MARTIN MARIETTA

Y/SUB/94-99069C/Y15/12

SITE STATUS MONITORING REPORT FOR UNDERGROUND STORAGE TANKS 1219-U, 1222-U, 2082-U, AND 2068-U AT THE RUST GARAGE FACILITY, BUILDINGS 9720-15 AND 9754-1

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

October 1994

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

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

DT

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

contributed to the preparation of this document
and should not be considered an eligible contractor
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Y/SUB/94-99069C/Y15/12

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OCTOBER 1994

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

Prepared by

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

Managed by

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

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SITE STATUS MONITORING REPORT

LIST OF FIGURES

TABLES

LIST OF ACRONYMS

BGL	below ground level
BTEX	benzene, toluene, ethylbenzene, and xylene
BTOC	below top of casing
CAP	Corrective Action Plan
LEL	lower explosive limit
MSL	mean sea level
TDEC	Tennessee Department of Conservation
TPH-DRO	total petroleum hydrocarbons - gasoline range organics
TPH-GRO	total petroleum hydrocarbons - gasoline range organics
UST	underground storage tank

SIGNATURE PAGE

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

See Attached Certification		
Owner/Operator (Print)	Signature	Date
William D. Keefer	William D. Keefer / TN 3328	10/13/94
P.E. or P.G. (Print)	Signature TN Lic./Reg. #	Date

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

(Print or Type)

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

County of Anderson State of Tennessee

Subscribed and Sworn to before me this

13th day of October, 1994.

Kimberly D. Mitchell
Notary Public

My Commission expires: September 23, 97

(Notary Seal)

SITE STATUS MONITORING REPORT FOR UNDERGROUND STORAGE TANKS 1219-U, 1222-U, 2082-U, AND 2068-U AT THE RUST GARAGE FACILITY BUILDINGS 9720-15 AND 9754-1

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

U.S. Department of Energy
Owner and operator

By:

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

11/24/97
Date Signed

Teresa L. Wilsayo
10-28-97

Martin Marietta Energy Systems, Inc.
Co-Operator

By:

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

11/4/97
Date Signed

Denah L. Lexton
NOTARY

(Stamp/Seal)

My commission expires Oct. 4, 1998

Note: Both signatures have been notarized per requirements.

94-131P/101394

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

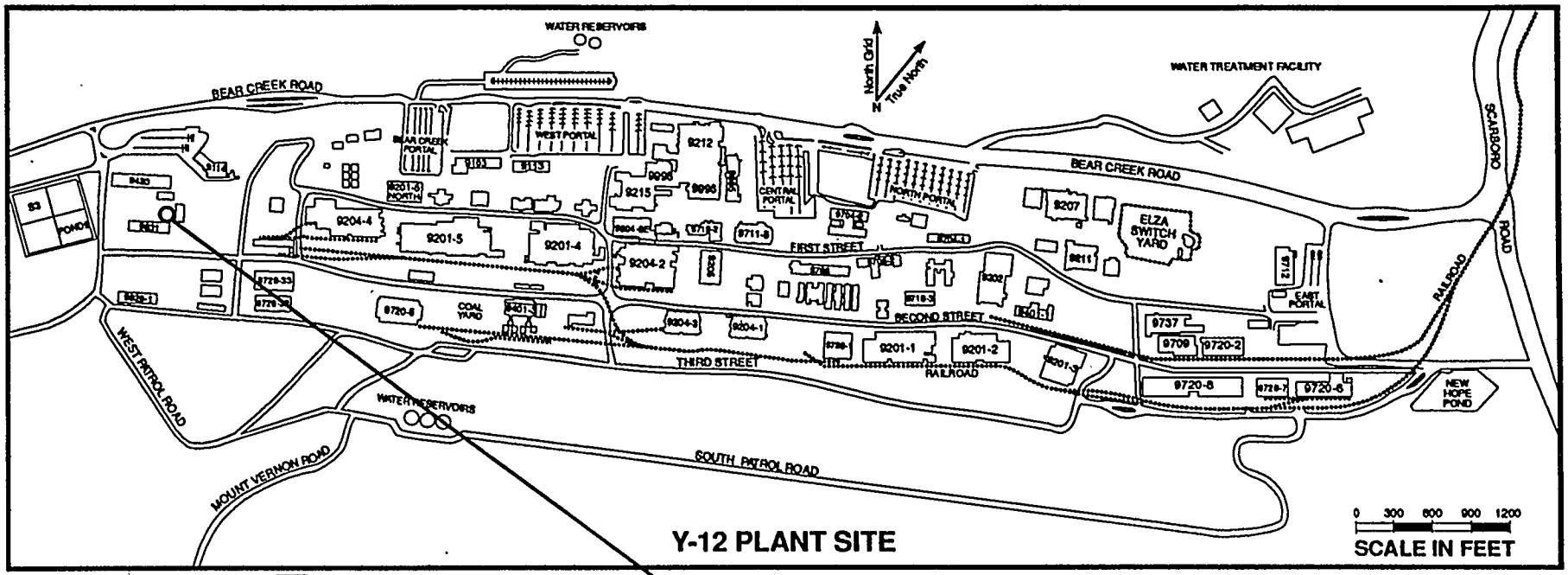
The purpose of this document is to provide hydrogeologic, geochemical, and vapor monitoring data required for site status monitoring of underground storage tanks (UST) 1219-U, 1222-U, 2082-U, and 2068-U at the Rust Garage Facility. Comprehensive monitoring was conducted at the site in May 1994 (Energy Systems 1994) as part of a Monitoring Only program approved by Tennessee Department of Environment and Conservation (TDEC) based on review and approval of Site Ranking (Site Ranking Form dated February 28, 1994). This document presents the results of the first semiannual site status monitoring, which was conducted in September 1994. Site status monitoring and preparation of this report have been conducted in accordance with the requirements of the TDEC Rule 1200-1-15, the TDEC UST Reference Handbook, Second Edition (TDEC 1994), and direction from TDEC (letter from Jim Harless to Robert Spence, dated March 7, 1994).

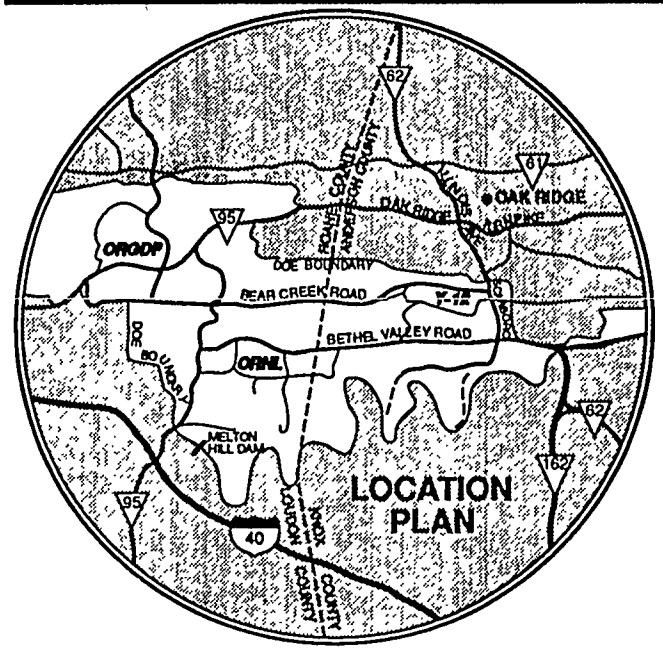
This document is organized into three sections. Section 1 presents introductory information relative to the site including regulatory initiative and a site description. Section 2 includes the results of sampling of monitoring wells GW-508, GW-631, GW-632, and GW-634. Section 3 presents data from vapor monitoring conducted in subsurface utilities present at the site.

1.2 SITE DESCRIPTION

The Rust Garage Facility is located at the western end of the Oak Ridge Y-12 Plant in Oak Ridge, Tennessee (Figure 1-1). The facility site is generally defined by the area surrounding the current locations of Buildings 9720-15 and 9831, and the former location of Building 9754-1 (Figure 1-2). This facility was formerly the location of four underground petroleum product storage tanks and was a fueling point for U.S. Department of Energy fleet vehicles.

The topography of the Rust Garage Facility generally decreases in elevation from north to south across the facility and is defined by two downward stepping terraces. The two terraces are separated by a steep embankment and a similar embankment is located along the northern side of the facility. Given the nature of the surface topography at the Rust Garage Facility, any petroleum product contamination resulting from past operations at the facility would be expected to migrate south away from the source area.





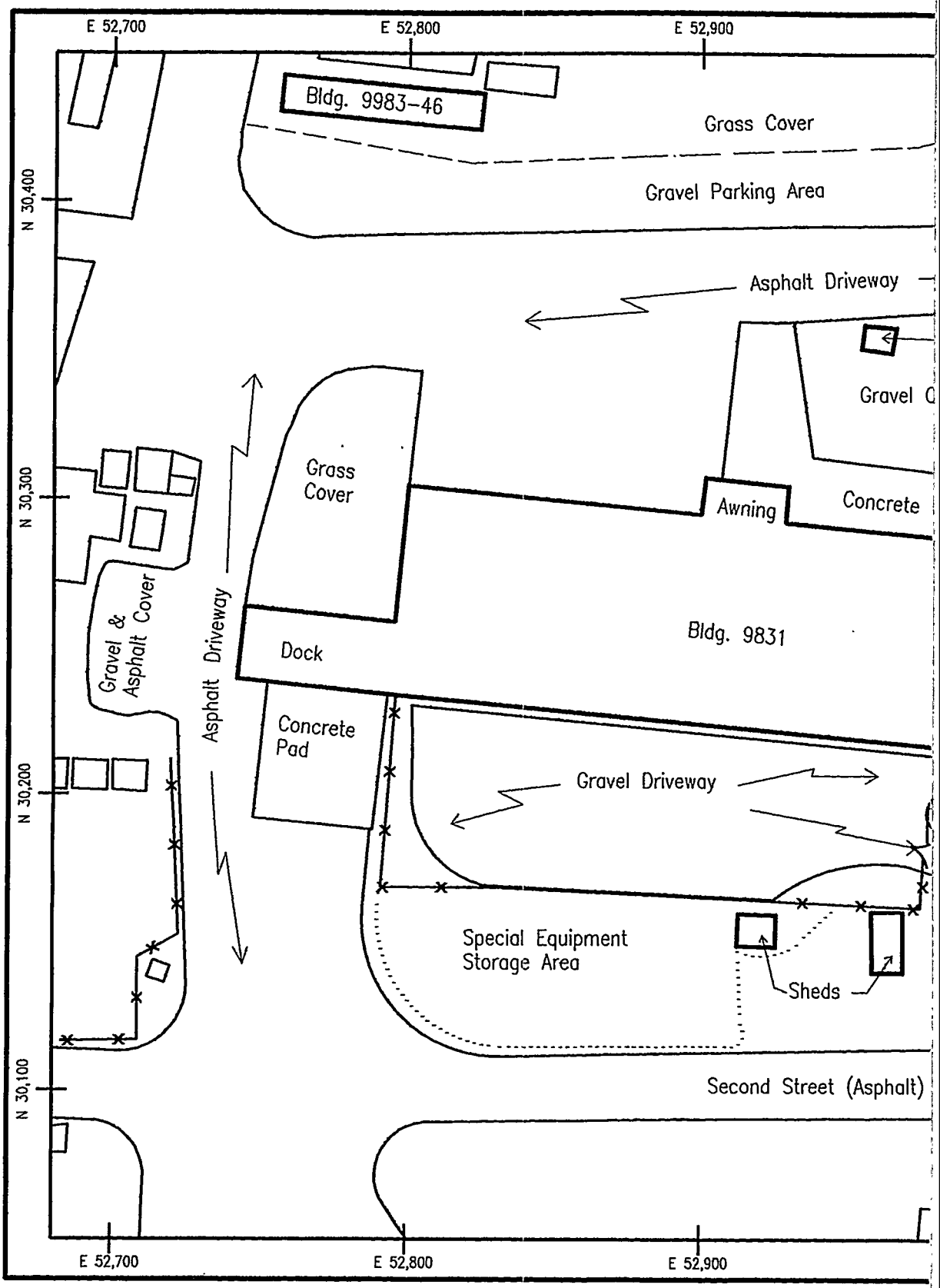
RUST GARAGE FACILITY

Figure 1-1.

MARTIN MARIETTA ENERGY SYSTEMS, INC.
ENVIRONMENTAL MANAGEMENT DEPARTMENT

LOCATION OF THE RUST GARAGE FACILITY AT THE Y-12 PLANT

Y-12(8) 380-03-115-04(10/90)



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0 25 50 100

SCALE: 1" = 50'

Y-12 Plant North

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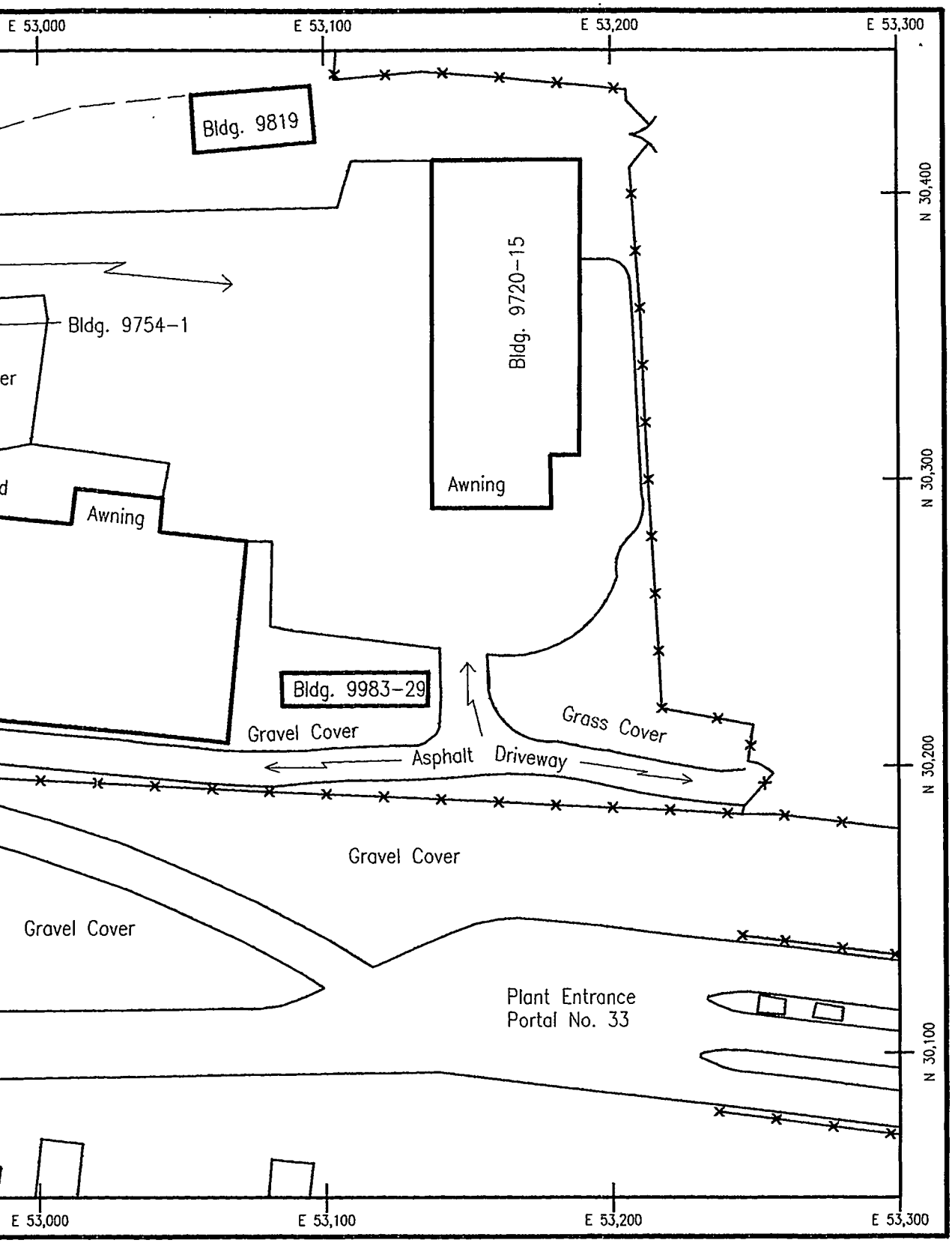
Access Restric



ık Fence

on Chain

N XX,XXX DOE Reservation Grid Location System

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Environmental Management Department

FIGURE 1-2

Rust Garage Facility Site Map

2.0 GROUNDWATER MONITORING

2.1 Groundwater Measurement, Sample Collection, and Analysis

2.1.1 Well Locations

As directed by TDEC, four monitoring wells have been sampled as part of the Monitoring Only program for the site. These wells are GW-508, GW-631, GW-632, and GW-634. The locations of these wells are presented in Figure 2-1. Well installation reports and construction details for these wells are presented in the Corrective Action Plan (CAP) for the Site (*Corrective Action Plan for Underground Storage Tanks 1219-U, 1222-U, 2082-U and 2068-U at the Rust Garage Facility, Buildings 9720-15 and 9754-1*, Appendix E, Martin Marietta Energy Systems, Inc., Y/SUB/92-99928C/1) (Energy Systems 1992).

2.1.2 Groundwater Measurement and Sampling

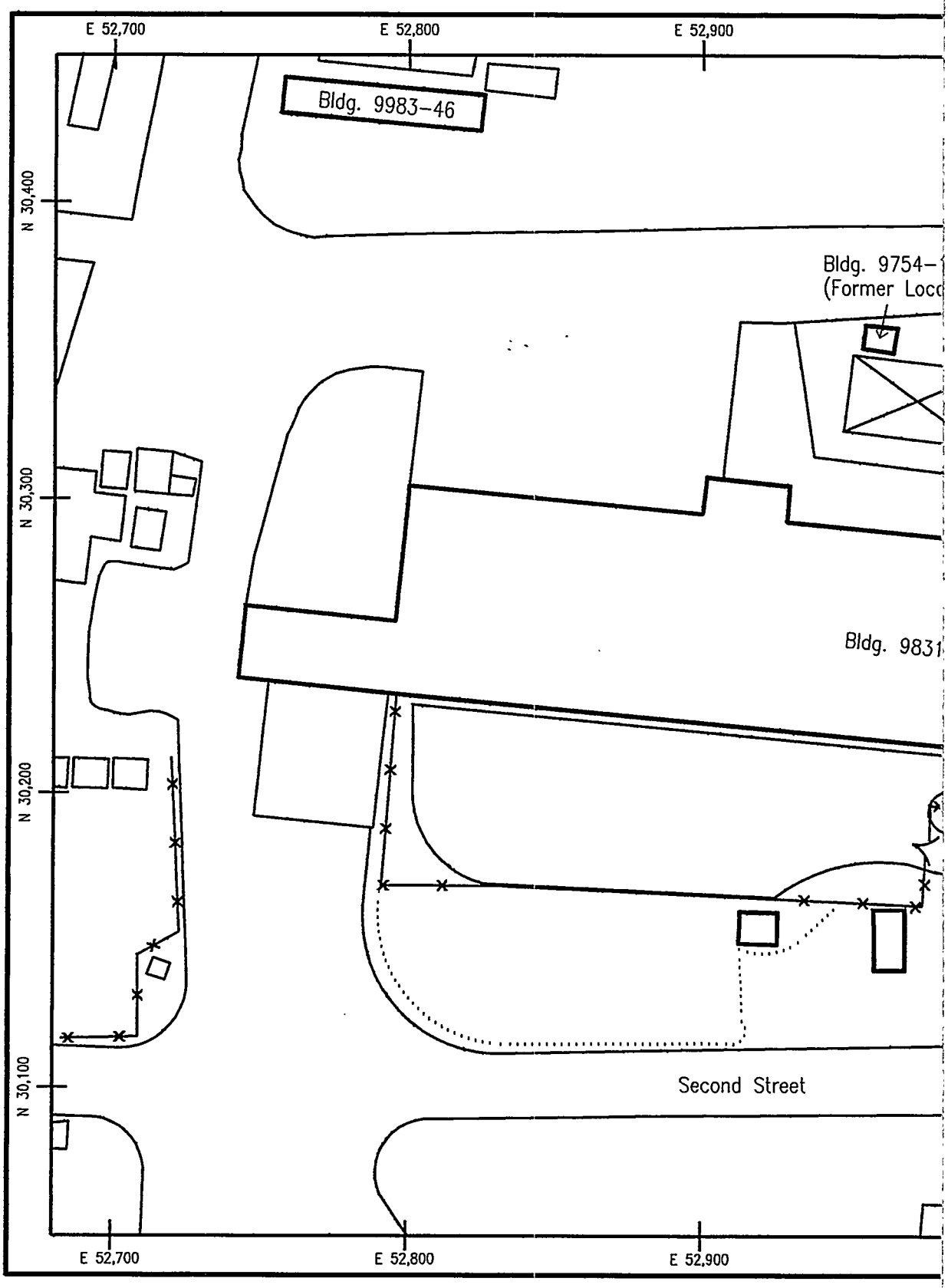
The specified groundwater monitoring wells at the Rust Garage Facility were measured for water level and sampled for the applicable petroleum constituents on September 5, 1994. All wells were measured for static water level and purged prior to sampling. Wells GW-508 and GW-634 were purged of approximately 3 well volumes. Well GW-631 was purged of approximately 2.4 well volumes and well GW-632 was purged of approximately 2 well volumes prior to going dry. Field measurement of pH, conductivity, temperature, and dissolved oxygen was conducted during purging to ensure representativeness for sampling. The wells were allowed to recover and samples were collected for analysis in pre-prepared bottles. No measurable free product was encountered during water level measurement or sampling in any of the wells. However, a slight oily sheen and petroleum odor were noted during sampling at well GW-508. A slight fuel odor was also noted at wells GW-632 and GW-634.

2.1.3 Sample Analysis

Samples were analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (TPH-GRO), diesel range organics (TPH-DRO), and for benzene, toluene, ethylbenzene, and xylene (BTEX).

2.2 POTENTIOMETRIC DATA

Potentiometric data for monitoring wells GW-508, GW-631, GW-632, and GW-634 from the site status monitoring and the comprehensive monitoring sample events are presented in Table 2-1. Figures 2-2 and 2-3 present potentiometric maps from these two periods of sampling. These figures illustrate that groundwater movement is generally from north to south across the site with relatively low seasonal variability.



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0 25 50 100

SCALE: 1" = 50'

Y-12 Plant North

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▲ GW-634 Groundwater Mo
Well Location

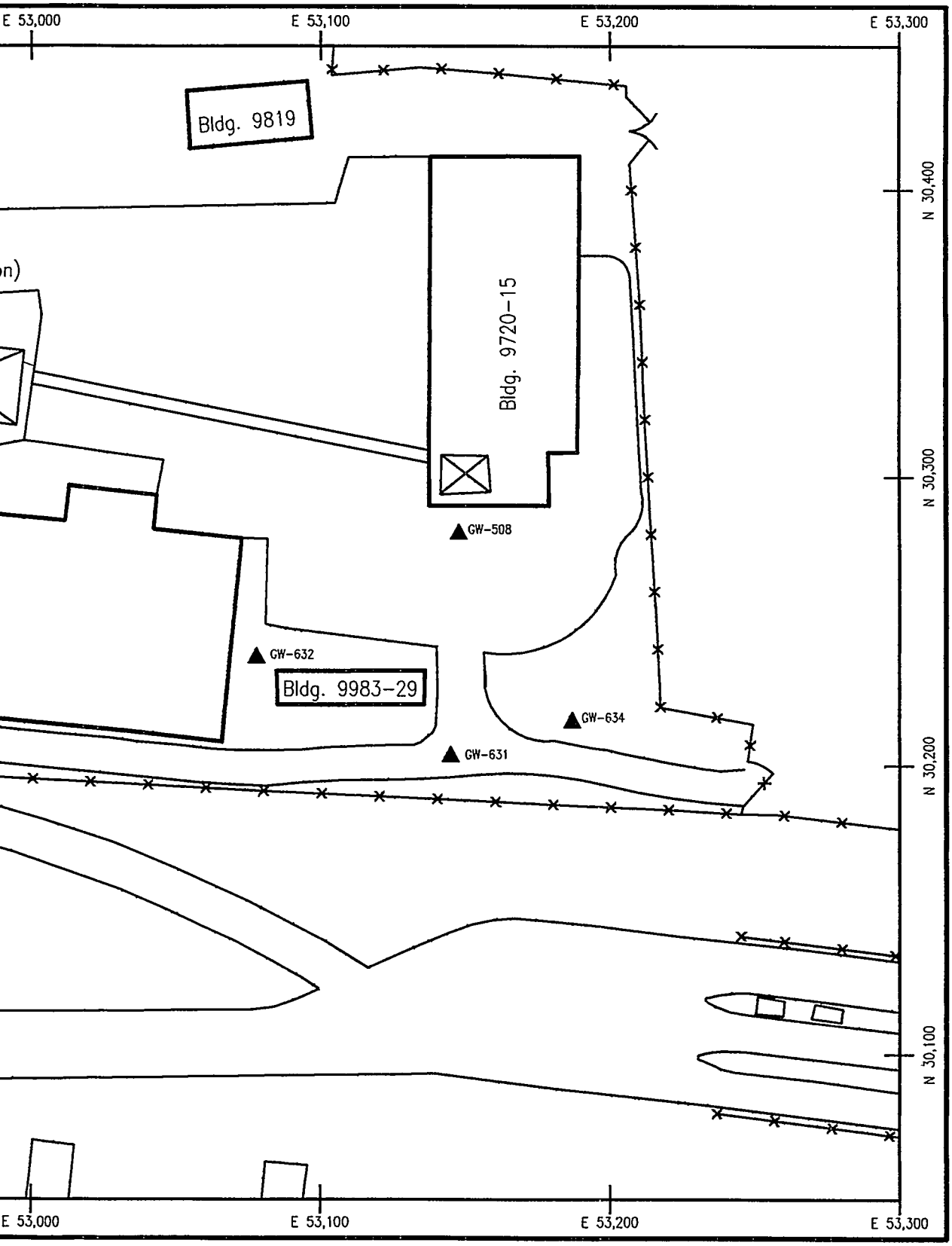

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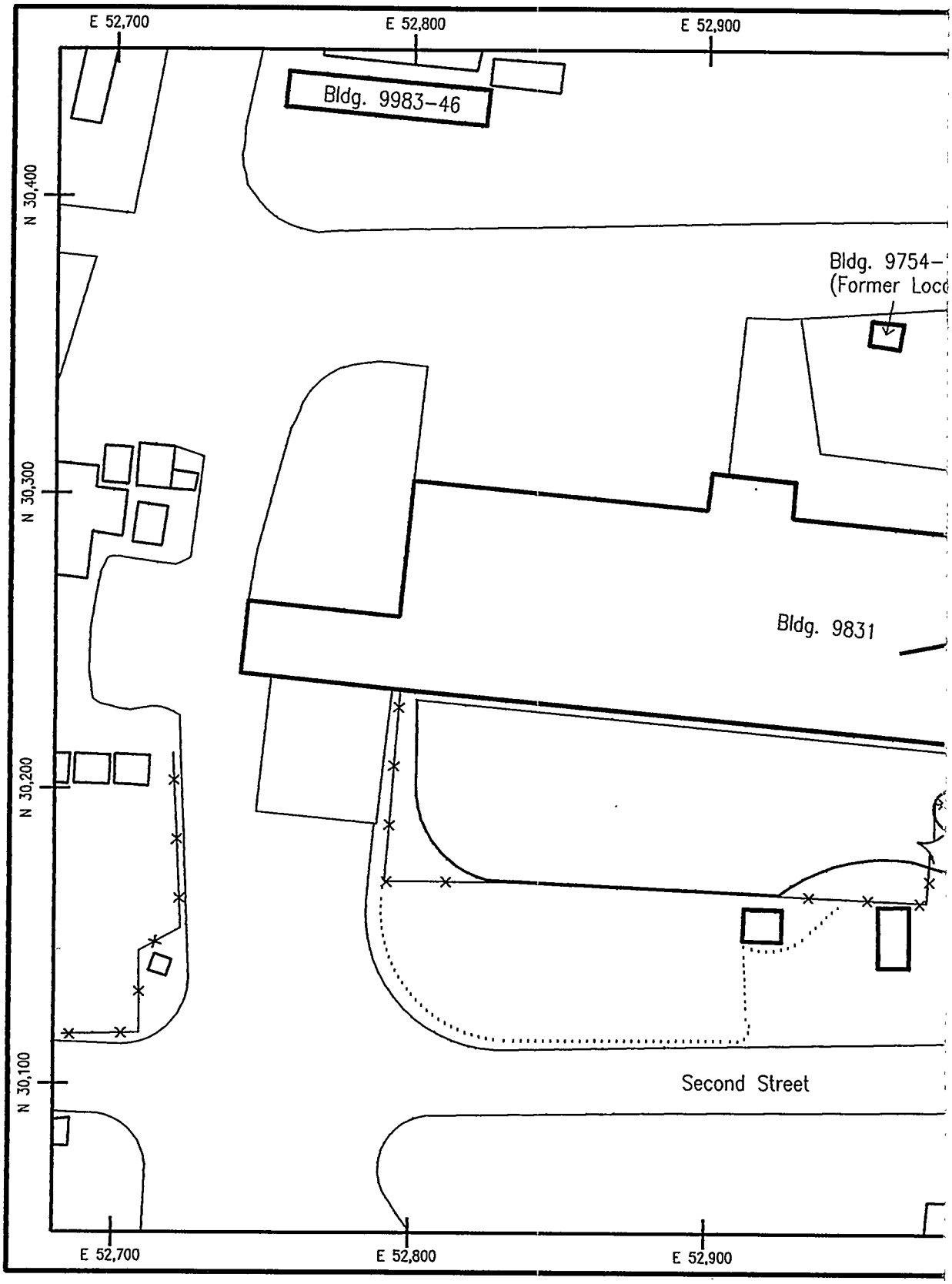
FIGURE 2-1

Rust Garage Facility Site
Monitoring Well
Location Map

Table 2-1. Water Level Measurements at the Rust Garage Facility for the Periods of April 1994 and September 1994

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)[2]
GW-508	09/01/94	15.0 ft	1012.5 ft	10.90 ft	1001.60 ft
	04/05/94	15.0 ft	1012.5 ft	14.93 ft	997.57 ft
GW-631	04/05/94	16.0 ft	1003.99 ft	7.70 ft	996.29 ft
	04/05/94	16.0 ft	1003.99 ft	7.01 ft	996.98 ft
GW-632	04/05/94	15.0 ft	1005.73 ft	7.70 ft	998.03 ft
	11/18/93[4]	15.0 ft	1005.73 ft	7.40 ft	998.33.ft
GW-634	04/05/94	15.0 ft	1007.15 ft	8.48 ft	998.67 ft
	11/18/93[4]	15.0 ft	1007.15 ft	7.97 ft	999.18 ft

[1]BGL - Below Ground Level
[2]MSL - Mean Sea Level
[3]BTOC - Below Top of Casing



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0 25 50 100

SCALE: 1" = 50'

Y-12 Plant North

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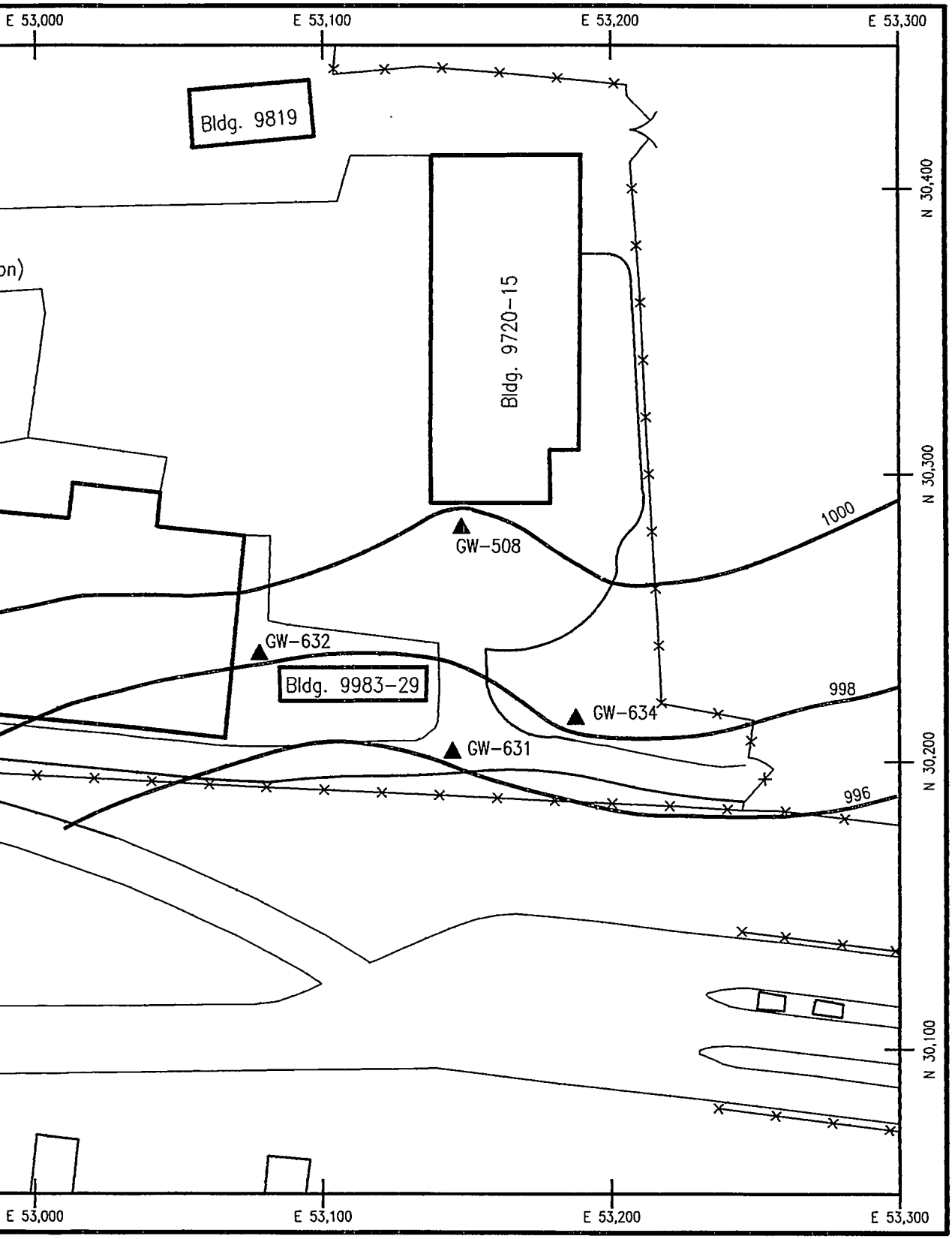
Legend

990 — Groundwater Potenti Contour Line Repre in Feet MSL

▲ GW-505 Groundwater Monito Well Location



Summary of Measured Groundwater Elevations (MSL)	
GW-508	997.57 FT.
GW-631	996.98 FT.
GW-632	998.33 FT.
GW-634	999.18 FT.

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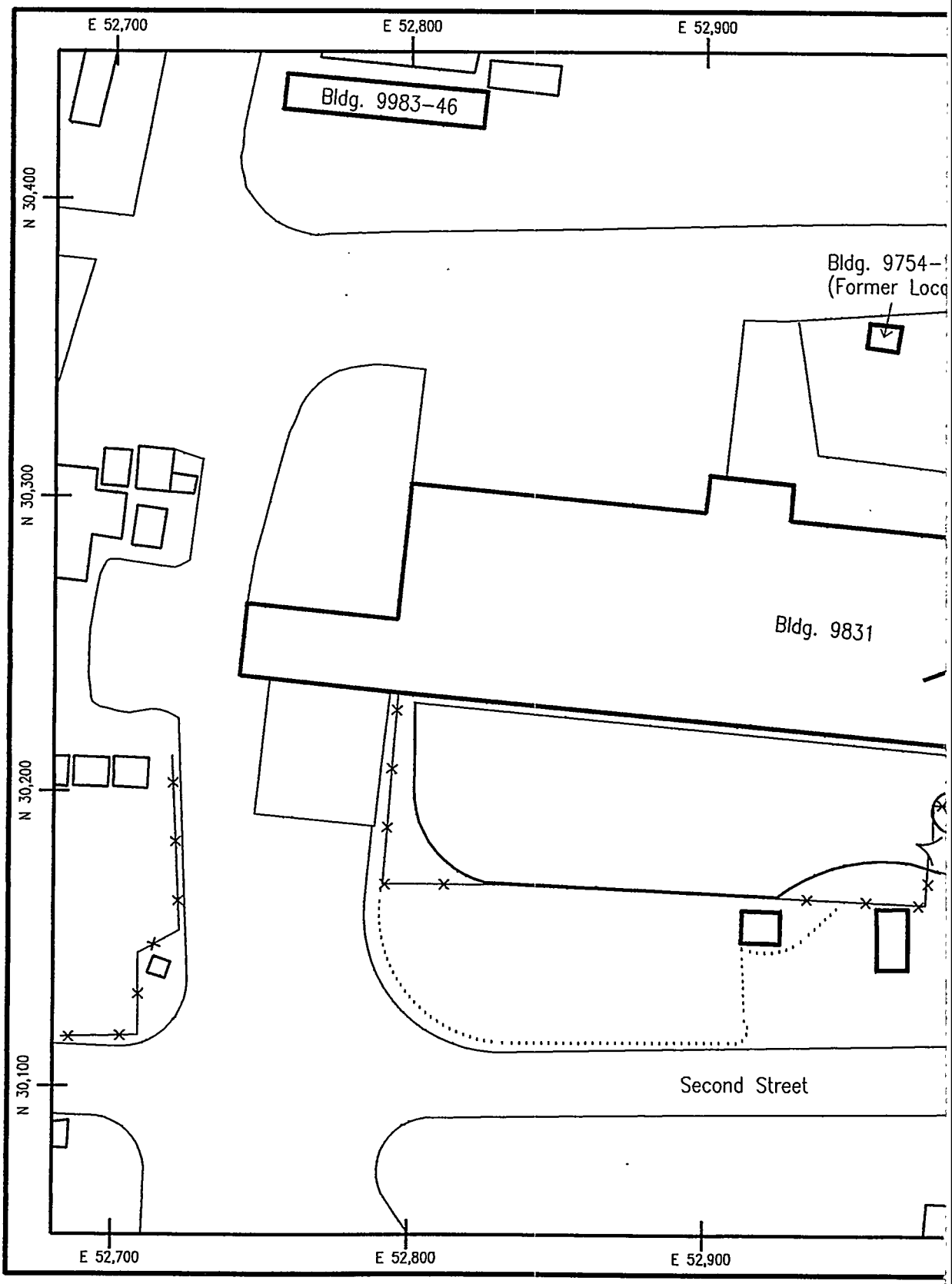
FIGURE 2-2

Rust Garage Facility Site
Groundwater Potentiometric Contour
Map, April 1994



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0 25 50 100

SCALE: 1" = 50'

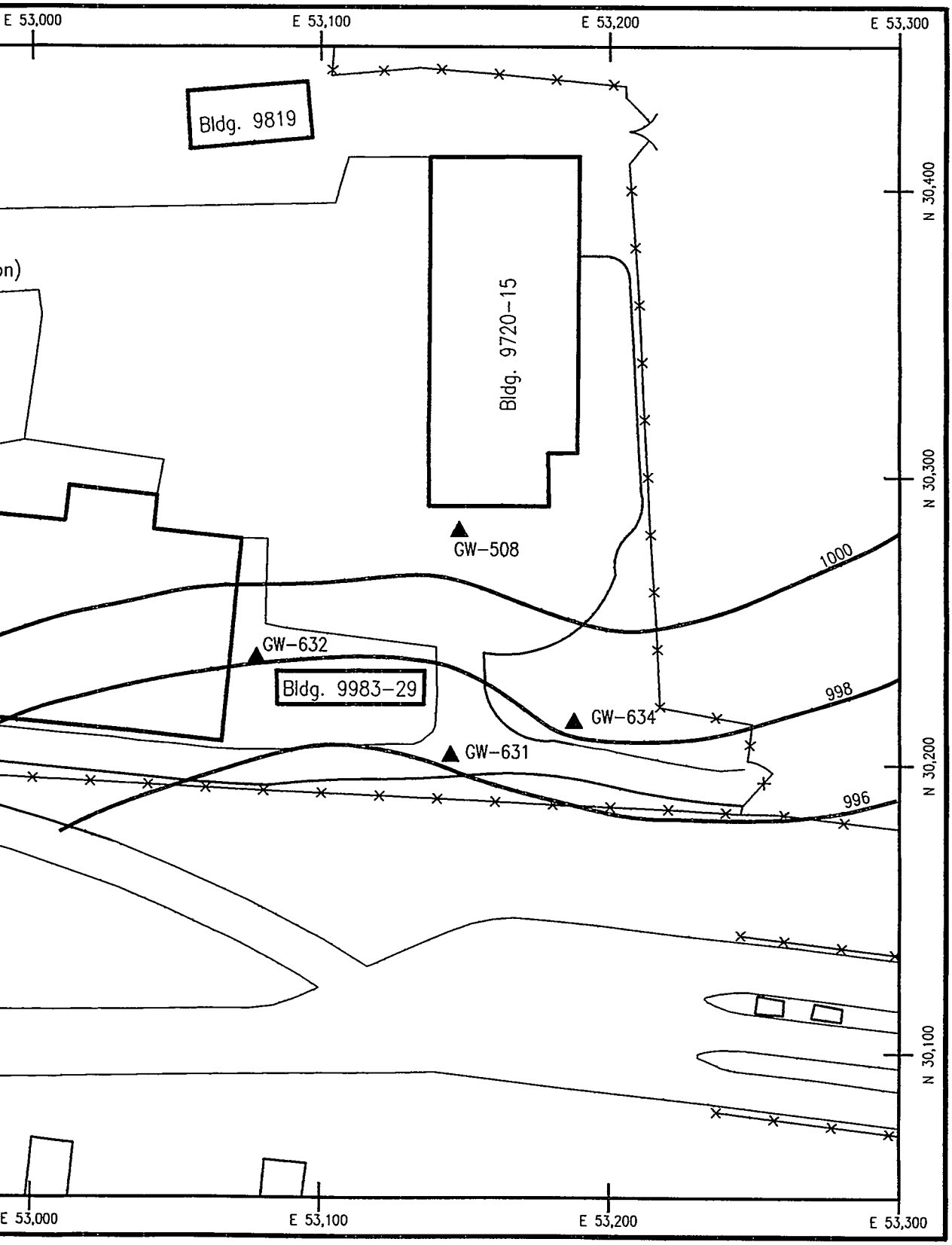
Y-12 Plant North

REV. 4 - 10/11/94 SAIC FILE: 94Z17R2/DWGS/675POTSE.DWG

Legend

990 — Groundwater Potenti Contour Line Repres in Feet MSL

▲ GW-505 — Groundwater Monitor Well Location



Summary of Measured Groundwater Elevations (MSL)	
GW-508	1001.60 FT.
GW-631	996.29 FT.
GW-632	998.03 FT.
GW-634	998.67 FT.

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FIGURE 2-3

Rust Garage Facility Site
Groundwater Potentiometric Contour
Map, September 1994

2.3 ANALYTICAL DATA

Analytical data for groundwater sampled at the site during site status monitoring, comprehensive monitoring, and for the last three rounds of groundwater sampling for the 1993 Y-12 Plant Groundwater Protection Program, UST monitoring wells is summarized in Table 2-2. Sample values in this table for total TPH represent summations of TPH-GRO and TPH-DRO values. Where a TPH-GRO or TPH-DRO result is qualified as a non-detect (U qualifier) and the detection limit is given, the detection limit is used for calculation of total TPH. Where estimated values are used to calculate total TPH, the J qualifier is assigned to the total value. Laboratory analytical sheets for these analyses are presented in Appendix A.

Table 2-2 demonstrates that petroleum contamination remains present in monitoring wells GW-508, GW-632, and GW-634 above TDEC non-drinking water Closure Action Limits (0.07 ppm benzene and 1.0 ppm TPH). These wells have historically produced values in excess of these closure limits. Site status monitoring results indicate some variability in contaminant concentrations over time that are probably related to rainfall totals and fluctuations in the water table. Based on the analytical results from GW-631 and GW-634, there is no indication that groundwater contaminants are migrating downgradient. In general, contaminant concentrations in these wells appear to be stable or slightly falling off over time.

Table 2-2. Analytical Results for Groundwater Collected During Site Status Monitoring, Comprehensive Monitoring, and 1993 Y-12 UEFPC Groundwater Quality Assessment Sampling

Sampling Event	TPH-DRO (ppm)	TPH-GRO (ppm)	Total TPH (ppm)	Benzene (ppm)	Ethyl benzene (ppm)	Toluene (ppm)	Xylene (ppm)
			GW-508				
Site Status Monitoring (9/1/94)	26.000	20.000	46.000	7.600	0.150J	1.400	1.800
Comprehensive Monitoring (4/5/94)	60.000	69.000	129.000	5.600	2.200	26.000	15.000
1993 Qtr 4	21.49	27.800	49.29	0.1529	—	0.002*	1.271
1993 Qtr 3	88.08	42.900	130.98	6.346	—	8.064	12.919
1993 Qtr 2	1422.9	89.000	1511.90	9.036	—	30.554	16.080
			GW-631				
Site Status Monitoring (9/1/94)	<0.200	<0.100	<0.300	<0.010	<0.010	0.040	0.014
Site Status Monitoring (Duplicate)	0.230	<0.100	<0.330	<0.010	0.010U	0.023	0.011
Comprehensive Monitoring (4/5/94)	0.057J	0.0100U	0.557J	0.010U	0.010U	0.010U	0.010U
1993 Qtr 4	0.002	0.0051	0.0071	<0.005	—	<0.005	<0.005
1993 Qtr 3	0	0.0078	0.0078	<0.005	—	<0.005	<0.005
1993 Qtr 2	<0.1	0.0155	<0.1155	<0.005	—	<0.005	<0.005

Table 2-2 (continued)

Sampling Event	TPH-DRO (ppm)	TPH-GRO (ppm)	Total TPH (ppm)	Benzene (ppm)	Ethyl benzene (ppm)	Toluene (ppm)	Xylene (ppm)
			GW-632				
Site Status Monitoring (9/1/94)	1.900	58.000	59.900	4.200	2.000	20.000	13.000
Comprehensive Monitoring (4/5/94)	14.000	27.000	41.000	9.200	2.000U	2.600	3.200
1993 Qtr 4	4.2	4.461	8.661	0.4529	—	0.2614	0.165
1993 Qtr 3	2.61	15.420	18.030	4.329	—	0.580	2.891
1993 Qtr 2	3.3	25.582	28.882	6.924	—	5.518	3.746
			GW-634				
Site Status Monitoring (9/1/94)	8.500	7.500	16.000	0.200	0.460	0.160	1.400
Comprehensive Monitoring (4/5/94)	11.000	8.600	19.600	0.260	0.500	0.340	1.900
1993 Qtr 4	5.16	3.933	9.093	0.0568	—	0.597	0.1096
1993 Qtr 3	2.48	8.031	10.511	0.309	—	0.3215	1.2656
1993 Qtr 2	4.48	10.158	14.638	0.018	—	0.570	1.604

U - Compound not detected at the reported minimum attainable detection limit.
< - Compound not detected at the reported minimum attainable detection limit.
J - Estimated Value.

* Interference Peak

3.0 VAPOR MONITORING

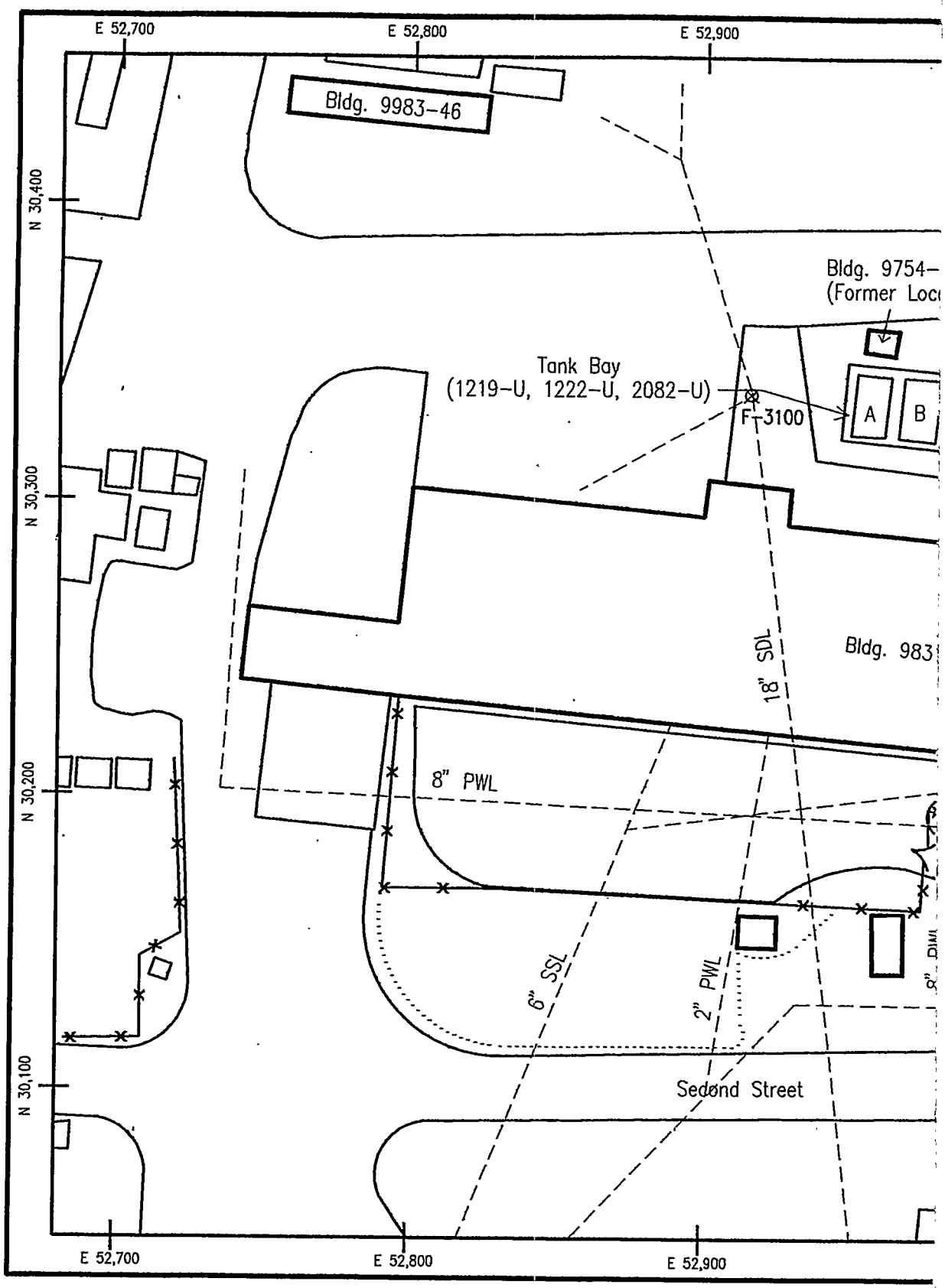
3.1 MONITORING METHOD AND LOCATIONS

Vapor monitoring as part of site status monitoring was conducted on September 30, 1994. Access points for three storm sewers and one sanitary sewer were monitored. The locations of sampling points are illustrated on Figure 3-1. Locations F-305C and F-3105 are the only accessible substructures within the delineated groundwater contamination plume.

At each location, organic vapors were monitored using direct-reading instruments. Organic vapors were monitored using a Thermo Environmental™ organic vapor meter. Lower explosive limit (LEL) was monitored using an MSA™ 260.

3.2 VAPOR MONITORING RESULTS

The results of vapor monitoring at the Rust Garage Facility are presented in Table 3-1. LEL readings of 0 % at all the monitored sites indicate that an explosion hazard does not exist within the monitored utilities. With the exception of monitoring results for location F-3105, organic vapor readings are near or equal to background readings. The organic vapor reading of 3.0 ppm at location F-3105 may be due to the presence of petroleum contamination or other organic compounds (naturally occurring or man-made) at the site. The nondiscriminatory nature of the organic vapor meter used in the monitoring does not allow specific identification of the source.



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0 25 50 100

SCALE: 1" = 50'

Y-12 Plant North

N

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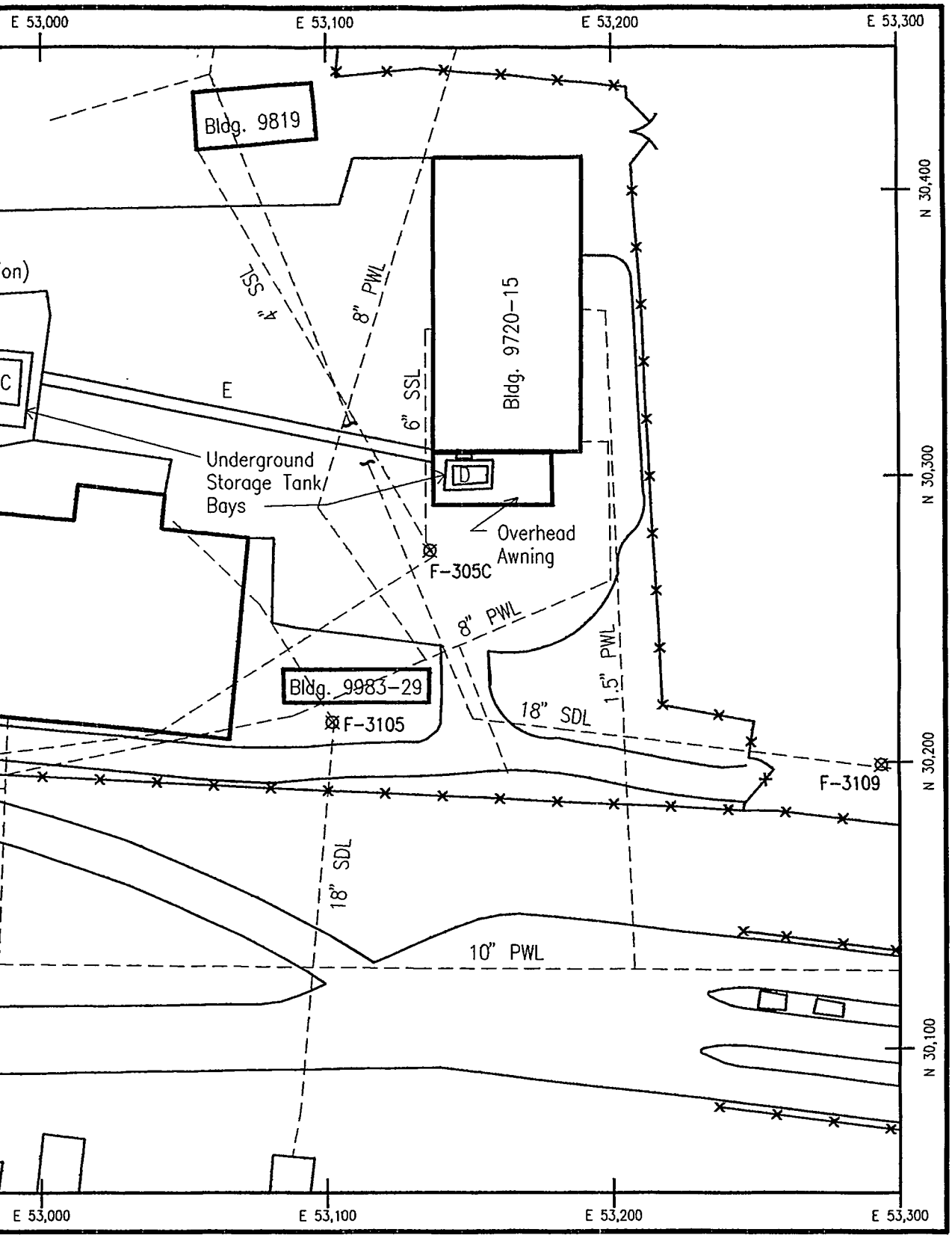
Legend

⊠ – Vapor Monitoring Sampling Point

A – Tank 1219-U, 12000 Gallon Diesel UST



B – Tank 1222-U, 12000 Gallon UST
C – Tank 2082-U, 8000 Gallon Gasoline UST
D – Tank 2068-U, 1000 Gallon Gasoline UST
E – Underground Gasoline Transfer Pipeline

SDL — Underground Stormwater Drainage Line
SSL — Underground Sanitary Sewer Line
PWL — Underground Potable Water Line

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FIGURE 3-1

Rust Garage Facility Vapor Monitoring Sample Point Location Map

Table 3-1. Vapor Monitoring Results for the Rust Garage Facility Site Status Monitoring 9/30/94

Sampling Location	LEL (%)	Maximum Organic Vapors (ppm)	Background Organic Vapors (ppm)
F-3100	0	0.001	0.001
F-305C	0	3.000	0.472
F-3105	0	0.006	0.001
F-3109	0	0.066	0.007

APPENDIX A

LABORATORY ANALYTICAL RESULTS FOR SITE STATUS MONITORING (9/1/94)

OFFICIAL REPORT

)/27/94 11:20:13 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
)hrman, Donald Edwa	Building 9115 MS 8219			E942440001	6801	APPROVED

\TE SAMPLED: 09/01/94 13:10:00 DATE NEEDED: 10/01/94 LOCATION: GW508 CHARGE #: S2205F28
\TE RECEIVED: 09/01/94 DATE COMPLETED: 09/26/94 PROJECT CODE: CASE: PJN1057
\MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

)MMENTS: FACILITY ID 0-010117

L. T. Emerson

:ST: DRO_W TPH Diesel Range Organics Water (TN UST METHOD) REPLICATE: 1 STATUS: APPROVED
!EP MTH: PROC MTH: TN UST METH PHASE: TIME ANALYZED: 09/15/94 13:59:00 APPROVER: E030124

\S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		26000		ug/L
	QUANTITATION LIMITS		4000		ug/L
	DRO in Blank		NONE		ug/L

:ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
!EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 09/08/94 14:10:00 APPROVER: E030124

\S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		20000		ug/L
432	Benzene		7600		ug/L
10414	Ethylbenzene		150 J		ug/L
18883	Toluene		1400		ug/L
130207	Xylene		1800		ug/L
	GRO Quantitation Limit		5000		ug/L
	BTEX Quantitation Limit		500		ug/L
	GRO Amount in Blank		NONE		ug/L

OFFICIAL REPORT

)/27/94 11:20:23 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
)hrman, Donald Edwa	Building 9115 MS 8219			E942440002	6801	APPROVED

ITE SAMPLED: 09/01/94 10:40:00 DATE NEEDED: 10/01/94 LOCATION: GW631 CHARGE #: S2205F28
ITE RECEIVED: 09/01/94 DATE COMPLETED: 09/26/94 PROJECT CODE: CASE: PJN1057
IMPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

)MMENTS: FACILITY ID 0-010117

:ST: DRO_W TPH Diesel Range Organics Water (TN UST METHOD) REPLICATE: 1 STATUS: APPROVED
:EP MTH: PROC MTH: TN UST METH PHASE: TIME ANALYZED: 09/14/94 14:33:00 APPROVER: E030124

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		<200		ug/L
	QUANTITATION LIMITS		200		ug/L
	DRO in Blank		NONE		ug/L

:ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
:EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 09/07/94 15:49:00 APPROVER: E030124
)MMENTS:

IS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
432	Benzene		<10		ug/L
10414	Ethylbenzene		<10		ug/L
18883	Toluene		40		ug/L
130207	Xylene		14		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

*** LAST PAGE ***

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)/27/94 11:20:45 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
)hrman, Donald Edwa	Building 9115 MS 8219			E942440005	6801	APPROVED

\TE SAMPLED: 09/01/94 10:40:00 DATE NEEDED: 10/01/94 LOCATION: GW631 CHARGE #: S2211601
\TE RECEIVED: 09/01/94 DATE COMPLETED: 09/26/94 PROJECT CODE: CASE: SQD001
\MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

)MMENTS: FACILITY ID 0-010117 L. T. Emerson

:ST: DRO_W TPH Diesel Range Organics Water (TN UST METHOD) REPLICATE: 1 STATUS: APPROVED
!EP MTH: PROC MTH: TN UST METH PHASE: TIME ANALYZED: 09/16/94 13:38:00 APPROVER: E030124

\S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		230		ug/L
	QUANTITATION LIMITS		200		ug/L
	DRO in Blank		NONE		ug/L

:ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
!EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 09/07/94 16:59:00 APPROVER: E030124

\S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
432	Benzene		<10		ug/L
10414	Ethylbenzene		10 U		ug/L
18883	Toluene		23		ug/L
130207	Xylene		11		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

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)/27/94 11:00:17 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

IBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
)hrman, Donald Edwa	Building 9115 MS 8219			E942440003	6801	APPROVED

)TE SAMPLED: 09/01/94 13:00:00 DATE NEEDED: 10/01/94 LOCATION: GW632 CHARGE #: S2205F28
)TE RECEIVED: 09/01/94 DATE COMPLETED: 09/26/94 PROJECT CODE: CASE: PJN1057
)MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

)MMENTS: FACILITY ID 0-010117

ST: DRO_W TPH Diesel Range Organics Water (TN UST METHOD) REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: TN UST METH PHASE: TIME ANALYZED: 09/16/94 09:58:00 APPROVER: E030124
)MMENTS: SURROGATE RECOVERY OUTSIDE LIMITS; MATRIX INTERFERENCE SUSPECTED

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		1900		ug/L
	QUANTITATION LIMITS		200		ug/L
	DRO in Blank		NONE		ug/L

ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 09/08/94 12:37:00 APPROVER: E030124

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		58000		ug/L
432	Benzene		4200		ug/L
0414	Ethylbenzene		2000		ug/L
8883	Toluene		20000		ug/L
30207	Xylene		13000		ug/L
	GRO Quantitation Limit		10000		ug/L
	BTEX Quantitation Limit		1000		ug/L
	GRO Amount in Blank		NONE		ug/L

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9/27/94 11:20:34 Y-12 ANALYTICAL SERVICES ORGANIZATION

JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
ohrman, Donald Edwa	Building 9115 MS 8219			E942440004	6801	APPROVED

ATE SAMPLED: 09/01/94 09:35:00 DATE NEEDED: 10/01/94 LOCATION: GW634 CHARGE #: S2205F28
ATE RECEIVED: 09/01/94 DATE COMPLETED: 09/26/94 PROJECT CODE: CASE: PJN1057
AMPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

OMMENTS: FACILITY ID 0-010117

EST: DRO_W TPH Diesel Range Organics Water (TN UST METHOD) REPLICATE: 1 STATUS: APPROVED
REP MTH: PROC MTH: TN UST METH PHASE: TIME ANALYZED: 09/16/94 12:19:00 APPROVER: E030124

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		8500		ug/L
	QUANTITATION LIMITS		1000		ug/L
	DRO in Blank		NONE		ug/L

EST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
REP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 09/07/94 16:24:00 APPROVER: E030124

AS NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		7500		ug/L
1432	Benzene		200		ug/L
00414	Ethylbenzene		460		ug/L
08883	Toluene		160		ug/L
530207	Xylene		1400		ug/L
	GRO Quantitation Limit		500		ug/L
	BTEX Quantitation Limit		50		ug/L
	GRO Amount in Blank		NONE		ug/L

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'/27/94 11:20:58 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

IBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
hrman, Donald Edwa	Building 9115 MS 8219			E942440006	6801	APPROVED

.TE SAMPLED: 09/01/94 12:50:00 DATE NEEDED: 10/01/94 LOCATION: FIELD CHARGE #: S2211601
.TE RECEIVED: 09/01/94 DATE COMPLETED: 09/26/94 PROJECT CODE: CASE: SQF001
MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MMENTS: FACILITY ID 0-010117

ST: DRO_W TPH Diesel Range Organics Water (TN UST METHOD) REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: TN UST METH PHASE: TIME ANALYZED: 09/16/94 14:14:00 APPROVER: E030124

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Diesel Range Organics		<200		ug/L
	QUANTITATION LIMITS		200		ug/L
	DRO in Blank		NONE		ug/L

ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 09/07/94 17:34:00 APPROVER: E030124

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
432	Benzene		10 U		ug/L
0414	Ethylbenzene		10 U		ug/L
8883	Toluene		<10		ug/L
30207	Xylene		10 U		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

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)/08/94 23:12:25 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

JBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
)hrman, Donald Edwa	Building 9115 MS 8219			E942440007	8601	APPROVED

\TE SAMPLED: 09/01/94 07:10:00 DATE NEEDED: 10/01/94 LOCATION: 9207 CHARGE #: S2211601
\TE RECEIVED: 09/01/94 DATE COMPLETED: 09/07/94 PROJECT CODE: CASE: SQT001
\MPLER: 029776 SAMPLE DESCRIPTION: TRIP BLANK FINAL APPROVAL:

)MMENTS:

:ST: VOA624 Volatile Organics by GC/MS (EPA 624) REPLICATE: 1 STATUS: APPROVED
!EP MTH: PROC MTH: EPA 624 PHASE: TIME ANALYZED: 09/06/94 14:59:00 APPROVER: E030124

\S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
,873	Chloromethane		10 U		ug/L
,839	Bromomethane		10 U		ug/L
;014	Vinyl chloride		10 U		ug/L
;003	Chloroethane		10 U		ug/L
;694	Trichlorofluoromethane		10 U		ug/L
;092	Methylene chloride		10 U		ug/L
;354	1,1-Dichloroethene		10 U		ug/L
;343	1,1-Dichloroethane		10 U		ug/L
;6605	trans-1,2-Dichloroethene		10 U		ug/L
'663	Chloroform		10 U		ug/L
)7062	1,2-Dichloroethane		10 U		ug/L
556	1,1,1-Trichloroethane		10 U		ug/L
,235	Carbon tetrachloride		10 U		ug/L
;274	Bromodichloromethane		10 U		ug/L
0758	2-Chloroethylvinyl ether		10 U		ug/L
)875	1,2-Dichloropropane		10 U		ug/L
)061015	cis-1,3-Dichloropropene		10 U		ug/L
)016	Trichloroethene		10 U		ug/L
!4481	Dibromochloromethane		10 U		ug/L
)005	1,1,2-Trichloroethane		10 U		ug/L
432	Benzene		10 U		ug/L
)061026	trans-1,3-Dichloropropene		10 U		ug/L
,252	Bromoform		10 U		ug/L
!7184	Tetrachloroethene		10 U		ug/L
'345	1,1,2,2,-Tetrachloroethane		10 U		ug/L
)8883	Toluene		10 U		ug/L
)8907	Chlorobenzene		10 U		ug/L
)0414	Ethylbenzene		10 U		ug/L

DOE Y-12 PLANT CHAIN OF CUSTODY FORM

№ 20425

SAMPLER: (Signature)			Dept.		Building/Phone		WATER	OIL	SOIL	SOLVENT	SLUDGE	OTHER	REMARKS
F. L. Ditzler			2366		9207/4-9496								
REQUISITION NUMBER	SAMPLING DATE	SAMPLING TIME	COMP.	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS							
	9/01/94	0935		✓	GW-634	5	✓						√E94244 0004
	9/01/94	1040		✓	GW-631	5	✓						√E94244 0002
	9/01/94	1040		✓	GW-631	5	✓						E94244 0005
	9/01/94	1300		✓	GW-632	5	✓						E94244 0003
	9/01/94	1310		✓	GW-508	5	✓						E94244 0001
	9/01/94	1250		✓	GW-632	5	✓						E94244 0006
	9/01/94	0710		✓	Bldg. 9207 Trip Blank	2	✓						E94244 0007
													Don Behrman/UST Wells
													RUSH

UCN-15487 (2 10-84)

Signatures Required on Back

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
F. L. Ditzler	9/01/94 1438	M W Hughes	1SEP94 1438			
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By. (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone

REMARKS:

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

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Tennessee Department of Environment and Conservation

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