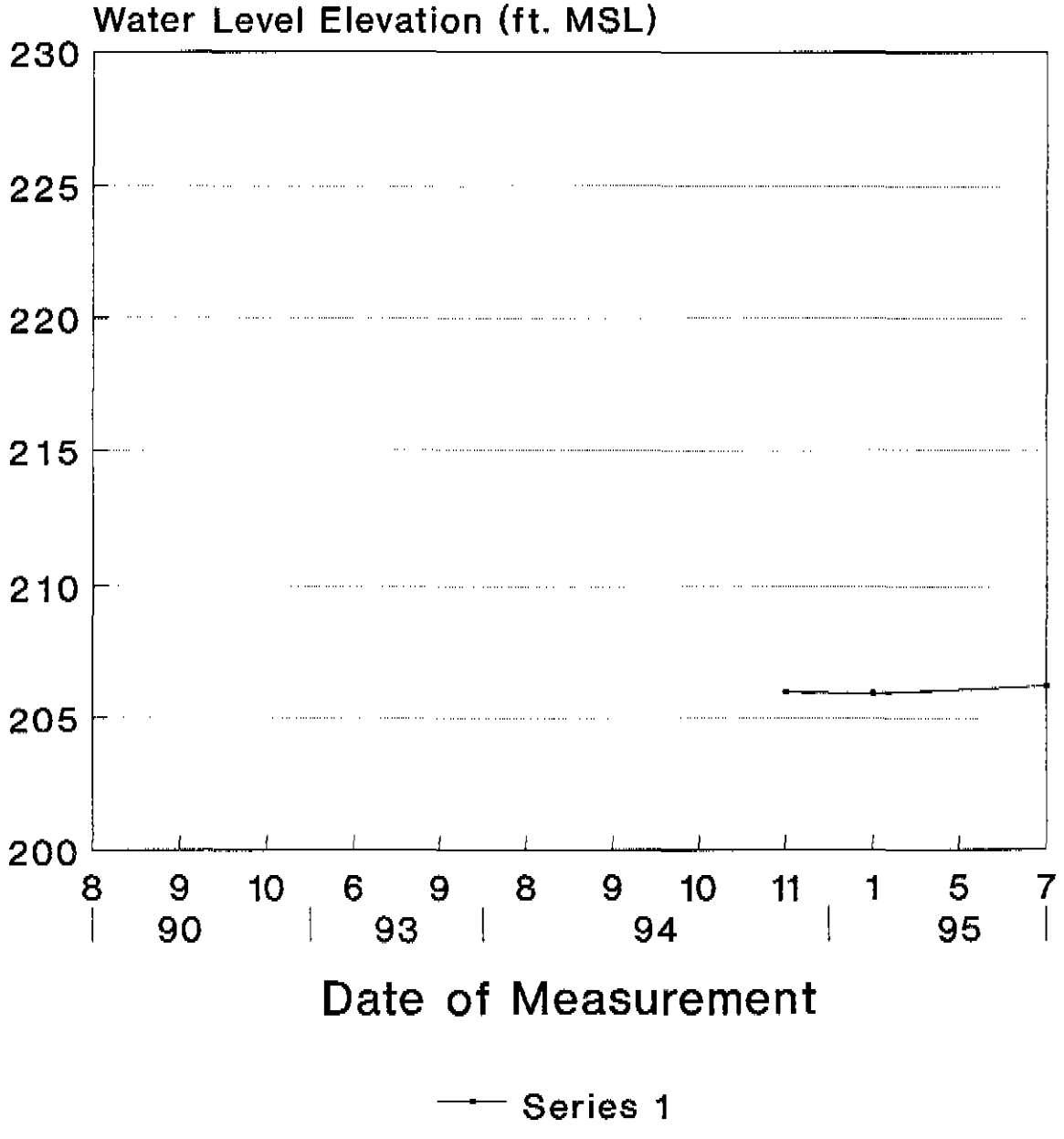

NCD 003 185 238

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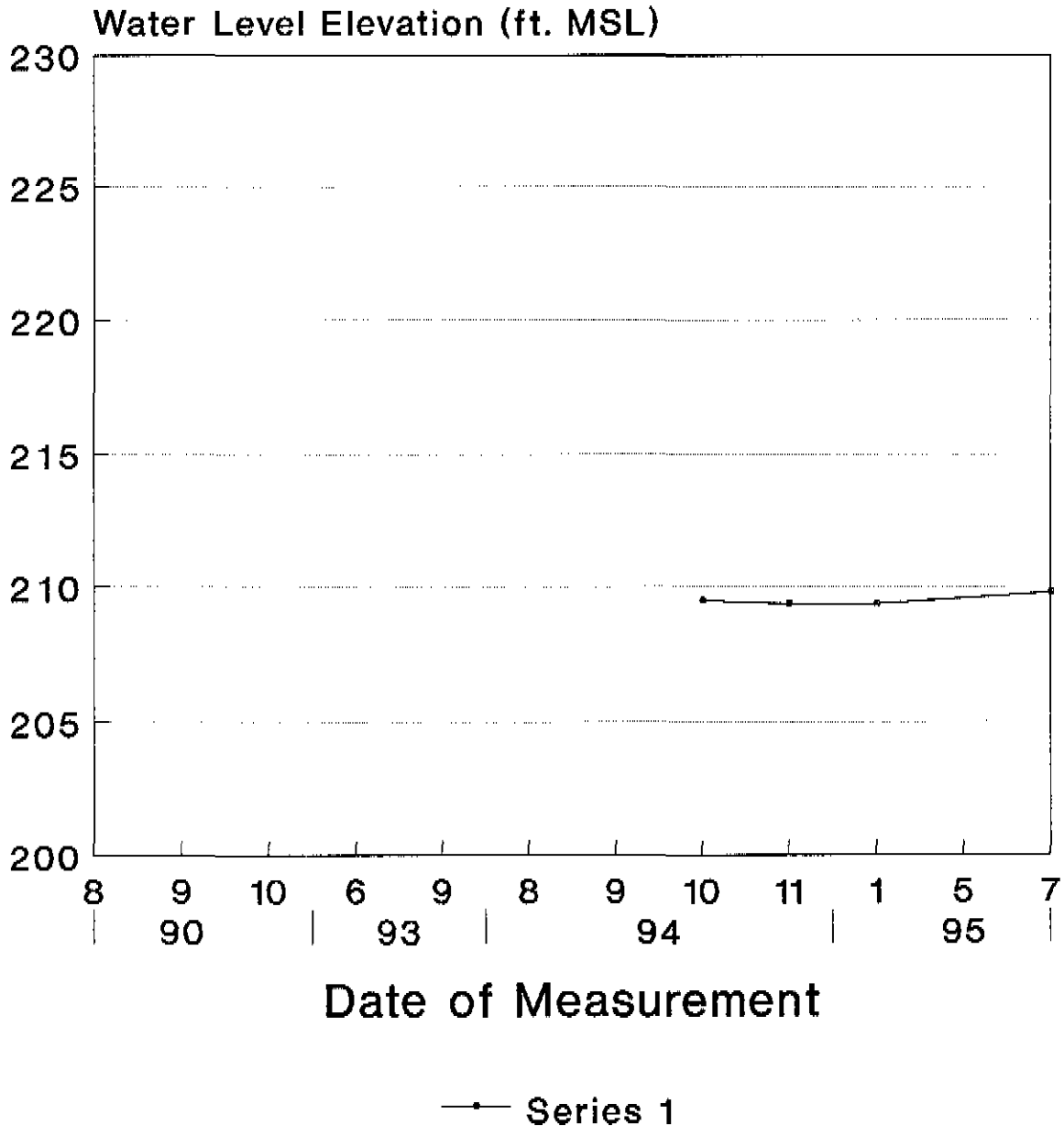
MW - 6sk



NCD 003 185 238

Alcatel Network System
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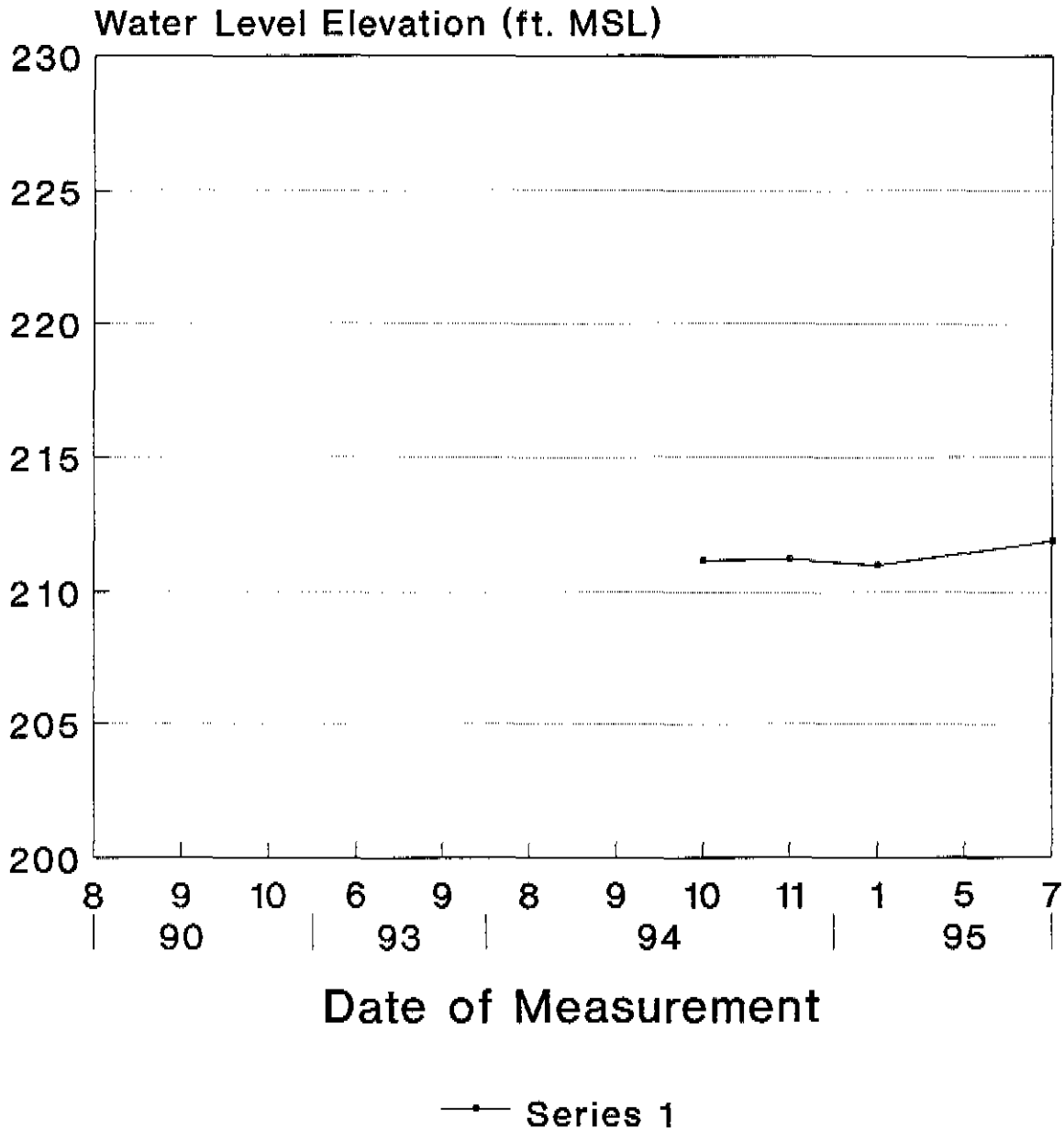
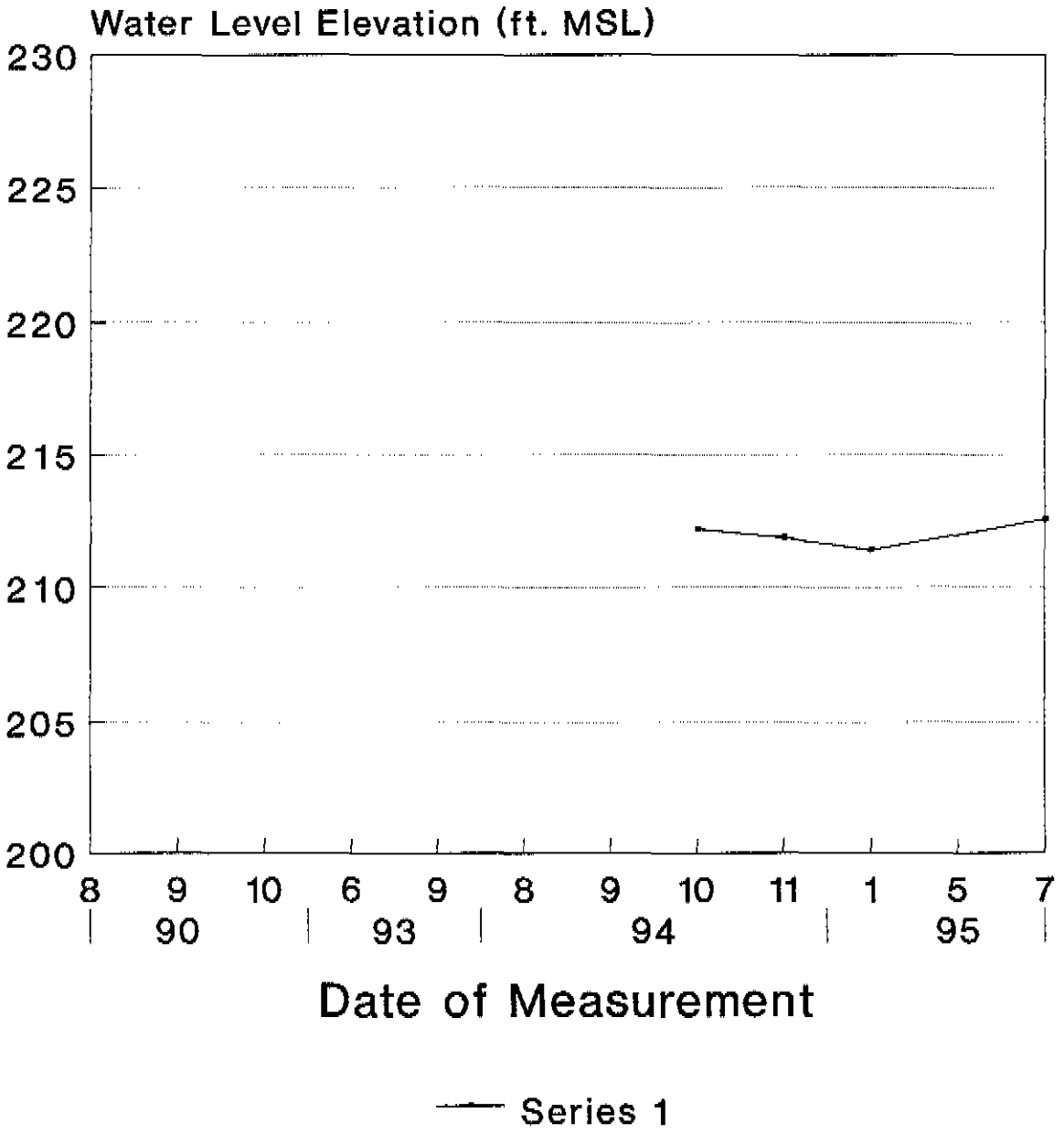


NCD 003 185 238

Alcatel Network System
MW - 7sk



NCD 003 185 238

Alcatel Network System
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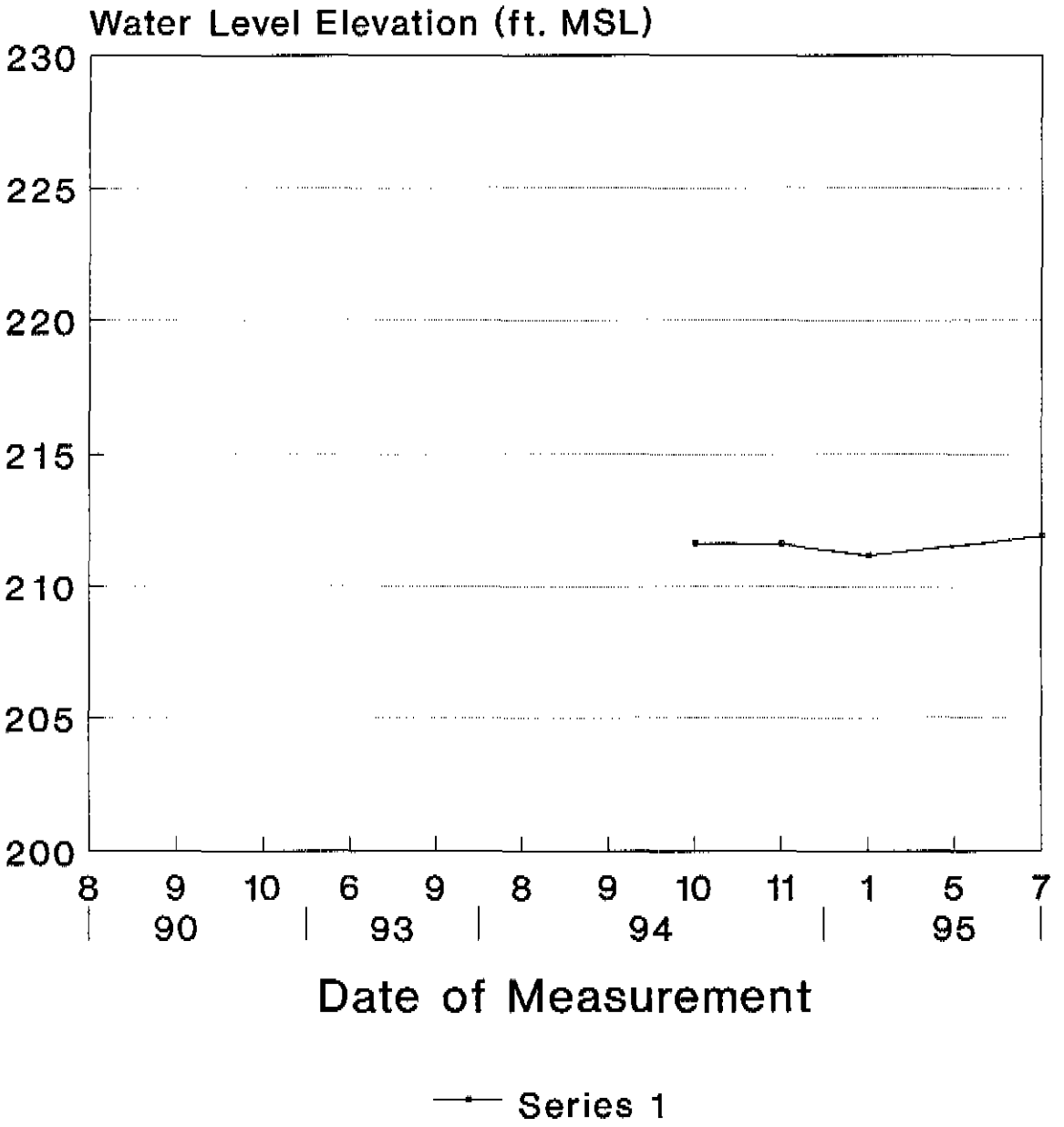
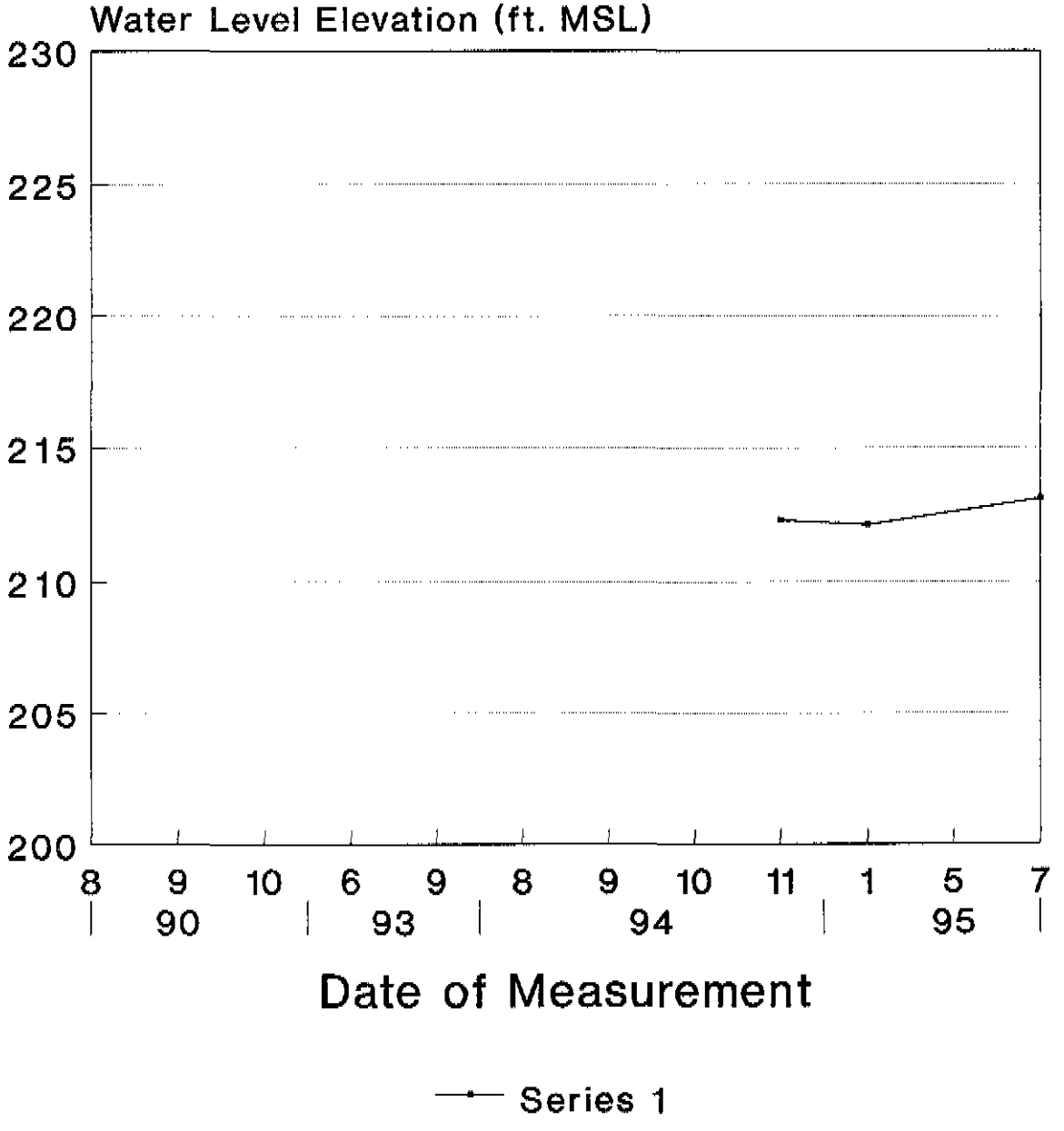


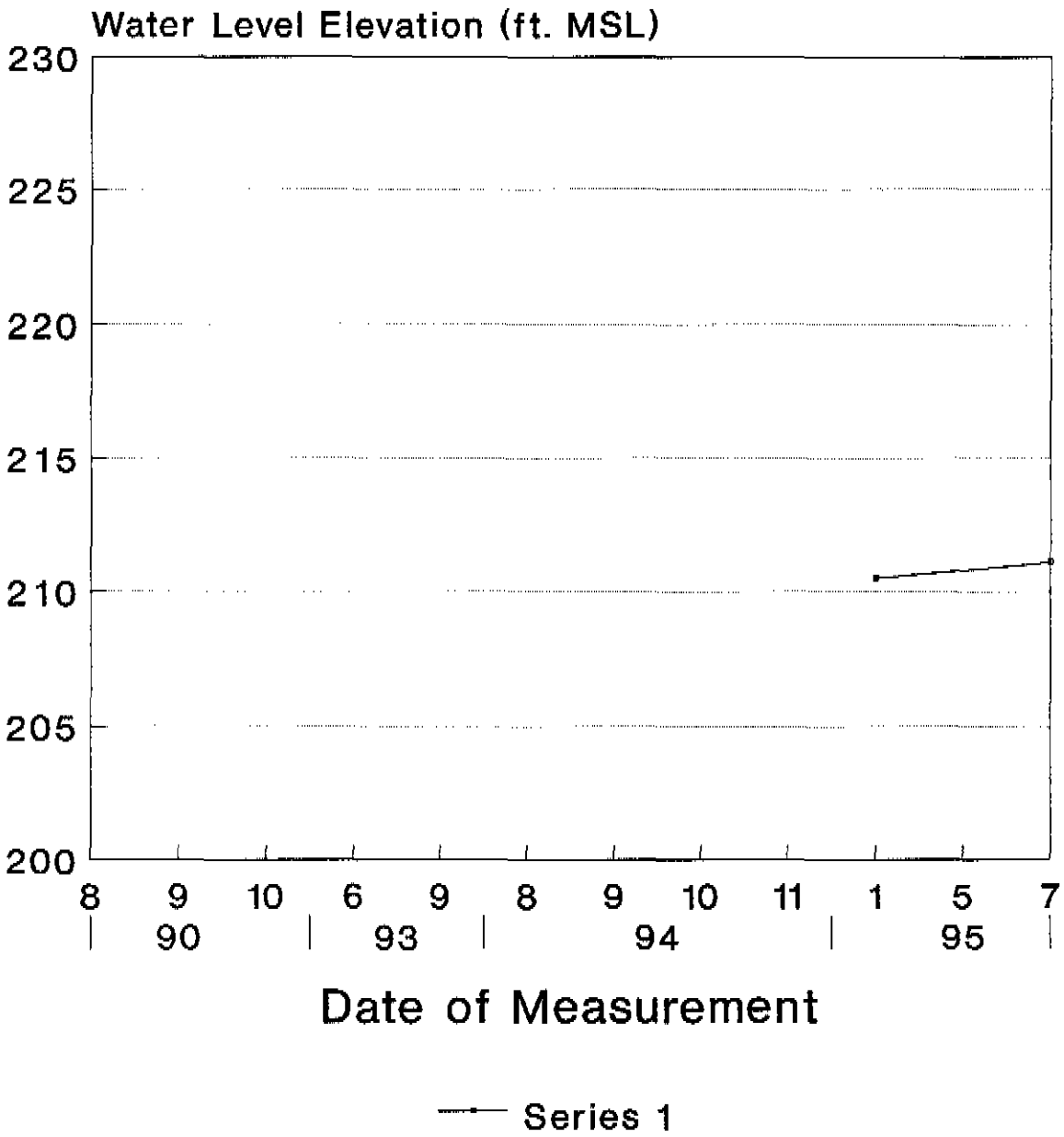
NCD 003 185 238

Alcatel Network System
MW - 8sk



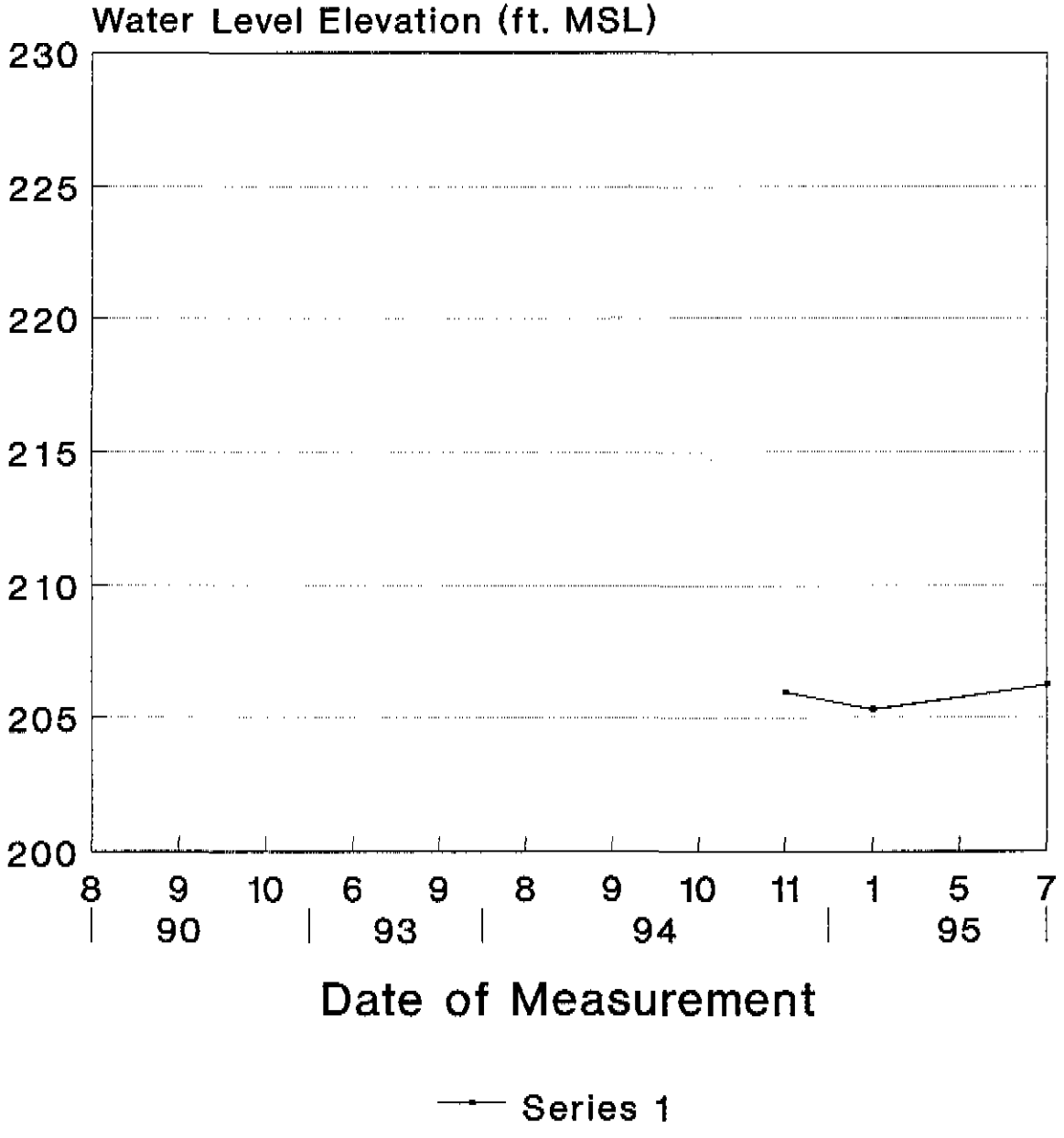
NCD 003 185 238

Alcatel Network System
MW - 8dk



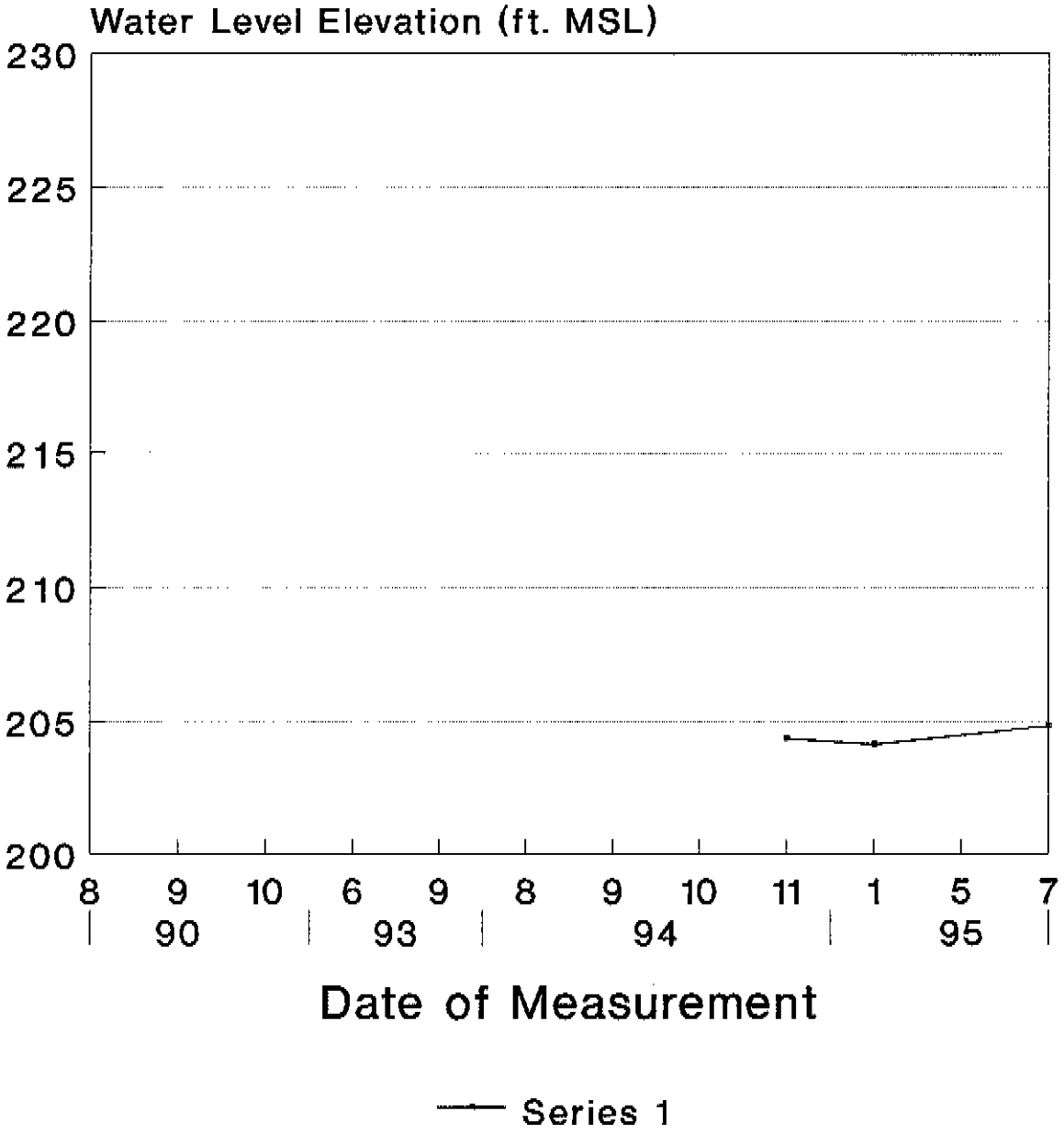
NCD 003 185 238

Alcatel Network System
MW - 9sk



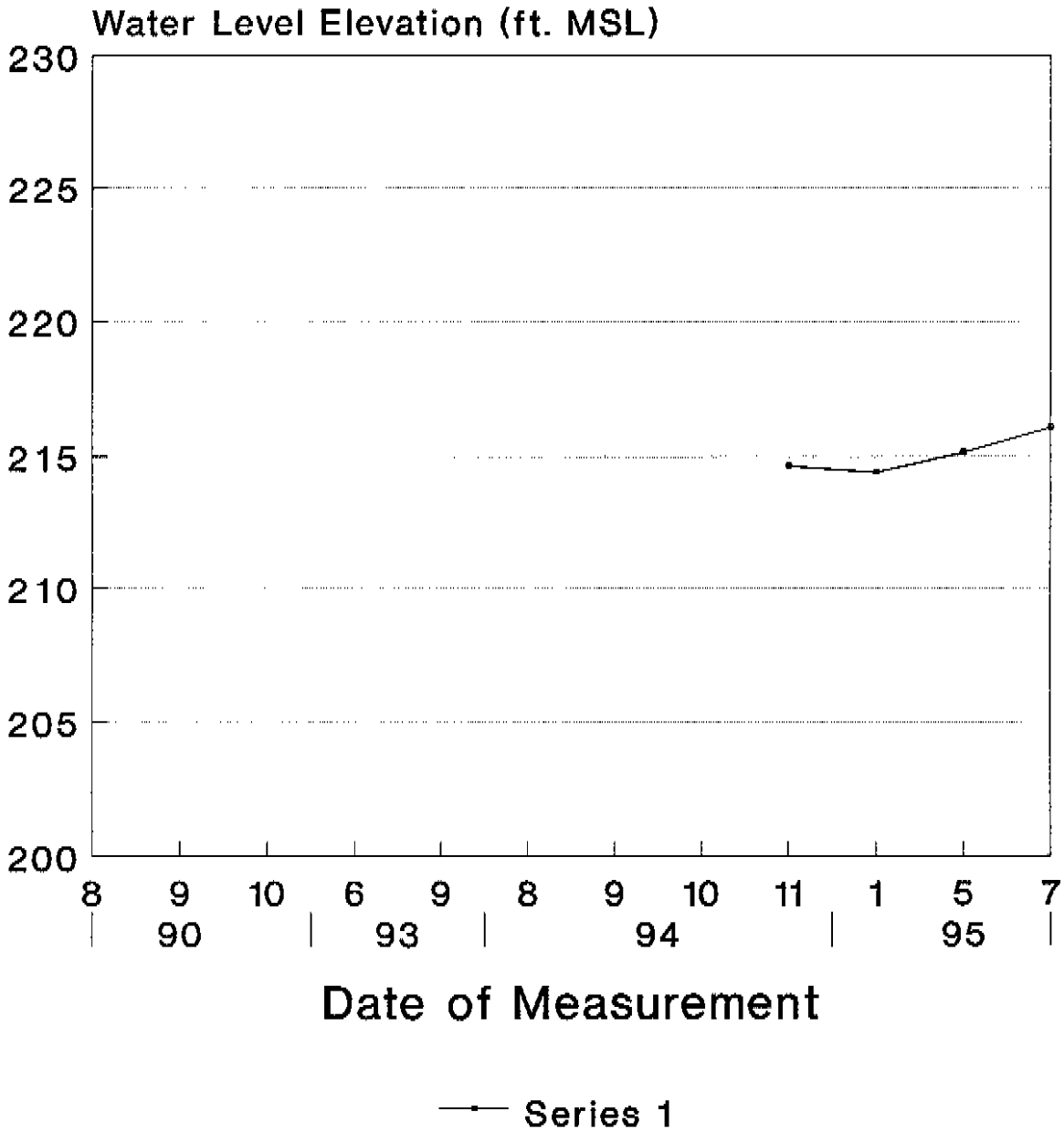
NCD 003 185 238

Alcatel Network System
MW - 9dk



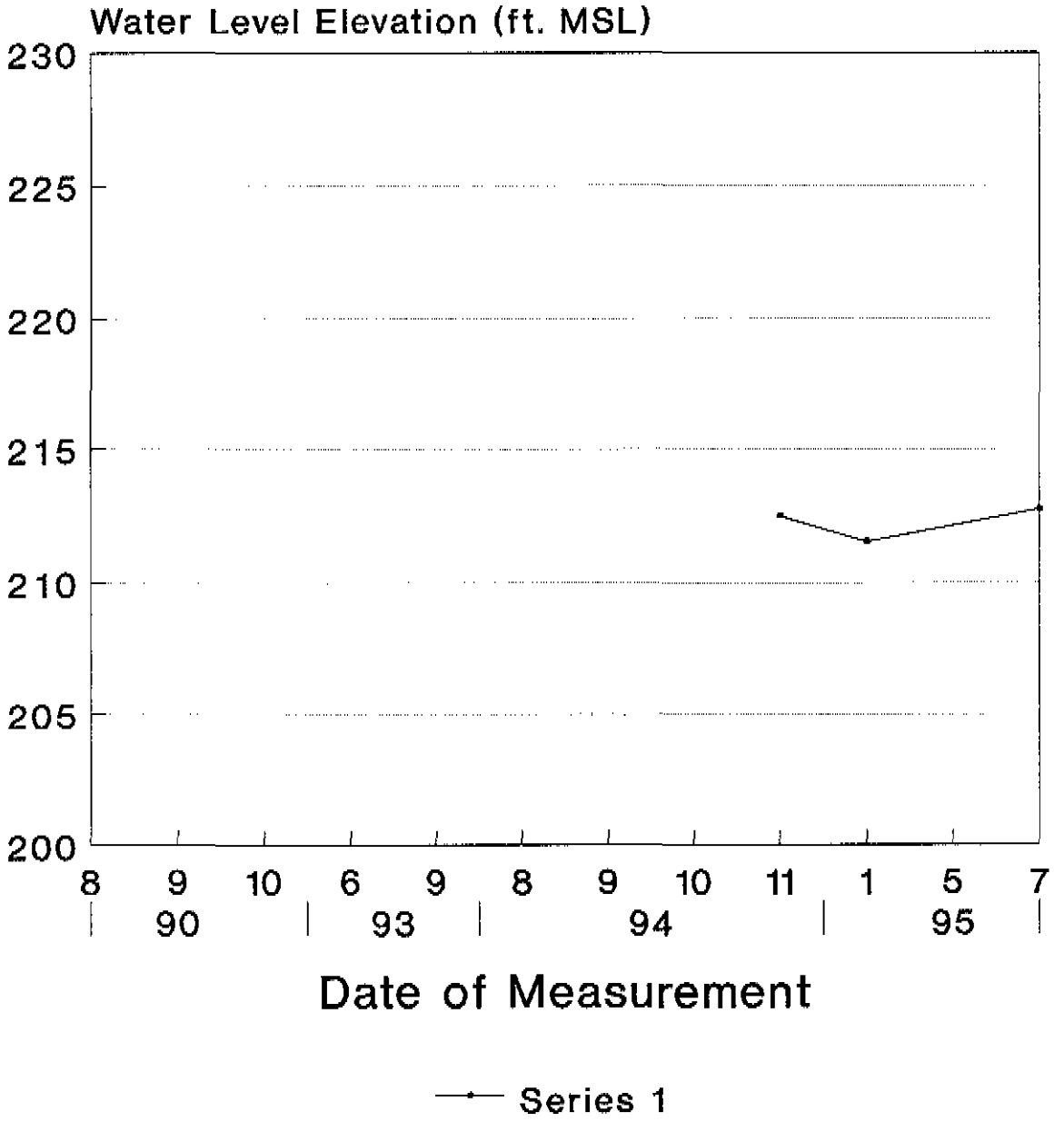
NCD 003 185 238

Alcatel Network System
RW - 1



NCD 003 185 238

Alcatel Network System
RW - 2



NCD 003 185 238

APPENDIX D

PREVIOUS REPORTS

WEGS Environmental Cleanup
Area No. 1

Report

May 1990

ENVIRONMENTAL CLEANUP
AREA NO. 1
ALCATEL NETWORK SYSTEMS
RALEIGH, NORTH CAROLINA

Prepared for:

Alcatel Network Systems
2912 Wake Forest Road
Raleigh, North Carolina 27609

Prepared By:

Westinghouse Environmental and Geotechnical Services, Inc.
3500-B Regency Parkway
P.O. Box 1308
Cary, North Carolina 27512

May 1990

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Section No.	Title	Page No.
1	INTRODUCTION	1
2	SITE ACTIVITIES	3
3	SAMPLING RESULTS	4
4	RECOMMENDATIONS	5
5	CERTIFICATION	6

FIGURES

Figure No.	Title
1	PLAN - ALCATEL NETWORK SYSTEMS
2	AREA 1

APPENDICES

Appendix	Title
A	Manifests, Customer Notification and Certifications
B	Laboratory Analytical Results

SECTION 1

INTRODUCTION

Soil contamination has been discovered in an alleyway between the main building and chemical storage sheds at Alcatel NA Network Systems Corp., 2912 Wake Forest Road, Raleigh, North Carolina. This contamination was found when Alcatel representatives removed the concrete and asphalt slab in their chemical unloading, storage, and handling area in order to replace it with a new containment slab and stormwater collection system.

Areas 1, 2 and 3 Workplans

Three areas of contamination (Areas 1, 2 and 3) have been identified, as shown on Figure 1. During the month of February, 1990, soils containing elevated levels of copper and lead were excavated from Areas 1 and 2, in accordance with the "Site Specific Work Plan for Alcatel Network Systems", submitted to the Hazardous Waste Section on February 9, 1990. Soil removal and assessment activities are continuing in the vicinity of Area 2.

Soils contaminated from the release of a solvent have been found in Area 3. A separate workplan, "Workplan for Site Assessment", has been submitted to the Hazardous Waste Section on March 2, 1990 to define the extent of soil contamination from solvent released in Area 3, and to determine the extent of any ground water contamination that may have occurred. It is anticipated that this work plan will be implemented beginning May 1990.

Area 1 Remediation Activities

The contaminated soil has been effectively excavated from Area 1. Laboratory analytical results indicate that the remaining soil contains concentrations of lead below background levels.

This report is a summary of Area 1 soil excavation activities and sampling results in support of our conclusion of the sufficiency of remedial work, and our recommendation to backfill the excavation in Area 1.

SECTION 2

SITE ACTIVITIES

Prior to any excavation activities on site, a site Specific Health and Safety Plan was prepared and read by all field and management personnel that may have had cause to visit the site.

The concrete slab covering Area 1, as shown in the attached photographs (Appendix A), was first removed. Approximately 20 tons of soil was excavated from Area 1. The final excavation is approximately 4 to 5 feet deep. Ground water was not encountered in Area 1.

Contaminated soil was transported in tarped, placarded dumptrailers, provided by Willms Trucking Company, Inc. (US EPA ID Number SCD073709297), to GSX Services of South Carolina, Inc. (US EPA ID Number SCD070375985). Copies of the applicable manifests, customer notification and certifications are presented in Appendix B.

SECTION 3

SAMPLING RESULTS

A modified EP Toxicity procedure was performed at the site to guide the excavation. Once field analysis indicated that contamination concentrations approached background levels, additional soil samples were collected and submitted to Webb Technical Group for confirmatory analysis.

Three background samples were taken from natural areas located near the north, east and south property boundaries of the Alcatel facility, respectively, at a depth of 1.5 feet. The background samples were field analyzed and a composite of the three samples was sent to Webb Technical Group for laboratory analysis for EP Toxicity. The laboratory results on the composite sample indicate background levels of 0.039 ppm for copper; less than 0.05 ppm for lead; 0.749 ppm for tin; and pH of 5.58 (see Appendix C).

To achieve sampling accuracy for the samples submitted to the laboratory for confirmatory analyses, and to ensure that every unit in the open excavated Area 1 had a theoretically equal chance of being sampled and measured, random sampling was used, per the workplan submitted to the Hazardous Waste Section on February 9, 1990. The open excavated Area 1 was divided by an imaginary grid. A series of consecutive numbers were assigned to the units of the grid and three sample points were selected through the use of a random-numbers table. The sample locations are shown on Figure 2.

Laboratory analyses for EP Toxicity indicated that samples of remaining soils in Area 1 contained concentrations of lead less than 0.05 ppm. Copper levels ranged from 1.76 to 2.96 ppm. The maximum tin concentration was found to be 0.915 ppm. The pH ranged from 5.03 to 7.34 (see Appendix C).

SECTION 4

RECOMMENDATIONS

Based on the laboratory analytical results on samples of remaining soil within Area 1, Westinghouse recommends that Area 1 be backfilled with clean fill material at this time.

Ground water was not encountered in Area 1. However, ground water quality will be monitored per the "Workplan for Site Assessment", previously submitted to the Hazardous Waste Section.

SECTION 5

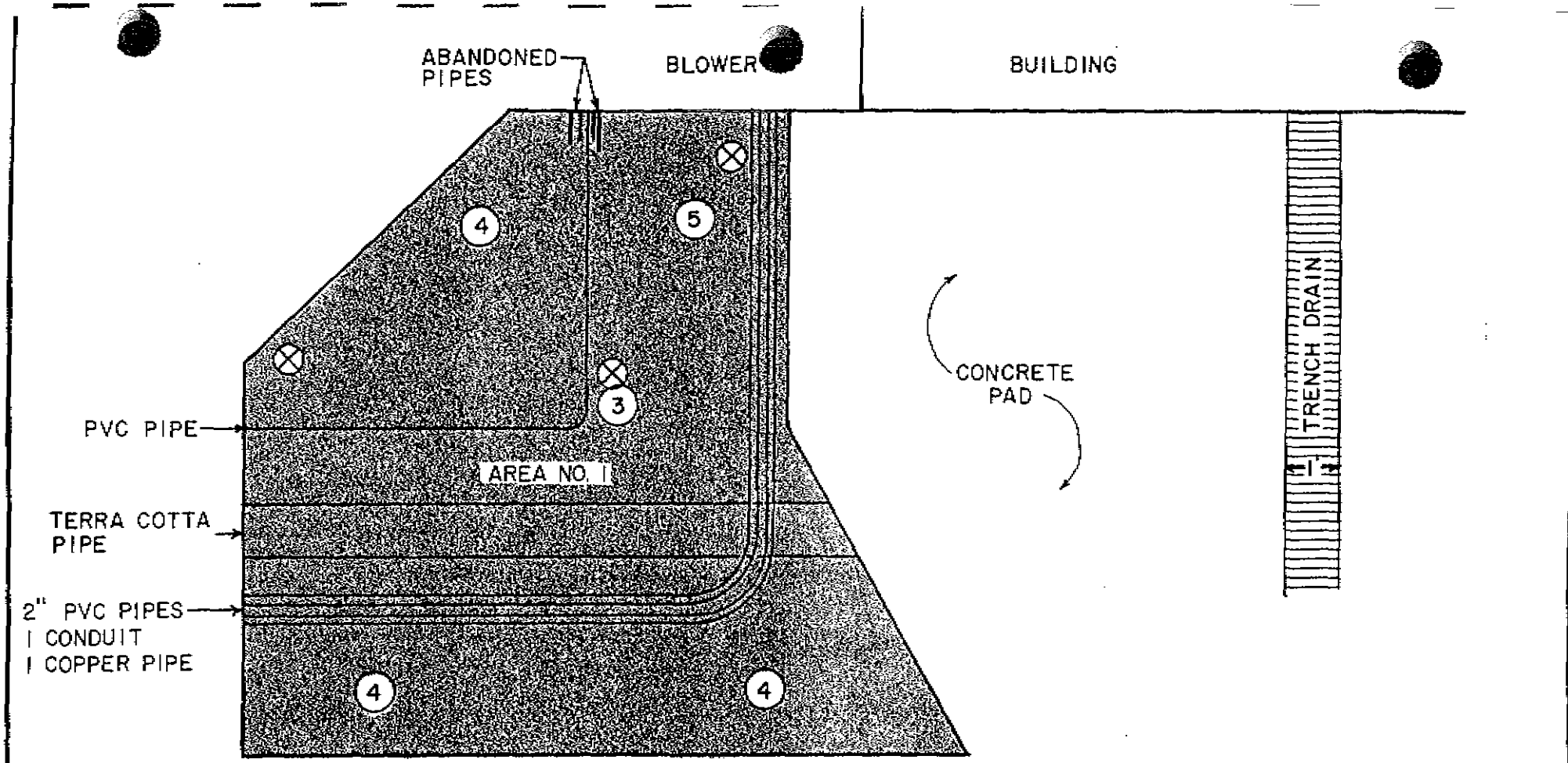
CERTIFICATION

I certify that the soil excavation activities for Area 1 described in this document located at Alcatel Network Systems, 2912 Wake Forest Road, Raleigh, North Carolina, have been conducted in accordance with the intent of the "Site Specific Work Plan for Alcatel Network Systems," submitted to the Hazardous Waste Section on February 9, 1990.

Pamela B Townsend
Signature of Registered P.E.

Pamela B. Townsend, No. 14983 (NC)

5/14/90
Date



PROJECT

AREA NO. 1
ALCATEL
RALEIGH, N. C

Westinghouse

SCALE: 1" = 3'

JOB NO: 4115-90-502

FIG NO: 2

SME-5

DUNCAN-PARNELL, INC., RALEIGH 919-828-4677

APPENDICES

APPENDIX A

Manifests, Customer Notification and Certifications

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.
2600 Bull Street, Columbia, SC 29201
Phone: (803) 734-5200
Emergency & Holidays: (803)253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved, OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 — Manifest Document No. 0 0 0 6 4
2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7

C. State Transporter's ID

D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125
10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5

G. State Facility's ID

H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. P W - 0 1 2 1 1 - 6 7 0 1
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WO# 108253
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 19 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St. S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN
Signature: Dikran V. Kabbendjian
Month Day Year: 0 2 1 4 9 0

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Joe Ravenell
Signature: Joe Ravenell #97
Month Day Year: 1 2 1 4 9 0

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space
a. 46440 lbs
b. lbs
c.
d.

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Wanda Ellis
Signature
Month Day

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00064

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes ____ No X If yes, please attach copy.

X Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

____ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ____

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

____ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ____

____ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

____ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: [illegible] DATE: Feb 14, 1990

[illegible] Environmental Safety Coordi

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.
2600 Bull Street, Columbia SC 29201
Phone: (803) 734-5200
Emergency & Holidays: (803)253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. NCD003128523 Manifest Document No. 00065
2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: SCD070329297

C. State Transporter's ID

D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125
10. U.S. EPA ID Number: SCD070375985

G. State Facility's ID

H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D008
b.					
c.					

J. Additional Descriptions for Materials Listed Above
a. PW-0121-6701
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WO# 108254
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St. S.W. Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN
Signature: Dikran V. Kabbendjian
Month Day Year: 02 14 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy W. Livingston
Signature: Tommy Livingston #8
Month Day Year: 02 14 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space
a. 4360 lbs c.
b. lbs d.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: GAIL TIMMONS
Signature: Gail Timmons
Month Day Year

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00065

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes ____ No X If yes, please attach copy.

X Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

____ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ____

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

____ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ____

____ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

____ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Dikran V. Kabbendjian DATE: Feb 14, 1990

PRINT NAME: Dikran Kabbendjian TITLE: Health & Environmental Safety Coord

APPENDIX B

Laboratory Analytical Results

eceived: 02/15/90

Webb Technical REPORT
03/14/90 12:51:10

Work Order # 90-02[illegible]8

REPORT TO
WESTINGHOUSE ENVIRONMENTAL
POST OFFICE BOX 1308
CARY, NC 27512

ATTEN MS. JILL WATSON

CLIENT WESTIN SAMPLES 1
COMPANY WESTINGHOUSE ENVIRONMENTAL
ACILITY CARY, NC

WORK ID EPTOX
TAKEN
TRANS DELIVERY, CLIENT
TYPE HAZARDOUS MATERIAL
P.O. # 03292
INV. # 0

PREPARED BY
Webb Technical Group, Inc.
4320 Delta Lake Drive
Raleigh, NC 27612

ATTEN
PHONE (919)787-3061

Mark Benfield
CERTIFIED BY

CONTACT G POWELL

We are pleased to provide this certified report of analysis.
Samples will be retained for 30 days after report is issued.
Feel free to telephone if further explanation is required.
Refer to the Work Order # in all correspondence.

NOTE: S&ME JOB NO.: 4115-90-502.

SAMPLE IDENTIFICATION

)1 SOIL BKGRD 2/9

TEST CODES and NAMES used on this report

CU	COPPER
PB AA	LEAD BY AA
PH	PH
SN AA	TIN BY AA

eceived: 02/15/90

Webb Technical REPORT

Results by Sample

Work Order # 90-02-[illegible]8

SAMPLE ID SOIL BKGRD 2/9 SAMPLE # 01 FRACTIONS: A,B

Date & Time Collected 02/09/90 Category J4115 90 502

CU	0.039 PPM	PB_AA	<0.05 PPM	PH	5.58 PH UNITS	SN_AA	0.749 PPM

Received: 03/01/90

Webb Technical REPORT
03/14/90 12:51:49

Work Order # 90-03-014

REPORT TO
WESTINGHOUSE ENVIRONMENTAL
POST OFFICE BOX 1308
CARY, NC 27512

ATTEN MR. DOUG GUILD

CLIENT WESTIN SAMPLES 3
COMPANY WESTINGHOUSE ENVIRONMENTAL
FACILITY CARY, NC

WORK ID EPTOX
TAKEN
TRANS DELIVERY, CLIENT
TYPE HAZARDOUS MATERIAL
P.O. # 03169
INV. # 0

PREPARED BY
Webb Technical Group, Inc.
4320 Delta Lake Drive
Raleigh, NC 27612

ATTEN
PHONE (919)787-3061

Mark Benfield
CERTIFIED BY

CONTACT G POWELL

We are pleased to provide this certified report of analysis.
Samples will be retained for 30 days after report is issued.
Feel free to telephone if further explanation is required.
Refer to the Work Order # in all correspondence.

SAMPLE IDENTIFICATION

01 AREAL SOIL #AA 2/28/90
02 AREAL SOIL #BB 2/28/90
03 AREAL SOIL #CC 2/28/90

TEST CODES and NAMES used on this report

CU	COPPER
PB AA	LEAD BY AA
PH	PH
SN AA	TIN BY AA

eceived: 03/01/90

Webb Technical REPORT
Results by Sample

Work Order # 90-03[illegible]14

SAMPLE ID AREAL SOIL #AA 2/28/90 SAMPLE # 01 FRACTIONS: A,B
Date & Time Collected 02/28/90 Category

CU	PB_AA	PH	SN_AA
2.96 PPM	<0.05 PPM	5.03 PH UNITS	0.672 PPM

SAMPLE ID AREAL SOIL #BB 2/28/90 SAMPLE # 02 FRACTIONS: A,B
Date & Time Collected 02/28/90 Category

CU	PB_AA	PH	SN_AA
1.76 PPM	<0.05 PPM	6.63 PH UNITS	0.596 PPM

SAMPLE ID AREAL SOIL #CC 2/28/90 SAMPLE # 03 FRACTIONS: A,B
Date & Time Collected 02/28/90 Category

CU	PB_AA	PH	SN_AA
2.32 PPM	<0.05 PPM	7.34 PH UNITS	0.915 PPM

WEGS Environmental Cleanup
Area No. 2

Report

August 1990

ENVIRONMENTAL CLEANUP
AREA NO. 2
ALCATEL NA NETWORK SYSTEMS CORP.
RALEIGH, NORTH CAROLINA

Prepared For:

Alcatel NA Network Systems Corp.
2912 Wake Forest Road
Raleigh, North Carolina 27609

Prepared By:

Westinghouse Environmental and Geotechnical Services, Inc.
3500-B Regency Parkway
P.O. Box 1308
Cary, North Carolina 27512

August 1990

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2	SITE ACTIVITIES	3
3	SAMPLING RESULTS	6
4	CONCLUSIONS AND RECOMMENDATIONS	8
5	CERTIFICATION	9

FIGURES

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1	Plan - Alcatel Network Systems
2	Area No. 2 Sample and Sump Boring Locations

TABLES

Table No.	Title
1	Lead Contaminated Soil Shipment Summary
2	Sampling Results Area No. 2 Open Excavation
3	Soil Boring Sample Results

APPENDICES

Appendix	Title
A	Manifests, Customer Notification and Certifications
B	Laboratory Analytical Results
C	Boring Logs

SECTION 1

INTRODUCTION

Soil contamination has been discovered in an alleyway between the main building and chemical storage sheds at Alcatel NA Network Systems Corp., 2912 Wake Forest Road, Raleigh, North Carolina. This contamination was found when Alcatel representatives removed the concrete and asphalt slab in their chemical unloading, storage, and handling area in order to replace it with a new containment slab and stormwater collection system.

Areas 1, 2 and 3 Workplans

Three areas of contamination (Area No. 1, No. 2 and No. 3) have been identified, as shown on Figure 1. During the months of February and March, 1990, soils containing elevated levels of copper and lead were excavated from Area No. 1 and No. 2, in accordance with the "Site Specific Work Plan for Alcatel Network Systems", submitted to the Hazardous Waste Section on February 9, 1990. A final report summarizing the environmental cleanup activities for Area No. 1 was submitted to the Hazardous Waste Section on May 22, 1990.

Soils contaminated with solvents have been found in Area No. 3. A separate workplan, "Workplan for Site Assessment", was submitted to the Hazardous Waste Section on March 2, 1990 to define the extent of soil contamination from solvent released in Area No. 3, and to determine the extent of any ground water contamination that may have occurred. This Assessment commenced on May 19, 1990.

Area No. 2 Remediation Activities

The majority of the contaminated soil has been effectively removed from Area No. 2 (see Figure 2). Field analytical results indicate that isolated contamination, which is currently inaccessible by conventional removal techniques, may still exist in the north "alcove" of Area No. 2, between the concrete sumps and chemical storage sheds, as well as under the terra cotta pipe.

A limited soil sampling program was performed around the concrete sumps adjacent to Area No. 2 to determine if these sumps were the source of the contamination. The laboratory analytical results from this soil sampling investigation do not support the conclusion that releases from the concrete sumps were the source of contamination.

This report is a summary of Area No. 2 soil excavation activities and sampling results in support of our conclusion, that contaminated soils have been removed to the extent possible with conventional removal techniques, and that no further action should be undertaken until results from the groundwater investigation, part of the ongoing implementation of the "Workplan for Site Assessment", are available.

Alcatel is in the process of closing down their printed circuit board manufacturing operation, and removing the associated equipment. They will be converting the area in the vicinity of the alleyway to other uses. When this conversion is completed, the possible areas of isolated contamination will become more accessible. For example, the need for the terra cotta pipe which transports wastewaters to the wastewater treatment plant, will become less critical. After the conversion activities are finished, if deemed necessary, the terra cotta pipe could be removed to access possible isolated contamination underneath.

SECTION 2

SITE ACTIVITIES

Prior to any excavation activities on site, a Site Specific Health and Safety Plan was prepared and read by all field and management personnel that may have had cause to visit the site.

Soil Removal

Unclassified excavation was performed in Area No. 2 to remove approximately 104 tons of contaminated soil. (Approximately 20 tons of contaminated soil was removed from Area No. 1.) Westinghouse employed standard construction equipment and techniques to remove the material to bedrock. Bedrock was encountered at approximately 9 feet.

Water was encountered approximately six feet below grade in the north "alcove" of Area No. 2 between the sumps and the chemical storage sheds. The water flowed under the terra cotta pipe into the open excavation (see Figure 2). A water collection sump was constructed in the eastern quadrant of the open excavation. The water was pumped by Alcatel representatives to Alcatel's wastewater treatment plant.

Contaminated soil was transported in tarped, placarded dumptrailers, provided by Willms Trucking Company, Inc. (US EPA ID Number SCD073709297), to GSX Services of South Carolina, Inc. (US EPA ID Number SCD070375985). A shipment summary for Area No. 1 and No. 2 is presented in Table 1. Copies of the applicable manifests, customer notification and certifications are presented in Appendix A.

Field Analysis

A modified EP Toxicity procedure was performed at the site to guide the excavation. Once field analysis indicated that contamination concentrations approached background levels, additional soil samples were collected and submitted to an independent laboratory for confirmatory analysis.

Field analysis indicated that isolated areas of soil contamination may be present under the terra cotta pipe and in the north "alcove" of Area No. 2, between the sumps and chemical storage sheds (see Figure 2). These isolated areas are currently inaccessible by conventional removal techniques.

Soil Sampling at Sumps

A limited soil sampling program was performed around the concrete sumps adjacent to Area No. 2 to determine if these sumps were the source of the contamination. Six soil borings, B-1 through B-6, were advanced around the perimeter of the concrete sumps. The borings were drilled with a Mobile Minuteman drill using two-inch diameter solid augers. Locations of each boring are shown on Figure 2. Logs of each boring are provided in Appendix C.

The soils around the sumps consist of slightly clayey silts (reworked residual soil) and gravel fill. No bedrock was encountered in the completed borings. Water was encountered in borings B-3, B-4, B-5, and B-6.

Typical sampling in each borehole consisted of obtaining composite samples of the soil cuttings from the auger flights at depths of three feet to six feet, six feet to nine feet, and nine feet to twelve feet. The composite soil samples from boring B-5 were taken at depths of three feet to five feet and five feet to six feet six inches and from boring B-6 at depths of three feet to six feet and six feet to seven feet three inches. Soil cuttings were collected using

decontaminated spoons and containers and placed in a cooler chilled to approximately 4° Centigrade until delivery to the laboratory. Custody of the samples was maintained by Westinghouse until their delivery to Industrial and Environmental Analysts, Inc. of Cary, North Carolina.

Augers were steam cleaned prior to and between borings to prevent potential cross contamination.

SECTION 3

SAMPLING RESULTS

Background Samples

Three background samples were taken from natural areas located near the north, east and south property boundaries of the Alcatel facility, respectively, at a depth of 1.5 feet. The background samples were field analyzed and a composite of the three samples was sent to Webb Technical Group for laboratory analysis for EP Toxicity. The laboratory results on the composite sample indicate background levels of 0.039 ppm for copper; less than 0.05 ppm for lead; 0.749 ppm for tin; and pH of 5.58 (see Appendix B).

Area No. 2 Open Excavation

To achieve sampling accuracy for the samples submitted for laboratory analyses, and to ensure that every unit in the open excavated Area No. 2 had a theoretically equal chance of being sampled and measured, random sampling was used, per the workplan submitted to the Hazardous Waste Section on February 9, 1990. The open excavated Area No.2 was divided by an imaginary grid. A series of consecutive numbers were assigned to the units of the grid and a total of 4 sample points were selected through the use of a random-numbers table. The sample locations are shown on Figure 2.

Referring to Table 2, laboratory results on the four samples from the Area No. 2 open excavation indicated that concentrations of copper ranged from 1.03 to 2.40 mg/L; levels for lead ranged from 0.055 to 2.42 mg/L, and levels for tin were less than 1.0 mg/L. PH ranged from 4.00 to 6.00. (See also Appendix B.)

Sampling at Sumps

The deepest soil samples collected from each of the six borings were analyzed for lead, chromium, copper and tin using the Toxic Characteristic Leaching Procedure (TCLP). These sampling points corresponded to the estimated locations of the interface of PVC pipes (4" diameter) with the concrete sumps, representing the most likely points of soil contamination.

Referring to Table 3, concentrations of chromium were found to be less than 0.03 mg/L for all six boring samples. Lead levels ranged from less than 0.005 to 0.53 mg/L. Tin was found to be present at concentrations of less than 1.0 mg/L. Copper concentrations ranged from less than 0.02 to 1.3 mg/L. PH ranged from 6.8 to 8.0. The analytical results are provided in Appendix B.

SECTION 4

CONCLUSIONS AND RECOMMENDATIONS

Based on the laboratory analytical results of accessible remaining soil within Area No. 2, the majority of the contaminated soil has been removed. Contamination levels in accessible remaining soils are well below the toxicity characteristic regulatory levels. Westinghouse, therefore, recommends that no further removal action be performed at this time.

Isolated, and currently inaccessible areas of contamination may exist directly under the terra cotta pipe, as well as in the north alcove of Area No. 2, between the concrete sumps and chemical storage sheds.

Monitoring wells will be installed to investigate the ground water quality per the "Workplan for Site Assessment." Consideration will be given to additional remedial activities after review of the data collected during the groundwater investigation.

SECTION 5

CERTIFICATION

I certify that the soil excavation activities for Area No. 2 described in this document located at Alcatel Network Systems, 2912 Wake Forest Road, Raleigh, North Carolina, have been conducted in accordance with the intent of the "Site Specific Work Plan for Alcatel Network Systems," submitted to the Hazardous Waste Section on February 9, 1990.

Pamela B Townsend

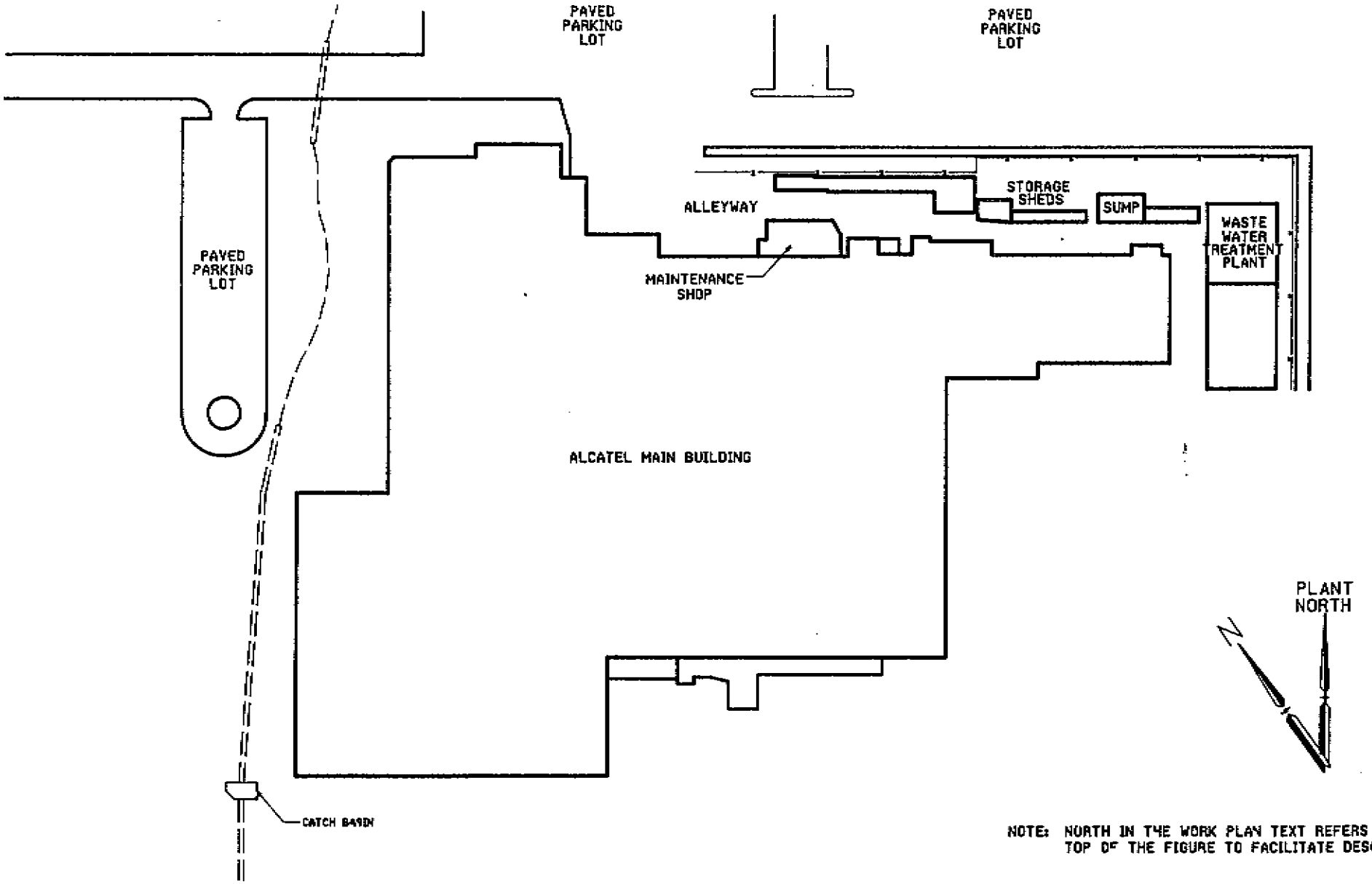
Signature of Registered P.E.

Pamela B. Townsend, No. 14983 (NC)

8/15/90

Date

(SEAL)

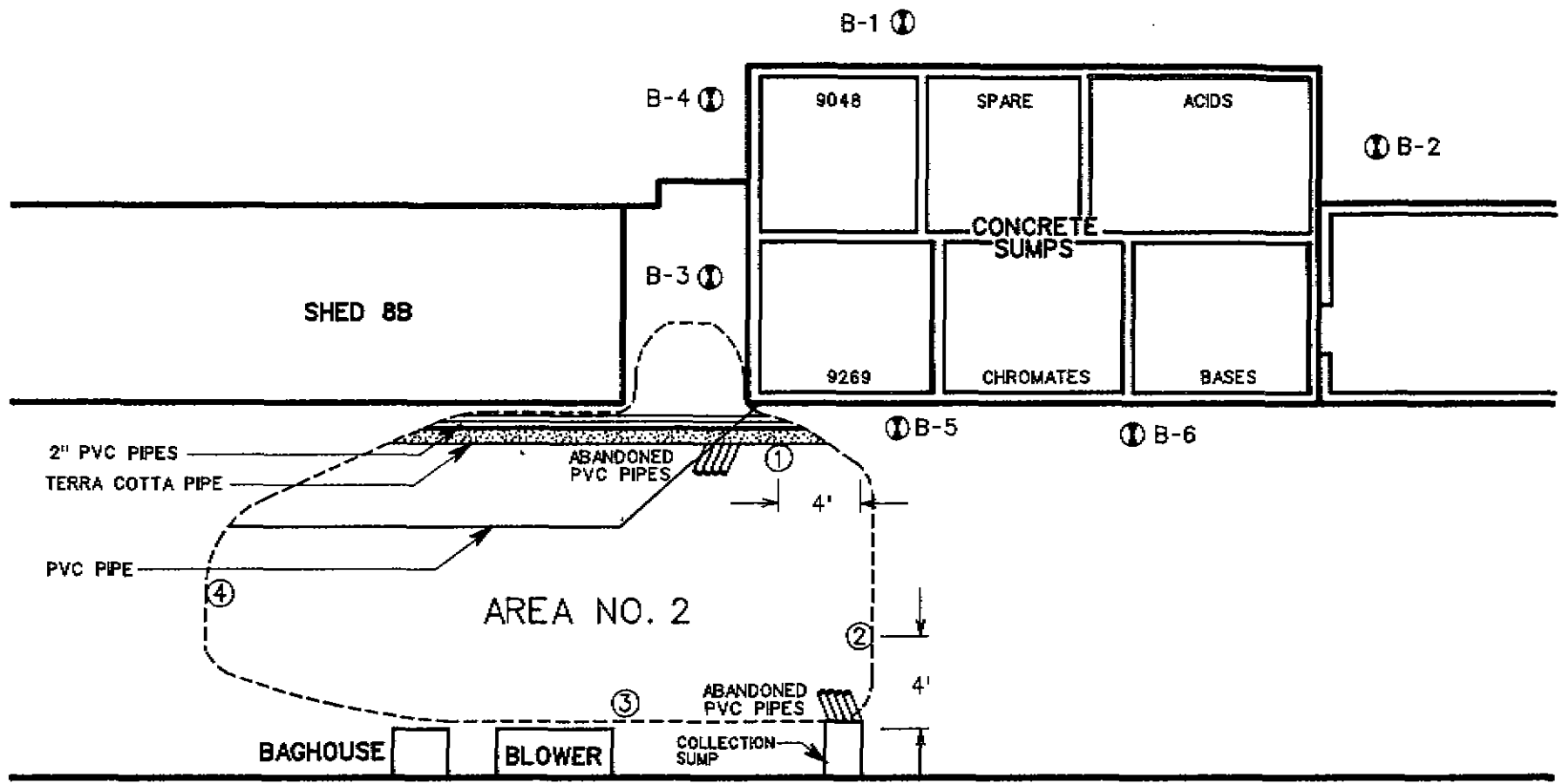


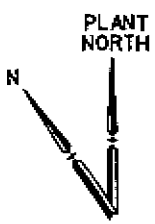
NOTE: NORTH IN THE WORK PLAN TEXT REFERS TO THE TOP OF THE FIGURE TO FACILITATE DESCRIPTIONS

Westinghouse Environmental And Geotechnical Services, Inc.

ALCATEL NETWORK SYSTEMS
RALEIGH, N.C.

PROJECT NO: 4115-90-502	FIGURE: 1
CHECKED BY: PBT	SCALE: 1"=100'
DRAWN BY: DCW	DATE: 8-14-90





MAIN BUILDING

NOTE: NORTH IN THE TEXT REFERS TO THE TOP OF THE FIGURE TO FACILITATE DESCRIPTIONS

KEY

1. SAMPLE NO. 1 - DEPTH 5'-0"
2. SAMPLE NO. 2 - DEPTH 5'-0"
3. SAMPLE NO. 3 - CORNER OF BLOWER DEPTH 8'-0"
4. SAMPLE NO. 4 - DEAD CENTER, DEPTH 6'-0"

B SOIL BORING LOCATIONS

Westinghouse Environmental And Geotechnical Services, Inc.

AREA NO. 2
ALCATEL NETWORK SYSTEMS
RALEIGH, N.C.

PROJECT NO: 4115-90-502	2
CHECKED BY: PBT	SCALE: 1" = 10'
DRAWN BY: DCW	DATE: 7-20-90

TABLE 1
LEAD CONTAMINATED SOIL SHIPMENT SUMMARY
AREA NO. 1 & NO. 2

MANIFEST DOCUMENT NO.	SHIPMENT DATE	WEIGHT (lbs)
00064	02-14-90	46,940
00065	02-14-90	43,600
00066	02-16-90	53,500
00067	03-08-90	33,980
00068	03-23-90	34,020
00069	03-23-90	35,040
TOTAL		247,080

TABLE 2
SAMPLING RESULTS
AREA NO. 2 OPEN EXCAVATION

SAMPLE NO.	COPPER	LEAD	TIN	pH
Background	0.039	<0.05	0.749	5.58
1	1.03	0.093	<1.0	4.12
2	1.54	0.356	<1.0	6.00
3	1.73	0.055	<1.0	4.00
4	2.40	2.42	<1.0	4.75

NOTE: Metals analysis was performed by EP TOX and are reported in mg/L

TABLE 3
SOIL BORING SAMPLE RESULTS
AT CONCRETE SUMPS

BORING	CHROMIUM	COPPER	LEAD	TIN	pH
B–1	<0.03	<0.02	<0.005	<1.0	7.4
B–2	<0.03	<0.02	<0.005	<1.0	6.9
B–3	<0.03	1.1	0.040	<1.0	8.0
B–4	<0.03	1.3	0.28	<1.0	7.5
B–5	<0.03	0.45	0.53	<1.0	7.6
B–6	<0.03	0.47	0.01	<1.0	6.8

NOTE: Metals analysis was performed by TCLP and are reported in mg/L.

APPENDICES

APPENDIX A

Manifests, Customer Notification and Certifications

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.
2600 Bull Street, Columbia, SC 29201
Phone: (803) 734-5200
Emergency & Holidays: (803)253-6488

ON-SITE INSPECTION
S.C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 — Manifest Document No. 0 0 0 6 4
2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address: Alcatel Network Systems Corporation, 2912 Wake Forest Road, Raleigh, NC 27609, ATTN: Mr. Dikran Kabbendjian
4. Generator's Phone (919) 850-6248

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7

C. State Transporter's ID
D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: GSX Services of South Carolina, Inc., Rt. 1, Box 255, Pinewood, SC 29125
10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5

G. State Facility's ID
H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. P W - 0 1 2 1 1 - 6 7 0 1
b. - -
c. - -
d. - -

K. Handling Codes for Wastes Listed Above

15. Special Handing Instructions and Additional Information
WO# 108253
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN — Signature: Dikran V. Kabbendjian — Month Day Year: 02 14 90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Joe Ravenell — Signature: Joe Ravenell #94 — Month Day Year: 02 14 90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

Discrepancy Indication Space
a 46940 lbs. c lbs.
b lbs. d lbs.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Wende Elliott — Signature: Wende Elliott — Month Day Year

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00064

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes ___ No X If yes, please attach copy.

x Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

___ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ___

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

___ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ___

___ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

___ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

___ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Edward J. Kalbendyan DATE: Feb 14, 1990

Environmental Safety Coordina

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.
2600 Bull Street, Columbia, SC 29201
Phone: (803) 734-5200
Emergency & Holidays: (803)253-6488

ON-SITE INSPECTION
S.C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 — Manifest Document No. 0 0 0 6 5
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7
C. State Transporter's ID
D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125
10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5
G. State Facility's ID
H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					

J. Additional Descriptions for Materials Listed Above
a. PW - 0 1 2 1 1 - 6 7 0 1
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WO# 108254
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN
Signature: Dikran V. Kabbendjian
Month Day Year: 02 14 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy Livingston
Signature: Tommy Livingston #8
Month Day Year: 02 14 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space
a. 43600 lbs. c. lbs.
b. lbs. d. lbs.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: GAIL TIMMONS
Signature: Gail Timmons
Month Day Year: 02 14 90

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00065

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes ____ No X If yes, please attach copy.

x Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

____ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ____

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

____ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ____

____ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

____ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Dikran V Kabbendjian DATE: Feb 14, 1990

Dikran Kabbendjian

TITLE: Health & Environmental Safety Coordi

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt
2600 Bull St. Columbia SC 29201
Phone (803) 734-5200
Emergency & Holidays: (803)253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 — Manifest Document No. 00016
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7
C. State Transporter's ID
D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125
10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5
G. State Facility's ID
H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					

J. Additional Descriptions for Materials Listed Above
a. PW — 0 1 2 1 1 — 6 7 0 1
b. — —
c. — —
d. — —

K. Handling Codes for Wastes Listed Above

15. Special Handing Instructions and Additional Information
WO# 108255
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St. S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN — Signature: Dikran V. Kabbendjian — Month Day Year: 02 16 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tommy W. Livingston — Signature: Tommy W. Livingston #8 — Month Day Year: 02 16 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

Discrepancy Indication Space
a. 53500 lbs. c. lbs
b. lbs d. lbs

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: GAIL TIMMONS — Signature — Month Day Year

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00066

EPA Hazardous Waste Number(s): (D008) ( )

Waste Analysis Available? Yes ___ No x If yes, please attach copy.

x Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

___ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ___

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

___ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ___

___ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

___ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

___ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Dikran Kabbendjian DATE: Feb 16, 1990

PRINT NAME: Dikran Kabbendjian TITLE: Health & Environmental Safety Coordinator

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt
2600 Bull Street, Columbia, SC 29201
Phone (803) 734-5200
Emergency & Holidays (803) 253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 Manifest Document No. 000617
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7
C. State Transporter's ID
D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125
10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5
G. State Facility's ID
H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. PW - 0 1 2 1 1 - 6 7 0 1
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WO# 109661
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN
Signature: Dikran V. Kabbendjian
Month Day Year: 03 08 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jay F. Hoffenberg
Signature:
Month Day Year: 03 08 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

Discrepancy Indication Space
a 33980 lbs. c lbs.
b lbs. d lbs.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: GAIL TIMMONS
Signature: Gail Timmons
Month Day Year: 03 09 90

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00067

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes __ No x If yes, please attach copy.

x Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

____ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ____

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

____ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ____

____ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

____ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Dikran Kabbendjian DATE: 3/8/90

PRINT NAME: Dikran Kabbendjian TITLE: Health & Environmental Safety Coordinator

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.
2600 Bull Street, Columbia, SC 29201
Phone: (803) 734-5200
Emergency & Holidays: (803)253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved: OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 — Manifest Document No. 0 0 0 6 8
2. Page 1 of 1

Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7
C. State Transporter's ID
D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125

10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5
G. State Facility's ID
H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. PW - 0 1 2 1 1 - 6 7 0 1
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WO# 110775
Shipment contains lead contaminated soils.
Truck no 16

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 15 minutes for treatment storage and disposal facilities. The estimate also for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St. S.W. Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN
Signature: Dikran V. Kabbendjian
Month Day Year: 03 23 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Leon Dantzler Jr
Signature: Leon Dantzler Jr
Month Day Year: 03 23 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space
a. 34090 lbs. c.
b. lbs. d.

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Wende Elliott
Signature: Wende Elliott
Month Day: 03-23-90

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED!

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 000 68

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes __ No x If yes, please attach copy.

x Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

____ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ____

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

____ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ____

____ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

____ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration, I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Dikran V Kabbendjian DATE: 03/23/90

PRINT NAME: Dikran Kabbendjian TITLE: Health & Environmental Safety Coordinator

South Carolina Department of Health and Environmental Control

Bureau of Solid & Hazardous Waste Mgt.
2600 Bull Street, Columbia, SC 29201
Phone: (803) 734-5200
Emergency & Holidays: (803)253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's U.S. EPA ID No. N C D 0 0 3 1 8 5 2 3 8 — Manifest Document No. 0 0 0 6 9
2. Page 1 of 1
Information in the shaded areas is not required by Federal law, but is by State law.

3. Generator's Name and Mailing Address
Alcatel Network Systems Corporation
2912 Wake Forest Road
Raleigh, NC 27609
ATTN: Mr. Dikran Kabbendjian

4. Generator's Phone (919) 850-6248

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Willms Trucking Company
6. U.S. EPA ID Number: S C D 0 7 3 7 0 9 2 9 7
C. State Transporter's ID
D. Transporter's Phone 803-766-3333

7. Transporter 2 Company Name
8. U.S. EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services of South Carolina, Inc.
Rt. 1, Box 255
Pinewood, SC 29125
10. U.S. EPA ID Number: S C D 0 7 0 3 7 5 9 8 5
G. State Facility's ID
H. Facility's Phone (803) 452-5003

11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. Hazardous Waste Solid, N.O.S. ORM - E, NA 9189	1	DT	18	Y	D 0 0 8
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. PW - 0 1 2 1 1 - 6 7 0 1
b.
c.
d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
WO# 110776
Shipment contains lead contaminated soils.

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St. S.W. Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DIKRAN V. KABBENDJIAN
Signature: Dikran V. Kabbendjian
Month Day Year: 03 23 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: LESTER LITTLE JR
Signature: Lester Little Jr. #9066
Month Day Year: 03 23 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

Discrepancy Indication Space
a 35040 lbs. c
b lbs. d

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Wende Elliott
Signature: Wende Elliott
Month Day Year: 03-23-90

CUSTOMER NOTIFICATION AND CERTIFICATION

GSX

ONLY STATEMENTS WITH ORIGINAL SIGNATURES WILL BE ACCEPTED

RECEIVED AUG - 3 1990

Generator Name/Location: Alcatel Network Systems Corporation

EPA ID Number: NCD003185238

Waste Profile or ARF Number: PW - 01211 - 6701

Manifest Number: 00069

EPA Hazardous Waste Number(s): (D008) (____)

Waste Analysis Available? Yes __ No x If yes, please attach copy.

x Unrestricted Waste Notification (Category 1)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d).

____ Restricted Waste Notification (Category 2)

I notify that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste does not comply with the treatment standards specified in 40 CFR 268, Subpart D.

—(2A) Waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid by chemical fixation or solidification prior to land disposal. Corresponding treatment standard ____

—(2B) Waste is subject to 40 CFR 268.7(a)(4) and landfilling or placing in a surface impoundment is not allowed unless conditions of category 5 below are met.

____ Restricted Waste Variance Certification/Notification (Category 3)

I notify pursuant to 40 CFR 268.7(a)(3) and certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

Applicable Variance: ____

____ Treated Waste Certification (Category 4)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

____ Soft Hammer Waste Certification (Category 5)

—(5A) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalities for submitting false information, including the possibility of fine or imprisonment.

—(5B) I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

—(5C) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

____ Restricted Waste Notification (Category 6)

I notify that I have personally examined and am familiar with the waste through anaylsis and testing or through knowledge of the waste to support this notification that the waste does comply with the treatment standards specified in 40 CFR 268, Subpart D.

SIGNATURE: Dikran V. Kabbendjian DATE: 3/23/90

PRINT NAME: Dikran Kabbendjian TITLE: Health & Environmental Safety Coordinator

APPENDIX B

Laboratory Analytical Results

Received: 02/15/90

Webb Technical REPORT

03/14/90 12:51:10

Work Order # 90-02-[illegible]

REPORT TO
WESTINGHOUSE ENVIRONMENTAL
POST OFFICE BOX 1308
CARY, NC 27512

ATTEN MS. JILL WATSON

CLIENT WESTIN SAMPLES 1
COMPANY WESTINGHOUSE ENVIRONMENTAL
FACILITY CARY, NC

WORK ID EPTOX
TAKEN
TRANS DELIVERY, CLIENT
TYPE HAZARDOUS MATERIAL
P.O. # 03292
INV. # 0

PREPARED BY
Webb Technical Group, Inc.
4320 Delta Lake Drive
Raleigh, NC 27612

ATTEN
PHONE (919)787-3061

Mark Benfield
CERTIFIED BY

CONTACT G POWELL

We are pleased to provide this certified report of analysis. Samples will be retained for 30 days after report is issued. Feel free to telephone if further explanation is required. Refer to the Work Order # in all correspondence.

NOTE: S&ME JOB NO.: 4115-90-502.

SAMPLE IDENTIFICATION

01 SOIL BKGRD 2/9

TEST CODES and NAMES used on this report

CU	COPPER
PB_AA	LEAD BY AA
PH	PH
SN_AA	TIN BY AA

Webb Technical REPORT
Results by Sample

Work Order # 90-02-

SAMPLE ID SOIL BKGRD 2/9 SAMPLE # 01 FRACTIONS: A,B
Date & Time Collected 02/09/90 Category J4115 90 502

CU	PB_AA	PH	SN_AA
0.039	<0.05	5.58	0.749
PPM	PPM	PH UNITS	PPM

Received: 03/21/90

Webb Technical REPORT
03/30/90 08:21:28

Work Order # 90-0[illegible]42

REPORT TO
WESTINGHOUSE ENVIRONMENTAL
POST OFFICE BOX 1308
CARY, NC 27512

ATTEN MS. JILL WATSON

CLIENT WESTIN SAMPLES 4
COMPANY WESTINGHOUSE ENVIRONMENTAL
FACILITY CARY, NC

WORK ID EXTOX,CU,PB AA,SN,PH
TAKEN
TRANS DELIVERY, CLIENT
TYPE HAZARDOUS MATERIAL
P.O. # 03217
INV. # 0

PREPARED BY
Webb Technical Group, Inc.
4320 Delta Lake Drive
Raleigh, NC 27612

ATTEN
PHONE (919)787-3061

CERTIFIED BY

CONTACT G POWELL

We are pleased to provide this certified report of analysis.
Samples will be retained for 30 days after report is issued.
Feel free to telephone if further explanation is required.
Refer to the Work Order # in all correspondence.

SAMPLE IDENTIFICATION

01	SOIL #2
02	SOIL #3
03	SOIL #4
04	SOIL #5

TEST CODES and NAMES used on this report

CU	COPPER
PB AA	LEAD BY AA
PH	PH
SN AA	TIN BY AA

Received: 03/21/90

Webb Technical REPORT
Results by Sample

Work Order # 90-03-

SAMPLE ID SOIL #2 SAMPLE # 01 FRACTIONS: A,B
Date & Time Collected not specified Category

CU	PB_AA	PH	SN_AA
1.03 MG/L	0.093 MG/L	4.12 PH UNITS	<1.0 MG/L

SAMPLE ID SOIL #3 SAMPLE # 02 FRACTIONS: A,B
Date & Time Collected not specified Category

CU	PB_AA	PH	SN_AA
1.54 MG/L	0.356 MG/L	6.00 PH UNITS	<1.0 MG/L

SAMPLE ID SOIL #4 SAMPLE # 03 FRACTIONS: A,B
Date & Time Collected not specified Category

CU	PB_AA	PH	SN_AA
1.73 MG/L	0.055 MG/L	4.00 PH UNITS	<1.0 MG/L

SAMPLE ID SOIL #5 SAMPLE # 04 FRACTIONS: A,B
Date & Time Collected not specified Category

CU	PB_AA	PH	SN_AA
2.40 MG/L	2.42 MG/L	4.75 PH UNITS	<1.0 MG/L

Industrial & Environmental Analysts, Inc.
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

June 12, 1990

Pam Townsend
Westinghouse Env. & Geotechnical Services, Inc.
P.O. Box 1308
Cary, NC 27512

Reference IEA Report No.: 115499
Project ID: 4115-90-502

Dear Ms. Townsend,

Transmitted herewith are the results of analyses on three samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

IEA LABORATORY RESULTS

IEA Project #: 115-499
Client Name: Westinghouse Env. & Geotechnical Services, Inc.

Sample #	Client ID	Parameter	Results		Date Analyzed
		TCLP METALS:			
1	B-1	Chromium	<0.03	mg/L	06/07/90
2	B-2	Chromium	<0.03	mg/L	06/07/90
3	B-3	Chromium	<0.03	mg/L	06/07/90
1	B-1	Copper	<0.02	mg/L	06/07/90
2	B-2	Copper	<0.02	mg/L	06/07/90
3	B-3	Copper	1.1	mg/L	06/07/90
1	B-1	Lead	<0.005	mg/L	06/06/90
2	B-2	Lead	<0.005	mg/L	06/06/90
3	B-3	Lead	0.040	mg/L	06/07/90
1	B-1	Antimony	<0.20	mg/L	06/07/90
2	B-2	Antimony	<0.20	mg/L	06/07/90
3	B-3	Antimony	<0.20	mg/L	06/07/90
1	B-1	pH	7.4		06/04/90
2	B-2	pH	6.9		06/04/90
3	B-3	pH	8.0		06/04/90

IEA LABORATORY RESULTS

IEA Project #: 115-499 (Revision)
Client Name: Westinghouse Env. & Geotechnical Services, Inc.

Sample #	Client ID	Parameter	Results		Date Analyzed
1	B-1	Tin	<1.0	mg/L	06/15/90
2	B-2	Tin	<1.0	mg/L	06/15/90
3	B-3	Tin	<1.0	mg/L	06/15/90

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 6532

PROJECT: 4415-90 502

PROJECT NAME: Alcatel

SAMPLERS SIGNATURE: Marklin M. Armstrong

SAMPLE ID	DATE	TIME	GRAB	COMP	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	TCLP Pb, Cr, Cu, Sn	pH
B-1	5-25	11:00	X		9 to 12 feet	1x125 1x500	X		X	X
B-2	5-25	12:30	X		9 to 12 feet	1x125 1x500	X		X	X
B-3	5-25	2:30	X		6 to 9 feet	1x125 1x500	X		X	X

RELINQUISHED BY SIGNATURE	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA RUSH NO.
Marklin M. Armstrong	5-25-90	6:55					

RELINQUISHED BY SIGNATURE	DATE	TIME	RECEIVED FOR LABBY	DATE	TIME	PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
			Elizabeth D. Gray	5/25/90	6:55	Pam Townsend	

IEA REMARKS:

IEA #115-499

FIELD REMARKS:

Industrial & Environmental Analysts, Inc.
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

June 13, 1990

Pam Townsend
Westinghouse Env. & Geotechnical Services, Inc.
P.O. Box 1308
Cary, NC 27512

Reference IEA Report No.: 115501
Project I.D.: 4115-90-502

Dear Ms. Townsend,

Transmitted herewith are the results of analyses on three samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Juliana L. Niemi

Linda F. Mitchell for
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

IEA LABORATORY RESULTS

IEA Project #: 115-501
Client Name: Westinghouse Environmental & Geotechnical Services, Inc.

Sample #	Client ID	Parameter	Results		Date Analyzed
		TCLP METALS:			
1	B-4	Chromium	<0.03	mg/L	06/11/90
2	B-5	Chromium	<0.03	mg/L	06/11/90
3	B-6	Chromium	<0.03	mg/L	06/11/90
1	B-4	Copper	1.3	mg/L	06/09/90
2	B-5	Copper	0.45	mg/L	06/09/90
3	B-6	Copper	0.47	mg/L	06/09/90
1	B-4	Lead	0.28	mg/L	06/11/90
2	B-5	Lead	0.53	mg/L	06/11/90
3	B-6	Lead	0.01	mg/L	06/11/90
1	B-4	Tin	<1.0	mg/L	06/11/90
2	B-5	Tin	<1.0	mg/L	06/11/90
3	B-6	Tin	<1.0	mg/L	06/11/90
1	B-4	pH	7.5		06/04/90
2	B-5	pH	7.6		06/04/90
3	B-6	pH	6.8		06/04/90

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 4082

PROJECT #	PROJECT NAME
4115-90 502	Alcatel

SAMPLERS (SIGNATURE): Macklin M. Armstrong

SAMPLE #	DATE	TIME	GRAB	COMP	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS: TCLP Pb, Cr, Cu, Sn	REQUESTED PARAMETERS: pH
B-4	5-29	9:40AM	X		9-12 feet	1x25 1x500	X		X	X
B-5	5-29	11:30AM	X		5-6½' feet	1x25 1x500	X		X	X
B-6	5-29	1:30PM	X		6' to 7'3"	1x25 1x500	X		X	X

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA RUSH NO.
Macklin Armstrong	5-29	1915					

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME	PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
			James Hay	5/29	1815	Pam Townsend	

IEA REMARKS: IEA #115-501

FIELD REMARKS:

APPENDIX C

Boring Logs

PROJECT NAME: Alcatel DATE STARTED: 5-29-90 COMPLETED: 5-20-90 PAGE 1 OF 6

JOB #: 4115-90-502 COUNTY: Wake CITY/TOWN: Raleigh STATE: North Carolina

BORING/WELL #: B-5 TOTAL DEPTH: 6' 6" BORING LOCATION: ELEV.:

GEOLOGIST/ENGINEER: M. Armstrong MONITORING EQUIPMENT USED: None

DRILLERS: D. Benthall - GAI DRILLING EQUIPMENT: Mobile Minuteman METHOD: Auger

REMARKS:

DEPTH TO BOTTOM OF SCREEN: TOP OF SCREEN: SCREEN SLOT SIZE:

DEPTH TO BOTTOM OF SAND: TOP OF SAND: DEPTH TO TOP OF BENTONITE:

WELL MATERIAL USED: DIAMETER: STICK UP/DOWN:

WATER ZONES (DEPTH): STATIC WATER LEVEL:

REMARKS:

LITHOLOGY	DEPTH (ft.)	SAMPLE NO.	BLOW COUNT 6"	6"	6"	% REC.	SAMPLE DESCRIPTION	AIR QUAL. PPM.
							0 - 6" ASPHALT 6" to 3". Silt and Gravel (fill).	
							3' to 6' 6". SILT, Micaceous, Slightly Clayey, with Sand and Gravel (fill). Composite samples taken from auger cuttings from 3' to 5' and 5' to 6' 6". Water at 6'. Total depth: 6' 6".	
	5							
	10							

SAMPLES SUBMITTED FOR LABORATORY TEST

The composite sample collected from 5' to 6' 6" was submitted to the laboratory for TCLP analysis (lead, chromium, copper, tin). The other composite sample was stored at the Alcatel Facility.

ROJECT NAME: Alcatel DATE STARTED: 5-29-90 COMPLETED: 5-29-90 PAGE 2 OF 6

JOB #: 4115-90-502 COUNTY: Wake CITY/TOWN: Raleigh STATE:

BORING/WELL #: B-6 TOTAL DEPTH: BORING LOCATION: ELEV.:

GEOLOGIST/ENGINEER: M. Armstrong MONITORING EQUIPMENT USED: None

DRILLERS: M. Armstrong DRILLING EQUIPMENT: Mobile Minuteman METHOD:

REMARKS:

DEPTH TO BOTTOM OF SCREEN: TOP OF SCREEN: SCREEN SLOT SIZE:

DEPTH TO BOTTOM OF SAND: TOP OF SAND: DEPTH TO TOP OF BENTONITE:

WELL MATERIAL USED: DIAMETER: STICK UP/DOWN:

WATER ZONES (DEPTH): STATIC WATER LEVEL:

REMARKS:

LITHOLOGY	DEPTH (ft.)	SAMPLE NO.	BLOW COUNT 6"	6"	6"	% REC.	SAMPLE DESCRIPTION	AIR QUAL. PPM.
							0 - 6".	
							ASPHALT	
							6" to 6'.	
							SILT with Sand and Gravel (fill).	
							Composite sample taken from auger cuttings from 3' to 6' and 6' to 7' 3".	
	5						Water at 5'.	
							Total depth 7' 3".	
	10							

SAMPLES SUBMITTED FOR LABORATORY TEST

e composite sample collected from 6' to 7' 3" was submitted to the laboratory for TCLP analysis (lead, chromium, pper, tin). The other composite sample was stored the the Alcatel facilty.

PROJECT NAME: Alcatel DATE STARTED: 5-29-90 COMPLETED: 5-29-90 PAGE 3 OF 6

JB #: 4115-90-502 COUNTY: Wake CITY/TOWN: Raleigh STATE: North Carolina

BORING/WELL #: B-1 TOTAL DEPTH: 12' BORING LOCATION: ELEV.:

OLOGIST/ENGINEER: M. Armstrong MONITORING EQUIPMENT USED: None

LERS: D. Benthall - GAI DRILLING EQUIPMENT: Mobile Minuteman METHOD: Auger

EMARKS:

DEPTH TO BOTTOM OF SCREEN: TOP OF SCREEN: SCREEN SLOT SIZE:

EPTH TO BOTTOM OF SAND: TOP OF SAND: DEPTH TO TOP OF BENTONITE:

ELL MATERIAL USED: DIAMETER: STICK UP/DOWN:

WATER ZONES (DEPTH): STATIC WATER LEVEL:

EMARKS:

HOLOGY	DEPTH (ft.)	SAMPLE NO.	BLOW COUNT 6"	6"	6"	% REC.	SAMPLE DESCRIPTION	AIR QUAL. PPM.
							0 - 12'	
							Silt, Micaceous, Slightly Clayey, Tan-to-brown with some rocks and pebbles (reworked residual soil mixed with fill).	
							Composite samples taken from auger cuttings from 3' to 6', 6' to 9', and 9' to 12'.	
	5							
							Wet at 8'.	
							Cave in at 9'.	
	10							
							Total depth: 12'.	

PLES SUBMITTED FOR LABORATORY TEST

he composite sample collected from 9' to 12' was submitted to the laboratory for TCLP analysis (lead, chromium, per, tin). The other composite samples were stored at the Alcatel facility.

PROJECT NAME: Alcatel DATE STARTED: 5-25-90 COMPLETED: 5-25-90 PAGE 4 OF 6

JOB #: 4115-90-502 COUNTY: Wake CITY/TOWN: Raleigh STATE: North Carolina

BORING/WELL #: B-2 TOTAL DEPTH: 12' BORING LOCATION: ELEV.:

GEOLOGIST/ENGINEER: M. Armstrong MONITORING EQUIPMENT USED: None

DRILLERS: D. Benthall - GAI DRILLING EQUIPMENT: Mobile Minuteman METHOD: Auger

REMARKS:

DEPTH TO BOTTOM OF SCREEN: TOP OF SCREEN: SCREEN SLOT SIZE:

DEPTH TO BOTTOM OF SAND: TOP OF SAND: DEPTH TO TOP OF BENTONITE:

WELL MATERIAL USED: DIAMETER: STICK UP/DOWN:

WATER ZONES (DEPTH): STATIC WATER LEVEL:

REMARKS:

LITHOLOGY	DEPTH (ft.)	SAMPLE NO.	BLOW COUNT 6"	6"	6"	% REC.	SAMPLE DESCRIPTION	AIR QUAL. PPM.
							0 - 12'	
							SILT, Micaceous, Slightly Clayey, Tan-to-Brown (reworked residual soil).	
							Composite samples taken from auger cuttings from 3' to 6', 6' to 9', and 9' to 12'.	
	5							
							Wet at 7'.	
							Cave in at 8'.	
	10							
							Total depth: 12'.	

SAMPLES SUBMITTED FOR LABORATORY TEST

The composite sample collected from 9' to 12' was submitted to the laboratory for TCLP analysis (lead, chromium, copper, tin). The other composite samples were stored at the Alcatel facility.

PROJECT NAME: Alcatel DATE STARTED: 5-29-90 COMPLETED: 5-30-90 PAGE 5 OF 6

JOB #: 4115-90-502 COUNTY: Wake CITY/TOWN: Raleigh STATE: North Carolina

BORING/WELL #: B-3 TOTAL DEPTH: 9' BORING LOCATION: ELEV.:

GEOLOGIST/ENGINEER: M. Armstrong MONITORING EQUIPMENT USED: None

DRILLERS: D. Benthall DRILLING EQUIPMENT: Mobile Minuteman METHOD: Auger

REMARKS:

DEPTH TO BOTTOM OF SCREEN: TOP OF SCREEN: SCREEN SLOT SIZE:

DEPTH TO BOTTOM OF SAND: TOP OF SAND: DEPTH TO TOP OF BENTONITE:

WELL MATERIAL USED: DIAMETER: STICK UP/DOWN:

WATER ZONES (DEPTH): STATIC WATER LEVEL:

REMARKS:

LITHOLOGY	DEPTH (ft.)	SAMPLE NO.	BLOW COUNT 6"	6"	6"	% REC.	SAMPLE DESCRIPTION	AIR QUAL. PPM.
							0 to 6" ASPHALT	
							6" to 2'	
							Silty Clay to Clayey SILT mixed with Gravel and Cobbles (fill).	
							2' to 9'.	
							SILT, Micaceous, Slightly Clayey, Tan-to-Brown (reworked residual soil).	
							Composite samples taken from auger cuttings from 3' to 6' and 6' to 9'.	
	5						Wet at 5' 6". Water at 6'. Cave in at 6' 3".	
							Total depth 9'.	
	10							

SAMPLES SUBMITTED FOR LABORATORY TEST

The composite sample collected from 6' to 9' was submitted to the laboratory for TCLP analysis (lead, chromium, copper, tin). The other composite sample was stored at the Alcatel facility.

PROJECT NAME: Alcatel DATE STARTED: 5-2 -90 COMPLETED: 5-29-90 PAGE 6 OF 6

JOB #: 4115-90-502 COUNTY: Wake CITY/TOWN: Raleigh STATE: North Carolina

BORING/WELL #: B-4 TOTAL DEPTH: 12' BORING LOCATION: ELEV.:

GEOLOGIST/ENGINEER: M. Armstrong MONITORING EQUIPMENT USED: None

DRILLERS: D. Benthall DRILLING EQUIPMENT: Mobile Minuteman METHOD: Auger

REMARKS:

DEPTH TO BOTTOM OF SCREEN: TOP OF SCREEN: SCREEN SLOT SIZE:

DEPTH TO BOTTOM OF SAND: TOP OF SAND: DEPTH TO TOP OF BENTONITE:

WELL MATERIAL USED: DIAMETER: STICK UP/DOWN:

WATER ZONES (DEPTH): STATIC WATER LEVEL:

REMARKS:

LITHOLOGY	DEPTH (ft.)	SAMPLE NO.	BLOW COUNT 6"	6"	6"	% REC.	SAMPLE DESCRIPTION	AIR QUAL. PPM.
							0 to 3'. SILT, Micaceous, Slightly Clayey, Tan-to-Brown, with Rocks and Cobbles (fill)	
							3' to 6' SILT, Micaceous, Slightly Clayey, Tan-to-Brown with some Gravel (reworked residual soil and fill).	
	5							
							6' to 12'. SILT, Micaceous, Slightly Clayey, Tan-to-Brown (reworked residual soil).	
	10						Wet at 10'. Cave in at 10' 4".	
							Total Depth: 12'.	

SAMPLES SUBMITTED FOR LABORATORY TEST

The composite sample collected from 9' to 12' was submitted to the laboratory for TCLP analysis (lead, chromium, copper, tin). The other composite samples were stored at the Alcatel facility.

WEGS Environmental Cleanup
Area No. 2

Addendum

March 1991

ENVIRONMENTAL CLEANUP
AREA NO. 2
ADDENDUM
ALCATEL NA NETWORK SYSTEMS CORP.
RALEIGH, NORTH CAROLINA

Prepared For:

Alcatel N.A. Network Systems Corp.
2912 Wake Forest Road
Raleigh, North Carolina 27609

Prepared By:

Westinghouse Environmental and Geotechnical Services, Inc.
3100 Spring Forest Drive
P.O. Box 58069
Raleigh, North Carolina 27658

March 1991

SECTION 1

INTRODUCTION

Alcatel NA Network Systems Corp., 2912 Wake Forest Road, Raleigh, North Carolina, is in the process of closing down their printed circuit board manufacturing operation, and removing the associated equipment. They will be converting the area to other uses. During this conversion, soil contamination was discovered in an alleyway between the main building and chemical storage sheds. This alleyway is shown in the site plan in Figure 1. The contamination was found when Alcatel representatives removed the concrete and asphalt slab in their chemical unloading, storage, and handling area in order to replace it with a new containment slab and stormwater collection system. The area discussed in this report has been designated Area No. 2 and is shown in Figure 1.

Previous Area No. 2 Remediation Activities

Previous remediation activities have been described in detail in the Westinghouse Environmental Cleanup - Area No. 2 Report of August, 1990. The majority of the lead contaminated soil had been effectively removed from Area No. 2., during the months of February and March, 1990. Approximately 104 tons of contaminated soil was transported to GSX Services of South Carolina, Inc. for disposal. Standard equipment and construction techniques were employed to excavate to the limits shown in Figure 2. Bedrock was encountered at approximately nine feet.

Analysis indicated that isolated contamination remained in areas inaccessible by conventional removal techniques; specifically, below the terra cotta pipe and in the north alcove between the sumps and the storage shed. Isolated contaminated soils also remained in the east and west ends of the excavation.

SECTION 2

FINAL SITE ACTIVITIES

Soil Excavation

Prior to initiating final excavation activities, all underground utilities in the open excavation, and a portion of storage shed 8B, were removed by other subcontractors to allow removal of previously inaccessible contaminated soils. These utilities had restricted prior excavation efforts.

Unclassified excavation was performed in Area No. 2 to enlarge the open excavation to the limits shown in Figure 3. Westinghouse employed standard construction equipment and techniques to remove 145 tons of contaminated soil. The excavation was extended to bedrock at a depth of approximately nine feet.

Ground water was encountered at approximately eight feet below grade. The ground water was pumped from the excavation to Alcatel's wastewater treatment plant.

Field analysis was used to determine the limits of the contaminated soils. Confirmatory samples from the final excavation limits were then submitted for laboratory analysis. The soil confirmatory sampling program for the soil excavation activity is discussed in the Sampling Results contained in Section 3.

Contaminated soil was transported in tarped, placarded dumptrailers, provided by Envirochem Environmental Services, Inc. (US EPA ID Number NCD982170292) and Willms Trucking Company, Inc. (US EPA ID Number SCD073709297), to GSX Services of South Carolina, Inc. (US EPA ID Number SCD070375985) for treatment and disposal. A

shipment summary for Area No. 2 is presented in Table 1. Manifest document numbers 00081 through 00092 were assigned to the shipments of contaminated soils from the excavation activities. Copies of the applicable manifests, customer notification and certifications for this activity are presented in Appendix C.

Sediment Removal

Approximately one month later, soil from the western end of the excavation had eroded into the excavation. An industrial vacuum truck was used to remove the sediment from the western half of the excavation bottom. An additional six to twelve inches of weathered bedrock was vacuumed from the western end of the excavation bottom as a precautionary measure to remove any isolated areas of contamination. The ground water in the excavation was pumped to Alcatel's wastewater treatment plant.

The soil sampling program for the sediment removal activity is discussed in the Sampling Results contained in Section 3.

Approximately eight tons of sediment was transported in tarped, placarded dumptrailers, provided by Fenn-Vac, Inc. (US EPA ID Number SCD980837504), to GSX Services of South Carolina, Inc. (US EPA ID Number SCD070375985) for disposal as a non-treatment type waste. A shipment summary for Area No. 2 is presented in Table 1. Copies of the applicable manifests, customer notification and certifications for this activity are presented in Appendix D.

SECTION 3

SAMPLING RESULTS

A summary of the sampling results for the final Area No. 2 activities is presented in Table 2.

Site Disposal Samples

To determine if the excavated soils would require treatment prior to disposal, a composite sample was collected from the excavation. The sample was sent to AnalytiKem, Inc., Rock Hill, South Carolina, for laboratory analysis for leachable lead and chromium using the Toxicity Characteristics Leaching Procedure (TCLP). The laboratory analysis indicates that leachable chromium was not detected in the soil samples. Leachable lead was present at a level of 28 mg/L. Because the leachable lead concentration was above the regulatory level, the excavated soils require treatment prior to disposal. Treatment was performed at GSX Services of South Carolina, Inc. facilities. Appendix A contains the analytical test report for site disposal analysis.

Background Samples

Three background samples were taken from natural areas located near the north, east and south property boundaries of the Alcatel facility, respectively, at a depth of 2.0 feet. A composite of the three samples was sent to AnalytiKem for laboratory analysis for leachable chromium and lead using the TCLP. The laboratory results on the composite sample indicate background levels of less than 0.5 mg/L for chromium and lead. The analytical test report for the background soil analysis is contained in Appendix B.

Excavation Limits

To achieve sampling accuracy for the samples submitted for laboratory analyses, and to ensure that every unit in the Area No. 2 excavation had a theoretically equal chance of being sampled and measured, random sampling was used, per the workplan submitted to the Hazardous Waste Section on February 9, 1990. The bottom and six sides of the Area No. 2 excavation were divided by an imaginary grid. A series of consecutive numbers were assigned to the units of the grid and a point on the bottom and on each side was selected through the use of a random-numbers table. The sample locations are shown on Figure 3.

Initial TCLP analysis on the seven samples was conducted with an extract detection limit of 0.5 mg/L. A second series of TCLP analyses was conducted with a extract detection limit of 0.05 mg/L. Referring to Table 2, laboratory results from the Area No. 2 open excavation indicated that concentrations of leachable lead were less than 0.05 mg/L for six of the seven samples tested. Analysis of Sample 5, taken from the excavation bottom, indicated a leachable lead concentration of 0.15 mg/L. Total lead concentrations for all seven samples were less than 10 mg/kg.

Sediment Removal

A composite sample was collected from the weathered bedrock in the excavation bottom and sent to AnalytiKem for laboratory analysis for total lead and leachable lead using the TCLP. Sampling points are shown in Figure 4. Test results indicated a total lead level of 150 mg/kg and a leachable lead concentration of 0.67 mg/L. Duplicate analysis was performed by Apex Environmental Services, Inc., Lakeville, Minnesota. Duplicate test results indicated a total lead level of 122.5 mg/kg and a leachable lead concentration of 0.50 mg/L.

SECTION 4

CONCLUSIONS AND RECOMMENDATIONS

Based on the laboratory analytical results of remaining soil within Area No. 2, the majority of the contaminated soil has been removed. Maximum contamination levels of the leachable lead in remaining soils are an order of magnitude less than the toxicity characteristic regulatory levels. Total lead levels in the remaining soil are within the common range of 2 to 200 mg/kg for natural soils (1,2,3,4,5,6). Westinghouse, therefore, recommends that no further removal action be performed.

SECTION 5

CERTIFICATION

I certify that the soil excavation activities for Area No. 2 described in this document located at Alcatel Network Systems, 2912 Wake Forest Road, Raleigh, North Carolina, have been conducted in accordance with the intent of the "Site Specific Work Plan for Alcatel Network Systems," submitted to the Hazardous Waste Section on February 9, 1990.

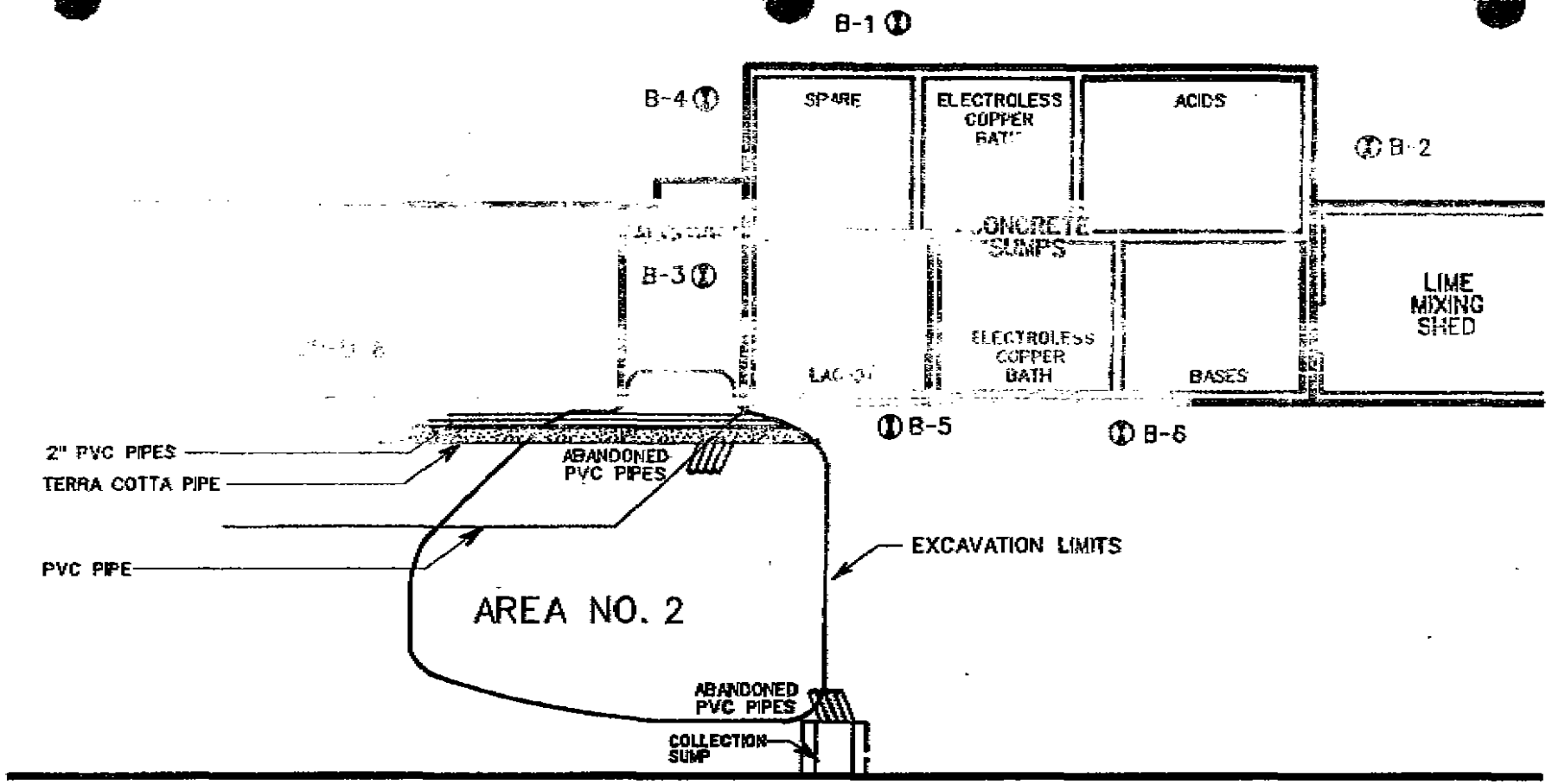
Signature of Registered P.E.

Pamela B. Townsend, No. 14983 (NC)

3/18/94

Date

(SEAL)



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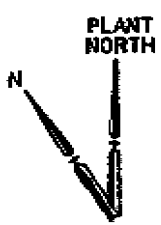

NOTE: NORTH IN THE TEXT REFERS TO THE TOP OF THE FIGURE TO FACILITATE DESCRIPTIONS

KEY
① SOIL BORING LOCATIONS

Westinghouse Environmental And Geotechnical Services, Inc.

AREA NO. 2
ALCATEL NETWORK SYSTEMS
RALEIGH, N.C.

PROJECT NO.: 4115-90-502	FIGURE NO. 2
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DRAWN BY: DCW	DATE: 3-11-91

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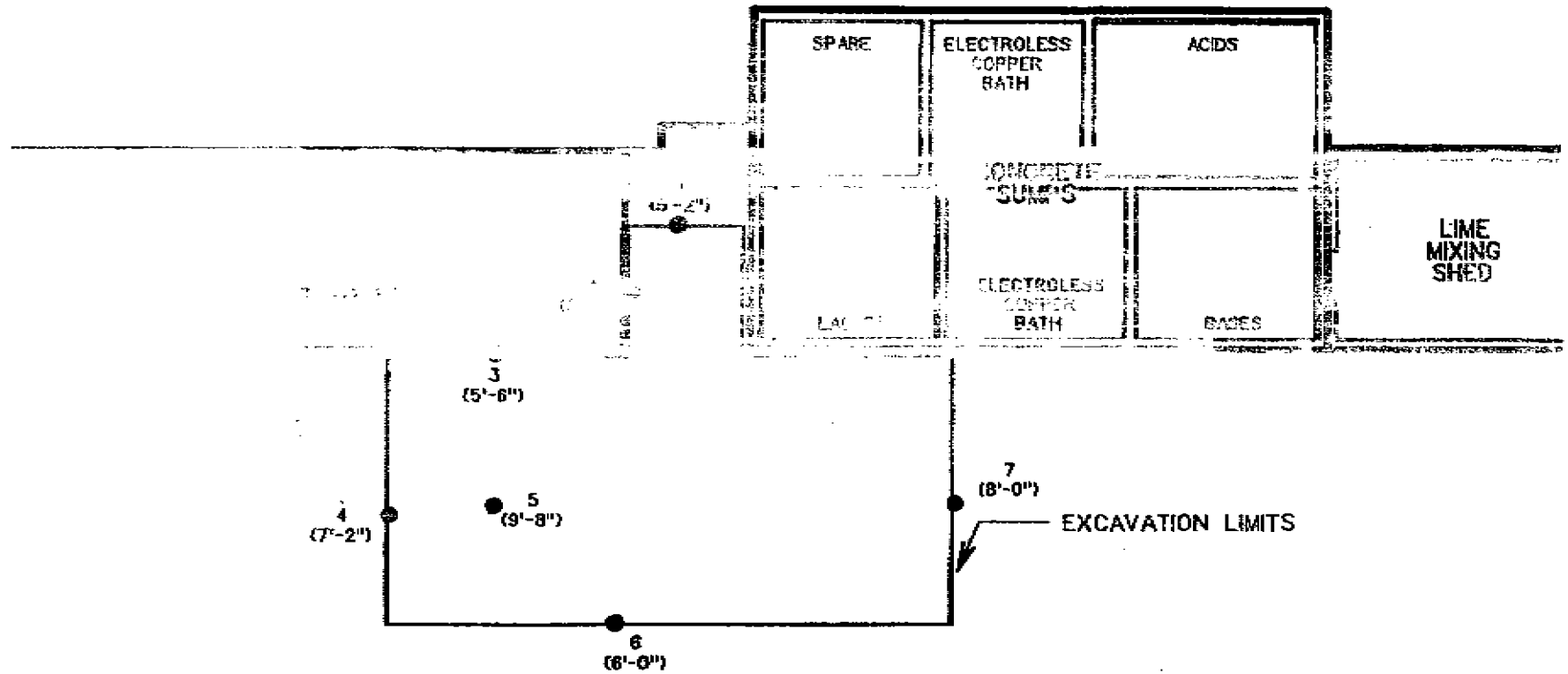

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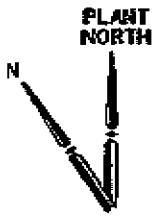

NOTE: NORTH IN THE TEXT REFERS TO THE TOP OF THE FIGURE TO FACILITATE DESCRIPTIONS

KEY

● SAMPLING POINT

(6') DEPTH BELOW TOP OF THE SOUTHWEST CORNER OF CONCRETE SUMPS

Westinghouse Environmental And Geotechnical Services, Inc.

AREA NO. 2
ALCATEL NETWORK SYSTEMS
RALEIGH, N.C.

PROJECT NO.: 4115-90-502	FIGURE NO.: 3
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DRAWN BY: MLB	DATE: 3-11-91

FILE: 90502DGN

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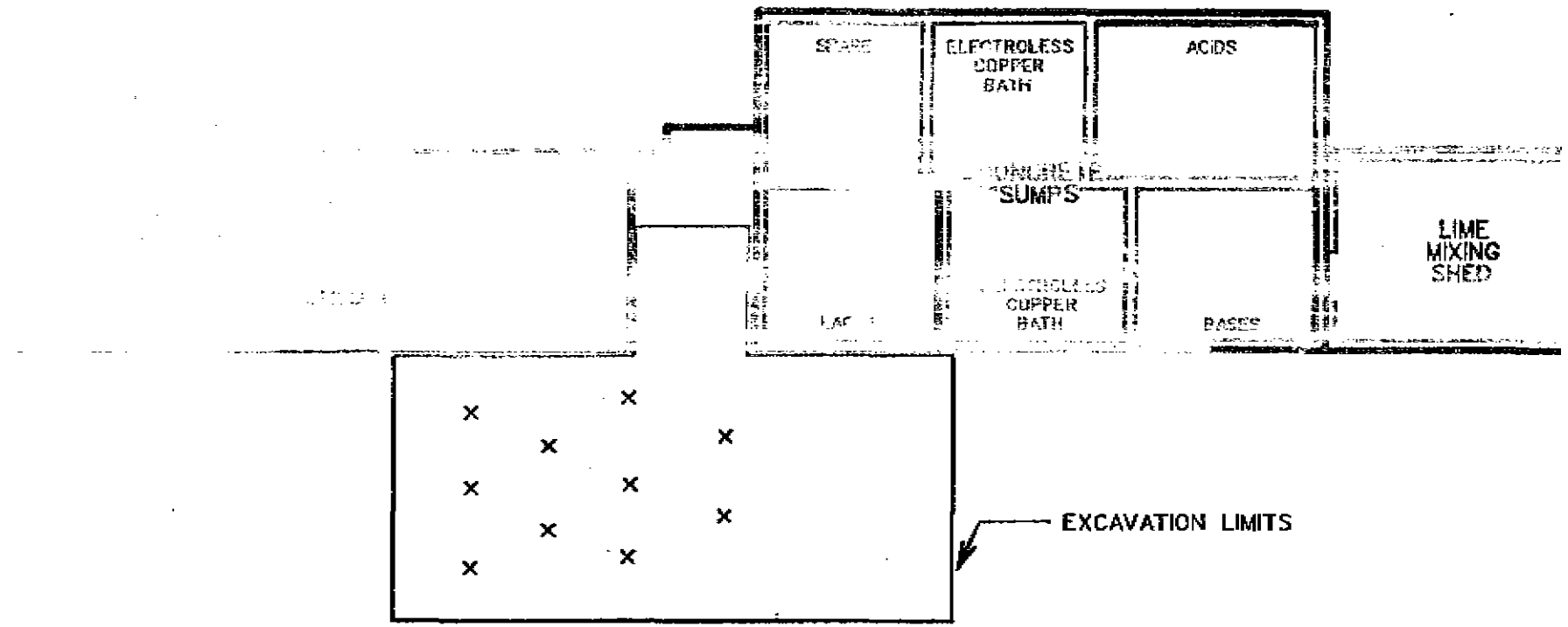

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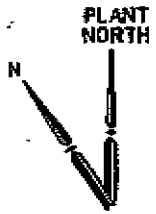

NOTE: NORTH IN THE TEXT REFERS TO THE TOP OF THE FIGURE TO FACILITATE DESCRIPTIONS

KEY

X APPROXIMATE LOCATION OF SEDIMENT SAMPLES COLLECTED FOR COMPOSITE SAMPLE

Westinghouse Environmental And Geotechnical Services, Inc.

AREA NO. 2
ALCATEL NETWORK SYSTEMS
RALEIGH, N.C.

PROJECT NO.: 4115-90-502	FIGURE NO.: 4
CHECKED BY:	SCALE: 1" = 10'
DRAWN BY: MLB	DATE: 3-13-91

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TABLE 2

SAMPLING RESULTS
AREA NO. 2 OPEN EXCAVATION

SAMPLING DATE	SAMPLE No.	TCLP CHROMIUM (mg/L)	TCLP LEAD (mg/L)		TOTAL LEAD (mg/kg)	NOTES
		0.5 DL	0.5 DL	0.05 DL		
10-16-90	1	0.5[1]	28.0	-	-	site disposal analysis
10-22-90	1	0.5[1]	0.50[1]	-	-	background
11-02-90	1	-	0.50[1]	0.018[2]	10[1]	excavation wall
11-02-90	2	-	0.50[1]	0.016[2]	10[1]	excavation wall
11-02-90	3	-	0.50[1]	0.05[1]	10[1]	excavation wall
11-02-90	4	-	0.50[1]	0.05[1]	10[1]	excavation wall
11-02-90	5	-	0.14[2]	0.15	10[1]	excavation bottom
11-02-90	6	-	0.50[1]	0.05[1]	10[1]	excavation wall
11-02-90	7	-	0.50[1]	0.05[1]	10[1]	excavation wall
12-19-90	1	-	-	1.67	158	excavation bottom
[illegible]	1	-	-	0.50	122.5	duplicate analysis by Aptus

DL Extract Detection Limit
[1] Not detected.
[2] Below practical quantitation limit.

NET Phase I Soil and Groundwater Impact Assessment

Report

February 1991

PHASE I

SOIL AND GROUNDWATER IMPACT ASSESSMENT

ALCATEL NETWORK SYSTEMS

2912 WAKE FOREST ROAD

RALEIGH, NORTH CAROLINA

Prepared by

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

February, 1991

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2.0		Previous Investigations	2
3.0		Investigation Objectives	4
4.0		Regional Geology	5
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	6.1	Soil Gas Survey	9
	6.2	Soil Physical Characterization	10
	6.3	Soil Chemical Characterization	10
	6.4	Groundwater Physical Characterization	12
	6.5	Groundwater Chemical Characterization	15
7.0		Conclusions and Recommendations	18

Appendices

1.0 INTRODUCTION AND BACKGROUND

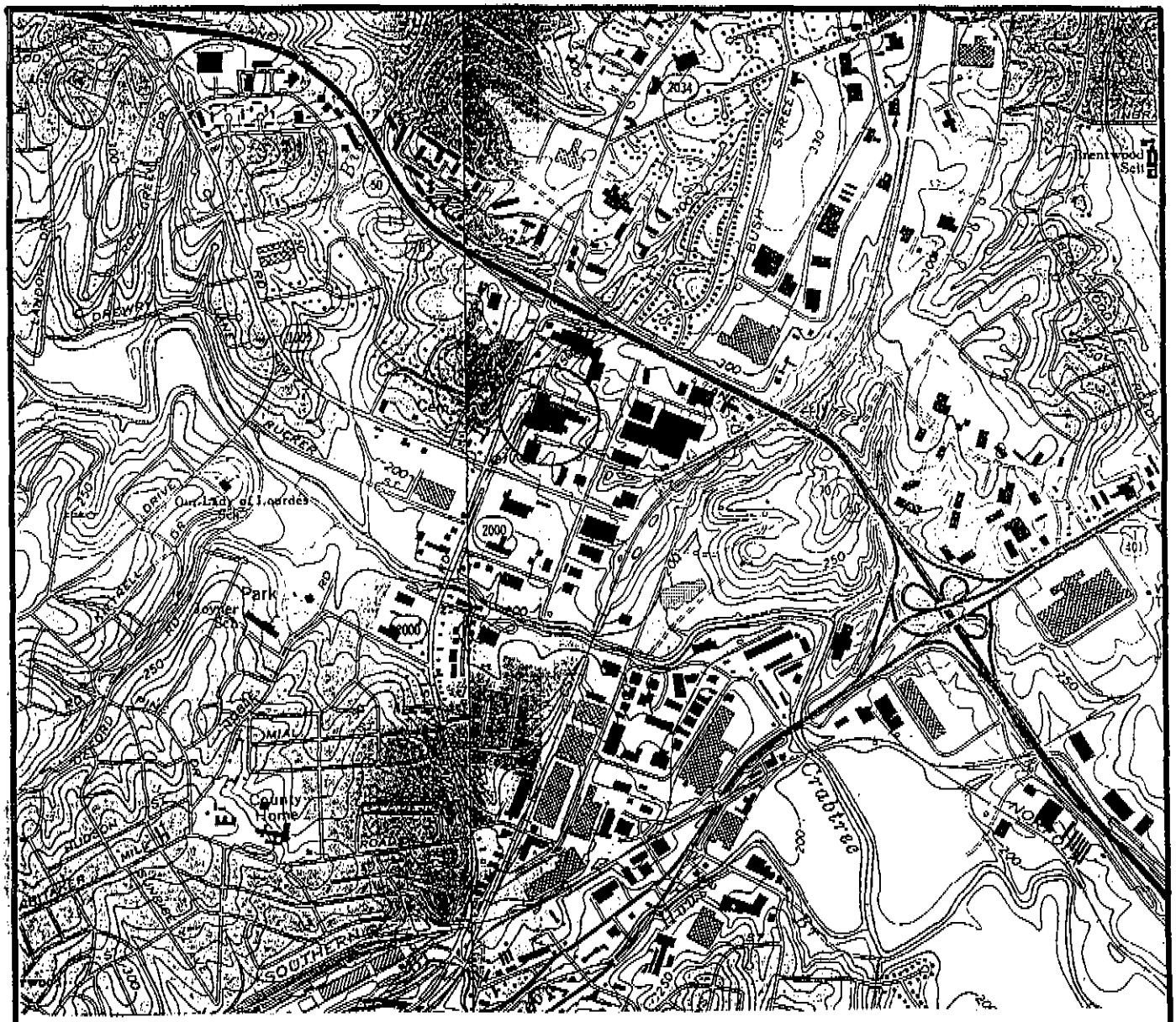
This report summarizes the findings of groundwater and soil impact assessment investigations conducted by National Environmental Technologies, Inc. (NET) at the ALCATEL Network Systems plant in Raleigh, North Carolina. The current investigation was requested by Mr. Dikran Kabbendjian of ALCATEL Network Systems, Inc., and was executed in accordance with the NET proposal, to ALCATEL Network Systems, Inc., dated March 19, 1990.

ALCATEL Network Systems is located at 2912 Wake Forest Road in Raleigh, North Carolina within a region of general manufacturing and commercial use (see Location Diagram). Activities at the plant have involved the manufacturing of printed electronic circuit boards and the assembly of electronic telephone switching and transmission equipment.

In the summer of 1990, the printed circuit board manufacturing operation was discontinued. The facility is currently undergoing modifications which alter or eliminate plant components that are no longer needed. Chlorinated solvents and wastewater containing lead and copper were the primary waste products generated by the circuit board manufacturing process.

Westinghouse Environmental and Geotechnical Services, Inc. (WEGS), was contracted, by ALCATEL in February, 1990, to perform a site assessment of potential impacts to soils at areas between the main building and the chemical storage sheds (see Site Plan, Drawing 1). As a result of this investigation, impacted soil was identified and soil remediation was conducted. Soil impacts have been attributed to spills and leaking pipes.

DUNCAN-PARNELL, INC., CHARLOTTE 704-372-7766



SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

NOTE: PLANT LOCATION CIRCLED

MN GN

7½° 133 MILS

1°26' 25 MILS

UTM GRID AND 1987 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

RALEIGH EAST, N. C.

SE/4 RALEIGH 15' QUADRANGLE

35078-G5-TF-024

1968

PHOTOREVISED 1981

DMA 5255 I SE-SERIES V842

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

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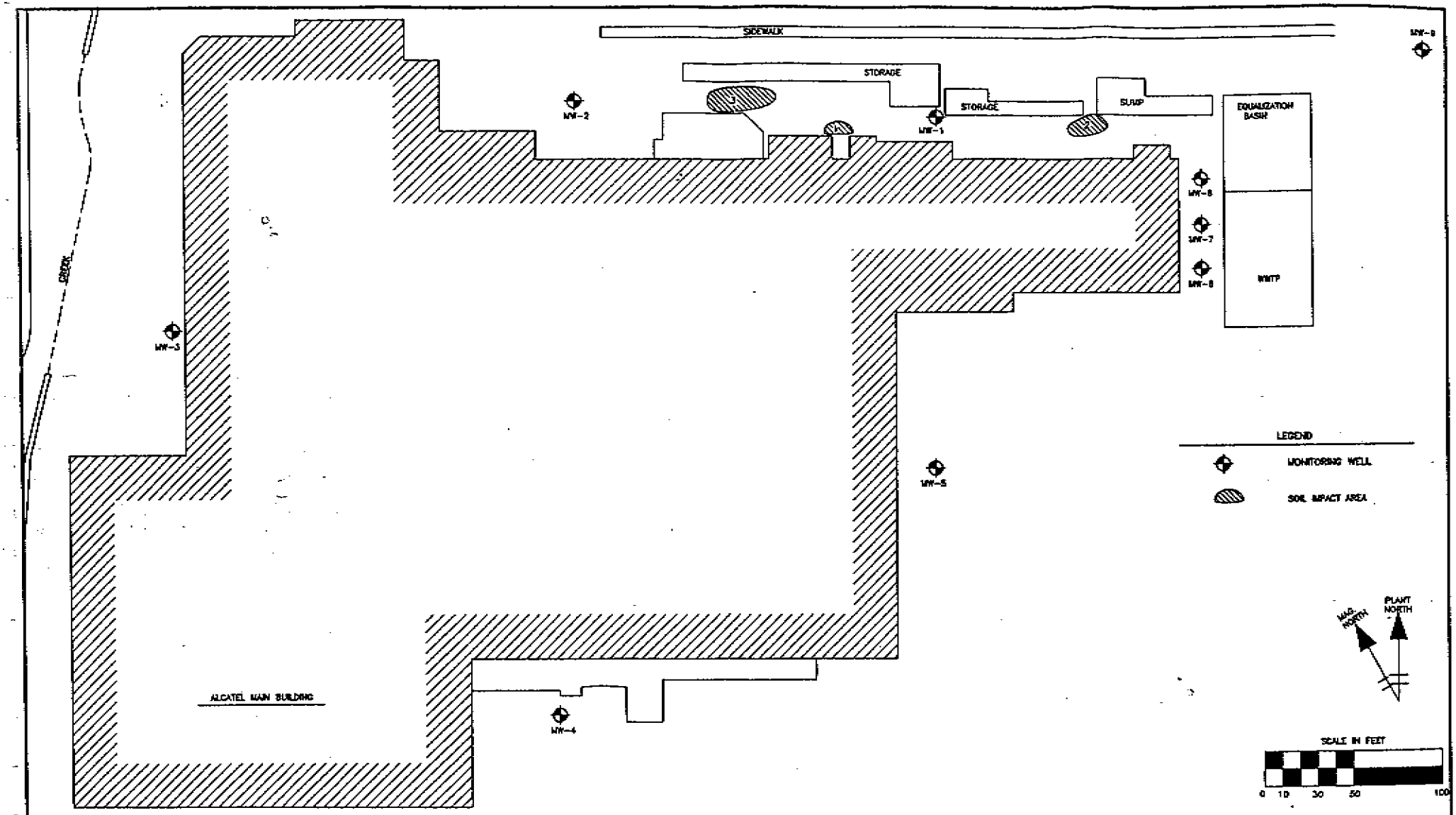
DWG. NO.	

CLIENT

ALCATEL NETWORK SYSTEMS

LOCATION DIAGRAM



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NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

CLIENT/TITLE
ALCATEL NETWORK SYSTEMS
Raleigh, NC
Site Plan (Drawing 1)

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2.0 PREVIOUS INVESTIGATIONS

In February, 1990, WEGS conducted a preliminary investigation of soil impacts at the facility. Their investigation identified three locations of impacted soils behind the main building of the plant. These areas were designated Areas 1, 2, and 3 and are shown on Drawing 1.

Soil samples from Areas 1 and 2 were analyzed for selected metals according to the EP-Toxicity (extraction) procedure. At each area, lead and copper were detected in the sample extract. Copper was detected in concentrations ranging from 1.03 mg/L to 2.4 mg/L while lead was detected in concentrations of 0.055 mg/L to 2.96 mg/L.

As a result of these findings, WEGS conducted remedial activities to remove impacted soils. The WEGS environmental cleanup reports for both areas are contained in Appendix A. Remedial activities consisted of excavation and subsequent landfill disposal of impacted soils. To date, a total of 277 tons of soil from both Areas 1 and 2 have been excavated and sent to GSX Services in South Carolina for disposal. Groundwater encountered in the excavation at Area 2 was pumped to ALCATEL's wastewater treatment system.

Soil sampling in Area 3 indicated the presence of several volatile organic compounds (VOCs). Analytical results for VOCs detected in samples obtained from Area 3 are shown by Table 1, below.

TABLE 1

WEGS SOIL ANALYTICAL RESULTS - AREA 3

CONSTITUENT	CONCENTRATION
1,1,1 Trichloroethane	2 - 2200 ug/kg
1,1,2 Trichloroethane	3 ug/kg
1,1-Dichloroethane	6 - 100 ug/kg
1,2 Dichloroethane	7 - 11 ug/kg
1,1 Dichloroethylene	500 ug/kg
Tetrachloroethene	110 - 250 ug/kg

Approximately 92 tons of soil in Area 3 was excavated and sent to GSX Services in South Carolina for disposal.

At the request of ALCATEL, NET obtained six soil samples from Areas 1 and 2 (excavation pit) for analysis of volatile organic compounds. This sampling was conducted to confirm that VOCs were not present at the limit of excavation for each impact area.

Soil samples ES-1, ES-2, ES-3, ES-4, ES-5, and ES-6 were collected with a hand auger and laboratory analyzed for VOCs per EPA Method 601 and 602. Results indicate volatile constituents are essentially absent from all sampling locations. Laboratory analytical results of VOC sampling activities for Areas 1 and 2 are contained in Appendix F. Maps showing soil sampling locations are also included following analytical reports.

3.0 INVESTIGATION OBJECTIVES

The objectives of this investigation were devised to further assess the environmental impact in the vicinity of Area 3 and to assess the physical and chemical groundwater conditions at the site. Specifically, the objectives were to:

1. Delineate impacted soil remaining, if any, in the vicinity of Area 3.
2. Install five groundwater monitoring wells to assess potential environmental impacts to the groundwater.
3. Characterize the hydrogeological conditions at the site.
4. Provide recommendations to ALCATEL for further assessment and/or remediation of impacted soils and groundwater.

The investigation consisted of three tasks. The first task consisted of a passive soil gas survey in the vicinity of Area 3 for the purpose of siting additional soil borings and groundwater monitoring wells. Following evaluation of the soil gas data, the second task was initiated and consisted of additional soil borings in the vicinity of Area 3. These borings were advanced to better characterize the soils and the extent of the impacted area.

Five groundwater monitoring wells were then installed to characterize the subsurface and to detect potential groundwater impacts within the water table aquifer. Water samples were collected and analyzed for metals and VOCs. Static water levels were measured and falling head hydraulic conductivity tests were conducted to estimate groundwater flow directions and velocities.

4.0 REGIONAL GEOLOGY

The study area is located within the piedmont physiographic province in a locality containing igneous and metamorphic rock bodies. Topography is gently to moderately rolling with streams dissecting the region in dendritic patterns. The rocks are primarily biotite and muscovite gneiss exhibiting strong foliation, or layering, of constituent minerals. Prismatic quartz zones are also common. Granitic to pegmatitic (large crystals) dikes and sills are commonly found within the region. The character of the dikes and sills indicates metamorphism post-dating injection.

Soil formation is variable but generally advanced to the point where well developed "B" (clay) horizons occur to depths of four to five feet. The degree of soil development within the region is largely attributed to the steepness of the topographic slope on which the soil is forming.

Within the region, depth to rock is variable but is typically encountered by a depth of 60 feet; however, at the site, hard rock occurs by a depth of 20 feet. It is not uncommon to find large boulders of hard rock occurring within unconsolidated materials. This phenomenon is caused by lithologic variations within the parent material and deep weathering induced by fractures and joints.

Groundwater occurs under water table, or phreatic, conditions. Water is stored in primary pore spaces and secondary openings, such as fractures, within the rock and unconsolidated materials. Recharge to the water table aquifer is primarily by precipitation. Atmospheric water percolates through the unsaturated zone and ultimately reaches the water table. Low water table conditions commonly occur during September and October due to reduced infiltration during the summer months.

5.0 GENERAL FIELD METHODOLOGY

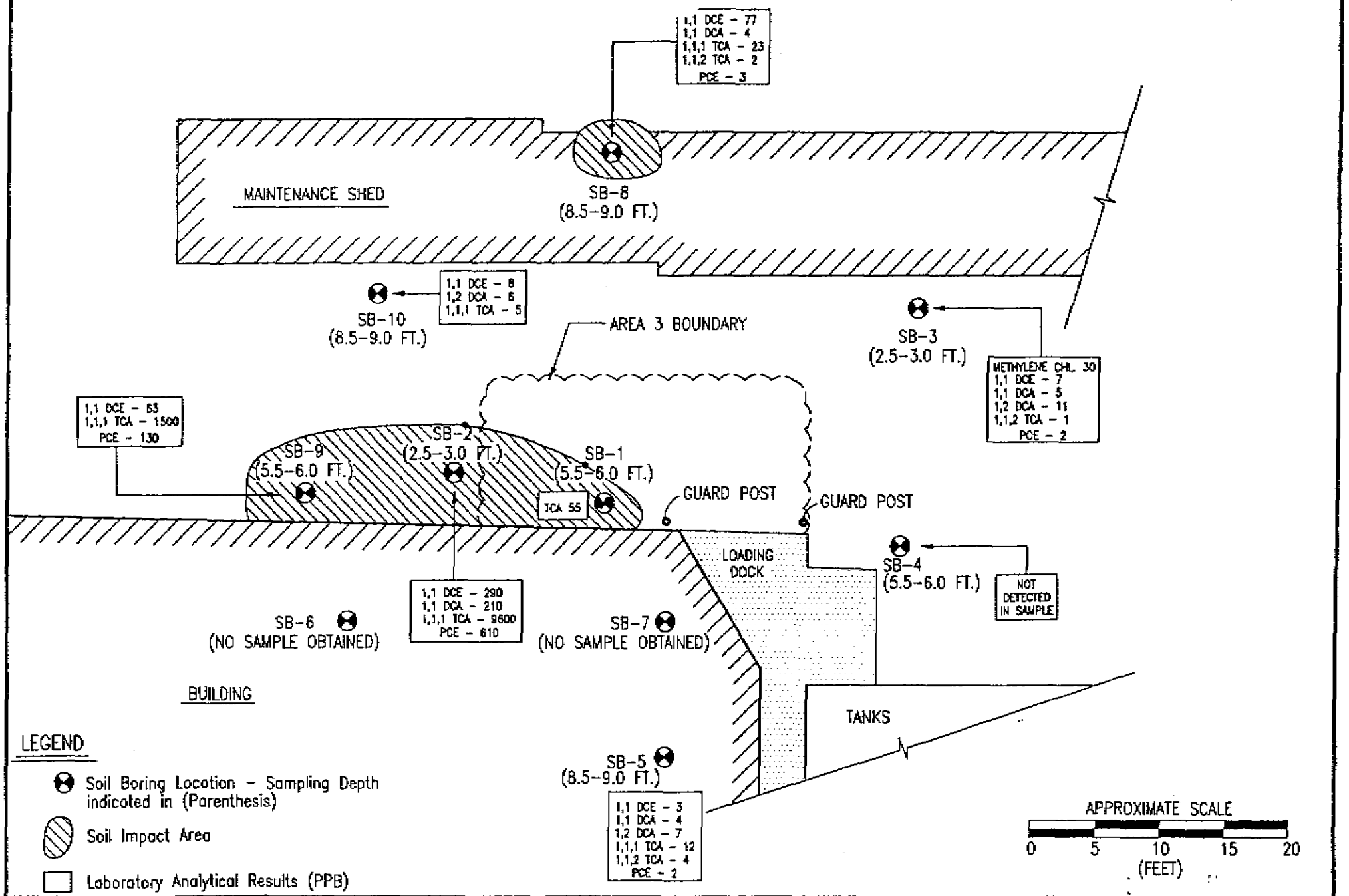
A variety of methods were employed in order to characterize and locate potential contaminants. A passive soil gas survey was implemented to estimate the lateral extent of environmental impact areas. Approximately fifty Petrex tubes were set out in a grid pattern to detect gases emanating from soil and groundwater constituents.

Each tube consisted of a glass tube containing a wire which is coated with activated charcoal. Tubes were placed in the ground at specific locations and were opened so as to expose the wire to soil gases. Three collectors were removed after 10 days of exposure and analyzed. The results were used to determine the duration of exposure for the remaining collectors.

The remaining collectors were exposed to soil gases for 25 days to ensure optimum exposure to VOCs. The tubes were then removed from their locations, labeled, and sent for laboratory analysis. Maps summarizing the results of the soil gas survey are contained in Appendix B.

Soil sampling for Area 3 was performed on August 10, 1990 and on September 12 and 13, 1990. Soil samples obtained on August 10 were collected as cuttings from well drilling activities and were used for determination of soil texture and gradation. A total of 10 soil borings were made on September 12 and 13 (see Drawing 2, Soil Sampling Results) for chemical screening and sampling.

Borings SB-1, 2, 3, 4, 9, and 10 were advanced in the alleyway in the vicinity of Area 3. Boring SB-8 was advanced in the maintenance shed and borings SB-5, 6, and 7 were advanced in the main building. Each of the borings was advanced with a "Minuteman" power auger drill.



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NATIONAL ENVIRONMENTAL TECHNOLOGIES INC.

DN KF CH
DATE DEC. 6, 1990
DWG. NO. 058001R06 REV. 0

CLIENT / TITLE
ALCATEL NETWORK SYSTEMS
Raleigh, NC

Soil Sampling Results (Drawing 2)

Samples were obtained with standard 1-1/4 inch split spoon samplers. Sample aliquots, approximately 150 grams, were placed in sample bags and allowed to de-gas for five minutes. The head space in each bag was then analyzed with a photoionization detector to screen the samples for the presence of VOC gasses. Readings of 0 to 19.3 ppm were detected, with the highest reading found in SB-4 at a depth of 5.5 to 6.0 feet.

Selected samples were then removed from the bags, "cored", and placed in laboratory supplied containers for laboratory analysis by EPA Methods 601 and 602, purgeable halocarbons and purgeable aromatics, respectively. "Coring" of samples was performed to remove representative portions of samples from the center of split spoon sample aliquots.

Five monitoring wells (MW-1 through MW-5) were installed on August 10, 1990 for groundwater quality and hydrogeologic analysis. The location of each monitoring well is shown on Drawing 1. Total depths of these wells varies between 15 to 20.5 feet (Table 2). A Diedrich D-120 power auger drilling rig turning 4-1/4 inch I.D. hollow stem augers was used to advance borings for well installation. All cuttings were placed into labeled drums and stored on site.

Each well was constructed of two-inch Schedule 40 PVC screens and casings. The wells were sealed with one to two feet of bentonite just above the screens and a bentonite cement mixture from the top of the bentonite seal to the surface. Each well was completed with a flush mount cover and locking inner casing cap. Well construction information is contained in Appendix D and summarized by Table 2, shown below.

TABLE 2

WELL CONSTRUCTION DATA

WELL	TOTAL DEPTH	GND ELEV	T/C ELEV	SCREEN INTERVAL
MW-1	20.0	229.25	229.02	9.0 - 19.0
MW-2	18.0	226.59	219.35	8.0 - 18.0
MW-3	20.5	229.58	229.34	10.5 - 20.5
MW-4	16.0	227.77	227.38	10.0 - 15.0
MW-5	20.0	229.30	229.04	10.0 - 20.0

Note: Elevations in feet MSL, other measurements in feet.
T/C - Top of well casing.

The wells were developed by surging and bailing with a clean, dedicated, teflon bailer until the water appeared free of sediment. All water evacuated from the wells was containerized in drums for on-site storage.

Prior to groundwater sampling, each monitoring well was purged by evacuating a minimum of three well volumes or enough water to empty the well. Samples were collected with a clean, dedicated, teflon bailer which was lowered gently to the static water surface. The recovered groundwater was then decanted into laboratory supplied containers and placed on ice for transport to the analytical laboratory. All samples were laboratory analyzed per EPA Method 601 and 601. These analyses were selected based on past chemical usages at the facility and results of previous analytical work.

6.0 SITE CHARACTERIZATION

6.1 SOIL GAS SURVEY

Although the results of the passive soil gas survey are essentially qualitative, they are intended to provide useful information regarding the relative abundance and lateral occurrence of detected compounds. It is important to realize, however, that this method of impact assessment does not verify the presence of solid or liquid phases for the these compounds. Constituents may be detected by the survey and not found during subsequent laboratory analyses of solids or liquids.

The method is most effective when used in soil systems that have not been modified by civil activities. Specifically, the presence of structures, such as foundation walls and floor slabs like those found at the Alcatel site, may act as traps for migrating vapors and lead to wrong conclusion regarding the occurrence of detected compounds.

The outcome of this soil gas survey produced results which were somewhat questionable. While some compounds were detected, and subsequently laboratory verified, others were found by the survey and not verified in either soil or groundwater samples. Because of this discrepancy, NET was reluctant to draw firm conclusions from the survey. Constituents detected by the soil gas survey are shown by the table below and graphical results of the survey are provided in Appendix B.

TABLE 3

CONSTITUENTS DETECTED BY SOIL GAS SURVEY

1. Trichloroethane (TCA)
2. Trichloroethene (TCE)
3. Tetrachloroethene (PCE)
4. Dichlorobenzene (DCB)
5. Hydrocarbons (BTEX, aliphatics, alkyl benzenes)

6.2 SOIL PHYSICAL CHARACTERIZATION

The soils in the plant area are approximately 20 feet deep and are underlain by bedrock. Soils are a residuum of a granitic protolith, and are typically soft to very dense, white to yellow brown, clayey to silty, very fine sands. They are typified by abundant mica particles, prevalent white quartz-rich zones, and local abundances of coarse fragments and dark brown mottles. Generally, the soils are classified as ML and SM under the Unified Soil Classification system.

Three samples were collected during drilling for MW-1, MW-4, and MW-5 for determination of soil physical parameters. Results of soils laboratory testing are contained in Appendix C. Results indicate that median grain sizes vary from 0.25 to 0.32 mm, liquid limits vary between 19 and 31, and natural moisture ranges from 8.9 to 14.2 weight percent. Sieve and hydrometer testing show that samples are fine to medium sands, Unified Classification SM.

6.3 SOIL CHEMICAL CHARACTERIZATION

Eight soil samples were collected in the vicinity of Area 3 for laboratory analysis. These samples were analyzed for purgeable halocarbons and purgeable aromatics by EPA Methods 601 and 602, respectively.

The samples were placed in clean, laboratory supplied, glass containers and sealed with teflon lined caps. Immediately after collection, each sample was placed in a cooler for delivery to the analytical laboratory. Ice was added to the cooler as necessary to maintain an internal temperature of approximately four degrees celsius.

Analyses of soil samples indicate at least five VOCs are present in the soils. Table 4 gives a summary of the analytical results for soil samples representing Area 3. See Appendix E for complete analytical results and Drawings 1 and 2 for sampling locations.

TABLE 4

AREA 3 SOIL ANALYTICAL RESULTS

BORING	DEPTH	CONSTITUENT	CONCENTRATION
SB-1	5.5 - 6.0	1,1,1 TCA	55
SB-2	2.5 - 3.0	1,1 DCE	290
		1,1 DCA	210
		1,1,1 TCA	9600
		PCE	610
SB-3	2.5 - 3.0	Meth. Chlor.	30
		1,1 DCE	7
		1,1 DCA	5
		1,1,1 TCA	11
		1,1,2 TCA	1
		PCE	2
SB-4		All Constituents BQL	
SB-5	8.5 - 9.0	1,1 DCE	3
		1,1 DCA	4
		1,2 DCA	7
		1,1,1 TCA	12
		1,1,2 TCA	4
		PCE	2
SB-6		No Sample Obtained	
SB-7		No Sample Obtained	
SB-8	8.5 - 9.0	1,1 DCE	77
		1,1 DCA	4
		1,1,1 TCA	23
		1,1,2 TCA	2
		PCE	3

TABLE 4 (CONTINUED)

SB-9	5.5 - 6.0	1,1 DCE	63
		1,1,1 TCA	1500
		PCE	130
SB-10	8.5 - 9.0	1,1 DCE	8
		1,1 DCA	6
		1,1,1 TCA	5

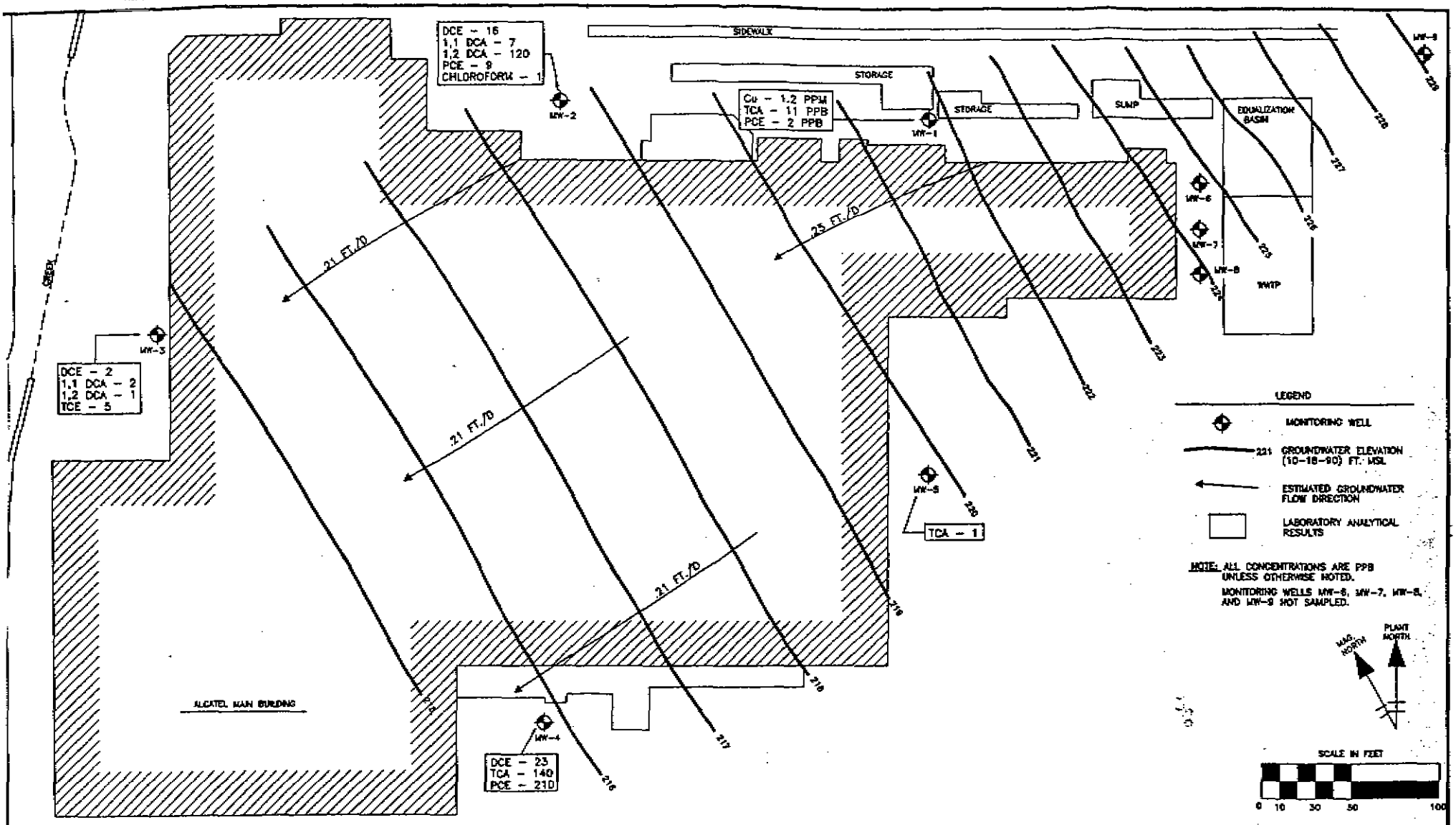
Note: All concentrations shown in ug/kg.
Depth shown in feet below ground surface.

The highest concentrations of VOCs are in the domain of borings SB-2 and SB-9, just to the west of the limit of excavation for Area 3. At this time it is uncertain if soils under the building floor slab immediately adjacent to Area 3 have been impacted. Low concentrations in other soil borings may be attributed to the migration of soil vapors.

6.4 GROUNDWATER PHYSICAL CHARACTERIZATION

Static groundwater levels in each monitoring well were determined so that a site potentiometric surface map could be generated. The static water level in each well was determined prior to purging and sampling by lowering an electronic sounding device to the water surface, and measuring the total distance between the water level and the top of the casing. All water level measurements were taken within a one hour period to reduce the effects of any water level fluctuation trends.

Based on October, 1990 observations, groundwater elevations range from approximately 215 to 222 feet (MSL) for monitoring wells MW-1 through MW-5. Water level data were plotted and a potentiometric map was generated for the site (see Drawing 3, Results of Groundwater Sampling). Horizontal groundwater flow is generally to the west, perpendicular to the potentiometric



REV.	DATE	DESCRIPTION	BY	CHK	APR
D	3/91	ORIGINAL ISSUE	KT		

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

CLIENT/TITLE

ALCATEL NETWORK SYSTEMS
Raleigh, NC

Results of Groundwater Sampling
(Drawing 3)

DN	K.FAIRCLOTH
CH	
DATE	DEC. 6, 1990
SCALE	NOTED
DWG. NO.	055001R07
REV.	D

contours. Four wells installed upgradient from Area 3 for another study confirm the areal continuity of the subsurface flow. These wells are shown as MW-6, MW-7, MW-8, and MW-9.

Slug tests were conducted in November, 1990 to determine the horizontal hydraulic conductivity in the upper portion of the saturated zone. Three wells were chosen for testing based on static water level and screen interval relationships. Static water levels in the wells were determined by the method described above. Following this, a pressure transducer was lowered into the well to measure the water level in the well during the test. The well was allowed to equilibrate and then a slug, constructed of PVC, was lowered into the well. A recording device was used to record the response of the water level over time. At the end of the test, the slug was removed and the well allowed to recover. This procedure was repeated three times for each well.

The Hvorslev Time Lag method was used to determine horizontal hydraulic conductivity of the material in the vicinity of the well screen. Horizontal hydraulic conductivity (K_h) is calculated by the following equation:

$$K_h = [r^2 \ln(L/R)]/2LT_o$$

where:
- K = horizontal hydraulic conductivity
- r = radius of the well casing
- R = effective radius of the well screen
- L = length of the well screen
- T_o = empirical constant relating change in head to well and media characteristics

Monitoring wells MW-1, MW-2, and MW-5 were used for slug testing. Table 5 contains a summary of hydraulic conductivity values calculated for these wells. Refer to Appendix G for slug testing field data.

TABLE 5

SLUG TESTING RESULTS

WELL	K_h AVERAGE
MW-1	3.22 ft/day
MW-2	3.02 ft/day
MW-5	5.72 ft/day
Mean	3.99 ft/day

As noted previously, the hydraulic gradient slopes to the west resulting in westward groundwater flow. Groundwater velocities were calculated along four transects of the phreatic surface. The following equation for groundwater seepage velocity was used to calculate flow velocity:

$$V_s = (K_h * i)/n_e$$

where:
V_s = seepage velocity
K_h = horizontal hydraulic conductivity
i = hydraulic gradient
n_e = effective porosity of soil (0.3)

Table 6 contains hydraulic gradient and seepage velocity calculation results for the four paths shown on Drawing 3.

TABLE 6

GROUNDWATER VELOCITY

PATH	HYDRAULIC GRADIENT	SEEPAGE VELOCITY
1	.016	.21 ft/day
2	.016	.21 ft/day
3	.016	.21 ft/day
4	.019	.25 ft/day
Mean	.017	.22 ft/day

6.5 GROUNDWATER CHEMICAL CHARACTERIZATION

Groundwater samples were obtained from monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 to determine if constituents have migrated to and impacted the water table aquifer. Prior to sampling, each well was purged a minimum of three times the volume of standing water in the well, or until dry. Water removed during purging was drummed and stored on site.

Sampling was accomplished with bottom-loading Teflon bailers attached to a braided nylon retrieval rope. A clean bailer was assigned to each well in order to prevent cross-contamination and to eliminate the field decontamination of bailers. Five groundwater samples were collected and analyzed for volatile organic compounds, lead, and copper according to EPA Methods 601/602, 239.2, and 6010, respectively. Samples collected for metals analyses were filtered prior to containerization. A new membrane filter was used for each sample.

Laboratory analyses of water samples show the presence of six compounds in the groundwater. Table 7 gives a listing of constituents found in the groundwater from monitoring wells MW-1 through MW-5. Other monitoring wells present at the site were not sampled as part of this investigation.

TABLE 7

GROUNDWATER ANALYTICAL RESULTS

WELL	CONSTITUENT	CONCENTRATION
MW-1	Copper	1200
	1,1,1 TCA	11
	PCE	2
MW-2	1,1 DCE	16
	1,1 DCA	7
	Chloroform	1
	1,1,1 TCA	120
	PCE	9
MW-3	1,1 DCE	2
	1,1 DCA	2
	1,1,1 TCA	1
	TCE	5
MW-4	1,1 DCE	23
	1,1,1 TCA	140
	PCE	210
MW-5	1,1,1 TCA	1

Note: All concentrations shown in ug/L

MW-1 was installed upgradient of Area 3 and contains copper at a concentration of 1.2 mg/L, which may be related to impacts from Area 2. Volatile constituents detected in MW-1 are of unknown origin. Metals were not found in concentrations above detection limits in other wells.

VOCs found in MW-2 and MW-3 may be related to impacted soils originating from Area 3. Although MW-2 does not lie directly downgradient of Area 3, VOCs found in this well may be attributed to lateral dispersion which occurs along the principal flow direction.

Well MW-4 is located southwest of Area 3 in the vicinity of the plant loading docks. Tetrachloroethylene (PCE) was detected at 210

ug/L in this well; however, it is not present in other wells. Monitoring well MW-5 is situated directly upgradient of MW-4. All 601/602 compounds for the sample obtained from MW-5 were reported to have concentrations below quantitation limit with the exception of TCA at a concentration of 1 ug/L. The relationship of constituent concentrations between wells MW-4 and MW-5 may indicate the presence of another groundwater impact source in addition to the sources suspected in the vicinity of Areas 2 and 3.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This investigation, combined with previous investigations, indicates impacted soil and groundwater exists at the ALCATEL site. Laboratory analytical results for both soil and groundwater show that multiple chemical constituents have impacted the area. Among these constituents are copper, lead, and various volatile organic compounds.

Introduction of these constituents into the environment may be attributed to chemical handling practices and leaks from transfer piping. Although Areas 2 and 3 have been identified as probable source locations for most groundwater constituents, results of this investigation suggest that an additional source area may be present hydraulically upgradient of monitoring well MW-4.

While the majority of impacted soil has been remediated in the vicinity of Area 3, analytical results suggest that low concentrations of VOCs remain present in the immediate vicinity of Area 3. Limited soil sampling to confirm the extent of soil impact is needed in the vicinity of soil borings SB-2 and SB-9.

Data gathered from monitoring wells indicates that the principal direction of groundwater flow, and constituent migration, is toward the west. Hydraulic conductivity and hydraulic gradient determinations were used to estimate groundwater flow velocities. Groundwater flow rates across the site are on the order of 0.22 feet/day. This flow occurs under phreatic, or water table, conditions within primary pore spaces of the weathered material. Migration of water within the fractured bedrock is suspected but has not been confirmed.

A variety of chemical constituents were identified in samples obtained from the five monitoring wells installed during this

investigation. Additional monitoring wells are necessary to give greater control in delineating the vertical and horizontal extent of impacted groundwater at the site.

In order to more accurately characterize identified and potential impacts at the study area, the following recommendations for continued groundwater and soil assessment are given:

1. An investigation should be performed which addresses the past history of chemical usage at the facility. A complete understanding of chemical usage and chemical handling practices will help identify potential constituent source locations and help identify constituent parent materials.

2. Additional soil sampling is necessary to better delineate impacted areas. Further soil sampling should concentrate on the areas in the vicinity of monitoring wells MW-4 and MW-5. The occurrence of PCE in the groundwater at MW-4 indicates that an additional source of groundwater impact may be located in the upgradient direction.

   Further soil sampling is required in the vicinity soil borings SB-2 and SB-9 to identify the lateral extent of soil impact west of Area 3.

3. The installation of additional groundwater monitoring wells is required to better assess the vertical and horizontal extent of groundwater impact. At least one monitoring well should be installed downgradient, and one well upgradient, of MW-4 to determine the extent of PCE impacts on the groundwater.

   A series of deep wells extending into the bedrock should be installed in an attempt to characterize the bedrock fracture system and its effect on constituent migration.

   Aquifer pump testing will be required to better quantify hydrogeologic parameters as they pertain to groundwater recovery system design.

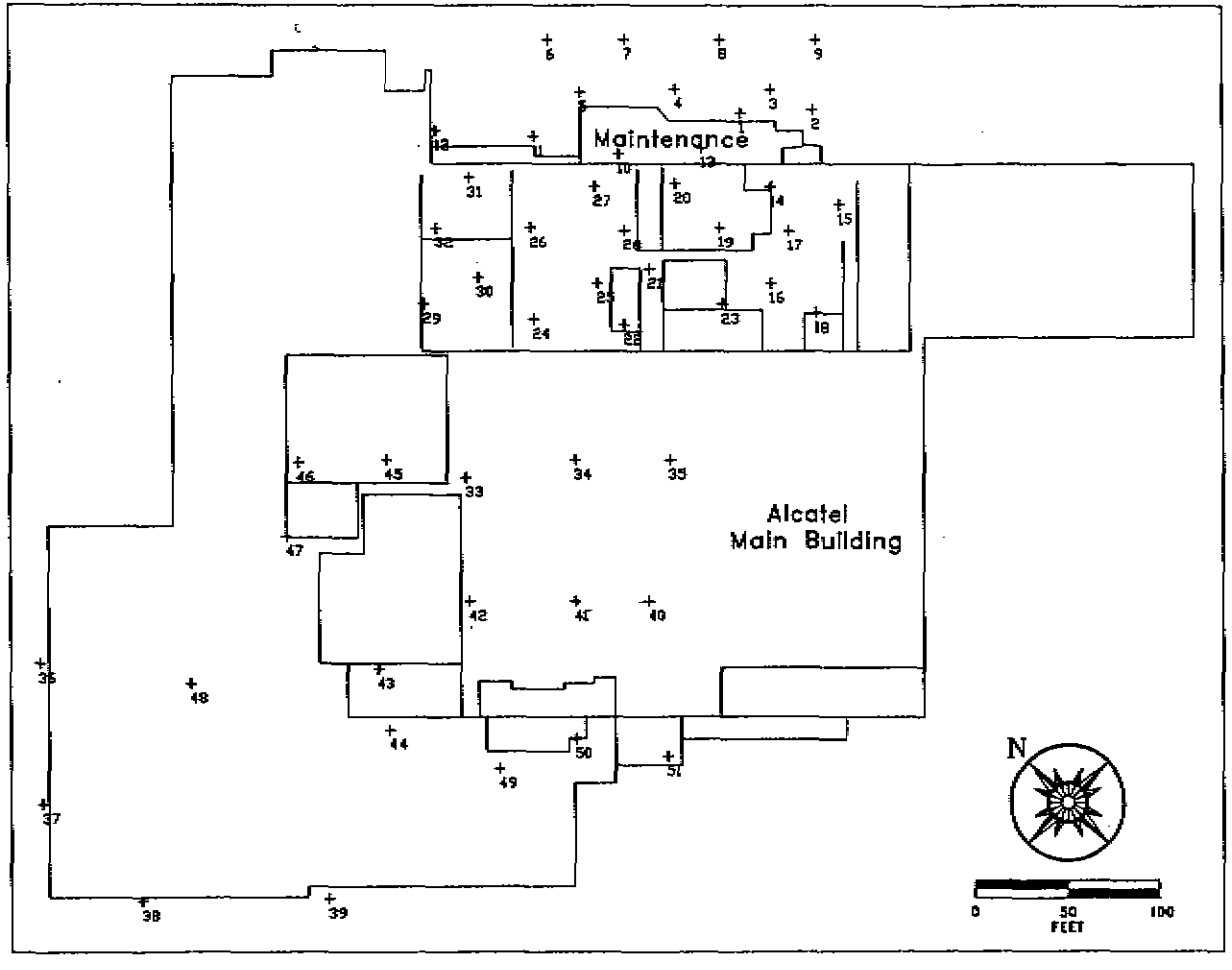
Appendix A

WEGS Area 1 and 2 Reports
(Relocated in RFI Appendix)

APPENDIX B

SOIL GAS SURVEY MAPS

NERI
NORTHEAST RESEARCH INSTITUTE, INC.
605 Parfet Street
Suite 100
Lakewood, Colorado 80215
(303) 238-0090
1066E



LEGEND

+ Petrex Sample Location

National Environmental Tech., Inc.

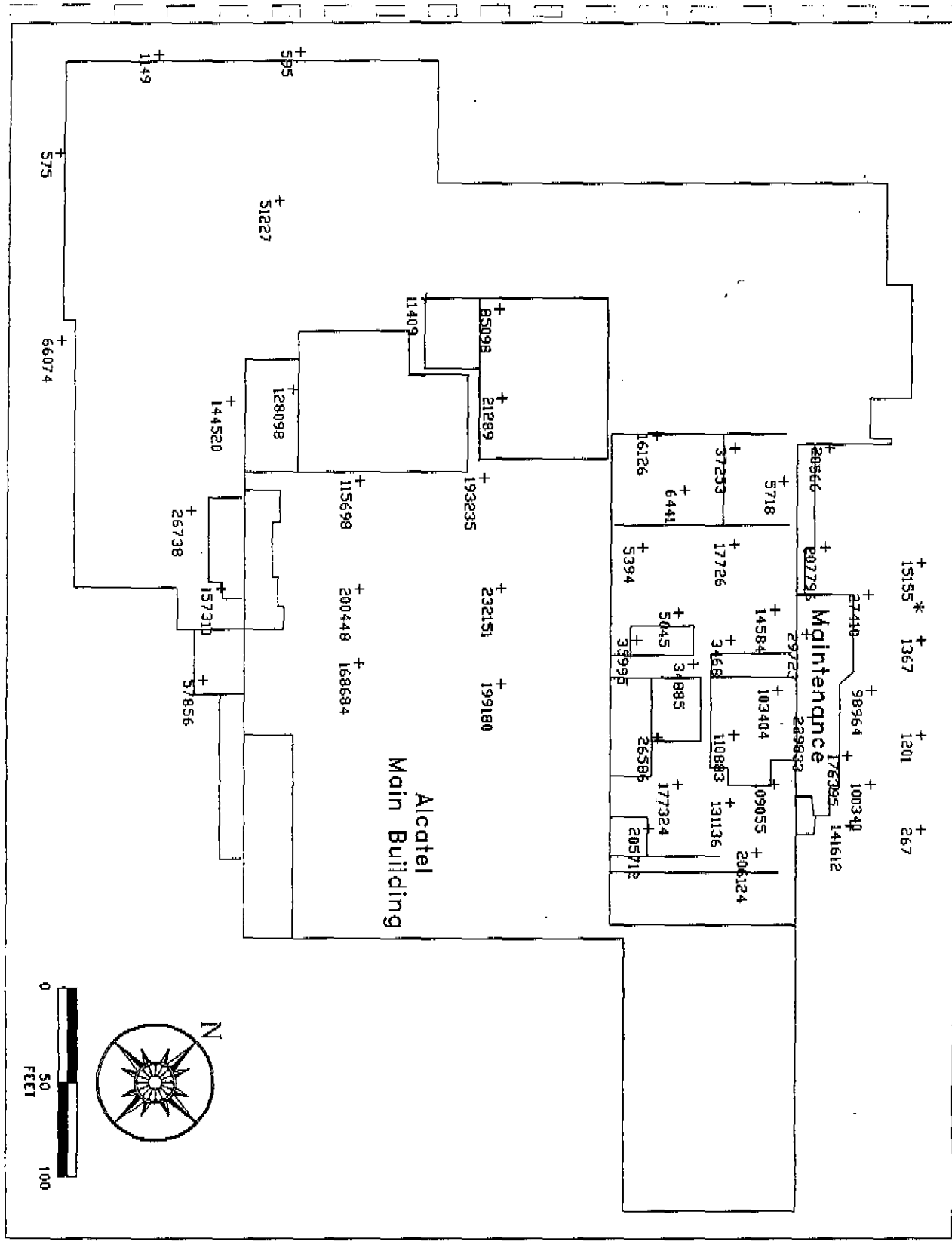
Sample Locations

Alcatel Corporation Site
Raleigh, North Carolina

Plate 1

PETREX FINGERPRINT TECHNIQUE®

August 3, 1990



National Environmental Tech., Inc.

Relative Flux

Tetrachloroethane (PCE)

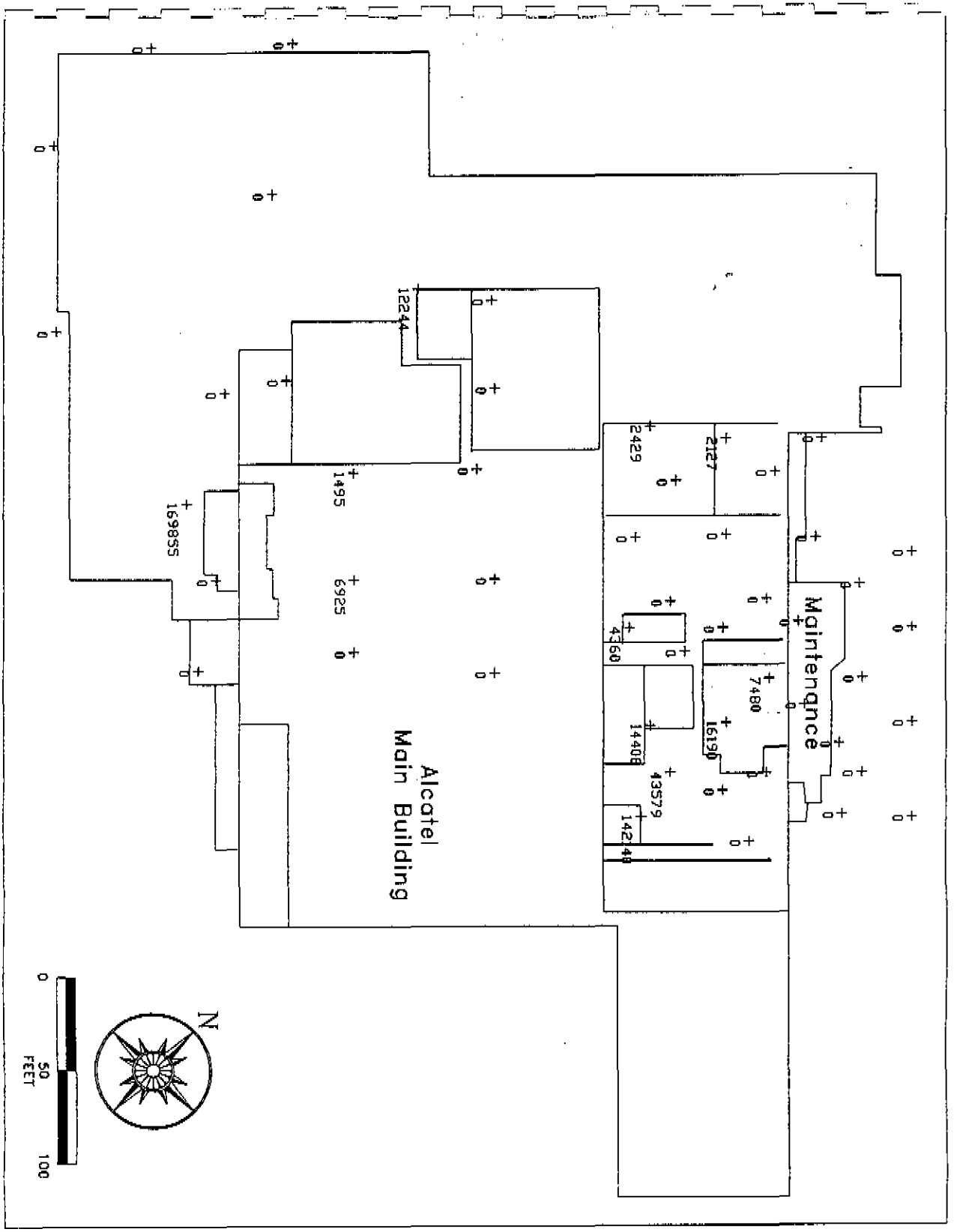
Alcatel Corporation Site

Raleigh, North Carolina

Plate 2

PETREX FINGERPRINT TECHNIQUE®

August 3, 1990



National Environmental Tech., Inc.

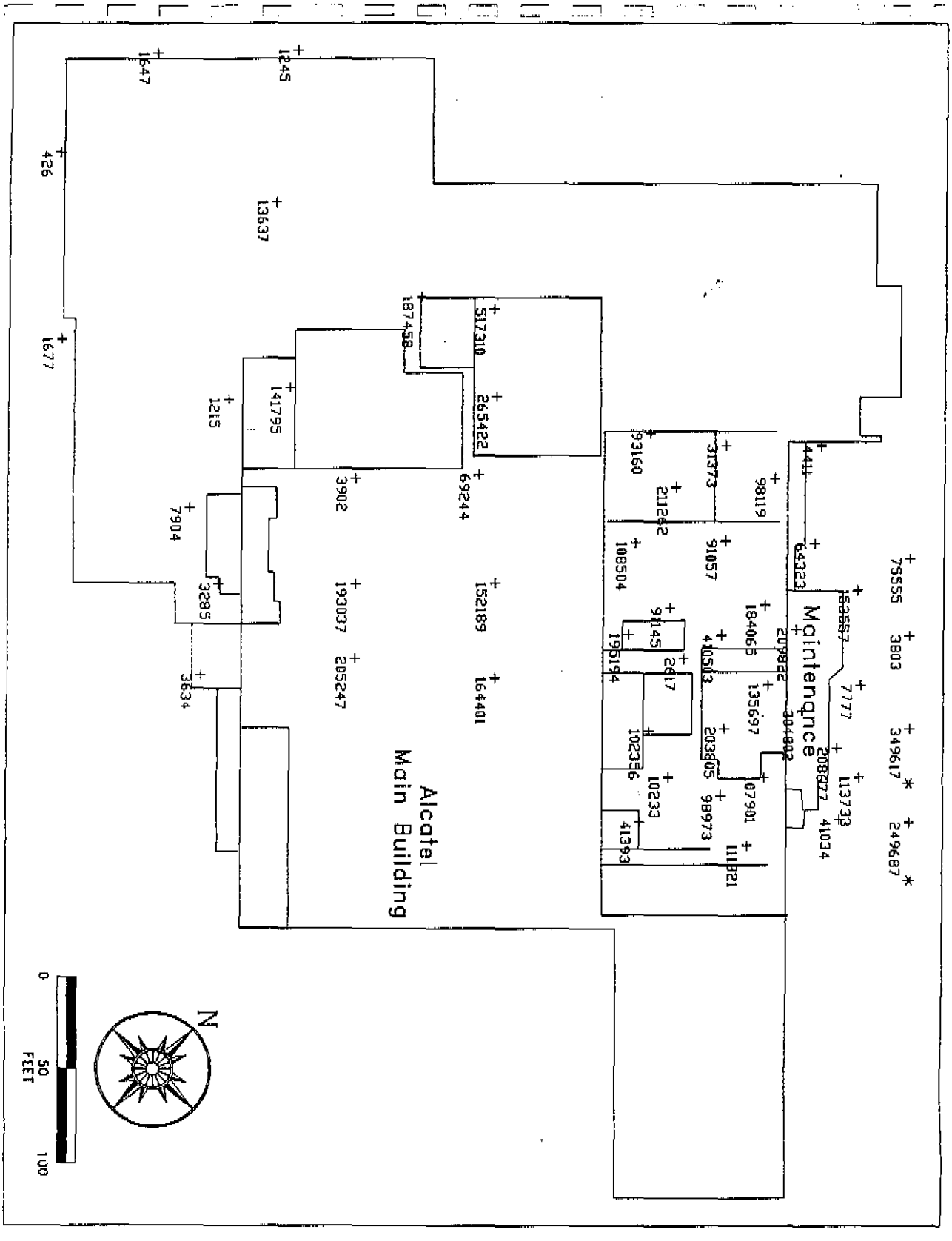
Relative Flux
Dichlorobenzene

Alcatel Corporation Site
Raleigh, North Carolina

Plate 3

PETREX FINGERPRINT TECHNIQUE®

August 3, 1990



National Environmental Tech., Inc.

Relative Flux

Aromatic Hydrocarbon Compounds

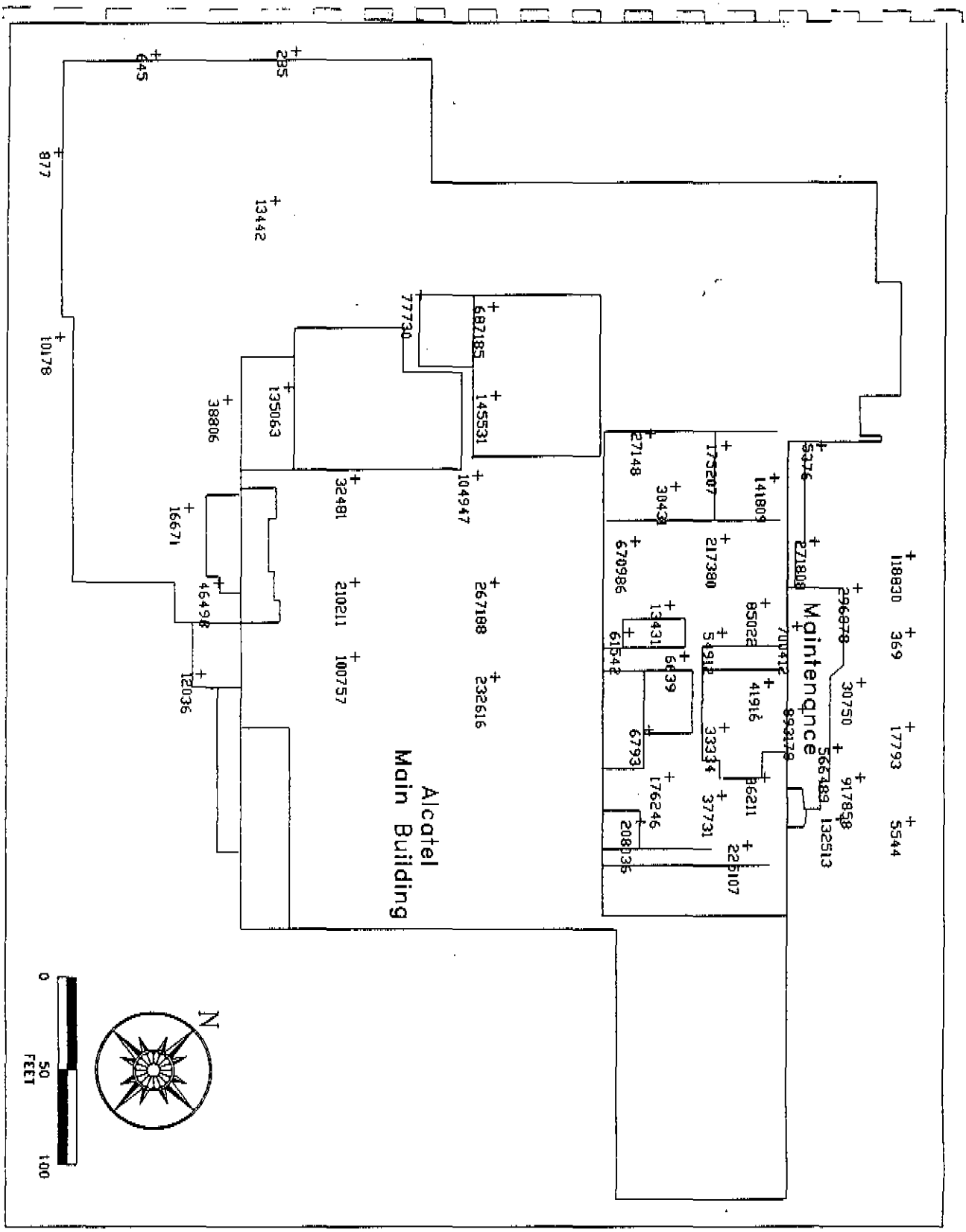
Alcatel Corporation Site

Raleigh, North Carolina

Plate 4

PETREX FINGERPRINT TECHNIQUE®

August 3, 1990



National Environmental Tech., Inc.

Relative Flux

Aliphatic Hydrocarbon Compounds

Alcatel Corporation Site

Raleigh, North Carolina

Plate 5

PETREX FINGERPRINT TECHNIQUE®

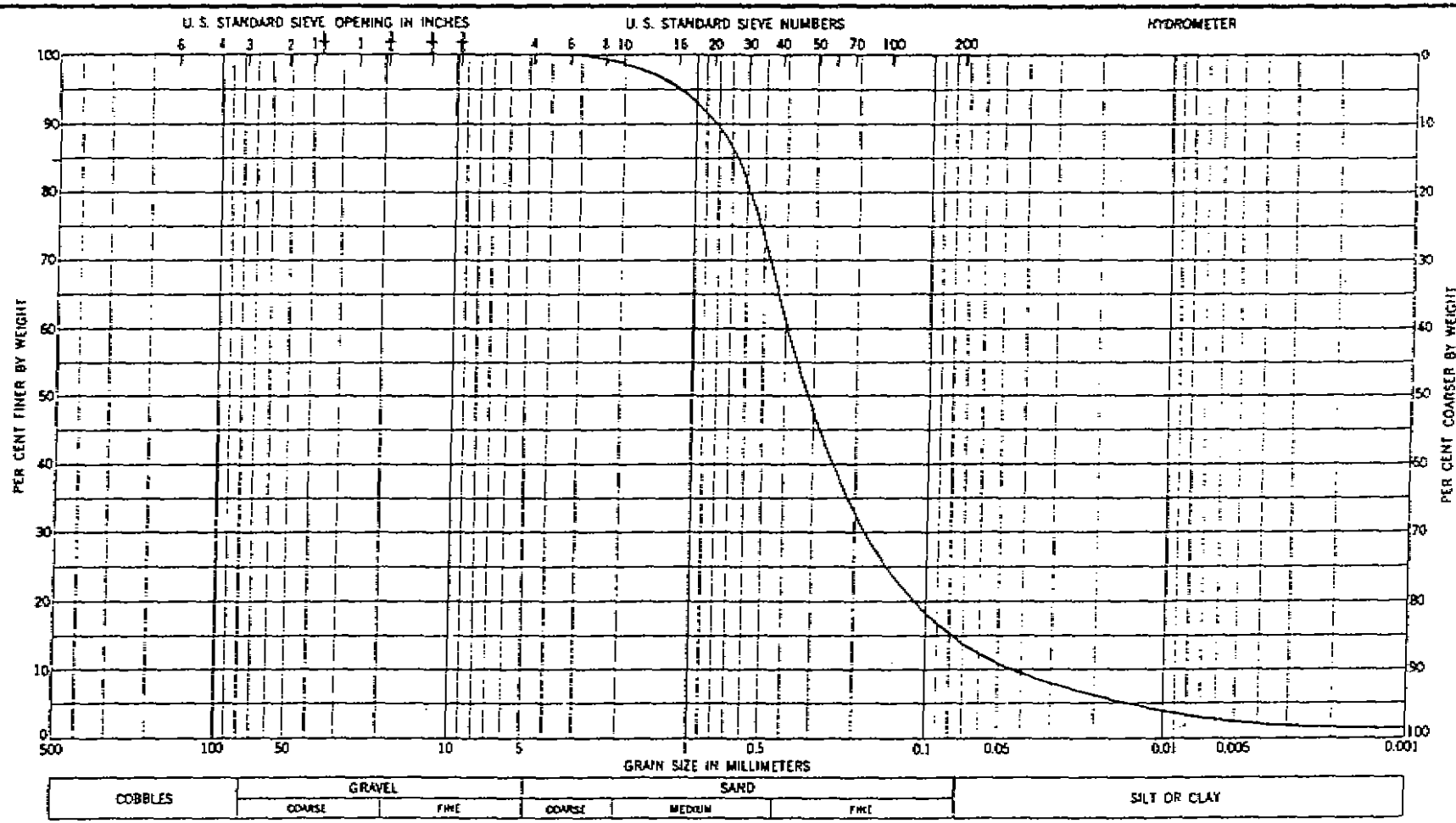
August 3, 1990

APPENDIX C

SOILS LABORATORY RESULTS

Project NET Project Alcatel Raleigh Job No. 3687

NET Job No. 058001 P.O. No. 286 Date 11/28/90



Boring No	Sample No	Elev or Depth	Classification		Nat w %	LL	PL	PI
MW-1 MW-4 Composite		13.5' - 15.0'	Tan white silty fine-medium sand (SM)	MW-1	14.2	31	---	NP
				MW-4	8.9	19	---	NP

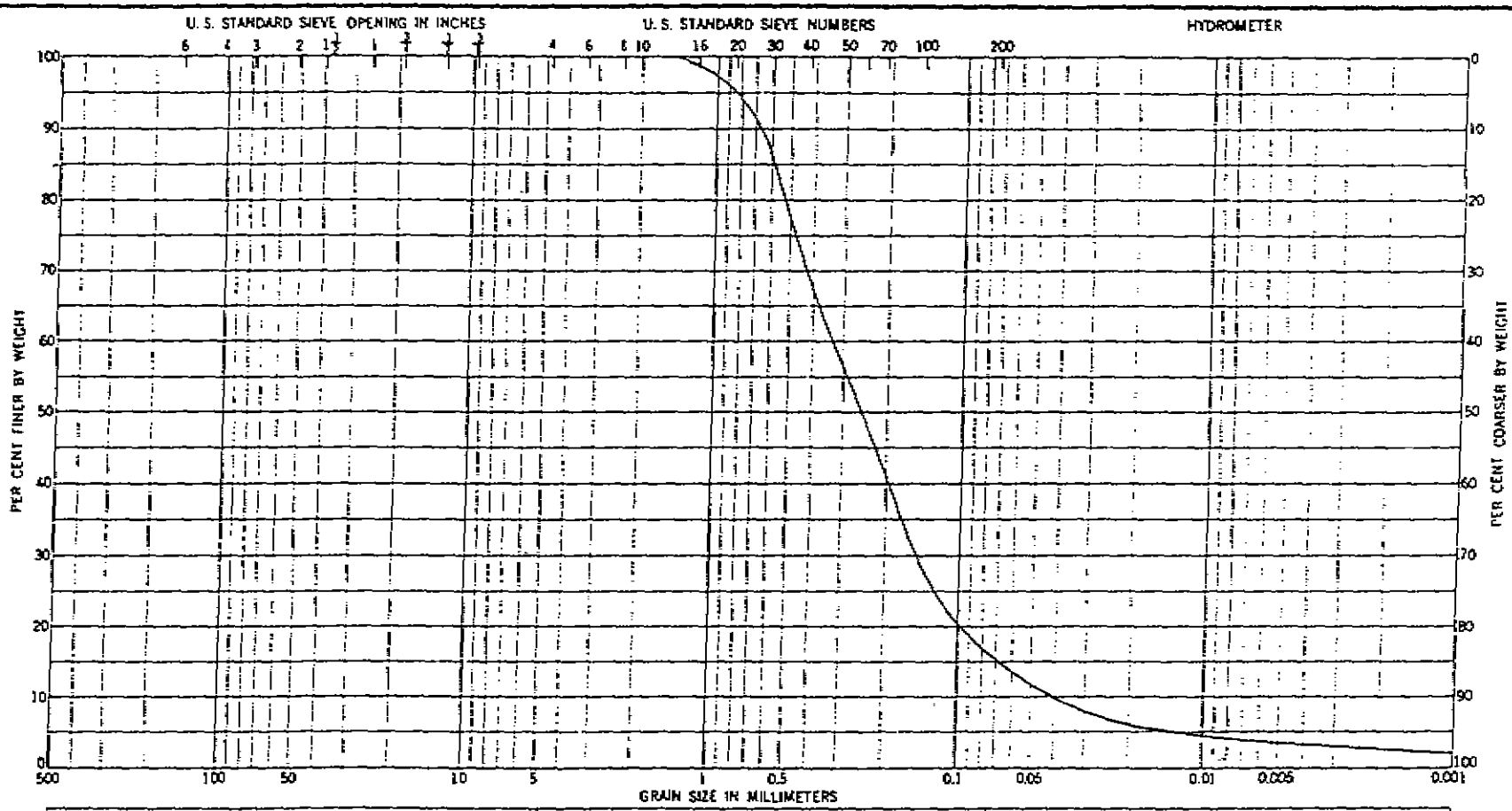
SUBSURFACE INVESTIGATIONS, INC.
P.O. BOX 241204
CHARLOTTE, NC 28224

GRADATION CURVES

Notes: (1) Glass container broken during transportation resulted in a composite sample and minor contamination with glass fragments.

Project NET Project Alcatel Raleigh Job No. 3687

NET Job No. 058001 P.O. No. 286 Date 11/28/90



Boring No	Sample No	Elev or Depth	Classification	Nat w %	LL	PL	PI
MW-5		3.5' - 5.0'	Tan white silty fine to medium sand (SM)	9.1	30	----	NP

SUBSURFACE INVESTIGATIONS, INC.
P.O. BOX 241204
CHARLOTTE, NC 28224

GRADATION CURVES

APPENDIX D

BORING LOGS AND WELL CONSTRUCTION DATA

BORING LOG		BORING NO: MW-1	PAGE 01 Of 01
LOCATION: Alcatel, Raleigh, NC	DATE COMPLETED: 8/13/90	NET PROJECT NO: 058001	
OTAL DEPTH (FT): 20.0	GROUNDWATER DEPTH (FT): 6.66 (8/20/90)	SCREEN DEPTH (FT): 9.0 - 19.0	
GROUND ELEV (MSL): 229.25	T/C ELEV (MSL): 229.02	SCREEN INTERVAL (MSL): 210.3 - 220.3	

DEPTH (FT)	ELEV (MSL)	UNIFIED CLASSIFICATION	BLW CNT (/FT)	SAMPL NO	S I	COMMENTS	PID (PPM)
		Gravel to approximately 1.0 feet					
4.5	224.8	Firm, yellow to yellow-gray silty medium to fine sand (SM)	19			5 to 10% white patches or Qtz. rich zones. Weak granular structure.	0
7.0	222.3						
9.0 9.5	220.3 219.8	Very dense, white to yellow gray-brown medium to fine clayey sand (SC)	51		-	Approx. 25% white patches, 2% dark brown stained mottles. Med. to fine weak granular structure. Weathered granitic material.	0
14.5	214.8	Very dense, yellow to gray, medium to fine silty clayey sand (SC)	50/5		-	"Salt and Pepper" appearance, white Qtz. rich patches, approx. 3% dark brown mottles. Weak to moderate granular structure.	0
19.0 19.5	210.3 209.8 209.3	Very dense, yellow-grey to yellow-grey brown, medium to fine clayey sand.(SC)	50/3		-	White and grey brown patches. Moderate granular structure.	0
		Auger Refusal @ 20.0					

EQUIPMENT: 4.25 inch I.D. H.S. augers w/ 1.25 inch S.S. sampler

NOTES: SI - SCREEN INTERVAL
Monitoring well completed with flush mount cover.

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL MANAGEMENT - GROUNDWATER SECTION
P.O. BOX 27687 - RALEIGH, NC 27611-7687
PHONE (919)733-3221

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR Groundwater Protection, Inc.
DRILLER REGISTRATION NUMBER 1105
STATE WELL CONSTRUCTION PERMIT NUMBER: 91-0892-WM-0417

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh County: Wake
(Road, Community, or Subdivision and Lot No.)

2. OWNER Alcatel Network Systems Corp.
ADDRESS 2912 Wake Forest Road (Street or Route No.)
Raleigh (City or Town) NC (State) 27609 (Zip Code)

3. DATE DRILLED 8-13-90 USE OF WELL Monitoring
4. TOTAL DEPTH 19.0' CUTTINGS COLLECTED [x] Yes [ ] No
5. DOES WELL REPLACE EXISTING WELL? [ ] Yes [x] No
6. STATIC WATER LEVEL: 10.0 FT. [ ] above [ ] below TOP OF CASING,
TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE.
7. YIELD (gpm): N/A METHOD OF TEST N/A
8. TER ZONES (depth): N/A
9. CHLORINATION: Type N/A Amount N/A

Depth From	Depth To	DRILLING LOG Formation Description
0.0'-3.5'		GRAVEL ORANGE TAN SANDY SILT
3.5'-5.0'		GRAY SANDY MICACEOUS SILT
5.0'-10.0'		WHITE TAN GRAY SANDY SILT
10.0'-20.0'		GRAY SANDY SILT

If additional space is needed use back of form.

0. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	9.0	2.0"	Sch. 40	PVC

1. GROUT:

	Depth From	Depth To	Material	Method
	1.0	6.0	Portland/Bentonite Slurry	

2. SCREEN:

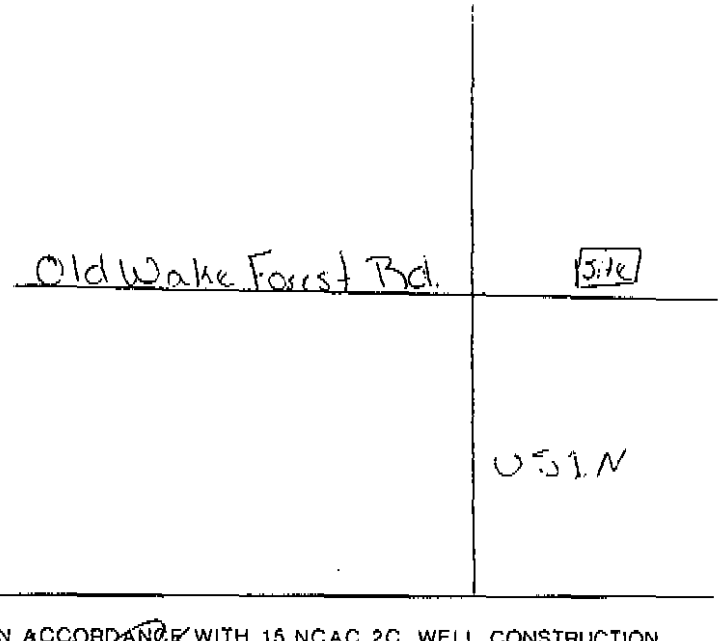
	Depth From	Depth To	Diameter	Slot Size	Material
	9.0	19.0	2.0 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

3. GRAVEL PACK:

	Depth From	Depth To	Size	Material
	8.0	19.0	20-60 Fine Silica Sand	

REMARKS: MW-1, Bentonite pellets from 6.0 to 8.0 feet.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT — DATE 9-24-90

Submit original to Division of Environmental Management and copy to well owner.

GW-1 (REVISED 2/90)

WELL COMPLETION LOG

LOCATION: Alcatel WORK ORDER# C-1249

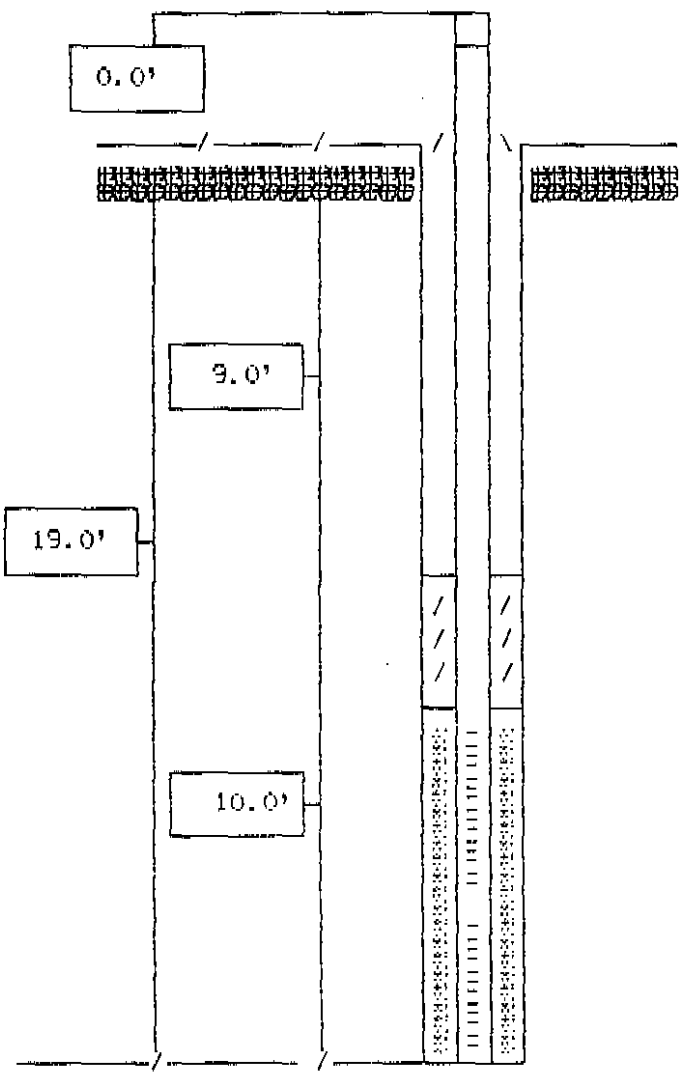
ADDRESS: Raleigh, NC

CLIENT: NET DATE 8-10-90

WELL NUMBER: MW-1 CONTACT: Hank Lyon

INSTALLED BY: Mike McConahey

OTHER SERVICES PERFORMED: None



X FLUSH MANHOLE

ABOVE GRADE PROTECTOR

NONE

CONCRETE 3 BAGS

CEMENT GROUT 2 BAGS

RISER - TYPE PVC

RISER - SIZE 2.0" Sch. 40

BENTONITE 50 Lbs. 3/8" Pellets

SCREEN - TYPE PVC

SCREEN - SIZE 2.0" .010 Slot

FILTER TYPE 20-60 Fine Silica Sand

DEVELOPMENT: BAILED PUMPED AIR LIFT SURGE SWAB NONE X

TOTAL TIME: TOTAL GALLONS:

WATER APPEARANCE: START FINISH

BORING LOG		BORING NO: MW-2	PAGE 01 OF 01
LOCATION: Alcatel, Raleigh, NC	DATE COMPLETED: 8/13/90	NET PROJECT NO: 058001	
OTAL DEPTH (FT): 18.0	GROUNDWATER DEPTH (FT): 7.17 (8/20/90)	SCREEN DEPTH (FT): 8.0 - 18.0	
GROUND ELEV (MSL): 226.59	T/C ELEV (MSL): 226.35	SCREEN INTERVAL (MSL): 208.6 - 218.6	

DEPTH (FT)	ELEV (MSL)	UNIFIED CLASSIFICATION	BLW CNT (/FT)	SAMPL NO	SI	COMMENTS	PID (PPM)
		Asphalt and gravel to approx. 1.0 feet					
4.5	222.1	Very dense, yellow to yellow-orange, medium to fine silty sand (SM)	50/1			Abundant biotite mica flakes, moderate, medium to fine granular structure. Weathered granitic materil.	0
7.0	219.6						
8.0	218.6						
9.5	217.1	Very dense, orange to red brown clayey sand with large patches of medium to fine sand (SC/SP)	50/2			5 to 10% coarse fragments, moderate granular to subangular blocky struc. Weathered granitic material.	0
14.5	212.1	Very hard, red orange to gray brown clayey sand (SC)	50/.5			5 to 10% coarse fragments, abundant biotite mica flakes, moderate subangular blocky structure. Weathered granitic material.	0
18.0	208.6	Auger Refusal @ 18.0					

EQUIPMENT: 4.25 inch I.D. H.S. augers w/1.25 inch S.S. sampler

NOTES: SI - SCREEN INTERVAL
Monitoring Well completed with flush mount cover.

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL MANAGEMENT - GROUNDWATER SECTION
P.O. BOX 27687 - RALEIGH, NC 27611-7687
PHONE (919)733-3221

WELL CONSTRUCTION RECORD

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

DRILLING CONTRACTOR Groundwater Protection, Inc.
DRILLER REGISTRATION NUMBER 1105
STATE WELL CONSTRUCTION PERMIT NUMBER: 91-0892-WM-0417

1. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh
County: Wake
(Road, Community, or Subdivision and Lot No.)

2. OWNER Alcatel Network Systems Corp.
ADDRESS 2912 Wake Forest Road (Street or Route No.)
Raleigh (City or Town) NC (State) 27609 (Zip Code)

3. DATE DRILLED 8-13-90 USE OF WELL Monitoring
4. TOTAL DEPTH 18.0' CUTTINGS COLLECTED [X] Yes [ ] No
5. DOES WELL REPLACE EXISTING WELL? [ ] Yes [X] No
6. STATIC WATER LEVEL: 10.0 FT. [ ] above [ ] below TOP OF CASING.
TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE.
7. YIELD (gpm): N/A METHOD OF TEST N/A
8. WATER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount N/A

10. CASING:

	Depth From	To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	8.0	2.0"	Sch. 40	PVC

11. GROUT:

	Depth From	To	Material	Method
	1.0	5.0	portland/Bentonite	Slurry

12. SCREEN:

	Depth From	To	Diameter	Slot Size	Material
	8.0	18.0	2.0 in.	.010 in.	PVC

13. GRAVEL PACK:

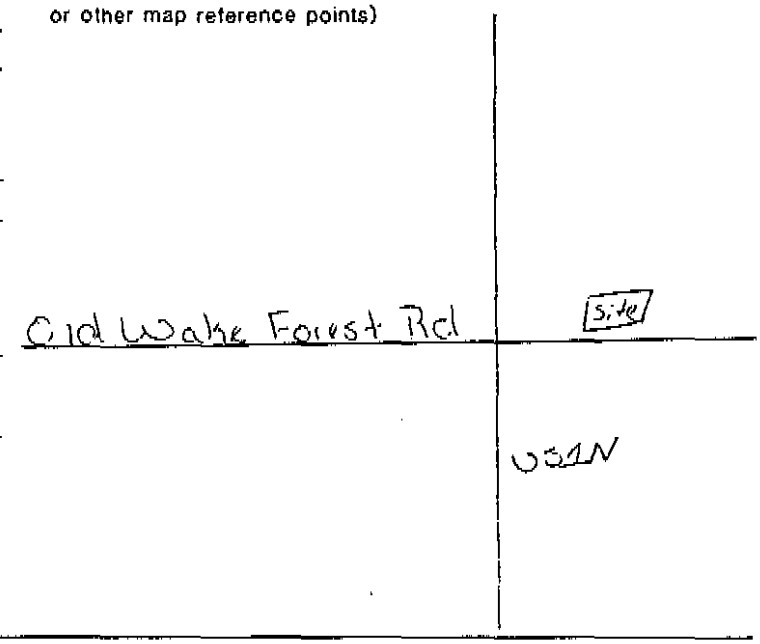
	Depth From	To	Size	Material
	7.0	18.0	20-60	Fine Silica Sand

14. REMARKS: MW-2, Bentonite pellets from 5.0 to 7.0 feet.

Depth From	To	DRILLING LOG Formation Description
0.0'-3.5'		ASPHALT STONE TAN ORANGE CLAYEY SANDY*
3.5'-5.0'		WHITE TAN ORANGE SANDY SILT
5.0'-18.0'		GRAY SANDY SILT
		*SILT

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT _____ DATE 9-24-90

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REVISED 2/90

WELL COMPLETION LOG

LOCATION: Alcatel WORK ORDER# C-1249

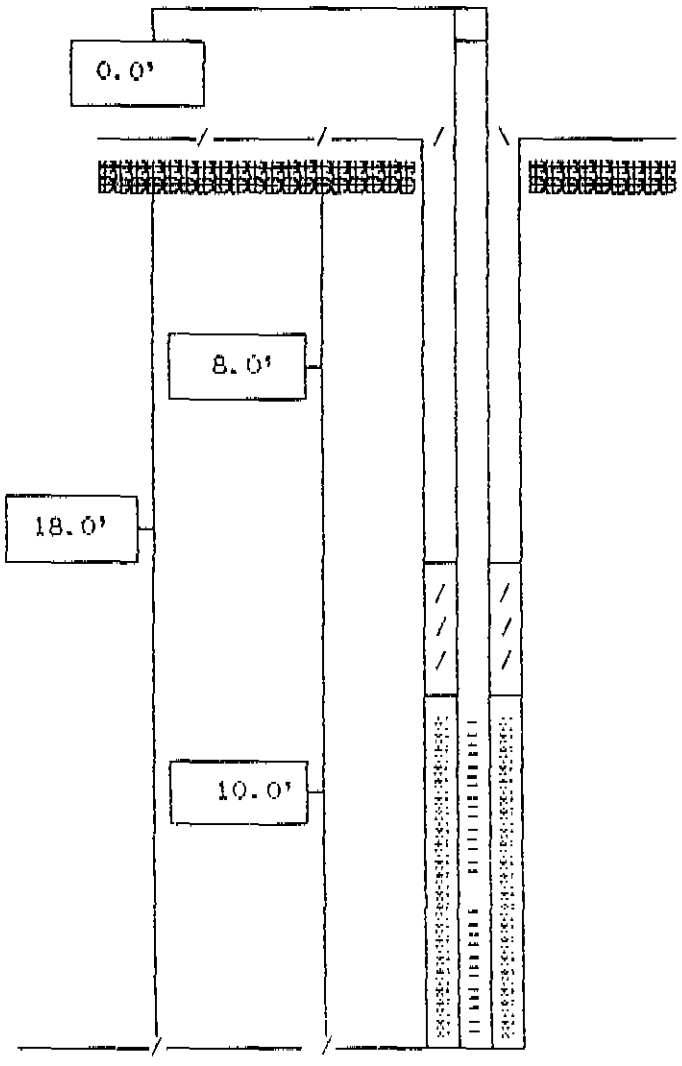
ADDRESS: Raleigh, NC

CLIENT: NET DATE 8-10-90

WELL NUMBER: MW-2 CONTACT: Hank Lyon

INSTALLED BY: Mike McConahey

OTHER SERVICES PERFORMED: None



X FLUSH MANHOLE

ABOVE GRADE PROTECTOR

NONE

CONCRETE 3 BAGS

CEMENT GROUT 2 BAGS

RISER - TYPE PVC

RISER - SIZE 2.0" Sch. 40

BENTONITE 50 Lbs. 3/8" Pellets

SCREEN - TYPE PVC

SCREEN - SIZE 2.0" .010 Slot

FILTER TYPE 20-60 Fine Silica Sand

DEVELOPMENT: BAILED ___ PUMPED ___ AIR LIFT ___ SURGE ___ SWAB ___ NONE X

TOTAL TIME: TOTAL GALLONS:

WATER APPEARANCE: START FINISH

BORING LOG		BORING NO: MW-3	PAGE 01 OF 01
LOCATION: Alcatel, Raleigh, NC	DATE COMPLETED: 8/13/90	NET PROJECT NO: 058001	
TOTAL DEPTH (FT): 20.5	GROUNDWATER DEPTH (FT): 14.68	SCREEN DEPTH (FT): 10.5 - 20.5	
GROUND ELEV (MSL): 229.58	T/C ELEV (MSL): 229.34	SCREEN INTERVAL (MSL): 209.1 - 219.1	

DEPTH (FT)	ELEV (MSL)	UNIFIED CLASSIFICATION	BLW CNT (/FT)	SAMPL NO	SI	COMMENTS	PID (PPM)
		Brown sandy loam to 0.5 feet					
4.5	225.1	Firm, brown to red brown, sandy clay (CL)	7			3 to 5% coarse fragments, abundant mica flakes, moderate angular to sub-angular blocky structure. Rooted. Fill.	0
9.5 / 10.5	220.1 / 219.1	Very stiff, yellow brown to brown orange sandy clay (CL)	18			2% coarse fragments, 2% dark brown to red brown mottled blocks. Abund mica flakes (biotite?), moderate angular blocky structure. Fill.	0
12.5	217.1						
14.5	215.1	Firm, yellow to yellow gray medium clayey silty sand (SM)	13			2 to 4% very coarse fragments, moderate granular structure. Abundant mica flakes.	0
17.0	212.6						
19.5	210.1	Stiff, dary yellow-gray to gray silty clay (CL)	11			<2% coarse fragments, approx. 2% organic material, 1 to 2% yellow orange mottles (Fe-staining). Strong, blocky structure, readily forms ribbons. Flood plain material.	0
20.5	209.1	Boring Terminated @ 20.5					

EQUIPMENT: 4.25 inch I.D. H.S. augers w/ 1.25 inch S.S. sampler

NOTES: SI - SCREEN INTERVAL
Monitoring well completed with flush mount cover.

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P.O. BOX 27687 - RALEIGH, NC 27611-7687
PHONE (919)733-3221

WELL CONSTRUCTION RECORD

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

DRILLING CONTRACTOR Groundwater Protection, Inc.

DRILLER REGISTRATION NUMBER 1105

STATE WELL CONSTRUCTION PERMIT NUMBER: 91-0892-WM-0417

WELL LOCATION: (Show sketch of the location below)

Nearest Town: Raleigh

County: Wake

(Road, Community, or Subdivision and Lot No.)

OWNER Alcatel Network Systems Corp.

ADDRESS 2912 Wake Forest Road (Street or Route No.)

Raleigh (City or Town) NC (State) 27609 (Zip Code)

3. DATE DRILLED 8-13-90 USE OF WELL Monitoring

TOTAL DEPTH 20.5' CUTTINGS COLLECTED ☒ Yes ☐ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

STATIC WATER LEVEL: 10.0 FT. ☐ above ☒ below TOP OF CASING,

TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST N/A

ER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount N/A

. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0'	10.5 Ft.	2.0"	Sch. 40	PVC
		Ft.			
		Ft.			

. GROUT:

	Depth From	Depth To	Material	Method
	1.0	7.5 Ft.	Portland/Bentonite Slurry	
		Ft.		

12. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	10.5	20.5 Ft.	2.0 in.	.010 in.	PVC
		Ft.	in.	in.	
		Ft.	in.	in.	

. GRAVEL PACK:

	Depth From	Depth To	Size	Material
	9.5	20.5 Ft.	20-60	Fine Silica Sand
		Ft.		

. REMARKS: MW-3, Bentonite pellets from 7.5 to 9.5 feet.

Depth From	Depth To	DRILLING LOG Formation Description
0.0'-3.5'		GRASS BROWN CLAYEY SANDY SILT
3.5'-13.5'		TAN BROWN CLAYEY SANDY SILT
13.5'-18.5'		WHITE TAN CLAYEY SANDY SILT
18.5'-21.0'		GRAY CLAYEY SANDY SILT

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)

Old Wake Forest Rd.

3.+8

USIN

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT DATE 9-24-90

Submit original to Division of Environmental Management and copy to well owner

GW-1 (REVISED 2/90)

WELL COMPLETION LOG

LOCATION: Alcatel WORK ORDER# C-1249

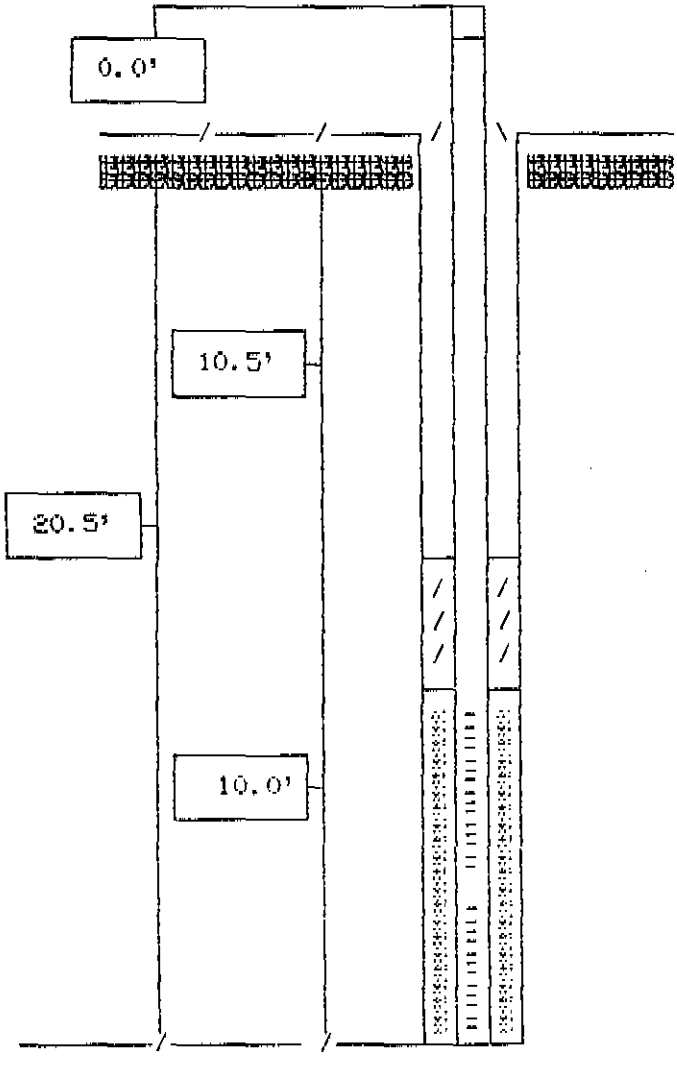
ADDRESS: Raleigh, NC

CLIENT: NET DATE 8-10-90

WELL NUMBER: MW-3 CONTACT: Hank Lyon

INSTALLED BY: Mike McConahey

OTHER SERVICES PERFORMED: None



X FLUSH MANHOLE

ABOVE GRADE PROTECTOR

NONE

CONCRETE 3 BAGS

CEMENT GROUT 2 BAGS

RISER - TYPE PVC

RISER - SIZE 2.0" Sch. 40

BENTONITE 50 Lbs. 3/8" Pellets

SCREEN - TYPE PVC

SCREEN - SIZE 2.0" .010 Slot

FILTER TYPE 20-60 Fine Silica Sand

DEVELOPMENT: BAILED ___ PUMPED ___ AIR LIFT ___ SURGE ___ SWAB ___ NONE X

TOTAL TIME: TOTAL GALLONS:

WATER APPEARANCE: START FINISH

BORING LOG		BORING NO: MW-4	PAGE 01 OF 01
LOCATION: Alcatel, Raleigh, NC	DATE COMPLETED: 8/13/90	NET PROJECT NO: 058001	
TOTAL DEPTH (FT): 16.0	GROUNDWATER DEPTH (FT): 10.95 (8/20/90)	SCREEN DEPTH (FT): 10.0 - 15.0	
GROUND ELEV (MSL): 227.77	T/C ELEV (MSL): 227.38	SCREEN INTERVAL (MSL): 212.8 - 217.8	

DEPTH (FT)	ELEV (MSL)	UNIFIED CLASSIFICATION	BLW CNT (/FT)	SAMPL NO	SI	COMMENTS	PID (PPM)
		Asphalt and gravel to 1.0 feet					
4.5	223.3	Very firm, yellow to yellow brown, medium to fine silty sand (SM)	30			<1% coarse material, white patches or Qtz. rich zones, 15 to 20% grey-brown clay patches, <1% light brown stained mottles, very weak crumb to granular structure.	0
9.5 10.0	217.3 217.8	Very dense, yellow orange to yellow gray-brown medium to fine silty clayey sand (SM)	50/5			Approx. 2% yellow orange Fe-staining mottles, weak granular structure. Weathered granitic material.	0
12.0	215.8	----------					
14.5	213.3	Very dense, gray to gray brown, medium to fine clayey sand (SC)	50/2			White Qtz. rich patches are less common, weak to moderate granular structure.	0
16.0	211.8	---------- Auger Refusal @ 16.0					

EQUIPMENT: 4.25 inch I.D. H.S. augers w/ 1.25 inch S.S. sampler

NOTES: SI - SCREEN INTERVAL
Monitoring well completed with flush mount cover.

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P.O. BOX 27687 - RALEIGH, NC 27611-7687
PHONE (919)733-3221

WELL CONSTRUCTION RECORD

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

DRILLING CONTRACTOR Groundwater Protection, Inc.
DRILLER REGISTRATION NUMBER 1105
STATE WELL CONSTRUCTION PERMIT NUMBER: 91-0892-WM-0417

WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh County: Wake
(Road, Community, or Subdivision and Lot No.)
OWNER Altcatel Network Systems Corp.
ADDRESS 2912 Wake Forest Road (Street or Route No.)
Raleigh (City or Town) NC (State) 27609 (Zip Code)

3. DATE DRILLED 8-13-90 USE OF WELL Monitoring
TOTAL DEPTH 15.0' CUTTINGS COLLECTED [X] Yes [ ] No
5. DOES WELL REPLACE EXISTING WELL? [ ] Yes [X] No
STATIC WATER LEVEL: 10.0 FT. [ ] above [ ] below TOP OF CASING,
TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE.
7. YIELD (gpm): N/A METHOD OF TEST N/A
WATER ZONES (depth): N/A
9. CHLORINATION: Type N/A Amount N/A

Depth From	Depth To	DRILLING LOG Formation Description
0.0'	3.5'	ASPHALT YELLOW TAN SANDY SILT
3.5'	10.0'	YELLOW TAN SANDY SILT
10.0'	16.0'	GRAY SANDY SILT

If additional space is needed use back of form.

11. CASING:

From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
0.0	10.0		2.0"	Sch. 40	PVC

12. GROUT:

From	To	Ft.	Material	Method
1.0	7.0		Portland/Bentonite	Slurry

12. SCREEN:

From	To	Ft.	Diameter	Slot Size	Material
10.0	15.0		2.0 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

13. GRAVEL PACK:

From	To	Ft.	Size	Material
9.0	15.0		20-60	Fine Silica Sand

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)

Old Wake Forest Rd.

15.7d

USGN

REMARKS: MW-4, Bentonite pellets from 7.0 to 9.0 feet.

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9-24-90

SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REVISED 2/90

WELL COMPLETION LOG

LOCATION: Alcatel WORK ORDER# C-1249

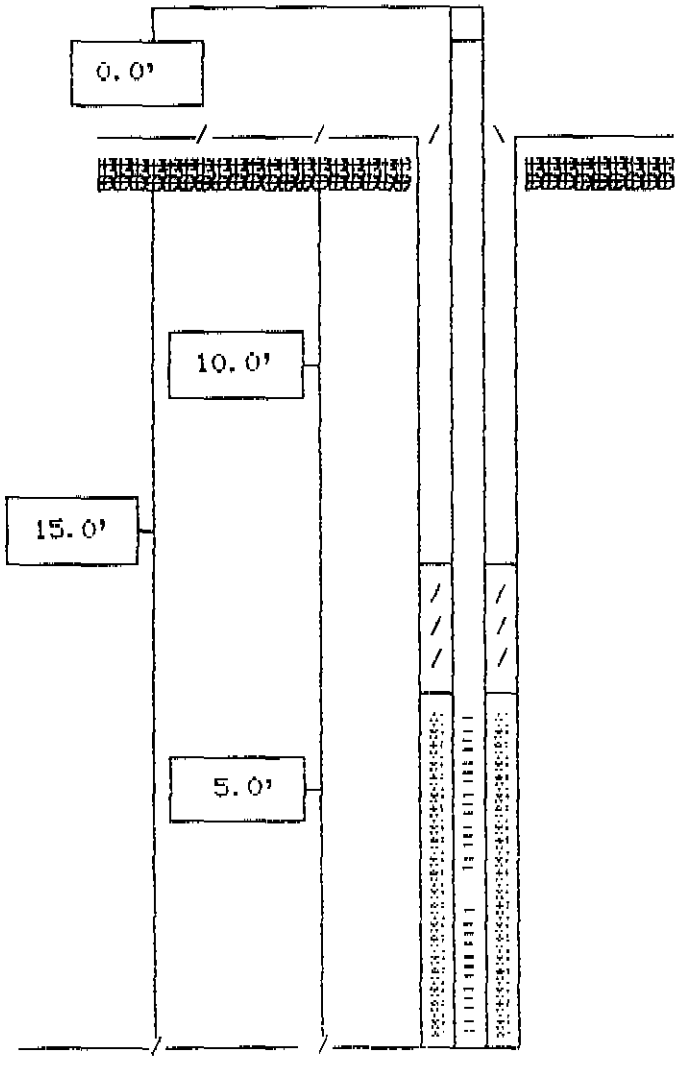
ADDRESS: Raleigh, NC

CLIENT: NET DATE 8-10-90

WELL NUMBER: MW-4 CONTACT: Hank Lyon

INSTALLED BY: Mike McConahey

OTHER SERVICES PERFORMED: None



X FLUSH MANHOLE

ABOVE GRADE PROTECTOR

NONE

CONCRETE 3 BAGS

CEMENT GROUT 1 BAG

RISER - TYPE PVC

RISER - SIZE 2.0" Sch. 40

BENTONITE 50 Lbs. 3/8" Pellets

SCREEN - TYPE PVC

SCREEN - SIZE 2.0" .010 Slot

FILTER TYPE 20-60 Fine Silica Sand

DEVELOPMENT: BAILED ___ PUMPED ___ AIR LIFT ___ SURGE ___ SWAB ___ NONE X

TOTAL TIME: TOTAL GALLONS:

WATER APPEARANCE: START FINISH

BORING LOG		BORING NO: MW-5	PAGE 01 OF 01
LOCATION: Alcatel, Raleigh, NC	DATE COMPLETED: 8/13/90	NET PROJECT NO: 058001	
TOTAL DEPTH (FT): 20.0	GROUNDWATER DEPTH (FT): 8.49 (8/20/90)	SCREEN DEPTH (FT): 10.0 - 20.0	
GROUND ELEV (MSL): 229.30	T/C ELEV (MSL): 229.04	SCREEN INTERVAL (MSL): 209.3 - 219.3	

DEPTH (FT)	ELEV (MSL)	UNIFIED CLASSIFICATION	BLW CNT (/FT)	SAMPL NO	SI	COMMENTS	PID (PPM)
		Brown sandy loam to 1.0 feet					
4.5	224.8	Very firm, yellow brown to gray, white mottled fine silty sand (SM)	21			"Salt and pepper" appearance, <1% coarse fragments, structureless to weak granular structure. <1% dark brown mottles. Weathered granitic material.	0
7.0	222.3						
9.5	219.8	Very firm, yellow brown to brown clayey sand (SC)	23			Approx. 2% coarse fragments with 1% dark brown mottles, approximately 2% yellow orange (Fe-staining) mottles. Numerous white Qtz. rich patches. Weak to moderate granular structure.	0
14.5	214.8	Very dense, yellow brown to gray brown, clayey sand (SC)	52			Weak "salt and pepper" appearance, moderate granular structure, <1% dark brown stained mottles, common iron staining, weathered granitic material.	0
20.0	209.3	Boring Terminated @ 20.0					

EQUIPMENT: 4.25 inch I.D. H.S augers w/ 1.25 inch S.S. sampler

NOTES: SI - SCREEN INTERVAL
Monitoring well completed with flush mount cover.

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL MANAGEMENT - GROUNDWATER SECTION
P.O. BOX 27687 - RALEIGH, NC 27611-7687
PHONE (919)733-3221

WELL CONSTRUCTION RECORD

FOR OFFICE USE ONLY
Quad. No. _____ Serial No. _____
Lat. _____ Long. _____ Pc _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent. _____

DRILLING CONTRACTOR: Groundwater Protection, Inc.
DRILLER REGISTRATION NUMBER: 1105
STATE WELL CONSTRUCTION PERMIT NUMBER: 91-0892-WM-0417

WELL LOCATION: (Show sketch of the location below)
Nearest Town: Raleigh
County: Wake
(Road, Community, or Subdivision and Lot No.)

OWNER: Alcatel Network Systems Corp.
ADDRESS: 2912 Wake Forest Road (Street or Route No.)
Raleigh (City or Town) NC (State) 27609 (Zip Code)

3. DATE DRILLED: 8-13-90 USE OF WELL: Monitoring
TOTAL DEPTH: 20.0' CUTTINGS COLLECTED: [X] Yes [ ] No
5. DOES WELL REPLACE EXISTING WELL? [ ] Yes [X] No
STATIC WATER LEVEL: 10.0 FT. [ ] above [X] below TOP OF CASING.
TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE.
7. YIELD (gpm): N/A METHOD OF TEST: N/A
ER ZONES (depth): N/A
9. CHLORINATION: Type N/A Amount N/A

. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0.0	10.0	2.0	Sch. 40	PVC

GROUT:

	Depth From	Depth To	Material	Method
	0.0	8.0	Portland/Bentonite Slurry	

12. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	10.0	20.0	2.0 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

13. GRAVEL PACK:

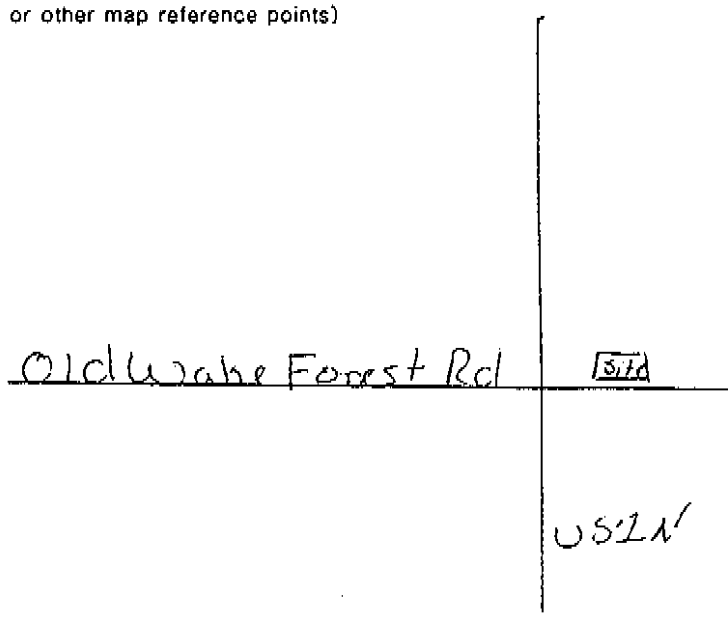
	Depth From	Depth To	Size	Material
	9.0	20.0	20-60 Fine Silica Sand	

REMARKS: MW-5, Bentonite pellets from 8.0 to 9.0 feet.

Depth From	Depth To	DRILLING LOG Formation Description
0.0'-3.5		RED BROWN SILTY SANDY CLAY
3.5'-5.0'		RED BROWN SILTY SANDY CLAY
5.0'-20.0'		TAN SILTY SANDY CLAY

If additional space is needed use back of form.

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT — DATE 9-24-90

GW-1 REVISED 2/90

Submit original to Division of Environmental Management and copy to well owner

WELL COMPLETION LOG

LOCATION: Alcatel WORK ORDER# C-1249

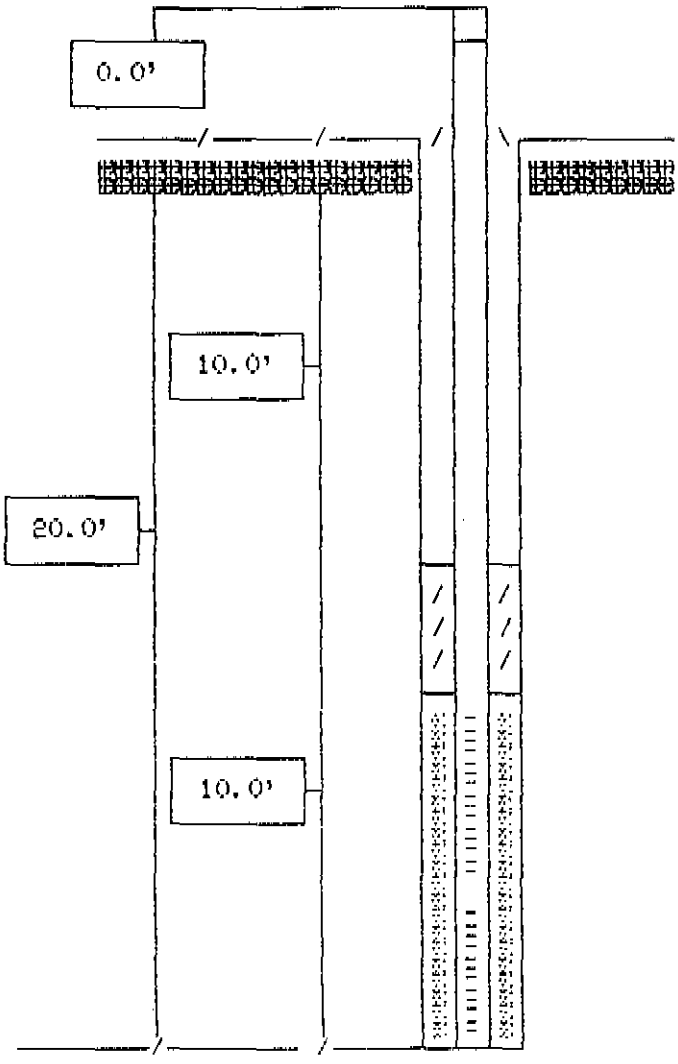
ADDRESS: Raleigh, NC

CLIENT: NET DATE 8-10-90

WELL NUMBER: MW-5 CONTACT: Hank Lyon

INSTALLED BY: Kevin Tesnear

OTHER SERVICES PERFORMED: None



X FLUSH MANHOLE

ABOVE GRADE PROTECTOR

NONE

CONCRETE 3 BAGS

CEMENT GROUT 3 BAGS

RISER - TYPE PVC

RISER - SIZE 2.0" Sch. 40

BENTONITE 50 Lbs. 3/8" Pellets

SCREEN - TYPE PVC

SCREEN - SIZE 2.0" .010 Slot

FILTER TYPE 20-60 Fine Silica Sand

DEVELOPMENT: BAILED ___ PUMPED ___ AIR LIFT ___ SURGE ___ SWAB ___ NONE X

TOTAL TIME: ___ TOTAL GALLONS: ___

WATER APPEARANCE: START ___ FINISH ___

APPENDIX E

SOIL AND GROUNDWATER ANALYTICAL LABORATORY RESULTS

Industrial & Environmental Analysts, Inc.
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

October 5, 1990

Hank Lyon
National Environmental Technology
9101 Southern Pine Blvd., Suite 280
Charlotte, NC 28273

Reference IEA Report No.: 726067
Project I.D.: 058001

Dear Mr. Lyon,

Transmitted herewith are the results of analyses on 14 samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-1
Sample Identification: SB-1
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	50	BQL
2	Bromomethane	50	BQL
3	Vinyl Chloride	50	BQL
4	Dichlorodifluoromethane	50	BQL
5	Chloroethane	50	BQL
6	Methylene chloride	50	BQL
7	Trichlorofluoromethane	50	BQL
8	1,1-Dichloroethene	50	BQL
9	1,1-Dichloroethane	50	BQL
10	1,2-Dichloroethene (total)	50	BQL
11	Chloroform	50	BQL
12	1,2-Dichloroethane	50	BQL
13	1,1,1-Trichloroethane	50	55
14	Carbon tetrachloride	50	BQL
15	Bromodichloromethane	50	BQL
16	1,2-Dichloropropane	50	BQL
17	cis-1,3-Dichloropropene	50	BQL
18	Trichloroethene	50	BQL
19	trans-1,3-Dichloropropene	50	BQL
20	1,1,2-Trichloroethane	50	BQL
21	Dibromochloromethane	50	BQL
22	2-Chloroethylvinyl ether	50	BQL
23	Bromoform	50	BQL
24	Tetrachloroethene	50	BQL
25	1,1,2,2-Tetrachloroethane	50	BQL
26	Chlorobenzene	50	BQL
27	1,3-Dichlorobenzene	50	BQL
28	1,2-Dichlorobenzene	50	BQL
29	1,4-Dichlorobenzene	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to the presence of non-target compounds.

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-1
Sample Identification: SB-1
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	50	BQL
2	Chlorobenzene	50	BQL
3	1,2-Dichlorobenzene	50	BQL
4	1,3-Dichlorobenzene	50	BQL
5	1,4-Dichlorobenzene	50	BQL
6	Ethylbenzene	50	BQL
7	Toluene	50	BQL
8	Xylenes (Total)	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis. Sample diluted due to the presence of non-target compounds.

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-2
Sample Identification: SB-2
Date Analyzed: 09/19/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	50	BQL
2	Bromomethane	50	BQL
3	Vinyl Chloride	50	BQL
4	Dichlorodifluoromethane	50	BQL
5	Chloroethane	50	BQL
6	Methylene chloride	50	BQL
7	Trichlorofluoromethane	50	BQL
8	1,1-Dichloroethene	50	290
9	1,1-Dichloroethane	50	210
10	1,2-Dichloroethene (total)	50	BQL
11	Chloroform	50	BQL
12	1,2-Dichloroethane	50	BQL
13	1,1,1-Trichloroethane	50	9,600
14	Carbon tetrachloride	50	BQL
15	Bromodichloromethane	50	BQL
16	1,2-Dichloropropane	50	BQL
17	cis-1,3-Dichloropropene	50	BQL
18	Trichloroethene	50	BQL
19	trans-1,3-Dichloropropene	50	BQL
20	1,1,2-Trichloroethane	50	BQL
21	Dibromochloromethane	50	BQL
22	2-Chloroethylvinyl ether	50	BQL
23	Bromoform	50	BQL
24	Tetrachloroethene	50	610
25	1,1,2,2-Tetrachloroethane	50	BQL
26	Chlorobenzene	50	BQL
27	1,3-Dichlorobenzene	50	BQL
28	1,2-Dichlorobenzene	50	BQL
29	1,4-Dichlorobenzene	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis. Sample diluted due to high concentration of target compounds present.

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-2
Sample Identification: SB-2
Date Analyzed: 09/19/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	50	BQL
2	Chlorobenzene	50	BQL
3	1,2-Dichlorobenzene	50	BQL
4	1,3-Dichlorobenzene	50	BQL
5	1,4-Dichlorobenzene	50	BQL
6	Ethylbenzene	50	BQL
7	Toluene	50	BQL
8	Xylenes (Total)	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to the presence of non-target compounds.

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-3
Sample Identification: SB-3
Date Analyzed: 09/19/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	30
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	7
9	1,1-Dichloroethane	1.0	5
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	11
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	1
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	2
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-3
Sample Identification: SB-3
Date Analyzed: 09/19/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-4
Sample Identification: SB-4
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	50	BQL
2	Bromomethane	50	BQL
3	Vinyl Chloride	50	BQL
4	Dichlorodifluoromethane	50	BQL
5	Chloroethane	50	BQL
6	Methylene chloride	50	BQL
7	Trichlorofluoromethane	50	BQL
8	1,1-Dichloroethene	50	BQL
9	1,1-Dichloroethane	50	BQL
10	1,2-Dichloroethene (total)	50	BQL
11	Chloroform	50	BQL
12	1,2-Dichloroethane	50	BQL
13	1,1,1-Trichloroethane	50	BQL
14	Carbon tetrachloride	50	BQL
15	Bromodichloromethane	50	BQL
16	1,2-Dichloropropane	50	BQL
17	cis-1,3-Dichloropropene	50	BQL
18	Trichloroethene	50	BQL
19	trans-1,3-Dichloropropene	50	BQL
20	1,1,2-Trichloroethane	50	BQL
21	Dibromochloromethane	50	BQL
22	2-Chloroethylvinyl ether	50	BQL
23	Bromoform	50	BQL
24	Tetrachloroethene	50	BQL
25	1,1,2,2-Tetrachloroethane	50	BQL
26	Chlorobenzene	50	BQL
27	1,3-Dichlorobenzene	50	BQL
28	1,2-Dichlorobenzene	50	BQL
29	1,4-Dichlorobenzene	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to the presence of non-target compounds.

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-4
Sample Identification: SB-4
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	50	BQL
2	Chlorobenzene	50	BQL
3	1,2-Dichlorobenzene	50	BQL
4	1,3-Dichlorobenzene	50	BQL
5	1,4-Dichlorobenzene	50	BQL
6	Ethylbenzene	50	BQL
7	Toluene	50	BQL
8	Xylenes (Total)	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis. Sample diluted due to the presence of non-target compounds.

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-5
Sample Identification: SB-5
Date Analyzed: 09/25/90 By: Cox

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	3
9	1,1-Dichloroethane	1.0	4
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	7
13	1,1,1-Trichloroethane	1.0	12
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	4
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	2
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-5
Sample Identification: SB-5
Date Analyzed: 09/25/90 By: Cox

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-6
Sample Identification: SB-8
Date Analyzed: 09/22/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	2	BQL
2	Bromomethane	2	BQL
3	Vinyl Chloride	2	BQL
4	Dichlorodifluoromethane	2	BQL
5	Chloroethane	2	BQL
6	Methylene chloride	2	BQL
7	Trichlorofluoromethane	2	BQL
8	1,1-Dichloroethene	2	77
9	1,1-Dichloroethane	2	4
10	1,2-Dichloroethene (total)	2	BQL
11	Chloroform	2	BQL
12	1,2-Dichloroethane	2	BQL
13	1,1,1-Trichloroethane	2	23
14	Carbon tetrachloride	2	BQL
15	Bromodichloromethane	2	BQL
16	1,2-Dichloropropane	2	BQL
17	cis-1,3-Dichloropropene	2	BQL
18	Trichloroethene	2	BQL
19	trans-1,3-Dichloropropene	2	BQL
20	1,1,2-Trichloroethane	2	2
21	Dibromochloromethane	2	BQL
22	2-Chloroethylvinyl ether	2	BQL
23	Bromoform	2	BQL
24	Tetrachloroethene	2	3
25	1,1,2,2-Tetrachloroethane	2	BQL
26	Chlorobenzene	2	BQL
27	1,3-Dichlorobenzene	2	BQL
28	1,2-Dichlorobenzene	2	BQL
29	1,4-Dichlorobenzene	2	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to high concentration of target compounds present.

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-6
Sample Identification: SB-8
Date Analyzed: 09/21/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	2	BQL
2	Chlorobenzene	2	BQL
3	1,2-Dichlorobenzene	2	BQL
4	1,3-Dichlorobenzene	2	BQL
5	1,4-Dichlorobenzene	2	BQL
6	Ethylbenzene	2	BQL
7	Toluene	2	BQL
8	Xylenes (Total)	2	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to the presence of non-target compounds.

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-7
Sample Identification: SB-9
Date Analyzed: 09/22/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	50	BQL
2	Bromomethane	50	BQL
3	Vinyl Chloride	50	BQL
4	Dichlorodifluoromethane	50	BQL
5	Chloroethane	50	BQL
6	Methylene chloride	50	BQL
7	Trichlorofluoromethane	50	BQL
8	1,1-Dichloroethene	50	63
9	1,1-Dichloroethane	50	BQL
10	1,2-Dichloroethene (total)	50	BQL
11	Chloroform	50	BQL
12	1,2-Dichloroethane	50	BQL
13	1,1,1-Trichloroethane	50	1,500
14	Carbon tetrachloride	50	BQL
15	Bromodichloromethane	50	BQL
16	1,2-Dichloropropane	50	BQL
17	cis-1,3-Dichloropropene	50	BQL
18	Trichloroethene	50	BQL
19	trans-1,3-Dichloropropene	50	BQL
20	1,1,2-Trichloroethane	50	BQL
21	Dibromochloromethane	50	BQL
22	2-Chloroethylvinyl ether	50	BQL
23	Bromoform	50	BQL
24	Tetrachloroethene	50	130
25	1,1,2,2-Tetrachloroethane	50	BQL
26	Chlorobenzene	50	BQL
27	1,3-Dichlorobenzene	50	BQL
28	1,2-Dichlorobenzene	50	BQL
29	1,4-Dichlorobenzene	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to high concentration of target compounds present.

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-7
Sample Identification: SB-9
Date Analyzed: 09/21/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	50	BQL
2	Chlorobenzene	50	BQL
3	1,2-Dichlorobenzene	50	BQL
4	1,3-Dichlorobenzene	50	BQL
5	1,4-Dichlorobenzene	50	BQL
6	Ethylbenzene	50	BQL
7	Toluene	50	BQL
8	Xylenes (Total)	50	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to the presence of non-target compounds.

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-8
Sample Identification: SB-10
Date Analyzed: 09/21/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	8
9	1,1-Dichloroethane	1.0	6
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	5
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-8
Sample Identification: SB-10
Date Analyzed: 09/21/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

ISTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 5943

PROJECT #: 058001

PROJECT NAME: Alcatel Raleigh Soil Sampling

SAMPLERS (SIGNATURE): [illegible] / National Environmental Tech, Inc

SAMPLE I.D.	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS 601/602
B-1	9-12			X	Boring 1	2	X		X
B-2	9-12			X	" 2	2	X		X
B-3	9-12			X	" 3	2	X		X
B-4	9-13			X	" 4	2	X		X
B-5	9-13			X	" 5	2	X		X
B-8	9-13			X	" 8	2	X		X
B-9	9-13			X	" 9	2	X		X
B-10	9-13			X	" 10	2	X		X
S-1	9-12			X	Pit 1	2	X		X
S-2	9-12			X	Pit 1	2	X		X
S-3	9-12			X	Pit 1	2	X		X
S-4	9-12			X	Pit 2	2	X		X

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[illegible]	9-13	1736			
RELINQUISHED BY (SIGNATURE)	**DATE**	**TIME**	**RECEIVED FOR LAB BY**	**DATE**	**TIME**
			James Hays	9/13/90	1736

IEA QUOTE NO.	IEA RUSH NO.
—	—
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
Henry W Lyon	0251

IEA REMARKS: IEA #726-67

FIELD REMARKS: SHEET 1/2

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 5944

PROJECT #: 058001

PROJECT NAME: Alcatel Rubish Soil Sampling

SAMPLERS: (SIGNATURE) [signature] / NET, INC

SAMPLE ID	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS 601/602											
ES-5	9-12			X	Pit 2	2	X		X											
ES-6	9-12			X	Pit 2	2	X		X											

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9-13	1736			
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			James Hays	9/13/90	1736

IEA QUOTE NO.	IEA RUSH NO.
—	—
PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
Henry W. Lyon	0251

IEA REMARKS: IEA # 72617

FIELD REMARKS: SHEET 2/2

Industrial & Environmental Analysts, Inc.
P.O. Box 12846
Research Triangle Park, North Carolina 27709
(919) 677-0090
FAX (919) 677-0427

September 12, 1990

RECEIVED
SEP 11 1990
Ans'd.

Robert Martin
National Environmental Technology
9101 Southern Pine Blvd., Suite 280
Charlotte, NC 28273

Reference IEA Report No.: 726064
Project ID: 058001

Dear Mr. Martin,

Transmitted herewith are the results of analyses on five samples submitted to our laboratory.

Please see the enclosed reports for your results.

Very truly yours,

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.

Linda F. Mitchell
Director, Technical Support Services

State Certification:

Alabama - #40210	New Jersey - #67719	South Carolina - #99021
Georgia - #816	Tennessee - #00296	North Carolina - #37720
Kansas - #E-158	Virginia - #00179	#84

IEA LABORATORY RESULTS

IEA Project #: 726-064
Client Name: National Environmental Technology

Sample #	Client ID	Parameter	Results		Date Analyzed
		TOTAL METALS:			
1	MW-1	Copper	1.2	mg/L	08/25/90
2	MW-2	Copper	<0.02	mg/L	08/25/90
3	MW-3	Copper	<0.02	mg/L	08/25/90
4	MW-4	Copper	<0.02	mg/L	08/25/90
5	MW-5	Copper	<0.02	mg/L	08/25/90
1	MW-1	Lead	<0.005	mg/L	08/26/90
2	MW-2	Lead	<0.005	mg/L	08/26/90
3	MW-3	Lead	<0.005	mg/L	08/26/90
4	MW-4	Lead	<0.005	mg/L	08/29/90
5	MW-5	Lead	<0.005	mg/L	08/29/90

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-064-1
Sample Identification: MW-1
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	11
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	2
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-064-1
Sample Identification: MW-1
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-064-2
Sample Identification: MW-2
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	16
9	1,1-Dichloroethane	1.0	7
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	1
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	120
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	9
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-064-2
Sample Identification: MW-2
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-064-3
Sample Identification: MW-3
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	2
9	1,1-Dichloroethane	1.0	2
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	1
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	5
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-064-3
Sample Identification: MW-3
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-064-4
Sample Identification: MW-4
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	5	BQL
2	Bromomethane	5	BQL
3	Vinyl Chloride	5	BQL
4	Dichlorodifluoromethane	5	BQL
5	Chloroethane	5	BQL
6	Methylene chloride	5	BQL
7	Trichlorofluoromethane	5	BQL
8	1,1-Dichloroethene	5	23
9	1,1-Dichloroethane	5	BQL
10	1,2-Dichloroethene (total)	5	BQL
11	Chloroform	5	BQL
12	1,2-Dichloroethane	5	BQL
13	1,1,1-Trichloroethane	5	140
14	Carbon tetrachloride	5	BQL
15	Bromodichloromethane	5	BQL
16	1,2-Dichloropropane	5	BQL
17	cis-1,3-Dichloropropene	5	BQL
18	Trichloroethene	5	BQL
19	trans-1,3-Dichloropropene	5	BQL
20	1,1,2-Trichloroethane	5	BQL
21	Dibromochloromethane	5	BQL
22	2-Chloroethylvinyl ether	5	BQL
23	Bromoform	5	BQL
24	Tetrachloroethene	5	210
25	1,1,2,2-Tetrachloroethane	5	BQL
26	Chlorobenzene	5	BQL
27	1,3-Dichlorobenzene	5	BQL
28	1,2-Dichlorobenzene	5	BQL
29	1,4-Dichlorobenzene	5	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis. Sample diluted due to high concentration of target compounds present.

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-064-4
Sample Identification: MW-4
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Benzene	5	BQL
2	Chlorobenzene	5	BQL
3	1,2-Dichlorobenzene	5	BQL
4	1,3-Dichlorobenzene	5	BQL
5	1,4-Dichlorobenzene	5	BQL
6	Ethylbenzene	5	BQL
7	Toluene	5	BQL
8	Xylenes (Total)	5	BQL

Comments:

BQL = Below Quantitation Limit

Quantitation limit elevated due to sample dilution prior to analysis. Sample diluted due to the presence of non-target compounds.

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-064-5
Sample Identification: MW-5
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	1
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-064-5
Sample Identification: MW-5
Date Analyzed: 08/29/90 By: Averill

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO. 6402

PROJECT #	PROJECT NAME
058001	Alcatel Network Systems

SAMPLERS (SIGNATURE): Robert L. Martin

SAMPLE I.D.	DATE	TIME	G	C	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	ZLH 601/602 BZ7	Pb, Cu
MW-4	8/21	0935		✓	Well MW-4	4		✓	✓	✓
MW-5	8/21	0950		✓	Well MW-5	4		✓	✓	✓
MW-1	8/21	1023		✓	Well MW-1	4		✓	✓	✓
MW-2	8/21	10:46		✓	Well MW-2	4		✓	✓	✓
MW-3	8/21	11:05		✓	Well MW-3	4		✓	✓	✓

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
Robert L. Martin	8/21/00	1310			
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			Elizabeth D. Gray	8/21/00	13:10

IEA QUOTE NO.:

IEA RUSH NO.:

PROJECT MANAGER (PLEASE PRINT): Robert Martin

P.O. NO.: 223

IEA REMARKS: IEA # 726-064

FIELD REMARKS: Do not analyze for Cr as originally requested.

APPENDIX F

AREAS 1 and 2 VOC CONFIRMATORY SAMPLING RESULTS

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-9
Sample Identification: ES-1
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	1
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	2
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-9
Sample Identification: ES-1
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-10
Sample Identification: ES-2
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	2
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-10
Sample Identification: ES-2
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-11
Sample Identification: ES-3
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-11
Sample Identification: ES-3
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-12
Sample Identification: ES-4
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-12
Sample Identification: ES-4
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-13
Sample Identification: ES-5
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	BQL
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE AROMATICS
EPA 602 COMPOUND LIST

IEA Sample Number: 726-067-13
Sample Identification: ES-5
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Benzene	1.0	BQL
2	Chlorobenzene	1.0	BQL
3	1,2-Dichlorobenzene	1.0	BQL
4	1,3-Dichlorobenzene	1.0	BQL
5	1,4-Dichlorobenzene	1.0	BQL
6	Ethylbenzene	1.0	BQL
7	Toluene	1.0	BQL
8	Xylenes (Total)	1.0	BQL

Comments:

BQL = Below Quantitation Limit

PURGEABLE HALOCARBONS
EPA 601 COMPOUND LIST

IEA Sample Number: 726-067-14
Sample Identification: ES-6
Date Analyzed: 09/20/90 By: Averill

Number	Compound	Quantitation Limit (ug/kg)	Results Concentration (ug/kg)
1	Chloromethane	1.0	BQL
2	Bromomethane	1.0	BQL
3	Vinyl Chloride	1.0	BQL
4	Dichlorodifluoromethane	1.0	BQL
5	Chloroethane	1.0	BQL
6	Methylene chloride	1.0	BQL
7	Trichlorofluoromethane	1.0	BQL
8	1,1-Dichloroethene	1.0	BQL
9	1,1-Dichloroethane	1.0	BQL
10	1,2-Dichloroethene (total)	1.0	BQL
11	Chloroform	1.0	BQL
12	1,2-Dichloroethane	1.0	BQL
13	1,1,1-Trichloroethane	1.0	1
14	Carbon tetrachloride	1.0	BQL
15	Bromodichloromethane	1.0	BQL
16	1,2-Dichloropropane	1.0	BQL
17	cis-1,3-Dichloropropene	1.0	BQL
18	Trichloroethene	1.0	BQL
19	trans-1,3-Dichloropropene	1.0	BQL
20	1,1,2-Trichloroethane	1.0	BQL
21	Dibromochloromethane	1.0	BQL
22	2-Chloroethylvinyl ether	1.0	BQL
23	Bromoform	1.0	BQL
24	Tetrachloroethene	1.0	BQL
25	1,1,2,2-Tetrachloroethane	1.0	BQL
26	Chlorobenzene	1.0	BQL
27	1,3-Dichlorobenzene	1.0	BQL
28	1,2-Dichlorobenzene	1.0	BQL
29	1,4-Dichlorobenzene	1.0	BQL

Comments:

BQL = Below Quantitation Limit

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 3943

PROJECT #	PROJECT NAME
58001	Alcatel Raleigh Soil Sampling

SAMPLERS (SIGNATURE): [illegible] / National Environmental Tech, Inc

SAMPLE ID	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS 601/602
-1	9-12			X	Boring 1	2	X		X
-2	9-12			X	" 2	2	X		X
-3	9-12			X	" 3	2	X		X
-4	9-13			X	" 4	2	X		X
-5	9-13			X	" 5	2	X		X
-8	9-13			X	" 8	2	X		X
-9	9-13			X	" 9	2	X		X
-10	9-13			X	" 10	2	X		X
-1	9-12			X	Pit 1	2	X		X
-2	9-12			X	Pit 1	2	X		X
-3	9-12			X	Pit 1	2	X		X
-4	9-12			X	Pit 2	2	X		X

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME	IEA QUOTE NO.	IEA RUSH NO.
[illegible]	9-13	1736				—	—
RELINQUISHED BY (SIGNATURE)	**DATE**	**TIME**	**RECEIVED FOR LAB BY**	**DATE**	**TIME**	**PROJECT MANAGER (PLEASE PRINT)**	**P.O. NO.**
			James Hays	9/13/90	1736	Henry W Lyon	0251

IEA REMARKS: IEA #726-67

FIELD REMARKS: SHEET 1/2

INDUSTRIAL & ENVIRONMENTAL ANALYSTS, INC.
1901 NORTH HARRISON AVE.
CARY, N.C. 27513

CHAIN OF CUSTODY RECORD

NO: 5944

PROJECT #: 058001

PROJECT NAME: Alcatel Raleigh Soil Sampling

SAMPLERS: (SIGNATURE) [illegible] / NET, INC

SAMPLE ID	DATE	TIME	COMP	GRAB	STATION LOCATION	# OF CONTAINERS	MATRIX SOIL	MATRIX WATER	REQUESTED PARAMETERS 601/602
S-5	9-12			X	Pit 2	2	X		X
S-6	9-12			X	Pit 2	2	X		X

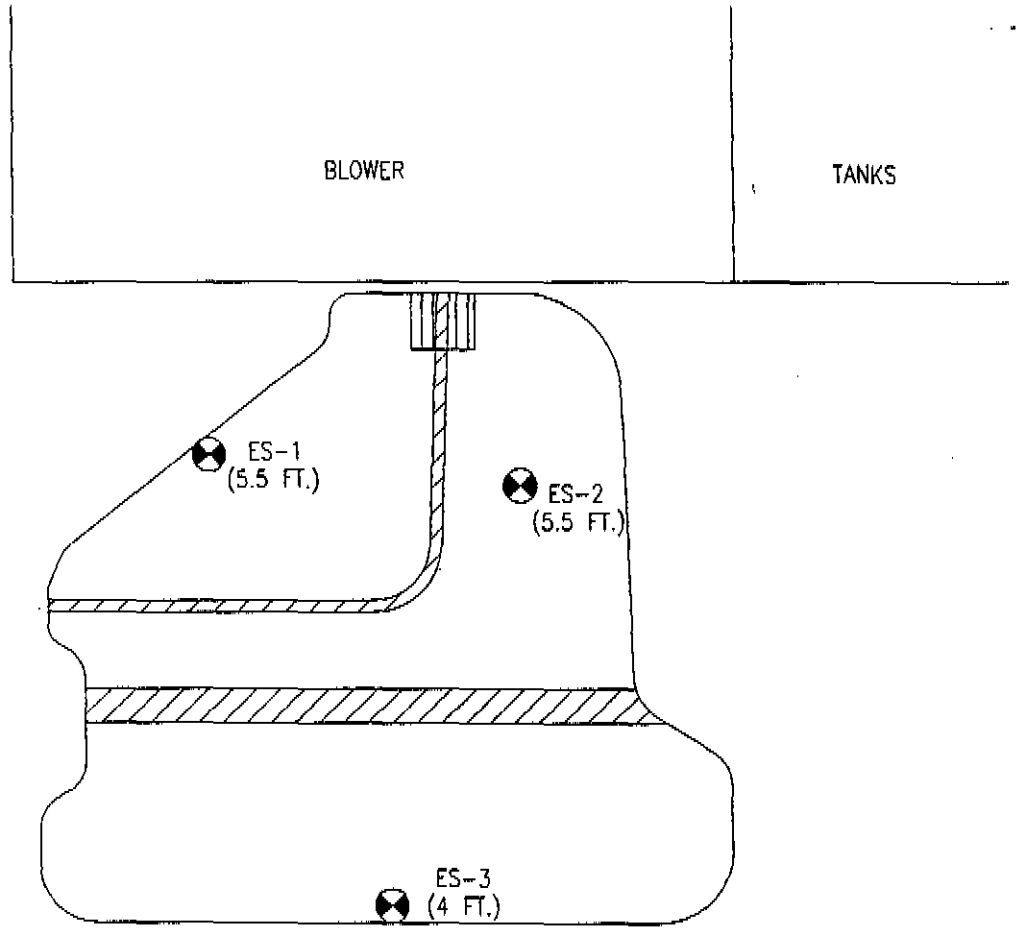
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[illegible]	9-13	1736			
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
			James Hays	9/13/90	1736

IEA QUOTE NO.	IEA RUSH NO.
—	—
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**
Henry W. Lyon	0251

IEA REMARKS

FIELD REMARKS

SHEET 2/2



LEGEND

PIPES

SOIL SAMPLING LOCATION

SCALE (IN FEET)

0 1 2 3 4

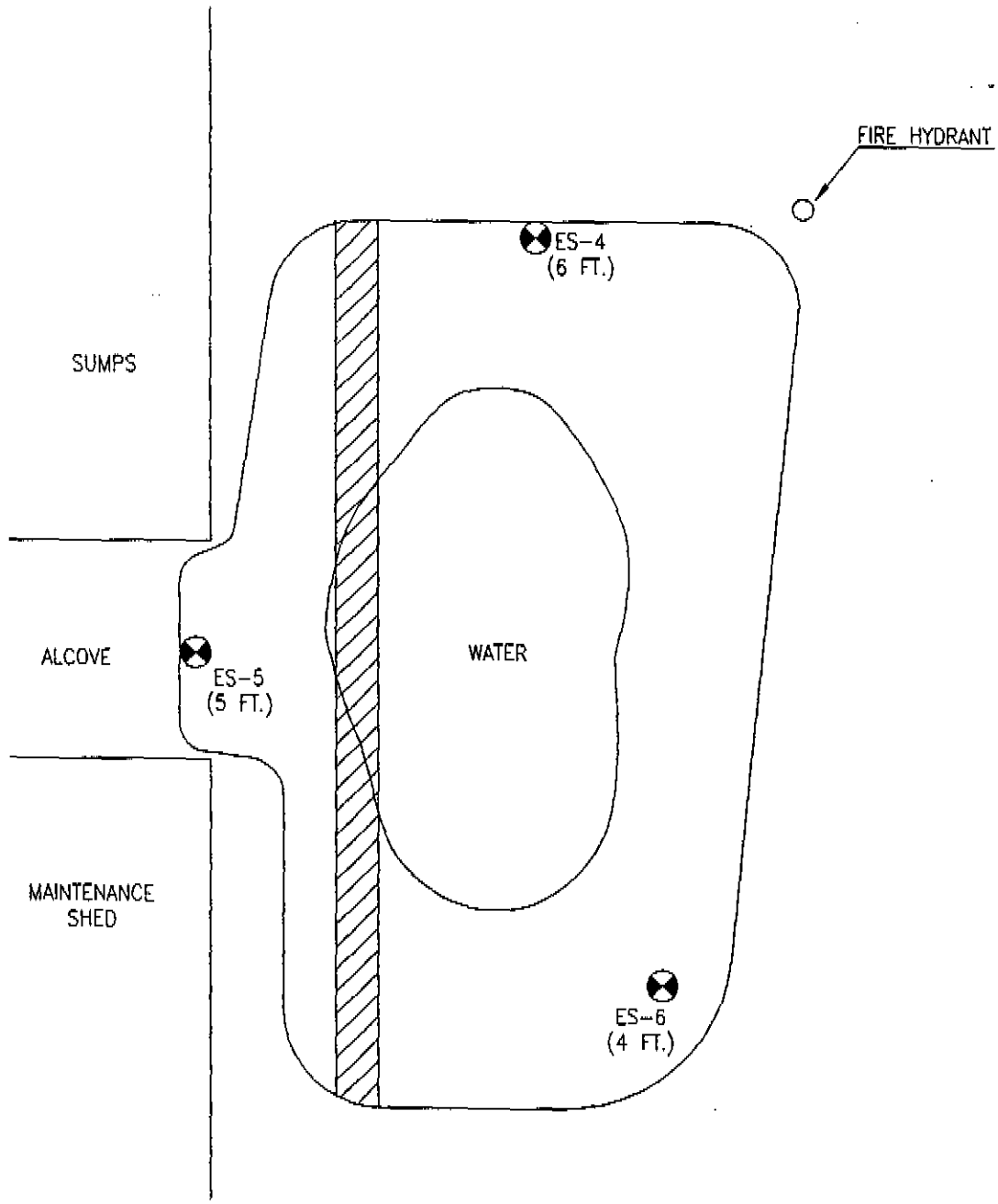
NATIONAL ENVIRONMENTAL TECHNOLOGIES INC.

DN DW	CH
DATE OCT. 18, 1990	
DWG. NO. 058001R02	

CLIENT /TITLE

ALCATEL NETWORK SYSTEMS

AREA 1 SOIL EXCAVATION
Confirmation Sampling Locations



LEGEND

PIPES

SOIL SAMPLING LOCATION
DEPTH SHOWN IN PARENTHESIS

SCALE (IN FEET)

0 1 2 3 4 5

NATIONAL ENVIRONMENTAL TECHNOLOGIES INC.

DN DW	CH
DATE OCT. 18, 1990	
DWG. NO. 058001R03	

CLIENT / TITLE

ALCATEL NETWORK SYSTEMS

AREA 2 SOIL EXCAVATION
Confirmation Sampling Locations

APPENDIX G

SLUG TEST DATA

MONITORING WELL MW-1 TEST 1 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	2.00
0.0033	1.73
0.0066	1.53
0.0099	1.37
0.0133	1.23
0.0166	1.11
0.0200	1.00
0.0233	0.92
0.0266	0.84
0.0300	0.77
0.0333	0.71
0.0500	0.49
0.0666	0.36
0.0833	0.28
0.1000	0.23
0.1166	0.19
0.1333	0.16
0.1500	0.14
0.1666	0.12
0.1833	0.11
0.2000	0.10
0.2333	0.08
0.2500	0.08
0.2666	0.08
0.2833	0.07
0.3000	0.07
0.3166	0.06
0.3333	0.06
0.4167	0.05
0.5000	0.05
0.5833	0.04
0.7500	0.04
0.8333	0.04
0.9167	0.03
1.0000	0.03
1.0833	0.03
1.1667	0.03
1.2500	0.03
1.3333	0.03
1.4166	0.03
1.5000	0.02
1.5833	0.02
1.6667	0.02
1.7500	0.02
1.8333	0.02
1.9167	0.02
2.0000	0.02
2.5000	0.02
3.0000	0.02

MONITORING WELL MW-1 TEST 2 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	2.82
0.0033	2.67
0.0066	2.38
0.0099	2.07
0.0133	1.82
0.0166	1.63
0.0200	1.47
0.0233	1.33
0.0266	1.20
0.0300	1.10
0.0333	1.01
0.0500	0.68
0.0666	0.50
0.0833	0.38
0.1000	0.30
0.1166	0.25
0.1333	0.21
0.1500	0.18
0.1666	0.16
0.1833	0.14
0.2000	0.12
0.2333	0.10
0.2500	0.09
0.2666	0.09
0.2833	0.08
0.3000	0.08
0.3166	0.07
0.3333	0.07
0.4167	0.06
0.5000	0.05
0.5833	0.04
0.7500	0.04
0.8333	0.03
0.9167	0.03
1.0000	0.03
1.0833	0.03
1.1667	0.03
1.2500	0.02
1.3333	0.02
1.4166	0.02
1.5000	0.02
1.5833	0.02
1.6667	0.02
1.7500	0.02
1.8333	0.02
1.9167	0.02
2.0000	0.02
2.5000	0.02
3.0000	0.01

MONITORING WELL MW-1 TEST 3 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	2.76
0.0033	2.40
0.0066	2.04
0.0099	1.78
0.0133	1.59
0.0166	1.44
0.0200	1.30
0.0233	1.18
0.0266	1.08
0.0300	0.99
0.0333	0.91
0.0500	0.63
0.0666	0.46
0.0833	0.36
0.1000	0.29
0.1166	0.24
0.1333	0.20
0.1500	0.17
0.1666	0.15
0.1833	0.13
0.2000	0.12
0.2333	0.10
0.2500	0.09
0.2666	0.09
0.2833	0.08
0.3000	0.07
0.3166	0.07
0.3333	0.07
0.4167	0.05
0.5000	0.05
0.5833	0.04
0.7500	0.04
0.8333	0.03
0.9167	0.03
1.0000	0.03
1.0833	0.03
1.1667	0.03
1.2500	0.02
1.3333	0.02
1.4166	0.02
1.5000	0.02
1.5833	0.02
1.6667	0.02
1.7500	0.02
1.8333	0.02
1.9167	0.02
2.0000	0.02
2.5000	0.01
3.0000	0.01

MONITORING WELL MW-2 TEST 1 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	1.67
0.0033	1.56
0.0066	1.47
0.0099	1.40
0.0133	1.31
0.0166	1.26
0.0200	1.17
0.0233	1.13
0.0266	1.06
0.0300	1.03
0.0333	0.96
0.0500	0.77
0.0666	0.63
0.0833	0.53
0.1000	0.45
0.1166	0.39
0.1333	0.34
0.1500	0.30
0.1666	0.27
0.1833	0.25
0.2000	0.23
0.2166	0.21
0.2333	0.19
0.2500	0.18
0.2666	0.17
0.2833	0.16
0.3000	0.15
0.3166	0.14
0.3333	0.14
0.4167	0.11
0.5000	0.10
0.5833	0.09
0.6667	0.08
0.7500	0.08
0.8333	0.07
0.9167	0.07
1.0000	0.06
1.0833	0.06
1.1667	0.06
1.2500	0.05
1.3333	0.05
1.4166	0.05
1.5000	0.05
1.5833	0.05
1.6667	0.05
1.7500	0.04
1.8333	0.04
1.9167	0.04
2.0000	0.04

MONITORING WELL MW-2 TEST 2 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	3.47
0.0033	3.21
0.0066	3.00
0.0099	2.80
0.0133	2.62
0.0166	2.43
0.0200	2.30
0.0233	2.15
0.0266	2.02
0.0300	1.91
0.0333	1.80
0.0500	1.35
0.0666	0.84
0.0833	0.69
0.1000	0.57
0.1166	0.49
0.1333	0.42
0.1500	0.37
0.1666	0.33
0.1833	0.29
0.2000	0.27
0.2333	0.22
0.2500	0.20
0.2666	0.19
0.2833	0.18
0.3000	0.17
0.3166	0.16
0.3333	0.12
0.4167	0.11
0.5000	0.09
0.5833	0.08
0.7500	0.07
0.8333	0.07
0.9167	0.07
1.0000	0.06
1.0833	0.06
1.1667	0.05
1.2500	0.05
1.3333	0.05
1.4166	0.05
1.5000	0.05
1.5833	0.04
1.6667	0.04
1.7500	0.04
1.8333	0.04
1.9167	0.04
2.0000	0.03
2.5000	0.02
3.0000	0.02

MONITORING WELL MW-2 TEST 3 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	3.80
0.0033	3.57
0.0066	3.53
0.0099	3.47
0.0133	3.39
0.0166	3.31
0.0200	3.23
0.0233	3.15
0.0266	3.01
0.0300	2.76
0.0333	2.57
0.0500	1.97
0.0666	1.50
0.0833	1.20
0.1000	0.97
0.1166	0.81
0.1333	0.69
0.1500	0.60
0.1666	0.52
0.1833	0.46
0.2000	0.41
0.2333	0.34
0.2500	0.30
0.2666	0.28
0.2833	0.26
0.3000	0.25
0.3166	0.23
0.3333	0.22
0.4167	0.17
0.5000	0.14
0.5833	0.13
0.7500	0.11
0.8333	0.10
0.9167	0.10
1.0000	0.09
1.0833	0.09
1.1667	0.08
1.2500	0.08
1.3333	0.08
1.4166	0.07
1.5000	0.07
1.5833	0.07
1.6667	0.07
1.7500	0.06
1.8333	0.06
1.9167	0.06
2.0000	0.06
2.5000	0.05
3.0000	0.04

MONITORING WELL MW-5 TEST 1 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	4.14
0.0033	3.91
0.0066	3.70
0.0099	3.51
0.0133	3.34
0.0166	3.17
0.0200	3.03
0.0233	2.88
0.0266	2.74
0.0300	2.61
0.0333	2.50
0.0500	1.97
0.0666	1.57
0.0833	1.26
0.1000	1.02
0.1166	0.83
0.1333	0.68
0.1500	0.57
0.1666	0.47
0.1833	0.39
0.2000	0.33
0.2166	0.28
0.2333	0.24
0.2500	0.20
0.2666	0.17
0.2833	0.15
0.3000	0.13
0.3166	0.11
0.3333	0.10
0.4167	0.06
0.5000	0.04
0.5833	0.03
0.6667	0.02
0.7500	0.02
0.8333	0.01
0.9167	0.01
1.0000	0.01
1.0833	0.01
1.1667	0.01
1.2500	0.01
1.3333	0.01
1.4166	0.00

MONITORING WELL MW-5 TEST 2 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	4.80
0.0033	5.03
0.0066	4.79
0.0099	4.54
0.0133	4.40
0.0166	4.32
0.0200	4.15
0.0233	3.92
0.0266	3.70
0.0300	3.51
0.0333	3.34
0.0500	2.62
0.0666	2.07
0.0833	1.65
0.1000	1.34
0.1166	1.08
0.1333	0.88
0.1500	0.72
0.1666	0.59
0.1833	0.49
0.2000	0.41
0.2166	0.34
0.2333	0.28
0.2500	0.24
0.2666	0.21
0.2833	0.18
0.3000	0.15
0.3166	0.13
0.3333	0.11
0.4167	0.06
0.5000	0.04
0.5833	0.03
0.6667	0.02
0.7500	0.01
0.8333	0.01
0.9167	0.01
1.0000	0.01
1.0833	0.00

MONITORING WELL MW-5 TEST 3 11-28-90

ELAPSED TIME (Minutes)	HEAD ABOVE STATIC (Feet)
0.0000	4.38
0.0033	4.25
0.0066	4.03
0.0099	3.80
0.0133	3.60
0.0166	3.43
0.0200	3.26
0.0233	3.11
0.0266	2.97
0.0300	2.83
0.0333	2.70
0.0500	2.14
0.0666	1.71
0.0833	1.38
0.1000	1.12
0.1166	0.92
0.1333	0.75
0.1500	0.62
0.1666	0.51
0.1833	0.43
0.2000	0.36
0.2166	0.31
0.2333	0.26
0.2500	0.23
0.2666	0.19
0.2833	0.17
0.3000	0.15
0.3166	0.13
0.3333	0.11
0.4167	0.06
0.5000	0.04
0.5833	0.03
0.6667	0.03
0.7500	0.02
0.8333	0.02
0.9167	0.02
1.0000	0.01
1.0833	0.01
1.1667	0.01

WEGS Area 4 Soil Sampling

Report

June 1991

Westinghouse Environmental
and Geotechnical Services, Inc.

3100 Spring Forest Road (27604)
P.O. Box 58069
Raleigh, North Carolina 27658-8069
(919) 872-2660
Fax (919) 790-9827

June 11, 1991

Alcatel N.A. Network Systems, Corp.
2912 Wake Forest Road
Raleigh, North Carolina 27609

Attention: Mr. Dikran Kabbendjian

Reference: Field Sampling and Analytical Services
Area No. 4 Soil Sampling
Alcatel N.A. Network Systems, Corp.
Raleigh, North Carolina
Westinghouse Project No. REW A 425

Dear Mr. Kabbendjian:

Westinghouse Environmental and Geotechnical Services, Inc. has completed the authorized soil sampling at the referenced facility. Samples were collected from Area No. 4, April 9, 1991. The sampling consisted of collecting 27 soil samples and 3 asphalt samples and submitting them for chemical analysis.

The following report contains the results of the analyses of these samples and a more detailed description of the sample collection.

If you have any questions or comments regarding the attached report, please call us at (919) 872-2660.

Sincerely,

WESTINGHOUSE ENVIRONMENTAL AND
GEOTECHNICAL SERVICES, INC.

for William B. Robertson
Senior Environmental Scientist

Pamela B. Townsend, P.E.
Senior Engineer

WBR/PBT/bar:R91A425B

SECTION 1
INTRODUCTION

Sampling of soil in Area No. 4 of the Alcatel Network Systems facility in Raleigh, North Carolina was conducted on April 9, 1991. Area No. 4 is located in the central portion of the alleyway on the northern end of the facility. The sampling consisted of collecting shallow soil samples using a hand auger. All samples collected were analyzed for total lead. Samples which exhibited total lead contamination were subjected to Toxicity Characteristics Leachate Procedure (TCLP) analysis for confirmation.

MAY 11 '94 08:30AM ALCATEL BLDG K MFG P.3

SECTION 2
DESCRIPTION OF THE SAMPLING ACTIVITIES

2.1 DESCRIPTION OF THE SAMPLING LOCATIONS

Sampling was limited to an area of approximately 700 square feet, designated Area No. 4 (Figure 1). The sampling site was enclosed on the northern and eastern boundaries by two retaining walls, open on the southern end, and bounded on the western side by a corrosive chemical shed. The sample area was previously an enclosed shed-like structure which housed two chemical reaction tanks. The area was divided into 15 separate sampling points, with each sample point being spaced within the 700 square foot Area No. 4.

All sample points were located in an area which was covered by asphalt and/or concrete. On April 8, 1991 the asphalt and/or concrete was cored at each sample site and the plug and stone base was removed in preparation for soil sampling.

2.2 SAMPLE COLLECTION

On April 9, 1991 hand augers were used to bore vertical borings to collect soil samples. Twelve of the sites were sampled at 0" - 6" and 18" - 24". One of the sample sites (No. 10) was advanced to 6 feet with samples collected at 2, 4, and 6 foot depths. Two of the cored sites (Nos. 8 and 14) were not sampled because of auger refusal.

A decontamination area was established in close proximity to the sampling area. A decontaminated auger was used for each sampling location. The sampling was performed by augering the 0" - 6" interval with a freshly decontaminated hand auger. This sample was removed from the auger and placed into a 120 ml sample bottle for laboratory analysis. After collecting the first sample the same hand auger was used to remove the 6" - 18" depth interval of soil. Following the removal of the 6" - 18" interval, the auger was brushed free of loose soil and

the second sample from the 18" - 24" depth interval was taken and also placed into a sample bottle. The sample protocol used in collecting the shallow samples, was repeated in the collection of samples from the one deep boring located at sample site No. 10.

Three of the asphalt cores (Nos. 5, 6, and 10) were also collected for laboratory analysis. The three cores sampled were located in areas where the suspected potential for highest concentrations existed (see Figure 1 for location).

MAY 11 '94 08:30AM ALCATEL BLDG K MFG P.5

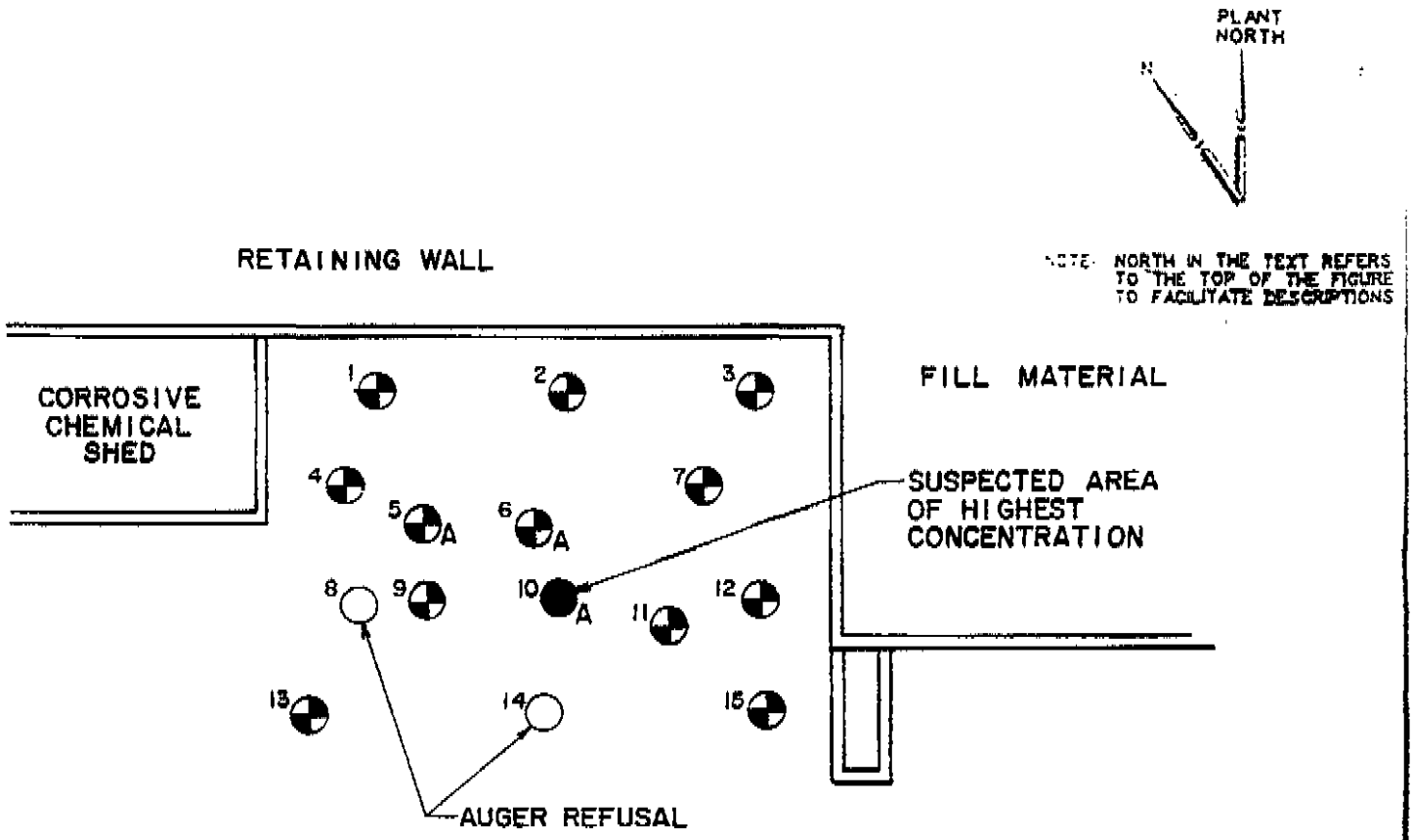
SECTION 3
SAMPLE ANALYSES

The collected samples were placed into laboratory supplied containers, logged on a standard chain-of-custody form and shipped to the Westinghouse Environmental Laboratory in Charlotte, North Carolina. The samples were submitted to laboratory for analysis of total lead by SW-846 Method 3010/7420 and TCLP where necessary. The laboratory data sheets are included as Appendix I of this report.

SECTION 4
FINDINGS AND CONCLUSIONS

Based on the laboratory analytical results of the soil and asphalt in Area No. 4, it appears that the lead contamination is limited in the soil to a depth of approximately one foot and in the overlying paving materials. It is therefore recommended that the removal of the upper one foot of soil and overlying paving materials be performed and disposed of properly.

MAY 11 '94 08:31AM ALCATEL BLDG K MFG P.7



KEY:

- HAND AUGER BORING LOCATIONS SAMPLE AT 0" 6" AND 18" 24"
- HAND AUGER BORING LOCATION SAMPLE AT 2' 4' 6'
- AUGER REFUSAL
- A ASPHALT SAMPLE

NOTE:

-AT SAMPLE POINTS 5, 6 AND 10 ASPHALT SAMPLES WERE ALSO TAKEN.

AREA NO. 4

PROJECT ALCATEL NETWORK SYSTEMS RALEIGH, N. C.	Westinghouse	SCALE: 1" = 10' JOB NO: REW-A-425 FIG. NO: 1

Westinghouse Environmental
and Geotechnical Services, Inc.

9751 Southern Pine Boulevard
Charlotte, North Carolina 28273
P.O. Box 7668
Charlotte, North Carolina 28241-7668
(704) 523-4726
FAX (704) 525-3953

Lead, TCLP Extractables

Westinghouse Environmental Job No: 1357-91-1264

Sample Identification: Alcatel (REWA425)

Date Analyzed: 5/15/91 **Analyst:** Maria J. Parillo

Sample I.D.	Lab No.	Quant. Limit mg/L	Result mg/L
1A @ 0-6"	5932	0.05	BQL
3A @ 0-6"	5936	0.05	1.30
4A @ 0-6"	5938	0.05	BQL
A6A @ 0-6"	5942	0.05	0.40
A6B @ 18-24"	5943	0.05	0.06
7A @ 0-6"	5944	0.05	0.10
9A @ 0-6"	5946	0.05	0.16
11A	5951	0.05	BQL
12A	5953	0.05	0.05
13A	5955	0.05	0.28
15A	5957	0.05	0.06
Composite Asphalt Area #4	6298	0.05	0.37

Comments: TCLP extraction and SW-846 Method 3010 used in sample preparation. SW-846 Method 7420 used in analysis.

BQL = Below Quantitation Limits

QA/QC Supervisor: _____ **Date:** 5/15/91

N.C. State Wastewater #321, S.C.D.H.E.C. #99033

Westinghouse Environmental
and Geotechnical Services, Inc.

9751 Southern Pine Boulevard
Charlotte, North Carolina 28273
P.O. Box 7668
Charlotte, North Carolina 28241-7668
(704) 523-4726
FAX (704) 525-3953

Lead, Total in Soil

Westinghouse Job No.: 1357-91-1216

Sample Identification: Alcatel (REWA425)

Date Analyzed: 4/25/91 **Analyst:** Maria J. Parillo

Sample I.D.	Lab No.	Quant. Limit mg/Kg	Results mg/Kg
13A	5955	5.0	20.8
13B	5956	5.0	BQL
15A	5957	5.0	20.8
15B	5958	5.0	BQL
5	5959	5.0	1,410
6	5960	5.0	289
10	5961	5.0	21,100

Comments: SW-846 Method 3050 used in digestion.
SW-846 Method 7420 used in analysis.

BQL = Below Quantitation Limits

QA/QC Supervisor: _____ **Date:** 4/26/91

N.C. State Wastewater #321, S.C.D.H.E.C. #99033

Westinghouse Environmental
and Geotechnical Services, Inc.

9751 Southern Pine Boulevard
Charlotte, North Carolina 28273
P.O. Box 7668
Charlotte, North Carolina 28241-7668
(704) 523-4726
FAX (704) 525-3953

Lead, Total in Soil

Westinghouse Job No.: 1357-91-1216

Sample Identification: Alcatel (REWA425)

Date Analyzed: 4/25/91 **Analyst:** Maria J. Parillo

Sample I.D.	Lab No.	Quant. Limit mg/Kg	Results mg/Kg
1A @ 0-6"	5932	5.0	12.6
1B @ 18-24"	5933	5.0	BQL
2A @ 0-6"	5934	5.0	12.6
2B @ 18-24"	5935	5.0	BQL
3A @ 0-6"	5936	5.0	275
3B @ 18-24"	5937	5.0	BQL
4A @ 0-6"	5938	5.0	4.9
4B @ 18-24"	5939	5.0	BQL
5A-A @ 0-6"	5940	5.0	BQL
5A-B @ 18-24"	5941	5.0	BQL
A6A @ 0-6"	5942	5.0	7.9
A6B @ 18-24"	5943	5.0	9.8
7A @ 0-6"	5944	5.0	40.0
7B @ 18-24"	5945	5.0	BQL
9A @ 0-6"	5946	5.0	18.6
9B @ 18-24"	5947	5.0	BQL
10 @ 2'	5948	5.0	BQL
10 @ 4'	5949	5.0	BQL
10 @ 6'	5950	5.0	BQL
11A	5951	5.0	14.7
11B	5952	5.0	BQL
12A	5953	5.0	15.0
12B	5954	5.0	BQL

NET Ground Water Investigation

Report

August 1993

NATIONAL ENVIRONMENTAL TECHNOLOGIES

August 11, 1993 **Project #058003**

SUBJECT: Results of Ground Water Investigation
ALCATEL Network Systems
Raleigh, North Carolina

Mr. Dikran Kabbendjian
Manager, Environmental and Human Resources Services
ALCATEL NETWORK SYSTEMS
2912 Wake Forest Rd.
Raleigh, NC 27609

Dear Mr. Kabbendjian:

This letter and attachments detail the results of a recent ground water investigation at the above named site. This project consisted of ground water screening, installation of two ground water monitoring wells, and sampling in accordance with a proposal dated March 17, 1993.

OBJECTIVES

The objectives of this project were three-fold: 1) Screen ground water beneath the former production building for volatile constituents, and collect confirmation samples based on the results; 2) Install three additional ground water monitoring wells, collect ground water samples from each, and tie the new wells into a horizontal and vertical survey previously performed at the site; and 3) Collect water levels from all wells in order to create a new water table surface map.

FIELD METHODOLOGIES

On June 25, 1993, NET began field activities at the site. Badger Drilling, Inc., and Associated Technical Support were subcontracted for monitoring well installation and utility locating, respectively. Prior to the commencement of drilling activities, the areas selected for drilling were carefully surveyed for subsurface utilities.

301-A N. Green Meadows Drive • Wilmington, N.C. 28405 • (919) 392-1747/FAX (919) 392-8654

Ground Water Screening

A ground water screening procedure was used to screen ground water beneath the main building for dissolved organic constituents (see the Site Plan in Attachment A). Seven existing monitoring wells (shown by the table below) were selected to correlate the screening procedure with laboratory results. Each well was purged of three well volumes prior to screening activities, and all purge water was containerized for on-site storage. Screening samples were obtained by lowering a length of dedicated PVC tubing to a depth just beneath the water surface in the wells. A vacuum was then applied, and two samples were collected in clean, glass vials. One sample was screened for dissolved volatile organics by sparging the sample with ambient air, while an organic vapor analyzer (OVA) monitored the headspace in the vial for volatile vapors. The second sample was analyzed for pH and specific conductance. For data correlation field results were plotted versus total volatile concentrations for January 1993. Total volatile data for January 1993, was provided by Alcatel.

The field parameter which appeared to correlate best with laboratory results was specific conductance. While a finite relationship of field data to laboratory data could not be established, it did appear that wells which were high in total volatile compounds also had a specific conductance higher than background. Data collected during the screening are summarized in Table 1. Graphs used during technique correlation are included in Attachment B.

Table 1
Summary of Initial Ground Water Screening Data

Well	Total Volatiles (ug/l)	OVA Reading (ppm)	Specific Conductivity (uS/cm)	pH
MW-1	0	180	191	6.13
MW-2	167	90	505	6.76
MW-3	7	100	110	6.75
MW-4	223	3.5	689	6.13
MW-5	7	2.7	228	6.40
MW-8	35	32	286	6.62
MW-9	0	10	202	6.52

NOTE: Total Volatiles (by Method 8240) were determined from January 1993, analytical data.

Following the initial screening, eleven borings were advanced beneath the floor of the main building (see the Site Plan) to a depth just below the water table surface. The water was allowed to equilibrate inside the open borehole, then screening samples were collected and field analyzed using the method described above. The results of field screening are summarized in Table 2.

Based on the results of the screening, five samples were selected for laboratory analysis. The samples were collected using the vacuum system, decanted into laboratory supplied containers, maintained on ice, and shipped to EnviroTech Mid-Atlantic (ETMA) in Blacksburg, Virginia. The samples were analyzed for Volatile Halocarbons and Aromatics using EPA Methods 601 and 602. These results are summarized in Table 2, and complete analytical results are included in Attachment C.

Table 2
Summary of Ground Water Screening Data

Boring	Total Volatiles (ug/l)	OVA Reading (ppm)	Specific Conductivity (uS/cm)	pH
GW-2	43.2	10	309	6.27
GW-3		7.5	260	6.52
GW-4		9.5	259	6.55
GW-5	1400	15	477	6.37
GW-6		30	353	6.39
GW-7	2800	n/s	614	5.77
GW-8		30	455	5.73
GW-9	8070	95	1110	5.93
GW-10	268	68	48.2	6.78

NOTE: Total Volatiles (by Methods 601 and 602) were determined from confirmation samples collected during ground water screening.

Well Installation

Two of the three proposed ground water monitoring wells were installed at the site during this project. The third well was omitted due to subsurface utility interferences. Well locations are shown on the Site Plan.

One well, MW-10, was installed hydraulically up-gradient of existing well MW-9. The boring for the well was advanced using 6.25-inch ID hollow stem augers. In order to characterize the shallow subsurface lithologies, split-spoon samples were collected at five foot intervals. The unconsolidated sediments and/or residuum were described as red to brown micaceous silty and sandy clays to depths of approximately 15 feet. Beneath this, a white to tan saprolite was encountered. Competent bedrock was encountered at a depth of approximately 24 feet. Boring logs are included in Attachment D.

The well was installed at the top of the bedrock, and was constructed of fourteen (14) feet of two-inch Schedule 40 PVC casing, and ten (10) feet of two-inch Schedule 40 PVC manufactured screen. A filter pack of clean sand was installed in the annulus between the well screen and the wall of the borehole to a depth approximately two feet above the top of the well screen. A two-foot bentonite seal was installed at the top of the filter pack, and the annulus was filled to the surface with a neat Portland cement grout. The well was completed with a locking cap, concrete pad, and flush mount bolt-down cover.

Well MW-11 was installed inside the former production building, near the ground water screening borings. The boring for the well was advanced using a three-inch sta[illegible]s steel hand auger. Cuttings obtained during the advancement of the borehole were de[illegible]ibed as red-brown silty clay to a depth of approximately 11 feet. Beneath this, a white to tan saprolite was encountered to a depth of approximately 14 feet. The boring was terminated at a depth of approximately 14 feet. Boring logs are included in Attachment D.

Well MW-11 was completed at a depth of approximately 13 feet. It was constructed of three (3) feet of two-inch Schedule 40 PVC casing, and ten (10) feet of two-inch Schedule 40 PVC manufactured screen. A filter pack of clean sand was installed in the annulus between the well screen and the wall of the borehole to a depth one foot above the top of the screened interval. A one-foot Bentonite seal was placed atop the filter pack. The well was completed with a locking cap, and flush-mount, bolt-down cover.

Well MW-12 was to be installed on the South side of the building. During advancement of the borehole, numerous blockages were encountered. Because numerous subsurface utilities are located in that area, it was decided to abandon plans for the installation of this well.

The wells were developed by purging, with a dedicated Teflon bailer, until the water was clear. All development water was containerized and stored on-site. Ground water samples

were collected from the wells by slowly lowering the bailer to just beneath the surface of the water in the well. The bailer was then retrieved, and laboratory samples were decanted into laboratory supplied containers, maintained on ice, and shipped to ETMA for analysis of Volatile Halocarbons and Aromatics by EPA Methods 601 and 602, and for total copper by Method 220.2. The samples were also field analyzed for pH, temperature, and specific conductivity. The results of sample analysis are summarized in Table 3, complete analytical results are included in Attachment E.

Table 3
Summary of Sample Results

Well	pH	Specific Conductivity (uS/cm)	Detected Constituent	Concentration (ug/l)
MW-10	6.81	210	1,1,1 Trichloroethane	1.9
			Copper	7.4
MW-11	6.94	636	Tetrachloroethene	270
			Copper	7.4

DISCUSSION

Ground water samples collected during this investigation indicate the presence of volatile organic constituents (VOCs) in the ground water beneath the former production building. Constituents detected in ground water screening borings have been listed, with their concentrations, on a drawing titled Laboratory Analytical Results, included in Attachment F. From this map, it appears that the area of highest VOC concentration is located beneath the middle portion of the former production building, near the surplus equipment storage area, in the vicinity of borings GW-9 through GW-11.

As earlier stated, monitoring well MW-10 was installed hydraulically up-gradient of existing well MW-9. The constituent 1,1,1 Trichloroethane was detected in very low concentrations in MW-10. Because of the low concentration of this constituent, and the absence of any apparent source in the vicinity of the well, it is possible that this constituent is a laboratory artifact in this sample.

The Water Table Surface map (included in Attachment G) indicates the ground water flow direction is generally to the West. By superimposing building additions onto the laboratory analytical results drawing, it may be speculated that the constituents originated from the

area local to the former printed circuit board manufacturing area, as shown on the drawings. The ground water flow direction appears conducive to the transportation of constituents from this area, to the locations of greatest concentration observed to date.
This is not to imply that releases originated from the circuit board operation. It is possible that the contaminants resulted from waste management practices employed prior to the construction of the circuit board manufacturing area.

As the scope of work for this investigation was largely exploratory, complete horizontal and vertical delineation of the contaminant plume could not be performed. Additional investigation should be performed in order to complete delineation of the contaminant plume beneath the building. Because of this, NET proposes the following:

- Additional ground water borings should be advanced beneath the former production building, parallel to the ground water flow direction. This boring traverse should be along a line extending from MW-1, and pass between borings GW-8 and GW-9, as this is the area of highest known VOC concentrations. Boring locations should not extend East of MW-1 as this well is hydraulically up-gradient of the former printed circuit board manufacturing area, and has historically shown very low VOC concentrations. These borings should be installed and sampled in a manner identical to borings GW-1 through GW-11. Data collected from these borings will be valuable in determining if the plume is the result of a continual source, or a "slug" from a former source.

- Because the above proposed borings will pass through an area of potential soil contamination, soil samples should be collected. These samples should be analyzed using EPA Methods 601 and 602 to determine whether or not volatile compounds found in ground water samples are present in the soil.

- An additional monitoring well should be installed outside the far west corner of the building. By positioning the well at this location, additional downgradient control would be provided.

National Environmental Technologies appreciates this opportunity to provide environmental services to Alcatel Network Systems. If there are any questions, please feel free to call.

Sincerely,

NATIONAL ENVIRONMENTAL TECHNOLOGIES

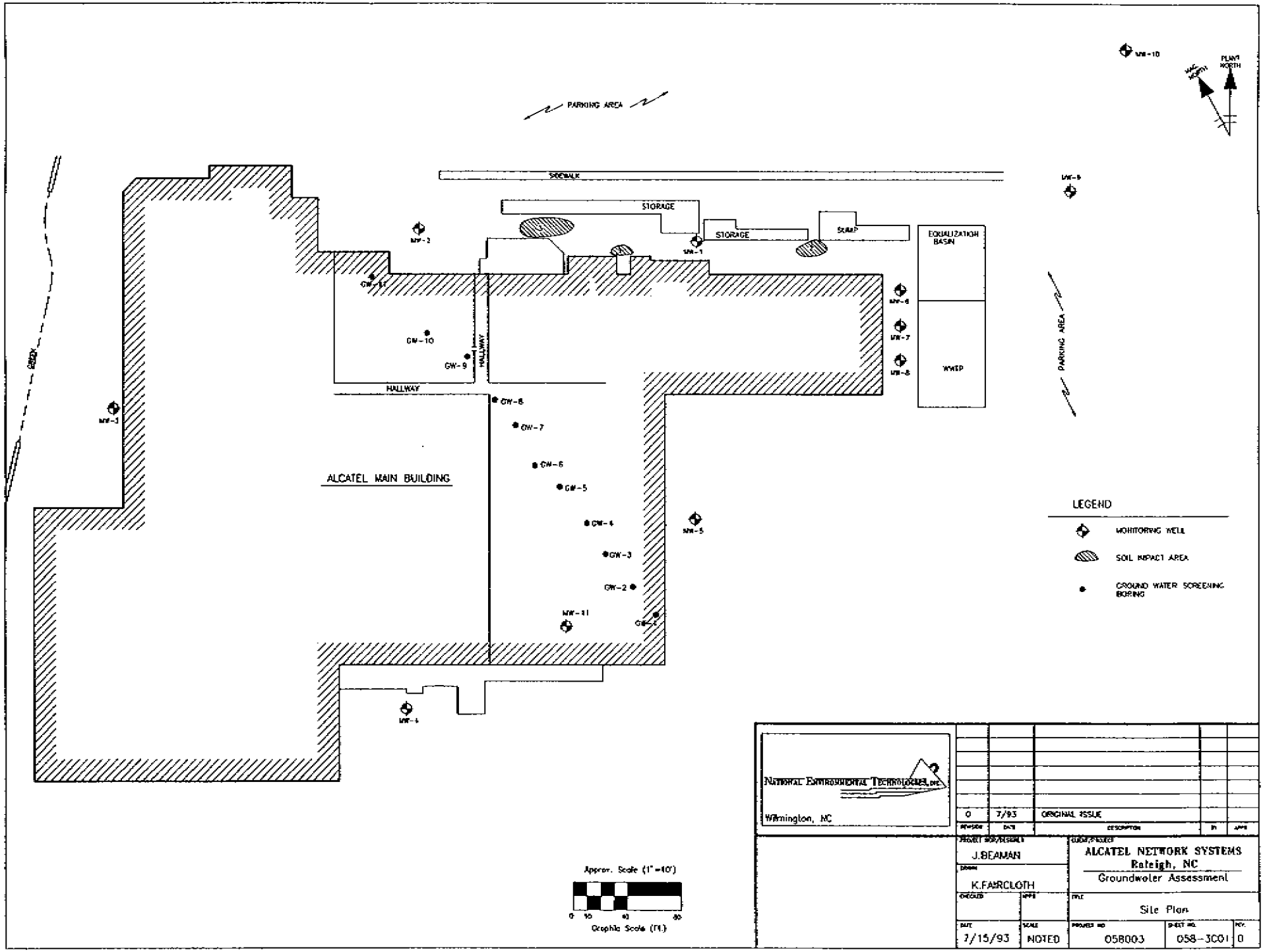
Joe Beaman

Joe Beaman
Project Manager

Attachments (7)

ATTACHMENT A

SITE PLAN

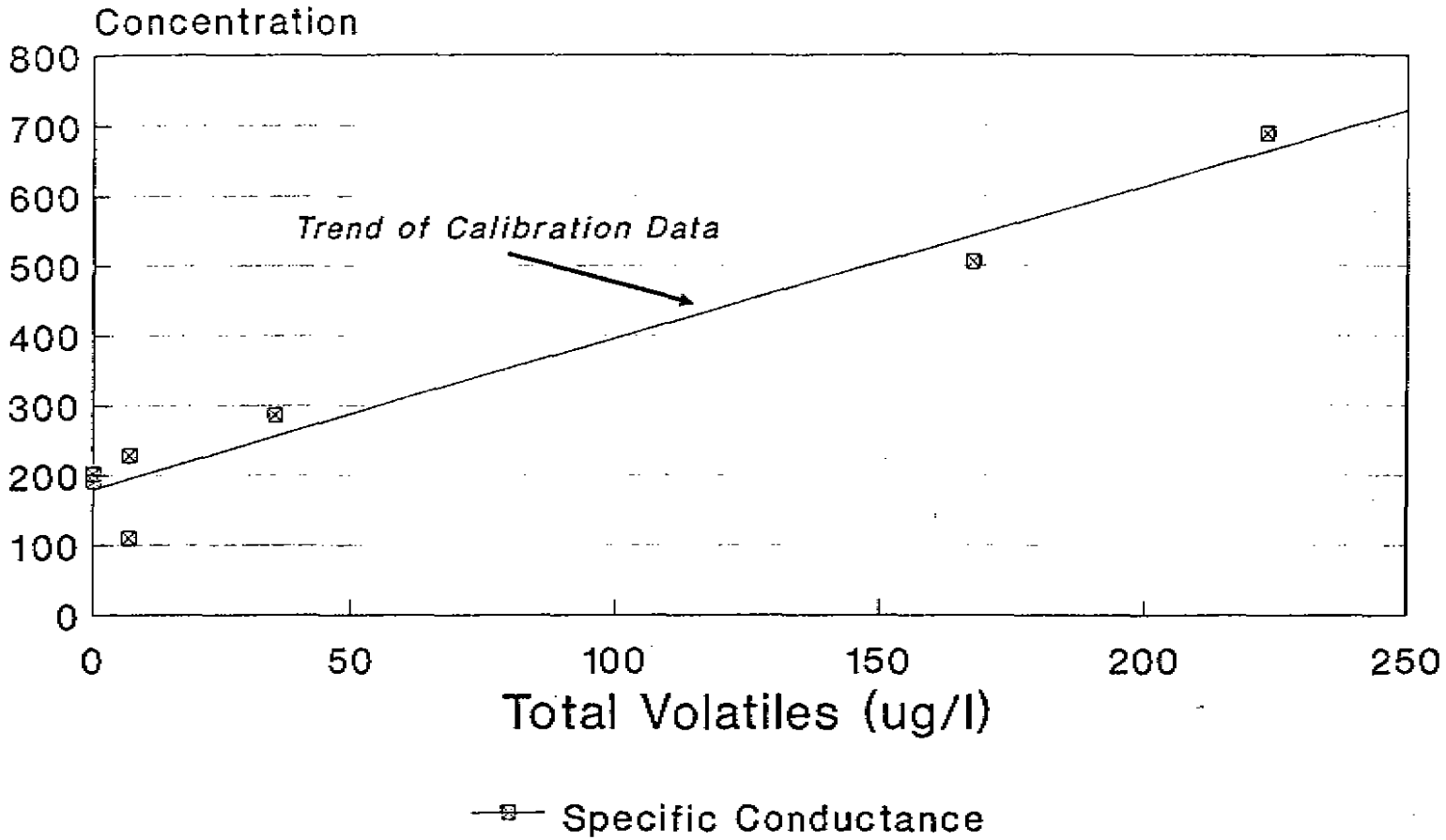

PARKING AREA
SIDEWALK
STORAGE
STORAGE
SUMP
EQUALIZATION BASIN
WWEP
PARKING AREA
HALLWAY
HALLWAY
ALCATEL MAIN BUILDING
GRID
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
GW-1
GW-2
GW-3
GW-4
GW-5
GW-6
GW-7
GW-8
GW-9
GW-10
GW-11
PLANT NORTH
MAG NORTH
LEGEND
MONITORING WELL
SOIL IMPACT AREA
GROUND WATER SCREENING BORING
Approx. Scale (1"=40')
0 10 40 80
Graphic Scale (Ft.)
NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC
0 7/93 ORIGINAL ISSUE
REVISION DATE DESCRIPTION BY APP
PROJECT MGR/ENGINEER J.BEAMAN
DRAWN K.FAIRCLOTH
CHECKED APPR
DATE 7/15/93
SCALE NOTED
CLIENT/PROJECT ALCATEL NETWORK SYSTEMS Raleigh, NC Groundwater Assessment
TITLE Site Plan
PROJECT NO 058003
SHEET NO. 058-3C01
REV. 0

ATTACHMENT B

GRAPHICAL CORRELATION DATA

Alcatel Network Systems

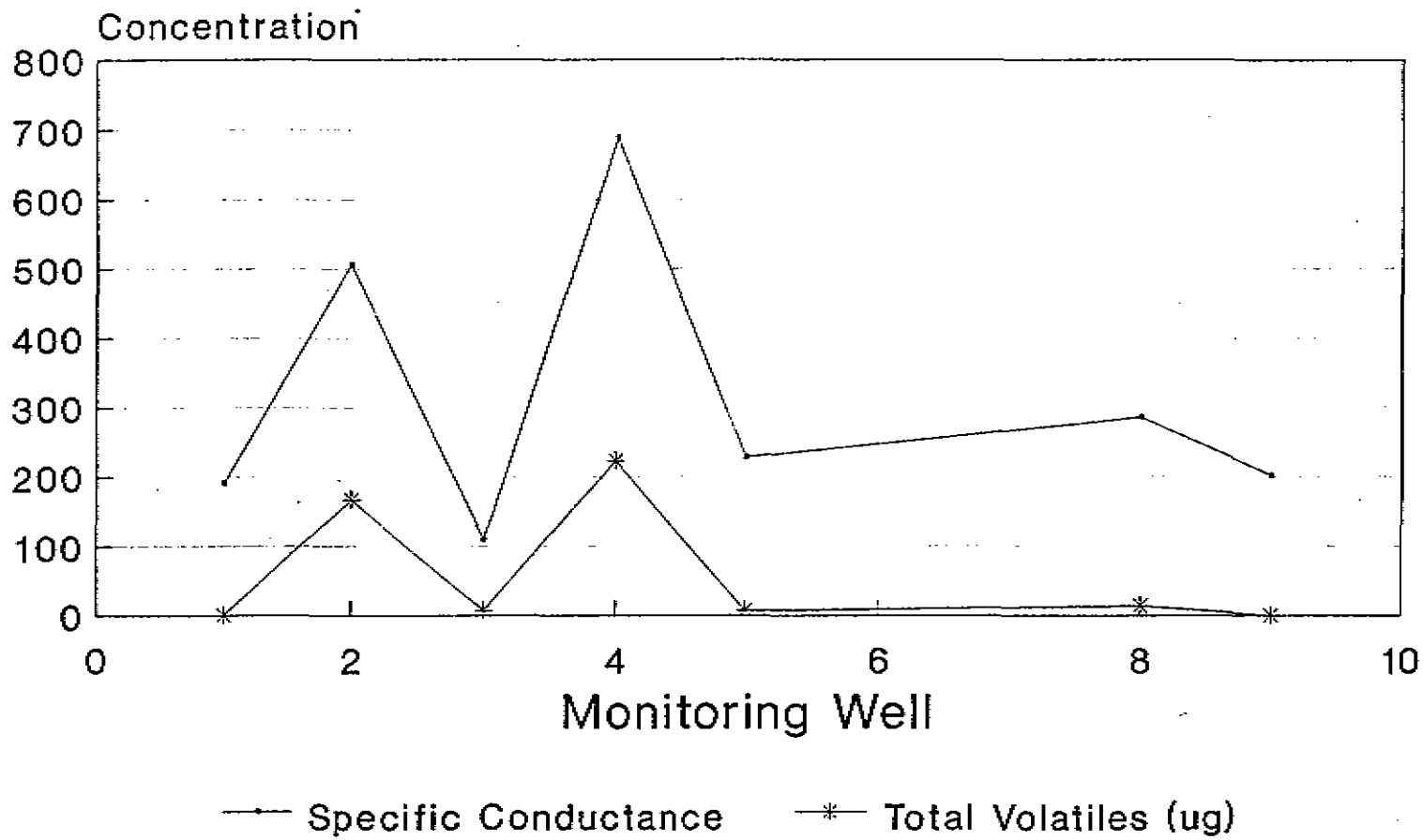
Analytical vs. Field Data



Total Volatiles vs. Specific Conductance

Alcatel Network Systems

Analytical vs. Field Data



Total Volatiles vs. Specific Conductance

ATTACHMENT C

LABORATORY ANALYTICAL RESULTS FOR SCREENING SAMPLES

EnviroTech Mid-Atlantic
Virginia Tech Corporate Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

JULY 9, 1993

CLIENT : NET, INC.
ADDRESS: 301 A N GREEN MEADOWS DR.
WILMINGTON, NC 28405

REPORT # : 5641
DATE RECEIVED: 6/29/93

ATTENTION: JOE BEAMAN
PROJECT:
PROJECT NO: 058003
PURCHASE ORDER:

FAX: 919-392-8654

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS
Samples submitted and identified by client as:

SAMPLE	FIELD ID	DATE
5641A	MW-10	6/27/93
5641B	MW-11	6/27/93
5641C	MW-10	6/27/93
5641D	MW-11	6/27/93
5641E	GW-5	6/27/93
5641F	GW-7	6/27/93
5641G	GW-2	6/27/93
5641H	GW-10	6/27/93
5641I	GW-9	6/27/93

ANALYSIS	D/L	5641A	D/L	5641B
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	1.0	BDL	10	BDL
Bromodichloromethane	1.0	BDL	10	BDL
Bromoform	1.0	BDL	10	BDL
Bromomethane	1.0	BDL	10	BDL
Carbon tetrachloride	1.0	BDL	10	BDL
Chlorobenzene	1.0	BDL	10	BDL
Chloroethane	1.0	BDL	10	BDL
2-Chloroethyl vinyl ether	1.0	BDL	10	BDL
Chloroform	1.0	BDL	10	BDL
Chloromethane	1.0	BDL	10	BDL
Dibromochloromethane	1.0	BDL	10	BDL
1,2-Dichlorobenzene	1.0	BDL	10	BDL

ANALYSIS	D/L	5641A	D/L	5641B
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
1,3-Dichlorobenzene	1.0	BDL	10	BDL
1,4-Dichlorobenzene	1.0	BDL	10	BDL
Dichlorodifluoromethane	1.0	BDL	10	BDL
1,1-Dichloroethane	1.0	BDL	10	BDL
1,2-Dichloroethane	1.0	BDL	10	BDL
1,1-Dichloroethene	1.0	BDL	10	BDL
trans-1,2-Dichloroethene	1.0	BDL	10	BDL
1,2-Dichloropropane	1.0	BDL	10	BDL
cis 1,3-Dichloropropene	1.0	BDL	10	BDL
trans 1,3-Dichloropropene	1.0	BDL	10	BDL
Ethylbenzene	1.0	BDL	10	BDL
Methylene chloride	1.0	BDL	10	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	10	BDL
Tetrachloroethene	1.0	BDL	10	270
Toluene	1.0	BDL	10	BDL
1,1,1-Trichloroethane	1.0	1.9	10	BDL
1,1,2-Trichloroethane	1.0	BDL	10	BDL
Trichloroethene	1.0	BDL	10	BDL
Trichlorofluoromethane	1.0	BDL	10	BDL
Vinyl chloride	1.0	BDL	10	BDL
total Xylenes	1.0	BDL	10	BDL

ANALYSIS	D/L	5641E	D/L	5641F
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	50	BDL	100	BDL
Bromodichloromethane	50	BDL	100	BDL
Bromoform	50	BDL	100	BDL
Bromomethane	50	BDL	100	BDL
Carbon tetrachloride	50	BDL	100	BDL
Chlorobenzene	50	BDL	100	BDL
Chloroethane	50	BDL	100	BDL
2-Chloroethyl vinyl ether	50	BDL	100	BDL
Chloroform	50	BDL	100	BDL
Chloromethane	50	BDL	100	BDL
Dibromochloromethane	50	BDL	100	BDL
1,2-Dichlorobenzene	50	BDL	100	BDL
1,3-Dichlorobenzene	50	BDL	100	BDL
1,4-Dichlorobenzene	50	BDL	100	BDL
Dichlorodifluoromethane	50	BDL	100	BDL
1,1-Dichloroethane	50	BDL	100	BDL
1,2-Dichloroethane	50	BDL	100	BDL
1,1-Dichloroethene	50	BDL	100	BDL

ANALYSIS	D/L	5641E	D/L	5641F
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
trans-1,2-Dichloroethene	50	BDL	100	BDL
1,2-Dichloropropane	50	BDL	100	BDL
cis 1,3-Dichloropropene	50	BDL	100	BDL
trans 1,3-Dichloropropene	50	BDL	100	BDL
Ethylbenzene	50	BDL	100	BDL
Methylene chloride	50	BDL	100	BDL
1,1,2,2-Tetrachloroethane	50	BDL	100	BDL
Tetrachloroethene	50	1,400	100	2,800
Toluene	50	BDL	100	BDL
1,1,1-Trichloroethane	50	BDL	100	BDL
1,1,2-Trichloroethane	50	BDL	100	BDL
Trichloroethene	50	BDL	100	BDL
Trichlorofluoromethane	50	BDL	100	BDL
Vinyl chloride	50	BDL	100	BDL
total Xylenes	50	BDL	100	BDL

ANALYSIS	D/L	5641G	D/L	5641H
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	1.0	BDL	10	BDL
Bromodichloromethane	1.0	BDL	10	BDL
Bromoform	1.0	BDL	10	BDL
Bromomethane	1.0	BDL	10	BDL
Carbon tetrachloride	1.0	BDL	10	BDL
Chlorobenzene	1.0	BDL	10	BDL
Chloroethane	1.0	BDL	10	BDL
2-Chloroethyl vinyl ether	1.0	BDL	10	BDL
Chloroform	1.0	BDL	10	BDL
Chloromethane	1.0	BDL	10	BDL
Dibromochloromethane	1.0	BDL	10	BDL
1,2-Dichlorobenzene	1.0	BDL	10	BDL
1,3-Dichlorobenzene	1.0	BDL	10	BDL
1,4-Dichlorobenzene	1.0	BDL	10	BDL
Dichlorodifluoromethane	1.0	BDL	10	BDL
1,1-Dichloroethane	1.0	BDL	10	BDL
1,2-Dichloroethane	1.0	BDL	10	BDL
1,1-Dichloroethene	1.0	BDL	10	230
trans-1,2-Dichloroethene	1.0	BDL	10	BDL
1,2-Dichloropropane	1.0	BDL	10	BDL
cis 1,3-Dichloropropene	1.0	BDL	10	BDL

ANALYSIS	D/L	5641G	D/L	5641H
trans 1,3-Dichloropropene	1.0	BDL	10	BDL
Ethylbenzene	1.0	BDL	10	BDL
Methylene chloride	1.0	BDL	10	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	10	BDL
Tetrachloroethene	1.0	34	10	23
Toluene	1.0	BDL	10	BDL
1,1,1-Trichloroethane	1.0	6.4	10	15
1,1,2-Trichloroethane	1.0	1.9	10	BDL
Trichloroethene	1.0	BDL	10	BDL
Trichlorofluoromethane	1.0	BDL	10	BDL
Vinyl chloride	1.0	BDL	10	BDL
total Xylenes	1.0	BDL	10	BDL

ANALYSIS	D/L	5641I
OLATILE HALOCARBONS/AROMATICS (ug/L)		
Benzene	200	BDL
Bromodichloromethane	200	BDL
Bromoform	200	BDL
Bromomethane	200	BDL
Carbon tetrachloride	200	BDL
Chlorobenzene	200	BDL
Chloroethane	200	BDL
2-Chloroethyl vinyl ether	200	BDL
Chloroform	200	BDL
Chloromethane	200	BDL
Dibromochloromethane	200	BDL
1,2-Dichlorobenzene	200	BDL
1,3-Dichlorobenzene	200	BDL
1,4-Dichlorobenzene	200	BDL
Dichlorodifluoromethane	200	BDL
1,1-Dichloroethane	200	230
1,2-Dichloroethane	200	BDL
1,1-Dichloroethene	200	6,200
trans-1,2-Dichloroethene	200	BDL
1,2-Dichloropropane	200	BDL
cis 1,3-Dichloropropene	200	BDL
trans 1,3-Dichloropropene	200	BDL
Ethylbenzene	200	BDL
Methylene chloride	200	BDL
1,1,2,2-Tetrachloroethane	200	BDL
Tetrachloroethene	200	340
Toluene	200	BDL

ANALYSIS	D/L	5641I
VOLATILE HALOCARBONS/AROMATICS (ug/L)		
1,1,1-Trichloroethane	200	1,300
1,1,2-Trichloroethane	200	BDL
Trichloroethene	200	BDL
Trichlorofluoromethane	200	BDL
Vinyl chloride	200	BDL
total Xylenes	200	BDL

	5641C	5641D	
TOTAL COPPER (Cu) (ug/L)	1	7.4	7.4

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

QUALITY CONTROL DATA

ALYSIS	%STD	%SPIKE	%RD	EPA #	ANALYST	DATE
VOLATILES				601/602	A CAMPBELL	7/07/93
1,1 DCE		107	0.0			
TCE		119	5.9			
C BENZENE		117	0.9			
BENZENE		111	1.8			
TOLUENE		113	0.0			
TOTAL Cu	107	113		220.2	S CROY	7/06/93

ABORATORY DIRECTOR
lizabeth B. Smiley

*IMPORTANT: See back before completing form!

ENVIROTECH MID-ATLANTIC

EnviroTech Mid-Atlantic
1861 Pratt Drive
Blacksburg, Virginia 24060
Phone: (703) 231-3983 Fax: (703) 231-3984

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

6 SPECIAL HANDLING
-Normal turn around time is 7-10 working days
-Prior authorization required for rush projects

MARK ONE:
☑ Normal TAT
☐ 24-48 HOUR
☐ 3-5 DAY

1

Billing Client: National Environmental Technologies
Address: 301-A N Green Meadows Dr
City, State, Zip Code: Wilmington NC 28405
Phone Number: (919) 392-1747 Fax Number: (919) 392-3654
Project Name and/or Number: 053003
Purchase or Work Order Number:
Sampler Name (please print): Joe Beaman
Project Manager (please print): Joe Beaman

3 ANALYSIS REQUESTED

2

SAMPLE DESCRIPTION AND/OR LOCATION (see instructions on back)	# CONTAINERS	SAMPLE MATRIX: LIQUID	SOIL	OTHER	GRAB SAMPLE	COMP. SAMP.	SAMPLING INFORMATION: DATE	TIME	ETMA LAB NO.	TPH - ☐ 1R (418.1) ☐ GC (3550)	TPH II (5030)	TCLP ☐ Full ☐ Partial (Specify in Remarks)	EPA 601/8010	EPA 602/8020 ☐ BTEX-only	EPA 608/8080 ☐ PCB-only	EPA ☐ 624 ☐ 8240	EPA ☐ 625 ☐ 8270	ETMA UST PKG (Undergrd Storage Tank)	ETMA - Above Ground Spill Pkg	ETMA - Guaranteed Petroleum Pkg.	Total Metals - Please specify	Corrosivity	Other Testing: Please Specify				
MW-10	4	✓			✓		6/27		5641 A				✓	✓													
MW-11	4	✓			✓		6/27		B				✓	✓													
MW-10	1	✓			✓		6/27		C													✓					
MW-11	1	✓			✓		6/27		D													✓					
GW-5	4	✓			✓		6/27		E				✓	✓													
GW-7	2	✓			✓		6/27		F				✓	✓													
GW-2	2	✓			✓		6/27		G				✓	✓													
GW-10	2	✓			✓		6/27		H				✓	✓													
GW-9	2	✓			✓		6/27		I				✓	✓													

4

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Stan H Hart	6/27	18:30						
RECEIVED BY	**DATE**	**TIME**	**RELINQUISHED BY**	**DATE**	**TIME**	**RECEIVED IN LAB BY**	**DATE**	**TIME**
						J. Tyler	6/29/93	11 Am

5 REMARKS (to include any special information pertinent to samples to be analyzed and/or billing)
Temp. Blank 4.5°C
Metals Sample pH = 1

ATTACHMENT D

MONITORING WELL BORING LOGS

BORING LOG

LOCATION: *Alcatel Network Systems, Raleigh,NC*	DATE COMPLETED: *6-26-93*	BORING NO. *MW-10*	PAGE *1* OF *1*
TOTAL DEPTH (FT.): *24 Feet*	GRDWTR. DEPTH: *18 Feet*	NET PROJECT NO: *050003*	
GROUND ELEV. (MSL): –	T/C ELEV (MSL): *253.45 Feet*	SCREEN DEPTH: *14'-24'*	LOGGED BY: *SH*
		SCREEN INTER. *239.45-229.45*	CHECKED BY: *GB*

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1							
5		*Very Stiff, Red to Brown, Sandy Micaceous Clay (CL)*		*17*			
7	*246.45*						
10		*Very Stiff, Red to Brown, Silty Micaceous Clay (CL)*		*25*			
12	*241.45*						
		Very Hard, Tan Silty Clay (CL)					
15	*238.45*						
		Very Hard, Tan to White, Granitic Saprolite, Clayey Silt (ML)					*Water Level-6/26/93 (235.45)*
20				*50/6*			
22	*231.45*						
		Partially Weathered Rock Gravelly (GC)					
24	*229.45*	*Boring Terminated @24' In Bedrock*					

EQUIPMENT: *Canterra CT-250 w/Hollow Stem Augers*

NOTES: SI – SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL – MEAN SEA LEVEL (FT.)

**Elevations Referenced to Top of Casing (T/C)*

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

BORING LOG

BORING NO. *MW-11*	PAGE *1* OF *1*		
LOCATION: *Alcatel Network Systems, Raleigh,NC*	DATE COMPLETED: *6-26-93*	NET PROJECT NO: *058003*	
TOTAL DEPTH (FT.): *14 Feet*	GRDWTR. DEPTH: *10 Feet*	SCREEN DEPTH: *4-14 Feet*	LOGGED BY: *SH*
GROUND ELEV. (MSL): *230.70*	T/C ELEV (MSL): *230.55 Feet*	SCREEN INTER. *226.70'-216.77'*	CHECKED BY: *RB*

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
1		*Red to Brown, Micaceous Clay (CL)*					
5							
10							*Water Level-6/26/93 (220.70)*
11	*219.70*	*Red-Brown to White Granitic Saprolite Silt (ML)*					
14	*216.70*	*Boring Terminated @14'*					
20							
24							

EQUIPMENT: *Stainless Steel Hand Auger*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

ATTACHMENT E

LABORATORY ANALYTICAL RESULTS FOR MONITORING WELL SAMPLES

EnviroTech Mid-Atlantic
Virginia Tech Corporate Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

JULY 9, 1993

CLIENT : NET, INC.
ADDRESS: 301 A N GREEN MEADOWS DR.
WILMINGTON, NC 28405

REPORT # : 5641
DATE RECEIVED: 6/29/93

ATTENTION: JOE BEAMAN
PROJECT:
PROJECT NO: 058003
PURCHASE ORDER:

FAX: 919-392-8654

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS
Samples submitted and identified by client as:

SAMPLE	FIELD ID	DATE
5641A	MW-10	6/27/93
5641B	MW-11	6/27/93
5641C	MW-10	6/27/93
5641D	MW-11	6/27/93
5641E	GW-5	6/27/93
5641F	GW-7	6/27/93
5641G	GW-2	6/27/93
5641H	GW-10	6/27/93
5641I	GW-9	6/27/93

ANALYSIS	D/L	5641A	D/L	5641B
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	1.0	BDL	10	BDL
Bromodichloromethane	1.0	BDL	10	BDL
Bromoform	1.0	BDL	10	BDL
Bromomethane	1.0	BDL	10	BDL
Carbon tetrachloride	1.0	BDL	10	BDL
Chlorobenzene	1.0	BDL	10	BDL
Chloroethane	1.0	BDL	10	BDL
2-Chloroethyl vinyl ether	1.0	BDL	10	BDL
Chloroform	1.0	BDL	10	BDL
Chloromethane	1.0	BDL	10	BDL
Dibromochloromethane	1.0	BDL	10	BDL
1,2-Dichlorobenzene	1.0	BDL	10	BDL

ANALYSIS	D/L	5641A	D/L	5641B
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
1,3-Dichlorobenzene	1.0	BDL	10	BDL
1,4-Dichlorobenzene	1.0	BDL	10	BDL
Dichlorodifluoromethane	1.0	BDL	10	BDL
1,1-Dichloroethane	1.0	BDL	10	BDL
1,2-Dichloroethane	1.0	BDL	10	BDL
1,1-Dichloroethene	1.0	BDL	10	BDL
trans-1,2-Dichloroethene	1.0	BDL	10	BDL
1,2-Dichloropropane	1.0	BDL	10	BDL
cis 1,3-Dichloropropene	1.0	BDL	10	BDL
trans 1,3-Dichloropropene	1.0	BDL	10	BDL
Ethylbenzene	1.0	BDL	10	BDL
Methylene chloride	1.0	BDL	10	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	10	BDL
Tetrachloroethene	1.0	BDL	10	270
Toluene	1.0	BDL	10	BDL
1,1,1-Trichloroethane	1.0	1.9	10	BDL
,1,2-Trichloroethane	1.0	BDL	10	BDL
Trichloroethene	1.0	BDL	10	BDL
Trichlorofluoromethane	1.0	BDL	10	BDL
Vinyl chloride	1.0	BDL	10	BDL
total Xylenes	1.0	BDL	10	BDL

ANALYSIS	D/L	5641E	D/L	5641F
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	50	BDL	100	BDL
Bromodichloromethane	50	BDL	100	BDL
Bromoform	50	BDL	100	BDL
Bromomethane	50	BDL	100	BDL
Carbon tetrachloride	50	BDL	100	BDL
Chlorobenzene	50	BDL	100	BDL
Chloroethane	50	BDL	100	BDL
2-Chloroethyl vinyl ether	50	BDL	100	BDL
Chloroform	50	BDL	100	BDL
Chloromethane	50	BDL	100	BDL
Dibromochloromethane	50	BDL	100	BDL
1,2-Dichlorobenzene	50	BDL	100	BDL
1,3-Dichlorobenzene	50	BDL	100	BDL
1,4-Dichlorobenzene	50	BDL	100	BDL
Dichlorodifluoromethane	50	BDL	100	BDL
1,1-Dichloroethane	50	BDL	100	BDL
1,2-Dichloroethane	50	BDL	100	BDL
1,1-Dichloroethene	50	BDL	100	BDL

ANALYSIS	D/L	5641E	D/L	5641F
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
trans-1,2-Dichloroethene	50	BDL	100	BDL
1,2-Dichloropropane	50	BDL	100	BDL
cis 1,3-Dichloropropene	50	BDL	100	BDL
trans 1,3-Dichloropropene	50	BDL	100	BDL
Ethylbenzene	50	BDL	100	BDL
Methylene chloride	50	BDL	100	BDL
1,1,2,2-Tetrachloroethane	50	BDL	100	BDL
Tetrachloroethene	50	1,400	100	2,800
Toluene	50	BDL	100	BDL
1,1,1-Trichloroethane	50	BDL	100	BDL
1,1,2-Trichloroethane	50	BDL	100	BDL
Trichloroethene	50	BDL	100	BDL
Trichlorofluoromethane	50	BDL	100	BDL
Vinyl chloride	50	BDL	100	BDL
total Xylenes	50	BDL	100	BDL

ANALYSIS	D/L	5641G	D/L	5641H
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	1.0	BDL	10	BDL
Bromodichloromethane	1.0	BDL	10	BDL
Bromoform	1.0	BDL	10	BDL
Bromomethane	1.0	BDL	10	BDL
Carbon tetrachloride	1.0	BDL	10	BDL
Chlorobenzene	1.0	BDL	10	BDL
Chloroethane	1.0	BDL	10	BDL
2-Chloroethyl vinyl ether	1.0	BDL	10	BDL
Chloroform	1.0	BDL	10	BDL
Chloromethane	1.0	BDL	10	BDL
Dibromochloromethane	1.0	BDL	10	BDL
1,2-Dichlorobenzene	1.0	BDL	10	BDL
1,3-Dichlorobenzene	1.0	BDL	10	BDL
1,4-Dichlorobenzene	1.0	BDL	10	BDL
Dichlorodifluoromethane	1.0	BDL	10	BDL
1,1-Dichloroethane	1.0	BDL	10	BDL
1,2-Dichloroethane	1.0	BDL	10	BDL
1,1-Dichloroethene	1.0	BDL	10	230
trans-1,2-Dichloroethene	1.0	BDL	10	BDL
1,2-Dichloropropane	1.0	BDL	10	BDL
cis 1,3-Dichloropropene	1.0	BDL	10	BDL

ANALYSIS	D/L	5641G	D/L	5641H
trans 1,3-Dichloropropene	1.0	BDL	10	BDL
Ethylbenzene	1.0	BDL	10	BDL
Methylene chloride	1.0	BDL	10	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	10	BDL
Tetrachloroethene	1.0	34	10	23
Toluene	1.0	BDL	10	BDL
1,1,1-Trichloroethane	1.0	6.4	10	15
1,1,2-Trichloroethane	1.0	1.9	10	BDL
Trichloroethene	1.0	BDL	10	BDL
Trichlorofluoromethane	1.0	BDL	10	BDL
Vinyl chloride	1.0	BDL	10	BDL
total Xylenes	1.0	BDL	10	BDL

ANALYSIS	D/L	5641I
)LATILE HALOCARBONS/AROMATICS (ug/L)		
Benzene	200	BDL
Bromodichloromethane	200	BDL
Bromoform	200	BDL
Bromomethane	200	BDL
Carbon tetrachloride	200	BDL
Chlorobenzene	200	BDL
Chloroethane	200	BDL
2-Chloroethyl vinyl ether	200	BDL
Chloroform	200	BDL
Chloromethane	200	BDL
Dibromochloromethane	200	BDL
1,2-Dichlorobenzene	200	BDL
1,3-Dichlorobenzene	200	BDL
1,4-Dichlorobenzene	200	BDL
Dichlorodifluoromethane	200	BDL
1,1-Dichloroethane	200	230
1,2-Dichloroethane	200	BDL
1,1-Dichloroethene	200	6,200
trans-1,2-Dichloroethene	200	BDL
1,2-Dichloropropane	200	BDL
cis 1,3-Dichloropropene	200	BDL
trans 1,3-Dichloropropene	200	BDL
Ethylbenzene	200	BDL
Methylene chloride	200	BDL
1,1,2,2-Tetrachloroethane	200	BDL
Tetrachloroethene	200	340
Toluene	200	BDL

ANALYSIS	D/L	5641I
VOLATILE HALOCARBONS/AROMATICS (ug/L)		
1,1,1-Trichloroethane	200	1,300
1,1,2-Trichloroethane	200	BDL
Trichloroethene	200	BDL
Trichlorofluoromethane	200	BDL
Vinyl chloride	200	BDL
total Xylenes	200	BDL

	5641C	5641D	
TOTAL COPPER (Cu) (ug/L)	1	7.4	7.4

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

QUALITY CONTROL DATA

ANALYSIS	%STD	%SPIKE	%RD	EPA #	ANALYST	DATE
VOLATILES				601/602	A CAMPBELL	7/07/93
1,1 DCE		107	0.0			
TCE		119	5.9			
C BENZENE		117	0.9			
BENZENE		111	1.8			
TOLUENE		113	0.0			
TOTAL Cu	107	113		220.2	S CROY	7/06/93

ABORATORY DIRECTOR
Elizabeth B. Smiley

*IMPORTANT: See back before completing form!

ENVIROTECH MID-ATLANTIC

EnviroTech Mid-Atlantic
1861 Pratt Drive
Blacksburg, Virginia 24060
Phone: (703) 231-3983 Fax: (703) 231-3984

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

6 **SPECIAL HANDLING**
-Normal turn around time is 7-10 working days
-Prior authorization required for rush projects

MARK ONE:
☑ Normal TAT
☐ 24-48 HOUR
☐ 3-5 DAY

1
Billing Client: National Environmental Technologies
Address: 301-A N Green Meadows Dr
City, State, Zip Code: Wilmington NC 28405
Phone Number: (919) 392-1747 Fax Number: (919) 392-3654
Project Name and/or Number: 058003
Purchase or Work Order Number:
Sampler Name (please print): Joe Beamer
Project Manager (please print): Joe Beamer

3 ANALYSIS REQUESTED

2

SAMPLE DESCRIPTION AND/OR LOCATION (see instructions on back)	# CONTAINERS	SAMPLE MATRIX: LIQUID	SOIL	OTHER	GRAB SAMPLE	COMP. SAMP.	SAMPLING INFORMATION: DATE	TIME	ETMA LAB NO.	TPH - ☐ IR (418.1) ☐ GC (3550)	TPH (5030)	TCLP ☐ Full ☐ Partial (Specify in Remarks)	EPA 601/8010	EPA 602/8020 ☐ BTEX-only	EPA 608/8080 ☐ PCB-only	EPA ☐ 624 ☐ 8240	EPA ☐ 625 ☐ 8270	ETMA UST PKG (Undergrd Storage Tank)	ETMA - Above Ground Spill Pkg	ETMA - Guaranteed Petroleum Pkg.	Total Metals - Please specify	Copper	Other Testing: Please Specify				
MW-10	4	✓			✓		6/27		SLAB A				✓	✓													
MW-11	4	✓			✓		6/27		B				✓	✓													
MW-10	1	✓			✓		6/27		C													✓					
MW-11	1	✓			✓		6/27		D													✓					
GW-5	4	✓			✓		6/27		E				✓	✓													
GW-7	2	✓			✓		6/27		F				✓	✓													
GW-2	2	✓			✓		6/27		G				✓	✓													
GW-10	2	✓			✓		6/27		H				✓	✓													
GW-9	2	✓			✓		6/27		I				✓	✓													

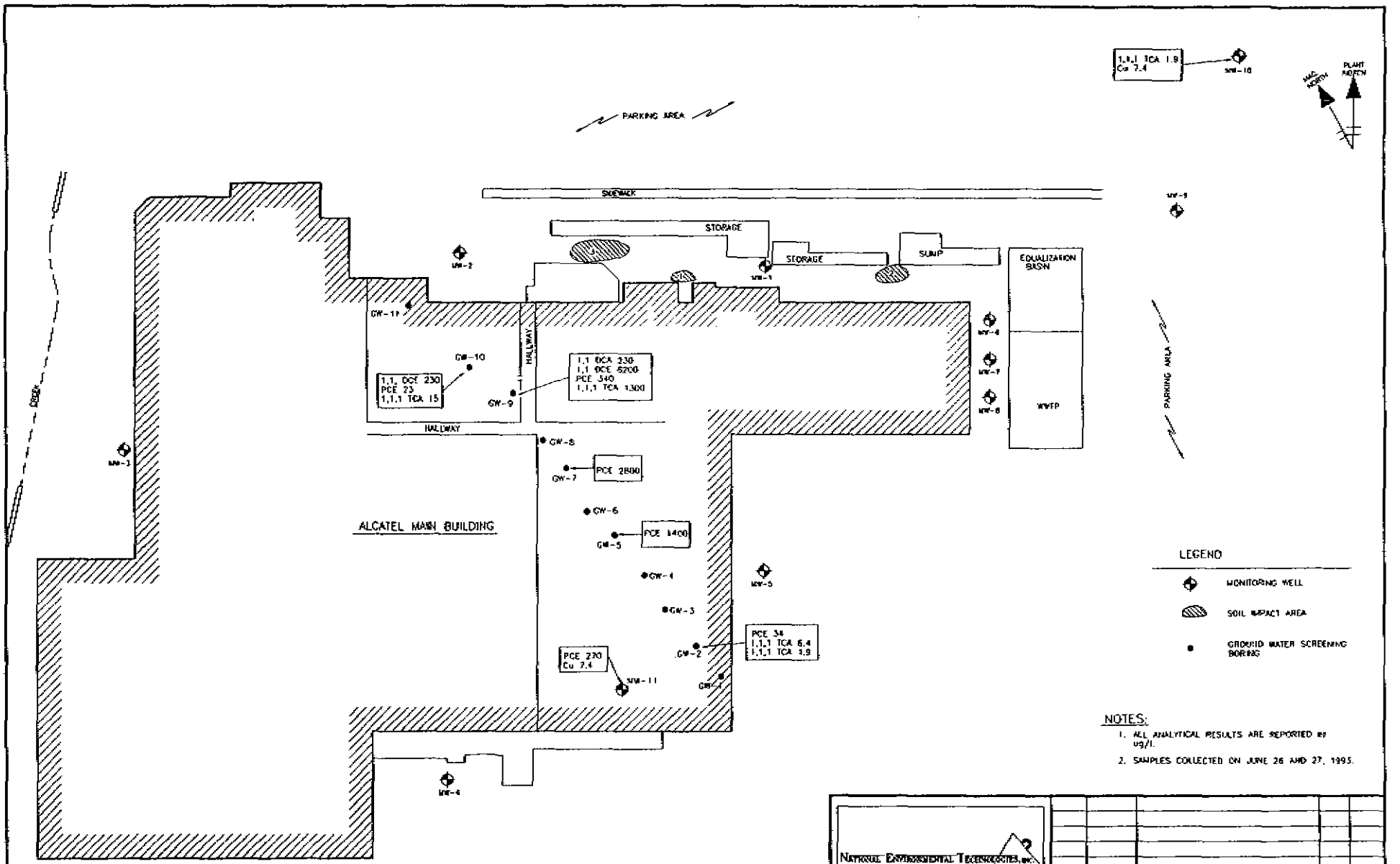
4

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Stan H Hart	6/27	18:30						
RECEIVED BY	**DATE**	**TIME**	**RELINQUISHED BY**	**DATE**	**TIME**	**RECEIVED IN LAB BY**	**DATE**	**TIME**
						J. Tyson	6/29/93	11 Am

5 REMARKS (to include any special information pertinent to samples to be analyzed and/or billing)
Temp. Blank 4.5°C
Metals Sample pH = 1

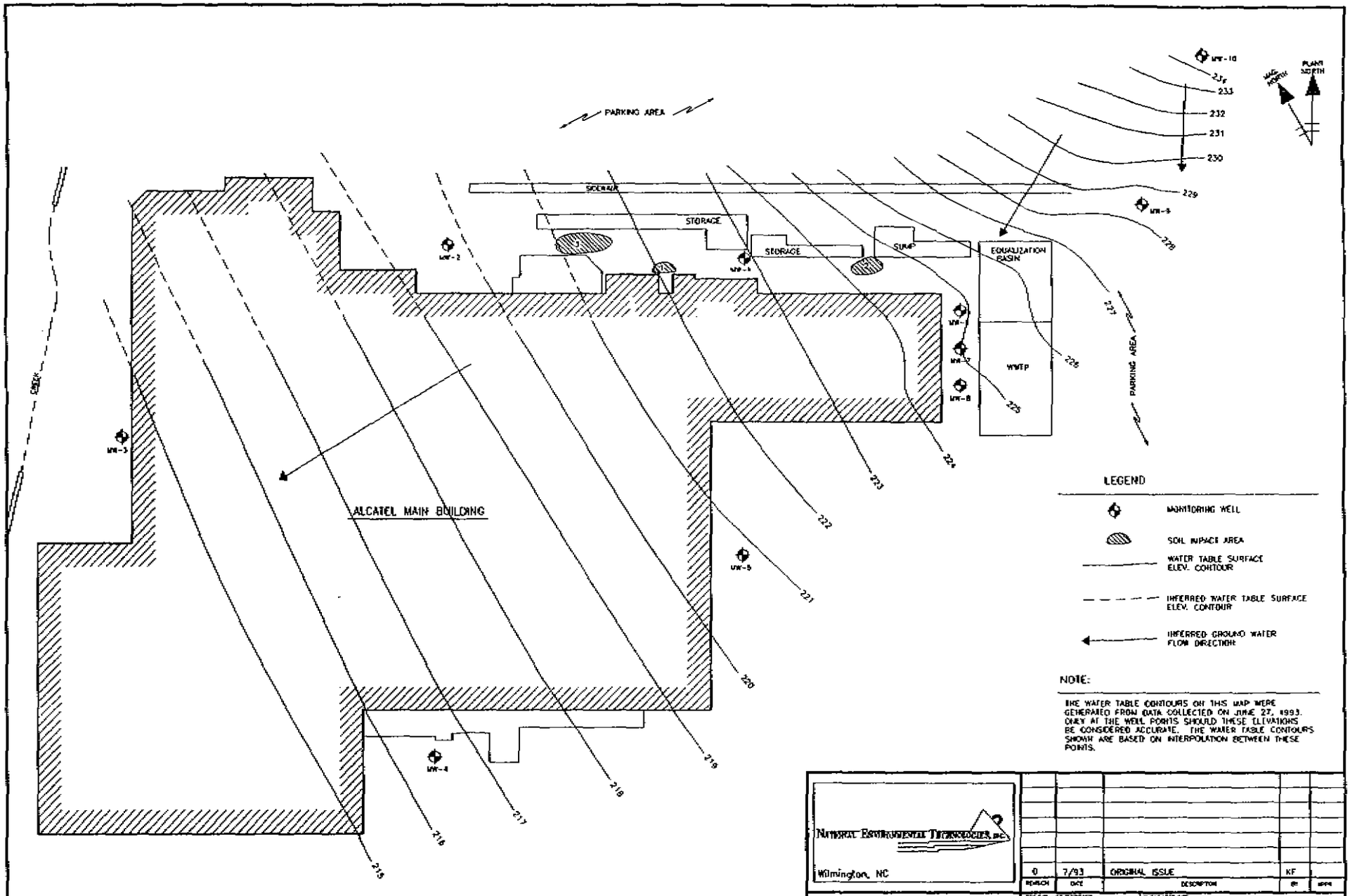
ATTACHMENT F

LABORATORY ANALYTICAL RESULTS MAP


PARKING AREA
SIDEWALK
STORAGE
STORAGE
SUMP
EQUALIZATION BASIN
WWTP
PARKING AREA
HALLWAY
HALLWAY
DITCH
ALCATEL MAIN BUILDING
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
GW-1
GW-2
GW-3
GW-4
GW-5
GW-6
GW-7
GW-8
GW-9
GW-10
GW-11
1,1,1 TCA 1.9
Cu 7.4
1,1 DCA 330
1,1 DCE 5200
PCE 540
1,1,1 TCA 1300
1,1 DCE 230
PCE 23
1,1,1 TCA 15
PCE 2800
PCE 1400
PCE 34
1,1,1 TCA 6.4
1,1,1 TCA 1.9
PCE 230
Cu 7.4
MAG NORTH
PLANT NORTH
LEGEND
MONITORING WELL
SOIL IMPACT AREA
GROUND WATER SCREENING BORING
NOTES:
1. ALL ANALYTICAL RESULTS ARE REPORTED IN ug/l.
2. SAMPLES COLLECTED ON JUNE 26 AND 27, 1995.
Approx. Scale (1"=40')
0 10 40 80
Graphic Scale (Ft.)
NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC
0 7/93 ORIGINAL ISSUE
REVISION DATE DESCRIPTION BY APPR
PROJECT MGR/DESIGNER J.BEAMAN
DRAWN K.FAIRCLOTH
CHECKED APPR
DATE 7/28/93
SCALE NOTED
CLIENT/PROJECT ALCATEL NETWORK SYSTEMS Raleigh, NC
Groundwater Assessment
TITLE Laboratory Analytical Results
PROJECT NO. 058003
SHEET NO. 058-3002
REV 0

ATTACHMENT G

WATER TABLE SURFACE MAP


PARKING AREA
SIDEWALK
STORAGE
STORAGE
SUMP
EQUALIZATION BASIN
WWTP
PARKING AREA
ALCATEL MAIN BUILDING
CREEK
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
233
232
231
230
229
228
227
226
225
224
223
222
221
220
219
218
217
216
215
PLANT NORTH
LEGEND
MONITORING WELL
SOIL IMPACT AREA
WATER TABLE SURFACE ELEV. CONTOUR
INFERRED WATER TABLE SURFACE ELEV. CONTOUR
INFERRED GROUND WATER FLOW DIRECTION
NOTE:
THE WATER TABLE CONTOURS ON THIS MAP WERE GENERATED FROM DATA COLLECTED ON JUNE 27, 1993. ONLY AT THE WELL POINTS SHOULD THESE ELEVATIONS BE CONSIDERED ACCURATE. THE WATER TABLE CONTOURS SHOWN ARE BASED ON INTERPOLATION BETWEEN THESE POINTS.
Approx. Scale (1" = 40')
0 10 40' 80
Graphic Scale (Ft.)
National Environmental Technologies, Inc.
Wilmington, NC
0 7/93 ORIGINAL ISSUE KF
REVISION DATE DESCRIPTION BY APPR
PROJECT MGR/DESIGNER J.BEAMAN
DRAWN K.FAIRCLOTH
CHECKED APPR.
DATE 7/21/93
SCALE NOTED
CLIENT/PROJECT ALCATEL NETWORK SYSTEMS Raleigh, NC Groundwater Assessment
TITLE Water Table Surface Map
PROJECT NO. 058003
SHEET NO. 058-3001
REV 0

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

September 9, 1993 **Project #058003**

SUBJECT: Addendum to August 11, 1993 Ground Water Investigation Report
Results of Metals Analysis
ALCATEL Network Systems
Raleigh, North Carolina

Mr. Dikran Kabbendjian
Manager, Environmental and Human Resources Services
ALCATEL NETWORK SYSTEMS
2912 Wake Forest Rd.
Raleigh, NC 27609

Dear Mr. Kabbendjian:

This letter and attachments are an addendum to the letter report of August 11, 1993, and detail the results of metals analysis for ground water samples collected during recent ground water investigation activities. Tasks were performed in accordance with our proposal of March 17, 1993 and consisted of ground water screening, installation of two ground water monitoring wells, and ground water sampling. Please reference the August 11, 1993 report for additional details concerning the project.

Ground water samples for laboratory analysis were collected from five (5) ground water screening borings and two (2) newly installed ground water monitoring wells. These samples were analyzed for volatile constituents and the eight (8) RCRA metals, plus copper. Table 1 (Attachment I) summarizes the results of metals analysis. Complete laboratory analytical data for metals are included in Attachment II.

Five metals were detected in the samples collected from the ground water screening borings, however, only cadmium and lead were detected at concentrations in excess of State maximum allowable concentrations (MACs) per 15A NCAC 2L. Cadmium was detected above the MAC in samples GW-2, GW-7, and GW-9. Conversations with the analytical laboratory indicate that these samples contained substantial amounts of sediment which may have introduced metals to the water sample following sample digestion.

301-A N. Green Meadows Drive • Wilmington, N.C. 28405 • (919) 392-1747/FAX (919) 392-8654

Only one ground water screening boring (GW-5) produced an adequate volume of water for mercury analysis. The concentration of mercury in this sample was reported to be below the state MAC. Mercury has not been reported in excess of the State MAC during any previous ground water sampling event at the facility.

Lead was detected above the method detection limit (0.1 mg/L) in samples GW-2, GW-5, GW-7, and GW-10. It should be noted that the method detection limit for lead was twice the State MAC for lead, due to matrix effects. As previously noted, the sample sediment load, in the ground water screening samples, may have elevated metals concentrations. In order to eliminate the matrix effect induced by sediment in the water samples, it may be necessary to filter samples collected for metals analysis during the up-coming continuation of the ground water investigation.

Two samples collected from each of the newly installed monitoring wells (MW-10 and MW-11) were analyzed for metals. The first analysis was performed on a sample with a relatively small quantity of sediment. The analytical results for these samples indicate no metals are present at concentrations in excess of State MACs. The second sample from the wells contained a greater quantity of sediment. The analytical results for the second sample indicated higher concentrations of barium, chromium, and lead in MW-10; and a higher concentration of lead in MW-11. Conversations with representatives from the analytical laboratory suggest that this is typical of metals being released during acid digestion, and were confident that the first samples (the samples with less sediment) were indicative of actual dissolved metal concentrations in the ground water. The results of the first sample for wells MW-10 and MW-11 are shown on Table 1 (Attachment I). Complete analytical results are included in Attachment II.

National Environmental Technologies appreciates this opportunity to provide environmental services to Alcatel Network Systems. If there are any questions, please feel free to call.

Very truly yours,

NATIONAL ENVIRONMENTAL TECHNOLOGIES

Joe Beaman

Joe Beaman
Project Manager

Attachments (2)

Attachment I

Summary of Metals Analysis

TABLE 1

Summary of Metals Analysis

Compound	GW-2 (mg/L)	GW-5 (mg/L)	GW-7 (mg/L)	GW-9 (mg/L)	GW-10 (mg/L)	MW-10 (mg/L)	MW-11 (mg/L)	MAC (mg/L)
Arsenic	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.05
Barium	0.2	0.2	0.1	0.7	BDL	0.1	0.1	1.0
Cadmium	0.008	BDL	0.007	0.006	BDL	BDL	BDL	0.005
Chromium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.05
Copper	0.09	BDL	BDL	BDL	BDL	0.0074	0.0074	1.0
Lead	0.2	0.1	0.1	BDL	0.1	BDL	BDL	0.05
Mercury	I/S	0.0004	I/S	I/S	I/S	0.0002	0.0003	0.0011
Selenium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.01
Silver	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.05

Notes: "BDL" is defined as Below Detection Limit.
"mg/L" is approximately equivalent to Parts Per Million or ppm.
"I/S" is defined as Insufficient Sample volume.
"MAC" is defined as Maximum Allowable Concentration.

Attachment II

Laboratory Analytical Results

EnviroTech Mid-Atlantic
Virginia Tech Corporate Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

JULY 9, 1993

CLIENT : NET, INC.
ADDRESS: 301 A N GREEN MEADOWS DR.
WILMINGTON, NC 28405

REPORT # : 15641
DATE RECEIVED: 6/29/93

ATTENTION: JOE BEAMAN
PROJECT:
PROJECT NO: 058003
PURCHASE ORDER:

FAX: 919-392-8654

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS
Samples submitted and identified by client as:

SAMPLE	FIELD ID	DATE
5641A	MW-10	6/27/93
5641B	MW-11	6/27/93
5641C	MW-10	6/27/93
5641D	MW-11	6/27/93
5641E	GW-5	6/27/93
5641F	GW-7	6/27/93
5641G	GW-2	6/27/93
5641H	GW-10	6/27/93
5641I	GW-9	6/27/93

ANALYSIS	D/L	5641A	5641B	5641C	5641D
TOTAL METALS (mg/L)					
ARSENIC As	0.002	BDL	BDL	BDL	BDL
BARMIUM Ba	0.1	0.1	0.1	0.3	0.1
CADMIUM Cd	0.005	BDL	BDL	BDL	BDL
CHROMIUM Cr	0.05	BDL	BDL	0.13	BDL
LEAD Pb	0.1	BDL	BDL	0.1	0.1
MERCURY Hg	0.0001	0.0002	0.0003	0.0002	0.0002
SELENIUM Se	0.002	BDL	BDL	BDL	BDL
SILVER Ag	0.05	BDL	BDL	BDL	BDL

		5641E	5641F	5641G	5641H
ARSENIC As	0.002	BDL	BDL	BDL	BDL
BARMIUM Ba	0.1	0.2	0.1	0.2	BDL
CADMIUM Cd	0.005	BDL	0.007	0.008	BDL
CHROMIUM Cr	0.05	BDL	BDL	BDL	BDL
LEAD Pb	0.1	0.1	0.1	0.2	0.1
MERCURY Hg	0.0001	0.0004	N/A	N/A	N/A
SELENIUM Se	0.002	BDL	BDL	BDL	BDL
SILVER Ag	0.05	BDL	BDL	BDL	BDL
COPPER Cu	0.05	BDL	BDL	0.09	BDL

ENVIROTECH MID-ATLANTIC
REPORT: 15641
REPORT DATED: 8/10/93
PROJECT:

ANALYSIS	D/L	5641I
TOTAL METALS (mg/L)		
ARSENIC As	0.002	BDL
BARMIUM Ba	0.1	0.7
CADMIUM Cd	0.005	0.006
CHROMIUM Cr	0.05	BDL
LEAD Pb	0.1	BDL
MERCURY Hg	0.0001	N/A
SELENIUM Se	0.002	BDL
SILVER Ag	0.05	BDL
COPPER Cu	0.05	BDL

N/A INSUFFICIENT SAMPLE

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

QUALITY CONTROL DATA

ANALYSIS	%STD	%SPIKE	%RD	EPA #	ANALYST	DATE
TOTAL METALS					S CROY	8/09/93
As	110	104	0	206.2		
Ba	90	107	0	208.1		
Cd	100	94	0	213.1		
Cr	93	98	0	218.1		
Pb	101	114	0	239.1		
Hg	108	110	0	245.1		
Se	110	105	0	270.2		
Ag	98	99	0	272.1		
Cu	101	99	0	220.1		

LABORATORY DIRECTOR
Elizabeth B. Smiley

NET Ground Water Investigation

Report

October 1993

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

FILE COPY

October 22, 1993 Project #058004

Mr. Dikran Kabbendjian
Manager, Environmental and Human Resources Services
ALCATEL NETWORK SYSTEMS
2912 Wake Forest Rd.
Raleigh, NC 27609

SUBJECT: Report for Ground Water Investigation
ALCATEL Network Systems
Raleigh, North Carolina

Dear Mr. Kabbendjian:

This letter and attachments detail the results of the recent continuation of a ground water investigation at the above named site. This report has been prepared in accordance with our proposal dated August 17, 1993, and should be considered as a continuation of previous ground water assessment activities.

OBJECTIVES

The objectives of this project were four-fold: 1) Screen ground water beneath the former production building for volatile constituents, and collect confirmation samples based on the results; 2) Install two (2) additional ground water monitoring wells, collect ground water samples from each, and tie the new wells into a horizontal and vertical survey previously performed at the site; 3) Collect water levels from all wells in order to create a new water table surface map; and 4) Collect ground water samples from nine (9) existing ground water monitoring wells.

FIELD METHODOLOGIES

On September 10, 1993, NET began field activities at the site. Badger Drilling, Inc., and Associated Technical Support were subcontracted for monitoring well installation and utility locating, respectively. Prior to the commencement of drilling activities, the areas selected for drilling were carefully surveyed for subsurface utilities.

301-A N. Green Meadows Drive • Wilmington, N.C. 28405 • (919) 392-1747/FAX (919) 392-8654

Ground Water Screening

The ground water screening procedure performed in the previous ground water investigation (please reference a report dated August 11, 1993 for NET Project #058003) was also employed in this project to screen ground water beneath the former production building for volatile organic constituents. Fifteen (15) borings were advanced beneath the floor of the former production building (see the Site Plan in Attachment A). Ground water samples were obtained from seven (7) of these borings. Either bedrock or subsurface obstructions were encountered in the remaining eight (8) borings (see Table 1).

Prior to collection of the screening samples, water was allowed to equilibrate inside the open borehole. Screening samples were collected by lowering a length of dedicated PVC tubing to a depth just beneath the water surface in the borehole. A vacuum was applied to the tubing and the sample was collected in a clean, dedicated, glass vial. Each sample was screened for organic vapors by sparging the sample with ambient air, while an organic vapor analyzer (OVA) monitored the headspace in the vials for organic vapors. The samples were also field analyzed for pH, specific conductance (SC), and temperature (deg. F). The results of field screening are summarized in Table 1.

Based on the results of the screening, five (5) samples were selected for laboratory analysis. The samples were collected using the vacuum system described above, decanted into laboratory supplied containers, maintained on ice, and shipped to EnviroTech Mid-Atlantic (ETMA) in Blacksburg, Virginia. The samples were analyzed for: Volatile Halocarbons and Aromatics (VHA) using EPA Methods 601 and 602, respectively; the eight (8) total RCRA metals plus copper; and chloride. These results are summarized in Table 2, and complete analytical results are included in Attachment B. Laboratory results are also included on the diagram "Laboratory Analytical Results for Ground Water Screening Samples" included in Attachment C.

Soil Sampling

The former printed cicuit board manufacturing area (please reference the Site Map in Attachment A) was speculated as the potential contaminant source area during the preceding study (NET Project #058003). Because of this, five (5) soil samples were collected from four (4) ground water screening borings which were advanced beneath and in the vicinity of the former printed circuit board area. One (1) grab and four (4) composite samples were collected from these borings. Samples were split into two aliquots. The first aliquot of each sample was placed in a clean, plastic, zip-lock bag and allowed to volatilize in direct sunlight for approximately 10 minutes. The headspace in the bag was then field

Table 1

Summary of Field Data
Samples Collected from Ground Water Screening Borings

Boring	OVA (ppm)	S. Cond. (uS/cm)	pH	Temp. (deg. F)	Comments
GW-12	2	400	6.09	73.5	Lab sample
GW-13	1	227	6.22	72.1	Rock at 9.0 feet
GW-14	90	752	5.96	73.7	Lab sample
GW-15	5	312	6.21	75.5	Lab sample
GW-16					Obstruction at 2.0 feet
GW-17					Rock at 10.0 feet
GW-18	3.5	58.3	6.78	74.0	Lab sample
GW-19					Rock at 10.0 feet
GW-20	22	470	6.23	72.8	Lab sample
GW-21	3	105	5.89	75.8	
GW-22					Rock at 11.5 feet
GW-23	30	68.2	6.26	75.9	Lab sample
GW-24					Rock at 13.0 feet
GW-25					Rock at 3.5 feet
GW-26					Obstruction in concrete

Table 2

Summary of Laboratory Analytical Results
Ground Water Samples from Screening Borings

Constituent	Detection Limit	Sample					
		GW-12W	GW-14W	GW-15W	GW-18W	GW-20W	GW-23
Volatile Organics (ug/L)							
Benzene	**	BDL	BDL	BDL	BDL	2.50	BDL
Chloroform	**	BDL	BDL	BDL	BDL	11.0	2.5
1,1 Dichloroethane	**	BDL	150	BDL	2.20	69.0	4.3
1,1 Dichloroethene	**	BDL	3600	BDL	47.0	890	140
Tetrachloroethene	**	BDL	250	52	79.0	420	79
1,1,1 Trichloroethane	**	BDL	290	BDL	BDL	280	2.6
Trichloroethene	**	BDL	BDL	BDL	5.0	410	6.8
Trichlorofluoromethane	**	BDL	BDL	BDL	BDL	BDL	5.5
All other compounds	**	BDL	BDL	BDL	BDL	BDL	BDL
Total Metals (mg/L)							
Arsenic	0.002	0.002	0.002	0.002	0.003	0.002	0.002
Barium	0.10	0.10	0.40	0.01	<0.1	0.20	0.6
Cadmium	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	0.05	BDL	BDL	BDL	BDL	BDL	BDL
Copper	0.02	0.23	BDL	BDL	BDL	BDL	0.05
Lead	0.001	0.004	0.004	0.004	0.004	0.004	0.015
Mercury	0.0001	BDL	0.0001	0.0001	0.0002	0.0003	BDL
Selenium	0.002	BDL	BDL	BDL	0.002	0.002	BDL
Silver	0.05	BDL	BDL	BDL	BDL	BDL	BDL
Chloride (mg/L)		20.2	188.6	24.1	5.40	84.4	20.7

NOTES:
"ug/L" denotes "micrograms per litre"
"mg/L" denotes "milligrams per litre"
"**" please reference the complete analytical data for detection limits
"BDL" denotes "Below Detection Limit"

screened for organic vapors using the OVA. The second aliquot was placed in laboratory supplied containers, maintained on ice, and shipped to ETMA for laboratory analysis for VHA, and the eight (8) total RCRA metals, plus copper. These results are summarized in Table 3, and complete analytical results are included in Attachement B. Laboratory results are also included on the diagram "Laboratory Analytical Results for Soil Samples" included in Attachment D.

Two composite samples were collected from the drums containing soil containerized during the installation of ground water screening borings and monitoring wells. Composite sample D-1 was collected from drums number 3 and 4, while composite sample D-2 was collected from drums number 5 and 6. Each composite sample was created by advancing a clean, stainless steel hand auger approximately twelve to eighteen inches into the center of the soil in each drum to collect a drum sample. The hand auger was thoroughly decontaminated between each drum sample. The drum samples were then combined accordingly, placed in laboratory supplied containers, and shipped to ETMA for laboratory analysis of VHA and the eight (8) total RCRA metals, plus copper. These results are summarized in Table 4. Laboratory analytical results are included included in Attachment B.

Well Installation

The proposed workplan dictated the installation of two (2) additional ground water monitoring wells to be installed at the site during this project. These wells were to be installed inside the former production building; however, during installation of the first well, competent bedrock was encountered at a depth of approximately five (5) feet below grade. Due to this, plans for the two wells were abandoned, and one (1) well (MW-12) was installed outside the southwest corner of the building. The location of this well is shown on the Site Plan (Attachment A).

The well was installed hydraulically down-gradient of the existing wells. The borehole for the well was advanced using a Little Beaver tri-pod style drilling rig, and four-inch OD solid stem augers. Auger cuttings were described as red to brown micaceous silty and sandy clays to a depth of approximately 24 feet. Competent bedrock was encountered at a depth of approximately 24 feet. A boring log is included in Attachment E. All cuttings were containerized and temporarily stored on-site.

The well was installed at a depth of approximately twenty (20) feet, and was constructed of ten (10) feet of two-inch Schedule 40 PVC casing, and ten (10) feet of two-inch Schedule 40 PVC manufactured screen. A filter pack of clean sand was installed in the annulus between the well screen and the wall of the borehole to a depth approximately two feet

Table 3

Summary of Laboratory Analytical Results
Soil Samples

Constituent	Detection Limit	Sample				
		GW-12S	GW-13S	GW-14S	GW-14S,11	GW-15S
Volatile Organics (ug/kg)						
1,1 Dichloroethene	100	BDL	BDL	BDL	380	BDL
All other compounds	100	BDL	BDL	BDL	BDL	BDL
Total Metals (mg/kg)						
Arsenic	0.02	4.00	1.90	4.50	1.50	1.40
Barium	1.00	123	83.0	58.0	57.0	65.0
Cadmium	0.05	0.92	0.29	0.55	BDL	0.23
Chromium	0.50	13.5	3.30	10.3	12.6	1.60
Copper	0.20	44.2	4.50	21.4	11.4	2.80
Lead	1.00	5.40	5.10	10.7	6.30	4.20
Mercury	0.02	0.04	BDL	0.05	0.02	BDL
Selenium	0.02	0.14	0.09	0.40	0.02	0.02
Silver	0.50	BDL	BDL	BDL	BDL	BDL

NOTES: "mg/kg" denotes "milligrams per kilogram"
"BDL" denotes "Below Detection Limit"

Table 4

Summary of Laboratory Analytical Results
Drum Composite Samples

Constituent	Detection Limit	Sample	
		D – 1	D – 2
Volatile Organics (ug/kg)			
All Compounds	Variable	BDL	BDL
Total Metals (mg/kg)			
Arsenic	0.02	2.08	1.86
Barium	1.00	58	67
Cadmium	0.05	BDL	0.06
Chromium	0.50	30.0	11.9
Copper	0.20	12.4	4.2
Lead	1.00	6.1	7.3
Mercury	0.01	BDL	BDL
Selenium	0.02	27.0	4.0
Silver	0.50	BDL	BDL

NOTES: "mg/kg" denotes "milligrams per kilogram"
"ug/kg" denotes "micrograms per kilogram"
"BDL" denotes "Below Detection Limit"

above the top of the well screen. A two-foot bentonite seal was installed at the top of the filter pack, and the annulus was filled to the surface with a neat Portland cement grout. The well was completed with a locking cap, concrete pad, and flush mount bolt-down cover.

The well was developed by purging, with a dedicated Teflon bailer, until the water was reasonably clear. All development water was containerized and stored on-site.

Well Sampling

Ground water samples were collected from the the newly installed well and nine (9) exisiting wells at the site. Prior to sample collection, the wells were opened and the water level was allowed to equilibrate to atmospheric pressure. Once equilibrated, water level measurements were collected from all site monitoring wells using an electronic water level indicator. Water level data is summarized in Table 5; this data is graphically represented on the Water Table Surface Map included in Attachment F.

Prior to sampling, the selected wells were purged of three (3) well volumes using dedicated Teflon bailers and nylon line. All purge water was containerized and stored on-site. Samples were collected by slowly lowering the bailer to a level just beneath the surface of the water in each well. The bailer was then retrieved, and laboratory samples were decanted into laboratory supplied containers, maintained on ice, and shipped to ETMA for analysis of VHA; and the eight (8) total RCRA metals plus copper. Two wells were also selected for chloride analysis. The samples were field analyzed for pH, temperature, and specific conductivity. The results of sample field analysis are summarized in Table 6. Laboratory analytical results are summarized in Table 7, complete analytical results are included in Attachment B.

The concentrations of each volatile organic constituent in each well were summed to determine a "total volatile" concentration in each well. This data was used to create a graphical representation of the ground water contaminant plume. This diagram, titled "Total Volatiles Contour Map," is included in Attachment G.

DISCUSSION

Compilation of the data collected during this investigation indicate that soil and ground water beneath and in the immediate vicinity of the former production building area have been impacted by regulated constituents. This finding is consistant with the results of previous studies at the facility.

Table 5

Water Table Elevation Data

Well	Top of Casing Elevation	Depth to Water (ft.)	Water Table Elevation
MW – 1	229.02	7.38	221.64
MW – 2	226.35	7.88	218.47
MW – 3	229.34	15.13	214.21
MW – 4	227.28	11.44	215.94
MW – 5	229.04	8.99	220.05
MW – 6	229.81	7.98	221.83
MW – 7	229.92	8.15	221.77
MW – 8	229.99	8.32	221.67
MW – 9	243.89	16.47	227.42
MW – 10	253.45	21.20	232.25
MW – 11	230.55	13.53	217.02
MW – 12	227.94	16.99	210.95

NOTE: All elevations are in feet MSL.

Table 6

Summary of Field Data
Samples Collected from Monitoring Wells

Boring	S. Cond. (uS/cm)	pH	Temp. (deg. F)
MW–1	195	6.48	79
MW–2	500	7.05	78.9
MW–3	121	6.87	70.6
MW–4	663	6.44	75.2
MW–5	250	6.78	73.4
MW–7	315	6.01	75.5
MW–9	211	7.17	75.6
MW–10	253	7.02	74.8
MW–11	560	6.76	72.3
MW–12	210	5.34	73.1

Table 7

Summary of Laboratory Analytical Results
Samples Collected from Ground Water Monitoring Wells

Constituent	Detection Limit	State GQS	Sample				
			MW-1	MW-2	MW-3	MW-4	MW-5
Volatile Organics (ug/L)							
1,1 Dichloroethane	**	700	BDL	6.9	1.2	BDL	1.8
1,1 Dichloroethene	**	7	BDL	12	1.7	10	BDL
Tetrachloroethene	**	0.7	BDL	8.9	BDL	120	6.8
1,1,1 Trichloroethane	**	200	BDL	94	BDL	22	1.8
Trichloroethene	**	2.8	BDL	BDL	9.3	BDL	BDL
Trichlorofluoromethane	**	2100	BDL	BDL	2.3	BDL	BDL
All other compounds	**	Variable	BDL	BDL	BDL	BDL	BDL
Total Metals (mg/L)							
Arsenic	0.002	0.05	0.002	0.002	0.002	0.002	0.002
Barium	0.10	2.0	0.2	0.3	0.1	0.3	0.2
Cadmium	0.005	0.005	BDL	BDL	BDL	BDL	BDL
Chromium	0.05	0.05	BDL	BDL	BDL	BDL	BDL
Copper	0.02	1.0	1.15	0.03	0.03	0.04	BDL
Lead	0.001	0.015	0.003	0.005	0.003	0.004	0.004
Mercury	0.0001	0.0011	BDL	BDL	BDL	BDL	BDL
Selenium	0.002	0.05	BDL	BDL	BDL	BDL	BDL
Silver	0.05	0.018	BDL	BDL	BDL	BDL	BDL
Chloride (mg/L)		250			5.1		

NOTES:
"ug/L" denotes "micrograms per litre"
"mg/L" denotes "milligrams per litre"
"**" please reference the complete analytical data for detection limits
"BDL" denotes "Below Detection Limit"

Table 7 (cont'd)

Summary of Laboratory Analytical Results
Samples Collected from Ground Water Monitoring Wells

Constituent	Detection Limit	State GQS	Sample				
			MW-7	MW-9	MW-10	MW-11	MW-12
Volatile Organics (ug/L)							
1,1 Dichloroethane	**	700	BDL	BDL	BDL	BDL	6.6
1,1 Dichloroethene	**	7	BDL	BDL	BDL	3.1	7.3
Tetrachloroethene	**	0.7	BDL	BDL	BDL	230	2.0
1,1,1 Trichloroethane	**	200	BDL	BDL	BDL	4.3	BDL
Trichloroethene	**	2.8	BDL	BDL	BDL	BDL	3.7
Trichlorofluoromethane	**	2100	BDL	BDL	BDL	BDL	12
All other compounds	**	Variable	BDL	BDL	BDL	BDL	BDL
Total Metals (mg/L)							
Arsenic	0.002	0.05	0.002	0.005	0.002	0.002	0.002
Barium	0.10	2.0	0.2	0.6	0.3	0.4	0.3
Cadmium	0.005	0.005	BDL	BDL	BDL	BDL	BDL
Chromium	0.05	0.05	BDL	BDL	BDL	BDL	BDL
Copper	0.02	1.0	0.02	0.05	0.03	0.02	0.04
Lead	0.001	0.015	0.002	0.015	0.002	0.002	0.021
Mercury	0.0001	0.0011	BDL	BDL	BDL	BDL	BDL
Selenium	0.002	0.05	BDL	BDL	BDL	BDL	BDL
Silver	0.05	0.018	BDL	BDL	BDL	BDL	BDL
Chloride (mg/L)		250		20.7	5.1		

NOTES:
"ug/L" denotes "micrograms per litre"
"mg/L" denotes "milligrams per litre"
"**" please reference the complete analytical data for detection limits
"BDL" denotes "Below Detection Limit"

During this investigation, soil samples were collected from the vicinity of the former circuit board manufacturing area. A total of five soil samples were collected from four borings in this area to determine if this area could act as a source for compounds detected in ground water samples. All samples, with the exception of sample GW-14S,11, were composites of grab samples collected from the ground surface to a depth just above the water table surface (approximately 10 feet). Various metals were detected in samples from each of the soil borings, however, only one (1) soil sample (GW-14S,11) reported a concentration of volatile compounds above the detection limit during laboratory analysis for volatile organics.

Two samples were collected from the boring GW-14. Sample GW-14S was a composite of the red-orange silty soil from interval ranging from ground surface to approximately 10 feet. Sample GW-14S,11 was a grab sample collected at eleven feet from the tan to black micaceous sandy silt which extended from a depth of 11 feet to 18 feet. The soil in the composite sample (GW-14S) was noted to possess no apparent odor and all compounds were reported as "BDL", or below detection limit. The grab sample (GW-14S,11) possessed a somewhat "sweet" odor and was dry. The sample was collected at a depth of approximatley eleven (11) feet, and the compound 1,1-Dichloroethene (DCE) was reported at 380 ug/kg.

Copper was detected in each of the soil samples, with total copper concentrations ranging from 2.8 mg/kg to 44.2 mg/kg. The samples with the highest concentrations were GW-12S and GW-14S, at 44.2 mg/kg and 21.2 mg/kg, respectively. These borings were located inside the building, near areas where soil impacted by copper had previously been reported (please reference Attachment D). As previously mentioned, two soil samples were collected from boring GW-14. The composite sample (0 to 10 feet) from this boring yielded a total copper concentration of 21.2 mg/kg, while the grab sample (11 feet) yielded a total copper concentration of 11.4 mg/kg.

Two composite samples were collected from the drums containing soil containerized during the installation of ground water screening borings and monitoring wells. Composite sample D-1 was collected from drums number 3 and 4, while composite sample D-2 was collected from drums number 5 and 6. Laboratory analytical results (included in Attachment B, and summarized in Table 4) do not indicate the presence of regulated constituents at concentrations in excess of allowable concentrations and/or background.

Ground water samples collected from the both the ground water screening borings and monitoring wells confirm impact to ground water by regulated constituents (please reference Tables 2 and 7). Copper was detected in several water samples at concentrations ranging from BDL to 1.15 mg/L in MW-1 as shown by Tables 2 and 7. The State "Groundwater Quality Standard" (GQS) for copper is 1.0 mg/L. Copper concentrations exceeded the GQS in sample MW-1.

Additionally, Tables 2 and 7 show several chlorinated compounds detected at concentrations in excess of the GQS. Three previously undetected compounds (benzene, chloroform, and trichlorofluoromethane) were detected in samples collected during this investigation. Benzene was detected in sample GW-20W at a concentration of 2.5 ug/L. There is no apparent source for this compound. Conversations with the analytical laboratory indicate that this compound may be a "laboratory artifact" and is not actually present in the sample.

Chloroform was detected in samples GW-20W and GW-23. Chloroform was detected in a water sample collected from MW-2 during a previous investigation. The presence of chloroform in the samples collected during this investigation were verified by the analytical laboratory using a mass spectrometer. The source for this compound is unknown.

Trichlorofluoromethane (Freon 11) was detected in MW-3, MW-12, and GW-23. Freon 11 has not been detected during previous sampling at the site, however, it's presence in the samples collected during this investigation was verified by the analytical laboratory using mass spectrometer. Freon 11 been out of use for several years. Although not necessarily Freon 11, a form of freon was used for the cleaning of printed circuit boards during past manufacturing operations at the site.

The Total Volatiles Contour Map (Attachment G) depicts the ground water contaminant plume as an oblong shaped, West-Southwest trending feature; encompassing approximately 178,500 ft^2, or approximately 4.1 acres. Superimposing the plume onto the Water Table Surface Map (Attachment F), it appears that the plume is elongated parallel to the direction of ground water flow. The area of highest concentration (or "hot spot") is in the vicinity of GW-9, which is near the rear of the original "main building" (1958 addition). The nucleus of the plume originates at this hot spot, and is elongated roughly parallel to the ground water flow direction.

The shape of the plume is relatively symmetrical with respect to the longitudnal axis and the inferred "0 ug/L" concentration line; with the body of the plume residing beneath and in the immediate vicinity of the former production building area. While ground water flow appears to be the dominant controlling factor with regards to the movement of the plume, it also appears that the surface of the bedrock may be influencing the plume. Southeast from the hot spot, the concentration gradient is approximately 20 ug/L/ft, from the hot spot to the 500 ug/L contour. Conversely, the concentration gradient west-northwest from the hot spot steepens substantially to approximately 208 ug/L/ft. In the interpretation provided, this steepend gradient forms a somewhat linear feature trending Northeast-Southwest on the map, which may be reflective of a "ridge" of bedrock in the subsurface. Borings GW-11, GW-17, and GW-19, residing north and west, of the hot spot terminated in competent bedrock.

The chlorinated compounds detected in ground water at the site all have densities greater than water. At high concentrations, these compounds tend to initially mound at the capillary fringe just above the water table surface, then "sink" in the saturated zone due to their densities. The bedrock westward from the hot spot may be acting as a "trap" accumulating high dissolved concentrations of volatile organics. The dissolved fractions appearing northward and westward from the "bedrock ridge" may then be a result of dispersion of the contaminants over the bedrock surface during periods of relatively shallow ground water.

The results of this study have served as to delineate the lateral extent of the ground water contaminant plume. The analytical results of water samples indicate the body of the contaminant plume is beneath the main building area. The area of greatest concentration, and potential source area, is located near the rear of the original manufacturing building. The technology employed during this study, however, did not facilitate the delineation of the vertical extent of the contaminant plume.

Soil samples collected during this investigation indicate the soil, in at least one location beneath the building, may have been impacted by chlorinated compounds (GW-14S,11). Copper appears to have impacted the soil in two locations (GW-12S and GW-14S). These borings are located inside the building, near Areas 2 and 3 which have been the subject of previous investigations (Westinghouse Project #4115-90-502 and NET Project #058001). While the results of this study indicate the presence of impacted soil beneath the building, the exact location(s) of possible soil "hot spots" (if they exist) could not be delineated. Due to the fact that the contaminant dilemma resides beneath the building, sampling is difficult. Similarly, it is not possible to sample beneath some areas of the building due to aesthetic concerns or the safety of sensitive equipment.

Mr. Dikran Kabbendjian
October 22, 1993

National Environmental Technologies appreciates this opportunity to provide environmental services to Alcatel Network Systems. If there are any questions, please feel free to call.

Sincerely,

NATIONAL ENVIRONMENTAL TECHNOLOGIES

Joe Beaman

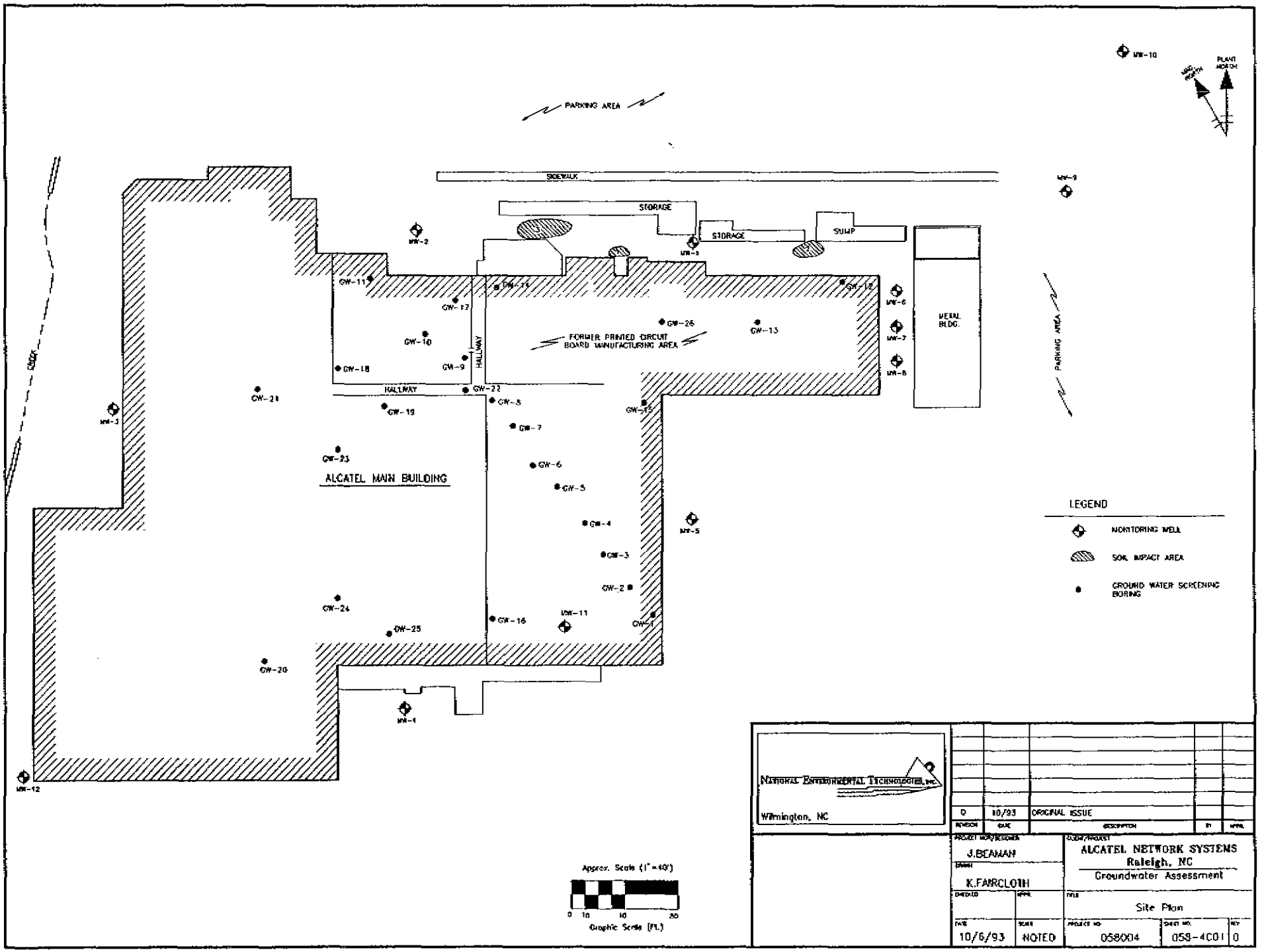
Joe Beaman
Project Manager

BJB/kf

Attachments (7)

ATTACHMENT A

SITE PLAN


PARKING AREA
SIDEWALK
STORAGE
STORAGE
SUMP
MECHAL BLDG.
PARKING AREA
FORMER PRINTED CIRCUIT BOARD MANUFACTURING AREA
HALLWAY
HALLWAY
ALCATEL MAIN BUILDING
MW-10
MW-9
MW-2
MW-3
MW-6
MW-7
MW-8
MW-5
MW-11
MW-4
MW-12
GW-1
GW-2
GW-3
GW-4
GW-5
GW-6
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GW-10
GW-11
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GW-13
GW-14
GW-15
GW-16
GW-17
GW-18
GW-19
GW-20
GW-21
GW-22
GW-23
GW-24
GW-25
GW-26
PLANT NORTH
MAGNETIC NORTH
LEGEND
MONITORING WELL
SOIL IMPACT AREA
GROUND WATER SCREENING BORING
Approx. Scale (1" = 40')
0 10 10 20
Graphic Scale (Ft.)
NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC
0 10/93 ORIGINAL ISSUE
REVISION DATE DESCRIPTION BY APPR.
PROJECT MGR/DESIGNER J.BEAMAN
DRAWN K.FAIRCLOTH
CHECKED APPR.
CLIENT/PROJECT ALCATEL NETWORK SYSTEMS Raleigh, NC Groundwater Assessment
TITLE Site Plan
DATE 10/6/93
SCALE NOTED
PROJECT NO. 058004
SHEET NO. 058-4C01
REV 0

ATTACHMENT B

LABORATORY ANALYTICAL RESULTS

EnviroTech Mid-Atlantic
Virginia Tech Corporate Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

September 28, 1993

CLIENT : NET, INC.
ADDRESS: 301-A N. GREEN MEADOWS DR.
WILMINGTON, NC 28405

REPORT # : 6002
DATE RECEIVED: 9-14-93

ATTENTION: J. BEAMAN
PROJECT:
PROJECT NO: 058004
PURCHASE ORDER:

FAX: 919/392-8654

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS
Samples submitted and identified by client as:

SAMPLE	FIELD ID	DATE/TIME COLLECTED
6002A	GW-12S	9-11-93
6002B	GW-14S	9-11-93/1200
6002C	GW-14S,11	9-11-93/1215
6002D	GW-13S	9-11-93
6002E	GW-15S	9-11-93/0956
6002F	GW-12W	9-11-93/2000
6002G	GW-14W	9-12-93/1330
6002H	GW-15W	9-11-93/1936
6002I	GW-18W	9-12-93/1415
6002J	GW-20W	9-12-93/1145

ANALYSIS	D/L	6002A	6002B	6002C	6002D	6002E
VOLATILE HALOCARBONS/AROMATICS (ug/kg)						
Benzene	100	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	100	BDL	BDL	BDL	BDL	BDL
Bromoform	100	BDL	BDL	BDL	BDL	BDL
Bromomethane	100	BDL	BDL	BDL	BDL	BDL
Carbon tetrachloride	100	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	100	BDL	BDL	BDL	BDL	BDL
Chloroethane	100	BDL	BDL	BDL	BDL	BDL
2-Chloroethyl vinyl ether	100	BDL	BDL	BDL	BDL	BDL
Chloroform	100	BDL	BDL	BDL	BDL	BDL
Chloromethane	100	BDL	BDL	BDL	BDL	BDL
Dibromochloromethane	100	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	100	BDL	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	100	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	100	BDL	BDL	BDL	BDL	BDL
Dichlorodifluoromethane	100	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	100	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethane	100	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	100	BDL	BDL	380	BDL	BDL

September 28, 1993

ANALYSIS	D/L	6002A	6002B	6002C	6002D	6002E
VOLATILE HALOCARBONS/AROMATICS (ug/kg)						
trans-1,2-Dichloroethene	100	BDL	BDL	BDL	BDL	BDL
1,2-Dichloropropane	100	BDL	BDL	BDL	BDL	BDL
cis 1,3-Dichloropropene	100	BDL	BDL	BDL	BDL	BDL
trans 1,3-Dichloropropene	100	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	100	BDL	BDL	BDL	BDL	BDL
Methylene chloride	100	BDL	BDL	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	100	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	100	BDL	BDL	BDL	BDL	BDL
Toluene	100	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	100	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	100	BDL	BDL	BDL	BDL	BDL
Trichloroethene	100	BDL	BDL	BDL	BDL	BDL
Trichlorofluoromethane	100	BDL	BDL	BDL	BDL	BDL
Vinyl chloride	100	BDL	BDL	BDL	BDL	BDL
total Xylenes	100	BDL	BDL	BDL	BDL	BDL
TOTAL METALS (mg/kg)						
Arsenic (As)	0.02	4.0	4.5	1.5	1.9	1.4
Barium (Ba)	1.0	123	58	57	83	65
Cadmium (Cd)	0.05	0.92	0.55	BDL	0.29	0.23
Chromium (Cr)	0.5	13.5	10.3	12.6	3.3	1.6
Lead (Pb)	1.0	5.4	10.7	6.3	5.1	4.2
Mercury (Hg)	0.02	0.04	0.05	0.02	BDL	BDL
Silver (Ag)	0.5	BDL	BDL	BDL	BDL	BDL
Selenium (Se)	0.02	0.14	0.40	0.02	0.09	0.02
Copper (Cu)	0.2	44.2	21.4	11.4	4.5	2.8

ANALYSIS	D/L	6002F	D/L	6002G	D/L	6002H
VOLATILE HALOCARBONS/AROMATICS (ug/L)						
Benzene	1.0	BDL	50	BDL	1.0	BDL
Bromodichloromethane	1.0	BDL	50	BDL	1.0	BDL
Bromoform	1.0	BDL	50	BDL	1.0	BDL
Bromomethane	1.0	BDL	50	BDL	1.0	BDL
Carbon tetrachloride	1.0	BDL	50	BDL	1.0	BDL
Chlorobenzene	1.0	BDL	50	BDL	1.0	BDL
Chloroethane	1.0	BDL	50	BDL	1.0	BDL
2-Chloroethyl vinyl ether	1.0	BDL	50	BDL	1.0	BDL
Chloroform	1.0	BDL	50	BDL	1.0	BDL
Chloromethane	1.0	BDL	50	BDL	1.0	BDL
Dibromochloromethane	1.0	BDL	50	BDL	1.0	BDL
1,2-Dichlorobenzene	1.0	BDL	50	BDL	1.0	BDL
1,3-Dichlorobenzene	1.0	BDL	50	BDL	1.0	BDL
1,4-Dichlorobenzene	1.0	BDL	50	BDL	1.0	BDL
Dichlorodifluoromethane	1.0	BDL	50	BDL	1.0	BDL
1,1-Dichloroethane	1.0	BDL	50	150	1.0	BDL

ANALYSIS	D/L	6002F	D/L	6002G	D/L	6002H
VOLATILE HALOCARBONS/AROMATICS (ug/L)						
1,2-Dichloroethane	1.0	BDL	50	BDL	1.0	BDL
1,1-Dichloroethene	1.0	BDL	100	3600	1.0	BDL
trans-1,2-Dichloroethene	1.0	BDL	50	BDL	1.0	BDL
1,2-Dichloropropane	1.0	BDL	50	BDL	1.0	BDL
cis 1,3-Dichloropropene	1.0	BDL	50	BDL	1.0	BDL
trans 1,3-Dichloropropene	1.0	BDL	50	BDL	1.0	BDL
Ethylbenzene	1.0	BDL	50	BDL	1.0	BDL
Methylene chloride	1.0	BDL	100	BDL	1.0	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	50	BDL	1.0	BDL
Tetrachloroethene	1.0	BDL	50	250	2.0	52
Toluene	1.0	BDL	50	BDL	1.0	BDL
1,1,1-Trichloroethane	1.0	BDL	50	290	1.0	BDL
1,1,2-Trichloroethane	1.0	BDL	50	BDL	1.0	BDL
Trichloroethene	1.0	BDL	50	BDL	1.0	BDL
Trichlorofluoromethane	1.0	BDL	50	BDL	1.0	BDL
Vinyl chloride	1.0	BDL	50	BDL	1.0	BDL
total Xylenes	1.0	BDL	50	BDL	1.0	BDL

ANALYSIS	D/L	6002I	D/L	6002J
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Benzene	1.0	BDL	2.0	2.5
Bromodichloromethane	2.0	BDL	10	BDL
Bromoform	2.0	BDL	10	BDL
Bromomethane	2.0	BDL	10	BDL
Carbon tetrachloride	2.0	BDL	10	BDL
Chlorobenzene	2.0	BDL	10	BDL
Chloroethane	2.0	BDL	10	BDL
2-Chloroethyl vinyl ether	2.0	BDL	10	BDL
Chloroform	2.0	BDL	10	11
Chloromethane	2.0	BDL	10	BDL
Dibromochloromethane	2.0	BDL	10	BDL
1,2-Dichlorobenzene	2.0	BDL	10	BDL
1,3-Dichlorobenzene	2.0	BDL	10	BDL
1,4-Dichlorobenzene	2.0	BDL	10	BDL
Dichlorodifluoromethane	2.0	BDL	10	BDL
1,1-Dichloroethane	2.0	2.2	10	69
1,2-Dichloroethane	2.0	BDL	10	BDL
1,1-Dichloroethene	2.0	47	10	890
trans-1,2-Dichloroethene	2.0	BDL	10	BDL
1,2-Dichloropropane	2.0	BDL	10	BDL
cis 1,3-Dichloropropene	2.0	BDL	10	BDL
trans 1,3-Dichloropropene	2.0	BDL	10	BDL
Ethylbenzene	1.0	BDL	2.0	BDL
Methylene chloride	2.0	BDL	10	BDL
1,1,2,2-Tetrachloroethane	2.0	BDL	10	BDL

ANALYSIS	D/L	6002I	D/L	6002J
VOLATILE HALOCARBONS/AROMATICS (ug/L)				
Tetrachloroethene	2.0	79	10	420
Toluene	1.0	BDL	2.0	BDL
1,1,1-Trichloroethane	2.0	BDL	10	280
1,1,2-Trichloroethane	2.0	BDL	10	BDL
Trichloroethene	2.0	5.0	10	410
Trichlorofluoromethane	2.0	BDL	10	BDL
Vinyl chloride	2.0	BDL	10	BDL
total Xylenes	1.0	BDL	2.0	BDL

ANALYSIS		D/L	6002F	6002G	6002H	6002I	6002J
TOTAL METALS (mg/kg)							
Arsenic	(As)	0.002	0.002	0.002	0.002	0.003	0.002
Barium	(Ba)	0.1	0.1	0.4	0.01	<0.1	0.2
Cadmium	(Cd)	0.005	BDL	BDL	BDL	BDL	BDL
Chromium	(Cr)	0.05	BDL	BDL	BDL	BDL	BDL
Lead	(Pb)	0.001	0.004	0.004	0.004	0.004	0.004
Mercury	(Hg)	0.0001	BDL	0.0001	0.0001	0.0002	0.0003
Silver	(Ag)	0.05	BDL	BDL	BDL	BDL	BDL
Selenium	(Se)	0.002	BDL	BDL	BDL	0.002	0.002
Copper	(Cu)	0.02	0.23	BDL	BDL	BDL	BDL

ANALYSIS	6002F	6002G	6002H	6002I	6002J
Total Chloride (mg/L)	20.2	188.6	24.1	5.4	84.4

D/L - DETECTION LIMIT BDL - BELOW DETECTION LIMIT

September 27, 1993

ENVIROTECH MID-ATLANTIC
CLIENT: NET, INC.
REPORT: 6002

QUALITY CONTROL DATA

ANALYSIS	%SPIKE	%RD	EPA #	ANALYST	DATE
VOLATILES		601/602	A. CAMPBELL		9-23-93
1,1 DCE	87	6.9			
TCE	99	2.0			
C BENZENE	103	1.0			
BENZENE	97	2.1			
TOLUENE	99	2.0			
TOTAL CHLORIDE			325.3	J. REID	9-23-93

ANALYSIS	%STD	%SPIKE	%RD	EPA #	ANALYST	DATE
TOTAL METALS (6002A-E)					J. SMILEY	
(As)	105	105	0	7060	9-20-93	
(Ba)	90	100	0	7080	9-19-93	
(Cd)	93	109	0	7130	9-14-93	
(Cr)	99	112	0	7190	9-19-93	
(Pb)	89	85	0	7420	9-19-93	
(Hg)	107	110	0	7470	9-21-93	
(Ag)	100	103	0	7760	9-20-93	
(Se)	90	110		7741	9-20-93	
(Cu)	100	96	0	7210	9-19-93	
TOTAL METALS (6002F-J)					J. SMILEY	
(As)	105	105	0	7060	9-20-93	
(Ba)	90	100	0	7080	9-19-93	
(Cd)	93	109	0	7130	9-14-93	
(Cr)	99	112	0	7190	9-19-93	
(Pb)	100	81	1	7420	9-18-93	
(Hg)	107	110	0	7470	9-21-93	
(Ag)	100	103	0	7760	9-20-93	
(Se)	90	110		7741	9-20-93	
(Cu)	100	96	0	7210	9-19-93	

Michael Lawless
DIRECTOR OF ENVIRONMENTAL SERVICES

*IMPORTANT: See back before completing form!

ENVIROTECH MID-ATLANTIC

EnviroTech Mid-Atlantic
1861 Pratt Drive
Blacksburg, Virginia 24060
Phone: (703) 231-3983 Fax: (703) 231-3984

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

6 **SPECIAL HANDLING**
-Normal turn around time is 7-10 working days
-Prior authorization required for rush projects

MARK ONE:
☑ Normal TAT
☐ 24-48 HOUR
☐ 3-5 DAY

1

Billing Client NET
Address 301-A N. Green Meadows Dr.
City, State, Zip Code Wilmington NC 28405
Phone Number (919) 392 - 1747 Fax Number (919) 392 - ~~8528~~ 8654
Project Name and/or Number 058004
Purchase or Work Order Number —
Sampler Name (please print) J. Beaman / S. Harts
Project Manager (please print) J. Beaman

3 **ANALYSIS REQUESTED**

2

SAMPLE DESCRIPTION AND/OR LOCATION (see instructions on back)	# CONTAINERS	SAMPLE MATRIX LIQUID	SAMPLE MATRIX SOIL	SAMPLE MATRIX OTHER	GRAB SAMPLE	COMP. SAMP.	SAMPLING INFORMATION DATE	SAMPLING INFORMATION TIME	ETMA LAB NO.	TPH - ☐ IR (418.1) ☐ GC (3550)	TPH11 (5030)	TCLP ☐ Full ☐ Partial (Specify in Remarks)	EPA 601/8010	EPA 602/8020 ☐ BTEX-only	EPA 608/8080 ☐ PCB-only	EPA ☐ 624 ☐ 8240	EPA ☐ 625 ☐ 8270	ETMA UST PKG (Undergrd Storage Tank)	ETMA - Above Ground Spill Pkg	ETMA - Guaranteed Petroleum Pkg.	Total Metals - Please specify	RCRA Metals + Cu	Other Testing: Please Specify	Chloride			
GW-12S	2		✓			✓	9/11/93	—	6002A				✓	✓								✓					
GW-14S	2		✓			✓	"	1200	B				✓	✓								✓					
GW-14S,11	2		✓		✓		"	1215	C				✓	✓								✓					
GW-13S	2		✓			✓	"	—	D				✓	✓								✓					
GW-15S	2		✓			✓	"	0956	E				✓	✓								✓					
GW-12W	4	✓			✓		"	2000	F				✓	✓								✓		✓			
GW-14W	4	✓			✓		9/12/93	1330	G				✓	✓								✓		✓			
GW-15W	4	✓			✓		9/11/93	1936	H				✓	✓								✓		✓			
GW-18W	4	✓			✓		9/12/93	1415	I				✓	✓								✓		✓			
GW-20W	4	✓			✓		"	1145	J				✓	✓								✓		✓			

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
T. Beaman	9/13/93	1000						
RECEIVED BY	**DATE**	**TIME**	**RELINQUISHED BY**	**DATE**	**TIME**	**RECEIVED IN LAB BY**	**DATE**	**TIME**
						[illegible]	9/14/93	

5 REMARKS (to include any special information pertinent to samples to be analyzed and/or billing)
Temp Blank C 15°C

EnviroTech Mid-Atlantic
Virginia Tech Corporate Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

October 1, 1993

CLIENT : NET
ADDRESS: 301-A GREEN MEADOWS DR.
WILMINGTON NC 28405

REPORT # : 6040
DATE RECEIVED: 9-21-93

ATTENTION: J. BEAMAN
PROJECT:
PROJECT NO:058004
PURCHASE ORDER:

FAX: 919/392-8654

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS
Samples submitted and identified by client as:

SAMPLE	FIELD ID	DATE/TIME COLLECTED
6040A	MW-1	9-19-93/14:35
6040B	MW-2	9-19-93/13:50
6040C	MW-3	9-19-93/13:15
6040D	MW-4	9-19-93/14:20
6040E	MW-5	9-19-93/14:10
6040F	MW-7	9-19-93/14:45
6040G	MW-9	9-19-91/13:40
6040H	MW-10	9-19-93/13:30
6040I	MW-11	9-19-93/14:00
6040J	MW-12	9-19-93/13:00
6040K	MW-23	9-18-93/13:45
6040L	TRIP BLANK	9-20-93/10:30

ANALYSIS	D/L	6040A	6040B	6040C
VOLATILE HALOCARBONS/AROMATICS	(ug/L)			
Bromodichloromethane	1.0	BDL	BDL	BDL
Bromoform	1.0	BDL	BDL	BDL
Bromomethane	1.0	BDL	BDL	BDL
Carbon tetrachloride	1.0	BDL	BDL	BDL
Chlorobenzene	1.0	BDL	BDL	BDL
Chloroethane	1.0	BDL	BDL	BDL
2-Chloroethyl vinyl ether	1.0	BDL	BDL	BDL
Chloroform	1.0	BDL	BDL	BDL
Chloromethane	1.0	BDL	BDL	BDL
Dibromochloromethane	1.0	BDL	BDL	BDL
1,2-Dichlorobenzene	1.0	BDL	BDL	BDL
1,3-Dichlorobenzene	1.0	BDL	BDL	BDL
1,4-Dichlorobenzene	1.0	BDL	BDL	BDL
Dichlorodifluoromethane	1.0	BDL	BDL	BDL
1,1-Dichloroethane	1.0	BDL	6.9	1.2
1,2-Dichloroethane	1.0	BDL	BDL	BDL
1,1-Dichloroethene	1.0	BDL	12	1.7
rans-1,2-Dichloroethene	1.0	BDL	BDL	BDL
1,2-Dichloropropane	1.0	BDL	BDL	BDL
cis 1,3-Dichloropropene	1.0	BDL	BDL	BDL
trans 1,3-Dichloropropene	1.0	BDL	BDL	BDL
Methylene chloride	1.0	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	BDL	BDL
Tetrachloroethene	1.0	BDL	8.9	BDL
1,1,1-Trichloroethane	1.0	BDL	94	BDL
1,1,2-Trichloroethane	1.0	BDL	BDL	BDL
Trichloroethene	1.0	BDL	BDL	9.3
Trichlorofluoromethane	1.0	BDL	BDL	2.3
Vinyl chloride	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
Total Xylenes	1.0	BDL	BDL	BDL

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

ANALYSIS	D/L	6040D	6040E	6040F
VOLATILE HALOCARBONS/AROMATICS	(ug/L)			
Bromodichloromethane	1.0	BDL	BDL	BDL
Bromoform	1.0	BDL	BDL	BDL
Bromomethane	1.0	BDL	BDL	BDL
Carbon tetrachloride	1.0	BDL	BDL	BDL
Chlorobenzene	1.0	BDL	BDL	BDL
Chloroethane	1.0	BDL	BDL	BDL
2-Chloroethyl vinyl ether	1.0	BDL	BDL	BDL
Chloroform	1.0	BDL	BDL	BDL
Chloromethane	1.0	BDL	BDL	BDL
Dibromochloromethane	1.0	BDL	BDL	BDL
1,2-Dichlorobenzene	1.0	BDL	BDL	BDL
1,3-Dichlorobenzene	1.0	BDL	BDL	BDL
1,4-Dichlorobenzene	1.0	BDL	BDL	BDL
Dichlorodifluoromethane	1.0	BDL	BDL	BDL
1,1-Dichloroethane	1.0	BDL	1.8	BDL
1,2-Dichloroethane	1.0	BDL	BDL	BDL
1,1-Dichloroethene	1.0	10	BDL	BDL
rans-1,2-Dichloroethene	1.0	BDL	BDL	BDL
1,2-Dichloropropane	1.0	BDL	BDL	BDL
cis 1,3-Dichloropropene	1.0	BDL	BDL	BDL
trans 1,3-Dichloropropene	1.0	BDL	BDL	BDL
Methylene chloride	1.0	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	BDL	BDL
Tetrachloroethene	1.0	120	6.8	BDL
1,1,1-Trichloroethane	1.0	22	1.8	BDL
1,1,2-Trichloroethane	1.0	BDL	BDL	BDL
Trichloroethene	1.0	BDL	BDL	BDL
Trichlorofluoromethane	1.0	BDL	BDL	BDL
Vinyl chloride	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
Total Xylenes	1.0	BDL	BDL	BDL

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

ANALYSIS	D/L	6040G	6040H	6040I
VOLATILE HALOCARBONS/AROMATICS	(ug/L)			
Bromodichloromethane	1.0	BDL	BDL	BDL
Bromoform	1.0	BDL	BDL	BDL
Bromomethane	1.0	BDL	BDL	BDL
Carbon tetrachloride	1.0	BDL	BDL	BDL
Chlorobenzene	1.0	BDL	BDL	BDL
Chloroethane	1.0	BDL	BDL	BDL
2-Chloroethyl vinyl ether	1.0	BDL	BDL	BDL
Chloroform	1.0	BDL	BDL	BDL
Chloromethane	1.0	BDL	BDL	BDL
Dibromochloromethane	1.0	BDL	BDL	BDL
1,2-Dichlorobenzene	1.0	BDL	BDL	BDL
1,3-Dichlorobenzene	1.0	BDL	BDL	BDL
1,4-Dichlorobenzene	1.0	BDL	BDL	BDL
Dichlorodifluoromethane	1.0	BDL	BDL	BDL
1,1-Dichloroethane	1.0	BDL	BDL	BDL
1,2-Dichloroethane	1.0	BDL	BDL	BDL
1,1-Dichloroethene	1.0	BDL	BDL	3.1
trans-1,2-Dichloroethene	1.0	BDL	BDL	BDL
1,2-Dichloropropane	1.0	BDL	BDL	BDL
cis 1,3-Dichloropropene	1.0	BDL	BDL	BDL
trans 1,3-Dichloropropene	1.0	BDL	BDL	BDL
Methylene chloride	1.0	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	BDL	BDL
Tetrachloroethene	1.0	BDL	BDL	230
1,1,1-Trichloroethane	1.0	BDL	BDL	4.3
1,1,2-Trichloroethane	1.0	BDL	BDL	BDL
Trichloroethene	1.0	BDL	BDL	BDL
Trichlorofluoromethane	1.0	BDL	BDL	BDL
Vinyl chloride	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
Total Xylenes	1.0	BDL	BDL	BDL

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

ANALYSIS	D/L	6040J	6040K	6040L
VOLATILE HALOCARBONS/AROMATICS	(ug/L)			
Bromodichloromethane	1.0	BDL	BDL	BDL
Bromoform	1.0	BDL	BDL	BDL
Bromomethane	1.0	BDL	BDL	BDL
Carbon tetrachloride	1.0	BDL	BDL	BDL
Chlorobenzene	1.0	BDL	BDL	BDL
Chloroethane	1.0	BDL	BDL	BDL
2-Chloroethyl vinyl ether	1.0	BDL	BDL	BDL
Chloroform	1.0	BDL	2.5	BDL
Chloromethane	1.0	BDL	BDL	BDL
Dibromochloromethane	1.0	BDL	BDL	BDL
1,2-Dichlorobenzene	1.0	BDL	BDL	BDL
1,3-Dichlorobenzene	1.0	BDL	BDL	BDL
1,4-Dichlorobenzene	1.0	BDL	BDL	BDL
Dichlorodifluoromethane	1.0	BDL	BDL	BDL
1,1-Dichloroethane	1.0	6.6	4.3	BDL
1,2-Dichloroethane	1.0	BDL	BDL	BDL
1,1-Dichloroethene	1.0	7.3	140	BDL
trans-1,2-Dichloroethene	1.0	BDL	BDL	BDL
1,2-Dichloropropane	1.0	BDL	BDL	BDL
cis 1,3-Dichloropropene	1.0	BDL	BDL	BDL
trans 1,3-Dichloropropene	1.0	BDL	BDL	BDL
Methylene chloride	1.0	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	1.0	BDL	BDL	BDL
Tetrachloroethene	1.0	2.0	79	BDL
1,1,1-Trichloroethane	1.0	BDL	2.6	BDL
1,1,2-Trichloroethane	1.0	BDL	BDL	BDL
Trichloroethene	1.0	3.7	6.8	BDL
Trichlorofluoromethane	1.0	12	5.5	BDL
Vinyl chloride	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
Total Xylenes	1.0	BDL	BDL	BDL

D/L - DETECTION LIMIT

BDL - BELOW DETECTION LIMIT

QUALITY CONTROL DATA

ANALYSIS	%SPIKE	%RD	EPA #	ANALYST	DATE
VOLATILE HALOCARBONS AROMATICS			601/602	A CAMPBELL	9/28/93
SAMPLES A-E					
1,1 DCE	85	5.9			
TCE	100	.1			
C BENZENE	102	0.0			
BENZENE	96	0.0			
TOLUENE	99	1.0			
SAMPLES F-L					
1,1 DCE	84	0.0			
TCE	105	2.9			
C BENZENE	103	2.9			
BENZENE	98	3.1			
TOLUENE	100	3.0			

LABORATORY DIRECTOR
Elizabeth B. Smiley

*IMPORTANT: See back before completing form!

ENVIROTECH MID-ATLANTIC

EnviroTech Mid-Atlantic
1861 Pratt Drive
Blacksburg, Virginia 24060
Phone: (703) 231-3983 Fax: (703) 231-3984

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

6 **SPECIAL HANDLING**
-Normal turn around time is 7-10 working days
-Prior authorization required for rush projects

MARK ONE:
- ☑ Normal TAT
- ☐ 24-48 HOUR
- ☐ 3-5 DAY

1

Billing Client NET
Address 301-A N. Green Meadows Dr.
City, State, Zip Code Wilmington, NC 28405
Phone Number (919) 392-1747 Fax Number (919) 392-8654
Project Name and/or Number 058004
Purchase or Work Order Number —
Sampler Name (please print) J. Beaman / E. Whitney
Project Manager (please print) J. Beaman

3 **ANALYSIS REQUESTED**

2

SAMPLE DESCRIPTION AND/OR LOCATION (see instructions on back)	# CONTAINERS	SAMPLE MATRIX: LIQUID	SOIL	OTHER	GRAB SAMPLE	COMP. SAMP.	SAMPLING INFORMATION: DATE	TIME	ETMA LAB NO.	TPH - ☐ 1R (418.1) ☐ GC (3550)	TPFH (5030)	TCLP ☐ Full ☐ Partial (Specify in Remarks)	EPA 601/8010	EPA 602/8020 ☐ BTEX-only	EPA 608/8080 ☐ PCB-only	EPA ☐ 624 ☐ 8240	EPA ☐ 625 ☐ 8270	ETMA UST PKG (Undergrd Storage Tank)	ETMA - Above Ground Spill Pkg	ETMA - Guaranteed Petroleum Pkg.	Total Metals - Please specify		Other Testing: Please Specify				
MW-1	2	✓			✓		9/19/93	1435	6040A				✓	✓													
MW-2	2	✓			✓		"	1350	B				✓	✓													
MW-3	2	✓			✓		"	1315	C				✓	✓													
MW-4	2	✓			✓		"	1420	D				✓	✓													
MW-5	2	✓			✓		"	1410	E				✓	✓													
MW-7	2	✓			✓		"	1445	F				✓	✓													
MW-9	2	✓			✓		"	1340	G				✓	✓													
MW-10	2	✓			✓		"	1330	H				✓	✓													
MW-11	2	✓			✓		"	1400	I				✓	✓													
MW-12	2	✓			✓		"	1300	J				✓	✓													
GW-23	2	✓			✓		9/18/93	1345	K				✓	✓													

4

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Bobby A. Beaman	9/20/93	1030						
RECEIVED BY	**DATE**	**TIME**	**RELINQUISHED BY**	**DATE**	**TIME**	**RECEIVED IN LAB BY**	**DATE**	**TIME**
						[illegible]	9/21/93	

5 **REMARKS** (to include any special information pertinent to samples to be analyzed and/or billing)
Samples received cold.

*IMPORTANT: See back before completing form!

ENVIROTECH MID-ATLANTIC

EnviroTech Mid-Atlantic
1861 Pratt Drive
Blacksburg, Virginia 24060
Phone: (703) 231-3983 Fax: (703) 231-3984

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

6 **SPECIAL HANDLING**
-Normal turn around time is 7-10 working days
-Prior authorization required for rush projects

MARK ONE:
☒ Normal TAT
☐ 24-48 HOUR
☐ 3-5 DAY

1

Billing Client: NET
Address: 301-A N. Green Meadows Dr.
City, State, Zip Code: Wilmington, NC 28405
Phone Number: (919) 392-9747 Fax Number: (919) 392-8654
Project Name and/or Number: 055004
Purchase or Work Order Number: —
Sampler Name (please print): J. Beaman / E. Whitney
Project Manager (please print): J. Beaman

3 ANALYSIS REQUESTED

2

SAMPLE DESCRIPTION AND/OR LOCATION (see instructions on back)	# CONTAINERS	SAMPLE MATRIX: LIQUID	SAMPLE MATRIX: SOIL	SAMPLE MATRIX: OTHER	GRAB SAMPLE	COMP. SAMP.	SAMPLING INFORMATION: DATE	SAMPLING INFORMATION: TIME	ETMA LAB NO.	TPH - ☐ 1R (418.1) ☐ GC (3550)	TPFH (5030)	TCLP ☐ Full ☐ Partial (Specify in Remarks)	EPA 601/8010	EPA 602/8020 ☐ BTEX-only	EPA 608/8080 ☐ PCB-only	EPA ☐ 624 ☐ 8240	EPA ☐ 625 ☐ 8270	ETMA UST PKG (Undergrd Storage Tank)	ETMA - Above Ground Spill Pkg	ETMA - Guaranteed Petroleum Pkg.	Total Metals - Please specify		Other Testing: Please Specify				
Trip Blank	2	✓					9/20	1030	6040L				✓	✓													

4

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Bobby A. Beaman	9/20/93	1030						
RECEIVED BY	**DATE**	**TIME**	**RELINQUISHED BY**	**DATE**	**TIME**	**RECEIVED IN LAB BY**	**DATE**	**TIME**
						[illegible]	9/21/93	[illegible]

5 REMARKS (to include any special information pertinent to samples to be analyzed and/or billing)
Sampled received cold

EnviroTech Mid-Atlantic
Virginia Tech Corporate Research Center
1861 Pratt Drive
Blacksburg, Virginia 24060
(703) 231-3983 FAX (703) 231-3984

September 30, 1993

CLIENT : NET, INC.
ADDRESS: 301-A N. GREEN MEADOWS DR.
WILMINGTON, NC 28405

REPORT # : 6041
DATE RECEIVED: 9-21-93

ATTENTION: J. BEAMAN
PROJECT NO: 058004

FAX: 919/392-8654

SAMPLE IDENTIFICATION AND ANALYSIS RESULTS
Samples submitted and identified by client as:

SAMPLE	FIELD ID	DATE/TIME COLLECTED
6041A	MW-3	9-19-93/1315
6041B	GW-23W	9-18-93/1345
6041C	MW-9	9-19-93/1340
6041D	MW-12	9-19-93/1300
6041E	MW-5	9-19-93/1410
6041F	MW-10	9-19-93/1330
6041G	MW-1	9-19-93/1435
6041H	MW-4	9-19-93/1420
6041I	MW-2	9-19-93/1350
6041J	MW-7	9-19-93/1445
6041K	MW-11	9-19-93/1400
6041L	D-1	9-18-93
6041M	D-2	9-18-93

ANALYSIS		D/L	6041A	6041B	6041C
TOTAL METALS (mg/L)					
Arsenic	(As)	0.002	0.002	0.002	0.005
Barium	(Ba)	0.1	0.1	0.2	0.6
Cadmium	(Cd)	0.005	BDL	BDL	BDL
Chromium	(Cr)	0.05	BDL	BDL	BDL
Lead	(Pb)	0.001	0.003	0.002	0.015
Mercury	(Hg)	0.0001	BDL	BDL	BDL
Silver	(Ag)	0.05	BDL	BDL	BDL
Selenium	(Se)	0.002	BDL	BDL	BDL
Copper	(Cu)	0.02	0.03	0.02	0.05
CHLORIDE (mg/L)		1.0	5.1	6.4	20.7

ANALYSIS		D/L	6041D	6041E	6041F	6041G
TOTAL METALS (mg/L)						
Arsenic	(As)	0.002	0.002	0.002	0.002	0.002
Barium	(Ba)	0.1	0.3	0.2	0.3	0.2
Cadmium	(Cd)	0.005	BDL	BDL	BDL	BDL
Chromium	(Cr)	0.05	BDL	BDL	BDL	BDL
Lead	(Pb)	0.001	0.021	0.004	0.002	0.003
Mercury	(Hg)	0.0001	BDL	BDL	BDL	BDL
Silver	(Ag)	0.05	BDL	BDL	BDL	BDL
Selenium	(Se)	0.002	BDL	BDL	BDL	BDL
Copper	(Cu)	0.02	0.04	BDL	0.03	1.15

ANALYSIS		D/L	6041H	6041I	6041J	6041K
TOTAL METALS (mg/L)						
Arsenic	(As)	0.002	0.002	0.002	0.002	0.002
Barium	(Ba)	0.1	0.3	0.3	0.2	0.4
Cadmium	(Cd)	0.005	BDL	BDL	BDL	BDL
Chromium	(Cr)	0.05	BDL	BDL	BDL	BDL
Lead	(Pb)	0.001	0.004	0.005	0.003	0.002
Mercury	(Hg)	0.0001	BDL	BDL	BDL	BDL
Silver	(Ag)	0.05	BDL	BDL	BDL	BDL
Selenium	(Se)	0.002	BDL	BDL	BDL	BDL
Copper	(Cu)	0.02	0.04	0.03	0.02	0.02

ANALYSIS		D/L	6041L	6041M
TOTAL METALS (mg/kg)				
Arsenic	(As)	0.02	2.08	1.86
Barium	(Ba)	1.0	58	67
Cadmium	(Cd)	0.05	BDL	0.06
Chromium	(Cr)	0.5	30.0	11.9
Lead	(Pb)	1.0	6.1	7.3
Mercury	(Hg)	0.01	BDL	BDL
Silver	(Ag)	0.5	BDL	BDL
Selenium	(Se)	0.02	27.0	4.0
Copper	(Cu)	0.2	12.4	4.2
VOLATILE HALOCARBONS/AROMATICS (ug/kg)				
Benzene		100	BDL	BDL
Bromodichloromethane		100	BDL	BDL
Bromoform		100	BDL	BDL
Bromomethane		100	BDL	BDL
Carbon tetrachloride		100	BDL	BDL
Chlorobenzene		100	BDL	BDL
Chloroethane		100	BDL	BDL
2-Chloroethyl vinyl ether		100	BDL	BDL
Chloroform		100	BDL	BDL

VOLATILE HALOCARBONS/AROMATICS (ug/kg)			
Chloromethane	100	BDL	BDL
Dibromochloromethane	100	BDL	BDL
1,2-Dichlorobenzene	100	BDL	BDL
1,3-Dichlorobenzene	100	BDL	BDL
1,4-Dichlorobenzene	100	BDL	BDL
Dichlorodifluoromethane	100	BDL	BDL
1,1-Dichloroethane	100	BDL	BDL
1,2-Dichloroethane	100	BDL	BDL
1,1-Dichloroethene	100	BDL	BDL
trans-1,2-Dichloroethene	100	BDL	BDL
1,2-Dichloropropane	100	BDL	BDL
cis 1,3-Dichloropropene	100	BDL	BDL
trans 1,3-Dichloropropene	100	BDL	BDL
Ethylbenzene	100	BDL	BDL
Methylene chloride	100	BDL	BDL
1,1,2,2-Tetrachloroethane	100	BDL	BDL
Tetrachloroethene	100	BDL	BDL
Toluene	100	BDL	BDL
1,1,1-Trichloroethane	100	BDL	BDL
1,1,2-Trichloroethane	100	BDL	BDL
Trichloroethene	100	BDL	BDL
Trichlorofluoromethane	100	BDL	BDL
Vinyl chloride	100	BDL	BDL
total Xylenes	100	BDL	BDL

D/L - DETECTION LIMIT BDL - BELOW DETECTION LIMIT

QUALITY CONTROL DATA

ANALYSIS	%STD	%SPIKE	%RD	EPA #	ANALYST	DATE
VOLATILES				601/602	A.CAMPBELL	9-24-93
1,1 DCE	90	4.4				
TCE	110	11				
C BENZENE	101	1.0				
BENZENE	96	0.0				
TOLUENE	99	0.0				
TOTAL METALS						
(As)	120	100	0	7060		
(Ba)	100	120	0	7080		
(Cd)	82	84	0	7130		
(Cr)	110	104	0	7190		
(Pb) A-K	90	90	0	7421		
L-M	98	84	8	7420		
(Hg)	80	100	0	7470		
(Ag)	87	98	0	7760		
(Se)	100	113	0	7741		
(Cu)	97	94	0	7210		
CHLORIDE	97	92	2	325.3	J.REID	9-23-93

Elizabeth Smiley

LABORATORY DIRECTOR, Elizabeth B. Smiley

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CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

6 SPECIAL HANDLING
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- ☒ Normal TAT
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1

Billing Client: NET
Address: 301-A N. Green Meadows Dr.
City, State, Zip Code: Wilmington, NC 28405
Phone Number: (919) 392-1747 Fax Number: (919) 392-8654
Project Name and/or Number: 058004
Purchase or Work Order Number: —
Sampler Name (please print): J. Beaman / E. Whitney
Project Manager (please print): J. Beaman

2 / 3

SAMPLE DESCRIPTION AND/OR LOCATION (see instructions on back)	# CONTAINERS	SAMPLE MATRIX: LIQUID	SOIL	OTHER	GRAB SAMPLE	COMP. SAMP.	SAMPLING INFORMATION: DATE	TIME	ETMA LAB NO.	TPH - ☐ 1R (418.1) ☐ GC (3550)	TPFH (5030)	TCLP ☐ Full ☐ Partial (Specify in Remarks)	EPA 601/8010	EPA 602/8020 ☐ BTEX-only	EPA 608/8080 ☐ PCB-only	EPA ☐ 624 ☐ 8240	EPA ☐ 625 ☐ 8270	ETMA UST PKG (Undergrd Storage Tank)	ETMA - Above Ground Spill Pkg	ETMA - Guaranteed Petroleum Pkg.	Total Metals - Please specify	Chloride	Other Testing: Please Specify	RCRA Metals + Cr			
MW-3	2	✓			✓		9/19/93	1315	6084A													✓		✓			
GW-23W	2	✓			✓		9/18/93	1345	B													✓		✓			
MW-9	2	✓			✓		9/19/93	1340	C													✓		✓			
MW-12	1	✓			✓		"	1300	D															✓			
MW-5	1	✓			✓		"	1410	E															✓			
MW-10	1	✓			✓		"	1330	F															✓			
MW-1	1	✓			✓		"	1435	G															✓			
MW-4	1	✓			✓		"	1420	H															✓			
MW-2	1	✓			✓		"	1360	I															✓			
MW-7	1	✓			✓		"	1445	J															✓			
MW-11	1	✓			✓		"	1400	K															✓			

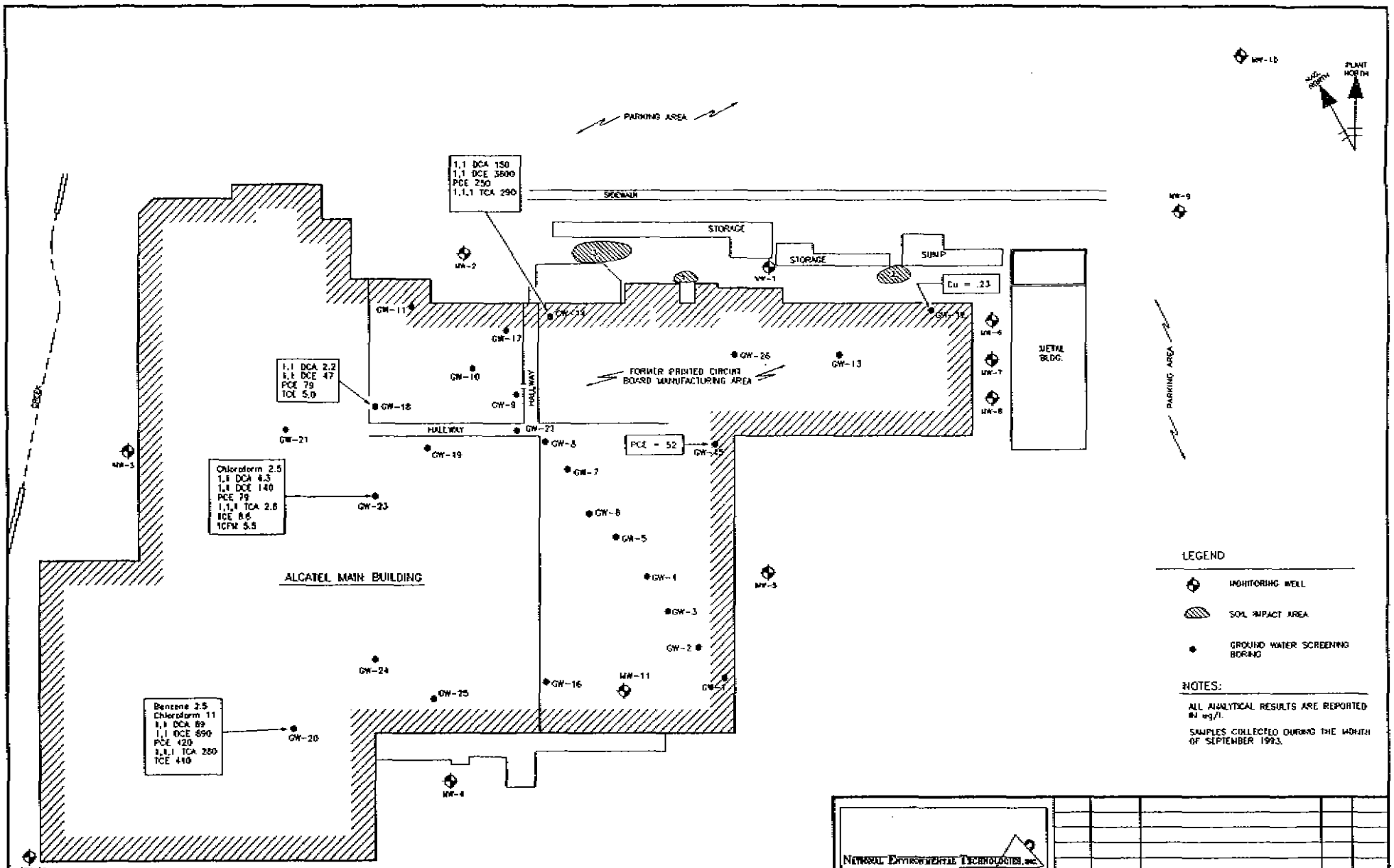
4

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Bobby A. Beaman	9/20/93	1030						
RECEIVED BY	**DATE**	**TIME**	**RELINQUISHED BY**	**DATE**	**TIME**	**RECEIVED IN LAB BY**	**DATE**	**TIME**
						[illegible]	9/21/93	1030

5 REMARKS (to include any special information pertinent to samples to be analyzed and/or billing)
Temp Blank 8°C
All liquid sampling for metals pH=1

ATTACHMENT C

DIAGRAM
LABORATORY ANALYTICAL RESULTS FOR SCREENING SAMPLES
GROUND WATER SCREENING SAMPLES



NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC

REVISION	DATE	DESCRIPTION	BY	APPR.
0	10/93	ORIGINAL ISSUE		

PROJECT MGR/DESIGNER: J. BEAMAN
DRAWN: K. FAIRCLOTH
CHECKED: APPR.
DATE: 10/8/93
SCALE: NOTED

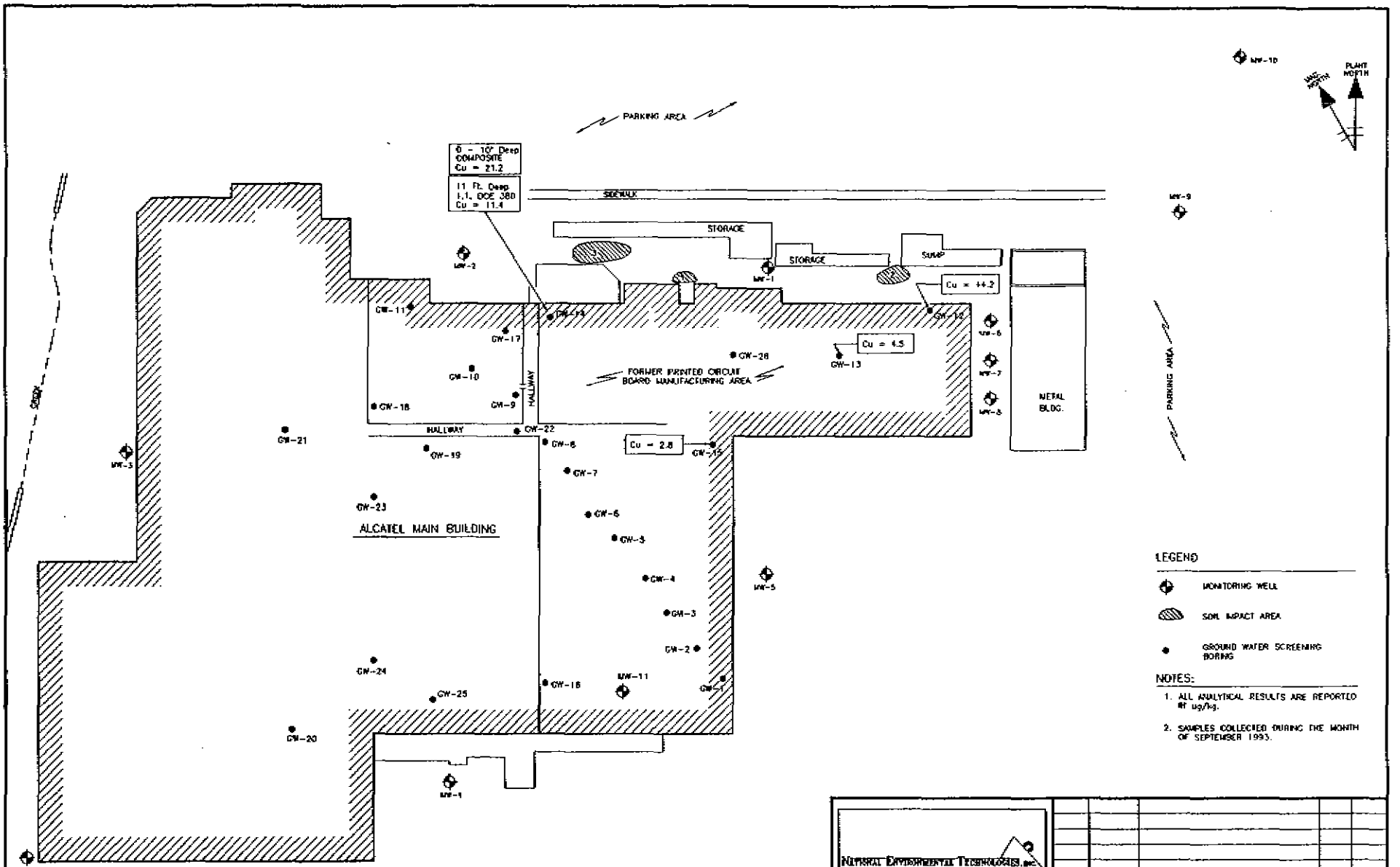
CLIENT/PROJECT: ALCATEL NETWORK SYSTEMS
Raleigh, NC
Groundwater Assessment

TITLE: Laboratory Analytical Results For Ground Water Screening Samples

PROJECT NO.: 05B004
SHEET NO.: 05B-4G03
REV: 0

ATTACHMENT D

DIAGRAM
LABORATORY ANALYTICAL RESULTS
SOIL SAMPLES



NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC

REVISION	DATE	DESCRIPTION	BY	APPR.
0	10/93	ORIGINAL ISSUE		

PROJECT MGR/DESIGNER: J. BEAMAN
DRAWN: K. FAIRCLOTH
CHECKED: APPR.
DATE: 10/7/93
SCALE: NOTED

CLIENT/PROJECT: ALCATEL NETWORK SYSTEMS
Raleigh, NC
Groundwater Assessment

TITLE: Laboratory Analytical Results For Soil Samples

PROJECT NO.: 058004
SHEET NO.: 058-4001
REV: 0

ATTACHMENT E

BORING LOG FOR MW - 12

BORING LOG

BORING NO. *MW-12*		PAGE *1* OF *1*	
LOCATION: *Alcatel Network Systems*	DATE COMPLETED: *9/11/93*	NET PROJECT NO: *058004*	
TOTAL DEPTH (FT.): *24 Ft.*	GRDWTR. DEPTH: *16.99 Ft.*	SCREEN DEPTH: *10 Ft.*	LOGGED BY: *JB*
GROUND ELEV. (MSL): *228.11 Ft.*	T/C ELEV (MSL): *227.94 Ft.*	SCREEN INTER. *10 - 20 Ft.*	CHECKED BY:

DEPTH (FEET)	ELEV. (MSL)	UNIFIED CLASSIFICATION	LITH-OLOGY	BLW CNT (/FT)	SAMPLE NO.	SI	COMMENTS
		Red Micaceous Clay (CL)					*Fill Material*
5							
8	220.11						
10		*Tan, Silty Clay Residuum (CL)*					
15							
17	211.11						*Water Table* *9/11/93 (16.99')*
20		*Tan, Silty Sand Saprolite (SM)*					
23	204.11	*Boring Terminates @ 24 Ft. in Bedrock*					*Auger Refusal*

EQUIPMENT: *Little Beaver Drilling Rig w/3" OD Stem Augers*

NOTES: SI - SCREEN INTERVAL
ALL DEPTHS SHOWN IN FEET.
MSL - MEAN SEA LEVEL (FT.)

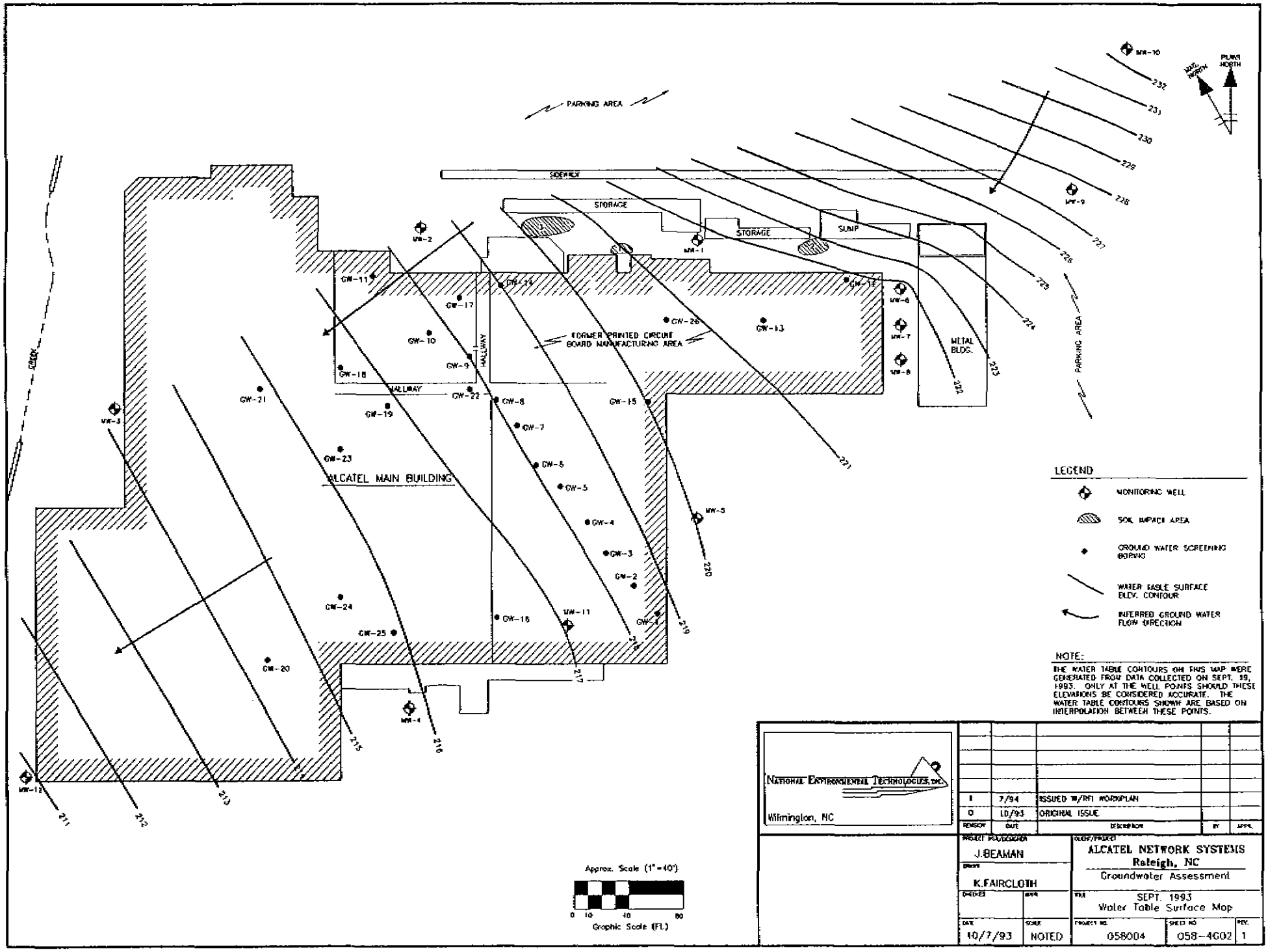
Form Prepared By KF

NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.

Wilmington, NC

ATTACHMENT F

WATER TABLE SURFACE MAP


PARKING AREA
SIDEWALK
STORAGE
STORAGE
SUMP
METAL BLDG.
FORMER PRINTED CIRCUIT BOARD MANUFACTURING AREA
HALLWAY
HALLWAY
ALCATEL MAIN BUILDING
CREEK
PARKING AREA
PLANT NORTH
MAGNETIC NORTH
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
GW-1
GW-2
GW-3
GW-4
GW-5
GW-6
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GW-21
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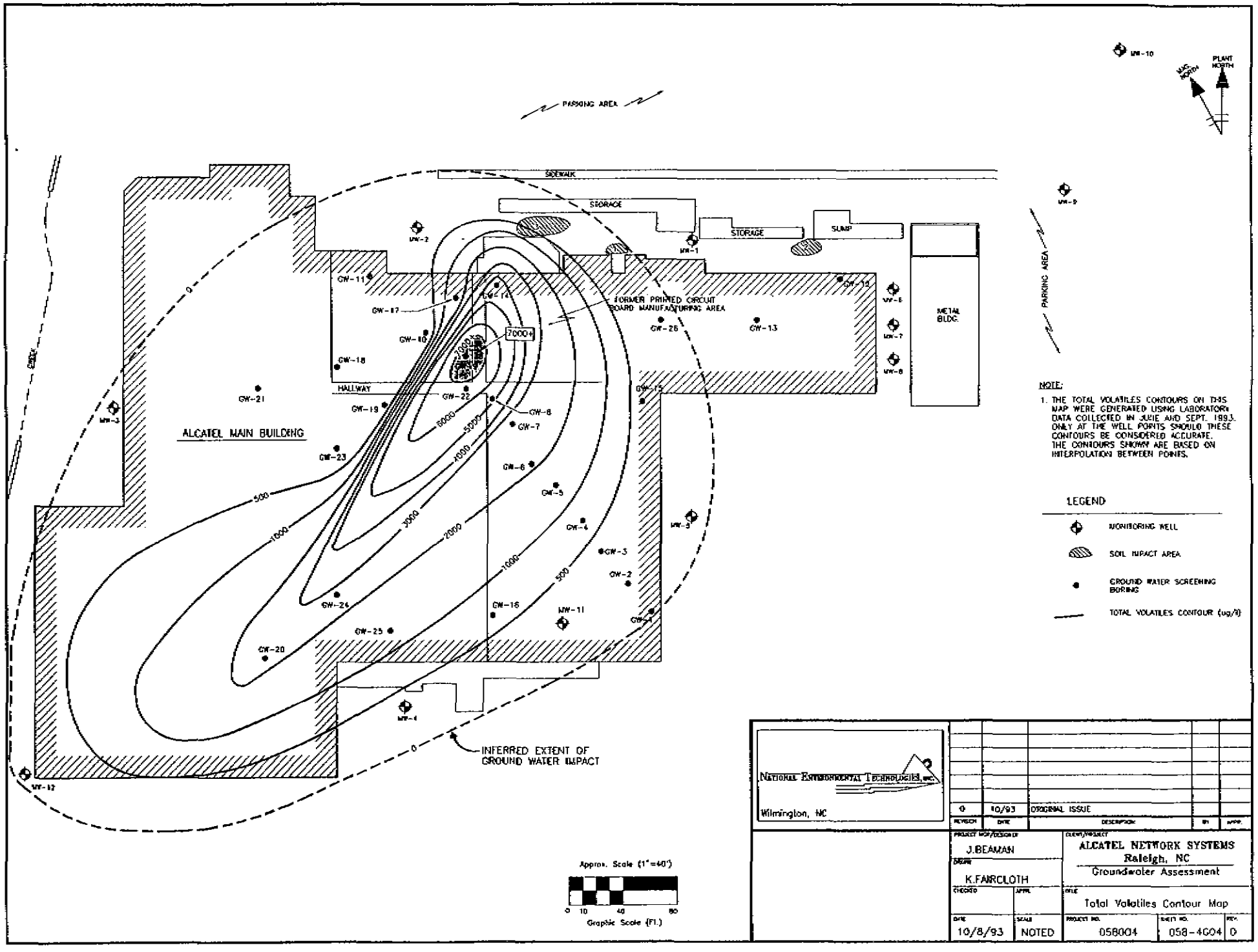
GW-25
GW-26
211
212
213
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
LEGEND
MONITORING WELL
SOIL IMPACT AREA
GROUND WATER SCREENING BORING
WATER TABLE SURFACE ELEV. CONTOUR
INFERRED GROUND WATER FLOW DIRECTION
NOTE:
THE WATER TABLE CONTOURS ON THIS MAP WERE GENERATED FROM DATA COLLECTED ON SEPT. 19, 1993. ONLY AT THE WELL POINTS SHOULD THESE ELEVATIONS BE CONSIDERED ACCURATE. THE WATER TABLE CONTOURS SHOWN ARE BASED ON INTERPOLATION BETWEEN THESE POINTS.
Approx. Scale (1"=40')
0 10 40 80
Graphic Scale (FT.)
NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC
REVISION DATE DESCRIPTION BY APPR.
1 7/94 ISSUED W/RFI WORKPLAN
0 10/93 ORIGINAL ISSUE
PROJECT MANAGER J.BEAMAN
DRAWN K.FAIRCLOTH
CHECKED
APPR.
DATE 10/7/93
SCALE NOTED
CLIENT/PROJECT ALCATEL NETWORK SYSTEMS Raleigh, NC
Groundwater Assessment
TITLE SEPT. 1993 Water Table Surface Map
PROJECT NO. 058004
SHEET NO. 058-4G02
REV. 1

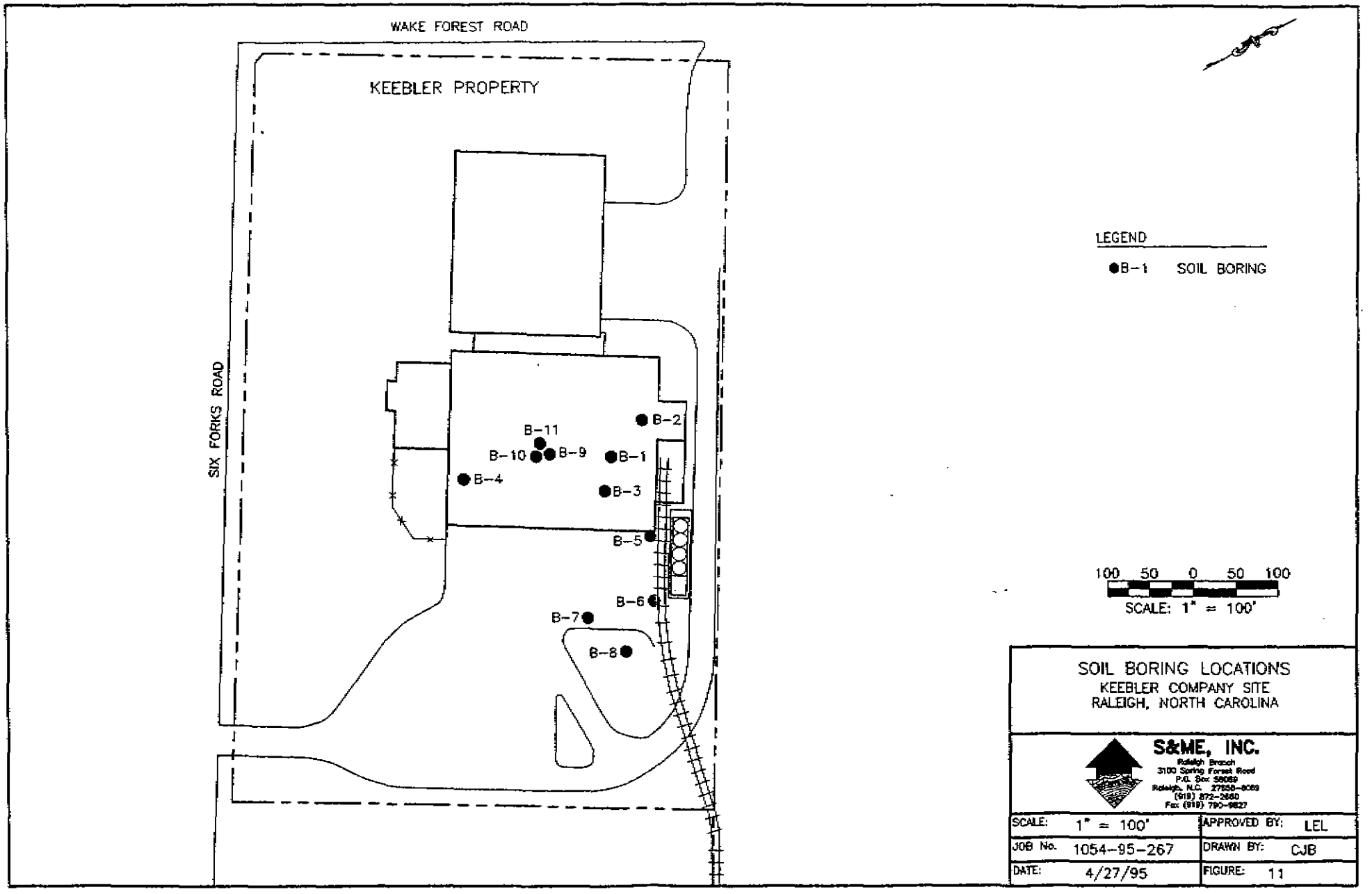
ATTACHMENT G

TOTAL VOLATILES CONTOUR MAP


PARKING AREA
SIDEWALK
STORAGE
STORAGE
SUMP
METAL BLDG.
FORMER PRINTED CIRCUIT BOARD MANUFACTURING AREA
HALLWAY
ALCATEL MAIN BUILDING
PARKING AREA
INFERRED EXTENT OF GROUND WATER IMPACT
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
MW-12
GW-1
GW-2
GW-3
GW-4
GW-5
GW-6
GW-7
GW-8
GW-9
GW-10
GW-11
GW-12
GW-13
GW-14
GW-15
GW-16
GW-17
GW-18
GW-19
GW-20
GW-21
GW-22
GW-23
GW-24
GW-25
GW-26
70000
5000
4000
3000
2000
1000
500
0
NOTE:
1. THE TOTAL VOLATILES CONTOURS ON THIS MAP WERE GENERATED USING LABORATORY DATA COLLECTED IN JULIE AND SEPT. 1993. ONLY AT THE WELL POINTS SHOULD THESE CONTOURS BE CONSIDERED ACCURATE. THE CONTOURS SHOWN ARE BASED ON INTERPOLATION BETWEEN POINTS.
LEGEND
MONITORING WELL
SOIL IMPACT AREA
GROUND WATER SCREENING BORING
TOTAL VOLATILES CONTOUR (ug/l)
Approx. Scale (1"=40')
0 10 40 80
Graphic Scale (Ft.)
NATIONAL ENVIRONMENTAL TECHNOLOGIES, INC.
Wilmington, NC
0 10/93 ORIGINAL ISSUE
REVISION DATE DESCRIPTION BY APPR.
PROJECT MGR/DESIGNER J.BEAMAN
DRAWN K.FARCLOTH
CHECKED APPR.
CLIENT/PROJECT ALCATEL NETWORK SYSTEMS Raleigh, NC Groundwater Assessment
TITLE Total Volatiles Contour Map
DATE 10/8/93
SCALE NOTED
PROJECT NO. 058004
SHEET NO. 058-4G04
REV. 0

S&ME Soil Sampling Results

April 1995


WAKE FOREST ROAD
KEEBLER PROPERTY
SIX FORKS ROAD
B-1
B-2
B-3
B-4
B-5
B-6
B-7
B-8
B-9
B-10
B-11
LEGEND
B-1 SOIL BORING
100 50 0 50 100
SCALE: 1" = 100'
SOIL BORING LOCATIONS
KEEBLER COMPANY SITE
RALEIGH, NORTH CAROLINA
S&ME, INC.
SCALE: 1" = 100'
APPROVED BY: LEL
JOB No. 1054-95-267
DRAWN BY: CJB
DATE: 4/27/95
FIGURE: 11

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-1			Date Analyzed:	02/02/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00605			Date Collected:	02/01/95
Lab Project ID:	G108-2			Date Received:	02/02/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	5	5	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	46	115

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-2			Date Analyzed:	02/02/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00607			Date Collected:	02/01/95
Lab Project ID:	G108-2			Date Received:	02/02/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	5	5	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	62	155

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-3			Date Analyzed:	02/06/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00631			Date Collected:	02/02/95
Lab Project ID:	G108-3			Date Received:	02/04/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	1	1	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	51	127

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-4			Date Analyzed:	02/06/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00632			Date Collected:	02/02/95
Lab Project ID:	G108-3			Date Received:	02/04/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	1	1	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	49	122

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-5			Date Analyzed:	02/02/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00602			Date Collected:	02/01/95
Lab Project ID:	G108-2			Date Received:	02/02/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	5	5	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	46	115

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-6			Date Analyzed:	02/02/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00603			Date Collected:	02/01/95
Lab Project ID:	G108-2			Date Received:	02/02/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	5	5	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	39	98

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-7			Date Analyzed:	02/02/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00604			Date Collected:	02/01/95
Lab Project ID:	G108-2			Date Received:	02/02/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	5	5	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	50	125

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-8			Date Analyzed:	02/02/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00606			Date Collected:	02/01/95
Lab Project ID:	G108-2			Date Received:	02/02/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	5	5	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	54	135

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-9 (5')			Date Analyzed:	02/08/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00648			Date Collected:	02/06/95
Lab Project ID:	G108-4			Date Received:	02/07/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	1	1	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	53	132

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-9 (7')			Date Analyzed:	02/08/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00649			Date Collected:	02/06/95
Lab Project ID:	G108-4			Date Received:	02/07/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	1	1	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	43	108

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-10			Date Analyzed:	02/08/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00647			Date Collected:	02/06/95
Lab Project ID:	G108-4			Date Received:	02/07/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	1	1	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	36	90

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID:	B-11			Date Analyzed:	02/08/95
Client Project ID:	Keebler			Analyzed By:	RNP
Lab Sample ID:	00646			Date Collected:	02/06/95
Lab Project ID:	G108-4			Date Received:	02/07/95
Matrix:	Soil	%SOLIDS	100.0	Dilution:	1.0

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)	
Bromodichloromethane	1	1	U
Bromoform	1	1	U
Bromomethane	1	1	U
Carbon tetrachloride	1	1	U
Chlorobenzene	1	1	U
Chloroethane	1	1	U
Chloroform	1	1	U
2-Chloro-ethylvinyl ether	1	1	U
Chloromethane	1	1	U
Dibromochloromethane	1	1	U
1,2-Dichlorobenzene	1	1	U
1,3-Dichlorobenzene	1	1	U
1,4-Dichlorobenzene	1	1	U
1,1-Dichloroethane	1	1	U
1,2-Dichloroethane	1	1	U
1,1-Dichloroethene	1	1	U
trans-1,2-Dichloroethene	1	1	U
Dichlorodifluoromethane	1	1	U
1,2-Dichloropropane	1	1	U
trans-1,3-Dichloropropene	1	1	U
cis-1,3-Dichloropropene	1	1	U
Methylene Chloride	1	1	U
1,1,2,2-Tetrachloroethane	1	1	U
Tetrachloroethene	1	1	U
1,1,1-Trichloroethane	1	1	U
1,1,2-Trichloroethane	1	1	U
Trichloroethene	1	1	U
Trichlorofluoromethane	1	1	U
Vinyl chloride	1	1	U

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	51	127

Comments:

All results are corrected for dilution and %solids.

Flags: U = Undetected