environmental restoration project

A Department of Energy
Environmental Cleanup Program

LA-UR-01-2793
June 2001
ER2000-0363

Los Alamos National Laboratory Permit Modification Request

No Further Action Proposals

Volume II

Los Alamos
NATIONAL LABORATORY
Los Alamos, NM 87545

8.0 SWMU 15-010(c) ACTIVE STORM DRAINLINE AND OUTFALL

8.1 Summary

SWMU 15-010(c) consists of an active storm drainline that channels stormwater from the exterior of Building TA-15-92 toward its associated outfall at the edge of Water Canyon. The stormwater line was mistakenly identified as a sanitary sewer line in the Comprehensive Environmental Assessment Response Program (CEARP) report and subsequently, the SWMU report. No solid or hazardous wastes or constituents were ever managed in Building TA-15-92. SWMU 15-010(c) is being proposed for NFA under NFA Criterion 2 (the site has never been used for the management of solid or hazardous waste and/or constituents).

8.2 Description and Operational History

8.2.1 Site Description

SWMU 15-010(c) (Figure 8.2-1) is a steel drainline that runs 105 ft south from a stair landing at Building TA-15-92, a camera firing point, toward its associated outfall. Laboratory Engineering Drawings ENG 4 C-942 (sheet 1 of 6) (LASL 1950, 70002) (Attachment A) and ENG-R 719 (sheet 29 of 29) (LASL 1958, 24005)(Attachment B) show a discrepancy regarding whether the drainline is of 3-in. or of 5-in. diameter.

The SWMU report (LANL 1990, 07512, p. 15-010)(Attachment C) states that, based on Engineering Drawing ENG-R 716 (sheet 26 of 29) (LASL 1958, 24002) (Attachment D), the CEARP describes SWMU 15-010(c) as a sanitary sewer that served the camera firing point, Building TA-15-92. However, a close inspection of ENG-R-716 shows the drainline detail for Building TA-15-31 rather than for Building TA-15-92. It is easy to see how the mistake was made because the configuration of each building and its nearby roads are similar and could easily be mistaken for one another. Additionally, under the "NOTES" section on p. 15-010 (Attachment C), the SWMU report states that new information on SWMU 15-010(c) suggests that this unit is actually a storm drain and therefore should not be considered a SWMU.

In 1993–1994, Santa Fe Engineering conducted a study to identify building drain piping, locate outfalls, and characterize wastewater flows and sources that existed throughout the Laboratory at the time of the study. Drain piping was verified by dye checking. The Santa Fe Engineering study shows that Building TA-15-92 contains no drains of any kind. (Santa Fe Engineering 1994, 20981) (Attachment E).

8.2.2 Operational History

The SWMU 15-010(c) drainline collects only stormwater from the stair landing on the south side of Building TA-15-92 and channels it to an outfall at the edge of Water Canyon. The stair landing is below grade and requires a drain to prevent stormwater from flooding it during storm events.

Engineering Drawing ENG 4 C-942 (sheet 1 of 6) (Attachment A) demonstrates that this drain line has been in place from the time of Building TA-15-92's construction in 1950.

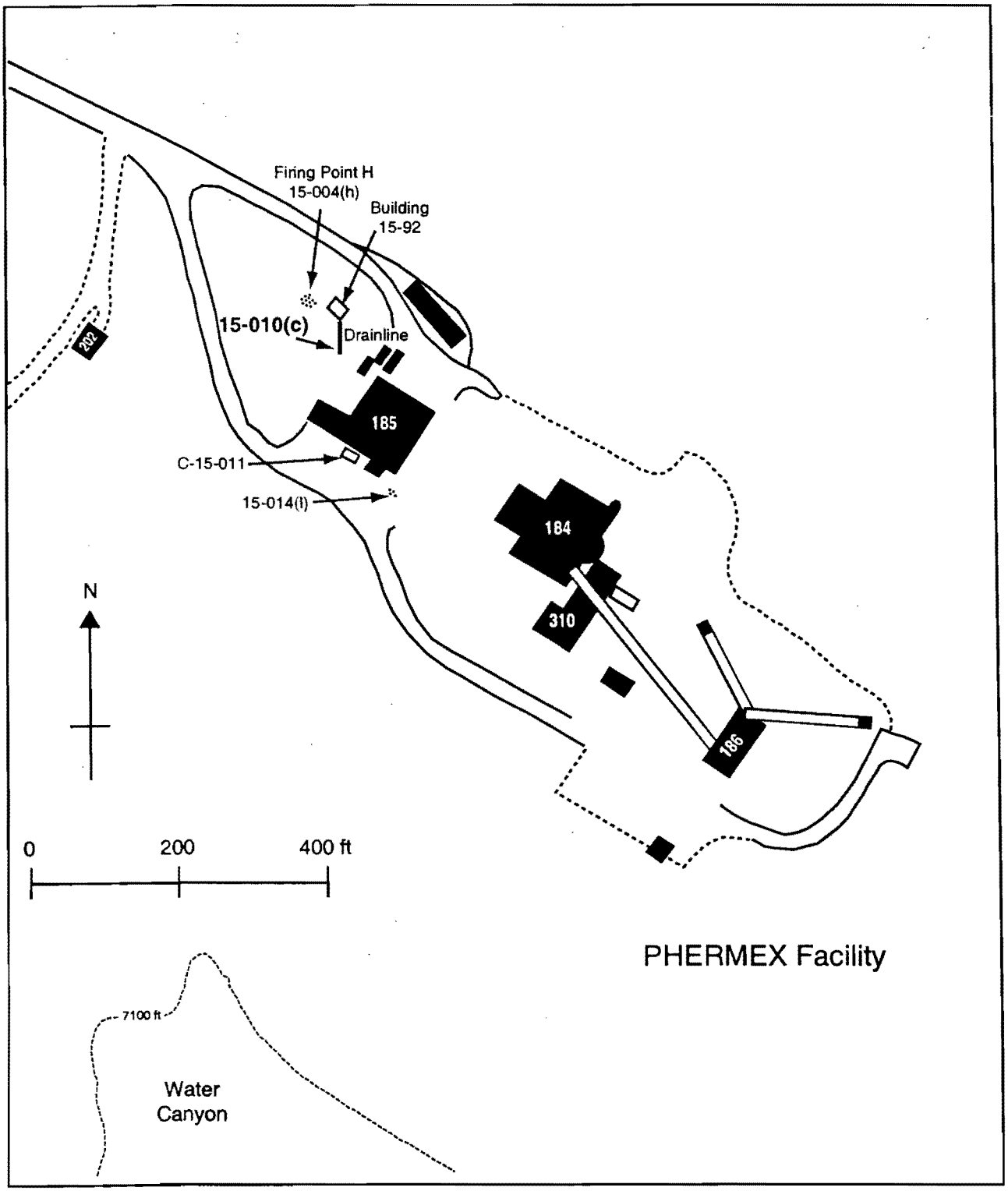

Figure 8.2-1. Site diagram of PHERMEX facility, showing PRSs and nearby structures

8.3 Land Use

8.3.1 Current

TA-15 is an industrial area used for the research, development, and testing of high explosives. It is a high-security, restricted access area enclosed by a chain-link fence topped with barbed wire. Access to TA-15 is obtained only by passing through a security guard station. These security measures effectively eliminate the possibility of inadvertent site intrusion.

8.3.2 Future/Proposed

The Laboratory does not anticipate any change from the industrial restricted-access use of TA-15 for the operational life of the Laboratory (LANL 1995, 57224, pp.11–12)(Appendix D, Attachment 1). Future industrial use of this TA will continue the research, development, and testing of high explosives.

8.4 No Further Action Proposal

8.4.1 Rationale

Based on documented information, the ER Project has demonstrated that

- since its installation in 1950, SWMU 15-010(c) has always been and currently is an active stormwater drainline serving an exterior stair landing at Building TA-15-92, and
- no drains exist within Building TA-15-92.

Thus the ER Project has demonstrated that SWMU 15-010(c) was never used for the management (that is, generation, treatment, storage or disposal) of RCRA solid or hazardous wastes and/or constituents.

8.4.2 Criterion

Based on the information presented in Sections 8.2 through 8.4.1, SWMU 15-010(c) is proposed for NFA under NFA Criterion 2.

8.5 Supporting Documentation Attached

Attachment A:	LASL Engineering Drawing ENG 4 C-942 (sheet 1 of 6). (LASL 1950, 70002)
Attachment B:	LASL Engineering Drawing ENG-R 719 (sheet 29 of 29). (LASL 1958, 24005)
Attachment C:	Relevant page from the SWMU report. (LANL 1990, 07512, p. 15-010)
Attachment D:	Engineering Drawing ENG-R 716 (sheet 26 of 29). (LASL 1958, 24002)
Attachment E:	Relevant page from the wastewater stream characterization report for TA-15-92, 1994 update. (Santa Fe Engineering 1994, 20981)
Appendix D, Attachment 1:	LANL site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

8.6. Reference Used for Text of the Request for Permit Modification for SWMU 15-010(c)

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086," Los Alamos National Laboratory Report LA-UR-92-3968, Los Alamos, New Mexico, p. 8-26. (LANL 1993, 20946)

8.7 History of Regulatory Deliverables

LANL, July 2, 1993:	RFI work plan for OU 1086 submitted to EPA Region 6. (LANL 1993, 20946)
EPA, July 26, 1994:	NOD for OU 1086 RFI work plan. (EPA 1994, 40380)
LANL, August 24, 1994:	Response to NOD for OU 1086 RFI work plan. (LANL 1994, 40595)
EPA, October, 1994:	List of modifications for OU 1086 RFI work plan transmitted to LANL (EPA 1994). Letter not found, but the list is included in our December 12, 1994 response to the letter.
LANL (via DOE/LAAO), December 12, 1994:	Response to list of modifications for OU 1086 RFI work plan. (DOE 1994, 45291)
EPA, January 9, 1995:	Approval of OU 1086 RFI work plan, LANL response to NOD, and modifications. (EPA 1995, 52910.102)
LANL, May 20, 1996:	RFI report for PRSs in TA-15 submitted to NMED. (LANL 1996, 54977)
NMED, June 11, 1997:	NOD for RFI report for PRSs in TA-15. (NMED 1997, 59155)
LANL, July 18, 1997:	Response to NOD for RFI report for PRSs in TA-15. (LANL 1997, 56292)
NMED, July 30, 1997:	Denial of RFI report for PRSs in TA-15. (NMED 1997, 56519)
LANL, August 24, 1998:	Response to July 30, 1997, denial of RFI report for PRSs in TA-15 (LANL 1998, 59483) and withdrawal of report.
NMED, October 15, 1998:	Approval of request for withdrawal and approval of extension for revised RFI report. (NMED 1998, 62322)

8.7.1 References for Regulatory Deliverables

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086," Los Alamos National Laboratory report LA-UR-93-3968, Los Alamos, New Mexico, p. 8-26. (LANL 1993, 20946)

EPA (US Environmental Protection Agency), July 26, 1994. "Notice of Deficiency, RFI Work Plan OU 1086, Los Alamos National Laboratory NM0890010515," EPA letter to J. Vozella (Chief, Environment, Safety, and Health Branch, DOE-LAAO) from W. Honker, P.E. (Chief, RCRA Permits Branch, EPA Region 6), Dallas, Texas. (EPA 1994, 40380)

LANL (Los Alamos National Laboratory), August 24, 1994. "Notice of Deficiency (NOD) Response for Operable Unit 1086 Resource Conservation and Recover Act (RCRA) Facility Investigation (RFI) Work Plan," Los Alamos National Laboratory letter ER:94-J351 to T. Taylor (DOE-LAAO) from J. Jansen (Project Manager, Environmental Restoration Project), Los Alamos, New Mexico. (LANL 1994, 40595)

DOE (US Department of Energy), December 12, 1994. "List of Modifications for the Operable Unit (OU) 1086 Resource Conservation and Recovery Act Facility Investigation Work Plan," DOE letter LAAMEP:7TT-057 to W. Honker (Chief, RCRA Permits Branch, Hazardous Waste Management Division, EPA Region 6) from T. Taylor (Program Manager, Environmental Restoration Program, DOE-LAAO), Los Alamos, New Mexico. (DOE 1994, 45291)

EPA (US Environmental Protection Agency), January 9, 1995. Review and approval of RFI Work Plan for Operable Unit 1086, EPA letter to J. Vozella (Chief, Environment, Safety, and Health Branch, DOE-LAAO) from A. Davis (Director, Hazardous Waste Management Division, EPA Region 6), Dallas, Texas. (EPA 1995, 52910.102)

LANL (Los Alamos National Laboratory), May 20, 1996. "Submittal of the Resource Conservation and Recovery Act Facility Investigation (RFI) Report for Potential Release Sites (PRSs) in Technical Area (TA) 15," Los Alamos National Laboratory letter EM/ER:96-278 to B. Garcia (NMED-HRMB) from J. Jansen (Program Manager, Environmental Restoration Project) and T. Taylor (Program Manager, DOE-LAAO), Los Alamos, New Mexico. (LANL 1996, 54977)

NMED (New Mexico Environment Department), June 11, 1997. "Notice of Deficiency and Request for Workplan Modification, RCRA Facility Investigation Report, Technical Area 15, Los Alamos National Laboratory NM0890010515," NMED letter to G.T. Todd (Area Manager, DOE-LAAO) from B. Garcia (Chief, Hazardous and Radioactive Materials Bureau, NMED), Santa Fe, New Mexico. (NMED 1997, 59155)

LANL (Los Alamos National Laboratory), July 18, 1997. "Response to NOD and Request for Workplan Modification on RFI Report Dated May 1996 for LANL LA-UR-96-278, for TA 15," Los Alamos National Laboratory letter EM/ER:97-274 to B. Garcia (NMED-HRMB) from J. Jansen (Program Manager, LANL/ER Project) and T. Taylor (Program Manager, DOE/LAAO), Los Alamos, New Mexico. (LANL 1997, 56292)

NMED (New Mexico Environment Department) July 30, 1997. "Denial of RCRA Facility Investigation Report and Response to Notice of Deficiency, Technical Area 15 (dated May 1996), Los Alamos National Laboratory NM0890010515," NMED letter to G.T. Todd (Area Manager, DOE-LAAO) and S. Hecker (Director, Los Alamos National Laboratory) from R.S. Dinwiddie (Manager, RCRA Permits Management Program, NMED-HRMB), Santa Fe, New Mexico. (NMED 1997, 56519)

LANL (Los Alamos National Laboratory), August 24, 1998. "Response to Denial of RFI Report and NOD Response for TA-15 (Former OU 1086, FU 2)," Los Alamos National Laboratory letter EM/ER:98-298 to R.S. Dinwiddie (NMED-HRMB) from J. Canepa (Program Manager, Environmental Restoration Project) and T. Taylor (Program Manager, DOE/LAAO), Los Alamos, New Mexico. (LANL 1997, 59483)

NMED (New Mexico Environment Department), October 15, 1998. "Request for Withdrawal, TA-15 RCRA Facility Investigation Report and Notice of Deficiency, Los Alamos National Laboratory (LANL) NM0890010515," NMED letter to T. Taylor (Project Manager, DOE-LAAO) and J. C. Browne, Director, Los Alamos National Laboratory) from B. Garcia (Chief, Hazardous and Radioactive Materials Bureau, NMED), Santa Fe, New Mexico. (NMED 1998, 62322)

15-010(c)

ATTACHMENTS

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

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Box # 892

Record Type: ENGINEERING DRAWING / MAP

Date: 12/27/50

Symbol: ENG 4 C-942

Subject:

SEE ER ID # 70002

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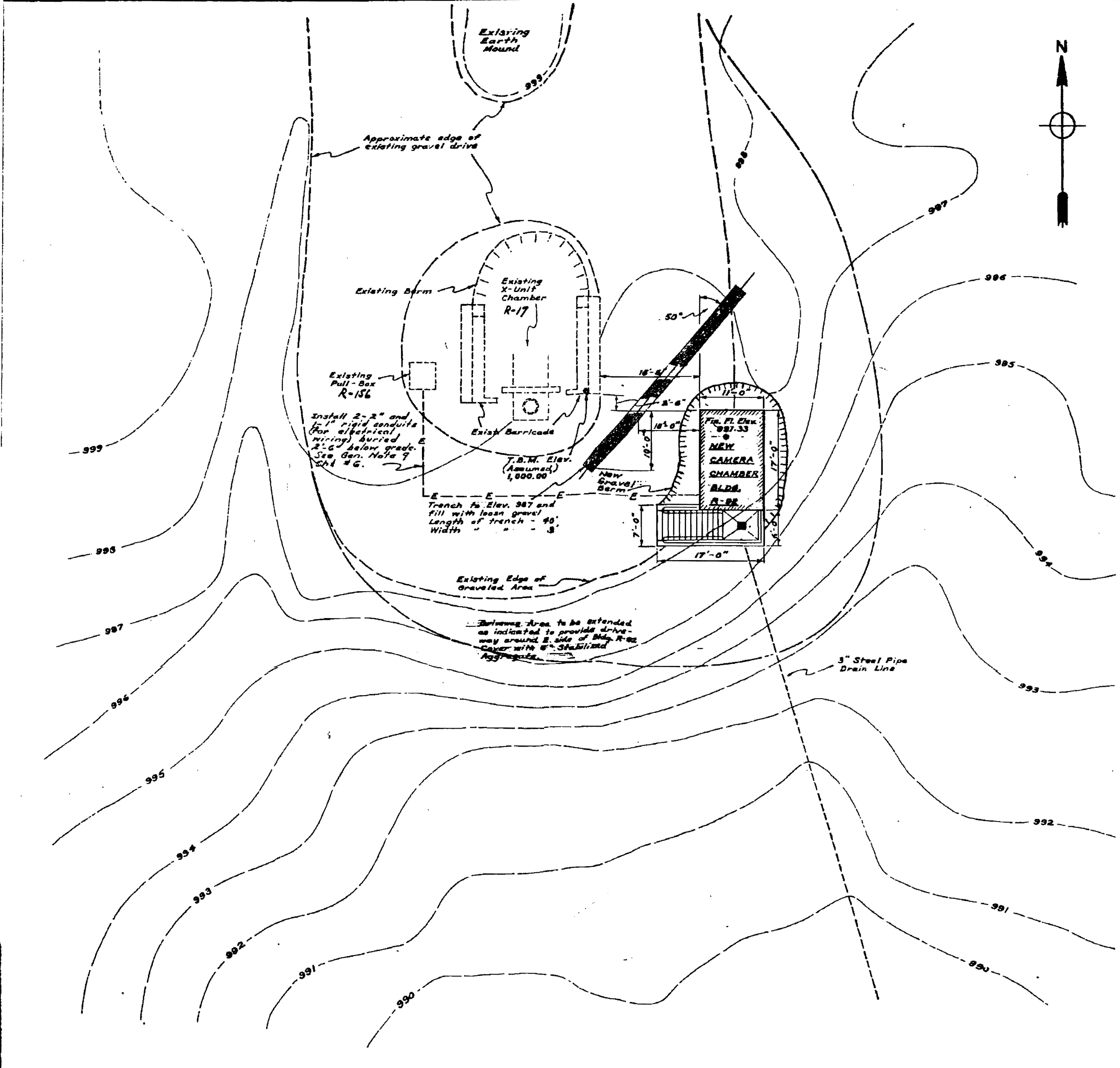

PLOT PLAN

Scale: 1" = 10'

NOTES:-

1. WHERE LINES AND GRADES ARE REQUIRED BY THE CONSTRUCTION INDICATED THEY WILL BE SET BY ENG 4 SURVEY PERSONNEL PRIOR TO THE BEGINNING OF THE JOB.

This Set of Drawings Consists of the following:

ENG 4 C 942	PLOT PLAN
ENG 4 C 943	STRUCTURAL PLANS & DETAILS
ENG 4 C 944	ARCHITECTURAL PLANS & DETAILS
ENG 4 C 945	DOOR DETAILS
ENG 4 C 946	ELECTRICAL PLAN
ENG 4 C 947	ELECTRICAL DETAILS

VERIFIED UNCLASSIFIED
PUBLICLY RELEASABLE
LANL Classification Group
P. Lang 5-14-2001

THIS JOB MUST BE INSPECTED AND APPROVED

BY............
INSPECTOR

OBSOLETE DEAD STORAGE

~~OFFICIAL USE ONLY~~

NO.	DATE	REVISIONS	BY	CK.	FINAL ENGR.	A.E.C. APP.
1	12-27-54	Work Completed (12-27-54) No Changes Required	JMM	RCK		

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

BLDG R-92

TA-15

PLOT PLAN

AUTHORIZED FOR: HEALTH NOT APPLICABLE; SAFETY GR; FIRE PR. GR; COMM. NOT APPLICABLE; GMX; Z1A; 7/31/50

DRAWN: BGH
CHECKED: JFE
A-E APPROVED
SCALE: 1" = 10'
DATE: 7-16-50
LAB. DWG. NO. ENG 4 C-942
SHEET 1 OF 6

SUBMITTED — CHIEF - DEPT. OF ENG.
RECOMMENDED — AEC.
APPROVED — AEC.

LOS ALAMOS SCIENTIFIC LABORATORY
DEPARTMENT OF ENGINEERING
CONSTRUCTION & MAINTENANCE GROUP

AEC. DRAWING NO.

Attachment A
15-010(c)

J.O. 185591

LAB. JOB NO. 574

70002

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Target

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SEE ER ID # 24005

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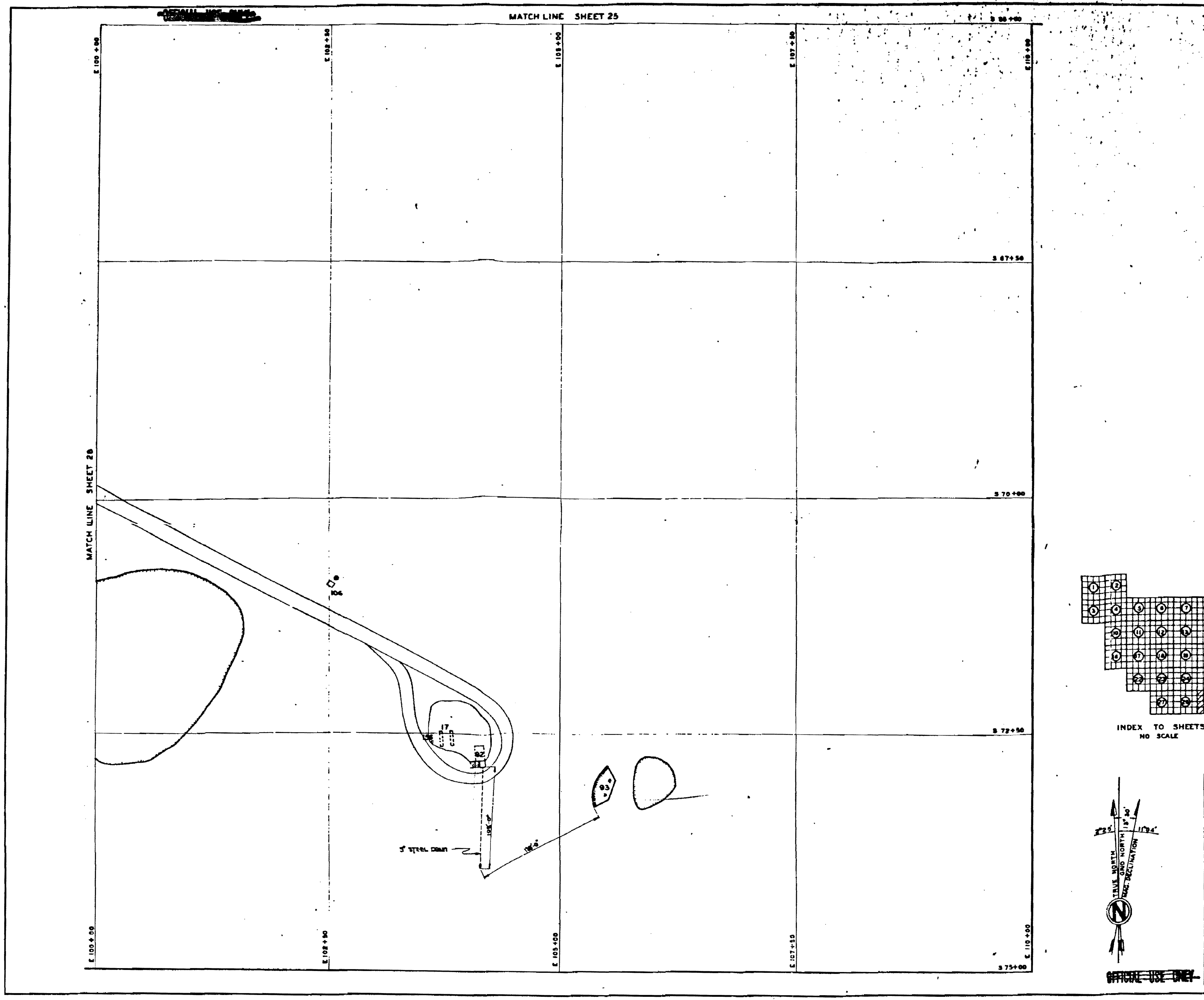

LEGEND
- W — WATER LINE
- G — GAS LINE
- SS — SANITARY SEWER
- LINE & VALVE

VERIFIED UNCLASSIFIED
PUBLICLY RELEASABLE
LANL Classification Group
P. Lang 5-14-2001

NO.	DATE	REVISIONS	BY	CHKD	GRP. LDR.	ENG.
2	10-30-58	REVISED TO FIELD CHECK STATUS OF 9-16-58	T.R.	BPW		
1		REVISED TO FIELD CHECK STATUS	SJK			

AUTHORIZED FOR: HEALTH, SAFETY, FIRE PROT., SEC.

LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPARTMENT — LOS ALAMOS, N. M.

UTILITY LOCATION PLAN
TA-15 R-SITE
WATER, SEWER, & FUEL SYSTEM

CHECKED / DESIGNER	RECOMMENDED / GROUP LEADER	APPROVED / ENG. DEPT. OFFICE
J. A. Singer	SER	JB

DRAWN	DATE	DRAWING NO.
AB	2-21-55	ENG-R-719
SCALE 1 IN. = 50 FT.	SHEET 29 OF 29	

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INFORMATION SHOWN
CURRENT AS OF 9-16-58

LAB. JOB NO.________

Attachment B

15-010(c)

SUMMARY

LOCATION	: TA-15	MATERIALS MANAGED	: SANITARY WASTE
TYPE OF UNIT(s)	: SEPTIC SYSTEM		SUSPECTED HAZARDOUS WASTE
UNIT USE	: TREATMENT/DISPOSAL		
OPERATIONAL STATUS	: INACTIVE		
PERIOD OF USE	: SEE BELOW		
HAZARDOUS RELEASE	: SUSPECTED		
RADIOACTIVE RELEASE	: NONE		

UNIT INFORMATION

Septic tank TA-15-80 [15-010(a)] was built in 1944 of reinforced concrete. The dimensions of the tank were 3' x 5' x 4' deep. Overflow from the tank probably went to a seepage pit or similar unit. It was abandoned in 1961. Septic tank TA-15-147 [15-010(b)] served Building TA-15-8, a shop building. The tank was built in 1947. In a 1972 survey, this tank was noted to have possible HE contamination. The tank was used between the 1940's and 1950's. There is conflicting data on this tank. Some engineering records indicate it was a 5' x 5' x 5'6" reinforced concrete industrial waste settling tank. Other records indicate it was a septic tank. However, since HE machining took place in the shop, it would be expected that TA-15-147 may have been used as an HE sump. The CEARP, based on engineering drawing ENG-R716, described a sanitary sewer which served the camera firing point, Building TA-15-92 [15-010(c)]. The sewer drained to a seepage field or an outfall at the edge of the canyon. It is not known whether the sewer line has been removed. However, this information appears to be incorrect, based on interviews with operating group members. The drain may have been a storm drain.

WASTE INFORMATION

Tank TA-15-80 served some of the early facilities; information on the type of waste that was handled by this tank is unavailable. Tank TA-15-147 may have HE contamination. The composition of the materials in the TA-15-92 sewer line is not available.

RELEASE INFORMATION

Information on location of overflow, possible contaminants, and releases from these units is unavailable.

NOTES

New information on SWMU No. 15-010(c), a drain from building TA-15-92, suggests that this unit is actually a storm drain and therefore should not be considered a SWMU. This unit includes an outfall formerly addressed as SWMU No. 15-012(b).

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
15-010(a)	TA15-8-S/ST/O-I-HW/RW		Tsk 24 : 1569	TA-15-80
15-010(b)	TA15-8-S/ST/O-I-HW/RW		Tsk 24 : 1570	TA-15-147
15-010(c)	TA15-8-S/ST/O-I-HW/RW		Tsk 23 : 1607 1611	TA-15-92

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

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Box # 292

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Subject:

SEE ER ID # 24002

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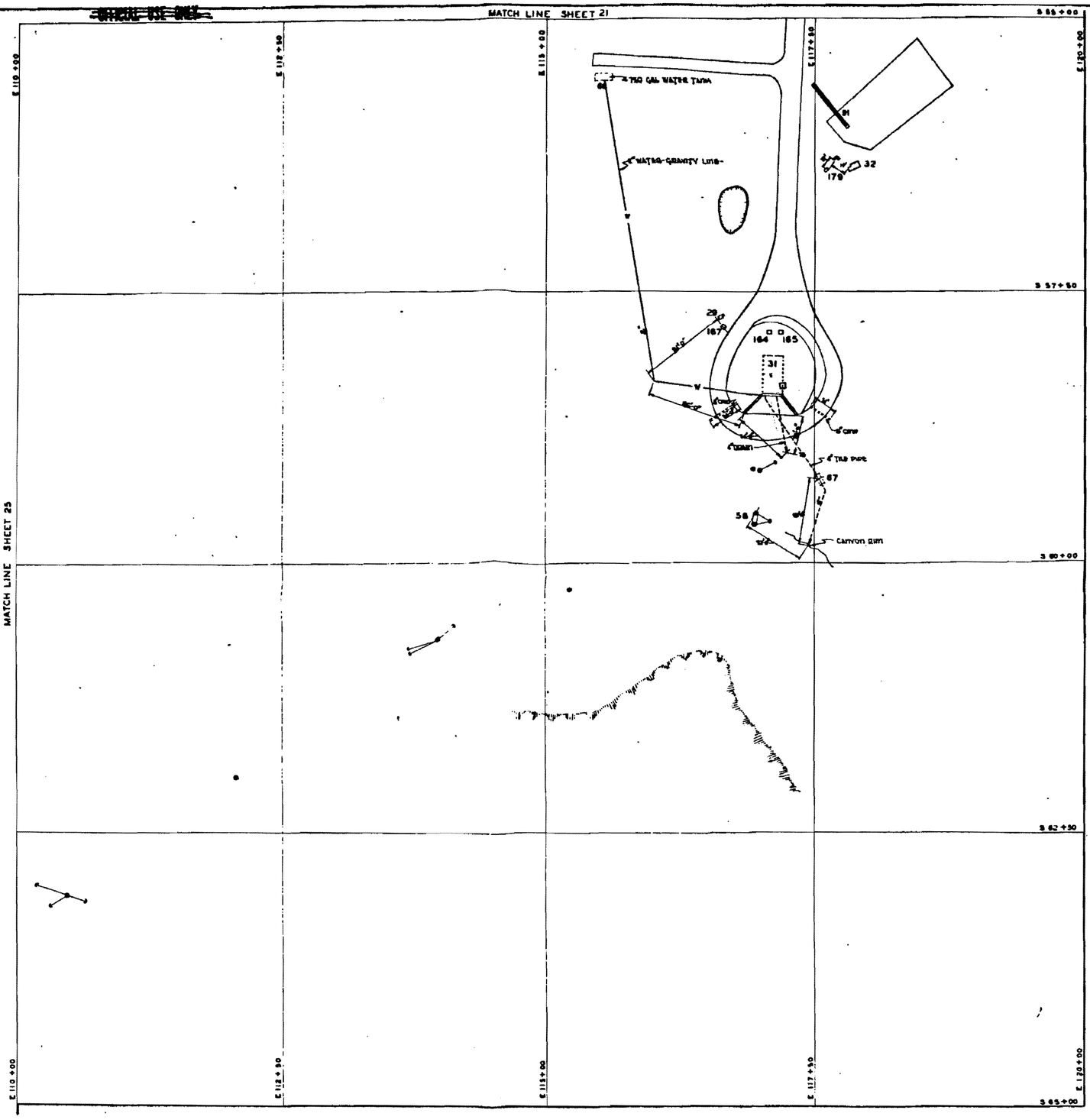
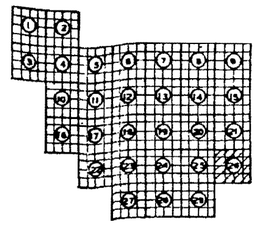


LEGEND

- W — WATER LINE
- G — GAS LINE
- SS — SANITARY SEWER
- LINE & VALVE



INDEX TO SHEETS
NO SCALE

VERIFIED UNCLASSIFIED
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P. Lang 5-14-2001

NO.	DATE	REVISIONS	BY	CHKD
2	9-30-58	REVISED TO FIELD CHECK STATUS OF 9-16-58	T.R.	BPM
1	[illegible]	REVISED TO FIELD CHECK STATUS	SDF	

AUTHORIZED FOR
HEALTH
SAFETY
FIRE PROT.
SEC.

LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
ENGINEERING DEPARTMENT — LOS ALAMOS, N. M.

UTILITY LOCATION PLAN
TA-15 R-SITE
WATER, SEWER & FUEL SYSTEM

CHECKED	RECOMMENDED	APPROVED
J.A. Sijer DESIGNER	GROUP LEADER	Engr. Dept. Manager
DRAWN: WS	DATE: 8-31-58	DRAWING NO. ENG-R-716
SCALE: 1 IN. = 50 FT.	SHEET 26 OF 29	

INFORMATION SHOWN
CURRENT AS OF 9-16-58

LAB. JOB NO.

Attachment D
15-010(c)

Attachment E

15-010(c)

WASTEWATER STREAM CHARACTERIZATION FOR TA-15

ENVIRONMENTAL STUDY

prepared for:
THE LOS ALAMOS NATIONAL LABORATORY
Los Alamos, New Mexico

under subcontract 9-XG8-2874P-1

by:
Santa Fe Engineering, Ltd.
1429 Second Street
Santa Fe, New Mexico 87504
(505) 988-7438
and
Engineering and Infromation Resources (WX-12)
Los Alamos National Laboratory
Los Alamos, New Mexico 87545
(505) 665-2510

June, 1992

EXECUTIVE SUMMARY

All buildings in TA-15 were visited to document all drain piping and to make permitting recommendations. The pipes exiting the building are as follows:

1) from 15-8, 22, 23, 30, 41, 42, 43, 47, 92, 140, 141, 182, 187, 188, 189, 204, 213, 231, 232, 239, 241, 243, 245, 261, 276, 289, 290, 297, 307, 314, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 381, 382, 383 and 424: no drains,

2) from 15-9, 27, 46 and 138: no water to the drains,

3) from 15-20: one discharge to a septic tank, two disconnected pipes, one discharge to the canyon, one discharge from a hot water heater and one discharge from an air conditioner,

4) from 15-40: two previously permitted outfalls in 04A category, one discharge to a septic tank and two discharges from air conditioners,

5) from 15-44: one discharge to a septic tank and one discharge from a French drain system,

6) from 15-45: one discharge to a septic tank and one discharge from a French drain system,

7) from 15-50: one discharge from an equipment room, one discharge from a building drain trough, one discharge from a hot water heater, one discharge from a back flow preventer, one discharge to a septic tank, one storm water discharge, two discharges from the fire water system and one discharge of deionized water,

8) from 15-183: one unpermitted discharge, one storm water discharge, one permitted 06A discharge and one discharge to a septic tank,

9) from 15-184: one permitted 04A discharge, one foundation drain, one gas vent and one discharge from a chiller,

10) from 15-185 and 202: two discharges from foundation drains, one discharge to a septic tank, one permitted 03A discharge, one gas vent, one discharge from the fire water system and one storm water discharge,

11) from 15-186, 199, 200 and 201: one discharge to a septic tank and two fire water discharges,

3.0 RECOMMENDATIONS FOR BUILDINGS WITH NO DRAINS

Buildings 15-8, 22, 23, 30, 41, 42, 43, 47, 92, 140, 141, 182, 187, 188, 189, 204, 213, 231, 232, 239, 241, 243, 245, 261, 276, 289, 290, 297, 307, 314, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 381, 382, 383 and 424 do not have any drains. No permitting or changes are recommended. No EPA forms were completed.

4.0 RECOMMENDATIONS FOR BUILDINGS 15-9, 27, 46 AND 138

These buildings have drains but no supply of water. Pluging the drains that are not used is recommended. No permitting is recommended. No EPA forms were completed.

5.0 RECOMMENDATIONS FOR BUILDING 15-20

Table 1 is a list of the drains to the building outfalls and Figure 1 is a schematic of the piping. The table lists the drains that connect to the outfall pipes and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

5.1 Outfall 15-20-OPN-1

This outfall consists of a building drain trough, a sink and a water fountain and discharges to the canyon. The sink and water fountain should be removed. The drain trough should be plugged. No permitting is recommended and no EPA forms were prepared.

9.0 SWMU 15-014(l)
ACTIVE NPDES-PERMITTED OUTFALL AND ASSOCIATED DRAINLINE

9.1 Summary

SWMU 15-014(l) is an active outfall and associated drainline from a cooling tower located at TA-15. The outfall is National Pollutant Discharge Elimination System (NPDES) permitted and, as such, regulated by EPA under the Clean Water Act. Other than antiscalants, no additives were introduced into the noncontact cooling water that discharged from the cooling tower. SWMU 15-014(l) is being proposed for NFA under NFA Criterion 4 (the site is regulated in accordance with another state and/or federal authority and is not known or suspected of releasing RCRA solid or hazardous wastes and/or constituents to the environment).

9.2 Description and Operational History

9.2.1 Site Description

SWMU 15-014(l) is an active cooling tower outfall located at TA-15 approximately 25 ft south of Building TA-15-185, the control building for the Pulsed, High-Energy, Radiographic Machine Emitting X-rays (PHERMEX) facility's accelerator (Figure 9.2-1).

9.2.2 Operational History

Noncontact cooling water is discharged from cooling tower TA-15-202, flows through the SWMU 15-014(l) drainline, and discharges into Water Canyon from the SWMU 15-014(l) outfall (NPDES 03A028).

Other than Formulas 2010 (consisting of 2-phosphono-1,2,4-butane-tricarboxylic acid) and 2011 (consisting of 2-phosphono-1,2,4-butane-triboxylic acid and benzotriazole), which are antiscalants and corrosion inhibitors, no additives are/were introduced into the water that discharges from the cooling tower (Nonno 2000, 69707; Garnett-Callahan 1993, 69708; Garnett-Callahan 1997, 69709) (Attachment A). Attachment B (Rhodes 1993, 63188) is included as verification that hexavalent chromium was not added to the water at cooling tower TA-15-202. Hexavalent chromium was used at three Laboratory facilities only (TA-2, TA-16, and TA-3 [SM-38]), all associated with power plants.

9.3 Land Use

9.3.1 Current

TA-15 is an industrial area used for the research, development, and testing of high explosives. It is a high-security, restricted-access area enclosed by a chain-link fence topped with barbed wire. Access to TA-15 is obtained only by passing through a security guard station. These security measures effectively eliminate the possibility of inadvertent site intrusion.

9.3.2 Future/Proposed

The Laboratory does not anticipate any change from the industrial restricted-access use of TA-15 for the operational life of the Laboratory (LANL 1995, 57224, pp.11-12)(Appendix D, Attachment 1). Future industrial use of this TA will continue to be research, development, and testing of high explosives.

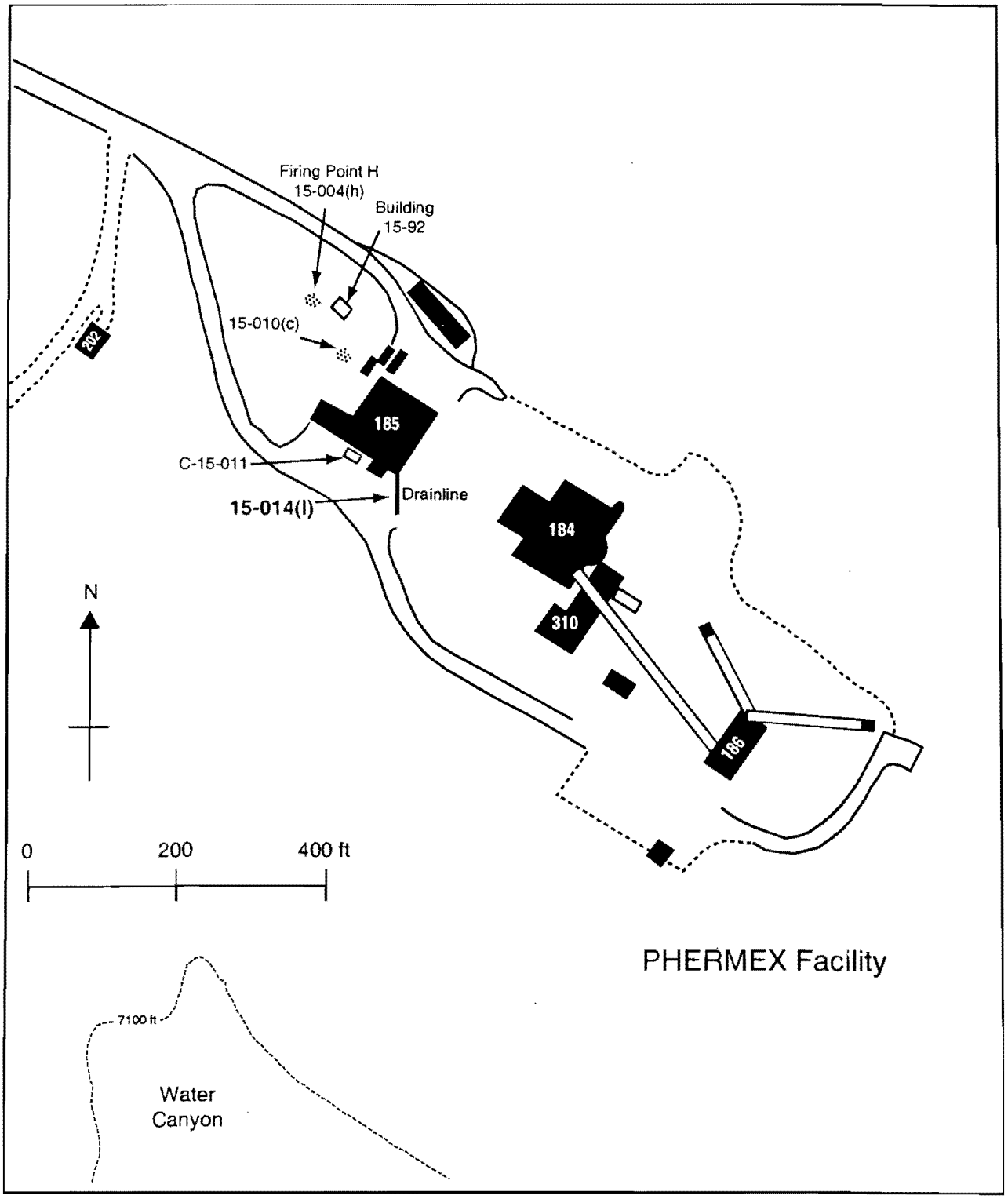


Figure 9.2-1 Site diagram of PHERMEX facility, showing PRSs and nearby structures

9.4 No Further Action Proposal

9.4.1 Rationale

Antiscalant/corrosion inhibitors (2-phosphono-1,2,4-butane-triboxylic acid and benzotriazole) were the only substances added to the noncontact cooling water at cooling tower TA-15-202. These additives do not meet the definition of RCRA hazardous wastes and/or constituents provided in 40 CFR 261.3, "Definition of Hazardous Waste."

SWMU 15-014(m) (associated with Building TA-16-306), a drainline and NPDES-permitted outfall with an operational history identical to that of SWMU 15-014(l), was previously removed by NMED-HRMB (now NMED-HWB) from Module VIII of the Laboratory's Hazardous Waste Facility Permit. SWMU 15-014(m) was removed from the permit under an NFA Criterion 4 justification. The December 23, 1998, letter approving the removal of this SWMU (NMED 1998, 63042) is included as Attachment C of this request for permit modification.

The Laboratory ER Project is proposing SWMU 15-014(l) for NFA because

- the SWMU is NPDES-permitted outfall 03A028 regulated by EPA under the Clean Water Act;
- the antiscalant/corrosion inhibitors added to the noncontact cooling water at cooling tower TA-15-202 do not fit the definition of RCRA hazardous wastes and/or constituents; and
- HWB removed a similar SWMU [15-014(m)] from Module VIII of the Laboratory's Hazardous Waste Facility Permit in December 1998.

9.4.2 Criterion

Based on the information presented in Sections 9.2 through 9.4, SWMU 15-014(l) is being proposed for NFA under Criterion 4.

9.5 Supporting Documentation Attached

Attachment A: Nonno memorandum regarding use of antiscalants (Nonno 2000, 69707) and material safety data sheets (2) for additives to water at cooling tower TA-16-202. (Garnett-Callahan 1993, 69708; Garnett-Callahan 1997, 69709)

Attachment B: Rhodes memorandum regarding use of chromates at the Laboratory. (Rhodes 1993, 63188)

Attachment C: NMED approval letter removing 99 SWMUs from LANL's Hazardous Waste Facility Permit. (NMED 1998, 63042)

Appendix D, Attachment 1: LANL site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

9.6 Reference Used for Text of the Request for Permit Modification for SWMU 15-014(l)

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086," Los Alamos National Laboratory Report LA-UR-92-3968, Los Alamos, New Mexico, p. 8-26. (LANL 1993, 20946)

9.7 History of Regulatory Deliverables

LANL, July 2, 1993:	RFI work plan for OU 1086 submitted to EPA Region 6. (LANL 1993, 20946)
EPA, July 26, 1994:	NOD for OU 1086 RFI work plan. (EPA 1994, 40380)
LANL, August 24, 1994:	Response to NOD for OU 1086 RFI work plan. (LANL 1994, 40595)
EPA, October, 1994:	List of modifications for OU 1086 RFI work plan transmitted to LANL. (EPA 1994). Letter not found, but the list is included in our December 12, 1994, response to the letter.
LANL (via DOE/LAAO), December 12, 1994:	Response to list of modifications for OU 1086 RFI work plan. (DOE 1994, 45291)
EPA, January 9, 1995:	Approval of OU 1086 RFI work plan, LANL response to NOD, and modifications. (EPA 1995, 52910.102)
LANL, May 20, 1996:	RFI report for PRSs in TA-15 submitted to NMED. (LANL 1996, 54977)
NMED, June 11, 1997:	NOD for RFI report for PRSs in TA-15. (NMED 1997, 59155)
LANL, July 18, 1997:	Response to NOD for RFI report for PRSs in TA-15. (LANL 1997, 56292)
NMED, July 30, 1997:	Denial of RFI report for PRSs in TA-15. (NMED 1997, 56519)
LANL, August 24, 1998:	Response to July 30, 1997, denial of RFI report for PRSs in TA-15 (LANL 1998, 59483) and withdrawal of report.
NMED, October 15, 1998:	Approval of request for withdrawal and approval of extension for revised RFI report. (NMED 1998, 62322)

9.7.1 References for Regulatory Deliverables

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086," Los Alamos National Laboratory Report LA-UR-93-3968, Los Alamos, New Mexico, p. 8-26. (LANL 1993, 20946)

EPA (US Environmental Protection Agency), July 26, 1994. "Notice of Deficiency, RFI Work Plan OU 1086, Los Alamos National Laboratory NM0890010515," EPA letter to J. Vozella (Chief, Environment, Safety, and Health Branch, DOE-LAAO) from W. Honker, P.E. (Chief, RCRA Permits Branch, EPA Region 6), Dallas, Texas. (EPA 1994, 40380)

LANL (Los Alamos National Laboratory), August 24, 1994. "Notice of Deficiency (NOD) Response for Operable Unit 1086 Resource Conservation and Recover Act (RCRA) Facility Investigation (RFI) Work Plan," Los Alamos National Laboratory letter ER:94-J351 to T. Taylor (DOE-LAAO) from J. Jansen (Project Manager, Environmental Restoration Project), Los Alamos, New Mexico. (LANL 1994, 40595)

DOE (US Department of Energy), December 12, 1994. "List of Modifications for the Operable Unit (OU) 1086 Resource Conservation and Recovery Act Facility Investigation Work Plan," DOE letter LAAMEP:7TT-057 to W. Honker (Chief, RCRA Permits Branch, Hazardous Waste Management Division, EPA Region 6) from T. Taylor (Program Manager, Environmental Restoration Program, DOE-LAAO), Los Alamos, New Mexico. (DOE 1994, 45291)

EPA (US Environmental Protection Agency), January 9, 1995. Review and approval of RFI Work Plan for Operable Unit 1086, EPA letter to J. Vozella (Chief, Environment, Safety, and Health Branch, DOE-LAAO) from A. Davis (Director, Hazardous Waste Management Division, EPA Region 6), Dallas, Texas. (EPA 1995, 52910.102)

LANL (Los Alamos National Laboratory), May 20, 1996. "Submittal of the Resource Conservation and Recovery Act Facility Investigation (RFI) Report for Potential Release Sites (PRSs) in Technical Area (TA) 15," Los Alamos National Laboratory letter EM/ER:96-278 to B. Garcia (NMED-HRMB) from J. Jansen (Program Manager, Environmental Restoration Project) and T. Taylor (Program Manager, DOE-LAAO), Los Alamos, New Mexico. (LANL 1996, 54977)

NMED (New Mexico Environment Department), June 11, 1997. "Notice of Deficiency and Request for Workplan Modification, RCRA Facility Investigation Report, Technical Area 15, Los Alamos National Laboratory NM0890010515," NMED letter to G.T. Todd (Area Manager, DOE-LAAO) from B. Garcia (Chief, Hazardous and Radioactive Materials Bureau, NMED), Santa Fe, New Mexico. (NMED 1997, 59155)

LANL (Los Alamos National Laboratory), July 18, 1997. "Response to NOD and Request for Workplan Modification on RFI Report Dated May 1996 for LANL LA-UR-96-278, for TA 15," Los Alamos National Laboratory letter EM/ER:97-274 to B. Garcia (NMED-HRMB) from J. Jansen (Program Manager, LANL/ER Project) and T. Taylor (Program Manager, DOE/LAAO), Los Alamos, New Mexico. (LANL 1997, 56292)

NMED (New Mexico Environment Department) July 30, 1997. "Denial of RCRA Facility Investigation Report and Response to Notice of Deficiency, Technical Area 15 (dated May 1996), Los Alamos National Laboratory NM0890010515," NMED letter to G.T. Todd (Area Manager, DOE-LAAO) and S. Hecker (Director, Los Alamos National Laboratory) from R.S. Dinwiddie (Manager, RCRA Permits Management Program, NMED-HRMB), Santa Fe, New Mexico. (NMED 1997, 56519)

LANL (Los Alamos National Laboratory), August 24, 1998. "Response to Denial of RFI Report and NOD Response for TA-15 (Former OU 1086, FU 2)," Los Alamos National Laboratory letter EM/ER:98-298 to R.S. Dinwiddie (NMED-HRMB) from J. Canepa (Program Manager, Environmental Restoration) and T. Taylor (Program Manager, DOE/LAAO), Los Alamos, New Mexico. (LANL 1997, 59483)

NMED (New Mexico Environment Department), October 15, 1998. "Request for Withdrawal, TA-15 RCRA Facility Investigation Report and Notice of Deficiency, Los Alamos National Laboratory (LANL) NM0890010515," NMED letter to T. Taylor (Project Manager, DOE-LAAO) and J. C. Browne, Director, Los Alamos National Laboratory) from B. Garcia (Chief, Hazardous and Radioactive Materials Bureau, NMED), Santa Fe, New Mexico. (NMED 1998, 62322)

15-014(I)

ATTACHMENTS

Attachment A-1

15-014(l)

E/ER TELEPHONE LOG

CALLs TO: Franco Sisneros, ESH 7, 5-6978
Lewis Mondragon, JCI Water Treatment Specialist, 667-4453 (104-6435) and
Wilford Bustos, JCI Water Treatment Employee, 667-4453, pager 104-2251

CALL FROM: Linda Nonno, Regulatory Compliance Focus Area

DATE: October 30, 2000

SUBJECT: Water treatment of non-contact cooling water, cooling tower TA-15-202

BACKGROUND:
In preparation for writing a Request for Permit Modification, more information was required to support the NFA determination for PRSs 15-014(l). Franco Sisneros (ESH-7 occurrence personnel) was contacted to supply information re current and past water treatment of non-contact cooling water for cooling tower TA-15-202. He was familiar with treatment over the past 10 years only and faxed me material data safety sheets for the two products used during that period (Formula 2010 and Formula 2011 which are anti-scalants). He suggested that I contact Lewis Mondragon at JCI for more information. Lewis Mondragon is the water treatment specialist at Johnsons Controls (JCI).

DISCUSSION:

Mr. Mondragon provided me with the following information:

For the past 3 years, only Formula 2011 (MSDS attached), an anti-scalant, has been added to the non-contact cooling water at cooling tower TA-15-202. Because he has been with JCI for only three years, he is not familiar with past water treatment practices for the cooling tower. He suggested that I contact Wilford Bustos, one of his employees who has worked in JCI water treatment for over 20 years.

On October 31, 2000, Mr. Bustos provided me with the following information:

Mr. Bustos has worked at JCI for 29 years and has been involved in water treatment for 26 years. Mr. Bustos stated that, in those 26 years, anti-scalants only have been added to the water at cooling tower TA-15-202. No other additives, including anti-corrosives, were used.

Linda Nonno

Attachment A-2

15-014(l)

Garratt Callahan Company

WATER TREATMENT PRODUCTS & SERVICES SINCE 1904

FORMULA 2010 SCALE AND CORROSION INHIBITOR

USE: Formula 2010 is a special blend of scale inhibitors, crystal modifiers, antifoulants, and corrosion inhibitors for use in cooling towers, evaporative condensers, and air washers.

DESCRIPTION: This blend of anodic and cathodic corrosion inhibitors has the ability to protect steel and copper metal from oxygen corrosion. The synergistic blend of dispersants is designed to protect the heat transfer surfaces from mineral scale deposits and to insure optimum system capacity.

The effectiveness of Formula 2010 is not adversely effected by the use of oxidizing biocides such as chlorine or bromine. Formula 2010 is especially effective in high silica waters allowing up to 300 ppm as SiO_2 in the recirculating water without scale.

DIRECTIONS: The recommended dosage is 150 to 225 parts per million depending upon the raw water quality and the operating conditions. The dosage is controlled with a sodium molybdate field test kit. Control is 6 to 9 ppm of sodium molybdate. For optimum scale and corrosion control, a pH range of 7.5-9.0 is normally recommended. Depending upon the raw water quality, a system pH as high as 9.5 is possible.

RECOMMENDATIONS: Formula 2010 can be fed from a solution tank or pumped directly from the shipping container. Plastic feed equipment is required.

DATA:
Color - pale yellow
Specific Gravity - 1.05 (8.8 lbs./gal.)
Flash Point - non-flammable
pH (neat) - 4.6

P.B. #2-2010 4/93

Main Office & Laboratories: 111 Rollins Road, Millbrae, CA 94030 • (415) 697-5811
Plants: *Addison, IL • Atlanta, GA • Edison, NJ • Dallas, TX • Millbrae, CA*
Offices in All Major Cities and Strategic Industrial Areas

SAFETY & HANDLING: Please refer to MSDS before handling any chemical.

For Medical or Chemical Emergencies call (415) 697-5811 (Garratt-Callahan Company). If no answer, call (303) 623-5716 (Rocky Mountain Poison Center, 24-hour number.)

For Non-emergency Product Information call (415) 697-5811 from 8:00 AM to 4:30 PM Pacific Time.

STORAGE: This product does not deteriorate with age, but has a suggested in-plant storage limit of six months.

Material Safety Data Sheet

REV 04/01/93

GARRATT-CALLAHAN COMPANY
111 ROLLINS ROAD
ORAE, CALIFORNIA 94030

0827519

FOR MEDICAL EMERGENCY CALL (415) 697-5811. IF NO ANSWER CALL (303) 623-5716 (ROCKY MTN POISON CENTER) 24 HOUR NUMBER.

FORMULA 2010

FOR NON-EMERGENCY PRODUCT INFORMATION CALL (415) 697-5811 BETWEEN 8AM AND 4PM PACIFIC TIME.

CURRENT AS OF 04/09/1993

SECTION #1 - IDENTIFICATION (LA IDENTIFICACION)

FORMULA 2010

SARA Hazard Class: Acute Health Hazard

SECTION #2 - HAZARDOUS COMPONENTS (LOS COMPONENTES PELIGROSOS)

COMPONENT: 2-phosphono-1,2,4-butane-tricarboxylic acid
CAS NUMBER: 37971-36-1

COMPONENT: Sodium Molybdate
CAS NUMBER: 7631-95-0
ACGIH TLV-TWA: 5 mg/m3 as Mo
OSHA PEL-TWA: 5 mg/m3 as Mo

COMPONENT: Benzotriazole
CAS NUMBER: 95-14-7

NOTE: OSHA requires only that hazardous components be listed in this section.

SECTION #3 - PHYSICAL DATA (LA INFORMACION FISICA)

BOILING POINT: 100 C
VAPOR PRESSURE: 17 MMHG
VAPOR DENSITY (AIR=1): <1 AIR=1
EVAPORATION RATE: < 1 WHERE BUTYL ACETATE = 1
PH FACTOR OF: 4.6 NEAT
APPEARANCE: BLUE LIQUID
ODOR: NONE

SPECIFIC GRAVITY: 1.05
SOLUBILITY (H2O): COMPLETE
PERCENT VOLATILES: 89

0827519 FORMULA 2010

CARRATT-CALLAHAN COMPANY
OLLINS ROAD
.RAE, CALIFORNIA 94030

FOR MEDICAL EMERGENCY CALL (415) 697-5811. IF NO ANSWER CALL (303) 623-5716 (ROCKY MTN POISON CENTER) 24 HOUR NUMBER.

FOR NON-EMERGENCY PRODUCT INFORMATION
CALL (415) 697-5811 BETWEEN
8AM AND 4PM PACIFIC TIME.

SECTION #4 - FIRE & EXPLOSION DATA (LA INFORMACION DE FUEGO Y EXPLOSION)

Flash Point: NONE
Autoignition: NONE
Flammability Class: NONE
Lower explosive Limit (%): UNKNOWN
Upper explosive Limit (%): UNKNOWN

Extinguishing Media:
Use media appropriate for the surrounding fire.

Fire and Explosion Hazards:
No Special Hazards

Special Fire Fighting Instructions:
No Special Instructions

SECTION #5 - EXPOSURE & EFFECT (LA EXPOSICION Y EFECTOS)

Routes of Exposure - Inhalation
PRODUCT DOES NOT EMIT FUMES

First Aid - Inhalation
NA

Route of Exposure - Skin
MAY IRRITATE OR BURN SKIN

First Aid - Skin:
Flush with water and call a physician if irritation persists.

Miscellaneous:
THIS PRODUCT CONTAINS NO KNOWN CARCINOGENS.

Route of Exposure - Eyes:
WILL BURN OR SEVERELY IRRITATE EYES.

First Aid - Eyes:
FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER CONTINUOUSLY FOR AT LEAST 15 MINUTES. CONSULT A PHYSICIAN IMMEDIATELY.

Route of Exposure - Ingestion
MAY IRRITATE OR BURN MOUTH, THROAT, AND STOMACH. MAY CAUSE SERIOUS DAMAGE TO MOUTH, THROAT, AND STOMACH.

First Aid - Ingestion:
DRINK WATER. INDUCE VOMITING. CALL PHYSICIAN.

Health Conditions Aggravated by Exposure:
NONE KNOWN.

SECTION #6 - REACTIVITY & POLYMERIZATION (LA REACTIVIDAD Y POLIMERIZACION)

Hazardous Polymerization:
WILL NOT OCCUR.

Incompatible Materials:
None

Conditions to avoid (polymerization):
NONE

Conditions to Avoid (stability):
NONE

Hazardous Decomposition Products:
NONE

Stability: STABLE

0827519 FORMULA 2010

...RATT-CALLAHAN COMPANY
...LLINS ROAD
...RAE, CALIFORNIA 94030

FOR MEDICAL EMERGENCY CALL (415) 697-5811. IF NO ANSWER CALL (303) 623-5716 (ROCKY MTN POISON CENTER) 24 HOUR NUMBER.

FOR NON-EMERGENCY PRODUCT INFORMATION CALL (415) 697-5811 BETWEEN 8AM AND 4PM PACIFIC TIME.

SECTION #7 - SPILL, LEAK & DISPOSAL PROCEDURES (LA ATILLA, GOTERA, & LOS PROCEDIMIENTOS DE ELIMACION)

Contain with absorbent material and shovel into plastic bags. Spills of a gallon or less may be flushed to drain with large amounts of water.

Dispose of in waste management facility or in compliance with federal, state and local regulations. If spill is not contaminated you may be able to dispose of materials where normally used.

Storage and Handling Conditions
Keep container covered and sealed when not in use. Store in a cool, dry area. Do not add water or any other material to drum of product or otherwise contaminate it.

SECTION #8 - SPECIAL PROTECTIVE MEASURES (LAS MEDIDAS PROTECTORAS ESPECIALES)

Ventilation
NORMAL ROOM VENTILATION

Skin Protection
PLASTIC OR RUBBER GLOVES. ELBOW LENGTH SUGGESTED.

Other Protection:
RUBBER APRON

Eye Protection:
CHEMICAL WORKER'S GOGGLES OR FACE MASK.

Respiratory Protection:
NIOSH APPROVED DUST/MIST MASK IF DUST IS A PROBLEM.

Work/Hygienic Practices:
Have eyewash and safety shower, ANSI Z358.1-1990 certified, in work area. Remove contaminated clothing. Wash contaminated clothing before reuse. If liquid is absorbed into shoes or gloves, discard.

MATERIAL SAFETY DATA SHEET

GARRATT-CALLAHAN COMPANY
111 ROLLINS ROAD
MILLBRAE CA. 94030

MSDS No. 082/11/

REVISED:1/29/97
PRINTED: 9/9/97

FORMULA 2011

FOR A CHEMICAL EMGERGENCY SPILL, LEAK, FIRE, OR ACCIDENT CALL CHEMTREC (800) 424-9300 24 HRS

FOR MEDICAL EMERGENCY CALL (650) 697-5811, 8 AM-4:30 PM PST or CALL (303) 623-5716 (ROCKY MTN POISON CENTER) 24 HOUR NUMBER

FOR NON-EMERGENCY PRODUCT INFORMATION CALL (650) 697-5811 BETWEEN 8 AM AND 4 PM PACIFIC TIME

SECTION #1 - IDENTIFICATION (LA IDENTIFICACION)

PRODUCT NAME: FORMULA 2011
PRODUCT USE: Cooling water corrosion and scale control

HMIS HAZARD RATING
HEALTH: 1
FLAMMABILITY:0
REACTIVITY: 0

SECTION #2 - HAZARDOUS COMPONENTS (LOS COMPONETES PELIGROSOS)

COMPONENT:	CAS NO:	PERCENT:	ACGIH TLV:	OSHA PEL:
2-phosphono-1,2,4-butane-tricarboxylic acid	37971-36-1	2-4%	None established	None established
Benzotriazole	95-14-7	1%	None established	None established

NOTE: OSHA requires only that hazardous components be listed in this section.

SECTION #3 - PHYSICAL DATA (LA INFORMACION FISICA)

APPEARANCE: Clear liquid

BOILING POINT: 100 C

VAPOR DENSITY: Unknown

VAPOR PRESSURE: Unknown

pH: 2.0 - 4.0

% VOLATILES BY VOL: 84

SOLUBILITY IN WATER: Complete

SPECIFIC GRAVITY: 1.01 - 1.11

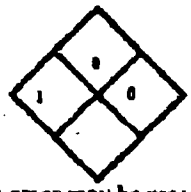
EVAPORATION RATE: <1 where butyl acetate=1

ODOR: None

COLOR: Blue green to amber

SECTION #4 - FIRE AND EXPLOSION DATA (LA INFORMACION DE FUEGO Y EXPLOSION

FLASHPOINT (PMCC): None AUTOIGNITION: None



EXTINGUISHING MEDIA: Water, foam, or carbon dioxide.

FIRE AND EXPLOSION HAZARDS: No special hazards

SPECIAL FIRE FIGHTING INSTRUCTIONS: Under fire conditions irritating and/or toxic gases may be present. Fire fighters should wear full protective clothing and self-contained breathing apparatus.

SECTION #5 - EXPOSURE & EFFECT (LA EXPOSICION Y EFECTOS)

ROUTES AND EFFECTS OF EXPOSURE:

SKIN CONTACT: May irritate or burn skin.

EYE CONTACT: Will burn or severely irritate eyes.

INGESTION: May irritate, or burn mouth, throat, and stomach.

INHALATION: Product does not emit vapors.

EMERGENCY AND FIRST AID PROCEDURES:

SKIN: Flush with water for at least 15 minutes, and call a physician if pain or irritation persists.

EYES: Flush immediately with large amounts of water for at least 15 minutes. Seek medical attention.

INGESTION: Drink water. Do not induce vomiting. Call a physician.

INHALATION: Remove victim to fresh air. Seek medical attention if breathing difficulties persist.

SECTION #6 - REACTIVITY & POLYMERIZATION (LA REACTIVIDAD Y POLIMERIZACION)

STABILITY: Stable CONDITIONS TO AVOID (STABILITY): None

INCOMPATIBLE MATERIALS: Bases

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, and oxides of nitrogen.

CONDITIONS TO AVOID (POLYMERIZATION): None HAZARDOUS POLYMERIZATION: Will not occur

MATERIAL SAFETY DATA SHEET

GARRATT-CALLAHAN COMPANY
111 ROLLINS ROAD
MILLBRAE CA, 94030

MSDS No. 0827717

SECTION #7 - SPILL, LEAK & DISPOSAL PROCEDURES (LA ATILLA, GOTERA, & LOS PROCEDIMENTOS DE ELIMACION)

Wear protective clothing. Small spills of one gallon or less may be flushed to drain with large amounts of water. For larger spills, contain with absorbent material. Place in plastic bag.

Dispose of in waste management facility or in compliance with federal, state and local regulations. If spill is not contaminated you may be able to dispose of material where normally used.

#8 SECTION - SPECIAL PROTECTIVE MEASURES (LAS MEDIDAS PROTECTORAS ESPECIALES)

VENTILATION: Normal room ventilation, local exhaust at work area recommended.

SKIN PROTECTION: Rubber, PVC, or Nitrile gloves, elbow length suggested

EYE PROTECTION: Chemical workers goggles or face mask.

OTHER: Rubber apron

RESPIRATORY PROTECTION:None required under normal use conditions.

WORK/HYGENIC PRACTICES:
Have eyewash and safety shower, ANSI Z358. 1-1990 certified, in work area. Remove contaminated clothing. Wash contaminated clothing before reuse. If liquid is absorbed into shoes or gloves, discard.

SECTION #9 - STORAGE & HANDLING INFORMATION (INFORMACION DE ALACENAMIENTO Y MANIPULACION)

STORAGE AND HANDLING CONDITIONS:
Keep container covered and sealed when not in use. Store in a cool, dry area. Do not add water or any other material to drum of product or otherwise contaminate it. Incompatible with alkaline materials. Wash thoroughly after handling. Read product label for further instructions. Product shelf-life is two years.

SECTION #10 - TRANSPORTATION INFORMATION (INFORMACION DE TRANSPORTACION)

DOT SHIPPING NAME: N/A

DOT HAZARD CLASS: N/A

UN/NA#: N/A

DOT LABEL REQUIRED: N/A

MATERIAL SAFETY DATA SHEET
GARRATT-CALLAHAN COMPANY
111 ROLLINS ROAD
MILLBRAE CA. 94030

MSDS No. 082711

SECTION #11 - REGULATORY INFORMATION (INFORMCION REGULADOR)

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade secrets are indicated by "TS".

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III requires emergency planning based upon Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 304, 311, AND 312).

Components present in this product at the level which would require reporting under the statute are:

Substance	CAS No.	RQ	TPQ	Percent
None				

SARA 311/312: Sara hazard class: Acute health hazard

SARA Title III - Section 313 Supplier Notification:
This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and of 40 CFR 372:

SUBSTANCE	CASE NO.	PERCENT IN MIXTURE
None		

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of hazardous substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4.

Components present in this product at the level which would require reporting under the statute are:

Substance	CAS No.	RQ	Percent
None			

Attachment B

MEMORANDUM 15-014(l)

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Valerie Rhodes VR

Date: 28 July 1993

Regarding: CHROMATE USE IN TA-3 COOLING TOWERS

On 27 July 1993, I spoke with Bill Radzinski (ENG-6) regarding the use of chromates in TA-3 cooling towers discharging into NPDES-permitted outfalls that are suspected SWMUs. The following list outlines the associated SWMUs, cooling towers, and NDPES permit numbers that are being investigated:

SWMU No.	Cooling Tower No.	NPDES No.
3-054(a)	TA-3-19	None
3-054(b)	TA-3-102	EPA03A009
3-054(c)	TA-3-156	EPA03A023
3-054(d)	TA-3-208	EPA03A025
3-045(h)	TA-3-187	EPA03A024
3-049(a)	TA-3-127	EPA03A022
3-021	TA-3-170	EPA04A094
3-045(a)	TA-3-22	EPA04A151
3-045(b)	TA-3-25/58	EPA01A001
3-045(c)	TA-3-285	EPA03A027
3-045(g)	asphalt plant/area	EPA04A109
"Dorothy's"	TA-3-29	EPA03A021

Mr. Radzinski reported that hexavalent chromium is/was used at only three facilities (all associated with power plants) at the Laboratory; these include TA-2, TA-16, and TA-3 (SM-38). No information was available regarding cooling tower TA-3-19 because it was dismantled in 1966 (prior to record-keeping); however, Mr. Radzinski maintained that if no green staining exists at the old site location, then chromate use in the cooling tower was highly unlikely. In addition, information pertaining to the cooling towers at the power plant (TA-3-25, 58, and 285) must be obtained from JCI (as the power plant has always been operated by LANL's contractor).

cc: Project File

Attachment C

(16)

15-014(l)

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
2044 Galisteo Street
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

December 23, 1998

ER PROJECT OFFICE RECEIVED JAN 0 4 1999

Mr. Theodore Taylor, Program Manager
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

Dr. John C. Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

RE: **Approval: Class III permit modification to remove ninety-nine (99) Solid Waste Management Units from the Department of Energy / Los Alamos National Laboratory RCRA permit NM 0890010515**

Dear Mr. Taylor and Dr. Brown:

This letter is to inform you that the New Mexico Environment Department (NMED) has approved the Class III permit modification to the US Department of Energy/Los Alamos National Laboratory (DOE/LANL) Resource Conservation and Recovery Act (RCRA) Permit No. NM0890100515 proposed in the Requests for Permit Modification: Units Proposed for No Further Action dated March and September 1995 and September 1996. The modification is effective as of this date.

The modification removes ninety-nine (99) Solid Waste Management Units from Tables A, B and C of Permit Module VIII, Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA for Los Alamos National Laboratory. Enclosed are the revised Tables A, B and C replacement pages for the tables currently in Module VIII. Please remove and replace the 12-8-98 modified pages in your copy of the Permit. A list of the ER sites removed are listed in Tables A.1, B.1 and C.1.

Received by EM-RPF
JAN 2 0 1998

Three written comments were received by NMED regarding its proposal to approve this permit modification. The comments and responses are enclosed.

Please contact John Kieling of HRMB, at 827-1558 extension 1012, if you have any questions.

Sincerely,

Ed Kelley, Ph. D., Director
Water and Waste Management Division

enclosures

cc: J. Canepa, LANL EM/ER, MS M992
J. Davis, NMED SWQB
R. Dinwiddie, NMED HRMB
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D. McInroy, LANL EM/ER, MS M992
D. Neleigh, EPA, 6PD-N
J. Parker, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
File: HSWA LANL G/P '98
Track: LANL, 12/23/98, na, DOE/LANL, NMED/WWMD/Kelley, RE, File

C:\DOCUMENT\LANL98~1\NFAS\LANLNFA.APP

Table A

Technical Area 0
SWMU Number
0-001
0-003
0-011(a)
0-011(c)
0-011(d)
0-011(e)
0-012
0-016
0-017
0-018(a)
0-019
0-028(a)
0-028(b)
0-030(a)
0-030(b)
0-030(g)
0-030(l)
0-030(m)
0-033
0-039 (20)

Technical Area 1
1-001(a)
1-001(b)
1-001(c)
1-001(d)
1-001(e)
1-001(f)
1-001(g)
1-001(m)
1-001(o)
1-001(s)
1-001(t)
1-001(u)
1-002
1-003(a)
1-003(d)
1-003(e)
1-006(a)
1-006(b)
1-006(c)
1-006(d)
1-006(h)
1-006(n)
1-006(o)
1-007(a)
1-007(b)
1-007(c)
1-007(d)
1-007(e)
1-007(j)
1-007(l) (36)

Technical Area 2
2-005
2-006(a)
2-006(b)
2-007
2-008(a)
2-008(b)
2-009(a)
2-009(b)
2-009(c) (9)

Technical Area 3
3-001(k)
3-002(c)
3-003(a)
3-003(b)
3-003(c)
3-009(a)
3-009(c)
3-009(d)
3-009(g)
3-010(a)
3-012(b)
3-013(a)
3-014(a)
3-014(b)
3-014(c)
3-014(d)
3-014(e)
3-014(f)
3-014(g)
3-014(h)
3-014(i)
3-014(j)
3-014(k)
3-014(l)
3-014(m)
3-014(n)
3-014(o)
3-014(p)
3-014(q)
3-014(r)
3-014(s)
3-014(t)
3-014(u)
3-015
3-026(d)
3-028
3-033
3-036(a)
3-036(c)
3-036(d)
3-037
3-038(a)
3-038(b)
3-043(e)
3-044(a)
3-056(a)
3-056(c) (47)

Technical Area 4
4-001
4-002
4-003(a)
4-003(b) (4)

Technical Area 5
5-001(a)
5-001(b)
5-002
5-003
5-004
5-005(a)
5-005(b)
5-006(b)
5-006(c)
5-006(e)
5-006(h) (11)

Technical Area 6
6-001(a)
6-001(b)
6-002
6-003(a)
6-003(c)
6-003(d)
6-003(e)
6-003(f)
6-003(g)
6-003(h)
6-005
6-006
6-007(a)
6-007(b)
6-007(c)
6-007(d)
6-007(e)
6-007(f)
6-007(g) (19)

Technical Area 7
7-001(a)
7-001(b)
7-001(c)
7-001(d) (4)

Technical Area 8
8-002
8-003(a)
8-004(a)
8-004(b)
8-004(c)
8-004(d)
8-005
8-006(a)
8-009(a)
8-009(d)
8-009(e)
C-8-010 (12)

Technical Area 9
9-001(a)
9-001(b)
9-001(c)
9-001(d)
9-002
9-003(a)
9-003(b)
9-003(d)
9-003(e)
9-003(g)
9-003(h)
9-003(l)
9-004(a)
9-004(b)
9-004(c)
9-004(d)
9-004(e)
9-004(f)
9-004(g)
9-004(h)
9-004(i)
9-004(j)
9-004(k)
9-004(l)
9-004(m)
9-004(n)
9-004(o)
9-005(a)
9-005(d)
9-005(g)
9-006
9-008(b)
9-009

Table A

9-013
C-9-001 (35)

Technical Area 10

10-001(a)
10-001(b)
10-001(c)
10-001(d)
10-002(a)
10-002(b)
10-003(a)
10-003(b)
10-003(c)
10-003(d)
10-003(e)
10-003(f)
10-003(g)
10-003(h)
10-003(i)
10-003(j)
10-003(k)
10-003(l)
10-003(m)
10-003(n)
10-003(o)
10-004(a)
10-004(b)
10-005
10-006
10-007 (26)

Technical Area 11

11-001(a)
11-001(b)
11-001(c)
11-002
11-004(a)
11-004(b)
11-004(c)
11-004(d)
11-004(e)
11-005(a)
11-005(b)
11-005(c)
11-006(a)
11-006(b)
11-006(c)
11-006(d)
11-009
11-011(a)
11-011(b)
11-011(c)
11-011(d) (21)

Technical Area 12

12-001(a)
12-001(b)
12-002 (3)

Technical Area 13

13-001
13-002
13-003(a)
13-004 (4)

Technical Area 14

14-002(a)
14-002(b)
14-002(c)
14-002(d)
14-002(e)
14-002(f)
14-003
14-005
14-006
14-007
14-009
14-010 (12)

Technical Area 15

15-002
15-003
15-004(a)
15-004(b)
15-004(c)
15-004(f)
15-004(g)
15-004(i)
15-006(a)
15-006(b)
15-006(c)
15-006(d)
15-007(a)
15-007(b)
15-007(c)
15-007(d)
15-008(a)
15-008(b)
15-008(c)
15-008(d)
15-009(a)
15-009(b)
15-009(c)
15-009(e)
15-009(f)
15-009(g)
15-009(h)
15-009(i)
15-009(j)
15-009(k)
15-010(a)
15-010(b)
15-010(c)
15-011(a)
15-011(b)
15-011(c)
15-012(a)
15-012(b)
15-014(a)
15-014(b)
15-014(i)
15-014(j)
15-014(k)
15-014(l) (44)

Technical Area 16

16-001(a)
16-001(b)
16-001(c)
16-001(d)
16-001(e)
16-003(a)
16-003(b)
16-003(c)
16-003(d)
16-003(e)
16-003(f)
16-003(g)
16-003(h)
16-003(i)
16-003(j)
16-003(k)
16-003(l)
16-003(m)
16-003(n)
16-003(o)
16-004(a)
16-004(b)
16-004(c)
16-004(d)
16-004(e)
16-004(f)
16-005(g)
16-005(n)
16-006(a)
16-006(c)
16-006(d)
16-006(e)
16-007(a)
16-008(a)
16-009(a)
16-010(a)
16-010(b)
16-010(c)
16-010(d)
16-010(e)
16-010(f)
16-010(h)
16-010(i)
16-010(j)
16-010(k)
16-010(l)
16-010(m)
16-010(n)
16-013
16-016(a)
16-016(b)
16-016(c)
16-018
16-019
16-020
16-021(a)
16-021(c)
16-026(b)
16-026(c)
16-026(d)
16-026(e)
16-026(h2)
16-026(j2)
16-026(v)
16-029(a)
16-029(b)
16-029(c)
16-029(d)
16-029(e)
16-029(f)
16-029(g)
16-030(h)
16-035
16-036 (74)

Technical Area 18

18-001(a)
18-001(b)
18-001(c)
18-002(a)
18-002(b)
18-003(a)
18-003(b)

Table A

18-003(c)
18-003(d)
18-003(e)
18-003(f)
18-003(g)
18-003(h)
18-004(a)
18-004(b)
18-005(a)
18-007
18-012(a)
18-012(b) (19)

Technical Area 19

19-001
19-002
19-003 (3)

Technical Area 20

20-001(a)
20-001(b)
20-001(c)
20-002(a)
20-002(b)
20-002(c)
20-002(d)
20-003(a)
20-005 (9)

Technical Area 21

21-002(a)
21-003
21-004(b)
21-004(c)
21-005
21-006(a)
21-006(b)
21-006(c)
21-006(d)
21-006(e)
21-007
21-010(a)
21-010(b)
21-010(c)
21-010(d)
21-010(e)
21-010(f)
21-010(g)
21-010(h)
21-011(a)
21-011(b)
21-011(c)
21-011(d)
21-011(e)
21-011(f)
21-011(g)
21-011(i)
21-011(j)
21-011(k)
21-012(b)
21-013(a)
21-013(b)
21-013(c)
21-013(d)
21-013(e)
21-014
21-015
21-016(a)
21-016(b)
21-016(c)
21-017(a)
21-017(b)
21-017(c)
21-018(a)
21-018(b)
21-021
21-022(a)
21-022(b)
21-022(c)
21-022(d)
21-022(e)
21-022(f)
21-022(g)
21-022(h)
21-022(i)
21-022(j)
21-023(a)
21-023(b)
21-023(c)
21-023(d)
21-024(a)
21-024(b)
21-024(c)
21-024(d)
21-024(e)
21-024(f)
21-024(g)
21-024(h)
21-024(i)
21-024(j)
21-024(k)
21-024(l)
21-024(n)
21-024(o)
21-026(a)
21-026(b)
21-027(a)
21-027(c)
21-027(d)
21-029 (80)

Technical Area 22

22-010(a)
22-010(b)
22-011
22-012
22-014(a)
22-014(b)
22-015(a)
22-015(b)
22-015(c)
22-015(d)
22-015(e)
22-016 (12)

Technical Area 26

26-001
26-002(a)
26-002(b)
26-003 (4)

Technical Area 27

27-001
27-002
27-003 (3)

Technical Area 31

31-001 (1)

Technical Area 32

32-001
32-002(a)
32-002(b) (3)

Technical Area 33

33-001(a)
33-001(b)
33-001(c)
33-001(d)
33-001(e)
33-002(a)
33-002(b)
33-002(c)
33-002(d)
33-002(e)
33-003(a)
33-003(b)
33-004(a)
33-004(b)
33-004(c)
33-004(d)
33-004(g)
33-004(h)
33-004(l)
33-004(j)
33-004(k)
33-004(m)
33-005(a)
33-005(b)
33-005(c)
33-006(a)
33-006(b)
33-007(a)
33-007(b)
33-007(c)
33-008(a)
33-008(b)
33-009
33-010(a)
33-010(b)
33-010(c)
33-010(d)
33-010(f)
33-010(g)
33-010(h)
33-011(a)
33-011(c)
33-011(d)
33-011(e)
33-012(a)
33-013
33-014
33-015
33-016
33-017 (50)

Technical Area 35

35-002
35-003(a)
35-003(b)
35-003(c)
35-003(d)
35-003(e)
35-003(f)
35-003(g)
35-003(h)
35-003(j)
35-003(k)

Table A

35-003(l)
35-003(m)
35-003(n)
35-003(o)
35-003(p)
35-003(q)
35-004(a)
35-004(b)
35-004(c)
35-004(g)
35-004(h)
35-006
35-008
35-009(a)
35-009(b)
35-009(c)
35-009(d)
35-009(e)
35-010(a)
35-010(b)
35-010(c)
35-010(d)
35-011(a)
35-013(a)
35-013(b)
35-013(c)
35-013(d)
35-014(a)
35-014(b)
35-014(c)
35-014(g)
35-015(a)
35-015(b)
35-016(a)
35-016(c)
35-016(d)
35-016(l)
35-016(k)
35-016(m)
35-016(o)
35-016(p)
35-016(q) (53)

Technical Area 36

36-001
36-002
36-003(a)
36-003(b)
36-004(d)
36-005
36-006
C-36-003 (8)

Technical Area 39

39-001(a)
39-001(b)
39-002(a)
39-004(a)
39-004(b)
39-004(c)
39-004(d)
39-004(e)
39-005
39-006(a)
39-007(a)
39-008 (12)

Technical Area 40

40-001(b)
40-001(c)
40-003(a)
40-004
40-005
40-006(a)
40-006(b)
40-006(c)
40-009
40-010 (10)

Technical Area 41

41-001
41-002(a)
41-002(b)
41-002(c) (4)

Technical Area 42

42-001(a)
42-001(b)
42-001(c)
42-002(b)
42-003 (5)

Technical Area 43

43-001(a)
43-002 (2)

Technical Area 45

45-001
45-002
45-003
45-003 (4)

Technical Area 46

46-002
46-003(a)
46-003(b)
46-003(c)
46-003(d)
46-003(e)
46-003(f)
46-003(g)
46-003(h)
46-004(a)
46-004(b)
46-004(c)
46-004(d)
46-004(e)
46-004(f)
46-004(g)
46-004(h)
46-004(a2)
46-004(b2)
46-004(c2)
46-004(d2)
46-004(m)
46-004(p)
46-004(q)
46-004(r)
46-004(s)
46-004(t)
46-004(u)
46-004(v)
46-004(w)
46-004(x)
46-004(y)
46-004(z)
46-005
46-006(a)
46-006(b)
46-006(c)
46-006(d)
46-006(f)
46-006(g)
46-007
46-008(a)
46-008(b)
46-008(d)
46-008(e)
46-008(f)
46-008(g)
46-009(a)
46-009(b)
46-010(d) (50)

Technical Area 48

48-002(a)
48-002(b)
48-003
48-004(a)
48-004(b)
48-004(c)
48-005
48-007(a)
48-007(b)
48-007(c)
48-007(d)
48-007(f)
48-010 (13)

Technical Area 49

49-001(a)
49-001(b)
49-001(c)
49-001(d)
49-001(e)
49-001(f)
49-001(g)
49-003
49-004
49-005(a)
49-006 (11)

Technical Area 50

50-001(a)
50-002(a)
50-002(b)
50-002(c)
50-004(a)
50-004(b)
50-004(c)
50-006(a)
50-006(c)
50-006(d)
50-009
50-011(a) (12)

Technical Area 52

52-001(d)
52-002(a) (2)

Technical Area 53

53-001(a)
53-001(b)
53-002(a)
53-002(b)
53-005
53-006(b)
53-006(c)
53-006(d)
53-006(e)
53-006(f)

Table A

53-007(a) (11)

Technical Area 54

54-001(a)
54-004 (excluding Shaft No. 9)
54-005
54-006
54-007(a)
54-007(b)
54-007(c)
54-012(b)
54-013(b)
54-014(b)
54-014(c)
54-014(d)
54-015(h)
54-015(k)
54-017
54-018
54-019
54-020 (18)

Technical Area 55

55-008
55-009 (2)

Technical Area 59

59-001 (1)

Technical Area 60

60-002
60-005(a)
60-006(a)
60-007(a)
60-007(b) (5)

Technical Area 61

61-002
61-004(a)
56.00
61-006
61-007 (5)

Technical Area 63

63-001(a)
63-001(b) (2)

Technical Area 69

69-001 (1)

Technical Area 73

73-001(a)
73-001(b)
73-001(c)
73-001(d)
73-002
73-004(a)
73-004(b)
73-004(c)
73-004(d)
73-005
73-006 (11)

Total SWMUs in Table A = 801

Table A.1
No Further Action
SWMUs removed from Table A through a Class III Permit Modification and date of removal

0-005 12-23-98
1-001(h) 12-23-98
1-001(i) 12-23-98
1-001(j) 12-23-98
1-001(k) 12-23-98
1-001(l) 12-23-98
1-001(n) 12-23-98
3-001(a) 12-23-98
3-001(b) 12-23-98
3-001(c) 12-23-98
3-002(b) 12-23-98
3-009(b) 12-23-98
3-009(e) 12-23-98
3-009(f) 12-23-98
3-009(h) 12-23-98
3-012(a) 12-23-98
3-018 12-23-98
3-020(a) 12-23-98
3-035(a) 12-23-98
3-035(b) 12-23-98
3-039(a) 12-23-98
7-003(c) 12-23-98
7-003(d) 12-23-98
8-005(b) 12-23-98
8-005(c) 12-23-98
8-006(b) 12-23-98
8-007 12-23-98
9-003(c) 12-23-98
9-003(f) 12-23-98
9-005(b) 12-23-98
9-005(c) 12-23-98
9-005(e) 12-23-98
9-005(f) 12-23-98
9-005(h) 12-23-98
9-007 12-23-98
11-007 12-23-98
14-004(b) 12-23-98
15-014(m) 12-23-98
16-005(i) 12-23-98
16-005(o) 12-23-98
16-006(b) 12-23-98
16-006(f) 12-23-98
16-010(g) 12-23-98
16-012(a) 12-23-98
16-012(b) 12-23-98
16-012(c) 12-23-98
16-012(d) 12-23-98
16-012(e) 12-23-98
16-012(f) 12-23-98
16-012(g) 12-23-98
16-012(h) 12-23-98
16-012(i) 12-23-98
16-012(j) 12-23-98
16-012(k) 12-23-98
16-012(l) 12-23-98
16-012(m) 12-23-98
16-012(n) 12-23-98
16-012(o) 12-23-98
16-012(p) 12-23-98
16-012(q) 12-23-98
16-012(r) 12-23-98
16-012(s) 12-23-98
16-012(t) 12-23-98
16-012(u) 12-23-98
16-012(v) 12-23-98
16-012(w) 12-23-98
16-012(x) 12-23-98
16-012(y) 12-23-98
16-012(z) 12-23-98
21-012(a) 12-23-98
21-024(m) 12-23-98
21-027(b) 12-23-98
33-004(e) 12-23-98
33-004(f) 12-23-98
35-003(i) 12-23-98
36-003(c) 12-23-98
39-003 12-23-98
39-006(b) 12-23-98
40-001(a) 12-23-98
46-008(c) 12-23-98
52-001(a) 12-23-98
52-001(b) 12-23-98
52-001(c) 12-23-98
52-002(b) 12-23-98
52-002(c) 12-23-98
52-002(d) 12-23-98
52-002(e) 12-8-97
52-002(f) 12-23-98
53-007(b) 12-23-98
54-001(c) 12-23-98
54-013(a) 12-23-98

SWMUs removed from Table A = 91

Table B - Priority SWMUs*

SWMU Number				
1-001(a)	11-004(c)	16-007	21-011(h)	36-003(a)
1-001(b)	11-005(a)	16-008(b)	21-011(i)	36-003(b)
1-001(c)	11-005(b)	16-016	21-014	39-001(a)
1-001(d)	11-006(a)	16-018	21-015	39-001(b)
1-001(e)	13-004	16-019	21-016(a)	41-001
1-001(f)	15-002	16-020	21-017(a)	46-002
1-001(g)	15-006(a)	16-021(a)	21-017(b)	46-006(a)
1-001(m)	15-006(b)	18-001(a)	21-017(c)	46-006(b)
1-002	15-006(c)	18-003(a)	21-018(a)	46-006(c)
1-003(a)	15-006(d)	18-003(b)	21-018(b)	46-006(d)
2-005	15-007(a)	18-003(c)	22-015(c)	46-007
2-008(a)	15-007(b)	18-003(d)	33-002(a)	49-001(a)
3-010(a)	15-007(c)	18-003(e)	33-002(b)	50-006(a)
3-012(b)	15-007(d)	18-003(f)	33-002(c)	50-006(c)
3-013(a)	15-008(a)	18-003(g)	33-017	50-006(d)
3-015	15-008(b)	18-003(h)	35-003(a)	50-009
3-029(a)	15-008(c)	21-006(a)	35-003(b)	54-004 (except Shaft No. 9)
5-005(a)	15-008(d)	21-006(b)	35-003(c)	
6-007(a)	15-009(a)	21-006(c)	35-003(d)	54-005
8-003(a)	15-009(b)	21-006(d)	35-003(e)	54-015(h)
9-008(a)	15-012(a)	21-006(e)	35-003(f)	60-005(a)
9-008(b)	15-012(b)	21-010(a)	35-003(g)	73-001(a)
9-009	15-012(c)	21-010(b)	35-003(h)	
9-013	15-012(d)	21-010(c)	35-003(j)	Total SWMUs in Table B = 164
10-003(a)	15-012(e)	21-010(d)	35-003(k)	
10-003(b)	15-012(f)	21-010(e)	35-003(l)	* As RFI work progresses, EPA main identify more SWMUs to be added to the list to be adressed in the installation workplans.
10-003(c)	15-012(g)	21-010(f)	35-003(m)	
10-003(d)	16-001(b)	21-010(g)	35-003(n)	
10-003(e)	16-001(c)	21-010(h)	35-003(o)	
10-003(f)	16-001(d)	21-011(a)	35-003(p)	
10-006	16-001(e)	21-011(b)	35-003(q)	
11-004(a)	16-005(n)	21-011(c)	35-006	
11-004(b)	16-006(a)	21-011(d)	35-010(a)	
11-004(c)	16-006(c)	21-011(e)	35-010(b)	
11-004(d)	16-006(d)	21-011(f)	35-010(c)	
	16-006(e)	21-011(g)	35-010(d)	

Table B.1
No Further Action
SWMUs removed from Table B through a Class III Permit Modification and date of removal

0-005	12-23-98	1-001(k)	12-23-98	3-020(a)	12-23-98	16-005(o)	12-23-98	36-003(c)	12-23-98
1-001(h)	12-23-98	1-001(l)	12-23-98	8-003(b)	12-23-98	16-006(f)	12-23-98		
1-001(i)	12-23-98	1-001(n)	12-23-98	8-003(c)	12-23-98	21-012(a)	12-23-98	SWMUs removed from Table B = 17	
1-001(j)	12-23-98	3-012(a)	12-23-98	8-007	12-23-98	35-003(i)	12-23-98		

Table C

RFI Work Plan due July 7, 1994: Technical Area 16

16-005(a)
16-005(b)
16-005(c)
16-005(d)
16-005(e)
16-005(h)
16-005(j)
16-005(k)
16-005(l)
16-005(m)
16-006(g)
16-006(h)
16-015(a)
16-015(b)
16-017
16-024(e)
16-025(a)
16-025(b)
16-025(b2)
16-025(c2)
16-025(d)
16-025(e)
16-025(f)
16-025(g)
16-025(h)
16-025(l)
16-025(j)
16-025(k)
16-025(l)
16-025(m)
16-025(n)
16-025(o)
16-025(p)
16-025(q)
16-025(r)
16-025(s)
16-025(t)
16-025(u)
16-025(v)
16-025(w)
16-025(x)
16-025(y)
16-025(z)
16-026(m)
16-026(n)
16-026(o)
16-026(p)
16-026(q)
16-026(s)
16-026(w)
16-028(a)
16-029(a2)
16-029(b2)
16-029(c2)
16-029(d2)
16-029(e2)
16-029(f2)
16-029(g2)
16-029(h2)
16-029(k)
16-029(l)
16-029(m)
16-029(n)
16-029(o)
16-029(p)
16-029(q)
16-029(r)
16-029(s)
16-029(t)
16-029(u)
16-029(v)
16-029(w)
16-029(x)
16-029(y)
16-029(z)
16-031(c)
16-031(d)
16-032(a)
16-032(c)
16-034(a)
16-034(b)
16-034(c)
16-034(d)
16-034(e)
16-034(f)
16-034(l)
16-034(m)
16-034(n)
16-034(o)
16-034(p)
C-16-025
C-16-026

• Total SWMUs = 92

RFI Work Plan due July 7, 1995: Technical Area 16

16-016(d)
16-016(e)
16-016(g)
16-025(a2)
16-025(d2)
16-025(e2)
16-025(f2)
16-025(h2)
16-026(a)
16-026(a2)
16-026(b2)
16-026(c2)
16-026(d2)
16-026(e2)
16-026(f)
16-026(f2)
16-026(g)
16-026(g2)
16-026(h)
16-026(i)
16-026(j)
16-026(k)
16-026(k2)
16-026(l)
16-026(r)
16-026(t)
16-026(u)
16-026(x)
16-026(y)
16-026(z)
16-028(b)
16-028(c)
16-028(d)
16-028(e)
16-029(h)
16-029(i)
16-029(j)
16-030(a)
16-030(b)
16-030(c)
16-030(e)
16-030(f)
16-031(a)
16-031(b)
16-031(e)
16-031(f)
16-031(h)
16-034(h)
16-034(i)
16-034(j)
16-034(k)

Total SWMUs = 51

RFI Work Plan due May 21, 1995: Operable Unit 1114

3-002(a)
3-002(d)
3-009(c)
3-009(i)
3-009(j)
3-011
3-019
3-021
3-025(a)
3-025(b)
3-026(b)
3-026(c)
3-029
3-031
3-032
3-034(a)
3-034(b)
3-043(c)
3-045(a)
3-045(b)
3-045(c)
3-045(e)
3-045(f)
3-045(g)
3-045(h)
3-045(i)
3-046
3-049(a)
3-049(b)
3-049(c)
3-049(d)
3-049(e)
3-050(a)
3-050(d)
3-050(e)
3-050(f)
3-050(g)
3-052(a)
3-052(c)
3-052(e)
3-052(f)
3-054(a)
3-054(b)
3-054(c)
3-054(d)
3-054(e)
3-055(a)
3-055(c)
3-055(d)
3-056(d)
3-056(l)
3-056(m)
3-056(n)
3-059

Total SWMUs = 54

• 20 additional SWMUs were added after workplan review

Table C.1
No Further Action
SWMUs removed from Table C through a Class III Permit Modification

3-024	12-8-97	16-006(i)	12-23-98	16-026(i2)	12-23-98	16-032(e)	12-23-98	SWMUs removed from Table C = 11
3-045(d)	12-8-97	16-025(c)	12-23-98	16-031(g)	12-23-98	16-034(g)	12-23-98	
16-005(f)	12-23-98	16-025(g2)	12-23-98	16-032(d)	12-23-98			

10.0 SWMUs 16-025(e2, f2, h2) POTENTIAL SOIL CONTAMINATION FROM FORMER HE STORAGE BUILDINGS

10.1 Summary

SWMUs 16-025(e2, f2, h2) were identified as areas of possible soil contamination from three former Laboratory storage buildings (magazines) that were removed in 1950. Archival evidence indicates that there has never been a release of contaminants. The former sites of all three storage magazines are currently located either under State Highway 501 or under disturbed soils adjacent to the road. SWMUs 16-025(e2, f2, h2) are being proposed for NFA under NFA Criterion 3 (no release).

10.2 Description and Operational History

10.2.1 Site Description

SWMUs 16-025(e2, f2, h2) were identified as areas of possible surface soil contamination from three former Laboratory storage magazines. All three storage magazines were located at S-Site, in TA-16 (Figure 10.2-1). Each storage magazine was 6 ft by 6 ft by 7 ft high and of wood frame construction. SWMU 16-025(e2) was designated structure number TA-16-106 (formerly A-1); SWMU 16-025(f2), TA-16-107 (formerly A-2); and SWMU 16-025(h2), TA-16-109 (formerly A-4). (LANL ER Records Package 730, Attachment A)

10.2.2 Operational History

The SWMU 16-025(e2, f2, h2) storage magazines were constructed in May of 1944 for product storage purposes. Structure TA-16-106 was removed in August 1949, and Structures TA-16-107 and TA-16-109 were removed in November 1950. (Attachment A)

According to a former site safety officer that worked at the Laboratory from 1944 to 1979, Structures TA-16-106, -107, and -109 were mainly used for the storage of non-HE materials such as aluminum powder, lead oxide, and barium nitrate. These structures were also used for the storage of HE, but for a brief period of time only, possibly for 1–1.5 years after they were first built (Martin and Hickmott 1994, 52964.268)(Attachment B). During this 1–1.5 time frame, HE (in packaged form) was placed in one of these buildings while awaiting transfer to one of S-Site's HE-processing buildings for machining and shaping. Once processed, finished HE forms were placed in one of these buildings, while awaiting transfer off-site. No open packages or loose HE was stored in these structures (Attachment B), and no machining or shaping of HE was ever conducted in these buildings. A thorough archival search resulted in no documented cases of a release to the environment of any of the materials stored in these structures.

By November 1950, all three buildings had been removed in preparation for the construction of State Highway 501. Building removal was accomplished through explosive demolition or burning, both common practices for decommissioning and decontaminating buildings at S-Site during the late 1940s through the mid- to late 1960s. The former locations of all three of these buildings currently lie either beneath State Highway 501 or beneath disturbed soils adjacent to the road. Road construction activities severely disturbed surrounding soils and obliterated the (surface) footprints of these former buildings. In addition, during road construction activities, several feet of excavated soil and/or base course and asphalt were placed over the former locations of these buildings. State Highway 501 is elevated and fully graded for drainage.

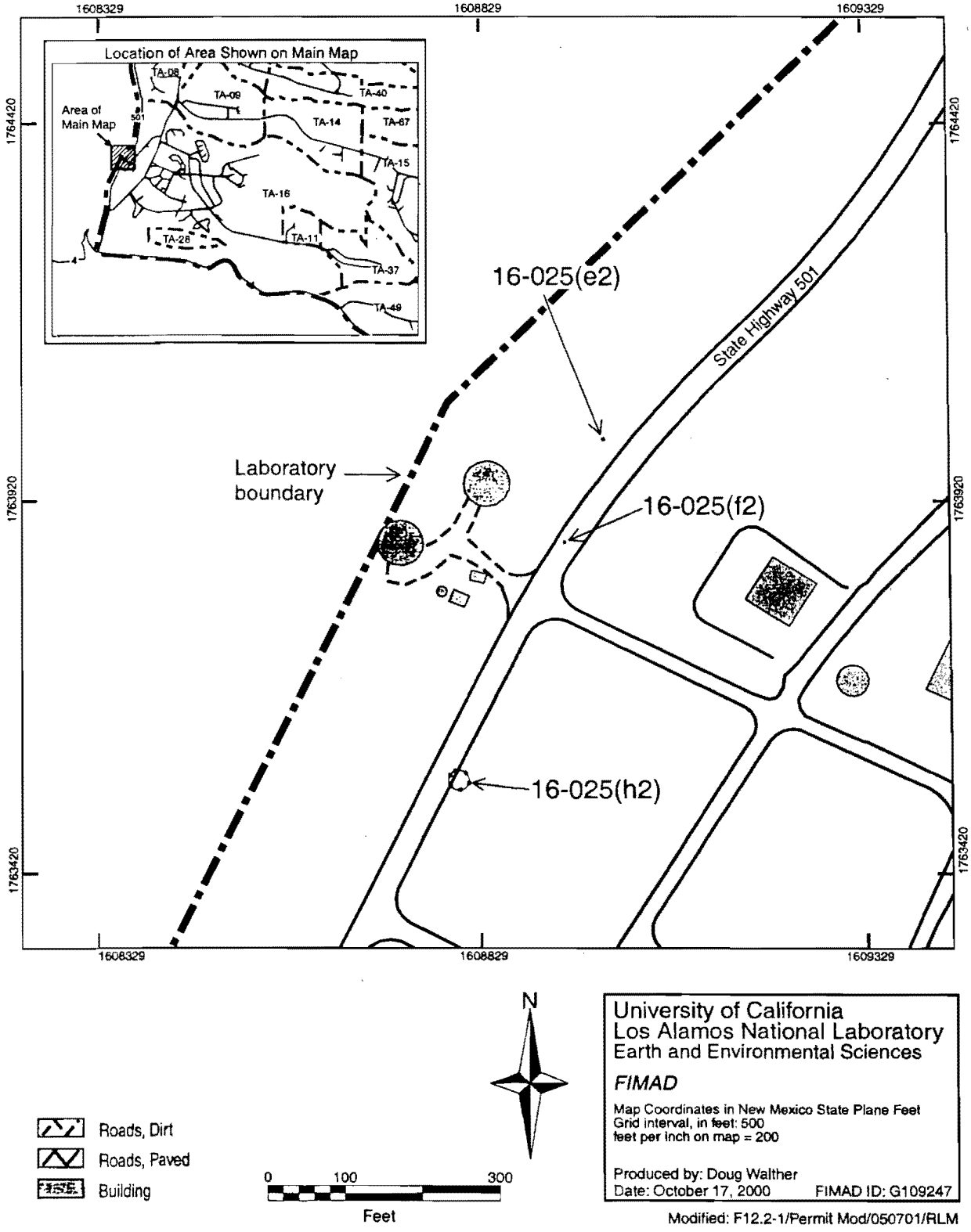


Figure 10.2-1. Locations of SWMUs 16-025(e2, f2, and h2)

10.3 Land Use

10.3.1 Current

The former locations of SWMUs 16-025(e2, f2, h2) are beneath or adjacent to State Highway 501. State Highway 501 is bordered by Santa Fe National Forest on the west and by Laboratory property on the east. Neither the road nor the area in the immediate vicinity of the road is fenced and access is not restricted. The US Forest Service property to the west of State Highway 501 is used recreationally. The Laboratory property to the east of the road is surrounded by a tall, chain-link fence topped with barbed wire, is used industrially, and has restricted access.

10.3.2 Future/Proposed

It is not anticipated that the US Forest Service will change the recreational use of the Santa Fe National Forest in the near or distant future. The Laboratory does not anticipate any change from the industrial use of TA-16 for the operational life of the Laboratory (LANL 1995, 57224, pp.11–12)(Appendix D, Attachment 1).

10.4 No Further Action Proposal

10.4.1 Rationale

SWMU 16-025(g2) (structure number TA-16-108), a building located adjacent to and having a site description and operational history identical to that of SWMUs 16-025(e2, f2, h2) was previously removed by HWB from Module VIII of the Laboratory's Hazardous Waste Facility Permit. SWMU 16-025(g2) was removed from the permit under NFA Criterion 3. The December 23, 1998, permit modification removing this SWMU (NMED 1998, 63042, p. 28) is included as Attachment C of this request for permit modification.

The Laboratory ER Project is proposing SWMUs 16-025(e2, f2, h2) for NFA based on

- archival information indicating that contaminants were not released at these SWMUs;
- the obliteration of the surface footprints of these former buildings and the placement of several feet of excavated soil and/or base course and asphalt over their former locations during the construction of State Highway 501; and
- the precedent established by HWB in removing an identical SWMU [16-025(g2)] from Module VIII of the Laboratory's Hazardous Waste Facility Permit in December 1998.

10.4.2 Criterion

Based on the information presented in Sections 10.2 through 10.4, SWMUs 16-025(e2, f2, h2) are being proposed for NFA under Criterion 3.

10.5 Supporting Documentation Attached

Attachment A: LANL TA-16 structure history book. (LANL ER Records Package 730)

Attachment B: Martin and Hickmott interview of Hilton regarding S-Site history (Martin and Hickmott 1994, 52964.286)

Attachment C: NMED approval letter removing 99 SWMUs from LANL's Hazardous Waste Facility Permit. (NMED 1998, 63042)

Appendix D, Attachment 1: LANL site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

Appendix D, Attachment 2: LANL submittal letter for Revision 1 of Chapter 6 of the RFI work plan for OU 1082, Addendum 2. (LANL 1998, 59685)

10.6 References Used for Text of the Request for Permit Modification for SWMUs 16-025(e2, f2, h2)

LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory report LA-UR-95-1038, Los Alamos, New Mexico, pp. 6-1, 6-18, 6-19. (LANL 1996, 57225).

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico, pp. 6-14 and 6-15. (Environmental Restoration Project 1998, 59685).

10.7 History of Regulatory Deliverables

LANL, July 5, 1995: RFI work plan for OU 1082, Addendum 2, submitted to EPA, Region 6. (LANL 1995, 57225)

LANL, September 11, 1998: Submittal of ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, to DOE as partial satisfaction of Functional Area A.2 Performance Measure. (LANL 1998, 59685)

NMED, Winter, 1998/1999: NMED verbally requested that the ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, not be submitted for NMED review because it would be more efficient to make the Chapter 6 NFA proposals via a first-pass Class III permit modification request. (LANL 1998, 59685)(Appendix D, Attachment 2)

At the time that Addendum 2 of the RFI work plan for OU 1082 was submitted for review, NMED had not yet fully developed its five criteria for NFA. The work plan proposed NFA based on four criteria, rather than five, and on human health evaluations only. In 1998, the ER Project evaluated the NFA recommendations made in Addendum 2 of the work plan against ecological risk and other applicable regulations and standards. In conjunction with the DOE, the ER Project wrote a replacement Chapter 6 for this work plan that

- applied the NFA criteria more recently developed by NMED;
- reevaluated the NFA proposals to include an evaluation of ecological risk as well as other applicable regulations and standards; and
- removed NFA proposals that were no longer viable based on the above two bullets.

In the winter of 1998/1999, a verbal agreement was made between Mr. Dave McInroy of the ER Project and Mr. John Kieling of the NMED Hazardous Waste Bureau. Mr. Kieling requested that the text of Chapter 6 of Addendum 2 of the OU 1082 work plan not be significantly modified in 1998, but the revised NFA proposals be submitted in a first-pass Class III request for permit modification (LANL 1998, 59685)(Appendix D, Attachment 2). Therefore, the Laboratory ER Project is making the NFA proposal for SWMUs 16-025 (e2, f2, h2) in this request for permit modification.

10.7.1 References for Regulatory Deliverables

LANL, July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory report LA-UR-95-1038, Los Alamos, New Mexico, pp. 6-1, 6-18, 6-19. (LANL 1996, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico. (Environmental Restoration Project 1998, 59685)

LANL, September 11, 1998. "Rewrite of Chapter 6 Within RFI Work Plan for OU 1082 to Satisfy PM for Functional Area A.2," Los Alamos National Laboratory letter to T. Taylor (DOE-LAAO) from J. Canepa (ER Project), Los Alamos, New Mexico. (LANL 1998, 59685)

16-025(e2,f2,h2)

ATTACHMENTS

LANL Structure History Book; TA-16

Attachment A-1
16-015 (e2, f2, h2)

STRUCTURE NUMBER	DESIGNATION AND TITLE	GROUP ASSIGN.	DATE ASSIGN.	GENERAL INFORMATION	W.O. J.O. E.S.	LAB JOB NUMBERS
TA-16-105	16-105 Passageway		6/30/49	Proposed ☐ Requested by: _____ (Name & Group) Built: Approximately March 1945, wood frame construction 50' x 9' x 8' high AEC-322-52 Cost: $4,956.00 Abandoned: In place per memo from W. F. Jenike, 11/28/67, AEC. Destroyed: By burning March 9, 1968. Industrial drain lines and sumps disposed of in the H. E. Contaminated pit, Mesita del Buey, TA-54, and all other non-combustible material disposed of in the Materials Disposal Area "P", north of the TA-16 Burning Ground on W. O. 6281-16, All work was completed on June 21, 1968. Retired: AO-5 CV# 2-5009, 2/1/68.		3826
TA-16-106	16-106 Storage		6/30/49	Proposed ☐ Requested by: _____ (Name & Group) Built: On Contract W(17-028)-ENG-55, Contractor: R. E. McKee, Started 5/27/44 Completed 8/1/44. Wood frame construction 6' x 6' x 7' high. AEC-317-26 (Formerly known as A-1) Cost: $1,714.00 6829 Destroyed: Removed and destroyed, per letter from Stone to Derr, dated 8/12/49.		
TA-16-107	16-107 Storage		6/30/49	Proposed ☐ Requested by: _____ (Name & Group) Built: Same as above (Formerly known as A-2) Removed: On Contract AT(29-1)-890, Contractor: Lowdermilk Brothers, Nov. 1950		
TA-16-108	16-108 Storage		6/30/49	Proposed ☐ Requested by: _____ (Name & Group) Built: Same as above (Formerly known as A-3) Removed: Same as above		

Attachment A-2
16-025(e2, f2, h2)

	STRUCTURE NUMBER	DESIGNATION AND TITLE	GROUP ASSIGN.	DATE ASSIGN.	GENERAL INFORMATION	W.O. J.O. E.S.	LAB JOB NUMBERS
	TA-16-109	16-109 Storage		6/30/49	Proposed ☐ Requested by: _____ (Name & Group) Built: On Contract W(17-028)-ENG-55, Contractor: R. E. McKee, Started 5/27/44 Completed 8/1/44. Wood frame construction 6' x 6' x 7' high. Cost: $ 1,714.00 AEC-317-26 #6829 (Formerly known as A-4) Removed: On Contract AT(29-1)-890, Contractor: Lowdermilk Brothers, Nov. 1950		
	TA-16-110	16-110 Barricade		1/25/56	Proposed ☐ Requested by: _____ (Name & Group) Built: Approximately July 1945, earth barricade 500' long x 25' high, S-site expansion #3. Cost: $ 8,000.00 Abandoned: In place 11/28/67 per memo from W. F. Jenike, AEC, 10/3/67. Retired: Per AO-5 CV#2-5009, 2/1/68. 4 322-55 Destroyed: By burning, 2/68. All non-combustible materials disposed of in the Materials Disposal Area "P" located north of the TA-16 Burning Ground. All work was completed June 21, 1968.	6281-16	3826
	TA-16-111	16-111 Barricade (Bin Type)		1/25/56	Proposed ☐ Requested by: _____ (Name & Group) Built: On Contract AT(29-1)-778, Contractor: Shaw & Estas, Started 7/24/49, Completed 3/15/50. Armco, flanged-type sheething, with as earth berm 180' long x 12' high. Cost: $10,000.00 AEC-322-56 Abandoned: 1959		192
	TA-16-112	16-112 Barricade (Earth)		6/30/50	Proposed ☐ Requested by: _____ (Name & Group) Built: Contract AT(29-1)-577, Phase "A", Contractor: J. F. Byrd, Started 12/2/48, Completed 5/26/48. Cost: $3,183.00 Abandoned: 1959		192

Attachment B

16-025(e2, f2, h2)

Los Alamos
NATIONAL LABORATORY
memorandum

Chemical Science and Technology
Responsible Chemistry for America

Environmental Restoration Program/CST-6
Los Alamos, New Mexico 87545

To/MS: OU 1082 File
From/MS: Brad Martin and Don Hickmott
Phone/FAX: 7-6080/5-4632
Symbol: CST-ER/BM-94-08
Date: September 27, 1994

EARLY S-SITE HISTORY, LEE HILTON INTERVIEW

This memorandum outlines a discussion with Mr. Hilton on March 30, 1994 that occurred in the TA-35-268 conference room. The interview lasted from 1:00 p.m. to 3:30 p.m. OU 1082 Team Members Brad Martin, Don Hickmott, Margo Buksa, Karen Schultz Paige, Steve Watanabe and ElRoy Miller attended.

Mr. Hilton arrived in Los Alamos in 1944 and worked in Laboratory groups X-3, GMX-3 and WX-3 until 1979. He was in charge of a casting line during W.W.II and later worked in photography and S-Site plant operations. Prior to his arrival in Los Alamos, Mr. Hilton worked at Atlas Powder Co. doing explosives work and enlisted in the Army Air Corps.

Mr. Hilton provided the following pertinent information regarding buildings at S-Site:

TA-16-15: There was a fairly large amount of HE brought into the laundry as fragments on worker's clothing.

TA-16-18: There was a great deal of HE in the drain line for this steam washing building when it was dug up in the mid 1960s.

TA-16-19: Pump house for fuel oil tank TA-16-29 to pump fuel oil into TA-16-7 steam plant. Not contaminated with HE.

TA-16-20: Hilton confirmed that this was a water pump pit, linked to the sanitary water system at S-Site. It is not an HE sump. They were careful not to contaminate the administration are with HE. The pump pit only carried chlorinated, treated water.

TA-16-21: Chlorination station was not HE contaminated. Chlorination, water softening and water flow monitoring occurred here. No known chlorine spills.

TA-16-29: This fuel oil tank was connected to pump house TA-16-19 and was used to provide fuel for TA-16-7 boilers.

TA-16-49: Hilton believed that this building had a rest room in its northern side.

TA-16-58-61: These magazines stored raw HE product upon arrival in S-Site. both packaged HE and finished HE products were stored in TA-16-57-59. No open packages or loose HE was stored in these magazines. Packages of HE were taken from these magazines to buildings S-23 and S-24 (TA-16-25 and TA-16-26) for opening and inspection. Barium nitrate was also stored in TA-16-58-61.

TA-16-63: This building was used for metals and is not contaminated with HE.

TA-16-62,64,65: These buildings were used with the receiving and handling of HE freighted from the outside and would be contaminated with HE, particularly TA-16-64. They were only used for one to one and one-half years as magazines. After that, carpenters and plumbers used the buildings for storage for a short time.

TA-16-106-109: These storage buildings were minimally used for packaged HE storage (similar to storage at TA-16-58-61), possibly for one to one and one half years when they were first built. They were used for storage of other materials such as aluminum powder, lead oxide, barium nitrate and other inert materials.

TA-16-139-146,190: These are a cluster of buildings located along Anchor Ranch Road near the old fire station. This are was not HE contaminated.

TA-16-200: Present day administration building never had a machine shop in it. Basement is not contaminated with HE, chemicals or oil. This building had a fuel tank on the west wall about 100' south of the northwest corner which was used for a backup generator in the building. The tank was removed after one to two years when the building was fitted with natural gas lines. No leaks from the tank were reported.

TA-16-202: The machine shop in the building did not machine any HE contaminated equipment. Water soluble soap and oils as well as minimal amounts of TCE and penetrating oil would have gone down the floor drains. No butyl acetate was used. The south end of the building was the WX-11 instrument shop. The north end was maintenance for compressors, hydraulics, etc. The East side was Zia electric. The oil overflow outfall daylighted near fence by the old guard shack (TA-16-209).

TA-16-260: Bays 1-8 were initially used for plastics explosives, not machining. Bay 25 was not originally designed and built on the building. However, it was added on almost immediately after TA-16-260 was built. The small hallway drain in Bay 25 was used to receive floor sweepings from the hallway, not the machining bay area. Hilton stated that a large horizontal milling machine ??? was used in that bay.

TA-16-308: This building was used to dry nitrocellulose explosives. However, the basement would not have become contaminated during this process.

TA-16-370: Floor drains from the building would be contaminated with barium nitrate from early days as a grinding facility. Barium nitrate was washed directly down the drains.

TA-16-391: Propane tank at Burning Grounds was used to dry materials in filter beds and tank before flash burning.

TA-16-396: Hilton believes that the rest rooms were inside TA-16-389 and that there was no latrine at the Burning Grounds.

TA-16-401 & 406: Pre-1986, before sand filters were routed to the pond or treatment facility, drain water was allowed to just run over the road into the canyon.

TA-16-411: This building was never used as a rest house, because it has no enclosed walkway connecting it to other buildings. It has always been used for storage and assembly of finished components. The temperature and humidity control equipment was used to control the environment for the assembly process.

TA-16-462: No known chemical spills.

TA-16-464: Should be considered contaminated with a wide variety of HE.

TA-16-478: The drain from the utility room would not be considered HE contaminated because it was located just outside the control room where they were careful not to get contaminated with HE. The utility room only had the pumps and condensers, with condensate leaking into the drain. There is a water cooled vacuum pump in the utility room which provided the vacuum needed to hold HE pieces in the chuck of the lathe located in the machining room. Although the vacuum lines are currently labeled "Danger - contaminated with HE", Hilton felt that it was unlikely that the vacuum lines were contaminated with HE because there is a filter on the front of the vacuum lines that prevents HE from going into the lines. Even if there were HE in the vacuum lines, he felt that it was unlikely that HE would then move into the water lines that drip into the utility drain outfall. Hilton felt that the building sump was a new feature added around 1965 and the sump drained to the east. Before the sump was added, the effluent drained through a French drain to the south which was not removed when the sump was added.

TA-16-481 & 488: Should be considered contaminated with HE.

General information about S-Site:

The rest houses were scattered throughout S-Site were well cleaned by Zia. The floors of the isolated utility rooms in the rest houses were wet mopped and washed down. The floor washings drained through the floor drains, carrying any traces of oil from the pumps and condensers.

The radiography are would not have HE contaminated floor drains since the work done there did not disturb the HE cast parts. The sources used in the buildings were radium and cobalt.

Hilton claimed that spills in magazines were uncommon. Standard clean up method was with a dustpan.

Removal of sumps throughout S-Site involved hand digging followed by an HE check using a test kit on all four sides of the sump.

E. L. Hilton

Cy: OU 1082 Archives
L. Hilton

25

Attachment C

State of New Mexico
ENVIRONMENT DEPARTMENT 16-025(e2,f2,h2)
Hazardous & Radioactive Materials Bureau
2044 Galisteo Street
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

December 23, 1998

ER PROJECT OFFICE RECEIVED JAN 0 4 1999

Mr. Theodore Taylor, Program Manager
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

Dr. John C. Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

RE: **Approval: Class III permit modification to remove ninety-nine (99) Solid Waste Management Units from the Department of Energy / Los Alamos National Laboratory RCRA permit NM 0890010515**

Dear Mr. Taylor and Dr. Brown:

This letter is to inform you that the New Mexico Environment Department (NMED) has approved the Class III permit modification to the US Department of Energy/Los Alamos National Laboratory (DOE/LANL) Resource Conservation and Recovery Act (RCRA) Permit No. NM0890100515 proposed in the Requests for Permit Modification: Units Proposed for No Further Action dated March and September 1995 and September 1996. The modification is effective as of this date.

The modification removes ninety-nine (99) Solid Waste Management Units from Tables A, B and C of Permit Module VIII, Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA for Los Alamos National Laboratory. Enclosed are the revised Tables A, B and C replacement pages for the tables currently in Module VIII. Please remove and replace the 12-8-98 modified pages in your copy of the Permit. A list of the ER sites removed are listed in Tables A.1, B.1 and C.1.

Received by EM-RPF
JAN 2 0 1998

Three written comments were received by NMED regarding its proposal to approve this permit modification. The comments and responses are enclosed.

Please contact John Kieling of HRMB, at 827-1558 extension 1012, if you have any questions.

Sincerely,

Ed Kelley, Ph. D., Director
Water and Waste Management Division

enclosures

cc: J. Canepa, LANL EM/ER, MS M992
J. Davis, NMED SWQB
R. Dinwiddie, NMED HRMB
B. Garcia, NMED HRMB
M. Johansen, DOE LAAO, MS A316
J. Kieling, NMED HRMB
H. LeDoux, DOE LAAO, MS A316
D. McInroy, LANL EM/ER, MS M992
D. Neleigh, EPA, 6PD-N
J. Parker, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
File: HSWA LANL G/P '98
Track: LANL, 12/23/98, na, DOE/LANL, NMED/WWMD/Kelley, RE, File

C:\DOCUMENT\LANL98~1\NFAS\LANLNFA.APP

Table A

Technical Area 0
SWMU Number
0-001
0-003
0-011(a)
0-011(c)
0-011(d)
0-011(e)
0-012
0-016
0-017
0-018(a)
0-019
0-028(a)
0-028(b)
0-030(a)
0-030(b)
0-030(g)
0-030(l)
0-030(m)
0-033
0-039 (20)

Technical Area 1
1-001(a)
1-001(b)
1-001(c)
1-001(d)
1-001(e)
1-001(f)
1-001(g)
1-001(m)
1-001(o)
1-001(s)
1-001(t)
1-001(u)
1-002
1-003(a)
1-003(d)
1-003(e)
1-006(a)
1-006(b)
1-006(c)
1-006(d)
1-006(h)
1-006(n)
1-006(o)
1-007(a)
1-007(b)
1-007(c)
1-007(d)
1-007(e)
1-007(j)
1-007(l) (36)

Technical Area 2
2-005
2-006(a)
2-006(b)
2-007
2-008(a)
2-008(b)
2-009(a)
2-009(b)
2-009(c) (9)

Technical Area 3
3-001(k)
3-002(c)
3-003(a)
3-003(b)
3-003(c)
3-009(a)
3-009(c)
3-009(d)
3-009(g)
3-010(a)
3-012(b)
3-013(a)
3-014(a)
3-014(b)
3-014(c)
3-014(d)
3-014(e)
3-014(f)
3-014(g)
3-014(h)
3-014(i)
3-014(j)
3-014(k)
3-014(l)
3-014(m)
3-014(n)
3-014(o)
3-014(p)
3-014(q)
3-014(r)
3-014(s)
3-014(t)
3-014(u)
3-015
3-026(d)
3-028
3-033
3-036(a)
3-036(c)
3-036(d)
3-037
3-038(a)
3-038(b)
3-043(e)
3-044(a)
3-056(a)
3-056(c) (47)

Technical Area 4
4-001
4-002
4-003(a)
4-003(b) (4)

Technical Area 5
5-001(a)
5-001(b)
5-002
5-003
5-004
5-005(a)
5-005(b)
5-006(b)
5-006(c)
5-006(e)
5-006(h) (11)

Technical Area 6
6-001(a)
6-001(b)
6-002
6-003(a)
6-003(c)
6-003(d)
6-003(e)
6-003(f)
6-003(g)
6-003(h)
6-005
6-006
6-007(a)
6-007(b)
6-007(c)
6-007(d)
6-007(e)
6-007(f)
6-007(g) (19)

Technical Area 7
7-001(a)
7-001(b)
7-001(c)
7-001(d) (4)

Technical Area 8
8-002
8-003(a)
8-004(a)
8-004(b)
8-004(c)
8-004(d)
8-005
8-006(a)
8-009(a)
8-009(d)
8-009(e)
C-8-010 (12)

Technical Area 9
9-001(a)
9-001(b)
9-001(c)
9-001(d)
9-002
9-003(a)
9-003(b)
9-003(d)
9-003(e)
9-003(g)
9-003(h)
9-003(l)
9-004(a)
9-004(b)
9-004(c)
9-004(d)
9-004(e)
9-004(f)
9-004(g)
9-004(h)
9-004(l)
9-004(j)
9-004(k)
9-004(l)
9-004(m)
9-004(n)
9-004(o)
9-005(a)
9-005(d)
9-005(g)
9-006
9-008(b)
9-009

Table A

9-013
C-9-001 (35)

Technical Area 10

10-001(a)
10-001(b)
10-001(c)
10-001(d)
10-002(a)
10-002(b)
10-003(a)
10-003(b)
10-003(c)
10-003(d)
10-003(e)
10-003(f)
10-003(g)
10-003(h)
10-003(i)
10-003(j)
10-003(k)
10-003(l)
10-003(m)
10-003(n)
10-003(o)
10-004(a)
10-004(b)
10-005
10-006
10-007 (26)

Technical Area 11

11-001(a)
11-001(b)
11-001(c)
11-002
11-004(a)
11-004(b)
11-004(c)
11-004(d)
11-004(e)
11-005(a)
11-005(b)
11-005(c)
11-006(a)
11-006(b)
11-006(c)
11-006(d)
11-009
11-011(a)
11-011(b)
11-011(c)
11-011(d) (21)

Technical Area 12

12-001(a)
12-001(b)
12-002 (3)

Technical Area 13

13-001
13-002
13-003(a)
13-004 (4)

Technical Area 14

14-002(a)
14-002(b)
14-002(c)
14-002(d)
14-002(e)
14-002(f)
14-003
14-005
14-006
14-007
14-009
14-010 (12)

Technical Area 15

15-002
15-003
15-004(a)
15-004(b)
15-004(c)
15-004(f)
15-004(g)
15-004(i)
15-006(a)
15-006(b)
15-006(c)
15-006(d)
15-007(a)
15-007(b)
15-007(c)
15-007(d)
15-008(a)
15-008(b)
15-008(c)
15-008(d)
15-009(a)
15-009(b)
15-009(c)
15-009(e)
15-009(f)
15-009(g)
15-009(h)
15-009(i)
15-009(j)
15-009(k)
15-010(a)
15-010(b)
15-010(c)
15-011(a)
15-011(b)
15-011(c)
15-012(a)
15-012(b)
15-014(a)
15-014(b)
15-014(i)
15-014(j)
15-014(k)
15-014(l) (44)

Technical Area 16

16-001(a)
16-001(b)
16-001(c)
16-001(d)
16-001(e)
16-003(a)
16-003(b)
16-003(c)
16-003(d)
16-003(e)
16-003(f)
16-003(g)
16-003(h)
16-003(i)
16-003(j)
16-003(k)
16-003(l)
16-003(m)
16-003(n)
16-003(o)
16-004(a)
16-004(b)
16-004(c)
16-004(d)
16-004(e)
16-004(f)
16-005(g)
16-005(n)
16-006(a)
16-006(c)
16-006(d)
16-006(e)
16-007(a)
16-008(a)
16-009(a)
16-010(a)
16-010(b)
16-010(c)
16-010(d)
16-010(e)
16-010(f)
16-010(h)
16-010(l)
16-010(j)
16-010(k)
16-010(l)
16-010(m)
16-010(n)
16-013
16-016(a)
16-016(b)
16-016(c)
16-018
16-019
16-020
16-021(a)
16-021(c)
16-026(b)
16-026(c)
16-026(d)
16-026(e)
16-026(h2)
16-026(j2)
16-026(v)
16-029(a)
16-029(b)
16-029(c)
16-029(d)
16-029(e)
16-029(f)
16-029(g)
16-030(h)
16-035
16-036 (74)

Technical Area 18

18-001(a)
18-001(b)
18-001(c)
18-002(a)
18-002(b)
18-003(a)
18-003(b)

Table A

18-003(c)
18-003(d)
18-003(e)
18-003(f)
18-003(g)
18-003(h)
18-004(a)
18-004(b)
18-005(a)
18-007
18-012(a)
18-012(b) (19)

Technical Area 19

19-001
19-002
19-003 (3)

Technical Area 20

20-001(a)
20-001(b)
20-001(c)
20-002(a)
20-002(b)
20-002(c)
20-002(d)
20-003(a)
20-005 (9)

Technical Area 21

21-002(a)
21-003
21-004(b)
21-004(c)
21-005
21-006(a)
21-006(b)
21-006(c)
21-006(d)
21-006(e)
21-007
21-010(a)
21-010(b)
21-010(c)
21-010(d)
21-010(e)
21-010(f)
21-010(g)
21-010(h)
21-011(a)
21-011(b)
21-011(c)
21-011(d)
21-011(e)
21-011(f)
21-011(g)
21-011(i)
21-011(j)
21-011(k)
21-012(b)
21-013(a)
21-013(b)
21-013(c)
21-013(d)
21-013(e)
21-014
21-015
21-016(a)
21-016(b)
21-016(c)
21-017(a)
21-017(b)
21-017(c)
21-018(a)
21-018(b)
21-021
21-022(a)
21-022(b)
21-022(c)
21-022(d)
21-022(e)
21-022(f)
21-022(g)
21-022(h)
21-022(i)
21-022(j)
21-023(a)
21-023(b)
21-023(c)
21-023(d)
21-024(a)
21-024(b)
21-024(c)
21-024(d)
21-024(e)
21-024(f)
21-024(g)
21-024(h)
21-024(i)
21-024(j)
21-024(k)
21-024(l)
21-024(n)
21-024(o)
21-026(a)
21-026(b)
21-027(a)
21-027(c)
21-027(d)
21-029 (80)

Technical Area 22

22-010(a)
22-010(b)
22-011
22-012
22-014(a)
22-014(b)
22-015(a)
22-015(b)
22-015(c)
22-015(d)
22-015(e)
22-016 (12)

Technical Area 26

26-001
26-002(a)
26-002(b)
26-003 (4)

Technical Area 27

27-001
27-002
27-003 (3)

Technical Area 31

31-001 (1)

Technical Area 32

32-001
32-002(a)
32-002(b) (3)

Technical Area 33

33-001(a)
33-001(b)
33-001(c)
33-001(d)
33-001(e)
33-002(a)
33-002(b)
33-002(c)
33-002(d)
33-002(e)
33-003(a)
33-003(b)
33-004(a)
33-004(b)
33-004(c)
33-004(d)
33-004(g)
33-004(h)
33-004(l)
33-004(j)
33-004(k)
33-004(m)
33-005(a)
33-005(b)
33-005(c)
33-006(a)
33-006(b)
33-007(a)
33-007(b)
33-007(c)
33-008(a)
33-008(b)
33-009
33-010(a)
33-010(b)
33-010(c)
33-010(d)
33-010(f)
33-010(g)
33-010(h)
33-011(a)
33-011(c)
33-011(d)
33-011(e)
33-012(a)
33-013
33-014
33-015
33-016
33-017 (50)

Technical Area 35

35-002
35-003(a)
35-003(b)
35-003(c)
35-003(d)
35-003(e)
35-003(f)
35-003(g)
35-003(h)
35-003(j)
35-003(k)

Table A

35-003(l)
35-003(m)
35-003(n)
35-003(o)
35-003(p)
35-003(q)
35-004(a)
35-004(b)
35-004(c)
35-004(g)
35-004(h)
35-006
35-008
35-009(a)
35-009(b)
35-009(c)
35-009(d)
35-009(e)
35-010(a)
35-010(b)
35-010(c)
35-010(d)
35-011(a)
35-013(a)
35-013(b)
35-013(c)
35-013(d)
35-014(a)
35-014(b)
35-014(c)
35-014(g)
35-015(a)
35-015(b)
35-016(a)
35-016(c)
35-016(d)
35-016(i)
35-016(k)
35-016(m)
35-016(o)
35-016(p)
35-016(q) (53)

Technical Area 36

36-001
36-002
36-003(a)
36-003(b)
36-004(d)
36-005
36-006
C-36-003 (8)

Technical Area 39

39-001(a)
39-001(b)
39-002(a)
39-004(a)
39-004(b)
39-004(c)
39-004(d)
39-004(e)
39-005
39-006(a)
39-007(a)
39-008 (12)

Technical Area 40

40-001(b)
40-001(c)
40-003(a)
40-004
40-005
40-006(a)
40-006(b)
40-006(c)
40-009
40-010 (10)

Technical Area 41

41-001
41-002(a)
41-002(b)
41-002(c) (4)

Technical Area 42

42-001(a)
42-001(b)
42-001(c)
42-002(b)
42-003 (5)

Technical Area 43

43-001(a)
43-002 (2)

Technical Area 45

45-001
45-002
45-003
45-003 (4)

Technical Area 46

46-002
46-003(a)
46-003(b)
46-003(c)
46-003(d)
46-003(e)
46-003(f)
46-003(g)
46-003(h)
46-004(a)
46-004(b)
46-004(c)
46-004(d)
46-004(e)
46-004(f)
46-004(g)
46-004(h)
46-004(a2)
46-004(b2)
46-004(c2)
46-004(d2)
46-004(m)
46-004(p)
46-004(q)
46-004(r)
46-004(s)
46-004(t)
46-004(u)
46-004(v)
46-004(w)
46-004(x)
46-004(y)
46-004(z)
46-005
46-006(a)
46-006(b)
46-006(c)
46-006(d)
46-006(f)
46-006(g)
46-007
46-008(a)
46-008(b)
46-008(d)
46-008(e)
46-008(f)
46-008(g)
46-009(a)
46-009(b)
46-010(d) (50)

Technical Area 48

48-002(a)
48-002(b)
48-003
48-004(a)
48-004(b)
48-004(c)
48-005
48-007(a)
48-007(b)
48-007(c)
48-007(d)
48-007(f)
48-010 (13)

Technical Area 49

49-001(a)
49-001(b)
49-001(c)
49-001(d)
49-001(e)
49-001(f)
49-001(g)
49-003
49-004
49-005(a)
49-006 (11)

Technical Area 50

50-001(a)
50-002(a)
50-002(b)
50-002(c)
50-004(a)
50-004(b)
50-004(c)
50-006(a)
50-006(c)
50-006(d)
50-009
50-011(a) (12)

Technical Area 52

52-001(d)
52-002(a) (2)

Technical Area 53

53-001(a)
53-001(b)
53-002(a)
53-002(b)
53-005
53-006(b)
53-006(c)
53-006(d)
53-006(e)
53-006(f)

Table A

53-007(a) (11)

Technical Area 54

54-001(a)
54-004 (excluding Shaft No. 9)
54-005
54-006
54-007(a)
54-007(b)
54-007(c)
54-012(b)
54-013(b)
54-014(b)
54-014(c)
54-014(d)
54-015(h)
54-015(k)
54-017
54-018
54-019
54-020 (18)

Technical Area 55

55-008
55-009 (2)

Technical Area 59

59-001 (1)

Technical Area 60

60-002
60-005(a)
60-006(a)
60-007(a)
60-007(b) (5)

Technical Area 61

61-002
61-004(a)
56.00
61-006
61-007 (5)

Technical Area 63

63-001(a)
63-001(b) (2)

Technical Area 69

69-001 (1)

Technical Area 73

73-001(a)
73-001(b)
73-001(c)
73-001(d)
73-002
73-004(a)
73-004(b)
73-004(c)
73-004(d)
73-005
73-006 (11)

Total SWMUs in Table A = 801

Table A.1
No Further Action
SWMUs removed from Table A through a Class III Permit Modification and date of removal

0-005 12-23-98
1-001(h) 12-23-98
1-001(i) 12-23-98
1-001(j) 12-23-98
1-001(k) 12-23-98
1-001(l) 12-23-98
1-001(n) 12-23-98
3-001(a) 12-23-98
3-001(b) 12-23-98
3-001(c) 12-23-98
3-002(b) 12-23-98
3-005(b) 12-23-98
3-005(e) 12-23-98
3-005(f) 12-23-98
3-005(h) 12-23-98
3-012(a) 12-23-98
3-018 12-23-98
3-020(a) 12-23-98
3-035(a) 12-23-98
3-035(b) 12-23-98
3-039(a) 12-23-98
7-003(c) 12-23-98
7-003(d) 12-23-98
8-003(b) 12-23-98
8-003(c) 12-23-98
8-006(b) 12-23-98
8-007 12-23-98
9-003(e) 12-23-98
9-003(f) 12-23-98
9-005(b) 12-23-98
9-005(c) 12-23-98
9-005(e) 12-23-98
9-005(f) 12-23-98
9-005(h) 12-23-98
9-007 12-23-98
11-007 12-23-98
14-004(b) 12-23-98
15-014(m) 12-23-98
16-005(i) 12-23-98
16-005(o) 12-23-98
16-006(b) 12-23-98
16-006(f) 12-23-98
16-010(g) 12-23-98
16-012(a) 12-23-98
16-012(b) 12-23-98
16-012(c) 12-23-98
16-012(d) 12-23-98
16-012(e) 12-23-98
16-012(f) 12-23-98
16-012(g) 12-23-98
16-012(h) 12-23-98
16-012(i) 12-23-98
16-012(j) 12-23-98
16-012(k) 12-23-98
16-012(l) 12-23-98
16-012(m) 12-23-98
16-012(n) 12-23-98
16-012(o) 12-23-98
16-012(p) 12-23-98
16-012(q) 12-23-98
16-012(r) 12-23-98
16-012(s) 12-23-98
16-012(t) 12-23-98
16-012(u) 12-23-98
16-012(v) 12-23-98
16-012(w) 12-23-98
16-012(x) 12-23-98
16-012(y) 12-23-98
16-012(z) 12-23-98
21-012(a) 12-23-98
21-024(m) 12-23-98
21-027(b) 12-23-98
33-004(e) 12-23-98
33-004(f) 12-23-98
35-003(i) 12-23-98
36-003(e) 12-23-98
39-003 12-23-98
39-006(b) 12-23-98
40-001(a) 12-23-98
46-008(c) 12-23-98
52-001(a) 12-23-98
52-001(b) 12-23-98
52-001(c) 12-23-98
52-002(b) 12-23-98
52-002(c) 12-23-98
52-002(d) 12-23-98
52-002(e) 12-8-97
52-002(f) 12-23-98
53-007(b) 12-23-98
54-001(c) 12-23-98
54-013(a) 12-23-98

SWMUs removed from Table A = 91

Table B - Priority SWMUs*

SWMU Number
1-001(a)
1-001(b)
1-001(c)
1-001(d)
1-001(e)
1-001(f)
1-001(g)
1-001(m)
1-002
1-003(a)
2-005
2-008(a)
3-010(a)
3-012(b)
3-013(a)
3-015
3-029(a)
5-005(a)
6-007(a)
8-003(a)
9-008(a)
9-008(b)
9-009
9-013
10-003(a)
10-003(b)
10-003(c)
10-003(d)
10-003(e)
10-003(f)
10-006
11-004(a)
11-004(b)
11-004(c)
11-004(d)
11-004(e)
11-005(a)
11-005(b)
11-006(a)
13-004
15-002
15-006(a)
15-006(b)
15-006(c)
15-006(d)
15-007(a)
15-007(b)
15-007(c)
15-007(d)
15-008(a)
15-008(b)
15-008(c)
15-008(d)
15-009(a)
15-009(b)
15-012(a)
15-012(b)
15-012(c)
15-012(d)
15-012(e)
15-012(f)
15-012(g)
16-001(b)
16-001(c)
16-001(d)
16-001(e)
16-005(n)
16-006(a)
16-006(c)
16-006(d)
16-006(e)
16-007
16-008(b)
16-016
16-018
16-019
16-020
16-021(a)
18-001(a)
18-003(a)
18-003(b)
18-003(c)
18-003(d)
18-003(e)
18-003(f)
18-003(g)
18-003(h)
21-006(a)
21-006(b)
21-006(c)
21-006(d)
21-006(e)
21-010(a)
21-010(b)
21-010(c)
21-010(d)
21-010(e)
21-010(f)
21-010(g)
21-010(h)
21-011(a)
21-011(b)
21-011(c)
21-011(d)
21-011(e)
21-011(f)
21-011(g)
21-011(h)
21-011(i)
21-014
21-015
21-016(a)
21-017(a)
21-017(b)
21-017(c)
21-018(a)
21-018(b)
22-015(c)
33-002(a)
33-002(b)
33-002(c)
33-017
35-003(a)
35-003(b)
35-003(c)
35-003(d)
35-003(e)
35-003(f)
35-003(g)
35-003(h)
35-003(j)
35-003(k)
35-003(l)
35-003(m)
35-003(n)
35-003(o)
35-003(p)
35-003(q)
35-006
35-010(a)
35-010(b)
35-010(c)
35-010(d)
36-003(a)
36-003(b)
39-001(a)
39-001(b)
41-001
46-002
46-006(a)
46-006(b)
46-006(c)
46-006(d)
46-007
49-001(a)
50-006(a)
50-006(c)
50-006(d)
50-009
54-004 (except Shaft No. 9)
54-005
54-015(h)
60-005(a)
73-001(a)

Total SWMUs in Table B = 164

* As RFI work progresses, EPA main identify more SWMUs to be added to the list to be adressed in the installation workplans.

Table B.1
No Further Action
SWMUs removed from Table B through a Class III Permit Modification and date of removal

0-005	12-23-98	1-001(k)	12-23-98	3-020(a)	12-23-98	16-005(o)	12-23-98	36-003(c)	12-23-98
1-001(h)	12-23-98	1-001(l)	12-23-98	8-003(b)	12-23-98	16-006(f)	12-23-98		
1-001(i)	12-23-98	1-001(n)	12-23-98	8-003(c)	12-23-98	21-012(a)	12-23-98	SWMUs removed from Table B = 17	
1-001(j)	12-23-98	3-012(a)	12-23-98	8-007	12-23-98	35-003(i)	12-23-98		

Table C

RFI Work Plan due July 7, 1994: Technical Area 16

16-005(a)
16-005(b)
16-005(c)
16-005(d)
16-005(e)
16-005(h)
16-005(j)
16-005(k)
16-005(l)
16-005(m)
16-006(g)
16-006(h)
16-015(a)
16-015(b)
16-017
16-024(e)
16-025(a)
16-025(b)
16-025(b2)
16-025(c2)
16-025(d)
16-025(e)
16-025(f)
16-025(g)
16-025(h)
16-025(i)
16-025(j)
16-025(k)
16-025(l)
16-025(m)
16-025(n)
16-025(o)
16-025(p)
16-025(q)
16-025(r)
16-025(s)
16-025(t)
16-025(u)
16-025(v)
16-025(w)
16-025(x)
16-025(y)
16-025(z)
16-026(m)
16-026(n)
16-026(o)
16-026(p)
16-026(q)
16-026(s)
16-026(w)
16-028(a)
16-029(a2)
16-029(b2)
16-029(c2)
16-029(d2)
16-029(e2)
16-029(f2)
16-029(g2)
16-029(h2)
16-029(k)
16-029(l)
16-029(m)
16-029(n)
16-029(o)
16-029(p)
16-029(q)
16-029(r)
16-029(s)
16-029(t)
16-029(u)
16-029(v)
16-029(w)
16-029(x)
16-029(y)
16-029(z)
16-031(c)
16-031(d)
16-032(a)
16-032(c)
16-034(a)
16-034(b)
16-034(c)
16-034(d)
16-034(e)
16-034(f)
16-034(l)
16-034(m)
16-034(n)
16-034(o)
16-034(p)
C-16-025
C-16-026

• Total SWMUs = **92**

RFI Work Plan due July 7, 1995: Technical Area 16

16-016(d)
16-016(e)
16-016(g)
16-025(a2)
16-025(d2)
16-025(c2)
16-025(f2)
16-025(h2)
16-026(a)
16-026(a2)
16-026(b2)
16-026(c2)
16-026(d2)
16-026(e2)
16-026(f)
16-026(f2)
16-026(g)
16-026(g2)
16-026(h)
16-026(i)
16-026(j)
16-026(k)
16-026(k2)
16-026(l)
16-026(r)
16-026(t)
16-026(u)
16-026(x)
16-026(y)
16-026(z)
16-028(b)
16-028(c)
16-028(d)
16-028(e)
16-029(h)
16-029(i)
16-029(j)
16-030(a)
16-030(b)
16-030(c)
16-030(e)
16-030(f)
16-031(a)
16-031(b)
16-031(e)
16-031(f)
16-031(h)
16-034(h)
16-034(i)
16-034(j)
16-034(k)

Total SWMUs = **51**

RFI Work Plan due May 21, 1995: Operable Unit 1114

3-002(a)
3-002(d)
3-009(c)
3-009(i)
3-009(j)
3-011
3-019
3-021
3-025(a)
3-025(b)
3-026(b)
3-026(c)
3-029
3-031
3-032
3-034(a)
3-034(b)
3-043(c)
3-045(a)
3-045(b)
3-045(c)
3-045(e)
3-045(f)
3-045(g)
3-045(h)
3-045(i)
3-046
3-049(a)
3-049(b)
3-049(c)
3-049(d)
3-049(e)
3-050(a)
3-050(d)
3-050(e)
3-050(f)
3-050(g)
3-052(a)
3-052(c)
3-052(e)
3-052(f)
3-054(a)
3-054(b)
3-054(c)
3-054(d)
3-054(e)
3-055(a)
3-055(c)
3-055(d)
3-056(d)
3-056(l)
3-056(m)
3-056(n)
3-059

Total SWMUs = **54**

• 20 additional SWMUs were added after workplan review

Table C.1
No Further Action
SWMUs removed from Table C through a Class III Permit Modification

3-024 12-8-97	16-006(i) 12-23-98	16-026(i2) 12-23-98	16-032(e) 12-23-98	SWMUs removed from Table C = 11
3-045(d) 12-8-97	16-025(c) 12-23-98	16-031(g) 12-23-98	16-034(g) 12-23-98	
16-005(f) 12-23-98	16-025(g2) 12-23-98	16-032(d) 12-23-98		

11.0 SWMU 16-026(a2) ACTIVE STORM OUTFALL AND ASSOCIATED DRAINLINE

11.1 Summary

SWMU 16-026(a2) is an active storm outfall and associated drainline from the roof drains of an administrative building at TA-16. From the time of its construction in the early 1950s, the building has housed offices only; no solid or hazardous wastes or constituents were ever managed in this building. This SWMU is being proposed for NFA under NFA Criterion 2 (the site has never been used for the management of solid or hazardous waste and/or constituents).

11.2 Description and Operational History

11.2.1 Site Description

The SWMU report (LANL 1990, 07512, p. 16-026)(Attachment A) describes SWMU 16-026(a2) as an inactive outfall with an unknown waste stream from a drain [line] located on the southeast side of Building TA-16-200 (Figure 11.2-1). However, archival information demonstrates that the outfall is periodically active, intermittently discharging rainwater collected from the roof of the building.

Building TA-16-200 is located outside of the fenced TA-16 HE-processing area (Figure 11.2-2). Rainwater from the roof of Building TA-16-200 is channeled through a line that runs beneath most of the length of the building's concrete basement floor, initiating as a 4-in.-diameter pipe at the north end of the basement (as-built Engineering Drawing ENG-C 8549 [sheet 96 of 144][Attachment B]). The 4-in. pipe connects to a 6-in. pipe at a juncture near the basement stairwell (as-built Engineering Drawing ENG-C 8549 [sheet 96 of 144][Attachment B]). The 6-in. line exits at the south end of the building where it runs southeast (underground) to a point of discharge (at daylight) approximately 175 ft southeast of the building (ENG-C 8541 [sheet 88 of 144][Attachment C]). The point of discharge is through a 12-in. corrugated culvert (see photograph [LANL 1994, 69720] included as Attachment D). No other buldings or potential sources of contamination are connected to this drainline/outfall.

11.2.2 Operational History

Building TA-16-200 was constructed from July 2, 1951, through December 22, 1952, and became operational in early 1953 (LANL ER Records Package 730)(Attachment E). This building has been used as an administrative office building from the time of its construction (As-built Engineering Drawings ENG-C 8549, 8550, 8551, and 8552)(Attachment B) and Martin/Hickmott interview of Lee Hilton (1994, 52464.286)(Attachment F).

As-built Engineering Drawing ENG-C 8541 (sheet 88 of 144)(Attachment C), shows that this drainline and associated outfall were built exclusively to collect and disperse storm water from the roof of TA-16-200. This is corroborated by Attachment B Engineering Drawings (ENG-C 8549 [sheet 96 of 144], ENG-C 8550 [sheet 97 of 144], ENG-C 8551 [sheet 98 of 144], and ENG-C 8552 [sheet 99 of 144]), which show that all roof drains tie into the building's storm drainline and that all floor drains tie into the building's sanitary sewer line.

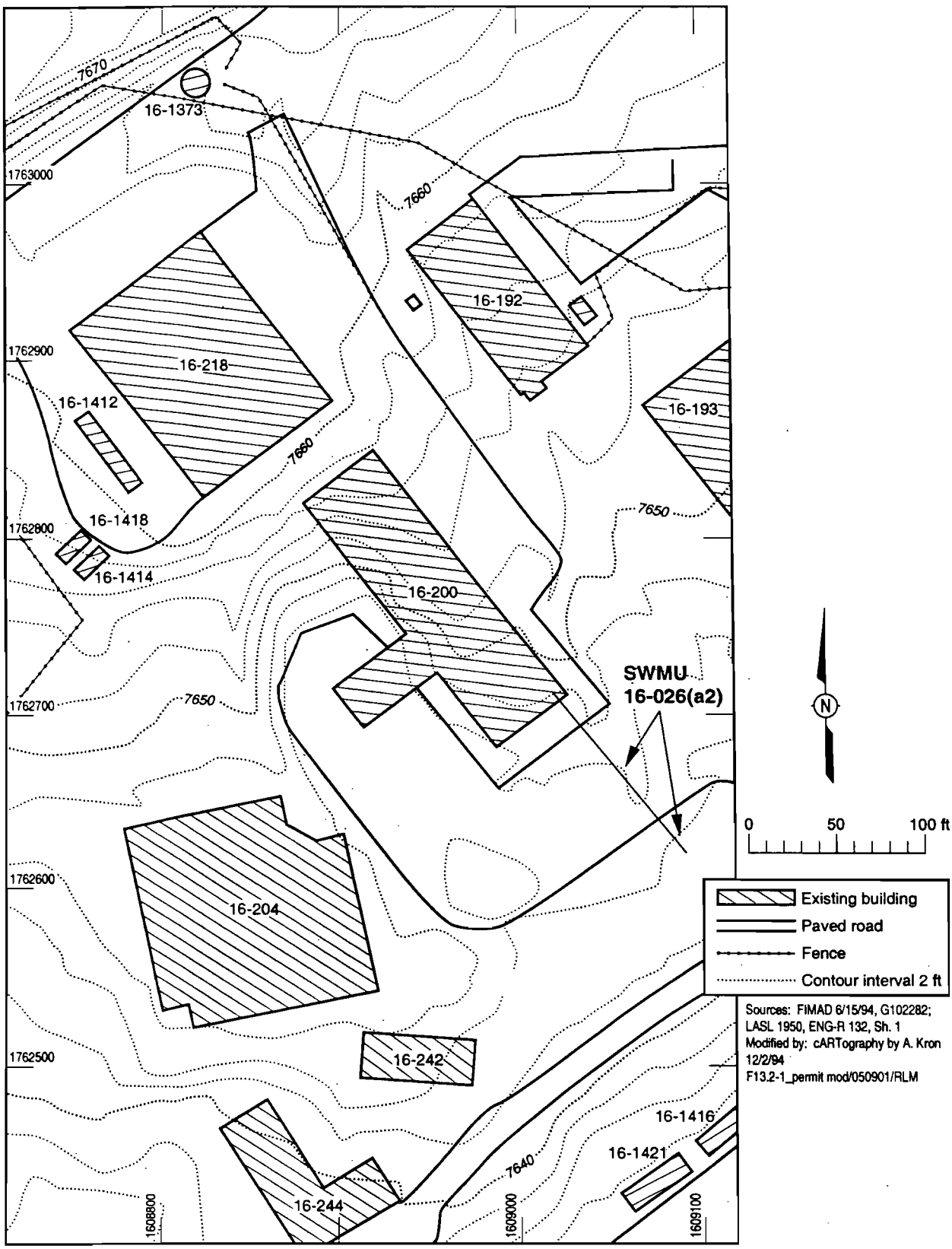


Figure 11.2-1. Location of SWMU 16-026(a2), active storm outfall and associated drainline

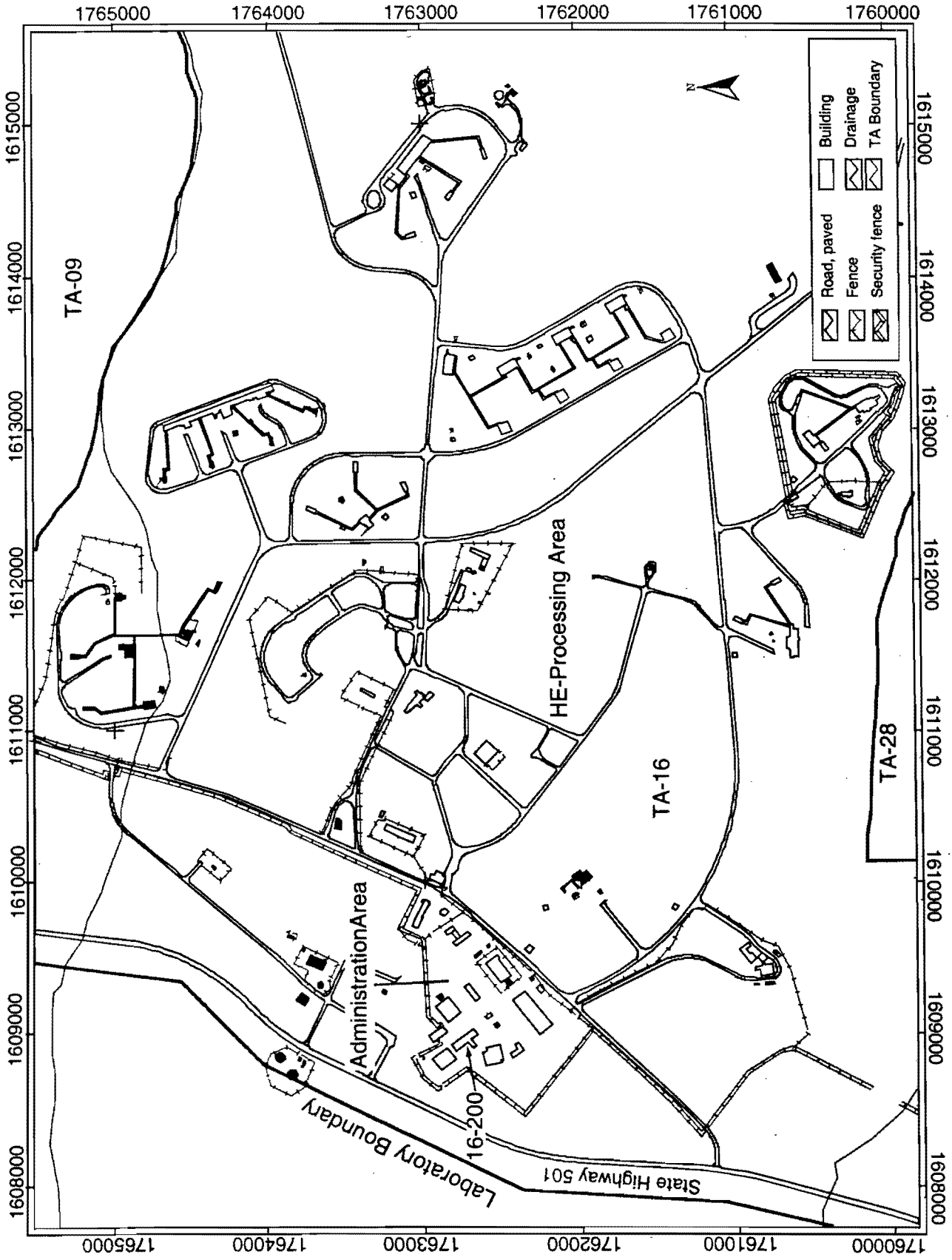


Figure 11.2-2. Location of Building 16-200

11.3 Land Use

11.3.1 Current

TA-16 is an industrial area used for the research, development, processing, and testing of HE. It is a high-security, restricted access area enclosed by a chain-link fence topped with barbed wire. Access to TA-16 is obtained only by passing through a security guard station. These security measures effectively eliminate the possibility of inadvertent site intrusion.

11.3.2 Future/Proposed

The Laboratory does not anticipate any change from the industrial restricted-access use of TA-16 for the operational life of the Laboratory (LANL 1995, 57224, pp.11-12)(Appendix D, Attachment 1). Future industrial use of this TA will continue to include the research, development, processing, and testing of HE.

11.4 No Further Action Proposal

11.4.1 Rationale

Based on archival information, the ER Project has demonstrated that, from the time Building TA-16-200 began operation in 1953 to the present,

- from the time of its construction to the present Building TA-16-200 has housed administrative offices only;
- none of the floor drains in Building TA-16-200 are tied into the SWMU 16-026(a2) storm drainline; all Building TA-16-200 floor drains are tied into the building's sanitary sewer system; and
- from the time of its construction to the present the SWMU 16-026(a2) drain system and associated outfall has received only the periodic flow of rainwater from 13 roof drains.

Thus, it is demonstrated that the SWMU 16-026(a2) outfall has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents.

11.4.2 Criterion

Based on the information presented in Sections 11.2 through 11.4.1, SWMS 16-026(a2) is proposed for NFA under NFA Criterion 2.

11.5 Supporting Documentation Attached

Attachment A: LANL SWMU report, Volume II, pp. 16-026. (LANL 1990, 07512)

Attachment B: LASL Engineering Drawings ENG-C 8549 (sheet 96 of 144), ENG-C 8550 (sheet 97 of 144), ENG-C 8551 (sheet 98 of 144), and ENG-C 8552 (sheet 99 of 144), dated 1951. (LASL 1951, 70003; 70004; 70005; 70006)

Attachment C: LASL Engineering Drawing ENG-C 8541 (sheet 88 of 144), dated 1951. (LASL 1951, 65632)

Attachment D: LANL photograph of SWMU 16-025(a2) outfall. (LANL 1994, 69720)

Attachment E: LANL TA-16 structure history book. (LANL ER Records Package 730)

Attachment F: Martin and Hickmott interview of Hilton regarding S-Site history. (Martin and Hickmott 1994, 52964.286)

Appendix D, Attachment 1: LANL, 1995. Site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

Appendix D, Attachment 2: LANL submittal letter for Revision 1 of Chapter 6 of the RFI work plan for OU 1082, Addendum 2. (LANL 1998, 59685)

11.6 References Used for Text of the Request for Permit Modification for SWMU 16-026(a2)

LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory Report LA-UR-95-1038, Los Alamos, New Mexico, p. 6-9. (LANL 1995, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico, p. 6-7. (Environmental Restoration Project 1998, 59685)

11.7 History of Regulatory Deliverables

LANL, July 5, 1995: RFI work plan for OU 1082, Addendum 2, submitted to EPA, Region 6. (LANL 1995, 57225)

LANL, September 11, 1998: Submittal of ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, to DOE as partial satisfaction of Functional Area A.2 Performance Measure. (LANL 1998, 59685)

NMED, Winter, 1998/1999: NMED verbally requested that the ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, not be submitted for NMED review because it would be more efficient to make the Chapter 6 NFA proposals via a first-pass Class III permit modification request. (LANL 1998, 59685)(Appendix D, Attachment 2)

At the time that Addendum 2 of the RFI work plan for OU 1082 was submitted for review, NMED had not yet fully developed its five criteria for NFA. The work plan proposed NFA based on four criteria, rather than five, and on human health evaluations only. In 1998, the ER Project evaluated the NFA recommendations made in Addendum 2 of the work plan against ecological risk and other applicable regulations and standards. In conjunction with the DOE, the ER Project wrote a replacement Chapter 6 for this work plan that

- applied the NFA criteria more recently developed by NMED;
- reevaluated the NFA proposals to include an evaluation of ecological risk as well as other applicable regulations and standards; and
- removed NFA proposals that were no longer viable based on the above two bullets.

In the winter of 1998/1999, a verbal agreement was made between Mr. Dave McInroy of the ER Project and Mr. John Kieling of the NMED Hazardous Waste Bureau. Mr. Kieling requested that the text of Chapter 6 of Addendum 2 of the OU 1082 work plan not be significantly modified in 1998, but the revised NFA proposals be submitted in a first-pass Class III request for permit modification (LANL 1998,

59685)(Appendix D, Attachment 2). Therefore, the Laboratory ER Project is making the NFA proposal for SWMU 16-026(a2) in this request for permit modification.

11.7.1 References for Regulatory Deliverables

LANL, July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory report LA-UR-95-1038, Los Alamos, New Mexico, pp. 6-1, 6-18, 6-19. (LANL 1996, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico. (Environmental Restoration Project 1998, 59685)

LANL, September 11, 1998. "Rewrite of Chapter 6 Within RFI Work Plan for OU 1082 to Satisfy PM for Functional Area A.2," Los Alamos National Laboratory letter to T. Taylor (DOE-LAAO) from J. Canepa (ER Project), Los Alamos, New Mexico. (LANL 1998, 59685)

16-026(a2)

ATTACHMENTS

SUMMARY

LOCATION	: TA-16	MATERIALS MANAGED	: HAZARDOUS WASTE
TYPE OF UNIT(s)	: OUTFALL		MIXED WASTE
UNIT USE	: DISPOSAL		SOLID WASTE
OPERATIONAL STATUS	: INACTIVE		
PERIOD OF USE	: 1940s - 1980s		
HAZARDOUS RELEASE	: KNOWN		
RADIOACTIVE RELEASE	: KNOWN		

UNIT INFORMATION

The following table lists inactive outfalls resulting from building drains in TA-16.

SWMU NO.	STRUCTURE NO.	BUILDING DRAIN LOCATION	OUTFALL LOCATION
16-026(a)	TA-16-370	east/south sides	Water Canyon
16-026(b)	TA-16-307	north side	Water Canyon
16-026(c)	TA-16-305	northeast side	Water Canyon
16-026(d)	TA-16-303	south side	Water Canyon
16-026(e)	TA-16-301	south side	Water Canyon
16-026(f)	TA-16-308	northeast/east sides	Valle Canyon
16-026(g)	TA-16-280	northeast side	Valle Canyon
16-026(h)	TA-16-281	northeast side	Valle Canyon
16-026(i)	TA-16-224	northeast/northwest sides	Valle Canyon
16-026(j)	TA-16-226	south/southwest sides	Valle Canyon
16-026(k)	TA-16-221	northeast side	Valle Canyon
16-026(l)	TA-16-220	northeast/southeast/south sides	Valle Canyon
16-026(m)	TA-16-92	east side	Valle Canyon
16-026(n)	TA-16-91	east/southeast sides	Valle Canyon
16-026(o)	TA-16-90	northeast side	Valle Canyon
16-026(p)	TA-16-89	southeast/northeast sides	Valle Canyon
16-026(q)	TA-16-27	north/south sides	Valle Canyon
16-026(r)	TA-16-180	south side	Valle Canyon
16-026(s)	TA-16-5	northeast side	unknown
16-026(t)	TA-16-207	east side	Water Canyon
16-026(u)	TA-16-195	southeast side	Valle Canyon
16-026(v)	TA-16-460	EPA05A072	Water Canyon
16-026(w)	TA-16-45	unknown	Water Canyon
16-026(x)	TA-16-437	south side	Water Canyon
16-026(y)	TA-16-411	east side	Water Canyon
16-026(z)	TA-16-306	south side	Water Canyon
16-026(a2)	TA-16-200	southeast side	Valle Canyon
16-026(b2)	TA-16-202	northeast side	Water Canyon
16-026(c2)	TA-16-462	southeast side	Water Canyon
16-026(d2)	TA-16-435	northeast side	Water Canyon
16-026(e2)	TA-16-415	north side	Water Canyon
16-026(f2)	TA-16-413	north side	Water Canyon
16-026(g2)	TA-16-285	southeast side	Valle Canyon
16-026(h2)	TA-16-360	west/east/north/south sides	Water Canyon
16-026(i2)	TA-16-54	unknown	Valle Canyon
16-026(j2)	TA-16-345	north side	Water Canyon
16-026(k2)	TA-16-260	north/south sides	Water Canyon

(continued)

WASTE INFORMATION

The building drains from TA-16-437, -411, -415, -285, -435, -221, and -281 received compressor condensate. Building drains from TA-16-303, -308, -345, -260, and -27 received HE and barium. Outfalls from TA-16-224, -226, and -220 may have contained HE and radionuclides. Outfalls from TA-16-92, -90, -91, and -89 may have contained barium in addition to HE and radionuclides. The following table summarizes waste constituents in the remaining outfalls:

BUILDING	WASTE TYPE
TA-16-370	barium, metals, solvents
TA-16-307	solvents, HE
TA-16-5	oils, solvents
TA-16-305	HE, barium, solvents
TA-16-301	solvents, HE, barium
TA-16-180	oil, grease, unknown
TA-16-207	uranium
TA-16-460	HE, barium, mercury, solvents
TA-16-360	possible HE, unknown
TA-16-45	HE, silver, barium, lead, Radium-226, -228
TA-16-462	solvents
TA-16-200	unknown
TA-16-54	barium nitrate

RELEASE INFORMATION

The extent to which the outfalls may have caused a release of hazardous waste is unknown.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
16-026(a)	**		Tsk 12 : 95 96 97	TA-16-370
16-026(a2)	**		Tsk 14 : 414	TA-16-200
16-026(b)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 193 194 192	TA-16-307
16-026(b2)	**		Tsk 14 : 416	TA-16-202
16-026(c)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 195 197	TA-16-305
16-026(c2)	**		Tsk 14 : 423	TA-16-462
16-026(d)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 198 200	TA-16-303
16-026(d2)	**		Tsk 14 : 440	TA-16-435
16-026(e)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 201 203	TA-16-301
16-026(e2)	**		Tsk 14 : 453	TA-16-415
16-026(f)	**		Tsk 13 : 204 205	TA-16-308
16-026(f2)	**		Tsk 14 : 454	TA-16-413
16-026(g)	**	16.057	Tsk 13 : 210 211	TA-16-280
16-026(g2)	**		Tsk 13 : 206	TA-16-285
16-026(h)	**		Tsk 13 : 207 212	TA-16-281
16-026(h2)	**		Tsk 12 : 91 92 93	TA-16-360
16-026(i)	**		Tsk 13 : 214 215	TA-16-224
16-026(i2)	**		Tsk 13 : 207	TA-16-283
16-026(j)	**		Tsk 13 : 216 217	TA-16-226
16-026(j2)	**		Tsk 12 : 73	TA-16-345
16-026(k)	**		Tsk 13 : 219	TA-16-221
16-026(k2)	**		Tsk 12 : 78	TA-16-260
16-026(l)	**		Tsk 13 : 220 221 222	TA-16-220
16-026(m)	**		Tsk 13 : 227	TA-16-92
16-026(n)	**		Tsk 13 : 228	TA-16-91
16-026(o)	**		Tsk 13 : 229 230	TA-16-90
16-026(p)	**		Tsk 13 : 231 232	TA-16-89
16-026(q)	**		Tsk 13 : 235 236 237	TA-16-27
16-026(r)	**		Tsk 14 : 402 403	TA-16-180
16-026(s)	**		Tsk 14 : 405	TA-16-5
16-026(t)	**		Tsk 14 : 410	TA-16-207
16-026(u)	**		Tsk 14 : 412 413	TA-16-195
16-026(v)	**	16.060	Tsk 14 : 418-422	TA-16-460

(continued)

SWMU CROSS-REFERENCE LIST
(continued)

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
16-026(w)	**		Tsk 14 : 425	TA-16-45
16-026(x)	**		Tsk 14 : 441	TA-16-437
16-026(y)	**		Tsk 14 : 455	TA-16-411
16-026(z)	TA16-5-O/CA-A/1-HW/RW		Tsk 13 : 191 192	TA-16-306

** No corresponding E. R. Program unit.

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

ER ID # 71096

Box # 292

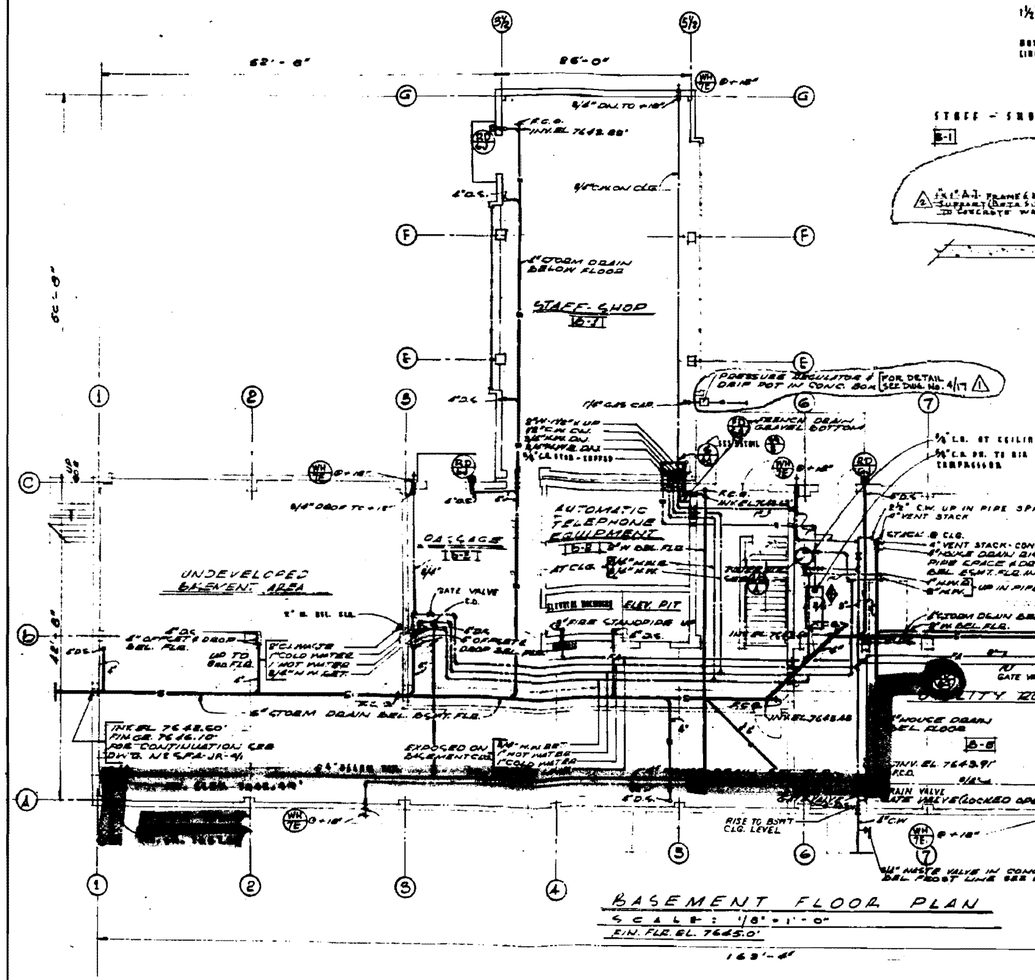
Record Type: ENGINEERING DRAWING/MAP

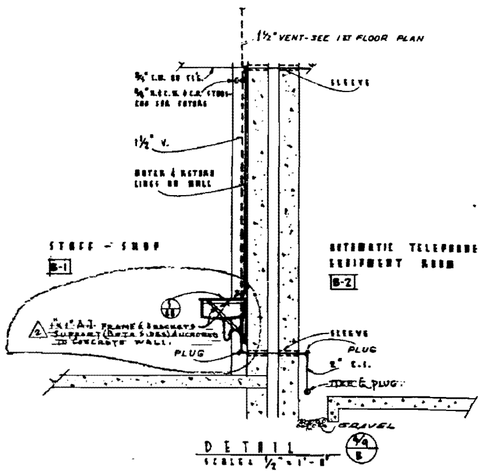
Date: 1/17/52

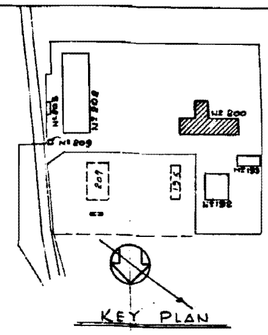
Symbol: ENG C 8549

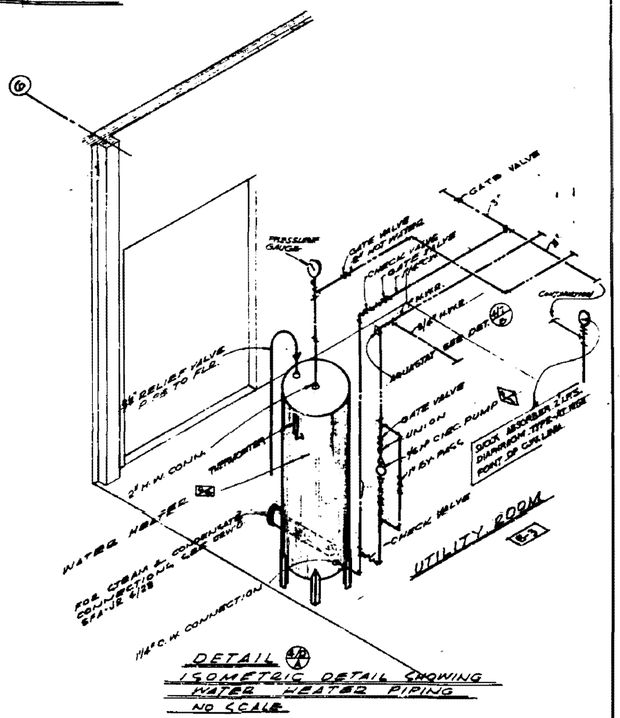
Subject:

SEE ER ID # 70003









RECORD DRAWING
THIS DRAWING REPRESENTS THE CONSTRUCTION AS BUILT
SUBMITTED
RECOMMENDED
APPROVED
KISTNER, CURTIS & WRIGHT, ARCHITECT-ENGINEERS
SUBMITTED THIS DRAWING AS A RECORD OF CONSTRUCTION AS BUILT
ATTENTION IS CALLED TO THE FACT THAT CHANGES IN THE CONSTRUCTION BY OTHER AGENCIES SUBSEQUENT TO THAT DATE.

VERIFIED UNCLASSIFIED
PUBLICLY RELEASABLE
LANL Classification Group
P. Lang 5-14-2001

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GENERAL NOTES
1. FOR CONTINUATION OF ALL OUTSIDE PIPING SEE DRAWING NUMBER SFA-JR-4/9
2. FOR PLUMBING LEGEND & FIXTURE & EQUIPMENT SCHEDULES, SEE DRAWING NUMBER SFA-JR-4/9

NO.	DATE	REVISIONS	BY	CK.	PROJ. ENGR. APP.
7	12-22	Support for Sink	BW		
6	10/16	Note Added In Reference To Valve On The Gas Service	H.V.	B.L.H.	

U.S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

SERVICE AREA-PROJECT "N", TA-16 PHASE A
PLUMBING
BUILDING 16-200 - ADMINISTRATION
BASEMENT PLAN & DETAILS

DESIGNED	H.V.
DRAWN	BLH
TRACED	BW
CHECKED	H.V.
APPROVED	

KISTNER, CURTIS & WRIGHT
ARCHITECTS & ENGINEERS
LOS ANGELES, CALIFORNIA

DRAWING NO. SFA-JR 4/9.2 | SHEET 96 | OF 144

JOB NO. 909 | L.A.S.L. DWG NO. ENG-C 8549

LAB JOB 233

Attachment B-1

16-026(a2)

70003

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Target

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ER ID # 71096

Box # 292

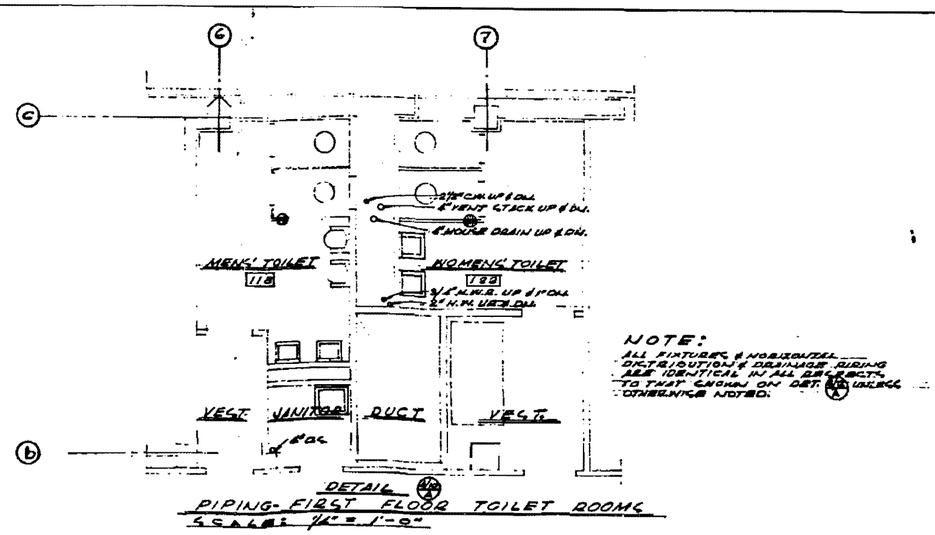
Record Type: ENGINEERING DRAWING/MAP

Date: 4/30/51

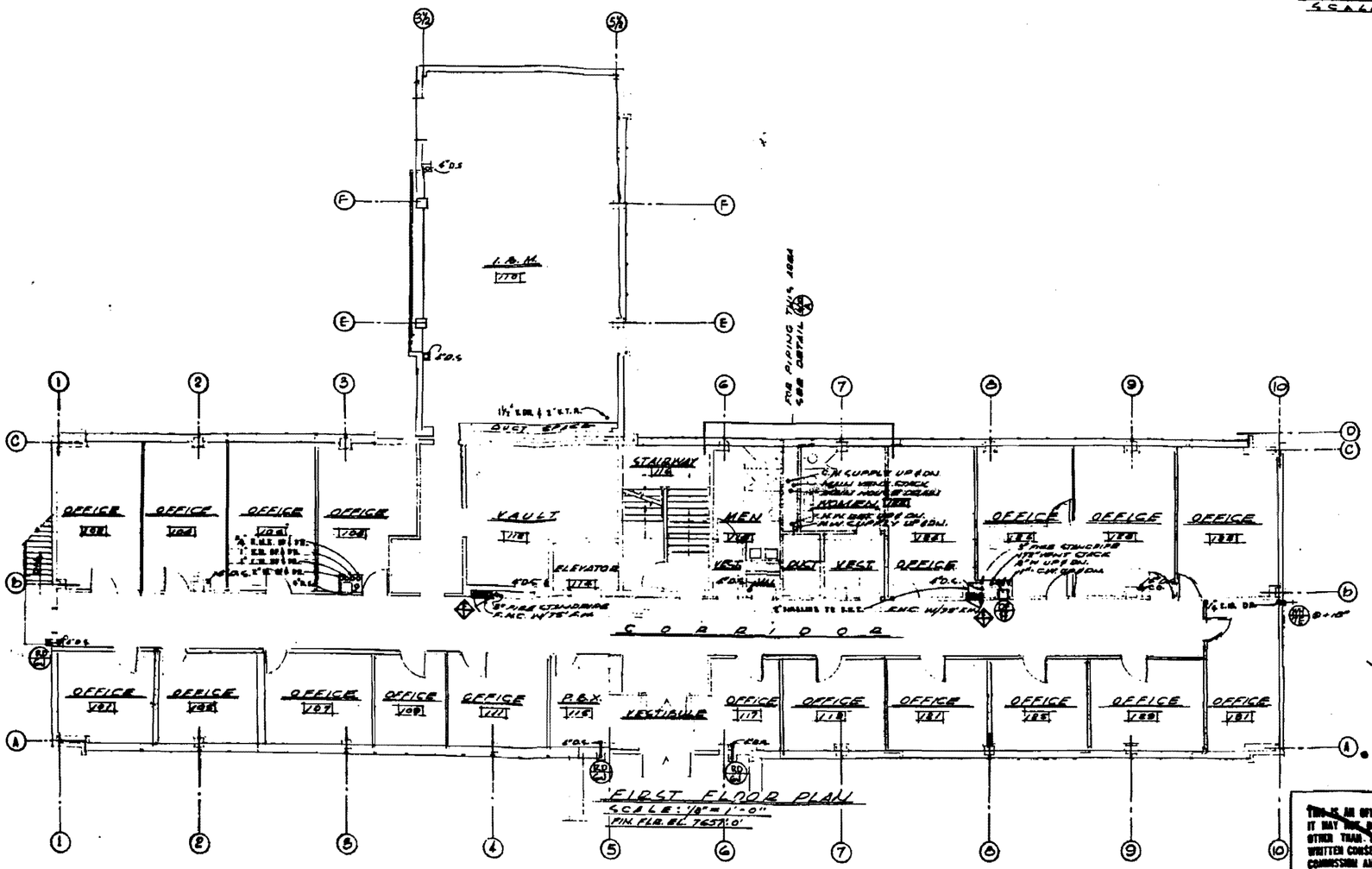
Symbol: ENG C 8550

Subject:

SEE ER ID # 70004



DETAIL
PIPING - FIRST FLOOR TOILET ROOMS
SCALE: 1/4" = 1'-0"



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"
FIN. FLR. EL. 7657.0'

RECORD DRAWING
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LOS ALAMOS, NEW MEXICO

SERVICE AREA PROJECT "N", TA-16 PHASE A
PLUMBING
BUILDING 16-200 ADMINISTRATION
FIRST FLOOR PLANS & DETAILS

KISTNER, CURTIS & WRIGHT
ARCHITECTS & ENGINEERS
LOS ANGELES, CALIFORNIA

SFA-JR 4/10

LAB JOB 233

Attachment B-2

16-026(a2)

70004

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

ER ID # 71096

Box # 292

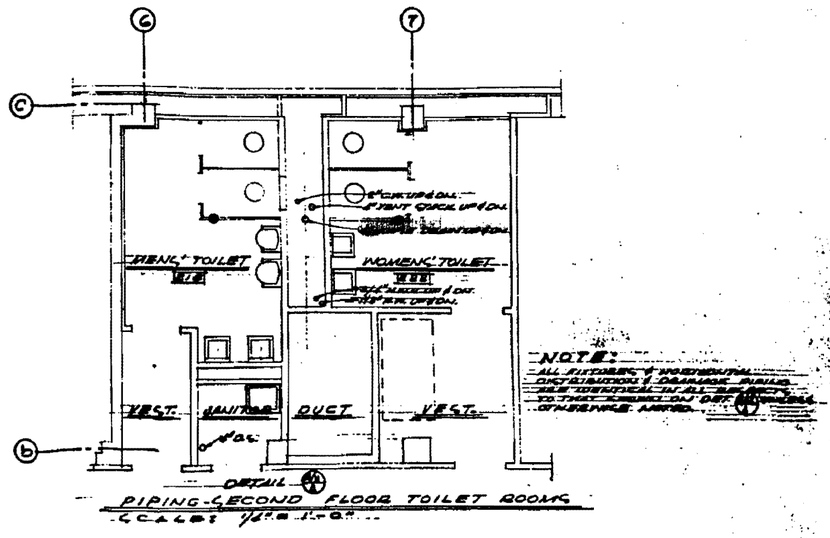
Record Type: ENGINEERING DRAWING/MAP

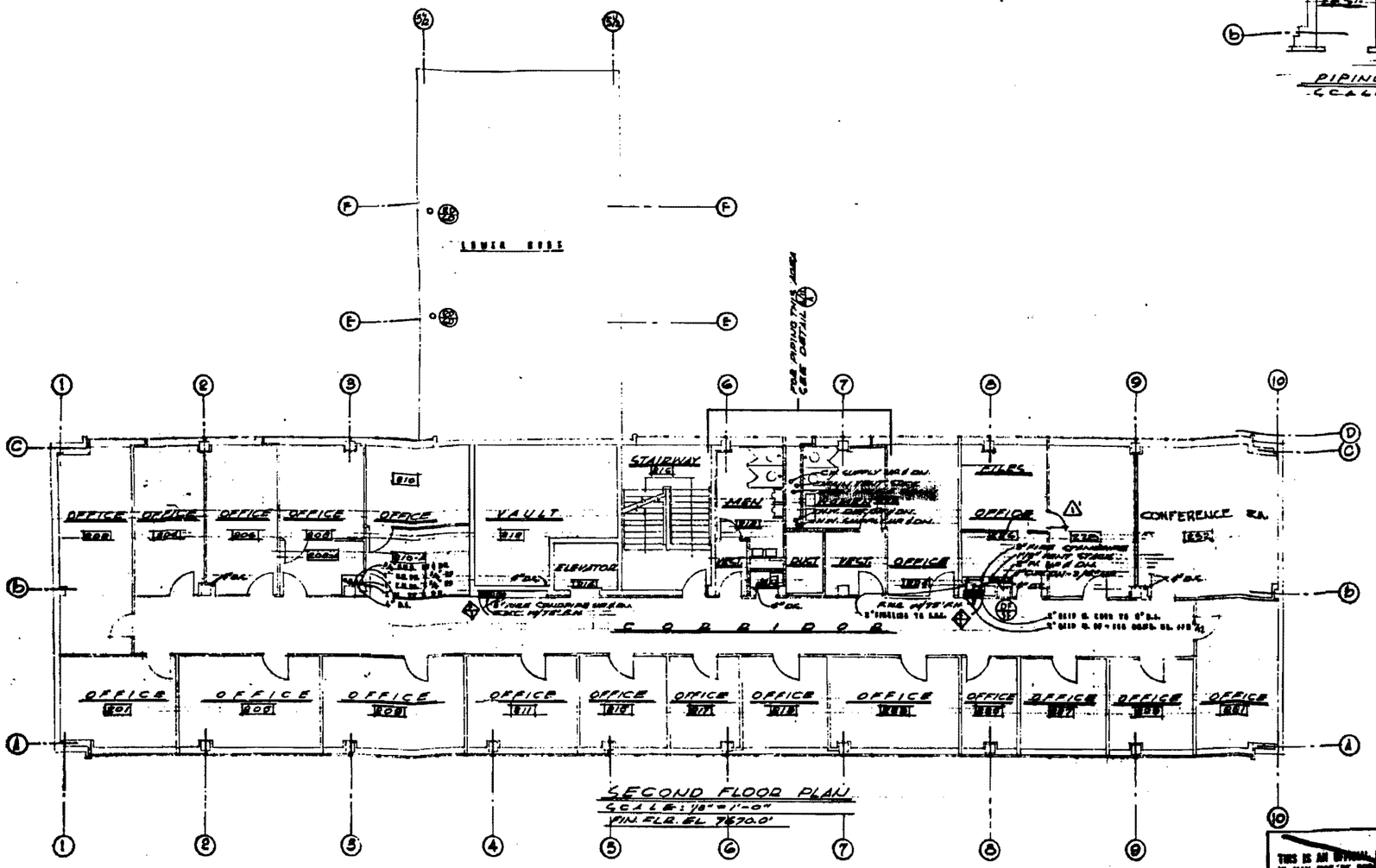
Date: 3/16/55

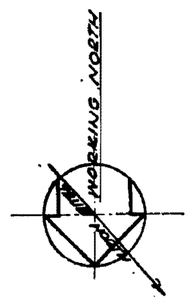
Symbol: ENG C 8551

Subject:

SEE ER ID # 70005







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THE CONSTRUCTION AS BUILT.

U.S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

SERVICE AREA PROJECT N-TA-16 PHASE A
PLUMBING
BUILDING 16-200 ADMINISTRATION
SECOND FLOOR PLAN & DETAILS

KOSTNER, CURTIS & WRIGHT
ARCHITECTS & ENGINEERS
LOS ANGELES, CALIFORNIA

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Attachment B-3

16-026(a2)

70005

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

ER ID # 71096

Box # 292

Record Type: ENGINEERING DRAWING/MAP

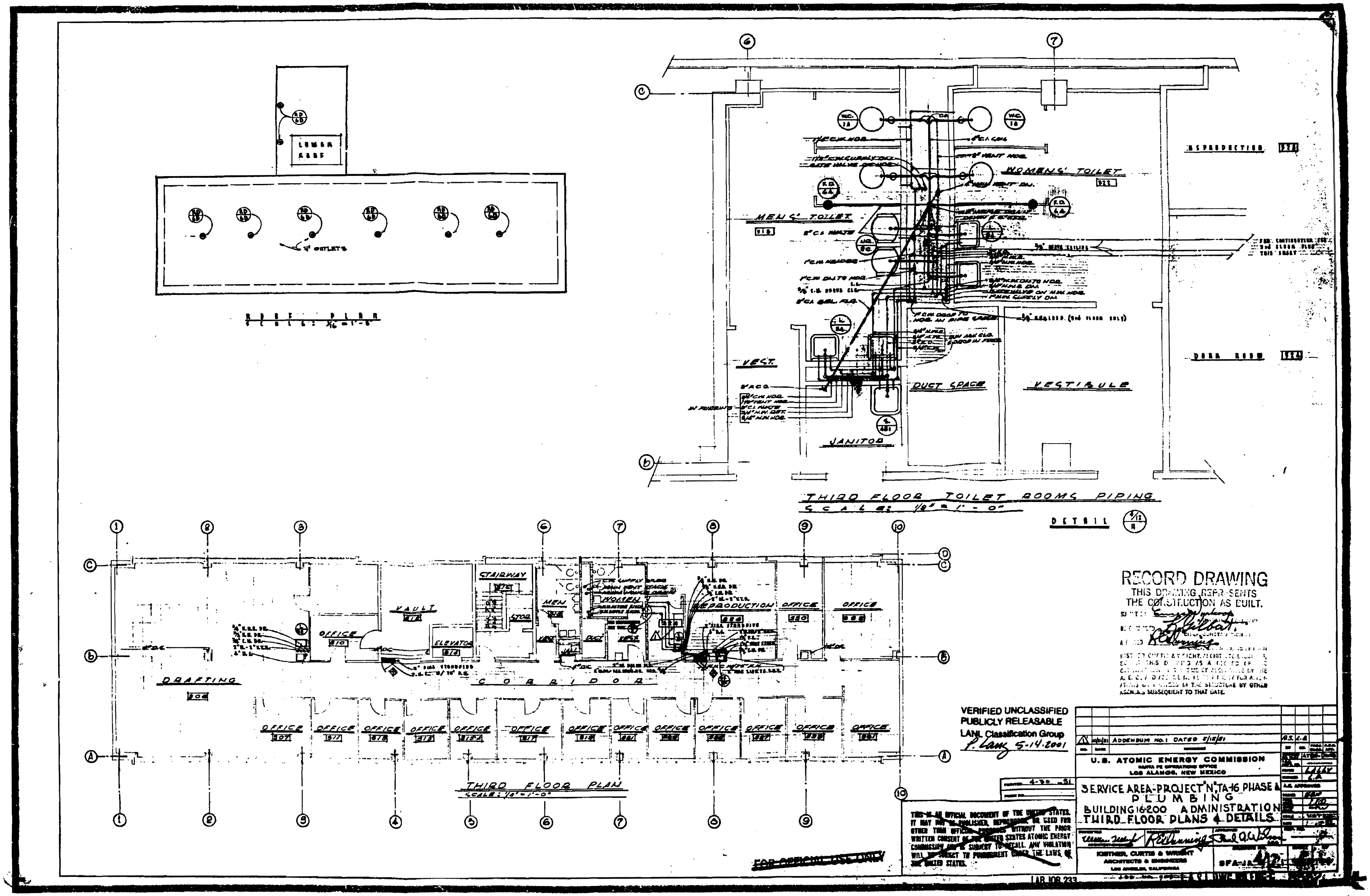
Date: 10/31/51

Symbol: ENG C 8552

Subject:

SEE ER ID #70006

265



ROOF PLAN
SCALE: 1/16" = 1'-0"
LOWER ROOF
1/2" OUTLETS
WOMENS' TOILET
MENS' TOILET
VEST.
DUCT SPACE
VESTIBULE
JANITOR
REPRODUCTION
DARK ROOM
THIRD FLOOR TOILET ROOMS PIPING
SCALE: 1/8" = 1'-0"
DETAIL
DRAFTING
OFFICE
VAULT
STAIRWAY
ELEVATOR
MEN
WOMEN
CORRIDOR
THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"
RECORD DRAWING
THIS DRAWING REPRESENTS
THE CONSTRUCTION AS BUILT.
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ADDENDUM NO. 1
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LOS ALAMOS, NEW MEXICO
SERVICE AREA-PROJECT 'N' TA-16 PHASE I
PLUMBING
BUILDING 16-200 ADMINISTRATION
THIRD FLOOR PLANS & DETAILS
KISTNER, CURTIS & WRIGHT
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LAB JOB 233

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ADC: Ricardo V. Ortiz, Group Leader
Date Reviewed: 11/06/00

Attachment B-4

16-026(a2)

70006

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

ER ID # 71096

Box # 292

Record Type: ENGINEERING DRAWING/MAP

Date: 4/30/51

Symbol: ENG-C 8541

Subject:

SEE ER ID # 65362

EXISTING SALVAGE YARD

FUTURE EXTENSION

(16-192) GUARD STATION NO. 1

(16-193) CHANGE HOUSE NO. 180

(16-202) F-202 SHOP

(16-1062)

EXISTING STEAM PLANT (16-540)

EXISTING 12" WATER MAIN

EXISTING P.R. TO BE REMOVED PLUG BARREL BELOW FROST LINE

STA. 8+55 New Manhole (16-760)

STA. 9+65 New Manhole (16-978)

STA. 2+75 New Manhole (16-777)

STA. 0+05 Existing Manhole (16-776)

Bldg. # 195 (16-1951)

(16-1658) EXIST. MAN. #29 (POINT OF CONNECTION)

(16-1059)

(16-1062)

(16-1185)

(16-21)

(16-22)

EXISTING CAFETERIA (16-46)

EXISTING PUMP HOUSE-16-20

EXISTING BUILDINGS

TRIANGULATION POINT "A"

P.I. STREET INTERSECTION

NEW ROAD

℄ of Existing Road

EXISTING 12" E.L.

8" V.C.P.

Existing 8" Sanitary Sewer

Existing 8" Sanitary Sewer

NOTE ⚠ FOR DETAIL OF GAS VALVE BOXES SEE DWG. No. 417

LEGEND

- EXISTING BUILDINGS
- BUILDINGS TO BE CONSTRUCTED
- FUTURE BUILDINGS
- O NEW MANHOLE (SEWER)
- NEW SEWER LINES (SIZE AS NOTED)
- V.C.P. VITRIFIED CLAY PIPE, STANDARD STRENGTH
- NEW MANHOLE (STEAM)
- NEW STEAM LINE
- C.R. NEW CONDENSATE RETURN LINE
- ANCHOR POINT
- P.R. PUMPED RETURN LINE
- EXISTING SEWER LINE
- WATER MAIN - NEW
- W WATER MAIN - EXISTING
- G GAS MAIN - NEW
- GL GAS MAIN - EXISTING
- L.P. LOCATION POST

GENERAL NOTES.

1. FOR PROFILE OF 10" SANITARY SEWER, SEE DWG. SFA-JR-4/30
2. FOR PLOT STAKE & GRADING PLANS, SEE:
   - DWG. SFA-JR-1/3
   - DWG. SFA-JR-1/4
   - DWG. SFA-JR-1/5
3. STATION 0+00 IN ℄ OF NEW STREET IS STATION 8+86 ON NEW 10" SANITARY SEWER.

RECORD DRAWING

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VERIFIED UNCLASSIFIED PUBLICLY RELEASABLE LANL Classification Group P. Lang 5-14-2001

NO.	DATE	REVISIONS	BY	APP.
3	5-17-52	ADD 2" OIL OVERFLOW LINE - BLDG 202		
2	3/19/52	REVERSED EXP. LOOP #1		
1	2/15/52	VALVE BOXES FOR GAS SERVICE ADDED	H.V.	R.L.H.

U.S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

SERVICE AREA-PROJECT "N", TA-16 PHASE A
UTILITIES
PLOT PLAN

KISTNER, CURTIS & WRIGHT
ARCHITECTS & ENGINEERS
LOS ANGELES, CALIFORNIA

SFA-JR-4/2

SCALE 1" = 60'

PLAN
SEWER, WATER, GAS & STEAM LINES
Scale 1" = 60'

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LAB JOB 233

THIS DOCUMENT CONTAINS UNCLASSIFIED INFORMATION
ADC: Ricardo V. Ortiz, Group Leader
Date Reviewed: 11/06/00

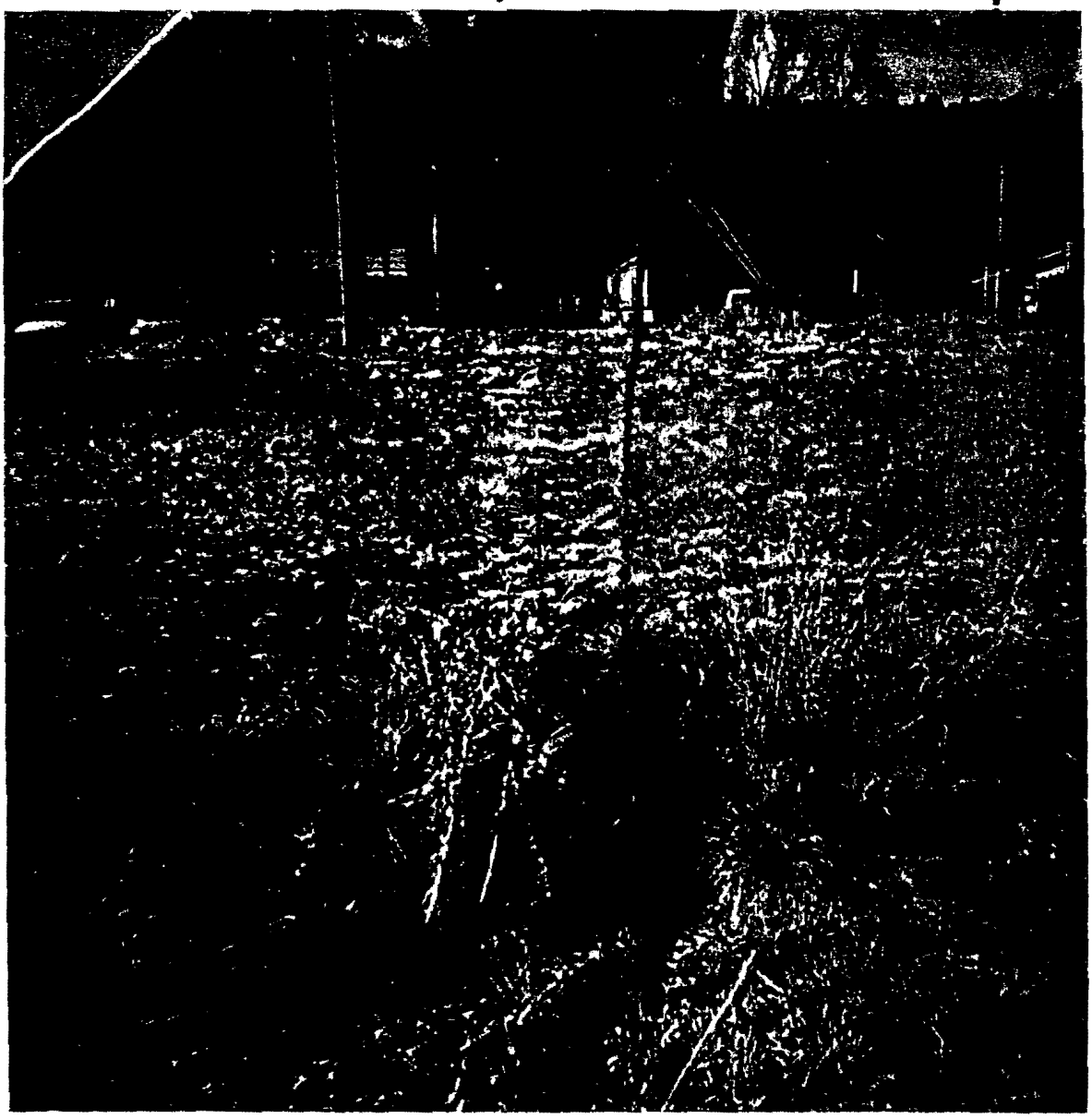
Attachment C
16-026(a2)

ER ID #65362

Attachment D

16-026(a2)

V= NW bldg 200 1/14/94



TA-16-200 16-026(a2)

~~[illegible]~~ outfall -150' SE of 16-200

LANL Structure History Book: TA-16

Attachment E
16-026(a2)

STRUCTURE NUMBER	DESIGNATION AND TITLE	GROUP ASSIGN.	DATE ASSIGN.	GENERAL INFORMATION	W.O. J.O. E.S.	LAB JOB NUMBERS
TA-16-197	16-197 Underground Tank 9-28-87 (REMOVED) PER ED SANDLIN, ENG-5		11/10/52	Proposed ☐ Requested by: (Name & Group) ____ Built: On Contract AT(29-1)01287, Contractor: Utah Construction Co. & C. H. Leavell & Co., started 11/5/51, completed 11/10/52. Cost: $ 966.60 June 23,1981 An undergroud tank. This tank was completed 11/10/52. This underground fuel tank has been abandoned. Information per W. Mangum, ENG-4. Sep. 23,1981 A 4,000 gallon fuel tank, 84" diameter by 14' long. This tank was formerly shown as being abandoned. This was erroneous and the tank is still active. Please adjust your record accordingly. This voids and supersedes structure assignment sheet dated 6/23/81 Structure Location: Southwest of 16-197; This structure was removed per Ed Sandlin, ENG-5.		901
TA-16-198	16-198 Hose House			Proposed ☐ Requested by: (Name & Group) ____ Built: Approximately July 1945, wood frame construction 6'-6" x 3'-5" x 7'-6" high. (Not on Zia or LASL records). Removed: 1958		
TA-16-199	16-199 Incinerator			Proposed ☐ Requested by: (Name & Group) ____ Built: On WO# 6-550-417. Removed:		
TA-16-200	16-200 Administration Building		10/15/53	Proposed ☐ Requested by: (Name & Group) ____ Built: On Contract AT(29-1)-1214, Contractor: R. E. McKee, started 7/2/51, completed 12/22/52. Cost: $ 695,104.38	5557 [illegible] 6042 [illegible] 6057 [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]	233, 90 1351,16 1392,15 2149,20 2270,24 2628,32 3259,35 3977,40 4160,46 4655,46 & 4747

Attachment F

16-026(a2)

Los Alamos
NATIONAL LABORATORY
memorandum
Chemical Science and Technology
Responsible Chemistry for America
Environmental Restoration Program/CST-6
Los Alamos, New Mexico 87545

To/MS: OU 1082 File
From/MS: Brad Martin and Don Hickmott
Phone/FAX: 7-6080/5-4632
Symbol: CST-ER/BM-94-08
Date: September 27, 1994

EARLY S-SITE HISTORY, LEE HILTON INTERVIEW

This memorandum outlines a discussion with Mr. Hilton on March 30, 1994 that occurred in the TA-35-268 conference room. The interview lasted from 1:00 p.m. to 3:30 p.m. OU 1082 Team Members Brad Martin, Don Hickmott, Margo Buksa, Karen Schultz Paige, Steve Watanabe and ElRoy Miller attended.

Mr. Hilton arrived in Los Alamos in 1944 and worked in Laboratory groups X-3, GMX-3 and WX-3 until 1979. He was in charge of a casting line during W.W.II and later worked in photography and S-Site plant operations. Prior to his arrival in Los Alamos, Mr. Hilton worked at Atlas Powder Co. doing explosives work and enlisted in the Army Air Corps.

Mr. Hilton provided the following pertinent information regarding buildings at S-Site:

TA-16-15: There was a fairly large amount of HE brought into the laundry as fragments on worker's clothing.

TA-16-18: There was a great deal of HE in the drain line for this steam washing building when it was dug up in the mid 1960s.

TA-16-19: Pump house for fuel oil tank TA-16-29 to pump fuel oil into TA-16-7 steam plant. Not contaminated with HE.

TA-16-20: Hilton confirmed that this was a water pump pit, linked to the sanitary water system at S-Site. It is not an HE sump. They were careful not to contaminate the administration are with HE. The pump pit only carried chlorinated, treated water.

TA-16-21: Chlorination station was not HE contaminated. Chlorination, water softening and water flow monitoring occurred here. No known chlorine spills.

TA-16-29: This fuel oil tank was connected to pump house TA-16-19 and was used to provide fuel for TA-16-7 boilers.

TA-16-49: Hilton believed that this building had a rest room in its northern side.

TA-16-58-61: These magazines stored raw HE product upon arrival in S-Site. both packaged HE and finished HE products were stored in TA-16-57-59. No open packages or loose HE was stored in these magazines. Packages of HE were taken from these magazines to buildings S-23 and S-24 (TA-16-25 and TA-16-26) for opening and inspection. Barium nitrate was also stored in TA-16-58-61.

TA-16-63: This building was used for metals and is not contaminated with HE.

TA-16-62,64,65: These buildings were used with the receiving and handling of HE freighted from the outside and would be contaminated with HE, particularly TA-16-64. They were only used for one to one and one-half years as magazines. After that, carpenters and plumbers used the buildings for storage for a short time.

TA-16-106-109: These storage buildings were minimally used for packaged HE storage (similar to storage at TA-16-58-61), possibly for one to one and one half years when they were first built. They were used for storage of other materials such as aluminum powder, lead oxide, barium nitrate and other inert materials.

TA-16-139-146,190: These are a cluster of buildings located along Anchor Ranch Road near the old fire station. This are was not HE contaminated.

TA-16-200: Present day administration building never had a machine shop in it. Basement is not contaminated with HE, chemicals or oil. This building had a fuel tank on the west wall about 100' south of the northwest corner which was used for a backup generator in the building. The tank was removed after one to two years when the building was fitted with natural gas lines. No leaks from the tank were reported.

TA-16-202: The machine shop in the building did not machine any HE contaminated equipment. Water soluble soap and oils as well as minimal amounts of TCE and penetrating oil would have gone down the floor drains. No butyl acetate was used. The south end of the building was the WX-11 instrument shop. The north end was maintenance for compressors, hydraulics, etc. The East side was Zia electric. The oil overflow outfall daylighted near fence by the old guard shack (TA-16-209).

TA-16-260: Bays 1-8 were initially used for plastics explosives, not machining. Bay 25 was not originally designed and built on the building. However, it was added on almost immediately after TA-16-260 was built. The small hallway drain in Bay 25 was used to receive floor sweepings from the hallway, not the machining bay area. Hilton stated that a large horizontal milling machine ??? was used in that bay.

TA-16-308: This building was used to dry nitrocellulose explosives. However, the basement would not have become contaminated during this process.

TA-16-370: Floor drains from the building would be contaminated with barium nitrate from early days as a grinding facility. Barium nitrate was washed directly down the drains.

TA-16-391: Propane tank at Burning Grounds was used to dry materials in filter beds and tank before flash burning.

TA-16-396: Hilton believes that the rest rooms were inside TA-16-389 and that there was no latrine at the Burning Grounds.

TA-16-401 & 406: Pre-1986, before sand filters were routed to the pond or treatment facility, drain water was allowed to just run over the road into the canyon.

TA-16-411: This building was never used as a rest house, because it has no enclosed walkway connecting it to other buildings. It has always been used for storage and assembly of finished components. The temperature and humidity control equipment was used to control the environment for the assembly process.

TA-16-462: No known chemical spills.

TA-16-464: Should be considered contaminated with a wide variety of HE.

TA-16-478: The drain from the utility room would not be considered HE contaminated because it was located just outside the control room where they were careful not to get contaminated with HE. The utility room only had the pumps and condensers, with condensate leaking into the drain. There is a water cooled vacuum pump in the utility room which provided the vacuum needed to hold HE pieces in the chuck of the lathe located in the machining room. Although the vacuum lines are currently labeled "Danger - contaminated with HE", Hilton felt that it was unlikely that the vacuum lines were contaminated with HE because there is a filter on the front of the vacuum lines that prevents HE from going into the lines. Even if there were HE in the vacuum lines, he felt that it was unlikely that HE would then move into the water lines that drip into the utility drain outfall. Hilton felt that the building sump was a new feature added around 1965 and the sump drained to the east. Before the sump was added, the effluent drained through a French drain to the south which was not removed when the sump was added.

TA-16-481 & 488: Should be considered contaminated with HE.

General information about S-Site:

The rest houses were scattered throughout S-Site were well cleaned by Zia. The floors of the isolated utility rooms in the rest houses were wet mopped and washed down. The floor washings drained through the floor drains, carrying any traces of oil from the pumps and condensers.

The radiography are would not have HE contaminated floor drains since the work done there did not disturb the HE cast parts. The sources used in the buildings were radium and cobalt.

Hilton claimed that spills in magazines were uncommon. Standard clean up method was with a dustpan.

Removal of sumps throughout S-Site involved hand digging followed by an HE check using a test kit on all four sides of the sump.

E. L. Hilton

Cy: OU 1082 Archives
L. Hilton

12.0 SWMUs 16-026(d2, e2, f2, g2, h, k, x) AND 16-030(b, e, f) OUTFALLS AND ASSOCIATED DRAINLINES

12.1 Summary

SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) are outfalls (and their associated drainlines) that serve floor drains in the utility rooms of various HE rest houses located throughout TA-16. Each of these outfalls was constructed to receive steam condensate from equipment used to heat the building associated with the outfall. Some drains are plugged (and thus, inactive) while others, although not plugged, are not used. The utility rooms of the rest houses are totally separated from the areas of the buildings used for storing HE components. No solid or hazardous waste or constituents were ever managed in the utility rooms of these buildings. These SWMUs are being proposed for NFA under NFA Criterion 2 (the site has never been used for the management of solid or hazardous waste and/or constituents).

12.2 Description and Operational History

12.2.1 Site Description

SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) are outfalls and their associated drainlines that serve single floor drains located in the utility rooms of various HE rest houses located throughout TA-16 (Figure 12.2-1).

A rest house is an auxiliary building used for the intermediate storage of HE materials which are awaiting some type of processing; hence, the term rest house. A typical rest house is approximately 20 ft by 40 ft and constructed of reinforced concrete with concrete floors. Metal double doors open to an exterior loading dock in front of the building. There are no windows. Open-lattice metal doors at the rear of the rest house connect it to an enclosed passageway that leads to one of TA-16's HE-processing buildings. Engineering Drawing ENG-C 15654 (sheet 51 of 121), dated 1951 (LASL 1951, 70007)(Attachment A) shows the floor plan and section of a typical rest house.

All rest houses at TA-16 are physically remote from other buildings and are often surrounded on three sides by an earthen berm. They are connected via enclosed passageways to an associated building used for the assembly, processing, or machining of HE. The passageways are up to several hundred feet in length.

Each rest house contains a separate 4-ft- by 8-ft utility room equipped with one steam pump and one small compressor, which are used to heat and ventilate the building. As indicated in ENG C-15654 (sheet 51 of 121), there is no access to the utility room from the area used for storing HE components. Each utility room can be accessed only from outside of the structure. (A photograph of the outside entrance to a typical utility room is included as Attachment B [LANL 2000, 67384]). Each utility room has a single floor drain which discharges through a 4-in. vitrified clay pipe to an outfall located 20 ft to 90 ft from its associated rest house. Because the following outfalls are buried, it was not possible to determine their exact locations through field observations: SWMUs 16-026(d2, h, k) and 16-030(b, e, f).

Photographs of two typical rest house utility rooms and their outfalls (from this set of SWMUs) are included as Attachment C (Environmental Restoration Project 2000, 67385; 67386).

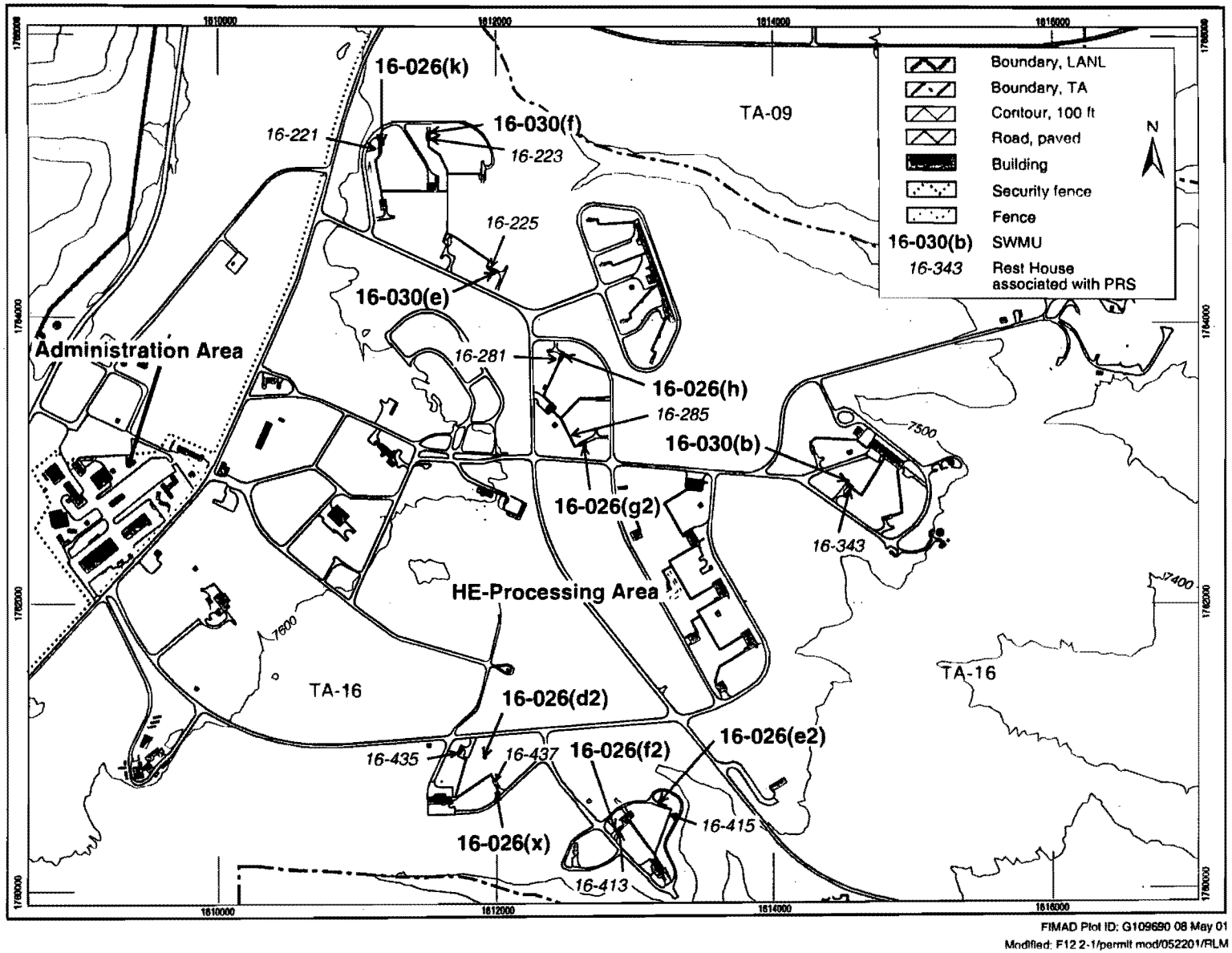


Figure 12.2-1. SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) and associated rest houses

12.2.2 Operational History

From the early 1950s to the present, each building in the TA-16 complex has been heated by steam, which is pumped from building to building. Each rest house has a utility room equipped with a steam pump as well as a small compressor used for heating and ventilating the associated building. A floor drain in each utility room carried low volumes of steam condensate to an outfall. The current practice at TA-16 is to collect steam condensate in a 2.5- or 5-gal. bucket placed at the end of the condensate pipe and to allow the condensate to evaporate from the bucket. This practice was initiated in 1992. Between 1992–1997, many of the utility room drains were plugged from within the building. However, some drains were subsequently unplugged as a safety precaution to prevent accumulated moisture from shorting-out electrical equipment. The floors of all ten utility rooms show rust and mineral stains as typically result from the evaporation of condensed water.

From approximately 1984 until January 1997 (when the new TA-16 steam plant became operative), TA-16 steam condensate was composed of condensed water containing amine, an ammonia derivative commonly added to water to control pH and to prevent corrosion and mineral buildup within piping. Amine was added to the steam once the steam exited the steam plant. The amine was injected into the steam pipe in liquid form and immediately vaporized as it came into contact with the steam. The current practice (starting in January 1997) is not to use additives of any kind in the steam used to heat the buildings at TA-16. No Laboratory or JCI employees knowledgeable of pre-1984 TA-16 steam plant practices could be located for corroborative interviews. However, the gas and steam engineer for the Laboratory's Utilities and Infrastructures Group and a water treatment specialist employed by JCI both stated that, because water treatment technologies have changed very little over the past 50 years, there is no reason to believe that the Laboratory's pre-1984 practice for treating steam varied from the practice used post-1984. (Nonno 2000, 67381, pp. 5, 6) (Attachment D)

From the normal operation and maintenance of the compressors, small amounts of lubricating oil have been known to leak, and oil stains are visible on many of the utility room floors. Typically, the oil staining is confined to a narrow ring (2–5 in. wide) around the compressor. Subsequently, some compressors have been contained by flexible absorbent tubing (referred to as a "pig"). The total capacity of lubricating oil (20-weight) for each compressor is approximately .5 quart or less (Attachment D, p. 3). An employee who routinely inspected the utility rooms and has worked at TA-16 from 1981 verified that, from the time of his hire, there has been no release to the environment involving a utility room drain from a rest house (Attachment D, p. 2).

The mechanical heating and ventilating equipment (condensate pump and compressor) has been removed from the utility room of rest house TA-16-415 [associated with SWMU 16-026(e2)] and replaced by an electric heating and ventilating unit (see photographs included as Attachment E [LANL 2000, 67387]). The utility room floor drain of this rest house is plugged and no longer used. Although the mechanical equipment has not been removed from the utility rooms of rest houses TA-16-221, -223, -225, and -343 [associated with SWMUs 16-026(k), 16-030(f), 16-030(e), and 16-030(b), respectively], these buildings are no longer used and steam is no longer pumped to them. These rest houses (TA-16-221, -223, -225, and -343) are slated for D&D.

Table 12.2-1 provides the structure number associated with SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) and the status for each of the utility room floor drains associated with them.

Table 12.2-1
Status of Utility Room Drains in TA-16 Resthouses

SWMU Number	Structure Number of Associated Rest House	Drain Status	Date Plugged	Date Reopened
16-026(d2)	TA-16-435	Open	10/1/92	3/28/97
16-026(e2)	TA-16-415	Plugged	10/1/92	n/a*
16-026(f2)	TA-16-413	Open	10/1/92	8/14/97
16-026(g2)	TA-16-285	Plugged	10/1/92	n/a
16-026(h)	TA-16-281	Plugged	10/1/92	n/a
16-026(k)	TA-16-221	Open	n/a	n/a
16-026(x)	TA-16-437	Open	12/8/95	4/16/97
16-030(b)	TA-16-343	Plugged	7/20/93	n/a
16-030(e)	TA-16-225	Plugged	7/20/93	n/a
16-030(f)	TA-16-223	Open	n/a	n/a

* n/a=not applicable.

12.3 Land Use

12.3.1 Current

TA-16 is an industrial area used for the research, development, processing, and testing of HE. It is a high-security, restricted access area enclosed by a chain-link fence topped with barbed wire. Access to TA-16 is obtained only by passing through a security guard station. Within this outer fence, certain HE-processing areas within TA-16 are enclosed by a second fence. Access through this interior fence is obtained only by passing through a gate secured by a badge-reader. These security measures effectively eliminate the possibility of inadvertent site intrusion.

SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) are all located within the double-fenced HE-processing area (Figure 12.2-1).

12.3.2 Future/Proposed

The Laboratory does not anticipate any change from the industrial restricted-access use of TA-16 for the operational life of the Laboratory (LANL 1995, 57224, pp.11–12)(Appendix D, Attachment 1). Future industrial use of this TA will continue to include the research, development, processing, and testing of HE.

12.4 No Further Action Proposal

12.4.1 Rationale

Each of the SWMU 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) outfalls receives only steam condensate flow from the single floor drain located in the utility room of its respective rest house. The steam condensate is currently composed of water only and was formerly composed of water containing amine, a commonly used additive for controlling pH and preventing corrosion and mineral buildup within piping. Amine does not fit the definition of RCRA hazardous wastes and/or constituents as provided in 40 CFR 261.3.

Although areas of oil staining are visible on many of the utility room floors, the stains are small, indicating that only small amounts of oil, resulting from the operation and maintenance of the compressors, have leaked. This amount of staining is common to utility rooms in commercial buildings. In 40 CFR 261.3 (a)(2)(iv)(D), EPA set a precedent for excluding *de minimus* leaks (from devices used to transfer materials) from being considered as a solid and/or hazardous waste.

Based on site visits and archival information, the ER Project has demonstrated that

- the additive in the condensate associated with these SMWUs does not fit the definition of RCRA hazardous wastes and/or constituents; and
- *de minimus* loss of oil from the compressors associated with these SMWUs also does not fit the definition of RCRA hazardous wastes and/or constituents.

Thus, none of the SWMU 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) outfalls have ever been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents.

Because it has been demonstrated that SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) never managed RCRA solid or hazardous wastes and/or constituents, finding the exact location of the outfalls is not essential in determining their eligibility for NFA.

12.4.2 Criterion

Based on the information presented in Sections 12.2 through 12.4.1, SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) are proposed for NFA under NFA Criterion 2.

12.5 Supporting Documentation Attached

Attachment A: LASL Engineering Drawing ENG-C 15654 (sheet 51 of 121). (LASL 1951, 70007)

Attachment B: LANL photograph of entrance to rest house TA-16-435 utility room. (LANL 2000, 67384)

Attachment C: LANL photographs of rest houses TA-16-413 and TA-16-437 utility rooms and their outfalls. (LANL 2000, 67385; 67386)

Attachment D: Nonno personal and telephone interviews regarding HE rest houses. (Nonno 2000, 67381)

Attachment E: LANL photographs of rest house TA-16-415 utility room. (LANL 2000, 67387)

Appendix D, Attachment 1: LANL site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

Appendix D, Attachment 2: LANL submittal letter for Revision 1 of Chapter 6 of the RFI work plan for OU 1082, Addendum 2. (LANL 1998, 59685)

12.6 References Used for Text of the Request for Permit Modification for SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f)

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1082," Los Alamos National Laboratory Report LA-UR-93-1196, Los Alamos, New Mexico, pp.6-19 and 6-20. (LANL 1993, 20948)

LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory Report LA-UR-95-1038, Los Alamos, New Mexico, pp.6-13 and 6-14. (LANL 1995, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico, pp.6-10 and 6-11. (Environmental Restoration Project 1998, 59685)

12.7 History of Regulatory Deliverables

LANL, July 5, 1995: RFI work plan for OU 1082, Addendum 2, submitted to EPA, Region 6. (LANL 1995, 57225)

LANL, September 11, 1998: Submittal of ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, to DOE as partial satisfaction of Functional Area A.2 Performance Measure. (LANL 1998, 59685)

NMED, Winter, 1998/1999: NMED verbally requested that the ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, not be submitted for NMED review because it would be more efficient to make the Chapter 6 NFA proposals via a first-pass Class III permit modification request. (LANL 1998, 59685)(Appendix D, Attachment 2)

At the time that Addendum 2 of the RFI work plan for OU 1082 was submitted for review, NMED had not yet fully developed its five criteria for NFA. The work plan proposed NFA based on four criteria, rather than five, and on human health evaluations only. In 1998, the ER Project evaluated the NFA recommendations made in Addendum 2 of the work plan against ecological risk and other applicable regulations and standards. In conjunction with the DOE, the ER Project wrote a replacement Chapter 6 for this work plan that

- applied the NFA criteria more recently developed by NMED;
- reevaluated the NFA proposals to include an evaluation of ecological risk as well as other applicable regulations and standards; and
- removed NFA proposals that were no longer viable based on the above two bullets.

In the winter of 1998/1999, a verbal agreement was made between Mr. Dave McInroy of the ER Project and Mr. John Kieling of the NMED Hazardous Waste Bureau. Mr. Kieling requested that the text of Chapter 6 of Addendum 2 of the OU 1082 work plan not be significantly modified in 1998, but the revised NFA proposals be submitted in a first-pass Class III request for permit modification (LANL 1998, 59685)(Appendix D, Attachment 2). Therefore, the Laboratory ER Project is making the NFA proposal for SWMUs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f) in this request for permit modification.

12.7.1 References for Regulatory Deliverables

LANL, July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory report LA-UR-95-1038, Los Alamos, New Mexico. (LANL 1996, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico. (Environmental Restoration Project 1998, 59685)

LANL, September 11, 1998. "Rewrite of Chapter 6 Within RFI Work Plan for OU 1082 to Satisfy PM for Functional Area A.2," Los Alamos National Laboratory letter to T. Taylor (DOE-LAAO) from J. Canepa (ER Project), Los Alamos, New Mexico. (LANL 1998, 59685)

16-026(d2,e2,f2,g2,h,k,x)
16-030(b,e,f)

ATTACHMENTS

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

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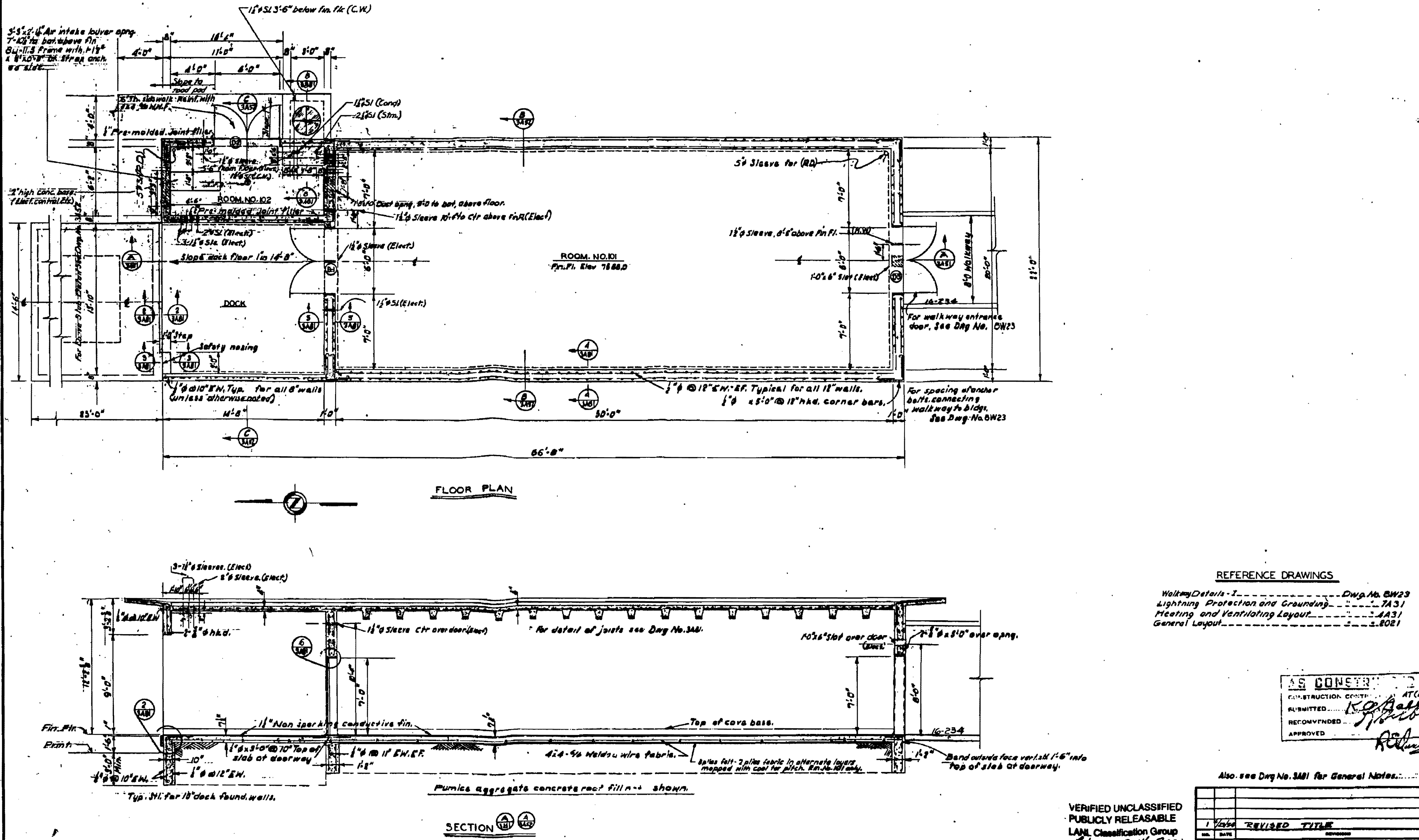

AS CONSTRUCTED DRAWING

CONSTRUCTION CONTRACT AT(29-1) 1208

SUBMITTED

RECOMMENDED

APPROVED

VERIFIED UNCLASSIFIED
PUBLICLY RELEASABLE
LANL Classification Group
P. Lang 5-14-2001

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1 — REVISED TITLE

U. S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

STRUCTURAL
BUILDING (NO.131-A) 16-221
FLOOR PLAN AND SECTION
TA-16 PROJECT "J"

BLACK & VEATCH
CONSULTING ENGINEERS
KANSAS CITY, MISSOURI

SFAJW-B3A51 | 51 | 121

2867

470

LAB-JOB 669 L.A.S.L. DWG. NO. ENG-C 15654

THIS DOCUMENT CONTAINS UNCLASSIFIED INFORMATION
ADC: Ricardo V. Ortiz, Group Leader
Date Reviewed: 11/06/00

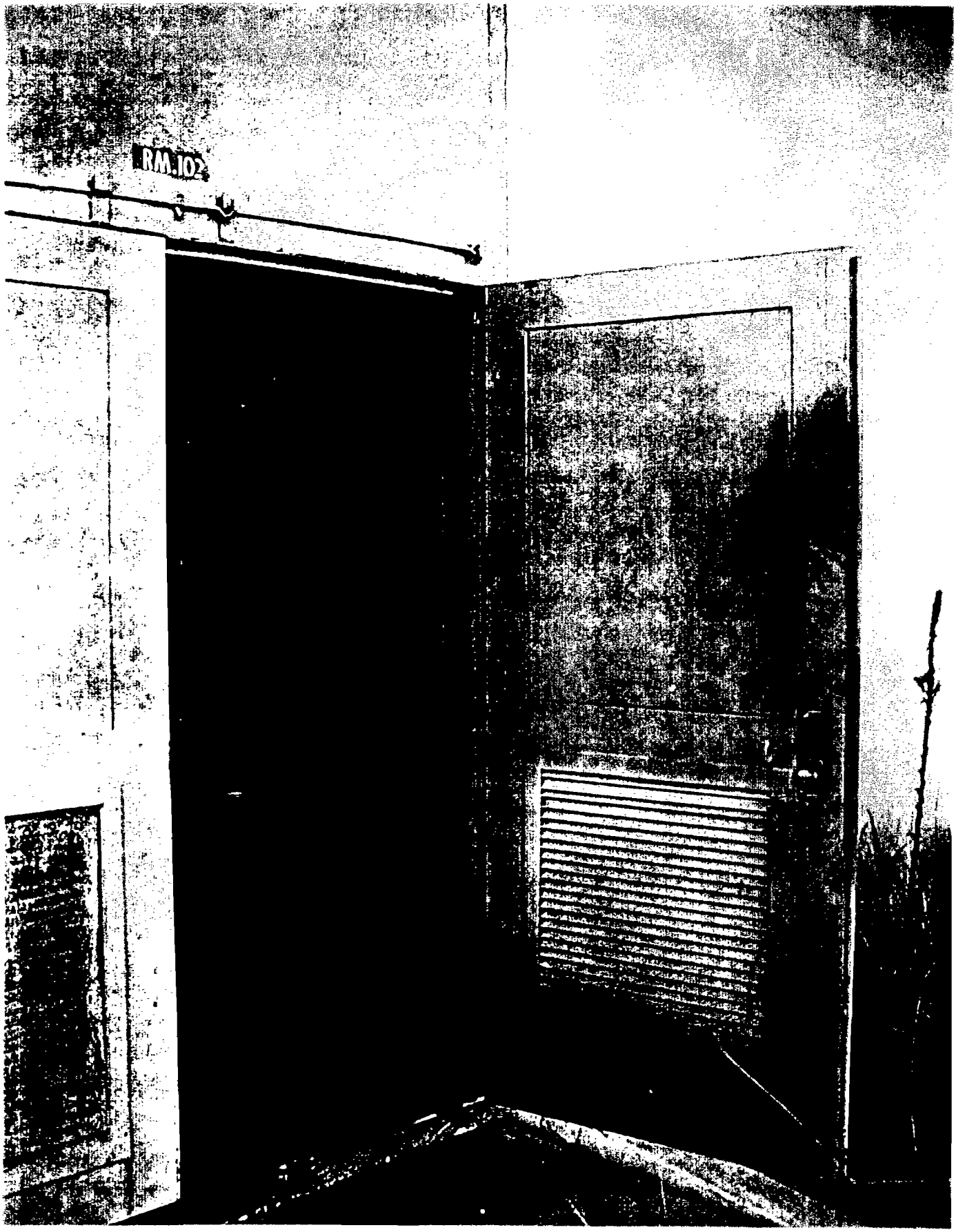
Attachment A

16-026 (d2, e2, f2, g2, h, kx)
16-030 (b, e, f)

70007

16-026(d2, e2, f2, g2 h, k, x)
16-030(b, e, f)

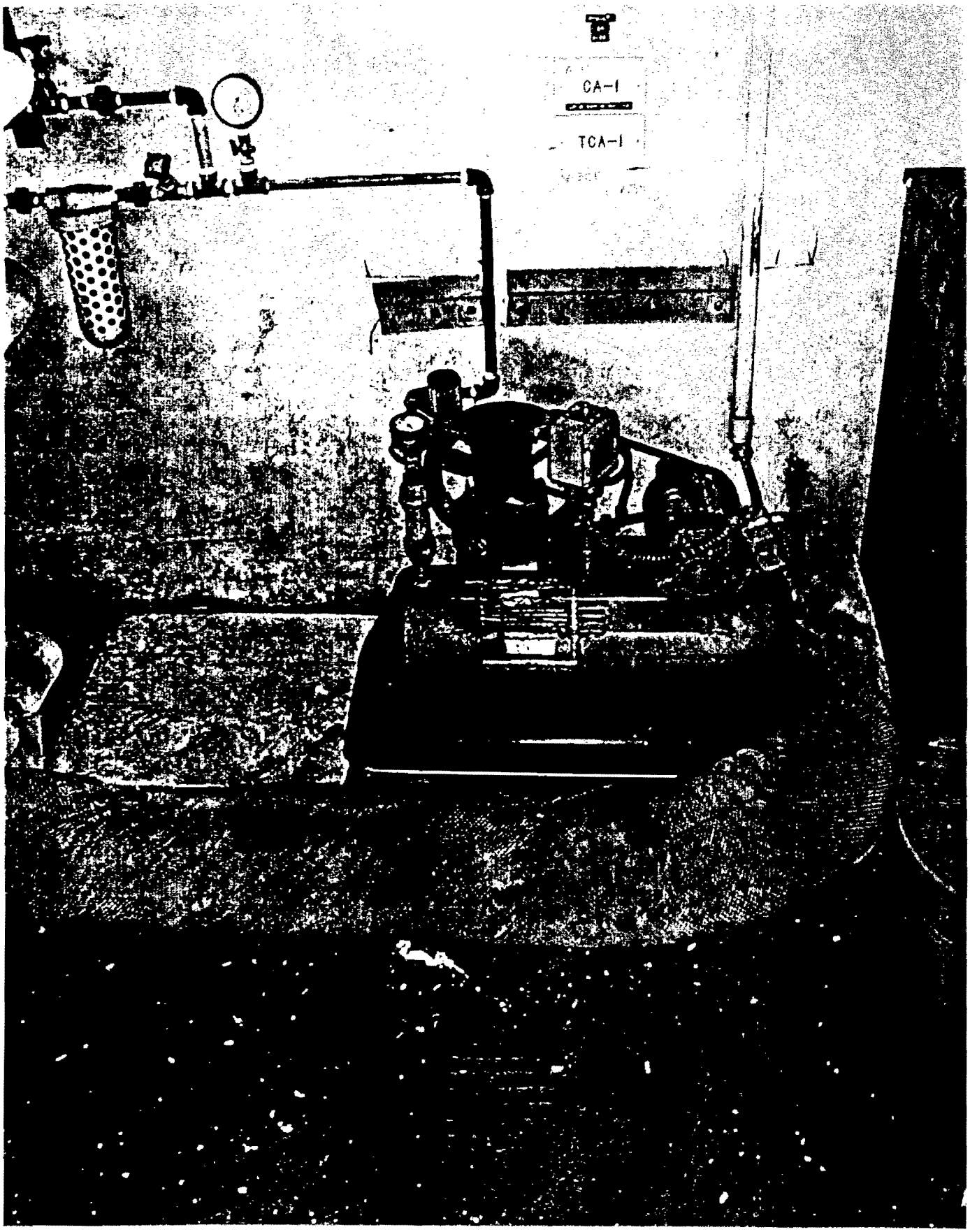
Attachment B



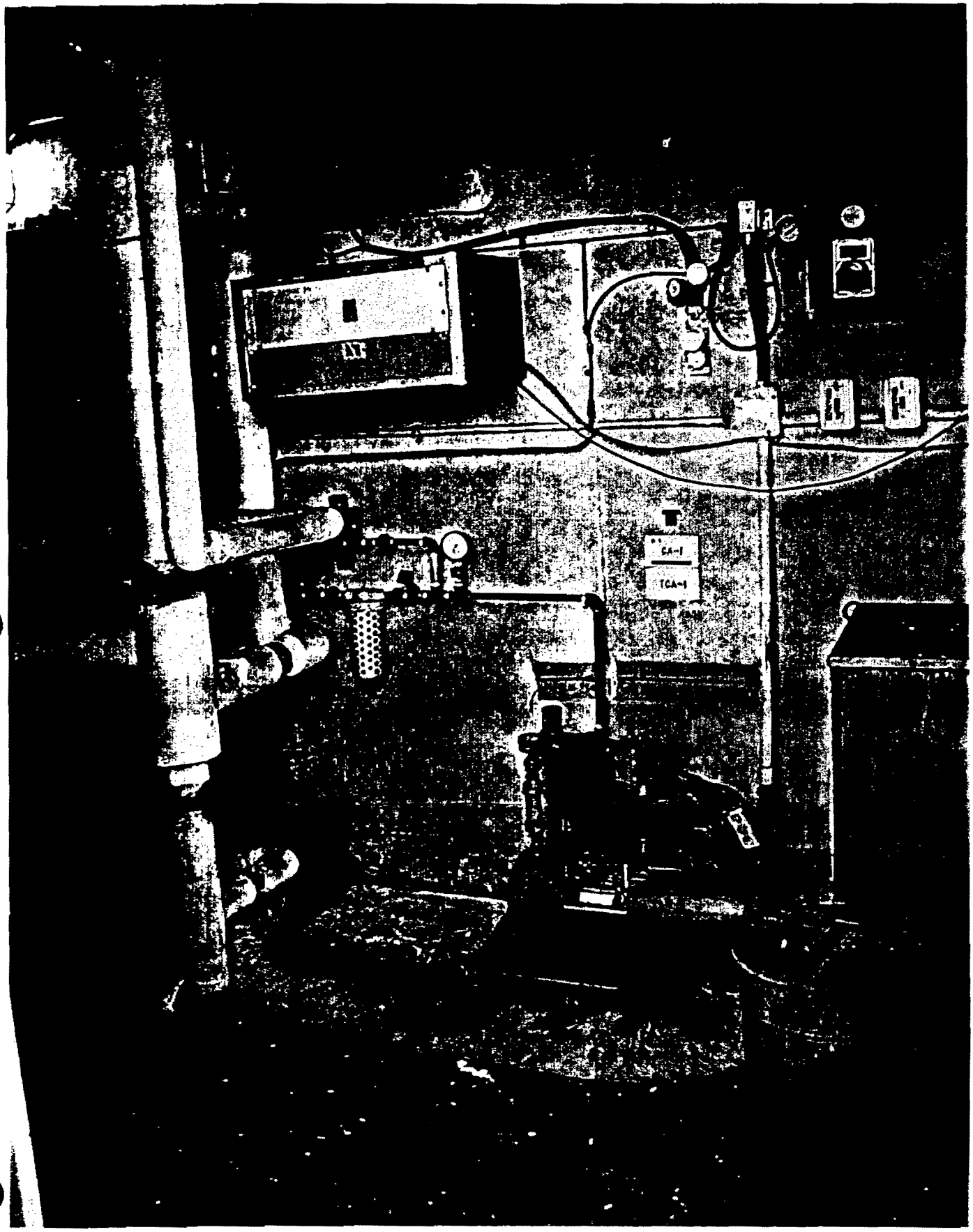
TA-16-435 Utility Room
SWMU #16-026(d2)

16-026(d2, e2, f2, g2
h, k, x)
16-030(b, e, f)

Attachment C-1



TA-16-413 Utility Room
SWMU #16-026(f2)



TA-16-413 Utility Room
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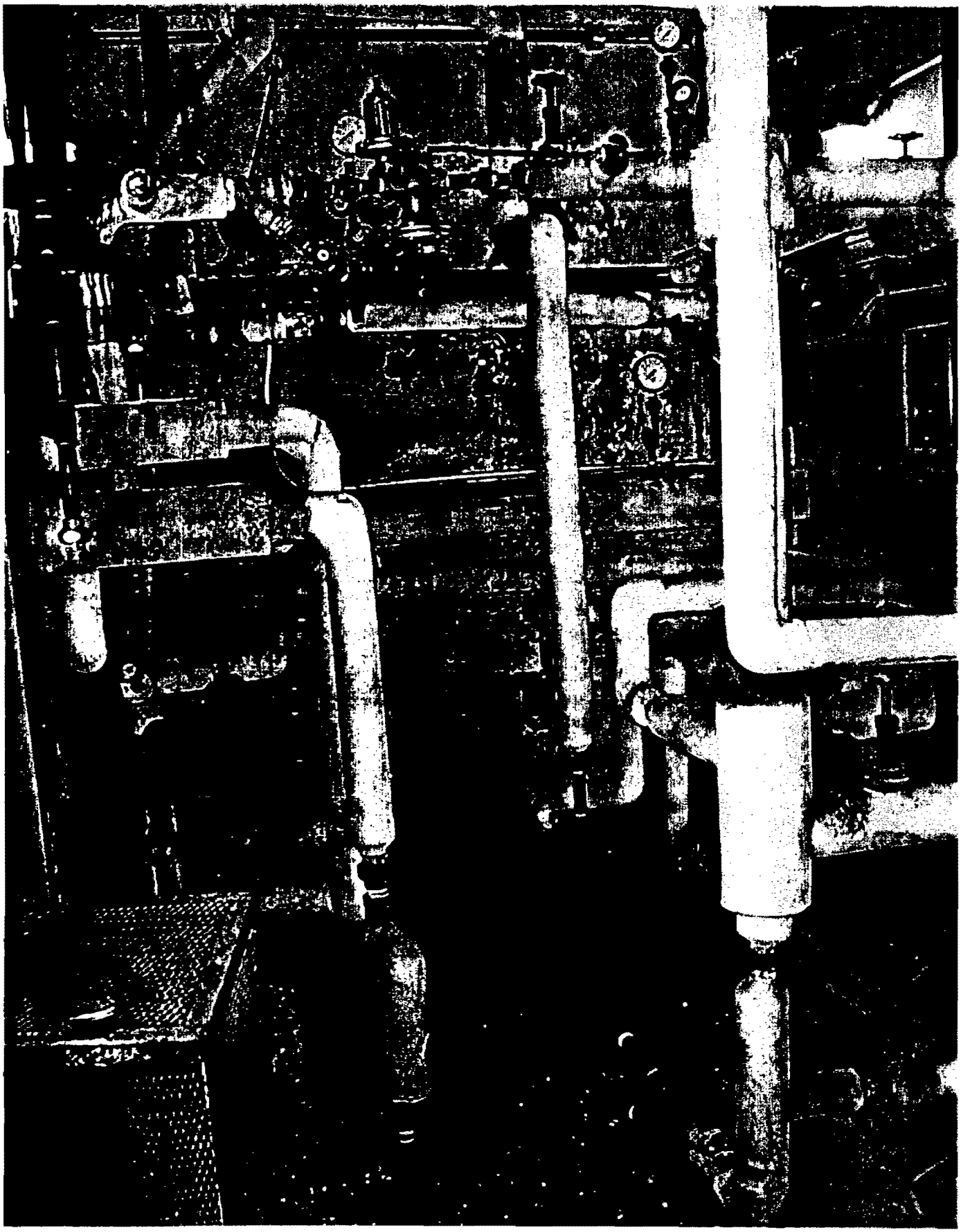
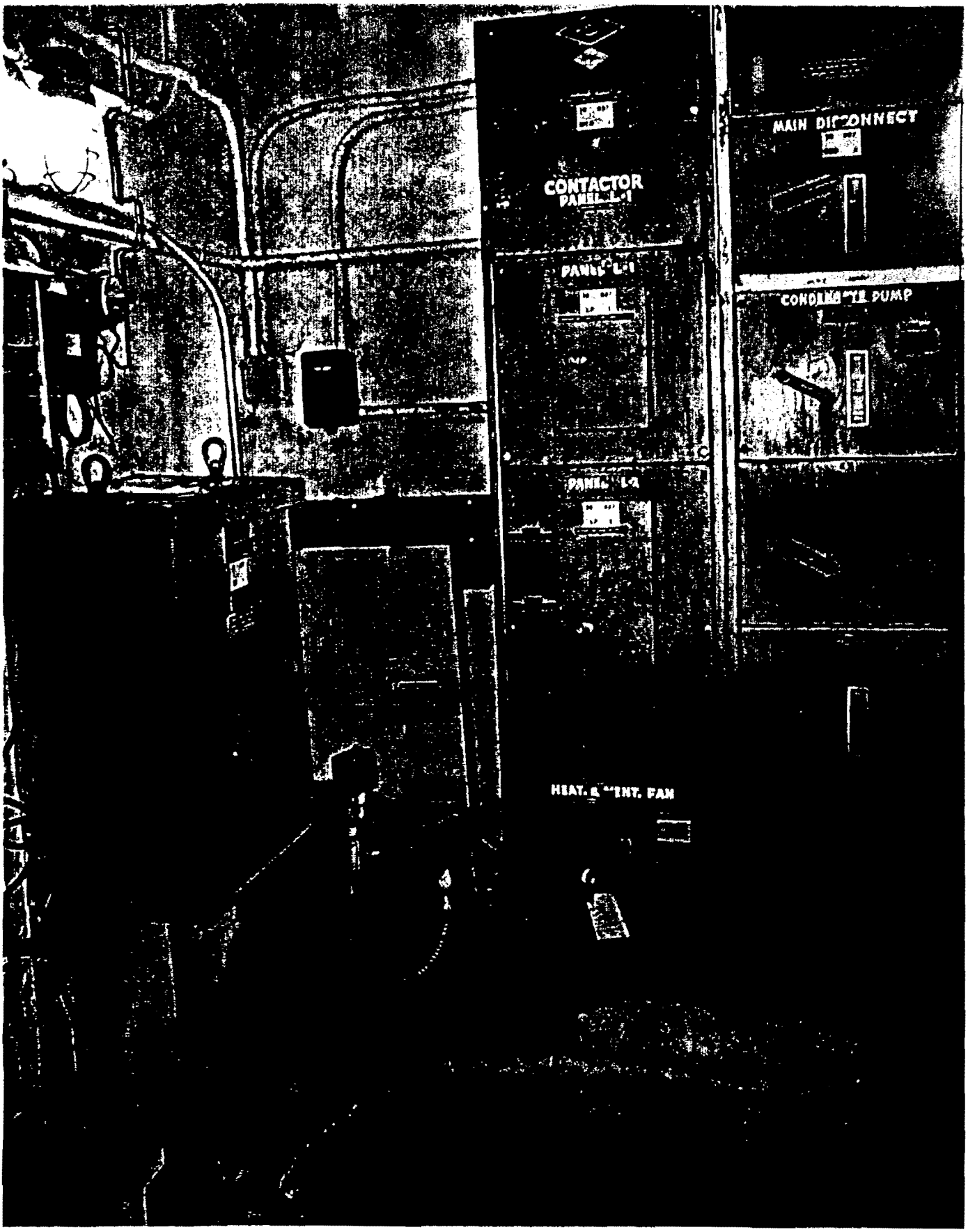


TA-16-413 Utility Room
SWMU #16-026(f2)

Attachment C-4

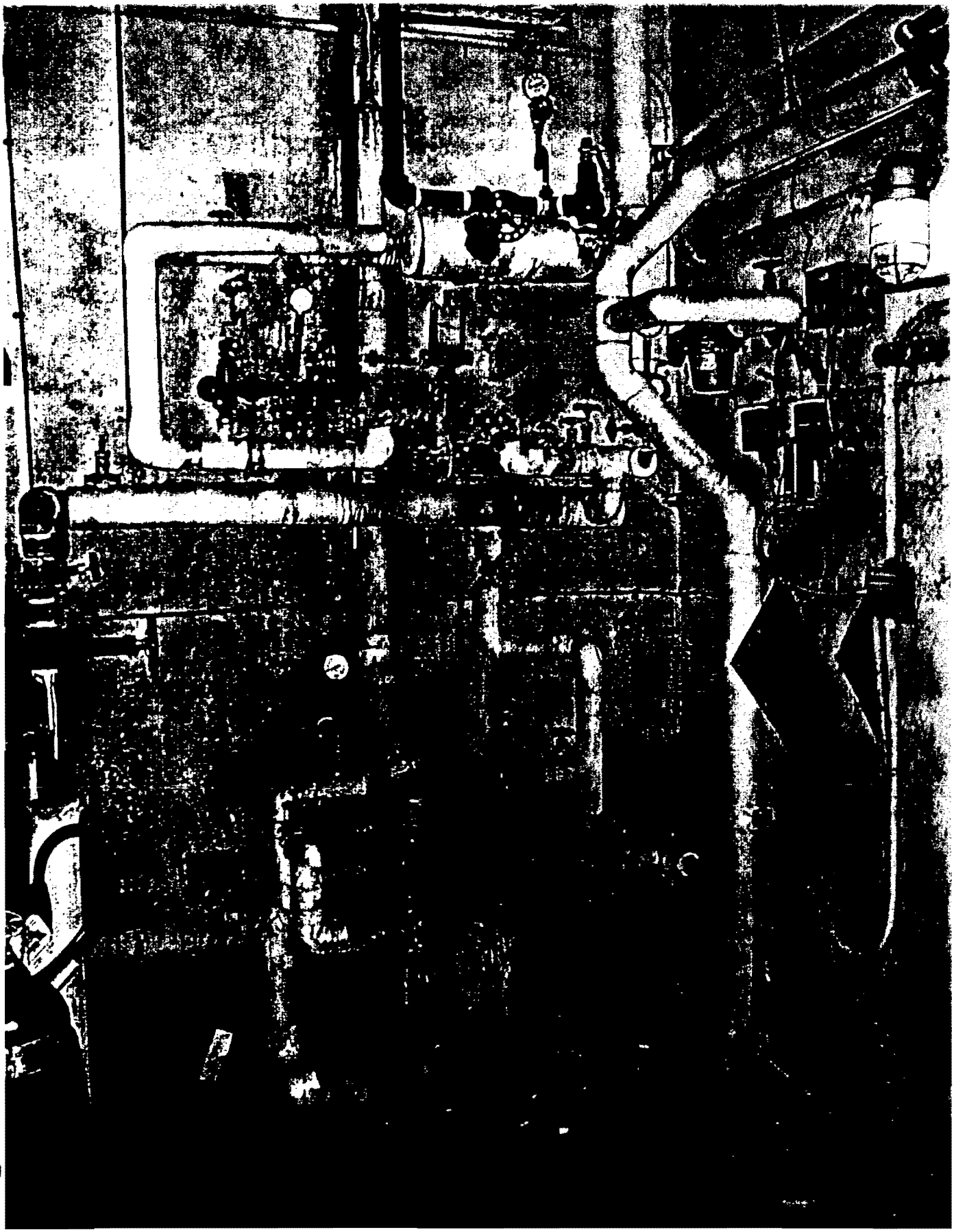
Outfall from TA-16-413 Utility Room
SWMU #16-026(f2)

Attachment C-5



TA-16-437 Utility Room
SWMU #16-026(x)

TA-16-437 Utility Room
SWMU #16-026(x)



TA-16-437 Utility Room
SWMU #16-026(x)

Attachment C-8

Outfall from TA-16-437 Utility Room
SWMU #16-026(x)

Attachment D

E/ER MEMO TO FILE

16-026(d2, e2, f2, g2, h, k, x)
16-030(b, e, f)

DATE: August 21, 2000

FROM: Linda Nonno, Regulatory Compliance Focus Area

SUBJECT: Personal and telephone interviews regarding HE rest houses at TA-16

BACKGROUND:
In preparation for writing the September 2000 Request for Permit Modification, more information was required to support NFA determinations for PRSs 16-026(d2, e2, f2, g2, h, k, x) and 16-030(b, e, f). Each of these SWMUs is an outfall (and their associated drainlines) that serves a single floor drain in each utility room of ten HE rest houses. A site visit was made to TA-16 on August 15, 2000, and a follow-up visit was made on August 17, 2000. During the August 15 visit, the interior of each utility room was photographed; the TA-16 safety manager, equipment mechanic, and water treatment personnel were interviewed as to procedures, and an attempt was made to locate and photograph each outfall. Only two of the ten outfalls were located on August 15. Ann Sherrard (TA-16's facility management ESH representative) provided Linda Nonno with the temporary use of a copy of a document entitled Wastewater Characterization of Building Drains and Outfalls at S-Site, which was prepared by the staff of Group WX-12 (Engineering and Information Resources) in September 1991. This document (the basis for the Wastewater Stream Characterization conducted by Santa Fe Engineering at TA-16) includes plumbing and drain plans, so a second visit (on August 17) was made to these rest houses in an attempt to locate the other 8 outfalls referenced this document. However, because many of the outfalls are buried, only two additional outfalls were located and photographed during the August 17 visit. The two outfalls located on the August 15 visit and the two located on the August 17 visit were at the exact locations indicated in the plumbing and drain plans provided by Ann Sherrard.

PERSONAL INTERVIEW WITH BILL McCORMICK
August 15, 2000
Interview conducted by Linda Nonno

Mr. McCormick stated that the plastic buckets used to collect steam condensate in the utility rooms are not emptied, but allowed to evaporate. He said the buildings are checked regularly, at least once a week, and some are checked daily. The equipment is serviced regularly by the resident mechanic for TA-16, Steve Santistevan (see Santistevan interview, page 3 of this memo). Other contacts for these buildings include building managers Leonard Maez (667-1832) and Jim Nuttal (667-4975).

Mr. McCormick stated that it was his experience that the equipment in the rest house utility rooms does not leak. However, if a lubricating oil leak were encountered, it would be immediately reported to the facility coordinator who would take action as required. Often, an absorbent pig is placed around equipment for containment. He further stated that he has been at TA-16 since 1981, and in those 19 years, no equipment leak has occurred other than the typical oil drips incurred during day to day operation (hence, the use of pigs).

When asked about why some drains had been unplugged, Mr. McCormick replied that it was done as a precautionary safety measure to prevent the possibility of moisture getting into electrical equipment and causing a short.

When asked if anything was added to the condensate, Mr. McCormick stated that he didn't know but that I should talk to Bill Van Gundy with JCI, Albuquerque, (949-0299) who treats the water at the current TA-16 steam plant (see Van Gundy interview, page 4 of this memo).

Mr. McCormick can be reached at 667-6316 or by pager at 104-6704.

Linda Nonno
August 15, 2000

PERSONAL INTERVIEW WITH STEVE SANTISTEVAN
August 15, 2000
Interview conducted by Linda Nonno

When asked about the quantity and type of oil used in servicing the equipment at the TA-16 rest houses, Mr. Santistevan stated that 20-weight lubricating oil was used. He said the steam pumps required no oil, only the compressors. He went on to say that the compressors were small and had a capacity of ½ quart or less of lubricating oil.

Mr. Santistevan can be reached at 665-0579.

Linda Nonno
August 15, 2000

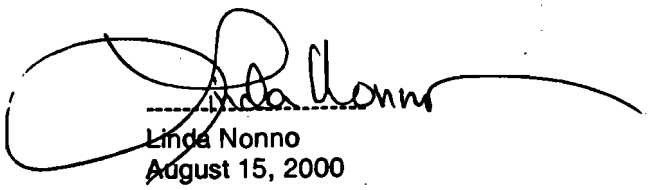
PERSONAL INTERVIEW WITH BILL VAN GUNDY
August 15, 2000
Interview conducted by Linda Nonno

When asked if anything was added to the steam for the TA-16 rest houses, Mr. Van Gundy stated that he used additives to prevent corrosion and mineral build up in the boilers at the steam plant, but that he didn't know if anything was added to the steam. He has been the boiler operator at the TA-16 steam plant for two years only, and had no idea what was done prior to the time he started working at TA-16. He suggested Jerome Gonzales (665-2612) would probably be able to answer these questions (see Gonzales interview, page 5 of this memo).

Additives include the solutions listed on the attached sheet.

NOTE FROM LN: The TA-16 steam plant is located outside TA-16's gated and fenced HE exclusion area approximately ½ to ¾ of a mile from the nearest of the 10 rest houses, which are all located inside of TA-16's HE exclusion area.

Mr. Van Gundy can be reached at 949-0299.



Linda Nonno
August 15, 2000

TELEPHONE INTERVIEW WITH JEROME GONZALES
August 21, 2000
Interview conducted by Linda Nonno

Jerome Gonzales is the Gas and Steam Engineer for the LANL Utilities Group.

When asked if anything was added to the steam for the TA-16 rest houses, Mr. Gonzales stated that from the time that the new steam plant went into operation in January 1997, nothing has been added to the steam used to heat the buildings at TA-16. Prior to January 1997, amines (an ammonia derivative for corrosion protection) were added to the steam heating all TA-16 buildings.

When asked if it was the Laboratory's practice to use amines at the beginning of TA-16's use of steam as a heating system (in the early 1950s), Mr. Gonzales did not know. However, he did state that since corrosive water treatment technologies had changed little over the past 50 or so years, there was no reason to assume that a different water treatment practice was used by the Laboratory during the 1950s. He suggested I call Joe Ortiz, a water treatment specialist employed by JCI (see Ortiz interview, page 6 of this memo).

NOTE FROM LN: According to Mr. Gonzales amine was added to the steam pipe after the steam exited the steam plant. The amine was injected into the steam pipe in liquid form and immediately vaporized as it came into contact with the steam.

Mr. Gonzales can be reached at 665-2612.

Linda Nonno
August 21, 2000

TELEPHONE INTERVIEW WITH JOE ORTIZ
August 21, 2000
Interview conducted by Linda Nonno

Joe Ortiz is the Water Treatment Specialist for JCI.

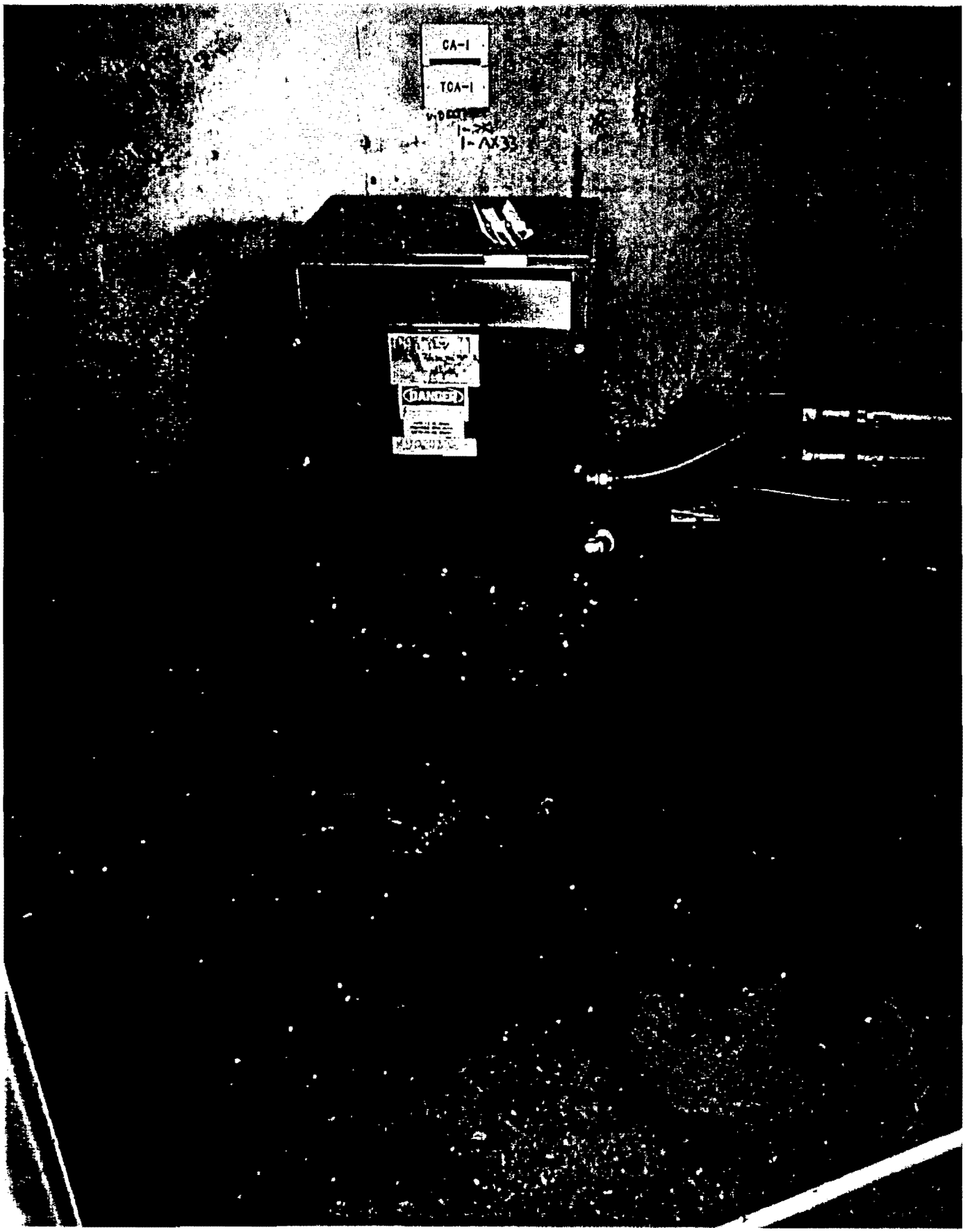
Mr. Ortiz re-confirmed everything stated by Mr. Gonzales. He further explained that amines are added to water to control its pH content, which, in turn, prevents corrosion. He said that he would send me a copy (attached) of the materials safety data sheet on this product. Mr. Ortiz reiterated that since corrosive water treatment technologies had changed little over the past years, there was no reason to assume that a different water treatment practice was used by the Laboratory during the 1950s.

Mr. Ortiz can be reached at 667-4842.

Linda Nonno
August 21, 2000

16-026(d2, e2, f2, g2
h, k, r)
16-030(b, e, f)

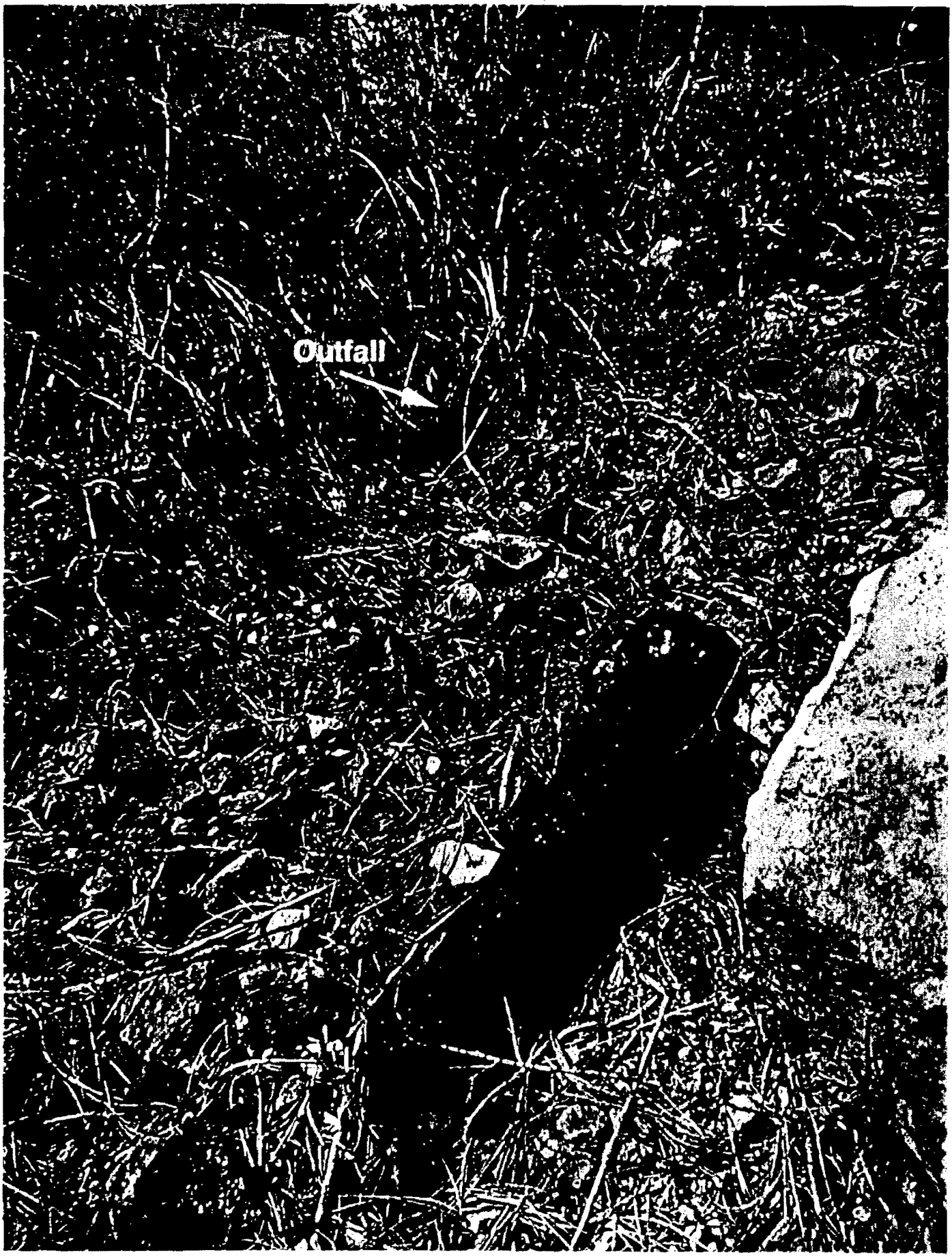
Attachment E -1



TA-16-415 Utility Room
SWMU #16-026(e2)

Attachment E-2

TA-16-415 Utility Room
SWMU #16-026(e2)



Outfall from TA-16-415 Utility Room
SWMU #16-026(e2)

13.0 SWMU 16-026(t)
ACTIVE OUTFALL AND ASSOCIATED DRAINLINE

13.1 Summary

SWMU 16-026(t) is an active storm outfall and associated drainline from the roof drains of Building TA-16-207, which was used as a warehouse until 1993, when it was converted to a weapons test facility (noninvasive and nondestructive). No solid or hazardous wastes or constituents were ever managed at this outfall/drainline. This SWMU is being proposed for NFA under NFA Criterion 2 (the site has never been used for the management of solid or hazardous waste and/or constituents).

13.2 Description and Operational History

13.2.1 Site Description

The SWMU report (LANL 1990, 07512, p. 16-026)(Attachment A) describes SWMU 16-026(t) as an inactive outfall from a drain [line] located on the eastern side of Building TA-16-207 (Figure 13.2-1). The SWMU report further indicates that uranium contamination may be associated with this outfall. However, archival information demonstrates that the SWMU 16-026(t) storm drainline periodically collects rainwater only from the building roof. Rainwater from 10 roof drains is channeled from the roof to a line that runs through the interior of the building and connects to a drainline beneath the concrete floor of Building TA-16-207 [as-built Engineering Drawing ENG-C 7162 (sheet 60 of 80)(Attachment B)]. The drainline exits the building at the northwest and the northeast corners of the building as 6-in. pipes that connect to an 8-in. storm drainline running southeast (underground) to its point of discharge (at daylight) approximately 80 ft southeast of the building (ENG-C 7158 [sheet 56 of 80][Attachment C]; LANL 1994, 69721 [Attachment D]). The point of discharge is through an 8-in. vitrified clay pipe.

Within the building, the drainline is an entirely closed system suspended from the ceiling. Building TA-16-207 and the SWMU 16-026(t) outfall/drainline system are located outside of TA-16's double-fenced HE-processing area (Figure 13.2-2). No other buildings or potential sources of contaminants are connected to this drainline/outfall.

13.2.2 Operational History

Building TA-16-207 was constructed from November 5, 1951, through November 10, 1952, and became operational in early 1953 (LANL ER Records Package 730)(Attachment E). Building TA-16-207 functioned exclusively as a warehouse from the time of its construction in 1951 (ENG-C 7158 [sheet 56 of 80][Attachment C]) until 1992. During that period, the building stored a variety of items, including small amounts of depleted uranium (stored in a locked, controlled area of the building) (Paige 1994, 52964.605)(Attachment F), which is not a RCRA-regulated hazardous waste.

As-built Engineering Drawing ENG-C 7158 (sheet 56 of 80)(Attachment C) shows that this drain was constructed exclusively to receive rainwater. This is corroborated by the Attachment B Engineering Drawing ENG-C 7162 (sheet 60 of 80), which shows that, at the time of construction, all roof drains tied into the building's storm drainline and all floor drains tied into the building's sanitary sewer line.

An exhaustive search of Laboratory engineering drawings revealed that no changes were made to Building TA-16-207 until late 1991/early 1992 (Nonno 2000, 67382)(Attachment G), when the building was converted to office and laboratory space for the Environmental Testing Team of the Engineering Sciences and Applications Division Measurement Technology Group (ESA-MT, ET). ESA-MT, ET still occupies the building. As part of this conversion, a metal-clad addition was added to the northeast side of the building. Engineering Drawing ENG-C 46139 (sheet 3 of 44)(Attachment H) is the [civil] site plan that

was made in preparation for this addition. ENG-C 46139 shows that the sanitary sewer and storm drain connections in place in 1991 are the same as those indicated in the 1951 as-built engineering drawings. A recent site visit confirmed that the storm drainline from the building roof drains daylights (Attachment D), as indicated in both the 1951 and 1991 engineering drawings.

From 1992 to the present, Building TA-16-207 has been occupied by ESA-MT, ET. The ESA-MT, ET conducts mechanical test simulations (i.e., noninvasive and nondestructive) on weapons components. Testing includes static testing, such as static loads, pressure, and material characterization tests. (Nonno 2000, 67383)(Attachment I)

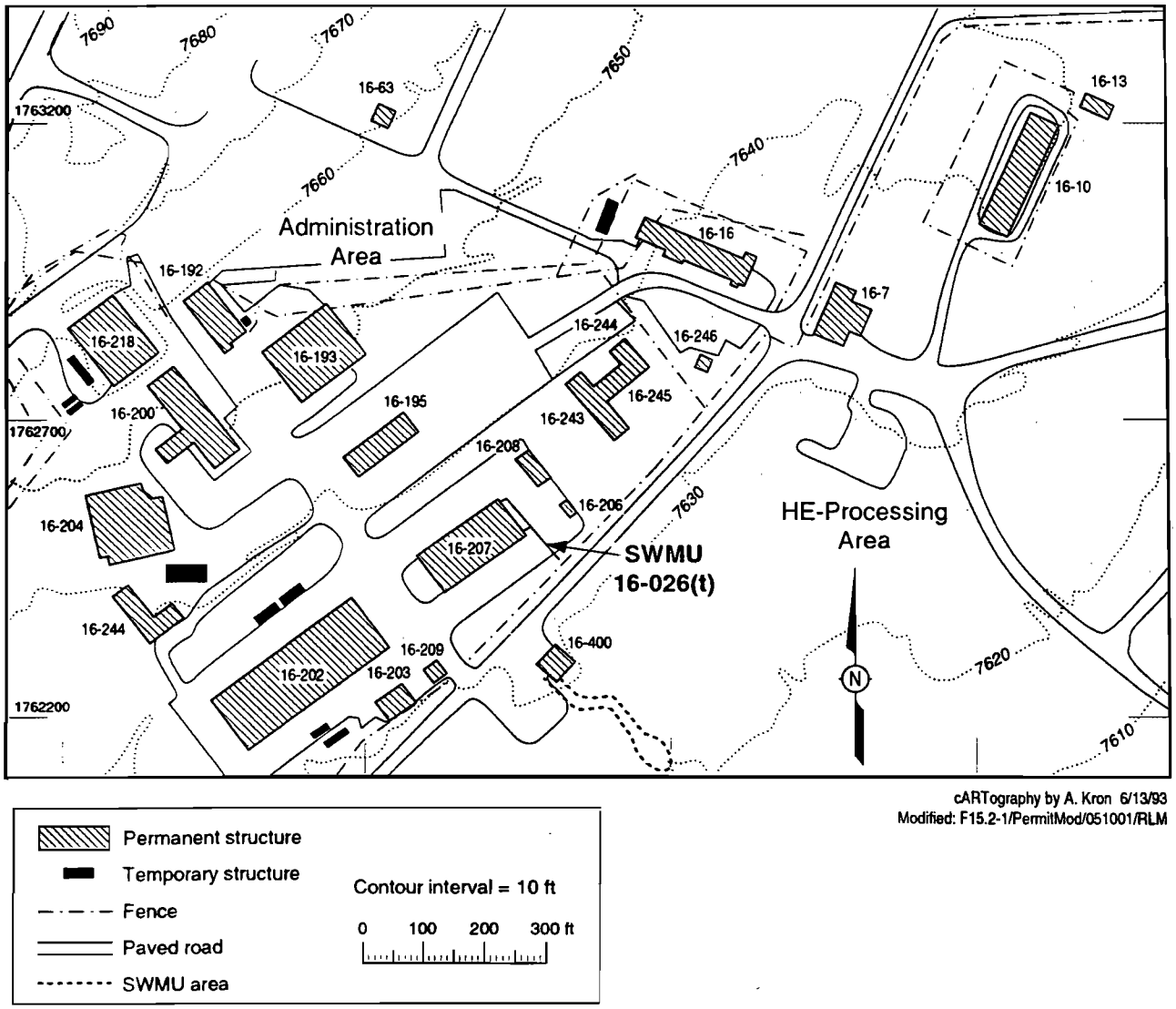


Figure 13.2-1. Location of SWMU 16-026(t)

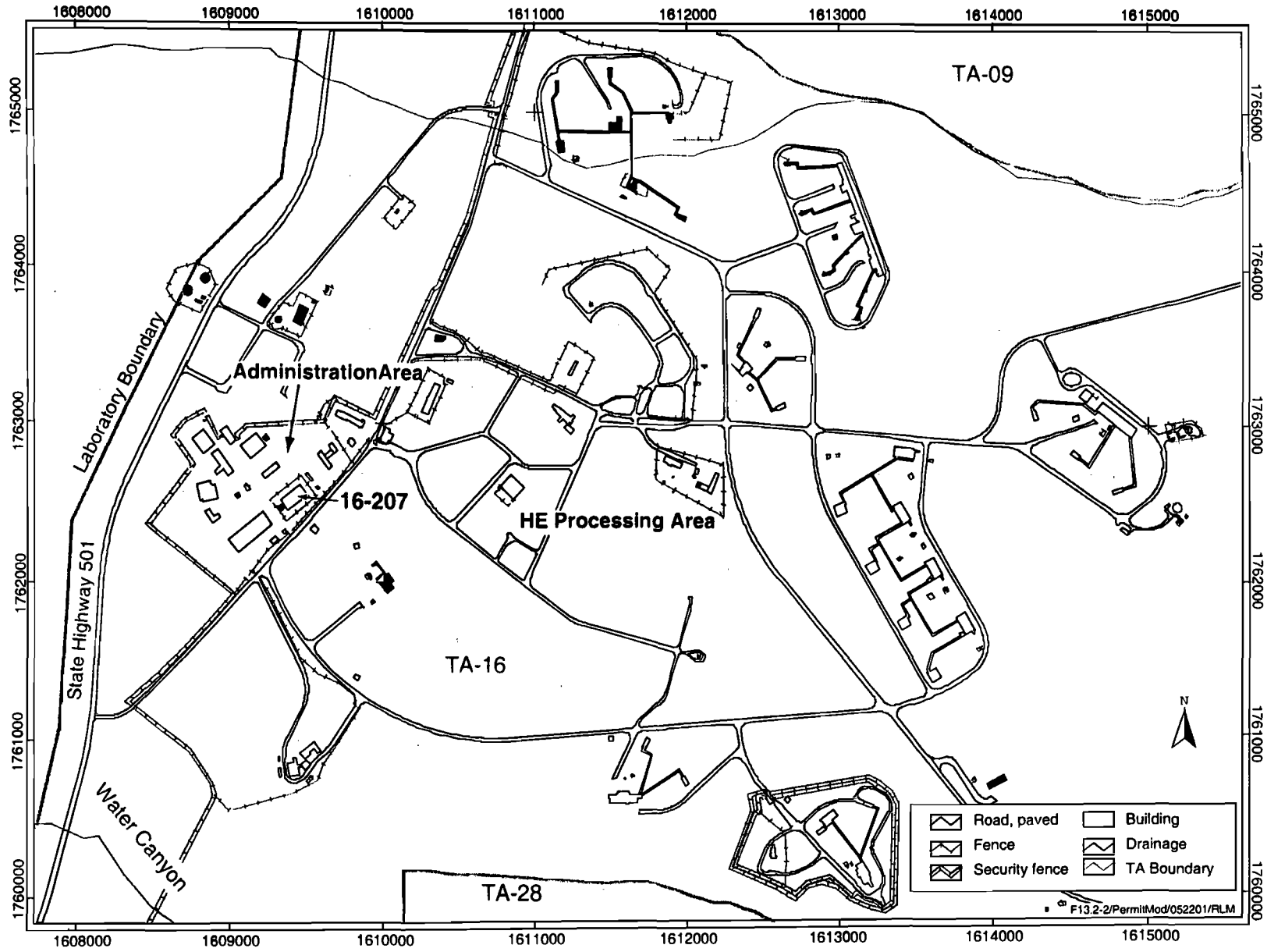


Figure 13.2-2. Location of Building 16-207

13.3 Land Use

13.3.1 Current

TA-16 is an industrial area used for the research, development, processing, and testing of HE. It is a high-security, restricted-access area enclosed by a chain-link fence topped with barbed wire. Access to TA-16 is obtained only by passing through a security guard station. Within this outer fence, certain HE-processing areas within TA-16 are enclosed by a second fence. Access through this interior fence is obtained only by passing through a gate secured by a badge-reader. These security measures effectively eliminate the possibility of inadvertent site intrusion.

SWMU 16-026(t) is located outside of the double-fenced HE-processing area.

13.3.2 Future/Proposed

The Laboratory does not anticipate any change from the industrial restricted-access use of TA-16 for the operational life of the Laboratory (LANL 1995, 57224, pp.11-12)(Appendix D, Attachment 1). Future industrial use of this TA will continue to include the research, development, processing, and testing of HE.

13.4 No Further Action Proposal

13.4.1 Rationale

Based on archival information and site visits, the ER Project has demonstrated that

- from 1951 (the time of construction of Building TA-16-207) to the present, the SWMU 16-026(t) storm drain system and associated outfall has managed only the periodic flow of rainwater from the roof drains of Building TA-16-207;
- within the interior of Building TA-16-207, the SWMU 16-026(t) storm drain system is an entirely closed system that receives no other source of influent; and
- all other drains in Building TA-16-207 are tied into the building's sanitary sewer system.

Thus, it is demonstrated that the SWMU 16-026(t) outfall has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents.

13.4.2 Criterion

Based on the information presented in Sections 13.2 through 13.4.1, SWMU 16-026(t) is proposed for NFA under NFA Criterion 2.

13.5 Supporting Documentation Attached

Attachment A: LANL SWMU report, Volume II, pp. 16-026. (LANL 1990, 07512)

Attachment B: LASL Engineering Drawing ENG-C 7162 (sheet 60 of 80), dated 1951. (LASL 1951, 70008)

Attachment C: LASL Engineering Drawing ENG-C 7158 (sheet 56 of 80), dated 1951. (LASL 1951, 24052)

Attachment D: LANL photograph of TA-16-207 outfall. (LANL 1994, 69721)

Attachment E: LANL TA-16 structure history book. (LANL [no date], LANL ER Records Package 730)

Attachment F: Paige memorandum to file, regarding use of Building TA-16-207. (Paige 1994, 52964.605)

Attachment G: Nonno memorandum to file, regarding site visit to Building TA-16-207. (Nonno 2000, 67382)

Attachment H: LANL Engineering Drawing ENG-C46139 (sheet 3 of 44), dated 1991. (LASL 1991, 70027)

Attachment I: (Nonno memorandum to file, regarding current operations in Building TA-16-207. (Nonno 2000, 67383)

Appendix D, Attachment 1: LANL, 1995. Site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

Appendix D, Attachment 2: LANL submittal letter for Revision 1 of Chapter 6 of the RFI work plan for OU 1082, Addendum 2. (LANL 1998, 59685)

13.6 References Used for Text of the Request for Permit Modification for SWMU 16-026(t)

LANL (Los Alamos National Laboratory), July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory Report LA-UR-95-1038, Los Alamos, New Mexico, p. 6-9. (LANL 1995, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico, p. 6-7. (Environmental Restoration Project 1998, 59685)

13.7 History of Regulatory Deliverables

LANL, July 5, 1995: RFI work plan for OU 1082, Addendum 2, submitted to EPA, Region 6. (LANL 1995, 57225)

LANL, September 11, 1998: Submittal of ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, to DOE as partial satisfaction of Functional Area A.2 Performance Measure. (LANL 1998, 59685)

NMED, Winter, 1998/1999: NMED verbally requested that the ecological and ARARs revision of Chapter 6 of the RFI work plan for OU 1082, Addendum 2, not be submitted for NMED review because it would be more efficient to make the Chapter 6 NFA proposals via a first-pass Class III permit modification request. (LANL 1998, 59685)(Appendix D, Attachment 2)

At the time that Addendum 2 of the RFI work plan for OU 1082 was submitted for review, NMED had not yet fully developed its five criteria for NFA. The work plan proposed NFA based on four criteria, rather than five, and on human health evaluations only. In 1998, the ER Project evaluated the NFA recommendations made in Addendum 2 of the work plan against ecological risk and other applicable regulations and standards. In conjunction with the DOE, the ER Project wrote a replacement Chapter 6 for this work plan that

- applied the NFA criteria more recently developed by NMED;
- reevaluated the NFA proposals to include an evaluation of ecological risk as well as other applicable regulations and standards; and
- removed NFA proposals that were no longer viable based on the above two bullets.

In the winter of 1998/1999, a verbal agreement was made between Mr. Dave McInroy of the ER Project and Mr. John Kieling of the NMED Hazardous Waste Bureau. Mr. Kieling requested that the text of Chapter 6 of Addendum 2 of the OU 1082 work plan not be significantly modified in 1998, but the revised NFA proposals be submitted in a first-pass Class III request for permit modification (LANL 1998, 59685)(Appendix D, Attachment 2). Therefore, the Laboratory ER Project is making the NFA proposal for SWMU 16-026(t) in this request for permit modification.

13.7.1 References for Regulatory Deliverables

LANL, July 1995. "RFI Work Plan for Operable Unit 1082, Addendum 2," Los Alamos National Laboratory report LA-UR-95-1038, Los Alamos, New Mexico, pp. 6-1, 6-18, 6-19. (LANL 1996, 57225)

Environmental Restoration Project, September 1998. "Chapter 6 of RFI Work Plan for OU 1082, Addendum 2, Rev. 1," Los Alamos National Laboratory, Los Alamos, New Mexico. (Environmental Restoration Project 1998, 59685)

LANL, September 11, 1998. "Rewrite of Chapter 6 Within RFI Work Plan for OU 1082 to Satisfy PM for Functional Area A.2," Los Alamos National Laboratory letter to T. Taylor (DOE-LAAO) from J. Canepa (ER Project), Los Alamos, New Mexico. (LANL 1998, 59685)

16-026(t)

ATTACHMENTS

Attachment A
16-026(t)

SUMMARY

LOCATION : TA-16
TYPE OF UNIT(s) : OUTFALL
UNIT USE : DISPOSAL
OPERATIONAL STATUS : INACTIVE
PERIOD OF USE : 1940s - 1980s
HAZARDOUS RELEASE : KNOWN
RADIOACTIVE RELEASE : KNOWN

MATERIALS MANAGED : HAZARDOUS WASTE
MIXED WASTE
SOLID WASTE

UNIT INFORMATION

The following table lists inactive outfalls resulting from building drains in TA-16.

SWMU NO.	STRUCTURE NO.	BUILDING DRAIN LOCATION	OUTFALL LOCATION
16-026(a)	TA-16-370	east/south sides	Water Canyon
16-026(b)	TA-16-307	north side	Water Canyon
16-026(c)	TA-16-305	northeast side	Water Canyon
16-026(d)	TA-16-303	south side	Water Canyon
16-026(e)	TA-16-301	south side	Water Canyon
16-026(f)	TA-16-308	northeast/east sides	Valle Canyon
16-026(g)	TA-16-280	northeast side	Valle Canyon
16-026(h)	TA-16-281	northeast side	Valle Canyon
16-026(i)	TA-16-224	northeast/northwest sides	Valle Canyon
16-026(j)	TA-16-226	south/southwest sides	Valle Canyon
16-026(k)	TA-16-221	northeast side	Valle Canyon
16-026(l)	TA-16-220	northeast/southeast/south sides	Valle Canyon
16-026(m)	TA-16-92	east side	Valle Canyon
16-026(n)	TA-16-91	east/southeast sides	Valle Canyon
16-026(o)	TA-16-90	northeast side	Valle Canyon
16-026(p)	TA-16-89	southeast/northeast sides	Valle Canyon
16-026(q)	TA-16-27	north/south sides	Valle Canyon
16-026(r)	TA-16-180	south side	Valle Canyon
16-026(s)	TA-16-5	northeast side	unknown
16-026(t)	TA-16-207	east side	Water Canyon
16-026(u)	TA-16-195	southeast side	Valle Canyon
16-026(v)	TA-16-460	EPA05A072	Water Canyon
16-026(w)	TA-16-45	unknown	Water Canyon
16-026(x)	TA-16-437	south side	Water Canyon
16-026(y)	TA-16-411	east side	Water Canyon
16-026(z)	TA-16-306	south side	Water Canyon
16-026(a2)	TA-16-200	southeast side	Valle Canyon
16-026(b2)	TA-16-202	northeast side	Water Canyon
16-026(c2)	TA-16-462	southeast side	Water Canyon
16-026(d2)	TA-16-435	northeast side	Water Canyon
16-026(e2)	TA-16-415	north side	Water Canyon
16-026(f2)	TA-16-413	north side	Water Canyon
16-026(g2)	TA-16-285	southeast side	Valle Canyon
16-026(h2)	TA-16-360	west/east/north/south sides	Water Canyon
16-026(i2)	TA-16-54	unknown	Valle Canyon
16-026(j2)	TA-16-345	north side	Water Canyon
16-026(k2)	TA-16-260	north/south sides	Water Canyon

(continued)

WASTE INFORMATION

The building drains from TA-16-437, -411, -415, -285, -435, -221, and -281 received compressor condensate. Building drains from TA-16-303, -308, -345, -260, and -27 received HE and barium. Outfalls from TA-16-224, -226, and -220 may have contained HE and radionuclides. Outfalls from TA-16-92, -90, -91, and -89 may have contained barium in addition to HE and radionuclides. The following table summarizes waste constituents in the remaining outfalls:

BUILDING	WASTE TYPE
TA-16-370	barium, metals, solvents
TA-16-307	solvents, HE
TA-16-5	oils, solvents
TA-16-305	HE, barium, solvents
TA-16-301	solvents, HE, barium
TA-16-180	oil, grease, unknown
TA-16-207	uranium
TA-16-460	HE, barium, mercury, solvents
TA-16-360	possible HE, unknown
TA-16-45	HE, silver, barium, lead, Radium-226, -228
TA-16-462	solvents
TA-16-200	unknown
TA-16-54	barium nitrate

RELEASE INFORMATION

The extent to which the outfalls may have caused a release of hazardous waste is unknown.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
16-026(a)	**		Tsk 12 : 95 96 97	TA-16-370
16-026(a2)	**		Tsk 14 : 414	TA-16-200
16-026(b)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 193 194 192	TA-16-307
16-026(b2)	**		Tsk 14 : 416	TA-16-202
16-026(c)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 195 197	TA-16-305
16-026(c2)	**		Tsk 14 : 423	TA-16-462
16-026(d)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 198 200	TA-16-303
16-026(d2)	**		Tsk 14 : 440	TA-16-435
16-026(e)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 201 203	TA-16-301
16-026(e2)	**		Tsk 14 : 453	TA-16-415
16-026(f)	**		Tsk 13 : 204 205	TA-16-308
16-026(f2)	**		Tsk 14 : 454	TA-16-413
16-026(g)	**	16.057	Tsk 13 : 210 211	TA-16-280
16-026(g2)	**		Tsk 13 : 206	TA-16-285
16-026(h)	**		Tsk 13 : 207 212	TA-16-281
16-026(h2)	**		Tsk 12 : 91 92 93	TA-16-360
16-026(i)	**		Tsk 13 : 214 215	TA-16-224
16-026(i2)	**		Tsk 13 : 207	TA-16-283
16-026(j)	**		Tsk 13 : 216 217	TA-16-226
16-026(j2)	**		Tsk 12 : 73	TA-16-345
16-026(k)	**		Tsk 13 : 219	TA-16-221
16-026(k2)	**		Tsk 12 : 78	TA-16-260
16-026(l)	**		Tsk 13 : 220 221 222	TA-16-220
16-026(m)	**		Tsk 13 : 227	TA-16-92
16-026(n)	**		Tsk 13 : 228	TA-16-91
16-026(o)	**		Tsk 13 : 229 230	TA-16-90
16-026(p)	**		Tsk 13 : 231 232	TA-16-89
16-026(q)	**		Tsk 13 : 235 236 237	TA-16-27
16-026(r)	**		Tsk 14 : 402 403	TA-16-180
16-026(s)	**		Tsk 14 : 405	TA-16-5
16-026(t)	**		Tsk 14 : 410	TA-16-207
16-026(u)	**		Tsk 14 : 412 413	TA-16-195
16-026(v)	**	16.060	Tsk 14 : 418-422	TA-16-460

(continued)

SWMU CROSS-REFERENCE LIST
(continued)

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
16-026(w)	**		Tsk 14 : 425	TA-16-45
16-026(x)	**		Tsk 14 : 441	TA-16-437
16-026(y)	**		Tsk 14 : 455	TA-16-411
16-026(z)	TA16-5-O/CA-A/I-HW/RW		Tsk 13 : 191 192	TA-16-306

** No corresponding E. R. Program unit.

Media Place Holder
Target

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ER ID # 71096

Box # 292

Record Type: ENGINEERING DRAWING/MAP

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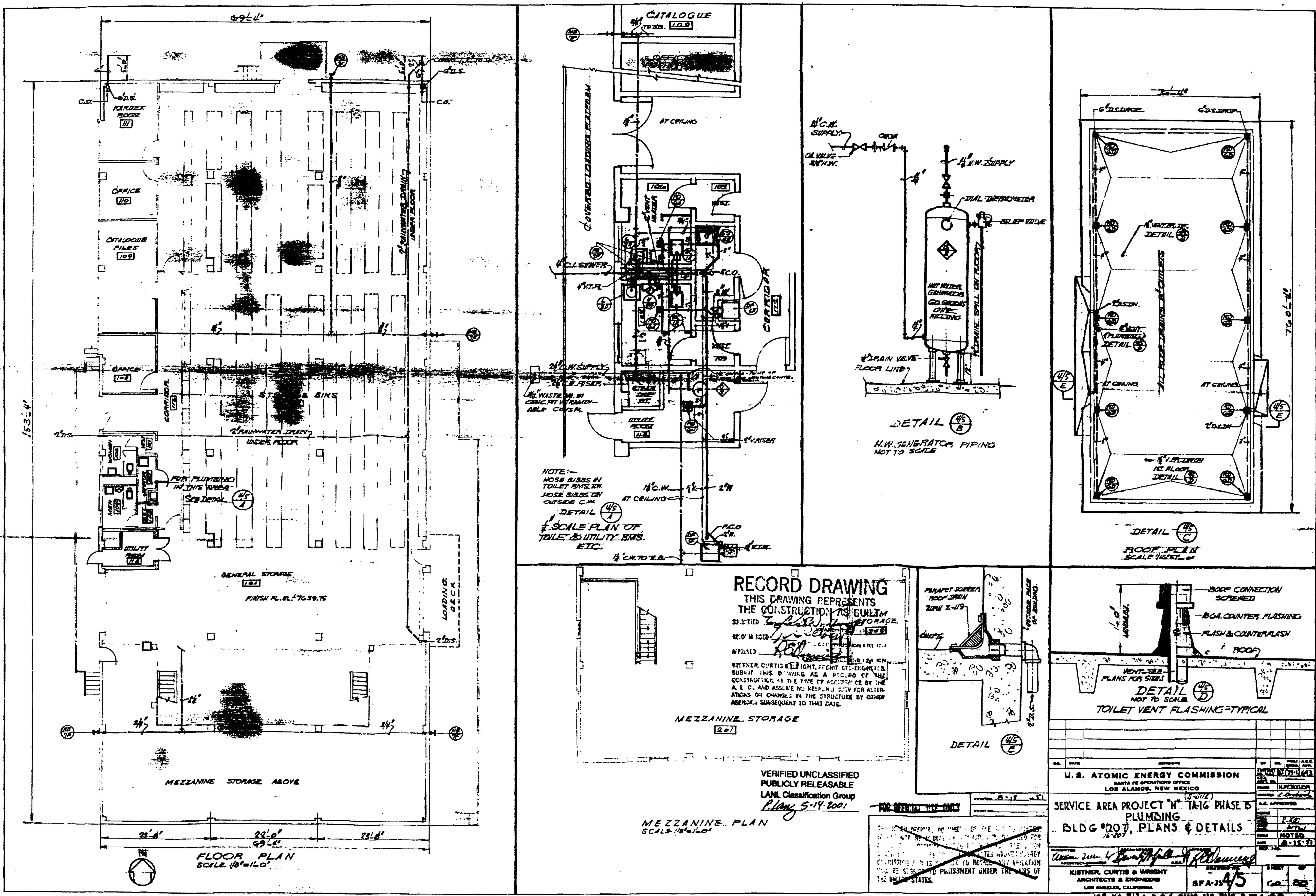
SEE ER ID # 70008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SCALE 1/8"=1'-0"
GENERAL STORAGE
MEZZANINE STORAGE ABOVE
KARDEX ROOM
OFFICE
CATALOGUE FILES
CORRIDOR
LOADING DOCK
FINISH FL. EL. 7639.75
1/4" SCALE PLAN OF TOILET & UTILITY RMS. ETC.
NOTE:— HOSE BIBBS IN TOILET RMS. ETC. HOSE BIBBS ON OUTSIDE C.W.
DETAIL 4/5 A
DETAIL 4/5 B
H.W. GENERATOR PIPING
NOT TO SCALE
DIAL THERMOMETER
RELIEF VALVE
DRAIN VALVE
FLOOR LINE
DETAIL 4/5 C
ROOF PLAN
DETAIL 4/5 D
TOILET VENT FLASHING-TYPICAL
ROOF CONNECTION SCREWED
FLASH & COUNTERFLASH
ROOF
DETAIL 4/5 E
MEZZANINE STORAGE
MEZZANINE PLAN
SCALE 1/8"=1'-0"
RECORD DRAWING
THIS DRAWING REPRESENTS THE CONSTRUCTION AS BUILT
KISTNER, CURTIS & WRIGHT, ARCHITECT-ENGINEERS, SUBMIT THIS DRAWING AS A RECORD OF THE CONSTRUCTION AT THE TIME OF ACCEPTANCE BY THE A.E.C. AND ASSUME NO RESPONSIBILITY FOR ALTERATIONS OR CHANGES IN THE STRUCTURE BY OTHER AGENCIES SUBSEQUENT TO THAT DATE.
VERIFIED UNCLASSIFIED
PUBLICLY RELEASABLE
LANL Classification Group
5-14-2001
FOR OFFICIAL USE ONLY
U.S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO
SERVICE AREA PROJECT "N" TA-16 PHASE IB
PLUMBING
BLDG #207, PLANS & DETAILS
KISTNER, CURTIS & WRIGHT
ARCHITECTS & ENGINEERS
LOS ANGELES, CALIFORNIA
SFA-J5 4/5
JOB No. 513
L.A.S.L. DWG. NO. ENG-C 7162

LAB JOB 901

Attachment B

16-026(4) Bldg 207

THIS DOCUMENT CONTAINS
UNCLASSIFIED INFORMATION
ADC: Ricardo V. Ortiz, Group Leader
Date Reviewed: 11/06/00

70008

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Target

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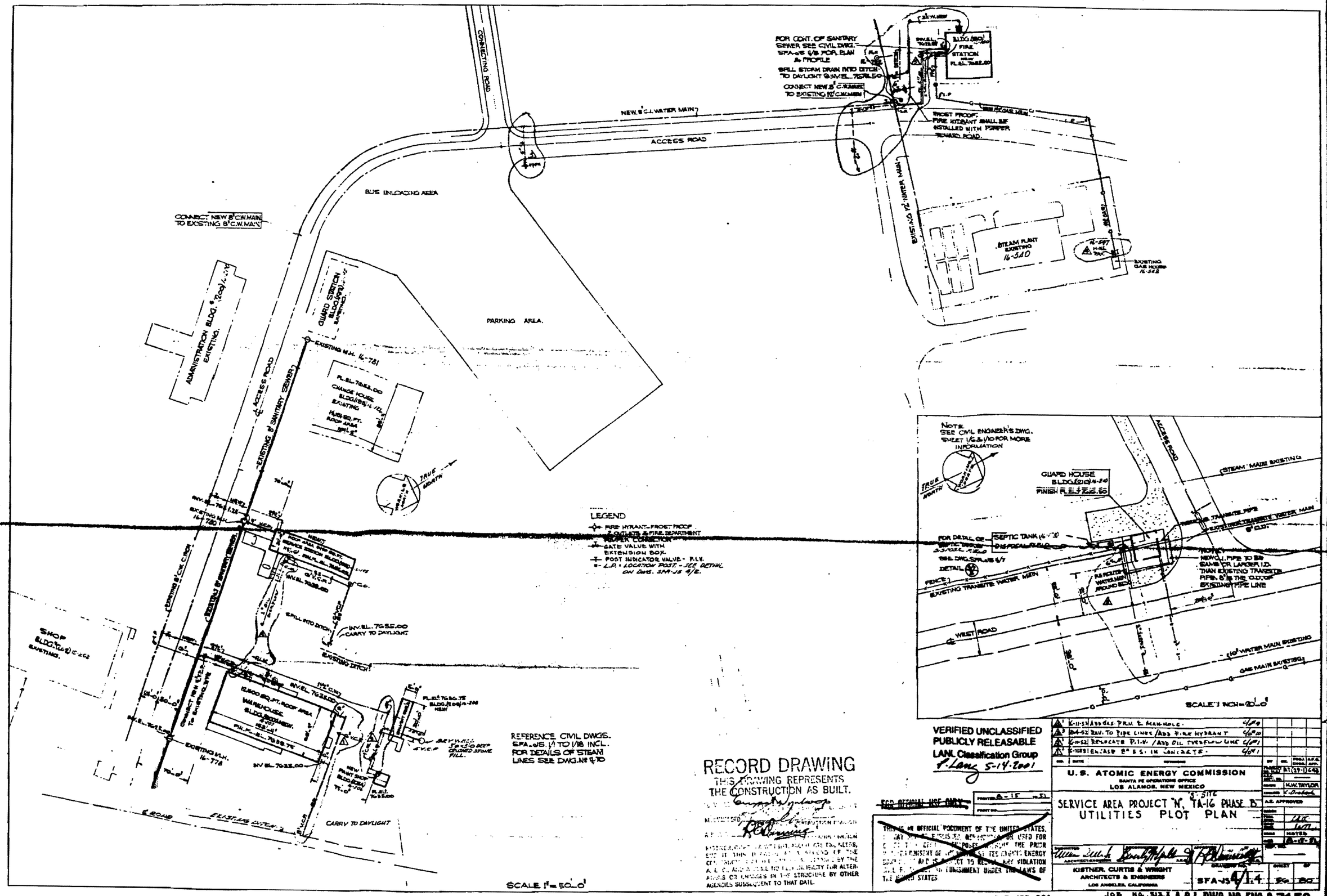
SEE ER ID # 24052



RECORD DRAWING
THIS DRAWING REPRESENTS THE CONSTRUCTION AS BUILT.

VERIFIED UNCLASSIFIED
PUBLICLY RELEASABLE
LANL Classification Group
T. Lang 5-14-2001

1	K-11-SN ADD GAS P.R.V. & MAN-HOLE.	4/00
2	04-52 REV. TO PIPE LINES / ADD FIRE HYDRANT	4/00
3	K-11-52 RELOCATE P.I.V. / ADD OIL OVERFLOW LINE	4/01
4	K-11-52 ENLARGE 8" S.S. IN CONCRETE.	4/01

U.S. ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS OFFICE
LOS ALAMOS, NEW MEXICO

SERVICE AREA PROJECT "N", TA-16 PHASE B
UTILITIES PLOT PLAN

KISTNER, CURTIS & WRIGHT
ARCHITECTS & ENGINEERS
LOS ANGELES, CALIFORNIA

SFA-JS 4/1.4

LAB JOB 901 JOB NO. 513 L.A.R.L. DWG. NO. ENG-C 7158

ER ID #24052

Attachment C
16-026(1)

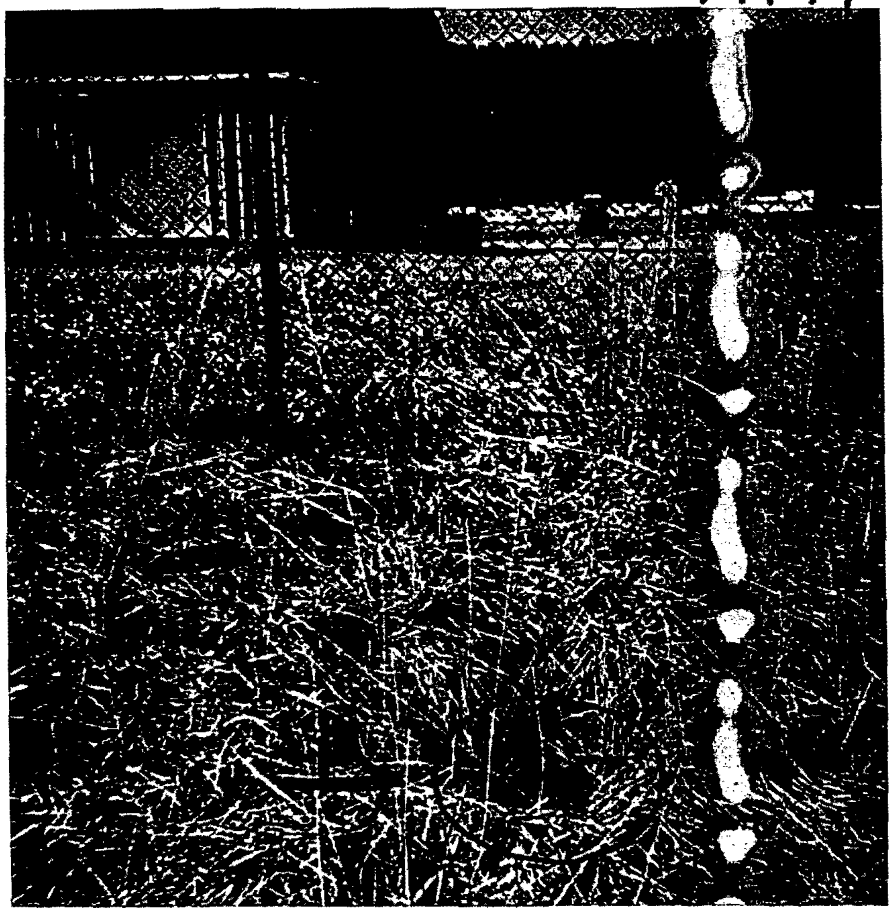
THIS DOCUMENT CONTAINS UNCLASSIFIED INFORMATION
ADC: Ricardo V. Ortiz, Group Leader
Date Reviewed: 11/06/00

Attachment D

16-026(t)

V=W 3/1/94

bldg 207 →



TA-16-207
Outfall

16-026(t)

LANL Photograph

LANL Structure History Book: TA-16

Attachment E

16-026(t)

STRUCTURE NUMBER	DESIGNATION AND TITLE	GROUP ASSIGN.	DATE ASSIGN.	GENERAL INFORMATION	W.O. J.O. E.S.	LAB JOB NUMBERS
TA-16-205	16-205 RESERVE Tritium Processing Building		4/13/82	Proposed ☐ Requested by: _____ (Name & Group) Located South of TA-16-450.		7714
TA-16-206	16-206 Pain and Bottle Storage		6/9/54	Proposed ☐ Requested by: _____ (Name & Group) Built: On Contract AT(29-1)-1278, Contractor: Utah Construction Co. & C. H. Leavell & Co., started 11/5/51, completed 11/10/52. Cost: $ 7,375.46 (Formerly 208-A)		4747,901
TA-16-207	16-207 Warehouse		6/9/54	Proposed ☐ Requested by: _____ (Name & Group) Built: Same as above. Cost: $ 197,232.27		901,2568 & 3666
TA-16-208	16-208 Storage Building		6/9/54	Proposed ☐ Requested by: _____ (Name & Group) Built: Same as above. Cost: $ 16,568.35 Title changed 11/9/71.		901,4747

16-026(t) **Attachment F**

Los Alamos
NATIONAL LABORATORY

memorandum

Chemical Science and Technology
Responsible Chemistry for America

Environmental Restoration Program/CST-4
Los Alamos, New Mexico 87545

To/MS: OU 1082 Files
From/MS: Karen Schultz Paige, CST-4, MS E525
Phone/FAX: 5-3527/5-4632 KSP
Symbol: CST/ER KSP 94-008
Date: April 13, 1994

INTERVIEW WITH CLARENCE COURTRIGHT 2/24/94

Clarence Courtright was interviewed over the telephone by Karen Schultz Paige on February 24, 1994. Mr. Courtright is a former LANL safety officer. He was stationed at S-Site from 1960 to 1984. He discussed buildings in the administration area of S-Site.

Regarding the basement of the main administration building, TA-16-200 (SWMU 16-026(a2)), Courtright believes that the basement was never contaminated and therefore floor drains from the basement would be clean.

This conversation also included discussion of TA-16-207, which was a secure storehouse during Courtright's tenure at S-Site. He reported that the building held small amounts of depleted uranium in a fenced, locked, controlled area. He did not feel that this would cause a contamination problem in the building presently (SWMU 16-026(t)).

Distribution:
CST-ER Files
OU 1082 Archives

Attachment G

16-026(t)

E/ER MEMO TO FILE

DATE: September 22, 2000

FROM: Linda Nonno, Regulatory Compliance Focus Area

SUBJECT: TA-16-207

BACKGROUND:
In preparation for writing the September 2000 Request for Permit Modification, more information was required to support an NFA determination for PRSs 16-026(t). This SWMU is a drainline and associated outfall that serves the roof drains of Building TA-16-207.

A search of Laboratory engineering drawings indicated only two sets of drawings relevant to Building 16-207. The first series of drawings is the 1951 as-built series. Of these, ENG-C 7158 (56 of 80, utilities plot plan) and ENG-7162 (60 of 80, Bldg. 207 plumbing plans and details) are pertinent for supporting NFA. The second series of drawings shows the 1991 remodel of (and addition to) the building. Of these, ENG-C 46139 (3 of 44, site plan and notes) is pertinent for NFA.

In addition, a site visit was made to TA-16 on September 22, 2000. A description of the site visit follows.

SITE VISIT TO TA-16-207 ON SEPTEMER 22, 2000

INVESTIGATORS: Linda Nonno, E/ER Regulatory Compliance Team, accompanied by
Ros Barnes, TA-16-207 Building Manager, 667-7651, 104-4767 (pager)

A complete traversal was made of the exterior of Building TA-16-207. The building is constructed entirely of poured concrete, except for the building addition, which is constructed of metal sheeting. Sewer lines are very clearly indicated with green paint on the asphalt pavement that surrounds the building and match the locations indicated on both the as-built and 1991 engineering drawings.

The roof drain outfall was easily located as per Engineering Drawings ENG-C 7158 (as-built, 1951) and ENG-C 46139 (1991). A fragment of vitrified clay pipe lies at the end of the outfall. A ditch at the end of the outfall receives the outflow from the daylighting end of the drainpipe. This ditch is also indicated on As-built Engineering Drawing ENG-C 7158 as receiving outflow from the daylighting pipe.

There is no drain piping on the exterior of the building as indicated on the as-built engineering drawings.

An inspection of the interior of the building was made. Roof drains feed into exposed pipes that are suspended from the ceiling and are clearly marked "drain". The drain pipes descend into the concrete floor at points which match the as-built engineering drawings.

Linda Nonno

Linda Nonno

Media Place Holder
Target

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ER ID # 71096

Box # 292

Record Type: ENGINEERING DRAWING/MAP

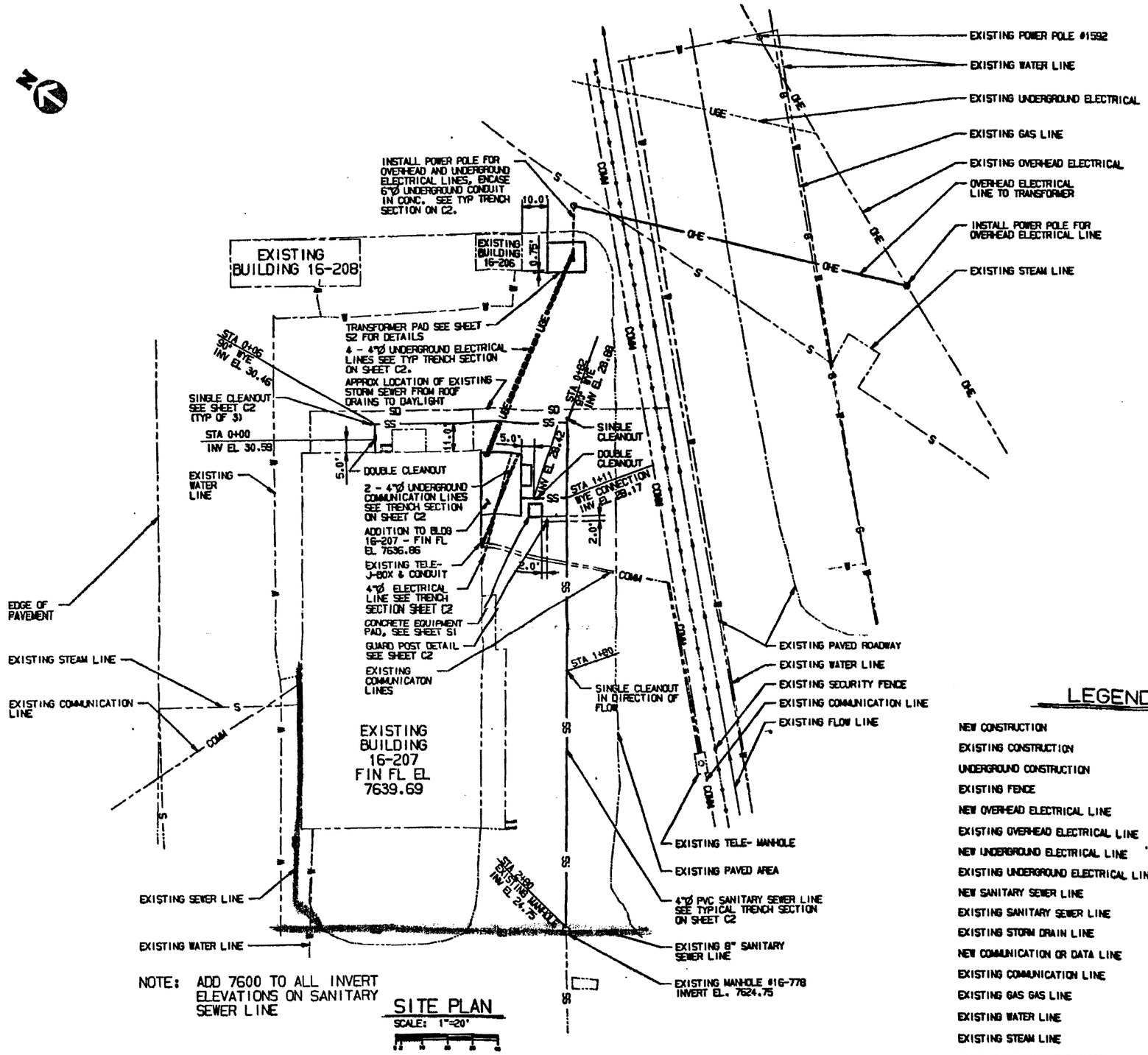
Date: 12/5/91

Symbol: C46139

Subject:

SKE ER ID # 70027

354



GENERAL NOTES

1. PROJECT CONSISTS OF AN ADDITION TO THE NORTHEAST SIDE OF BUILDING 207 INCLUDING SITE WORK AND ALL PHASES OF CONSTRUCTION.
2. DO NOT SCALE DRAWINGS FOR CONSTRUCTION DIMENSIONS.
3. FIELD VERIFY ALL DIMENSIONS, INCLUDING LOCATION OF ALL UTILITIES NEW ADDITION AND EQUIPMENT PADS PRIOR TO CONSTRUCTION.
4. REPAIR ALL AREAS DAMAGED DURING CONSTRUCTION TO MATCH EXISTING ADJACENT AREAS.
5. LOCATIONS OF EXISTING UILITIES SHOWN MAY NOT BE ACCURATE NOR COMPLETE. FIELD VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION. SITE PLAN WAS GENERATED FROM THE ENG-5 MOSS SYSTEM.
6. OBTAIN EXCAVATION PERMIT BEFORE STARTING CONSTRUCTION. SUBMIT TO ENG-5 INSPECTOR AND MAINTAIN A COPY ON-SITE.
7. PERFORM ALL EXCAVATION AND BACKFILL WORK TO THE LINES, DIMENSIONS AND ELEVATIONS INDICATED ON THE DRAWINGS.
8. KEEP WORK SITE IN AN ORDERLY CONDITION. REMOVE ALL WASTE AT PROJECT COMPLETION AND DISPOSE OF REMOVED MATERIALS AS DIRECTED BY THE ENG-5 INSPECTOR. LEAVE WORK SITE IN A CONDITION ACCEPTABLE TO THE ENG-5 INSPECTOR.
9. ALLOWABLE SOIL BEARING PRESSURE BASED UPON TOTAL LOAD USED FOR THE DESIGN IS 1000 P.S.F.
10. FOUNDATIONS TO BEAR ON COMPACTED BACKFILL COMPACTEDTO 95% MAXIMUM DENSITY (ASTM 1557) TO A MINIMUM DEPTH OF 2'-0" BELOW BOTTOM OF FOUNDATION AND HORIZONTALLY 2'-0" EACH SIDE OF FOOTING EDGES.

CIVIL NOTES

1. EARTHWORK AND GRADING
   - A. THE ENG-5 INSPECTOR SHALL APPROVE THE SOILS AND THE METHODS OF PLACEMENT AND COMPACTION. EARTHWORK SHALL NOT BE DONE IN FROZEN OR WET GROUND.
   - B. FILL MATERIAL SHALL BE CLEAN MATERIAL FREE OF ORGANIC MATTER, FROZEN MATERIAL, TRASH, ROCKS OVER 3 INCHES IN DIAMETER, CLAY AND OTHER DELETERIOUS SUBSTANCES.
   - C. COMPACT FILL MATERIAL IN 8" MAXIMUM LIFTS TO 95% OF MAXIMUM DENSITY.
2. PIPE TRENCHING
   - A. THE WIDTH OF TRENCHES FOR PIPE SHALL NOT BE GREATER THAN NECESSARY TO PERMIT SATISFACTORY JOINTING AND THOROUGH TAMPING OF THE BEDDING. USE SAND FOR BEDDING, EXCEPT WHERE CONCRETE ENCASEMENT IS AS NOTED ON PLANS, BACKFILL SHALL BE SELECTED MATERIAL FROM THE EXCAVATION.
   - B. WHERE PIPE WILL BE PLACED ON FILL, FIRST CONSTRUCT THE FILL OR EMBANKMENT AS SPECIFIED HEREIN. COMPACT FILL MATERIAL TO A MINIMUM ELEVATION OF 18 INCHES ABOVE THE REQUIRED ELEVATION FOR THE PIPE, THEN EXCAVATE THE TRENCHES AS REQUIRED FOR THE PIPE.
   - C. AFTER THE PIPE HAS BEEN INSTALLED AND ALL TESTING IS COMPLETED, BACKFILL AROUND THE PIPE WITH SAND AND THEN WITH SELECTED FILL MATERIAL AT OPTIMUM MOISTURE CONTENT AND IN LAYERS NOT TO EXCEED 6 INCHES IN DEPTH. CARE SHALL BE TAKEN SO AS TO INSURE THOROUGH COMPACTION OF THE SAND UNDER AND AROUND THE FULL LENGTH OF PIPE. COMPACT EACH LAYER OF BACKFILL BY MECHANICAL RAMMERS AND/OR TAMPERS UNTIL THE FILL HAS REACHED AN ELEVATION OF 18 INCHES ABOVE THE TOP OF THE PIPE. THE REMAINDER OF THE TRENCH MAY BE FILLED AND COMPACTED WITH HEAVY EQUIPMENT, PROVIDED THAT NO DAMAGE TO THE PIPE RESULTS.
   - D. COMPACT SAND BEDDING TO 90% MAXIMUM DENSITY AND TEST IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM D1557.
   - E. WHERE THE TRENCHES CROSS EXISTING UTILITY LINES HAND EXCAVATE WITHIN 5 FEET OF EXISTING LINE.
   - F. INSTALL PLASTIC IDENTIFICATION TAPE IN THE TRENCH ABOVE ALL NEW UTILITY LINES. INSTALL THE TAPE ONE FOOT BELOW FINISHED GRADE. THE APPROPRIATE COLOR AND LETTERING SHALL BE USED FOR THE PIPE INDICATED IN THE TRENCH BELOW.

LEGEND

NEW CONSTRUCTION	———
EXISTING CONSTRUCTION	———
UNDERGROUND CONSTRUCTION	———
EXISTING FENCE	—·—·—·—
NEW OVERHEAD ELECTRICAL LINE	——OHE——
EXISTING OVERHEAD ELECTRICAL LINE	——OHE——
NEW UNDERGROUND ELECTRICAL LINE	——UGE——
EXISTING UNDERGROUND ELECTRICAL LINE	——UGE——
NEW SANITARY SEWER LINE	——SS——
EXISTING SANITARY SEWER LINE	——SS——
EXISTING STORM DRAIN LINE	——SD——
NEW COMMUNICATION OR DATA LINE	——COMM——
EXISTING COMMUNICATION LINE	——COMM——
EXISTING GAS GAS LINE	——G——
EXISTING WATER LINE	——W——
EXISTING STEAM LINE	——S——
EXISTING CONTAMINATED WASTE LINE	——CW——
EXISTING FLOW LINE	——→——

NO.	DATE	CLASS REV.	REVISIONS	DRN	DES	CHKD	REL	SUB	ISC	APP

FACILITIES ENGINEERING DIVISION

NEW HAZPAC FACILITY

CIVIL: SITE PLAN & NOTES

DRAWN	C HARPER
DESIGN	R.B. SANCHEZ
CHECKED	W.A. JONES
RELEASED	W.A. JONES
DATE	12/20/91

BLDG. 207 TA-16

SUBMITTED R.B. SANCHEZ RECOMMENDED J. WOLF APPROVED C. DARNELL

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET C1 3

CLASSIFICATION UNCLASS REVIEWER R. MILLER DATE 12/20/91

PROJECT ID	DRAWING NO.	REV.
12089	C46139	

RECD ___ LOGGED ✓ TO VAULT ___ ER ID #70027

Attachment H
16-026(t)

Attachment I

16-026(t)

E/ER TELEPHONE LOG

CALL TO: John Hartin, ESA-MT, ET Team Leader
665-7837, 104-4611

CALL FROM: Linda Nonno, Regulatory Compliance Focus Area

DATE: September 20, 2000

SUBJECT: Current operations at Building TA-16-207

BACKGROUND:
In preparation for writing the September 2000 Request for Permit Modification, more information was required to support the NFA determination for PRSs 16-026(t). John Hartin, team leader of the group currently occupying Building TA-16-207, was contacted to supply information on the current operations at Building TA-16-207. John Hartin is the Team Leader for the Environmental Testing Team of the Engineering Sciences & Applications Division Measurement Technology Group (ESA-MT, ET).

DISCUSSION:

Mr. Hartin provided me with the following information:

The Environmental Testing Team (ESA-MT, ET) simulates potentially damaging environments that a weapon component might experience during its lifetime. Vibration, temperature extremes, forces, and sudden acceleration changes are examples of such environmental conditions. During these simulations, the team measures and analyzes the response of the test object, investigates failure modes, and characterizes nonlinear behavior.

Building TA-16-207 currently houses ESA-MT, ET offices and a testing laboratory. The ESA-MT, ET laboratory conducts mechanical test simulations on weapons components. Testing includes static testing (such as static loads, pressure, and material characterization tests.

14.0 SWMU 20-003(a)
FORMER FIRING SITE CONTROL BUILDING

14.1 Summary

SWMU 20-003(a) consists of a former control building (TA-20-2) that supported test-firing operations conducted at a technical area that no longer exists. The control building was used solely for controlling the detonation of and observing firing tests. The building was removed in 1948 when TA-20 was decontaminated and decommissioned to make way for a new access road. No hazardous wastes or constituents were ever managed in this building. SWMU 20-003(a) is being proposed for NFA under NFA Criterion 2 (the site has never been used for the management of solid or hazardous waste and/or constituents).

14.2 Description and Operational History

14.2.1 Site Description

SWMU 20-003(a) was located near the center of TA-20 (Figure 14.2-1), a now decommissioned Laboratory technical area. LASL Engineering Drawing ENG-C 1775, dated 1945, (LASL 1945, 24342)(Attachment A) shows structure TA-20-2 as a one-room, 20- by 10- by 7.5-ft building with three wooden walls and a large access door. This drawing also shows that the building was covered and surrounded on three sides by an earthen berm. Shelves were placed near the door and a workbench was located at the end of the building opposite the door. The plumbing plan for TA-20-2, LASL Engineering Drawing ENG-C 1779 (sheet 1 of 1), dated 1945 (LASL 1945, 24346)(Attachment B), shows that Building TA-20-2 had a steel door and contained no plumbing.

LASL Engineering Drawing ENG-C 1778 (LASL 1945, 24345) (Attachment C) shows the general layout of TA-20 and shows the location of Building TA-20-2 within the TA.

14.2.2 Operational History

TA-20 consisted of a series of firing areas that were spaced along a small road heading west from New Mexico State Highway 4 (Figure 14.2-1; Attachment C). The area was used during the Manhattan Project to test initiators (devices used to generate neutrons to initiate nuclear explosions). In late 1945, initiator work was transferred to a new site, TA-33. At this time, Group M-4 took over TA-20 to conduct implosion tests. Group M-4 performed fewer than 10 tests. (LANL 1994, 34756, p. 2-1 through 2-4)

TA-20 underwent an intensive radiation-monitoring and cleanup effort in the spring of 1946 during which soil contaminated with polonium was removed. Several structures were also removed at that time. In April 1948, TA-20 was decontaminated and decommissioned to make way for East Jemez Road to provide access to South Mesa and Los Alamos. Many of the remaining structures were dismantled and removed (including TA-20-2). A two-week cleanup conducted during the summer of 1948 collected 60–70 pounds of HE just before construction of East Jemez Road was to begin. The Laboratory continued to conduct periodic searches for HE until the area was declared safe in 1973. (LANL 1994, 34756, p. 2-4)

TA-20 was decommissioned as a designated technical area in 1948. The area formerly occupied by TA-20 is located along what is currently the south side of East Jemez Road approximately 0.5 mi west of the DOE small-arms firing range. This area is near the western end of Sandia Canyon within the boundaries of what are now TAs-53 and -72.

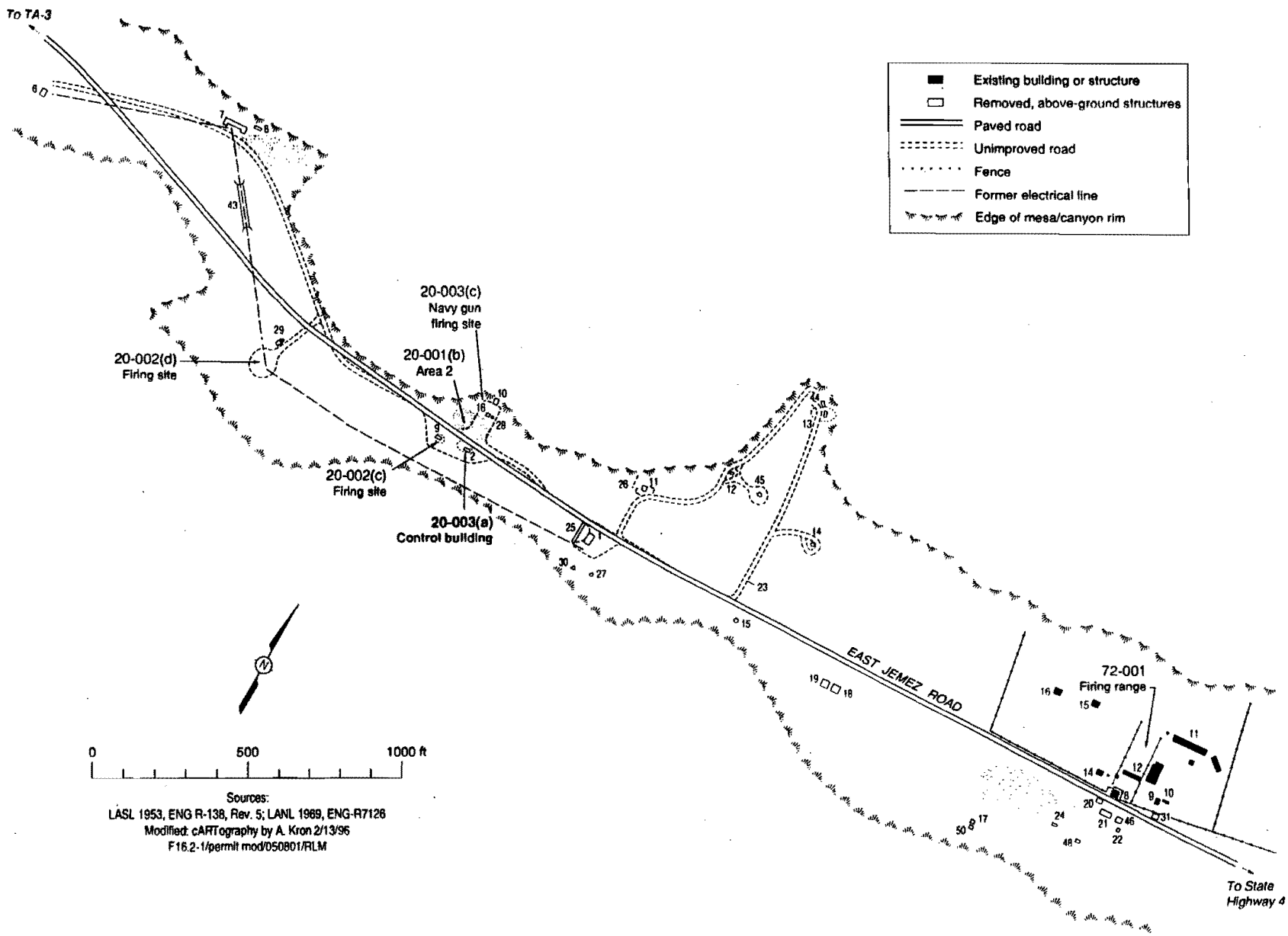


Figure 14.2-1 Locations of structures, SWMUs, and areas of concern in former TA-20 and in TA-72

Building TA-20-2, SWMU 20-003(a), was constructed in March of 1945 as a control building (LANL ER Records Package 751) (Attachment D) to support firing operations at a former test firing site [PRS 20-002(c)] and a former navy gun test firing site [PRS 20-003(c)]. A control building is used solely to remotely detonate test firings and to shelter personnel observing the tests. No hazardous wastes or contaminants were ever managed in this building. A 1947 Laboratory memo (Bradbury 1947, 07006) (Attachment E) states that the initial installation at TA-20 consisted of a laboratory and a control building adjacent to a firing site.

Building TA-20-2 was used for a brief period of time, approximately nine months to three years. Although Group M-4 (the implosions test group) used TA-20 to conduct implosion tests, it is unknown whether that group ever used Building TA-20-2 for remote detonation and observation of their implosion tests or if use of the building ended when the initiator test group moved to TA-33. Whichever the case, Building TA-20-2 was removed in April of 1948 (Attachment D) when TA-20 was decommissioned in preparation for the construction of East Jemez Road.

14.3 Land Use

14.3.1 Current

The former location of TA-20 lies within the current boundaries of TA-53 and TA-72, an industrial area containing the Los Alamos Meson Physics Facility (LAMPF). The LAMPF facility consists of a 0.5 mi.-long linear proton accelerator and associated research areas, offices, laboratories, and operational facilities. The facility also includes administrative buildings, a cafeteria, a library, workshops, and warehouses. East Jemez Road runs through the center of the former TA. Land use is industrial. The area along both sides of East Jemez Road is bounded by a 4-ft-high barbed wire fence posted with frequent "No Trespassing" signs.

14.3.2 Future/Proposed

The Laboratory does not anticipate any change from industrial use (and the posted fencing bounding the land) in the vicinity of former TA-20 for the operational life of the Laboratory (LANL 1995, 57224, pp.11–12) (Appendix D, Attachment 1).

14.4 No Further Action Proposal

14.4.1 Rationale

Archival information demonstrates that

- SWMU 20-003(a) (Building TA-20-2) was used solely as a control building for a former test firing site [PRS 20-002(c)] and a former navy gun test firing site [PRS 20-003(c)] for a duration of nine months to three years. The control building was used solely to remotely detonate test firings and to shelter personnel observing the tests.
- no hazardous wastes and/or constituents were ever managed at this building.

14.4.2 Criterion

Based on the information presented in Sections 14.2 through 14.4.1, SWMU 20-003(a) is proposed for NFA under Criterion 2.

14.5 Supporting Documentation Attached

Attachment A: LASL Engineering Drawing ENG-C 1775, dated 1945. (LASL 1945, 24342)

Attachment B: LASL Engineering Drawing ENG-C 1779 (sheet 1 of 1), dated 1945. (LASL 1945, 24346)

Attachment C: LASL Engineering Drawing ENG-C 1778. (LASL 1945, 24345)

Attachment D: LANL TA-20 structure history book. (LANL ER Records Package, 751)

Attachment E: 1947 Laboratory memo. (Bradbury 1947, 07006)

Appendix D, Attachment 1: LANL 1995. Site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

14.6 Reference Used for Text of the Request for Permit Modification for SWMU 20-003(a)

LANL, May 1994: Work Plan for Operable Unit 1100 (LANL 1994, 34756, pp. 2-1 through 2-4 and 6-1 and 6-2)

14.7 History of Regulatory Deliverables

LANL, May 25, 1994: Work Plan for OU 1100 submitted to EPA Region 6. (LANL 1994, 34756)

EPA, November 10, 1994: NOD for work plan for OU 1100 (EPA 1994, 52910.118). SWMU 20-003(a) did not receive an NOD.

LANL, December 14, 1994: Response to NOD for work plan for OU 1100. (LANL 1994, 43899)

EPA, December 28, 1994: Approval for work plan for OU 1100. (EPA 1994, 52910.117).

14.7.1 References for Regulatory Deliverables

LANL (Los Alamos National Laboratory), May 1994. "RFI Work Plan for Operable Unit 1100," Los Alamos National Laboratory report LA-UR-94-1097, Los Alamos, New Mexico. (LANL 1994, 34756)

EPA (US Environmental Protection Agency), November 10, 1994. EPA review and notice of deficiency, RFI work plan OU 1100, EPA letter to J. Vozella (Assistant Area Manager, Environment, Safety, and Health Branch, DOE/LAAO) from W. Honker, P.E., Chief, RCRA Permits Branch, EPA Region 6, Dallas, Texas. (EPA 1994, 52910.118)

LANL (Los Alamos National Laboratory), December 14, 1994. "Response to Notice of Deficiency (NOD) Concerning Operable Unit 1100 Resource Conservation and Recovery Act Facility Investigation (RFI) Work Plan, Breakdown Structure Number 1.4.2.6.1.8.1.2" Los Alamos National Laboratory letter EM/ER:94-J489 to J. Vozella (Environment, Safety, and Health Branch, DOE/LAAO) from J. Jansen (Project Manager, Environmental Restoration), Los Alamos, New Mexico. (LANL 1994, 43899)

EPA (US Environmental Protection Agency) December 28, 1994. Review and approval of RFI workplan for Operable Unit 1100, EPA letter to J. Vozella, (Chief, Environment, Safety, and Health Branch, DOE/LAAO) from A. Davis (Director, Hazardous Waste Management Division, EPA Region 6) Dallas, Texas. (EPA 1994, 52910.117)

20-003(a)

ATTACHMENTS

Media Place Holder
Target

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Box # 292

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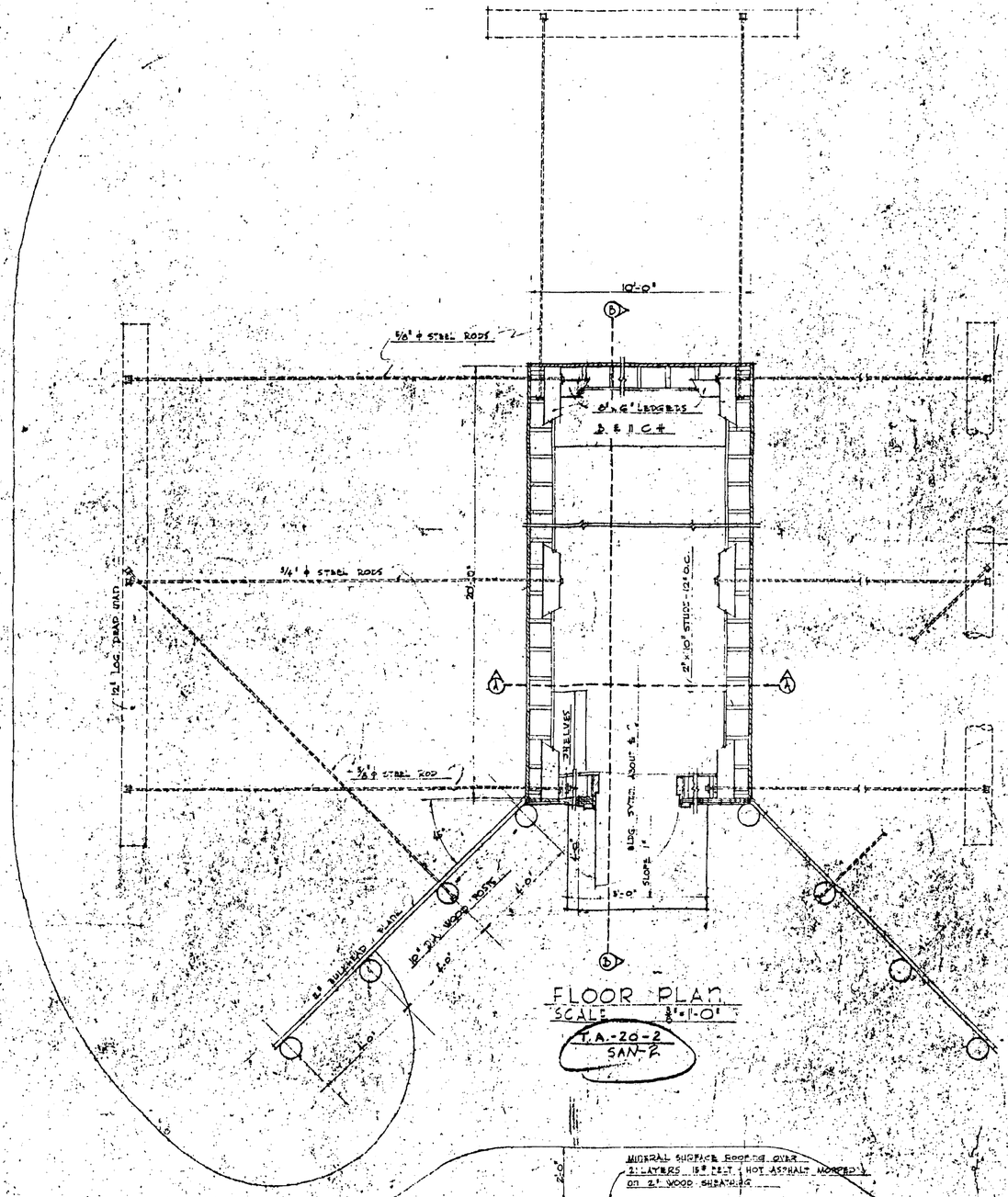
Symbol: ENG C-1775

Subject:

SEE ER ID # 24342

359



FLOOR PLAN
SCALE 1/8"=1'-0"

T.A.-20-2
SAN-R

SECTION 'B-B'
SCALE 3/8"=1'-0"

DOOR DETAILS
SCALE 1½"=1'-0"

BUILT-UP DOOR, 4-3/4" DIAG. T.&G. WOOD LAMMATIONS - W.P. GLUED & SCREWED

R.W. Nº 125 "BULL DOG" STEEL LATCH, WITH Nº 139 PAD-LOCK PLATES.

PAIR OF R.W. Nº BB 1046 HEAVY STRAP HINGES WITH MORTISE PINTLE (3"x12" STRAP)

BENCH DETAILS
SCALE 3/4"=1'-0"

SHELVING DETAILS
SCALE 1/2"=1'-0"

GENERAL NOTES

ALL EXPOSED DOOR & TRIM SURFACES TO BE GIVEN TWO COATS OF LEAD & OIL PAINT.

ALL INTERIOR WOOD SURFACES TO BE STAINED.

Attachment A

20-003(a)

OBSOLETE
DEAD STORAGE

SECTION 'A-A'
SCALE 1/8"=1'-0"

① T.A. NUMBERS ADDED ___ 2/19/51

TA-20
Sandia
1/5/45

Los Alamos Environmental Restoration Records Processing Facility
ER Record I.D.# 0024342

T.A.-20

PLAN - SECTIONS - DETAILS BUILDING SAN-2		
W.C. KRUGER ARCHITECT APPROVED: MAJOR, C.E. OPERATIONS OFFICER	ZIA - PROJECT SANDIA SITE CONSTRUCTION	DRAWN: L.V. CHECKED:
APPROVED FOR USING SERVICE, BY R. F. Bacher	APPROVED: G. R. Tyler COLONEL, C.E., COMMANDING OFFICER	U.S. ENGINEER OFFICE SANTA FE NEW MEXICO	DATE: SHEET 2

L.A.S.L. Dwg. No. ENG-C1775 SANDIA - 5 20,010

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

ER ID # 71096

Box # 292

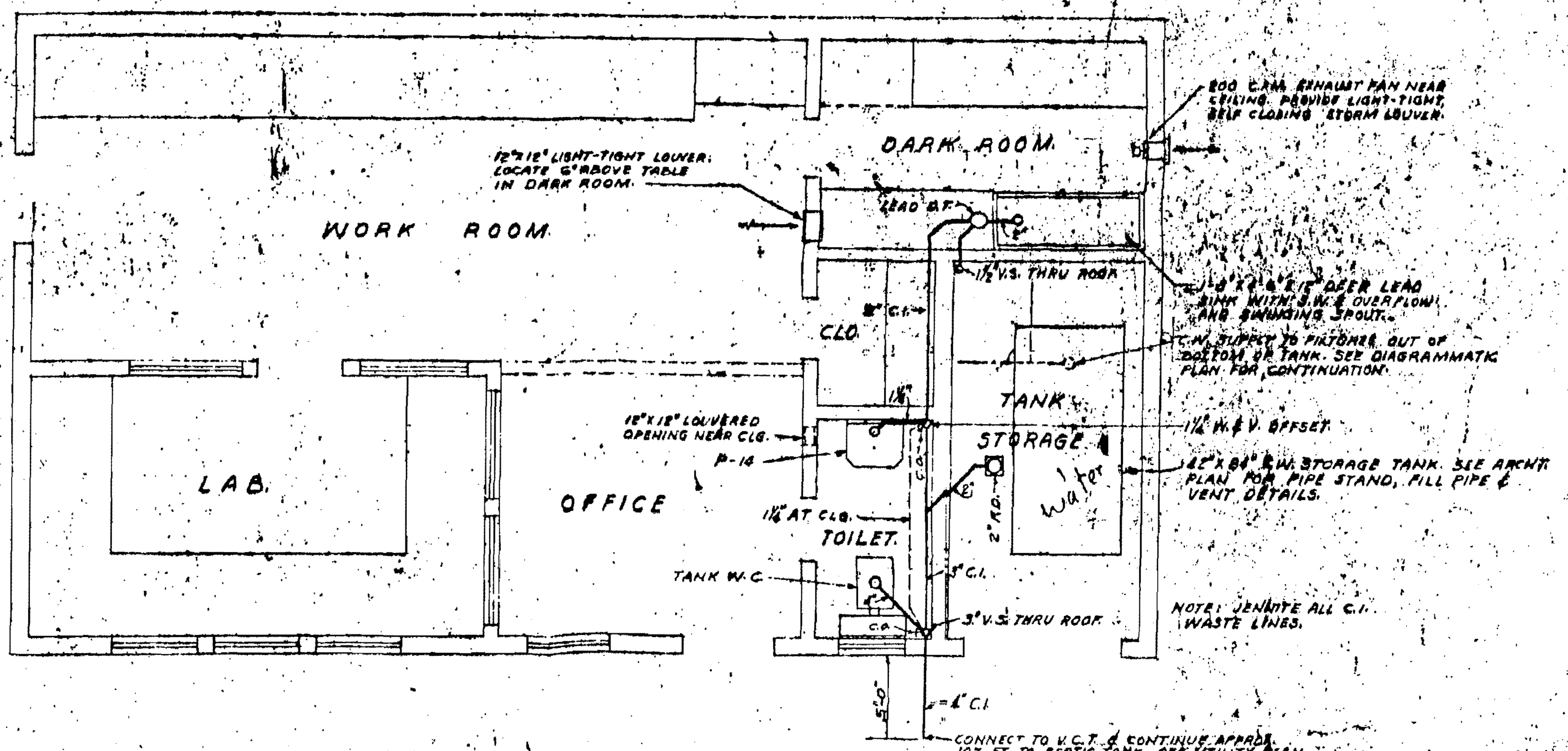
Record Type: ENGINEERING DRAWING/MAP

Date: 2/19/51

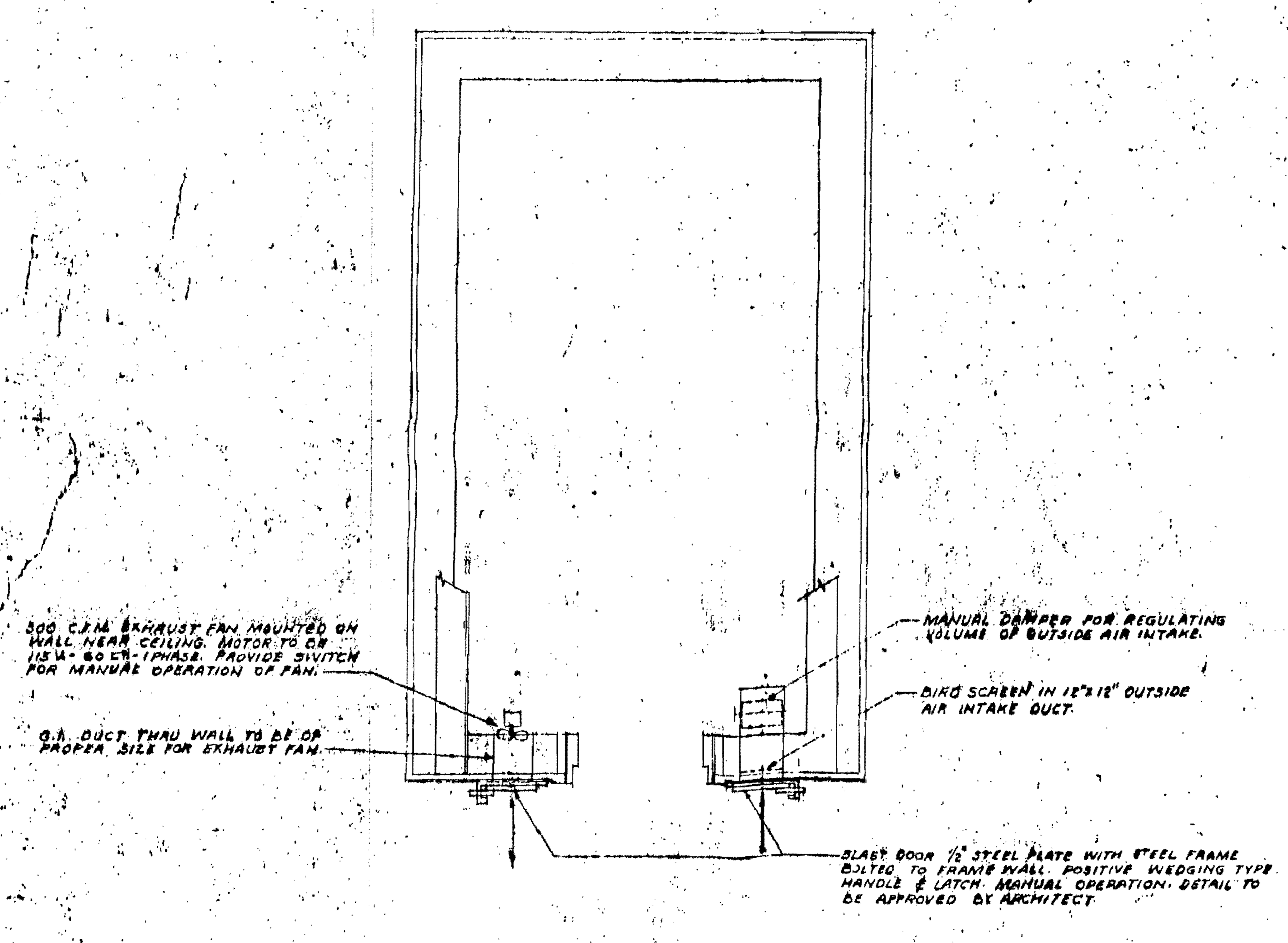
Symbol: ENG C 1779

Subject:

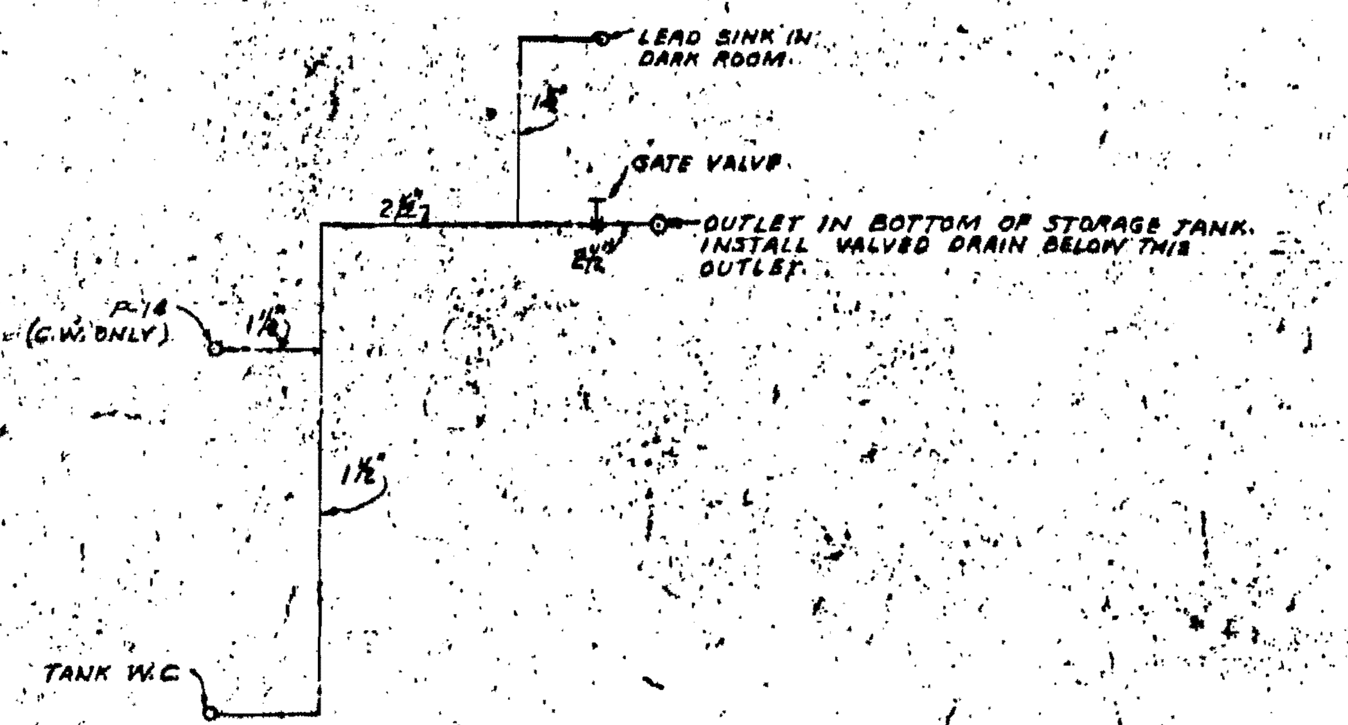
SEE ER ID # 24346



VENTILATING & PLUMBING PLAN
BUILDING (No. 1)
T.A. 20-1
SAN-1



VENTILATING PLAN FOR BUILDING (No. 2)
SCALE 3/8" = 1'-0"
T.A. 20-2
SAN-2



DIAGRAMMATIC PLAN OF COLD WATER PIPING
IN BLDG. (No. 1) SAN-1
NO SCALE

NOTE:- BLDG. (No. 1) SAN-1
THE WATER STORAGE TANK SHALL BE INSULATED WITH A 4" BLANKET OF ROCK WOOL OR FIBRE GLASS AND FINISHED WITH A COAT OF ASBESTOS & PORTLAND CEMENT PLASTER TO PROVIDE A SMOOTH HARD FINISH.
ALL COLD WATER PIPING IN TANK ROOM TO BE INSULATED WITH DOUBLE THICKNESS COVERING.

Attachment B

20-003(a)

OBSOLETE
DEAD STORAGE

△ T.A. NUMBERS ADDED 2/19/51

TA-20
Sandia
1/29/45

T.A.-20

APPROVED FOR USING SERVICE

BY

VENTILATING & PLUMBING PLANS - BLDGS. SAN 1 & 2				
W. H. KRUGER ARCHITECT			SANDIA SITE CONSTRUCTION	SHEET No.
DRAWN W.N.T.	CHECKED E.F.R.	DATE JAN. 29, 1945	U.S. ENGINEER OFFICE SANTA FE, N.M.	
SUBMITTED: HEAD, ENGINEERING SECTION			RECOMMENDED: MAJOR, C.E. OPERATIONS OFFICER	APPROVED: COLONEL, C.E. COMMANDING OFFICER

L.A.S.L. DWG. NO. ENG-C 1779 SANDIA-8 20,013

Media Place Holder
Target

This target represents media that was not microfilmed. The original media can be obtained through the Records Processing Facility.

ER ID # 71096

Box # 292

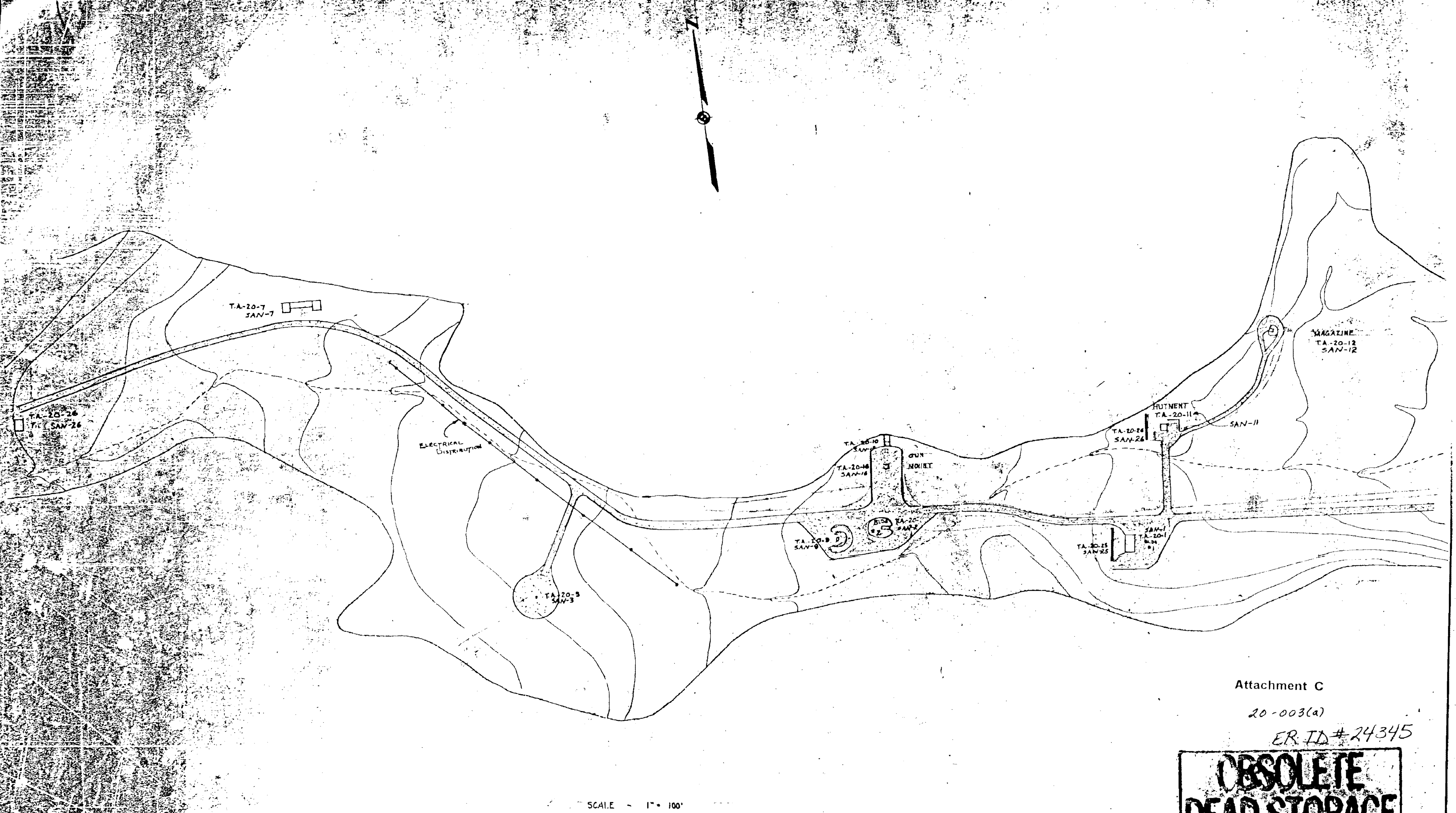
Record Type: ENGINEERING DRAWING/MAP

Date: 2/19/51

Symbol: ENG C 1778

Subject:

SEE ER ID # 24345



Attachment C

20-003(a)

ER ID #24345

OBSOLETE
DEAD STORAGE

△1 T.A. NUMBERS ADDED ORC 2/19/51

T.A.-20

REVISED SITE PLAN & TOPOGRAPHIC LAYOUT			
W. C. KRUGER - ARCHITECT			SANDIA SITE CONSTRUCTION
DRAWN: W.A.S.	CHECKED	DATE: 2-21-45 1945	U. S. ENGINEER OFFICE SANTA FE, N.M.

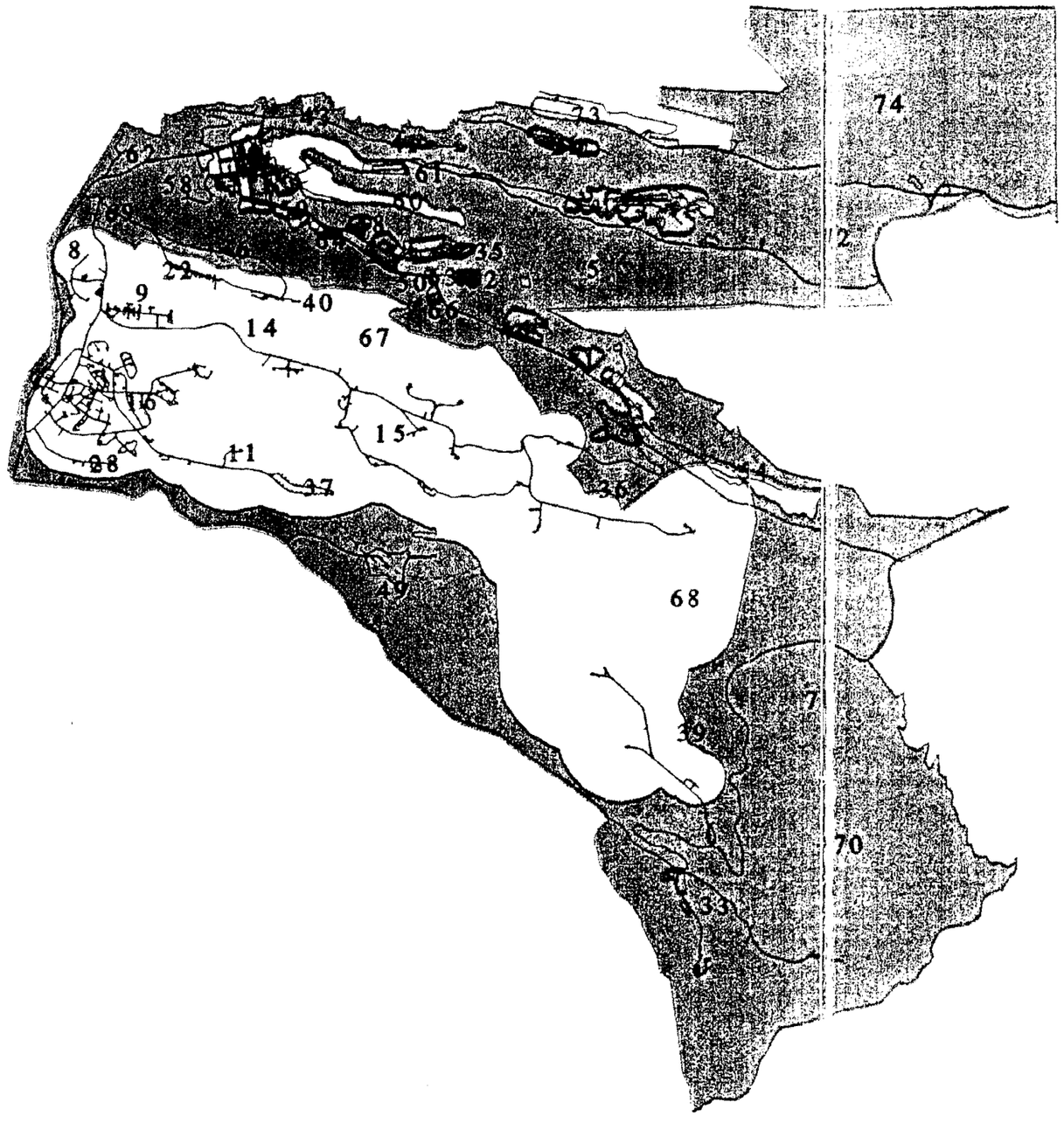
L.A.S.L. Dwg. No. Eng-C 1778

Attachment D

20-003(a)

LANL Structure History Book: TA-20

STRUCTURE NUMBER	DESIGNATION AND TITLE	GROUP ASSIGN.	DATE ASSIGN.	GENERAL INFORMATION	W.O. J.O. E.S.	LAB JOB NUMBERS
TA-20-1	SAN-1 Laboratory			Proposed ☐ Requested by: _____ (Name & Group) AEC-316-98 #6101 Built on Contract W(17-028)-Eng-3, Contractor: R.E. McKee, Started 3/1/45, Completed 4/1/45. Wood frame const., 20'-0" x 40'-0" x 10'-0" high. Relocated to R-site, renumbered TA-15-23, approx. May 1948.		
TA-20-2	SAN-2 Control Bldg.			Proposed ☐ Requested by: _____ (Name & Group) AEC-316-100 #6105 Built on Contract W(17-028)-Eng-3, Contractor: R. E. McKee, Started 3/1/45, Completed 4/1/45. Wood frame const., 10'-0" x 20'-0" x 7'-6" high with earth berm on three sides and top. Removed April 1948.		303
TA-20-3	SAN-3 Manhole (electrical)			Proposed ☐ Requested by: _____ (Name & Group) AEC-322-35 #6104 Built on Contract W(17-028)-Eng-3, Contractor: R.E. McKee Started 3/1/45, Completed 4/1/45. Reinforced concrete const., 4'-0" x 4'-6" deep, with a steel cover. Abandoned April 1948		
TA-20-4	SAN-4 Manhole (electrical)			Proposed ☐ Requested by: _____ (Name & Group) AEC-322-33 Built on Contract W(17-028)-Eng-3, Contractor: R.E. McKee, Started 3/1/45, Completed 4/1/45. Abandoned April 1948.		



LANL EXISTING LAND USE (LABWIDE)

PREPARED FOR :
SITE DEVELOPMENT PLAN
ANNUAL UPDATE, 1995

Appendix D

Attachment 1

LEGEND

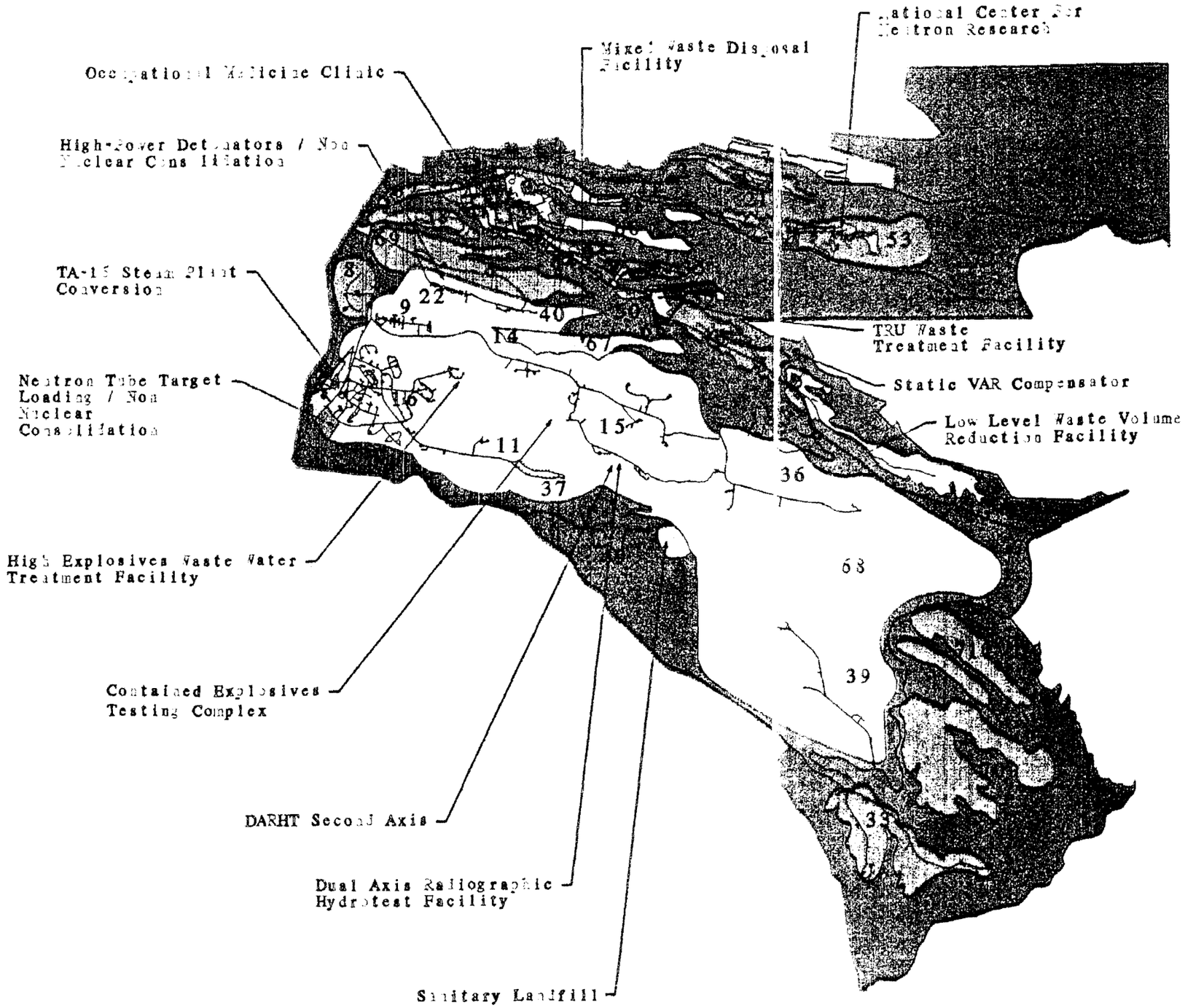
- ENVIRONMENTAL RESEARCH /BUFFER (ER)
- PHYSICAL SUPPORT AND INFRASTRUCTURE (PSI)
- EXPERIMENTAL SCIENCE (EX)
- HIGH EXPLOSIVES R&D AND TESTING (HE)
- SPECIAL NUCLEAR MATERIALS R&D (SNM)
- PUBLIC AND CORPORATE INTERFACE (PC)
- ADMINISTRATIVE AND TECHNICAL SERVICES (ATS)
- WASTE MANAGEMENT (WM)
- THEORETICAL AND COMPUTATIONAL SCIENCE (TC)
- NON-DOE LAND : POTENTIALLY PSI
- HIGH EXPLOSIVES ADMINISTRATIVE AND TECHNICAL SUPPORT AREA
- 03 TECHNICAL AREA NUMBERS
- PAVED ROADS
- DOE BOUNDARY

PREPARED BY:
LOS ALAMOS NATIONAL LABORATORY
SITE PLANNING OFFICE
DATE: 03-21-95 PHONE: 505-667-9383

3000 0 3000 6000 FEET
914 0 914 1828 METERS

N

NEW MEXICO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE)
1927 NORTH AMERICAN DATUM



LANL FUTURE LAND USE (LABWIDE)

PREPARED FOR:
SITE DEVELOPMENT PLAN
ANNUAL UPDATE, 1995

Appendix D

Attachment 1

LEGEND

- ENVIRONMENTAL RESEARCH /BUFFER (ER)
- PHYSICAL SUPPORT AND INFRASTRUCTURE (PSI)
- EXPERIMENTAL SCIENCE (EX)
- HIGH EXPLOSIVES R&D AND TESTING (HE)
- SPECIAL NUCLEAR MATERIALS R&D (SNM)
- PUBLIC AND CORPORATE INTERFACE (PC)
- ADMINISTRATIVE AND TECHNICAL SERVICES (ATS)
- WASTE MANAGEMENT (WM)
- THEORETICAL AND COMPUTATIONAL SCIENCE (TC)
- NON-DOE LAND : POTENTIALLY PSI
- HIGH EXPLOSIVES ADMINISTRATIVE AND TECHNICAL SUPPORT AREA
- 03 TECHNICAL AREA NUMBERS
- PAVED ROADS
- DOE BOUNDARY

PREPARED BY:
LOS ALAMOS NATIONAL LABORATORY
SITE PLANNING OFFICE
DATE: 03-21-95 PHONE: 505-667-9383

3000 0 3000 6000 FEET
914 0 914 1828 METERS

N

NEW MEXICO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE)
1927 NORTH AMERICAN DATUM

Attachment E

20-003(a)

A Technical Maintenance Group Report
on
General Background Data Concerning
The Los Alamos Scientific Laboratory
Required for Planning Purposes

LAB-A-5 September 11, 1947

removed. The concrete "battleships" and the underground structures might as well be left - some use might be found for them.

19. TA-19 (East Gate Laboratory)

a. This small site, consisting of one frame laboratory building and a storage hutment, was constructed in the summer of 1944 for the use of Dr. Segre, who needed an isolated spot for erecting experimental work on small sources. Because of the rush in which the construction was carried out, the site was located just east of the Project boundary, as indeed was Post One, the east gate to the Project. The past two years the site has been used only upon occasion by the Physics Division. The disposition of it requires no great rush, and it may well be that upon its demolition no replacement will be required.

20. TA-20 (Sandia Canyon Site)

a. This explosives field test site was built for G Division in the spring of 1945. Installations consisted of a laboratory and control building adjacent to a firing point for charges up to 50 pounds, two "Dumbo" metal vessels for small recovery shots, a small magazine, a trimming hutment, and an underground pit with a metal mesh cover (which failed after the first few shots) for larger recovery shots. In April a 22 mm gun setup, together with a second magazine and a small workshop, was constructed in a side canyon to replace a similar setup previously installed in an armored room on the south side of Building B in the Main Technical Area. The site was assigned to M Division in the fall of 1945 and since then has been used for a miscellany of experiments without much change in the original installations. The canyon could be reached by a properly constructed road from the mesa land to the west, and the necessity for using the Route #4 approach thereby be obviated. All the construction is temporary in nature and will have to be replaced if the site becomes permanent.

21. TA-21 (DP Site)

a. This important site was conceived and built during the spring and summer of 1945 for major chemical and metallurgical work. At that time it consisted of ten major structures together with twenty-odd smaller ones. Later a concrete vault and several other maintenance and storage buildings were constructed. This site is the nearest thing to a permanent working area now used by the Laboratory, and with replacement of several frame structures by fireproof ones can be made completely so. Most of the planning work required will be in this category.

22. TA-22 (TD Site)

a. This site was constructed in the summer of 1945 for O Division as a center for the handling of special assemblies, replacing V Site. It consisted of two prefabricated stran steel buildings, two large frame magazines (unbarricaded) and one improved ranch building. The assembly work was transferred from Los Alamos in 1946, and the site has since been used by X Division as an additional storage area for high explosives.

23. TA-23 (Nu Site)

a. This firing site was constructed in the spring of 1945 for X Division, to relieve the crowded firing schedule at "far point," Anchor Site

Appendix A

Acronyms and Glossary

APPENDIX A ACRONYMS AND GLOSSARY

A-1.0 ACRONYMS AND ABBREVIATIONS

BMP	best management practice
BV	background value
CEARP	Comprehensive Environmental Assessment and Response Program
CFR	Code of Federal Regulations
COPC	chemical of potential concern
COPEC	chemical of potential ecological concern
D&D	decontamination and decommissioning
DOE	US Department of Energy
DOE-LAAO	US Department of Energy/Los Alamos Area Office
EOD	explosive ordnance disposal
EPA	US Environmental Protection Agency
ESL	ecological screening level
ER	Environmental Restoration (Project)
FIMAD	Facility for Information Management, Analysis, and Display
HE	high explosive
HI	hazard index
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine [2691-41-0]
HQ	hazard quotient
HRMB	Hazardous and Radioactive Materials Bureau
HSWA	Hazardous and Solid Waste Amendments
HWB	Hazardous Waste Bureau
ICPES	inductively coupled plasma emission spectroscopy
IWP	Installation Work Plan
JCI	Johnson Controls World Services Inc.
Laboratory	Los Alamos National Laboratory
LANL	Los Alamos National Laboratory
LASL	Los Alamos Scientific Laboratory
LIBS	laser-induced breakdown spectroscopy
NFA	no further action
NMED	New Mexico Environment Department
NOD	notice of deficiency
NPDES	National Pollutant Discharge Elimination System
OU	operable unit
PCB	polychlorinated biphenyl

PHERMEX	Pulsed, High-Energy, Radiographic Machine Emitting X-rays
PRG	preliminary remediation goal
PRS	potential release site
QA	quality assurance
RCRA	Resource Conservation and Recovery Act
RDX	cyclotrimethylenetrinitramine [121-82-4]
RFI	RCRA facility investigation
RSI	request for supplemental information
SAL	screening action level
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TA	technical area
TAL	target analyte list
TPH	total petroleum hydrocarbon
TSCA	Toxic Substances Control Act
UST	underground storage tank
UXO	unexploded ordnance
VCA	voluntary corrective action
VOC	volatile organic compound

A-2.0 GLOSSARY

analysis. Includes physical analysis, chemical analysis, and knowledge-of-process determinations. (Laboratory Hazardous Waste Facility Permit)

background level. Naturally occurring concentrations (levels) of an inorganic chemical and naturally occurring radionuclides in soil, sediment, and tuff.

background value (BV). A threshold used to identify site sample results that may be greater than background levels.

best management practices (BMPs). For facilities that manufacture, use, store, or *discharge* toxic or hazardous pollutants as defined by the 1977 Clean Water Act, a required program to control the potential spill or *release* of those materials to surface

chemical of potential concern (COPC). A chemical, detected at a site, that has the potential to adversely affect human receptors due to its concentration, distribution, and mechanism of toxicity. A COPC remains a concern until exposure pathways and receptors are evaluated in a site-specific human health risk assessment.

chemical of potential ecological concern (COPEC). A *chemical,* detected at a site, that has the potential to adversely affect ecological *receptors* due to its concentration, distribution, and mechanism of toxicity.

cleanup levels. Media-specific contaminant concentration levels that must be met by a selected corrective action. Cleanup levels are established by using criteria such as protection of human health and the environment; compliance with regulatory requirements; reduction of toxicity, mobility, or volume through treatment; long- and short-term effectiveness; implementability; cost; and public acceptance.

corrective action. Action to rectify conditions adverse to human health or the environment.

ecological screening level (ESL). An organism's exposure-response threshold for a given chemical constituent. The concentration of a substance in a particular medium corresponds to a hazard quotient (HQ) of 1.0 for a given organism below which no risk is indicated.

exposure pathway. Mode by which a receptor may be exposed to contaminants in environmental media (e.g., drinking water, ingesting food, or inhaling dust).

groundwater. Water in a subsurface saturated zone; water beneath the regional water table.

hazard index (HI). The sum of *hazard quotients* for multiple *contaminants* to which a *receptor* (j) is determined to be exposed, i.e., $HI_j = \Sigma_i HQ_{ij}$.

Hazardous and Solid Waste Amendments (HSWA). The Hazardous and Solid Waste Amendments of 1984 (Public Law No. 98-616, 98 Stat. 3221), which amended the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 et seq.

hazardous waste. Any *solid waste* is generally a hazardous waste if it

- is not excluded from regulation as a hazardous waste,
- is listed in the regulations as a hazardous waste,

- exhibits any of the defined characteristics of hazardous waste (ignitability, corrosivity, reactivity, or toxicity), or
- is a mixture of *solid waste* and hazardous waste.

See 40 CFR 261.3 for a complete definition of hazardous waste.

hazard quotient (HQ) — The ratio of a calculated exposure (E) to or *dose* (D) from a given *contaminant* (I) to a given *receptor* (j) over a reference value (TRV) for *contaminant* (I) determined to be protective of *receptor* (j), i.e., $HQ_{ij} = E_{ij}$ [or D_{ij}]TRV_{ij}.

industrial-use scenario. Industrial use is the scenario in which current Laboratory operations continue. Any necessary remediation involves cleanup to standards designed to ensure a safe and healthy work environment for Laboratory workers.

migration. The movement of inorganic and organic species through unsaturated or saturated materials.

National Pollutant Discharge Elimination System (NPDES). The national program for both issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits and imposing requirements under Sections 307, 318, 402, and 405 of the Clean Water Act.

no further action (NFA). A recommendation that no further investigation or remediation is warranted based on specific criteria.

notice of deficiency (NOD). A notice issued to DOE and the Laboratory by the administrative authority which states that some aspect(s) of a plan, report, or application does not meet their requirements or that requires clarification or correction.

operable unit (OU). At the Laboratory, one of 24 areas originally established for administering the ER Project. Set up as groups of potential release sites, the OUs were aggregated based on geographic proximity for the purpose of planning and conducting RCRA facility assessments and RCRA facility investigations. As the project matured, it became apparent that 24 were too many to allow efficient communication and to ensure consistency in approach. Therefore, in 1994, the 24 OUs were reduced to 6 administrative "field units."

outfall. The vent or end of a drain, pipe, sewer, ditch, or other conduit that carries wastewater, sewage, storm runoff or other *effluent* into a stream.

permit modification. A request by either the permittee or the administrative authority to change a condition of the Laboratory's Hazardous Waste Facility Permit.

polychlorinated biphenyls (PCBs). Any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substances. PCBs are colorless, odorless compounds that are chemically, electrically, and thermally stable and have proven to be toxic to both humans and animals.

potential release site (PRS). Refers to potentially contaminated sites at the Laboratory that are identified either as solid waste management units (SWMUs) or areas of concern (AOCs). PRS refers to SWMUs and AOCs collectively.

preliminary remediation goal (PRG). Acceptable exposure levels, protective of human health and the environment, that are used as a *risk*-based tool for evaluating remedial alternatives.

radionuclide. A nuclide (species of atom) that exhibits radioactivity.

RCRA facility investigation (RFI). The investigation that determines if a release has occurred and the nature and extent of the contamination at a hazardous waste facility. The RFI is generally equivalent to the remedial investigation portion of the Comprehensive Environment Response, Compensation, and Liability Act (CERCLA) process.

receptor. A person, plant, animal, or geographical location that is exposed to a chemical or physical agent released to the environment by human activities.

release. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of hazardous waste or hazardous constituents into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles that contain any hazardous wastes or hazardous constituents).

remediation. The process of reducing the concentration of a *contaminant* (or *contaminants*) in air, water, or soil media to a level that poses an acceptable *risk* to human health and the environment; the act of restoring a contaminated area to a usable condition based on specified standards.

request for supplemental information (RSI). A request issued to DOE and the Laboratory by the administrative authority which states that some aspect(s) of a plan or report does not meet their requirements. The ER Project must respond by providing additional information to address the identified issue or concern.

residential-use scenario. The standards for residential use are the most stringent of the three current- and future-use scenarios being considered by the ER Project and is the level of cleanup the EPA is currently specifying for SWMUs located off the Laboratory site and for those released for non-Laboratory use.

Resource Conservation and Recovery Act (RCRA). The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976. (40 CFR 270.2)

restricted area. Any area to which access is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials. "Restricted area" shall not include areas used as residential quarters, although a separate room or rooms in a residential building may be set apart as a restricted area (10 CFR 60.2).

screening action level (SAL). *Medium*-specific concentration level for a *chemical* derived using conservative criteria below for which it is generally assumed that there is no potential for unacceptable *risk* to human health. The derivation of a SAL is based on conservative exposure and land-use assumptions. However, if an applicable *regulatory standard* exists that is less than the value derived by *risk*-based computations, it will be used for the SAL.

screening assessment. A process designed to determine whether contamination detected in a particular medium at a site may present a potentially unacceptable human-health and /or ecological risk. The assessment utilizes screening levels that are either human-health or ecologically based concentrations derived by using chemical-specific toxicity information and standardized exposure assumptions below which no additional actions are generally warranted.

site conceptual model. A qualitative or quantitative description of sources of contamination, environmental transport pathways for contamination, and biota that may be impacted by contamination (called receptors) and whose relationships describe qualitatively or quantitatively the release of

contamination from the sources, the movement of contamination along the pathways to the exposure points, and the uptake of contaminant by the receptors.

solid waste. Any garbage; refuse; sludge from a waste *treatment* plant, water-supply *treatment* plant, or air-pollution-control facility; and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities.

solid waste management unit (SWMU). Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released. This definition includes regulated units (i.e., landfills, surface impoundments, waste piles, and land treatment units) but does not include passive leakage or one-time spills from production areas and units in which wastes have not been managed (e.g., product-storage areas).

target analyte. An element, *chemical*, or parameter, the concentration, mass, or magnitude of which is designed to be quantified by use of a particular test method.

technical area (TA). The Laboratory established technical areas as administrative units for all its operations. There are currently 49 active TAs spread over 43 square miles.

underground storage tank (UST). [as defined in Section 9001(1) of the Solid Waste Disposal Act]. The term "underground storage tank" means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10% or more beneath the surface of the ground. Such term does not include any

(a) farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;

(b) tank used for string heating oil for consumptive use on the premises where stored;

(c) septic tank;

(d) pipeline facility (including gathering lines) regulated under
  (i) the Natural Gas Pipeline Safety Act of 1968 (49 USC App. 1671 et seq.),
  (ii) the Hazardous Liquid Pipeline Safety Act of 1979 (49 USC App. 2001 et seq.), or
  (iii) which is an intrastate pipeline facility regulated under state laws comparable to the provisions of law referred to in Clause (i) or (ii) of this subparagraph;

(e) surface impoundment, pit, pond, or lagoon;

(f) stormwater or wastewater collection system;

(g) flow-through process tank;

(h) liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(i) storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

unrestricted area. Any area, access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials and any area used for residential quarters (10 CFR 60.2).

Appendix B

Requested Modifications to Tables A, B, and C of Module VIII of the Laboratory's Hazardous Waste Facility Permit

Note:

This appendix contains the requested modifications to Tables A, B, and C of Module VIII. The date of each request is provided next to the SWMU proposed for deletion. Strike-through text indicates deletions, and boldface text indicates new text. The number at the bottom of each technical area listing denotes the number of SWMUs on Module VIII for that area.

Requested Modifications to Table A

Technical Area 0

SWMU Number
0-001
0-003
~~0-011(a)~~ June 2001
0-011(c)
0-011(d)
~~0-011(e)~~ June 2001
0-012
~~0-016~~ June 2000
0-017
0-018(a)
0-019
0-028(a)
0-028(b)
0-030(a)
0-030(b)
0-030(g)
0-030(l)
0-030(m)
~~0-033(a)~~ June 2000
0-039 ~~(20)~~ **(16)** June 2001

Technical Area 1

1-001(a)
1-001(b)
1-001(c)
1-001(d)
1-001(e)
1-001(f)
1-001(g)
~~1-001(m)~~ June 2001
1-001(o)
1-001(s)
1-001(t)
1-001(u)
1-002
1-003(a)
1-003(d)
1-003(e)
1-006(a)
1-006(b)
1-006(c)
1-006(d)
1-006(h)
1-006(n)
1-006(o)
1-007(a)
1-007(b)
1-007(c)
1-007(d)
1-007(e)
1-007(j)
1-007(l) ~~(30)~~ **(29)** June 2001

Technical Area 2

2-005
2-006(a)
2-006(b)
2-007
2-008(a)
~~2-008(b)~~ June 2000
2-009(a)
2-009(b)
2-009(c) ~~(9)~~ **(8)** June 2000

Technical Area 3

3-001(k)
3-002(c)
3-003(a)
3-003(b)
3-003(c)
3-009(a)
3-009(d)
3-010(a)
3-012(b)
3-013(a)
3-014(a)
3-014(b)
3-014(c)
3-014(d)
3-014(e)
3-014(f)
3-014(g)
3-014(h)
3-014(i)
3-014(j)
3-014(k)
3-014(l)
3-014(m)
3-014(n)
3-014(o)
3-014(p)
3-014(q)
3-014(r)
3-014(s)
3-014(t)
3-014(u)
3-015
3-026(d)
3-028
3-033
3-036(a)
3-036(c)
3-036(d)
3-037
3-038(a)
3-038(b)
3-056(a)
3-056(c) **(43)**

Technical Area 4

4-001
4-002
4-003(a)
4-003(b) **(4)**

Technical Area 5

5-001(a)
5-001(b)
5-002
5-003
5-004
5-005(a)
5-005(b)
5-006(b)
5-006(c)
5-006(e)
5-006(h) **(11)**

Technical Area 6

6-001(a)
6-001(b)
6-002
6-003(a)
6-003(c)
6-003(d)
6-003(e)
6-003(f)
~~6-003(g)~~ June 2000
6-003(h)
6-005
6-006
6-007(a)
6-007(b)
6-007(c)
6-007(d)
6-007(e)
6-007(f)
6-007(g) ~~(19)~~ **(18)** June 2000

Technical Area 7

7-001(a)
7-001(b)
7-001(c)
7-001(d) **(4)**

Technical Area 8

8-002
8-003(a)
8-004(a)
8-004(b)
8-004(c)
8-004(d)
~~8-005~~ June 2001
8-006(a)
8-009(a)
8-009(d)
8-009(e)
~~C-8-010~~ June 2001
~~(12)~~ **(10)** June 2001

Technical Area 9

9-001(a)
9-001(b)
9-001(c)
9-001(d)
9-002
9-003(a)
9-003(b)
9-003(d)
9-003(e)
9-003(g)
9-003(h)
9-003(i)
9-004(a)
9-004(b)
9-004(c)
9-004(d)
9-004(e)
9-004(f)
9-004(g)
9-004(h)
9-004(i)
9-004(j)
9-004(k)
9-004(l)
9-004(m)
9-004(n)
9-004(o)
9-005(a)
9-005(d)
9-005(g)
9-006
9-008(b)
9-009
9-013
C-9-001 **(35)**

Technical Area 10

10-001(a)
10-001(b)
10-001(c)
10-001(d)
10-002(a)
10-002(b)
10-003(a)
10-003(b)
10-003(c)
10-003(d)
10-003(e)
10-003(f)
10-003(g)
10-003(h)
10-003(i)
10-003(j)
10-003(k)
10-003(l)
10-003(m)
10-003(n)
10-003(o)
10-004(a)
10-004(b)
10-005
10-006
10-007 **(26)**

Technical Area 11

11-001(a)
11-001(b)
11-001(c)
11-002
11-004(a)
11-004(b)
11-004(c)
11-004(d)
11-004(e)
11-005(a)
11-005(b)
11-005(c)
11-006(a)
11-006(b)
11-006(c)
11-006(d)
11-009
11-011(a)
11-011(b)
11-011(d) **(20)**

Requested Modifications to Table A

Technical Area 12

12-001(a)
12-001(b)
12-002 (3)

Technical Area 13

13-001
13-002
13-003(a)
13-004 (4)

Technical Area 14

14-002(a)
14-002(b)
14-002(c)
14-002(d)
14-002(e)
14-002(f)
~~14-003~~ June 2001
14-005
14-006
14-007
14-009
14-010 ~~(12)~~ **(11)** June 2001

Technical Area 15

15-002
15-003
15-004(a)
15-004(b)
15-004(c)
15-004(f)
15-004(g)
15-004(i)
15-006(a)
15-006(b)
15-006(c)
15-006(d)
15-007(a)
15-007(b)
15-007(c)
15-007(d)
15-008(a)
15-008(b)
15-008(c)
15-008(d)
15-009(a)
15-009(b)
15-009(c)
15-009(e)
15-009(f)
15-009(g)
15-009(h)
15-009(i)
~~15-009(j)~~ June 2000
15-009(k)
15-010(a)
15-010(b)
~~15-010(c)~~ June 2001
15-011(a)
15-011(b)
15-011(c)
~~15-012(a)~~ June 2000
~~15-012(b)~~ June 2000
15-014(a)
15-014(b)
15-014(i)
15-014(j)
15-014(k)
~~15-014(l)~~ June 2001
~~(44)~~ **(39)** June 2001

Technical Area 16

16-001(a)
16-001(b)
16-001(c)
16-001(d)
16-001(e)
16-003(a)
16-003(b)
16-003(c)
16-003(d)
16-003(e)
16-003(f)
16-003(g)
16-003(h)
16-003(i)
16-003(j)
16-003(k)
16-003(l)
16-003(m)
16-003(n)
16-003(o)
16-004(a)
16-004(b)
16-004(c)
16-004(d)
16-004(e)
16-004(f)
16-005(g)
16-005(n)
16-006(a)
16-006(c)
16-006(d)
16-006(e)
16-007(a)
16-008(a)
16-009(a)
16-010(a)
~~16-010(b)~~ Aug. 2001
~~16-010(c)~~ Aug. 2001
~~16-010(d)~~ Aug. 2001
~~16-010(e)~~ Aug. 2001
~~16-010(f)~~ Aug. 2001
16-010(h)
16-010(i)
16-010(j)
16-010(k)
16-010(l)
16-010(m)
16-010(n)
16-013
16-016(a)
16-016(b)
16-016(c)
16-018
16-019
16-020
16-021(a)
16-021(c)
16-026(b)
16-026(c)
16-026(d)
16-026(e)
16-026(h2)
16-026(j2)
16-026(v)
16-029(a)
16-029(b)
16-029(c)
16-029(d)
16-029(e)
16-029(f)
16-029(g)
16-030(h)
16-035
16-036 ~~(74)~~ **(69)** Aug. 2001

Technical Area 18

18-001(a)
18-001(b)
18-001(c)
18-002(a)
18-002(b)
18-003(a)
18-003(b)
18-003(c)
18-003(d)
18-003(e)
18-003(f)
18-003(g)
18-003(h)
18-004(a)
18-004(b)
18-005(a)
18-012(a)
18-012(b) (18)

Technical Area 19

19-001
19-002
19-003 (3)

Technical Area 20

20-001(a)
20-001(b)
20-001(c)
20-002(a)
20-002(b)
20-002(c)
20-002(d)
~~20-003(a)~~ June2001
20-005 ~~(9)~~ **(8)** June 2001

Technical Area 21

21-002(a)
21-003
21-004(b)
21-004(c)
~~21-005~~ June 2000
21-006(a)
21-006(b)
21-006(c)
21-006(d)
21-006(e)
21-007
21-010(a)
21-010(b)
21-010(c)
21-010(d)
21-010(e)
21-010(f)
21-010(g)
21-010(h)
21-011(a)
21-011(b)
21-011(c)
21-011(d)
21-011(e)
21-011(f)
21-011(g)
21-011(i)
21-011(j)
21-011(k)
21-012(b)
21-013(a)
21-013(b)
21-013(c)
21-013(d)
21-013(e)
21-014
21-015
21-016(a)
21-016(b)
21-016(c)
21-017(a)
21-017(b)
21-017(c)
21-018(a)
21-018(b)
21-021
21-022(a)
21-022(b)
21-022(c)
21-022(d)
21-022(e)
21-022(f)
21-022(g)
21-022(h)
21-022(i)
21-022(j)
21-023(a)
21-023(b)
21-023(c)
21-023(d)
21-024(a)
21-024(b)
21-024(c)
21-024(d)
21-024(e)
21-024(f)
21-024(g)
21-024(h)
21-024(i)
21-024(j)
21-024(k)
21-024(l)
21-024(n)
21-024(o)
21-026(a)

Requested Modifications to Table A

21-026(b)
21-027(a)
21-027(c)
21-027(d)
21-029
~~(80)~~ (79)
June 2000

Technical Area 22

22-010(a)
22-010(b)
22-011
22-012
22-014(a)
22-014(b)
22-015(a)
22-015(b)
22-015(c)
22-015(d)
22-015(e)
22-016 (12)

Technical Area 26

26-001
26-002(a)
26-002(b)
26-003 (4)

Technical Area 27

27-002
27-003 (2)

Technical Area 31

31-001 (1)

Technical Area 32

32-001
32-002(a)
32-002(b) (3)

Technical Area 33

33-001(a)
33-001(b)
33-001(c)
33-001(d)
33-001(e)
33-002(a)
33-002(b)
33-002(c)
33-002(d)
33-002(e)
33-003(a)
33-003(b)
33-004(a)
33-004(b)
33-004(c)
33-004(d)
33-004(g)
33-004(h)
33-004(i)
33-004(j)
33-004(k)
33-004(m)
33-005(a)
33-005(b)
33-005(c)
33-006(a)
33-006(b)
33-007(a)
33-007(b)
33-007(c)
33-008(a)
33-008(b)
33-009
33-010(a)
33-010(b)
33-010(c)
33-010(d)
33-010(f)
33-010(g)
33-010(h)
33-011(a)
33-011(c)
33-011(d)
33-011(e)
33-012(a)
33-013
33-014
33-015
33-016
33-017 (50)

Technical Area 35

35-002
35-003(a)
35-003(b)
35-003(c)
35-003(d)
35-003(e)
35-003(f)
35-003(g)
35-003(h)
35-003(j)
35-003(k)
35-003(l)
35-003(m)
35-003(n)
35-003(o)
35-003(p)
35-003(q)
35-004(a)
35-004(b)
35-004(g)
35-004(h)
35-008
35-009(a)
35-009(b)
35-009(c)
35-009(d)
35-009(e)
35-010(a)
35-010(b)
35-010(c)
35-010(d)
35-013(a)
35-013(b)
35-013(c)
35-014(a)
35-014(b)
35-014(e)
35-014(g)
35-015(a)
35-015(b)
35-016(a)
35-016(c)
35-016(d)
35-016(i)
35-016(k)
35-016(m)
35-016(o)
35-016(p)
35-016(q) (49)

Technical Area 36

36-001
36-002
36-003(a)
36-003(b)
36-004(d)
36-005
36-006
C-36-003 (8)

Technical Area 39

39-001(a)
39-001(b)
39-002(a)
39-004(a)
39-004(b)
~~39-004(c)~~ Aug. 2001
~~39-004(d)~~ Aug. 2001
39-004(e)
39-005
39-006(a)
39-007(a)
39-008 ~~(12)~~ (10)
Aug. 2001

Technical Area 40

40-001(b)
40-001(c)
~~40-003(a)~~ June 2000
40-004
40-005
40-006(a)
40-006(b)
40-006(c)
40-009
40-010 ~~(10)~~ (9)
June 2000

Technical Area 41

41-001
41-002(a)
41-002(b)
41-002(c) (4)

Technical Area 42

42-001(a)
42-001(b)
42-001(c)
42-002(b)
42-003 (5)

Technical Area 43

43-001(a)
43-002 (2)

Technical Area 45

45-001
45-002
45-003
45-003 (4)

Technical Area 46

46-002
46-003(a)
46-003(b)
46-003(c)
46-003(d)
46-003(e)
46-003(f)
46-003(g)
46-003(h)
46-004(a)
46-004(b)
46-004(c)
46-004(d)
46-004(e)
46-004(f)
46-004(g)
46-004(h)
46-004(a2)
46-004(b2)
46-004(c2)
46-004(d2)
46-004(m)
46-004(p)
46-004(q)
46-004(r)
46-004(s)
46-004(t)
46-004(u)
46-004(v)
46-004(w)
46-004(x)
46-004(y)
46-004(z)
46-005
46-006(a)
46-006(b)
46-006(c)
46-006(d)
46-006(f)
46-006(g)
46-007
46-008(a)
46-008(b)
46-008(d)
46-008(e)
46-008(f)
46-008(g)
46-009(a)
46-009(b)
46-010(d) (50)

Technical Area 48

48-002(a)
48-002(b)
48-003
48-004(a)
48-004(b)
48-004(c)
48-005
48-007(a)
48-007(b)

Requested Modifications to Table A

48-007(c)
48-007(d)
48-007(f)
48-010 (13)

Technical Area 49

49-001(a)
49-001(b)
~~49-001(c)~~
~~49-001(d)~~
49-001(e)
~~49-001(f)~~
49-001(g)
49-003
~~49-004~~
49-005(a)
~~49-006~~ (11)

Technical Area 50

~~50-001(a)~~ Aug. 2001
50-002(a)
50-002(b)
50-002(c)
50-004(a)
50-004(b)
50-004(c)
50-006(a)
50-006(c)
50-006(d)
50-009
50-011(a)
~~(12)~~ (11)
Aug. 2000

Technical Area 52

52-001(d)
52-002(a) (2)

Technical Area 53

53-001(a)
53-001(b)
53-002(a)
53-002(b)
53-005
53-006(b)
53-006(c)
53-006(d)
53-006(e)
53-006(f)
53-007(a) (11)

Technical Area 54

54-001(a)
54-004 (excluding Shaft No. 9)
54-005
54-006
54-007(a)
54-007(c)
54-012(b)
54-013(b)
54-014(b)
54-014(c)
54-014(d)
54-015(k)
54-017
54-018
54-019
54-020 (16)

Technical Area 55

55-008
55-009 (2)

Technical Area 60

60-002
60-005(a)
60-006(a)
60-007(a)
60-007(b) (5)

Technical Area 61

61-002
61-005
61-006
61-007 (4)

Technical Area 63

63-001(a)
63-001(b) (2)

Technical Area 69

69-001 (1)

Technical Area 73

73-001(a)
73-001(b)
73-001(c)
73-001(d)
73-002
73-004(a)
73-004(b)
73-004(c)
73-004(d)
73-005
73-006 (11)

Total SWMUs in Table A = ~~786~~ **760**

Table A.1
No Further Action SWMUs Removed from Table A
Through a Class III Permit Modification and Date of Removal

0-005	12-23-98										
0-011(a)		3-039(a)	12-23-98	15-012(b)		16-012(o)	12-23-98	39-003	12-23-98		
0-011(e)		3-043(e)	05-02-01	15-014(l)		16-012(p)	12-23-98	**39-004(c)**			
0-016		3-044(a)	05-02-01	15-014(m)	12-23-98	16-012(q)	12-23-98	**39-004(d)**			
0-033(a)		**6-003(g)**		16-005(i)	12-23-98	16-012(r)	12-23-98	39-006(b)	12-23-98		
1-001(h)	12-23-98	7-003(c)	12-23-98	16-005(o)	12-23-98	16-012(s)	12-23-98	40-001(a)	12-23-98		
1-001(i)	12-23-98	7-003(d)	12-23-98	16-006(b)	12-23-98	16-012(t)	12-23-98	**40-003(a)**			
1-001(j)	12-23-98	8-003(b)	12-23-98	16-006(f)	12-23-98	16-012(u)	12-23-98	46-008(c)	12-23-98		
1-001(k)	12-23-98	8-003(c)	12-23-98	**16-010(b)**		16-012(v)	12-23-98	**50-001(a)**			
1-001(l)	12-23-98	**8-005**		**16-010(c)**		16-012(w)	12-23-98	52-001(a)	12-23-98		
1-001(m)		8-006(b)	12-23-98	**16-010(d)**		16-012(x)	12-23-98	52-001(b)	12-23-98		
1-001(n)	12-23-98	**C-8-010**		**16-010(e)**		16-012(y)	12-23-98	52-001(c)	12-23-98		
2-008(b)		8-007	12-23-98	**16-010(f)**		16-012(z)	12-23-98	52-002(b)	12-23-98		
3-001(a)	12-23-98	9-003(c)	12-23-98	16-010(g)	12-23-98	18-007	05-02-01	52-002(c)	12-23-98		
3-001(b)	12-23-98	9-003(f)	12-23-98	16-012(a)	12-23-98	**20-003(a)**		52-002(d)	12-23-98		
3-001(c)	12-23-98	9-005(b)	12-23-98	16-012(b)	12-23-98	**21-005**		52-002(e)	12-8-97		
3-002(b)	12-23-98	9-005(c)	12-23-98	16-012(c)	12-23-98	21-012(a)	12-23-98	52-002(f)	12-23-98		
3-009(b)	12-23-98	9-005(e)	12-23-98	16-012(d)	12-23-98	21-024(m)	12-23-98	53-007(b)	12-23-98		
3-009(c)	05-02-01	9-005(f)	12-23-98	16-012(e)	12-23-98	21-027(b)	12-23-98	54-001(c)	12-23-98		
3-009(e)	12-23-98	9-005(h)	12-23-98	16-012(f)	12-23-98	27-001	05-02-01	54-007(b)	05-02-01		
3-009(f)	12-23-98	9-007	12-23-98	16-012(g)	12-23-98	33-004(e)	12-23-98	54-013(a)	12-23-98		
3-009(g)	05-02-01	11-011(c)	05-02-01	16-012(h)	12-23-98	33-004(f)	12-23-98	54-015(h)	05-02-01		
3-009(h)	12-23-98	11-007	12-23-98	16-012(i)	12-23-98	35-003(i)	12-23-98	59-001	05-02-01		
3-012(a)	12-23-98	**14-003**		16-012(j)	12-23-98	35-004(e)	05-02-01	61-004(a)	05-02-01		
3-018	12-23-98	14-004(b)	12-23-98	16-012(k)	12-23-98	35-006	05-02-01				
3-020(a)	12-23-98	**15-009(j)**		16-012(l)	12-23-98	35-011(a)	05-02-01	SWMUs removed from Table A = ~~196~~ **132**			
3-035(a)	12-23-98	**15-010(e)**		16-012(m)	12-23-98	35-013(d)	05-02-01				
3-035(b)	12-23-98	**15-012(a)**		16-012(n)	12-23-98	36-003(c)	12-23-98				

Requested Modifications to Table B Priority SWMUs*

SWMU Number
1-001(a)
1-001(b)
1-001(c)
1-001(d)
1-001(e)
1-001(f)
1-001(g)
1-001(m)
1-002
1-003(a)
2-005
2-008(a)
3-010(a)
3-012(b)
3-013(a)
3-015
3-029(a)
5-005(a)
6-007(a)
8-003(a)
9-008(a)
9-008(b)
9-009
9-013
10-003(a)
10-003(b)
10-003(c)
10-003(d)
10-003(e)
10-003(f)
10-006
11-004(a)
11-004(b)
11-004(c)
11-004(d)
11-004(e)
11-005(a)
11-005(b)
11-006(a)
13-004
15-002
15-006(a)
15-006(b)
15-006(c)
15-006(d)
15-007(a)
15-007(b)
15-007(c)
15-007(d)
15-008(a)
15-008(b)
15-008(c)
15-008(d)
15-009(a)
15-009(b)
~~15-012(a)~~ June 2000
~~15-012(b)~~ June 2000
15-012(c)
15-012(d)
15-012(e)
15-012(f)
15-012(g)
16-001(b)
16-001(c)
16-001(d)
16-001(e)
16-005(n)
16-006(a)
16-006(c)
16-006(d)
16-006(e)
16-007
16-008(b)
16-016
16-018
16-019
16-020
16-021(a)
18-001(a)
18-003(a)
18-003(b)
18-003(c)
18-003(d)
18-003(e)
18-003(f)
18-003(g)
18-003(h)
21-006(a)
21-006(b)
21-006(c)
21-006(d)
21-006(e)
21-010(a)
21-010(b)
21-010(c)
21-010(d)
21-010(e)
21-010(f)
21-010(g)
21-010(h)
21-011(a)
21-011(b)
21-011(c)
21-011(d)
21-011(e)
21-011(f)
21-011(g)
21-011(h)
21-011(i)
21-014
21-015
21-016(a)
21-017(a)
21-017(b)
21-017(c)
21-018(a)
21-018(b)
22-015(c)
33-002(a)
33-002(b)
33-002(c)
33-017
35-003(a)
35-003(b)
35-003(c)
35-003(d)
35-003(e)
35-003(f)
35-003(g)
35-003(h)
35-003(j)
35-003(k)
35-003(l)
35-003(m)
35-003(n)
35-003(o)
35-003(p)
35-003(q)
35-010(a)
35-010(b)
35-010(c)
35-010(d)
36-003(a)
36-003(b)
39-001(a)
39-001(b)
41-001
46-002
46-006(a)
46-006(b)
46-006(c)
46-006(d)
46-007
49-001(a)
50-006(a)
50-006(c)
50-006(d)
50-009
54-004 (excluding Shaft No. 9)
54-005
60-005(a)
73-001(a)

Total SWMUs in Table B = ~~162~~ **160**

* As RFI work progresses, EPA may identify more SWMUs to be added to the list to be addressed in the installation work plans.

Table B.1
No Further Action SWMUs Removed from Table B Through a Class III Permit Modification and Date of Removal

0-005	12-23-98	1-001(l)	12-23-98	8-003(c)	12-23-98	16-006(f)	12-23-98	54-015(h) 05-02-01
1-001(h)	12-23-98	1-001(n)	12-23-98	8-007	12-23-98	21-012(a)	12-23-98	
1-001(i)	12-23-98	3-012(a)	12-23-98	**15-012(a)**		35-003(i)	12-23-98	SWMUs removed from Table B = ~~17~~ **19**
1-001(j)	12-23-98	3-020(a)	12-23-98	**15-012(b)**		35-006	05-02-01	
1-001(k)	12-23-98	8-003(b)	12-23-98	16-005(o)	12-23-98	36-003(c)	12-23-98	

Requested Modifications to Table C

RFI Work Plan due July 7, 1994: Technical Area 16

16-005(a)
16-005(c)
16-005(d)
16-005(e)
16-005(h)
16-005(j)
16-005(k)
16-005(l)
16-005(m)
16-006(g)
16-006(h)
16-015(a)
16-015(b)
16-017
16-024(e)
16-025(a)
16-025(b)
16-025(b2)
16-025(c2)
16-025(d)
16-025(e)
16-025(f)
16-025(g)
16-025(h)
16-025(i)
16-025(j)
16-025(k)
16-025(l)
16-025(m)
16-025(n)
16-025(o)
16-025(p)
16-025(q)
16-025(r)
16-025(s)
16-025(t)
16-025(u)
16-025(v)
16-025(w)
16-025(x)
16-025(y)
16-025(z)
16-026(m)
16-026(n)
16-026(o)
16-026(p)
16-026(q)
16-026(s)
16-026(w)
16-028(a)
16-029(a2)
16-029(b2)
16-029(c2)
16-029(d2)
16-029(e2)
16-029(f2)
16-029(g2)
16-029(h2)
16-029(k)
16-029(l)
16-029(m)
16-029(n)
16-029(o)
16-029(p)
16-029(q)
16-029(r)
16-029(s)
16-029(t)
16-029(u)
16-029(v)
16-029(w)
16-029(x)
16-029(y)
16-029(z)
16-031(c)
16-031(d)
16-032(a)
16-032(c)
16-034(a)
16-034(b)
16-034(c)
16-034(d)
16-034(e)
16-034(f)
16-034(l)
16-034(m)
16-034(n)
16-034(o)
16-034(p)
C-16-025
C-16-026
Total SWMUs = 91*

RFI Work Plan due July 7, 1995: Technical Area 16

16-016(d)
16-016(e)
16-016(g)
16-025(a2)
16-025(d2)
~~16-025(e2)~~ June 2001
~~16-025(f2)~~ June 2001
~~16-025(h2)~~ June 2001
16-026(a)
~~16-026(a2)~~ June 2001
16-026(b2)
16-026(c2)
~~16-026(d2)~~ June 2001
~~16-026(e2)~~ June 2001
16-026(f)
~~16-026(f2)~~ June 2001
16-026(g)
~~16-026(g2)~~ June 2001
~~16-026(h)~~ June 2001
16-026(i)
16-026(j)
~~16-026(k)~~ June 2001
16-026(k2)
16-026(l)
16-026(r)
~~16-026(t)~~ June 2001
16-026(u)
~~16-026(x)~~ June 2001
16-026(y)
16-026(z)
16-028(b)
16-028(c)
16-028(d)
16-028(e)
16-029(h)
16-029(i)
16-029(j)
16-030(a)
~~16-030(b)~~ June 2001
16-030(c)
~~16-030(e)~~ June 2001
~~16-030(f)~~ June 2001
16-031(a)
16-031(b)
16-031(e)
16-031(f)
16-031(h)
16-034(h)
16-034(i)
16-034(j)
16-034(k)
Total SWMUs = ~~51~~ 36

RFI Work Plan due May 21, 1995: Operable Unit 1114

3-009(i)
3-009(j)
3-011
3-021
3-025(b)
3-026(c)
3-029
3-031
3-034(a)
3-034(b)
3-043(c)
3-045(a)
3-045(b)
3-045(c)
3-045(e)
3-045(f)
3-045(g)
3-045(h)
~~3-046~~ June 2001
3-049(a)
3-049(b)
3-049(e)
3-050(a)
3-050(d)
3-050(f)
3-050(g)
3-052(a)
3-052(e)
3-052(f)
3-054(a)
3-054(b)
3-054(c)
3-054(d)
3-054(e)
3-055(a)
3-055(c)
3-056(d)
3-056(l)
3-059
Total SWMUs = ~~39~~ **38**

*20 additional SWMUs were added after work plan review

Table C.1
No Further Action SWMUs Removed from Table C
Through a Class III Permit Modification and Date of Removal

3-002(a)	05-02-01	**3-046**		16-006(i)	12-23-98	**16-026(g2)**		16-032(d)	12-23-98
3-002(d)	05-02-01	3-049(c)	05-02-01	16-025(c)	12-23-98	**16-026(h)**		16-032(e)	12-23-98
3-009(c)	05-02-01	3-049(d)	05-02-01	**16-025(e2)**		16-026(i2)	12-23-98	16-034(g)	12-23-98
3-019	05-02-01	3-050(e)	05-02-01	**16-025(f2)**		**16-026(k)**			
3-024	12-8-97	3-052(c)	05-02-01	16-025(g2)	12-23-98	**16-026(t)**		SWMUs removed from	
3-025(a)	05-02-01	3-055(d)	05-02-01	**16-025(h2)**		**16-026(x)**		Table C = ~~27~~ **43**	
3-026(b)	05-02-01	3-056(m)	05-02-01	**16-026(a)**		**16-030(b)**			
3-032	05-02-01	3-056(n)	05-02-01	**16-026(d2)**		**16-030(e)**			
3-045(d)	12-8-97	16-005(b)	05-02-01	**16-026(e2)**		**16-030(f)**			
3-045(i)	05-02-01	16-005(f)	12-23-98	**16-026(f2)**		16-031(g)	12-23-98		

Appendix C

Proposed Tables A, B and C of Module VIII of the Laboratory's Hazardous Waste Facility Permit

Note:

This appendix contains proposed Tables A, B, and C of Module VIII. The number at the bottom of each technical area listing denotes the number of SWMUs on Module VIII for that area.

Proposed Table A

Technical Area 0

SWMU Number

0-001
0-003
0-011(c)
0-011(d)
0-012
0-017
0-018(a)
0-019
0-028(a)
0-028(b)
0-030(a)
0-030(b)
0-030(g)
0-030(l)
0-030(m)
0-039 (16)

Technical Area 1

1-001(a)
1-001(b)
1-001(c)
1-001(d)
1-001(e)
1-001(f)
1-001(g)
1-001(o)
1-001(s)
1-001(t)
1-001(u)
1-002
1-003(a)
1-003(d)
1-003(e)
1-006(a)
1-006(b)
1-006(c)
1-006(d)
1-006(h)
1-006(n)
1-006(o)
1-007(a)
1-007(b)
1-007(c)
1-007(d)
1-007(e)
1-007(j)
1-007(l) (29)

Technical Area 2

2-005
2-006(a)
2-006(b)
2-007
2-008(a)
2-009(a)
2-009(b)
2-009(c) (8)

Technical Area 3

3-001(k)
3-002(c)
3-003(a)
3-003(b)
3-003(c)
3-009(a)
3-009(d)
3-010(a)
3-012(b)
3-013(a)
3-014(a)
3-014(b)
3-014(c)
3-014(d)
3-014(e)
3-014(f)
3-014(g)
3-014(h)
3-014(i)
3-014(j)
3-014(k)
3-014(l)
3-014(m)
3-014(n)
3-014(o)
3-014(p)
3-014(q)
3-014(r)
3-014(s)
3-014(t)
3-014(u)
3-015
3-026(d)
3-028
3-033
3-036(a)
3-036(c)
3-036(d)
3-037
3-038(a)
3-038(b)
3-056(a)
3-056(c) (43)

Technical Area 4

4-001
4-002
4-003(a)
4-003(b) (4)

Technical Area 5

5-001(a)
5-001(b)
5-002
5-003
5-004
5-005(a)
5-005(b)
5-006(b)
5-006(c)
5-006(e)
5-006(h) (11)

Technical Area 6

6-001(a)
6-001(b)
6-002
6-003(a)
6-003(c)
6-003(d)
6-003(e)
6-003(f)
6-003(h)
6-005
6-006
6-007(a)
6-007(b)
6-007(c)
6-007(d)
6-007(e)
6-007(f)
6-007(g) (18)

Technical Area 7

7-001(a)
7-001(b)
7-001(c)
7-001(d) (4)

Technical Area 8

8-002
8-003(a)
8-004(a)
8-004(b)
8-004(c)
8-004(d)
8-006(a)
8-009(a)
8-009(d)
8-009(e) (10)

Technical Area 9

9-001(a)
9-001(b)
9-001(c)
9-001(d)
9-002
9-003(a)
9-003(b)
9-003(d)
9-003(e)
9-003(g)
9-003(h)
9-003(i)
9-004(a)
9-004(b)
9-004(c)
9-004(d)
9-004(e)
9-004(f)
9-004(g)
9-004(h)
9-004(i)
9-004(j)
9-004(k)
9-004(l)
9-004(m)
9-004(n)
9-004(o)
9-005(a)
9-005(d)
9-005(g)
9-006
9-008(b)
9-009
9-013
C-9-001 (35)

Technical Area 10

10-001(a)
10-001(b)
10-001(c)
10-001(d)
10-002(a)
10-002(b)
10-003(a)
10-003(b)
10-003(c)
10-003(d)
10-003(e)
10-003(f)
10-003(g)
10-003(h)
10-003(i)
10-003(j)
10-003(k)
10-003(l)
10-003(m)
10-003(n)
10-003(o)
10-004(a)
10-004(b)
10-005
10-006
10-007 (26)

Technical Area 11

11-001(a)
11-001(b)
11-001(c)
11-002
11-004(a)
11-004(b)
11-004(c)
11-004(d)
11-004(e)
11-005(a)
11-005(b)
11-005(c)
11-006(a)
11-006(b)
11-006(c)
11-006(d)
11-009
11-011(a)
11-011(b)
11-011(d) (20)

Technical Area 12

12-001(a)
12-001(b)
12-002 (3)

Technical Area 13

13-001
13-002
13-003(a)
13-004 (4)

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Proposed Table A

Technical Area 14

14-002(a)
14-002(b)
14-002(c)
14-002(d)
14-002(e)
14-002(f)
14-005
14-006
14-007
14-009
14-010 (11)

Technical Area 15

15-002
15-003
15-004(a)
15-004(b)
15-004(c)
15-004(f)
15-004(g)
15-004(i)
15-006(a)
15-006(b)
15-006(c)
15-006(d)
15-007(a)
15-007(b)
15-007(c)
15-007(d)
15-008(a)
15-008(b)
15-008(c)
15-008(d)
15-009(a)
15-009(b)
15-009(c)
15-009(e)
15-009(f)
15-009(g)
15-009(h)
15-009(i)
15-009(k)
15-010(a)
15-010(b)
15-011(a)
15-011(b)
15-011(c)
15-014(a)
15-014(b)
15-014(i)
15-014(j)
15-014(k) (39)

Technical Area 16

16-001(a)
16-001(b)
16-001(c)
16-001(d)
16-001(e)
16-003(a)
16-003(b)
16-003(c)
16-003(d)
16-003(e)
16-003(f)
16-003(g)
16-003(h)
16-003(i)
16-003(j)
16-003(k)
16-003(l)
16-003(m)
16-003(n)
16-003(o)
16-004(a)
16-004(b)
16-004(c)
16-004(d)
16-004(e)
16-004(f)
16-005(g)
16-005(n)
16-006(a)
16-006(c)
16-006(d)
16-006(e)
16-007(a)
16-008(a)
16-009(a)
16-010(a)
16-010(h)
16-010(i)
16-010(j)
16-010(k)
16-010(l)
16-010(m)
16-010(n)
16-013
16-016(a)
16-016(b)
16-016(c)
16-018
16-019
16-020
16-021(a)
16-021(c)
16-026(b)
16-026(c)
16-026(d)
16-026(e)
16-026(h2)
16-026(j2)
16-026(v)
16-029(a)
16-029(b)
16-029(c)
16-029(d)
16-029(e)
16-029(f)
16-029(g)
16-030(h)
16-035
16-036 (69)

Technical Area 18

18-001(a)
18-001(b)
18-001(c)
18-002(a)
18-002(b)
18-003(a)
18-003(b)
18-003(c)
18-003(d)
18-003(e)
18-003(f)
18-003(g)
18-003(h)
18-004(a)
18-004(b)
18-005(a)
18-012(a)
18-012(b) (18)

Technical Area 19

19-001
19-002
19-003 (3)

Technical Area 20

20-001(a)
20-001(b)
20-001(c)
20-002(a)
20-002(b)
20-002(c)
20-002(d)

Technical Area 21

21-002(a)
21-003
21-004(b)
21-004(c)
21-006(a)
21-006(b)
21-006(c)
21-006(d)
21-006(e)
21-007
21-010(a)
21-010(b)
21-010(c)
21-010(d)
21-010(e)
21-010(f)
21-010(g)
21-010(h)
21-011(a)
21-011(b)
21-011(c)
21-011(d)
21-011(e)
21-011(f)
21-011(g)
21-011(i)
21-011(j)
21-011(k)
21-012(b)
21-013(a)
21-013(b)
21-013(c)
21-013(d)
21-013(e)
21-014
21-015
21-016(a)
21-016(b)
21-016(c)
21-017(a)
21-017(b)
21-017(c)
21-018(a)
21-018(b)
21-021
21-022(a)
21-022(b)
21-022(c)
21-022(d)
21-022(e)
21-022(f)
21-022(g)
21-022(h)
21-022(i)
21-022(j)
21-023(a)
21-023(b)
21-023(c)
21-023(d)
21-024(a)
21-024(b)
21-024(c)
21-024(d)
21-024(e)
21-024(f)
21-024(g)
21-024(h)
21-024(i)
21-024(j)
21-024(k)
21-024(l)
21-024(n)
21-024(o)
21-026(a)
21-026(b)
21-027(a)
21-027(c)
21-027(d)
21-029 (79)

Technical Area 22

22-010(a)
22-010(b)
22-011
22-012
22-014(a)
22-014(b)
22-015(a)
22-015(b)
22-015(c)
22-015(d)
22-015(e)
22-016 (12)

Technical Area 26

26-001
26-002(a)
26-002(b)
26-003 (4)

Technical Area 27

27-002
27-003 (2)

Proposed Table A

Technical Area 31

31-001 (1)

Technical Area 32

32-001
32-002(a)
32-002(b) (3)

Technical Area 33

33-001(a)
33-001(b)
33-001(c)
33-001(d)
33-001(e)
33-002(a)
33-002(b)
33-002(c)
33-002(d)
33-002(e)
33-003(a)
33-003(b)
33-004(a)
33-004(b)
33-004(c)
33-004(d)
33-004(g)
33-004(h)
33-004(i)
33-004(j)
33-004(k)
33-004(m)
33-005(a)
33-005(b)
33-005(c)
33-006(a)
33-006(b)
33-007(a)
33-007(b)
33-007(c)
33-008(a)
33-008(b)
33-009
33-010(a)
33-010(b)
33-010(c)
33-010(d)
33-010(f)
33-010(g)
33-010(h)
33-011(a)
33-011(c)
33-011(d)
33-011(e)
33-012(a)
33-013
33-014
33-015
33-016
33-017 (50)

Technical Area 35

35-002
35-003(a)
35-003(b)
35-003(c)
35-003(d)
35-003(e)
35-003(f)
35-003(g)
35-003(h)
35-003(j)
35-003(k)
35-003(l)
35-003(m)
35-003(n)
35-003(o)
35-003(p)
35-003(q)
35-004(a)
35-004(b)
35-004(g)
35-004(h)
35-008
35-009(a)
35-009(b)
35-009(c)
35-009(d)
35-009(e)
35-010(a)
35-010(b)
35-010(c)
35-010(d)
35-013(a)
35-013(b)
35-013(c)
35-014(a)
35-014(b)
35-014(e)
35-014(g)
35-015(a)
35-015(b)
35-016(a)
35-016(c)
35-016(d)
35-016(i)
35-016(k)
35-016(m)
35-016(o)
35-016(p)
35-016(q) (49)

Technical Area 36

36-001
36-002
36-003(a)
36-003(b)
36-004(d)
36-005
36-006
C-36-003 (8)

Technical Area 39

39-001(a)
39-001(b)
39-002(a)
39-004(a)
39-004(b)
39-004(e)
39-005
39-006(a)
39-007(a)
39-008 (10)

Technical Area 40

40-001(b)
40-001(c)
40-004
40-005
40-006(a)
40-006(b)
40-006(c)
40-009
40-010 (9)

Technical Area 41

41-001
41-002(a)
41-002(b)
41-002(c) (4)

Technical Area 42

42-001(a)
42-001(b)
42-001(c)
42-002(b)
42-003 (5)

Technical Area 43

43-001(a)
43-002 (2)

Technical Area 45

45-001
45-002
45-003
45-003 (4)

Technical Area 46

46-002
46-003(a)
46-003(b)
46-003(c)
46-003(d)
46-003(e)
46-003(f)
46-003(g)
46-003(h)
46-004(a)
46-004(b)
46-004(c)
46-004(d)
46-004(e)
46-004(f)
46-004(g)
46-004(h)
46-004(a2)
46-004(b2)
46-004(c2)
46-004(d2)
46-004(m)
46-004(p)
46-004(q)
46-004(r)
46-004(s)
46-004(t)
46-004(u)
46-004(v)
46-004(w)
46-004(x)
46-004(y)
46-004(z)
46-005
46-006(a)
46-006(b)
46-006(c)
46-006(d)
46-006(f)
46-006(g)
46-007
46-008(a)
46-008(b)
46-008(d)
46-008(e)
46-008(f)
46-008(g)
46-009(a)
46-009(b)
46-010(d) (50)

Technical Area 48

48-002(a)
48-002(b)
48-003
48-004(a)
48-004(b)
48-004(c)
48-005
48-007(a)
48-007(b)
48-007(c)
48-007(d)
48-007(f)
48-010 (13)

Technical Area 49

49-001(a)
49-001(b)
49-001(c)
49-001(d)
49-001(e)
49-001(f)
49-001(g)
49-003
49-004
49-005(a)
49-006 (11)

Technical Area 50

50-002(a)
50-002(b)
50-002(c)
50-004(a)
50-004(b)
50-004(c)
50-006(a)
50-006(c)
50-006(d)
50-009
50-011(a) (11)

Technical Area 52

52-001(d)
52-002(a) (2)

Proposed Table A

Technical Area 53
53-001(a)
53-001(b)
53-002(a)
53-002(b)
53-005
53-006(b)
53-006(c)
53-006(d)
53-006(e)
53-006(f)
53-007(a) (11)

Technical Area 54
54-001(a)
54-004 (excluding Shaft No. 9)
54-005
54-006
54-007(a)
54-007(c)
54-012(b)
54-013(b)
54-014(b)
54-014(c)
54-014(d)
54-015(k)
54-017
54-018
54-019
54-020 (16)

Technical Area 55
55-008
55-009 (2)

Technical Area 60
60-002
60-005(a)
60-006(a)
60-007(a)
60-007(b) (5)

Technical Area 61
61-002
61-005
61-006
61-007 (4)

Technical Area 63
63-001(a)
63-001(b) (2)

Technical Area 69
69-001 (1)

Technical Area 73
73-001(a)
73-001(b)
73-001(c)
73-001(d)
73-002
73-004(a)
73-004(b)
73-004(c)
73-004(d)
73-005
73-006 (11)

Total SWMUs in Table A = 760

Proposed Table A.1
No Further Action SWMUs Removed from Table A
Through a Class III Permit Modification and Date of Removal

0-005	12-23-98	3-039(a)	12-23-98	15-014(l)		16-012(q)	12-23-98	39-006(b)	12-23-98
0-011(a)		3-043(e)	05-02-01	15-014(m)	12-23-98	16-012(r)	12-23-98	40-001(a)	12-23-98
0-011(e)		3-044(a)	05-02-01	16-005(i)	12-23-98	16-012(s)	12-23-98	40-003(a)	
0-016		6-003(g)		16-005(o)	12-23-98	16-012(t)	12-23-98	46-008(c)	12-23-98
0-033(a)		7-003(c)	12-23-98	16-006(b)	12-23-98	16-012(u)	12-23-98	50-001(a)	
1-001(h)	12-23-98	7-003(d)	12-23-98	16-006(f)	12-23-98	16-012(v)	12-23-98	52-001(a)	12-23-98
1-001(i)	12-23-98	8-003(b)	12-23-98	16-010(b)		16-012(w)	12-23-98	52-001(b)	12-23-98
1-001(j)	12-23-98	8-003(c)	12-23-98	16-010(c)		16-012(x)	12-23-98	52-001(c)	12-23-98
1-001(k)	12-23-98	8-005		16-010(d)		16-012(y)	12-23-98	52-002(b)	12-23-98
1-001(l)	12-23-98	8-006(b)	12-23-98	16-010(e)		16-012(z)	12-23-98	52-002(c)	12-23-98
1-001(m)		C-8-010		16-010(f)		18-007	05-02-01	52-002(d)	12-23-98
1-001(n)	12-23-98	8-007	12-23-98	16-010(g)	12-23-98	20-003(a)		52-002(e)	12-8-97
2-008(b)		9-003(c)	12-23-98	16-012(a)	12-23-98	21-005		52-002(f)	12-23-98
3-001(a)	12-23-98	9-003(f)	12-23-98	16-012(b)	12-23-98	21-012(a)	12-23-98	53-007(b)	12-23-98
3-001(b)	12-23-98	9-005(b)	12-23-98	16-012(c)	12-23-98	21-024(m)	12-23-98	54-001(c)	12-23-98
3-001(c)	12-23-98	9-005(c)	12-23-98	16-012(d)	12-23-98	21-027(b)	12-23-98	54-007(b)	05-02-01
3-002(b)	12-23-98	9-005(e)	12-23-98	16-012(e)	12-23-98	27-001	05-02-01	54-013(a)	12-23-98
3-009(b)	12-23-98	9-005(f)	12-23-98	16-012(f)	12-23-98	33-004(e)	12-23-98	54-015(h)	05-02-01
3-009(c)	05-02-01	9-005(h)	12-23-98	16-012(g)	12-23-98	33-004(f)	12-23-98	59-001	05-02-01
3-009(e)	12-23-98	9-007	12-23-98	16-012(h)	12-23-98	35-003(i)	12-23-98	61-004(a)	05-02-01
3-009(f)	12-23-98	11-011(c)	05-02-01	16-012(i)	12-23-98	35-004(e)	05-02-01		
3-009(g)	05-02-01	11-007	12-23-98	16-012(j)	12-23-98	35-006	05-02-01	SWMUs removed from Table A = 132	
3-009(h)	12-23-98	14-003		16-012(k)	12-23-98	35-011(a)	05-02-01		
3-012(a)	12-23-98	14-004(b)	12-23-98	16-012(l)	12-23-98	35-013(d)	05-02-01		
3-018	12-23-98	15-009(j)		16-012(m)	12-23-98	36-003(c)	12-23-98		
3-020(a)	12-23-98	15-010(e)		16-012(n)	12-23-98	39-003	12-23-98		
3-035(a)	12-23-98	15-012(a)		16-012(o)	12-23-98	39-004(c)			
3-035(b)	12-23-98	15-012(b)		16-012(p)	12-23-98	39-004(d)			

Proposed Table B Priority SWMUs*

SWMU Number				
1-001(a)	11-004(d)	16-007	21-011(g)	35-010(d)
1-001(b)	11-004(e)	16-008(b)	21-011(h)	36-003(a)
1-001(c)	11-005(a)	16-016	21-011(i)	36-003(b)
1-001(d)	11-005(b)	16-018	21-014	39-001(a)
1-001(e)	11-006(a)	16-019	21-015	39-001(b)
1-001(f)	13-004	16-020	21-016(a)	41-001
1-001(g)	15-002	16-021(a)	21-017(a)	46-002
1-001(m)	15-006(a)	18-001(a)	21-017(b)	46-006(a)
1-002	15-006(b)	18-003(a)	21-017(c)	46-006(b)
1-003(a)	15-006(c)	18-003(b)	21-018(a)	46-006(c)
2-005	15-006(d)	18-003(c)	21-018(b)	46-006(d)
2-008(a)	15-007(a)	18-003(d)	22-015(c)	46-007
3-010(a)	15-007(b)	18-003(e)	33-002(a)	49-001(a)
3-012(b)	15-007(c)	18-003(f)	33-002(b)	50-006(a)
3-013(a)	15-007(d)	18-003(g)	33-002(c)	50-006(c)
3-015	15-008(a)	18-003(h)	33-017	50-006(d)
3-029(a)	15-008(b)	21-006(a)	35-003(a)	50-009
5-005(a)	15-008(c)	21-006(b)	35-003(b)	54-004 (excluding Shaft No. 9)
6-007(a)	15-008(d)	21-006(c)	35-003(c)	54-005
8-003(a)	15-009(a)	21-006(d)	35-003(d)	60-005(a)
9-008(a)	15-009(b)	21-006(e)	35-003(e)	73-001(a)
9-008(b)	15-012(c)	21-010(a)	35-003(f)	
9-009	15-012(d)	21-010(b)	35-003(g)	
9-013	15-012(e)	21-010(c)	35-003(h)	Total SWMUs in Table B = 160
10-003(a)	15-012(f)	21-010(d)	35-003(j)	
10-003(b)	15-012(g)	21-010(e)	35-003(k)	
10-003(c)	16-001(b)	21-010(f)	35-003(l)	* As RFI work progresses, EPA may identify more SWMUs to be added to the list to be addressed in the installation work plans.
10-003(d)	16-001(c)	21-010(g)	35-003(m)	
10-003(e)	16-001(d)	21-010(h)	35-003(n)	
10-003(f)	16-001(e)	21-011(a)	35-003(o)	
10-006	16-005(n)	21-011(b)	35-003(p)	
11-004(a)	16-006(a)	21-011(c)	35-003(q)	
11-004(b)	16-006(c)	21-011(d)	35-010(a)	
11-004(c)	16-006(d)	21-011(e)	35-010(b)	
	16-006(e)	21-011(f)	35-010(c)	

Proposed Table B.1
No Further Action SWMUs Removed from Table B
Through a Class III Permit Modification and Date of Removal

0-005	12-23-98	1-001(l)	12-23-98	8-003(c)	12-23-98	16-006(f)	12-23-98	36-003(c)	12-23-98
1-001(h)	12-23-98	1-001(n)	12-23-98	8-007	12-23-98	21-012(a)	12-23-98	54-015(h)	05-02-01
1-001(i)	12-23-98	3-012(a)	12-23-98	15-012(a)		35-003(i)	12-23-98		
1-001(j)	12-23-98	3-020(a)	12-23-98	15-012(b)		35-006	05-02-01	SWMUs removed from Table B = 19	
1-001(k)	12-23-98	8-003(b)	12-23-98	16-005(o)	12-23-98				

Proposed Table C

RFI Work Plan due July 7, 1994: Technical Area 16

16-005(a)
16-005(c)
16-005(d)
16-005(e)
16-005(h)
16-005(j)
16-005(k)
16-005(l)
16-005(m)
16-006(g)
16-006(h)
16-015(a)
16-015(b)
16-017
16-024(e)
16-025(a)
16-025(b)
16-025(b2)
16-025(c2)
16-025(d)
16-025(e)
16-025(f)
16-025(g)
16-025(h)
16-025(i)
16-025(j)
16-025(k)
16-025(l)
16-025(m)
16-025(n)
16-025(o)
16-025(p)
16-025(q)
16-025(r)
16-025(s)
16-025(t)
16-025(u)
16-025(v)
16-025(w)
16-025(x)
16-025(y)
16-025(z)
16-026(m)
16-026(n)
16-026(o)
16-026(p)
16-026(q)
16-026(s)
16-026(w)
16-028(a)
16-029(a2)
16-029(b2)
16-029(c2)
16-029(d2)
16-029(e2)
16-029(f2)
16-029(g2)
16-029(h2)
16-029(k)
16-029(l)
16-029(m)
16-029(n)
16-029(o)
16-029(p)
16-029(q)
16-029(r)
16-029(s)
16-029(t)
16-029(u)
16-029(v)
16-029(w)
16-029(x)
16-029(y)
16-029(z)
16-031(c)
16-031(d)
16-032(a)
16-032(c)
16-034(a)
16-034(b)
16-034(c)
16-034(d)
16-034(e)
16-034(f)
16-034(l)
16-034(m)
16-034(n)
16-034(o)
16-034(p)
C-16-025
C-16-026
Total SWMUs = 91*

RFI Work Plan due July 7, 1995: Technical Area 16

16-016(d)
16-016(e)
16-016(g)
16-025(a2)
16-025(d2)
16-026(a)
16-026(b2)
16-026(c2)
16-026(f)
16-026(g)
16-026(i)
16-026(j)
16-026(k2)
16-026(l)
16-026(r)
16-026(u)
16-026(y)
16-026(z)
16-028(b)
16-028(c)
16-028(d)
16-028(e)
16-029(h)
16-029(i)
16-029(j)
16-030(a)
16-030(c)
16-031(a)
16-031(b)
16-031(e)
16-031(f)
16-031(h)
16-034(h)
16-034(i)
16-034(j)
16-034(k)
Total SWMUs = 36

RFI Work Plan due May 21, 1995: Operable Unit 1114

3-009(i)
3-009(j)
3-011
3-021
3-025(b)
3-026(c)
3-029
3-031
3-034(a)
3-034(b)
3-043(c)
3-045(a)
3-045(b)
3-045(c)
3-045(e)
3-045(f)
3-045(g)
3-045(h)
3-049(a)
3-049(b)
3-049(e)
3-050(a)
3-050(d)
3-050(f)
3-050(g)
3-052(a)
3-052(e)
3-052(f)
3-054(a)
3-054(b)
3-054(c)
3-054(d)
3-054(e)
3-055(a)
3-055(c)
3-056(d)
3-056(l)
3-059
Total SWMUs = 38

*20 additional SWMUs were added after work plan review

Proposed Table C.1
No Further Action SWMUs Removed from Table C
Through a Class III Permit Modification and Date of Removal

3-002(a)	05-02-01	3-046		16-006(i)	12-23-98	16-026(g2)		16-032(d)	12-23-98
3-002(d)	05-02-01	3-049(c)	05-02-01	16-025(c)	12-23-98	16-026(h)		16-032(e)	12-23-98
3-009(c)	05-02-01	3-049(d)	05-02-01	16-025(e2)		16-026(i2)	12-23-98	16-034(g)	12-23-98
3-019	05-02-01	3-050(e)	05-02-01	16-025(f2)		16-026(k)			
3-024	12-8-97	3-052(c)	05-02-01	16-025(g2)	12-23-98	16-026(t)		SWMUs removed from	
3-025(a)	05-02-01	3-055(d)	05-02-01	16-025(h2)		16-026(x)		Table C = 43	
3-026(b)	05-02-01	3-056(m)	05-02-01	16-026(a)		16-030(b)			
3-032	05-02-01	3-056(n)	05-02-01	16-026(d2)		16-030(e)			
3-045(d)	12-8-97	16-005(b)	05-02-01	16-026(e2)		16-030(f)			
3-045(i)	05-02-01	16-005(f)	12-23-98	16-026(f2)		16-031(g)	12-23-98		

Appendix D

Attachments Common to More Than One SWMU

LANL EXISTING LAND USE (LABWIDE)

PREPARED FOR:
SITE DEVELOPMENT PLAN
ANNUAL UPDATE, 1995

Appendix D
Attachment 1

LEGEND

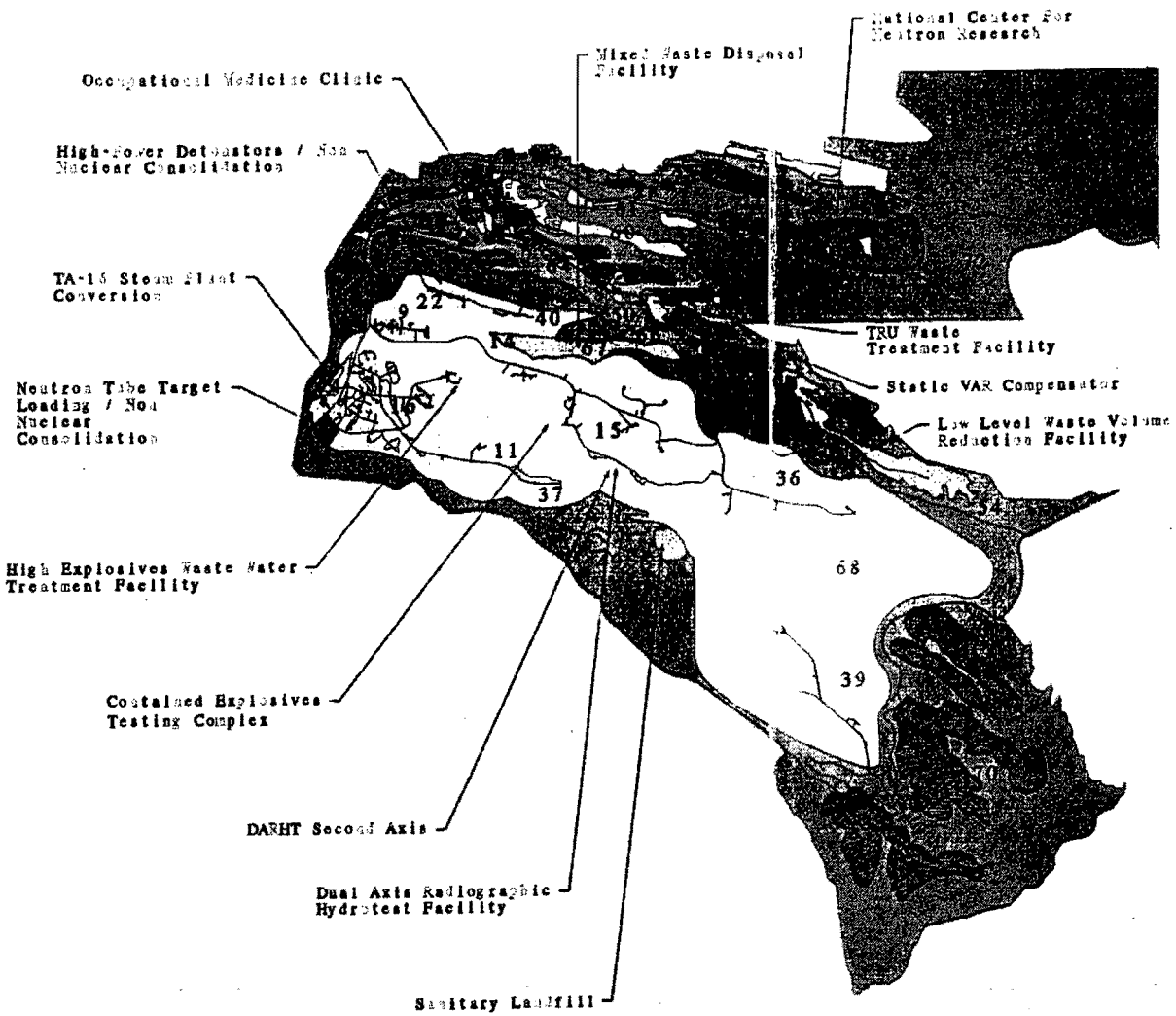
- ENVIRONMENTAL RESEARCH /BUFFER (ER)
- PHYSICAL SUPPORT AND INFRASTRUCTURE (PSI)
- EXPERIMENTAL SCIENCE (EX)
- HIGH EXPLOSIVES R&D AND TESTING (HE)
- SPECIAL NUCLEAR MATERIALS R&D (SNM)
- PUBLIC AND CORPORATE INTERFACE (PC)
- ADMINISTRATIVE AND TECHNICAL SERVICES (ATS)
- WASTE MANAGEMENT (WM)
- THEORETICAL AND COMPUTATIONAL SCIENCE (TC)
- NON-DOE LAND : POTENTIALLY PSI
- HIGH EXPLOSIVES ADMINISTRATIVE AND TECHNICAL SUPPORT AREA
- 03 TECHNICAL AREA NUMBERS
- PAVED ROADS
- DOE BOUNDARY

PREPARED BY:
LOS ALAMOS NATIONAL LABORATORY
SITE PLANNING OFFICE
DATE: 05-31-95 PHONE: 505-667-9383

3000 0 FEET 3000 6000
914 0 914 1828

N

NEW MEXICO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE)
1927 NORTH AMERICAN DATUM



LANL FUTURE LAND USE (LABWIDE)

PREPARED FOR:
SITE DEVELOPMENT PLAN
ANNUAL UPDATE, 1995

Appendix D
Attachment 1

LEGEND

- ENVIRONMENTAL RESEARCH /BUFFER (ER)
- PHYSICAL SUPPORT AND INFRASTRUCTURE (PSI)
- EXPERIMENTAL SCIENCE (EX)
- HIGH EXPLOSIVES R&D AND TESTING (HE)
- SPECIAL NUCLEAR MATERIALS R&D (SNM)
- PUBLIC AND CORPORATE INTERFACE (PC)
- ADMINISTRATIVE AND TECHNICAL SERVICES (ATS)
- WASTE MANAGEMENT (WM)
- THEORETICAL AND COMPUTATIONAL SCIENCE (TC)
- NON-DOE LAND : POTENTIALLY PSI
- HIGH EXPLOSIVES ADMINISTRATIVE AND TECHNICAL SUPPORT AREA
- 03 TECHNICAL AREA NUMBERS
- PAVED ROADS
- DOE BOUNDARY

PREPARED BY:
LOS ALAMOS NATIONAL LABORATORY
SITE PLANNING OFFICE

DATE: 03-21-95

3000 0 3000 6000
914 0 914 1828

N

NEW MEXICO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE)
1927 NORTH AMERICAN DATUM

Appendix D
Attachment 2

Los Alamos National Laboratory

UNIVERSITY OF CALIFORNIA

Environmental Restoration Project
MS M992
Los Alamos, New Mexico 87545
505-667-0808/FAX 505-665-4747

Date: September 11, 1998
Refer to: EM/ER:98-317

ER
ID #
59685

Mr. Ted Taylor
US Department of Energy
Los Alamos Area Office, MS A316
Los Alamos, NM 87545

SUBJECT: REWRITE OF CHAPTER 6 WITHIN RFI WORK PLAN FOR OU 1082 TO SATISFY PM FOR FUNCTIONAL AREA A.2

Dear Ted:

Enclosed are the results of an exercise Los Alamos National Laboratory has completed to partially satisfy Functional Area A.2 of the Fiscal Year 1998 (FY98) Performance Measures (Enclosure 1). This exercise involved a re-evaluation of 80 sites proposed for no further action (NFA) within the Resource Conservation and Recovery Act Facility Investigation (RFI) Work Plan for Operable Unit 1082, Addendum 2. This document was submitted in July 1995, and has yet to be reviewed by the Administrative Authority. At the time this document was submitted, the five NFA criteria had not been developed and accepted by the New Mexico Environment Department (NMED). The original NFA recommendations were based on human health evaluations only. Ecological risk and other applicable regulations and standards were not considered at that time.

The Environmental Restoration (ER) Project informed John Kieling of NMED of our need to meet Functional Area A.2 Performance Measure by revisiting previously proposed NFA recommendations and re-evaluating them to today's NFA standards. Dave McInroy of my staff has been working with Mr. Kieling and agreed on a process that would allow for the Laboratory to resubmit a replacement Chapter 6 for this Work Plan, which would achieve the following:

- apply the more recent NFA criteria to those sites previously proposed for NFA;
- reevaluate the proposals to include an evaluation of ecological risk and other applicable regulations and standards; and
- remove those sites from the chapter that the Laboratory believes are no longer viable NFA proposals.

Mr. Kieling asked that we not significantly modify the text at this time to reflect the new NFA format but to wait until a permit modification is generated for those proposed NFAs that NMED concurred with. Dave McInroy has discussed this approach with Joe Mose of your staff, and Joe has also concurred with this approach.

As a result of this re-evaluation exercise, the Laboratory's ER Project has determined that 72 of the original 80 proposals meet today's NFA criteria. This evaluation was performed in accordance with the ER Project's white paper entitled *Documentation of Ecological Risk Assessment and Other Applicable Regulations and Standards for Administrative No Further Action Proposals*. This is the evaluation process that your office has accepted on previous deliverables (September 30, 1997; June 29, 1998; and August 13, 1998) to meet the A.2 Performance Measure last fiscal year and earlier this fiscal year. This re-evaluation exercise adds another 72 sites to the previously submitted 119, for a total of 191 sites submitted in satisfaction of Functional Area A.2 of the FY98 Performance Measures.

Enclosed please find two tables listing HSWA and non-HSWA sites for the 72 potential release sites that have been re-evaluated. Tables 1 and 2 include:

- NFA criteria;
- PRS number and descriptions;
- former OU number;
- NFA document;
- document date; and
- NFA justification.

Also enclosed are the revised Chapter 6 for the RFI Work Plan for OU 1082, Addendum 2 and the draft transmittal letter. Upon your concurrence, the rewrite of Chapter 6 will be sent to the NMED. Mr. Kieling has held off on the review of the subject document until this re-evaluation is completed and delivered.

Per my discussion with you on September 9, 1998, and our joint memo modifying the A.2 Performance memo (EM/ER:98-335), credit for completion of this performance measure will be obtained upon submittal to and acceptance by DOE-LAAO. We will jointly determine the most efficient approach and timing for transmitting appropriate information to NMED.

Should you have any questions, please contact Dave McInroy at 667-0819.

Sincerely,

Julie A. Canepa, Program Manager
Environmental Restoration Project

JC/DM/rfr

Enclosures: (1) Functional Area A.2 Performance Measure
(2) Table 1, HSWA NFA PRSs
(3) Table 2, Non-HSWA NFA PRSs
(4) Draft Letter to Dr. Robert Dinwiddie
(5) Rewrite of Chapter 6 for RFI Work Plan for OU 1082, Addendum 2

Cy (w/ encs.):
D. Beak, TSA-10, MS M992
D. Daymon, EM/ER, MS M992
A. Dorries, TSA-11, MS M992
T. George, EM/ER, MS M992
D. McInroy, EM/ER, MS M992
R. Michelotti, CST-7, MS E525
J. Newlin, CST-7, MS M992
A. Pratt, EES-13, MS M992
M. Salazar, EM/ER, MS M769
RPF, MS M707, Record Package 306

Cy (w/o encs.):
EM/ER, MS M992

Appendix E

Documentation for Varying from
HSWA Permit Modification Request Outline

EM/ER Telephone Log

Call To: Kim Hill (HRMB)
827-1558, ext. 1048
Call From: Linda Nonno (EM/ER)
Date: May 4, 1999, 3:40 pm

Discussion:

I phoned Kim Hill to discuss the outline for HSWA permit modification request NFA proposals provided in HRMB's RPMP Document Requirement Guide (3/3/98). The outline in question is located in Section II.B.4.a.(4).(a) of the 3/3/98 Document Requirement Guide.

The outline works well for sites that fall under NFA Criterion 5, but many of the sections are not applicable for sites that fall under Criteria 1 through 4. I asked Kim if it would be possible to alter the outline as per the attached example that eliminates the following sections of the outline: 2.4 Investigatory Activities, 2.5 Site Conceptual Model, and 2.6 Site Assessments (human health, ecological, and other). We discussed the best place to include a site map and agreed that it should be placed in section 2.2.1, Site Description. I also suggested adding a section for supporting documentation, to which Kim agreed. In rare cases, an applicable assessment, such as surface water SOP 2.01 (formerly AP 4.5) or a UST closure report may exist for a Criterion 1 – 4 site. When applicable, such documentation will be included as an attachment in the supporting documentation section.

We agreed to put a discussion of how and why these permit modification request NFA proposals will vary from the HRMB Document Requirement guide in both the Introduction section of the permit modification request and in the cover letter for the request.

Linda Nonno

Linda Nonno

I agree that the above telephone log accurately records the May 4 telephone conversation between Linda Nonno and myself.

Kim Hill 5/18/99

Kim Hill

LMN/KH:lmn

HSWA PERMIT MODIFICATION REQUEST
NO FURTHER ACTION PROPOSALS
OUTLINE FOR NFA CRITERIA 1 THROUGH 4

EXECUTIVE SUMMARY
1.0 INTRODUCTION
2.0 Solid Waste Management Unit/Area of Concern (SWMU/AOC) X
- 2.1 Summary
- 2.2 Description and Operational History
  - 2.2.1 Site Description
    Includes a site map
  - 2.2.2 Operational History
- 2.3 Land Use
  - 2.3.1 Current
  - 2.3.2 Future/Proposed
- 2.4 No Further Action Proposal
  - 2.4.1 Rationale
  - 2.4.2 Criterion
- 2.5 Supporting Documentation

APPENDIX A LIST OF ACRONYMS AND GLOSSARY
- A-1 List of Acronyms
- A-2 Glossary

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NATIONAL LABORATORY

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