

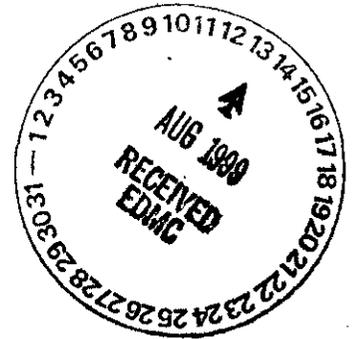


Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

0051571

99-EAP-424

AUG 04 1999



Ms. Valerie Perry, Librarian
NWP Kennewick Library
1315 West Fourth Avenue
Kennewick, Washington 99336

Dear Ms. Perry:

DANGEROUS WASTE PERMIT APPLICATION, PART A, FORM 3 FOR THE
PLUTONIUM URANIUM EXTRACTION (PUREX) PLANT, REVISION 9

Please reference the letter from L. Ruud, State of Washington Department of Ecology (Ecology), to J. E. Rasmussen, U.S. Department of Energy, Richland Operations Office (RL), "Response to 5/21/99 Letter to Ecology Regarding Hanford Facility Dangerous Waste Part A Permit Application (Part A), Form 3's for PUREX, Revision 9," dated June 18, 1999. RL and its contractor Bechtel Hanford, Inc. are resubmitting the enclosed Revision 9 of the Part A, Form 3, for the PUREX Plant. This Form 3 reflects the changes requested by Ecology in the referenced letter.

If you have any questions regarding this revision, please contact Ellen Mattlin, of my staff, on (509) 376-2385 or J. P. Sands, Restoration Projects, on (509) 372-2282.

Sincerely,

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

EAP:EMM

Enclosure

cc w/encl:
Administrative Record, H6-08
R. J. Julian, Ecology
L. E. Ruud, Ecology
S. M. Price, FDH
Environmental Portal, LMSI
R. C. Bowman, WMH

cc w/o encl:
D. A. Faulk, EPA
M. C. Hughes, BHI

Please print or type in the unshaded areas only
fill-in areas are spaced for elite type, i.e., 12 character/inch.

FORM 3	DANGEROUS WASTE PERMIT APPLICATION	1. EPA/STATE I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr><td>W</td><td>A</td><td>7</td><td>8</td><td>9</td><td>0</td><td>0</td><td>0</td><td>8</td><td>9</td><td>6</td><td>7</td></tr> </table>	W	A	7	8	9	0	0	0	8	9	6	7
W	A	7	8	9	0	0	0	8	9	6	7			

FOR OFFICIAL USE ONLY		
APPLICATION APPROVED	DATE RECEIVED (mo., day, & yr.)	COMMENTS

II. FIRST OR REVISED APPLICATION
Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

A. FIRST APPLICATION (place an "X" below and provide the appropriate date)

<input type="checkbox"/> 1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.) <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td style="width: 30px;">MO.</td><td style="width: 30px;">DAY</td><td style="width: 30px;">YR.</td></tr> <tr><td style="text-align: center;">03</td><td style="text-align: center;">22</td><td style="text-align: center;">43</td></tr> </table> * FOR EXISTING FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left) * The date construction of the Hanford Facility commenced.	MO.	DAY	YR.	03	22	43	<input type="checkbox"/> 2. NEW FACILITY (Complete item below.) <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td style="width: 30px;">MO.</td><td style="width: 30px;">DAY</td><td style="width: 30px;">YR.</td></tr> <tr><td style="height: 20px;"></td><td style="height: 20px;"></td><td style="height: 20px;"></td></tr> </table> FOR NEW FACILITIES, PROVIDE THE DATE, (mo., day, & yr.) OPERATION BEGAN OR IS EXPECTED TO BEGIN	MO.	DAY	YR.			
MO.	DAY	YR.											
03	22	43											
MO.	DAY	YR.											

B. REVISED APPLICATION (place an "X" below and complete Section I above)

<input checked="" type="checkbox"/> 1. FACILITY HAS AN INTERIM STATUS PERMIT	<input checked="" type="checkbox"/> 2. FACILITY HAS A FINAL PERMIT
--	--

III. PROCESSES - CODES AND CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the codes(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the (Section III-C).

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.
2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:			Treatment:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided: Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
Disposal:					
INJECTION WELL	D80	GALLONS OR LITERS			
LANDFILL	D81	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D82	ACRES OR HECTARES			
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECATRES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING SECTION III (shown in line numberS X-1 and X-2 below): A facility has two storage tanks; one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PRO-CESS CODE (from list above)			B. PROCESS DESIGN CAPACITY				FOR OFFICIAL USE ONLY	LINE NUMBER	B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY
				1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	1. AMOUNT (specify)						
X-1	S	0	2	600	G				5				
X-2	T	0	3	20	E				6				
1	T01			392,000	V				7				
2	S02			1,263,233	L				8				
3	S06			430	C				9				
4									10				

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "TO4"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

The Plutonium-Uranium Extraction (PUREX) Plant, constructed in 1956, is located in the southeast corner of the 200 East Area. The PUREX Plant was used for the recovery of uranium and plutonium from irradiated reactor fuel. Liquid processes were used to separate the plutonium from the uranium. The PUREX Plant consists of the 202-A Building and various support structures. The 202-A Building is a reinforced concrete structure 306.3 meters long, 36.3 meters wide (at its maximum), and 30.5 meters high with approximately 12.2 meters of the height below grade. The 202-A Building consists of three main structural components: (1) a thick-walled, concrete canyon containing remotely operated process equipment (in cells below grade); (2) the pipe and operating, sample, and storage galleries; and (3) an annex that included offices, process control rooms, laboratories, and building services.

T01 and S02 are used to indicate a historical use of tanks for storage and treatment. The tanks once used in this process have been drained and flushed and are awaiting final disposition.

S02 references vessels that are permitted to store dangerous waste. The PUREX Plant Vessel Table (page 6) includes the tank identification numbers, tank locations, and tank capacities for the permitted tanks. The total process design capacity for tank storage was 1,263,233 liters.

S06 is used to indicate a containment building subject to the requirements of 40 CFR 265, Subpart DD as prescribed in WAC-173-400 Interim status facility standards. A steel open top skip containing concrete chips from the floor of E-Cell is stored in F-Cell. The solid mixed waste in the canyon could consist of contaminated discarded canyon process equipment, jumpers (or isolated components thereof) or other material from various onsite sources.

Treatment and storage capacities are provided to reflect past operations. Current and/or future PUREX Plant activities do not propose utilization of treatment or storage capacity beyond what has been agreed to for facility transition purposes under Section 8 of the Hanford Federal Facility Agreement and Consent Order.

IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER - Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

- Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.
- Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE	A. DANGEROUS WASTE NO. (enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES																		
	1. PROCESS CODES (enter)						2. PROCESS DESCRIPTION (if a code is not entered in D(1))																		
X-1	K	0	5	4	900	P	T	0	3	D	8	0													
X-2	D	0	0	2	400	P	T	0	3	D	8	0													
X-3	D	0	0	1	100	P	T	0	3	D	8	0													
X-4	D	0	0	2			T	0	3	D	8	0													included with above

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I. D. NUMBER (entered from page 1)

W A 7 8 9 0 0 0 8 9 6 7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

L I N E	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEAS- SURE (enter code)		D. PROCESSES			
					1. PROCESS CODES (enter)			2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	WT01	0	K		T01	S02		Process is not in use. The waste codes have been listed to indicate a historical use of tanks for treatment and storage.
2	WT02	0			T01	S02		Included with above
3	WP01	0			T01	S02		Included with above
4	WP02	0			T01	S02		Included with above
5	D001	0			T01	S02		Included with above
6	D002	0			T01	S02		Included with above
7	D003	0			T01	S02		Included with above
8	D004	0			T01	S02		Included with above
9	D005	0			T01	S02		Included with above
10	D006	0			T01	S02		Included with above
11	D007	0			T01	S02		Included with above
12	D008	0			T01	S02		Included with above
13	D009	0			T01	S02		Included with above
14	D010	0			T01	S02		Included with above
15	D011	0			T01	S02		Included with above
16	WT01	15,200	K		S06			Storage in a containment building
17	WT02	Included with above			S06			Included with above
18	D005	Included with above			S06			Included with above
19	D006	Included with above			S06			Included with above
20	D007	Included with above			S06			Included with above
21	D008	Included with above			S06			Included with above
22	D010	Included with above			S06			Included with above
23	D011	Included with above			S06			Included with above
24								
25								
26								

IV. DESCRIPTION OF DANGEROUS WASTE (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

V. FACILITY DRAWING Refer to attached drawing(s).

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS Refer to attached photograph(s).

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

VII. FACILITY GEOGRAPHIC LOCATION This information is provided on the attached drawings and photos.

LATITUDE (degrees, minutes, & seconds)			LONGITUDE (degrees, minutes, & seconds)		
46	32	57	119	31	12

VIII. FACILITY OWNER

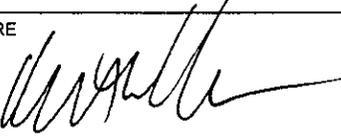
A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information," place an "X" in the box to the left and skip to Section XI below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER			2. PHONE NO. (area code & no.)		
3. STREET OR P.O. BOX			4. CITY OR TOWN		5. ST.
					6. ZIP CODE

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type) Keith A. Klein, Manager U.S. Department of Energy Richland Operations Office	SIGNATURE 	DATE SIGNED 8/4/99
--	--	-----------------------

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type) See Attachment	SIGNATURE	DATE SIGNED
--	-----------	-------------

X. OPERATOR CERTIFICATION

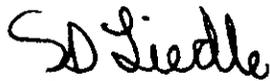
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Owner/Operator
Keith A. Klein, Manager
U.S. Department of Energy
Richland Operations Office

8/4/99

Date



Co-operator
S. D. Liedle, President
Bechtel Hanford, Inc.

1/21/99

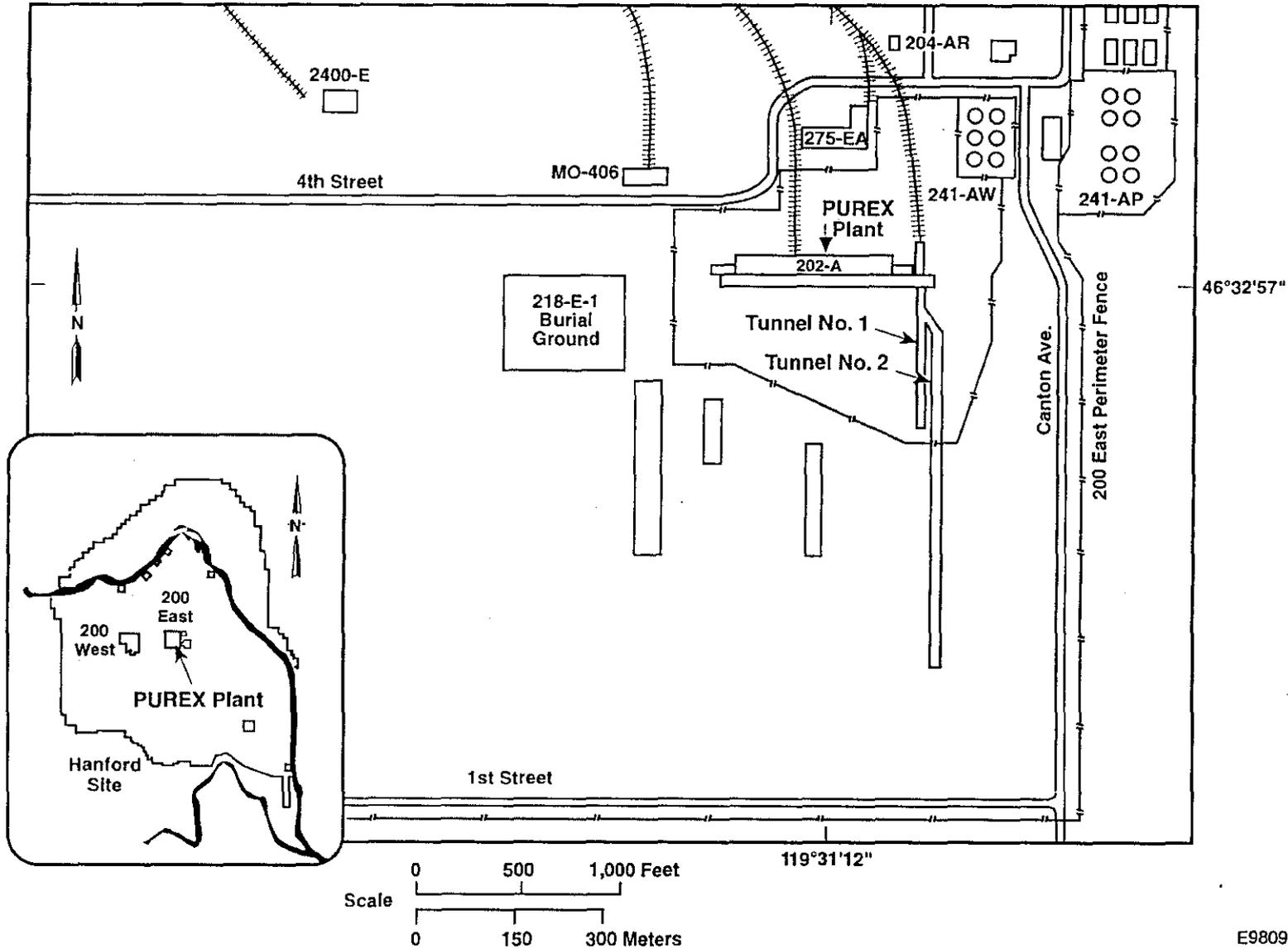
Date

PUREX PLANT VESSEL TABLE

VESSEL	LOCATION	CAPACITY (LITERS)
TK-D5	D Cell	19,851
TK-E5	E Cell	19,873
TK-E6	E Cell	19,813
TK-F3	F Cell	19,964
TK-F4	F Cell	19,593
T-F5	F Cell	1,132
E-F11	F Cell	9,804
TK-F15	F Cell	19,419
TK-F16	F Cell	19,870
TK-F18	F Cell	19,798
TK-G1	G Cell	18,662
TK-G2	G Cell	7,064
T-G2	G Cell	8,248
TK-G5	G Cell	55,403
TK-G7	G Cell	50,827
TK-G8	G Cell	19,881
TK-H1	H Cell	19,593
T-H2	H Cell	7,003
E-H4	H Cell	10,137
TK-J1	J Cell	19,926
TK-J3	J Cell	19,911
T-J6	J Cell	6,057
T-J7	J Cell	6,730
TK-J21	J Cell	1,162
T-J22	J Cell	568
T-J23	J Cell	393
TK-K1	K Cell	19,828
T-K2	K Cell	5,194
T-K3	K Cell	6,507
TK-K6	K Cell	19,593
T-L2	L Cell	447
TK-L3	L Cell	488
T-L4	L Cell	139
TK-M2	M Cell	6,852
TK-Q21	Q Cell AMU	81
TK-Q22	Q Cell AMU	968
TK-R1	R Cell	18,121
TK-R2	R Cell	6,746
T-R2	R Cell	8,282
TK-R7	R Cell	35,174
TK-U3	U Cell	31,124
TK-U4	U Cell	31,184
TK-P4	203-A	402,930
TK-40	211-A	247,360
TK-156	AMU	1,533
Total Captivity		1,263,233

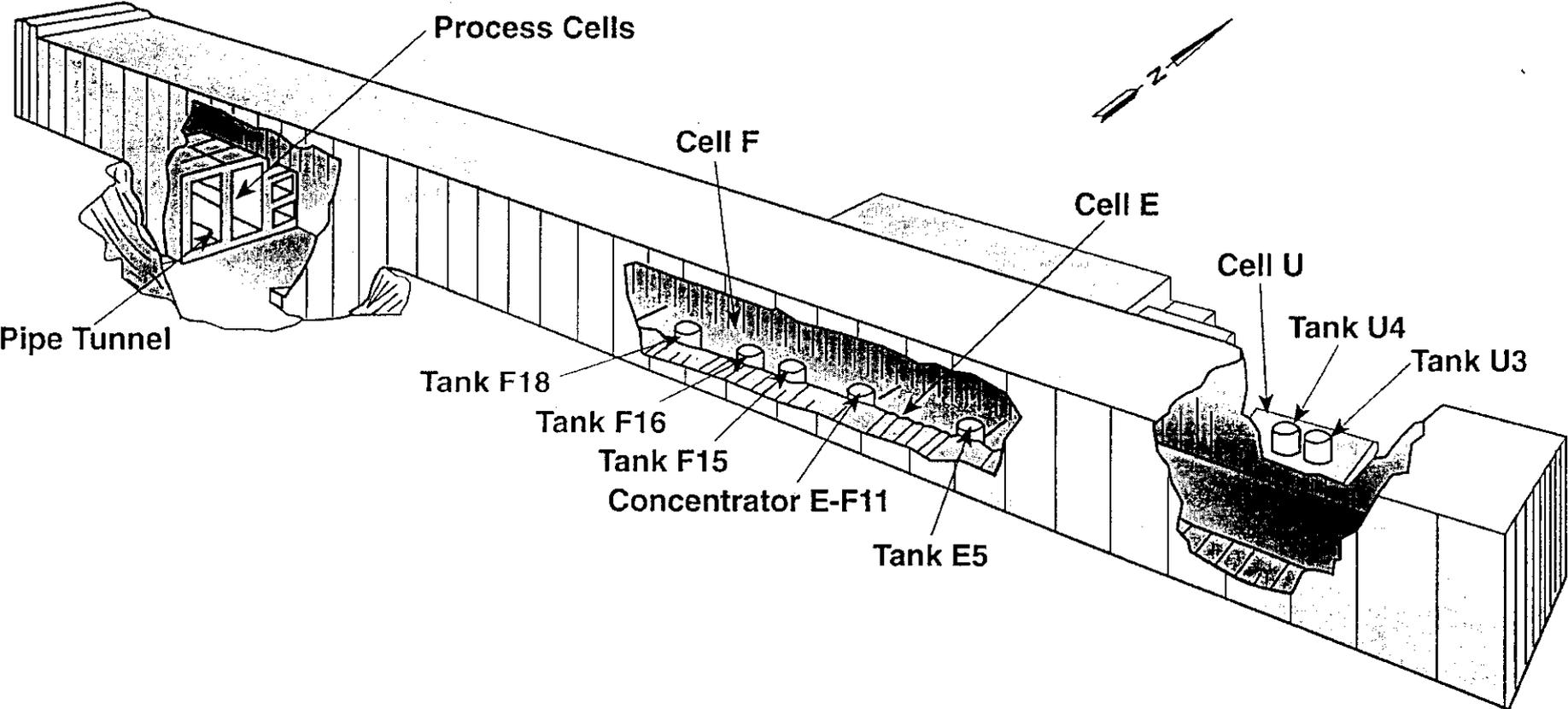
Cell locations are noted on the building illustrations of pages 8-10.

PUREX Plant Site Plan



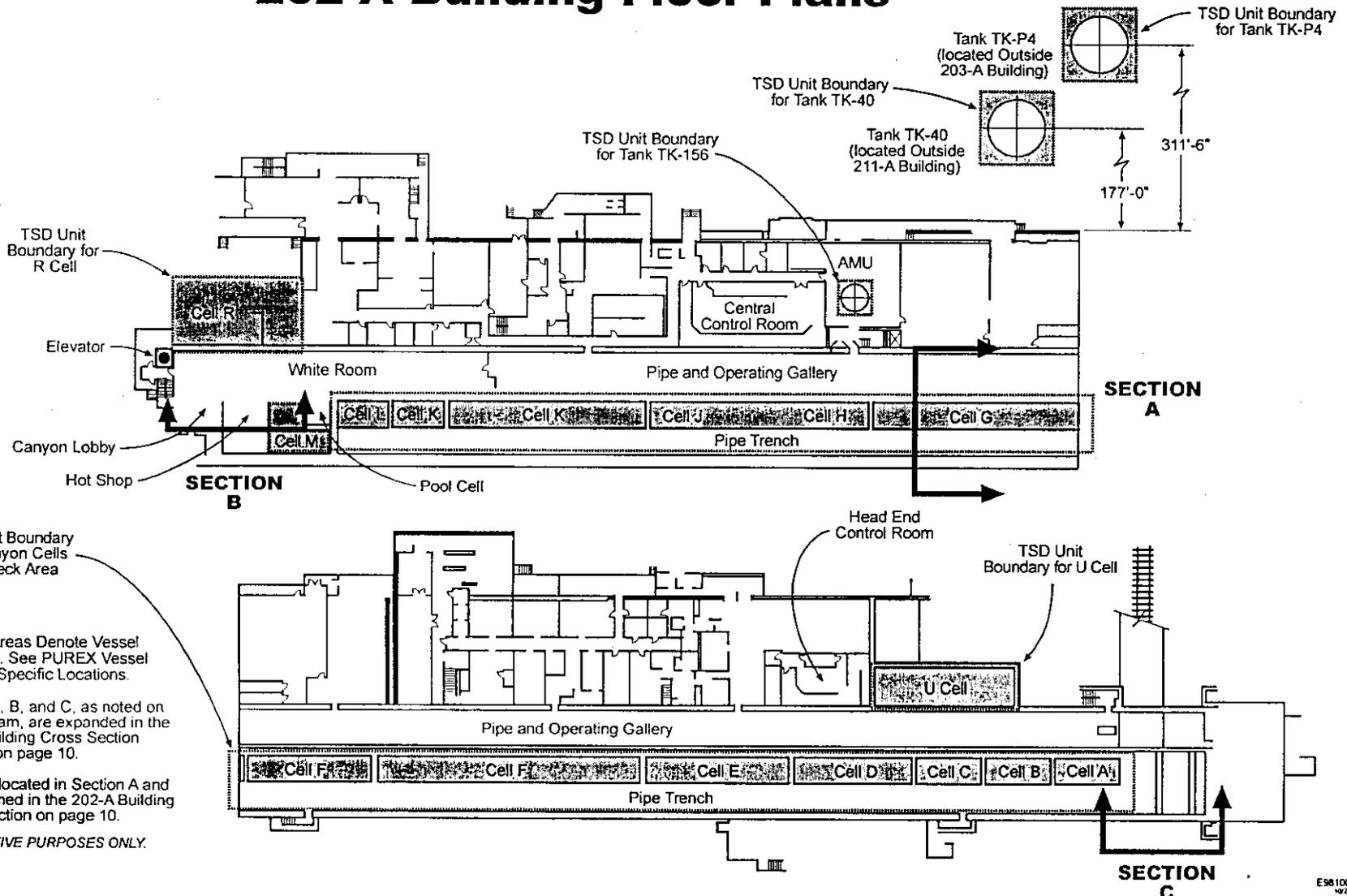
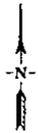
E9809

PUREX Plant Cutaway View (202-A Building)



E9809075.2

202-A Building Floor Plans

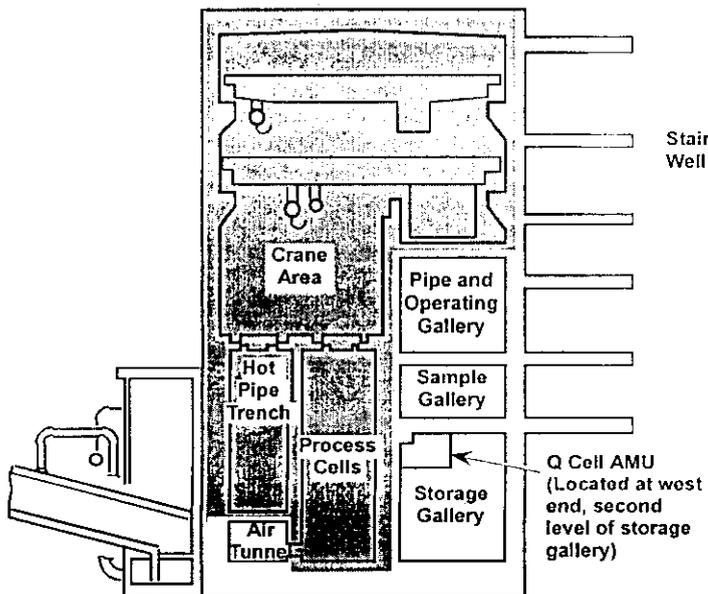


- NOTE 1: Shaded Areas Denote Vessel Locations. See PUREX Vessel Table for Specific Locations.
- NOTE 2: Section A, B, and C, as noted on this diagram, are expanded in the 202-A Building Cross Section diagram on page 10.
- NOTE 3: Q-Cell is located in Section A and is diagramed in the 202-A Building Cross Section on page 10.

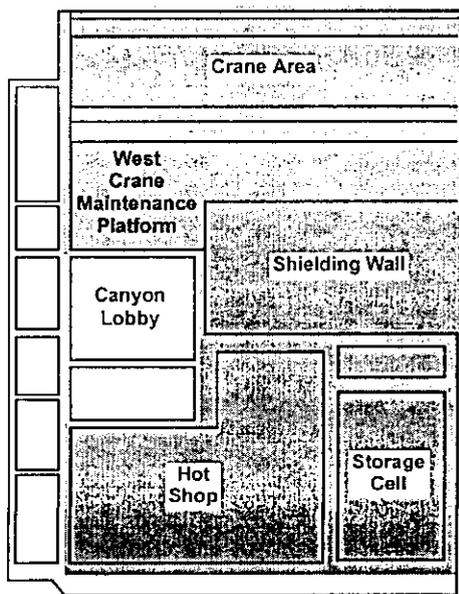
FOR ILLUSTRATIVE PURPOSES ONLY.

E5810002
10/22/94

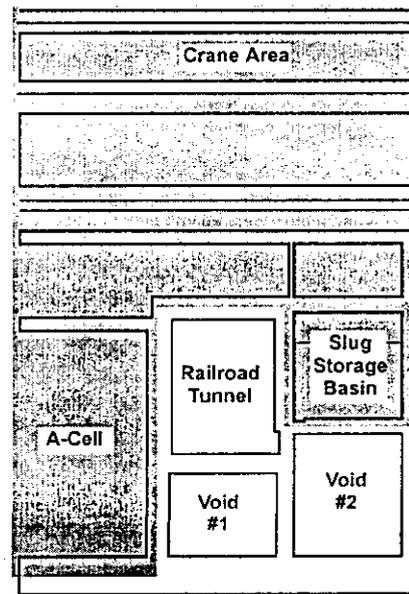
Section A



Section B



Section C

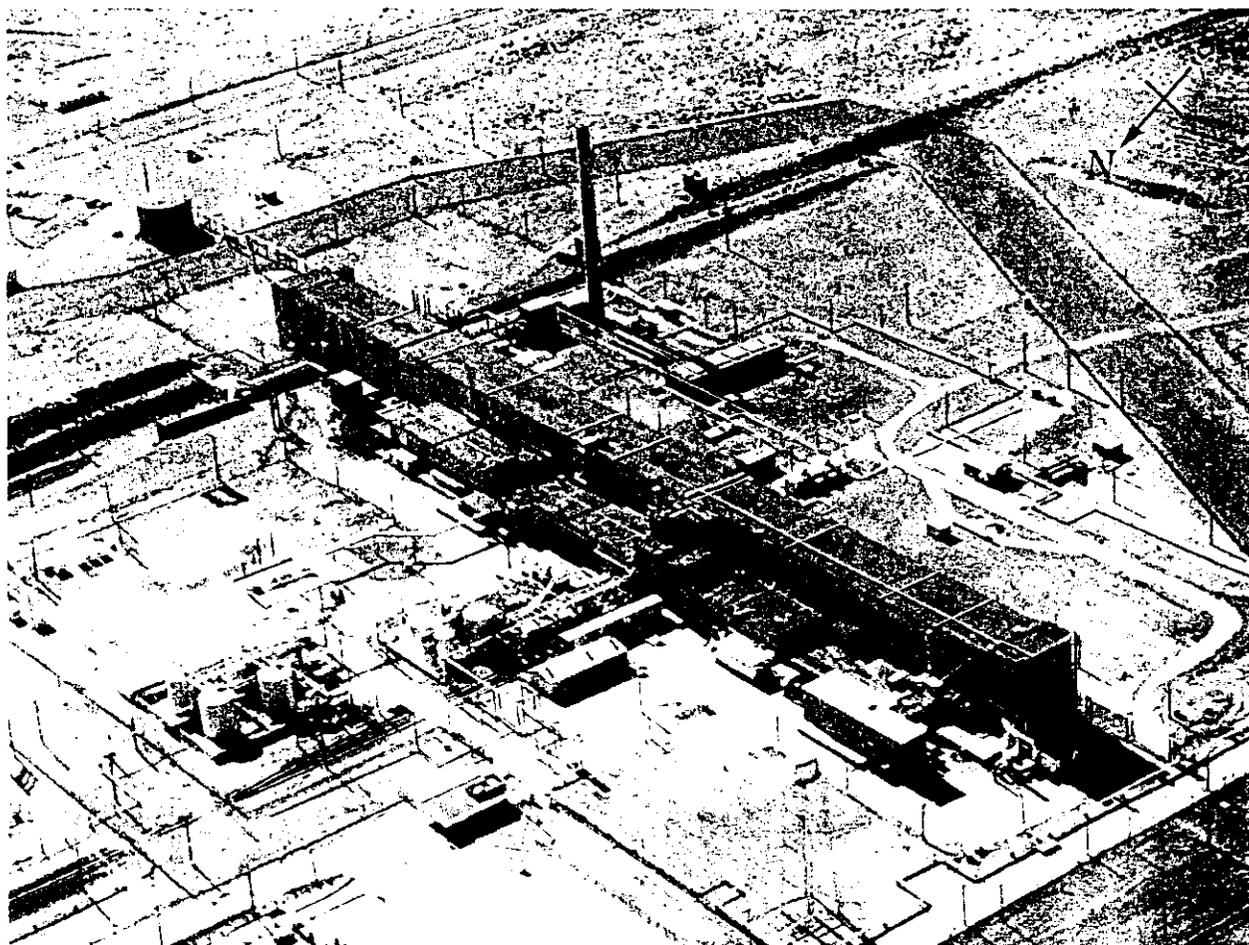


E9809075.1

(Not to Scale)

Note: Shaded portions denote areas that are within the TSD boundary.

PUREX PLANT (AERIAL VIEW)



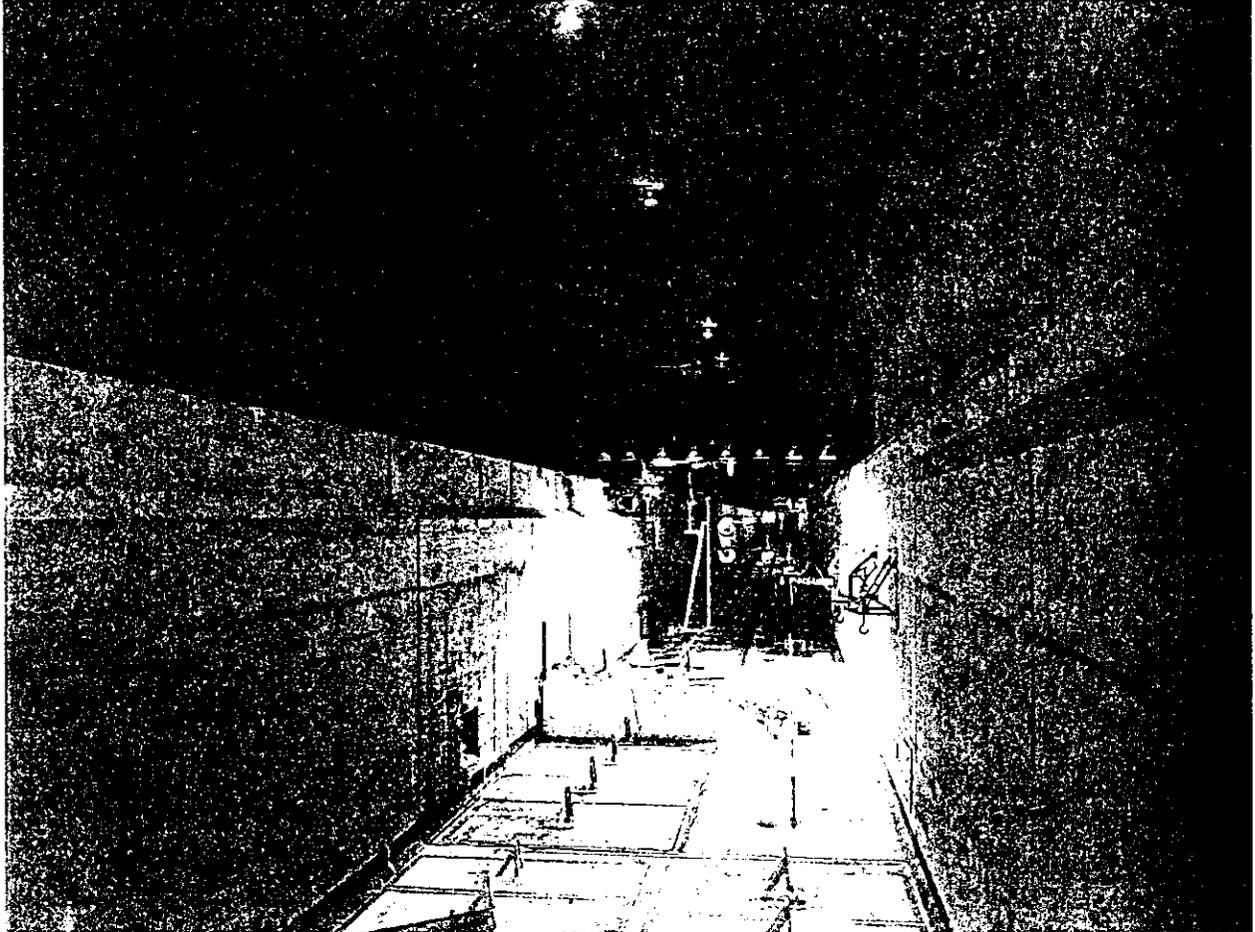
46°32'57"
119°31'12"

97060044-12CN
(PHOTO TAKEN 1997)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

INTERIOR CANYON

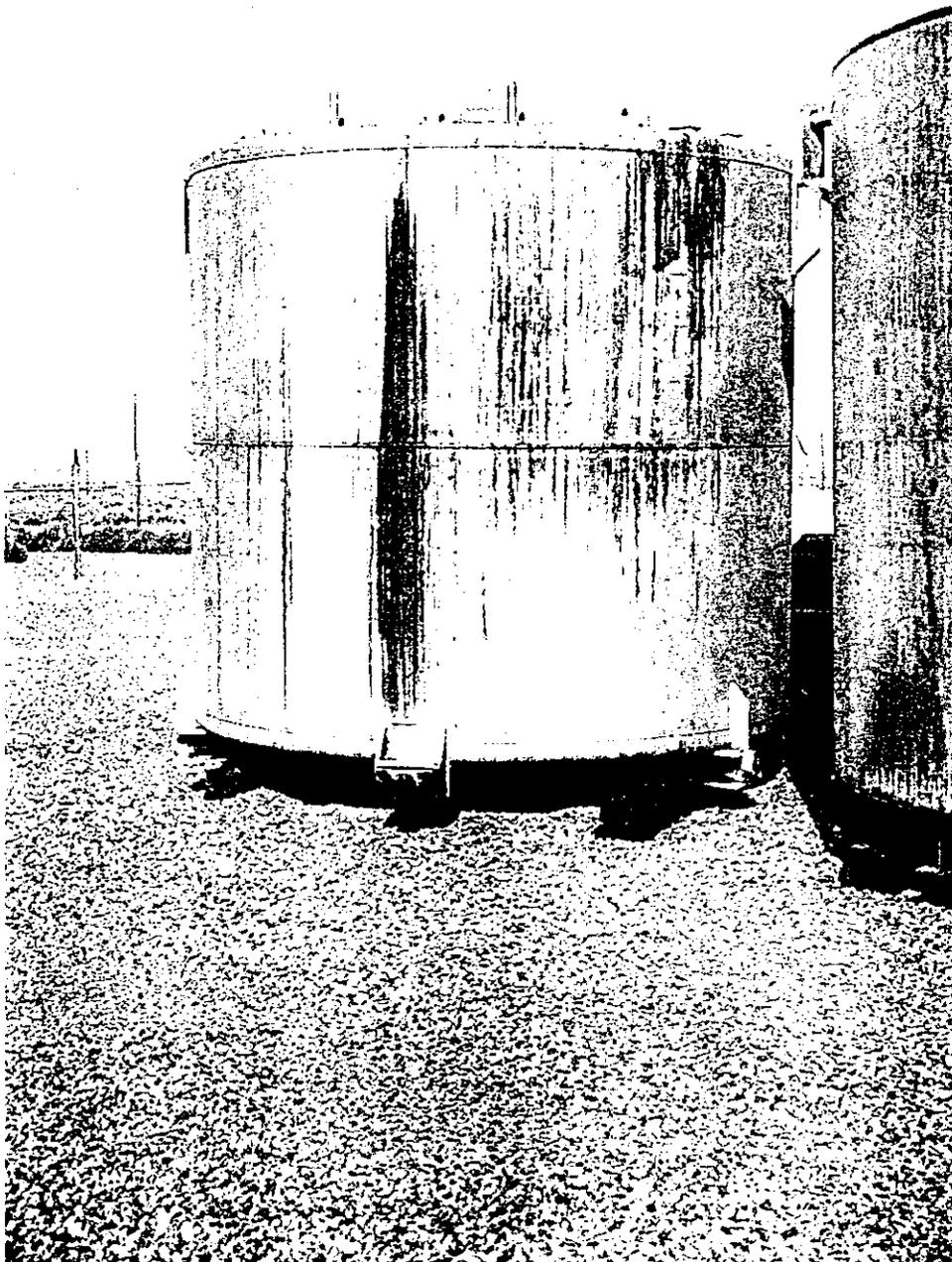
VIEW FROM WEST TO EAST



60478-4CN
(TAKEN 1973)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

STANDARD 18,927-LITER TANK (TYPICAL OF E5, F15, F16 AND F18)

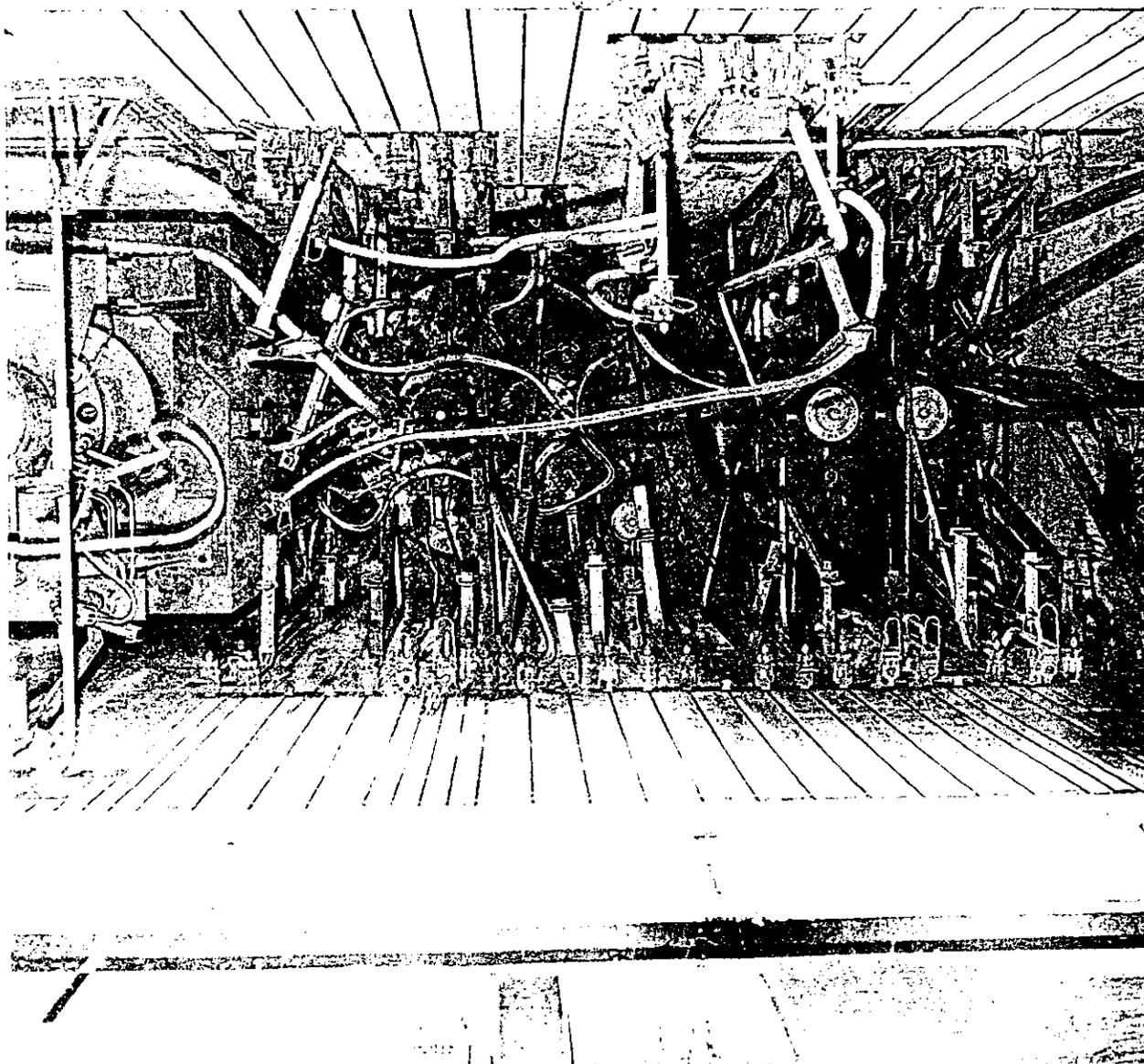


8706243-5CN
(PHOTO TAKEN 1987)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

TANK E5

Pipe Trench Wall – Top View



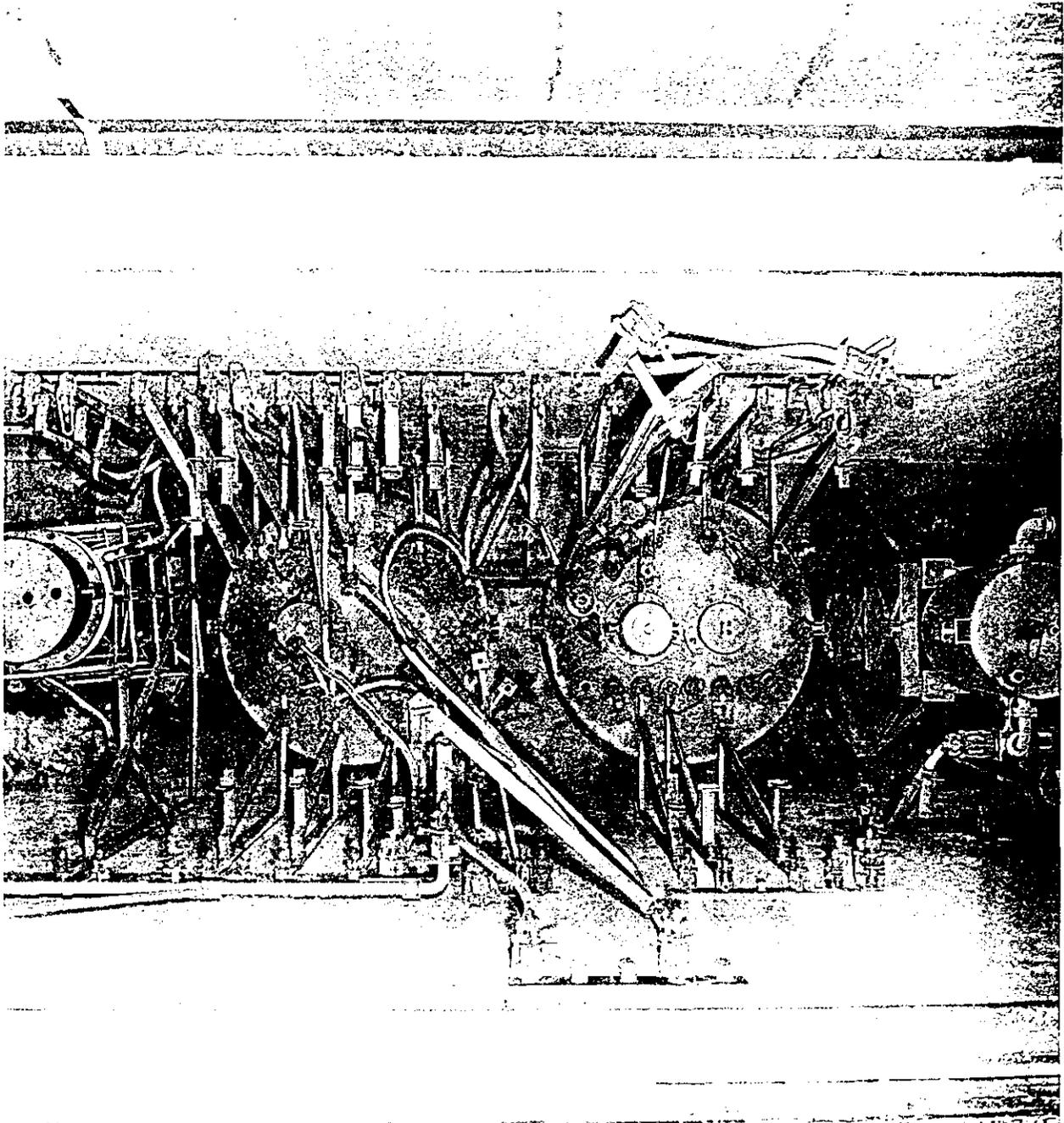
46°32'57"
119°31'12"

09948-38CN
(PHOTO TAKEN 1982)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

TANK F 15 AND TANK F16

Pipe Trench Wall – Top View



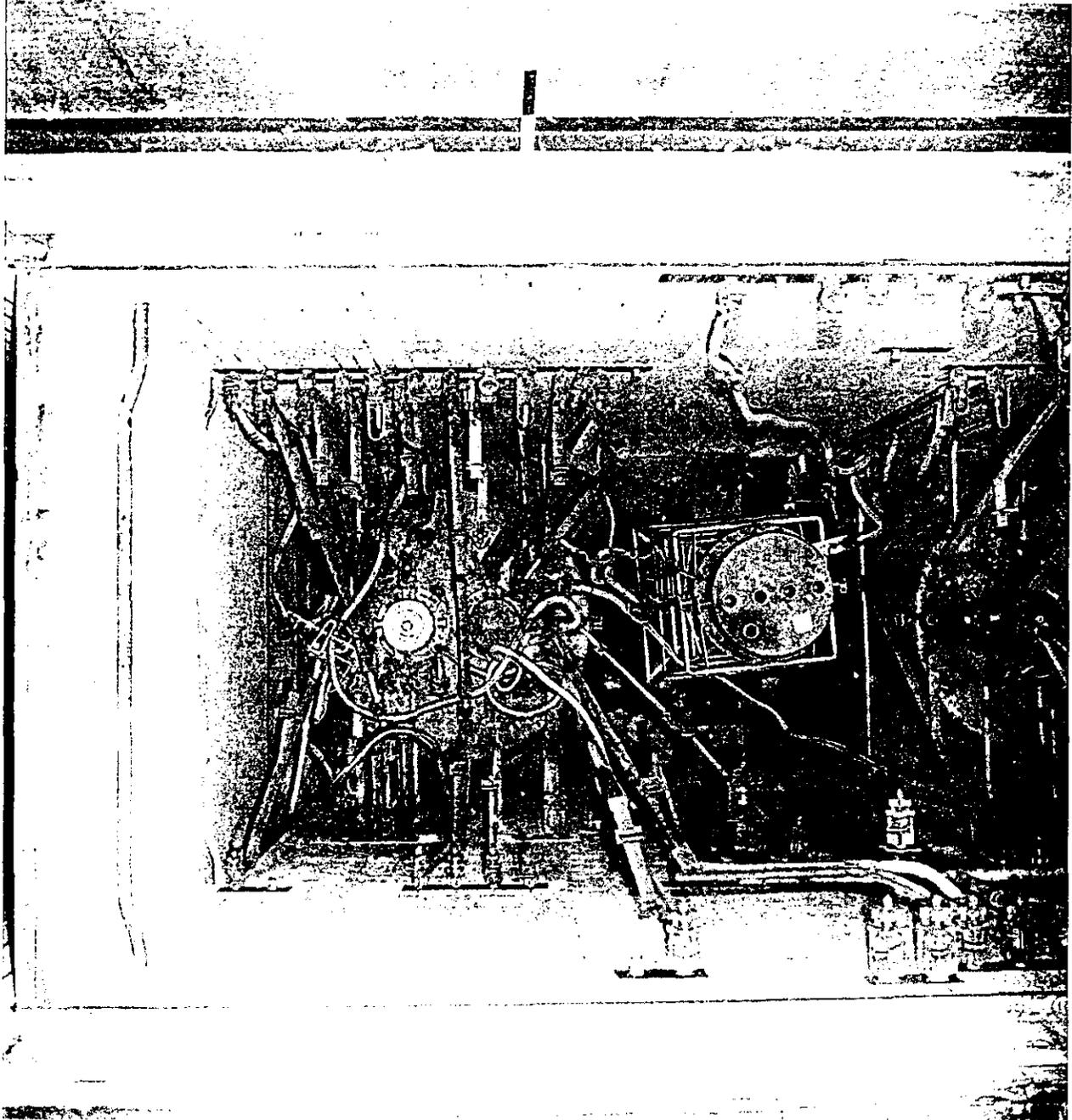
46°32'57"
119°31'12"

099948-71CN
(PHOTO TAKEN 1982)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

TANK F 18

Pipe Trench Wall – Top View

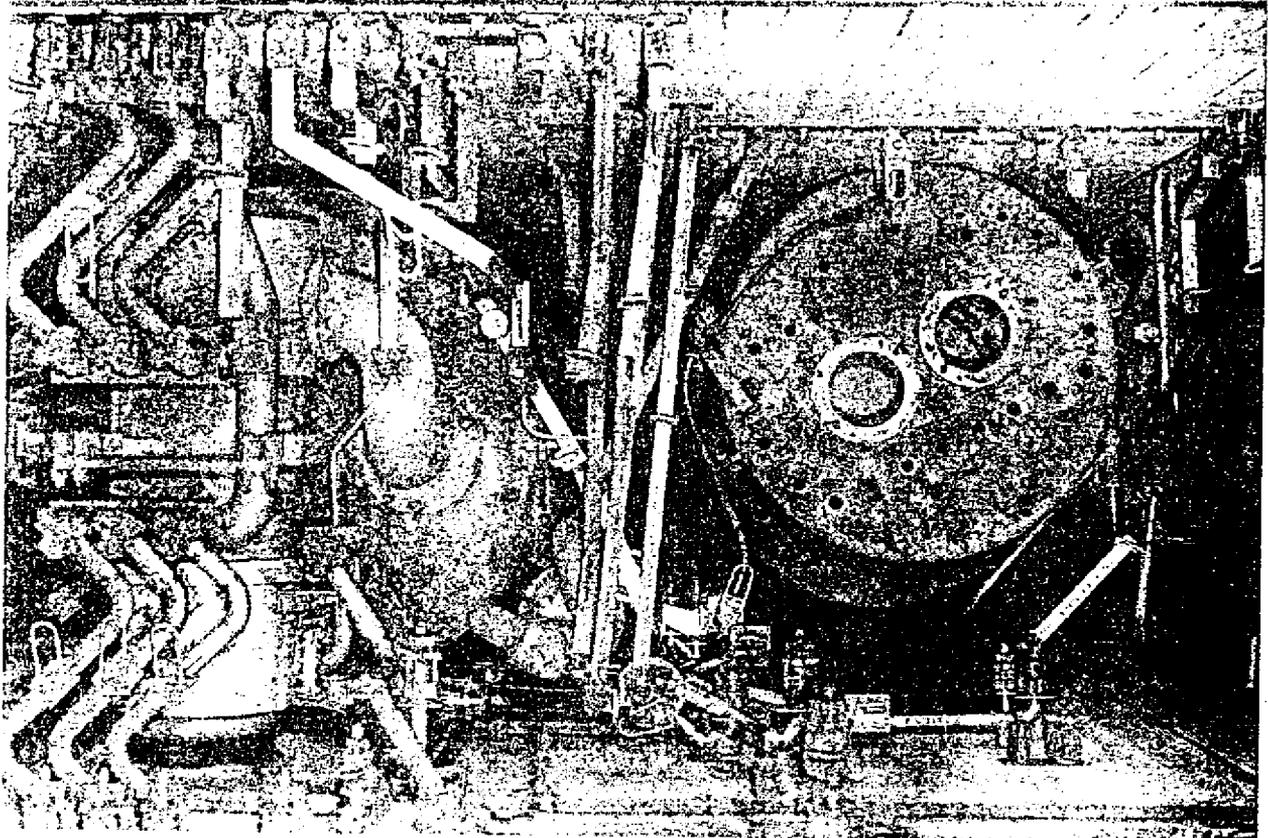


46°32'57"
119°31'12"

099948-74CN
(PHOTO TAKEN 1982)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

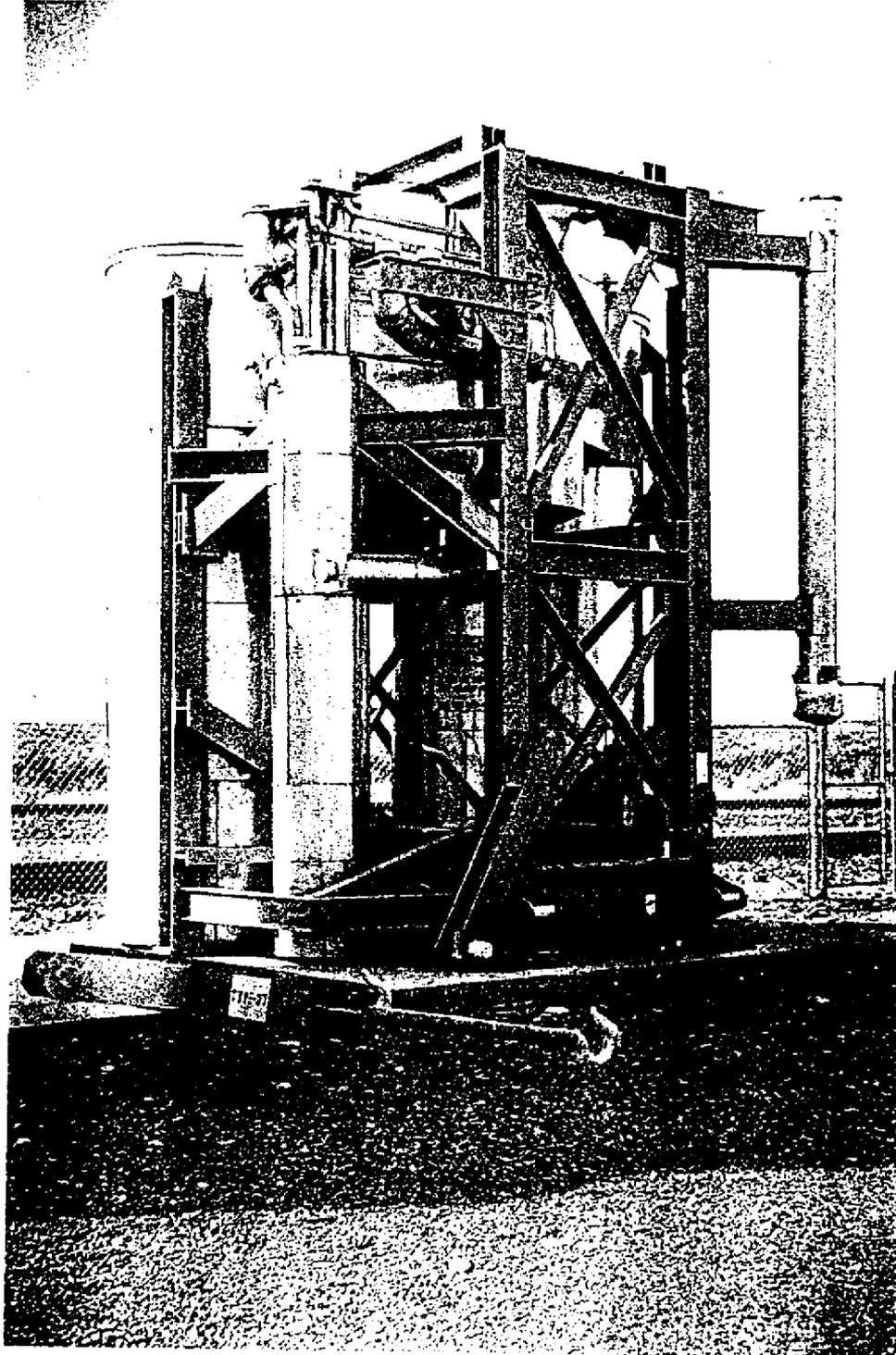
F-CELL LOOKING DOWN



99948-48CN
(PHOTO TAKEN 1982)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

E-F11 CONCENTRATOR

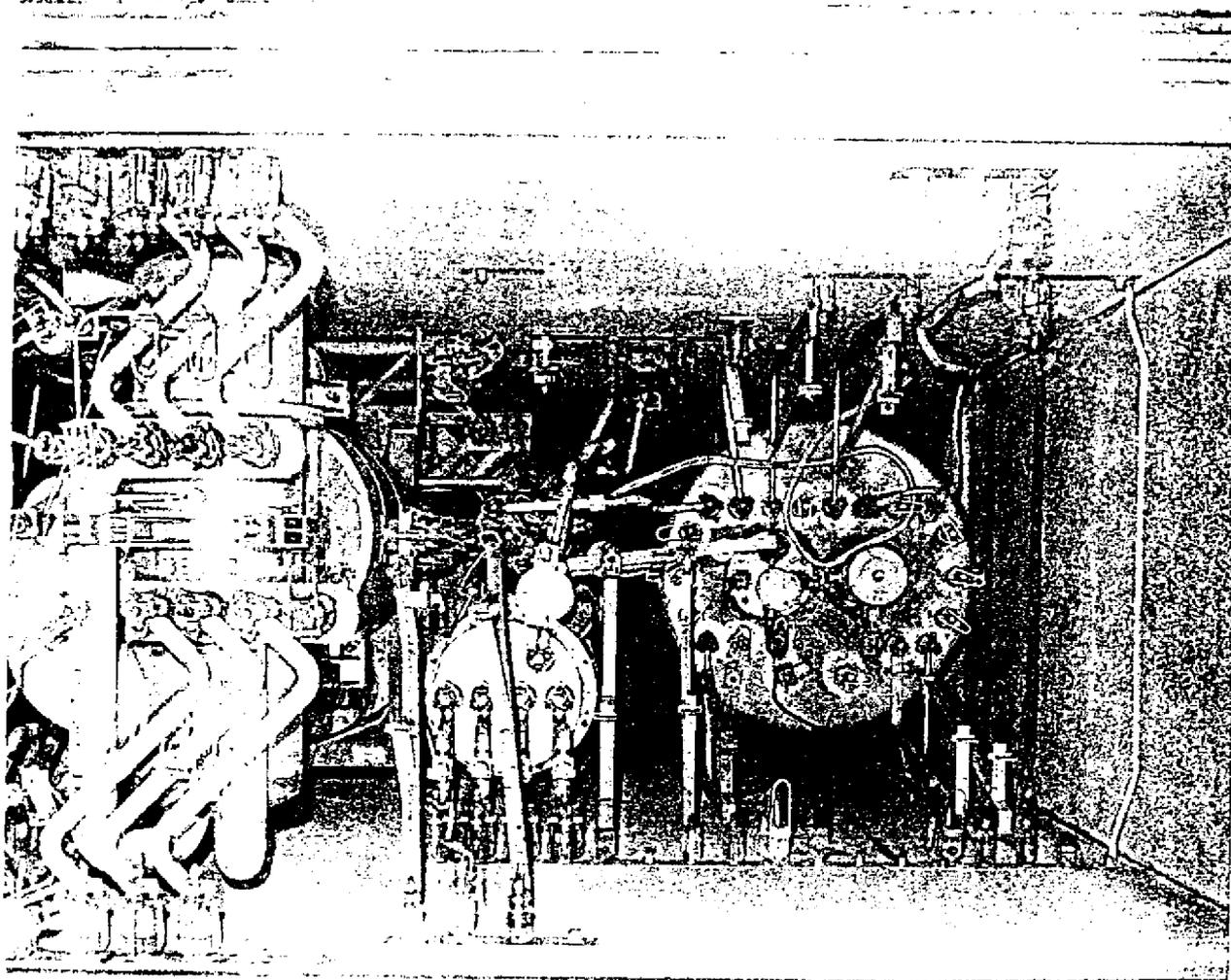


8706243-8CN
(PHOTO TAKEN 1987)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

E-F11 CONCENTRATOR

Pipe Trench Wall – Top View



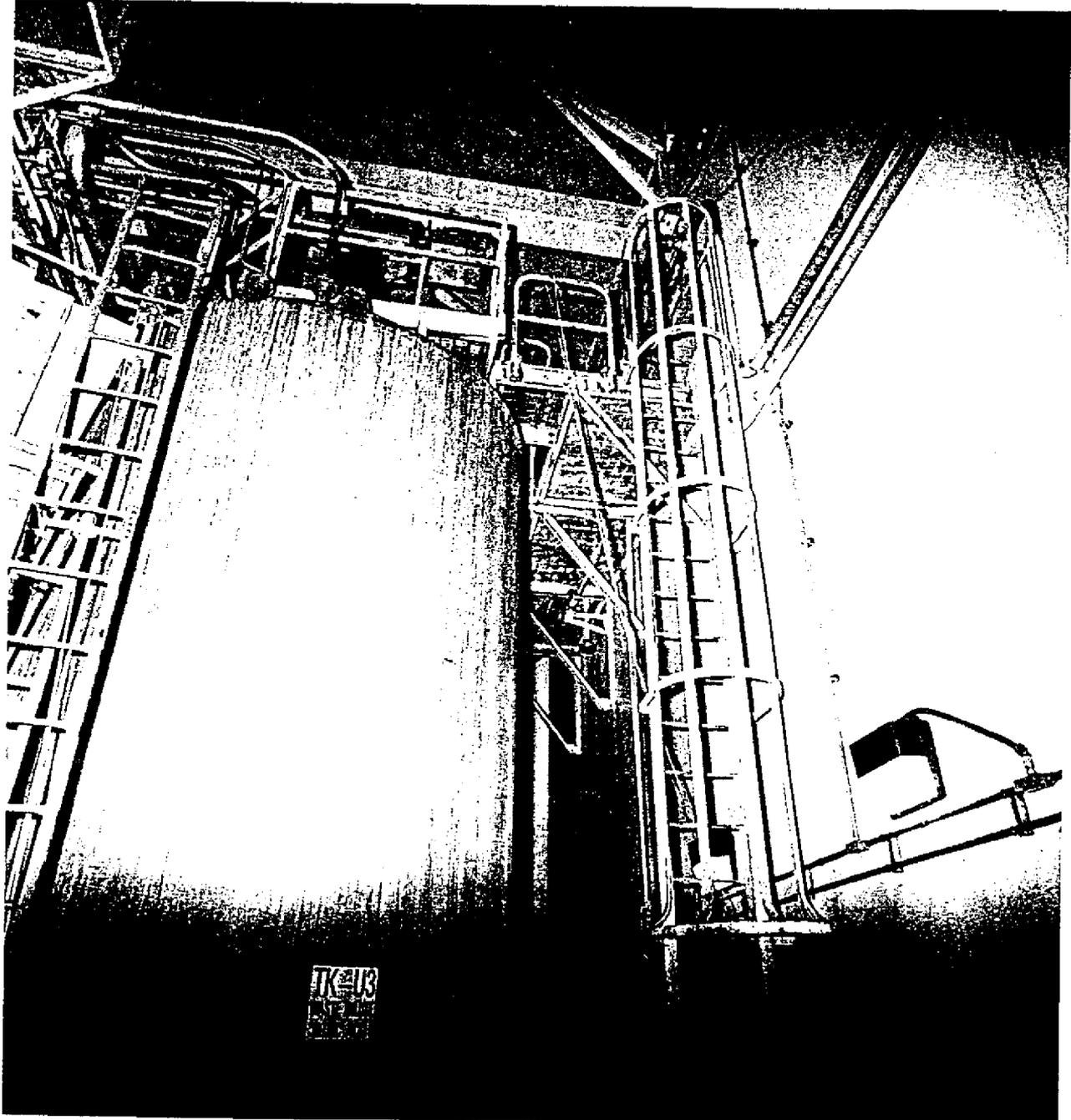
46°32'57"
119°31'12"

099948-64CN
(PHOTO TAKEN 1982)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

U CELL

Tank U3 (Typical of Tank U4)



46°32'57"
199°31'12"

92102839-10CN
(PHOTO TAKEN 1992)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE

U CELL

Bottom of Tanks

Tank U3

Tank U4



46°32'57"
119°31'12"

92102839-7CN
(PHOTO TAKEN 1992)

HISTORICAL PHOTO
CONSISTENT WITH CURRENT APPEARANCE