

NRC MEETING AGENDA

- **INTRODUCTION/BACKGROUND**
- **GENERAL AREA DESCRIPTION**
- **SITE DESCRIPTION**
- **SITE GEOHYDROLOGY**
- **BUILDING LAYOUT**
- **URANIUM RECOVERY AREA**
- **SOIL SAMPLING RESULTS**
- **MONITORING WELL RESULTS**
- **SOURCE TERM ELIMINATION**
- **CONFIRMATORY ACTION PLAN**

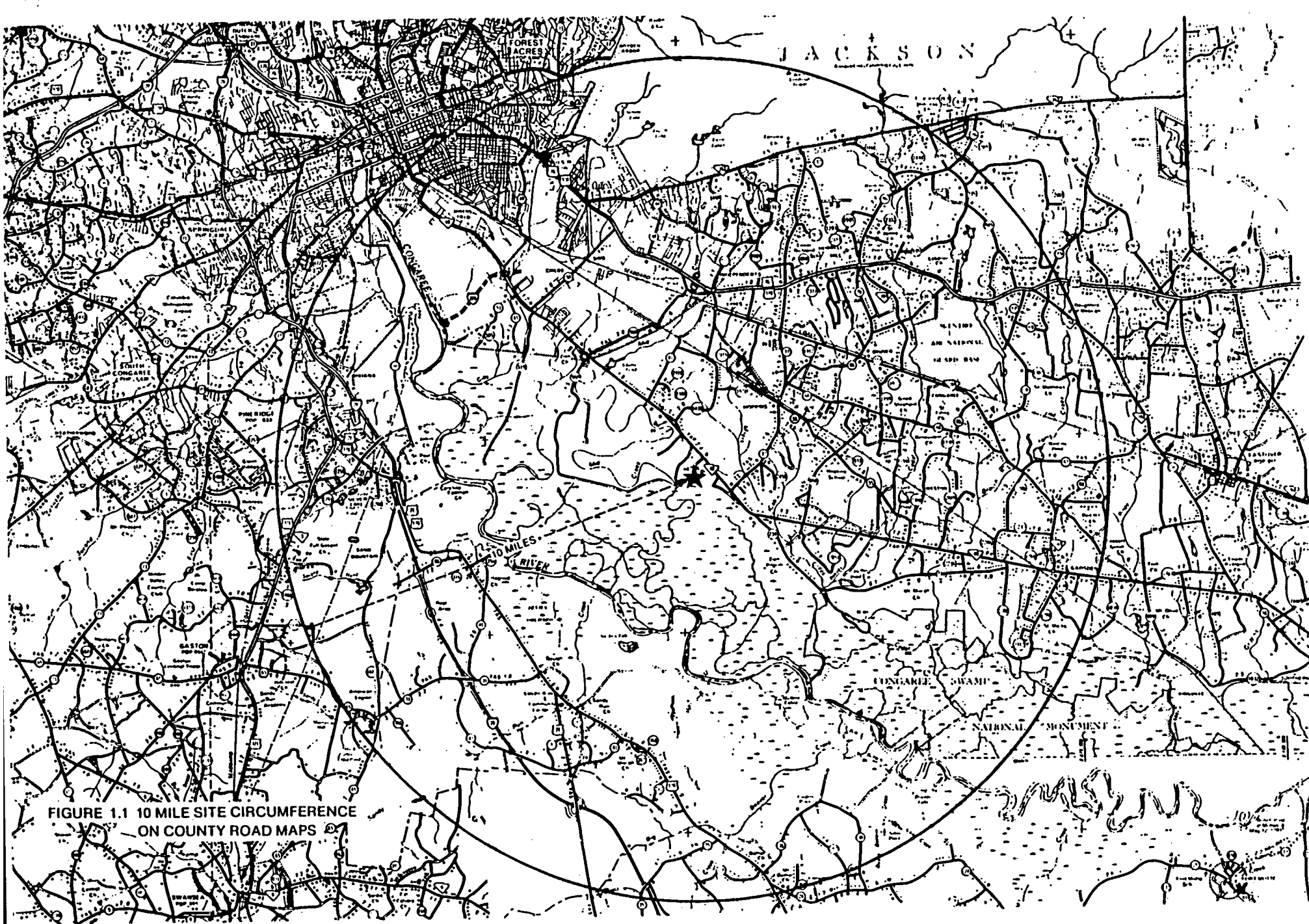
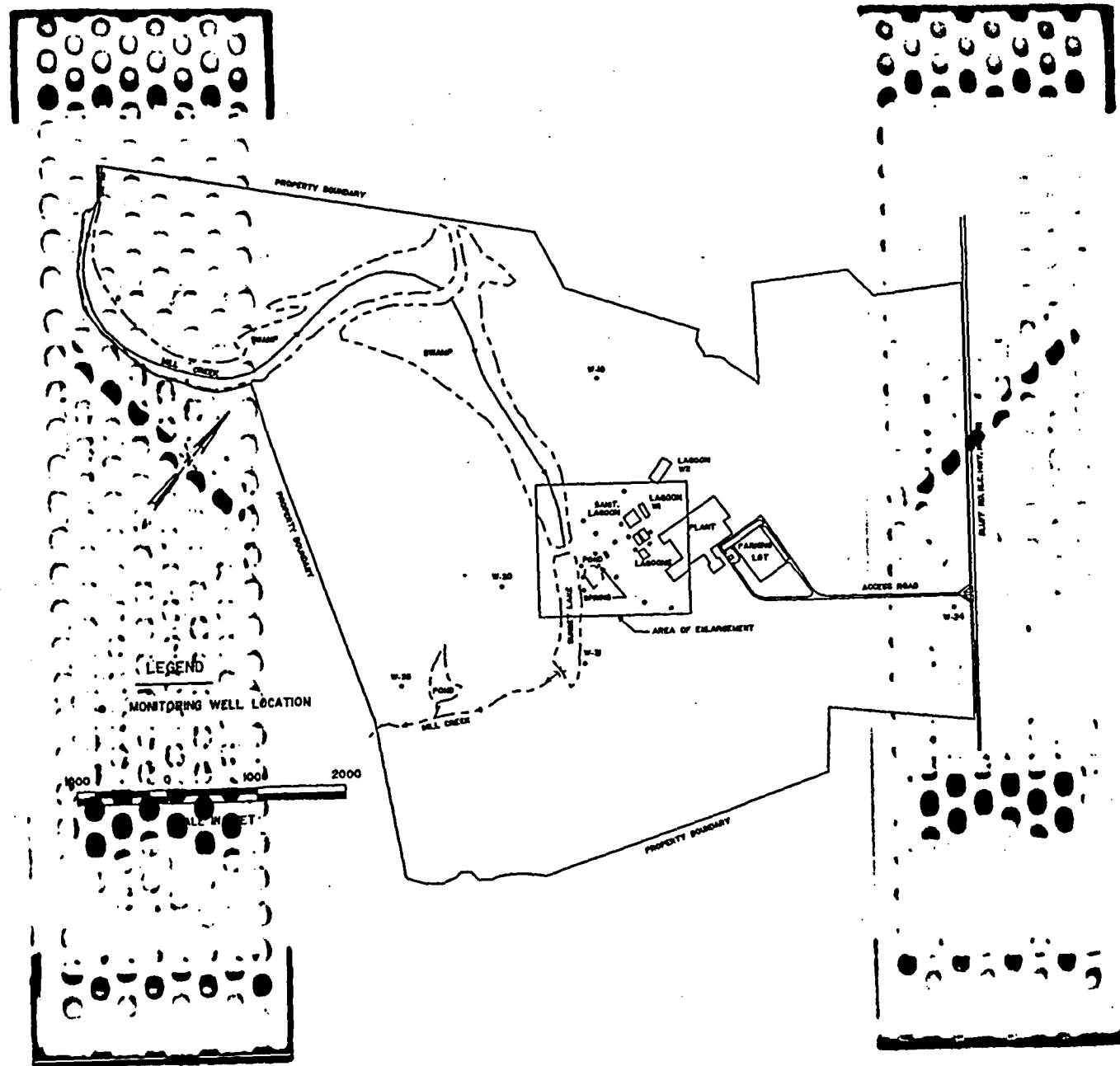
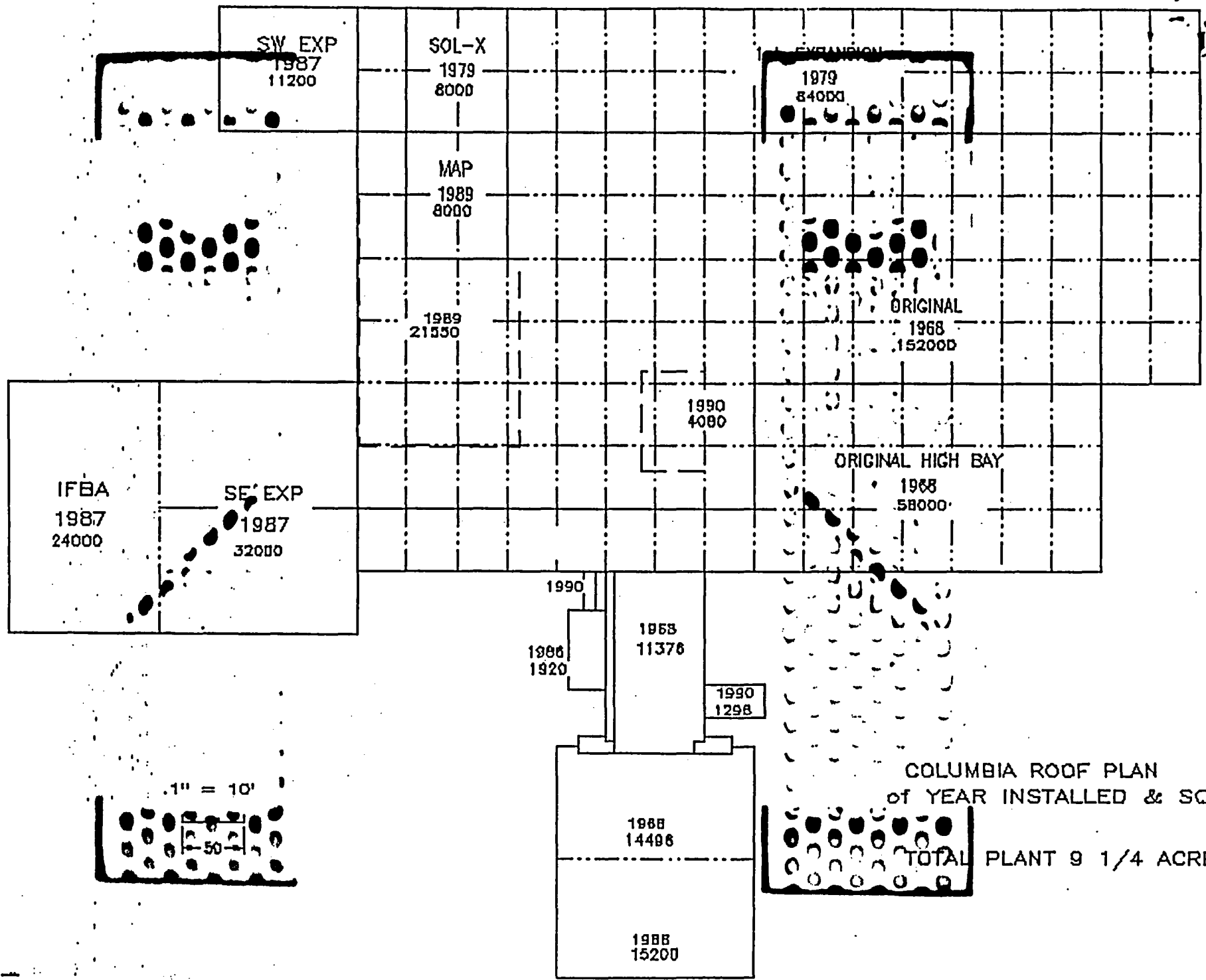


FIGURE 1.1 10 MILE SITE CIRCUMFERENCE
ON COUNTY ROAD MAPS



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

CC
BB
AA
B
C
D
E
F
G
H



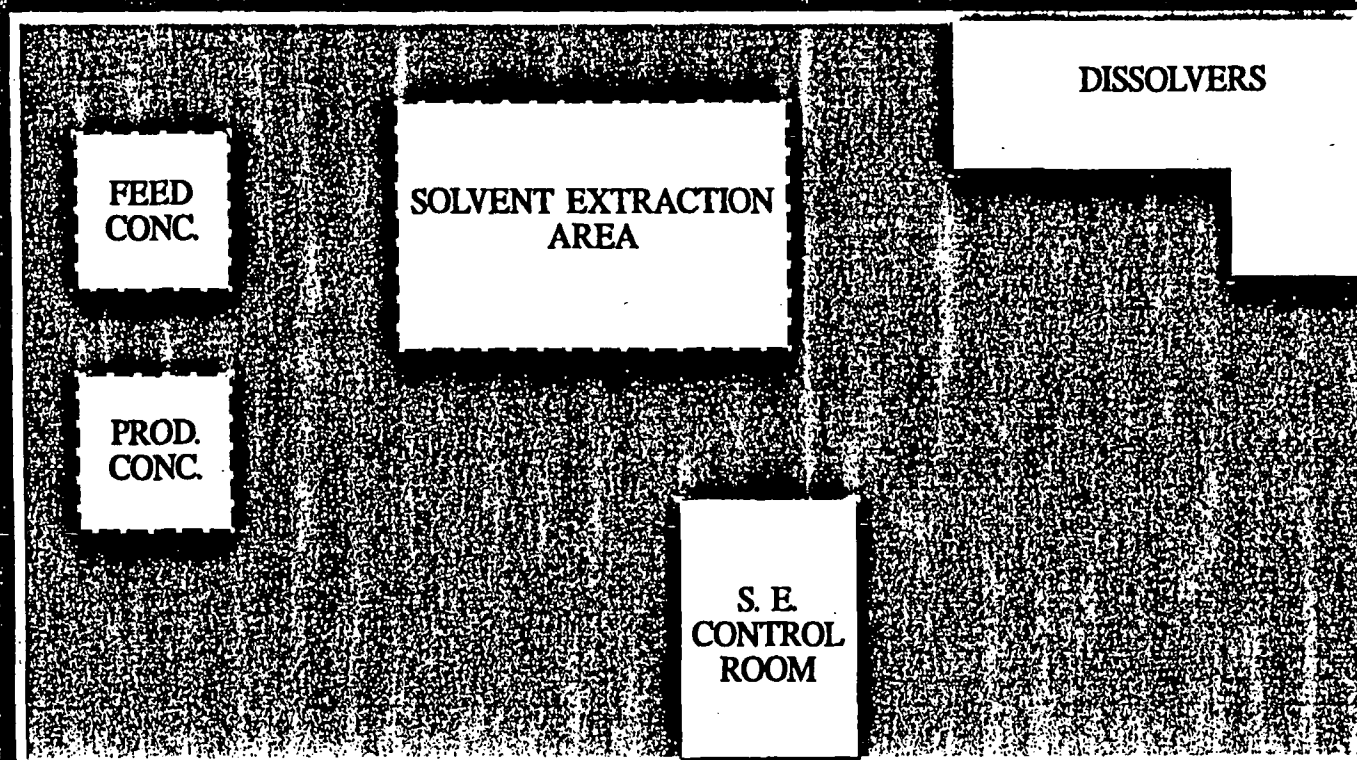
COLUMBIA ROOF PLAN
of YEAR INSTALLED & SQ. FT.

TOTAL PLANT 9 1/4 ACRES

COMMERCIAL NUCLEAR FUEL DIVISION

COLUMBIA, S. C. PLANT

URANIUM RECOVERY AREA

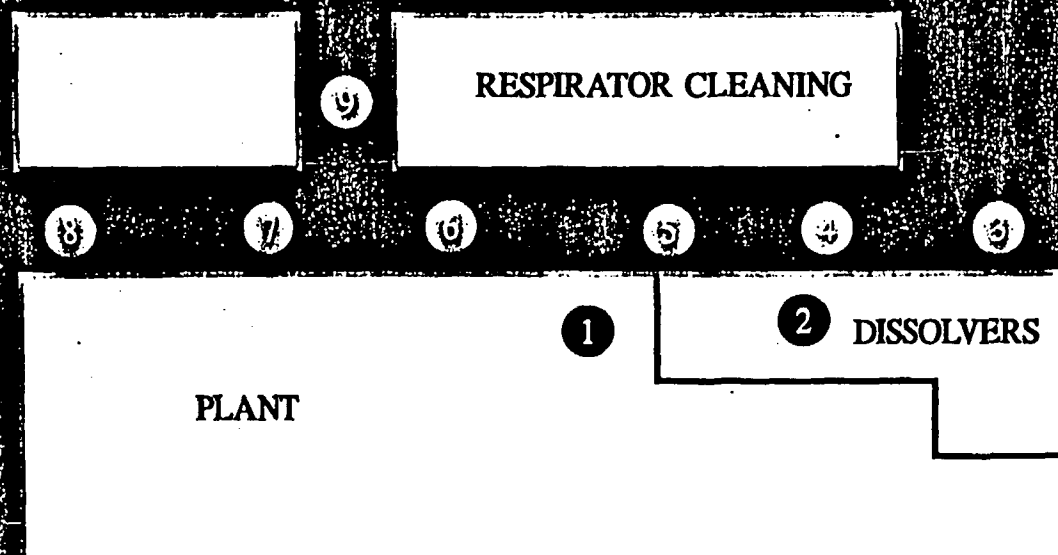


COMMERCIAL NUCLEAR FUEL DIVISION COLUMBIA, S. C. PLANT

SOIL SAMPLING RESULTS

SAMPLE NUMBER	SAMPLE ACTIVITY(PCI/GM) @ VARIOUS DEPTHS(IN)						
	6"	12"	18"	24"	30"	36"	42"
1	203	195	311	328	193	213	326
2	434	631	831	776	737	956	828
3	2	1	—	—	—	—	—
4	314	141	—	—	—	—	—
5	9	2	3	—	—	—	—
6	2	2	—	—	—	—	—
7	12	3	—	—	—	—	—
8	30	41	—	—	—	—	—
9	4	3	5	3	—	—	—

SAMPLE LOCATIONS WITHIN FACILITY

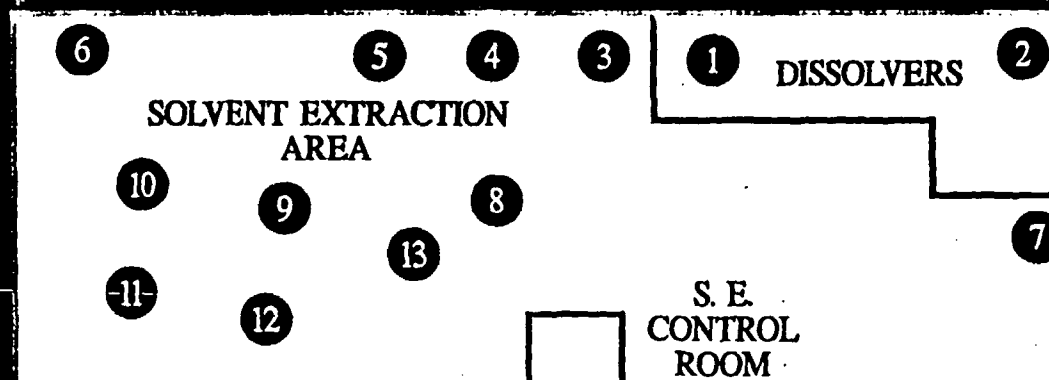


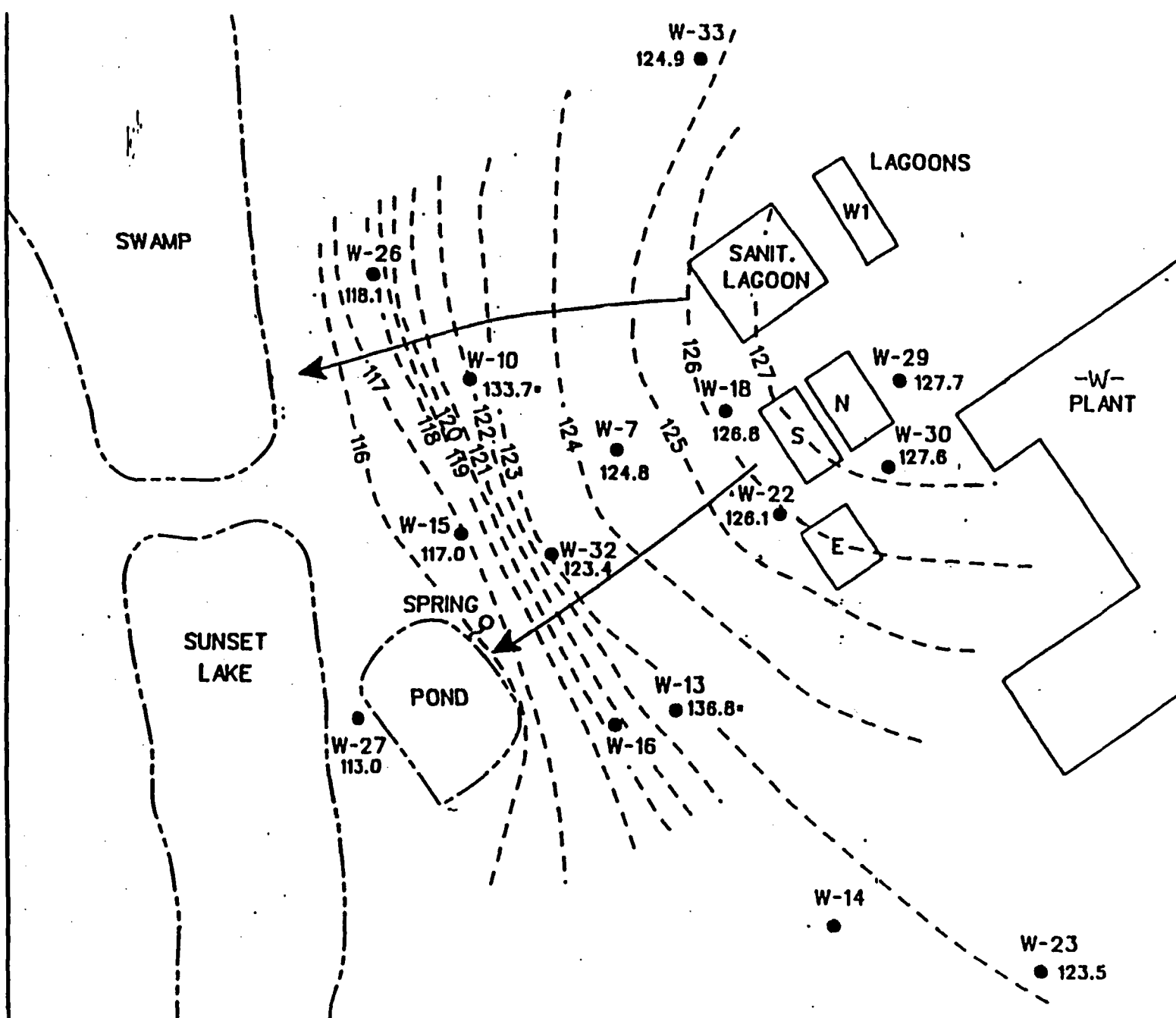
COMMERCIAL NUCLEAR FUEL DIVISION COLUMBIA, S. C. PLANT

SOIL SAMPLING RESULTS

SAMPLE NUMBER	SAMPLE ACTIVITY(PCI/GM) @ VARIOUS DEPTHS(FT)					
	2'	4'	6'	8'	10'	12'
1	645	2068	2711	2584	2412	—
2	752	549	184	—	—	—
3	385	69	811	328	3	—
4	1962	1601	2045	—	—	—
5	44	11	—	—	—	—
6	3	5	—	—	—	—
7	208	8	—	—	—	—
8	9	10	5	4	6	2
9	3	5	—	—	—	—
10	24	5	—	—	—	—
11	24	27	11	34	3	—
12	16	5	3	3	2	—
13	252	183	—	—	—	—

SAMPLE LOCATIONS WITHIN FACILITY





AREA OF ENLARGEMENT FROM FIGURE 1-3.



MONITORING WELL RESULTS
AVERAGE GROSS ALPHA ACTIVITY

$\mu\text{Ci/ml} \times \text{E}^{-06}$

<u>WELL NO</u>	<u>1981-1983</u>	<u>1990-1991</u>
3A	0.003*	0.003
7	0.023	0.011
10	0.008	0.022
13	0.018	0.022
14	0.001	0.003
15	0.010	0.007
16	0.006	0.004
18	0.041	0.045
19	0.028	0.049
20	0.001	0.002
22	0.031	0.004
23	0.009	0.010
24	0.005	0.004
26	0.008	0.011
27	0.004	0.003
29	0.016	0.017
30	0.214	0.028
32	0.010	0.012

*EARLIEST DATA FROM 1985

SOLVENT EXTRACTION SOIL SAMPLING

CHEMICAL RESULTS

NOVEMBER 22, 1991

<u>SAMPLE</u>	<u>DEPTH</u>	<u>RESULT. PPM NO3</u>
1	12'	1440
2	6'	163
3	10'	274
4	6'	1620
5	4'	109
6	4'	67
7	4'	91
8	10'	71
9	4'	13
10	4'	13
11	10'	8
12	10'	15
13	3'	391

CONFIRMATORY ACTION PLAN

ACTION	DATE
● COLLECT "HYDROCONE" GROUNDWATER SAMPLES OUTSIDE WEST AND SOUTH WALLS OF PLANT BUILDING	2/15/92
● COLLECT SOIL SAMPLES OUTSIDE WEST WALL OF URANIUM RECOVERY AREA	2/15/92
● INSTALL PERMANENT WELL OUTSIDE WEST WALL OF URANIUM RECOVERY AREA	2/21/92
● ANALYZE SOIL AND GROUNDWATER SAMPLES, EVALUATE RESULTS AND IDENTIFY FUTURE ACTIONS	4/30/92

**HYDRO-
GEOLOGIC
UNITS**

**GENERALIZED
STRATIGRAPHIC
COLUMN**

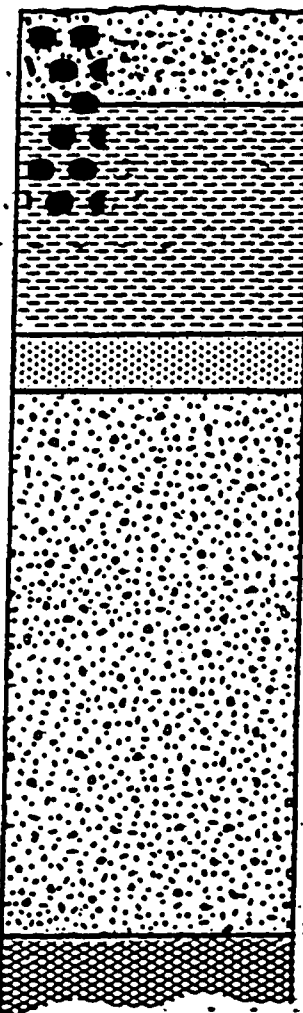
DESCRIPTION

**FORMATION
NAMES**

UNIT I
UNIT II

UNIT III

UNIT IV



0
20-40
POORLY SORTED CLAY,
SILT, SAND AND GRAVEL.

MASSIVE CLAY AND SHALE.

75
95-115
FINE TO COARSE SAND.

FINE TO COARSE SAND
INTERBEDDED WITH CLAY.

240
IGNEOUS AND
METAMORPHIC ROCK.

OKEENOKEE
FORMATION

BLACK
MINGO
FORMATION

TUSCALOOSA
FORMATION

CRYSTALLINE
BEDROCK

WESTINGHOUSE
COLUMBIA PLANT



Westinghouse Environmental
and Geotechnical Services, Inc.

GENERALIZED
STRATIGRAPHIC COLUMN

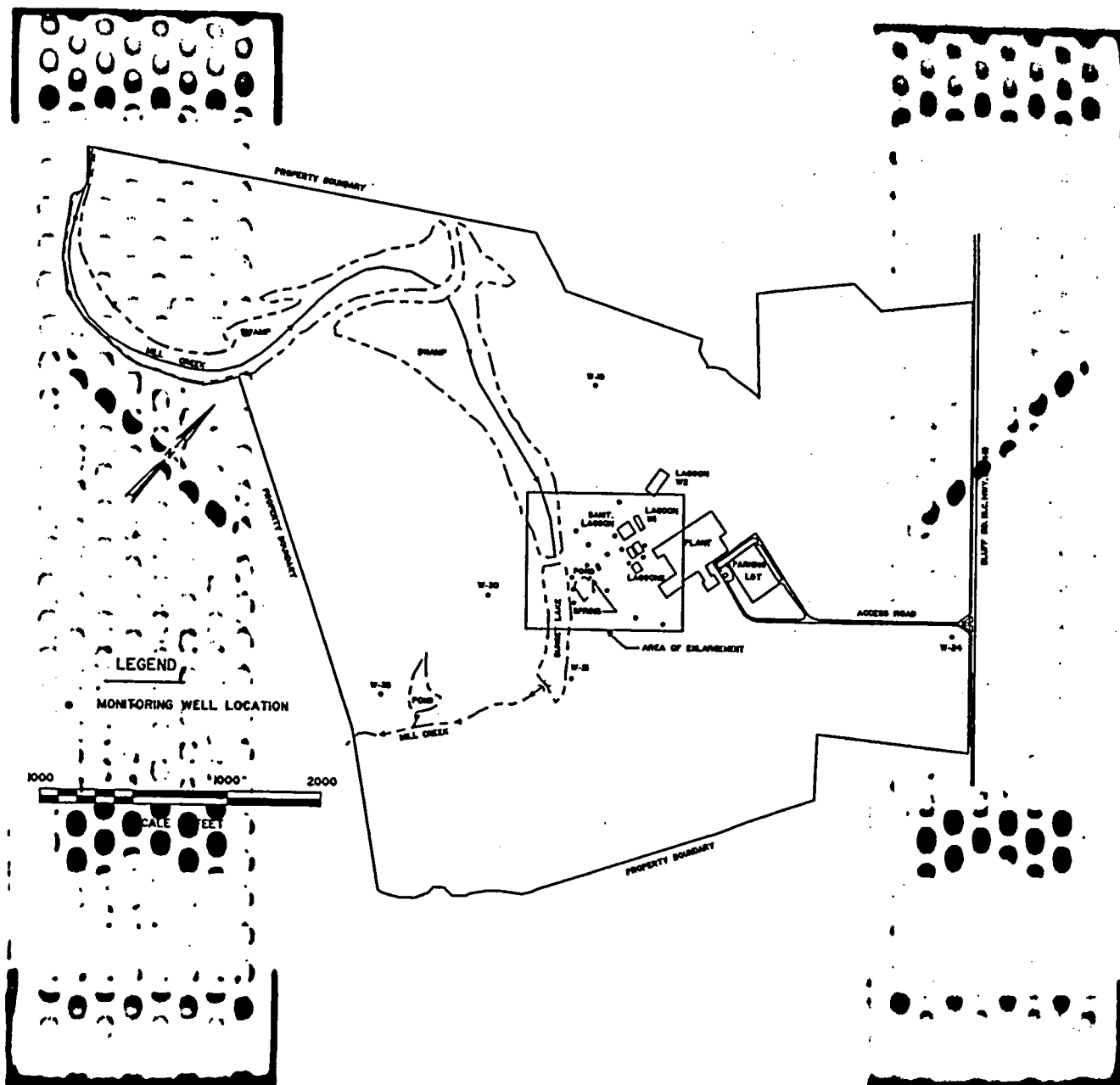
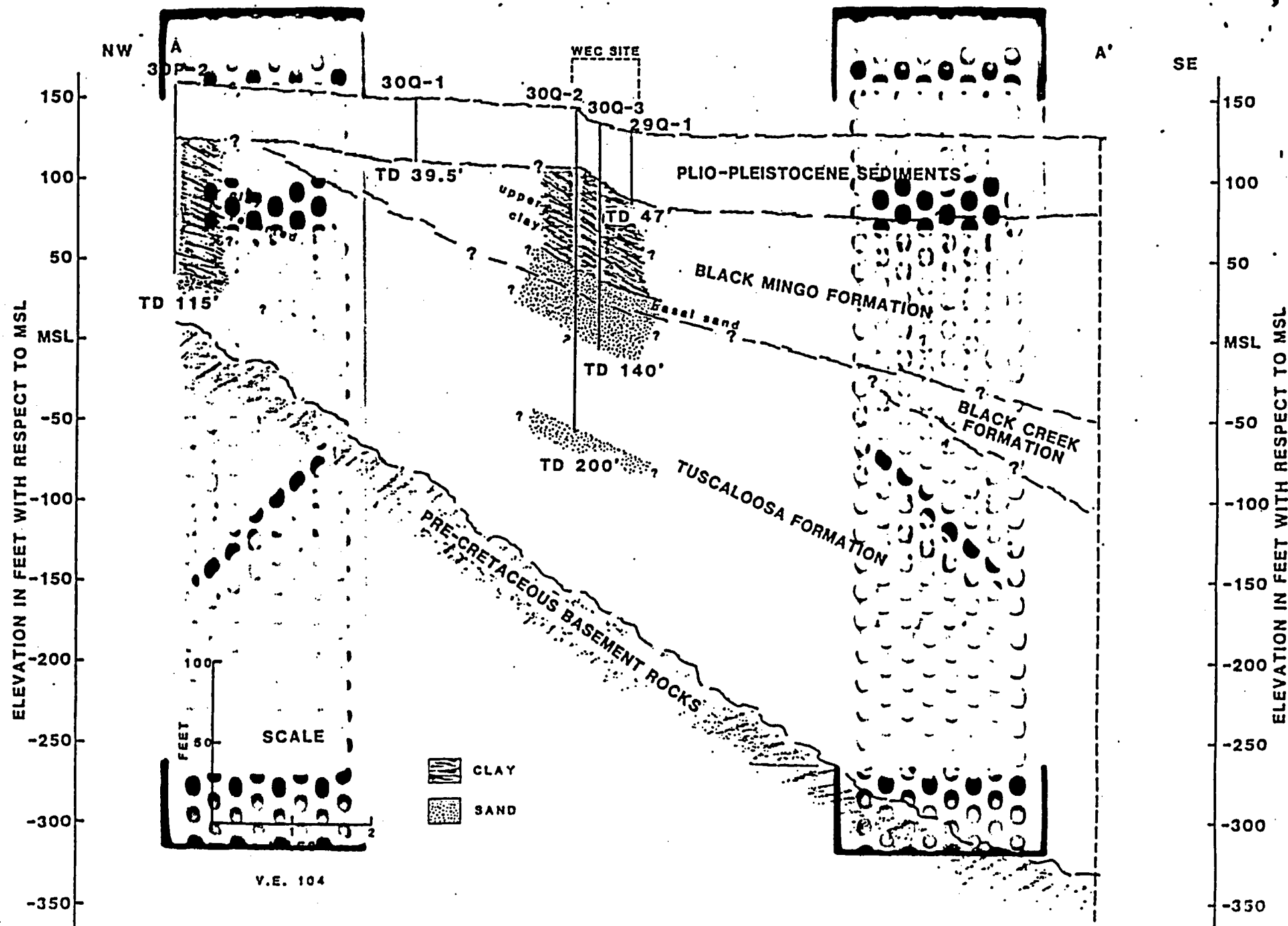
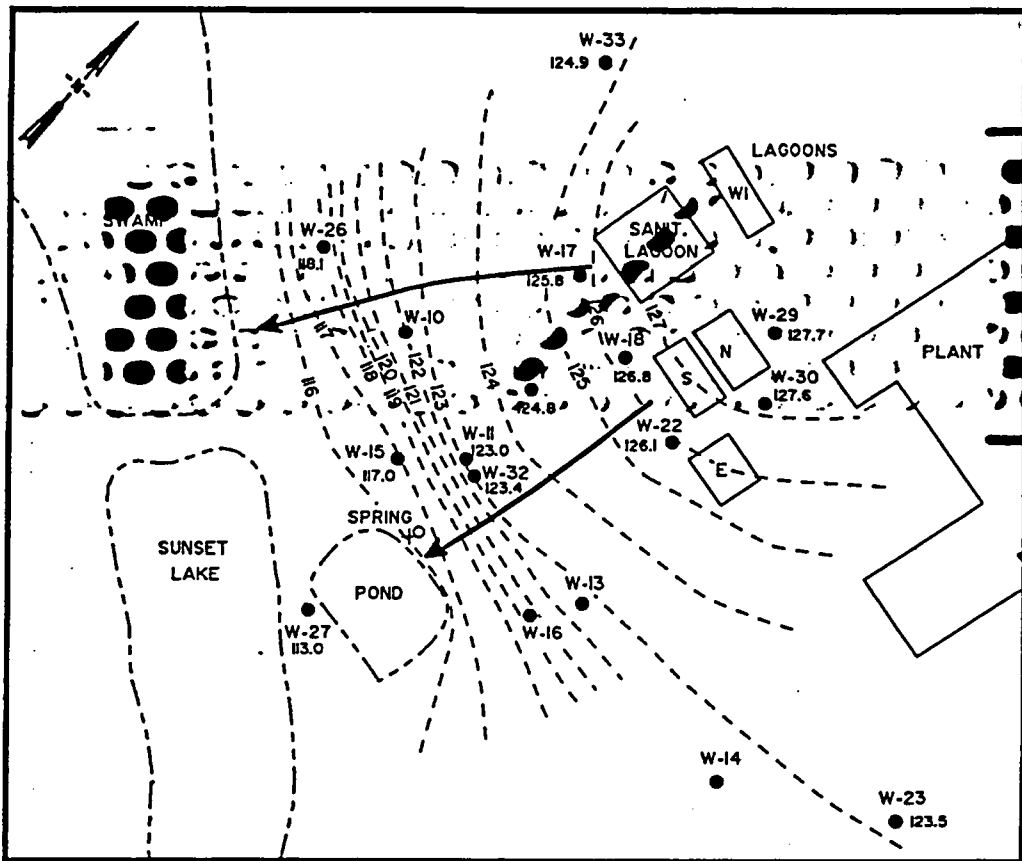


FIGURE 3-1. GENERALIZED GEOLOGIC CROSS-SECTION A-A', of SOUTHERN RICHLAND COUNTY.





AREA OF ENLARGEMENT



LEGEND

MONITORING WELL LOCATION WITH WATER
LEVEL ELEVATION IN FEET ABOVE MSL

POTENTIOMETRIC SURFACE CONTOUR
(CONTOUR INTERVAL 1 FOOT)

GROUNDWATER FLOW DIRECTION

WASTEWATER TREATMENT LAGOON

MANUFACTURING IMPROVEMENTS IN THE SOLVENT EXTRACTION AREA

IMPROVEMENTS TO PROCESS EQUIPMENT

IMPROVEMENTS TO LEAK CONTAINMENT AND EQUIPMENT REPAIR

IMPROVED HOUSEKEEPING PRACTICES

ATTENTION TO FLOOR INTEGRITY

Manufacturing Improvements in the Solvent Extraction Area

Improved Process Equipment

- 1987 Introduced fluoride stripping of feed materials
- 1988 Discontinued using acid recovery system
- 1989/90 Improved piping in Dissolver area
 - Installed 2" dia SS Schedule 80 piping
 - Replaced elbows with Tees
 - Replaced unions with flanges
 - Used inconel welding rods
 - Removed idle piping
 - Replaced Teflon coated gaskets with solid
- 1989/90 Improved pumps in the dissolver area
 - Reduced motor speed
 - Replaced single mechanical seal with double mechanical seal/ water flush system
 - Instituted pump rebuild shop with dedicated mechanics

Manufacturing Improvements in the Solvent Extraction Area

Improved Leak Containment and Repair

- 1987/88 Installed drip pans under cartridge filter housings
- 1989/90 Installed improved pump bases with integral drip pans
- 1991/92 Focused management attention on leak prevention:
 - Formal supervisor performance objective
 - "Leak Log"
 - Formal procedure

Manufacturing Improvements in the Solvent Extraction Area

Improved Housekeeping

- **Removed idle equipment**
 - Centrifuge near dissolver #1
 - Leaching bag filter system
 - Precoat and water wash system
 - Acid storage tank
 - Acid recovery system pumps
- **Designed drainage system for Wilfley pump system to preclude leaks during week-end shutdown**
- **Implemented formal housekeeping schedule**

Manufacturing Improvements in the Solvent Extraction Area

Floor Repair and Upgrade

- 1987 Resurfaced 3600 sq. ft. of floor
 - Removed loose concrete
 - Patched subsurface with Swindless bond,
 capped with epoxy/quartz sand mixture
 - Topcoated with clear epoxy, approx 1/4"
- 1988 Applied second coat of epoxy
- 1989 Replaced floor under dissolver (64 sq. ft.)
- 1989/91 Performed minor patching and floor repair
- 1991/92 Coated aiseways with vinyl ester; patched with
 epoxy due to adherence problems

Jan 23, 1992

<u>NAME</u>	<u>Title</u>
Merri Horn, NMSS	Env, Eng.
Sam Nallaswami, NMSS	Hydrologist
John Hickey, NMSS	Chief - Fuel Cycle Safety Branch
John Greeves, NMSS	Dep. Dir. IMNS
THOMAS DECKER RII	CHIEF, RADIOLOGICAL EFFLUENTS & CHEMISTRY
David Sanders, PG	Hydrogeologist - W Environmental
Gheda Lowder	(W) MGR MAINT
EDWIN E. KEELEN	(W) MANUFACTURING MANAGER
George Bidingger	SECTION LEADER