



UCAR CARBON COMPANY INC.

32N03. GW51

11/11/99
MM

P.O. Box 887, Niagara Falls, NY 14302-0887

April 13, 1999

Mr. Mark Hans, PE
Regional Solid Materials Engineer
NYS Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Subject: Quarterly Reports of Groundwater Analysis
Republic Solid Waste Management Facility
Post-Closure Monitoring Program

RECEIVED

APR 15 1999

NYSDE, REG. 9
FOIL
REL UNREL

32N03

Dear Mr. Hans,

Please find enclosed a copy of the forty-fourth (44) quarter's groundwater analysis from the closed Republic Waste Management Facility. Bedrock Well, BW-4, continues to demonstrate some slight semi-volatile organic contamination in less than one part per million range.

cis 1,2 Dichloroethene was detected for the first time in BW-4 at 137 ppb (quant. limit 10 ppb).

The downgradient Bedrock Well, BW-6, shows no contamination.

If you have any questions, please contact me at 278-3275.

Very truly yours,

A.C. Ogg
Site Manager

A.C. Ogg
nm
Attachments

**QUARTERLY REPORT OF GROUNDWATER ANALYSIS
REPUBLIC SOLID WASTE MANAGEMENT FACILITY POST-CLOSURE MONITORING PROGRAM**

44th QUARTER

POSITIVE ORGANIC PARAMETERS FROM BW-4

CONTAMINATE	44th Quarter ppb	Mean Conc. ppb	Range ppb
Trichloroethene	202	288	30 - 740
Tetrachloroethene	172	228	72 – 601
Hexachlobutadiene	49.6	50	10 – 160
Vinyl Chloride	87	100	29 – 300
cis-1,2 Dichloroethene	137	137	137

CC: Mr. Jim Devald, Dir. of Environmental Health
Niagara County Health Department
Environmental Division
5467 Upper Mountain Road
Lockport, New York 14094-1899

UCAR CARBON COMPANY, INCORPORATED

REPUBLIC WASTE MANAGEMENT FACILITY

POST CLOSURE MONITORING PROGRAM

QUARTERLY REPORT

FIRST QUARTER 1999

Prepared By:

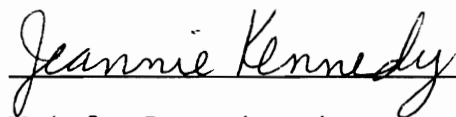


"A Company Dedicated to Honesty, Quality and Service"

March 24, 1999
REF: CTC917V/100B
Lab ID No. 10233

QA/QC VERIFICATION FOR PROJECT ID 917V

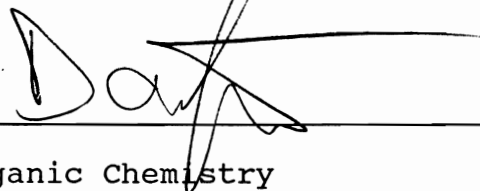
The following report, as well as the supporting data, have been carefully reviewed for accuracy, adherence to the cited methods, and completeness. All data contained in this report was generated in accordance with the AES Laboratory Quality Assurance/Quality Control Program.



Metals Department



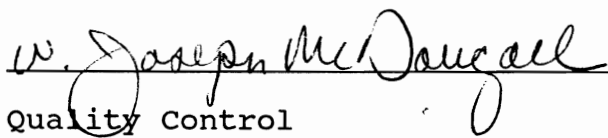
Inorganic Chemistry



Organic Chemistry



Field Services



Quality Control



Project Manager

All 'Total' results on soil matrices are calculated on a dry weight basis, unless otherwise noted. Analyses noted as 'Performed in the laboratory' require immediate testing and should be performed in the field.

The following are standard abbreviations:

BQL - Below Quantifiable Limits
ND - None Detected
NG - No Growth of Colonies
NR - Not Requested
D - Indicates a dilution was required

Advanced Environmental Services, Inc.

2186 Liberty Drive
Niagara Falls, New York 14304
(716) 283-3120

QUARTERLY GROUNDWATER MONITORING - WELL INFORMATION
February 25/26 1999

UCAR CARBON COMPANY, INC.

Hyde Park Boulevard
Niagara Falls, New York

AES Code: CTC

Project I.D. # 917V

Monitoring Well I.D.	Evacuation Date	Top of Inner Casing Elevation (ft.)	Monitoring Well Diameter	Water Level (ft.)	Water Elevation (ft.)	Bottom of Well (ft.)	Volume of Standing Water (gallons)	Volume of Evacuated Water (gallons)	Recharge Rate
BW-1	2/25/99	610.72	4	17.19	593.53	28.82	7.59	23.0	C
BW-2	2/25/99	608.43	4	14.60	593.83	26.60	7.83	24.0	C
BW-3	2/25/99	604.72	4	11.44	593.28	24.85	8.75	26.5	C
BW-4	2/25/99	607.08	4	11.50	595.58	22.70	7.31	22.0	C
BW-5	2/25/99	603.33	4	9.58	593.75	28.70	12.48	37.5	C
BW-6	2/25/99	607.04	4	16.03	591.01	25.13	5.94	18.0	C
MW-1	2/25/99	609.43	2	13.30	596.13	23.37	1.64	2.0 (Dry)	S
MW-2	2/25/99	607.54	3	12.60	594.94	24.58	4.40	7.5 (Dry)	S
MW-3	2/25/99	601.61	2	6.00	595.61	15.93	1.62	2.75(Dry)	S
OW-1 SOUTH	2/25/99	608.81	2	7.40	601.41	NR	NR	NR	N/A
OW-2 NORTH	2/25/99	607.06	2	6.92	600.14	NR	NR	NR	N/A

Abbreviations:

VS = Very Slow ----- Recharge Rate longer than 24 hr period.

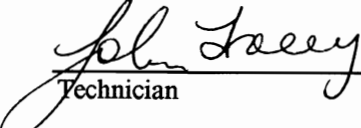
S = Slow ----- Recharge Rate within 24 hr period.

R = Rapid ----- Recharge Rate within 1 hr period.

C = Continuous ----- Recharge Rate immediate.

NR = Not Required

N/A = Not Applicable


Technician

3/11/99
Date

Advanced Environmental Services, Inc.

2186 Liberty Drive
Niagara Falls, New York 14304
(716) 283-3120

QUARTERLY GROUNDWATER MONITORING - FIELD PARAMETER INFORMATION
February 25/26 1999.

UCAR CARBON COMPANY, INC.

Hyde Park Boulevard
Niagara Falls, New York

AES Code: CTC

Project I.D. # 917V

Monitoring Well I.D.	Sampling Date	Sampling Time	Water Level (ft.)	Turbidity (NTU)	Filter Time	Field Comments/Observations
BW-1	2/26/99	12:00 PM	17.21	66.4	2:55 PM	Mainly Clear
BW-2	2/26/99	10:40 AM	14.73	70.2	2:40 PM	Mainly Clear
BW-3	2/26/99	10:55 AM	11.70	2.4	2:45 PM	Clear.
BW-4	2/26/99	11:30 AM	11.82	57.4	2:00 PM	Sl, Cloudy, Orange tint, SO2
BW-5	2/26/99	11:10 AM	9.82	6.8	2:50 PM	Clear, SO2
BW-6	2/26/99	10:10 AM	16.17	91.3	2:15 PM	Mainly Clear
MW-1	2/26/99	11:50 AM	14.50	32.4	2:35 PM	Mainly Clear
MW-2	2/26/99	10:17 AM	23.37	524.0	2:40 PM	Cloudy, Black, SO2
MW-3	2/26/99	11:20 AM	6.78	65.6	3:00 PM	Sl, Cloudy, Orange tint.
OW-1 South	2/25/99	2:50 PM	7.40	NA	NA	Required to take water elevation only.
OW-2 North	2/25/99	2:55 PM	6.92	NA	NA	Required to take water elevation only.
Blind Dup	2/26/99	11:30 AM	11.82	59.2	1:35 PM	Sl, Cloudy, Orange tint, SO2
Trip Blank	2/26/99	1:45 PM	NA	NA	NA	Deionized Water

The Blind Duplicate site was BW-4.

 3/11/99
Field Technician Date

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: MW-1
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-1

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	32.4	NTU	0.1	EPA 180.1
Ammonia	4.0	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	4.4	mg/L	0.8	EPA 351.3
Total Iron	2.91	mg/L	0.060	EPA 200.7
Soluble Iron	ND	mg/L	0.060	EPA 200.7
Total Potassium	38 **	mg/L	1.8	EPA 200.7
Soluble Potassium	41	mg/L	1.8	EPA 200.7
Total Zinc	0.062	mg/L	0.016	EPA 200.7
Soluble Zinc	ND	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

** The soluble value is slightly higher than the total value for this element. The difference is statistically insignificant.

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: MW-3
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-2

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	65.6	NTU	0.1	EPA 180.1
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	0.8	mg/L	0.8	EPA 351.3
Total Iron	4.89	mg/L	0.060	EPA 200.7
Soluble Iron	ND	mg/L	0.060	EPA 200.7
Total Potassium	ND	mg/L	1.8	EPA 200.7
Soluble Potassium	ND	mg/L	1.8	EPA 200.7
Total Zinc	0.025	mg/L	0.016	EPA 200.7
Soluble Zinc	ND	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: BW-1
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-3

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	66.4	NTU	0.1	EPA 180.1
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	0.8	mg/L	0.8	EPA 351.3
Total Iron	7.60	mg/L	0.060	EPA 200.7
Soluble Iron	0.946	mg/L	0.060	EPA 200.7
Total Potassium	ND	mg/L	1.8	EPA 200.7
Soluble Potassium	ND	mg/L	1.8	EPA 200.7
Total Zinc	7.47	mg/L	0.016	EPA 200.7
Soluble Zinc	0.849	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: BW-2
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-4

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	70.2	NTU	0.1	EPA 180.1
Ammonia	0.7	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	0.9	mg/L	0.8	EPA 351.3
Total Iron	8.33	mg/L	0.060	EPA 200.7
Soluble Iron	5.98	mg/L	0.060	EPA 200.7
Total Potassium	3.71 **	mg/L	1.8	EPA 200.7
Soluble Potassium	4.17	mg/L	1.8	EPA 200.7
Total Zinc	0.671	mg/L	0.016	EPA 200.7
Soluble Zinc	0.192	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

** The soluble value is slightly higher than the total value for this element. The difference is statistically insignificant.

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: BW-3
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-5

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	2.4	NTU	0.1	EPA 180.1
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	ND	mg/L	0.8	EPA 351.3
Total Iron	0.224	mg/L	0.060	EPA 200.7
Soluble Iron	ND	mg/L	0.060	EPA 200.7
Total Potassium	ND	mg/L	1.8	EPA 200.7
Soluble Potassium	ND	mg/L	1.8	EPA 200.7
Total Zinc	0.184	mg/L	0.016	EPA 200.7
Soluble Zinc	0.123	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-4
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-6

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	57.4	NTU	0.1	EPA 180.1
Ammonia	2.6	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	2.6	mg/L	0.8	EPA 351.3
Total Iron	16.4	mg/L	0.060	EPA 200.7
Soluble Iron	2.46	mg/L	0.060	EPA 200.7
Total Potassium	18.0 **	mg/L	1.8	EPA 200.7
Soluble Potassium	19.5	mg/L	1.8	EPA 200.7
Total Zinc	6.32	mg/L	0.016	EPA 200.7
Soluble Zinc	0.538	mg/L	0.016	EPA 200.7
Chloromethane	ND	µg/L	10	SW 846 8260
Vinyl chloride	87 ✓	µg/L	10	SW 846 8260
Bromomethane	ND	µg/L	10	SW 846 8260
Chloroethane	ND	µg/L	10	SW 846 8260
1,1-Dichloroethene	ND	µg/L	10	SW 846 8260
Carbon disulfide	ND	µg/L	20	SW 846 8260
Acetone	ND	µg/L	20	SW 846 8260
Methylene chloride	ND	µg/L	10	SW 846 8260
trans-1,2-Dichloroethene	ND	µg/L	10	SW 846 8260
1,1-Dichloroethane	ND	µg/L	10	SW 846 8260
cis-1,2-Dichloroethene	137 ✓	µg/L	10	SW 846 8260
2-Butanone	ND	µg/L	20	SW 846 8260
Chloroform	ND	µg/L	10	SW 846 8260
1,1,1-Trichloroethane	ND	µg/L	10	SW 846 8260
Carbon tetrachloride	ND	µg/L	10	SW 846 8260
Benzene	ND	µg/L	10	SW 846 8260
1,2-Dichloroethane	ND	µg/L	10	SW 846 8260

* Analysis performed in the field.

** The soluble value is slightly higher than the total value for this element. The difference is statistically insignificant.

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-4
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-6

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Trichloroethene	202 D	µg/L	10	SW 846 8260
1,2-Dichloropropane	ND	µg/L	10	SW 846 8260
Bromodichloromethane	ND	µg/L	10	SW 846 8260
cis-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Toluene	ND	µg/L	10	SW 846 8260
4-Methyl-2-pentanone	ND	µg/L	20	SW 846 8260
trans-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Tetrachloroethene	172	µg/L	10	SW 846 8260
1,1,2-Trichloroethane	ND	µg/L	10	SW 846 8260
Chlorodibromomethane	ND	µg/L	10	SW 846 8260
2-Hexanone	ND	µg/L	20	SW 846 8260
Chlorobenzene	ND	µg/L	10	SW 846 8260
Ethylbenzene	ND	µg/L	10	SW 846 8260
m/p-Xylene	ND	µg/L	10	SW 846 8260
o-Xylene	ND	µg/L	10	SW 846 8260
Styrene	ND	µg/L	10	SW 846 8260
Bromoform	ND	µg/L	10	SW 846 8260
1,1,2,2-Tetrachloroethane	ND	µg/L	10	SW 846 8260
Aniline	ND	µg/L	10	SW 846 8270
Benzoic acid	ND	µg/L	10	SW 846 8270
Benzyl alcohol	ND	µg/L	10	SW 846 8270
Phenol	ND	µg/L	10	SW 846 8270
bis(2-chloroethyl)ether	ND	µg/L	10	SW 846 8270
2-Chlorophenol	ND	µg/L	10	SW 846 8270
1,3-Dichlorobenzene	ND	µg/L	10	SW 846 8270
1,4-Dichlorobenzene	ND	µg/L	10	SW 846 8270
1,2-Dichlorobenzene	ND	µg/L	10	SW 846 8270
2-Methylphenol	ND	µg/L	10	SW 846 8270
bis(2-chloroisopropyl)ether	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-4
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-6

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
4-Methylphenol	ND	µg/L	10	SW 846 8270
n-Nitrosodi-n-propylamine	ND	µg/L	10	SW 846 8270
Hexachloroethane	ND	µg/L	10	SW 846 8270
Nitrobenzene	ND	µg/L	10	SW 846 8270
Isophorone	ND	µg/L	10	SW 846 8270
2-Nitrophenol	ND	µg/L	10	SW 846 8270
2,4-Dimethylphenol	ND	µg/L	10	SW 846 8270
bis(2-chloroethoxy)methane	ND	µg/L	10	SW 846 8270
2,4-Dichlorophenol	ND	µg/L	10	SW 846 8270
1,2,4-Trichlorobenzene	ND	µg/L	10	SW 846 8270
Naphthalene	ND	µg/L	10	SW 846 8270
4-Chloroaniline	ND	µg/L	10	SW 846 8270
Hexachlorobutadiene	49.6	µg/L	10	SW 846 8270
4-Chloro-3-methylphenol	ND	µg/L	10	SW 846 8270
2-Methylnaphthalene	ND	µg/L	10	SW 846 8270
Hexachlorocyclopentadiene	ND	µg/L	10	SW 846 8270
2,4,6-Trichlorophenol	ND	µg/L	10	SW 846 8270
2,4,5-Trichlorophenol	ND	µg/L	10	SW 846 8270
2-Chloronaphthalene	ND	µg/L	10	SW 846 8270
2-Nitroaniline	ND	µg/L	10	SW 846 8270
Dimethyl phthalate	ND	µg/L	10	SW 846 8270
Acenaphthylene	ND	µg/L	10	SW 846 8270
2,6-Dinitrotoluene	ND	µg/L	10	SW 846 8270
3-Nitroaniline	ND	µg/L	10	SW 846 8270
Acenaphthene	ND	µg/L	10	SW 846 8270
2,4-Dinitrophenol	ND	µg/L	10	SW 846 8270
4-Nitrophenol	ND	µg/L	10	SW 846 8270
Dibenzofuran	ND	µg/L	10	SW 846 8270
2,4-Dinitrotoluene	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-4
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-6

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Diethyl phthalate	ND	µg/L	10	SW 846 8270
4-Chlorophenyl phenyl ether	ND	µg/L	10	SW 846 8270
Fluorene	ND	µg/L	10	SW 846 8270
4-Nitroaniline	ND	µg/L	10	SW 846 8270
4,6-Dinitro-2-methylphenol	ND	µg/L	10	SW 846 8270
n-Nitrosodiphenylamine	ND	µg/L	10	SW 846 8270
4-Bromophenyl phenyl ether	ND	µg/L	10	SW 846 8270
Hexachlorobenzene	ND	µg/L	10	SW 846 8270
Pentachlorophenol	ND	µg/L	10	SW 846 8270
Phenanthrene	ND	µg/L	10	SW 846 8270
Anthracene	ND	µg/L	10	SW 846 8270
Carbazole	ND	µg/L	10	SW 846 8270
di-n-Butylphthalate	ND	µg/L	10	SW 846 8270
Fluoranthene	ND	µg/L	10	SW 846 8270
Pyrene	ND	µg/L	10	SW 846 8270
Butyl benzyl phthalate	ND	µg/L	10	SW 846 8270
3,3'-Dichlorobenzidine	ND	µg/L	10	SW 846 8270
Benzo(a)anthracene	ND	µg/L	10	SW 846 8270
Chrysene	ND	µg/L	10	SW 846 8270
bis(2ethylhexyl)phthalate	ND	µg/L	10	SW 846 8270
di-n-Octylphthalate	ND	µg/L	10	SW 846 8270
Benzo(b)fluoranthene	ND	µg/L	10	SW 846 8270
Benzo(k)fluoranthene	ND	µg/L	10	SW 846 8270
Benzo(a)pyrene	ND	µg/L	10	SW 846 8270
Indeno(1,2,3-cd)pyrene	ND	µg/L	10	SW 846 8270
Dibenzo(a,h)anthracene	ND	µg/L	10	SW 846 8270
Benzo(g,h,i)perylene	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: BW-5
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-7

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	6.8	NTU	0.1	EPA 180.1
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	1.3	mg/L	0.8	EPA 351.3
Total Iron	3.17	mg/L	0.060	EPA 200.7
Soluble Iron	0.582	mg/L	0.060	EPA 200.7
Total Potassium	2.23 **	mg/L	1.8	EPA 200.7
Soluble Potassium	3.35	mg/L	1.8	EPA 200.7
Total Zinc	2.24	mg/L	0.016	EPA 200.7
Soluble Zinc	0.019	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

** The soluble value is slightly higher than the total value for this element. The difference is statistically insignificant.

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-6
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-8

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	91.3	NTU	0.1	EPA 180.1
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	1.2	mg/L	0.8	EPA 351.3
Total Iron	22	mg/L	0.060	EPA 200.7
Soluble Iron	17.1	mg/L	0.060	EPA 200.7
Total Potassium	ND	mg/L	1.8	EPA 200.7
Soluble Potassium	ND	mg/L	1.8	EPA 200.7
Total Zinc	0.034 **	mg/L	0.016	EPA 200.7
Soluble Zinc	0.035	mg/L	0.016	EPA 200.7
Chloromethane	ND	µg/L	10	SW 846 8260
Vinyl chloride	ND	µg/L	10	SW 846 8260
Bromomethane	ND	µg/L	10	SW 846 8260
Chloroethane	ND	µg/L	10	SW 846 8260
1,1-Dichloroethene	ND	µg/L	10	SW 846 8260
Carbon disulfide	ND	µg/L	20	SW 846 8260
Acetone	ND	µg/L	20	SW 846 8260
Methylene chloride	ND	µg/L	10	SW 846 8260
trans-1,2-Dichloroethene	ND	µg/L	10	SW 846 8260
1,1-Dichloroethane	ND	µg/L	10	SW 846 8260
cis-1,2-Dichloroethene	ND	µg/L	10	SW 846 8260
2-Butanone	ND	µg/L	20	SW 846 8260
Chloroform	ND	µg/L	10	SW 846 8260
1,1,1-Trichloroethane	ND	µg/L	10	SW 846 8260
Carbon tetrachloride	ND	µg/L	10	SW 846 8260
Benzene	ND	µg/L	10	SW 846 8260
1,2-Dichloroethane	ND	µg/L	10	SW 846 8260

* Analysis performed in the field.

** The soluble value is slightly higher than the total value for this element. The difference is statistically insignificant.

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-6
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-8

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Trichloroethene	ND	µg/L	10	SW 846 8260
1,2-Dichloropropane	ND	µg/L	10	SW 846 8260
Bromodichloromethane	ND	µg/L	10	SW 846 8260
cis-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Toluene	ND	µg/L	10	SW 846 8260
4-Methyl-2-pentanone	ND	µg/L	20	SW 846 8260
trans-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Tetrachloroethene	ND	µg/L	10	SW 846 8260
1,1,2-Trichloroethane	ND	µg/L	10	SW 846 8260
Chlorodibromomethane	ND	µg/L	10	SW 846 8260
2-Hexanone	ND	µg/L	20	SW 846 8260
Chlorobenzene	ND	µg/L	10	SW 846 8260
Ethylbenzene	ND	µg/L	10	SW 846 8260
m/p-Xylene	ND	µg/L	10	SW 846 8260
o-Xylene	ND	µg/L	10	SW 846 8260
Styrene	ND	µg/L	10	SW 846 8260
Bromoform	ND	µg/L	10	SW 846 8260
1,1,2,2-Tetrachloroethane	ND	µg/L	10	SW 846 8260
Aniline	ND	µg/L	10	SW 846 8270
Benzoic acid	ND	µg/L	10	SW 846 8270
Benzyl alcohol	ND	µg/L	10	SW 846 8270
Phenol	ND	µg/L	10	SW 846 8270
bis(2-chloroethyl)ether	ND	µg/L	10	SW 846 8270
2-Chlorophenol	ND	µg/L	10	SW 846 8270
1,3-Dichlorobenzene	ND	µg/L	10	SW 846 8270
1,4-Dichlorobenzene	ND	µg/L	10	SW 846 8270
1,2-Dichlorobenzene	ND	µg/L	10	SW 846 8270
2-Methylphenol	ND	µg/L	10	SW 846 8270
bis(2-chloroisopropyl)ether	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-6
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-8

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
4-Methylphenol	ND	µg/L	10	SW 846 8270
n-Nitrosodi-n-propylamine	ND	µg/L	10	SW 846 8270
Hexachloroethane	ND	µg/L	10	SW 846 8270
Nitrobenzene	ND	µg/L	10	SW 846 8270
Isophorone	ND	µg/L	10	SW 846 8270
2-Nitrophenol	ND	µg/L	10	SW 846 8270
2,4-Dimethylphenol	ND	µg/L	10	SW 846 8270
bis(2-chloroethoxy)methane	ND	µg/L	10	SW 846 8270
2,4-Dichlorophenol	ND	µg/L	10	SW 846 8270
1,2,4-Trichlorobenzene	ND	µg/L	10	SW 846 8270
Naphthalene	ND	µg/L	10	SW 846 8270
4-Chloroaniline	ND	µg/L	10	SW 846 8270
Hexachlorobutadiene	ND	µg/L	10	SW 846 8270
4-Chloro-3-methylphenol	ND	µg/L	10	SW 846 8270
2-Methylnaphthalene	ND	µg/L	10	SW 846 8270
Hexachlorocyclopentadiene	ND	µg/L	10	SW 846 8270
2,4,6-Trichlorophenol	ND	µg/L	10	SW 846 8270
2,4,5-Trichlorophenol	ND	µg/L	10	SW 846 8270
2-Chloronaphthalene	ND	µg/L	10	SW 846 8270
2-Nitroaniline	ND	µg/L	10	SW 846 8270
Dimethyl phthalate	ND	µg/L	10	SW 846 8270
Acenaphthylene	ND	µg/L	10	SW 846 8270
2,6-Dinitrotoluene	ND	µg/L	10	SW 846 8270
3-Nitroaniline	ND	µg/L	10	SW 846 8270
Acenaphthene	ND	µg/L	10	SW 846 8270
2,4-Dinitrophenol	ND	µg/L	10	SW 846 8270
4-Nitrophenol	ND	µg/L	10	SW 846 8270
Dibenzofuran	ND	µg/L	10	SW 846 8270
2,4-Dinitrotoluene	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BW-6
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-8

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Diethyl phthalate	ND	µg/L	10	SW 846 8270
4-Chlorophenyl phenyl ether	ND	µg/L	10	SW 846 8270
Fluorene	ND	µg/L	10	SW 846 8270
4-Nitroaniline	ND	µg/L	10	SW 846 8270
4,6-Dinitro-2-methylphenol	ND	µg/L	10	SW 846 8270
n-Nitrosodiphenylamine	ND	µg/L	10	SW 846 8270
4-Bromophenyl phenyl ether	ND	µg/L	10	SW 846 8270
Hexachlorobenzene	ND	µg/L	10	SW 846 8270
Pentachlorophenol	ND	µg/L	10	SW 846 8270
Phenanthrene	ND	µg/L	10	SW 846 8270
Anthracene	ND	µg/L	10	SW 846 8270
Carbazole	ND	µg/L	10	SW 846 8270
di-n-Butylphthalate	ND	µg/L	10	SW 846 8270
Fluoranthene	ND	µg/L	10	SW 846 8270
Pyrene	ND	µg/L	10	SW 846 8270
Butyl benzyl phthalate	ND	µg/L	10	SW 846 8270
3,3'-Dichlorobenzidine	ND	µg/L	10	SW 846 8270
Benzo(a)anthracene	ND	µg/L	10	SW 846 8270
Chrysene	ND	µg/L	10	SW 846 8270
bis(2ethylhexyl)phthalate	ND	µg/L	10	SW 846 8270
di-n-Octylphthalate	ND	µg/L	10	SW 846 8270
Benzo(b)fluoranthene	ND	µg/L	10	SW 846 8270
Benzo(k)fluoranthene	ND	µg/L	10	SW 846 8270
Benzo(a)pyrene	ND	µg/L	10	SW 846 8270
Indeno(1,2,3-cd)pyrene	ND	µg/L	10	SW 846 8270
Dibenzo(a,h)anthracene	ND	µg/L	10	SW 846 8270
Benzo(g,h,i)perylene	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BLIND DUPLICATE
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-9

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
turbidity *	59.2	NTU	0.1	EPA 180.1
Ammonia	2.2	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	2.8	mg/L	0.8	EPA 351.3
Total Iron	17.2	mg/L	0.060	EPA 200.7
Soluble Iron	2.44	mg/L	0.060	EPA 200.7
Total Potassium	18 **	mg/L	1.8	EPA 200.7
Soluble Potassium	19	mg/L	1.8	EPA 200.7
Total Zinc	6.50	mg/L	0.016	EPA 200.7
Soluble Zinc	0.533	mg/L	0.016	EPA 200.7
Chloromethane	ND	µg/L	10	SW 846 8260
Vinyl chloride	88	µg/L	10	SW 846 8260
Bromomethane	ND	µg/L	10	SW 846 8260
Chloroethane	ND	µg/L	10	SW 846 8260
1,1-Dichloroethene	ND	µg/L	10	SW 846 8260
Carbon disulfide	ND	µg/L	20	SW 846 8260
Acetone	ND	µg/L	20	SW 846 8260
Methylene chloride	ND	µg/L	10	SW 846 8260
trans-1,2-Dichloroethene	ND	µg/L	10	SW 846 8260
1,1-Dichloroethane	ND	µg/L	10	SW 846 8260
cis-1,2-Dichloroethene	135	µg/L	10	SW 846 8260
2-Butanone	ND	µg/L	20	SW 846 8260
Chloroform	ND	µg/L	10	SW 846 8260
1,1,1-Trichloroethane	ND	µg/L	10	SW 846 8260
Carbon tetrachloride	ND	µg/L	10	SW 846 8260
Benzene	ND	µg/L	10	SW 846 8260
1,2-Dichloroethane	ND	µg/L	10	SW 846 8260

* Analysis performed in the field.

** The soluble value is slightly higher than the total value for this element. The difference is statistically insignificant.

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BLIND DUPLICATE
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-9

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Trichloroethene	200 D	µg/L	10	SW 846 8260
1,2-Dichloropropane	ND	µg/L	10	SW 846 8260
Bromodichloromethane	ND	µg/L	10	SW 846 8260
cis-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Toluene	ND	µg/L	10	SW 846 8260
4-Methyl-2-pentanone	ND	µg/L	20	SW 846 8260
trans-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Tetrachloroethene	164	µg/L	10	SW 846 8260
1,1,2-Trichloroethane	ND	µg/L	10	SW 846 8260
Chlorodibromomethane	ND	µg/L	10	SW 846 8260
2-Hexanone	ND	µg/L	20	SW 846 8260
Chlorobenzene	ND	µg/L	10	SW 846 8260
Ethylbenzene	ND	µg/L	10	SW 846 8260
m/p-Xylene	ND	µg/L	10	SW 846 8260
o-Xylene	ND	µg/L	10	SW 846 8260
Styrene	ND	µg/L	10	SW 846 8260
Bromoform	ND	µg/L	10	SW 846 8260
1,1,2,2-Tetrachloroethane	ND	µg/L	10	SW 846 8260
Aniline	ND	µg/L	10	SW 846 8270
Benzoic acid	ND	µg/L	10	SW 846 8270
Benzyl alcohol	ND	µg/L	10	SW 846 8270
Phenol	ND	µg/L	10	SW 846 8270
bis(2-chloroethyl)ether	ND	µg/L	10	SW 846 8270
2-Chlorophenol	ND	µg/L	10	SW 846 8270
1,3-Dichlorobenzene	ND	µg/L	10	SW 846 8270
1,4-Dichlorobenzene	ND	µg/L	10	SW 846 8270
1,2-Dichlorobenzene	ND	µg/L	10	SW 846 8270
2-Methylphenol	ND	µg/L	10	SW 846 8270
bis(2-chloroisopropyl)ether	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BLIND DUPLICATE
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-9

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
4-Methylphenol	ND	µg/L	10	SW 846 8270
n-Nitrosodi-n-propylamine	ND	µg/L	10	SW 846 8270
Hexachloroethane	ND	µg/L	10	SW 846 8270
Nitrobenzene	ND	µg/L	10	SW 846 8270
Isophorone	ND	µg/L	10	SW 846 8270
2-Nitrophenol	ND	µg/L	10	SW 846 8270
2,4-Dimethylphenol	ND	µg/L	10	SW 846 8270
bis(2-chloroethoxy)methane	ND	µg/L	10	SW 846 8270
2,4-Dichlorophenol	ND	µg/L	10	SW 846 8270
1,2,4-Trichlorobenzene	ND	µg/L	10	SW 846 8270
Naphthalene	ND	µg/L	10	SW 846 8270
4-Chloroaniline	ND	µg/L	10	SW 846 8270
Hexachlorobutadiene	50	µg/L	10	SW 846 8270
4-Chloro-3-methylphenol	ND	µg/L	10	SW 846 8270
2-Methylnaphthalene	ND	µg/L	10	SW 846 8270
Hexachlorocyclopentadiene	ND	µg/L	10	SW 846 8270
2,4,6-Trichlorophenol	ND	µg/L	10	SW 846 8270
2,4,5-Trichlorophenol	ND	µg/L	10	SW 846 8270
2-Chloronaphthalene	ND	µg/L	10	SW 846 8270
2-Nitroaniline	ND	µg/L	10	SW 846 8270
Dimethyl phthalate	ND	µg/L	10	SW 846 8270
Acenaphthylene	ND	µg/L	10	SW 846 8270
2,6-Dinitrotoluene	ND	µg/L	10	SW 846 8270
3-Nitroaniline	ND	µg/L	10	SW 846 8270
Acenaphthene	ND	µg/L	10	SW 846 8270
2,4-Dinitrophenol	ND	µg/L	10	SW 846 8270
4-Nitrophenol	ND	µg/L	10	SW 846 8270
Dibenzofuran	ND	µg/L	10	SW 846 8270
2,4-Dinitrotoluene	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: BLIND DUPLICATE
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-9

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Diethyl phthalate	ND	µg/L	10	SW 846 8270
4-Chlorophenyl phenyl ether	ND	µg/L	10	SW 846 8270
Fluorene	ND	µg/L	10	SW 846 8270
4-Nitroaniline	ND	µg/L	10	SW 846 8270
4,6-Dinitro-2-methylphenol	ND	µg/L	10	SW 846 8270
n-Nitrosodiphenylamine	ND	µg/L	10	SW 846 8270
4-Bromophenyl phenyl ether	ND	µg/L	10	SW 846 8270
Hexachlorobenzene	ND	µg/L	10	SW 846 8270
Pentachlorophenol	ND	µg/L	10	SW 846 8270
Phenanthrene	ND	µg/L	10	SW 846 8270
Anthracene	ND	µg/L	10	SW 846 8270
Carbazole	ND	µg/L	10	SW 846 8270
di-n-Butylphthalate	ND	µg/L	10	SW 846 8270
Fluoranthene	ND	µg/L	10	SW 846 8270
Pyrene	ND	µg/L	10	SW 846 8270
Butyl benzyl phthalate	ND	µg/L	10	SW 846 8270
3,3'-Dichlorobenzidine	ND	µg/L	10	SW 846 8270
Benzo(a)anthracene	ND	µg/L	10	SW 846 8270
Chrysene	ND	µg/L	10	SW 846 8270
bis(2ethylhexyl)phthalate	ND	µg/L	10	SW 846 8270
di-n-Octylphthalate	ND	µg/L	10	SW 846 8270
Benzo(b)fluoranthene	ND	µg/L	10	SW 846 8270
Benzo(k)fluoranthene	ND	µg/L	10	SW 846 8270
Benzo(a)pyrene	ND	µg/L	10	SW 846 8270
Indeno(1,2,3-cd)pyrene	ND	µg/L	10	SW 846 8270
Dibenzo(a,h)anthracene	ND	µg/L	10	SW 846 8270
Benzo(g,h,i)perylene	ND	µg/L	10	SW 846 8270

CLIENT: Ucar Carbon Company, Incorporated
 SAMPLE ID: TRIP BLANK
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 02/26/99
 SAMPLE TYPE: BAKER WATER

AES CLIENT ID: CTC
 AES SAMPLE ID: 917V-10

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	1.1	mg/L	0.8	EPA 351.3
Total Iron	ND	mg/L	0.060	EPA 200.7
Total Potassium	ND	mg/L	1.8	EPA 200.7
Total Zinc	ND	mg/L	0.016	EPA 200.7
Chloromethane	ND	µg/L	10	SW 846 8260
Vinyl chloride	ND	µg/L	10	SW 846 8260
Bromomethane	ND	µg/L	10	SW 846 8260
Chloroethane	ND	µg/L	10	SW 846 8260
1,1-Dichloroethene	ND	µg/L	10	SW 846 8260
Carbon disulfide	ND	µg/L	20	SW 846 8260
Acetone	ND	µg/L	20	SW 846 8260
Methylene chloride	ND	µg/L	10	SW 846 8260
trans-1,2-Dichloroethene	ND	µg/L	10	SW 846 8260
1,1-Dichloroethane	ND	µg/L	10	SW 846 8260
cis-1,2-Dichloroethene	ND	µg/L	10	SW 846 8260
2-Butanone	ND	µg/L	20	SW 846 8260
Chloroform	ND	µg/L	10	SW 846 8260
1,1,1-Trichloroethane	ND	µg/L	10	SW 846 8260
Carbon tetrachloride	ND	µg/L	10	SW 846 8260
Benzene	ND	µg/L	10	SW 846 8260
1,2-Dichloroethane	ND	µg/L	10	SW 846 8260
Trichloroethene	ND	µg/L	10	SW 846 8260
1,2-Dichloropropane	ND	µg/L	10	SW 846 8260
Bromodichloromethane	ND	µg/L	10	SW 846 8260
cis-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Toluene	ND	µg/L	10	SW 846 8260
4-Methyl-2-pentanone	ND	µg/L	20	SW 846 8260

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: TRIP BLANK
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: BAKER WATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-10

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
trans-1,3-Dichloropropene	ND	µg/L	10	SW 846 8260
Tetrachloroethene	ND	µg/L	10	SW 846 8260
1,1,2-Trichloroethane	ND	µg/L	10	SW 846 8260
Chlorodibromomethane	ND	µg/L	10	SW 846 8260
2-Hexanone	ND	µg/L	20	SW 846 8260
Chlorobenzene	ND	µg/L	10	SW 846 8260
Ethylbenzene	ND	µg/L	10	SW 846 8260
m/p-Xylene	ND	µg/L	10	SW 846 8260
o-Xylene	ND	µg/L	10	SW 846 8260
Styrene	ND	µg/L	10	SW 846 8260
Bromoform	ND	µg/L	10	SW 846 8260
1,1,2,2-Tetrachloroethane	ND	µg/L	10	SW 846 8260

CLIENT: Ucar Carbon Company, Incorporated
SAMPLE ID: MW-2
COLLECTION METHOD: GRAB
COLLECTION DATE(S): 02/26/99
SAMPLE TYPE: GROUNDWATER

AES CLIENT ID: CTC
AES SAMPLE ID: 917V-11

PROJECT ID: 917V

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Turbidity *	524.0	NTU	0.1	EPA 180.1
Ammonia	ND	mg/L	0.4	EPA 350.3
Nitrite	ND	mg/L	0.04	HACH 8507
Total Kjeldahl Nitrogen	1.7	mg/L	0.8	EPA 351.3
Total Iron	370 D	mg/L	0.060	EPA 200.7
Soluble Iron	ND	mg/L	0.060	EPA 200.7
Total Potassium	ND	mg/L	1.8	EPA 200.7
Soluble Potassium	ND	mg/L	1.8	EPA 200.7
Total Zinc	5.39	mg/L	0.016	EPA 200.7
Soluble Zinc	0.031	mg/L	0.016	EPA 200.7

* Analysis performed in the field.

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

ACCURACY

Analytical Parameter(s)	Method	Sample ID	Type	Percent Recovery
Ammonia	EPA 350.3	917V-8	Matrix Spike	86
Nitrite	HACH 8507	917V-8	Matrix Spike	96
Total Kjeldahl Nitrogen	EPA 351.3	917V-8	Matrix Spike	86
Total Iron	EPA 200.7	917V-8	Matrix Spike	94
Soluble Iron	EPA 200.7	917V-8	Matrix Spike	100
Total Potassium	EPA 200.7	917V-8	Matrix Spike	98
Soluble Potassium	EPA 200.7	917V-8	Matrix Spike	93
Total Zinc	EPA 200.7	917V-8	Matrix Spike	96
Soluble Zinc	EPA 200.7	917V-8	Matrix Spike	100
Chloromethane	SW 846 8260	917V-8	Matrix Spike	113
Vinyl chloride	SW 846 8260	917V-8	Matrix Spike	115
Bromomethane	SW 846 8260	917V-8	Matrix Spike	112
Chloroethane	SW 846 8260	917V-8	Matrix Spike	108
1,1-Dichloroethene	SW 846 8260	917V-8	Matrix Spike	100
Carbon disulfide	SW 846 8260	917V-8	Matrix Spike	110
Acetone	SW 846 8260	917V-8	Matrix Spike	103
Methylene chloride	SW 846 8260	917V-8	Matrix Spike	112
trans-1,2-Dichloroethene	SW 846 8260	917V-8	Matrix Spike	107
1,1-Dichloroethane	SW 846 8260	917V-8	Matrix Spike	106
cis-1,2-Dichloroethene	SW 846 8260	917V-8	Matrix Spike	93
2-Butanone	SW 846 8260	917V-8	Matrix Spike	88
Chloroform	SW 846 8260	917V-8	Matrix Spike	93
1,1,1-Trichloroethane	SW 846 8260	917V-8	Matrix Spike	90
Carbon tetrachloride	SW 846 8260	917V-8	Matrix Spike	86
Benzene	SW 846 8260	917V-8	Matrix Spike	109
1,2-Dichloroethane	SW 846 8260	917V-8	Matrix Spike	96
Trichloroethene	SW 846 8260	917V-8	Matrix Spike	107
1,2-Dichloropropane	SW 846 8260	917V-8	Matrix Spike	112
Bromodichloromethane	SW 846 8260	917V-8	Matrix Spike	97

ADVANCED ENVIRONMENTAL SERVICES, INC.
QUALITY CONTROL REPORT

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CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

ACCURACY

Analytical Parameter(s)	Method	Sample ID	Type	Percent Recovery
cis-1,3-Dichloropropene	SW 846 826C	917V-8	Matrix Spike	107
Toluene	SW 846 8260	917V-8	Matrix Spike	111
4-Methyl-2-pentanone	SW 846 8260	917V-8	Matrix Spike	93
trans-1,3-Dichloropropene	SW 846 8260	917V-8	Matrix Spike	89
Tetrachloroethene	SW 846 8260	917V-8	Matrix Spike	91
1,1,2-Trichloroethane	SW 846 8260	917V-8	Matrix Spike	102
Chlorodibromomethane	SW 846 8260	917V-8	Matrix Spike	90
2-Hexanone	SW 846 8260	917V-8	Matrix Spike	89
Chlorobenzene	SW 846 8260	917V-8	Matrix Spike	107
Ethylbenzene	SW 846 8260	917V-8	Matrix Spike	106
m/p-Xylene	SW 846 8260	917V-8	Matrix Spike	100
o-Xylene	SW 846 8260	917V-8	Matrix Spike	100
Styrene	SW 846 8260	917V-8	Matrix Spike	110
Bromoform	SW 846 8260	917V-8	Matrix Spike	82
1,1,2,2-Tetrachloroethane	SW 846 8260	917V-8	Matrix Spike	114
Aniline	SW 846 8270	917V-8	Matrix Spike	124
Benzoic acid	SW 846 8270	917V-8	Matrix Spike	4
Benzyl alcohol	SW 846 8270	917V-8	Matrix Spike	96
Phenol	SW 846 8270	917V-8	Matrix Spike	53
bis(2-chloroethyl)ether	SW 846 8270	917V-8	Matrix Spike	102
2-Chlorophenol	SW 846 8270	917V-8	Matrix Spike	92
1,3-Dichlorobenzene	SW 846 8270	917V-8	Matrix Spike	68
1,4-Dichlorobenzene	SW 846 8270	917V-8	Matrix Spike	68
1,2-Dichlorobenzene	SW 846 8270	917V-8	Matrix Spike	76
2-Methylphenol	SW 846 8270	917V-8	Matrix Spike	74
bis(2-chloroisopropyl)ether	SW 846 8270	917V-8	Matrix Spike	93
4-Methylphenol	SW 846 8270	917V-8	Matrix Spike	62
n-Nitrosodi-n-propylamine	SW 846 8270	917V-8	Matrix Spike	150
Hexachloroethane	SW 846 8270	917V-8	Matrix Spike	71

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

ACCURACY

Analytical Parameter(s)	Method	Sample ID	Type	Percent Recovery
Nitrobenzene	SW 846 8270	917V-8	Matrix Spike	107
Isophorone	SW 846 8270	917V-8	Matrix Spike	110
2-Nitrophenol	SW 846 8270	917V-8	Matrix Spike	106
2,4-Dimethylphenol	SW 846 8270	917V-8	Matrix Spike	100
bis(2-chloroethoxy)methane	SW 846 8270	917V-8	Matrix Spike	110
2,4-Dichlorophenol	SW 846 8270	917V-8	Matrix Spike	92
1,2,4-Trichlorobenzene	SW 846 8270	917V-8	Matrix Spike	85
Naphthalene	SW 846 8270	917V-8	Matrix Spike	86
4-Chloroaniline	SW 846 8270	917V-8	Matrix Spike	85
Hexachlorobutadiene	SW 846 8270	917V-8	Matrix Spike	69
4-Chloro-3-methylphenol	SW 846 8270	917V-8	Matrix Spike	91
2-Methylnaphthalene	SW 846 8270	917V-8	Matrix Spike	74
Hexachlorocyclopentadiene	SW 846 8270	917V-8	Matrix Spike	64
2,4,6-Trichlorophenol	SW 846 8270	917V-8	Matrix Spike	91
2,4,5-Trichlorophenol	SW 846 8270	917V-8	Matrix Spike	69
2-Chloronaphthalene	SW 846 8270	917V-8	Matrix Spike	97
2-Nitroaniline	SW 846 8270	917V-8	Matrix Spike	104
Dimethyl phthalate	SW 846 8270	917V-8	Matrix Spike	95
Acenaphthylene	SW 846 8270	917V-8	Matrix Spike	93
2,6-Dinitrotoluene	SW 846 8270	917V-8	Matrix Spike	107
3-Nitroaniline	SW 846 8270	917V-8	Matrix Spike	110
Acenaphthene	SW 846 8270	917V-8	Matrix Spike	92
2,4-Dinitrophenol	SW 846 8270	917V-8	Matrix Spike	66
4-Nitrophenol	SW 846 8270	917V-8	Matrix Spike	24
Dibenzofuran	SW 846 8270	917V-8	Matrix Spike	87
2,4-Dinitrotoluene	SW 846 8270	917V-8	Matrix Spike	109
Diethyl phthalate	SW 846 8270	917V-8	Matrix Spike	89
4-Chlorophenyl phenyl ether	SW 846 8270	917V-8	Matrix Spike	84
Fluorene	SW 846 8270	917V-8	Matrix Spike	95

ADVANCED ENVIRONMENTAL SERVICES, INC.
QUALITY CONTROL REPORT

PAGE 4

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

ACCURACY

Analytical Parameter(s)	Method	Sample ID	Type	Percent Recovery
4-Nitroaniline	SW 846 8270	917V-8	Matrix Spike	107
4,6-Dinitro-2-methylphenol	SW 846 8270	917V-8	Matrix Spike	92
n-Nitrosodiphenylamine	SW 846 8270	917V-8	Matrix Spike	68
4-Bromophenyl phenyl ether	SW 846 8270	917V-8	Matrix Spike	88
Hexachlorobenzene	SW 846 8270	917V-8	Matrix Spike	92
Pentachlorophenol	SW 846 8270	917V-8	Matrix Spike	52
Phenanthrene	SW 846 8270	917V-8	Matrix Spike	84
Anthracene	SW 846 8270	917V-8	Matrix Spike	89
Carbazole	SW 846 8270	917V-8	Matrix Spike	104
di-n-Butylphthalate	SW 846 8270	917V-8	Matrix Spike	78
Fluoranthene	SW 846 8270	917V-8	Matrix Spike	84
Pyrene	SW 846 8270	917V-8	Matrix Spike	85
Butyl benzyl phthalate	SW 846 8270	917V-8	Matrix Spike	106
3,3'-Dichlorobenzidine	SW 846 8270	917V-8	Matrix Spike	39
Benzo(a)anthracene	SW 846 8270	917V-8	Matrix Spike	86
Chrysene	SW 846 8270	917V-8	Matrix Spike	57
bis(2ethylhexyl)phthalate	SW 846 8270	917V-8	Matrix Spike	65
di-n-Octylphthalate	SW 846 8270	917V-8	Matrix Spike	50
Benzo(b)fluoranthene	SW 846 8270	917V-8	Matrix Spike	43
Benzo(k)fluoranthene	SW 846 8270	917V-8	Matrix Spike	36
Benzo(a)pyrene	SW 846 8270	917V-8	Matrix Spike	30
Indeno(1,2,3-cd)pyrene	SW 846 8270	917V-8	Matrix Spike	60
Dibenzo(a,h)anthracene	SW 846 8270	917V-8	Matrix Spike	61
Benzo(g,h,i)perylene	SW 846 8270	917V-8	Matrix Spike	64

ADVANCED ENVIRONMENTAL SERVICES, INC.
QUALITY CONTROL REPORT

PAGE 1

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

PRECISION

Analytical Parameter(s)	Method	Sample ID	Type	Relative % Difference
Ammonia	EPA 350.3	917V-8	Duplicate	11
Nitrite	HACH 8507	917V-8	Duplicate	NA
Total Kjeldahl Nitrogen	EPA 351.3	917V-8	Duplicate	8
Total Iron	EPA 200.7	917V-8	Duplicate	0
Soluble Iron	EPA 200.7	917V-8	Duplicate	0.2
Total Potassium	EPA 200.7	917V-8	Duplicate	NA
Soluble Potassium	EPA 200.7	917V-8	Duplicate	NA
Total Zinc	EPA 200.7	917V-8	Duplicate	7
Soluble Zinc	EPA 200.7	917V-8	Duplicate	9
Chloromethane	SW 846 8260	917V-8	Duplicate	NA
Vinyl chloride	SW 846 8260	917V-8	Duplicate	NA
Bromomethane	SW 846 8260	917V-8	Duplicate	NA
Chloroethane	SW 846 8260	917V-8	Duplicate	NA
1,1-Dichloroethene	SW 846 8260	917V-8	Duplicate	NA
Carbon disulfide	SW 846 8260	917V-8	Duplicate	NA
Acetone	SW 846 8260	917V-8	Duplicate	NA
Methylene chloride	SW 846 8260	917V-8	Duplicate	NA
trans-1,2-Dichloroethene	SW 846 8260	917V-8	Duplicate	NA
1,1-Dichloroethane	SW 846 8260	917V-8	Duplicate	NA
cis-1,2-Dichloroethene	SW 846 8260	917V-8	Duplicate	NA
2-Butanone	SW 846 8260	917V-8	Duplicate	NA
Chloroform	SW 846 8260	917V-8	Duplicate	NA
1,1,1-Trichloroethane	SW 846 8260	917V-8	Duplicate	NA
Carbon tetrachloride	SW 846 8260	917V-8	Duplicate	NA
Benzene	SW 846 8260	917V-8	Duplicate	NA
1,2-Dichloroethane	SW 846 8260	917V-8	Duplicate	NA
Trichloroethene	SW 846 8260	917V-8	Duplicate	NA
1,2-Dichloropropane	SW 846 8260	917V-8	Duplicate	NA

NA = NOT AVAILABLE - ORIGINAL AND/OR DUPLICATE RESULTS ARE BELOW REPORTED LIMITS

ADVANCED ENVIRONMENTAL SERVICES, INC.
QUALITY CONTROL REPORT
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PAGE 2

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

PRECISION

Analytical Parameter(s)	Method	Sample ID	Type	Relative % Difference
Bromodichloromethane	SW 846 8260	917V-8	Duplicate	NA
cis-1,3-Dichloropropene	SW 846 8260	917V-8	Duplicate	NA
Toluene	SW 846 8260	917V-8	Duplicate	NA
4-Methyl-2-pentanone	SW 846 8260	917V-8	Duplicate	NA
trans-1,3-Dichloropropene	SW 846 8260	917V-8	Duplicate	NA
Tetrachloroethene	SW 846 8260	917V-8	Duplicate	NA
1,1,2-Trichloroethane	SW 846 8260	917V-8	Duplicate	NA
Chlorodibromomethane	SW 846 8260	917V-8	Duplicate	NA
2-Hexanone	SW 846 8260	917V-8	Duplicate	NA
Chlorobenzene	SW 846 8260	917V-8	Duplicate	NA
Ethylbenzene	SW 846 8260	917V-8	Duplicate	NA
m/p-Xylene	SW 846 8260	917V-8	Duplicate	NA
o-Xylene	SW 846 8260	917V-8	Duplicate	NA
Styrene	SW 846 8260	917V-8	Duplicate	NA
Bromoform	SW 846 8260	917V-8	Duplicate	NA
1,1,2,2-Tetrachloroethane	SW 846 8260	917V-8	Duplicate	NA
Aniline	SW 846 8270	917V-8	Duplicate	NA
Benzoic acid	SW 846 8270	917V-8	Duplicate	NA
Benzyl alcohol	SW 846 8270	917V-8	Duplicate	NA
Phenol	SW 846 8270	917V-8	Duplicate	NA
bis(2-chloroethyl)ether	SW 846 8270	917V-8	Duplicate	NA
2-Chlorophenol	SW 846 8270	917V-8	Duplicate	NA
1,3-Dichlorobenzene	SW 846 8270	917V-8	Duplicate	NA
1,4-Dichlorobenzene	SW 846 8270	917V-8	Duplicate	NA
1,2-Dichlorobenzene	SW 846 8270	917V-8	Duplicate	NA
2-Methylphenol	SW 846 8270	917V-8	Duplicate	NA
bis(2-chloroisopropyl)ether	SW 846 8270	917V-8	Duplicate	NA
4-Methylphenol	SW 846 8270	917V-8	Duplicate	NA

NA = NOT AVAILABLE - ORIGINAL AND/OR DUPLICATE RESULTS ARE BELOW REPORTED LIMITS

ADVANCED ENVIRONMENTAL SERVICES, INC.
QUALITY CONTROL REPORT

PAGE 3

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

PRECISION

Analytical Parameter(s)	Method	Sample ID	Type	Relative % Difference
n-Nitrosodi-n-propylamine	SW 846 8270	917V-8	Duplicate	NA
Hexachloroethane	SW 846 8270	917V-8	Duplicate	NA
Nitrobenzene	SW 846 8270	917V-8	Duplicate	NA
Isophorone	SW 846 8270	917V-8	Duplicate	NA
2-Nitrophenol	SW 846 8270	917V-8	Duplicate	NA
2,4-Dimethylphenol	SW 846 8270	917V-8	Duplicate	NA
bis(2-chloroethoxy)methane	SW 846 8270	917V-8	Duplicate	NA
2,4-Dichlorophenol	SW 846 8270	917V-8	Duplicate	NA
1,2,4-Trichlorobenzene	SW 846 8270	917V-8	Duplicate	NA
Naphthalene	SW 846 8270	917V-8	Duplicate	NA
4-Chloroaniline	SW 846 8270	917V-8	Duplicate	NA
Hexachlorobutadiene	SW 846 8270	917V-8	Duplicate	NA
4-Chloro-3-methylphenol	SW 846 8270	917V-8	Duplicate	NA
2-Methylnaphthalene	SW 846 8270	917V-8	Duplicate	NA
Hexachlorocyclopentadiene	SW 846 8270	917V-8	Duplicate	NA
2,4,6-Trichlorophenol	SW 846 8270	917V-8	Duplicate	NA
2,4,5-Trichlorophenol	SW 846 8270	917V-8	Duplicate	NA
2-Chloronaphthalene	SW 846 8270	917V-8	Duplicate	NA
2-Nitroaniline	SW 846 8270	917V-8	Duplicate	NA
Dimethyl phthalate	SW 846 8270	917V-8	Duplicate	NA
Acenaphthylene	SW 846 8270	917V-8	Duplicate	NA
2,6-Dinitrotoluene	SW 846 8270	917V-8	Duplicate	NA
3-Nitroaniline	SW 846 8270	917V-8	Duplicate	NA
Acenaphthene	SW 846 8270	917V-8	Duplicate	NA
2,4-Dinitrophenol	SW 846 8270	917V-8	Duplicate	NA
4-Nitrophenol	SW 846 8270	917V-8	Duplicate	NA
Dibenzofuran	SW 846 8270	917V-8	Duplicate	NA
2,4-Dinitrotoluene	SW 846 8270	917V-8	Duplicate	NA

NA = NOT AVAILABLE - ORIGINAL AND/OR DUPLICATE RESULTS ARE BELOW REPORTED LIMITS

CLIENT: Ucar Carbon Company, Incorporated

AES CLIENT ID: CTC
PROJECT ID: 917V

PRECISION

Analytical Parameter(s)	Method	Sample ID	Type	Relative % Difference
Diethyl phthalate	SW 846 8270	917V-8	Duplicate	NA
4-Chlorophenyl phenyl ether	SW 846 8270	917V-8	Duplicate	NA
Fluorene	SW 846 8270	917V-8	Duplicate	NA
4-Nitroaniline	SW 846 8270	917V-8	Duplicate	NA
4,6-Dinitro-2-methylphenol	SW 846 8270	917V-8	Duplicate	NA
n-Nitrosodiphenylamine	SW 846 8270	917V-8	Duplicate	NA
4-Bromophenyl phenyl ether	SW 846 8270	917V-8	Duplicate	NA
Hexachlorobenzene	SW 846 8270	917V-8	Duplicate	NA
Pentachlorophenol	SW 846 8270	917V-8	Duplicate	NA
Phenanthrene	SW 846 8270	917V-8	Duplicate	NA
Anthracene	SW 846 8270	917V-8	Duplicate	NA
Carbazole	SW 846 8270	917V-8	Duplicate	NA
di-n-Butylphthalate	SW 846 8270	917V-8	Duplicate	NA
Fluoranthene	SW 846 8270	917V-8	Duplicate	NA
Pyrene	SW 846 8270	917V-8	Duplicate	NA
Butyl benzyl phthalate	SW 846 8270	917V-8	Duplicate	NA
3,3'-Dichlorobenzidine	SW 846 8270	917V-8	Duplicate	NA
Benzo(a)anthracene	SW 846 8270	917V-8	Duplicate	NA
Chrysene	SW 846 8270	917V-8	Duplicate	NA
bis(2ethylhexyl)phthalate	SW 846 8270	917V-8	Duplicate	NA
di-n-Octylphthalate	SW 846 8270	917V-8	Duplicate	NA
Benzo(b)fluoranthene	SW 846 8270	917V-8	Duplicate	NA
Benzo(k)fluoranthene	SW 846 8270	917V-8	Duplicate	NA
Benzo(a)pyrene	SW 846 8270	917V-8	Duplicate	NA
Indeno(1,2,3-cd)pyrene	SW 846 8270	917V-8	Duplicate	NA
Dibenzo(a,h)anthracene	SW 846 8270	917V-8	Duplicate	NA
Benzo(g,h,i)perylene	SW 846 8270	917V-8	Duplicate	NA

NA = NOT AVAILABLE - ORIGINAL AND/OR DUPLICATE RESULTS ARE BELOW REPORTED LIMITS

Advanced Environmental Services, Inc.
Sample Traceability Report

Project Identification CTC 917V

Sample #	Sample Collection	Group #	Run #	Prep Method	Prep Date	Analyst	Analytical Methodology	Analysis Date	Analyst
917V 1-11	2/26/99	—	—	9.3	3/11/99	RP	200.7	3/12/99	RP
917V 1-9411	2/26/99	—	—	—	—	—	200.7	3/9/99	RP

Please note. Areas marked by a dash indicate that no sample preparation is required under the applied methodology

Advanced Environmental Services, Inc.
Sample Traceability Report

Project Identification CTC 917V

Sample #	Sample Collection	Group #	Run #	Prep Method	Prep Date	Analyst	Analytical Methodology	Analysis Date	Analyst
917V 1-11	2/26/99	2120	144	—	—	—	8507	2/26/99	ur
917V-1,2	2/26/99	2027	151	351.2	3/4/99	DB	351.2	3/5/99	DB
917V-3-6	2/26/99	2027	152	351.2	3/9/99	DB	351.2	3/10/99	DB
917V-1-11	2/26/99	2005	168	—	—	—	350.1	3/11/99	DB
917V-7-11	2/26/99	2027	153	351.2	3/12/99	DB	357.2	3/12/99	DB

Please note. Areas marked by a dash indicate that no sample preparation is required under the applied methodology

Advanced Environmental Services, Inc.
Sample Traceability Report

Project Identification

CTC 917V

Sample #	Sample Collection	Group #	Run #	Prep Method	Prep Date	Analyst	Analytical Methodology	Analysis Date	Analyst
917V-6	2/26/99	-	-	3510/8270	3/3/99	BA	3/3/99	8270	BA
917V-8	2/26/99	-	-	3510/8270	3/3/99	BA	8270	3/3/99	BA
917V-9	2/26/99	-	-	3510/8270	3/3/99	BA	8270	3/3/99	BA
917V-10	2/26/99	-	-	3510/8270	3/3/99	BA	8270	3/3/99	BA
917V -6,8,9,10	2/26/99	-	-	-	-	-	8260	3/5/99	DJ

Please note: Areas marked by a dash indicate that no sample preparation is required under the applied methodology.

CHAIN C. CUSTODY RECORD



ENVIRONMENTAL SERVICES, INC.
2186 Liberty Drive
Niagara Falls, NY 14304

(716) 283-3120
(800) 791-3120
Fax (716) 283-4727

CUSTOMER NAME: UCAR CARBON

PROJECT NAME: QUARTERLY LANDFILL MONITORING

SAMPLER'S SIGNATURE: John Truzy

CONTAINER CLASSIFICATION									
UNPRESERVED	HNO ₃	H ₂ SO ₄	HCL	NaOH	VIAL (PRES.)	VIAL (UNPRES.)	OTHER	TOTAL	

PROJECT I.D.#: 917V

JOB CODE: CTC

DATE	TIME	SAMPLE IDENTIFICATION	GRAB	COMP	SAMPLE TYPE	UNPRESERVED	HNO ₃	H ₂ SO ₄	HCL	NaOH	VIAL (PRES.)	VIAL (UNPRES.)	OTHER	TOTAL	PARAMETERS / REMARKS
2/26/99	10.10AM	BW6 (+ QC)	✓		WATER	5	5	3			6			19	AMMO, TKN, SOL & TOT METALS
	11.30AM	BW4	✓		↓	2	2	1			2			7	NITRITE, TCLV,
	-	BLIND DUPLICATE	✓		↓	2	2	1			2			7	TCLSV
	2.00pm	TRIP BLANK	-	-	DI WATER	3	1	1			2			7	TRIP BLANK - SAME BUT NO METALS
	11.50am	MW1	✓		WATER	1	2	1						4	AMM TKN SOL & TOTAL METALS NITRITE
	11.20AM	MW3	✓		↓	1	2	1						4	
	12.00pm	BW1	✓		↓	1	2	1						4	
	10.40am	BW2	✓		↓	1	2	1						4	
	10.58AM	BW3	✓		↓	1	2	1						4	
	11.10AM	BW5	✓		↓	1	2	1						4	
✓	10.17AM	MW2	✓		↓	1	2	1						4	

TOTAL NUMBER OF CONTAINERS 68

NOTE: Please indicate required analysis, and whom we may contact with questions, if you have not yet done so through your customer service representative.

1. RELINQUISHED BY: <u>John Truzy</u>	DATE <u>2/26/99</u>	TIME <u>3.25pm</u>	RECEIVED BY: <u>[Signature]</u>
2. RELINQUISHED BY: _____	DATE _____	TIME _____	RECEIVED BY: _____
3. RELINQUISHED BY: _____	DATE _____	TIME _____	RECEIVED BY: _____