**COMPREHENSIVE MONITORING REPORT
FOR UNDERGROUND STORAGE TANK 2331-U
AT BUILDING 9201-1**

1331.940729.004

**OAK RIDGE Y-12 PLANT
OAK RIDGE, TENNESSEE
FACILITY ID #0-010117**

July, 1994

**Environmental Management Department
Health, Safety, Environment,
and Accountability Organization**

Prepared by

**Science Applications International Corporation
Under Subcontract 22B-99069C
for the
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831**

Managed by

**Martin Marietta Energy Systems, Inc.
for the
U.S. Department of Energy
Under Contract No. DE-AC05-84OR21400**

MASTER

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LIST OF ACRONYMS

BGL	below ground level
BTEX	benzene, toluene, ethylbenzene, and xylenes
BTOC	below top of casing
CAP	Corrective Action Plan
GRO	gasoline range organic
LEL	lower explosive limit
MSL	mean sea level
TDEC	Tennessee Department of Environment and Conservation
TPH	total petroleum hydrocarbon
TWA	time weighted average
UEFPC	Upper East Fork Poplar Creek
UST	underground storage tank

SIGNATURE PAGE

I certify under penalty of law, including but not limited to penalties for perjury, that the information contained in this report and on any attachments, is true, accurate, and complete to the best of my knowledge, information, and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for intentional violations.

See Attached Certification
Owner/Operator (Print)

Signature

Date

William D Keefer
P.E. or P.G. (Print)

William D Keefer / TN 3328
Signature TN Lic./Reg. #

7/27/97
Date

If a P.E. signs this report, please indicate the area of expertise.

(Print or Type)

(P.E./P.G. Stamp/Seal)

County of Anderson State of Tennessee

Subscribed and Sworn to before me this

29th day of July, 19 97.

Kimberly D. Mitchell
Notary Public

My Commission expires: Sept. 28th, 97 (Notary Seal)

**CERTIFICATION STATEMENT FOR THE
COMPREHENSIVE MONITORING REPORT FOR
THE UNDERGROUND STORAGE TANK 2331-U,
AT BUILDING 9201-1**

I certify that this document and all enclosures were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

U.S. Department of Energy
Owner and Operator

By:

R.J. Spence
Department of Energy, Y-12 Site Manager

8/23/94
Date Signed

Martin Marietta Energy Systems, Inc.
Co-Operator

By:

D.J. Bostock
Martin Marietta Energy Systems, Inc.
Vice President and Y-12 Plant Manager

Jeresa L. Thilsapao
10-28-97

8/15/94
Date Signed

Jeresa L. Thilsapao
10-28-97

NOTARY

(Stamp/Seal)

Note: Both signatures have been notarized per requirements.

1. INTRODUCTION

1.1 Purpose and Scope

The purpose of this document is to present potentiometric, groundwater quality and vapor monitoring data required for comprehensive monitoring of underground storage tank (UST) 2331-U at the Building 9201-1 Site. Comprehensive monitoring has been conducted at the site as part of a Monitoring Only program approved by the Tennessee Department of Environment and Conservation (TDEC) based on review and approval of Site Ranking (Site Ranking Form approved May 23, 1994). Site Status Monitoring will be conducted semiannually. Comprehensive monitoring and preparation of this report have been conducted in accordance with the requirements of the TDEC Rule 1200-1-15 and the TDEC *UST Reference Handbook, Second Edition* (TDEC 1994).

This document is organized into three sections. Section 1 presents introductory information relative to the site including the regulatory initiative and a site description. Section 2 includes the results of sampling of monitoring wells GW-193, GW-657, GW-707, GW-708, GW-808, GW-809, and GW-810. Section 3 presents data from vapor monitoring conducted in subsurface utilities present at the site.

1.2 Site Description

The Building 9201-1 Site is located within the south central portion of the Oak Ridge Y-12 Plant in Oak Ridge, Tennessee (Figure 1-1). This area is within the Exclusion Zone of the Y-12 Plant, which is access restricted. The site is generally defined as the area directly south of the concrete ramp/loading dock (Figure 1-2). The site was previously the location of an underground gasoline storage tank used to fuel gasoline-powered equipment in the area. The tank has been excavated and removed from the site.

The UST was a 560-gallon gasoline tank that was suspected of leaking in 1988. Tightness testing confirmed that the tank was leaking; the tank was subsequently excavated and removed. An Initial Site Characterization and Environmental Assessment identified the presence of petroleum contamination above applicable Closure Action Levels. A Corrective Action Plan (CAP) was prepared and approved and Baseline Monitoring was performed in support of corrective action. However, site ranking indicated that contaminant concentrations were sufficiently low and exposure limited in extent to qualify for a monitoring only program in lieu of active remediation.

The topography of the Building 9201-1 Site gently decreases in elevation from north to south across the facility. A surface water drainage groundwater divide coincident with the trace of Upper East Fork Poplar Creek (UEFPC) lies approximately 230 ft south of the site. Given the nature of the surface topography at the Building 9201-1 Site, any petroleum product contamination resulting from past operations would be expected to migrate south/southeast away from the source area.

[illegible]

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ENVIRONMENTAL MANAGEMENT DEPARTMENT
LOCATION OF THE BUILDING 9201-1 SITE
AT THE Y-12 PLANT

All location information presented in this figure is based upon MMES engineering drawings, results of previous MMES investigations, and/or field determinations of feature and sampling locations. No representation or warranty, expressed or implied, is made as to the accuracy of the information or statements presented in this figure.

REV. 1 - 7/28/94 SAIC FILE: 93021R1/DWGS/734SITE

Y-12 PLANT NORTH

Legend

- Building
- Fence

2. GROUNDWATER MONITORING

2.1 Groundwater Measurement, Sample Collection, and Analysis

2.1.1 Well Locations

Seven wells have been sampled as part of the Site Status Monitoring program for the site. These wells include GW-193, GW-657, GW-707, GW-708, GW-808, GW-809, and GW-810. The locations of these wells are presented in Figure 2-1. Well installation reports and construction details for monitoring wells GW-193, GW-657, GW-707, and GW-708 are presented in the CAP for the Site [*Corrective Action Plan for Underground Storage Tank 2331-U at the Building 9201-1 Site, Appendix C, Y/SUB-92-99928C/3* (Energy Systems 1992)]. Well installation reports and construction details for monitoring wells GW-808, GW-809, and GW-810 that were installed in July 1993 are presented in the Corrective Action Baseline Report for the Site [*Corrective Action Baseline Report for Underground Storage Tank 2331-U, Building 9201-1, Appendix A, Y/SUB/94-99069C/Y15/2* (Energy Systems 1994)].

2.1.2 Groundwater Measurement and Sampling

Groundwater level measurement and sampling of the monitoring wells at the Building 9201-1 Site occurred on June 21, 1994. Each well was purged of three well volumes prior to sampling. Field measurement of pH, conductivity, temperature, and dissolved oxygen was conducted during purging to ensure representativeness for sampling. No measurable free product was encountered during water level measurement or sampling in any of these wells. However, an oily sheen and odor were observed during purging and sampling of wells GW-193 and GW-708.

2.1.3 Sample Analysis

Groundwater samples were analyzed for total petroleum hydrocarbons for gasoline range organics (TPH-GRO), and for benzene, toluene, ethylbenzene, and xylenes (BTEX).

2.2 Potentiometric Data

Potentiometric data for monitoring wells at the Building 9201-1 site from the comprehensive monitoring sampling event (June 1994) and from the last round of monitoring conducted for corrective action baseline reporting (December 1993) are presented in Table 2-1. Figures 2-2 and 2-3 present potentiometric contour maps from these two periods of sampling. These figures indicate an irregular potentiometric surface with locally variable groundwater flow directions. However, the general flow direction, depicted for both periods of measurement, is from north to south across the site.

2.3 Groundwater Analytical Data

Analytical data for groundwater sampled at the site during comprehensive monitoring, corrective action baseline sampling and the last four rounds of 1993 Upper East Fork Poplar Creek Hydrogeologic Regime Groundwater Quality Assessment Sampling are presented in Table 2-2. Laboratory analytical sheets for samples collected during Comprehensive Monitoring are presented in Appendix A. Delineation of the horizontal extent of benzene and TPH-GRO contamination in groundwater is based on Comprehensive Monitoring results, and is presented in Figures 2-4 and 2-5 (respectively). Also presented in these figures are the maximum concentrations of TPH and BTX in soil, determined during the Site Investigation, July 1990 (Energy Systems 1992).

All location information presented in this figure is based upon MMES engineering drawings, results of previous MMES investigations, and/or field determinations of feature and sampling locations. No representation or warranty, expressed or implied, is made as to the accuracy of the information or statements presented in this figure.

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Legend

▲ GW-193 Groundwater
(18.4 BGS) Total Depth

Monitoring Well Location
w Ground Surface (BGS)

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FIGURE 2-1
Building 9201-1 Site
Monitoring Well Location Map

**Table 2-1. Water level measurements at the Building 9201-1 Site for the periods of
December 1993 and June 1994**

Monitoring well number	Date measured	Total well depth (ft) (BGL)	Top of casing (ft) (MSL)	Top of casing to water depth (ft) (BTOC)	Potentiometric surface (ft) (MSL)
GW-193	12/18/93	18.4	934.00	8.71	925.29
	6/21/94	18.4	934.00	8.20	925.80
GW-657	12/18/93	17.1	930.53	6.96	923.57
	6/21/94	17.1	930.53	6.90	923.63
GW-707	12/18/93	26.0	930.91	6.22	924.69
	6/21/94	26.0	930.91	5.70	925.21
GW-708	12/18/93	13.9	930.87	4.53	926.34
	6/21/94	13.9	930.87	4.60	926.27
GW-808	12/18/93	40.4	930.75	8.05	922.70
	6/21/94	40.4	930.75	7.87	922.88
GW-809	12/18/93	40.0	931.04	8.31	922.73
	6/21/94	40.0	931.04	8.46	922.58
GW-810	12/18/93	26.8	931.44	8.67	922.77
	6/21/94	26.8	931.44	9.69	921.75

Notes:

BGL - below ground level
MSL - mean sea level
BTOC - below top of casing

All location information presented in this figure is based upon MMES engineering drawings, results of previous MMES investigations, and/or field determinations of feature and sampling locations. No representation or warranty, expressed or implied, is made as to the accuracy of the information or statements presented in this figure.

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Y-12 PLANT NORTH

Legend

- 925 — Groundwater Potential Line (Feet Above Sea Level)
- - 924 - - Inferred Groundwater Contour Line (Feet Above Sea Level)
- Interpreted Groundwater Flow Direction

metric Contour
L)
Potentiometric
bove MSL)
ter Flow Direction

▲ GW-193 Groundwater Monitoring
Well Locations
(925.29') Water Level Measurement
Dec. 1993

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FIGURE 2-2

Building 9201-1 Site
Groundwater Potentiometric
Contour Map Dec. 1993

All location information presented in this figure is based upon MMES engineering drawings, results of previous MMES investigations, and/or field determinations of feature and sampling locations. No representation or warranty, expressed or implied, is made as to the accuracy of the information or statements presented in this figure.

REV. 1 - 7/28/94 SAIC FILE: 93021R1/DWGS/734POTJN

Legend

- 925 — Groundwater Potential Line (Feet Above Sea Level)
- - 924 - - Inferred Groundwater Contour Line (Feet Above Sea Level)
- Interpreted Groundwater Flow Direction

Potentiometric Contour
(L)
Potentiometric
above MSL)
ter Flow Direction

▲ GW-193 Groundwater Monitoring
(925.29') Well Locations
Water Level Measurement
June 1994

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Environmental Management Department

FIGURE 2-3

Building 9201-1 Site
Groundwater Potentiometric
Contour Map JUNE 1994

Table 2-2. Analytical results for groundwater samples collected during comprehensive monitoring, baseline sampling, and 1993 groundwater quality assessment sampling

Sampling event	Sampling date	TPH-GRO ¹ (ppm)	Benzene (ppm)	Ethylbenzene (ppm)	Toluene (ppm)	Xylenes (ppm)
GW-193						
Comprehensive monitoring	6-21-94	*4.100	0.420	0.400	0.200	0.480
Baseline sampling	11-2-93	*5.50	*1.68E ²	0.575	0.235	0.353
1993 Qtr 4	11-18-93	*3.223	*2.800	0.450	0.700	0.580
1993 Qtr 3	9-23-93	*3.566	*1.200	0.520	0.100	0.300
1993 Qtr 2	6-22-93	*12.300	*1.400	0.740	0.075	0.320
1993 Qtr 1	3-11-93	*5.600	*2.200	0.790	0.370	0.680
GW-657						
Comprehensive monitoring	6-21-94	0.100U ³	0.010U	0.010U	0.010U	0.010U
Baseline sampling	11-2-93	<0.100	<0.001	<0.001	<0.001	<0.001
1993 Qtr 4	11-15-93	0.0049	0.005U	0.005U	0.005U	0.005U
1993 Qtr 3	9-21-93	0.160	0.005U	0.005U	0.005U	0.005U
1993 Qtr 2	6-18-93	NA ⁴	0.005U	0.005U	0.005U	0.005U
1993 Qtr 1	3-10-93	0.0033	0.005U	0.005U	0.005U	0.005U
GW-707						
Comprehensive monitoring	6-21-94	0.042J ⁵	0.002J	0.010U	0.010U	0.001J
Baseline sampling ⁶	11-2-93	<0.100	<0.001	<0.001	<0.001	<0.001
1993 Qtr 4	11-18-93	0.0103	0.005U	0.005U	0.005U	0.005U
1993 Qtr 3	9-27-93	0.0126	0.005U	0.005U	0.005U	0.005U
1993 Qtr 2	6-23-93	0.1080	0.005U	0.005U	0.005U	0.005U
1993 Qtr 1	3-11-93	0.0730	0.005U	0.005U	0.005U	0.005U
GW-708						
Comprehensive monitoring	6-21-94	*5.300	*0.980	0.620	0.110	0.690
Baseline sampling ⁶	11-2-93	*7.50	*0.900	0.800	0.095	1.575
1993 Qtr 4	11-12-93	*5.995	*0.780	0.670	0.098	1.800
1993 Qtr 3	9-21-93	*8.408	*1.100	0.720	0.120	2.400
1993 Qtr 2	6-18-93	*10.215	*1.200	0.620	0.120	2.600
1993 Qtr 1	3-10-93	*11.428	*0.870	0.300	0.150	2.500
GW-808						
Comprehensive monitoring	6-21-94	0.012J	0.010U	0.010U	0.010U	0.006J
Baseline sampling	11-2-93	0.140	<0.001	0.016	<0.001	0.111
GW-809						
Comprehensive monitoring	6-21-94	0.010	0.010U	0.010U	0.010U	0.010U
Baseline sampling	11-2-93	<0.100	0.001	0.003	0.001	0.016
GW-810						
Comprehensive monitoring	6-21-94	0.021J	0.010U	0.010U	0.010U	0.010U
Baseline sampling	11-2-93	0.190	0.001	0.019	0.001	0.136

¹TPH-GRO - Total Petroleum Hydrocarbons-Gasoline Range Organics.

²E - Benzene exceeded calibration range.

³U - Contaminant was not detected above quantitation limit during the analysis.

⁴NA - No analysis performed for the contaminant.

⁵J - Value estimated for contaminant.

⁶Sample identification error suspected. Baseline sample results for wells GW-707 and GW-708 have been transposed to correct this error.

*Denotes contamination above the applicable closure action levels for the site.

Comprehensive Molecular Analytical Results

ation
g Well
ing

● SB-4
(0.021 ppm BTEX)

Soil Boring Location
Site Investigation
Analytical Results

FTL Fuel Transfer Line
CWL Chilled Water Line
EC Electrical Conduit
SDL Underground Storm-
water Drainage Line
SSL Sanitary Under-
ground Sewer Line

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FIGURE 2-4

Building 9201-1 Site
Horizontal Extent of Benzene
Contamination in Groundwater

All location information presented in this figure is based upon MMES engineering drawings, results of previous MMES investigations, and/or field determinations of feature and sampling locations. No representation or warranty, expressed or implied, is made as to the accuracy of the information or statements presented in this figure.

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Y-12 PLANT NORTH

Legend

GW-657
(0.042 ppm BENZENE)
(5.50 ppm TPH)

Groundwater Cont.
>1.0ppm TPH

Groundwater Monit.
Location

Comprehensive Mon.
Analytical Results

● SB-4 (0.021 ppm BTEX)	Soil Boring Location Site Investigation Analytical Results	— FTL — — CWL — — EC — — SDL — — SSL —	Fuel Transfer Line Chilled Water Line Electrical Conduit Underground Storm- water Drainage Line Sanitary Under- ground Sewer Line	Martin Marietta Energy Systems, Inc. Environmental Management Department FIGURE 2-5 Building 9201-1 Site Horizontal Extent of TPH Contamination in Groundwater
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Figures 2-4 and 2-5 illustrate contamination in monitoring wells GW-193 and GW-708 above the TDEC nondrinking water Closure Action Limits of 0.07 ppm benzene and 1.0 ppm TPH. Both of these wells have historically produced values in excess of these closure limits. Comprehensive monitoring analytical results for GW-707, which has also historically produced elevated levels of benzene and TPH, are substantially below the closure action limits. These results indicate a reduction in the horizontal area of groundwater contamination as defined by the November 1993 Baseline data. Analytical results for GW-808, GW-809, GW-810, and GW-657 show no contamination greater than the Closure Action Limits and decreased levels of contamination relative to the Baseline results. These data indicate that groundwater contamination (above the Closure Action Limits) has not migrated downgradient to the location of these wells, and suggests the degradation of contaminants within the plume as defined by the Baseline data.

3. VAPOR MONITORING

3.1 Monitoring Methods and Locations

Vapor monitoring as part of the Comprehensive Monitoring Program was conducted on June 28, 1994. Seven access points along subsurface stormwater and sewer drainage lines that cross the site were monitored. However, none of the subsurface utilities present at the site crosses the groundwater plume defined by the most recent data. The locations of vapor monitoring locations are illustrated in Figure 3-1.

At each location, organic vapors were monitored using direct reading instruments. Organic vapors were monitored using a Thermo Environmental™ organic vapor meter. Oxygen, lower explosive limit (LEL), hydrogen sulfide, and carbon monoxide were monitored using a Gastech Fourrunner™.

3.2 Vapor Monitoring Results

The results of vapor monitoring at the Building 9201-1 Site are presented in Table 3-1. Measured oxygen percentages are within the range of normal air concentrations. LEL readings of 0% indicate that an explosion hazard does not exist within any of the monitored utilities. Monitoring results for both hydrogen sulfide and carbon monoxide reveal levels well below the time weighted average (TWA) exposure limits of 10 ppm and 35 ppm (respectively) (American Conference of Governmental Industrial Hygienists 1993-1994). With the exception of monitoring results for locations C-4021 and C-4112, organic vapor readings are equal to background readings. Organic vapor readings for C-4021 and C-4112 of up to 0.3 ppm and 0.5 ppm (respectively) over background are considered insignificant, but may be due to the presence of petroleum contamination or other organic compounds (naturally occurring or man-made) at the site. However, the non-discriminatory nature of the organic vapor meter used in monitoring does not allow specific identification of the source.

Table 3-1. Vapor monitoring results for the Building 9201-1 Site

Sampling location	O ₂ %	LEL %	H ₂ S (ppm)	CO (ppm)	Organic vapors (ppm)	Background organic vapors (ppm)
402-A	20.9	0	0.0	1	0.1-0.3	0.1-0.3
409	21.0	0	0.0	0	0.0-0.1	0.1-0.3
C-4019	20.9	0	0.0	1	0.0-0.1	0.0-0.1
C-4021	21.0	0	0.0	0	0.1-0.3	0.0-0.1
C-4112	20.9	0	0.0	0	0.1-0.5	0.0-0.3
C-4111	20.9	0	0.0	0	0.1	0.0-0.1
C-4024	20.8	0	0.0	1	0.0-0.1	0.1

- SDL — Underground Stormwater Drainage Line
- SSL — Sanitary Underground Sewer Line
- ⊗ Vapor Monitoring Location

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Environmental Management Department
FIGURE 3-1
Building 9201-1 Site
Vapor Monitoring Sampling
Location Map

REFERENCES

- American Conference of Governmental Industrial Hygienists 1993-1994. *The 1993-1994 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*, ISDN: 1-882417-03-8.
- Energy Systems (Martin Marietta Energy Systems, Inc.) 1992. *Corrective Action Plan for Underground Storage Tank 2331-U at the Building 9201-1 Site*, Y/SUB-92-99928C/3.
- Energy Systems 1994. *Corrective Action Baseline Report for Underground Storage Tank 2331-U, Building 9201-1*, Y/SUB/94-99069C/Y15/2.
- TDEC (Tennessee Department of Environment and Conservation) 1994. *Underground Storage Tank Reference Handbook*, Second Edition.

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Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
Ingram, Edward Micha	Building 9115 MS 8219			E941720000	8601	APPROVED
DATE SAMPLED: 06/21/94 11:20:00	DATE NEEDED: 07/21/94	LOCATION: 808				CHARGE #: S2205F26
DATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:				CASE: U03130
SAMPLER: 029776	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

L. T. Emerson

COMMENTS:

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
PREP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 09:27:00	APPROVER: E030124
COMMENTS:			

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

CAS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		12 J		ug/L
71432	Benzene		10 U		ug/L
100414	Ethylbenzene		10 U		ug/L
108883	Toluene		10 U		ug/L
1330207	Xylene		6 J		ug/L

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*** LAST PAGE ***

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7/13/94 08:22:25

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
ngram, Edward Micha	Building 9115 MS 8219			E941720002	8601	APPROVED
ATE SAMPLED: 06/21/94 14:05:00	DATE NEEDED: 07/21/94	LOCATION: 809				CHARGE #: S2205F26
ATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:				CASE: U03130
AMPLER: 029776	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

OMMENTS:

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 10:05:00	APPROVER: E030124

OMMENTS:

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		10 J		ug/L
1432	Benzene		10 U		ug/L
00414	Ethylbenzene		10 U		ug/L
08883	Toluene		10 U		ug/L
330207	Xylene		10 U		ug/L

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Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

<u>SUBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
ngram, Edward Micha	Building 9115 MS 8219			E941720003	8601	APPROVED
DATE SAMPLED: 06/21/94 14:20:00	DATE NEEDED: 07/21/94	LOCATION: 810				
DATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:				CHARGE #: S2205F26
SAMPLER: 029776	SAMPLE DESCRIPTION: GRAB					CASE: U03130

FINAL APPROVAL:

COMMENTS:

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 10:41:00	APPROVER: E030124

COMMENTS:

Bldg 9201-1

Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L

BTEX Quantitation Limit 10 ug/L per compound

<u>AS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		21 J		ug/L
1432	Benzene		10 U		ug/L
00414	Ethylbenzene		10 U		ug/L
08883	Toluene		10 U		ug/L
330207	Xylene		10 U		ug/L

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Y-12 ANALYTICAL SERVICES ORGANIZATION

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UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTG	STATUS
ngram, Edward Micha	Building 9115 MS 8219			E941720004	8601	APPROVED
ATE SAMPLED: 06/21/94 15:30:00	DATE NEEDED: 07/21/94	LOCATION: 657				
ATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:				CHARGE #: S2205F26
AMPLER: 029776	SAMPLE DESCRIPTION: GRAB					CASE: U03130

FINAL APPROVAL:

L. T. Emerson

OMMENTS:

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 11:18:00	APPROVER: E030124

OMMENTS:

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		10 U		ug/L
30414	Ethylbenzene		10 U		ug/L
38883	Toluene		10 U		ug/L
330207	Xylene		10 U		ug/L

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JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
ngram, Edward Micha	Building 9115 MS 8219			E941720005	8601	APPROVED
ATE SAMPLED: 06/21/94 15:00:00	DATE NEEDED: 07/21/94	LOCATION: 708				
ATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:				CHARGE #: S2205F26
AMPLER: 029776	SAMPLE DESCRIPTION: GRAB					CASE: U03130

FINAL APPROVAL:

COMMENTS:

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/28/94 14:09:00	APPROVER: E030124

COMMENTS:

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		5300		ug/L
1432	Benzene		980		ug/L
10414	Ethylbenzene		620		ug/L
18883	Toluene		110		ug/L
130207	Xylene		690		ug/L

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SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
Ingram, Edward Micha	Building 9115 MS 8219			E941720006	8601	APPROVED
DATE SAMPLED: 06/21/94 16:55:00	DATE NEEDED: 07/21/94	LOCATION: 707			CHARGE #:	S2205F26
DATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:			CASE:	U03130
SAMPLER: 029776	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

COMMENTS:

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
PREP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 17:29:00	APPROVER: E030124

COMMENTS:

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

CAS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		42 J		ug/L
71432	Benzene		2 J		ug/L
100414	Ethylbenzene		10 U		ug/L
108883	Toluene		10 U		ug/L
1330207	Xylene		1 J		ug/L

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SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTG	STATUS
Ingram, Edward Micha	Building 9115 MS 8219			E941720007	8601	APPROVED
DATE SAMPLED: 06/21/94 16:40:00	DATE NEEDED: 07/21/94	LOCATION: 193			CHARGE #: S2205F26	
DATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:			CASE: U03130	
SAMPLER: 029776	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

COMMENTS:

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 16:53:00	APPROVER: E030124

COMMENTS:

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

CAS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		4100		ug/L
1432	Benzene		420		ug/L
100414	Ethylbenzene		400		ug/L
108883	Toluene		200		ug/L
1330207	Xylene		480		ug/L

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Y-12 ANALYTICAL SERVICES ORGANIZATION

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SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
ngram, Edward Micha	Building 9115 MS 8219			E941720008	8601	APPROVED
DATE SAMPLED: 06/21/94 06:30:00	DATE NEEDED: 07/21/94	LOCATION: T.B.				CHARGE #: S2211601
DATE RECEIVED: 06/22/94	DATE COMPLETED: 07/01/94	PROJECT CODE:				CASE: SQT001
SAMPLER: 029776	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

COMMENTS:

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 06/27/94 08:47:00	APPROVER: E030124

COMMENTS:

Bldg 9201-1
Facility ID# 0-010117

GRO Quantitation Limit 100 ug/L
BTEX Quantitation Limit 10 ug/L per compound

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		10 U		ug/L
00414	Ethylbenzene		10 U		ug/L
08883	Toluene		10 U		ug/L
330207	Xylene		10 U		ug/L

EST: VOA624	Volatile Organics by GC/MS (EPA 624)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: EPA 624 PHASE:	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

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DOE Y-12 PLANT CHAIN OF CUSTODY FORM

No 20418

SAMPLER: (Signature)			Dept.		Building/Phone								REMARKS
REQUISITION NUMBER	SAMPLING DATE	SAMPLING TIME	COMP.	GRAB	SAMPLE LOCATION	NO. OF CON- TAINERS	WATER	OIL	SOIL	SOLVENT	SLUDGE	OTHER	
Alpha 1	9/21/94	1120		✓	GW-808	4	✓						E941720000
		1405		✓	GW-809	4	✓						E941720002
		1420		✓	GW-810	4	✓						E941720003
		1500		✓	GW-708	4	✓						E941720005
		1530		✓	GW-657	4	✓						E941720004
		1655		✓	GW-707	4	✓						E941720006
		1640		✓	GW-193	4	✓						E941720007
✓	✓	0630		✓	61dg 9207 TRIP BLANK	2	✓						E941720008

UCN-15487 (2 10-84)

Signatures Required on Back

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
<i>F. L. Litzler</i>	<i>4/22/94 0705</i>	<i>D. R. Thompson</i>	<i>4/22/94 0705</i>	<i>7222</i>	<i>9207</i>	<i>14347</i>
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone

REMARKS:

RETURN TO: ENVIRONMENTAL MONITORING, 9704-1, MS - 1, 4-3980.

**9201-1 CMR
DISTRIBUTION**

**HEALTH, SAFETY, ENVIRONMENT
AND ACCOUNTABILITY
ORGANIZATION**

D.E. Bohrman (2)
L.L. Cunningham/E.M. Ingram
L.W. McMahon
File - EMD -RC

**MECHANICAL OPERATIONS
ORGANIZATION**

A.A. Barnes

**ENVIRONMENTAL COMPLIANCE
ORGANIZATION**

S.H. Welch

**TENNESSEE DEPARTMENT OF
ENVIRONMENT AND CONSERVATION**

C. Head
E.C. Leming/J.D. Harless

U. S. DEPARTMENT OF ENERGY

E.M. Atkins
R.J. Spence/W.G. McMillan
S.R. Lankford

A. K. Lee/DOE-OSTI (2)
Y-12 Central Files