-45511

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QUARTERLY REPORT

ST. CHARLES COUNTY WELL FIELD

MONITORING PROJECT

GRANT NO. DE-FG05-89OR21864

Prepared by: Stanley Remington
July, August and September, 1994

-45511

MONTHLY REPORT

JULY 1994

BY

Stanley M. Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

I was able to sample RMW-2 for the first time in over a year because of the flooded conditions around this well. This was done on June 22, 1994. I also sampled PW-9 on the same day. This was the quarterly sampling parameters which includes several additional chemical analyses. I split these with the Department of Energy. The results are appended. The observation well, RMW-2, showed an arsenic level of 14.0 ug/L (parts per billion) which was slightly above the levels that St. Charles County has ever recorded, but is well below the NPDES limits. The Department of Energy has recorded higher levels than this one for arsenic, but even theirs were well below the limits. This probably was due to the flooding. All of the other parameters were within historical values. RMW-2 is located halfway between the quarry and PW-9, the nearest pumping well to the quarry and the St. Charles County well field. This means that during the past 40 to 50 years no hazardous chemicals have even reached the half way point to the County's nearest production well. Well number PW-9 showed no unusual deviations from the historical analyses.

II. REPORTS

Three reports were received during June and July from the

Department of Energy. The first was entitled "Weldon Spring Site Environmental Report for Calendar Year 1993." It is dated May 1994 and is Rev.0. The report is prepared yearly to present a summary of data from the environmental monitoring program, to characterize trends and environmental conditions at the Weldon Spring Site, and to confirm compliance with environmental and health protection standards and requirements. The report also presents the status of remedial activities and the results of monitoring these activities to assess their impacts on the public and environment. The report includes monitoring data from routine radiological and nonradiological sampling activities. This data includes estimates of dose to the public from the Weldon Spring Site, estimates of effluent releases, and the trends in groundwater contaminant levels. Also, applicable compliance requirements, quality assurance programs, and special studies conducted in 1993 to support environmental protection programs are reviewed. The report is available from the Department of Energy and me for anyone interested in reading it.

A second report was received in July 1994 entitled, "Quarterly Environmental Data Summary - Second Quarter 1994." Its purpose is the same as the yearly summary in the 1993 yearly report mentioned above. This report is also available to anyone who wishes to read it at the DOE or from

me.

I am enclosing the quarterly site and quarry water treatment plant effluent data summary - second quarter 1994. This has a limited distribution. It shows the effluent data summary sheets for the batches of water treated and discharged during the second quarter of 1994.

Also enclosed are the results of my sampling of the treated water from the site on July 7, 1994.

The results for analyses of the St. Charles Well Field by the St. Louis Health Department for gross alpha and gross beta are enclosed. This is for the period from 5/1/94 - 5/31/94.

III. MEETINGS

I attended the annual Missouri Waste Control Coalition from July 10 to July 12, 1994 at Columbia, Missouri. There are a series of Plenary and Concurrent Sessions which members can select to attend. One of the St. Charles County Council members was a speaker on one of the Concurrent sessions which I attended. This annual meeting is important since it discusses both solid waste problems and their effect(s) on the environment, including ground and surface

waters. Many very good suggestions are discussed, and I have always found it to be informative, including problems that St. Charles County is having at Weldon Spring.

IV. FUTURE PLANS

Now that the St. Charles County well field is free from flooding I intend to sample PW-8 during August 1994. Also I am still sampling every fourth batch of treated water at both the site and the quarry. This is because of the need to corroborate the analyses from different laboratories before the treated waters are released into the Missouri River. This method has worked very well since its inception.

V. MISCELLANEOUS

Well number PW-2 was sampled on July 19, 1994. This is the first time in several months that I have been able to sample this well because of flooding. The main concern for this well is the possibility of nitroaromatics flowing from the Femme Osage Slough.

Appended is the St. Charles County Water Department's Monthly Water Usage Report.

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

July 14, 1994

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

RE: ATAS #10098.01-#10098.02
Weldon Spring

Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on June 22, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr
Project Manager

Enclosures

JAC/pck

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: 109801MT(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : 10098.01
DATE SUBMITTED: 06-22-94
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE	0.2	mg/L	ND	06-24-94	EPA 300.0
			METALS		
ARSENIC	10.0	ug/L	14.0	06-27-94	SW 6010
BERYLLIUM	1.0	ug/L	ND	06-27-94	SW 6010
COPPER	10.0	ug/L	ND	06-27-94	SW 6010
IRON	55.0	ug/L	1050	06-27-94	SW 6010
LEAD	3.0	ug/L	ND	06-27-94	SW 6010
MANGANESE	5.0	ug/L	445	06-27-94	SW 6010
ZINC	15.0	ug/L	39.3	06-27-94	SW 6010
MERCURY	0.20	ug/L	ND	07-06-94	SW 7470

/L = PARTS PER BILLION(PPB)
/L = PARTS PER MILLION(PPM)
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: 109802MT(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : 10098.02
DATE SUBMITTED: 06-22-94
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE	0.2	mg/L	ND	06-24-94	EPA 300.0
			METALS		
ARSENIC	10.0	ug/L	ND	06-27-94	SW 6010
BERYLLIUM	1.0	ug/L	ND	06-27-94	SW 6010
COPPER	10.0	ug/L	ND	06-27-94	SW 6010
IRON	55.0	ug/L	6650	06-27-94	SW 6010
LEAD	3.0	ug/L	ND	06-27-94	SW 6010
MANGANESE	5.0	ug/L	400	06-27-94	SW 6010
ZINC	15.0	ug/L	ND	06-27-94	SW 6010
MERCURY	0.20	ug/L	ND	07-06-94	SW 7470

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

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

REPORT: QC0627MT(198)

DATE : 07-14-94

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	06-27-94	ARSENIC	<10.0	ug/L
METHOD BLANK	06-27-94	BERYLLIUM	<1.00	ug/L
METHOD BLANK	06-27-94	COPPER	<10.0	ug/L
METHOD BLANK	06-27-94	IRON	<55.0	ug/L
METHOD BLANK	06-27-94	LEAD	<3.0	ug/L
METHOD BLANK	06-27-94	MANGANESE	<5.0	ug/L
METHOD BLANK	06-27-94	ZINC	<15.0	ug/L
METHOD BLANK	07-06-94	MERCURY	<0.2	ug/L
BLANK SPIKE	06-27-94	ARSENIC	102 %	RECOVERY
BLANK SPIKE	06-27-94	BERYLLIUM	101 %	RECOVERY
BLANK SPIKE	06-27-94	COPPER	100 %	RECOVERY
BLANK SPIKE	06-27-94	IRON	109 %	RECOVERY
BLANK SPIKE	06-27-94	LEAD	101 %	RECOVERY
BLANK SPIKE	06-27-94	MANGANESE	100 %	RECOVERY
BLANK SPIKE	06-27-94	ZINC	103 %	RECOVERY
BLANK SPIKE	07-06-94	MERCURY	107 %	RECOVERY

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: 109801EX(198)

DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : 10098.01
DATE SUBMITTED: 06-22-94
DATE EXTRACTED: 06-24-94
DATE ANALYZED : 06-25-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : RMW-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	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	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
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 109802EX(198)

DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : 10098.02
DATE SUBMITTED: 06-22-94
DATE EXTRACTED: 06-24-94
DATE ANALYZED : 06-25-94
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	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	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
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: BK0624EX(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 06-22-94
DATE EXTRACTED: 06-24-94
DATE ANALYZED : 06-24-94
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	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	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
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: QC0624EX(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 06-22-94
DATE EXTRACTED: 06-24-94
DATE ANALYZED : 06-28-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

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

COMPOUND	SPIKE ADDED(ug/L)	AMT. FOUND SMPL.(ug/L)	AMT. FOUND LCS(ug/L)	PERCENT RECOVERY
HMX	1600	0	1620	101.3 %
RDX	1300	0	1360	104.6 %
1,3,5-TNB	900	0	933	103.7 %
TETRYL	1650	0	1650	100.0 %
1,3-DNB	475	0	494	104.0 %
TNT	750	0	768	102.4 %
NITROBENZENE	850	0	864	101.6 %
2,6 DNT	1150	0	1180	102.6 %
2,4 DNT	700	0	705	100.7 %
o-NITROTOLUENE	1450	0	1530	105.5 %
p-NITROTOLUENE	1000	0	1050	105.0 %
m-NITROTOLUENE	950	0	992	104.4 %

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: 1098RADW(198)

DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #10098
DATE SUBMITTED: 06-22-94
PROJECT : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
RMW-2	10098.01	GROSS ALPHA	3 +/- 2*
RMW-2	10098.01	GROSS BETA	6 +/- 3*
RMW-2	10098.01	TOTAL URANIUM (mg/L)	0.008
PW-9	10098.02	GROSS ALPHA	1 +/- 2*
PW-9	10098.02	GROSS BETA	4 +/- 3*
PW-9	10098.02	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)

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

___OF___

CHAIN OF CUSTODY RECORD

PROJ. NO.

ATAS CLIENT NAME: STAN REMINGTON

FORM COMPLETED BY: [signature]

LOCATION: WELDON SPRING

ANALYSIS: WD 6/22/94 IJS-BA ACCULAB

SAMPLE ID	DATE	TIME	MATRIX	GRAB	COMP	PRES	NO. OF CONTAINERS	TOTAL U	GROSS α	GROSS β	NITROS	METALS	NITRATES	MERCURY	TSS						REMARKS	LAB NO.
RMW-2	6/22/94							X	X	X	X	X	X	X								10098.01
PW-9	"							X	X	X	X	X	X	X								↓ 02
WATER PLANT	"														X							

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
[signature]	6/22/94 1120	[signature]	6/22/94 1120				

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

July 14, 1994

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

RE: ATAS #10251.01
WSSRAP

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on July 7, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr
Project Manager

Enclosures

JAC/pck

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: 125101EX(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : 10251.01
DATE SUBMITTED: 07-07-94
DATE EXTRACTED: 07-08-94
DATE ANALYZED : 07-11-94
PROJECT : WSSRAP
SAMPLE ID : NP-EPSI-070794-C

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

EXPLOSIVE	REPORTING LIMIT	RESULTS
2,6 DNT	0.01	ND
2,4 DNT	0.02	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL	80 %
TETRACHLORO-M-XYLENE	70 %

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: BK0708EX(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 07-07-94
DATE EXTRACTED: 07-08-94
DATE ANALYZED : 07-11-94
PROJECT : WSSRAP
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	57 %
TETRACHLORO-M-XYLENE	60 %

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: QC0708EX(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE
DATE SUBMITTED: 07-07-94
DATE EXTRACTED: 07-08-94
DATE ANALYZED : 07-11-94
PROJECT : WSSRAP
SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

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

COMPOUND	SPIKE ADDED(ug/L)	AMT. FOUND BLANK(ug/L)	AMT. FOUND SB (ug/L)	PERCENT RECOVERY
2,6 DNT	0.250	0	0.182	73 %
2,4 DNT	0.250	0	0.176	70 %

COMPOUND	AMT. FOUND SPB DUP.(ug/L)	PERCENT RECOVERY	PERCENT RPD
2,6 DNT	0.182	73 %	0.0 %
2,4 DNT	0.176	71 %	1.4 %

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: 1251RADW(198)

DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #10251
DATE SUBMITTED: 07-07-94
PROJECT : WSSRAP

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-EPSI-070794-C	10251.01	GROSS ALPHA	3 +/- 3*
		GROSS BETA	12 +/- 4*
		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
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 125101MT(198)
DATE : 07-14-94

SAMPLE MATRIX : WATER
ATAS # : 10251.01
DATE SUBMITTED: 07-07-94
PROJECT : WSSRAP
SAMPLE ID : NP-EPSI-070794-C

PARAMETER	DET LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE	0.5	mg/L	4.3	07-14-94	EPA 300.0
			METALS		
ARSENIC	10.0	ug/L	ND	07-14-94	SW 6010
CHROMIUM	5.0	ug/L	ND	07-14-94	SW 6010
LEAD	3.0	ug/L	ND	07-14-94	SW 6010
MANGANESE	5.0	ug/L	ND	07-14-94	SW 6010
MERCURY	0.20	ug/L	ND	07-14-94	SW 7470
SELENIUM	5.0	ug/L	ND	07-11-94	SW 6010

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

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. #: St. Chas.
Dept/Cost Code:
Requisitioner:
Turnaround Time: ☐ Standard ☐ Accelerated ☐ Priority ☐ Urgent ☐ Emergency

#	Sample ID LM 7/7/94 BA-1A2-AL	QC	Date Sampled	Matrix	Cont.	Preserv.	Parameters	Arch. (Y/N)
1	NP-EPS1-070794-C 10251.01		7/7/94	Water	1-1L	HNO_3	As, Cr, Hg, Mn, Se, Pb 24°C 7/7/94	
					1-1L Glass	ICE	2,4-DNT	
					1-1L	H_2SO_4	NO_3	
					1-1L	HNO_3	U, Gross α, β	

Sampler's Signature: E. Davidson
Checked By: [signature]
Technical Reviewer:

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? (Y/N)	Cooler Temp
E. Davidson	[signature]	7/7/94	1325			
[signature]	Dawton Massenburg	7/7/94	1405			

AUTHORIZATION

MK-F Procurement Date
ES&H Date
Site Shipping Officer Date

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

July 12, 1994

Distribution:

QUARTERLY SITE AND QUARRY WATER TREATMENT PLANT EFFLUENT DATA SUMMARY -- SECOND QUARTER 1994

Enclosed please find the subject effluent data summary sheets for the batches of water treated and discharged during the second quarter of 1994. Eight batches (S#023 through S#030) and four batches (Q#018 and Q#021) have been treated and discharged from the site and quarry water treatment plants, respectively

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

Sincerely,

Jerry L. Van Fossen

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

Enclosure:
As stated

cc w/o enclosure:
Karen Marcus, MDNR
Martha Kopper/Geri Kountzman, MDNR

Distribution List:

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Division of Environmental Quality
Missouri Department of Natural Resources
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Jefferson City, Missouri 65102

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Remedial Project Manager
U.S. Environmental Protection Agency
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726 Minnesota Avenue
Kansas City, Kansas 66101

Stanley Remington
Consulting Hydrologist
919 Broadmoor Lane
St. Charles, Missouri 63301

Wayne Black
St. Louis County Health Department
111 S. Meremac
2nd Floor
Clayton, Missouri 63105

Conn Roden
St. Louis County Health Department
111 S. Meremac
2nd Floor
Clayton, Missouri 63105

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

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

SUMMARY OF QWTP (BATCH 018) ANALYTICAL RESULTS

4/13/94 0925

FROM ALL AGENCIES RECEIVING SAMPLES ON 4/1/94

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
BOD5	*	<1.0 mg/l		NA	NA	NA
COD	90 / 60	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	14 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l	<0.005 mg/l	NA	NA	
BARIUM	1.5	0.0495 mg/l		NA	NA	
CADMIUM	0.02	0.0005 mg/l		NA	NA	
CHROMIUM	0.1	<0.004 mg/l		NA	NA	
COPPER	1	<0.0025 mg/l		NA	NA	
IRON	0.6	<0.0225 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0084 mg/l	<0.010 mg/l	NA	NA	
MERCURY	0.004	0.00014 mg/l		NA	NA	
SELENIUM	0.02	<0.001 mg/l		NA	NA	
SILVER	0.1	<0.0025 mg/l		NA	NA	
ZINC	5.0	<0.010 mg/l		NA	NA	
CYANIDE	0.0075	<0.003 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.076 ug/l	<0.025 ug/l	NA	NA	<0.032 mg/l
FLUORIDE	4.0	<0.500 mg/l		NA	NA	0.063 mg/l
NITRATE AS N	*	<0.500 mg/l	<0.05 mg/l	NA	NA	<0.1 mg/l
SULFATE	500	307.9 mg/l		NA	NA	303.8 mg/l
CHLORIDE	*	175.6 mg/l		NA	NA	154.9 mg/l
GROSS ALPHA	*	2.10 ±1.04 pCi/l	<1.5 pCi/l	NA	NA	2.5 ±1.1 pCi/l
GROSS BETA	*	9.29 ±3.01 pCi/l	8.0 ±0.8 pCi/l	NA	NA	8.9 ±1.2 pCi/l
URANIUM, TOTAL	**	1.52 pCi/l	1.2 ±0.2 pCi/l	NA	NA	1.4 ±0.3 pCi/l
RADIUM-226	*	0.870 ±0.150 pCi/l		NA	NA	NA
RADIUM-228	*	<1.00 pCi/l		NA	NA	NA
THORIUM-230	*	<1.00 pCi/l		NA	NA	NA
THORIUM-232	*	0.0616 ±0.134 pCi/l		NA	NA	NA
ASBESTOS	*	0.17 MFL		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA	NA	NA	NA	NA
2. VOA	*	NA	NA	NA	NA	NA
3. PCB/PEST	*	NA	NA	NA	NA	NA

* = Monitoring Only Permit Discharge Limits

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

NA = Not Analyzed by Agency

= Data received after batch was discharged

cc: S. Anderson
C. Branchfield
B. Freeman
Glen Schmidt
Bulletin Board

SUMMARY OF QWTP (BATCH 019) ANALYTICAL RESULTS

4/28/94 0800

FROM ALL AGENCIES RECEIVING SAMPLES ON 4/18/94

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
BOD5	*	<1.0 mg/l		NA	NA	NA
COD	90 / 60	<5.00 mg/l		NA	NA	NA
TSS	50 / 30	<4 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l	<0.005 mg/l	NA	NA	
BARIUM	1.5	0.0285 mg/l		NA	NA	
CADMIUM	0.02	<0.0001 mg/l		NA	NA	
CHROMIUM	0.1	<0.004 mg/l		NA	NA	
COPPER	1	<0.0025 mg/l		NA	NA	
IRON	0.6	0.0295 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0069 mg/l	<0.020 mg/l	NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	0.0015 mg/l		NA	NA	
SILVER	0.1	<0.0025 mg/l		NA	NA	
ZINC	5.0	<0.015 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l	<0.005 mg/l	NA	NA	
2,4-DNT	0.22 ug/l	<0.076 ug/l	<0.025 ug/l	NA	NA	<0.032 ug/l
FLUORIDE	4.0	0.468 mg/l	0.19 mg/l	NA	NA	0.081 mg/l
NITRATE AS N	*	<0.100 mg/l	<0.05 mg/l	NA	NA	<0.1 mg/l
SULFATE	500	331.9 mg/l		NA	NA	316.1 mg/l
CHLORIDE	*	103.6 mg/l	95 mg/l	NA	NA	92.05 mg/l
GROSS ALPHA	*	1.70 ± 0.571 pCi/l	2.3 ±1.0 pCi/l	NA	NA	1.9 ±1.0 pCi/l
GROSS BETA	*	8.08 ± 1.03 pCi/l	10.5 ±0.8 pCi/l	NA	NA	6.3 ±1.0 pCi/l
URANIUM, TOTAL	**	1.40 ± 0.155 pCi/l	1.0 ±0.2 pCi/l	NA	NA	<1.0 pCi/l
RADIUM-226	*	0.840 ±0.329 pCi/l		NA	NA	NA
RADIUM-228	*	<1.33 pCi/l		NA	NA	NA
THORIUM-230	*	4.04 ±1.05 pCi/l	0.1 ±0.1 pCi/l	NA	NA	NA
THORIUM-232	*	4.91 ±1.17 pCi/l	<0.1 pCi/l	NA	NA	NA
ASBESTOS	*	<0.19 MFL		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA	NA	NA	NA	NA
2. VOA	*	NA	NA	NA	NA	NA
3. PCB/PEST	*	NA	NA	NA	NA	NA

* = Monitoring Only Permit Discharge Limits

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

NA = Not Analyzed by Agency

= Data received after batch was discharged

cc: S. Anderson
C. Branchfield
B. Freeman
Glen Schmidt
Bulletin Board

SUMMARY OF QWTP (BATCH 020) ANALYTICAL RESULTS

5/18/94 0800

FROM ALL AGENCIES RECEIVING SAMPLES ON 5/9/94

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
BOD5	*	<2.00 mg/l		NA	NA	NA
COD	90 / 60	<6.0 mg/l		NA	NA	NA
TSS	50 / 30	8.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0010 mg/l		NA	NA	
BARIUM	1.5	0.0359 mg/l		NA	NA	
CADMIUM	0.02	<0.0010 mg/l		NA	NA	
CHROMIUM	0.1	0.0017 mg/l		NA	NA	
COPPER	1	0.0029 mg/l		NA	NA	
IRON	0.6	0.0524 mg/l		NA	NA	
LEAD	0.1	<0.0010 mg/l		NA	NA	
MANGANESE	0.1	0.0097 mg/l		NA	NA	
MERCURY	0.004	<0.00010 mg/l		NA	NA	
SELENIUM	0.02	0.0033 mg/l		NA	NA	
SILVER	0.1	<0.0010 mg/l		NA	NA	
ZINC	5.0	0.010 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.0050 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.20 ug/l		NA	NA	
FLUORIDE	4.0	0.15 mg/l		NA	NA	
NITRATE AS N	*	<1.0 mg/l		NA	NA	
SULFATE	500	310 mg/l		NA	NA	
CHLORIDE	*	130 mg/l		NA	NA	
GROSS ALPHA	*	2.3 ± 3.2 pCi/l		NA	NA	2.5 ± 1.3 pCi/l
GROSS BETA	*	9 ± 3.1 pCi/l		NA	NA	8.5 ± 1.0 pCi/l
URANIUM, TOTAL	**	0.86 ± 0.082 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	*	0.68 ±0.46 pCi/l		NA	NA	NA
RADIUM-228	*	0.16 ±0.57 pCi/l		NA	NA	NA
THORIUM-230	*	7 ±1.2 pCi/l		NA	NA	NA
THORIUM-232	*	2.04 ±0.59 pCi/l		NA	NA	NA
ASBESTOS	*	<0.17 MFL		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	N.D.	NA	NA	NA	NA
2. VOA	*	N.D.	NA	NA	NA	NA
3. PCB/PEST	*	N.D.	NA	NA	NA	NA
pH	6.0 – 9.0 S.U.	6.69	NA	NA	NA	NA

* =MONITORING ONLY, NO PERMIT DISCHARGE LIMITS

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

NA = Not Analyzed by Agency

= Data received after batch was discharged

cc: S. Anderson
C. Branchfield
B. Freeman
Glen Schmidt
Bulletin Board

SUMMARY OF QWTP (BATCH 021) ANALYTICAL RESULTS

6/9/94 1300

FROM ALL AGENCIES RECEIVING SAMPLES ON 5/31/94

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
BOD5	*	<2.00 pCi/l		NA	NA	NA
COD	90 / 60	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	<4.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0010 mg/l		NA	NA	
BARIUM	1.5	0.0801 mg/l		NA	NA	
CADMIUM	0.02	0.0003 mg/l		NA	NA	
CHROMIUM	0.1	<0.0040 mg/l		NA	NA	
COPPER	1	<0.0025 mg/l		NA	NA	
IRON	0.6	<0.0225 mg/l		NA	NA	
LEAD	0.1	0.0017 mg/l		NA	NA	
MANGANESE	0.1	0.0161 mg/l		NA	NA	
MERCURY	0.004	<0.00010mg/l		NA	NA	
SELENIUM	0.02	0.0055 mg/l		NA	NA	
SILVER	0.1	<0.0025 mg/l		NA	NA	
ZINC	5.0	<0.0150 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 pCi/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.076 ug/l		NA	NA	
FLUORIDE	4.0	0.266 mg/l		NA	NA	
NITRATE AS N	*	<0.200 mg/l		NA	NA	
SULFATE	500	357.6 mg/l		NA	NA	
CHLORIDE	*	230.6 mg/l		NA	NA	
GROSS ALPHA	*	2.58 ±0.973 pCi/l		NA	NA	2.2 ±1.2 pCi/l
GROSS BETA	*	11.1 ±1.60 pCi/l		NA	NA	9.6 ±1.1 pCi/l
URANIUM, TOTAL	**	0.816 ±0.01 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	*	1.24 ±0.560 pCi/l		NA	NA	NA
RADIUM-228	*	6.00 ±1.40 pCi/l		NA	NA	NA
THORIUM-230	*	<1.00 pCi/l		NA	NA	NA
THORIUM-232	*	<1.00 pCi/l		NA	NA	NA
ASBESTOS	*	<0.20 MFL		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	N.D.	NA	NA	NA	NA
2. VOA	*	N.D.	NA	NA	NA	NA
3. PCB/PEST	*	N.D.	NA	NA	NA	NA
pH	6.0 – 9.0 S.U.	8.21	NA	NA	NA	NA

* =MONITORING ONLY, NO PERMIT DISCHARGE LIMITS

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

NA = Not Analyzed by Agency

= Data received after batch was discharged

cc: S. Anderson
C. Branchfield
B. Freeman
Glen Schmidt
Bulletin Board

SUMMARY OF SWTP (BATCH 023) ANALYTICAL RESULTS

4/11/94 09:25

FROM ALL AGENCIES RECEIVING SAMPLES ON 3/31/94

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	5.0 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.002 mg/l	<0.010 mg/l	NA	NA	
CHROMIUM	0.1	<0.005 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	<0.003 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	<0.005 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.018 ug/l	<0.025 ug/l	NA	NA	<0.032 ug/l
FLUORIDE	4.0	1.67 mg/l		NA	NA	1.293 mg/l
NITRATE AS N	20	5.36 mg/l	6.7 mg/l	NA	NA	27.5 mg/l
SULFATE	500	307 mg/l		NA	NA	920.7 mg/l
CHLORIDE	*	121 mg/l		NA	NA	126.55 mg/l
GROSS ALPHA	*	0.751 ± 0.665 pCi/l	1.3 ±1.0 pCi/l	NA	NA	2.8 ±1.2 pCi/l
GROSS BETA	*	4.97 ± 0.972 pCi/l	9.6 ±0.8 pCi/l	NA	NA	9.3 ±1.1 pCi/l
URANIUM, TOTAL	**	0.598 pCi/l	0.6 ±0.2 pCi/l	NA	NA	<1.0 pCi/l
RADIUM-226	***	2.01 ±0.190 pCi/l		NA	NA	
RADIUM-228	***	<1.00 pCi/l		NA	NA	
THORIUM-230	***	<1.00 pCi/l		NA	NA	NA
THORIUM-232	***	<1.00 pCi/l		NA	NA	NA
pH (Std. Units)	6 – 9	7.49 S.U.				
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.38 ug/l	<0.20 ug/l	NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Mel Roberts, Kathy McClintock
Roy VanHee, B. Freeman
Bulletin Board, Glen Schmidt

SUMMARY OF SWTP (BATCH 024) ANALYTICAL RESULTS

4/15/94 09:25

FROM ALL AGENCIES RECEIVING SAMPLES ON 4/11/94

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	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	7.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l		NA		
CHROMIUM	0.1	<0.004 mg/l		NA		
LEAD	0.1	0.0013 mg/l		NA		
MANGANESE	0.1	0.0039 mg/l		NA		
MERCURY	0.004	<0.0002 mg/l		NA		
SELENIUM	0.02	0.0026 mg/l		NA		
CYANIDE, AMENABLE	0.0075	<0.003 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.076 ug/l		NA		<0.032 mg/l
FLUORIDE	4.0	1.422 mg/l		NA	NA	1.073 mg/l
NITRATE AS N	20	6.664 mg/l		NA		6.449 mg/l
SULFATE	500	289.9 mg/l		NA	NA	284.7 mg/l
CHLORIDE	*	85.51 mg/l		NA	NA	77 mg/l
GROSS ALPHA	*	3.31 ±1.09 pCi/l		NA		2.1 ±1.2 pCi/l
GROSS BETA	*	10.9 ±1.29 pCi/l		NA		9.1 ±1.0 pCi/l
URANIUM, TOTAL	**	0.897 ±0.094 pCi/l		NA		<1.0 pCi/l
RADIUM-226	***	1.21 ±0.387 pCi/l		NA	NA	
RADIUM-228	***	1.83 ±0.618 pCi/l		NA	NA	
THORIUM-230	***	<1.32 pCi/l		NA	NA	NA
THORIUM-232	***	<0.962 pCi/l		NA	NA	NA
pH (Std. Units)	6 – 9	6.31 S.U.				
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	1 Detect (Note 2)		NA	NA	NA
2. VOA	*	Non-Detect		NA	NA	NA
3. PCBs / Pesticides	*	Non-Detect		NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month

NA = Not Analyzed

Note 2 = Bis(2-Ethylhexyl)Phthalate concentration is 1.3 ug/l.

= Data received after batch was discharged

cc: S. Anderson, Mel Roberts, Kathy McClintock, Roy VanHee, B. Freeman, Bulletin Board, Glen Schmidt

SUMMARY OF SWTP (BATCH 025) ANALYTICAL RESULTS

4/29/94 0800

FROM ALL AGENCIES RECEIVING SAMPLES ON 4/25/94

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	15.0 mg/l		NA	NA	NA
TSS	50 / 30	4 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l	<0.005 mg/l	NA	NA	
CHROMIUM	0.1	<0.004 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0025 mg/l	<0.020 mg/l	NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	0.0011 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.076 ug/l		NA	NA	<0.032 ug/l
FLUORIDE	4.0	2.923 mg/l		NA	NA	2.96 mg/l
NITRATE AS N	20	5.235 mg/l	<4.7 mg/l	NA	NA	5.024 mg/l
SULFATE	500	228.5 mg/l		NA	NA	218.55 mg/l
CHLORIDE	*	71.21 mg/l		NA	NA	68.85 mg/l
GROSS ALPHA	*	<1.76 pCi/l	1.2 ±0.7 pCi/l	NA	NA	1.4 ±1.0 pCi/l
GROSS BETA	*	8.63 ± 1.11 pCi/l	7.1 ±0.6 pCi/l	NA	NA	6.0 ±1.0 pCi/l
URANIUM, TOTAL	*	<0.705 pCi/l	0.2 ±0.2 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	7.78		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	Non-Detect	<0.1 ug/l	NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Mel Roberts, Kathy McClintock, Roy VanHee, B. Freeman, Bulletin Board, Glen Schmidt

SUMMARY OF SWTP (BATCH 026) ANALYTICAL RESULTS

5/6/94 1100

FROM ALL AGENCIES RECEIVING SAMPLES ON 5/2/94

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	<5.00 mg/l		NA	NA	NA
TSS	50 / 30	5.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.003 mg/l		NA	NA	
CHROMIUM	0.1	<0.007 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	<0.003 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	<0.002 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 ug/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.20 ug/l		NA	NA	<0.092 ug/l
FLUORIDE	4.0	2.0 mg/l		NA	NA	1.92 mg/l
NITRATE AS N	20	3.14 mg/l		NA	NA	4.80 mg/l
SULFATE	500	220 mg/l		NA	NA	225.55 mg/l
CHLORIDE	*	53 mg/l		NA	NA	61.2 mg/l
GROSS ALPHA	*	0.6 ±1.9 pCi/l		NA	NA	2.5 ±1.3 pCi/l
GROSS BETA	*	5.8 ±2.5 pCi/l		NA	NA	6.0 ±1.0 pCi/l
URANIUM, TOTAL	*	0.356 ±0.021 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	***	0.68 ±0.33 pCi/l		NA	NA	
RADIUM-228	***	0.73 ±0.46 pCi/l		NA	NA	
THORIUM-230	***	1.1 ±0.47 pCi/l		NA	NA	NA
THORIUM-232	***	0.4 ±0.28 pCi/l		NA	NA	NA
pH (Std. Units)	6 – 9	6.05		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.38 ug/l		NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Mel Roberts, Kathy McClintock
Roy VanHee, B. Freeman
Bulletin Board, Glen Schmidt

SUMMARY OF SWTP (BATCH 027) ANALYTICAL RESULTS

5/17/94 1325

FROM ALL AGENCIES RECEIVING SAMPLES ON 5/11/94

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	<6.0 mg/l		NA	NA	NA
TSS	50 / 30	<5.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0010 mg/l		NA	NA	
CHROMIUM	0.1	0.0013 mg/l		NA	NA	
LEAD	0.1	<0.0010 mg/l		NA	NA	
MANGANESE	0.1	0.0011 mg/l		NA	NA	
MERCURY	0.004	<0.00010 mg/l		NA	NA	
SELENIUM	0.02	<0.0030 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.20 ug/l		NA	NA	<0.032 ug/l
FLUORIDE	4.0	1.7 mg/l		NA	NA	1.98 mg/l
NITRATE + NITRITE AS N	20	2.7 mg/l		NA	NA	2.35 mg/l
SULFATE	500	240 mg/l		NA	NA	256.35 mg/l
CHLORIDE	*	50 mg/l		NA	NA	49.65 mg/l
GROSS ALPHA	*	0.481 ±0.771 pCi/l		NA	NA	2.4 ±1.3 pCi/l
GROSS BETA	*	5.78 ±1.29 pCi/l		NA	NA	7.1 ±1.0 pCi/l
URANIUM, TOTAL	*	0.02 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	***	***		NA	NA	
RADIUM-228	***	***		NA	NA	
THORIUM-230	***	***		NA	NA	NA
THORIUM-232	***	***		NA	NA	NA
pH (Std. Units)	6 – 9	6.69		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.38 ug/l		NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month. Already sampled this month.

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Mel Roberts, Kathy McClintock, Roy VanHee, B. Freeman, Bulletin Board, Glen Schmidt

SUMMARY OF SWTP (BATCH 028) ANALYTICAL RESULTS

5/31/94 0900

FROM ALL AGENCIES RECEIVING SAMPLES ON 5/25/94

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	<5.00 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	0.00138 mg/l		NA		
CHROMIUM	0.1	<0.00700 mg/l		NA		
LEAD	0.1	<0.00100 mg/l		NA		
MANGANESE	0.1	<0.00300 mg/l		NA		
MERCURY	0.004	0.00012 mg/l		NA		
SELENIUM	0.02	<0.00200 mg/l		NA		
CYANIDE, AMENABLE	0.0075	<0.00500 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA		
FLUORIDE	4.0	1.86 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	1.56 mg/l		NA		
SULFATE	500	242 mg/l		NA	NA	
CHLORIDE	*	83.4 mg/l		NA	NA	
GROSS ALPHA	*	1.63 ±0.957 pCi/l		NA		5.4 ±1.7 pCi/l
GROSS BETA	*	4.50 ±1.32 pCi/l		NA		8.2 ±1.0 pCi/l
URANIUM, TOTAL	*	<6.8 pCi/l		NA		<1.0 pCi/l
RADIUM-226	***	***		NA	NA	
RADIUM-228	***	***		NA	NA	
THORIUM-230	***	***		NA	NA	NA
THORIUM-232	***	***		NA	NA	NA
pH (Std. Units)	6 – 9	7.62		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.30 ug/l		NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month. Already sampled this month.

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Roy VanHee, Bulletin Board, Mel Roberts, B. Freeman, Glen Schmidt, Kathy McClintock

SUMMARY OF SWTP (BATCH 029) ANALYTICAL RESULTS

6/14/94 1130

From all parties receiving samples on 6/6/94

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	<5.00 mg/l		NA	NA	NA
TSS	50 / 30	<2.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.00100 mg/l		NA	NA	
CHROMIUM	0.1	<0.0060 mg/l		NA	NA	
LEAD	0.1	<0.00100 mg/l		NA	NA	
MANGANESE	0.1	<0.00300 mg/l		NA	NA	
MERCURY	0.004	<0.00010 mg/l		NA	NA	
SELENIUM	0.02	<0.00300 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.00400 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	
FLUORIDE	4.0	1.73 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	1.83 mg/l		NA	NA	
SULFATE	500	262 mg/l		NA	NA	
CHLORIDE	*	153 mg/l		NA	NA	
GROSS ALPHA	*	0.9 ±2.9 pCi/l		NA	NA	4.4 ±1.5 pCi/l
GROSS BETA	*	5.3 ±4.7 pCi/l		NA	NA	7.3 ±1.0 pCi/l
URANIUM, TOTAL	*	0.097 ±0.01 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	***	<1.00 pCi/l		NA	NA	
RADIUM-228	***	1.80 ±0.600 pCi/l		NA	NA	
THORIUM-230	***	<1.00 pCi/l		NA	NA	NA
THORIUM-232	***	<1.00 pCi/l		NA	NA	NA
pH (Std. Units)	6 ~ 9	6.12		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.30 ug/l		NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month. Already sampled this month.

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Mel Roberts, Kathy McClintock
Roy VanHee, B. Freeman
Bulletin Board, Glen Schmidt

SUMMARY OF SWTP (BATCH 030) ANALYTICAL RESULTS

6/24/94 1030

From all parties receiving samples on 6/20/94

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	<5.0 mg/l		NA	NA	NA
TSS	50 / 30	<4.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.001 mg/l		NA	NA	
CHROMIUM	0.1	<0.004 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	<0.0025 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	<0.001 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.019 ug/l		NA	NA	
FLUORIDE	4.0	2.674 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	5.283 mg/l		NA	NA	
SULFATE	500	225.7 mg/l		NA	NA	
CHLORIDE	*	83.79 mg/l		NA	NA	
GROSS ALPHA	*	1.2 ±2.3 pCi/l		NA	NA	2.6 ±1.3 pCi/l
GROSS BETA	*	9 ±2.3 pCi/l		NA	NA	6.1 ±0.6 pCi/l
URANIUM, TOTAL	**	0.18 ±0.02 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226	*	***		NA	NA	
RADIUM-228	*	***		NA	NA	
THORIUM-230	*	***		NA	NA	NA
THORIUM-232	*	***		NA	NA	NA
pH (Std. Units)	6 – 9	6.44		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.30 ug/l		NA	NA	NA

* = Monitoring Parameter

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

*** = Monitoring parameter once per month. Already sampled this month.

NA = Not Analyzed

= Data received after batch was discharged

cc: S. Anderson, Roy VanHee, Bulletin Board, Mel Roberts, B. Freeman, Glen Schmidt, Kathy McClintock

ouis County
rtment of Health

July 8, 1994

Kenneth V. Miller
Bureau of Radiological Health
Missouri Department of Health
Jefferson City, MO 65102

Dear Mr. Miller:

The level of Gross Alpha and Gross Beta in the commercial samples from St. Charles County Court, Weldon Springs, Treatment Plant are as follows:

DATE: [05-01-94/05/31/94)	GROSS ALPHA	GROSS BETA	MDL(pCi/L)
Raw Water	3.7 ± 1.4	5.8 ± 0.8	1.0
Finished Water	< 1.0	4.1 ± 0.8	1.0

Sincerely,

Wayne E. Black

Wayne E. Black, Ph.D.
Laboratory Director (;)

pc - Dept. of Natural Resources - WSP - Jefferson City
Dept. of Natural Resources - WSP - St. Louis
Mr. Thomas W. Aaron, St. Charles County Court, Weldon Springs
% St. Charles County Water

WEB:y

zz Westfall
unty Executive

a Fowler Bryan, M.D.
ector

S. Meramec Avenue
on, Missouri 63105

one 14) 854-6000
(314) 854-6435
(314) 854-6446

An equal opportunity employer

DATE: 07/[illegible]

ST. CHARLES COUNTY WATER DEPARTMENT

MONTHLY WATER USAGE REPORT

MONTH OF: JUNE	monthly usaged	avg daily	y to d usaged	avg y to d
PLANT PRODUCTION	421783000	14.10	1644073000	9.08
PLANT USE	25000000	0.80	85246000	0.47
DELIVERED TO SYSTEM	396783000	13.30	1560087000	8.61
MISSOURI CITIES WATER	312248000	10.40	1192010000	6.58
WATER DISTRICT #2 24" LINE	61210000	2.00	240354000	1.32
WATER DIST. #2 NEW MELLE	6667000	0.20	28310000	0.15
NATIONAL GUARD AREA	000	0	6000	
TOTAL METER SALES	380125000	12.60	1460704000	8.06
UNMETERED AND UNACCOUNTED	16658 000	0.60	99383000	0.55

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+: 252362	+: 4191
RECEIVED	+: 727440	+: 32000
TOTAL	=: 979802	=: 36191
USED	-: 666954	-: 28515
BALANCE	=: 312848	=: 7676
POUNDS PER 1000 GALLONS	=: 1.581	=: 0.0676
PARTS PER MILLION	=: 189.6	=: 8.106
AVG. POUNDS PER DAY	=: 22231.8	=: 950.5
POUNDS USED YEAR TO DATE	=: 2589557	=: 116070

DATE: 7/01/94 FOR THE MONTH OF: JUNE

ETER READINGS

CCOUNT #	METER	TO: 6/30/94	FROM: 5/31/94	USAGED
MI(JURI CITIES BOOSTER STATION				
	ULTRA SONIC #1	+: 205233	-: 82291	=: 122942000
	ULTRA SONIC #2	+: 358324	-: 178002	=: 180322000
	TOTALIZER	+: 3265548	-: 2956088	=: 309460000

ETERS BEFORE MISSOURI CITIES BOOSTER STATION

		TO: 6/27/94	FROM: 5/26/94	USAGED
04-50-1328350	1. FH ANNEX 4"	+: 931	-: 910	=: 21000
4-50-1328500	2. MO STATE SHED	+: 154	-: 150	=: 4000
04-50-1330000	3. DOE LAB LARGE	+: 285	-: 275	=: 10000
	SMALL	+: 5403	-: 4404	=: 999000
4-50-1330401	4. DOE FIRE LINE	+: 12536	-: 11764	=: 772000
4-50-1330701	5. DOE TRAILERS	+: 82	-: 82	=:
04-50-1330100	6. DOE 8" #1 LARGE	+: 5437	-: 5061	=: 376000
	SMALL	+: 5910	-: 5880	=: 30000
4-50-1330200	7. DOE 8" #2 LARGE	+: 1776	-: 1721	=: 55000
	SMALL	+: 2385	-: 2370	=: 15000
04-50-1320200	8. DOE 3"	+: 2058	-: 1770	=: 288000
4-50-1328550	9. FH SCHOOL	+: 12055	-: 11837	=: 218000
			TOTAL	=: 2788000

MISSOURI CITIES TOTAL =: 312248

A R DIST. #2 24" LINE

	TO: 7/01/94	FROM: 6/01/94	USAGED
24" EAST	+: 201747	-: 201747	=:
24" WEST	+: 612864	-: 551654	=: 61210000
BYPASS	+: 2340	-: 2340	=:

WATER DIST. #2 TOTAL =: 61210000

NEW MELLE	+: 209258	-: 202591	=: 6667000

MONTHLY REPORT

AUGUST 1994

BY

Stanley M. Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results from sampling well PW-2 have been received and are appended. This well was sampled on July 19, 1994. The parameters that concern us at this well are primarily the nitroaromatics. No detections were noted for any of these chemicals. The gross alpha, beta and total uranium are all within background ranges and have not changed.

A sample was taken from the treated water at the plant site on August 24, 1994. These results are also appended. A gross beta of 39 +/- 12 was noted. This is higher than normal. However the figure does not agree with other results obtained at the same time by other agencies who sent their samples to different laboratories for analyses. This probably indicates a mistake in the analysis. This frequently happens because of the low concentrations required for analyses, and since it does not agree with the other four split samples it can be ignored.

Well number PW-8 was sampled on August 18, 1994. The main concerns of this well are the concentrations of the radionucleides and nitroaromatics.

II. FUTURE PLANS

I will sample PW-9 during mid September, 1994 and either one or two treated waters from the quarry and/or plant sites. I still have not completed the reading of all of the reports that arrived last month.

III. MISCELLANEOUS

Enclosed are the results of the gross alpha and gross beta by the St. Louis County Department of Health on the raw and finished water from the commercial samples for the St. Charles County Court, Weldon Spring Treatment Plant for the period from 6/1/94 - 6/20/94.

Also enclosed is the St. Charles County Water Department Monthly Water Usage Report.

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

August 19, 1994

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

RE: ATAS #10362.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on July 19, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeff Carr

Jeffrey A. Carr
Project Manager

Enclosures

JAC/mb

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: 1036201R(201)

DATE : 08-19-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #10362
DATE SUBMITTED: 07-19-94
DATE ANALYZED : 08-11-94
PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
PW-2	10362.01	pCi/L	GROSS ALPHA	2 +/- 2*
PW-2	10362.01	pCi/L	GROSS BETA	7 +/- 3*
PW-2	10362.01	mg/L	TOTAL URANIUM	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTEGRATION 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
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1036201E(201)
DATE : 08-19-94

SAMPLE MATRIX : WATER
ATAS # : 10362.01
DATE SUBMITTED: 07-19-94
DATE EXTRACTED: 07-22-94
DATE ANALYZED : 07-22-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-2

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

EXPLOSIVE	REPORTING LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	ND

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

REPORT: BK0722E(201)

DATE : 08-19-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 07-19-94
DATE EXTRACTED: 07-22-94
DATE ANALYZED : 07-22-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

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

EXPLOSIVE	REPORTING LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	ND

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

REPORT: QC0722E(201)

DATE : 08-19-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 07-19-94
DATE EXTRACTED: 07-22-94
DATE ANALYZED : 07-22-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
SAMPLE ID : LABORATORY CONTROL SAMPLE

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

COMPOUND	SPIKE ADDED(ug/L)	AMT. FOUND SMPL.(ug/L)	AMT. FOUND LCS(ug/L)	PERCENT RECOVERY	QC LIMITS RECOVERY
HMX	1600	ND	1670	104 %	46-151
RDX	1300	ND	1340	103 %	72-129
1,3,5-TNB	900	ND	930	103 %	74-118
TETRYL	1650	ND	1820	110 %	58-120
1,3-DNB	475	ND	530	112 %	79-132
TNT	750	ND	790	105 %	61-145
NITROBENZENE	850	ND	900	106 %	68-135
2,6 DNT	1150	ND	1250	109 %	77-125
2,4 DNT	700	ND	700	100 %	70-134
o-NITROTOLUENE	1450	ND	1560	108 %	73-131
p-NITROTOLUENE	1000	ND	1060	106 %	73-116
m-NITROTOLUENE	950	ND	1010	106 %	71-127

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

___OF___

CHAIN OF CUSTODY RECORD

PROJ. NO.

ATAS CLIENT NAME: STAN REMINGTON

FORM COMPLETED BY: [signature]

LOCATION: WELDON SPRING

ANALYSIS: LM 7/19/94 AL-BA

SAMPLE ID	DATE	TIME	MATRIX	GRAB	COMP	PRES	NO. OF CONTAINERS	TOTAL U	GROSS α	GROSS β	NITROS	TSS									REMARKS	LAB NO.
PW-2	7/19/94	1115		X				X	X	X	X											10362.01
COUNTY TREATMENT												X									14°C WD 7/19/94	

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
[signature]	12:50 7/19/94	[signature]	12:51 7-19-94				

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

September 1, 1994

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

RE: ATAS #10712.01
WSSRAP

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on August 24, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr
Project Manager

Enclosures

JAC/pck

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: 1071201G(204)
DATE : 08-31-94

SAMPLE MATRIX : WATER
ATAS # : 10712.01
DATE SUBMITTED: 08-24-94
DATE EXTRACTED: 08-25-94
DATE ANALYZED : 08-30-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WSSRAP
SAMPLE ID : #1 NP-EPS1-082494-C

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

COMPOUND	DETECTION LIMIT	RESULTS
2,6-DINITROTOLUENE	0.011	ND
2,4-DINITROTOLUENE	0.023	ND

QA/QC SURROGATE RECOVERY

TETRACHLORO-M-XYLENE	64 %
DECACHLOROBIPHENYL	70 %

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: BK0825GC(204)
DATE : 08-31-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 08-24-94
DATE EXTRACTED: 08-25-94
DATE ANALYZED : 08-30-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WSSRAP
SAMPLE ID : METHOD BLANK

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

COMPOUND	DETECTION LIMIT	RESULTS
2,6-DINITROTOLUENE	0.010	ND
2,4-DINITROTOLUENE	0.020	ND

QA/QC SURROGATE RECOVERY

TETRACHLORO-M-XYLENE	66 %
DECACHLOROBIPHENYL	88 %

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: QC0825GC(204)
DATE : 08-31-94

SAMPLE MATRIX : WATER
ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE
DATE SUBMITTED: 08-24-94
DATE EXTRACTED: 08-25-94
DATE ANALYZED : 08-30-94
METHOD REF. : SW846-8080, EPA METHODOLOGY
PROJECT : WSSRAP
SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

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

COMPOUND	SPIKE ADDED(ug/L)	AMT. FOUND SMPL.(ug/L)	AMT. FOUND SB (ug/L)	PERCENT RECOVERY
2,6 DNT	0.25	0	0.198	79 %
2,4 DNT	0.25	0	0.237	95 %

COMPOUND	AMT. FOUND SBD.(ug/L)	SBD PERCENT RECOVERY	RELATIVE PERCENT DIFFERENCE
2,6 DNT	0.202	81 %	2.5 %
2,4 DNT	0.237	95 %	0.0 %

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: 1071201R(204)

DATE : 08-31-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #10712
DATE SUBMITTED: 08-24-94
DATE ANALYZED : 08-31-94
PROJECT : WSSRAP

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
1 NP-EPS1-082494-C	10712.01	pCi/L	GROSS ALPHA	2 +/- 4*
1 NP-EPS1-082494-C	10712.01	pCi/L	GROSS BETA	39 +/- 12*
1 NP-EPS1-082494-C	10712.01	mg/L	TOTAL URANIUM	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTEGRATION 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
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1071201M(204)
DATE : 08-31-94

SAMPLE MATRIX : WATER
ATAS # : 10712.01
DATE SUBMITTED: 08-24-94
PROJECT : WSSRAP
SAMPLE ID : #1 NP-EPS1-082494-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE-SPEC.	0.10	mg/L	1.26	08-29-94	SM 418B
			METALS		
ARSENIC	10.0	ug/L	ND	08-26-94	SW 6010
CHROMIUM	5.0	ug/L	ND	08-26-94	SW 6010
LEAD	3.0	ug/L	ND	08-26-94	SW 6010
MANGANESE	5.0	ug/L	ND	08-26-94	SW 6010
MERCURY	0.2	ug/L	ND	08-26-94	SW 7470
SELENIUM	5.0	ug/L	ND	08-26-94	SW 6010

mg/L = PARTS PER MILLION(PPM)
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

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

REPORT: QC0826M(204)

DATE : 08-31-94

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	08-26-94	ARSENIC	<10.0	ug/L
METHOD BLANK	08-26-94	CHROMIUM	<5.0	ug/L
METHOD BLANK	08-26-94	LEAD	<3.0	ug/L
METHOD BLANK	08-26-94	MANGANESE	<5.0	ug/L
METHOD BLANK	08-26-94	MERCURY	<0.2	ug/L
METHOD BLANK	08-26-94	SELENIUM	<5.0	ug/L
METHOD BLANK	08-29-94	NITRATE/NITRITE	<0.10	mg/L
BLANK SPIKE	08-26-94	ARSENIC	111 %	RECOVERY
BLANK SPIKE	08-26-94	CHROMIUM	104 %	RECOVERY
BLANK SPIKE	08-26-94	LEAD	104 %	RECOVERY
BLANK SPIKE	08-26-94	MANGANESE	104 %	RECOVERY
BLANK SPIKE	08-26-94	MERCURY	101 %	RECOVERY
BLANK SPIKE	08-26-94	SELENIUM	108 %	RECOVERY
BLANK SPIKE	08-29-94	NITRATE/NITRITE	100 %	RECOVERY
BLANK SPIKE DUP	08-26-94	ARSENIC	0.5 %	RPD
BLANK SPIKE DUP	08-26-94	CHROMIUM	0.5 %	RPD
BLANK SPIKE DUP	08-26-94	LEAD	0.4 %	RPD
BLANK SPIKE DUP	08-26-94	MANGANESE	0.0 %	RPD
BLANK SPIKE DUP	08-26-94	MERCURY	1.0 %	RPD
BLANK SPIKE DUP	08-26-94	SELENIUM	0.0 %	RPD

18
LM
8/24/94

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: _____ Lab/P.O. #: _____ Dept/Cost Code: _____
Phone Number: _____ Requisitioner: _____
Request Number: _____ Turnaround Time: ☐ Standard ☐ Accelerated ☐ Priority ☐ Urgent ☐ Emergency

#	Sample ID	QC	Date Sampled	Matrix	Cont.	Preserv.	Parameters	LM 8/24/94 IF3-AL-BA	Arch. (Y/N)
1	NP-EPS1-082494-C		8/24/94	WATER	1-1L	HNO_3	As, Cr, Hg, Mn, Se, Pb •	10712.01	N
					1-1L Glass	ICE	2,4-DNT •	↓	
					1-1L	H_2SO_4	NO_3 •	↓	
					1-1L	HNO_3	U, Gross α, β •	↓	

Sampler's Signature _____ Checked By _____ Technical Reviewer _____

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? (Y/N)	Cooler Temp
[signature]	[signature]	8/24/94	1200			
[signature]	[signature]	8/24/94	1245			

AUTHORIZATION

MK–F Procurement _____ Date _____ ES&H _____ Date _____ Site Shipping Officer _____ Date _____

St. Louis County
Department of Health

July 28, 1994

Kenneth V. Miller
Bureau of Radiological Health
Missouri Department of Health
Jefferson City, MO 65102

Dear Mr. Miller:

The level of Gross Alpha and Gross Beta in the commercial samples from St. Charles County Court, Weldon Springs, Treatment Plant are as follows:

DATE: [06-01-94/06/30/94)	GROSS ALPHA	GROSS BETA	MDL(pCi/L)
Raw Water	1.5 ± 1.0	6.1 ± 1.1	1.0
Finished Water	< 1.0	3.5 ± 1.0	1.0

Sincerely,

Wayne E. Black by (J)
Wayne E. Black, Ph.D.
Laboratory Director

pc - Dept. of Natural Resources - WSP - Jefferson City
Dept. of Natural Resources - WSP - St. Louis
Mr. Thomas W. Aaron, St. Charles County Court, Weldon Springs
& St. Charles County Water

WEB:y

Buzz Westfall
County Executive

Alpha Fowler Bryan, M.D.
Director

111 S. Meramec Avenue
Clayton, Missouri 63105

Ph: (314) 854-6000
Fax: (314) 854-6435
TDD: (314) 854-6446

An equal opportunity employer

DATE: [illegible]

ST. CHARLES COUNTY WATER DEPARTMENT

MONTHLY WATER USAGE REPORT

MONTH OF: [illegible]

	USAGED	AVG	Y TO D	AVG
PLANT PRODUCTION	394[illegible]5000	12.70	2[illegible]8825[illegible]000	9.61
PLANT USE	[illegible]20[illegible]000	9.60	[illegible]000	0.50
DELIVERED TO SYSTEM	[illegible]4000	12.10	[illegible]000	9.12
MISSOURI CITIES WATER	281[illegible]86000	9.00	3[illegible]73202000	6.95
WATER DISTRICT #2 24" LINE	69983000	2.20	310337000	1.46
WATER DIST. #2 NEW MELLE	6[illegible]000000	0.20	34218000	0.16
NATIONAL GUARD AREA	8000	0	14000	
TOTAL METER SALES	35[illegible]77000	11.50	1[illegible]7781000	[illegible].57
UNMETERED AND UNACCOUNTED	[illegible]1217000	0.60	115700000	[illegible].55

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+: 312848	+: 7676
RECEIVED	+: 559904	+: 32000
TOTAL	=: [illegible]	=: 39676
USED	-: 596981	-: 28680
BALANCE	=: 275771	=: 10996
POUNDS PER 1000 GALLONS	=: 1.51	=: 0.038
PARTS PER MILLION	=: 163	=: 7.6
AVG. POUNDS PER DAY	=: [illegible]057	=: 925
POUNDS USED YEAR TO DATE	=: 3136638	=: 144750

DATE: 08/01/94 FOR THE MONTH OF: JULY

ETER READINGS

ACCOUNT # METER TO: 07/29/94 FROM: 07/01/94 USAGED

IS OURI CITIES BOOSTER STATION

ULTRA SONIC #1	+: 317045	-: 205233	=: 111812000
ULTRA SONIC #2	+: 519855	-: 358324	=: 161521000
TOTALIZER	+: 3544548	-: 326554	=: 278998000

ETERS BEFORE MISSOURI CITIES BOOSTER STATION

TO: 07/27/94 FROM: 06/27/94 USAGED

04-50-1328350	1. FH ANNEX 4"	+: 960	-: 931	=: 29000
4-50-1328500	2. MO STATE SHED	+: 158	-: 154	=: 4000
4-50-1330000	3. DOE LAB LARGE	+: 340	-: 285	=: 55000
	SMALL	+: 6444	-: 5403	=: 1041000
04-50-1330401	4. DOE FIRE LINE	+: 12976	-: 12536	=: 440000
4-50-1330701	5. DOE TRAILERS	+: 82	-: 82	=:
04-50-1330100	6. DOE 8" #1 LARGE	+: 5565	-: 5437	=: 128000
	SMALL	+: 5970	-: 5910	=: 60000
4-50-1330200	7. DOE 8" #2 LARGE	+: 1787	-: 1776	=: 11000
	SMALL	+: 2390	-: 2385	=: 5000
04-50-1320200	8. DOE 3"	+: 2342	-: 2042	=: 284000
4-50-1328550	9. FH SCHOOL	+: 12186	-: 12055	=: 131000
			TOTAL	=: 2188000

MISSOURI CITIES TOTAL =: 281186000

WATER DIST. #2 24" LINE

TO: 08/01/94 FROM: 07/01/94 USAGED

24" EAST	+: 201747	-: 201747	=:
24" WEST	+: 682847	-: 612864	=: 69983000
BYPASS	+: 2340	-: 2340	=:

WATER DIST. #2 TOTAL =: 69983000

NEW MELLE	+: 215158	-: 209258	=: 5900000

MONTHLY REPORT

SEPTEMBER 1994

BY

Stanley M. Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results of the sampling of well number PW-8 is appended. The results show that no changes occurred since the last time this well was tested. This well and well PW-9 are the two wells nearest the quarry. Our concern is primarily for the radionuclides that are known to exist in the quarry, which conceivably could enter the well field from the quarry. However, there is still no indication that this will ever occur.

I took no samples for analysis during September from any of the batches treated by the DOE at both the quarry and chemical plant sites. Well PW-2 was sampled on September 20, 1994.

Also enclosed are the results of the analyses for Gross Alpha and Gross Beta from the commercial samples from St. Charles Court, Weldon Spring Treatment Plant. These analyses are carried out by the St. Louis County Dept. of Health in their laboratory in Clayton, MO. by Wayne E. Black, Ph.D., the Director of the lab. Again the results showed only background levels, well below the NPDES limits. This was for the period 7/1/94 - 7/31/94.

II. REPORTS

I have completed the 400 page report entitled, "Weldon Spring Site Environmental Report for Calendar Year 1993." I mentioned this report in an earlier monthly report. I am mainly concerned with the ground and surface water results. One sample for the Femme Osage Slough showed uranium concentration noticeably higher than historic concentrations. The DOE determined this to be caused by flood conditions during much of 1993.

Environmental monitoring of the ground water indicates that the largest amount of contamination is still present in the bedrock of the quarry rim and the alluvial materials and bedrock north of the Femme Osage Slough. Total uranium concentrations remain within background levels, and no detectable concentrations of nitroaromatic compounds were identified south of the Slough or in any of the St. Charles County production wells.

III. FUTURE PLANS

The eighth annual St. Louis Regional Environmental Conference will be held on October 11, 1994 at the Adam's Mark Hotel in St. Louis. I will attend. I will attend the "Water Breakout Section" which deals with water and

hazardous contaminants. I will sample well PW-9 during the middle of the month, and probably one of the treated batches at the Chemical Plant Site.

IV. MISCELLANEOUS

The St. Charles County water Department Monthly Water Usage Report for the month of August, 1994 is enclosed.

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

September 13, 1994

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

RE: ATAS #10636.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on August 16, 1994.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Jeffrey A. Carr
Project Manager

Enclosures

JAC/mb

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: 1063601E(204)
DATE : 09-12-94

SAMPLE MATRIX : WATER
ATAS # : 10636.01
DATE SUBMITTED: 08-16-94
DATE EXTRACTED: 08-19-94
DATE ANALYZED : 08-19-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-8

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

EXPLOSIVE	REPORTING LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	ND

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

REPORT: BK0819E(204)

DATE : 09-12-94

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 08-16-94
DATE EXTRACTED: 08-19-94
DATE ANALYZED : 08-19-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

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

EXPLOSIVE	REPORTING LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	44.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	10.0	ND
2,6 DNT	9.4	ND
2,4 DNT	6.0	ND
2,4,6 TNT	7.0	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.5	ND
m-NITROTOLUENE	8.0	ND

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

REPORT: QC0819E(204)
DATE : 09-12-94

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 08-16-94
DATE EXTRACTED: 08-19-94
DATE ANALYZED : 08-19-94
METHOD REF. : SW846-8330, EPA METHODOLOGY
SAMPLE ID : LABORATORY CONTROL SAMPLE

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

COMPOUND	SPIKE ADDED(ug/L)	AMT. FOUND SMPL.(ug/L)	AMT. FOUND LCS(ug/L)	PERCENT RECOVERY	QC LIMITS RECOVERY
HMX	1600	ND	1530	96 %	46-151
RDX	1300	ND	1270	98 %	72-129
1,3,5-TNB	900	ND	844	94 %	74-118
TETRYL	1650	ND	1730	105 %	58-120
1,3-DNB	475	ND	508	107 %	79-132
TNT	750	ND	752	100 %	61-145
NITROBENZENE	850	ND	852	100 %	68-135
2,6 DNT	1150	ND	1170	102 %	77-125
2,4 DNT	700	ND	670	96 %	70-134
o-NITROTOLUENE	1450	ND	1470	101 %	73-131
p-NITROTOLUENE	1000	ND	1020	102 %	73-116
m-NITROTOLUENE	950	ND	947	100 %	71-127

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: 1063601R(204)
DATE : 09-12-94

SAMPLE MATRIX : WATER
ATAS EPISODE : #10636
DATE SUBMITTED: 08-16-94
DATE ANALYZED : 09-08-94 + 09-12-94
PROJECT : WELDON SPRING

CLIENT ID	ATAS ID	UNITS	RADIONUCLIDE	RESULT
PW-8	10636.01	pCi/L	GROSS ALPHA	5 +/- 4*
PW-8	10636.01	pCi/L	GROSS BETA	7 +/- 10*
PW-8	10636.01	mg/L	TOTAL URANIUM	<0.005

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

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

___OF___

CHAIN OF CUSTODY RECORD

PROJ. NO.

ATAS CLIENT NAME: STAN REMINGTON

FORM COMPLETED BY: SMR

LOCATION: WELDON SPRING

20°C LM 8/16/94

ANALYSIS

LM 8/16/94 AL-BA

SAMPLE ID	DATE	TIME	MATRIX	GRAB	COMP	PRES	NO. OF CONTAINERS	GROSS α	GROSS β	TOTAL U	NITRATE	TSS	REMARKS	LAB NO.
PW-8	8/16/94	1300		X				X	X	X	X			10636.01
S.C. COUNTY TREAT. PLANT	"	"			X							X		

Please Indicate Turnaround Time

In # Of Work Days

5	10	15	other

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
[illegible]	8/16/94 1450	Lawton Mosenberg	8/16/94 1430				

St. Louis County
Department of Health

August 30, 1994

Kenneth V. Miller
Bureau of Radiological Health
Missouri Department of Health
Jefferson City, MO 65102

Dear Mr. Miller:

The level of Gross Alpha and Gross Beta in the commercial samples from St. Charles County Court, Weldon Springs, Treatment Plant are as follows:

DATE: [07-01-94/07/31/94)	GROSS ALPHA	GROSS BETA	MDL(pCi/L)
Raw Water	2.2 ± 1.2	6.4 ± 1.1	1.0
Finished Water	< 1.0	6.6 ± 1.2	1.0

Sincerely,

Wayne E. Black as per (7)
Wayne E. Black, Ph.D.
Laboratory Director

pc - Dept. of Natural Resources - WSP - Jefferson City
Dept. of Natural Resources - WSP - St. Louis
Mr. Thomas W. Aaron, St. Charles County Court, Weldon Springs
% St. Charles County Water

WEB:y

Buzz Westfall
County Executive

Alpha Fowler Bryan, M.D.
Director

111 S. Meramec Avenue
Clayton, Missouri 63105

(314) 854-6000
(314) 854-6435
TDD: (314) 854-6446

An equal opportunity employer

DATE: 09/02/94

ST. CHARLES COUNTY WATER DEPARTMENT

MONTHLY WATER USAGE REPORT

MONTH OF: August

PLANT PRODUCTION	450486000	14.50	2488745000	10.24
PLANT USE	25000000	0.80	131038000	0.53
DELIVERED TO SYSTEM	425486000	13.70	2357707000	9.70
MISSOURI CITIES WATER	325818000	10.50	1799020000	7.40
WATER DISTRICT #2 24" LINE	70675000	2.30	381012000	1.57
WATER DIST. #2 NEW MELLE	6675000	0.20	40893000	0.17
NATIONAL GUARD AREA	7000	0	21000	
TOTAL METER SALES	403175000	13.00	2220946000	9.14
UNMETERED AND UNACCOUNTED	21311000	0.60	136761000	0.56

INVENTORY OF CHEMICALS

	LIME	CHLORINE
PREV. BALANCE	+: 316211	+: 10996
RECEIVED	+: 485360	+: 24000
TOTAL	=: 801571	=: 34996
USED	-: 645310	-: 29140
BALANCE	=: 156261	=: 5856
POUNDS PER 1000 GALLONS	=: 1.432	=: 0.646
PARTS PER MILLION	=: 171.75	=: 7.75
AVG. POUNDS PER DAY	=: 20816	=: 940
POUNDS USED YEAR TO DATE	=: 3531848	=: 173890

DATE: 09/02/94 FOR THE MONTH OF: August

ETER READINGS

ACCOUNT # METER TO: 08/31/94 FROM: 07/29/94 USAGED

OURI CITIES BOOSTER STATION

ULTRA SONIC #1	+: 721690	-: 317045	=:	changed
ULTRA SONIC #2	+: 441629	-: 519855	=:	meter heads 08/23/94
TOTALIZER	+: 3877076	-: 3544546	=:	322530000

IETERS BEFORE MISSOURI CITIES BOOSTER STATION

TO: 08/25/94 FROM: 07/27/94 USAGED

04-50-1328350	1. FH ANNEX 4"	+: 1020	-: 960	=:	60000
04-50-1328500	2. MO STATE SHED	+: 166	-: 158	=:	8000
04-50-1330000	3. DOE LAB LARGE	+: 365	-: 340	=:	25000
	SMALL	+: 8159	-: 6449	=:	1715000
04-50-1330401	4. DOE FIRE LINE	+: 13939	-: 12976	=:	968000
04-50-1330701	5. DOE TRAILERS	+: 82	-: 82	=:	
04-50-1330100	6. DOE 8" #1 LARGE	+: 5643	-: 5565	=:	78000
	SMALL	+: 5990	-: 5970	=:	20000
04-50-1330200	7. DOE 8" #2 LARGE	+: 1853	-: 1787	=:	76000
	SMALL	+: 2410	-: 2390	=:	20000
04-50-1320200	8. DOE 3"	+: 2572	-: 2342	=:	230000
04-50-1328550	9. FH SCHOOL	+: 12279	-: 12186	=:	93000
			TOTAL	=:	3288000

MISSOURI CITIES TOTAL =: 325818000

R DIST. #2 24" LINE

TO: 08/31/94 FROM: 07/29/94 USAGED

24" EAST	+: 201747	-: 201747	=:	
24" WEST	+: 753522	-: 682847	=:	70675000
BYPASS	+: 2340	-: 2340	=:	

WATER DIST. #2 TOTAL =: 70675000

NEW MELLE	+: 221784	-: 215158	=:	6626000