CLOSURE REPORT

SWMU 69, Pond by Chromic Acid Treatment Tanks
Radford Army Ammunition Plant, Virginia
Task Order No. 4
(DRAFT)

Prepared for:

U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010-5401
Contract No. DAAA15-90-D-0015

DAMES & MOORE
2807 N. Parham Road, Suite 114, Richmond, VA 23294

August 30, 1994

DAMES & MOORE

2807 N. PARHAM ROAD, SUITE 114, RICHMOND, VIRGINIA 23294
(804) 965-9000 FAX: (804) 965-9764

August 31, 1994

Harry R. Kleiser
U.S. Army Environmental Center
Installation Restoration Division
Building E4480
Aberdeen Proving Ground, MD 21010-5401

Re: Revised VI Section Report
SWMU Closure Report
Radford Army Ammunition Plant, VA

Dear Harry:

Enclosed are one revised section report for the VI at RAAP and the closure report for SWMU 69; one bound and one unbound for each report. These reports include the 1993 data collected at SWMU 39 (Section 11.0) and the documentation for excavating SWMU 69 and landfilling the soil at the RAAP Fly Ash Landfill. Please review these draft documents and provide comments as necessary. A copy of the SWMU 69 report was sent to Bill Hendon (RAAP) for his review. Revised section reports for SWMU O and SWMUs 10/35 are being prepared now and should be out in a week or two. Our plan is still to send the revised section reports to you for comment, give you a week or so to review them and have them returned to us for a final draft of each to be prepared before the end of September. We plan on providing the study on using the onsite soils data to create background concentrations to you in late September.

Please call to discuss any changes or extras to the reports. I will contact you within the next few days if I do not get a call from you or Dennis.

Sincerely,

DAMES & MOORE, INC.

Anthony J. Duda
Sr. Hydrogeologist

Enclosures

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Task Order No. 4
Radford Army Ammunition Plant, Virginia

Submitted to:

Commander, U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010-5401

Contract No. DAAA15-90-D-0015

Prepared by:

Dames & Moore
2807 N. Parham Road, Suite 114
Richmond, Virginia 23294

August 30, 1994

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ACRONYMS AND ABBREVIATIONS

bgs	Below Ground Surface
HBN	Health Based Number
msl	Mean sea level
RAAP	Radford Army Ammunition Plant
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Total Organic Carbon
TOX	Total Organic Halogen
ug/g	Micrograms per gram
ug/L	Micrograms per Liter
USAEC	U.S. Army Environmental Center
USEPA	U.S. Environmental Protection Agency
VI	Verification Investigation
XRF	X-Ray Fluorescence

1.0 BACKGROUND INFORMATION

Solid Waste Management Unit (SWMU) 69 was a retention facility at Radford Army Ammunition Plant (RAAP), Virginia identified in the RAAP Resource Conservation and Recovery Act (RCRA) Facility Assessment (USEPA,1987) as having the potential for releasing contaminants into the environment and was included in the RCRA Permit for Corrective Action and Incinerator Operation (USEPA, 1989) issued to RAAP by the U.S. Environmental Protection Agency as warranting investigation. The actions undertaken by Dames & Moore at SWMU 69 were authorized by the U.S. Army Environmental Center (USAEC) under Contract No. DAAA15-90-D-0015, Task Order 4.

In accordance with the RCRA Permit for Corrective Action and Incineration Operation, a Verification Investigation (VI) was performed in 1992. As part of the VI, samples were collected from the surface water and sediment located in SWMU 69 and analyzed to evaluate whether hazardous constituents were present from discharges associated with the chromium tanks at SWMU 68, approximately 25 feet upgradient and southeast of SWMU 69. Additional soil samples were collected downgradient of the retention facility to evaluate the presence of hazardous constituents transported through overflows of the retention facility. (See Figure 1 for VI sample locations). Soil and sediment samples were analyzed for pH and Target Analyte List (TAL) metals. The water sample was analyzed for pH, TAL metals, Total Organic Carbon (TOC) and Total Organic Halogen (TOX).

The sediment and soil sample results from the 1992 VI indicated concentrations of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, and thallium exceeding (HBN) criteria. The laboratory analyses of the surface water in the pond indicated that antimony, cadmium, chromium, cobalt, copper, lead, manganese, nickel and zinc exceeded the permit HBNs. The recommendations of the VI report included the removal of all accumulated water, sediment and surficial soils associated with SWMU 69 that are known to be adversely impacted. RAAP personnel collected additional samples of the pond sediment for chemical analysis and demonstrated that these materials were compatible to the flyash being disposed into Fly Ash Landfill No. 2 (FAL No. 2). Based on this demonstration, the Virginia Department of Environmental Quality modified the permit for FAL No. 2 to allow the sediment and soil at

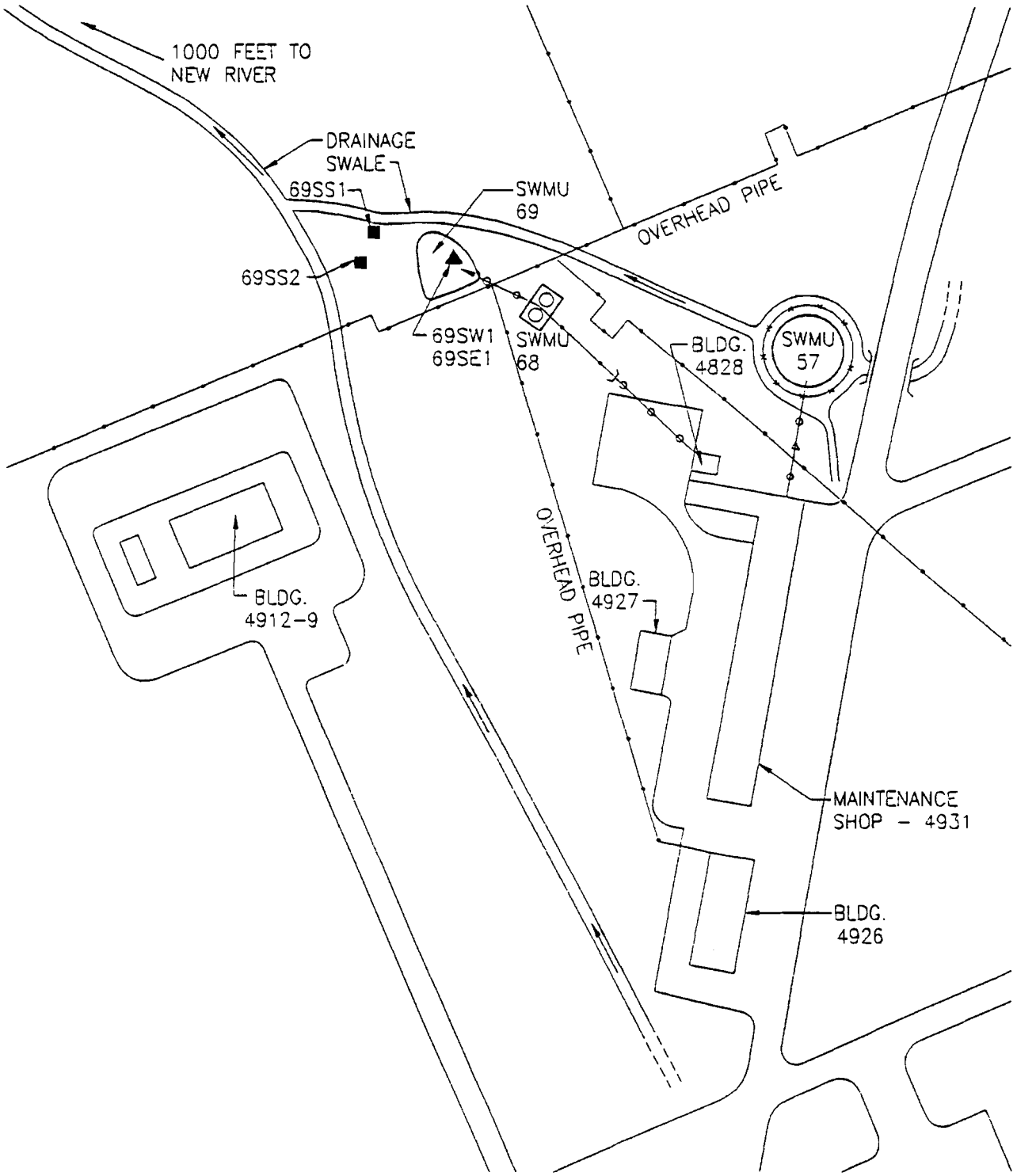


FIGURE 1
LOCATION MAP
SWMU 69—POND BY CHROMIC ACID TREATMENT TANKS
RADFORD ARMY AMMUNITION PLANT, VA

Dames & Moore

SWMU 69 to be disposed of into the landfill. The excavation activities were initiated after the permit modifications were approved.

2.0 ENVIRONMENTAL SETTING

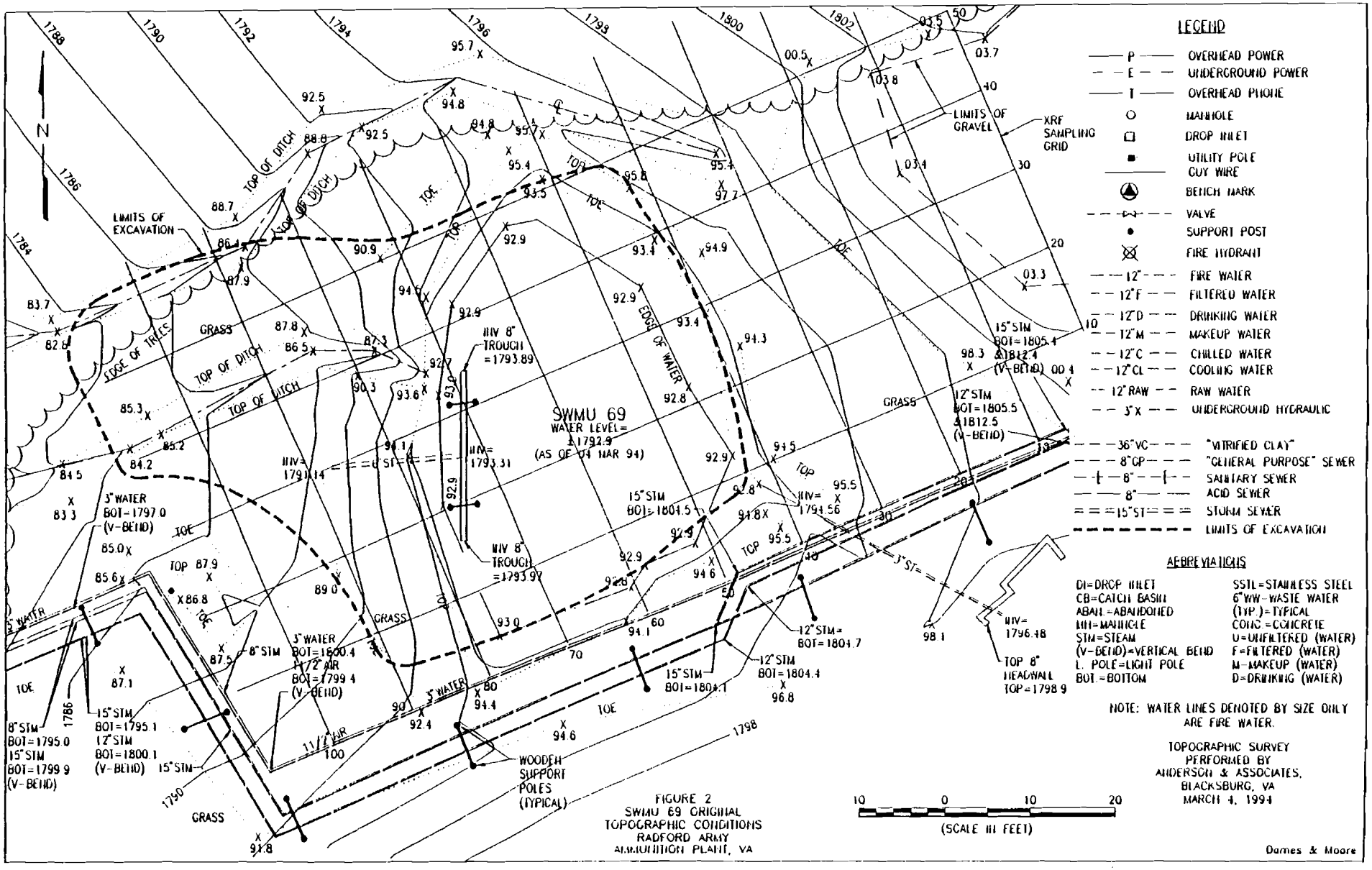
The topography in the area of SWMU 69 is moderately sloping towards the northwest. The area further north of SWMU 69 is moderately steeply sloping toward the west. The elevation at SWMU 69 is approximately 1,790 to 1,800 feet above mean sea level (msl). There are buildings, paved roads, and overhead pipes in the vicinity of SWMU 69. The topographic survey of conditions prior to excavation activities was performed by Anderson and Associates, Blacksburg, VA. Insert 1 presents the topographic survey of the site and adjacent areas. Figure 2 presents the pond and areas to be disturbed from the excavations.

No site-specific groundwater conditions have been investigated in this area. However, groundwater is likely found at a depth of 20 to 40 feet below ground surface (bgs) with flow northwestward and discharge into the New River.

Based on topography, the surface water in the area of SWMU 69 appears to flow westward towards a tributary to the New River. The tributary flows north and discharges into the New River which is approximately 1,400 feet from SWMU 69. Based on the review of RAAP utility maps, no manholes, catch basins, or storm drains were evident in the immediate vicinity of SWMU 69. Overflow from the pond traveled through a weir which discharges to the northwest.

3.0 EXCAVATION AND SOIL SCREENING PROGRAM

In accordance with the recommendation included in the final draft VI report for SWMU 69, interim measures were undertaken at SWMU 69 to remove impacted soil. An X-Ray fluorescence (XRF) method was selected as the appropriate field method to delineate the limits of the area to be excavated. Lead was selected as the indicator for field screening of soils due to excessive levels present in pond sediment and ease of testing using the XRF method. The corrective action consisted of developmental sampling, excavation and disposal of contaminated sediment and soils, on-site sampling and analysis during excavation activities, confirmatory sampling and analysis, and backfilling and grading operations.


LEGEND
P OVERHEAD POWER
E UNDERGROUND POWER
T OVERHEAD PHONE
MANHOLE
DROP INLET
UTILITY POLE
GUY WIRE
BENCH MARK
VALVE
SUPPORT POST
FIRE HYDRANT
12" FIRE WATER
12"F FILTERED WATER
12"D DRINKING WATER
12"M MAKEUP WATER
12"C CHILLED WATER
12"CL COOLING WATER
12"RAW RAW WATER
3"X UNDERGROUND HYDRAULIC
36"VC "VITRIFIED CLAY"
8"GP "GENERAL PURPOSE" SEWER
8" SANITARY SEWER
8" ACID SEWER
15"ST STORM SEWER
LIMITS OF EXCAVATION
ABBREVIATIONS
DI=DROP INLET
CB=CATCH BASIN
ABAN.=ABANDONED
MH=MANHOLE
STM=STEAM
(V-BEND)=VERTICAL BEND
L. POLE=LIGHT POLE
BOT.=BOTTOM
SSTL=STAINLESS STEEL
6"WW=WASTE WATER
(TYP.)=TYPICAL
CONC.=CONCRETE
U=UNFILTERED (WATER)
F=FILTERED (WATER)
M=MAKEUP (WATER)
D=DRINKING (WATER)
NOTE: WATER LINES DENOTED BY SIZE ONLY ARE FIRE WATER.
TOPOGRAPHIC SURVEY PERFORMED BY ANDERSON & ASSOCIATES, BLACKSBURG, VA MARCH 4, 1994
SWMU 69
WATER LEVEL= 1792.9
(AS OF 04 MAR 94)
LIMITS OF EXCAVATION
LIMITS OF GRAVEL
XRF SAMPLING GRID
TOP OF DITCH
TOE OF DITCH
EDGE OF TREES
EDGE OF WATER
GRASS
WOODEN SUPPORT POLES (TYPICAL)
INV 8" TROUGH =1793.89
INV= 1791.14
INV= 1793.31
INV 8" TROUGH =1793.97
INV= 1794.56
INV= 1796.48
TOP 8" HEADWALL TOP=1798.9
3"WATER BOT=1797.0 (V-BEND)
3"WATER BOT=1800.4 1/2" AIR BOT=1799.4 (V-BEND)
8"STM BOT=1795.0 15"STM BOT=1799.9 (V-BEND)
15"STM BOT=1795.1 12"STM BOT=1800.1 (V-BEND)
15"STM BOT=1804.5
15"STM BOT=1804.1
12"STM BOT=1804.7
12"STM BOT=1804.4
15"STM BOT=1805.4 &1812.4 (V-BEND)
12"STM BOT=1805.5 &1812.5 (V-BEND)
10 0 10 20
(SCALE IN FEET)
FIGURE 2
SWMU 69 ORIGINAL TOPOGRAPHIC CONDITIONS
RADFORD ARMY AMMUNITION PLANT, VA
Dames & Moore

3.1 Developmental Sampling

Prior to undertaking the excavation activities, developmental sampling activities took place to establish a lead XRF standard to be utilized for analysis of samples collected during excavation activities.

3.1.1 XRF Instrumentation

The XRF instrument used for the soils screening was the MAP 3, manufactured by Scitec Corporation. The instrument uses a radioactive cadmium^{109} source to excite the elements in the samples, causing the elements to emit their own characteristic (in terms of wavelength and energy) fluorescent x-radiation. The instrument detector sorts the fluorescent x-rays by energies, and the concentrations of the elements are calculated by comparing the fluorescent intensities in the sample unknowns to those in standard samples. The form of the metal analyte in the samples is unimportant (e.g., amorphous versus crystalline, organically versus inorganically bound, silicate versus oxide, etc.). Analytical accuracy is greatly enhanced if the matrix composition of the sample unknowns is similar to that of the standards (in terms of bulk elemental composition), and similar particle size distributions also contribute to improved accuracy.

3.1.2 Lead XRF Standard Preparation

Site-specific lead calibration standards were prepared from "clean" soil collected in the immediate vicinity of the pond. Two sets of standards were made using two different soil types identified at the site (one soil appeared to contain more clay than the other). An analysis of the two soils for metals content revealed the concentrations presented in Table 1. Elementally, the two soils are not substantially different; the lead contents were 38 and 17 micrograms/gram (ug/g). The standards were made by doping the soils with lead atomic absorption reference solutions (1,000 ug/g and 10,000 ug/g) to yield soil lead concentrations scanning the expected

Table 1
Summary of Analytical Results for Calibration Soils
SWMU 69, Pond by Chromic Acid Treatment Tanks
RAAP, Virginia

Metal Analyte	Metals Concentrations (micrograms/grams) Soil No. 1	Soil No. 2
Silver	BDL	BDL
Aluminum	36,800	34,200
Arsenic	1,990	6,350
Barium	285	248
Beryllium	3	3
Calcium	581	1,080
Cadmium	BDL	BDL
Cobalt	9	11
Chromium	161	347
Copper	23	22
Iron	22,400	23,600
Potassium	6,090	9,340
Magnesium	1,410	2,480
Molybdenum	BDL	BDL
Sodium	864	1,090
Nickel	47	41
Lead	38	17
Antimony	170	200
Selenium	250	261
Silicon	228,000	26,500
Thallium	248	299
Vanadium	63	51
Zinc	73	50

BDL = Below Detection Limit.

concentration range of lead in the sample unknowns (0 to 2,500 ug/g). The samples were air-dried and then homogenized and placed in plastic zip-lock bags.

3.1.3 XRF Calibration

The exact calibration procedures for the MAP 3 are proprietary. In general terms, the sample standards were analyzed with the XRF unit to generate fluorescence yield data for lead. The standard samples were analyzed through the walls of the plastic zip-lock bags. The fluorescence yields and the known lead concentrations were used to develop calibration curves (models) for lead in the two soils; the models were simply linear (or near linear) plots of fluorescence yield versus lead concentration. The two models were stored in the MAP 3 internal computer for use in the field. Based on the linear plots of the laboratory derived lead calibration standards, the lead concentrations of the field samples could be estimated to plus or minus 25 ug/g.

3.2 Onsite Sampling and Analysis

The objective of the XRF screening of soils was to identify soils for which lead concentrations were greater than the permit specified HBN of 200 ug/g. Soils were collected and screened before excavation began in order to establish a baseline database to define areas from which soils needed to be removed. The soils continued to be screened during excavation so that the areas needing excavation could be continously redefined based on the detected lead concentrations. Once an area yielded soil with lead concentrations consistently below the HBN, soil excavation was discontinued and excavation begun on the adjacent soils. This process of screening soils, adjusting excavation areas and final screening of soils was continued until the area needing soil removal was defined and fully excavated.

3.2.1 Soil and Sampling Locations

During the excavation process, samples were collected to determine and limit the excavation process. Samples were collected and located on a locally developed grid coordinate pattern, (see Figure 2 for grid layout). The samples shown on Table 2 are identified by their westing coordinate followed by their northing coordinate. The sample coordinates were

Table 2
Summary of XRF Lead Results
SWMU 69, Pond by Chromic Acid Treatment Tanks
RAAP, Virginia

Sample Identification	Estimated Lead Concentrations (micrograms/grams) Model 1	Model 2
Samples Screened Prior to Excavation		
69SE2	1910	1729
69SO1-2	131	112
69SO2-2	244	213
Red/upslope	99	84
Brown/downslope	182	158
100W10N	148	128
100W20N	191	166
100W30N	233	203
100W40N	205	178
100W50N	329	288
40W10N	139	119
40W20N	131	113
40W30N	150	129
40W40N	128	109
40W50N	89	75
80W50N	148	127
80W60N	257	225
90W50N	160	138
90W60N	440	388
100W60N	330	290
90W10N	124	106
90W20N	0	0
90W30N	62	52
90W40N	34	27

Table 2 (Cont'd)

Sample Identification	Estimated Lead Concentrations (micrograms/grams) Model 1	Model 2
Samples Screened During Excavation		
Black sediment 1	35	27
Black sediment 2	17	12
Flyash/black sed mix	382	336
Flyash	521	461
50W15N–bottom6'	78	66
50W25N–bottom6'	0	0
40W15N–wall2'	3	1
40W35N–wall2'	0	0
40W25N–wall2'	0	0
80W20N–wall	9	7
85W35N–wall	32	25
85W45N–westwall	66	54
80W50N–wall	54	45
90W15N–insidewall	83	70
110W50N	35	28
110W60N	37	29
100W50N	45	36
100W60N	134	115
90W5N	95	81
85W10N	84	70
83W5N	79	66
80W5N–1400	83	73
75W5N–1400	62	51
70W5N–1400	19	13
65W5N–1400	125	104
60W5N–1400	66	55
90W40N–1445	31	24
90W50N–1445	64	53
100W40N–1445	108	102
100W50N–1445	52	43
100W60N–1445	110	94

Table 2 (Cont'd)

Sample Identification	Estimated Lead Concentrations (micrograms/grams) Model 1	Model 2
Samples Screened After Excavation		
70W3N – 5'deep		
60W5N – 5'deep	0	0
65W3N – 5'deep	0	0
75W3N – 5'deep	0	0
50W20N – bot – 1800	0	0
50W30N – bot – 1800	0	0
60W20N – bot – 1800	19	14
70W10N – bot – 1800	0	0
70W20N – bot – 1800	0	0
80W30N – bottom	0	0
45W30N – eastwall	0	0
50W35N – bottom	0	0
80W20N – bottom	0	0
55W25N – bottom	0	0
70W30N – bottom	0	0
60W30N – bottom	0	0
80W40N – bottom	0	0
60W40N – bottom	0	0
70W50N – northwall	0	0
60W50N – northwall	0	0
100W60N	101	86
85W25N – westwall	0	0
75W55N – northwall	0	0
100W50N	15	11
90W40N	34	26
90W50N	74	63
90W60N	71	59

approximated using visual alignments of the westing coordinate and an approximation of the distance north of the west coordinate line. The coordinates are used mostly for sample identification; field determination of where to excavate was based on the actual sample collection location. Where applicable, descriptions such as "wall" or "bottom" have been added to further locate the sample. Screening samples were also collected from the flyash used to stabilize wet sediments and sediment with and without flyash for comparison to background levels and levels of lead in the soils.

3.2.2 Soil and Sediment Sampling Procedures

Soil and sediment samples were collected by placing samples into plastic sealable zip-lock bags using stainless steel spoons decontaminated between uses with distilled water, scrubbing with brushes (if needed) and drying with paper towels. Once collected, samples were transported to the on-site laboratory facilities for XRF analysis for lead. The laboratory was set-up in an office room in Building 4926. After sampling, the soil was returned to the excavation site and added to the soil transported to the landfill.

3.2.3 XRF Analysis for Lead

The unknown soil and sediment XRF screenings were performed through the walls of the plastic bags to simulate the analyses performed on the sample standards. No sample preparation was conducted (i.e., drying, sieving, or grinding), although noncohesive soil/sediment was homogenized inside the baggie by shaking and kneading immediately prior to analysis. From the outset, it was apparent that soil matrix composition and particle size distributions were extremely variable between samples, and also somewhat dissimilar to the two soil types provided for standard preparation. To compensate for the variability, both calibration models were used for each analysis. Calibration model 1 usually yielded slightly higher lead concentrations for the sample unknowns than did calibration model 2. The analyses were performed by "counting" each sample twice for 255 seconds each; the sample was either turned over to expose a new surface for analysis (if cohesive) or remixed (if noncohesive) between runs. The final concentration was taken as the average of the two readings. The laboratory prepared calibration samples were screened periodically during testing to insure that the XRF unit was functioning properly.

3.3 Excavation and Disposal of Contaminated Soil

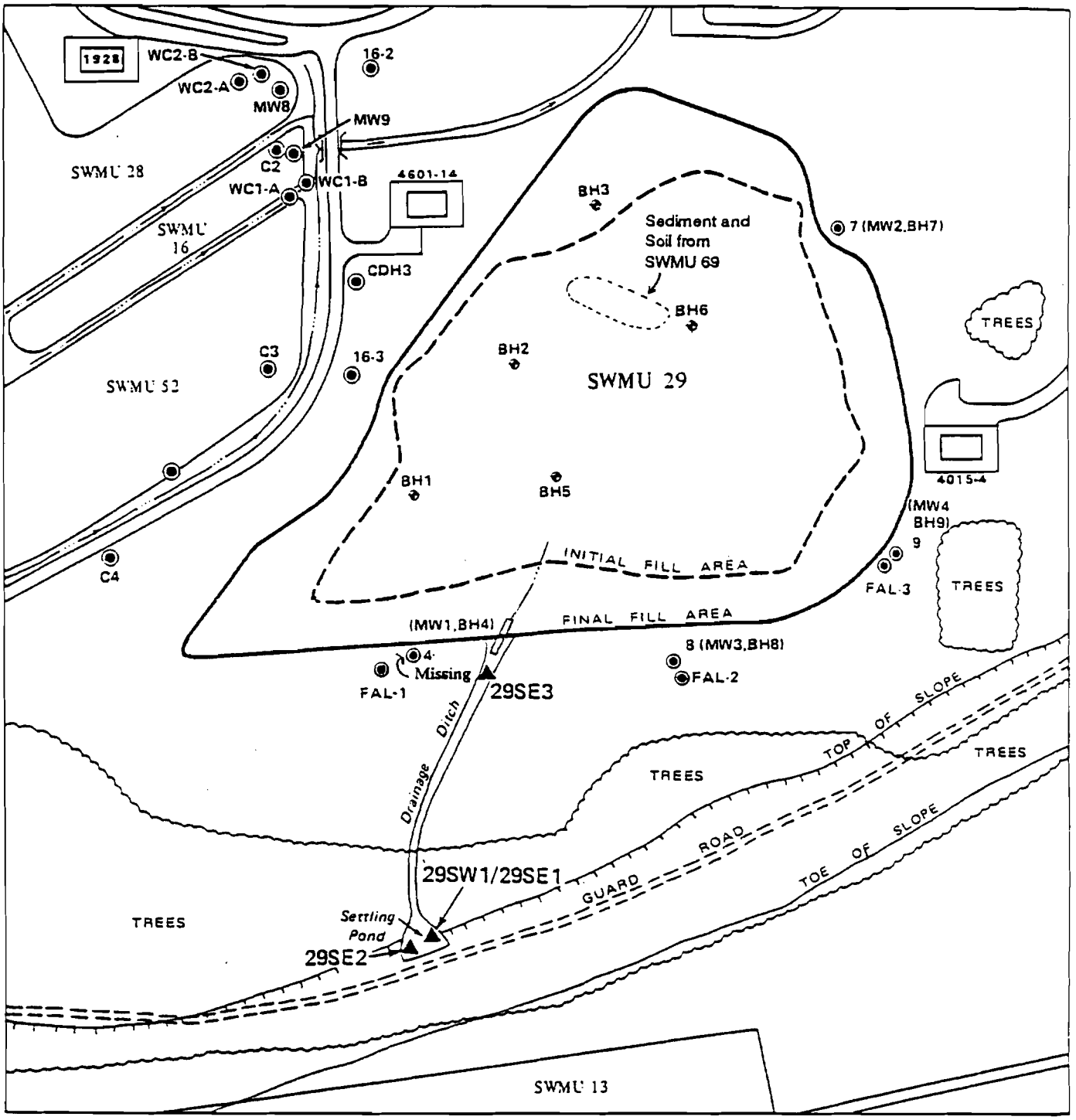
Excavation activities were undertaken to remove sediment and soils with lead constituents. Approximately 3,500 square feet of surface area was disturbed during the excavation of sediment and soil.

The excavated sediments were wet due to water trapped within the low permeability soils underlying the pond and in the berm. Flyash supplied by RAAP, was introduced into the excavation, as necessary, to absorb the water. The flyash was mixed with the sediment and soils and subsequently removed. With the flyash added, approximately 700 cubic yards of material were removed. Excavated materials were hauled to the existing Fly Ash Landfill No. 2, located on-site at RAAP approximately 2 miles east of the site (Figure 3).

4.0 CONFIRMATORY SAMPLING

Eight soil samples were collected from the excavation pit after the soils delineated as material for removal and landfilling were taken to the landfill. One sample (69SO1) was taken from the center of the south wall of the excavation and seven samples (69SO2 through 69SO8) were taken from the floor of the excavation pit (Figure 4). These samples were analyzed for total TAL metals and full TCLP analyses to confirm the XRF screening data, indicating that the lead impacted soils have been identified and removed. Insert 2 in the map pocket is the full size topograhic map of the excavation pit.

As shown on Table 3, only four TCLP parameters were detected in the eight soil samples (barium, cadmium, 2,4-D and chloroform) and no detection exceeded TCLP criteria. The greatest concentration of TCLP of barium detected was 190 ug/L, the greatest cadmium concentration was 5.2 ug/L versus the criterion of 1,000 ug/L, the greatest 2,4-D concentration was 0.37 ug/L versus the criterion of 10,000 ug/L and the greatest chloroform concentration was 6.4 ug/L versus the criterion of 6,000 ug/L. These results agree with the two samples of the pond sediment also submitted for TCLP analysis. Sample 69SE2 was of pond sediment prior to flyash being added and sample 69SL1 was of a mixture of pond sediment and flyash. Concentrations of TCLP barium, 2,4-D and chloroform in these samples were as low as the post excavation soil samples and TCLP cadmium was not detected.



LEGEND:

- Boring
- Monitoring Well
- Surface Water and/or Sediment Sample

0 200 Feet

FIGURE 3
DISPOSAL LOCATION OF SWMU 69 SOIL AND SEDIMENT
SWMU 29 – FLY ASH LANDFILL NO. 2
RADFORD ARMY AMMUNITION PLANT, VIRGINIA

Dames & Moore

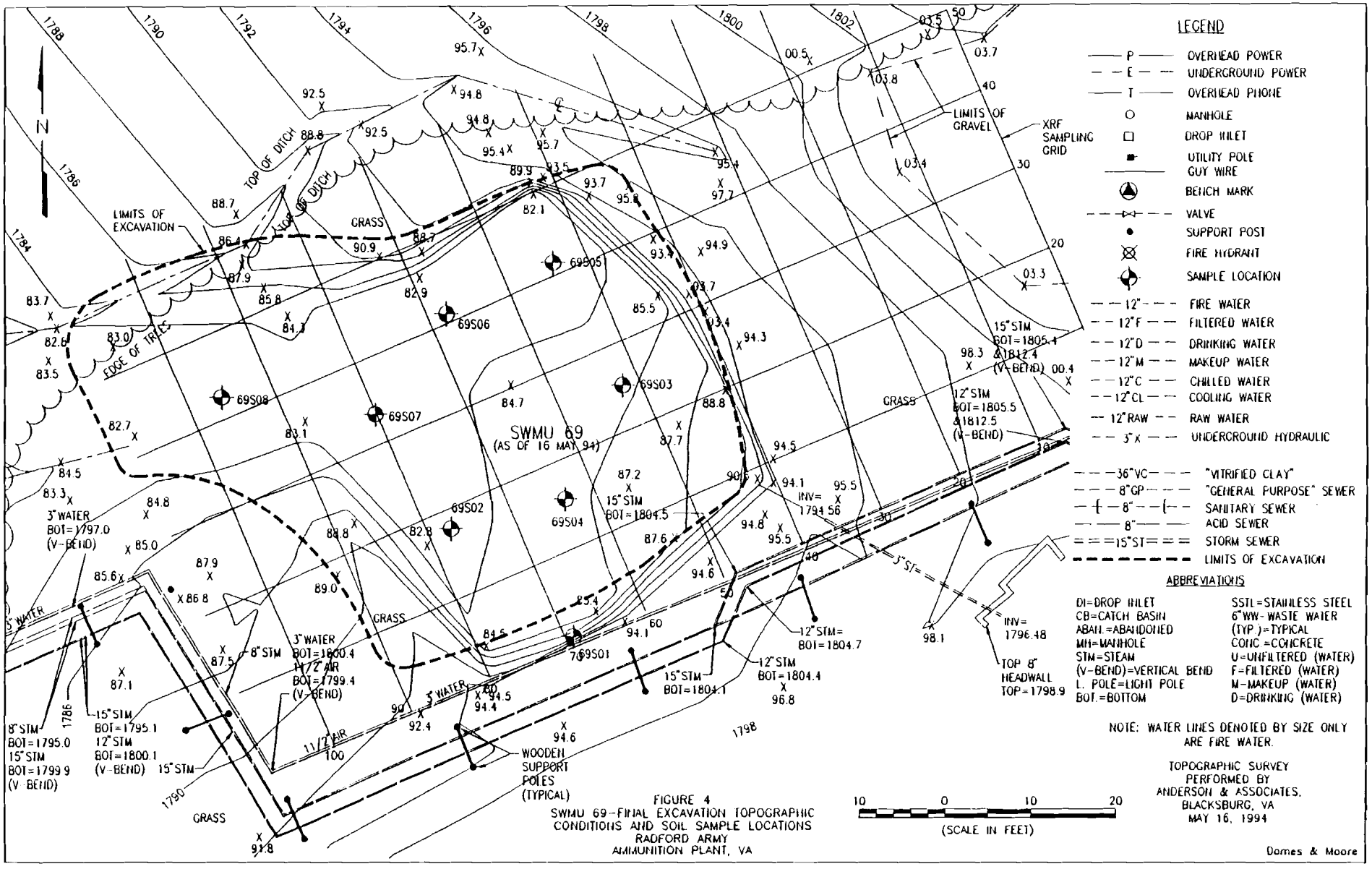


FIGURE 4
SWMU 69-FINAL EXCAVATION TOPOGRAPHIC CONDITIONS AND SOIL SAMPLE LOCATIONS
RADFORD ARMY AMMUNITION PLANT, VA

Domes & Moore

Table 3
Summary of Analytical Data For Sediment and Confirmatory Soil Samples
SWMU 69 – Pond by Chromic Acid Treatment Tanks
Radford Army Ammunition Plant, Virginia

SITE ID		69SE2	69SL1	69SO1	69SO2	69SO3	
FIELD ID		RDSW*27	RDSW*28	RDSX*17	RDSX*18	RDSX*19	
S. DATE		28-apr-94	29-apr-94	02-may-94	03-may-94	03-may-94	
DEPTH (ft)		3.0	3.0	5.0	0.5	0.5	
MATRIX	PQLs	CSE	CSE	CSO	CSO	CSO	HBN
UNITS	UGG	UGG	UGG	UGG	UGG	UGG	UGG
TAL Metals							
ALUMINUM	14.1	9500	11200	30500	25300	31300	230000
ANTIMONY	20	[60.5]	[83.4]	[64.2]	<7.14	<7.14	30
ARSENIC	30	[1.21]	[1.77]	[3.01]	[3.94]	[4.79]	0.5
BARIUM	1	62.3	90.9	40.6	43.1	45.4	1000
BERYLLIUM	0.2	[0.694]	[1.05]	[1.49]	[2.34]	[2.6]	0.1
CADMIUM	2	<0.7	[65.1]	8.79	<0.7	<0.7	40
CALCIUM	500	4480	12800	3350	577	1120	NSA
CHROMIUM	4	75.9	[443]	50.9	29.9	51.7	400
COBALT	3	[3.14]	[8.7]	[5.84]	[7.41]	[19.7]	0.8
COPPER	7	7.04	43.7	21.6	21.3	28.7	2900
IRON	1000	16200	22600	38700	44600	46500	NSA
LEAD	2	<10.5	169	<10.5	<10.5	<10.5	200
MAGNESIUM	50	966	997	1320	4720	2350	NSA
MANGANESE	0.275	345	647	328	81.8	132	8000
MERCURY	0.1	<0.05	0.0703	0.122	<0.05	<0.05	20
NICKEL	3	13.2	27.5	25.6	29.9	32.7	1000
POTASSIUM	37.5	919	769	1410	2620	1720	NSA
SELENIUM	40	<0.5	1.1	<0.5	<0.5	<0.5	200
SILVER	4	<0.589	<0.589	<0.589	<0.589	<0.589	200
SODIUM	150	1430	4020	4860	3990	4500	NSA
THALLIUM	4	<6.62	[33.2]	[39.1]	[44.9]	[49.5]	6
VANADIUM	0.775	31.9	43.4	64.8	84.9	68.9	560
ZINC	30.2	160	1110	119	28.2	32.7	16000
							TCLP
TCLP Metals	UGL						UGL
BARIUM	20	20	<20	56	79	180	100000
CADMIUM	1	<5	<5	<5	<5	<5	1000
TCLP Organics							
2,4-D	0.2	0.5	0.37	<0.2	0.22	0.21	10000
CHLOROFORM	5	5.3	5.3	5.1	5.4	5.1	6000
Non-TCLP Volatiles[1]							
ACETONE	100	33	GT 50	NT	NT	NT	NSA
METHYLENE CHLORIDE	5	6.1	7.2	NT	NT	NT	NSA
CARBON DISULFIDE	5	4.6	1.7	NT	NT	NT	NSA
TOTAL UNKNOWNS[2]	NA	50(2)	68(4)	NT	NT	NT	NSA

Table 3 (Cont'd)

SITE ID		69SO4	69SO5	69SO6	69SO7	69SO8	
FIELD ID		RDSX*20	RDSX*21	RDSX*22	RDSX*23	RDSX*24	
S. DATE		03-may-94	03-may-94	03-may-94	03-may-94	03-may-94	
DEPTH (ft)		0.5	0.5	0.5	0.5	0.5	
MATRIX	PQLs	CSO	CSO	CSO	CSO	CSO	HBN
UNITS	UGG	UGG	UGG	UGG	UGG	UGG	UGG
TAL Metals							
ALUMINUM	14.1	31700	27500	23600	11400	12700	230000
ANTIMONY	20	24	21.2	<7.14	<7.14	9.91	30
ARSENIC	30	[3.16]	[7.98]	[2.78]	[2.44]	[2.7]	0.5
BARIUM	1	58.3	47.2	53.5	33.4	38	1000
BERYLLIUM	0.2	[2.51]	[2.89]	[2.89]	[1.05]	[1.06]	0.1
CADMIUM	2	<0.7	6.9	<0.7	<0.7	<0.7	40
CALCIUM	500	1530	604	1110	214	556	NSA
CHROMIUM	4	56.7	75.2	41.6	38.2	29.5	400
COBALT	3	[6.94]	[9.25]	[9.69]	[5.76]	[10.4]	0.8
COPPER	7	32.4	27.3	25.6	9.12	9.84	2900
IRON	1000	49500	51500	43000	23600	21900	NSA
LEAD	2	<10.5	24.5	<10.5	<10.5	18.3	200
MAGNESIUM	50	2240	5540	6620	654	940	NSA
MANGANESE	0.275	184	168	243	580	758	8000
MERCURY	0.1	0.124	0.0801	<0.05	0.0701	0.0674	20
NICKEL	3	29.4	29.9	25.9	6.86	5.87	1000
POTASSIUM	37.5	1850	3400	3260	767	781	NSA
SELENIUM	40	<0.5	1	<0.5	<0.5	<0.5	200
SILVER	4	<0.589	<0.589	<0.589	<0.589	<0.589	200
SODIUM	150	4770	4720	3730	2540	1400	NSA
THALLIUM	4	[53.1]	[54.6]	[62.6]	[27.5]	[22.3]	6
VANADIUM	0.775	89.8	74.7	83	49.5	47.5	560
ZINC	30.2	69.1	140	46.8	22.4	33	16000
							TCLP
TCLP Metals	UGL						UGL
BARIUM	20	190	86	120	120	91	100000
CADMIUM	1	<5	<5	<5	5.2	<5	1000
TCLP Organics							
2,4-D	0.2	<0.2	<0.2	<0.2	<0.2	0.37	10000
CHLOROFORM	5	4.9	6.4	5.6	5.8	5.2	6000
Non-TCLP Volatiles							
ACETONE	10	NT	NT	NT	NT	NT	NSA
METHYLENE CHLORIDE	5	NT	NT	NT	NT	NT	NSA
CARBON DISULFIDE	5	NT	NT	NT	NT	NT	NSA
TOTAL UNKNOWNS	NA	NT	NT	NT	NT	NT	NSA

Footnotes :

CSO = Chemical soil. CSE = Chemical sediment. UGG = Micrograms per gram. UGL = Micrograms per liter.

TAL = Target Analyte List. TCLP = Toxicity Characteristic Leaching Procedure

HBN = Health based number as defined in the RCRA permit. HBNs not specified in the permit were derived using standard exposure and intake assumptions consistent with EPA guidelines (51 Federal Register 33992, 34006, 34014, and 34028).

NSA = No standard (HBN) available; health effects data were not available for the calculation of a HBN; or volatile was analyzed from TCLP extraction leachate.

NA = Not available. NT = Not tested.

GT = Greater than equipment calibration range. < = Less than method detection limit.

PQL = Practical quantitation limit; the lowest concentration that can be reliably detected at a defined level of precision for a given analytical method.

[1] = TCLP extraction leachate analyzed for TCL volatiles for pond sediment samples.

[2] = Total concentration of unknowns with number of detected unknowns in parenthesis.

[ ] = Brackets indicate that the detected concentration exceeds the HBN.

The samples of the sediment and sediment/flyash mixture were collected during the excavation of the pond and surrounding soils. During excavation, it was noted that the pond appeared to have two layers of material; 1) a 1 foot thick, light gray top layer which was tested in 1992 and found to have excessive lead concentration, and 2) several feet of dark greenish gray to black sediments underlying the gray layer and extending to the bottom of the engineered pond. Analyses of the pond material indicated that the sediments also contained low concentrations of two common cleaning solvents (acetone and methylene chloride) and low concentrations of carbon disulfide which is usally associated with decompositon of organic material.

The eight soil samples were analyzed for total TAL metals to document that the lead concentrations were below the permit HBN of 200 ug/g. Lead was detected above the detection limit (10.5 ug/g) in only two samples at concentrations of 24.5 ug/g and 18.3 ug/g. The concentrations of four metals (arsenic, beryllium, cobalt and thallium) exceeded the permit HBNs in each of the eight samples, but the detected concentrations appear to be natural since they vary very little from sample to sample. Arsenic ranged from 2.44 to 7.98 ug/g, beryllium ranged from 1.05 to 2.89 ug/g, cobalt ranged from 5.76 to 19.7 ug/g and thallium ranged from 22.3 to 62.6 ug/g. The only other exceedance of a permit HBN was for antimony in sample 69SO1. This antimony concentration is similar to the concentrations detected in the pond sediment and sediment/flyash mixture which could indicate that the sampled soil may have included some pond sediment or flyash. However, the lead concentration in this sample was below the detection limit.

In summary, the analytical data for the confirmatory samples show that the impacted pond soils were adequately defined by the XRF screening and subsequently removed for disposal in the RAAP landfill.

5.0 BACKFILL AND FINAL GRADING

After the confirmatory sampling activities were completed, the excavation was backfilled with clean fill as supplied by RAAP. The site was regraded to provide a natural drainage course in conformance with upstream and downstream conditions. A final survey of the regraded area is shown in Figure 5 and the full size topographic map of the final graded site is included as Insert 3.

Instal' on :Radford AAP, VA (RD)
ile Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S01	RDSX*17	5.0	02-MAY-94	ES	RDSX*17	JB01/S	39-97-6	Mercury		.122	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		3.01	UGG		
							JS16/S	29-90-5	Aluminum		30500	UGG		
								39-89-6	Iron		38700	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		1320	UGG		
								39-96-5	Manganese		328	UGG		
								40-02-0	Nickel		25.6	UGG		
								40-09-7	Potassium		1410	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		4860	UGG		
								40-28-0	Thallium		39.1	UGG		
								40-36-0	Antimony		64.2	UGG		
								40-39-3	Barium		40.6	UGG		
								40-41-7	Beryllium		1.49	UGG		
								40-43-9	Cadmium		8.79	UGG		
								40-47-3	Chromium		50.9	UGG		
								40-48-4	Cobalt		5.84	UGG		
								40-50-8	Copper		21.6	UGG		
								40-62-2	Vanadium		64.8	UGG		
								40-66-6	Zinc		119	UGG		
								40-70-2	Calcium		3350	UGG		
		RDSXL*17	5.0	09-MAY-94	ES	RDSXL*17	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		56	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		

* - Analyte Description has been truncated. See Data Dictionary

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Installation :Radford AAP, VA (RD)
File Type: CSO
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Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S01	RDSXL*17	5.0	09-MAY-94	ES	RDSXL*17	8150/W	94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid	LT	.2	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		5.1	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69S02	RDSX*18	0.5	03-MAY-94	ES	RDSX*18	JB01/S	39-97-6	Mercury	LT	5.00 E -2	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		3.94	UGG		
							JS16/S	29-90-5	Aluminum		25300	UGG		
								39-89-6	Iron		44600	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		4720	UGG		
								39-96-5	Manganese		81.8	UGG		
								40-02-0	Nickel		29.9	UGG		
								40-09-7	Potassium		2620	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		3990	UGG		
								40-28-0	Thallium		44.9	UGG		
								40-36-0	Antimony	LT	7.14	UGG		

* - Analyte Description has been truncated. See Data Dictionary

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Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S02	RDSX*18	0.5	03-MAY-94	ES	RDSX*18	JS16/S	40-39-3	Barium		43.1	UGG		
								40-41-7	Beryllium		2.34	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		29.9	UGG		
								40-48-4	Cobalt		7.41	UGG		
								40-50-8	Copper		21.3	UGG		
								40-62-2	Vanadium		84.9	UGG		
								40-66-6	Zinc		28.2	UGG		
								40-70-2	Calcium		577	UGG		
		RDSXL*18	0.5	09-MAY-94	ES	RDSXL*18	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		79	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid		.22	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		5.4	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6						

* - Analyte Description has been truncated. See Data Dictionary

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Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69SO2	RDSXL*18	0.5	09-MAY-94	ES	RDSXL*18	8240/W	79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69SO3	RDSX*19	0.5	03-MAY-94	ES	RDSX*19	JB01/S	39-97-6	Mercury	LT	5.00 E -2	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		4.79	UGG		
							JS16/S	29-90-5	Aluminum		31300	UGG		
								39-89-6	Iron		46500	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		2350	UGG		
								39-96-5	Manganese		132	UGG		
								40-02-0	Nickel		32.7	UGG		
								40-09-7	Potassium		1720	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		4500	UGG		
								40-28-0	Thallium		49.5	UGG		
								40-36-0	Antimony	LT	7.14	UGG		
								40-39-3	Barium		45.4	UGG		
								40-41-7	Beryllium		2.6	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		51.7	UGG		
								40-48-4	Cobalt		19.7	UGG		
								40-50-8	Copper		28.7	UGG		
								40-62-2	Vanadium		68.9	UGG		
								40-66-6	Zinc		32.7	UGG		
								40-70-2	Calcium		1120	UGG		
		RDSXL*19	0.5	09-MAY-94	ES	RDSXL*19	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		

* - Analyte Description has been truncated. See Data Dictionary

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Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69SO3	RDSXL*19	0.5	09-MAY-94	ES	RDSXL*19	1311/W	40-39-3	Barium		180	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid		.21	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		5.1	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S03	RDSXL*19	0.5	09-MAY-94	ES	RDSXL*19	8270/W	95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69S04	RDSX*20	0.5	03-MAY-94	ES	RDSX*20	JB01/S	39-97-6	Mercury		.124	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		3.16	UGG		
							JS16/S	29-90-5	Aluminum		31700	UGG		
								39-89-6	Iron		49500	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		2240	UGG		
								39-96-5	Manganese		184	UGG		
								40-02-0	Nickel		29.4	UGG		
								40-09-7	Potassium		1850	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		4770	UGG		
								40-28-0	Thallium		53.1	UGG		
								40-36-0	Antimony		24	UGG		
								40-39-3	Barium		58.3	UGG		
								40-41-7	Beryllium		2.51	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		56.7	UGG		
								40-48-4	Cobalt		6.94	UGG		
								40-50-8	Copper		32.4	UGG		
								40-62-2	Vanadium		89.8	UGG		
								40-66-6	Zinc		69.1	UGG		
								40-70-2	Calcium		1530	UGG		
		RDSXL*20	0.5	09-MAY-94	ES	RDSXL*20	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		190	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8						

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S04	RDSXL*20	0.5	09-MAY-94	ES	RDSXL*20	8080/W	76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid	LT	.2	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		4.9	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69S05	RDSX*21	0.5	03-MAY-94	ES	RDSX*21	JB01/S	39-97-6	Mercury		8.01 E -2	UGG		
							JD15/S	82-49-2	Selenium		1	UGG		
							JD19/S	40-38-2	Arsenic		7.98	UGG		
							JS16/S	29-90-5	Aluminum		27500	UGG		
								39-89-6	Iron		51500	UGG		
								39-92-1	Lead		24.5	UGG		
								39-95-4	Magnesium		5540	UGG		
								39-96-5	Manganese		168	UGG		
								40-02-0	Nickel		29.9	UGG		
								40-09-7	Potassium		3400	UGG		

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Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S05	RDSX*21	0.5	03-MAY-94	ES	RDSX*21	JS16/S	40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		4720	UGG		
								40-28-0	Thallium		54.6	UGG		
								40-36-0	Antimony		21.2	UGG		
								40-39-3	Barium		47.2	UGG		
								40-41-7	Beryllium		2.89	UGG		
								40-43-9	Cadmium		6.9	UGG		
								40-47-3	Chromium		75.2	UGG		
								40-48-4	Cobalt		9.25	UGG		
								40-50-8	Copper		27.3	UGG		
								40-62-2	Vanadium		74.7	UGG		
								40-66-6	Zinc		140	UGG		
								40-70-2	Calcium		604	UGG		
		RDSXL*21	0.5	09-MAY-94	ES	RDSXL*21	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		86	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid	LT	.2	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		6.4	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S05	RDSXL*21	0.5	09-MAY-94	ES	RDSXL*21	8240/W	75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69S06	RDSX*22	0.5	03-MAY-94	ES	RDSX*22	JB01/S	39-97-6	Mercury	LT	5.00 E -2	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		2.78	UGG		
							JS16/S	29-90-5	Aluminum		23600	UGG		
								39-89-6	Iron		43000	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		6620	UGG		
								39-96-5	Manganese		243	UGG		
								40-02-0	Nickel		25.9	UGG		
								40-09-7	Potassium		3260	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		3730	UGG		
								40-28-0	Thallium		62.6	UGG		
								40-36-0	Antimony	LT	7.14	UGG		
								40-39-3	Barium		53.5	UGG		
								40-41-7	Beryllium		2.89	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		41.6	UGG		
								40-48-4	Cobalt		9.69	UGG		
								40-50-8	Copper		25.6	UGG		
								40-62-2	Vanadium		83	UGG		
								40-66-6	Zinc		46.8	UGG		
								40-70-2	Calcium		1110	UGG		
		RDSXL*22	0.5	09-MAY-94	ES	RDSXL*22	1311/W	39-92-1	Lead	LT	50	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S06	RDSXL*22	0.5	09-MAY-94	ES	RDSXL*22	1311/W	39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		120	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid	LT	.2	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		5.6	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69SO6	RDSXL*22	0.5	09-MAY-94	ES	RDSXL*22	8270/W	87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69SO7	RDSX*23	0.5	03-MAY-94	ES	RDSX*23	JB01/S	39-97-6	Mercury		7.01 E -2	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		2.44	UGG		
							JS16/S	29-90-5	Aluminum		11400	UGG		
								39-89-6	Iron		23600	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		654	UGG		
								39-96-5	Manganese		580	UGG		
								40-02-0	Nickel		6.86	UGG		
								40-09-7	Potassium		767	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		2540	UGG		
								40-28-0	Thallium		27.5	UGG		
								40-36-0	Antimony	LT	7.14	UGG		
								40-39-3	Barium		33.4	UGG		
								40-41-7	Beryllium		1.05	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		38.2	UGG		
								40-48-4	Cobalt		5.76	UGG		
								40-50-8	Copper		9.12	UGG		
								40-62-2	Vanadium		49.5	UGG		
								40-66-6	Zinc		22.4	UGG		
								40-70-2	Calcium		214	UGG		
		RDSXL*23	0.5	09-MAY-94	ES	RDSXL*23	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		120	UGL		
								40-43-9	Cadmium		5.2	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S07	RDSXL*23	0.5	09-MAY-94	ES	RDSXL*23	8080/W	72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid	LT	.2	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		5.8	UGL		
								71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69S08	RDSX*24	0.5	03-MAY-94	ES	RDSX*24	JB01/S	39-97-6	Mercury		6.74 E -2	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		2.7	UGG		
							JS16/S	29-90-5	Aluminum		12700	UGG		
								39-89-6	Iron		21900	UGG		
								39-92-1	Lead		18.3	UGG		
								39-95-4	Magnesium		940	UGG		
								39-96-5	Manganese		758	UGG		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69S08	RDSX*24	0.5	03-MAY-94	ES	RDSX*24	JS16/S	40-02-0	Nickel		5.87	UGG		
								40-09-7	Potassium		781	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		1400	UGG		
								40-28-0	Thallium		22.3	UGG		
								40-36-0	Antimony		9.91	UGG		
								40-39-3	Barium		38	UGG		
								40-41-7	Beryllium		1.06	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		29.5	UGG		
								40-48-4	Cobalt		10.4	UGG		
								40-50-8	Copper		9.84	UGG		
								40-62-2	Vanadium		47.5	UGG		
								40-66-6	Zinc		33	UGG		
								40-70-2	Calcium		556	UGG		
		RDSXL*24	0.5	09-MAY-94	ES	RDSXL*24	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		91	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid		.37	UGL		
							8240/W	07-06-2	1,2-Dichloroethane	LT	2.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	1.4	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.9	UGL		
								56-23-5	Carbon tetrachloride	LT	2.6	UGL		
								67-66-3	Chloroform		5.2	UGL		

* - Analyte Description has been truncated. See Data Dictionary

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Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSO
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
PLUG	69SO8	RDSXL*24	0.5	09-MAY-94	ES	RDSXL*24	8240/W	71-43-2	Benzene	LT	1	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	4.6	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	3.2	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	10	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	3	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		

** End of Report - 504 Records Found **

* - Analyte Description has been truncated. See Data Dictionary

Site ID	Field ID	Media	Date	Depth	Units	Analytical Method	Analyte Abbrv.	Value	Flag	Internal Std. Code
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JB01	HG	0.050	LT	
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JD19	AS	2.400		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JD15	SE	0.250	LT	
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	AG	0.779		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	AL	9450.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	BA	118.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	BE	1.130		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	CA	624.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	CD	1.590		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	CO	11.500		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	CR	26.900		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	CU	9.960		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	FE	12600.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	K	538.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	MG	642.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	MN	1250.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	NA	650.000		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	NI	8.770		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	PB	16.500		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	SB	7.140	LT	
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	TL	9.620		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	V	30.500		
68SS1	RVFS*59	CSO	04-feb-1992	0.5	UGG	JS16	ZN	54.100		
68SS1	RVFS*59	CSO	04-feb-1992	0.5		00	PH	8.520		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JB01	HG	0.362		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JD19	AS	7.300		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JD15	SE	0.250	LT	
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	AG	1.100		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	AL	18500.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	BA	61.300		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	BE	1.870		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	CA	2270.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	CD	0.700	LT	
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	CO	14.600		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	CR	49.200		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	CU	20.100		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	FE	33900.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	K	1010.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	MG	1610.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	MN	885.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	NA	188.000		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	NI	10.700		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	PB	28.700		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	SB	26.300		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	TL	21.100		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	V	75.800		
68SS2	RVFS*60	CSO	04-feb-1992	0.5	UGG	JS16	ZN	87.400		
68SS2	RVFS*60	CSO	04-feb-1992	0.5		00	PH	7.370		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JB01	HG	0.050	LT	
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JD19	AS	2.130		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JD15	SE	0.250	LT	
69SE1	RVFS*61	CSE	10-feb-1992	0.5		00	PH	8.360		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	AG	3.030		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	AL	10900.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	BA	165.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	BE	0.500	LT	
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	CA	50200.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	CD	610.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	CO	20.700		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	CR	2040.000		

Site ID	Field ID	Media	Date	Depth	Units	Analytical Method	Analyte Abbrv.	Value	Flag	Internal Std. Code
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	CU	818.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	FE	34500.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	K	522.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	MG	2200.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	MN	621.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	NA	7990.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	NI	77.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	PB	1330.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	SB	178.000		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	TL	18.500		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	V	25.100		
69SE1	RVFS*61	CSE	10-feb-1992	0.5	UGG	JS16	ZN	10000.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JB01	HG	0.117		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JD19	AS	3.270		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JD15	SE	0.250	LT	
69SS1	RVFS*62	CSO	10-feb-1992	0.5		00	PH	7.200		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	AG	0.919		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	AL	10500.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	BA	138.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	BE	0.981		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	CA	4930.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	CD	31.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	CO	9.980		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	CR	159.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	CU	26.600		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	FE	20600.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	K	868.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	MG	6430.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	MN	765.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	NA	334.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	NI	46.600		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	PB	307.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	SB	859.000		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	TL	10.600		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	V	36.300		
69SS1	RVFS*62	CSO	10-feb-1992	0.5	UGG	JS16	ZN	2500.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JB01	HG	0.050	LT	
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JD19	AS	6.030		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JD15	SE	0.250	LT	
69SS2	RVFS*63	CSO	10-feb-1992	0.5		00	PH	6.950		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	AG	0.589	LT	
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	AL	9340.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	BA	92.700		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	BE	0.500	LT	
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	CA	1620.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	CD	3.730		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	CO	6.490		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	CR	145.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	CU	14.700		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	FE	19100.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	K	710.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	MG	972.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	MN	766.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	NA	208.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	NI	11.700		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	PB	162.000		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	SB	25.300		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	TL	6.620	LT	
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	V	36.600		
69SS2	RVFS*63	CSO	10-feb-1992	0.5	UGG	JS16	ZN	261.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	AL	9800.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	BA	159.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	BE	5.000	LT	
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	CA	268000.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	CD	2540.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	CO	1640.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	CR	25000.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	CU	1450.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	FE	650000.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	K	3210.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	MG	29300.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	MN	25300.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	NA	950000.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	NI	120000.000		

Site ID	Field ID	Media	Date	Depth	Units	Analytical Method	Analyte Abbrv.	Value	Flag	Internal Std. Code
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	SB	269.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	V	161.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SS10	ZN	61000.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SB01	HG	0.243	LT	
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SD09	TL	6.990	LT	
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SD22	AS	3.620		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SD21	SE	3.020	LT	
69SW1	RDWD*2	CSW	10-feb-1992	0.0		00	PH	6.330		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SD20	PB	7900.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	SD23	AG	5.830		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	00	TOX	110.000		
69SW1	RDWD*2	CSW	10-feb-1992	0.0	UGL	00	TOC	22300.000		

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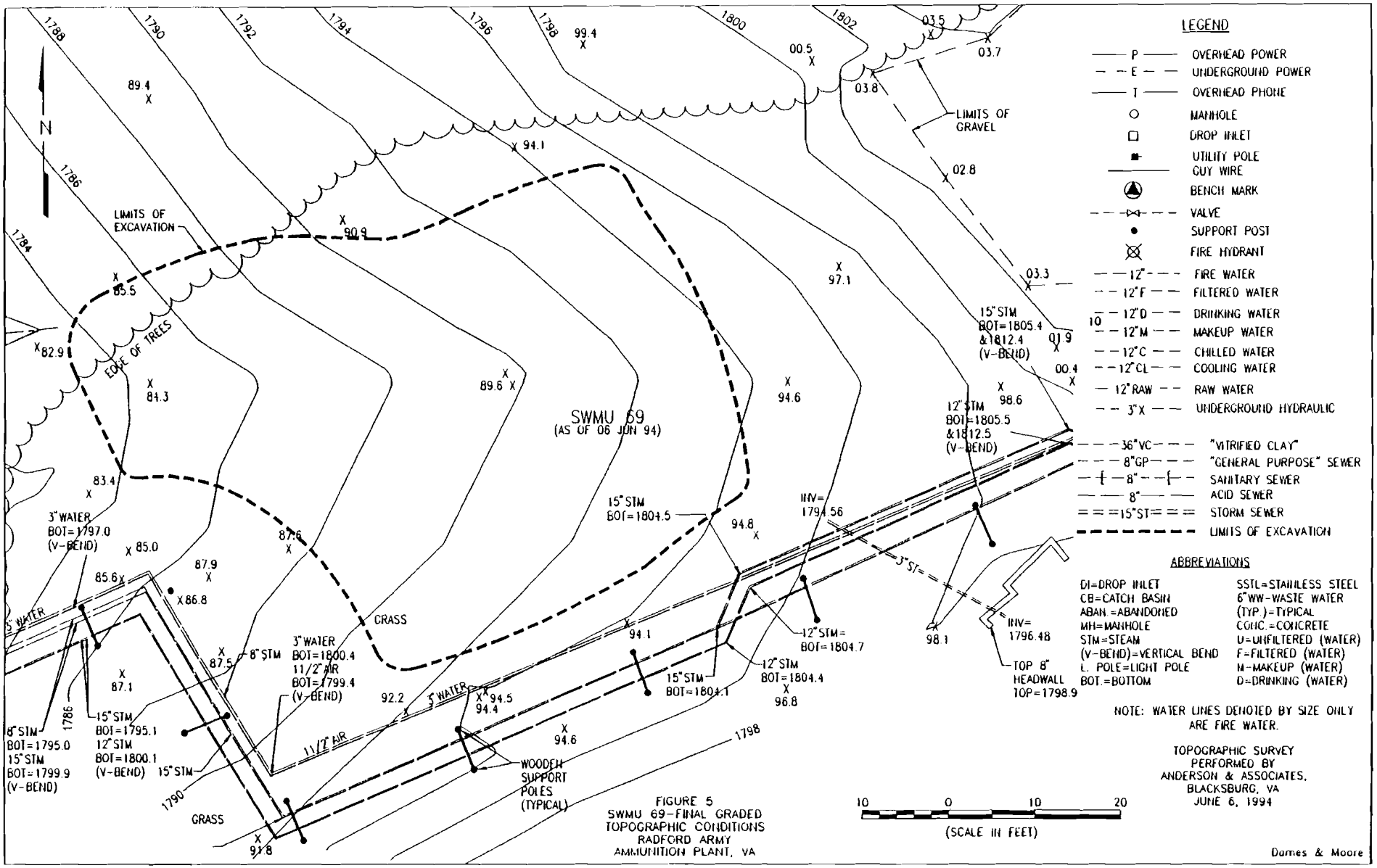

FIGURE 5
SWMU 69-FINAL GRADED TOPOGRAPHIC CONDITIONS
RADFORD ARMY AMMUNITION PLANT, VA

Dames & Moore

6.0 CONCLUSIONS

Based upon the interim measures taken and the corresponding confirmatory sampling activities, impacted pond sediments and associated soils containing lead above the HBN have been removed from SWMU 69 and the surrounding vicinity. Analytical data of samples of the pond sediment and sediment/flyash mixture indicate that all TCLP parameters were below TCLP criteria. Analytical data for soil samples collected indicates that the concentrations of metals in soils remaining at the site after excavation were also below TCLP criteria.

BIBLIOGRAPHY

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APPENDIX A

Laboratory Analytical Data

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSE
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
BASN	69SE2	RDSXL*15	3.0	10-MAY-94	ES	RDSXL*15	UM20/W	56-23-5	Carbon tetrachloride	LT	.58	UGL		
								591-78-6	Methyl n-butyl ketone / 2-Hexanone	LT	3.6	UGL		
								67-64-1	Acetone		33	UGL		
								67-66-3	Chloroform		5.3	UGL		
								71-43-2	Benzene	LT	.5	UGL		
								71-55-6	1,1,1-Trichloroethane	LT	.5	UGL		
								74-83-9	Bromomethane	LT	5.8	UGL		
								74-87-3	Chloromethane	LT	3.2	UGL		
								75-00-3	Chloroethane	LT	1.9	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	2.6	UGL		
								75-09-2	Methylene chloride / Dichloromethane		6.1	UGL		
								75-15-0	Carbon disulfide		4.6	UGL		
								75-25-2	Bromoform	LT	2.6	UGL		
								75-27-4	Bromodichloromethane	LT	.59	UGL		
								75-34-3	1,1-Dichloroethane	LT	.68	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	.5	UGL		
								75-69-4	Trichlorofluoromethane	LT	1.4	UGL		
								78-87-5	1,2-Dichloropropane	LT	.5	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	6.4	UGL		
								79-00-5	1,1,2-Trichloroethane	LT	1.2	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	.5	UGL		
								79-34-5	Tetrachloroethane / 1,1,2,2-Tetrachloroethane / Acetylene *	LT	.51	UGL		
									1,2-Dichloroethylenes (cis and trans isomers) / Acetylene *	LT	.5	UGL		
									Dichlorobenzenes	ND	10	UGL	R	
									Unknown compound 097		30	UGL	S	
									Unknown compound 112		20	UGL	S	
									trans-1,3-Dichloropropene	LT	.7	UGL		
		RDSXL*27	3.0	09-MAY-94	ES	RDSXL*27	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium		20	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9						

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSE
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
BASN	69SE2	RDSXL*27	3.0	09-MAY-94	ES	RDSXL*27	8080/W	58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid		.5	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		
								67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		
	69SL1	RDSX*28	3.0	29-APR-94	ES	RDSX*28	JB01/S	39-97-6	Mercury		7.03 E -2	UGG		
							JD15/S	82-49-2	Selenium		1.1	UGG		
							JD19/S	40-38-2	Arsenic		1.77	UGG		
							JS16/S	29-90-5	Aluminum		11200	UGG		
								39-89-6	Iron		22600	UGG		
								39-92-1	Lead		169	UGG		
								39-95-4	Magnesium		997	UGG		
								39-96-5	Manganese		647	UGG		
								40-02-0	Nickel		27.5	UGG		
								40-09-7	Potassium		769	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		4020	UGG		
								40-28-0	Thallium		33.2	UGG		
								40-36-0	Antimony		83.4	UGG		
								40-39-3	Barium		90.9	UGG		
								40-41-7	Beryllium		1.05	UGG		
								40-43-9	Cadmium		65.1	UGG		
								40-47-3	Chromium		443	UGG		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSE
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
BASN	69SL1	RDSX*28	3.0	29-APR-94	ES	RDSX*28	JS16/S	40-48-4	Cobalt		8.7	UGG		
								40-50-8	Copper		43.7	UGG		
								40-62-2	Vanadium		43.4	UGG		
								40-66-6	Zinc		1110	UGG		
								40-70-2	Calcium		12800	UGG		
		RDSXL*16	3.0	10-MAY-94	ES	RDSXL*16	UM20/W	00-41-4	Ethylbenzene	LT	.5	UGL		
								00-42-5	Styrene / Ethenylbenzene / Styrol / Styrolene / Cinnamene *	LT	.5	UGL		
								07-02-8	Acrolein	ND	100	UGL	R	
								07-06-2	1,2-Dichloroethane	LT	.5	UGL		
								07-13-1	Acrylonitrile	ND	100	UGL	R	
								08-05-4	Vinyl acetate / Acetic acid vinyl ester	LT	8.3	UGL		
								08-10-1	Methyl isobutyl ketone / Isopropylacetone / 4-Methyl-2-pen*	LT	3	UGL		
								08-88-3	Toluene	LT	.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	.5	UGL		
								10-75-8	2-Chloroethyl vinyl ether / (2-Chloroethoxy)ethene	LT	.71	UGL		
								10061-01-5	cis-1,3-Dichloropropylene / cis-1,3-Dichloropropene	LT	.58	UGL		
								1330-20-7	Xylenes	LT	.84	UGL		
								24-48-1	Dibromochloromethane / Chlorodibromomethane	LT	.67	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.6	UGL		
								56-23-5	Carbon tetrachloride	LT	.58	UGL		
								591-78-6	Methyl n-butyl ketone / 2-Hexanone	LT	3.6	UGL		
								67-64-1	Acetone	GT	50	UGL		
								67-66-3	Chloroform		5.3	UGL		
								71-43-2	Benzene	LT	.5	UGL		
								71-55-6	1,1,1-Trichloroethane	LT	.5	UGL		
								74-83-9	Bromomethane	LT	5.8	UGL		
								74-87-3	Chloromethane	LT	3.2	UGL		
								75-00-3	Chloroethane	LT	1.9	UGL		
								75-01-4	Vinyl chloride / Chloroethene	LT	2.6	UGL		
								75-09-2	Methylene chloride / Dichloromethane		7.2	UGL		
								75-15-0	Carbon disulfide		1.7	UGL		
								75-25-2	Bromoform	LT	2.6	UGL		
								75-27-4	Bromodichloromethane	LT	.59	UGL		
								75-34-3	1,1-Dichloroethane	LT	.68	UGL		
								75-35-4	1,1-Dichloroethylene / 1,1-Dichloroethene	LT	.5	UGL		
								75-69-4	Trichlorofluoromethane	LT	1.4	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSE
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
BASN	69SE2	RDSX*27	3.0	28-APR-94	ES	RDSX*27	JB01/S	39-97-6	Mercury	LT	5.00 E -2	UGG		
							JD15/S	82-49-2	Selenium	LT	.5	UGG		
							JD19/S	40-38-2	Arsenic		1.21	UGG		
							JS16/S	29-90-5	Aluminum		9500	UGG		
								39-89-6	Iron		16200	UGG		
								39-92-1	Lead	LT	10.5	UGG		
								39-95-4	Magnesium		966	UGG		
								39-96-5	Manganese		345	UGG		
								40-02-0	Nickel		13.2	UGG		
								40-09-7	Potassium		919	UGG		
								40-22-4	Silver	LT	.589	UGG		
								40-23-5	Sodium		1430	UGG		
								40-28-0	Thallium	LT	6.62	UGG		
								40-36-0	Antimony		60.5	UGG		
								40-39-3	Barium		62.3	UGG		
								40-41-7	Beryllium		.694	UGG		
								40-43-9	Cadmium	LT	.7	UGG		
								40-47-3	Chromium		75.9	UGG		
								40-48-4	Cobalt		3.14	UGG		
								40-50-8	Copper		7.04	UGG		
								40-62-2	Vanadium		31.9	UGG		
								40-66-6	Zinc		160	UGG		
								40-70-2	Calcium		4480	UGG		
		RDSXL*15	3.0	10-MAY-94	ES	RDSXL*15	UM20/W	00-41-4	Ethylbenzene	LT	.5	UGL		
								00-42-5	Styrene / Ethenylbenzene / Styrol / Styrolene / Cinnamene *	LT	.5	UGL		
								07-02-8	Acrolein	ND	100	UGL	R	
								07-06-2	1,2-Dichloroethane	LT	.5	UGL		
								07-13-1	Acrylonitrile	ND	100	UGL	R	
								08-05-4	Vinyl acetate / Acetic acid vinyl ester	LT	8.3	UGL		
								08-10-1	Methyl isobutyl ketone / Isopropylacetone / 4-Methyl-2-pen*	LT	3	UGL		
								08-88-3	Toluene	LT	.5	UGL		
								08-90-7	Chlorobenzene / Monochlorobenzene	LT	.5	UGL		
								10-75-8	2-Chloroethyl vinyl ether / (2-Chloroethoxy)ethene	LT	.71	UGL		
								10061-01-5	cis-1,3-Dichloropropylene / cis-1,3-Dichloropropene	LT	.58	UGL		
								1330-20-7	Xylenes	LT	.84	UGL		
								24-48-1	Dibromochloromethane / Chlorodibromomethane	LT	.67	UGL		
								27-18-4	Tetrachloroethylene / Tetrachloroethene / Perchloroethylen*	LT	1.6	UGL		

* - Analyte Description has been truncated. See Data Dictionary

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Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSE
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
BASN	69SL1	RDSXL*16	3.0	10-MAY-94	ES	RDSXL*16	UM20/W	78-87-5	1,2-Dichloropropane	LT	.5	UGL		
								78-93-3	Methyl ethyl ketone / 2-Butanone	LT	6.4	UGL		
								79-00-5	1,1,2-Trichloroethane	LT	1.2	UGL		
								79-01-6	Trichloroethylene /Trichloroethene / Ethinyl trichloride /T*	LT	.5	UGL		
								79-34-5	Tetrachloroethane / 1,1,2,2-Tetrachloroethane / Acetylene *	LT	.51	UGL		
									1,2-Dichloroethylenes (cis and trans isomers) / Acetylene *	LT	.5	UGL		
									Dichlorobenzenes	ND	10	UGL	R	
									Unknown compound 075		10	UGL	S	
									Unknown compound 097		30	UGL	S	
									Unknown compound 112		20	UGL	S	
									Unknown compound 144		8	UGL	S	
									trans-1,3-Dichloropropene	LT	.7	UGL		
		RDSXL*28	3.0	09-MAY-94	ES	RDSXL*28	1311/W	39-92-1	Lead	LT	50	UGL		
								39-97-6	Mercury	LT	.2	UGL		
								40-22-4	Silver	LT	5	UGL		
								40-38-2	Arsenic	LT	100	UGL		
								40-39-3	Barium	LT	20	UGL		
								40-43-9	Cadmium	LT	5	UGL		
								40-47-3	Chromium	LT	10	UGL		
								82-49-2	Selenium	LT	100	UGL		
							8080/W	01-35-2	Toxaphene / Chlorinated camphene / Camphechlor / Alltox / *	LT	5	UGL		
								24-57-3	Heptachlor epoxide	LT	5.0 E -2	UGL		
								57-74-9	Chlordane	LT	.25	UGL		
								58-89-9	Lindane / gamma-Benzene hexachloride / gamma-Hexachlorocyc*	LT	5.0 E -2	UGL		
								72-20-8	Endrin	LT	5.0 E -2	UGL		
								72-43-5	Methoxychlor / Methoxy-DDT / 1,1'-(2,2,2-Trichloroethylide*	LT	5.0 E -2	UGL		
								76-44-8	Heptachlor / 1H-1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrah*	LT	5.0 E -2	UGL		
							8150/W	93-72-1	245TP / Silvex / 2-(2,4,5-Trichlorophenoxy)propionic acid *	LT	.2	UGL		
								94-75-7	2,4-D / 2,4-Dichlorophenoxyacetic acid		.37	UGL		
							8270/W	06-44-5	p-Cresol / 4-Cresol / 4-Methylphenol	LT	20	UGL		
								06-46-7	1,4-Dichlorobenzene	LT	10	UGL		
								08-39-4	m-Cresol / 3-Cresol / 3-Methylphenol	LT	10	UGL		
								10-86-1	Pyridine	LT	100	UGL		
								18-74-1	Hexachlorobenzene	LT	20	UGL		
								21-14-2	2,4-Dinitrotoluene	LT	20	UGL		

* - Analyte Description has been truncated. See Data Dictionary

Final Documentation Appendix Report
Installation :Radford AAP, VA (RD)
File Type: CSE
Sampling Date Range: 01-JAN-94 23-AUG-94

Site Type	Site ID	Field Sample No.	Depth	Sample Date	Lab	Lab Anly. No.	Meth/ Matrix	CAS No.	Analyte Description	Meas. Bool.	Conc.	Unit Meas.	Flag Codes	Data Quals
BASN	69SL1	RDSXL*28	3.0	09-MAY-94	ES	RDSXL*28	8270/W	67-72-1	Hexachloroethane	LT	20	UGL		
								87-68-3	Hexachlorobutadiene / Hexachloro-1,3-butadiene	LT	20	UGL		
								87-86-5	Pentachlorophenol	LT	40	UGL		
								88-06-2	2,4,6-Trichlorophenol	LT	30	UGL		
								95-48-7	o-Cresol / 2-Cresol / 2-Methylphenol	LT	20	UGL		
								95-95-4	2,4,5-Trichlorophenol	LT	30	UGL		
								98-95-3	Nitrobenzene / Essence of mirbane / Oil of mirbane	LT	10	UGL		

** End of Report - 190 Records Found **

* - Analyte Description has been truncated. See Data Dictionary