MARTIN MARIETTA

Y/SUB/94-99069C/Y15/1

**CORRECTIVE ACTION BASELINE
REPORT FOR UNDERGROUND
STORAGE TANKS 0439-U, 0440-U,
2073-U, 2074-U, AND 2075-U AT THE
EAST END FUEL STATION,
BUILDINGS 9754 AND 9754-2**

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

January 1994

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

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FOR THE UNITED STATES
DEPARTMENT OF ENERGY**

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Health, Safety, Environment,
and Accountability Organization**

Prepared by

**Science Applications International Corporation
Under Subcontract 18B-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**

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LIST OF ACRONYMS

BTEX	benzene, toluene, ethylbenzene, and xylene
CAP	corrective action plan
TDEC	Tennessee Department of Environment and Conservation
TPH-DRO	total petroleum hydrocarbons - diesel range organics
TPH-GRO	total petroleum hydrocarbons - gasoline range organics
UST	underground storage tank

1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of this report is to provide baseline geochemical and hydrogeologic data relative to corrective action for underground storage tanks (USTs) 0439-U, 0440-U, 2073-U, 2074-U, and 2075-U at the East End Fuel Station, Buildings 9754 and 9754-2 at the Oak Ridge Y-12 Plant. This report has been prepared in accordance with the requirements of the Tennessee Department of Environment and Conservation (TDEC) Rule 1200-1-15, the TDEC UST Reference Handbook (TDEC 1992), and the approved corrective action plan (CAP) for this site (Energy Systems 1992). Progress in support of corrective action at the East End Fuel Station has included monitoring well installation, tank removal, and baseline groundwater sampling and analysis.

This document represents the baseline report for corrective action at the East End Fuel Station and is organized into three sections. Section 1 presents introductory information relative to the site, including the regulatory initiative, site description, and progress to date. Section 2 includes a summary of additional monitoring well installation activities, the results of baseline groundwater sampling, a summary of tank removal activities, and the results of confirmatory soil sampling performed during tank removal. Section 3 presents the baseline hydrogeology and planned zone of influence for groundwater remediation.

1.2 Site Description

The East End Fuel Station is located at the eastern edge of the Y-12 Plant on the north side of First Street between "A" Road and Agate Road near Portal 5 (Fig. 1-1). The site includes Building 9754-2 and the former Building 9754 and is, in general, moderately industrialized. Tanks 0439-U and 0440-U were located adjacent to Building 9754-2, and tanks 2073-U, 2074-U, and 2075-U serviced pump islands adjacent to the former Building 9754. This area is characterized by a gentle slope stepping down to the south toward Upper East Fork Poplar Creek.

The East End Fuel Station has been in use as a primary fueling point for the Y-12 Plant since 1944. The holding tanks at former Building 9754 facility were in use until 1978 when they were emptied and taken out of service. The piping associated with the holding tanks and two emergency dispensing pumps was capped at a valving station and abandoned in place. The USTs at the Building 9754-2 facility were put into service in 1979 and taken out of service and removed in June 1989. The East End Fuel Station is still in use and is currently supplied by two aboveground storage tanks. A reconstruction of the major events related to the tanks at the East End Fuel Station is presented in Table 1-1.

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.

SCALE
1" = 70'

Legend

Buildings
Supply Lines

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FIGURE 1-1
East End Fuel Station
Site Map

Table 1-1 Chronological Summary of Events at the East End Fuel Station

1944	Tanks 2073-U, 2074-U, and 2075-U at the Building 9754 facility placed into service.
1978	Tanks 2073-U, 2074-U, and 2075-U at the Building 9754 facility emptied, taken out of service, and abandoned in place with associated piping.
1979	Tanks 0439-U and 0440-U at the Building 9754-2 facility placed into service.
1985	Diesel spill due to overfilling at tank 0440-U. Free product removal and geohydrological investigation performed.
1989	Leakage discovered through tightness testing of tanks 0439-U and 0440-U. Initial abatement, free product removal, and initial site characterization conducted, and corresponding reports issued. Soil and groundwater contamination identified. Tanks 0439-U and 0440-U removed. Site Investigation Plan submitted to TDHE.
1990	Site Investigation Plan approved by TDHE. Site investigation performed, and soil and groundwater contamination above applicable limits identified.
1991	Site Investigation Report/Corrective Action Plan issued. TDEC finds CAP deficient and requires revision before approval.
1992	Environmental Assessment Report/Corrective Action Plan issued.
1993	TDEC approves revised Environmental Assessment Report/Corrective Action Plan. Corrective action for East End Fuel Station initiated.

1.3 Progress Summary

Following TDEC approval of the CAP in May 1993, initial steps were taken to implement the soil and groundwater corrective action at the site. Three additional monitoring wells were installed downgradient of the projected groundwater contaminant plume to complete delineation in accordance with the approved CAP. Monitoring well GW-767 was installed in May 1992 (as part of the Y-12 Groundwater Protection Program), GW-802 was installed in June 1993, and GW-803 and GW-804 were installed in July 1993. These wells were sampled in August 1993 and analytical results were received in September 1993. Tanks 2073-U, 2074-U, and 2075-U and associated piping at the former Building 9754 facility were excavated and removed in October 1993 in accordance with the approved CAP. Confirmatory soil samples were collected from the piping excavations (the tank pits were known to be underlain by contaminated soil) to define the extent of excavation necessary for soil corrective action. Water level measurements for baseline hydrogeologic interpretation were taken in December 1993 (wet season).

Activities completed to date coincide with the implementation schedule presented in the approved CAP (Energy Systems 1993). A comparison of the planned versus actual/projected dates for completion of milestone corrective action activities is presented in Table 1-2. Deviation from the implementation schedule has occurred with respect to the procurement of soil corrective action services and installation of the groundwater recovery system. An addendum reflecting changes to the approach and schedule for proposed soil and groundwater corrective action has been drafted. A staged approach to installation of the groundwater recovery system will be pursued in order to limit or prevent continued migration of contaminants along the downgradient margins of the groundwater plume. The groundwater recovery well outside of the planned area of soil excavation will be installed and, in conjunction with two existing monitoring wells (GW-183 and GW-658), will be used to initiate groundwater recovery and treatment. Full implementation of the groundwater recovery system will take place following soil excavation, as planned.

Table 1-2 Planned/Actual Schedule for Corrective Action Activities

Corrective action activity	Planned date	Actual/ projected date
TDEC Approval of CAP	N/A	5/11/93
Begin Installation of Additional Site Monitoring Wells, and Sampling and Analysis of Groundwater	7/9/93	6/22/93
Receipt of Groundwater Analytical Data	N/A	9/17/93
Receipt of Wet Season Water Level Measurements	N/A	12/13/93
Issue Baseline Report	11/1/93	~1/18/94
Issue Bid Specifications for Procurement Soil Corrective Action Services		*
Begin Tank 2073-U, 2074-U, and 2075-U Removal	N/A	10/4/93
Begin Recovery and Treatment of Groundwater	*	~2/1/94
Issue First Monthly Report on Progress and Field Sample Analysis (if available)	Within 45 days soil excavation	As scheduled
Begin Thermal Desorption Treatment of Contaminated Soils	Within 60 days contract award	As scheduled
Issue Second and Third Monthly Reports on Progress and Field Sample Analysis	Monthly after first report	As scheduled
Issue Quarterly Reports on Progress and Field/Treatment Sample Analyses	Quarterly	As scheduled
Issue Final Corrective Action Report	Within 90 days completion	As scheduled

*Pending approval of the schedule presented in the forthcoming Addendum to the CAP

2.0 ANALYTICAL RESULTS

2.1 Groundwater Sample Collection and Analysis

2.1.1 New and Existing Well Locations

At present, twelve groundwater monitoring wells encircle the East End Fuel Station. The location of wells used in the groundwater monitoring at the facility are presented in Fig. 2-1. Four wells have been installed since the submittal of the *Corrective Action Plan (CAP) for Underground Storage Tanks 0439-U, 0440-U, 2073-U, 2074-U and 2075-U at the East End Fuel Station, Buildings 9754 and 9754-2* (Energy Systems, 1992) to TDEC in July 1992. These wells are GW-767 (installed 6/92), and wells GW-802, GW-803, and GW-804 (installed 6/93 to 7/93). The additional wells extend groundwater monitoring coverage to the east and south of the facility. Well Installation Activity/Progress Reports for wells GW-767, GW-802, GW-803, and GW-804 are contained in Appendix A. Well details for the twelve groundwater monitoring wells are listed in Table 2-1.

2.1.2 Groundwater Sampling

The groundwater monitoring wells at the East End Fuel Facility were sampled for baseline data on August 3rd and 4th, 1993. Wells were purged of three well volumes with field measurement of pH, conductivity, temperature, and dissolved oxygen during the purging operation to ensure representativeness for sampling. The wells were allowed to recover and samples were collected for analysis in pre-prepared bottles.

2.1.3 Sample Analysis

Samples were analyzed for total petroleum hydrocarbons for gasoline range organics (TPH-GRO) and total petroleum hydrocarbon for diesel range organics (TPH-DRO). TPH-GRO analysis included analysis for benzene, toluene, ethylbenzene, and xylene (BTEX). As listed in Table 2-2, Total TPH is the sum of TPH-GRO and TPH-DRO. Analytical results for the August 1993 sampling event are summarized in Table 2-2 with laboratory reports presented in Appendix B.

2.2 Groundwater Data Evaluation

2.2.1 Baseline Sampling Analytical Results

Analytical data to support delineation of the groundwater contamination at the East End Fuel Station has been collected through various investigations since 1986. Data generated from these investigations are presented in Appendices C, D, F, and G of the approved CAP (Energy Systems 1992). Based on results of previous groundwater investigations, the groundwater at the East End Fuel Station has been classified as a nondrinking water source. According to this classification, the TDEC closure action levels for groundwater at the East

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1"=70'

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Legend

▲ GW-804
25.0 BGS

Monitoring
Total Dep.

Well Locations

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FIGURE 2-1
East End Fuel Station
Monitoring Well Location Map

Table 2-1 Groundwater Monitoring Well Details for the East End Fuel Station

Well #	Aquifer Zone	Well Depth	T.O.C. ¹ Elevation (MSL) ²	Surface Elevation (MSL)	Installation Date	WL ³ Readings	Time Frame	Average WL Depth	High WL Reading	Low WL Reading
GW-183	WT ⁴	30.6	946.02	943.01	8/89	12	1990,91,92,93	7.88	6.64	9.16
GW-281	WT	17.5	946.08	946.51	8/86	17	1989,90,91,92,93	7.11	6.00	8.41
GW-282	WT	16.0	943.94	944.69	8/86	15	1989,90,91,92	5.21	2.91	7.03
GW-283	WT	20.0	938.62	939.22	8/86	17	1989,90,91,92,93	6.90	6.10	9.67
GW-284	WT	18.0	941.61	942.32	8/86	17	1989,90,91,92,93	9.39	6.74	10.3
GW-285	WT	21.0	942.46	942.88	8/86	17	1989,90,91,92,93	9.92	7.25	10.86
GW-658	WT	19.1	944.81		8/90	9	1991,92,93	8.20	7.23	9.06
GW-659	WT	16.7	941.16		8/90	9	1991,92,93	8.38	7.78	8.98
GW-767	WT	18.0	948.54		5/92	1	1993	9.61	9.61	9.61
GW-802	WT	26.5	941.83	942.30	6/93	4.9	12/93 ⁵	NA ⁶	NA	NA
GW-803	WT	25.0	942.53	939.29	7/93	9.2	12/93	NA	NA	NA
GW-804	WT	25.0	942.55	939.22	7/93	9.2	12/93	NA	NA	NA

¹ T.O.C. = top of casing² MSL = mean sea level³ WL = water level⁴ WT = water table⁵ December 1993 measurement only⁶ NA = not applicable

Table 2-2 Baseline Groundwater Analytical Results, August 3-4, 1993

Well #	Benzene ¹ (ppm)	Ethylbenzene ¹ (ppm)	Toluene (ppm)	Xylene (ppm)	TPH-GRO ¹ (ppm)	TPH-DRO ² (ppm)	Total TPH (ppm)
GW-183	1.30*	0.61	0.034	0.15	5.20	0.39	5.59*
GW-281	0.001u ³	0.001u	0.001u	0.001u	0.10u	0.10u	ND ⁴
GW-282	0.001u	0.001u	0.001u	0.001u	0.10u	0.16 ⁵	0.16
GW-283	0.001u	0.001u	0.001u	0.001u	0.10u	0.40 ⁵	0.40
GW-284	0.002	0.001u	0.001u	0.001u	0.10u	0.10u	ND
GW-285	0.002	0.001u	0.001u	0.001u	0.10u	0.32	0.32
GW-658	18.0*	12.0	1.30	6.10	78.0	48.0	126.0*
GW-659	0.10*	0.005	0.084	0.015	0.42	0.51	0.93
GW-767	0.001u	0.001u	0.001u	0.001u	0.10u	0.20 ⁵	0.20
GW-802	0.001u	0.001u	0.001u	0.001u	0.10u	1.30 ⁵	1.30*
GW-803	0.001u	0.001u	0.001u	0.001u	0.10u	0.10u	ND
GW-804	0.001u	0.001u	0.001u	0.001u	0.10u	0.57 ⁵	0.57

¹ Analyzed by SW-846/8020: gas chromatography for aromatic volatile organic compounds (modified for TPH-GRO)

² Analyzed by SW-846/8015: gas chromatography for nonhalogenated volatile organic compounds (modified for TPH-DRO)

³ u = compound not detected during analysis. The sample quantitation limit is listed.

⁴ ND = not detected

⁵ Analytical notation indicating a significant fraction of the detected compounds did not have a hydrocarbon pattern.

* These results exceed the TDEC closure action levels for groundwater at the East End Fuel Facility,
Benzene - 0.070 ppm TPH - 1.0 ppm.

End Fuel Station are 0.070 ppm for benzene and 1.0 ppm for TPH. Analytical results that exceed the TDEC closure action limits are indicated with an asterisk in Table 2-2. It should also be noted that the analytical laboratory determined that, in several instances, the analyses for TPH-DRO indicated the presence of nonpetroleum related compounds. The significance of this finding relative to the low actionable concentrations of TPH-DRO has not been determined, but may indicate the presence of low concentrations of an unidentified organic compound. The affected results are noted in Table 2-2.

Groundwater samples analyzed from wells GW-183, GW-658, and GW-659 have historically produced analytical results in excess of the 0.070 ppm benzene closure action levels for contaminated groundwater. These limits were exceeded by samples from these wells during baseline sampling. TPH values in excess of the 1.0 ppm closure action levels for TPH were found in wells GW-183, GW-658, and GW-802. With the exception of GW-802, the TPH contaminant levels in these wells have historically exceeded the TDEC limits.

2.2.2 Changes in Contaminant Extent

The analytical results confirm the lateral extent of contamination as previously defined in the CAP. The additional data from the recently installed wells (GW-767, GW-802, GW-803, and GW-804) indicated an extension of the area of groundwater contamination area to the east farther than previously defined. As shown in Fig. 2-2, the contaminant values present in monitoring well GW-802 confirm contamination of the groundwater is further east of the area delineated in the approved CAP. Migration of contaminants appears to be strike-parallel and may locally reflect control by bedding plane/fracture orientation. The contaminant plume does not appear to extend to the location of GW-803 as indicated by the nondetection of benzene or TPH.

2.3 Tank Removal and Confirmatory Sampling

Underground storage tanks 2073-U, 2074-U, 2075-U, and associated piping were excavated, removed, and disposed in accordance with the approved CAP for the East End Fuel Station. Tank removal activities began October 4, 1993 and were completed October 13, 1993. A summary of field activities is included in Appendix C.1. During excavation of the tanks and piping, confirmatory soil samples were taken from the piping excavations to determine the presence and/or extent of contamination. No confirmatory samples were taken from the tank bays since these were within the area of known soil contamination planned for corrective action.

2.3.1 Tank Removal Disposal Records

Tanks 2073-U, 2074-U, and 2075-U were emptied of petroleum products when taken out of service in 1979. Prior to removal, the associated piping was disconnected and capped, and the tank interiors were inerted with a hydrocarbon mitigation agent. Tank 2073-U had a small hole in one end seam and was partially filled with water, tank 2074-U appeared to be intact but also contained some water (possibly from open piping), and tank 2075-U was in

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1" = 70'

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- Groundwater Contamination >0.07 ppm Benzene
- Groundwater Contamination >1.0 ppm TPH and >0.1 ppm Benzene

TPH - > 1.0 ppm

Monitoring Well Locations

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FIGURE 2-2

East End Fuel Station
Zone of Influence of Benzene &
TPH Groundwater Contamination

poor condition with numerous corrosion holes and also contained water. Following removal, the tanks were properly marked and labeled and transferred to the Y-12 Plant Scrap Metal Yard where they will be flattened, sheared, and rendered useless as tanks (Appendix C.2). Asphalt and concrete demolished during tank and piping removal was screened for organic vapors and radiation, determined to be noncontaminated, and transferred to the Y-12 Plant Sanitary Landfill II for disposal (Appendix C.3). Potentially contaminated soil removed during excavation of the tanks and piping was used to backfill the tank bays (to be remediated during soil corrective action), and the piping excavations were backfilled with clean clay.

2.3.2 Confirmatory Soil Sampling

Confirmatory soil samples were collected for the piping excavations to delimit the extent of soil contamination for subsequent corrective action. Piping runs were present between the excavated tanks and the former valving station, and between the former emergency dispensing pumps and the former valving station. Confirmatory soil samples were taken from the piping excavations at regular intervals, near pipe joints, or in stained areas (Fig. 2-3). Field screening of the excavated soil indicated that contamination was present in the piping trenches. Confirmatory soil samples were analyzed for TPH-DRO, TPH-GRO, and BTEX. The results of these analyses are summarized in Table 2-3, and the analytical laboratory data sheets are included in Appendix D.

The analytical results indicate that petroleum contamination (primarily diesel constituents) above applicable action limits is present along the transfer piping between the excavated tanks and the former valving station. However, no contamination was observed or detected within the emergency dispenser transfer piping excavation. These results confirm the planned area of soil excavation for corrective action with the exception of the soil beneath the emergency dispenser piping. This area will only be excavated if adjacent soil contamination extends beneath this area.

Table 2-3 Tank Removal Confirmatory Soil Sampling Analytical Results

Sample	Benzene ¹ (ppm)	Toluene ¹ (ppm)	Ethylbenzene ¹ (ppm)	Xylenes ¹ (ppm)	Total BTX (ppm)	TPH-GRO ¹ (ppm)	TPH-DRO ² (ppm)	Total TPH (ppm)
A2	<0.1	<0.1	<0.1	<0.1	<0.1	<10	718	718*
A3	<0.1	<0.1	<0.1	<0.1	<0.1	16	2036	2052*
A4	<0.1	<0.1	<0.1	<0.1	<0.1	24	1522	1546*
A5	<1	2.6	<1	<1	2.6	125	5753	5878*
B1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.5	4.6	4.6
B2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.5	26	26

¹ Analyzed by Method SW-846 8020: gas chromatography for aromatic volatile organic compounds (modified for TPH-GRO)

² Analyzed by Method SW-846 8015: gas chromatography for non-halogenated volatile organic compounds modified for TPH-DRO

* Results above applicable TDEC Action Levels for petroleum contaminated soil at the East End Fuel Station

Fig. 2-3. Excavation Area and Confirmatory Soil Sample Locations

A-1 = Sample Location Site

Extent of Excavation

Scale: 1 inch = 20 feet

3.0 ZONE OF INFLUENCE

3.1 Baseline Hydrogeologic Conditions

Seasonal water level measurements obtained between 1986 and 1990 indicate groundwater generally flows from the north/northwest to the south/southeast across the East End Fuel Station as depicted in the approved CAP. Measurement of water levels was made as part of this baseline report to confirm established trends and update potentiometric maps with data from recently installed wells.

3.1.1 Water Level Measurements

Water level measurements for the twelve groundwater monitoring wells at the East End Fuel Station are listed in Table 3-1. Water level measurements were taken in late December 1993 and, therefore, correspond closely to the expected fall/winter water levels.

3.1.2 Potentiometric Surface

Mapping of the potentiometric groundwater surface present at the East End Fuel Station based on the December 1993 data indicates groundwater flow from the north-northwest to the south-southeast across the facility (Fig. 3-1). Water level data available from wells GW-767, GW-802, GW-803, and GW-804 suggest a southerly component to groundwater flow in the eastern area of the facility.

Seasonal and average potentiometric surface maps were presented in the approved CAP. Contouring presented on these maps predates the installation of wells GW-767, GW-802, GW-803, and GW-804. Average water level data are not available for these recently installed wells, thus, a comparison of only fall/winter levels is applicable. A comparison of Fig. 3-1 to the corresponding potentiometric surface map for fall/winter in the approved CAP shows the influence of additional data points (water levels from wells GW-767, GW-802, GW-803, and GW-804) by the interpretation of the potentiometric surface. The additional data produce a slight shift in the orientation of the potentiometric surface from a south to a more southeasterly direction.

3.2 Adjusted Zone of Influence

The extension of the area of petroleum-contaminated groundwater to the east and to the southeast is supported by the projected groundwater flow as contoured in Fig. 3-1 and is validated by groundwater samples from well GW-802. Therefore, adjustment of the planned zone of influence, as depicted in the approved CAP, is required. The adjusted zone of contaminated groundwater (Fig. 3-2) occupies an area of approximately 39,600 ft². Assuming an effective aquifer depth of 8 ft and 20% voids in the saturated soil, the total contaminated groundwater volume is estimated to be approximately 468,000 gallons.

Table 3-1 Water Level Measurements

Monitoring Well #	Date Measured	Total Well Depth (BGL) ¹	Top of Casing (MSL) ²	Top of Casing to Water Level (BTOC) ³	Potentiometric Surface (MSL)
GW-183	12/18/93	30.6 ft	946.02 ft	9.9 ft	936.12 ft
GW-281	12/18/93	17.5 ft	946.08 ft	5.7 ft	940.38 ft
GW-282	12/18/93	16.0 ft	943.94 ft	1.9 ft	942.04 ft
GW-283	12/18/93	20.0 ft	938.62 ft	5.4 ft	933.22 ft
GW-284	12/18/93	18.0 ft	941.61 ft	8.2 ft	933.41 ft
GW-285	12/18/93	21.0 ft	942.46 ft	9.1 ft	933.36 ft
GW-658	12/18/93	19.1 ft	944.81 ft	10.6 ft	934.21 ft
GW-659	12/18/93	16.7 ft	941.16 ft	6.9 ft	934.26 ft
GW-767	12/18/93	18.0 ft	948.54 ft	10.9 ft	937.64 ft
GW-802	12/18/93	26.5 ft	941.83 ft	4.9 ft	936.93 ft
GW-803	12/18/93	25.0 ft	942.53 ft	9.2 ft	933.33 ft
GW-804	12/18/93	25.0 ft	942.55 ft	9.2 ft	933.35 ft

¹BGL = Below Ground Level

²MSL = Mean Sea Level

³BTOC = 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.

SCALE

1" = 70'

0 70' 140 ft

93016R1/DWGS/561CONT.DWG

Legend

▲ Monitoring Well Location
Potentiometric Surface

— 941 — Potentiometric Contour

Contour Interval = 2 Feet

Martin Marietta Energy Systems, Inc.
Environmental Management Department

FIGURE 3-1

East End Fuel Station
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.

SCALE

1" = 70'

0 70' 140 ft

93016R1\DWGS\561EXT.DWG

Legend

- Groundwater Contamination >0.07 ppm Benzene
- Groundwater Contamination >1.0 ppm TPH and >0.07 ppm Benzene

TPH - > 1.0 ppm

Monitoring Well Locations

Extraction Well Approximate Locations

Martin Marietta Energy Systems, Inc.
Environmental Management Department

FIGURE 3-2

East End Fuel Station
Groundwater Extraction
Well Locations

The planned zone of influence of the groundwater recovery system will be sufficient to encompass the actual area of contaminated groundwater following the change in location of the easternmost extraction well. The actual drawdown produced by the groundwater recovery system will be mapped and presented in subsequent status reports following implementation of groundwater corrective action. Any deficiency in the zone of influence of the groundwater recovery system will be corrected by adjusting pumping rates or by installing additional extraction well(s).

DISTRIBUTION

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Appendix A

**Monitoring Well Installation and
Development Reports**

A.1 GW-767

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM			WELL NO. <u>GW-767</u> FACILITY ID <u>0-010117</u> BUILDINGS <u>9754/9754-2</u> PAGE 1 of 2																																																										
WELL LOG																																																													
LOCATION: <u>Grid Location I2, 70 ft N of First Street</u> DRILLER: <u>Rick Mayberry - Highland</u> HELPERS: <u>Randy Phillips/Steve Hill - Highland</u> DRILL: <u>Ingersoll Rand RD-10</u>		DATE: START: <u>5-19-92</u> FINISH: <u>5-20-92</u> DRILLING METHOD: <u>Air Rotary</u> LOGGED BY: <u>W. Kevin Jago - SAIC</u>																																																											
NOTES: <u>Grid Program, stainless-steel, screened well monitoring the water table within weath-</u> <u>ered bedrock of the Maryville Limestone.</u>																																																													
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Y-12 PLANT GROUNDWATER PROTECTION PROGRAM

WELL NO. GW-767

WELL INSTALLATION DIAGRAM

LOGGED BY: W. Kevin Jago - SAIC

DRILLING DATES

DRILLING COMPANY: Highland Drilling

STARTED: 5-19-92

DRILLER: Rick Mayberry HELPERS: Randy Phillips/Steve Hill

FINISHED: 5-20-92

MONITORING WELL DEVELOPMENT PROGRESS

LOCATION: Grid Location I-2, 70 ft N of First Street

COMPLETION DATE: 6-2-92

ONE WELL VOLUME : 6.4 GALLONS

RESULTS AT END OF DEVELOPMENT

COMMENTS: (1) Purged to dryness.

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM	WELL NO. <u>GW-767</u>
MONITORING WELL DEVELOPMENT SUMMARY	
METHOD OF DEVELOPMENT: <u>1-gal. PVC bailer</u>	
DEVELOPMENT OBSERVED BY: <u>W.K. Jago - SAIC</u>	
ONE WELL VOLUME: <u>6.4</u> GALLONS	
TOTAL GALLONS PUMPED: <u>103</u> TOTAL WELL VOLUMES PUMPED: <u>16.0</u>	
INITIAL pH: <u>5.65</u> FINAL pH: <u>5.22</u>	
INITIAL SPECIFIC CONDUCTANCE: <u>108 umhos/cm</u> FINAL: <u>60 umhos/cm</u>	
DESCRIPTION OF INITIAL TURBIDITY: <u>Very turbid, silt accumulation</u>	
DESCRIPTION OF FINAL TURBIDITY: <u>Turbid</u>	
FINAL MEASURED TURBIDITY: <u>Not analyzed</u>	
WELL APPROVED BY: <u>Steven Jones - HSEA</u>	
ODOR OF WATER: <u>None discernable</u>	
WATER DISCHARGED TO: <div style="display: flex; justify-content: space-between;"> <div> ☐ GROUND SURFACE ☐ STORM SEWERS ☐ DRUMS </div> <div> ☐ TANK TRUCK ☐ STORAGE TANKS ☒ OTHER <u>Drilling returns pit</u> </div> </div>	
INITIAL PRE-DEVELOPMENT WATER DEPTH: <u>9.2 ft BGS on 5-21-92</u>	
DEVELOPMENT OBSERVATIONS: <u>Well turbidity slow to improve. Recharge rate of well is slow based on drawdown amounts during development sessions. Well was purged to dryness during each session.</u>	
<div style="text-align: right;"> OBSERVER SIGNATURE: <u>W. K. Jago</u> DATE: <u>6-2-92</u> </div>	

A.2 GW-802

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM		WELL NO. <u>GW-802</u>	
WELL LOG		FACILITY ID <u>0-010117</u> BUILDINGS <u>9754/9754-2</u>	
LOCATION: <u>East End Fuel Station</u>		DATE: START: <u>6-22-93</u>	
DRILLERS: <u>Rick Mayberry - Highland Drilling Co.</u>		FINISH: <u>6-25-93</u>	
HELPERS: <u>Greg Shillings/Randy Phillips - Highland Drilling Co.</u>		DRILLING METHOD: <u>Air Rotary</u>	
DRILL: <u>Ingersoll Rand T4W</u>		LOGGED BY: <u>S.L. Abston - SAIC</u>	
NOTES: <u>UST Program, PVC, screened interval monitoring diffuse water in Nolichucky shale.</u>			
DEPTH (ft)		SAMPLE (NO. & INTERVAL)	SOIL/BEDROCK DESCRIPTION
FROM	TO		
0.0	2.5		Light brown clay (5YR 5/6) topsoil with weathered shale fragments.
2.5	10.0	Beta + gamma = 40 cpm, organic vapor, breathing zone = 0.1 ppm (back- ground = 0.0 ppm), alpha = 0 cpm (background 0 cpm)	Dark brown (10YR 4/2) clay with brownish gray (5YR 4/1) shale fragments. Weathered rock at 10.0 ft BGS.
10.0	15.0		Dark gray (10YR 4/2) clay with 10% medium light gray (N6) partially weathered altering to fresh silty, slightly micaceous shale.
15.0	26.4	Beta + gamma = 60 cpm, organic vapor, breathing zone = 0.3 ppm, alpha = 0 cpm	Dark gray (10YR 4/2) clay with increasing (50%) amounts of shale. Wet cuttings at 17.0 ft BGS. Ratty drilling at 19.0 ft BGS. Fresh bedrock at approximately 15 ft BGS.

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

WELL LOG - continued

A-10

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM

WELL NO. GW-802

WELL INSTALLATION DIAGRAM

LOGGED BY: S.L. Abston - SAIC

DRILLING DATES

DRILLING COMPANY: Highland Drilling Co.

STARTED: 6-22-93

DRILLER: Rick Mayberry HELPER: Greg Shillings
Randy Phillips

FINISHED: 6-25-93

A-12

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM	WELL NO. <u>GW-802</u>
MONITORING WELL DEVELOPMENT SUMMARY	
<p>METHOD OF DEVELOPMENT: <u>Bailing</u></p>	
<p>DEVELOPMENT OBSERVED BY: <u>S.L. Abston - SAIC</u></p>	
<p>ONE WELL VOLUME: <u>12.2</u> GALLONS</p>	
<p>TOTAL GALLONS PUMPED: <u>45</u> TOTAL WELL VOLUMES PUMPED: <u>3.7</u></p>	
<p>INITIAL pH: <u>9.6</u> FINAL pH: <u>7.2</u></p>	
<p>INITIAL SPECIFIC CONDUCTANCE: <u>600 µmhos/cm</u> FINAL: <u>500 µmhos/cm</u></p>	
<p>DESCRIPTION OF INITIAL TURBIDITY: <u>Moderately Turbid</u></p>	
<p>DESCRIPTION OF FINAL TURBIDITY: <u>Moderately Turbid</u></p>	
<p>FINAL MEASURED TURBIDITY: <u>Not Analyzed</u></p>	
<p>WELL APPROVED BY: <u>Steven B. Jones - HSEA</u></p>	
<p>ODOR OF WATER: <u>None Discernible</u></p>	
<p>WATER DISCHARGED TO: ☒ GROUND SURFACE ☐ TANK TRUCK</p> <p style="margin-left: 100px;">☐ STORM SEWERS ☐ STORAGE TANKS</p> <p style="margin-left: 100px;">☐ DRUMS ☐ OTHER _____</p>	
<p>INITIAL PRE-DEVELOPMENT WATER DEPTH: <u>8.0 ft BGS on 6-25-93</u></p>	
<p>DEVELOPMENT OBSERVATIONS: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	
<p>OBSERVER SIGNATURE: <u><i>Lucian J. Abston</i></u></p> <p>DATE: <u>6-25-93</u></p>	

A.3 GW-803

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM		WELL NO. <u>GW-803</u> FACILITY ID <u>0-010117</u> BUILDINGS <u>9754/9754-2</u> PAGE 1 of 2																																											
WELL LOG																																													
LOCATION: <u>East End Fuel Station</u> DRILLERS: <u>John Voekel (Law Engineering)</u> HELPERS: <u>Mel Wagner (Law Engineering)</u> <u>Greg Shillings (Highland Drilling Co.)</u> DRILL: <u>CME 55</u>		DATE: START: <u>7-12-93</u> FINISH: <u>7-13-93</u> DRILLING METHOD: <u>Hollow Stem Auger</u> LOGGED BY: <u>S.L. Abston - SAIC</u>																																											
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Y-12 PLANT GROUNDWATER PROTECTION PROGRAM

WELL NO. GW-803

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PAGE 2 of 2

WELL LOG - continued

[illegible]

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM

WELL NO. GW-803

WELL INSTALLATION DIAGRAM

LOGGED BY: Susan L. Abston - SAIC

DRILLING DATES

DRILLING COMPANY: Highland Drilling/Law Engineering

STARTED: 7-12-93

DRILLER: John Voekel (Law) Mel Wagner (Law)
 HELPER: Greg Shillings (Highland)

FINISHED: 7-13-93

A-18

A-19

A.4 GW-804

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM		WELL NO. <u>GW-804</u> FACILITY ID <u>0-010117</u> BUILDINGS <u>9754/9754-2</u> PAGE 1 of 2																																																						
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LOCATION: <u>East End Fuel Station</u> DRILLERS: <u>John Voekel - Law Engineering</u> HELPERS: <u>Mel Wagner - Law Engineering</u> <u>Greg Shillings - Highland Drilling Co.</u> DRILL: <u>CME 55</u>		DATE: START: <u>7-12-93</u> FINISH: <u>7-13-93</u> DRILLING METHOD: <u>Hollow Stem Auger</u> LOGGED BY: <u>S.L. Abston - SAIC</u>																																																						
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">DEPTH (ft)</th> <th rowspan="2" style="text-align: center;">SAMPLE (NO. & INTERVAL)</th> <th rowspan="2" style="text-align: center;">SOIL/BEDROCK DESCRIPTION</th> </tr> <tr> <th style="text-align: center;">FROM</th> <th style="text-align: center;">TO</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0.0</td> <td style="text-align: center;">2.0</td> <td></td> <td>Light brown (5 YR 5/6) clay with 20% very pale orange (10 YR 8/2) chert fragments.</td> </tr> <tr> <td style="text-align: center;">2.0</td> <td style="text-align: center;">3.0</td> <td></td> <td>Grayish brown (5 YR 3/2) fine clay with <1% shale fragments.</td> </tr> <tr> <td style="text-align: center;">3.0</td> <td style="text-align: center;">4.0</td> <td></td> <td>Pale brown (5 YR 5/2) clay with 70% N6 medium light gray (N6) limestone fragments.</td> </tr> <tr> <td style="text-align: center;">4.0</td> <td style="text-align: center;">9.0</td> <td>Beta & gamma = 50 cpm (background = 40 cpm); organic vapor, breathing zone = 0.2 ppm (background = 0.0 ppm); alpha = 10 cpm (background = 10 cpm)</td> <td>Dark yellowish brown (10 YR 4/2), moist, clay with 20% brownish gray (5 YR 4/1) shale fragments. Weathered bedrock (TOWR) at 4.0 ft BGS.</td> </tr> <tr> <td style="text-align: center;">9.0</td> <td style="text-align: center;">14.0</td> <td>Beta & gamma = 50 cpm; organic vapor, breathing zone = 0.4 ppm; alpha = 10 cpm</td> <td>Same as above. Resistant layer at 14.0 ft BGS.</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>			DEPTH (ft)		SAMPLE (NO. & INTERVAL)	SOIL/BEDROCK DESCRIPTION	FROM	TO	0.0	2.0		Light brown (5 YR 5/6) clay with 20% very pale orange (10 YR 8/2) chert fragments.	2.0	3.0		Grayish brown (5 YR 3/2) fine clay with <1% shale fragments.	3.0	4.0		Pale brown (5 YR 5/2) clay with 70% N6 medium light gray (N6) limestone fragments.	4.0	9.0	Beta & gamma = 50 cpm (background = 40 cpm); organic vapor, breathing zone = 0.2 ppm (background = 0.0 ppm); alpha = 10 cpm (background = 10 cpm)	Dark yellowish brown (10 YR 4/2), moist, clay with 20% brownish gray (5 YR 4/1) shale fragments. Weathered bedrock (TOWR) at 4.0 ft BGS.	9.0	14.0	Beta & gamma = 50 cpm; organic vapor, breathing zone = 0.4 ppm; alpha = 10 cpm	Same as above. Resistant layer at 14.0 ft BGS.																												
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Y-12 PLANT GROUNDWATER PROTECTION PROGRAM

WELL NO. GW-804

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PAGE 2 of 2

WELL LOG - continued

[illegible]

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM

WELL NO. GW-804

WELL INSTALLATION DIAGRAM

LOGGED BY: Susan L. Abston - SAIC

DRILLING DATES

DRILLING COMPANY: Highland Drilling/Law Engineering

STARTED: 7-12-93

DRILLER: John Voekel (Law) Mel Wagner (Law)
HELPER: Greg Shillings (Highland)

FINISHED: 7-13-93

NOTE:
ALL DEPTHS ARE MEASURED FROM
GROUND SURFACE UNLESS
OTHERWISE NOTED

HOLE CLEANED OUT
TO 25.0 FT

DRILLED DEPTH OF
BOREHOLE 25.0 FT

NOT TO SCALE

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM						WELL NO. <u>GW-804</u>	
MONITORING WELL DEVELOPMENT PROGRESS							
LOCATION: <u>East End Fuel Station</u> ONE WELL VOLUME: <u>10.7</u> GALLONS WELL INSTALLATION COMPLETION DATE: <u>7-13-93</u>							
DATE	GALLONS PUMPED	DESCRIPTION OF TURBIDITY	pH	DISSOLVED SOLIDS (µmhos)	TOTAL GALLONS PUMPED	WELL VOLUMES PUMPED	COMMENTS
7-14-93	0	Very Turbid	5.3	430	0	0	1st bailer
7-14-93	15	Very Turbid	5.0	400	15	1.4	
7-14-93	17	Very Turbid	4.8	430	32	3.0	
7-14-93	3	Very Turbid	5.1	445	35	3.3	
7-14-93	15	Very Turbid	5.0	445	50	4.7	
7-14-93	10	Very Turbid	5.0	445	60	5.6	
7-23-93	20	Very Turbid	5.5	420	80	7.5	
RESULTS AT END OF DEVELOPMENT		Very Turbid	5.5	420	80	7.5	
COMMENTS		Surging using bailer to develop.					

Y-12 PLANT GROUNDWATER PROTECTION PROGRAM	WELL NO. <u>GW-804</u>
MONITORING WELL DEVELOPMENT SUMMARY	
<p>METHOD OF DEVELOPMENT: <u>Bailer</u></p> <p>DEVELOPMENT OBSERVED BY: <u>S.L. Abston - SAIC</u></p> <p>ONE WELL VOLUME: <u>10.7</u> GALLONS</p> <p>TOTAL GALLONS PUMPED: <u>80</u> TOTAL WELL VOLUMES PUMPED: <u>7.5</u></p> <p>INITIAL pH: <u>5.3</u> FINAL pH: <u>5.5</u></p> <p>INITIAL SPECIFIC CONDUCTANCE: <u>430 µmhos/cm</u> FINAL: <u>420 µmhos/cm</u></p> <p>DESCRIPTION OF INITIAL TURBIDITY: <u>Very Turbid</u></p> <p>DESCRIPTION OF FINAL TURBIDITY: <u>Very Turbid</u></p> <p>FINAL MEASURED TURBIDITY: <u>Not Analyzed</u></p> <p>WELL APPROVED BY: <u>Steven B. Jones - HSEA</u></p> <p>ODOR OF WATER: <u>None Discernible</u></p> <p>WATER DISCHARGED TO: ☐ GROUND SURFACE ☐ TANK TRUCK ☐ STORM SEWERS ☐ STORAGE TANKS ☒ DRUMS ☐ OTHER _____</p> <p>INITIAL PRE-DEVELOPMENT WATER DEPTH: <u>9.6 ft BGS on 7-14-93</u></p> <p>DEVELOPMENT OBSERVATIONS: <u>Well exhibits average recharge. pH abnormally low for location.</u></p> <p> </p> <p> </p> <p> </p> <p> </p> <p> </p> <p> </p> <p> </p>	
<p>OBSERVER SIGNATURE: <u><i>Steven L. Abston</i></u></p> <p>DATE: <u>7-23-93</u></p>	

Appendix B

**Laboratory Analytical Results for
Baseline Groundwater Sampling**

B.1 Groundwater Sample Analytical Results

UNCLASSIFIED

PRELIMINARY REPORT

1/18/93 13:57:04

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

<u>IBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
sterling, Samuel D	BUILDING 9207 MS 8225	A1H475	A1H475	E932350026	8601	APPROVED
ITE SAMPLED: 08/03/93 16:13:00	DATE NEEDED: 09/06/93	LOCATION: GW 183	CHARGE #: S2205F24			
ITE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:	CASE:			
AMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER	FINAL APPROVAL:				

MMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

IST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
IEP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

<u>IS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		5200		ug/L
1432	Benzene		1300		ug/L
10414	Ethylbenzene		610		ug/L
18883	Toluene		34		ug/L
130207	Xylene		150		ug/L

IST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
IEP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

MMMENTS: DIESEL RANGE ORGANICS 390 ug/L
Identity as diesel is uncertain. Hydrocarbon could be gasoline or kerosene.

<u>IS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
IST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
IEP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:		

MMMENTS: GASOLINE RANGE ORGANICS 5200 ug/L
THIS TEST WAS CANCELLED

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*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

CORRECTED PRELIMINARY REPORT

1/18/93 13:53:03

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

LABMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1G470	A1H470	E932350021	8601	APPROVED
DATE SAMPLED: 08/03/93 14:52:00	DATE NEEDED: 09/06/93	LOCATION: GW 281	CHARGE #: S2205F24			
DATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:	CASE:			
ANALYPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER	FINAL APPROVAL:				

COMMENTS: MISC20/DIESEL RANGE ORGANICS

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
10414	Ethylbenzene		1 U		ug/L
18883	Toluene		1 U		ug/L
130207	Xylene		1 U		ug/L

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503
COMMENTS: DIESEL RANGE ORGANICS 100 U ug/L			

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
TEST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503		
COMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L					

THIS TEST WAS CANCELLED

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

PRELIMINARY REPORT

0/18/93 13:55:49

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

<u>UBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
asterling, Samuel D	BUILDING 9207 MS 8225	A1H471	A1H471	E932350022	8601	APPROVED
ATE SAMPLED: 08/03/93 15:46:00	DATE NEEDED: 09/06/93	LOCATION: GW 282			CHARGE #:	S2205F24
ATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
AMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER			FINAL APPROVAL:		

OMMENTS: VOABTEX/GASOLINE RANGE ORGANICS

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

<u>AS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
00414	Ethylbenzene		1 U		ug/L
08883	Toluene		1 U		ug/L
330207	Xylene		1 U		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

OMMENTS: DIESEL RANGE ORGANICS 160 ug/L

79% of the DRO result was contributed by 1 component of an unknown identity.

A hydrocarbon pattern was not present.

<u>AS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
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EST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:

OMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L

THIS TEST WAS CANCELLED

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

CORRECTED PRELIMINARY REPORT

0/18/93 14:00:33

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
esterling, Samuel D	BUILDING 9207 MS 8225	A1H472	A1H472	E932350023	8601	APPROVED
ATE SAMPLED: 08/03/93 19:35:00	DATE NEEDED: 09/06/93	LOCATION: GW 283			CHARGE #:	S2205F24
ATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
AMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER				FINAL APPROVAL:	

OMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
00414	Ethylbenzene		1 U		ug/L
08883	Toluene		1 U		ug/L
330207	Xylene		1 U		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

OMMENTS: DIESEL RANGE ORGANICS 400 ug/L

91% of the DRO result was contributed by 1 component of an unknown identity.

A hydrocarbon pattern was not present.

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
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EST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

OMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L

THIS TEST WAS CANCELLED

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

CORRECTED PRELIMINARY REPORT

1/18/93 13:59:35

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

IBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H473	A1H473	E932350024	8601	APPROVED
TE SAMPLED: 08/03/93 17:35:00	DATE NEEDED: 09/06/93	LOCATION: GW 284			CHARGE #:	S2205F24
TE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
AMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER				FINAL APPROVAL:	

MMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

IST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
IEP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
.432	Benzene		2		ug/L
10414	Ethylbenzene		1 U		ug/L
18883	Toluene		1 U		ug/L
130207	Xylene		1 U		ug/L

IST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
IEP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503
MMMENTS: DIESEL RANGE ORGANICS 100 U	ug/L		

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
IST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
IEP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503		
MMMENTS: GASOLINE RANGE ORGANICS 100 U	ug/L				
	THIS TEST WAS CANCELLED				

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

08/18/93 13:58:02

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

MITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H474	A1H474	E932350025	8601	APPROVED
DATE SAMPLED: 08/03/93 16:52:00		DATE NEEDED: 09/06/93		LOCATION: GW 285		CHARGE #: S2205F24
DATE RECEIVED: 08/05/93		DATE COMPLETED: 08/24/93		PROJECT CODE:		CASE:
ANALYSE: MIKE ELLIOTT 013303		SAMPLE DESCRIPTION: WATER		FINAL APPROVAL:		

COMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC 20/DIESEL RANGE ORGANICS

ST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
132	Benzene		2		ug/L
1414	Ethylbenzene		1		ug/L
3883	Toluene		1 U		ug/L
50207	Xylene		1 U		ug/L

ST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

COMMENTS: DIESEL RANGE ORGANICS 320 ug/L

82% of the DRO result was contributed by 1 component of an unknown identity.

A hydrocarbon pattern was not present.

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
ST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
EP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:		
COMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L					
THIS TEST WAS CANCELLED					

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

1/18/93 14:02:46

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H476	A1H476	E932350027	8601	APPROVED
DATE SAMPLED: 08/04/93 14:54:00	DATE NEEDED: 09/06/93	LOCATION: GW 658			CHARGE #:	S2205F24
DATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
SAMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER	FINAL APPROVAL:				

REMARKS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		78000		ug/L
432	Benzene		18000		ug/L
10414	Ethylbenzene		12000		ug/L
18883	Toluene		1300		ug/L
130207	Xylene		6100		ug/L

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503
REMARKS: DIESEL RANGE ORGANICS 48,000 ug/L			
Identity as diesel is uncertain. Hydrocarbon could be gasoline or kerosene.			

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
TEST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:		
REMARKS: GASOLINE RANGE ORGANICS 78000 ug/L					
THIS TEST WAS CANCELLED					

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

OFFICIAL REPORT

/20/93 10:51:01

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

SMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTG	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H477	A1H477	E932350028	8601	APPROVED
TE SAMPLED: 08/04/93 17:50:00	DATE NEEDED: 09/06/93	LOCATION: GW 659	CHARGE #: S2205F24			
TE RECEIVED: 08/05/93	DATE COMPLETED: 12/20/93	PROJECT CODE:	CASE:			
MPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER	FINAL APPROVAL: <i>RL Sewell</i>				

MMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

ST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/12/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		420		ug/L
432	Benzene		100		ug/L
0414	Ethylbenzene		5		ug/L
8883	Toluene		14		ug/L
30207	Xylene		15		ug/L

ST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503
MMMENTS: DIESEL RANGE ORGANICS 510 ug/L			
Identity as diesel is uncertain. Hydrocarbon could be gasoline or kerosene.			

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
ST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
EP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:		
MMMENTS: GASOLINE RANGE ORGANICS 420 ug/L					
THIS TEST WAS CANCELLED					

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

08/18/93 14:01:38

Y-12 ANALYTICAL SERVICES ORGANIZATION

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SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H478	A1H478	E932350033	8601	APPROVED
DATE SAMPLED: 08/04/93 14:00:00	DATE NEEDED: 09/06/93	LOCATION: GW 767	CHARGE #: S2205F24			
DATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:	CASE:			
ANALYSTER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER	FINAL APPROVAL:				

COMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/13/93 00:00:00	APPROVER: E021503

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
10414	Ethylbenzene		1 U		ug/L
18883	Toluene		1 U		ug/L
130207	Xylene		1 U		ug/L

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

COMMENTS: DIESEL RANGE ORGANICS 200 ug/L

89% of the DRO result was contributed by 2 components of an unknown identity.

A hydrocarbon pattern was not present.

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
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TEST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:
COMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L			
THIS TEST WAS CANCELLED			

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

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<u>JBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
asterling, Samuel D	BUILDING 9207 MS 8225	A1H479	A1H479	E932350029	8601	APPROVED
ATE SAMPLED: 08/04/93 18:02:00	DATE NEEDED: 09/06/93	LOCATION: GW 802			CHARGE #:	S2205F24
ATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
AMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER		FINAL APPROVAL:			

OMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/13/93 00:00:00	APPROVER: E021503

<u>AS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
00414	Ethylbenzene		1 U		ug/L
08883	Toluene		1 U		ug/L
330207	Xylene		1 U		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

OMMENTS: DIESEL RANGE ORGANICS 1300 ug/L
94% of the DRO result was contributed by 2 components of an unknown identity.
A hydrocarbon pattern was not present.

<u>AS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
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EST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:
OMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L THIS TEST WAS CANCELLED			

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

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UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
asterling, Samuel D	BUILDING 9207 MS 8225	A1H480	A1H480	E932350030	8601	APPROVED
ATE SAMPLED: 08/04/93 16:32:00	DATE NEEDED: 09/06/93	LOCATION: GW 803			CHARGE #:	S2205F24
ATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
AMPLER: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER				FINAL APPROVAL:	

OMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/13/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
00414	Ethylbenzene		1 U		ug/L
08883	Toluene		1 U		ug/L
330207	Xylene		1 U		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503
OMMENTS: DIESEL RANGE ORGANICS 100 U ug/L			

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
EST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED		
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:		
OMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L					
THIS TEST WAS CANCELLED					

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

11/18/93 14:04:23

Y-12 ANALYTICAL SERVICES ORGANIZATION

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JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H514	A1H514	E932350032	8601	APPROVED
DATE SAMPLED: 08/04/93 17:16:00	DATE NEEDED: 09/06/93	LOCATION: GW 804			CHARGE #:	S2205F24
DATE RECEIVED: 08/05/93	DATE COMPLETED: 08/24/93	PROJECT CODE:			CASE:	
ANALYSE: MIKE ELLIOTT 013303	SAMPLE DESCRIPTION: WATER					

FINAL APPROVAL:

COMMENTS: VOABTEX/GASOLINE RANGE ORGANICS MISC20/DIESEL RANGE ORGANICS

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 08/13/93 00:00:00	APPROVER: E021503

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		100 U		ug/L
1432	Benzene		1 U		ug/L
10414	Ethylbenzene		1 U		ug/L
18883	Toluene		1 U		ug/L
130207	Xylene		1 U		ug/L

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED: 08/19/93 00:00:00	APPROVER: E021503

COMMENTS: DIESEL RANGE ORGANICS 570 ug/L

92% of the DRO result was contributed by 2 components of an unknown identity.

A hydrocarbon pattern was not present.

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
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TEST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8260 PHASE:	TIME ANALYZED:	APPROVER:

COMMENTS: GASOLINE RANGE ORGANICS 100 U ug/L

THIS TEST WAS CANCELLED

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B.2 Quality Control Sample Analytical Results

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

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Y-12 ANALYTICAL SERVICES ORGANIZATION

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<u>SUBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
sterling, Samuel D	BUILDING 9207 MS 8225	A1H501	A1H501	E932150007	8601	CANCELLED
ITE SAMPLED:	DATE NEEDED: 08/18/93	LOCATION: EAST FUEL ST.			CHARGE #:	S2205F24
ITE RECEIVED:	DATE COMPLETED: 09/17/93	PROJECT CODE:			CASE:	6029
IMPLER: 13303	SAMPLE DESCRIPTION: TRIP BLANK	FINAL APPROVAL:				

REMARKS:

TEST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8260	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

PRELIMINARY REPORT

18/93 14:08:17

Y-12 ANALYTICAL SERVICES ORGANIZATION

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MITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H503	A1H503	E932150008	8601	CANCELLED
IE SAMPLED:	DATE NEEDED: 08/17/93	LOCATION: EAST IN FUEL STATION			CHARGE #: S2205F24	
IE RECEIVED:	DATE COMPLETED: 09/17/93	PROJECT CODE:			CASE: 6029	
PLER: 13303	SAMPLE DESCRIPTION: TRIP BLANK	FINAL APPROVAL:				

MENTS:

ST: VOABTEX	VOA Analysis, BTEX Compounds (SW846 8260)	REPLICATE: 1	STATUS: CANCELLED
EP MTH:	PROC MTH: SW846 8260	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

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Appendix C

**Underground Storage Tanks 2073-U, 2074-U,
and 2075-U Removal Records**

C.1 Tank Removal Oversight Field Notes

**Excavation of Tanks 2073-U, 2074-U, and 2075-U Field Oversight Notes.
October 4 through October 13, 1993.**

SUMMARY

Three 1,000 gallon tanks and their associated valves and piping were excavated from the former East End Fuel Station, Building 9754. The excavated tanks are designated 2073-U, 2074-U, and 2075-U. Tanks 2073-U and 2074-U contained gasoline and Tank 2075-U contained diesel; all three tanks have been inactive since 1973. The tanks and piping were removed in preparation for the planned soil corrective action for the East End Fuel Station. During excavation, samples were collected beneath the transfer lines because these lie outside the planned soil corrective action excavation. No samples were taken from the tank excavation areas because these are within the area of the planned corrective action. The samples were collected in accordance with the Corrective Action Plan for Underground Storage Tanks 0439-U, 0440-U, 2073-U, 2074-U, and 2075-U at the East End Fuel Station, Buildings 9754 and 9754-2 (Y/SUB-92-99928C/2). Field measurements indicated that the area exhibiting the highest contamination is limited to the former tank areas. Field measurements from the transfer line excavation indicate that the highest concentrations were near the former tanks and the lowest concentrations were near the valve box at the north end of the site. The excavation and sample points are illustrated on Figure 1. The soil from the tank and piping excavations was placed back into the tank excavation. The transfer line excavation was back-filled with clean soil.

PERSONNEL

Y-12	Don Bohrman (UST Program Manager) Ed Ingram (UST Program Field Coordinator) Rudy Weigel (Industrial Hygiene) Cathy Hodge (Industrial Hygiene) Jeff Williams (HSE Sampling Team) 574-9496 Marie Collier (HSE Sampling Team) R.D. Leprone (HSE Sampling Team) Ed Ridenour (Maintenance and Utilities Division Crew Chief) Jerry Lawless (Backhoe operator) Maintenance Crew
X-10	Jim Wade (Field GC operator) Ti Barbour (Field GC operator)
TDEC	Jack Wheat Robert Benfield
SAIC	Will Kegley

October 4, 1993 Monday

Weather conditions warm and sunny.

0800 Arrive at Y-12 Maintenance Building 9219

0810 Meet Ed Ingram. Proceed to meeting room for health and safety briefing.

0820-0930 Health and Safety Briefing held in Building 9219. Briefing delivered by Rudy Weigel. Hazards discussed included chemical (benzene, toluene, lead) and physical hazards (explosion, tripping, falling, equipment operating).

0930-0950 Discuss excavation job with Ed Ingram at Ingram's office. The excavation is planned to take approximately 1 week. All appropriate permits have been obtained.

0950-1000 Blood test for baseline lead analysis

1030 Depart site for the day.

October 5, 1993 Tuesday

Road barricades installed between first street and the excavation site.

October 6, 1993 Wednesday

Y-12 Maintenance removed concrete cover over tanks.

October 7, 1993 Thursday

Weather conditions warm and clear skies.

0810 Arrive at the job site.

0820 Y-12 Maintenance setting up decon line and removing remaining concrete.

0830-1100 Width and length of concrete cover removed is 14 × 50 ft, fully exposing the tanks and piping between the tanks. The concrete thickness was variable, ranging from 6 to 18 in. The concrete was transported to the sanitary landfill for disposal. Five dump truck loads of concrete were transported to the sanitary landfill. There is a 4 × 4 × 3 ft piping junction box located adjacent to each tank. The adjoining asphalt is about 4 in. thick with a 6-in. gravel base. Red clay is present below the gravel.

1100 Depart site for lunch.

1230 Arrive on site. Y-12 Maintenance removed asphalt cover from over transfer piping.

All cover for the tanks and associated piping has been removed in preparation for excavation.

- 1240-1245 Inert Tanks 2073-U, 2074-U, and 2075-U with 3% solution of "Biosolve®" hydrocarbon mitigation agent.
- 1250-1258 Activate Biosolve® in tanks using a spray washer (potable water). The inerting solution was not pumped out of tanks prior to excavation.
- 1300 One truck load of asphalt transported to the sanitary landfill.
- 1300-1310 Y-12 Maintenance covering ground surface with plastic for laydown of excavated soil; back hoe electrically grounded; maintenance crew don PPE.
- 1315-1345 Begin excavating soil cover over Tank 2073-U. Y-12 laborers assisting the back hoe operator are wearing syrenax® and full face respirators. Back hoe operator is wearing full face respirator. Soil from excavation consists of moist to wet red clay with some gravel. Soil from excavation has petroleum odor (Note: no gravel was used when back-filling the tanks during their construction). Black clay excavated from top of tank near the stand pipe.
- 1440 Pulled Tank 2073-U out of the ground. The tank is a 1,000-gallon steel tank. Tank had oily sheen on underside and one small hole (quarter size) located at the weld seam on one end of the tank. The tank was empty and appeared in fairly good condition. The tank was wrapped in black plastic and transferred to the corner of the work area to await disposal.
- 1455 Jack Wheat (TDEC) arrived on site. Mr Wheat inspected Tank 2073-U and the excavation from outside the exclusion zone.
- 1530 Mr. Robert Benfield (TDEC) arrived on site.
- 1600 The excavated soil was covered with plastic and the site was secured.
- 1605 Departed site.

October 8, 1993 Friday

Weather conditions cool and partly cloudy.

- 0735 Inspected excavation of Tank 2073-U. The excavation is $\sim 15 \times 12 \times 7$ ft. The bottom of the excavation is filled with about 1 ft of water. A small amount of product (less than one gallon) was observed floating on the water in the northeast corner of the excavation.
- 0740 Inspected Tank 2073-U. Tank is 11 ft long and 4 ft in diameter. Tank has some corrosion pitting. One small hole observed at the weld seam on the end side of the tank. This hole corresponds to the hole noted in the 1440 10/7/93 entry of this description.
- 0800 Tank 2073-U was wrapped in black plastic to await disposal.
- 0830 Began excavating Tank 2074-U. Y-12 laborers and back hoe operator performing excavation are wearing full face respirators.
- 0925 Tank 2074-U pulled out of ground. About 10 gallons of brown water drained out of tank and into the excavation upon tank removal.
- 0930 Inspected Tank 2074-U. Tank is 11×4 ft. No holes observed in the tank. Some corrosion pitting observed. Inspected excavation of Tank U-2074; some water was observed in the excavation. No product was observed. The soil had a petroleum odor.
- 1015 Began excavating Tank 2075. Workers in full face respirators.
- 1100 Tank 2075-U pulled out of ground. Tank was in poor condition and was about 1/4 filled with water upon excavation. The water was allowed to drain back into the excavation before tank was pulled to the ground surface. Some product was observed in excavation. Three holes were observed on one end of the tank.
- 1130 Tanks 2074-U and 2075-U were wrapped in black plastic to await disposal. Waste Management Disposal Record numbers assigned to the tanks are as follows: Tank 2073-U (Y12C9324911), Tank 2074-U (Y12C9324912), Tank 2075-U (Y12C9324910). The Tanks were labeled as follows: "Tank has contained gasoline. Not suitable for storage of food or liquid intended for human or animal consumption."

October 11, 1993 Monday

- 1000 Y-12 Maintenance has located the transfer line at the valve box. The transfer line is about 5 ft below the ground surface and is encased in concrete. The copper lines that were used to mix methanol with the gasoline are about 1 ft below the ground surface.

The copper lines are 1½-in. diameter and of continuous (seamless) construction. The transfer lines are 3 in. in diameter and are constructed of carbon steel. Native soil underlies the concrete that encased the transfer lines.

- 1030 Inspected soil profile in transfer line excavation (valve box to 90 degree turn). The soil column consists of ~3 ft of dark brown and red clay with gravel underlain by 6-in. gravel zone, underlain by light brown clay. Light brown clay is native soil.
- 1035 Removed ~22 ft of the transfer lines from the valve box to the corner where transfer lines makes 90 degree turn. About 1 gallon of black fluid spilled from the transfer pipe upon excavation. Spill occurred near the 90 degree bend in the transfer line. The soil was excavated by Y-12 Maintenance and taken to the former tank excavation.
- 1040 Collected Sample A-1 below the pipes where the transfer line has a 90 degree joint. Sample depth from ground surface is ~4 ft. Soil gas peaked at 240 ppm as measured from the backhoe bucket on OVM calibrated for benzene. Sample A-1 is from fill material. Because Sample A-1 was in the vicinity of the < 1 gallon spill, it was not sent for analysis and the soil was returned to excavation pile. The soil from which Sample A-1 was obtained was excavated and transferred to the tank excavations.
- 1045 Collected Sample A-2 at about 6 ft below ground surface at the same location as Sample A-1. Sample A-2 from native soil. Sample measured 30 ppm TPH on field GC.
- 1220 Y-12 Maintenance accidentally covered storm drain with soil. Informed laborer what had happened and the soil was removed and straw was placed around storm drain to prevent soil from entering the storm sewer.
- 1230 Began excavating north-south portion of the transfer lines.
- 1300 Intersected 15 in. storm sewer. Storm sewer is above transfer line.
- 1330 Collected Sample A-3 ~32 ft south of 90 degree bend in transfer line (Figure 1). Sample from ~6 ft below the ground surface. Sample is from native clay below the concrete.
- 1345 Intersected 3 vent lines located on top of the transfer line. These vent lines were connected to the tanks and extended from the tanks to the former building (Figure 1).

October 12, 1993 Tuesday

Weather conditions cold and overcast, rain last night.

- 0930 Y-12 Maintenance crew moved soil from transfer line excavation stockpile to the tank excavation.
- 1200 Inspected sections of the pipeline that have been excavated. The pipe is 3 in. ID.

Some staining was observed near the couplings, suggesting possible leakage during operation. These stains correspond to sampling points A-2 and A-3. Some fluid leaked from the transfer lines upon removal from the excavation.

- 1230 Began breaking concrete with ram-hoe for the southern half of the pipe line.
- 1245-1310 Obtained GC Samples 7 and 6 and soil samples A-4 and A-5 from transfer line excavation ~ 11 ft from Sample A-3 location. Sample 7 was collected below the concrete in native soil and Sample 8 was collected in fill material. Hnu reading on Sample 6 (> 1000 ppm). Hnu reading on Sample 7 from (200 ppm). GC analysis on Sample 7 indicated 4 ppm benzene and 10 ppm toluene. Collected Sample A-4 from native soil below concrete (Figure 1). Soil sample measured 52 ppm with OVM. Gasoline tanker truck filled tanks at active East End Fuel station during collection of Samples A-4 and A-5.
- 1330 Pipe fitters cut transfer line into 4-ft sections for disposal.
- 1400 Collected soil Sample A-5 and field GC Sample 8. Soil sample measured 101 ppm on OVM. Sample 8 measured > 1000 ppm with Hnu so was not analyzed by the GC.

October 13, 1993 Wednesday

Weather conditions cold and overcast.

- 0915 Y-12 Maintenance has removed soil cover over the copper transfer line between dispensing pump and valve box. Excavation is 18 in. deep and 32 in. wide. There are two 1½-in. copper lines. Observed a small amount of amber fluid that leaked from copper pipe below the concrete at the former alcohol transfer pump (Figure 1). Soil gas in the area of the amber fluid measured 150 ppm on OVM. The product leaked from the pipe when it was broken by the back-hoe. Laborer used Absorb All® to capture the liquid.
- 0930-0945 Some product still present in copper lines. Y-12 Maintenance drained this product into a bucket to prevent another spill from occurring. The copper transfer lines were broken by the back hoe at several places. A small amount of product spilled at each point where the transfer line was broken. This contaminated soil was excavated and transferred to the tank excavation area.
- 1000 Soil samplers arrive on site (J. Williams and Marie Collier).
- 1005 Collected Sample B-1 60 ft from former Alcohol pump station, soil sample from below copper line (Figure 2). Soil sample measured 6 ppm on the OVM as measured from the soil in the back hoe bucket.
- 1010 Collected Sample B-2 10 ft from alcohol pumping station (Figure 2).
- 1020 Excavated soil beneath concrete pad where alcohol pumping station was located and

where the amber fluid was seen this morning. Excavated ~ 1½ ft below ground surface into native clay.

1100 Departed site. Remaining activities: back-fill transfer line excavations with clean fill and remove vent lines. These activities were completed by Y-12 maintenance.

October 26, 1993

0900 Inspected job site. The pipeline excavations have been backfilled with virgin clay from the Chestnut Ridge Borrow pit. The tank excavation has been covered with plastic. Straw bales have been placed around the storm drains to prevent a loss of contaminated soil from the site. The tanks are still located on site. Tank 2074-U surveyed at 15,000 dpm/cm² for gamma/beta radiation. The other two tanks were below background.

Figure 1. Sketch of Excavation and Sample Locations

A-1 = Sample Location Site

Extent of Excavation

Scale: 1 inch = 20 feet

C.2 Tank Disposal Records

WASTE ITEM DESCRIPTION

WASTE ITEM IDENTIFICATION

Waste Item ID Number 42C9324612	I2. Generator's Name (Print) E. M. Ingram	I3. Badge No. 10737	I4. Generator's Phone No. 6-5716	I5. MS 8219	I6. Charge Number/WO S0019200
I7. Origin Div. 66	I8. Origin Date 10/20/93	I9. Origin Site Y-12	I10. Origin Facility 9754, East End Service Station	I11. Origin Room/Area Yard	I12. Radiological Area? ☐ Yes ☒ No
I3. Est. Net Volume 150	I14. Units CU. FT.	I15. Est. Gross Weight 1,000	I16. Units LBS	(Reserved) HARRIS	

CONTAINER INFORMATION (1 of 3) If more than one attach Waste Container List (UCN-2109A)

C1. Container ID. No. Y12C9324612	C2. Container Type Self	C3. Holding Site Y-12	C4. Holding Facility 9754	C5. Holding Room/Area Yard
---	-----------------------------------	---------------------------------	-------------------------------------	--------------------------------------

WASTE CATEGORY

W1. Process Stream ID	W2. Process Category CON	W3. Process Activity A 89 (Recycle Metal)	W8. Waste Category (Check all)			
			Yes	No	Yes	No
W4. Physical Form Solid	W5. Material Type MT007	W6. AWA No. N/A	Chemical	☒	Biological	☒
W7. Waste Description 1,000 gallon steel underground petroleum tank removed from 9754 UST site (Recycle to Scrap Metal)			Radioactive	☒	Asbestos	☒
			San/Ind	☒	Carcinogen	☒
			Const. Debris	☒	Compactible	☒
			Medical	☒	Recyclable	☒
				☒	Classified	☒

CHEMICAL WASTE

M1. RCRA? ☐ Yes ☒ No	M2. RCRA 90-day Start Date	M3. PCB? ☐ Yes ☒ No	M4. PCB Start Date	M5. PCB Conc. (PPM)
M6. Determination Method (Check ONE) ☐ Analysis ☒ Process Knowledge		M7. Determination Document Number(s)		M8. Flash Pt. M9. pH
M10. EPA Waste Code Numbers				
M11. Substance ID	M12. Vol %	M13. Substance Name		

RADIOACTIVE WASTE

R1. RAD Category (Check ONE) ☐ TRU ☐ High-Level ☐ Low-Level ☐ Special ☐ VLA			R2. RAD Handling Type ☐ Contact ☐ Remote		R3. UCN 2681 No.	
R4. Determination Method (Check ONE) ☐ Analysis ☐ Process Knowledge			R5. Determination Document Number(s)			
R6. Chemical Form			(Reserved)			
R7. Isotope	R8. Est. Qty	R9. Units	R7. Isotope	R8. Est. Qty	R9. Units	R7. Isotope

HANDLING INFORMATION

H1. Handling Instructions LEL = 0% (2074-U)		H4. HP Tag Color yellow	Surface Contamination (cpm/100 cm²) Transfer Direct Read		Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
H2. Respirator ☒ None ☐ Half ☐ Full		H3. Cartridge Type N/A	Alpha				A 165
H5. Pickup Site East End Service Station		H6. Pickup Facility 9754	Beta/Gamma	15,000			B 129
			Neutron				
			H7. Pickup Area Yard				

SIGNATURES and APPROVALS

S1. Generator E. M. Ingram	Badge 10737	Date 10-22-93	S2. HP Technician John Eubanks	Badge 34213	Date 10/20/93
S3. Verification Officer John M. Baker	Badge 23873	Date 10-22-93	S4. Derivative Classifier L. Wayne M. Mahan	Badge 22721	Date 10/22/93

WASTE ITEM/CONTAINER LIST

R 00901

(Continuation Page 1 of 1)

Sequence Number 1	Referenced from WID (UCN-2109)*	
	II. Waste Item ID Number Y12C9324612	C1. Container ID. No. Self

*ALL WASTE ITEM/CONTAINERS ON THIS FORM
HAVE THE SAME CHARACTERISTICS AS
ITEM/CONTAINER NUMBER 1

Sequence Number	II. Waste Item ID Number Y12C9324611	C1. Container ID. No. Self	IS. Origin Date 10/20/93	M2. RCRA 90-day Start Date N/A	M4. PCB Start Date N/A		
2	II3. Est. Net Volume 150	II4. Units CU. FT.	H4. HP Tag Color Brown	Surface Contamination (dpm/100 cm ²) Transfer: Direct Read:	Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	II5. Est. Gross Weight 1,000	II6. Units LBS.	Alpha				A-165
			Beta/Gamma				B-129
Comments 2073-U			Neutron				

Sequence Number	II. Waste Item ID Number Y12C9324610	C1. Container ID. No. Self	IS. Origin Date 10/20/93	M2. RCRA 90-day Start Date N/A	M4. PCB Start Date N/A		
3	II3. Est. Net Volume 150	II4. Units CU. FT.	H4. HP Tag Color Brown	Surface Contamination (dpm/100 cm ²) Transfer: Direct Read:	Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	II5. Est. Gross Weight 1,000	II6. Units LBS.	Alpha				A-165
			Beta/Gamma				B-129
Comments			Neutron				

Sequence Number	II. Waste Item ID Number	C1. Container ID. No.	IS. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date		
	II3. Est. Net Volume	II4. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm ²) Transfer: Direct Read:	Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	II5. Est. Gross Weight	II6. Units	Alpha				
			Beta/Gamma				
Comments			Neutron				

Sequence Number	II. Waste Item ID Number	C1. Container ID. No.	IS. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date		
	II3. Est. Net Volume	II4. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm ²) Transfer: Direct Read:	Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	II5. Est. Gross Weight	II6. Units	Alpha				
			Beta/Gamma				
Comments			Neutron				

Sequence Number	II. Waste Item ID Number	C1. Container ID. No.	IS. Origin Date	M2. RCRA 90-day Start Date	M4. PCB Start Date		
	II3. Est. Net Volume	II4. Units	H4. HP Tag Color	Surface Contamination (dpm/100 cm ²) Transfer: Direct Read:	Dose Rate at Surface (mrem/hr)	Dose Rate at 1 Meter (mrem/hr)	Instrument Identification
	II5. Est. Gross Weight	II6. Units	Alpha				
			Beta/Gamma				
Comments			Neutron				

SIGNATURES and APPROVALS

S1. Generator E.H. Ingram	Badge 10737	Date 10-22-93	S2. HP Technician John Eubanks	Badge 34213	Date 10/20/93
S3. Verification Officer John O. Deakin	Badge 23873	Date 10-28-93	S4. Derivative Classifier D. Wayne M. Mahan	Badge 22721	Date 10/22/93

R 00901.

RFD

RFD

table)

Y12C9324612

Y12C9324611

Y12C9324612

Y12C9324611

VOL. 150 cu ft WT. 1000 lbs

VOL. 150 cu ft WT. 1000 lbs

3rd bar code on
previous page

WASTE MANAGEMENT SECTION

EPA Codes					
DOT Rad > =2000 ☐ Yes ☐ No		Required Labels/Markings/Tags Correct ☐ Yes ☐ No		DOT Shipping Name <i>Radioactive material, n.o.s.</i>	
Hazard Class/Division <i>7</i>	DOT ID Number <i>UN2982</i>	Packing Group	Sample Request Number	Date Sampled	Sampling Code Number
1 Yr. Storage Deadline for RCRA (Date)		9 Month/1 Year PCB Date		Required Protective Equipment	
Field Review Signature (TSD) <i>Th. C. Wiginton</i>			Badge Number <i>27208</i>	Date <i>11/22/93</i>	
Onsite TSD Facility	Date Waste Received	Bay	Shelf	Column	Row
Operator's Signature			Badge Number	Date	
Movement History to to			Date Moved ;		
Operator's Signature			Badge Number	Date	
Disposal Method/Code	Disposal Facility/Company		Transporter's Name/Company		
Waste Manifest Number	CD Receipt Date	Waste Destination			
Shipping Coordinator's Signature			Badge Number	Date	
Disposal Instructions: <i>Transport to Salvage Yard H1 per KD Delius</i> <i>WTSD will volume reduce</i>					
Certification Officer Signature			Badge Number	Date	

ENERGY SYSTEMS WASTE DISPOSAL REQUEST

UCN-2109 Profile Sheet

W

RFD

Y12C9324610

Y12C9324610

m
he generation of the waste

or can be reached

valid work order, account number, or project number for waste handling charges

rated
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tal

terial

C

VOL. 150 cu ft. 4000 lbs.

age container for this waste item

or

accumulation

C4. Holding Facility: The facility (building) where the waste was held during accumulation

C5. Holding Room/Area: The room number or area identifier where the waste was held during accumulation

WASTE CATEGORY

- W1. Process Stream ID: The ID number of the process stream which generated the waste
- W2. Process Category: The category of the process which generated this waste
- W3. Process Activity: The descriptive name of the generation process
- W4. Physical Form: The physical form of the waste material
- W5. Material Type: The sub-category of the physical form of the waste material
- W6. AWA Number: Asbestos Work Authorization Number
- W7. Waste Description: Further specification of the waste, including descriptive information
- W8. Waste Category: Specific categories for the waste material (check each one either "YES" or "NO")

CHEMICAL WASTE

- M1. RCRA (Y/N)? The waste contains RCRA regulated material
- M2. RCRA 90-Day Start Date: The date RCRA waste was placed in a 90-day storage area
- M3. PCB (Y/N)? The waste contains PCB regulated material
- M4. PCB Start Date: The date PCB waste material was removed from service
- M5. PCB Conc.(PPM): The PCB concentration in parts per million (if "less than" nnn, enter nnn)
- M6. Determination Method: The method used to determine the chemical characteristics
- M7. Determination Document Number(s): Document numbers that substantiate the determination of the characteristics
- M8. Flash Point: The flash point of the waste material (degrees C)
- M9. pH: The relative acidity of the waste material (pH)
- M10. EPA Waste Code Numbers: The EPA waste code numbers determined from the waste characteristics
- M11. Substance ID: The ID number of a chemical constituent of the waste (either its CAS number or MSDS record number)
- M12. Vol %: The percent by volume for the chemical substance
- M13. Substance Name: The common name of the chemical substance

RADIOACTIVE WASTE

- R1. Rad Category: The radioactive waste category code (check one)
- R2. Rad Handling Type: The radioactive waste handling code
- R3. UCN 2681 Number: The ID number of the UCN-2681 "Accountability Transfer" form associated with this waste (if any)
- R4. Determination Method: The method used to determine the radioactive characteristics (check one)
- R5. Determination Document Number(s): Document numbers that substantiate the determination of the characteristics
- R6. Chemical Form: The chemical form of the waste material
- R7. Isotope ID: The ID number of a particular radioactive isotope contained in this waste item
- R8. Est. Quantity: The estimated quantity of this isotope
- R9. Quan. Units: The units for the isotope quantity (grams or curies)

HANDLING INFORMATION

Handling Instructions: General handling instructions for the waste
- requirements for handling this waste
- to be used (if applicable)

Y-12 MAINTENANCE JOB REQUEST

Date Written	Priority Code	Work Order #	Account #	Job Number
22-NOV-1993	R	S0048200	22350410	YJ-656580

Badge	Requester	Building	MS	Phone	Authorized By
10737	EM Ingram	9115	8219	6-5716	

Deliver To Badge	Name	Building	MS/Room/DP	Phone
10737	EM Ingram	9115	8219/ 0128/8219	6-5716

Category Code	Required Work Permits	Req. Completion Date	Crew Code
OT	NONE	06-DEC-1993	180

Maint #	Property #	Equipment Code	Work Location	Comments
MXXXXXX	YXXXXXX	000	Building	Room
			9754	YARD
				OLD SERVICE STATION

Special QA Action	Specify:	Procedure #:
N		

Description: MOVE (3) EACH 1,000 GALLON TANKS THAT WERE EXCAVATED FROM 9754/
EAST END SERVICE STATION TO WEST SCRAP METAL YARD (BENNY PATTON'S
LOCATION) TO BE FLATTEN AND SHEERED, RENDER UNUSABLE FOR FUTURE USE AS
TANKS. TANK NUMBERS OF THESE FUEL TANKS ARE 2073-U, 2074-U, AND
2075-U. TANKS HAVE BEEN INERTED AND LOWER EXPLOSION LEVEL READS
ZERO. THE SIGNED 2109 FORM WILL BE GIVEN TO LARRY WEST, OF RIGGERS.

C-21

C.3 Asphalt and Concrete Disposal Records

REQUEST FOR TRANSFER, STORAGE, OR DISPOSAL OF WASTES

(No Classified Information Should Be Entered When Using This Form.)

REQUEST NUMBER

37590

Information must be typed.

WASTE GENERATOR COMPLETES THIS SECTION

DESCRIPTION OF MATERIAL (Only one type per form.)

Asphalt and concrete from East End Service Station

03 AUG 27 PM 1:36

MATERIAL FORM (One Only)

CONTAINER

LUDE
EROSOL
IL

Y12C9323049

Y12C9323049

ENTRATION

DO NOT REMOVE LABEL

ART DATE

EPA CODE (S):

IS WASTE CLASSIFIED? ☐ YES ☒ NO	8. DOES WASTE CONTAIN CARCINOGEN? ☐ YES ☒ NO
DOES WASTE CONTAIN POLYCHLORINATED BIPHENYLS (PCB'S)? ☐ YES ☒ NO	9. IS WASTE RADIOACTIVE? ☐ YES ☒ NO
DOES WASTE CONTAIN MERCURY? ☐ YES ☒ NO	10. DOES WASTE CONTAIN OTHER CONTAMINANTS? ☐ YES ☒ NO
DOES WASTE CONTAIN BERYLLIUM? ☐ YES ☒ NO	NAME
DOES WASTE CONTAIN ASBESTOS? ☐ YES ☒ NO	CON
IS MATERIAL RCRA WASTE? ☐ YES ☒ NO	BY ☒ PROCESS ☐ ANALYSIS
HAZARDS IN HANDLING	IF YES:
None	Mask: NA

CONTAINER TYPE (Drum, Polytank, Box, Bag, etc.) Bulk (truck load) (SELF)	14. HP SURVEY TAG COLOR Green	15. NUMBER OF CONTAINERS 37
NET VOLUME OF WASTE 432 1296	VOL. UNITS (Cubic Feet or Gallons) cubic feet	17. GROSS WEIGHT OF CONTAINERS 96,000
WASTE LOCATION	WEIGHT UNITS lbs.	

Building: 9754	Dock of Pickup Area:		
WASTE GENERATOR NAME (Print) M. Ingram	20. PHONE NO. 6-5716	21. BUILDING/MAIL STOP 9115/8219	22. CHARGE NO. S0019200

WASTE GENERATOR SIGNATURE M. Ingram	I CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND CORRECT.	SIGNATURE E.M. Ingram	10737	DATE 8-19-93
ENVIRONMENTAL OFFICER SIGNATURE J.E. M. Deakin	DATE 8-24-93	25. DERIVATIVE CLASSIFIER SIGNATURE H.E. Feller	DATE 8/23/93	26. ENVIRONMENTAL OFFICER DIVISION 664

INFORMATION BELOW TO BE COMPLETED BY WASTE MANAGEMENT	
TECHNICAL CONTACT Wiginton	DATE ASSIGNED
HAZARD CLASSIFICATION Not Regulated	28. PROPER DOT SHIPPING NAME
SAMPLE REQUISITION NO.	30. UN OR NA NUMBER
DATE SAMPLED	31. FIELD REVIEW SIGNATURE M.C. Wiginton
	DATE 8/26/93

DISPOSAL INSTRUCTIONS Sanitary Landfill II. Please keep asphalt & concrete separated
SPECIAL PROTECTIVE EQUIPMENT REQUIRED (Safety Glasses and Gloves to be worn as minimum.)

MOVEMENT/DISPOSAL DATA			
MOVED TO CODE	DATE MOVED	TRANSPORTER'S BADGE NO.	
FACILITY	DATE WASTE RECEIVED	FACILITY LOCATION (BAY OR ROW)	OPERATOR SIGNATURE
FINAL DISPOSITION	TANK	COMPANY	OTHER

893 -005186 mcm

DISTRIBUTION: WHITE - Retained By Waste Management
CANARY - To Waste Generator After Completion
PINK - To Environmental Officer
GREEN - By Waste Generator
C-18

CONTAINER

Y12C9323050

Y12C9323050

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323051

Y12C9323051

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323052

Y12C9323052

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323054

Y12C9323054

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323055

Y12C9323055

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323056

Y12C9323056

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9319156

Y12C9319156

DO NOT REMOVE LABEL

EPA CODE (S): **Non-RCRA**

CONTAINER

Y12C9323057

Y12C9323057

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323058

Y12C9323058

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9323059

Y12C9323059

DO NOT REMOVE LABEL

EPA CODE (S):

CONTAINER

Y12C9316860

Y12C9316860

DO NOT REMOVE LABEL

EPA CODE (S): **Non-RCRA**

CONTAINER

Y12C9316861

Y12C9316861

DO NOT REMOVE LABEL

EPA CODE (S): **Non-RCRA**

Appendix D

Laboratory Analytical Results for Tank Removal Soil Sampling

D.1 Soil Sample Analytical Results

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

OFFICIAL REPORT

1/13/94 11:06:07

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A11408-001	A11408	E932860007	8403	APPROVED
ITE SAMPLED: 10/12/93 14:15:00		DATE NEEDED: 10/15/93		LOCATION: "A2" UST GAS LINE		CHARGE #: S0048200
ITE RECEIVED: 10/13/93		DATE COMPLETED: 11/18/93		PROJECT CODE:		CASE: U06029
UMPLER: 30095		SAMPLE DESCRIPTION: GRAB		FINAL APPROVAL:

REMARKS:

IST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
IEP MTH:	PROC MTH: SW846 8015	PHASE:	TIME ANALYZED: 10/30/93 00:00:00
		APPROVER: E021503	

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		718		mg/kg

IST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
IEP MTH:	PROC MTH: SW846 8020	PHASE:	TIME ANALYZED: 10/25/93 00:00:00
		APPROVER: E021503	

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<10000		ug/kg
1432	Benzene		<100		ug/kg
10414	Ethylbenzene		<100		ug/kg
18883	Toluene		<100		ug/kg
130207	Xylene		<100		ug/kg

IST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
IEP MTH:	PROC MTH:	PHASE:	TIME ANALYZED:
THIS TEST WAS CANCELLED		APPROVER:	

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

OFFICIAL REPORT

/13/94 11:06:21

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

<u>BITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
sterling, Samuel D	BUILDING 9207 HS 8225	A11408-003	A11408	E932860010	8403	APPROVED
TE SAMPLED: 10/12/93 14:15:00	DATE NEEDED: 10/15/93	LOCATION: "A3" UST GAS LINE			CHARGE #: S0048200	
TE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:			CASE: U06029	
MPLER: 30095	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

MENTS:

ST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED: 10/30/93 00:00:00	APPROVER: E021503

<u>S NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Diesel Range Organics		2036		mg/kg

ST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/25/93 00:00:00	APPROVER: E021503

<u>S NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		16000		ug/kg
432	Benzene		<100		ug/kg
0414	Ethylbenzene		<100		ug/kg
8883	Toluene		<100		ug/kg
30207	Xylene		550		ug/kg

ST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
EP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-016117
BUILDINGS 9754/9754-2

OFFICIAL REPORT

1/13/94 11:06:44

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
Isterling, Samuel D	BUILDING 9207 MS 8225	A11408-004	A11408	E932860011	8403	APPROVED
DATE SAMPLED: 10/12/93 14:15:00	DATE NEEDED: 10/15/93	LOCATION: "A4" UST GAS LINE			CHARGE #: S0048200	
DATE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:			CASE: U06029	
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL:				

R. S. Hays

REMARKS:

TEST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
PROC MTH:	PROC MTH: SW846 8015	PHASE:	TIME ANALYZED: 10/30/93 00:00:00
			APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		1522		mg/kg

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
PROC MTH:	PROC MTH: SW846 8020	PHASE:	TIME ANALYZED: 10/25/93 00:00:00
			APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		24000		ug/kg
432	Benzene		<100		ug/kg
10414	Ethylbenzene		<100		ug/kg
18883	Toluene		<100		ug/kg
30207	Xylene		<100		ug/kg

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
PROC MTH:	PROC MTH:	PHASE:	TIME ANALYZED:
	THIS TEST WAS CANCELLED		APPROVER:

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-010117
BUILDINGS 9754/9754-2

OFFICIAL REPORT

/13/94 11:07:28

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

BMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A11408-005	A11408	E932860012	8403	APPROVED
TE SAMPLED: 10/12/93 14:15:00	DATE NEEDED: 10/15/93	LOCATION: "A5" UST GAS LINE	CHARGE #: S0048200			
TE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:	CASE: U06029			
MPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL: <i>A. G. Slope</i>				

MMENTS:

ST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED: 10/30/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		5753		mg/kg

ST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/25/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		125000		ug/kg
432	Benzene		<1000		ug/kg
0414	Ethylbenzene		<1000		ug/kg
8883	Toluene		2600		ug/kg
30207	Xylene		3900		ug/kg

ST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
EP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

UNCLASSIFIED

*** LAST PAGE ***

UNCLASSIFIED

FACILITY ID 0-01011
BUILDINGS 9754/971

OFFICIAL REPORT

1/13/94 11:07:44

Y-12 ANALYTICAL SERVICES ORGANIZATION

PAGE 1 OF 1

<u>JBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
sterling, Samuel D	BUILDING 9207 MS 8225	A1H628-001	A1H628	E932860081	8403	APPROVED
DATE SAMPLED: 10/13/93 10:10:00	DATE NEEDED: 10/15/93	LOCATION: "B1" UST GAS LINE			CHARGE #: S0048200	
DATE RECEIVED: 10/14/93	DATE COMPLETED: 11/18/93	PROJECT CODE:			CASE: U06029	
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

COMMENTS: BTX, TPH

TEST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED: 10/30/93 00:00:00	APPROVER: E021503

<u>IS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Diesel Range Organics		4.6		mg/kg

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/27/93 00:00:00	APPROVER: E021503

<u>IS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		<500		ug/kg
1432	Benzene		<5		ug/kg
10414	Ethylbenzene		<5		ug/kg
18883	Toluene		<5		ug/kg
130207	Xylene		<5		ug/kg

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

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Y-12 ANALYTICAL SERVICES ORGANIZATION

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SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A1H628-002	A1H628	E932860086	8403	APPROVED
DATE SAMPLED: 10/13/93 10:15:00	DATE NEEDED: 10/15/93	LOCATION: "B2" UST GAS LINE	CHARGE #: S0048200			
DATE RECEIVED: 10/14/93	DATE COMPLETED: 11/18/93	PROJECT CODE:	CASE: U06029			
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL:				

R. S. Slagter

REMARKS: BTX, TPH

TEST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
PROC MTH:	PROC MTH: SW846 8015	TIME ANALYZED: 10/30/93 00:00:00	APPROVER: E021503

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		26		mg/kg

TEST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
PROC MTH:	PROC MTH: SW846 8020	TIME ANALYZED: 10/27/93 00:00:00	APPROVER: E021503

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<500		ug/kg
1432	Benzene		<5		ug/kg
10414	Ethylbenzene		<5		ug/kg
18883	Toluene		<5		ug/kg
130207	Xylene		<5		ug/kg

TEST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
PROC MTH:	PROC MTH:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

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<u>SMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTC</u>	<u>STATUS</u>
sterling, Samuel D	BUILDING 9207 MS 8225	A1H316	A1H316	E932860149	8403	APPROVED
TE SAMPLED: 10/13/93 10:30:00	DATE NEEDED: 10/15/93	LOCATION: WASTE PILE UST	CHARGE #: S0048200			
TE RECEIVED: 10/14/93	DATE COMPLETED: 11/12/93	PROJECT CODE:	CASE: U06029			
MPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL:				

R.S. Slope

REMARKS:

ST: AA_PB	Lead (Pb) by Graphite Furnace (ppb levels)	REPLICATE: 1	STATUS: CANCELLED
EP MTH:	PROC MTH: EPA 239.2 PHASE:	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

ST: PCB SOL	Gas Chromatography, PCBs in Solids	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8080 PHASE:	TIME ANALYZED: 11/05/93 11:22:00	APPROVER: E034353

<u>S NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	PCB		<4.4		ug/g
674112	PCB1016		N		-
104282	PCB1221		N		-
141165	PCB1232		N		-
469219	PCB1242		N		-
672296	PCB1248		N		-
097691	PCB1254		N		-
096825	PCB1260		N		-

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D.2 Quality Control Sample Analytical Results

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IBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
sterling, Samuel D	BUILDING 9207 MS 8225	A11408-002	A11408	E932860009	8403	APPROVED
TE SAMPLED: 10/12/93 14:15:00	DATE NEEDED: 10/15/93	LOCATION: "A2DUP" UST GAS LINE			CHARGE #: S0048200	
TE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:			CASE: U06029	
MPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL: <i>P. S. Long</i>				

MENTS:

ST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED: 10/30/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		1377		mg/kg

ST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
EP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/25/93 00:00:00	APPROVER: E021503

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<10000		ug/kg
432	Benzene		<100		ug/kg
0414	Ethylbenzene		<100		ug/kg
8883	Toluene		<100		ug/kg
30207	Xylene		420		ug/kg

ST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
EP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

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FACILITY ID 0-010117
BUILDINGS 9754/9754-2

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UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTG	STATUS
asterling, Samuel D	BUILDING 9207 MS 8225	A11409	A11409	E932860015	8601	APPROVED
ATE SAMPLED: 10/11/93 08:15:00	DATE NEEDED: 10/15/93	LOCATION: TRIP BLANK	CHARGE #: S2211601			
ATE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:	CASE: U06029			
AMPLER: 30095	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: 10/23/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
1432	Benzene		<1		ug/L
00414	Ethylbenzene		<1		ug/L
08883	Toluene		<1		ug/L
330207	Xylene		<1		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

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<u>JBMITTER</u>	<u>ADDRESS</u>	<u>CUSTOMER ID</u>	<u>REQ NO</u>	<u>SAMPLE NO</u>	<u>MTG</u>	<u>STATUS</u>
asterling, Samuel D	BUILDING 9207 MS 8225	A11070	A11070	E932860089	8601	APPROVED
DATE SAMPLED: 10/13/93 09:25:00	DATE NEEDED: 10/13/93	LOCATION: TRIP BLANK				CHARGE #: S2211601
DATE RECEIVED: 10/14/93	DATE COMPLETED: 11/18/93	PROJECT CODE:				CASE: U06029
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB					

FINAL APPROVAL:

COMMENTS: BTX

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/23/93 00:00:00	APPROVER: E021503

<u>AS NUMBER</u>	<u>DETERMINATION</u>	<u>DT</u>	<u>RESULT</u>	<u>CONFIDENCE</u>	<u>UNIT</u>
	Gasoline Range Organics		<100		ug/L
1432	Benzene		<1		ug/L
10414	Ethylbenzene		<1		ug/L
18883	Toluene		<1		ug/L
130207	Xylene		<1		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

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UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
asterling, Samuel D	BUILDING 9207 MS 8225	A11410-001		E932860013	8601	APPROVED
ATE SAMPLED: 10/12/93 14:15:00	DATE NEEDED: 10/15/93	LOCATION: EQUIP. RINSE 10/11/9			CHARGE #: S0048200	
ATE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:			CASE: U06029	
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL:				

R. S. Phog

COMMENTS:

EST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED: 10/19/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		100		ug/L

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/23/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
1432	Benzene		<1		ug/L
20414	Ethylbenzene		<1		ug/L
38883	Toluene		<1		ug/L
530207	Xylene		<1		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
	THIS TEST WAS CANCELLED		

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UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTG	STATUS
asterling, Samuel D	BUILDING 9207 MS 8225	A11410-002	A11410	E932860014	8601	APPROVED
ATE SAMPLED: 10/12/93 14:15:00	DATE NEEDED: 10/15/93	LOCATION: EQUIP. RINSE 10/12	CHARGE #: S0048200			
ATE RECEIVED: 10/13/93	DATE COMPLETED: 11/18/93	PROJECT CODE:	CASE: U06029			
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL: <i>A. G. King</i>				

COMMENTS: TPH-GRO, TPH-DRO

EST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/23/93 00:00:00	APPROVER: E021503

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
1432	Benzene		<1		ug/L
10414	Ethylbenzene		<1		ug/L
18883	Toluene		<1		ug/L
130207	Xylene		<1		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

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BUILDINGS 9754/9754-2

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UBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
asterling, Samuel D	BUILDING 9207 MS 8225	A1H694	A1H694	E932860087	8601	APPROVED
ATE SAMPLED: 10/13/93 10:25:00	DATE NEEDED: 10/15/93	LOCATION: EQUIP. RINSE	CHARGE #: S0048200			
ATE RECEIVED: 10/14/93	DATE COMPLETED: 11/18/93	PROJECT CODE:	CASE: U06029			
AMPLER: 30095	SAMPLE DESCRIPTION: GRAB	FINAL APPROVAL:

COMMENTS: BTX, TPH-GRO, TPH-DRO

EST: DRO	TPH Diesel Range Organics (SW846 8015)	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8015 PHASE:	TIME ANALYZED: 10/19/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		100		ug/L

EST: GRO	TPH Gasoline Range Organics Including BTEX	REPLICATE: 1	STATUS: APPROVED
REP MTH:	PROC MTH: SW846 8020 PHASE:	TIME ANALYZED: 10/23/93 00:00:00	APPROVER: E021503

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
1432	Benzene		1		ug/L
10414	Ethylbenzene		<1		ug/L
18883	Toluene		<1		ug/L
130207	Xylene		<1		ug/L

EST: MISC20	Gas Chromatography, Misc. Analysis (Must Specify)	REPLICATE: 1	STATUS: CANCELLED
REP MTH:	PROC MTH: PHASE:	TIME ANALYZED:	APPROVER:
THIS TEST WAS CANCELLED			

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