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QUARTERLY REPORT

ST. CHARLES COUNTY WELL FIELD

MONITORING PROJECT

GRANT NO. DE-FG05-89OR21864

Prepared by: Stanley Remington
April May and June 1997

MONTHLY REPORT

APRIL 1997

BY

Stanley Remington

Consulting Hydrologist

1. CHEMICAL ANALYSES

The results from testing wells PW-8 and PW-9 were received from the American Technical and Analytical Services (ATAS) and are appended. These samples were taken on March 20, 1997. I had originally intended to sample PW-8 and RMW-2 but recent heavy rains prevented us from reaching well RMW-2. This sampling was the quarterly sampling with the Department of Energy. There are additional chemical parameters tested for at this time than is normally done. There were no unusual results. All of the test results showed that all of the chemical constituents were well within the NPDES limits.

The Quarterly Site and Quarry Water Treatment Plant Effluent Data Summary - First Quarter Report is appended. This report was written by the Department of Energy and summarized the results of the water analyses of the treated water batches from both the Quarry and Site treatment plants. All of the treatment test results show the effectiveness of the treatment process.

Well PW-2 was sampled on April 17, 1997. The results have not yet been received.

The results of the gross alpha and gross beta tests performed by the St. Louis County Department of Health is appended. Both the raw and finished (treated) water at the St. Charles County Water Treatment Plant were tested. The results of both tests show a normal historical range of readings.

II. FUTURE PLANS

I intend to sample well PW-5 sometime during mid May. If any treated samples from either the Quarry or Chemical Plant Site are ready for analyses I will also do these.

III. MISCELLANEOUS

Chemical tests were completed with the Department of Energy and St. Louis County on water treatment batch number 99. This was done on April 24, 1997. The results have not yet been received.

Appended is the March 1997 Water Sales Report by the St. Charles County Water Department.

The results of the "Sample Analyses for Public Water Supplies" is appended. This sampling and testing was done by the Missouri Department of Natural Resources. The rests were carried out at the St. Charles County Booster Station and the samples were collected on February 8, 1996. They show the overall quality of the County's drinking water is good.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.
875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

April 10, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #18444.01-#18444.02
Weldon Spring

Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on March 20, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(281,

DATE : 04-08-97

SAMPLE MATRIX : WATER
ATAS # : 18444.01
DATE SUBMITTED: 03-20-97
DATE ANALYZED : 03-25-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-8

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	6.4	ND
2,6 DNT	7.0	ND
2,4 DNT	9.4	ND
2,4,6 TNT	5.7	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(281)
DATE : 04-08-97

SAMPLE MATRIX : WATER
ATAS # : 18444.02
DATE SUBMITTED: 03-20-97
DATE ANALYZED : 03-25-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	6.4	ND
2,6 DNT	7.0	ND
2,4 DNT	9.4	ND
2,4,6 TNT	5.7	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(281,

DATE : 04-08-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 03-20-97
DATE ANALYZED : 03-25-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	6.4	ND
2,6 DNT	7.0	ND
2,4 DNT	9.4	ND
2,4,6 TNT	5.7	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(281)

DATE : 04-08-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 03-20-97
DATE ANALYZED : 03-24-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
HMX	86 %
RDX	104 %
1,3,5-TNB	112 %
TETRYL	93 %
1,3-DNB	113 %
TNT	108 %
NITROBENZENE	116 %
2,6 DNT	102 %
2,4 DNT	109 %
o-NITROTOLUENE	106 %
p-NITROTOLUENE	105 %
m-NITROTOLUENE	103 %

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CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(281)
DATE : 04-08-97

SAMPLE MATRIX : WATER
ATAS # : MATRIX SPIKE/MATRIX SPIKE DUPLICATE
DATE SUBMITTED: 03-20-97
DATE ANALYZED : 03-25-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : MATRIX SPIKE/MATRIX SPIKE DUPLICATE

COMPOUND	MS PERCENT RECOVERY	MSD PERCENT RECOVERY	RPD
HMX	84 %	85 %	1 %
RDX	103 %	105 %	1 %
1,3,5-TNB	112 %	113 %	1 %
TETRYL	103 %	99 %	4 %
1,3-DNB	112 %	114 %	2 %
TNT	108 %	109 %	1 %
NITROBENZENE	*114 %	*116 %	2 %
2,6 DNT	103 %	105 %	3 %
2,4 DNT	103 %	109 %	4 %
o-NITROTOLUENE	106 %	107 %	2 %
p-NITROTOLUENE	105 %	107 %	2 %
m-NITROTOLUENE	103 %	104 %	1 %

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 · FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401RA(281)

DATE : 04-08-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #18444
DATE SUBMITTED: 03-20-97
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-8	18444.01	GROSS ALPHA	3 +/- 4*
PW-8	18444.01	GROSS BETA	5 +/- 5*
PW-8	18444.01	TOTAL URANIUM (mg/L)	<0.005
PW-9	18444.02	GROSS ALPHA	2 +/- 3*
PW-9	18444.02	GROSS BETA	7 +/- 5*
PW-9	18444.02	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

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CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(
DATE : 04-10-97

SAMPLE MATRIX : WATER
ATAS # : 18444.01
DATE SUBMITTED: 03-20-97
PROJECT : WELDON SPRING
SAMPLE ID : PW-8

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE-SPEC.	1.05	mg/L	ND	03-21-97	SM 418B
			METALS		
ARSENIC	10.0	ug/L	ND	03-28-97	SW 6010
BERYLLIUM	2.0	ug/L	ND	03-28-97	SW 6010
COPPER	7.0	ug/L	ND	03-28-97	SW 6010
IRON	100	ug/L	7090	03-28-97	SW 6010
LEAD	3.0	ug/L	ND	03-28-97	SW 6010
MANGANESE	3.0	ug/L	957	03-28-97	SW 6010
MERCURY	0.1	ug/L	ND	04-09-97	SW 7470
ZINC	20.0	ug/L	ND	03-28-97	SW 6010

ug/L = PARTS PER BILLION(PPB)
ND = NOT DETECTED ABOVE REPORTING LIMIT

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CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(281)
DATE : 04-10-97

SAMPLE MATRIX : WATER
ATAS # : 18444.02
DATE SUBMITTED: 03-20-97
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYSED	METHOD REFERENCE
			INORGANICS		
NITRATE-SPEC.	1.05	mg/L	ND	03-21-97	SM 418B
			METALS		
ARSENIC	10.0	ug/L	ND	03-28-97	SW 6010
BERYLLIUM	2.0	ug/L	ND	03-28-97	SW 6010
COPPER	7.0	ug/L	ND	03-28-97	SW 6010
IRON	100	ug/L	6190	03-28-97	SW 6010
LEAD	3.0	ug/L	ND	03-28-97	SW 6010
MANGANESE	3.0	ug/L	388	03-28-97	SW 6010
MERCURY	0.1	ug/L	ND	04-09-97	SW 7470
ZINC	20.0	ug/L	ND	03-28-97	SW 6010

ug/L = PARTS PER BILLION(PPB)
ND = NOT DETECTED ABOVE REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1844401EX(:

DATE : 04-10-97

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	03-28-97	ARSENIC	<10.0	ug/L
METHOD BLANK	03-28-97	BERYLLIUM	<2.0	ug/L
METHOD BLANK	03-28-97	COPPER	<7.0	ug/L
METHOD BLANK	03-28-97	IRON	<100.0	ug/L
METHOD BLANK	03-28-97	LEAD	<3.0	ug/L
METHOD BLANK	03-28-97	MANGANESE	<3.0	ug/L
METHOD BLANK	04-09-97	MERCURY	<0.1	ug/L
METHOD BLANK	03-28-97	ZINC	<20.0	ug/L
METHOD BLANK	03-21-97	NITRATE	<1.0	ug/L
CONTROL SPIKE	03-28-97	ARSENIC	110 %	RECOVERY
CONTROL SPIKE	03-28-97	BERYLLIUM	107 %	RECOVERY
CONTROL SPIKE	03-28-97	COPPER	99 %	RECOVERY
CONTROL SPIKE	03-28-97	IRON	101 %	RECOVERY
CONTROL SPIKE	03-28-97	LEAD	101 %	RECOVERY
CONTROL SPIKE	03-28-97	MANGANESE	101 %	RECOVERY
CONTROL SPIKE	04-09-97	MERCURY	103 %	RECOVERY
CONTROL SPIKE	03-28-97	ZINC	102 %	RECOVERY
CONTROL SPIKE	03-21-97	NITRATE	102 %	RECOVERY

ATAS

AMERICAN TECHNICAL & ANALYTICAL SERVICES, Inc.

675 Fee Fee Road · Maryland Heights, MO 63043-3211 · Office (314) 434-4570 · FAX (314) 434-0080

PAGE ___ OF ___

CHAIN OF CUSTODY RECORD

ATAS Client Name: STAN REMINGTON

Project Name: WELDON SPRING

Project #:

Form Completed By:

PO #:

Sample ID	Sample Date	Sample Time	Sample Matrix	Grab	Comp	No. of Containers	Total U	Gross α	Gross β	Nitrate	HNO3	Metals	TSS	Preservative: Ice / Chemical (see below)	Remarks	Lab Use Only
PW-8	3/20/97	0900		X			X	X	X	X	X	X				18444.01
PW-9	"	0920		X			X	X	X	X	X	X				02
WATER TREAT PLANT	"	0800			X								X			

Initials: WD

Date: 3-20-97

Location/Temp: 15-BA-A2-10

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
Printed Name: STAN REMINGTON	Printed Name: WALTER DODD	Printed Name:	Printed Name:
Firm: WELDON SPRING	Firm: ATAS	Firm:	Firm:
Date/Time: 3/20/97 1025	Date/Time: 3/20/97 1025	Date/Time:	Date/Time:

SEND RESULTS TO (Name & Company): _____

Turnaround Requirements

___ 1 to 2 working days

___ 3 working days

___ 5 working days

___ 10 working days

___ 15 working days

Preservative codes

A - none

B - HNO_3

C - H_2SO_4

D - NaOH

E - HCl

Department of Energy
Oak Ridge Operations
Weldon Spring Site
Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63304

April 17, 1997

DISTRIBUTION:

QUARTERLY SITE AND QUARRY WATER TREATMENT PLANT EFFLUENT DATA SUMMARY - FIRST QUARTER 1997

Enclosed please find the subject effluent data summary sheets for the batches of water treated and discharged during the first quarter of 1997. Four batches (S#94 through S#97) and one batch (Q#48) have been treated and discharged from the site and quarry water treatment plants, respectively.

If you have any questions, please call me or Bruce Ballew at (314)441-8978.

Sincerely,

Stephen H. McCracken
Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

cc w/o enclosure:
Martha Windsor, MDNR

Larry Erickson
Division of Environmental Quality
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dan Wall
Project Manager
Federal Facilities/Special Emphasis Branch
Superfund Division
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, KS 66101

Stanley Remington
Consulting Hydrologist
956 Broadmoor Lane
St. Charles, MO 63301

St. Louis County Health Department
111 South Meramec
2nd Floor
Clayton, MO 63105

Terry Gloriod
Vice President for Production
St. Louis County Water Department
535 North New Ballas
St. Louis, MO 63141

Dave Visintainer
City of St. Louis Water Division
Chain of Rocks Plant
10450 Riverview Drive
St. Loius, MO 63137

SUMMARY OF QWTP (BATCH 048) ANALYTICAL RESULTS

3/24/97 1100

FROM ALL AGENCIES RECEIVING SAMPLES ON 3/13/97

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<10.0 mg/l		NA	NA	NA
TSS	50 / 30	<5.56 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l		NA	NA	
CHROMIUM	0.1	<0.00095 mg/l		NA	NA	
COPPER ***	1	0.00274 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.00716 mg/l		NA	NA	
MERCURY	0.004	0.00025 mg/l		NA	NA	
SELENIUM	0.02	<0.001 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.00147 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.0166 µg/l		NA	NA	
FLUORIDE	4.0	0.179 mg/l		NA	NA	
NITRATE+NITRITE AS	*	0.09 mg/l		NA	NA	
SULFATE	500	54.9 mg/l		NA	NA	
CHLORIDE	*	62.1 mg/l		NA	NA	
GROSS ALPHA	*	<1.31 pCi/l		NA	NA	<1.0 pCi/l
GROSS BETA	*	7.95 ± 1.71 pCi/l		NA	NA	2.6 ± 1.0 pCi/l
URANIUM, TOTAL	**	0.0839 ±0.00655 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226 ***	*	0.206 ±0.234 pCi/l		NA	NA	NA
RADIUM-228 ***	*	1.50 ± 0.633 pCi/l		NA	NA	NA
THORIUM-230 ***	*	0.108 ±0.0514 pCi/l		NA	NA	NA
THORIUM-232 ***	*	<0.0553 pCi/l		NA	NA	NA
PRIORITY POLLUTANTS		(see below)				
1. SEMI-VOA	*	NA	NA	NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.12 µg/l		NA	NA	NA
4. PESTICIDES	*	NA			NA	
5. METALS / OTHERS	*	****			NA	
pH	6.0 - 9.0 S.U.	7.11	NA	NA	NA	NA

* =MONITORING ONLY, NO PERMIT DISCHARGE LIMITS

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Parameter required once/month. Sampled this batch.

**** Po-210 = 0.631 ± 0.298; Ac-227 = <72.2 pCi/l; Rn 222<37.8 Annual Monitoring Requirement, no limits.

NA = Not analyzed.

= Data received after batch was discharged

SUMMARY OF SWTP (BATCH 094) ANALYTICAL RESULTS

12/26/96 0900

From all parties receiving samples on 12/16/96

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	6.3 mg/l		NA	NA	NA
TSS	50 / 30	< 5 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0015 mg/l		NA	NA	
CHROMIUM	0.1	<0.001 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0015 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	0.0043 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.015 ug/l		NA	NA	
FLUORIDE	4.0	2.1 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	2.22 mg/l		NA	NA	
SULFATE	500	365 mg/l		NA	NA	
CHLORIDE	*	84.2 mg/l		NA	NA	
GROSS ALPHA	*	6.69 ± 3.37 pCi/l		NA	NA	3.0 ±1.3 pCi/l
GROSS BETA	*	14.7 ± 3.96 pCi/l		NA	NA	8.7 ±1.1 pCi/l
URANIUM, TOTAL	**	0.716 ± 0.0161 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226 ***	*	NA***		NA	NA	
RADIUM-228 ***	*	NA***		NA	NA	
THORIUM-230 ***	*	NA***		NA	NA	NA
THORIUM-232 ***	*	NA***		NA	NA	NA
pH (Std. Units)	6 - 9	7.52		NA	NA	
PRIORITY POLLUTANTS		(SEE BELOW)				
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<0.12 ug/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month. Sampled in batch S093.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

SUMMARY OF SWTP (BATCH 095) ANALYTICAL RESULTS

02/20/97 1300

From all parties receiving samples on 02/12/97

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	< 2.0 mg/l		NA	NA	NA
ARSENIC	0.20	<0.002 mg/l		NA	NA	
CHROMIUM	0.40	<0.002 mg/l		NA	NA	
LEAD	0.20	<0.0015 mg/l		NA	NA	
MANGANESE	0.50	0.0034 mg/l		NA	NA	
MERCURY	0.005	<0.0001 mg/l		NA	NA	
SELENIUM	0.05	0.0022 mg/l		NA	NA	
CYANIDE, AMENABLE	0.05	<0.004 mg/l		NA	NA	
2,4-DNT	1.1 ug/l	<0.015 ug/l		NA	NA	
FLUORIDE	12	1.8 mg/l		NA	NA	
NITRATE + NITRITE AS N	100	5.72 mg/l		NA	NA	
SULFATE	1000	415 mg/l		NA	NA	
CHLORIDE	*	152 mg/l		NA	NA	
GROSS ALPHA	*	7.86 ± 2.89 pCi/l		NA	NA	5.6 ± 1.6 pCi/l
GROSS BETA	*	27.8 ± 3.12 pCi/l		NA	NA	19.1 ± 1.3 pCi/l
URANIUM, TOTAL	2.0 mg/l(1360 pCi/l)	1.14 ± 0.03 pCi/l		NA	NA	2.1 ± 0.3 pCi/l
RADIUM-226 ***	*	0.897±0.299 pCi/l***		NA	NA	
RADIUM-228 ***	*	3.11±0.882***		NA	NA	
THORIUM-230 ***	*	0.229±0.192***		NA	NA	NA
THORIUM-232 ***	*	0.0761±0.109 pCi/l***		NA	NA	NA
pH (Std. Units)	6 - 9	7.12		NA	NA	
PRIORITY POLLUTANTS		(SEE BELOW)				
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<1.0 ug/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month. Sampled in batch S093.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

SUMMARY OF SWTP (BATCH 096) ANALYTICAL RESULTS

03/12/97 0830

From all parties receiving samples on 03/06/97

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	2.4 mg/l		NA	NA	NA
ARSENIC	0.20	0.0042 mg/l		NA	NA	
CHROMIUM	0.40	<0.002 mg/l		NA	NA	
LEAD	0.20	<0.0015 mg/l		NA	NA	
MANGANESE	0.50	<0.0015 mg/l		NA	NA	
MERCURY	0.005	<0.0001 mg/l		NA	NA	
SELENIUM	0.05	0.0025 mg/l		NA	NA	
CYANIDE, AMENABLE	0.05	<0.004 mg/l		NA	NA	
2,4-DNT	1.1 ug/l	<0.015 ug/l		NA	NA	
FLUORIDE	12	1.82 mg/l		NA	NA	
NITRATE + NITRITE AS N	100	12.2 mg/l		NA	NA	
SULFATE	1000	457 mg/l		NA	NA	
CHLORIDE	*	97 mg/l		NA	NA	
GROSS ALPHA	*	3.9 ± 3.3 pCi/l		NA	NA	4.7 ± 1.6 pCi/l
GROSS BETA	*	11.6 ± 3.8 pCi/l		NA	NA	15.0 ± 1.2 pCi/l
URANIUM, TOTAL	1360 pCi/l	<0.7 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226 ***	*	0.8 ± 0.6 pCi/l***		NA	NA	
RADIUM-228 ***	*	1.5 ± 0.1 pCi/l***		NA	NA	
THORIUM-230 ***	*	<0.4 pCi/l***		NA	NA	NA
THORIUM-232 ***	*	<0.4 pCi/l ***		NA	NA	NA
pH (Std. Units)	6 - 9	6.93		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<1.0 ug/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA		NA	NA	NA

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

[redacted] = Data received after batch was discharged

SUMMARY OF SWTP (BATCH 097) ANALYTICAL RESULTS

04/01/97 1530

From all parties receiving samples on 03/28/97

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<5 mg/l		NA	NA	NA
TSS	50 / 30	2 mg/l		NA	NA	NA
ARSENIC	0.20	0.0039 mg/l		NA	NA	
CHROMIUM	0.40	<0.0015 mg/l		NA	NA	
LEAD	0.20	<0.0023 mg/l		NA	NA	
MANGANESE	0.50	0.0027 mg/l		NA	NA	
MERCURY	0.005	< 0.0001 mg/l		NA	NA	
SELENIUM	0.05	0.0065 mg/l		NA	NA	
CYANIDE, AMENABLE	0.05	<0.004 mg/l		NA	NA	
2,4-DNT	1.1 ug/l	<0.015 ug/l		NA	NA	
FLUORIDE	12	1.89 mg/l		NA	NA	
NITRATE + NITRITE AS N	100	10.3 mg/l		NA	NA	
SULFATE	1000	399 mg/l		NA	NA	
CHLORIDE	*	75.8 mg/l		NA	NA	± pCi/l
GROSS ALPHA	*	0.990 ± 1.25 pCi/l		NA	NA	± pCi/l
GROSS BETA	*	8.06 ± 1.04 pCi/l		NA	NA	pCi/l
URANIUM, TOTAL	1360 pCi/l	0.499 ± 0.00645pCi/l		NA	NA	
RADIUM-226 ***	*	DUE 4/5/97***		NA	NA	
RADIUM-228 ***	*	DUE 4/5/97 ***		NA	NA	NA
THORIUM-230 ***	*	DUE 4/5/97 ***		NA	NA	NA
THORIUM-232 ***	*	DUE 4/5/97 ***		NA	NA	NA
pH (Std. Units)	6 - 9	8.6				
PRIORITY POLLUTANTS	(SEE BELOW)			NA	NA	NA
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<0.5 ug/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA		NA	NA	NA

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 3/4/97

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 02-01-02-28-97

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: RAW

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) ____

SL277-3

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	1.8 ± 1.1	1.0
Gross Beta	6.5 ± 1.1	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

4/1/97 JH

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 3-4-97

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 02-01 - 02-28-97

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: Finish

X GROSS ALPHA X GROSS BETA _____ RA-226 _____ RA-228

_____ OTHER (Identify) _____

3CT97-3

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	<1.0	1.0
Gross Beta	5.0 ± 1.0	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

3/4/97

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

Mar-97 Water Sales Report

Date of Report **04/02/97**

Water Production		295,527,000
Washwater Used		5,672,000
Delivered to System	**Total——**	**289,855,000**
Mo. American	Booster Station	195,000,000
4132835-007	Francis Howell	49,000
4132850-007	Mo. Hwys & Trans.	0
4133000-004	M. K. Fergusen	404,500
4133040-015	M. K. Fergusen	52,000
4133010-002	M. K. Fergusen	50500
4133020-000	M. K. Fergusen	500
4132855-002	Francis Howell	4,000
4132890-009	M. K. Fergusen	37,000
95018237-000	M. K. Fergusen	18,000
4132851-006	Mo. Hwys & Trans.	0
	Total——	**195,616,000**
Water Dist. #2	24" East Line	0
	24" West Line	75,555,000
	Bypass	0
	Total——	**75,555,000**
Water Dist. #2	New Melle **Total——**	**6,563,000**
National Guard	Bldg S-61	0
Area	Wash Rack	14,000
	Total——	**14,000**
Total Water Sales	**********	**277,748,000**
Unaccounted for	**********	**12,107,000**
(A:\MARWS97.wpd)		

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

Mar-97 Inventory of Chemicals

Date	Invoice #	LIME
2-28	**Balance**	**346030**
3-5	337176	48660
3-6	337501	49280
3-11	338287	50300
3-13	338637	50420
3-18	339630	49160
3-20	339630	49800
3-25	340266	50300
3-27	340715	50040

Date	Invoice #	CL2
2-28	**Balance**	**12018**
3-14	97-469	8000
3-31	97-544	8000

Amount Received	**398040**	**16000**
Total Amount	744070	28018
Amount Used	381649	15900
Balance 3-31	**362421**	**12118**
lbs. Per. 1000 Gallons	1.29	0.0538
Part Per. Million	135	5.54
Avg. Day Usage	12311	512
Year to Date	**1174022**	**48750**

(A:\mar97inv.wpd)

STATE OF MISSOURI

Mel Carnahan, Governor • David A. Shorr, Director

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

ST. CHARLES CO WATER PLANT
1635 SO. HIGHWAY 94
DEFIANCE, MO 63341

Lab Number: 96-A1185

Sample Number: 96-C308

RESULTS OF SAMPLE ANALYSES FOR PUBLIC WATER SUPPLIES

Report Date: March 4, 1996
Date Collected: February 8, 1996
Sample Location: ST. CHARLES COUNTY BOOSTER STATION
PWS Name: ST. CHARLES CO CT-WELDON SPRING

PWS County: ST. CHARLES
PWS ID: MO6079507

Analysis Performed	Results	MCL	Units
Nitrate as N	< 0.05	10.0	mg/L
Nitrate + Nitrite as N	< 0.05	10.0	mg/L

MCL = Maximum Contaminant Level -- = Not Applicable

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency. If you have any questions, please contact Mr. Terry Timmons at 314/751-1188.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

RECYCLED PAPER

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

ST. CHARLES CO. WATER PLANT
1635 SO. HIGHWAY 94
DEFIANCE, MO 63341

Lab Number: 96-A10714

Sample Number: 96-L347

RESULTS OF SAMPLE ANALYSES FOR PUBLIC WATER SUPPLIES

Report Date: January 6, 1997
Date Collected: December 20, 1996
Sample Location: BOOSTER STATION
PWS Name: ST. CHARLES CO. CT-WELDON SPRING

PWS County: ST. CHARLES
PWS ID: MO6079507

Analysis Performed	Results	MCL	Units
VOC Results:			
Dichlorodifluoromethane	< 20.0	--	ug/L
Chloromethane	< 2.5	--	ug/L
Vinyl Chloride	< 0.5	2.0	ug/L
Bromomethane	< 9.0	--	ug/L
Chloroethane	< 2.5	--	ug/L
Trichlorofluoromethane	< 2.5	--	ug/L
1,1-Dichloroethene	< 0.5	7.0	ug/L
Methylene Chloride	< 0.5	5.0	ug/L
Methyl-tert-butyl ether	< 5.0	--	ug/L
trans-1,2-Dichloroethene	< 0.5	100	ug/L
1,1-Dichloroethane	< 1.0	--	ug/L
2,2-Dichloropropane	< 1.0	--	ug/L
cis-1,2-Dichloroethene	< 0.5	70.0	ug/L
Chloroform	24.1	--	ug/L
Bromochloromethane	< 1.0	--	ug/L
1,1,1-Trichloroethane	< 0.5	200	ug/L
1,1-Dichloropropene	< 1.0	--	ug/L
Carbon Tetrachloride	< 0.5	5.0	ug/L
Benzene	< 0.5	5.0	ug/L
1,2-Dichloroethane	< 0.5	5.0	ug/L
Trichloroethene	< 0.5	5.0	ug/L
1,2-Dichloropropane	< 0.5	5.0	ug/L
Bromodichloromethane	13.7	--	ug/L
Dibromomethane	< 1.0	--	ug/L
cis-1,3-Dichloropropane	< 2.0	--	ug/L
Toluene	< 0.5	1000	ug/L
trans-1,3-Dichloropropane	< 1.0	--	ug/L
1,1,2-Trichloroethane	< 0.5	5.0	ug/L

Lab Number: 96-A10714
Sample Number: 96-L347

Analysis Performed	Results	MCL	Units
Tetrachloroethene	< 0.5	5.0	ug/L
1,3-Dichloropropane	< 2.0	--	ug/L
Dibromochloromethane	8.2	--	ug/L
1,2-Dibromoethane	< 2.0	--	ug/L
Chlorobenzene	< 0.5	100	ug/L
Ethylbenzene	< 0.5	700	ug/L
1,1,1,2-Tetrachloroethane	< 1.0	--	ug/L
Total Xylenes	< 0.5	10000	ug/L
Styrene	< 0.5	100	ug/L
Isopropylbenzene	< 2.0	--	ug/L
Bromoform	1.1	--	ug/L
1,1,2,2-Tetrachloroethane	< 1.0	--	ug/L
1,2,3-Trichloropropane	< 1.0	--	ug/l
n-Propylbenzene	< 2.0	--	ug/L
Bromobenzene	< 1.0	--	ug/L
2-Chlorotoluene	< 2.0	--	ug/L
4-Chlorotoluene	< 2.0	--	ug/L
1,3,5-Trimethylbenzene	< 2.0	--	ug/L
tert-Butylbenzene	< 2.0	--	ug/L
1,2,4-Trimethylbenzene	< 1.0	--	ug/L
sec-Butylbenzene	< 2.0	--	ug/L
p-isopropyltoluene	< 2.0	--	ug/L
1,3-Dichlorobenzene	< 1.0	--	ug/L
1,4-Dichlorobenzene	< 0.5	75.0	ug/L
n-Butylbenzene	< 2.0	--	ug/L
1,2-Dichlorobenzene	< 0.5	600	ug/L
1,2-Dibromo-3-Chlorobenz	< 5.0	--	ug/L
1,2,4-Trichlorobenzene	< 0.5	70.0	ug/L
Hexachlorobutadiene	< 1.0	--	ug/L
Naphthalene	< 2.0	--	ug/L
1,2,3-Trichlorobenzene	< 2.0	--	ug/L

MCL = Maximum Contaminant Level -- = Not Applicable

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency. If you have any questions, please contact Mr. Terry Timmons at 573/751-1188.

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

STATE OF MISSOURI

Mel Carnahan, Governor • David A. Shorr, Director

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

ENVIRONMENTAL SERVICES PROGRAM

ST. CHARLES CO. WATER PLANT
1635 SO. HIGHWAY 94
DEFIANCE, MO 63341

Lab Number: 96-A10706

Sample Number: 96-L287

RESULTS OF SAMPLE ANALYSES FOR PUBLIC WATER SUPPLIES

Report Date: March 4, 1997
Date Collected: December 20, 1996
Sample Location: BOOSTER STATION
PWS Name: ST. CHARLES CO. CT-WELDON SPRING

PWS County: ST. CHARLES
PWS ID: MO6079507

Analysis Performed	Results	MCL	SS	Units
Total Dissolved Solids	241	--	500	mg/L
Hardness as CaCO3	130	--	--	mg/L
Fluoride	0.20	4.00	2.00	mg/L
Sulfate	88.8	--	250	mg/L
Chloride	19.1	--	250	mg/L
Cyanide	< 0.100	0.200	--	mg/L
Silver, Dissolved	< 5.00	--	100	ug/L
Aluminum, Dissolved	< 10.0	--	200	ug/L
Arsenic, Dissolved	< 2.0	50.0	--	ug/L
Barium, Dissolved	80.3	2000	--	ug/L
Beryllium, Dissolved	< 1.00	4.00	--	ug/L
Calcium, Dissolved	23.6	--	--	mg/L
Cadmium, Dissolved	< 1.00	5.00	--	ug/L
Chromium, Dissolved	2.05	100	--	ug/L
Copper, Dissolved	3.52	1300	1000	ug/L
Iron, Dissolved	29.4	--	300	ug/L
Mercury, Dissolved	< 0.20	2.00	--	ug/L
Potassium, Dissolved	4.6	--	--	mg/L
Magnesium, Dissolved	17.5	--	--	mg/L
Manganese, Dissolved	< 2.00	--	50.0	ug/L
Sodium, Dissolved	33.5	--	--	mg/L
Nickel, Dissolved	< 3.00	100	--	ug/L
Lead, Dissolved	< 4.0	15.0	--	ug/L
Antimony, Dissolved	< 3.0	6.0	--	ug/L
Selenium, Dissolved	< 2.0	50.0	--	ug/L
Thallium, Dissolved	< 1.00	2.00	--	ug/L
Zinc, Dissolved	< 5.00	--	5000	ug/L

RECYCLED PAPER

Report Date: March 4, 1997

Lab Number: 96-A10706
Sample Number: 96-L287

MCL=Maximum Contaminant Level SS=Secondary Standard --=Not Applicable

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency. If you have any questions, please contact Mr. Terry Timmons at 573/751-118

James H. Long, Director
Environmental Services Program
Division of Environmental Quality

MONTHLY REPORT

MAY 1997

BY

Stanley Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results from the testing of well PW-2 has been received and is appended. This test was done on April 17, 1997. The primary concern for this well are nitroaromatics, listed as explosives. No detections were noted for any of the nitros tested for. Also the radionuclides are all well within normal ranges.

The treated water from the chemical plant site was tested for on April 24, 1997. The results have been received and are appended. Again the results show that the treatment processes are functioning very well. This was batch number 99. The water was discharged into the Missouri River.

Well PW-5 was sampled on May 19, 1997, and was sent for analyses the same day. These results have not yet been received.

II. REPORTS

A report was received from the St. Louis County Department of Health showing the results of their testing for the raw and finished waters of the St. Charles Water Treatment Plant. The dates collected are shown as 3/1/97 to 3/31/97. The report was received on April 23, 1997. St. Louis County tested for gross alpha, gross beta, radium 226 and radium 228. Both the raw and finished waters showed very low quantities of these radionuclides.

The quarterly environmental data summary for the first quarter 1997 was received from the Department of Energy. The DOE concluded that, "All data received and verified during the fourth quarter were within a permissible range of variability except for some detailed below." The only significant finding was from well

PW-8 which showed gross alphas of 21.1 pCi/l and a reading of 73.9 pCi/l from the raw water intake at the County Water Treatment Plant. Their values are believed to be in error. They list several reasons for their beliefs. If you will note the St. Louis County measured the gross alpha from the same source just about the same time and came up with a reading of only 2.4 pC/l. (See Above) Our own readings have never been that high so I can only conclude that they were right when they said they were in error. The report is appended for your review.

A quarterly report was received from the Missouri Department of Natural Resources dealing with their activities at the Weldon Spring Chemical Plant Site. It deals primarily with such items as foundation, soils, raffinate pit studies and bioremediation studies. It appears little, if anything, was done in or around our well field. I am enclosing the report for those who may have some interest in the MDNR activities during the first quarter of 1997.

III. FUTURE PLANS

I will sample well PW-4 sometime during mid June 1997. I will continue reading and monitoring any reports or activities by other agencies during the month.

IV. MISCELLANEOUS

Appended is the St. Charles County Water Sales Report for April 1997.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.
875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

May 12, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #18725.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on April 24, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H Mannz PM

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1872501M(281)

DATE : 05-12-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #18725
DATE SUBMITTED: 04-24-97
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-EPSI-042497-C	18725.01	GROSS ALPHA	-1 +/- 4*
NP-EPSI-042497-C	18725.01	GROSS BETA	14 +/- 10*
NP-EPSI-042497-C	18725.01	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1872501M(281)
DATE : 05-12-97

SAMPLE MATRIX : WATER
ATAS # : 18725.01
DATE SUBMITTED: 04-24-97
PROJECT : WELDON SPRING
SAMPLE ID : NP-EPSI-042497-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE	0.10	mg/L	19	04-28-97	EPA 353.2
			METALS		
ARSENIC	10.0	ug/L	ND	04-28-97	SW 6010
CHROMIUM	5.0	ug/L	ND	04-28-97	SW 6010
LEAD	3.0	ug/L	ND	04-28-97	SW 6010
MANGANESE	3.0	ug/L	ND	04-28-97	SW 6010
MERCURY	0.20	ug/L	ND	04-29-97	SW 7470
SELENIUM	5.0	ug/L	ND	04-28-97	SW 6010

ug/L = PARTS PER BILLION(PPB)
mg/L = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1872501M(2
DATE : 05-12-97

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	04-28-97	ARSENIC	<10.0	ug/L
METHOD BLANK	04-28-97	CHROMIUM	<5.0	ug/L
METHOD BLANK	04-28-97	LEAD	<3.0	ug/L
METHOD BLANK	04-28-97	MANGANESE	<3.0	ug/L
METHOD BLANK	04-29-97	MERCURY	<0.2	ug/L
METHOD BLANK	04-28-97	SELENIUM	<5.0	ug/L
METHOD BLANK	04-28-97	NITRATE	<5.0	ug/L
CONTROL SPIKE	04-28-97	ARSENIC	105 %	RECOVERY
CONTROL SPIKE	04-28-97	CHROMIUM	98 %	RECOVERY
CONTROL SPIKE	04-28-97	LEAD	97 %	RECOVERY
CONTROL SPIKE	04-28-97	MANGANESE	99 %	RECOVERY
CONTROL SPIKE	04-29-97	MERCURY	100 %	RECOVERY
CONTROL SPIKE	04-28-97	SELENIUM	96 %	RECOVERY
CONTROL SPIKE	04-28-97	NITRATE	99 %	RECOVEP

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1872501EX(282)

DATE : 05-12-97

SAMPLE MATRIX : WATER
ATAS # : 18725.01
DATE SUBMITTED: 04-24-97
DATE EXTRACTED: 04-25-97
DATE ANALYZED : 04-25-97
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : NP-EPSI-042497-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	REPORTING LIMIT	RESULTS
2,6 DNT	0.0109	ND
2,4 DNT	0.0217	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	95 %
TETRACHLORO-M-XYLENE(30-150)	91 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1872501EX(282)

DATE : 05-12-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 04-24-97
DATE EXTRACTED: 04-25-97
DATE ANALYZED : 04-25-97
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	REPORTING LIMIT	RESULTS
2,6 DNT	0.010	ND
2,4 DNT	0.020	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	77 %
TETRACHLORO-M-XYLENE(30-150)	89 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 · FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1872501EX(282)

DATE : 05-12-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 04-24-97
DATE EXTRACTED: 04-25-97
DATE ANALYZED : 04-25-97
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

	LCS % REC.	LCSD % REC.	RPD
2,6 DNT	103	102	1
2,4 DNT	100	99	1

C

ENVIRONMENTAL SAMPLE CHAIN-OF-CUSTODY / AUTHORIZATION FORM

WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP)

7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304

TELEPHONE (314) 441-8086 TELEX (314) 447-0803

Validation Documentation ☐

ES&H 4.1.2.1, Rev.6, Effective 11/92

WSSRAP Contact:

Phone Number:

Request Number:

Lab/P.O. #:

Dept./Cost Code:

Requisitioner: St. Charles

Turnaround Time: ☐ Standard ☐ Accelerated ☐ Priority ☐ Urgent ☐ Emergency

#	Sample ID	QC	Date Sampled	Matrix	Cont.	Preserv.	Parameters	LM 4-24-97 IDS-BA-AL	Arch. (Y/N)
1	NP-EPS1-042497-C		4/24/97	Water	1-1 liter	HNO3	As,Cr,Hg,Mn,Se,Pb	18725.01	N
					1-1 liter glass	Ice	2,4-DNT		
					1-1 liter	H2SO4	NO3		
					1-4 liter	HNO3	U, Gross alpha, Gross beta		

Sampler's Signature

Checked By

Technical Reviewer

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? (Y/N)	Cooler Temp
[signature]	[signature]	4/24/97	1207			
[signature]	[signature]	4/24/97	1313			

AUTHORIZATION

-F Procurement Date ES&H

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

May 16, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #18665.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on April 17, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H. Mannz III

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1866501EX(282)

DATE : 05-16-97

SAMPLE MATRIX : WATER
ATAS # : 18665.01
DATE SUBMITTED: 04-17-97
DATE ANALYZED : 04-24-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-2

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1866501EX(282)
DATE : 05-16-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 04-17-97
DATE ANALYZED : 04-24-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 · FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1866501EX(282)

DATE : 05-16-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 04-17-97
DATE ANALYZED : 04-24-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
HMX	88 %
RDX	97 %
1,3,5-TNB	111 %
TETRYL	103 %
1,3-DNB	104 %
TNT	107 %
NITROBENZENE	118 %
2,6 DNT	106 %
2,4 DNT	111 %
o-NITROTOLUENE	99 %
p-NITROTOLUENE	104 %
m-NITROTOLUENE	112 %

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1866501EX(282)

DATE : 05-16-97

SAMPLE MATRIX : WATER
ATAS ID : 18665.01
DATE SUBMITTED: 04-17-97
PROJECT : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-2	18665.01	GROSS ALPHA	1 +/- 2*
PW-2	18665.01	GROSS BETA	9 +/- 6*
PW-2	18665.01	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

AT

AMERICAN TECHNICAL & ANALYTICAL SERVICES, Inc.

875 Fee Fee Road • Maryland Heights, MO 63043-3211 • Office (314) 434-4570 • FAX (314) 434-0060

PAGE ____ OF ____

CHAIN OF CUSTODY RECORD

ATAS Client Name: STAN REMINGTON

Project Name: WELDON SPRING

Project #:

Form Completed By: S. REMINGTON

PO #:

Sample ID	Sample Date	Sample Time	Sample Matrix	Grab	Comp	No. of Containers	Type of Analysis: GROSS α	GROSS β	TOTAL U	NITRATE	TSS	Preservative: Ice / Chemical (see below)	Remarks	Lab Use Only: Initials / Date / Location/Temp.
PW-2	4/17/97	0945		X			X	X	X	X				AL-BA 8c
TREAT. PLANT	"				X						X			

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature:	Signature:	Signature:	Signature:
STAN. REMINGTON	L. ROSENBERG		
Printed Name:	Printed Name:	Printed Name:	Printed Name:
WELDON SPRING	ATAS		
Firm:	Firm:	Firm:	Firm:
4/17/97 1140	4-17-97 1140		
Date/Time	Date/Time	Date/Time	Date/Time

Turnaround Requirements

____ 1 to 2 working days

____ 3 working days

____ 5 working days

____ 10 working days

____ 15 working days

Preservative codes

A - none

B - HNO_3

C - H_2SO_4

D - NaOH

E - HCl

ID RESULTS TO (Name & Company) : _____

Department of Energy
Oak Ridge Operations
Weldon Spring Site
Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63304

May 9, 1997

Distribution:

QUARTERLY ENVIRONMENTAL DATA SUMMARY FOR FIRST QUARTER 1997

In support of the Weldon Spring Site Remedial Action Project Federal Facilities Agreement, a copy of the Quarterly Environmental Data Summary (QEDS) for the first quarter of 1997 is enclosed.

The data presented in this letter and attachment constitutes the QEDS. The data were received from the contract laboratories, verified by the Weldon Spring Site verification group and, except for air monitoring data, merged into the data base during the first quarter of 1997. Air monitoring data presented are the most recent complete sets of quarterly data. Air data are not stored in the data base.

Significant data, defined as data values that have exceeded defined "above normal" values, are discussed in this letter for Environmental Monitoring Plan (EMP) generated data only. Above normal values are based, in ES&H procedures, on historical high values, DOE derived concentration guides (DCGs), NPDES limits and other guidelines. The procedures also establish actions to be taken in the event that "above normal" data occur.

All data received and verified during the fourth quarter were within a permissible range of variability except for those detailed below. Above normal occurrences are cited for groundwater data and NPDES. There were none for air, surface water or springs. The following discussion offers a brief summary of the data that met the above normal criteria merged during the first quarter and updates on past reported above normal data. The attached tables present the most recent air data and all the data merged into the data base during the first quarter 1997 for groundwater, NPDES, surface water, and springs.

Graphs showing concentrations of selected contaminants of concern at some of the critical locations have also been included in this QEDS. The graphs are discussed in the separate sections.

NPDES

The uranium concentrations at the three major NPDES outfalls are graphed for November and December 1996 and January, February and

March 1997. The graph is located at the beginning of the NPDES tables. For comparison purposes, the annual average for 1996 is also graphed and the derived concentration guide (DCG)of 600 pCi/l for uranium is noted. The DCG is the concentration of a radionuclide in air or water which, under conditions of continuous exposure for one year by one exposure mode (i.e., ingestion of water), would result in an effective dose equivalent of 100 mrem. This is an administrative level established by the Department of Energy to maintain doses to members of the public "as low as reasonably achievable" (ALARA). Outfall NP-0010, the CMSA sedimentation basin outfall, has remained below the 1996 annual average and, because the area has been remediated, it is expected to remain so. Outfalls NP-0002 and NP-0005 have remained below the 1996 average except for March of 1997. The March sample was collected when the runoff was tailing off from an all day light rain. Uranium concentrations tend to be higher during this stage of the runoff. The remediation for the NP-0002 and NP-0005 watersheds has been completed, and after some initial fluctuations, the levels for uranium are expected to level off at low concentrations. The uranium levels at NP-0003 have been higher (except for the November 1996 sample) than the 1996 average. While most of the Outfall NP-0003 watershed has been remediated, the NP-0003 watershed contains Ash Pond where contaminated soils, concrete, etc., are being stored. This has contributed to the higher levels at NP-0003. In addition, uranium levels from Ash Pond have tended to be higher during the winter months. Although water is not released from the Ash Pond area if it is greater than 600 pCi/l, it may be higher than the 1996 average (at Outfall NP-0003), and thus, may contribute to higher levels at NP-0003. At no time did uranium concentrations at the three major outfalls exceed the DCG of 600 pCi/l.

There was one above normal sample at an NPDES outfall during the first quarter of 1997. The above normal sample, and above-normal samples that were not resolved in previous QEDS, are discussed below.

NP-0002-022097

Settleable solids for the sample collected at Outfall NP-0002 on February 20, 1997, were 5.5 ml/l/hr. The permit limit is 1.0 ml/l/hr. (Total suspended solids of 2,440 mg/l for this sample reflected the high settleable solids.) An unstabilized soil pile at the adjacent highway department facility was a major contributor to the high solids level. The PMC contacted the highway department and the highway department subcontractor erected several silt fences downstream of the piles. Subsequently, the PMC installed two sand bag check dams downstream of the silt fences and a rock check dam in the main channel just upstream of Outfall NP-0002. In addition, willow

cuttings and cat tails have been planted in the channel above outfall NP-0002 as a natural method to slow flow and trap sediment. A subsequent sample collected on March 10, 1997, was in compliance at less than 0.1 ml/l/hr. The PMC will continue to monitor settleable solids and inspect the watershed on a regular basis.

- **NP-0005-110796, NP-0005-012297**

The November 7, 1996, sample collected at outfall NP-0005 had an analytical result for Radium-226 (2.26 pCi/l) that was above the baseline value of 1.06 pCi/l. Radium - 226 is not a permitted parameter and there is no permit notification level. The elevated level is believed to be the result of higher than normal total suspended solids in the water in combination with upstream remediation efforts. This outfall was again sampled for Radium-226 on January 22, 1997, with an analytical result of 0.821 pCi/l (below the baseline). Periodic monitoring for radium will continue.

The analytical results for the NPDES outfalls are reported in the quarterly discharge monitoring report as well as in this report.

GROUNDWATER

Weldon Spring Chemical Plant Site

Site Water Treatment Plant and Temporary Storage Area

Sample Numbers GW-2037-Q496, GW-2037-0197, and GW-2037-0297

New historical high concentrations of the volatile organic compound (VOC) trichloroethene (TCE) were reported for the first quarter of 1997 at this location, which monitors groundwater along the western edge of the temporary storage area (TSA). The TCE results for samples collected in December 1996 and January and February 1997 were 1100 ug/l, 1200 ug/l, and 1300 ug/l, respectively. This location is included in the on-going, site-wide VOC groundwater investigation, which began in April, 1996.

- Sample Numbers GW-2038-Q496, GW-2038-0197, and GW-2038-0297

The fourth quarter VOC concentrations reported for samples from the MW-2038 groundwater monitoring location indicate decreasing levels of TCE. This monitoring well is situated between the south side of Raffinate Pit 3 along the north boundary of the temporary storage area. Levels reported for the previous quarter

were above 1000 ug/l. The TCE concentrations in samples collected in December 1996, January 1997, and February 1997; were 860 ug/l, 790ug/l and 860 ug/l, respectively, all of which are above the MCL of 5 ug/l. The MW-2038 sampling location is sampled monthly as part of the ongoing VOC impact investigation. Other investigation requirements are being developed.

- Sample Numbers GW-2040-Q396 and GW-2040-Q496

In an attempt to address a third quarter above-normal value for the metals lead and chromium, the fourth quarter sample was collected following three full-well volumes purged to reduce the potential for collection of water that has been in prolonged contact with the stainless steel well casing material.

The third quarter 1996 sample lead value(6.4 ug/l) was above baseline level (3.3 ug/l), but below the drinking water quality standard of 15 ug/l. The fourth quarter sample data (4.1 ug/l) were again above the baseline for lead. The reported chromium concentration (29.2 ug/l) was also above the baseline of 14.1 ug/l for this location. Monitoring well MW-2040 is located on the north side of the site water treatment plant equalization basin along the south side of the site water treatment plant Train I structure. Three additional wells that monitor the equalization basin, which are 100 feet to 150 feet down-gradient and cross-gradient from MW-2040, show no lead impact. The sources of the elevated lead and chromium are unknown and are under investigation because, although the three-volume purge reduced the potential for leaching of metals from the stainless steel well construction material, lead and chromium were still above baseline. Treatment plant influent chromium and lead values were not elevated and no other anomalous basin leachate values (such as elevated uranium) were identified.

Further investigation of potential sources is ongoing and includes sampling the water treatment plant sump, sampling the interceptor trench located between the equalization basin and Raffinate Pits 1 and 2, investigating the use of acids and salts in and around the treatment plant, and comparing metals analysis of a filtered sample duplicate with an unfiltered sample. The above-baseline values listed in this report are from unfiltered samples. The baseline values to which the current analytical results are compared were established utilizing values from filtered samples. The investigation findings should be useful in determining whether the difference in sample preparation methods (filtered vs. unfiltered) has a significant impact on analytical results.

- Sample Numbers GW-2042-Q396 and GW-2042-Q496

The MW-2042 sampling location is along the south side of the site water treatment plant equalization basin. The third and fourth quarter samples for chloride (15.8 mg/l and 20.6 mg/l) were above the baseline level of 11.3 mg/l. The source of elevated chloride is unknown. The source of the elevated chloride values around the water treatment plant may be acids used at the decontamination pad or road salts used around the plant. The elevated chlorides may also be related to the above-normal metals value at nearby location MW-2040 which is currently under investigation as described in the previous paragraph.

Disposal Cell

Groundwater sampling from the site disposal cell detection monitoring well network was initiated during the first quarter of 1997. The wells MW-2045 through MW-2048 (installed during late 1996-early 1997) and MW-2032 will be sampled quarterly during 1997 to determine baseline groundwater contaminant concentrations. Abnormal or unexpected values will be reported in subsequent QEDS as the analytical results become available.

Weldon Spring Chemical Plant and Raffinate Pits

- Sample Numbers GW-2013-0197 and GW-2013-0297

The VOC 1,2-dichloroethene was detected in the January 1997 sample from this location, along the south side of Frog Pond, at 15 ug/l, but the February 1997 sample was below the 10 ug/l detection limit. The VOC source at this sampling location is suspected to differ from that which impacts the area around Raffinate Pits 3 and 4, since TCE is not the primary VOC contaminant. Even though the source is suspected to be different, this sampling location has been included in the site VOC groundwater investigation and will continue to be monitored through 1997.

- Sample Numbers GW-3025-121896 and GW-3025-0197

TCE was monitored at this location during the fourth quarter of 1996 (27 ug/l) and first quarter of 1997 (38 ug/l). This location is along the east side of Raffinate Pit 3 and is included in the current VOC investigation mentioned in the previous paragraphs. These TCE concentrations do not indicate

any significant change in concentration from the third quarter 1996 sample (GW-3025-Q396 = 29.0 ug/l). The values exceed the MCL of 5 ug/l.

Weldon Spring Quarry Site

Quarry Water Treatment Plant

- Sample Numbers GW-1036-Q296, GW-1036-Q396 and GW-1036-Q496

The fourth quarter sample for monitoring location MW-1036 was again above the baseline level of 102 mg/l for chloride at 120 mg/l. Chloride concentrations above baseline levels were also reported in two previous QEDS. The second quarter 1996 sample value (518 mg/l) was the highest recorded for this location. Third quarter data (130 mg/l) indicate that the chloride concentration remains above baseline level, but is significantly decreasing. The fourth quarter chloride (120 mg/l) concentration indicates that the values are continuing to decrease and are now near baseline. Chromium was reported above the baseline level of 7.57 ug/l in the previous quarter, but it has decreased to 6.4 ug/l, which is within baseline. The chloride impact, and the related increase in metals concentration, were most likely due to the use of hydrochloric acid used for cleaning equipment during late 1995 and early 1996 at the decontamination pad, which was in need of repairs. Cracks in the decontamination pad were repaired in August 1996, and the chloride and chromium values are decreasing as expected.

- Sample Numbers GW-1040-Q296, GW-1040-Q396, and GW-1040-Q496

Three consecutive chloride historic highs above the baseline concentration of 10.9 mg/l for this location have been reported. HCl was used in the quarry decontamination area during late 1995 and early 1996. The chloride concentration has not decreased at this location as quickly as the MW-1036 sampling location. The chloride value decreased from 25.8 mg/l in the second quarter sample to 21 mg/l in the third quarter sample, but increased to 31 mg/l for the fourth quarter. Cracks in the decontamination pad at the quarry were repaired in August 1996. Subsequent data are expected to show decreases in chloride values.

Quarry Vicinity

- Sample Numbers GW-1005-B596 and GW-1005-B696

Two consecutive new historic highs for total uranium were reported for the fifth and sixth bimonthly 1996 samples (5380

pCi/l and 6920 pCi/l) from this location. This well had been dry from mid-1995 to late 1996 due to groundwater level decreases resulting from quarry pond dewatering. It is possible that contaminated residual sediments that have accumulated in bedrock conduits, through which groundwater flows to this location, are being remobilized as the groundwater level rises and recharges the well. When sufficient water volume recharges this well, additional surging and purging of the groundwater in MW-1005 will be performed to determine if residual sediments are the source and, if so, subsequent samples should show decreasing total uranium activity. Further, first quarter 1997 samples collected from this location included a filtered replicate that will be compared to the standard unfiltered sample to determine the potential for suspended solids contributions to the increased total uranium activity.

St. Charles County Well Field

- Sample Numbers GW-PW08-Q496 and GW-RAWW-Q496

Gross alpha values were reported above the MCL of 15 pCi/l for the St. Charles County pumping well PW-08 (21.1 pCi/l) and the for the raw water intake at the county water treatment plant (73.9 pCi/l). These values are believed to be in error for the following reasons. No wells upgradient or crossgradient from PW-08 showed any increased alpha or total uranium activities. Further, the RAWW sample is a composite of all wells pumping to the treatment plant and should approximately equal the average gross alpha value of the wells contributing to the treatment plant. The reported average for this sampling event during fourth quarter 1996 was 5.6 pCi/l. The treated water sample from the plant (GW-FINW-Q496) had a gross alpha activity of 2.57 pCi/l.

Total uranium activities during the last four sampling events for groundwater in the St. Charles County well field are shown graphically at the beginning of the Groundwater Tables.

SURFACE WATER

No elevated contaminant values were reported in surface water samples for the quarter.

SPRINGS

No elevated contaminant levels were reported for Burgermeister Spring during this quarter.

AIR

There were no above normal samples for air monitoring for the first quarter of 1997. Data for the monitoring locations are attached. Graphs of the monitoring results are located in front of the tables.

The gross alpha concentration for air particulate monitoring for the first quarter 1997 are graphed with the background level and background plus 3 standard deviations shown for comparison. The background level is based on monitoring conducted from the second quarter 1996 to the first quarter of 1997. The background location is AP-4012 at the Daniel Boone Elementary School in New Melle.

The gamma exposure from environmental TLD monitoring results for the fourth quarter 1996 are graphed with the background and the background plus 25 mrem quarterly committed effective dose equivalent (CEDE) shown for comparison. The 25 mrem CEDE is based on one-fourth of the annual 100 mrem CEDE established in DOE Order 5400.5. The background locations are TD-4005 (west of the Army site) and TD-4009 (Daniel Boone Elementary School in New Melle).

The alpha track radon and thoron monitoring results are graphed for the fourth quarter of 1996. The background level (based on 1996 monitoring) and the derived concentration guide (DCG) for radon and thoron are shown for comparison. The DCG is a reference value for protection of the public and the environment contained in DOE Order 5400.5. Although some locations are above the DCG they are all within the site boundary. All locations identified with R3--are located inside the WSSRAP fence line. The background locations are TD-4005 (west of the Army site) and TD-4009 (Daniel Boone Elementary School in New Melle).

SUMMARY

The previously described data were highlighted as being above prescribed baseline values, varying from historical ranges or being above regulatory limits, and as a result, are subject to more focused attention by the WSSRAP Environmental Protection Group. Continuous trends are monitored to determine the need for additional possible action. Except for the highlighted data, all other indicators subject to reporting in the QEDS were within historic range or below reporting criteria.

If you have any questions, please contact the WSSRAP Community Relations Department at(314)441-8086.

Sincerely,

Stephen H. McCracken
Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

Date: Thu, 15 May 1997 13:02:18 -0700
From: Ed Sadler <esadler@mail.state.mo.us>
Organization: Mo. DNR
To: cyhighwa@mail.win.org
Subject: MDNR quarterly report

ATTN: Joe Nichols

I have attached the quarterly report prepared by MDNR Federal Facilities Section staff for the WSSRAP for the quarter ended March 31, 1997. The attachment is in ASCII text.

Please let me know if this has been received intact, or if changes need to be made.

Thank you.
Laura Estes

May 11, 1997

Mr. Steve McCracken, DOE Project Manager
Weldon Spring Site Remedial Action Project
7295 Highway 94 South
St. Charles, MO 63304

Dear Mr. McCracken:

This quarterly report summarizes the activities and follow-up of issues associated with MDNR's oversight role at the Weldon Spring Site Remedial Action Project (WSSRAP). This report covers the time period from January 1, 1997 through March 31, 1997.

As stated, this report covers the first quarter of calendar year 1997. The information for this report was compiled by Ms. Martha Windsor, Mr. Glenn Carlson, and Mr. Robert Stovall. As always, your comments and suggestions on this report are encouraged.

If you desire additional information regarding specific issues mentioned in this report, please contact me at (573) 751-6838.

Sincerely,

HAZARDOUS WASTE PROGRAM

Larry Erickson, P.E.
DOE-Unit Chief
Federal Facilities Section

Enclosure

c: Dan Wall, EPA
Steve Iverson, Corps of Engineers
Ed Valdez, FUSRAP Field Office
Conn Rodden, St. Louis County Health Department
Terry Gloriad, St. Louis County Water Department
Joyce Mueller, St. Charles County Council
Helene Diller, St. Charles Citizens' Commission
Kay Drey, Coalition for the Environment
St. Charles County Water Department

Sierra Club

May 11, 1997

Mr. Dan Wall, Remedial Project Manager
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, KS 66101

Dear Mr. Wall:

This quarterly report summarizes the activities and follow-up of issues associated with MDNR's oversight role at the Weldon Spring Site Remedial Action Project (WSSRAP). This report covers the time period from January 1, 1997, through March 31, 1997.

As stated, this report covers the first quarter of calendar year 1997. The information for this report was compiled by Ms. Martha Windsor, Mr. Glenn Carlson, and Mr. Robert Stovall. As always, your comments and suggestions on this report are encouraged.

If you desire additional information regarding specific issues mentioned in this report, please contact me at (573) 751-6838.

Sincerely,

HAZARDOUS WASTE PROGRAM

Larry Erickson, P.E.
DOE-Unit Chief
Federal Facilities Section

LE:rse

enclosure

MEMORANDUM

DATE: May 11, 1997

TO FILE: WSSRAP Operable Units
Quarterly Reports

THROUGH: Robert Geller, Chief
Federal Facilities Section
Hazardous Waste Program

FROM: Larry Erickson, DOE-Unit Chief
Federal Facilities Section
Hazardous Waste Program

SUBJECT: MDNR Quarterly Report - 1st Quarter 1997

This quarterly report summarizes the activities and follow-up of issues associated with MDNR's oversight role at the Weldon Spring Site Remedial Action Project (WSSRAP). This report covers the time period from January 1, 1997 through March 31, 1997. The information for this report was compiled by Ms. Martha Windsor, Mr. Glenn Carlson, and Mr. Robert Stovall.

LE:rse

Enclosure: QR1/1-3/97

c: Daryl Roberts, MDOH/BEE

cc via e-mail: Elsa Steward, DEQ
Ed Sadler, HWP
Jim Long, ESP
Robert Eck, SLRO
Diana Travis, DGLS
Randy Raymond, APCP
Richard Laux, WPCP
Robert Geller, HWP

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Division of Environmental Quality
Hazardous Waste Program

Report Number: QR#1/1-3/97

Major Field Code: 3593

Site Project Code: 3945

Facility Operator: Department of Energy (DOE)
7295 Highway 94 South
St. Charles, Missouri 63304

Facility Name: Weldon Spring Site Remedial Action Project (WSSRAP) - Chemical Plant Area, Weldon Spring Quarry, Quarry Residuals, Groundwater, and Vicinity Properties

MDNR Oversight: R. Stovall, Environmental Engineer II
M. Windsor, Environmental Specialist III
G. Carlson, Environmental Engineer III

Approved By: / /
Larry Erickson, DOE-Unit Chief Date

Federal Facilities Section

Quarterly Report Summary

Introduction and Purpose

This report summarizes key activities at the Weldon Spring Remedial Action Project (WSSRAP) site by the Department of Energy and their contractors for site remediation activities. It also summarizes Missouri Department of Natural Resources (MDNR) oversight activities at WSSRAP to ensure that the Department of Energy and their contractors are protecting human health and the environment during the site remediation process. The time period covers site activities from the First Quarter of 1997.

Firstt Quarter 1997 (January 1997 to March 1997)

Site Activities During First Quarter

Kathy Coutros and Glen Newtown of DOE were re-assigned from the Project Engineering position on the Chemical Solidification & Stabilization plant. Ed Valdez is no longer with WSSRAP and is now the Project Manager for FUSRAP.

On February 20, 1997, there was a NPDES exceedance violation for the SWTP on the settleable solids limit of 1.0 ml/L/hr.

At WSSRAP the Department of Energy and the Project Management Contractor completed removal of the building foundations including removal of unsuitable soils and placement of low permeability soil to bring the foundations up to grade. Low permeability soils were placed as fill for the excavation and for the footprint of the disposal cell. The PMC is working toward

the completion of this project by the end of May 1997.

The Department of Energy and the Project Management Contractor completed removal of the contaminated soil and foundations within the disposal cell foot print. Clean up of the contaminants of concern to clean up goals in accordance with the Record of Decision was confirmed via confirmation sampling of the soils. MDNR will be reviewing the data and providing comments during the next quarter.

Sludge consolidation continues at Raffinate Pit #4. Sludge was removed from Raffinate Pit #1 and Raffinate Pit #2. High nitrate water from Raffinate Pit #3 was transferred into Pit 1 and Pit 2 for biodenitrification and subsequent treatment in the Site Water Treatment Plant.

Construction of the Chemical Stabilization and Solidification Plant (CSS) has started. The Project Management Contractor is currently leveling the ground for the plant foot print and installation of a clay liner material for the plant tanks. The plant is to be constructed by integration of prefabricated equipment modules. The prefabricated equipment modules are being built off site. The modules will arrive at the site mid-June for plant construction. The sludge inventory storage tanks and the thickener required for the CSS plant will be fabricated in place at the site.

Approval for the fifth year budget of the Agreement-In-Support for MDNR was received on March 31, 1997. The budget period is from February 1, 1997 to January 31, 1998. The approved budget is $300,000 less than the budget request. Amendments to increase the approved budget are expected by MDNR.

Treatment of the wastewater from the Weldon Spring Site at the Site Water Treatment Plant and Quarry Water Treatment Plant

continues. The Missouri Department of Natural Resources Hazardous Waste Program continues to take split samples with the Department of Energy to ensure compliance with the NPDES permit discharge requirements. There were four (4) batches from the SWTP analyzed and one (1) batch analyzed from the QWTP. These results are shown in the appendix.

Federal Facilities Staff Oversight Activities

On March 18, 1997, Federal Facilities Staff briefed MDNR Director David Shorr to provide the status of Federal Facilities oversight at the Weldon Spring Site (WSSRAP), and the major issues at WSSRAP.

Federal Facilities Staff provided comments on the Engineering Soils Plan for the Raffinate Pits. The Department of Energy (DOE) responded to MDNR's comments regarding sampling for volatile organic compounds including trichloroethylene sampling and characterization. The Department of Energy's responses to MDNR's comments were that they would conduct sampling for trichloroethylene and determine the extent of the contamination.

Federal Facilities Staff provided comments on the Nitrosoils Bioremediation Study Report. The Department of Energy (DOE) responded to MDNR's comments. MDNR comments on this document stated that the data supplied was difficult to interpret and the results of the study was inconclusive. The Department of Energy agreed that additional studies were necessary to characterize the data, but the data in this study did provide useful bioremediation characterization data.

All Department of Energy WP 420 Soils Confirmation Units were determined by the Department of Energy to be clean. Currently MDNR staff is reviewing the soils confirmation data to confirm that the contaminants of concern have been remediated to the

clean up levels specified in the Record of Decision.

Federal Facilities Staff provided comments on the 100% Design for the Raffinate Pits Dredge System and the 100% Design Operations Plan for the CSS Plant. MDNR's concerns were the frequency of testing for the quality grout product being produced by the CSS process, and whether the grout would meet the minimal compressive strength requirements. The Department of Energy adequately addressed these concerns.

Federal Facilities Staff provided comments on the Quarry Residuals Draft Remedial Investigation and the Quarry Residuals Draft Baseline Risk Assessment. The major concern for the Quarry Residuals Remedial Investigation and the Baseline Risk Assessment was contaminant migration towards the St. Charles County well field, particularly for the contaminant of concern Uranium. Currently MDNR and the Department of Energy are discussing exposure scenarios with respect to St. Charles County Well field. The preliminary draft Feasibility Study and Proposed Plan were issued to MDNR on April 18, 1997, for review and comment.

Federal Facilities Staff provided comments on the South East Drainage 90% Design. The Department of Energy will start remedial action for this area in August 1997 and the remediation of this area is to be completed in February 1998. Currently MDNR and the Department of Energy are discussing the method of confirmation which can best determine the adequacy of the cleanup to proposed cleanup levels.

Federal Facilities Staff provided review and comments on the Final Draft of Groundwater Operable Unit Remedial Investigation and the Final Draft of the Groundwater Operable Unit Baseline Risk Assessment. The Department of Energy has unsatisfactorily addressed MDNR's comments and concerns regarding these two documents. However, there are a number of issues which are

currently still under negotiation. Currently, notification to invoke dispute resolution has been given. The main issue is the clean up of the contaminants of concern to residential or unlimited use levels.

Federal Facilities Staff is still coordinating with the Water Pollution Control Program regarding the proposed changes on the Uranium limit for the NPDES permit at WSSRAP. This change will require the concurrence of the Clean Water Commission. The Commission approved two stays regarding this issue in their March 26 meeting. The issue of discharge of disposal cell leachate to Dardenne Creek will require a Clean Water Commission rule change.

The MDNR Hazardous Waste Program issued a request for proposal for analytical services for analysis of radioactively contaminated wastewater, groundwater, and soils. The finalized contract for analytical services will allow MDNR to provide oversight via split sampling with the Department of Energy to determine if the Department of Energy Laboratory's analysis coincides with independent monitoring and to ensure that clean up criteria has been reached for each media sampled.

Federal Facilities Staff Field Activities

Federal Facilities staff has provided oversight on the following projects at the WSSRAP site:

Raffinate pits sludge consolidation and sludge removal.
Low permeability soils placement for the disposal cell.
Borrow area low permeability soils removal Lake 36 characterization.

Staff Training

On January 8, 1997, Larry Erickson received the Annual SHARP Refresher for radiation and health safety.

February 27 and 28, 1997, Glenn Carlson attended training on the disposal cell design.

In March, Federal Facilities Staff attended training at WSSRAP regarding oversight of the low permeability soil placement for the disposal cell. Training included the ASTM specifications and testing and quality control methods used for determining the acceptability of the low permeability soils used in the disposal cell construction.

On March 20, 1997, Robert Stovall received the Annual SHARP Refresher for radiation and health and safety.

Meetings/Community Relations

Federal Facilities Staff attended the monthly St. Charles Citizens Commission meeting at the WSSRAP site. The staff met with the St. Charles Citizens Commission on January 23, 1997, February 27, 1997, and March 27, 1997.

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 4-3-97
Results 4-21-97 y

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

RECEIVED
APR 23 1997
ST. CHARLES COUNTY HIGHWAY DEPARTMENT

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 3-01-97 - 3-31-97

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: RAW

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) ____

FOR LABORATORY USE ONLY SCR97-4

	RESULTS (pCi/L)	*MDL (pCi/L) 4/17/97 MW LAB
Gross Alpha	2.4 ± 1.1	1.0
Gross Beta	5.1 ± 0.5	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

APR-97 Water Sales Report

Date of Report 05/01/97

Water Production			290,959,000
Washwater Used			6,085,000
Delivered to System		**Total——**	**284,874,000**
Mo. American	Booster Station		205,000,000
4132835-007	Francis Howell		58,000
4132850-007	Mo. Hwys & Trans.		0
4133000-004	M. K. Fergusen		385,500
4133040-015	M. K. Fergusen		636,700
4133010-002	M. K. Fergusen		15,000
4133020-000	M, K. Fergusen		1,000
4132855-002	Francis Howell		419,000
4132890-009	M. K. Fergusen		24,000
95018237-000	M. K. Fergusen		297,000
4132851-006	Mo. Hwys & Trans.		14,000
		Total——	**286,850,000**
Water Dist. #2	24" East Line		0
	24" West Line		66,100,000
	Bypass		0
		Total——	**66,100,000**
Water Dist. #2	New Melle	**Total——**	**6,145,000**
National Guard	Bldg S-61		0
Area	Wash Rack		9,000
		Total——	**9,000**
Total Water Sales	**********		**279,104,000**
Unaccounted for	**********		**5,770,000**
(A:\APRWS97.wpd)			

MONTHLY REPORT

JUNE 1997

BY

Stanley Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results from the testing of well number PW-5 were received and are appended. This well was tested on May 19, 1997. All of the results were within the NPDES limits and historical ranges. Only gross alpha and gross beta, total uranium, and nitroaromatics were tested.

The results from the St. Louis County Department of Health were received for the gross alpha and gross beta readings of raw and finished water from the St. Charles County Water Treatment Plant. They are appended. These are composite samples from all of the wells pumping when the samples were taken. The time period covered was 4/1/97 - 4/30/97. Both parameters were well below the NPDES limits.

Wells RMW-2 and PW-9 were sampled with the Department of Energy on June 19, 1997. The results have not yet been received. This was the quarterly sampling period.

II. FUTURE PLANS

I will undergo major surgery on July 3, 1997. I do not know at this time how long it will take to recover, so I can not plan anything for the month of July at this time. Hopefully I will be able to sample one well near the end of July, or if not, in August.

III. MISCELLANEOUS

Enclosed is the May 1997 Water Sales Report by the St. Charles County Water Department.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

June 9, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #18945.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on May 19, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1894501RA(282)

DATE : 06-09-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #18945
DATE SUBMITTED: 05-19-97
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-5	18945.01	GROSS ALPHA	4.80 +/- 3.55
PW-5	18945.01	GROSS BETA	11.7 +/- 4.76
PW-5	18945.01	TOTAL URANIUM	0.0881 +/- 0.088

pCi/L= PICOCURIES PER LITER

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1894501RA(282)

DATE : 06-09-97

SAMPLE MATRIX : WATER
ATAS # : 18945.01
DATE SUBMITTED: 05-19-97
DATE EXTRACTED: 05-23-97
DATE ANALYZED : 05-27-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT REF. : WELDON SPRING
SAMPLE ID : PW-5

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1894501RA(282)

DATE : 06-09-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 05-19-97
DATE EXTRACTED: 05-23-97
DATE ANALYZED : 05-27-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT REF. : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1894501RA(282)

DATE : 06-09-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 05-19-97
DATE EXTRACTED: 05-23-97
DATE ANALYZED : 05-27-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
HMX	89 %
RDX	99 %
1,3,5-TNB	111 %
TETRYL	106 %
1,3-DNB	112 %
TNT	117 %
NITROBENZENE	109 %
2,6 DNT	107 %
2,4 DNT	106 %
o-NITROTOLUENE	101 %
p-NITROTOLUENE	102 %
m-NITROTOLUENE	107 %

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-008(

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1894501RA(282)

DATE : 06-09-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE DUPLICATE
DATE SUBMITTED: 05-19-97
DATE EXTRACTED: 05-23-97
DATE ANALYZED : 05-27-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE DUPLICATE

COMPOUND	PERCENT RECOVERY
HMX	89 %
RDX	97 %
1,3,5-TNB	112 %
TETRYL	107 %
1,3-DNB	112 %
TNT	118 %
NITROBENZENE	109 %
2,6 DNT	107 %
2,4 DNT	106 %
o-NITROTOLUENE	101 %
p-NITROTOLUENE	101 %
m-NITROTOLUENE	107 %

ATAS

AMERICAN TECHNICAL & ANALYTICAL SERVICES, Inc.

875 Fee Fee Road • Maryland Heights, MO 63043-3211 • Office (314) 434-4570 • FAX (314) 434-0080

PAGE ____ OF ____

CHAIN OF CUSTODY RECORD

ATAS Client Name: STAN REMINGTON

Project Name: WELDON SPRING

Project #:

Form Completed By: [signature]

PO #:

Type of Analysis / Preservative: Ice Chemical (see below)

Sample ID	Sample Date	Sample Time	Sample Matrix	Grab	Comp	No. of Containers	TOTAL U.	GROSS α	GROSS β	NITROS	TSS					Remarks	Lab Use Only: Initials WD; Date 5-19-97; Location/Temp BA 15°C
PW-5	5/19/97	1300		X			X	X	X	X							18945.01
					X						X						

Relinquished by:	Received by:	Relinquished by:	Received by:
[signature]	[signature]		
Signature	Signature	Signature	Signature
STANLEY REMINGTON	L. MASSENBERG		
Printed Name	Printed Name	Printed Name	Printed Name
WELDON SPRING	ATAS		
Firm	Firm	Firm	Firm
MAY 19, 1997 1426	5-19-97 1426		
Date/Time	Date/Time	Date/Time	Date/Time

Turnaround Requirements

____ 1 to 2 working days

____ 3 working days

____ 5 working days

____ 10 working days

____ 15 working days

Preservative codes

A - none

B - HNO_3

C - H_2SO_4

D - NaOH

SEND RESULTS TO (Name & Company): _____

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 5/5/97
Results 5/23/97 ✓

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

RECEIVED
MAY 29 1997
ST. CHARLES COUNTY HIGHWAY DEPARTMENT

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 04-01- 04-30-97

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) Raw

SCR97-5

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L) 5/22/97
Gross Alpha	2.1 ± 1.2	1.0
Gross Beta	7.1 ± 1.1	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 5/5/97
Results 5/23/97

RECEIVED
MAY 29
ST. CHARLES C.
HIGHWAY DEPAR

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 04-01- 04-30-97

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) Finished.

SCT97-5

FOR LABORATORY USE ONLY

5/22/97

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	< 1.0	1.0
Gross Beta	4.3 ± 1.0	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

ELAB/RAD-97R/3/96

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

MAY-97 Water Sales Report

Date of Raport 06/02/97

Water Production		367,966,000
Washwater Used		8,093,000
Delivered to System	**Total——**	**359,873,000**
Mo. American	Booster Station	265,000,000
4132835-007	Francis Howell	28,100
4132850-007	Mo. Hwys & Trans.	0
4133000-004	M. K. Fergusen	424,500
4133040-015	M. K. Fergusen	-3,218
4133010-002	M. K. Fergusen	101,000
4133020-000	M. K. Fergusen	500
4132855-002	Francis Howell	1,425,000
4132890-009	M. K. Fergusen	38,000
95018237-000	M. K. Fergusen	823,000
4132851-006	Mo. Hwys & Trans.	13,600
	Total——	**267,850,800**
Water Dist. #2	24" East Line	0
	24" West Line	73,296,000
	Bypass	0
	Total——	**73,296,000**
Water Dist. #2	New Malle **Total——**	**7,242,800**
National Guard	Bldg S-61	0
Area	Wash Rack	2,000
	Total——	**2,000**
Total Water Sales	**********	**348,390,800**
Unaccounted for (A:\MAYWS97.wpd)	**********	**11,433,000**

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

MAY-97 Inventory of Chemicals

Date	Invoice #	LIME	Date	Invoice #	CL2
4-30	Balance	411759	4-30	Balance	11848
5-1	346425	48280	5-14	97-867	8000
5-6	347078	51660	5-22	97-935	8000
5-8	347393	49400			
5-14	348231	49740			
5-15	348409	50000			
5-20	349054	49660			
5-22	349388	48980			
5-23	349607	50020			
5-27	350001	50140			
5-29	350471	50180			

Amount Received	498060	16000
Total Amount	909819	27848
Amount Used	475688	18790
Balance 5-31	434131	9058
lbs. Per. 1000 Gallons	1.17	0.0511
Part Per. Million	141	6.122
Avg. Day Usage	15245	606
Year to Date	2042892	83810

(A:\MAY97inv.wpd)

RECEIVED JUN 0 2 199

MISSOURI-AMERICAN WATER COMPANY
ST. CHARLES DISTRICT
SYSTEM DELIVERY-MAY, 1997

MAY	1993 ACT.	1994 ACT.	1995 ACT.	1996 ACT.	1997 ACT.	5 YEAR AVG.	1997 BGT.	VARIANCE 1997 TO 5 YR AVG	VARIANCE 1997ACT TO BUDGET	97 ACT VS 97 BUDGET MO-TO-DATE
1	6.668	4.697	6.066	6.191	7.025	6.865	7.156	1.141	(0.131)	(0.131)
2	5.595	4.598	6.192	6.332	6.959	6.927	7.156	1.032	(0.197)	(0.327)
3	5.665	4.645	6.075	5.768	6.959	6.800	7.156	1.156	(0.197)	(0.524)
4	5.402	4.699	6.111	6.473	6.959	6.959	7.156	0.996	(0.197)	(0.721)
5	4.815	5.991	7.132	7.178	7.068	6.437	7.156	0.631	(0.088)	(0.809)
6	6.029	5.554	7.132	8.152	7.898	6.673	7.156	1.125	0.542	(0.268)
7	6.340	5.521	7.132	8.191	7.519	6.541	7.156	0.979	0.363	0.097
8	7.123	5.521	6.967	6.332	7.064	6.621	7.156	0.543	(0.092)	0.005
9	7.123	5.522	6.663	6.332	9.213	6.971	7.156	2.243	2.057	2.063
10	7.123	6.151	6.366	5.768	9.213	6.922	7.156	2.291	2.057	4.120
11	7.826	6.090	6.806	6.755	9.212	7.299	7.156	1.916	2.057	6.177
12	4.799	5.825	7.850	7.037	9.209	6.702	7.156	1.906	1.052	7.229
13	5.118	5.507	7.860	6.473	8.488	6.847	7.156	1.641	1.332	8.562
14	5.145	5.073	7.660	6.755	9.241	6.973	7.156	2.268	2.086	10.647
15	6.288	5.073	7.446	6.814	9.930	7.247	7.166	2.684	2.674	13.321
16	6.288	6.072	6.811	7.037	11.896	7.557	7.156	4.039	4.440	17.762
17	6.289	6.510	6.052	7.719	11.896	7.529	7.156	3.867	4.440	22.202
18	6.211	6.916	6.216	9.306	11.896	8.049	7.156	3.547	4.440	26.642
19	5.447	7.467	6.946	10.586	7.372	7.566	7.156	(0.194)	0.216	26.859
20	4.836	10.487	6.946	9.212	9.337	8.164	7.156	1.173	2.181	29.040
21	6.679	10.234	6.946	7.178	10.562	8.118	7.156	2.434	3.396	32.436
22	6.856	10.234	6.409	8.447	10.549	8.839	7.156	1.710	3.393	35.829
23	6.658	10.235	6.563	8.729	8.780	8.177	7.156	0.803	1.624	37.454
24	6.556	14.024	6.147	8.586	8.780	8.618	7.156	(0.039)	1.624	39.078
25	7.256	7.821	6.542	8.615	8.780	7.803	7.156	0.977	1.624	40.702
26	7.204	8.413	7.470	7.178	8.781	7.409	7.156	1.372	1.625	42.328
27	9.159	8.586	7.470	8.024	6.850	8.020	7.156	(1.170)	(0.306)	42.022
28	7.341	9.087	7.470	7.460	6.497	7.571	7.156	(1.074)	(0.659)	41.363
29	8.260	9.087	7.470	5.909	7.253	7.600	7.156	(0.347)	0.097	41.460
30	8.260	9.086	7.901	7.601	8.009	8.175	7.156	(0.166)	0.853	42.314
31	8.260	8.864	7.436	7.037	8.009	7.926	7.156	0.064	0.853	43.167
TOTALS	199.653	225.000	215.241	225.000	265.000	226.036	221.833	36.864	43.167	43.167
BEFORE METERS				1.261	2.850					
GRAND TOTAL				226.261	267.850					

Francis Howell	67004132835-00 7	28100
MO Hwy & Trans	67004132850-00 7	0
MK Ferguson	67004132000-00 4	424500
MK Ferguson	67004132040-01 8	-3218
MK Ferguson	67004132010-00 2	101000
MK Ferguson	67004132020-00 0	500
Francis Howell	67004132855-00 2	1428000
MK Ferguson	67004132890-00 9	38000
MK Ferguson	67095018287-00 2	823000
MO Hwy & Trans	67004132851-00 8	13500

TOTAL 2850482 gallons
= 2.850 MG

Date 6/2/97 # of pages
To Tom Aaron
Fax
From Kathy
Phone
per Bill C