

APPENDIX A

PREVIOUS INVESTIGATION ANALYTICAL DATA

This appendix provides data from previous investigations conducted by a number of different contractors. The work was also conducted for a variety of reasons and with the support of different analytical laboratories. Consequently, much of the data is not consistent with that reported in the RFI with regard to analytes, detection limits and reporting schemes. An attempt has been made, however, to provide all data that is readily available regarding both analytes tested for and detection limits.

TABLE 1

PCB CONCENTRATIONS IN SEDIMENT SAMPLES,
PLATING BUILDING AREA
(SEE FIGURE 7A)
(PAGE 1 OF 2)

SAMPLING DATE: SUMMER 1985

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE TYPE	PCB CONCENTRATION (ppm)
S-16	Sump near stack #7414	Sediment	5,800
S-17	Sump near pump CE 17634	Sediment	43,000
S-18	Sump at NW corner of Bldg 57	Sediment	1,500
CB-1	Catch basin near east door to Bldg 59	Sediment in basin	0.1
CB-2	Catch basin near east door to Bldg 59	Sediment in basin	0.9
CB-3	Catch basin in front of east door to Bldg 59	Sediment in basin	0.2
CB-4	Catch basin east of Bldg 75	Sediment in basin	1.1
CB-5	Catch basin west of East Boiler House	Sediment in basin	0.7
CB-6	Catch basin NE of East Boiler House	Sediment in basin	0.9
W-7	18" deep well at NE corner of Bldg 57	Sediment, rim of well	6.5
MH-8	Manhole along north wall of Bldg 57	Sediment on rim of manhole	6.5
CB-9	Catch basin midway bwn Bldg 57 and East Boiler House	Sediment in basin	0.7
CB-10	Catch basin north of alkali waste pump station	Sediment in basin	1.3

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TABLE 1

PCB CONCENTRATIONS IN SEDIMENT SAMPLES,
PLATING BUILDING AREA
(SEE FIGURE 7A)
(PAGE 2 OF 2)

<u>SAMPLE NUMBER</u>	<u>SAMPLE LOCATION</u>	<u>SAMPLE TYPE</u>	<u>PCB CONCENTRATION (ppm)</u>
CB-11	Catch basin near acid and alkali waste pump stations	Sediment in basin	1.7
T-12	Trench around fuel oil tanks	Sediment	4.6
CB-13	Catch basin at SE corner of Bldg 57	Sediment in basin	9.2
CB-14	Catch basin btn Bldg 57 and Mfg Support Bldg	Sediment in basin	2.1

TABLE 2
 PIPE GALLERY ANALYTICAL RESULTS
 SUMP SEDIMENT
 (SEE FIGURE 7B)

SAMPLING DATE: SUMMER 1985

<u>SAMPLING LOCATION</u>	<u>DEPTH (feet)</u>	<u>PCB CONCENTRATION (ppm)^a</u>
1	1	25
	3	13
2	1	120 (286)
3A	1	1000
3B	1	34 (103)
	3	ND (2.2)
4A	Surface	2600 (2800)
5	1	ND
	3	ND
6	1	240 (2540)
	3	ND (0.646)
7	1	ND (0.306)
	3	ND (0.149)
8	1	ND (18)
	3	ND (0.344)
9	1	120 (196)
	2 ^b	700 (4410)

^a ND = Not Detected; concentration is <1.0 ppm. The number in parentheses is the result for a field split of the sample. The detection limit for the field splits was 0.004 ppm.

^b An obstacle prevented sampling below 2 feet at this location.

Source: Fleischhauer et al., 1986 (GJ-40)

Note: See Figure 7B for sampling locations. Samples were collected from accumulated soil in sumps in the concrete containment structure. Samples were not taken beneath the concrete floor in the pipe gallery area. This accumulated soil has since been removed. The entire catch basin was steam cleaned in July 1989 and asphalt waterproofing material applied to the floor and walls.

TABLE 3

PCB CONCENTRATIONS IN SHALLOW BORINGS,
1987 AND 1988
(SEE FIGURE 7C)

SAMPLING DATE: 1987-1988

<u>SAMPLE NUMBER</u>	<u>LOCATION</u>	<u>DEPTH (ft)</u>	<u>PCB CONCENTRATION (ppm)</u>
B-28	North of Substn 18 (SWMU 11)	3	ND
B-29	Midway between Bldgs. 57 and 75	4 5	ND ND
1031-1	20 ft south of Bldg. 90	2 2	1400 1480
1031-2	20 ft south of SW corner of Bldg. 90	2	54
1031-3	8 ft west of Bldg. 90	2	3

ND = Not Detected; concentration is <1.0 ppm

TABLE 4

002 STORM SEWER LATERAL SOIL BORING ANALYTICAL RESULTS
(SEE FIGURE 7D)

SAMPLING DATE: SUMMER 1985

BORING NUMBER	RANGE OF PCB CONCENTRATIONS (ppm) ^a		MAXIMUM DEPTH OF CONTAMINATION (feet)	NUMBER OF SAMPLES	
	MINIMUM	MAXIMUM		ANALYZED	CONTAMINATED
E85-1	ND	ND	0	5	0
-2	ND	2.3	15	5	1
-3	5.1	13.0	6	2	2
-4	2.2	14.0	19.5	6	6
K85-1	ND	2.1	3	6	1
-2	ND	1.8	3	6	1
N85-2	2.0	4.7	6	3	3

SAMPLING POINTS NOT IN PLATING BUILDING INVESTIGATION AREA

-3	2.3	32.0	19.5	6	6
-4	ND	3.3	19.5	6	4
T85-1	1.9	20.0	19.5	6	6
-2	2.0	3.1	19.5	6	6
W85-1	1.6	2.9	19.5	6	6

^a ND = Not Detected; concentration is <1.0 ppm.

Source: Fleischhauer et al., 1986 (GJ-40)

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TABLE 5A

PLATING BUILDING SOIL BORINGS
PCB CONCENTRATIONS
(SEE FIGURE 7E)
(PAGE 1 OF 2)

SAMPLING DATE: SUMMER 1988

BOREHOLE NUMBER	SAMPLE DEPTH	PCB CONCENTRATION, PPM						OTHER
		3 FT	6 FT	9 FT	12 FT	15 FT	18 FT	
57-01	<D.L.		0.35					
57-02	<D.L.							
57-03		-----NO SAMPLES RETRIEVED - CONCRETE-----						
57-04	<D.L.	<D.L.						
57-05	<D.L.	<D.L.						
57-06	<D.L.	<D.L.						
57-07		-----NO SAMPLES RETRIEVED - CONCRETE-----						
57-08	3120	940	47.5	128	8.58			
57-09	0.9	0.4	<D.L.	<D.L.				
57-10	<D.L.	<D.L.						
57-11	<D.L.	<D.L.						
57-12	205	113	275	2.85	20.0			
57-13R	<D.L.	<D.L.						
57-13	0.25	---HIT CONCRETE AT 3.5 FT---						
57-14	<D.L.	0.60	0.88					
57-15	<D.L.	<D.L.			<D.L.			
57-16	<D.L.	<D.L.						
57-17	<D.L.	<D.L.						
57-18	<D.L.	<D.L.	<D.L.					
57-19	<D.L.	<D.L.						
57-20	<D.L.	<D.L.						
57-21	<D.L.	0.81	15.9					
57-22	<D.L.	<D.L.	<D.L.	<D.L.	<D.L.			
57-23	<D.L.	0.4	<D.L.	<D.L.	<D.L.			
57-24	158	2.5	2.4	1.3	0.33			
57-25	3.67	-----NO SAMPLES RETRIEVED-----						
57-26	NO SAMPLE	2.2				21.5	152	AT 11 FT: 10.6
57-27	<D.L.	<D.L.	0.24	0.25	6.16	4.2		
57-28	0.68	55.2	0.91	410	5.0			
57-29	34.0	129	20.5	2030	2010			AT 8 FT: 587

TABLE 5A

PLATING BUILDING SOIL BORINGS
 PCB CONCENTRATIONS
 (SEE FIGURE 7E)
 (PAGE 2 OF 2)

<u>BOREHOLE NUMBER</u>	<u>SAMPLE DEPTH</u>	<u>PCB CONCENTRATION, PPM</u>						
		<u>3 FT</u>	<u>6 FT</u>	<u>9 FT</u>	<u>12 FT</u>	<u>15 FT</u>	<u>18 FT</u>	<u>OTHER</u>
57-30	0.27	<D.L.	<D.L.	<D.L.	0.19	<D.L.		
57-31R		<D.L.	<D.L.	<D.L.	<D.L.	<D.L.		
57-32	214	0.67	0.16	0.64	<D.L.			
57-33	<D.L.	<D.L.	0.17	0.20	<D.L.			
57-34	0.56	0.67	<D.L.	0.31	<D.L.		<D.L.	
E 85-3	5.1	13.0						
E 85-4	2.2	9.7	14.0	8.5	5.0		3.1	
B 28	<1							
B 29		<1						

* Total PCBs
 <D.L. - Below detectable limits

TABLE 5B

PLATING BUILDING SOIL BORINGS
 EP TOXICITY METALS (mg/l)*
 (SEE FIGURE 7E)

SAMPLING DATE: SUMMER 1988

SAMPLE # (DEPTH)	Ar	Ba	Cd	Cr	Pb	Hg	Se	Ag
57-01 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-02 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-02 (9')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-05 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-05 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-06 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-08 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-09 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-09 (9')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-10 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-11 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-12 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-13 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-13R (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-14 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-15 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-16 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-16 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-17 (3')	0.25	5.0	0.05	0.25	0.260**	0.01	0.05	0.25
57-18 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-19 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-20 (6')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-21 (3')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-35 (0')	0.25	5.0	0.05	0.25	0.25	0.01	0.05	0.25
57-36 (0')	0.25	5.0	0.05	0.25	0.26	0.01	0.05	0.25

* All values are nondetected at detection levels shown unless otherwise stated.

** Actual concentration

TABLE 6

SOIL BORING PETROLEUM HYDROCARBONS AND VOLATILE ORGANICS ANALYSES

SAMPLING DATE: SUMMER 1988

<u>SAMPLE #</u> <u>(DEPTH)</u>	<u>TPHC CONCENTRATION</u> <u>(mg/kg)</u>	<u>VOC CONCENTRATION</u> <u>(mg/kg)</u>
57-12 (9')	745	
57-16 (12')	156	
57-16 (15')	77	
57-18 (9')	94	
57-21 (12')	242	
57-21 (15')	166	
57-35 (3')	<5	
57-36 (3')	<5	
B-7 (5')	3300	
B-7 (12')	1270	
B-8 (2.5')	348	
B-29 (4.5')	381	
B-29 (5.5')	356	
57-09 (3')		None Detectable
57-09 (6')		None Detectable
57-09 (9')		None Detectable
57-14 (9')		None Detectable
57-15 (15')		None Detectable
57-18 (9')		None Detectable

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TABLE 7

DEPARTMENT 26 SOIL SAMPLES
PCB ANALYSES

SAMPLING DATE: JULY 1988

SAMPLE NUMBER *	RESULT (mg/kg)	AROCLOR
X-1	1.9	1242
X-2	118	1232
X-3	1,250	1232
X-4	27	1232

* See Figure 7 for location of samples (between columns M and O inside the Main Manufacturing Building.) This data is also addressed in the Department 26 RFI Report, as part of SWMU 31.

(Revised July 1993--Replaces Apr. 1993 Appendix A--Table 7 page.)

ZONE	EP Toxic Metals (mg/l)										TOTAL	PCBs	
	ANALYTE (Parameter):	ARSENIC	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	SELENIUM	SILVER	CYANIDE			
	EP Toxicity Limits (mg/l):	5	100	1	5	5	0.2	1	5	mg/kg	mg/kg		
(See Figs. 9 thru 12)	Method Detection Limit (MDL)	0.25	5	0.050	0.25	0.25	0.010	0.05	0.25	0.01	1	Aroclor	
SAMPLE NO.	TYPE*	*Note: SED=sediment grab sample; CON=concrete surface chip sample; -- (dash): not applicable or parameter not analysed. (See Appendix A Figures 9 thru 12.)											
ND= non-detection (<MDL).													
1	11630	SED	ND	ND	0.466	ND	ND	ND	ND	ND	0.09	140	1248
1	11520	CON	ND	ND	0.106	ND	ND	ND	ND	ND	ND	36	1248
2	11670	CON	ND	ND	ND	4.91	ND	ND	ND	ND	0.03	7.60	1248
2	11680	SED	ND	ND	1.37	ND	21.60	ND	ND	ND	0.74	41	1248
3	11690	CON	ND	ND	1.43	0.40	ND	ND	ND	ND	0.42	12	1248
3	11620	SED	ND	ND	1.24	ND	ND	ND	ND	ND	0.48	58	1248
5	11860	CON	ND	ND	2.62	ND	0.27	ND	ND	ND	0.37	ND	---
5	11700	SED	ND	ND	7.15	27.50	ND	ND	ND	ND	0.22	38	1248
6	11870	CON	ND	ND	0.39	ND	0.45	ND	ND	ND	0.10	12	1248
6	11600	SED	ND	ND	3.52	0.41	ND	ND	ND	ND	2.34	88	1248
7	11880	CON	ND	ND	0.054	ND	0.67	ND	ND	ND	0.08	3.10	1248
7	11530	SED	ND	ND	1.53	0.41	ND	ND	ND	ND	1.30	2.30	1248
8	11890	CON	ND	ND	ND	ND	ND	ND	ND	ND	0.41	3	1248
8	11610	SED	ND	ND	1.73	1.08	0.39	ND	ND	ND	3.79	8.90	1248
9	11900	CON	ND	ND	0.062	ND	0.30	ND	ND	ND	1.14	12	1248
9	11550	SED	ND	ND	3.65	8.50	1.69	ND	ND	ND	1.24	23	1248
10	11910	CON	ND	ND	0.092	ND	0.26	ND	ND	ND	0.20	9.80	1248
10	11640	SED	ND	ND	1.35	ND	ND	ND	ND	ND	3.20	ND	---
11	11920	CON	ND	ND	0.121	ND	ND	ND	ND	ND	1.11	3.80	1248
11	11660	SED	ND	ND	0.364	ND	ND	ND	ND	ND	1.68	20	1248
12	11930	CON	ND	ND	0.110	ND	ND	ND	ND	ND	0.76	ND	---
12	11540	SED	ND	ND	0.631	ND	ND	ND	ND	ND	0.69	3	1248
13	11940	CON	ND	ND	0.082	ND	ND	ND	ND	ND	7.51	ND	---
13	11650	SED	ND	ND	1.900	ND	ND	ND	ND	ND	38.30	5.10	1248
14	11950	CON	ND	ND	0.082	ND	2.76	ND	ND	ND	1.97	ND	---
14	12010	SED	ND	ND	0.436	ND	ND	ND	ND	ND	15.90	18	1248
15	11960	CON	ND	ND	ND	ND	0.31	ND	ND	ND	2.50	11	1248
15	12020	SED	ND	ND	1.650	ND	ND	ND	ND	ND	8.74	3.70	1248

Table 8: Building 57 Foundation Sampling (August 1989)--Preceding Partial Demolition and Site Paving.

ZONE	ANALYTE (Parameter):	EP Toxic Metals (mg/l)									TOTAL	PCBs	
		ARSENIC	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	SELENIUM	SILVER	CYANIDE	mg/kg		
		5	100	1	5	5	0.2	1	5	mg/kg	mg/kg	Aroclor	
(See Figs. 9 thru 12)	Method Detection Limit (MDL)	0.25	5	0.050	0.25	0.25	0.010	0.05	0.25	0.01	1		
	SAMPLE NO.	TYPE*	*Note: SED=sediment grab sample; CON=concrete surface chip sample; -- (dash): not applicable or parameter not analysed. (See Appendix A Figures 9 thru 12.)										
			ND= non-detection (<MDL).										
16	11970	CON	ND	ND	0.094	ND	0.37	ND	ND	ND	1.25	ND	--
16	12030	SED	ND	ND	0.593	ND	1.91	ND	ND	ND	1.87	30	1248
17	11980	CON	ND	ND	ND	ND	0.26	ND	ND	ND	0.44	1.60	1248
17	12040	SED	ND	ND	0.093	ND	ND	ND	ND	ND	0.05	2.70	1248
18	11990	CON	ND	ND	ND	ND	0.33	ND	ND	ND	0.33	ND	--
18	12050	SED	ND	ND	0.226	ND	ND	ND	ND	ND	2.04	18	1248
19	12070	CON	ND	ND	0.077	ND	ND	ND	ND	ND	0.03	ND	--
19	12060	SED	ND	ND	0.362	ND	ND	ND	ND	ND	1.36	3.60	1248
20	12000	CON	ND	ND	0.087	ND	0.31	ND	ND	ND	0.09	ND	--
20	12080	SED	ND	ND	0.235	ND	ND	ND	ND	ND	0.70	10	1248
21	12100	CON	ND	ND	0.064	ND	0.25	ND	ND	ND	0.61	17	1248
21	12090	SED	ND	ND	0.625	ND	ND	ND	ND	ND	9.85	2	1248
22	12490	CON	ND	ND	0.791	ND	ND	ND	ND	ND	0.22	ND	--
22	12110	SED	ND	ND	0.342	ND	ND	ND	ND	ND	1	4.20	1248
23	12500	CON	ND	ND	0.128	ND	0.83	ND	ND	ND	2.81	ND	--
23	12140	SED	ND	ND	0.380	ND	0.52	ND	ND	ND	5.75	ND	--
24	12510	CON	ND	ND	0.066	ND	ND	ND	ND	ND	0.33	4	1248
24	12150	SED	ND	ND	0.107	0.30	0.31	ND	ND	ND	1.26	11	1248
25	12520	CON	ND	ND	ND	ND	ND	ND	ND	ND	0.60	ND	--
25	12160	SED	ND	ND	0.440	ND	1.06	ND	ND	ND	1.54	4.30	1016
26	12530	CON	ND	ND	ND	ND	0.25	ND	ND	ND	0.87	ND	--
26	12170	SED	ND	ND	0.211	NS	0.33	ND	ND	ND	5.53	2	1248
27	12540	CON	ND	ND	0.074	ND	ND	ND	ND	ND	3.19	3.30	1248
27	12180	SED	ND	ND	0.160	ND	ND	ND	ND	ND	1.89	40	1248
28	12550	CON	ND	ND	0.054	ND	ND	ND	ND	ND	0.04	ND	--
28	12190	SED	ND	ND	0.073	ND	ND	ND	ND	ND	2.19	ND	--
29	12560	CON	ND	ND	ND	ND	0.27	ND	ND	ND	ND	3.60	1248
29	12200	SED	ND	ND	0.254	ND	ND	ND	ND	ND	2.70	18	1248

Table 8: Building 57 Foundation Sampling (August 1989)--Preceding Partial Demolition and Site Paving.

ZONE <small>(See Figs. 9 thru 12)</small>	EP Toxic Metals (mg/l)										TOTAL	PCBs	
	ANALYTE (Parameter):	ARSENIC	BARIIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	SELENIUM	SILVER	CYANIDE	mg/kg	mg/kg	Aroclor
	EP Toxicity Limits (mg/l):	5	100	1	5	5	0.2	1	5	mg/kg	mg/kg		
Method Detection Limit (MDL)	0.25	5	0.050	0.25	0.25	0.010	0.05	0.25	0.01	1			
SAMPLE NO.	TYPE*	*Note: SED=sediment grab sample; CON=concrete surface chip sample; -- (dash): not applicable or parameter not analysed. (See Appendix A Figures 9 thru 12.)											
ND= non-detection (<MDL).													
30	12570	CON	ND	ND	0.052	ND	ND	ND	ND	ND	4.56	2.40	1248
30	12210	SED	ND	ND	9.940	0.95	ND	ND	ND	ND	18.19	39	1248
31	12580	CON	ND	ND	0.144	ND	ND	ND	ND	ND	0.55	3.70	1248
31	12220	SED	ND	ND	0.436	ND	ND	ND	ND	ND	77.04	11	1248
32	12590	CON	ND	ND	0.663	ND	ND	ND	ND	ND	1.02	13	1248
32	12230	SED	ND	ND	3.970	ND	0.27	ND	ND	ND	7.01	45	1248
33	12600	CON	ND	ND	0.096	ND	ND	ND	ND	ND	0.09	ND	---
33	12240	SED	ND	ND	0.493	ND	ND	ND	ND	ND	14.45	60	1248
34	12610	CON	ND	ND	0.064	ND	ND	ND	ND	ND	0.41	650	1248
34	12250	SED	ND	ND	0.603	ND	ND	ND	ND	ND	0.70	380	1248
35	12620	CON	ND	ND	0.050	ND	0.330	ND	ND	ND	0.11	ND	---
35	12260	SED	ND	ND	0.403	ND	0.390	ND	ND	ND	0.21	3.90	1248
36	12630	CON	ND	ND	0.081	ND	0.270	ND	ND	ND	0.10	ND	---
36	12270	SED	ND	ND	0.167	4.040	1.610	ND	ND	ND	0.91	2.80	1248
37	12640	CON	ND	ND	0.066	3.960	0.320	ND	ND	ND	0.19	ND	---
37	12280	SED	ND	ND	0.372	0.260	ND	ND	ND	ND	7.75	12	1248
38	12650	CON	ND	ND	0.063	ND	0.380	ND	ND	ND	1.93	1.30	1248
38	12290	SED	ND	ND	0.100	ND	0.250	ND	ND	ND	0.33	4	1248
39	12660	CON	ND	ND	0.052	3.420	0.340	ND	ND	ND	0.63	ND	---
39	12300	SED	ND	ND	0.179	ND	0.260	ND	ND	ND	4.56	2.50	1248
40	12670	CON	ND	ND	0.055	0.520	0.330	ND	ND	ND	1.58	ND	---
40	12310	SED	ND	ND	0.058	ND	ND	ND	ND	ND	1.88	2.40	1248
41	12680	CON	ND	ND	0.070	ND	0.350	ND	ND	ND	0.23	5.70	1248
41	12320	SED	ND	ND	0.076	ND	ND	ND	ND	ND	0.53	ND	---
42	12690	CON	ND	ND	0.064	ND	0.340	ND	ND	ND	2.35	ND	---
42	12330	SED	ND	ND	1	2	0.820	ND	ND	ND	4.50	ND	---
43	12700	CON	ND	ND	0.046	ND	0.300	ND	ND	ND	0.59	ND	---
43	12340	SED	ND	ND	0.477	ND	ND	ND	ND	ND	1.46	7.40	1248

Table 8: Building 57 Foundation Sampling (August 1989)--Preceding Partial Demolition and Site Paving.

ZONE	EP Toxic Metals (mg/l)										TOTAL	PCBs	
	ANALYTE (Parameter):	ARSENIC	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	SELENIUM	SILVER	CYANIDE	mg/kg	mg/kg	Aroclor
	EP Toxicity Limits (mg/l):	5	100	1	5	5	0.2	1	5	mg/kg	mg/kg		
(See Figs. 9 thru 12)	Method Detection Limit (MDL)	0.25	5	0.050	0.25	0.25	0.010	0.05	0.25	0.01	1	Aroclor	
	SAMPLE NO.	TYPE*	*Note: SED=sediment grab sample; CON=concrete surface chip sample; -- (dash): not applicable or parameter not analysed. (See Appendix A Figures 9 thru 12.)										
			ND= non-detection (<MDL).										
44	12710	CON	ND	ND	0.100	ND	0.360	ND	ND	ND	7.60	12	1248
44	12350	SED	ND	ND	0.773	ND	ND	ND	ND	ND	5.60	6	1248
45	12720	CON	ND	ND	0.159	ND	0.270	ND	ND	ND	12.20	6.20	1248
45	12360	SED	ND	ND	0.868	ND	0.250	ND	ND	ND	11.90	7	1248
46	12730	CON	ND	ND	0.101	ND	0.310	ND	ND	ND	10.90	3.20	1248
46	12370	SED	ND	ND	0.526	ND	0.250	ND	ND	ND	1.38	7	1248
47	12740	CON	ND	ND	0.212	ND	0.460	ND	ND	ND	15.60	5.10	1248
47	12380	SEC	ND	ND	0.156	ND	ND	ND	ND	ND	1.24	4	1248
48	12750	CON	ND	ND	0.107	ND	0.410	ND	ND	ND	23.50	3.40	1248
48	12390	SED	ND	ND	0.470	ND	0.330	ND	ND	ND	7.36	16	1248
49	12760	CON	ND	ND	1.270	ND	0.410	ND	ND	ND	4.50	8.20	1248
49	12400	SED	ND	ND	0.364	ND	ND	ND	ND	ND	0.28	13	1248
50	12770	CON	ND	ND	0.053	ND	0.390	ND	ND	ND	2.87	8	1248
50	12410	SED	ND	ND	0.602	ND	ND	ND	ND	ND	25.10	13	1248
51	12780	CON	ND	ND	0.247	ND	0.360	ND	ND	ND	11.80	2.30	1248
51	12420	SED	ND	ND	0.555	ND	0.310	ND	ND	ND	44.30	21	1248
52	12790	CON	ND	ND	0.073	ND	0.350	ND	ND	ND	1.76	2.20	1248
52	12430	SED	ND	ND	0.468	ND	0.610	ND	ND	ND	30.70	11	1248
53	12800	CON	ND	ND	0.059	ND	0.400	ND	ND	ND	7.47	ND	---
54	12810	SED	ND	ND	1.300	ND	17.900	0.010	ND	ND	20.90	ND	---
56	12820	SED	ND	ND	0.641	ND	7.210	ND	ND	ND	6.39	490	1248
55	--	SED	No sediment was found at this location										
57	--	SED	No sediment was found at this location										
58	--	SED	No sediment was found at this location										
59	--	SED	No sediment was found at this location										

Table 8: Building 57 Foundation Sampling (August 1989)--Preceding Partial Demolition and Site Paving.

(See Footnotes, page 4.)

				RCRA Heavy Metals List												
SAMPLE #	LOCATION	TYPE	Date	ANALYTE (Parameter):	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN	PCBs, ppm		
				Secondary Parameter:	Total	Total	Total	Total HxvInt	Total	Total	Total	Total	Total	--	Aroclor	
				LIQUIDS MDL (mg/l):	0.010	0.10	0.010	0.010	0.10	0.001	0.010	0.010	0.001	0.0001	(A)-MDL	
				SOLIDS MDL (mg/kg):	--	--	--	--	--	--	--	--	--	--	Footnotes	
				Note: -- (dash) indicates not applicable, or parameter not analysed. (See Figures 9 thru 12.)												
				MDL: Method Detection Limit; ND: non-detection (< MDL).												
Sump #1	Acid pit, north	Water	09/26/89	--	--	--	ND	--	--	--	--	--	0.018	0.0027	1242(A)	
Sump #2	Acid pit, south	Water	09/26/89	0.069	--	--	5.60	--	--	--	--	--	0.003	0.0010	1242(A)	
Sump #3	Acid pit, east	Water	09/26/89	--	--	--	13.36	--	--	--	--	--	0.002	ND	(A)	
Sump #4	Indus.Waste pit	Water	09/26/89	--	--	--	ND	--	--	--	--	--	0.001	ND	(A)	
D-97 Pool#1	Treated, Pool #1	Water	09/26/89	--	--	--	70.7	--	--	--	--	--	0.020	0.0013	1242(A)	
D-97 Pool#2	Treated, Pool #2	Water	10/09/89	--	--	--	11.0	--	--	--	--	--	0.002	0.0002	1242(A)	
7914-016	Treated, Skid tank	Water	10/10/89	--	--	--	--	--	--	--	--	--	--	ND	(A)	
7914-022	Treated, Pool #3	Water	10/16/89	--	--	--	--	--	--	--	--	--	--	ND	(A)	
7914-023	Treated, Pool #1	Water	10/17/89	ND	--	--	--	--	--	--	--	--	0.0022	1242(A)		
7914-024	Treated, Pool #2	Water	10/17/89	ND	--	--	--	--	--	--	--	--	--	ND	--	
7914-025	Treated, Pool #3	Water	10/17/89	ND	--	--	--	--	--	--	--	--	--	ND	--	
7914-026	Skid Tank	Water	10/17/89	ND	--	--	--	--	--	--	--	--	0.0025	1242		
7914-028	Treated, Pool #3	Water	10/20/89	ND	--	--	--	--	--	--	--	--	--	ND	--	
7914-029	Ponded, zone 4	Water	10/31/89	ND	--	--	3.81	--	--	--	--	--	0.004	ND	--	
7914-030	Ponded zones 31, 32	Water	10/31/89	ND	--	--	0.10	--	--	--	--	--	0.001	ND	--	
7914-031	Treated, Pool #2	Water	10/31/89	ND	--	--	--	--	--	--	--	--	--	ND	--	
7914-032	Treated, Pool #2	Water	11/07/89	ND	--	--	--	--	--	--	--	--	--	ND	--	
1547-041	Ponded, zones 26-29	Water	11/21/89	ND	0.674	0.019	0.605(B)	0.203	0.003	ND	0.01	0.022	ND	--		

Additional Parameter--Copper: 0.253 mg/l (MDL: 0.10 mg/l).

Table 9: Verification Sampling - Building 57 Foundation During Partial Demolition.

(See Footnotes, page 4.)

				RCRA Heavy Metals List													
SAMPLE #	LOCATION	TYPE	Date	ANALYTE (Parameter):	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN	PCBs, ppm			
				Secondary Parameter:	Total	Total	Total	Total HxvInt	Total	Total	Total	Total	Total	Total	--	Aroclor	
				LIQUIDS MDL (mg/l):	--	--	--	--	--	--	--	--	--	--	--	--	
				SOLIDS MDL (mg/kg):	0.25	5.0	0.050	0.010	0.25	0.010	0.010	0.050	0.001	1.0			

Note: -- (dash) indicates not applicable, or parameter not analysed. (See Figures 9 thru 12.)
 MDL: Method Detection Limit; ND: non-detection (< MDL).

R-1	South of zone 57	Soil	09/28/89	ND	--	--	8.14	--	--	--	--	--	ND	ND	--
R-2	South of zone 56	Soil	09/28/89	ND	--	--	8.86	--	--	--	--	--	ND	ND	--
R-3	South of zone 55	Soil	09/28/89	ND	--	--	9.80	--	--	--	--	--	ND	ND	--
R-4	South of zone 54	Soil	09/28/89	ND	--	--	9.66	--	--	--	--	--	ND	ND	--
R-5	South of zone 59	Soil	09/28/89	ND	--	--	1.03	--	--	--	--	--	ND	ND	--
R-6	South of zone 58	Soil	09/28/89	ND	--	--	6.42	--	--	--	--	--	ND	ND	--

Table 9: Verification Sampling - Building 57 Foundation During Partial Demolition.

(See Footnotes, page 4.)

Sample #	Location	TYPE	Date	RCRA EP Toxic Metals (mg/l)									TOTAL	PCBs		
				ANALYTE (Parameter):	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN	mg/kg	mg/kg	Aroclor
				EP Toxicity Limits (mg/l):	5	100	1	5	5	0.2	1	5	mg/kg	mg/kg		
MDL (mg/l):	0.25	5.0	0.050	0.25	0.25	5	0.050	0.25	0.01	1.0						
				Note: -- (dash) indicates not applicable, or parameter not analysed. (See Figures 9 thru 12.)												
				MDL: Method Detection Limit; ND: non-detection (< MDL).												
7914-007	Zone 4, north lateral	Soil	09/29/89	ND	ND	ND	0.076	ND	ND	ND	ND	ND	ND	ND	--	
7914-008	Zone 4, south lateral	Soil	09/29/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04	ND	--	
7914-009	Zone 4, trench floor	Soil	09/29/89	ND	ND	ND	ND	0.83	ND	ND	ND	ND	ND	ND	--	
7914-010	Zone 17, hole in slab	Soil	09/29/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	ND	--	
7914-011	Under zones 5 and 6	Soil	10/02/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	
7914-012	Under zones 2 and 3	Soil	10/02/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	ND	--	
7914-013	Hole at E wall, zone 4	Soil	10/02/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.197	ND	--	
7914-014	Sump pit sub-soil	Soil	10/02/89	ND	ND	0.05	0.26	ND	ND	ND	ND	ND	0.02	ND	--	
7914-015	Hole in slab, zone 36	Soil	10/09/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	
7914-017	Sump pit	Soil	10/13/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	
7914-020	NW corner, zone 37	Soil	10/13/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	ND	--	
7914-021	Hole in NW corner	Soil	10/13/89	ND	ND	ND	ND	0.37	ND	ND	ND	ND	ND	ND	--	
7914-033	West wall, zone 4	Soil	11/13/89	ND	ND	0.168	33.1*	0.32	ND	ND	ND	--	ND	ND	--	
1547-034	Under slab, zone 29	Soil	11/16/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12	ND	--	
1547-035	Under slab, zone 27	Soil	11/16/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	
1547-036	East end zones 26, 2	Soil	11/16/89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	
7914-027	Zone 33 flr @ W wall	Concr. chip	10/18/89	ND	ND	0.079	8.58	ND	ND	ND	ND	--	--	--	--	
1547-037	Middle of zone 28	Concr. chip	11/16/89	ND	ND	ND	6.95	ND	ND	ND	ND	0.18	ND	ND	--	
1547-038	Raised floor, zone 22	Concr. chip	11/17/89	ND	ND	ND	ND	ND	ND	ND	ND	0.04	50.0	1248	--	
1547-039	Floor drain, zone 44	Concr. chip	11/17/89	ND	ND	ND	ND	0.34	ND	ND	ND	0.05	ND	ND	--	
1547-040	West end Zone 7	Concr. chip	11/17/89	ND	ND	ND	ND	0.32	ND	ND	ND	0.02	ND	ND	--	

Table 9: Verification Sampling - Building 57 Foundation During Partial Demolition.

(See Footnotes below.)

ANALYTE (Parameter):	RCRA EP Toxic Metals (mg/l)									TOTAL	PCBs	
	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN	mg/kg	micro g / sq.cm	Aroclor
	5	100	1	5	5	0.2	1	5	0.01	0.10		
MDL (mg/l):	0.25	5.0	0.050	0.25	0.25	5	0.050	0.25	0.01	0.10		

Note: -- (dash) indicates not applicable, or parameter not analysed. (See Figures 9 thru 12.)

MDL: Method Detection Limit; ND: non-detection (< MDL).

Sample #	Location	TYPE	Date	As	Ba	Cd	Cr	Pb	Hg	Se	Ag	CN	PCBs
PBW-1	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-2	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-3	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-4E	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-5E	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-6E	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-7E	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-8E	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-9E	W. wall-Bldg 57 Foun	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-ION	N. wall-Bldg 57 Foun.	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --
PBW-IIN	N. wall-Bldg 57 Foun.	Wipe	10/10/89	--	--	--	--	--	--	--	--	--	ND --

Footnotes:

Type: Water: Liquid grab sample.

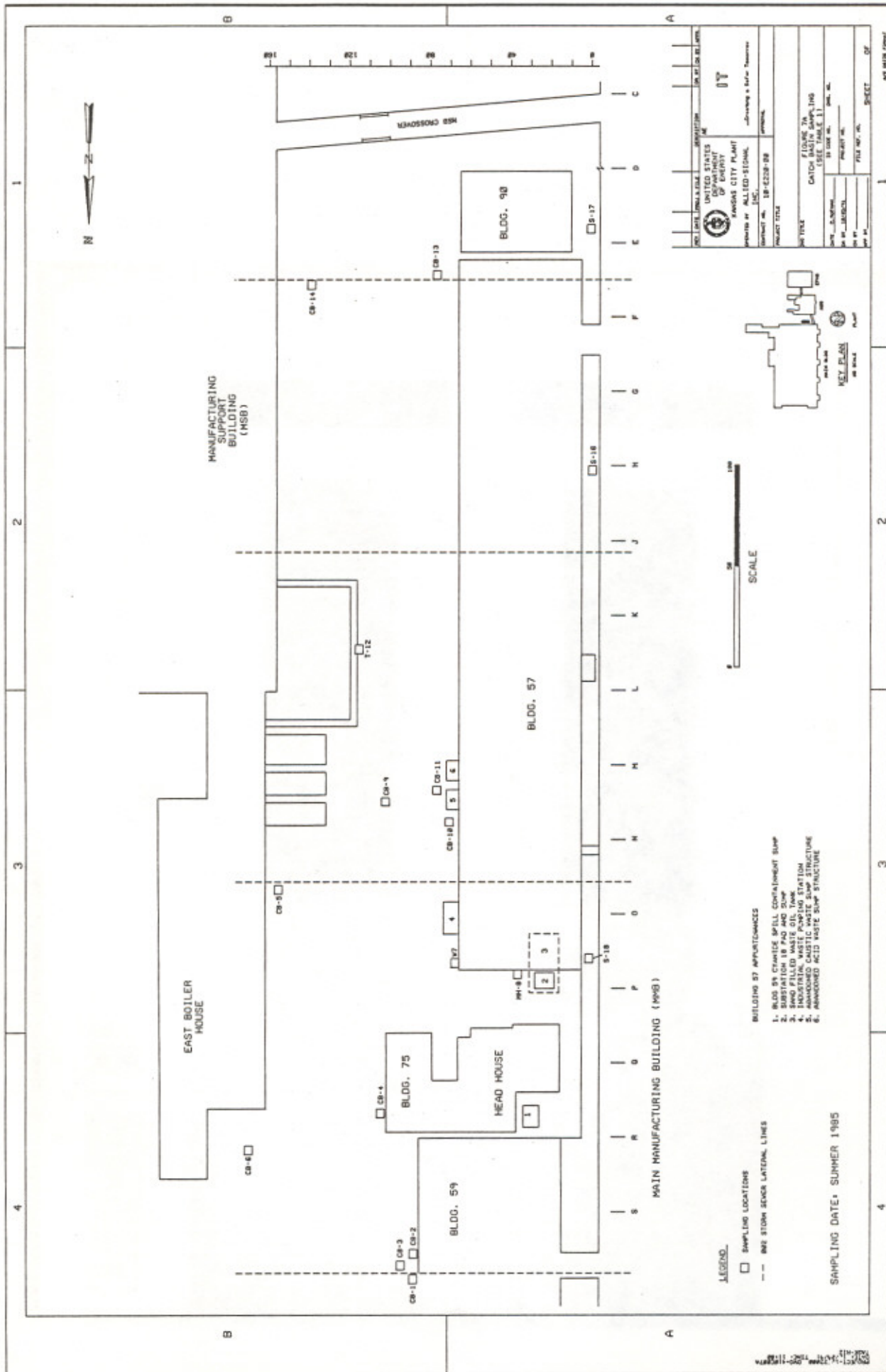
Soil: Soil grab sample.

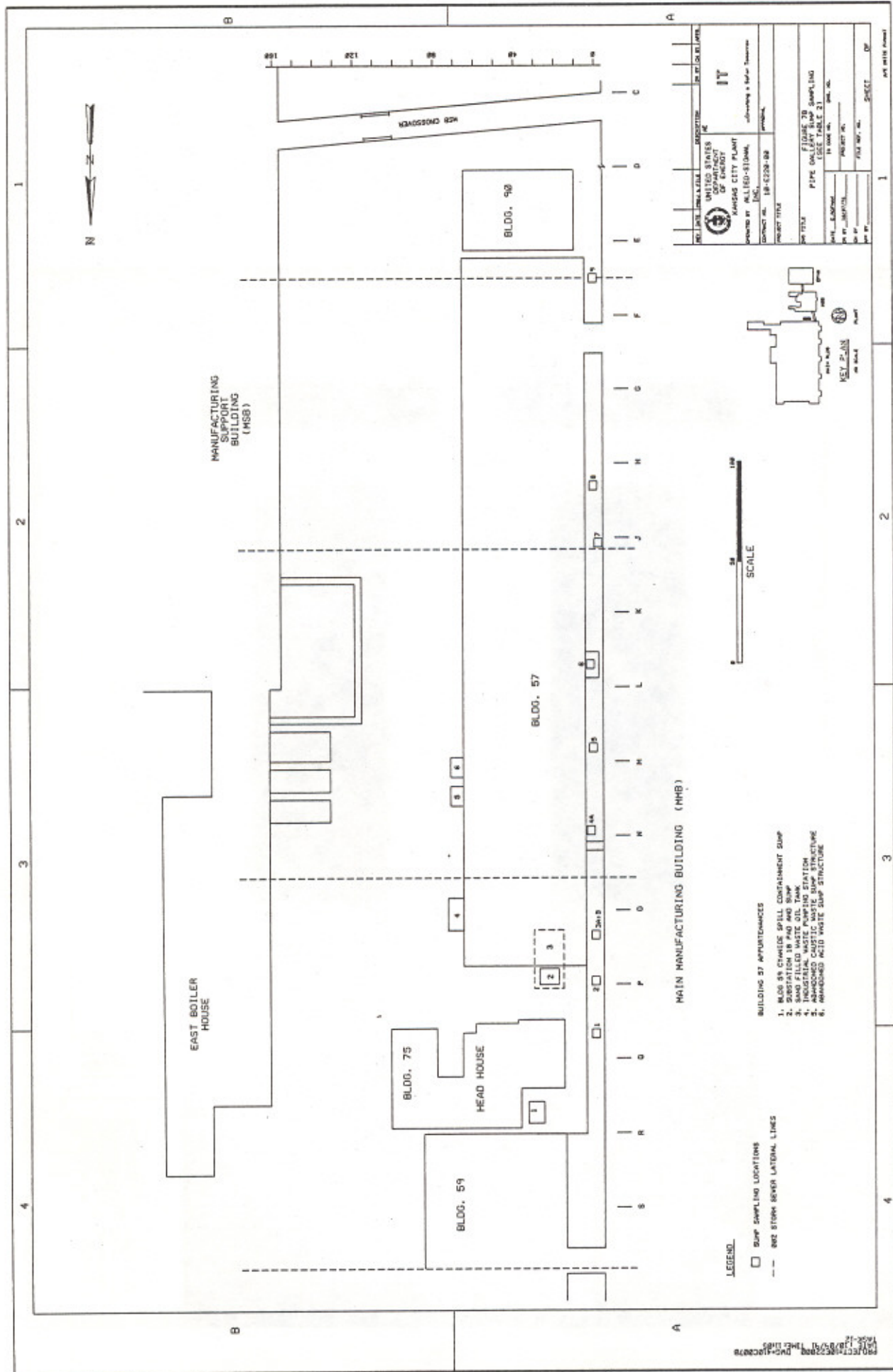
ND: Non-detection, (< MDL).

*--Analytical results exceed RCRA EP Toxicity regulatory threshold.

(A) Alternate method detection limit: (0.0010 mg/l)

(B) Alternate method detection limit: (0.10 mg/l)





PROJECT: 187-1988
 152-12
 10/27/91 THE/145
 DWG: 44037C

LEGEND:
 * BARS & MCDONNELL BORING LOCATIONS
 □ OTHER SAMPLING LOCATIONS
 --- BR2 STORM SEWER LATERAL LINES

SAMPLING DATE: 1987-1988

LEGEND:
 * BARS & MCDONNELL BORING LOCATIONS
 □ OTHER SAMPLING LOCATIONS
 --- BR2 STORM SEWER LATERAL LINES

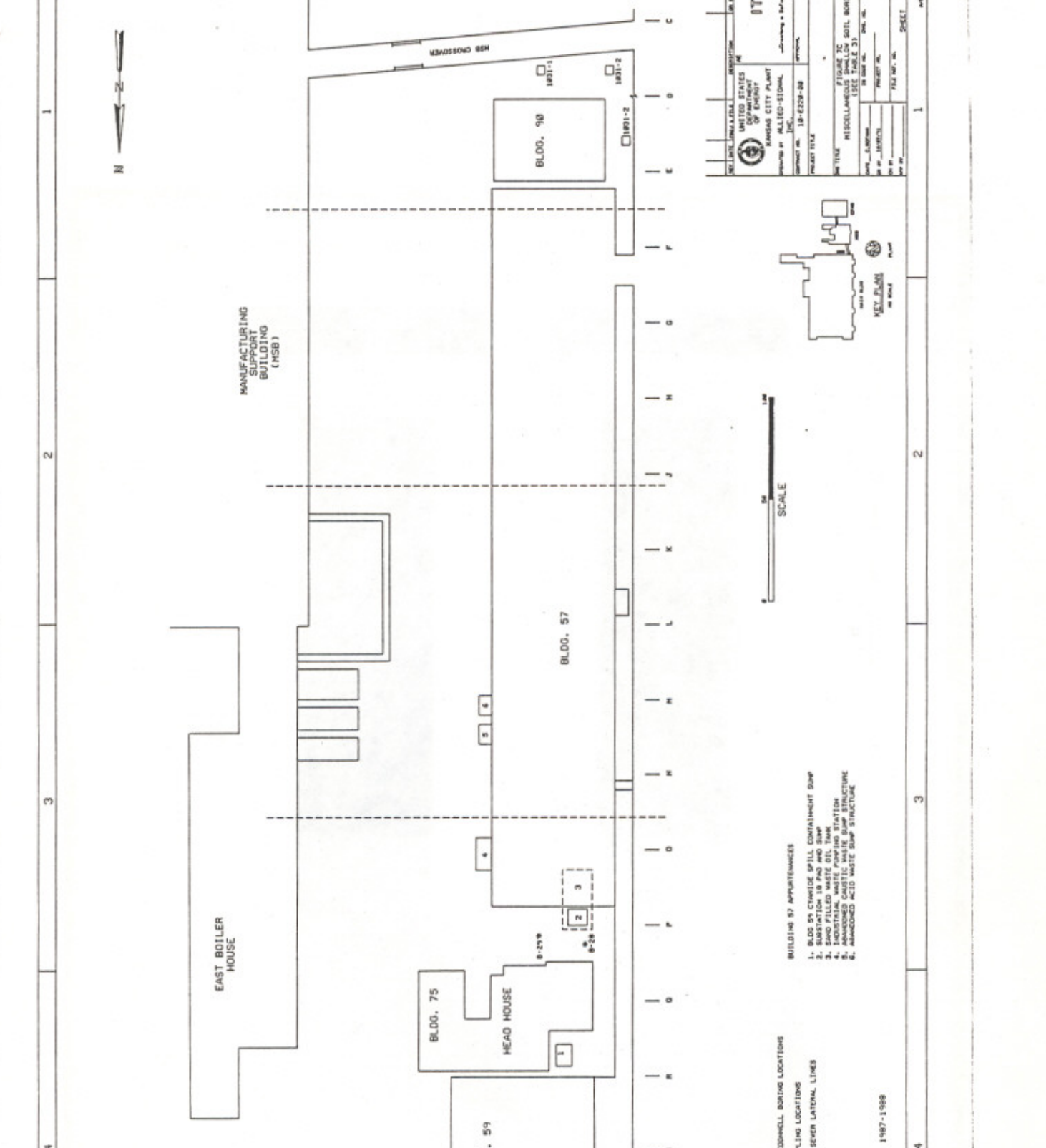
SAMPLING DATE: 1987-1988

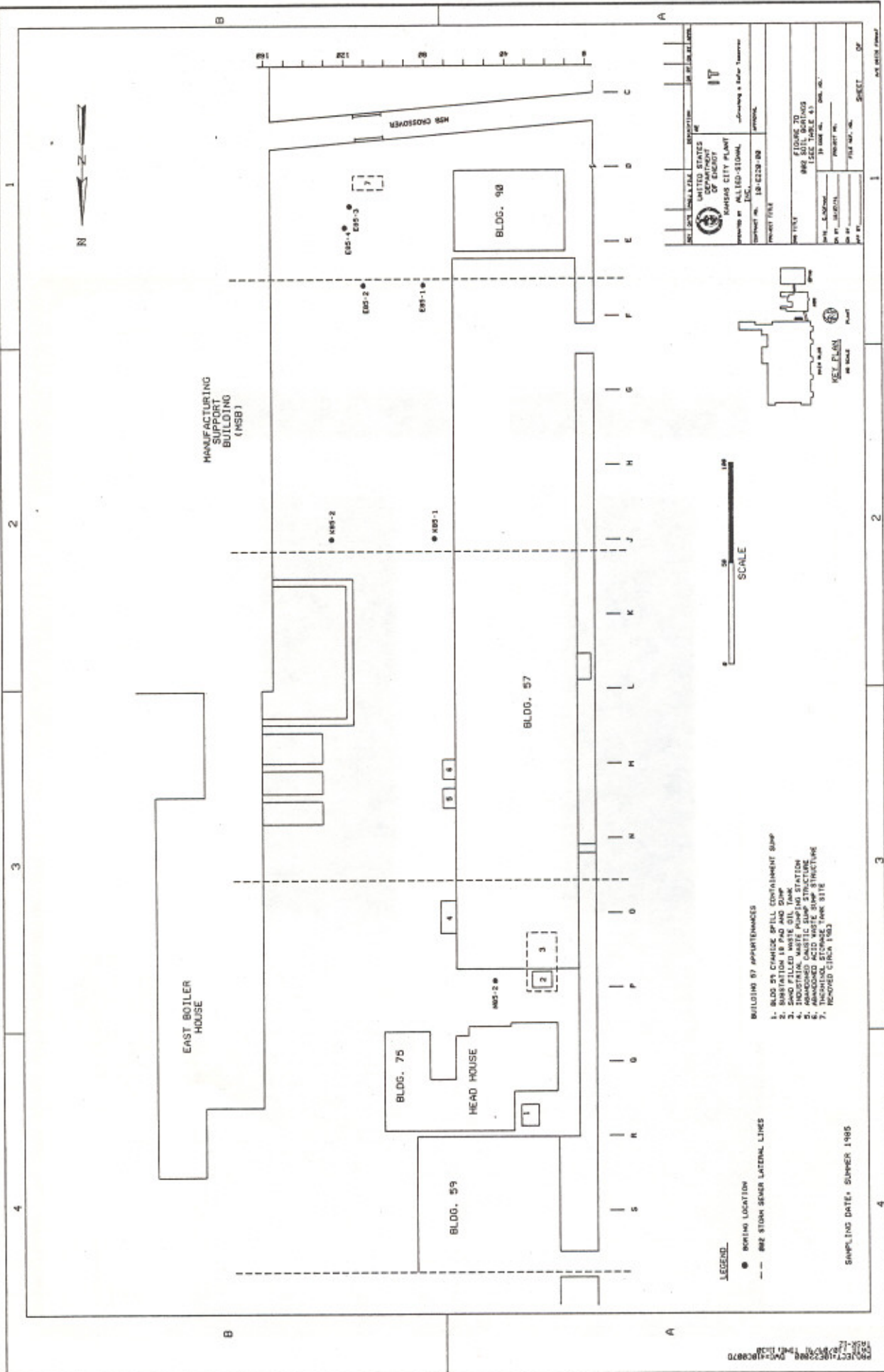
BUILDING 57 APPURTENANCES
 1. BLDG 57 CRACKED SPILL CONTAINMENT DUMP
 2. SUBSTATION 18 PND AND SUMP
 3. SAND FILLED WASTE OIL TANK
 4. INDUSTRIAL WASTE PUMPING STATION
 5. INDUSTRIAL WASTE PUMPING STATION
 6. ARMORED ACID WASTE SUMP STRUCTURE



SECTIONAL TITLE
 PROJECT TITLE
 CONTRACT NO. 187-1988
 DRAWING NO. 44037C
 SHEET NO. 1 OF 1

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 10/27/91





LEGEND

- BORING LOCATION
- MSB STORM SEWER LATERAL LINES

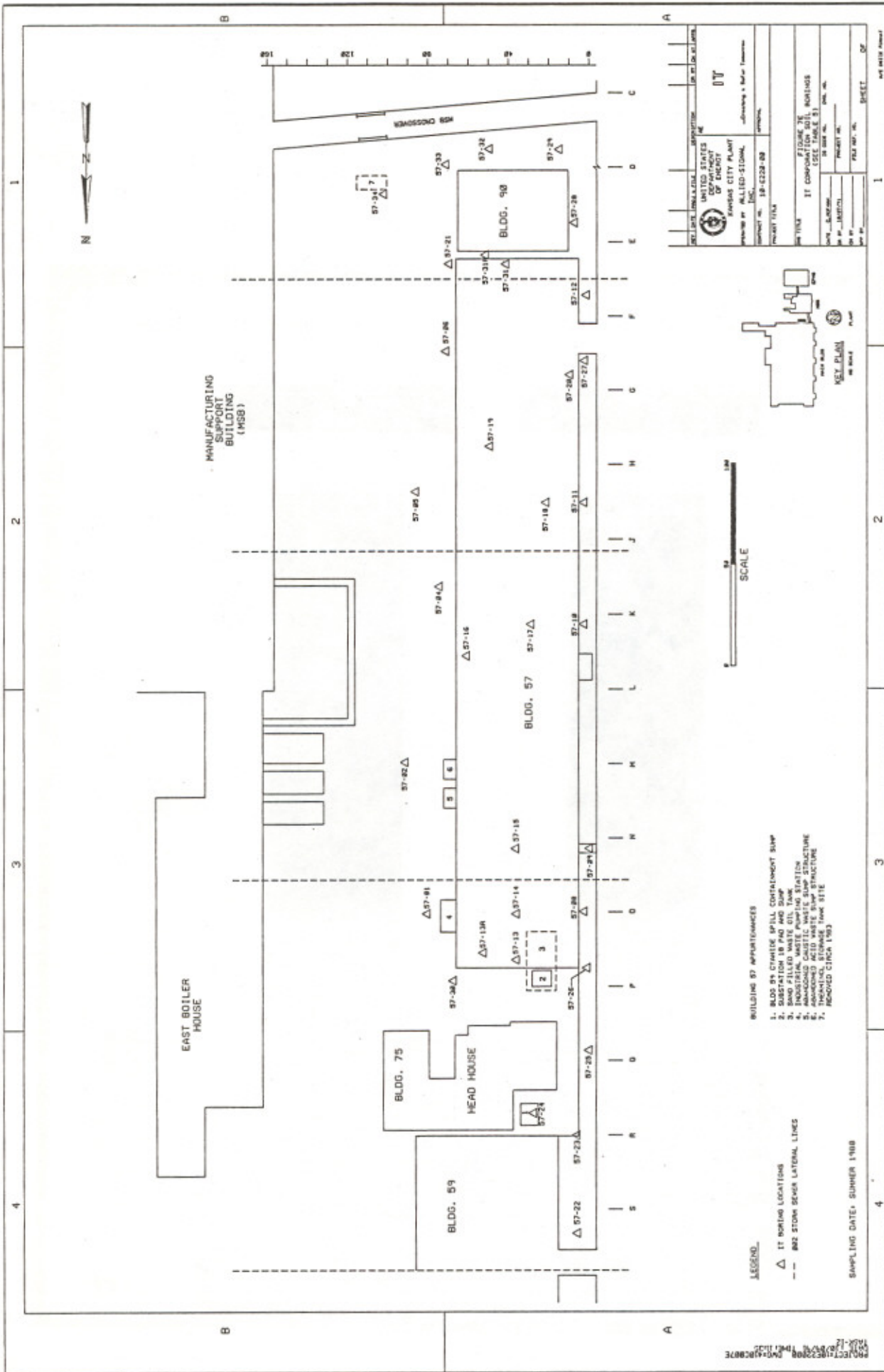
BUILDING 57 APARTMENTS

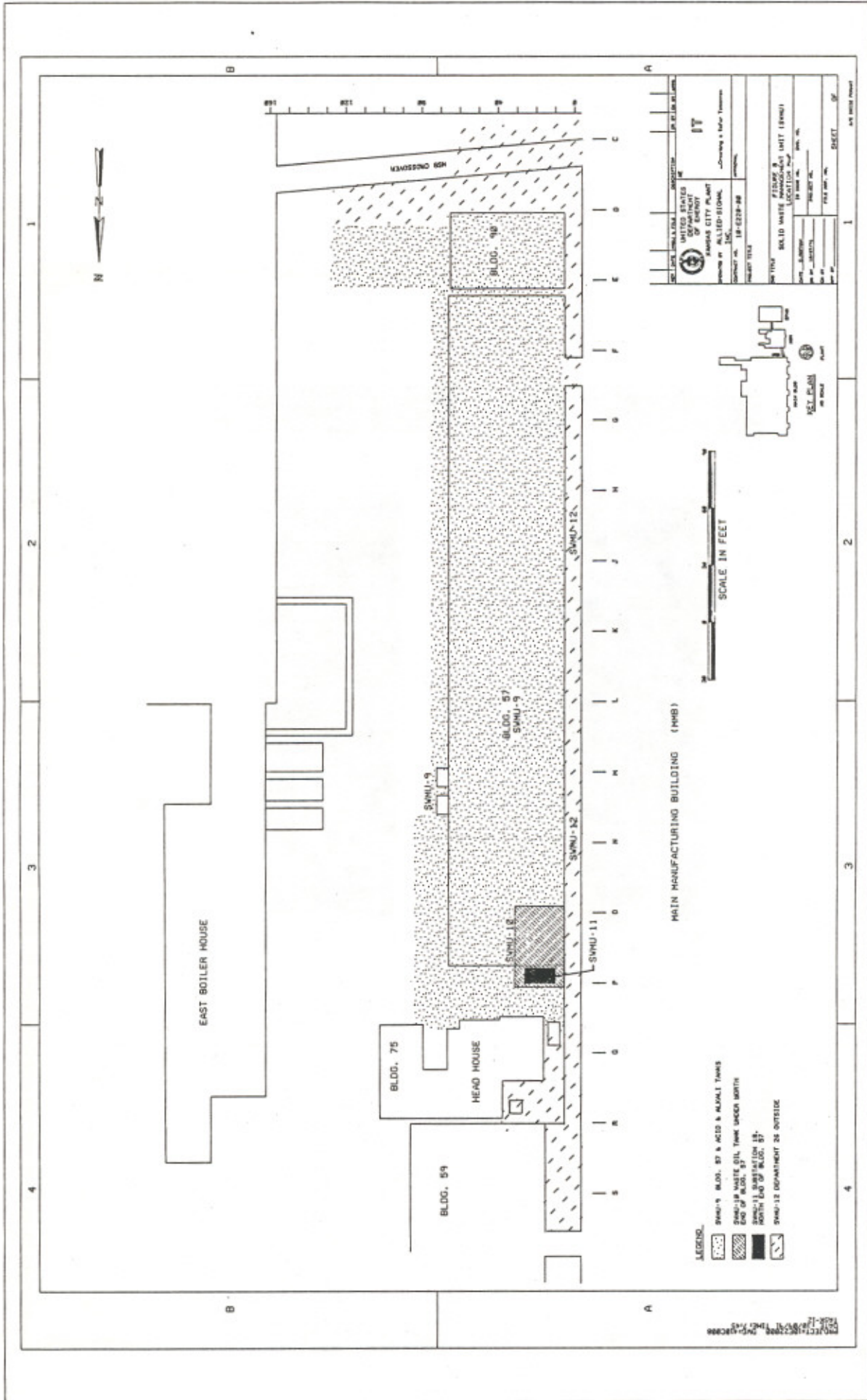
1. BLDG 57 CRACKED SPILL CONTAINMENT SUMP
2. BASIN/STATION 18 PAD AND SUMP
3. SAND FILLED WHITE OIL TANK
4. SAND FILLED WHITE OIL TANK
5. SAND FILLED WHITE OIL TANK
6. ABANDONED ACID WASTE SUMP STRUCTURE
7. THICKENED STORAGE TANK SITE

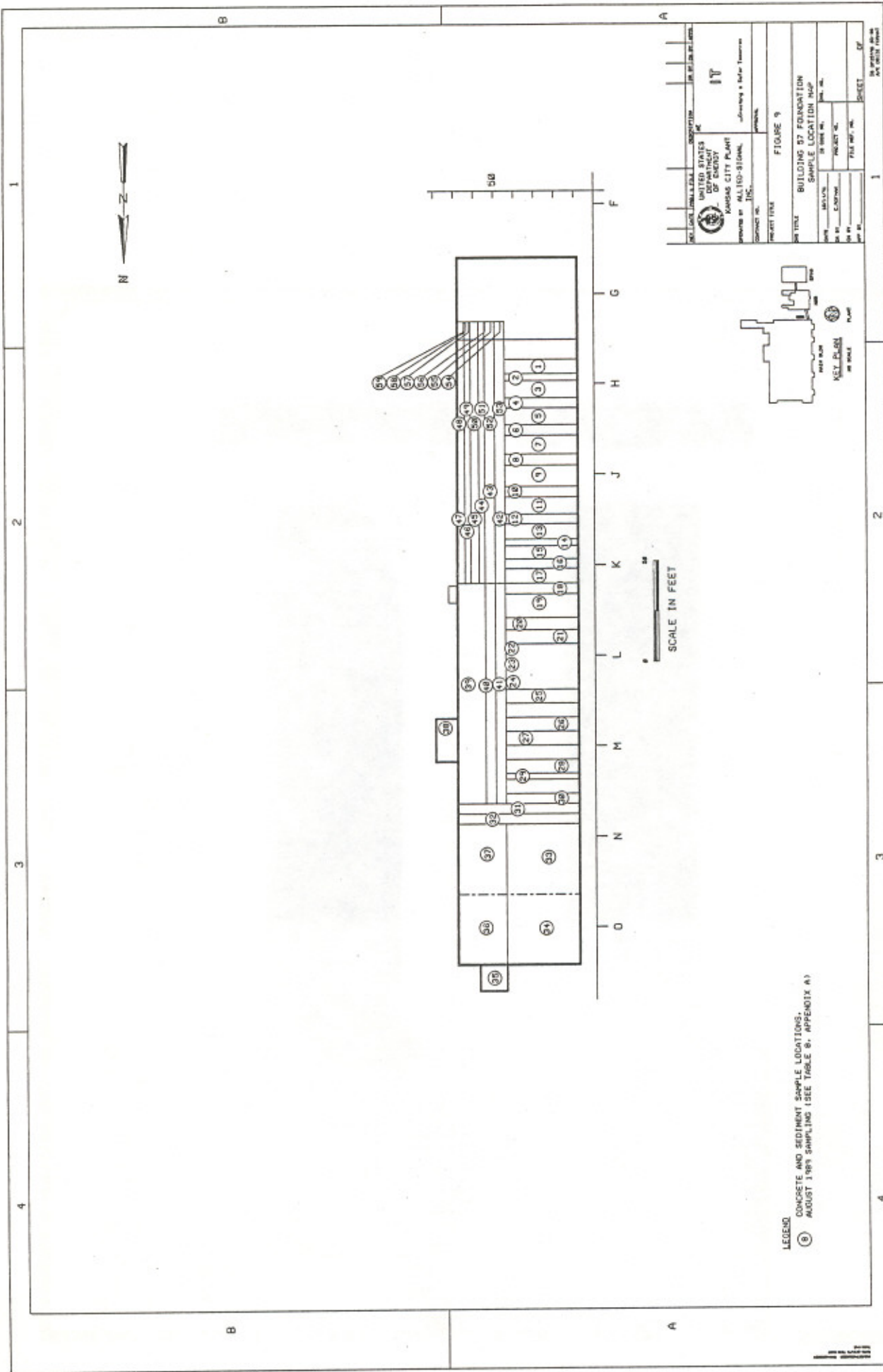
SAMPLING DATE: SUMMER 1985



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY KANSAS CITY PLANT	PROJECT NO. 18-0228-89 PROJECT TITLE CONTRACT NO. 18-0228-89 APPROVED BY: [Signature]
TITLE: 410007d DATE: 10/10/85 DRAWN BY: [Name] CHECKED BY: [Name]	SHEET NO. 1 OF 1





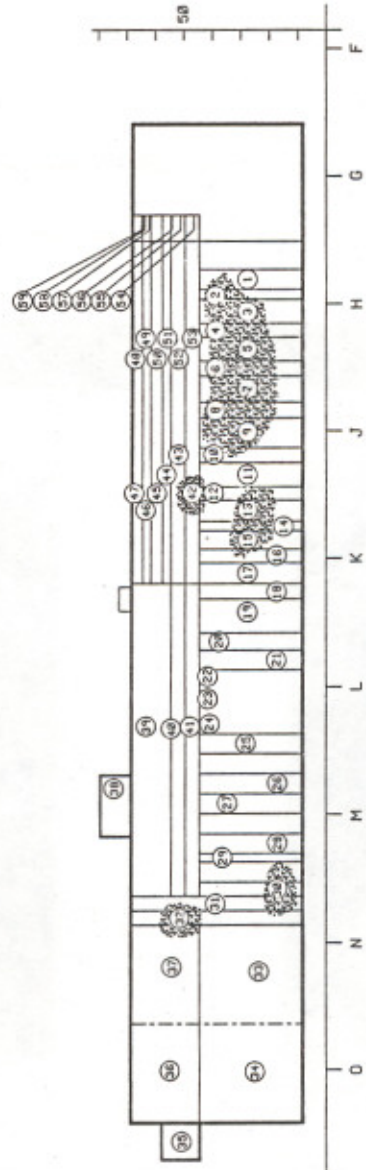
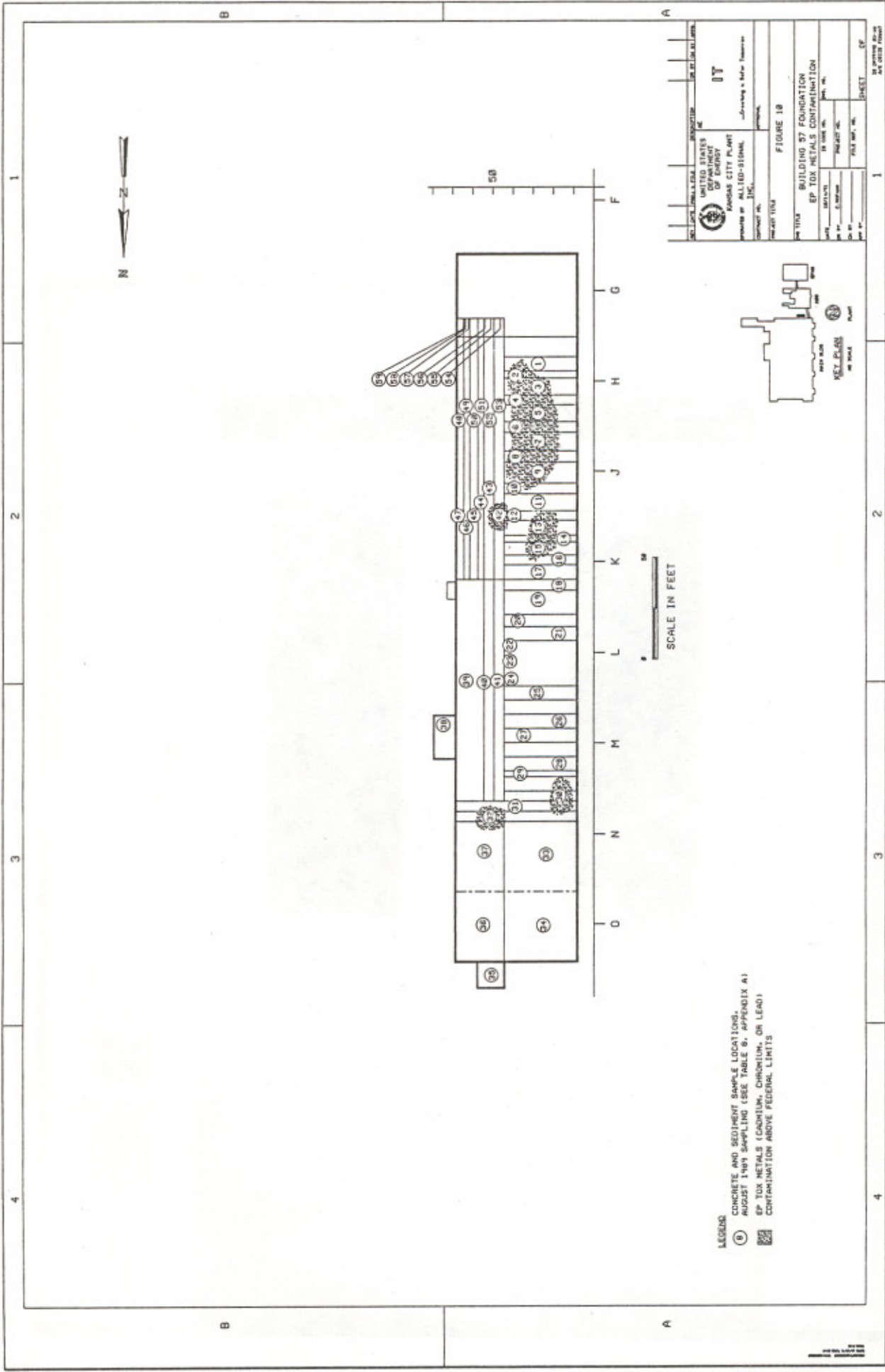


LEGEND
 (S) CONCRETE AND SEDIMENT SAMPLE LOCATIONS.
 (B) AUGUST 1987 SAMPLING (SEE TABLE 8, APPENDIX A)

NATIONAL BUREAU OF STANDARDS DEPARTMENT OF ENERGY KANSAS CITY PLANT PROJECT NO. ALL-150-SIGNAL CONTRACT NO. 115		DRAWING NO. 11 DRAWING & REVISIONS DATE
PROJECT TITLE BUILDING 87 FOUNDATION SAMPLE LOCATION MAP		FIGURE NO. 9
SHEET NO. 1	OF SHEETS 1	SHEET NO. OF SHEETS 1



SCALE IN FEET
 0 50



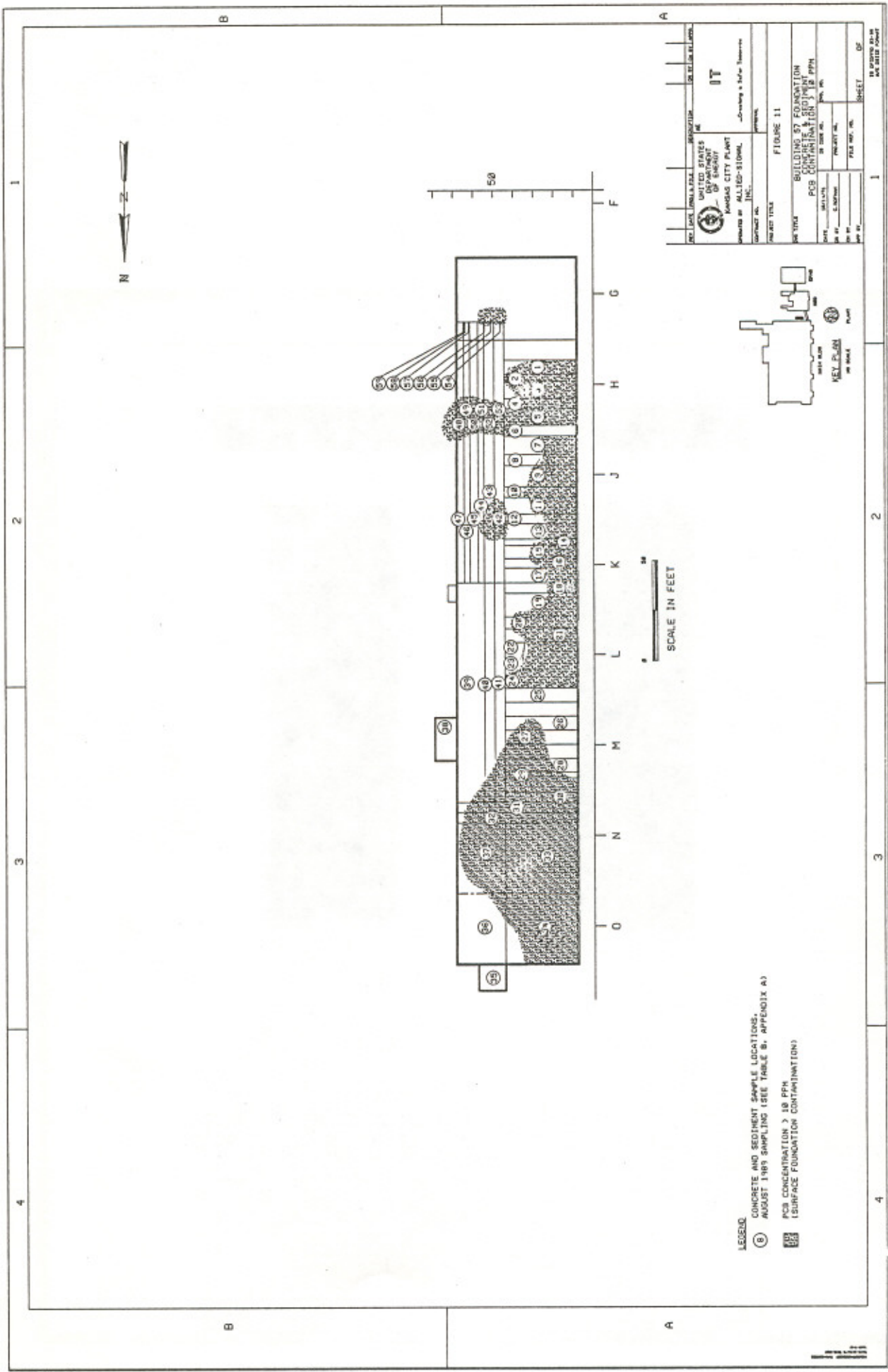
LEGEND

- CONCRETE AND SEDIMENT SAMPLE LOCATIONS, AUGUST 1989 SAMPLING (SEE TABLE B, APPENDIX A)
- EP TOX METALS (CADMIUM, CHROMIUM, OR LEAD) CONTAMINATION ABOVE FEDERAL LIMITS

SCALE IN FEET

UNITED STATES DEPARTMENT OF DEFENSE KANSAS CITY PLANT PROJECT NO. 14100-01000 DRAWING NO. 1100		DATE: 11/83 BY: J. W. [unclear] CHECKED BY: [unclear]
TITLE: BUILDING 57 FOUNDATION EP TOX METALS CONTAMINATION		SHEET NO. [unclear] OF [unclear] SHEETS



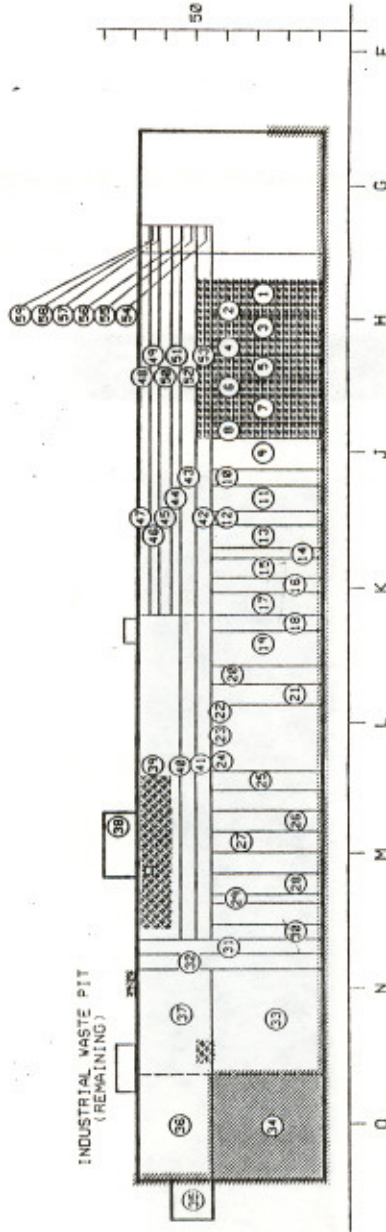


LEGEND
 (C) CONCRETE AND SEDIMENT SAMPLE LOCATIONS, AUGUST 1989 SAMPLING (SEE TABLE B, APPENDIX A)
 (Hatched Area) PCB CONCENTRATION > 10 PPM (SURFACE FOUNDATION CONTAMINATION)

FEDERAL AGENCY UNITED STATES DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES REGIONAL OFFICE KANSAS CITY PLANT ADDRESS: 141120-110000 CONTRACT NO. 141120-110000 PROJECT TITLE: PCB CONTAMINATION	DATE: 08/22/89 DRAWN BY: J. M. HARRIS CHECKED BY: J. M. HARRIS FILE NO.: 141120-110000 SHEET: 02 OF 02
---	--



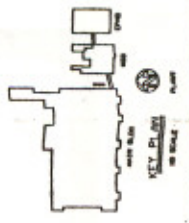
INDUSTRIAL WASTE PIT
(REMAINING)



- LEGEND**
- ① CONCRETE AND SEDIMENT SAMPLE LOCATION
 - ▨ CONCRETE AREAS REMOVED, SEPTEMBER AND OCTOBER 1989
 - ▩ CONTAMINATED CONCRETE LEFT IN PLACE AFTER JULY 1990

NOTE:
ALL NONHAZARDOUS CONCRETE FOUNDATION MATERIAL (NO SHADING) WAS REMOVED IN JULY 1990.

SCALE IN FEET



UNITED STATES DEPARTMENT OF ENERGY		PROJECT TITLE	
KANSAS CITY PLANT		FIGURE 12	
OPERATED BY ALLIED-SIGNAL		EXTENT OF CONTAMINATED CONCRETE REMOVAL	
PROJECT NO. 1104		DATE 10/89	
PROJECT NO. 1104		FILE NO. 1104	
PROJECT NO. 1104		SHEET NO. 07	