MARTIN MARIETTA

Y/SUB/95-99069C/K49/4

SITE STATUS MONITORING REPORT FOR UNDERGROUND STORAGE TANK 2331–U AT BUILDING 9201-1

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

May 1995

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

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

Y/SUB/95-99069C/K49/4

SITE STATUS MONITORING REPORT FOR UNDERGROUND STORAGE TANK 2331-U AT BUILDING 9201-1

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

May 1995

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

94-047MS/051595

TABLE OF CONTENTS

SITE STATUS MONITORING REPORT

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

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

SIGNATURE PAGE

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

See Attached Certification		
Owner/Operator (Print)	Signature	Date
Christopher David Potter	[signature] TN2345	5/26/95
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

26 day of May, 19 95.

Suzanne Knott
Notary Public

My Commission expires: 01-27-96 (Notary Seal)

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

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

U.S. Department of Energy
Owner and Operator

By:

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

6/6/95
Date Signed

Martin Marietta Energy Systems, Inc.
Co-Operator

By:

T.R. Butz
Martin Marietta Energy Systems, Inc.
Y-12 Plant Manager

5/25/95
Date Signed

DINAH L. SEXTON NOTARY PUBLIC AT LARGE KNOX COUNTY, TENNESSEE EXP. 10-4-98

Dinah L. Sexton NOTARY (Stamp/Seal)

Dinah L. Sexton

Note: Both signatures have been notarized per requirements.

1. INTRODUCTION

1.1 Purpose and Scope

The purpose of this document is to present potentiometric, groundwater quality and vapor monitoring data required for site status monitoring of underground storage tank (UST) 2331-U at the Building 9201-1 Site. Site status monitoring has been conducted at the site as part of a Monitoring Only program approved by the Tennessee Department of Environment and Conservation (TDEC) based on review and approval of Site Ranking (Site Ranking Form approved May 23, 1994). This document presents the results of the second semiannual site status monitoring that was performed in May 1995. Site status monitoring and preparation of this report have been conducted in accordance with the requirements of TDEC Rule 1200-1-15 and the TDEC *UST Reference Handbook, Second Edition* (TDEC 1994) Technical Guidance Document (TGD) 007.

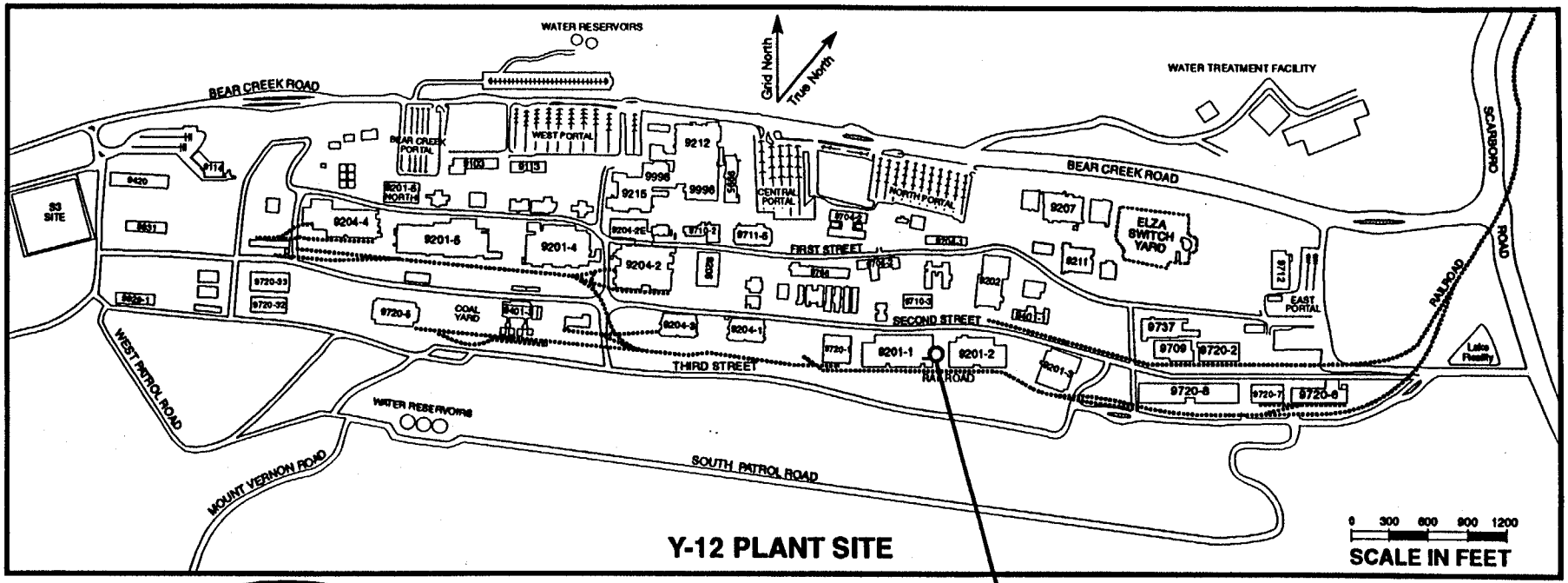
This document is organized into three sections. Section 1 presents introductory information relative to the site including the regulatory initiative and a site description. Section 2 includes the results of measurement and sampling of monitoring wells GW-193, GW-657, GW-707, GW-708, GW-808, GW-809, and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

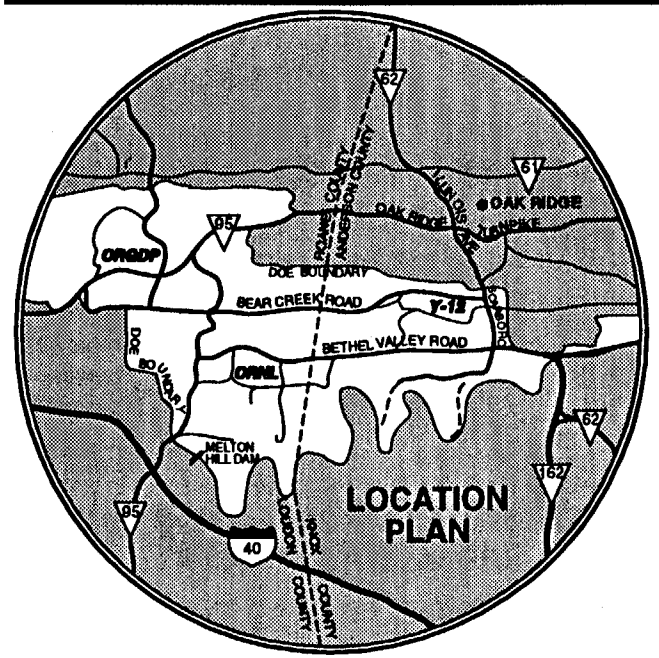
1.2 Site Description

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

The UST was a 560-gallon gasoline tank that was first suspected of leaking in 1988. Tightness testing confirmed that the tank was leaking and the tank was subsequently excavated and removed. An Initial Site Characterization and Environmental Assessment identified the presence of petroleum contamination above applicable TDEC Closure Action Levels. A Corrective Action Plan (CAP) was prepared and approved and Baseline Monitoring was performed in support of corrective action (11/93). However, site ranking performed in accordance with the newly issued TGD-014 (1/94) indicated that contaminant concentrations were sufficiently low and contaminant exposure sufficiently limited in extent to qualify for a monitoring only program in lieu of active remediation.

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





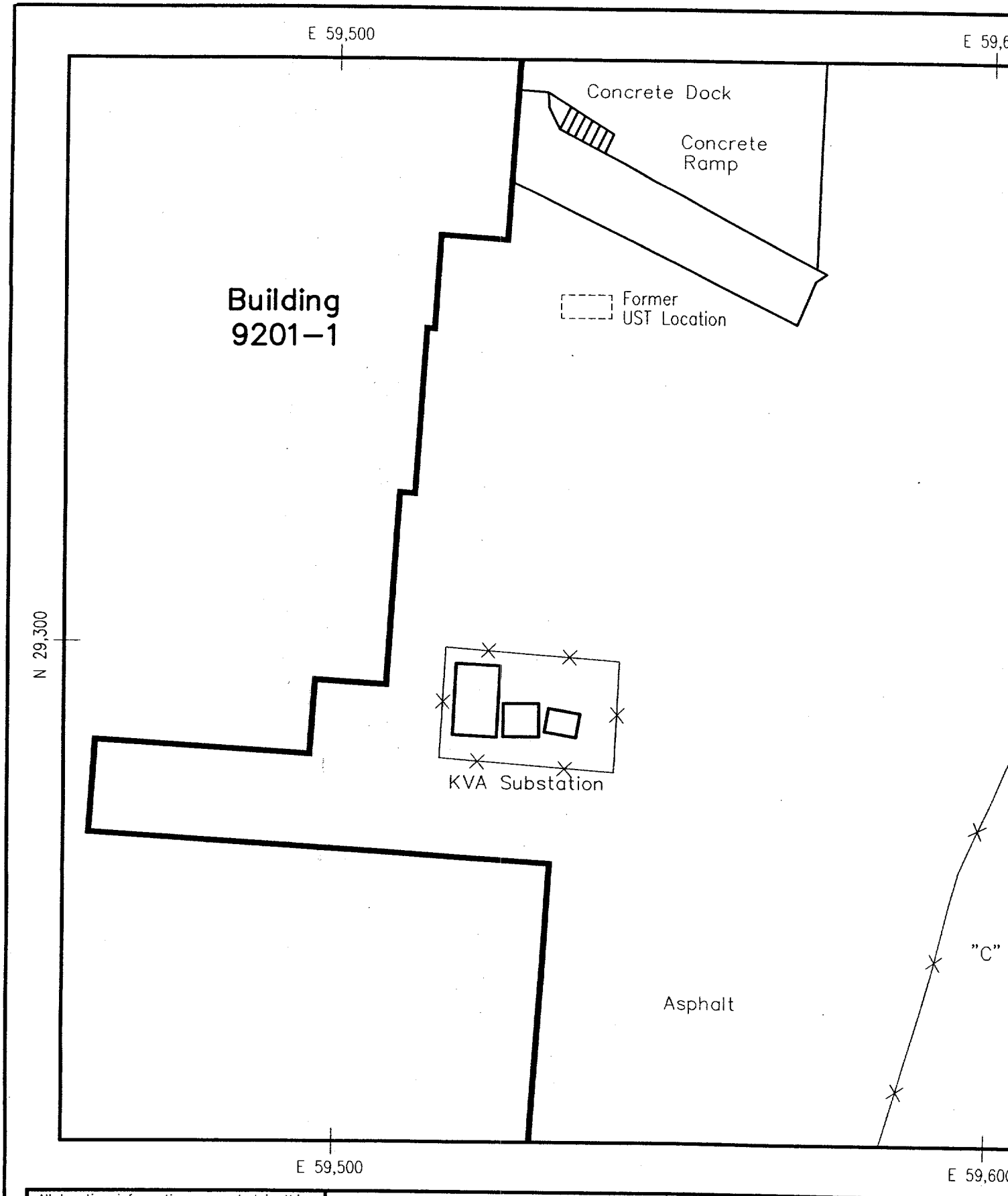
BUILDING 9201-1 SITE

MARTIN MARIETTA ENERGY SYSTEMS, INC.
ENVIRONMENTAL MANAGEMENT DEPARTMENT

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

Figure 1-1. Location of the Building 9201-1 Site at the Y-12 Plant

1-031792-077



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.

0 5 10 20 40

SCALE: 1" = 20'

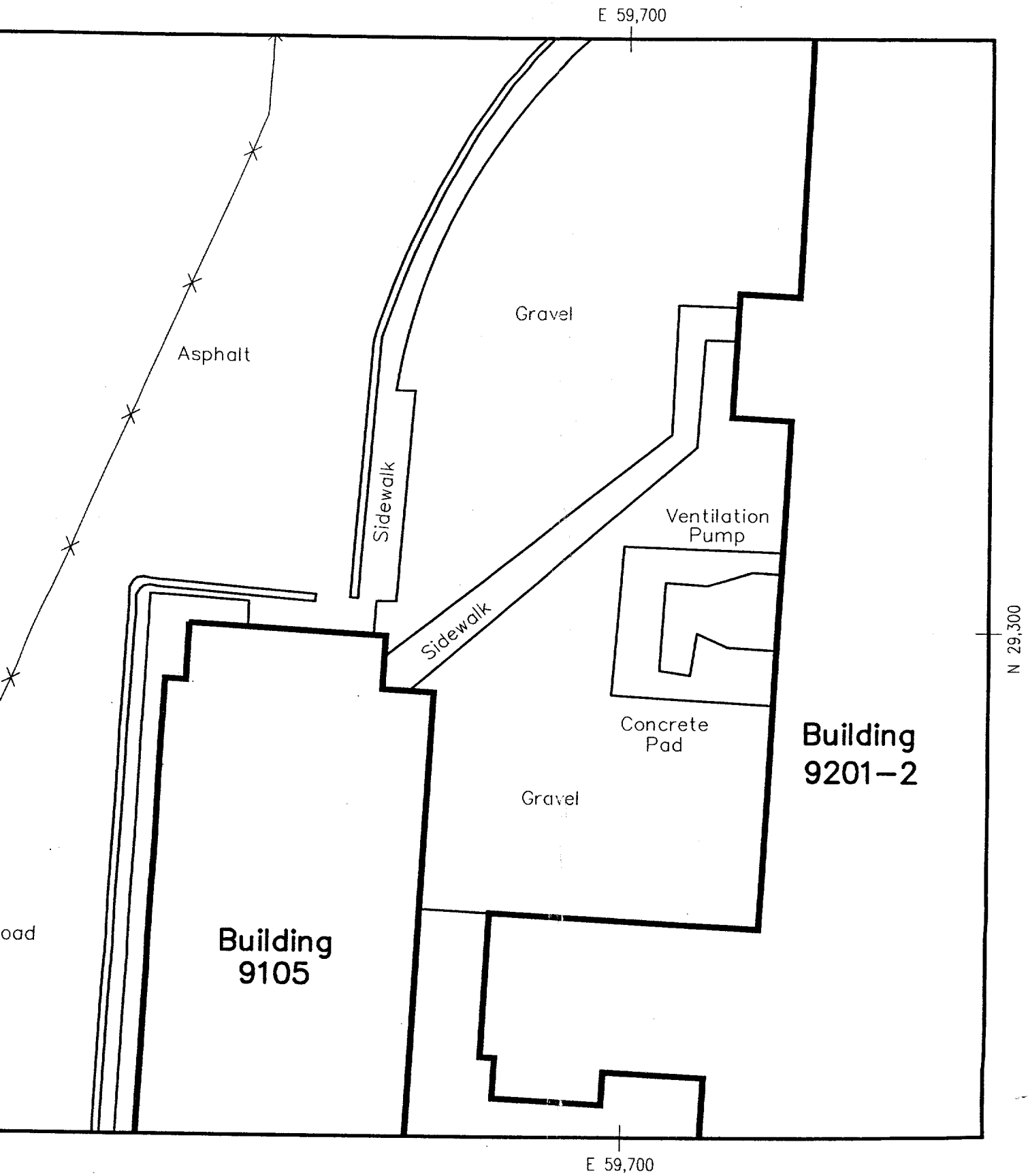
REV. 2 – 05/18/95 SAIC FILE: 93021R1/DWGS/131SITE

Y-12 PLANT NORTH

Legend

Building

Fence



Martin Marietta Energy Systems, Inc.
Environmental Management Department

FIGURE 1-2

Building 9201-1 Site
Site Map

2. GROUNDWATER MONITORING

2.1 Groundwater Measurement, Sample Collection, and Analysis

2.1.1 Well Locations

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

2.1.2 Groundwater Measurement and Sampling

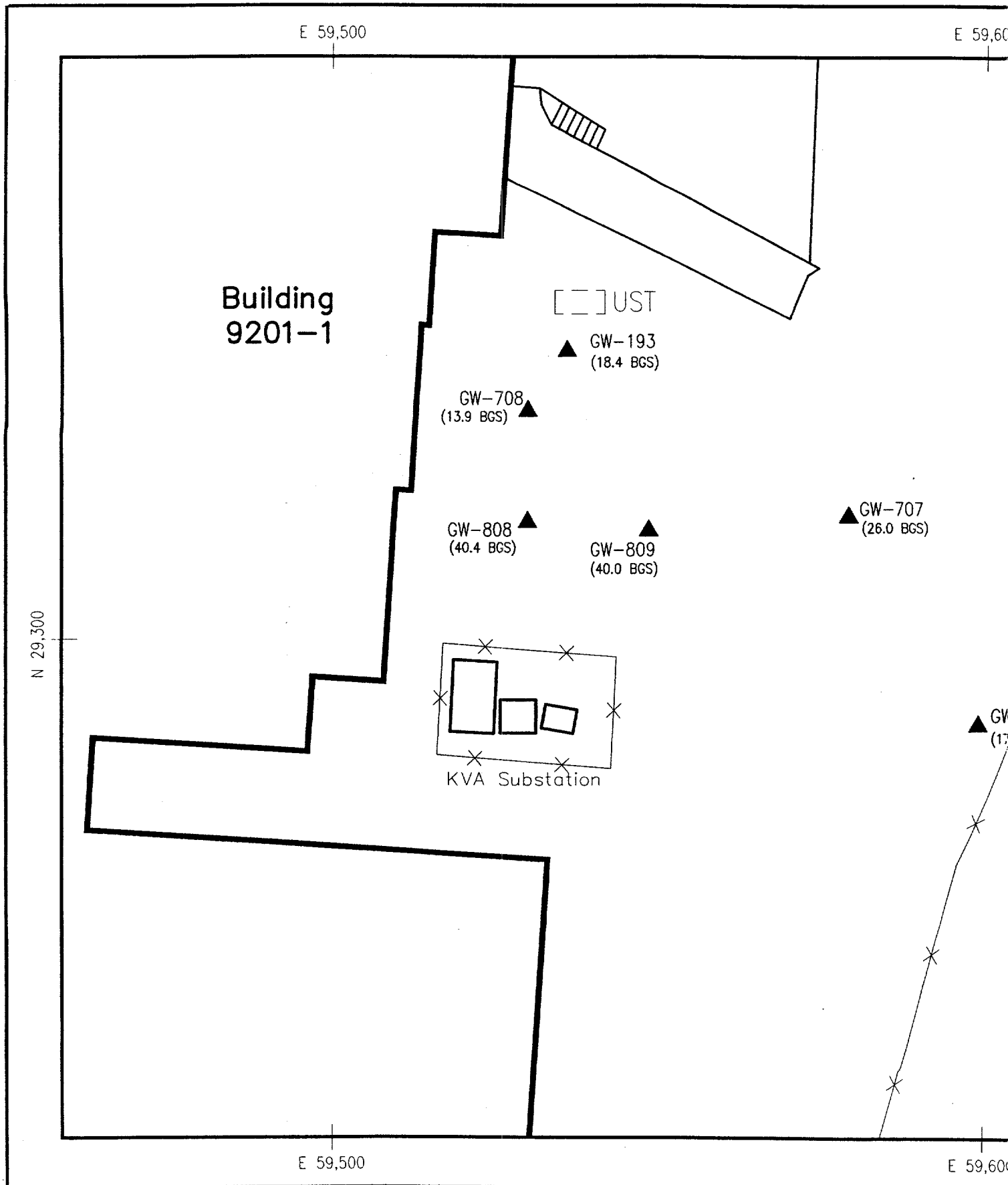
Current groundwater level measurement and sampling of the monitoring wells at the Building 9201-1 Site occurred on December 14, 1994 and May 4, 1995. Water levels were measured to the nearest 0.01 ft using an electronic water level indicator. Each well was then purged of three well volumes prior to sampling. Field measurement of pH, conductivity, temperature, and dissolved oxygen was conducted during purging to ensure representativeness for sampling. Monitoring wells GW-809, and GW-810 had elevated pH (>10.0), but this is not expected to affect analytical results. No measurable free product was encountered during water level measurement or sampling in any of these wells. However, an oily sheen and petroleum odor were observed during purging and sampling of wells GW-193 and GW-708. A slight sulfur odor was observed in GW-657 possibly due to the close proximity of the sewer line. Samples were collected using a bailer and transferred into pre-cleaned glass containers with zero headspace.

2.1.3 Sample Analysis

Groundwater samples were analyzed for total petroleum hydrocarbons-gasoline range organics (TPH-GRO), and for benzene, toluene, ethylbenzene, and xylenes (BTEX) at the Y-12 Plant Environmental Laboratory (a TDEC Division of UST approved laboratory).

2.2 Potentiometric Data

Potentiometric data for monitoring wells at the Building 9201-1 Site from the site status monitoring measurement events are presented in Table 2-1. Figures 2-2 and 2-3 present potentiometric contour maps from these two events. These figures indicate an irregular potentiometric surface with locally variable groundwater flow directions. A localized water table high southeast of the former UST site (around wells GW-707 and GW-657) appears to be reasonably persistent. This water table high may be related to a subsurface feature (e.g., fracture) or may reflect a small difference in head between unconsolidated and bedrock wells. However, the general flow direction, for any petroleum contaminants entering groundwater from the former UST depicted for both periods of measurement, is from north to south across the site.



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.

0 5 10 20 40

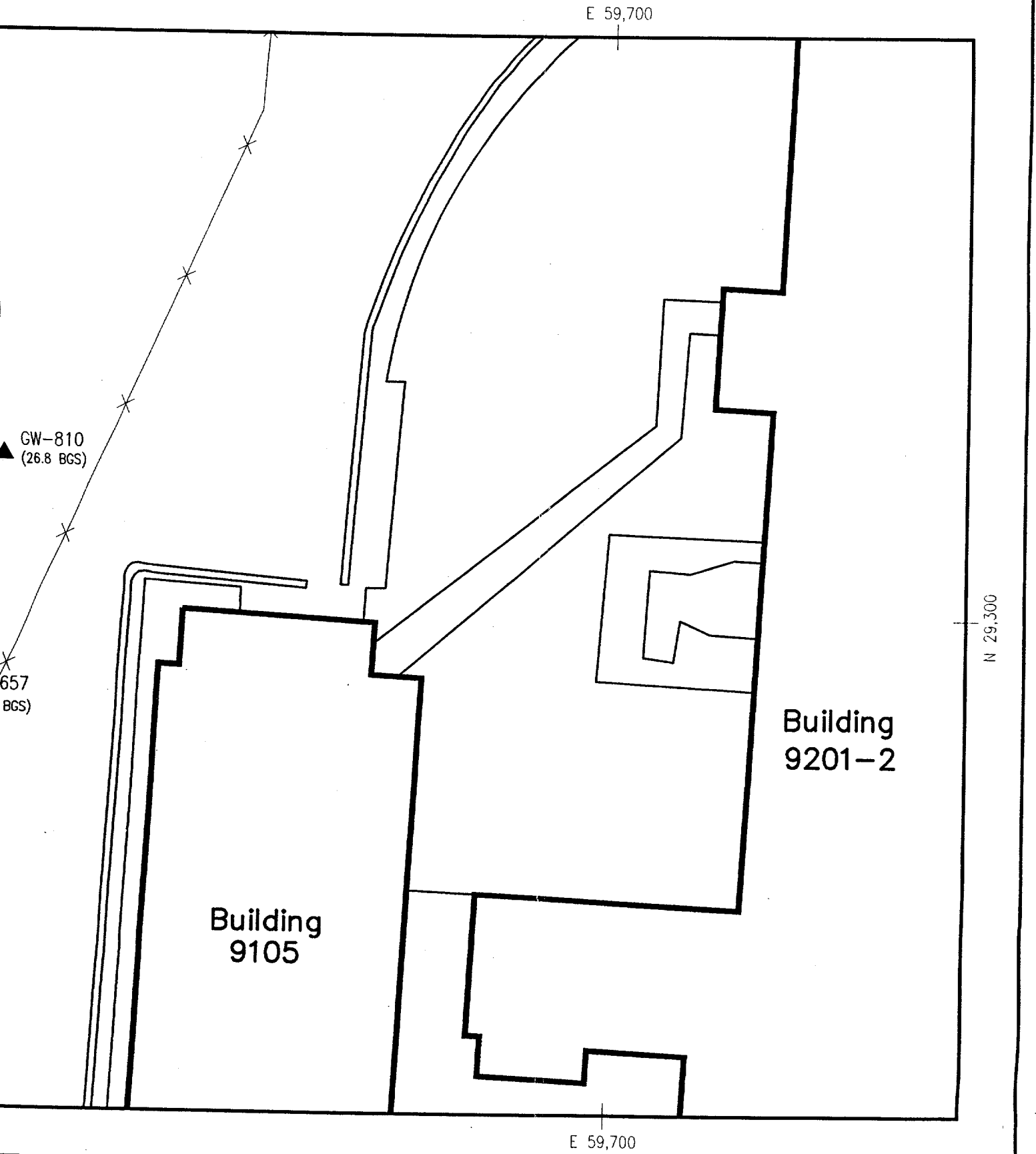
SCALE: 1" = 20'

Y-12 PLANT NORTH

REV. 2 – 05/12/95 SAIC FILE: 95021R1/DWGS/131MON

Legend

▲ GW–193 (18.4 BGS) Groundwater Mo
Total Depth Bel



oring Well Location
Ground Surface (BGS)

Martin Marietta Energy Systems, Inc.
Environmental Management Department

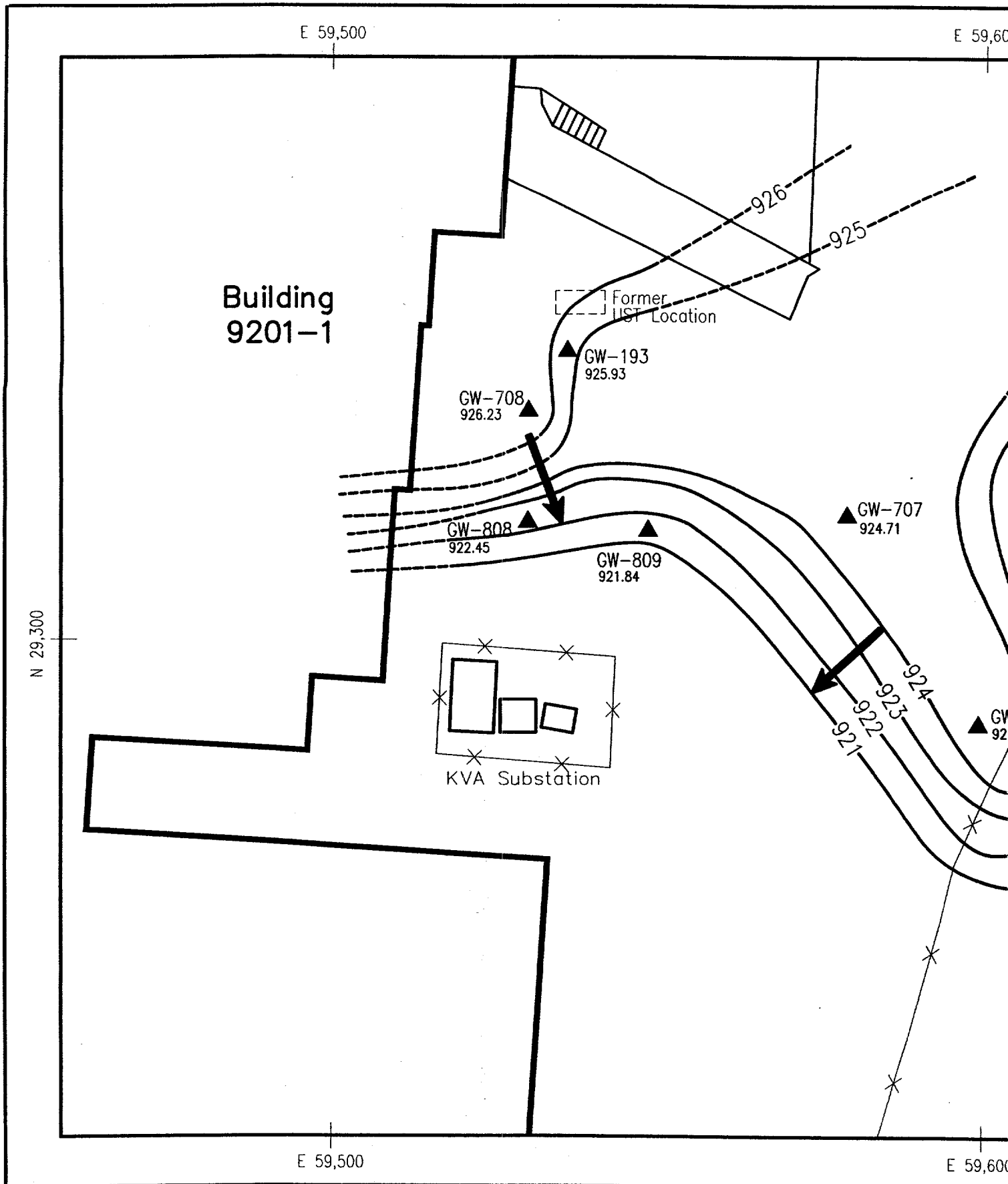
FIGURE 2-1
Building 9201-1 Site
Monitoring Well Location Map

Table 2-1. Water level measurements at the Building 9201-1 Site for the periods of December 1994 and May 1995

Monitoring well number	Date measured	Well depth (from TOC)	Top of casing (ft-MSL)	Top of casing to water level (ft-BTOC)	Potentiometric surface elevation (ft-MSL)
GW-193	12/14/94	21.0	934.00	8.07	925.93
	05/04/95	21.0	934.00	7.76	926.24
GW-657	12/14/94	15.2	930.53	6.30	924.23
	05/04/95	15.2	930.53	6.38	924.15
GW-707	12/14/94	16.6	930.91	6.20	924.71
	05/04/95	16.6	930.91	5.88	925.03
GW-708	12/14/94	13.1	930.87	4.64	926.23
	05/04/95	13.1	930.87	4.65	926.22
GW-808	12/14/94	36.1	930.75	8.30	922.45
	05/04/95	36.1	930.75	7.70	923.05
GW-809	12/14/94	36.0	931.04	9.20	921.84
	05/04/95	36.0	931.04	8.69	922.35
GW-810	12/14/94	26.1	931.44	8.95	922.49
	05/04/95	26.1	931.44	8.35	923.09

Notes:

MSL - mean sea level
BTOC - below top of casing
TOC - 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.

0 5 10 20 40

SCALE: 1" = 20'

REV. 2 – 05/18/95 SAIC FILE: 93021R1/DWGS/131POTEN

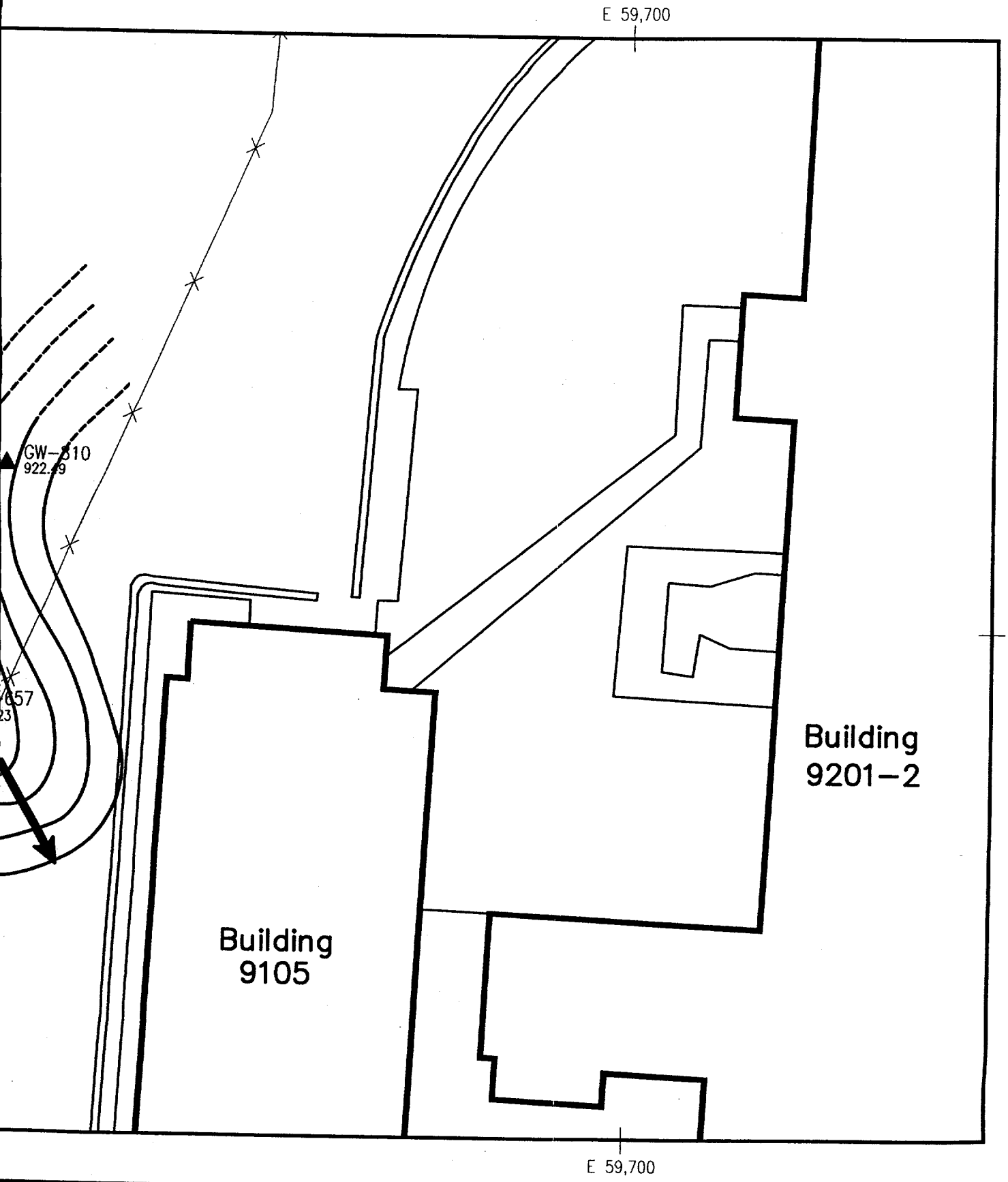
Y-12 PLANT NORTH

Legend

—925— Groundwater Potentiom Line (Feet Above MSL)

--925-- Inferred Groundwater P Contour Line (Feet Abo

Interpreted Groundwater



ic Contour

entiometric
MSL)

Flow Direction

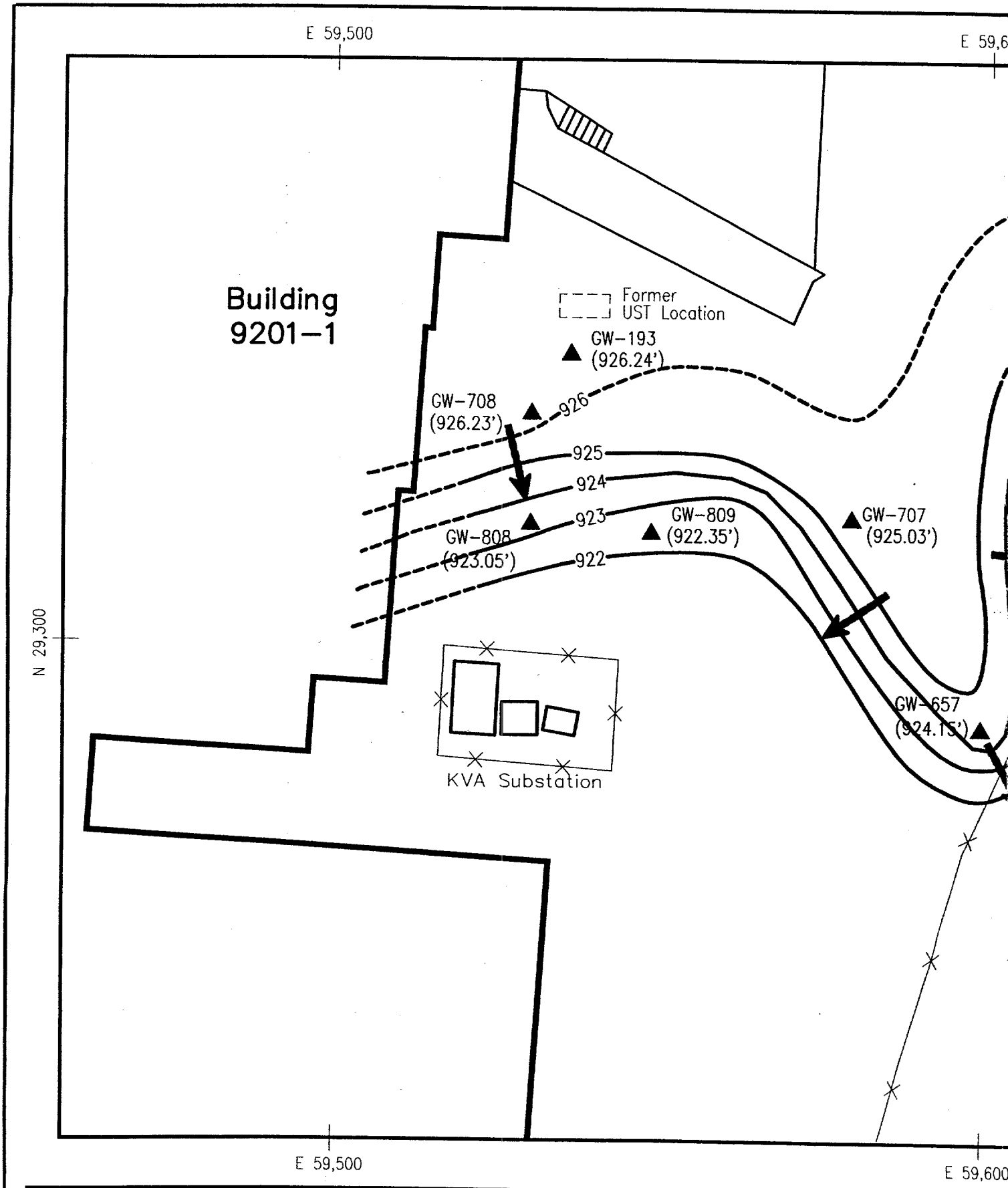
▲ GW-193 Groundwater Monitoring Well Location

925.93 Water Level Measurement Dec. 1994 (Feet Above MSL)

Martin Marietta Energy Systems, Inc.
Environmental Management Department

FIGURE 2-2

Building 9201-1 Site
Groundwater Potentiometric
Contour Map Dec. 1994



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.

0 5 10 20 40

SCALE: 1" = 20'

REV. 2 – 05/18/95 SAIC FILE: 95021R2/DWGS/131POTJN

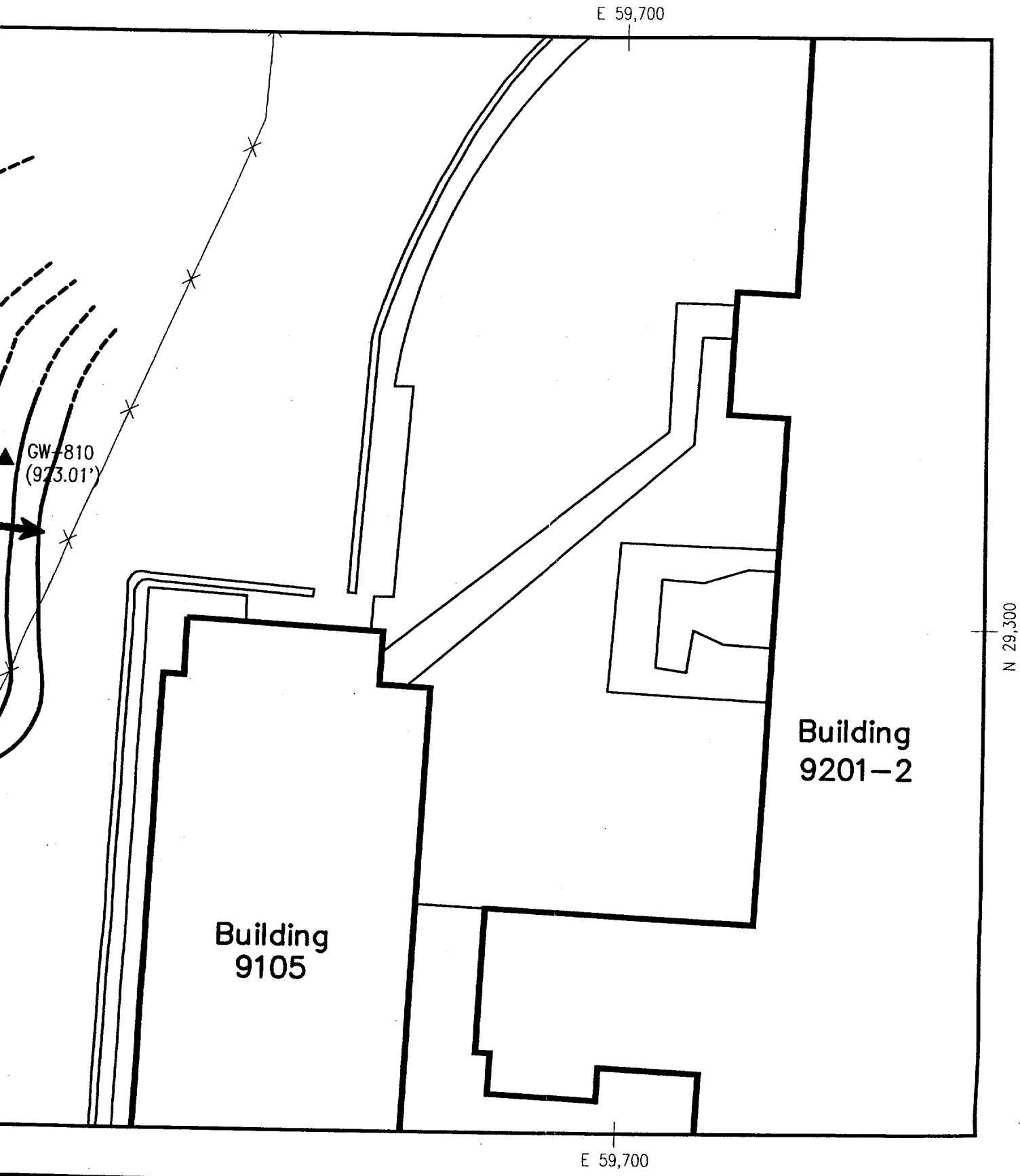
Y-12 PLANT NORTH

Legend

925 — Groundwater Potenti Line (Feet Above MS

924 — Inferred Groundwater Contour Line (Feet

Interpreted Groundwa



etric Contour
)
Potentiometric
ove MSL)
r Flow Direction

▲GW-193 Groundwater Monitoring Well Locations

(925.29') Water Level Measurement May 1995

Martin Marietta Energy Systems, Inc.
Environmental Management Department

FIGURE 2-3

Building 9201-1 Site
Groundwater Potentiometric
Contour Map May 1995

2.3 Groundwater Analytical Data

Analytical data for groundwater sampled at the site during site status and comprehensive monitoring and baseline sampling are presented in Table 2-2. Analytical results for the site status monitoring did not indicate any significant increase or decrease in the level of contamination as compared to historical monitoring. Benzene and TPH values for GW-193 and GW-708 continued to exceed the applicable Closure Action Levels of 0.07 ppm for benzene and 1.0 ppm for TPH, Both of these wells have historically produced values in excess of these closure limits. These results produce no change in the horizontal area of groundwater contamination as defined by the comprehensive monitoring data. Analytical results for GW-657, GW-707, GW-808, GW-809, and GW-810 show no groundwater contamination detected above analytical quantitation limits, which are below the applicable Closure Action Levels. These data indicate that groundwater contamination has not migrated downgradient to the location of these wells, and suggests the area of groundwater contamination is relatively stable over time. This is consistent with previous monitoring results and the calculated hydraulic gradient, velocity, and conductivity from slug testing of wells GW-193 and GW-707 (Energy Systems 1992). It is expected that contaminant levels will fall off slowly as contaminant degradation continues because of the slow migration and limited mixing of the contaminated groundwater.

Table 2-2. Analytical results for groundwater samples collected during site status and comprehensive monitoring and baseline sampling

Sampling event	Sampling date	TPH-GRO[1] (ppm)	Benzene (ppm)	Ethylbenzene (ppm)	Toluene (ppm)	Xylenes (ppm)
			GW-193			
Site status monitoring	05-04-95	2.400	*0.350	0.280	.077	0.200
Site status monitoring	12-14-94	*3.000	*0.620	0.320	0.230B[2]	0.360B
Comprehensive monitoring	6-21-94	*4.100	*0.420	0.400	0.200	0.480
Baseline sampling	11-2-93	*5.50	*1.68E[3]	0.575	0.235	0.353
			GW-657			
Site status monitoring	05-04-95	<0.100	0.010U	0.010U	0.010U	0.010U
Site status monitoring	12-14-94	<0.100	0.010U	0.010U	0.010U	0.010U
Comprehensive monitoring	6-21-94	0.100U[4]	0.010U	0.010U	0.010U	0.010U
Baseline sampling	11-2-93	<0.100	<0.001	<0.001	<0.001	<0.001
			GW-707			
Site status monitoring	05-04-95	<0.100	0.010U	0.010U	0.010U	0.010U
Site status monitoring	12-14-94	<0.100	0.010U	0.010U	0.010U	0.010U
Comprehensive monitoring	6-21-94	0.042J[5]	0.002J	0.010U	0.010U	0.001J
Baseline sampling[6]	11-2-93	<0.100	<0.001	<0.001	<0.001	<0.001
			GW-708			
Site status monitoring	05-04-95	6.400	*0.500	0.430	0.062	0.930
Site status monitoring	12-14-94	*5.300	*0.820	0.610	0.094B	1.200B
Comprehensive monitoring	6-21-94	*5.300	*0.980	0.620	0.110	0.690
Baseline sampling[6]	11-2-93	*7.50	*0.900	0.800	0.095	1.575
			GW-808			
Site status monitoring	05-04-95	<0.100	0.010U	0.010U	0.010U	0.010U
Site status monitoring	12-14-94	<0.100	0.010U	0.010U	0.010U	<.010B
Comprehensive monitoring	6-21-94	0.012J	0.010U	0.010U	0.010U	0.006J
Baseline sampling	11-2-93	0.140	<0.001	0.016	<0.001	0.111
			GW-809			
Site status monitoring	05-04-95	<0.100	0.010U	0.010U	0.010U	0.010U
Site status monitoring	12-14-94	<0.100	0.010U	0.010U	0.010U	0.010U
Comprehensive monitoring	6-21-94	0.010	0.010U	0.010U	0.010U	0.010U
Baseline sampling	11-2-93	<0.100	0.001	0.003	0.001	0.016

Table 2-2 (continued)

Sampling event	Sampling date	TPH-GRO[1] (ppm)	Benzene (ppm)	Ethylbenzene (ppm)	Toluene (ppm)	Xylenes (ppm)
			GW-810			
Site status monitoring	05-04-95	<0.100	0.010U	0.010U	0.010U	0.010U
Site status monitoring	12-14-94	<0.100	0.010U	0.010U	0.010U	0.010U
Comprehensive monitoring	6-21-94	0.021J	0.010U	0.010U	0.010U	0.010U
Baseline sampling	11-2-93	0.190	0.001	0.019	0.001	0.136

[1]TPH-GRO - Total Petroleum Hydrocarbons-Gasoline Range Organics.
[2]B - Indicates the analyte was found in the associated blank as well as in the sample.
[3]E - Benzene exceeded calibration range.
[4]U - Contaminant was not detected above quantitation limit during the analysis.
[5]J - Value estimated for contaminant.
[6]Sample identification error suspected. Baseline sample results for wells GW-707 and GW-708 have been transposed to correct this error.
*Denotes contamination above the applicable closure action levels for the site.

3. VAPOR MONITORING

3.1 Monitoring Methods and Locations

Vapor monitoring as part of the Monitoring Only program has been conducted at seven access points along subsurface stormwater and sewer drainage lines that cross the Building 9201-1 Site. However, none of the subsurface utilities present at the site crosses the groundwater plume defined by the most recent data. The locations of vapor monitoring locations are illustrated in Figure 3-1.

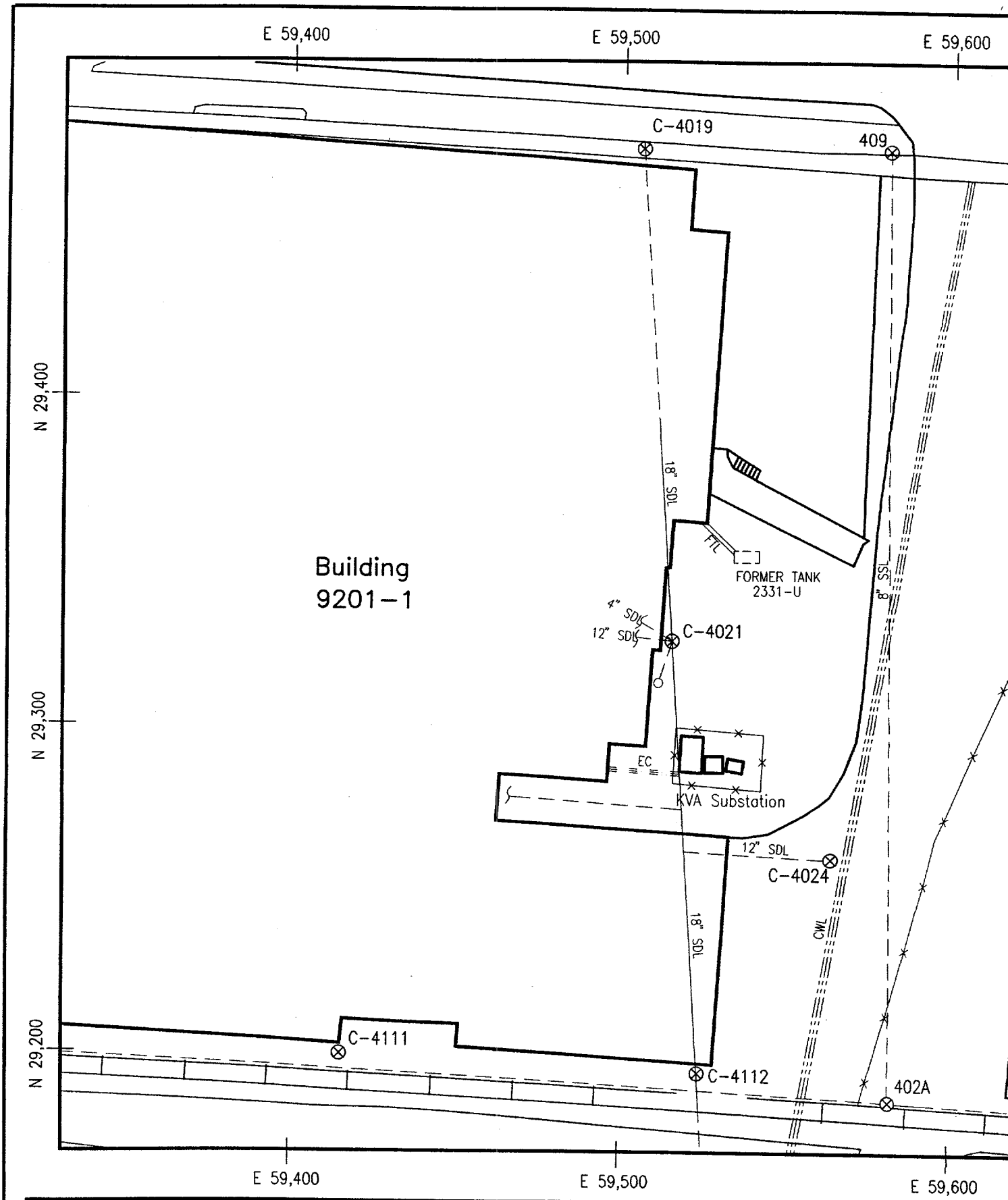
At each location, the atmosphere was monitored using direct reading instruments. Organic vapors were measured using a Thermo Environmental™ organic vapor meter. Oxygen and lower explosive limit (LEL) were monitored .

3.2 Vapor Monitoring Results

The results of site status vapor monitoring conducted May 10, 1995 at the Building 9201-1 Site are presented in Table 3-1. Measured oxygen percentages are within the range of normal air concentrations. LEL readings of 0% indicate that an explosion hazard does not exist within any of the monitored utilities. Organic vapor readings range from 0.0 ppm to 1.8 ppm above background. These results are not considered indicative of the presence of measurable petroleum contamination, but may be due to the presence of residual petroleum contamination or other organic compounds (naturally occurring or man-made) at the site. However, the non-discriminatory nature of the organic vapor meter used in monitoring does not allow specific identification of the source.

Table 3-1. Vapor monitoring results for the Building 9201-1 Site, May 10, 1995

Sampling location	O_2 %	LEL %	Organic vapors (ppm)	Background organic vapors (ppm)
402A	20.8	0	0.0 to 0.6	0.0
409	20.7	0	0.0 to 0.6	0.0
C-4019	20.7	0	0.0 to 0.6	0.0
C-4021	20.7	0	0.6 to 1.8	0.0
C-4112	20.7	0	0.0	0.0
C-4111	20.8	0	0.0 to 0.6	0.0
C-4024	20.8	0	0.0	0.0



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.

0 20 40 80

SCALE: 1" = 40'

Y-12 PLANT NORTH

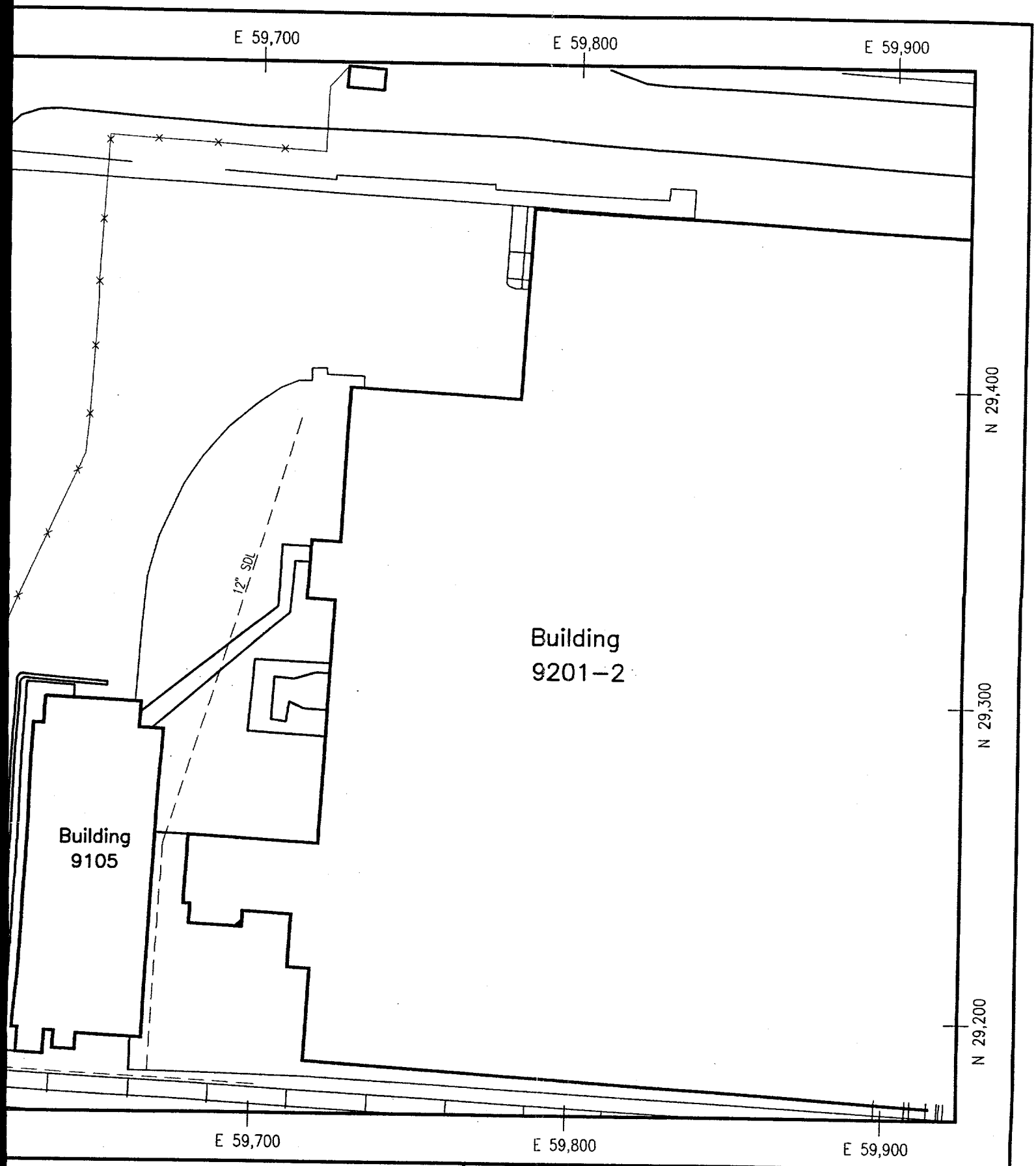
REV. 2 – 05/12/95 SAIC FILE: 93021R1/DWGS/131VAPOR

Legend

FTL — Fuel Transfer Li

CWL — Chilled Water Lir

EC — Electrical Condui



— SDL — Underground Stormwater Drainage Line

— SSL — Sanitary Underground Sewer Line

⊗ Vapor Monitoring Location

Martin Marietta Energy Systems, Inc.
Environmental Management Department

FIGURE 3-1

Building 9201-1 Site
Vapor Monitoring Sampling
Location Map

REFERENCES

American Conference of Governmental Industrial Hygienists 1993-1994. *The 1993-1994 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*, ISDN: 1-882417-03-8.

Energy Systems (Martin Marietta Energy Systems, Inc.) 1992. *Corrective Action Plan for Underground Storage Tank 2331-U at the Building 9201-1 Site*, Y/SUB-92-99928C/3.

Energy Systems 1994. *Corrective Action Baseline Report for Underground Storage Tank 2331-U, Building 9201-1*, Y/SUB/94-99069C/Y15/2.

TDEC (Tennessee Department of Environment and Conservation) 1994. *Underground Storage Tank Reference Handbook*, Second Edition.

APPENDIX A
LABORATORY ANALYTICAL RESULTS FOR SITE STATUS MONITORING (05/04/95)

OFFICIAL REPORT

/11/95 15:44:18 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

BMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230034	8601	APPROVED

TE SAMPLED: 05/04/95 10:00:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-808 CHARGE #: S2205F26
TE RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MMENTS: 9201-1 UST GW-808 FOR DON BOHRMAN, 1 WEEK TURNAROUND

L. T. Emerson

ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 10:24:00 APPROVER: E030124

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
0	Gasoline Range Organics		<100		ug/L
432	Benzene		10 U		ug/L
0414	Ethylbenzene		10 U		ug/L
3883	Toluene		10 U		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

*** LAST PAGE ***

OFFICIAL REPORT

11/95 15:22:42 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

MITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID #0-010117		E951230041	8601	APPROVED

E SAMPLED: 05/04/95 10:12:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-809 CHARGE #: S2205F26
E RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
PLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MENTS: 9201-1 UST GW- 809 FOR DON BOHRMAN, 1 WEEK TURNAROUND

T: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
P MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 12:21:00 APPROVER: E030124

NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
32	Benzene		10 U		ug/L
414	Ethylbenzene		10 U		ug/L
883	Toluene		10 U		ug/L
0207	Xylene		10 U		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

OFFICIAL REPORT

'11/95 15:22:49 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

SMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230042	8601	APPROVED

'E SAMPLED: 05/04/95 11:22:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-810 CHARGE #: S2205F26
'E RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
PLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MENTS: 9201-1 UST GW-810 FOR DON BOHRMAN, 1 WEEK TURNAROUND

T: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
P MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 15:05:00 APPROVER: E030124

NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
32	Benzene		10 U		ug/L
414	Ethylbenzene		10 U		ug/L
883	Toluene		10 U		ug/L
0207	Xylene		10 U		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

*** LAST PAGE ***

OFFICIAL REPORT

11/95 15:22:58 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

SUBMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230043	8601	APPROVED

TE SAMPLED: 05/04/95 11:04:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-657 CHARGE #: S2205F26
TE RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MMENTS: 9201-1 UST GW-657 FOR DON BOHRMAN, 1 WEEK TURNAROUND

ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 15:44:00 APPROVER: E030124

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
0	Gasoline Range Organics		<100		ug/L
32	Benzene		10 U		ug/L
0414	Ethylbenzene		10 U		ug/L
3883	Toluene		10 U		ug/L
0207	Xylene		10 U		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

*** LAST PAGE ***

OFFICIAL REPORT

'11/95 15:23:04 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

SMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230044	8601	APPROVED

TE SAMPLED: 05/04/95 13:35:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-707 CHARGE #: S2205F26
TE RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MMENTS: 9201-1 UST GW-707 FOR DON BOHRMAN, 1 WEEK TURNAROUND

ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 16:23:00 APPROVER: E030124

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
0	Gasoline Range Organics		<100		ug/L
32	Benzene		10 U		ug/L
0414	Ethylbenzene		10 U		ug/L
3883	Toluene		10 U		ug/L
0207	Xylene		10 U		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

*** LAST PAGE ***

OFFICIAL REPORT

/11/95 15:44:24 Y-12 ANALYTICAL SERVICES ORGANIZATION

SMITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230045	8601	APPROVED

TE SAMPLED: 05/04/95 14:44:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-193 CHARGE #: S2205F26
TE RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
MPLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL: L. T. Emerson

MMENTS: 9201-1 UST GW-193 FOR DON BOHRMAN, 1 WEEK TURNAROUND

ST: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
EP MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 17:40:00 APPROVER: E030124
MMENTS: GRO, BENZENE, AND ETHYLBENZENE ARE REPORTED FROM A 1:2 DILUTION RUN ON 5/10/95 AT 10:16

S NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		2400		ug/L
32	Benzene		350		ug/L
0414	Ethylbenzene		280		ug/L
3883	Toluene		77		ug/L
50207	Xylene		200		ug/L
	GRO Quantitation Limit		200		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

*** LAST PAGE ***

OFFICIAL REPORT

11/95 15:44:30 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

MITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230046	8601	APPROVED

E SAMPLED: 05/04/95 13:48:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW-708 CHARGE #: S2205F26
E RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
PLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MENTS: 9201-1 UST GW-708 FOR DON BOHRMAN, 1 WEEK TURNAROUND

T: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
P MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/10/95 18:19:00 APPROVER: E030124
MENTS: GRO, BENZENE, ETHYLBENZENE, AND M,P-XYLENE ARE REPORTED FROM A 1:4 DILUTION RUN ON 5/10/95 AT 11:15

NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		6400		ug/L
32	Benzene		500		ug/L
414	Ethylbenzene		430		ug/L
883	Toluene		62		ug/L
0207	Xylene		930		ug/L
	GRO Quantitation Limit		400		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

OFFICIAL REPORT

'11/95 15:23:09 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

MITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230047	8601	APPROVED

E SAMPLED: 05/04/95 07:25:00 DATE NEEDED: 05/11/95 LOCATION: 9201-1 GW EQ. RINSE CHARGE #: S2205F26
E RECEIVED: 05/04/95 DATE COMPLETED: 05/11/95 PROJECT CODE: CASE: U03130
PLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MENTS: 9201-1 UST GW EQUIP. RINSE FOR DON BOHRMAN, 1 WEEK TURNAROUND

T: GRO TPH Gasoline Range Organics Including BTEX REPLICATE: 1 STATUS: APPROVED
P MTH: PROC MTH: SW846 8020 PHASE: TIME ANALYZED: 05/09/95 17:02:00 APPROVER: E030124

NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
	Gasoline Range Organics		<100		ug/L
32	Benzene		10 U		ug/L
414	Ethylbenzene		10 U		ug/L
883	Toluene		10 U		ug/L
0207	Xylene		10 U		ug/L
	GRO Quantitation Limit		100		ug/L
	BTEX Quantitation Limit		10		ug/L
	GRO Amount in Blank		NONE		ug/L

*** LAST PAGE ***

OFFICIAL REPORT

11/95 15:44:37 Y-12 ANALYTICAL SERVICES ORGANIZATION PAGE 1 OF 1

MITTER	ADDRESS	CUSTOMER ID	REQ NO	SAMPLE NO	MTC	STATUS
rman, Donald Edwa	Building 9115 MS 8219	FID# 0-010117		E951230048	8601	APPROVED

E SAMPLED: 05/04/95 07:20:00 DATE NEEDED: 05/11/95 LOCATION: 9207 UST T.B. CHARGE #: S2211601
E RECEIVED: 05/04/95 DATE COMPLETED: 05/10/95 PROJECT CODE: CASE: SQT001
PLER: 029776 SAMPLE DESCRIPTION: GRAB FINAL APPROVAL:

MENTS: 9201-1 UST GW TRIP BLANK FOR DON BOHRMAN, 1 WEEK TURNAROUND

T: VOA624 Volatile Organics by GC/MS (EPA 624) REPLICATE: 1 STATUS: APPROVED
P MTH: EPA624 PROC MTH: EPA 624 PHASE: TIME ANALYZED: 05/09/95 13:11:00 APPROVER: E030124

NUMBER	DETERMINATION	DT	RESULT	CONFIDENCE	UNIT
73	Chloromethane		10 U		ug/L
39	Bromomethane		10 U		ug/L
14	Vinyl chloride		10 U		ug/L
03	Chloroethane		10 U		ug/L
94	Trichlorofluoromethane		10 U		ug/L
92	Methylene chloride		3 BJ		ug/L
54	1,1-Dichloroethene		10 U		ug/L
43	1,1-Dichloroethane		10 U		ug/L
605	trans-1,2-Dichloroethene		10 U		ug/L
63	Chloroform		10 U		ug/L
062	1,2-Dichloroethane		10 U		ug/L
56	1,1,1-Trichloroethane		10 U		ug/L
35	Carbon tetrachloride		10 U		ug/L
74	Bromodichloromethane		10 U		ug/L
758	2-Chloroethylvinyl ether		10 U		ug/L
75	1,2-Dichloropropane		10 U		ug/L
61015	cis-1,3-Dichloropropene		10 U		ug/L
16	Trichloroethene		10 U		ug/L
481	Dibromochloromethane		10 U		ug/L
05	1,1,2-Trichloroethane		10 U		ug/L
32	Benzene		10 U		ug/L
61026	trans-1,3-Dichloropropene		10 U		ug/L
52	Bromoform		10 U		ug/L
184	Tetrachloroethene		10 U		ug/L
45	1,1,2,2,-Tetrachloroethane		10 U		ug/L
883	Toluene		10 U		ug/L
907	Chlorobenzene		10 U		ug/L
414	Ethylbenzene		10 U		ug/L

DOE Y-12 PLANT CHAIN OF CUSTODY FORM

№ 20447

SAMPLER: (Signature) F. L. Ditzler | Dept. 2366 | Building/Phone 9207/4-9496

REQUISITION NUMBER	SAMPLING DATE	SAMPLING TIME	COMP.	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	WATER	OIL	SOIL	SOLVENT	SLUDGE	OTHER	REMARKS: BETX, TPH/GRO; 1 week Turnaround for Don Bohrman
	5/04/95	1000		✓	9201-1 GW-808	4	✓						E95123034
		1012		✓	9201-1 GW-809	4	✓						E95123041
		1122		✓	9201-1 GW-810	4	✓						E95123042
		1104		✓	9201-1 GW-657	4	✓						E95123043
		1335		✓	9201-1 GW-707	4	✓						E95123044
		1444		✓	9201-1 GW-193	4	✓						E95123045
		1348		✓	9201-1 GW-708	4	✓						E95123046
		0725		✓	9207 Equip. Rinse	4	✓						E95123047
	↓	0720		✓	9207 Trip Blank	2	✓						E95123048

UCN-15487 (2 10-84)

Signatures Required on Back

UST Sampling / 1 wk. Turnaround for Don Bohrman

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Date / Time	Dept.	Building	Phone
J. L. Ditzler	5/04/95 15[16]	B. Campbell	5/04/95 15[16]	7222	9207	1-4347
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.**

DISTRIBUTION

HEALTH, SAFETY, ENVIRONMENT AND ACCOUNTABILITY ORGANIZATION

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

MECHANICAL OPERATIONS ORGANIZATION

A.A. Barnes

ENVIRONMENTAL COMPLIANCE ORGANIZATION

S.H. Welch

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

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

U. S. DEPARTMENT OF ENERGY

E.M. Atkins
R.J. Spence/L.M. Sparks
S.R. Lankford

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