

General Electric Company
Wilmington Manufacturing Department
Wilmington, N. C.

EFFLUENT & ENVIRONMENTAL RADIOLOGICAL* MONITORING PROGRAM

Sample Points	Drawing Reference	Sample Type	Collection Frequency	Parameter	Action Level	Detection Limit
1) Gaseous discharges to atmosphere	Figures 1 and 2	Continuous collection	Daily stacks	Gross alpha, gross beta	$> 10 \times 10^{-12}$ $\mu\text{Ci/ml}$, action gross alpha	50 d/m
			Weekly stacks	Gross alpha, gross beta	$> 3 \times 10^{-12}$ $\mu\text{Ci/ml}$, action gross alpha	50 d/m
			Quarterly total	Gross alpha	> 1250 μCi	50 d/m
2) Liquid discharges from chemical lagoons	Figure 3	Composite	Daily	U content	> 5 ppm one day, > 2 ppm daily average for month	0.01 parts per million (ppm)
		Composite	Weekly	Gross alpha, gross beta	$> 3 \times 10^{-5}$ $\mu\text{Ci/ml}$, gross alpha	3×10^{-8} $\mu\text{Ci/ml}$, gross alpha; 5×10^{-8} $\mu\text{Ci/ml}$, gross beta
3) Each waste box	---	Waste box	Various	U content	100 gms U-235 as calculated from U-238 content	1 gm U-238
4) Nitrate waste stream						
a) Ammonium nitrate tank truck	---	Grab	Each truck	U content	> 25 ppm U for single truckload, 1st level; > 50 ppm U for single truckload, 2nd level	10 ppm
		Composite of individual truck samples for one day	Daily	U content	> 3 ppm U daily composite, 1st level; > 3 ppm U averaged over 30 days, 2nd level.	0.01 ppm U; 3×10^{-8} $\mu\text{Ci/ml}$, gross alpha; 5×10^{-8} $\mu\text{Ci/ml}$, gross beta
		Weekly composite of truck samples	---	Gross alpha, gross beta	---	

*NONradiological monitoring conducted in accordance with NPDES, RCRA and North Carolina air emission permit requirements.

NRC LICENSE SNM-1097

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DATE 9/1/81

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Sample Points	Drawing Reference	Sample Type	Collection Frequency	Parameter	Action Level	Detection Limit
b) Canal sludge	Figure 7	Grab	Quarterly	U content	>5 ppm U	0.01 ppm U; 3×10^{-8} $\mu\text{Ci/ml}$, gross alpha; 5×10^{-8} $\mu\text{Ci/ml}$, gross beta
c) Clarifier sludge	Figure 7	Grab	Quarterly	Gross alpha, gross beta, U content	>5 ppm U	Same as above
d) New bay liquid	Figure 7	Grab	Quarterly	Gross alpha, gross beta		Same as above
e) New bay sludge	Figure 7	Grab	Quarterly	Gross alpha, gross beta, U content	>5 ppm U	Same as above
f) North basin liquid	Figure 7	Grab	Quarterly	Gross alpha, gross beta		Same as above
g) North basin sludge	Figure 7	Grab	Quarterly	U content, gross alpha, gross beta	>5 ppm U	Same as above
h) Cape Fear River upstream	Figure 7	Grab	Quarterly	Gross alpha, gross beta		Same as above
i) Cape Fear River downstream	Figure 7	Grab	Quarterly	Gross alpha, gross beta		Same as above
5) Hydrofluoric acid tank truck	Figure 7	Grab	Each truck	U content	3 ppm	0.01 ppm
6) NE Cape Fear River - upstream & downstream	Figure 4	Grab	Monthly	U content	3 successive values >0.2 ppm	0.01 ppm
7) Area soil	Figure 5	Grab	Quarterly	U content	0.7 ppm	0.01 ppm
8) Water supply	---	Grab	Monthly	U content	0.1 ppm	0.01 ppm
9) Ambient air stations	Figure 6	Composite	Weekly	Gross alpha	o 40 CFR 190 limits o $>3.45 \times 10^{-15}$ $\mu\text{Ci/ml}$ average ambient air concentration per quarter o 12 month average $>.9 \times 10^{-2}$ Ci	0.5×10^{-15} $\mu\text{Ci/ml}$
			Monthly	U isotopes	---	$<1 \times 10^{-16}$ $\mu\text{Ci/ml}$
10) Shallow wells (4) - waste treatment facility	Figure 8		Monthly	Gross alpha, gross beta	Three times background gross alpha	0.5×10^{-15} $\mu\text{Ci/ml}$
11) Shallow wells (4) - final discharge lagoons	Figure 8		Quarterly	Gross alpha, gross beta	Three times background gross alpha	0.5×10^{-15} $\mu\text{Ci/ml}$

FIGURE 1

TYPICAL EXHAUST AIR CLEANING SYSTEM FOR URANIUM PROCESSING AREAS
(EXCEPT FOR WET CHEMICAL PROCESSING AREAS)

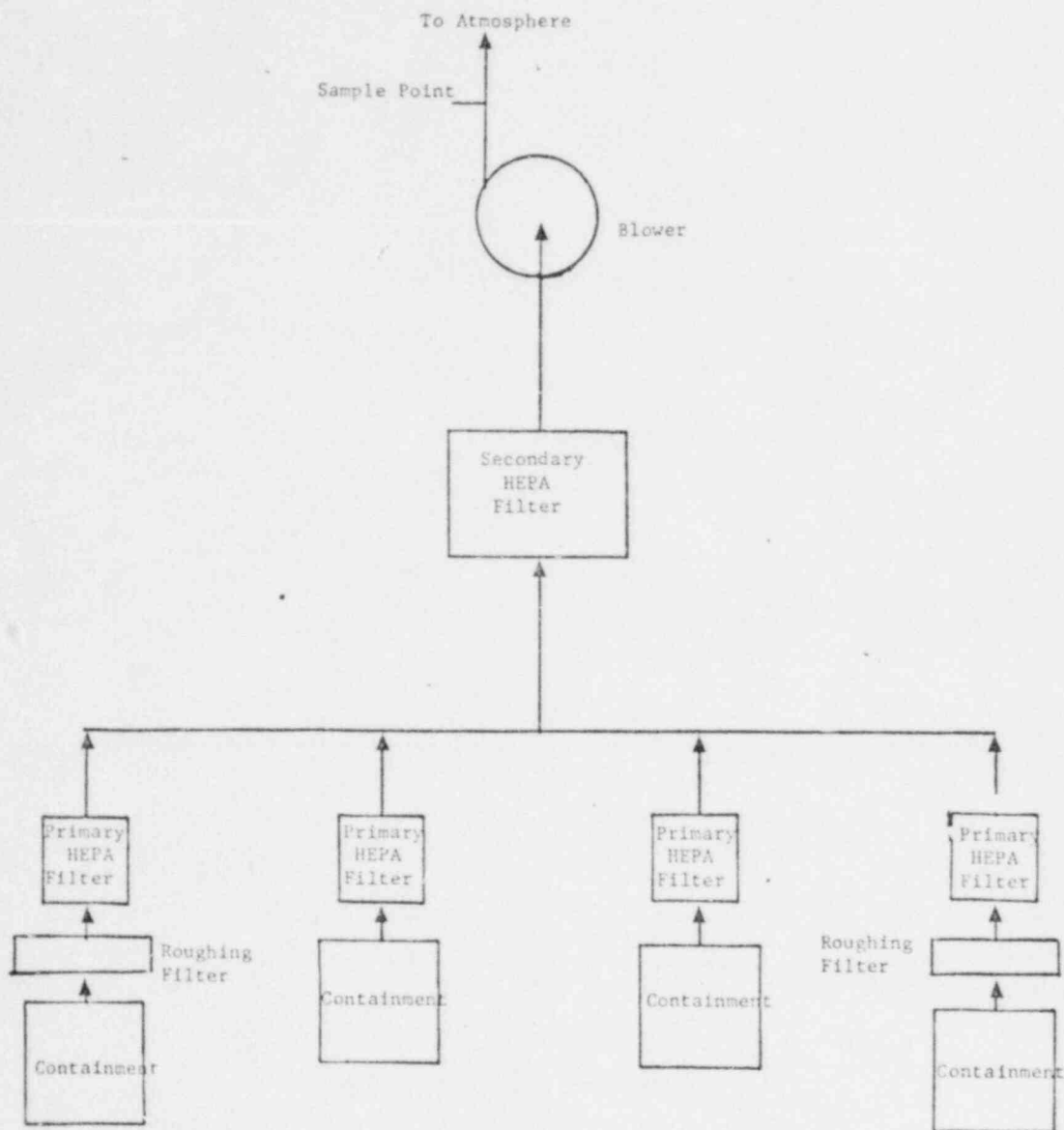
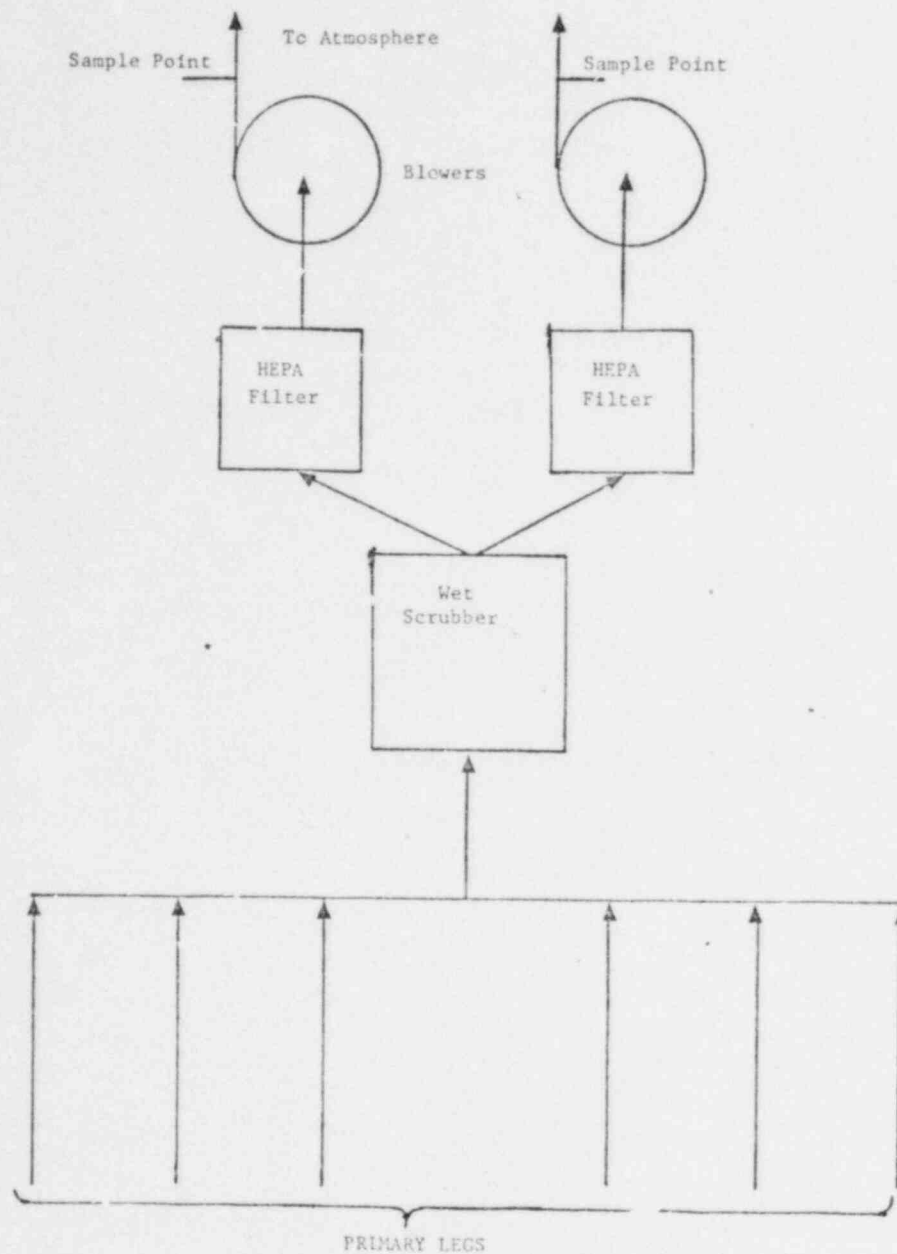


FIGURE 2

EXHAUST AIR CLEANING SYSTEM FOR WET CHEMICAL PROCESSING AREAS



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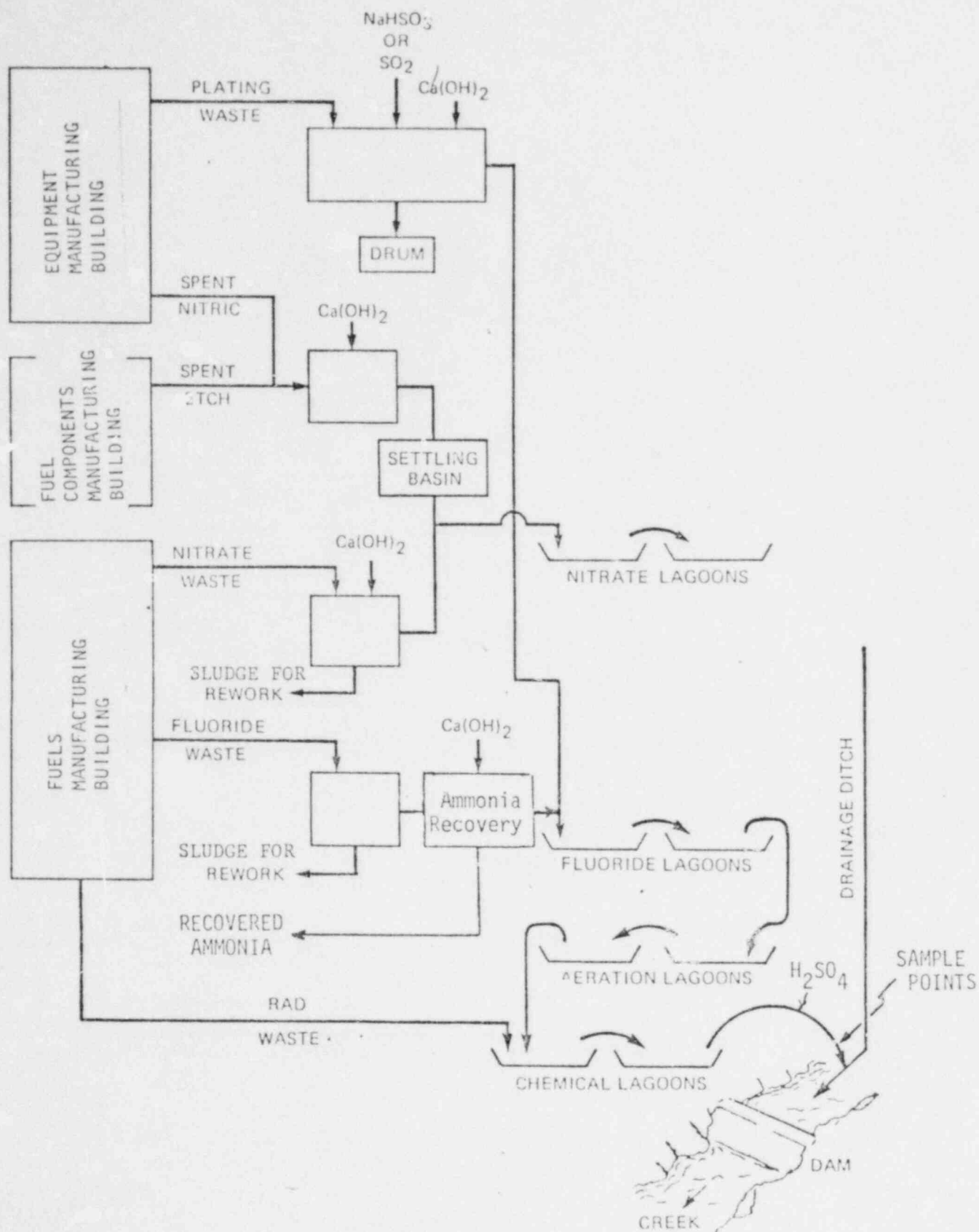
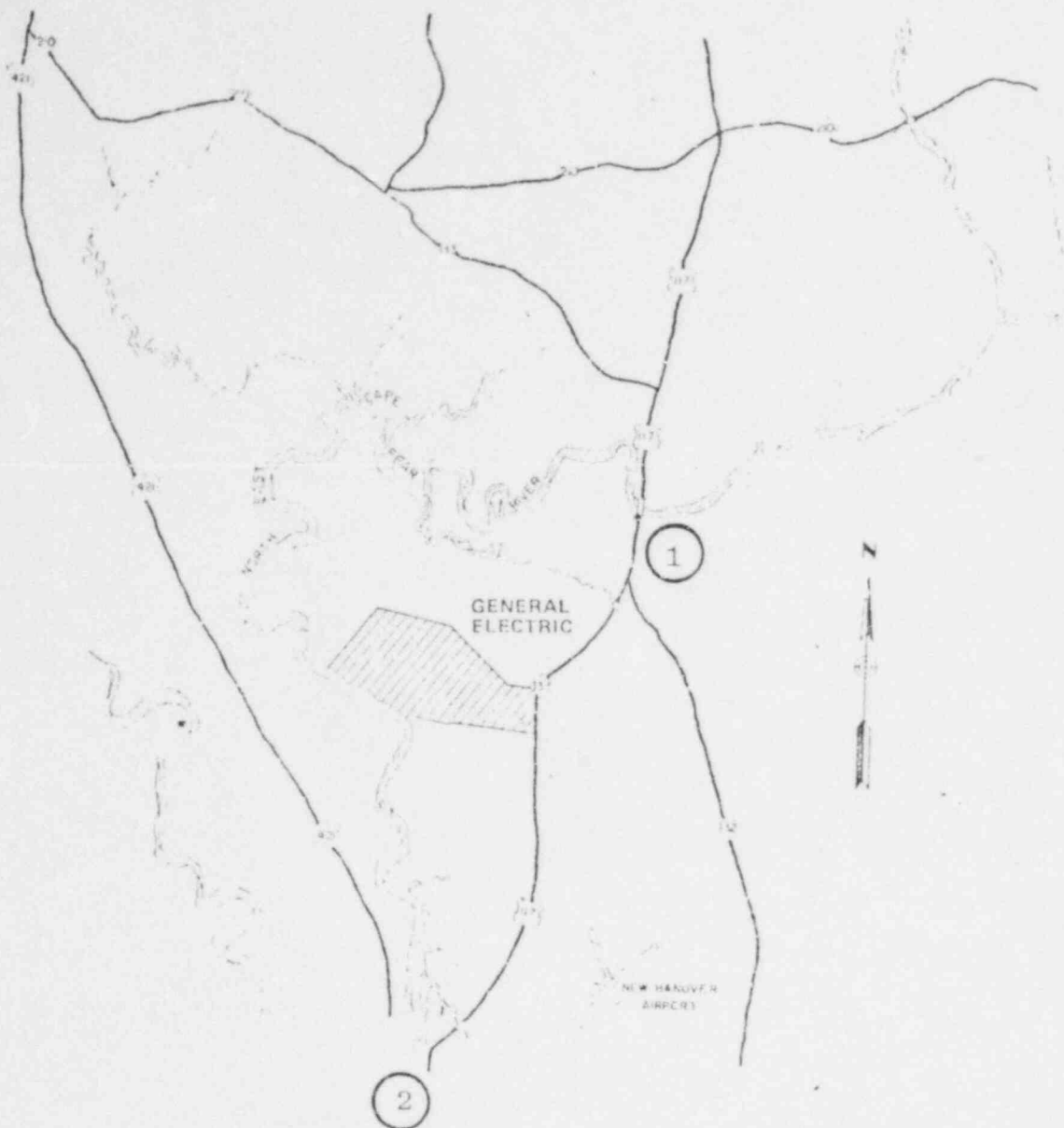


FIGURE 4
RIVER WATER SAMPLING LOCATIONS (OPERATIONAL)



		<u>Location</u>	<u>Sample Type</u>	<u>Frequency</u>
①	Upstream	Public boat dock	Grab	Monthly
②	Downstream	Seaboard Coastline Railroad Bridge	Grab	Monthly

FIGURE 5
ENVIRONMENTAL SOIL SAMPLING LOCATIONS

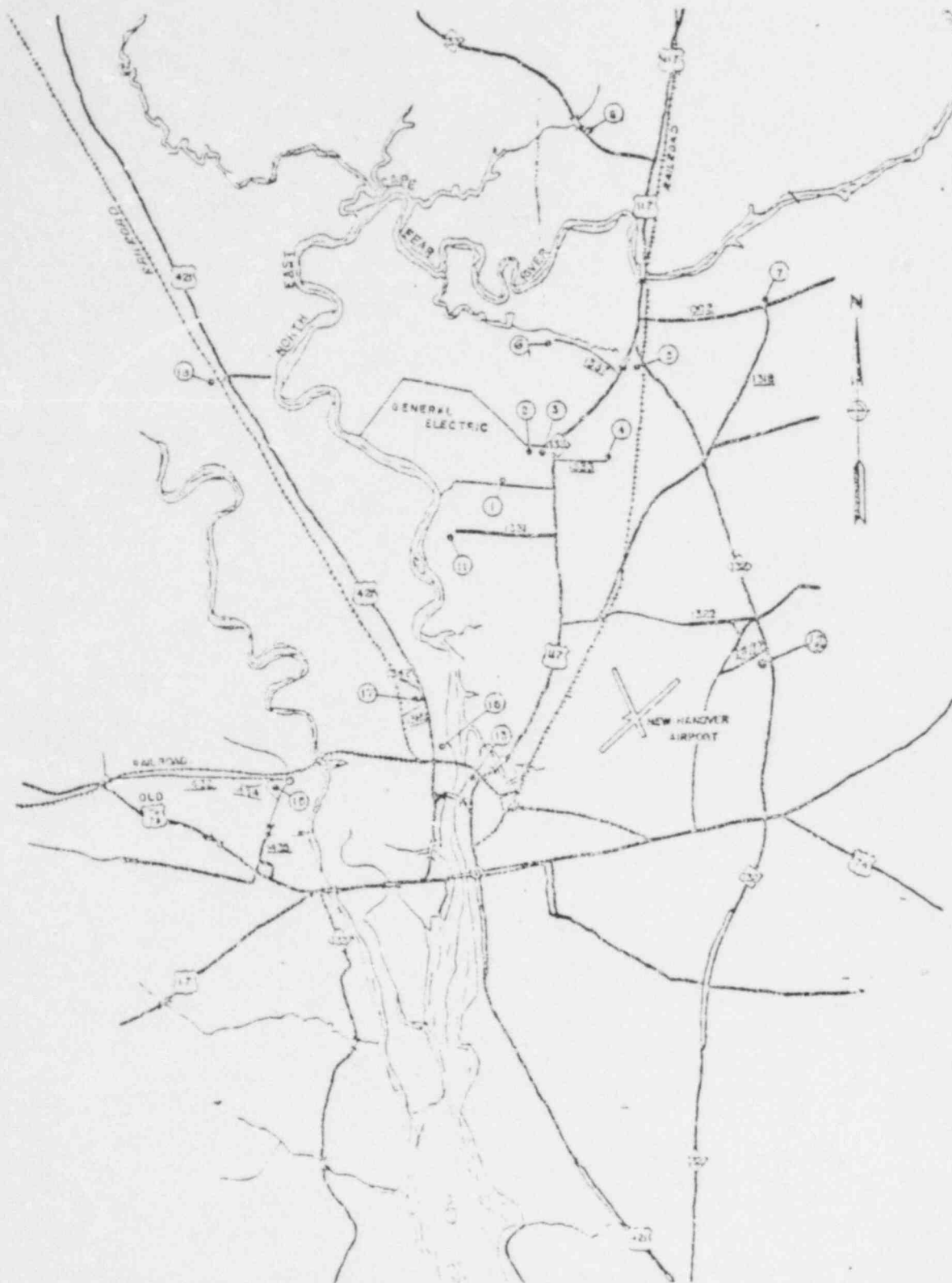
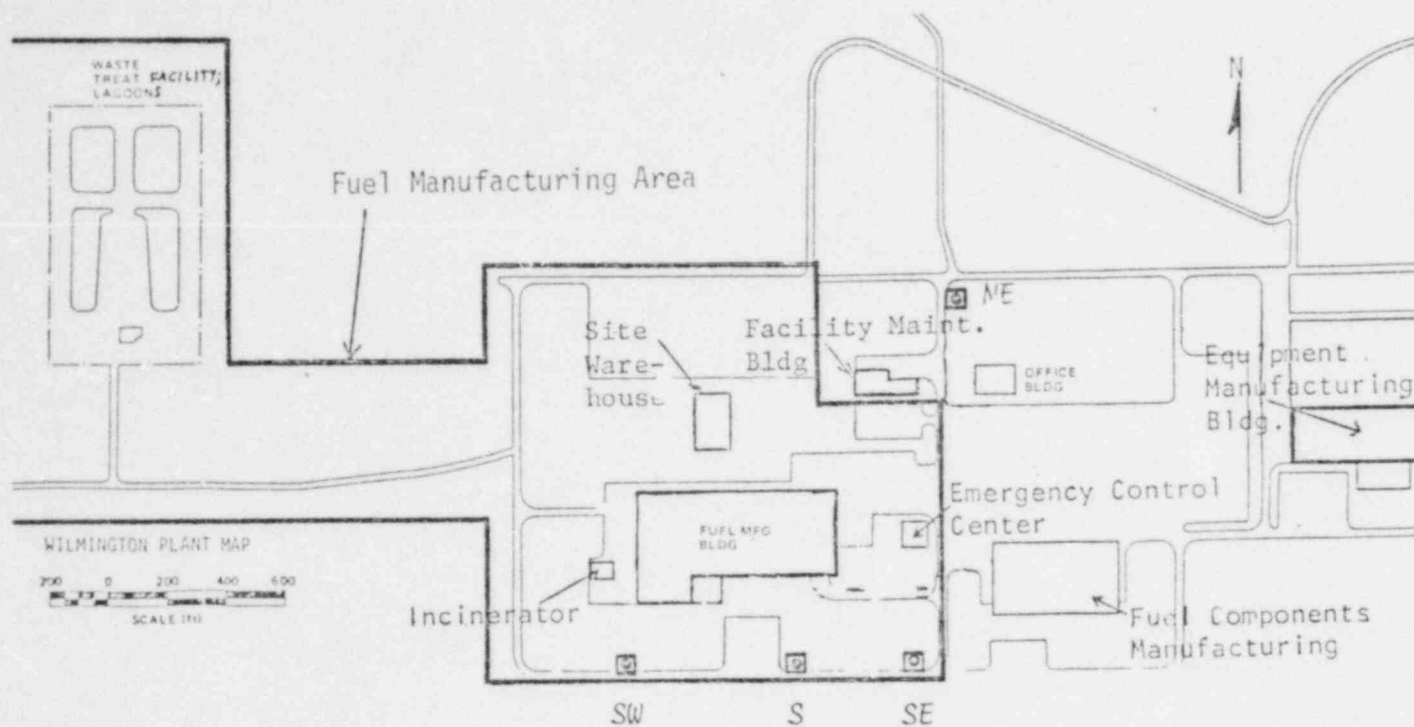


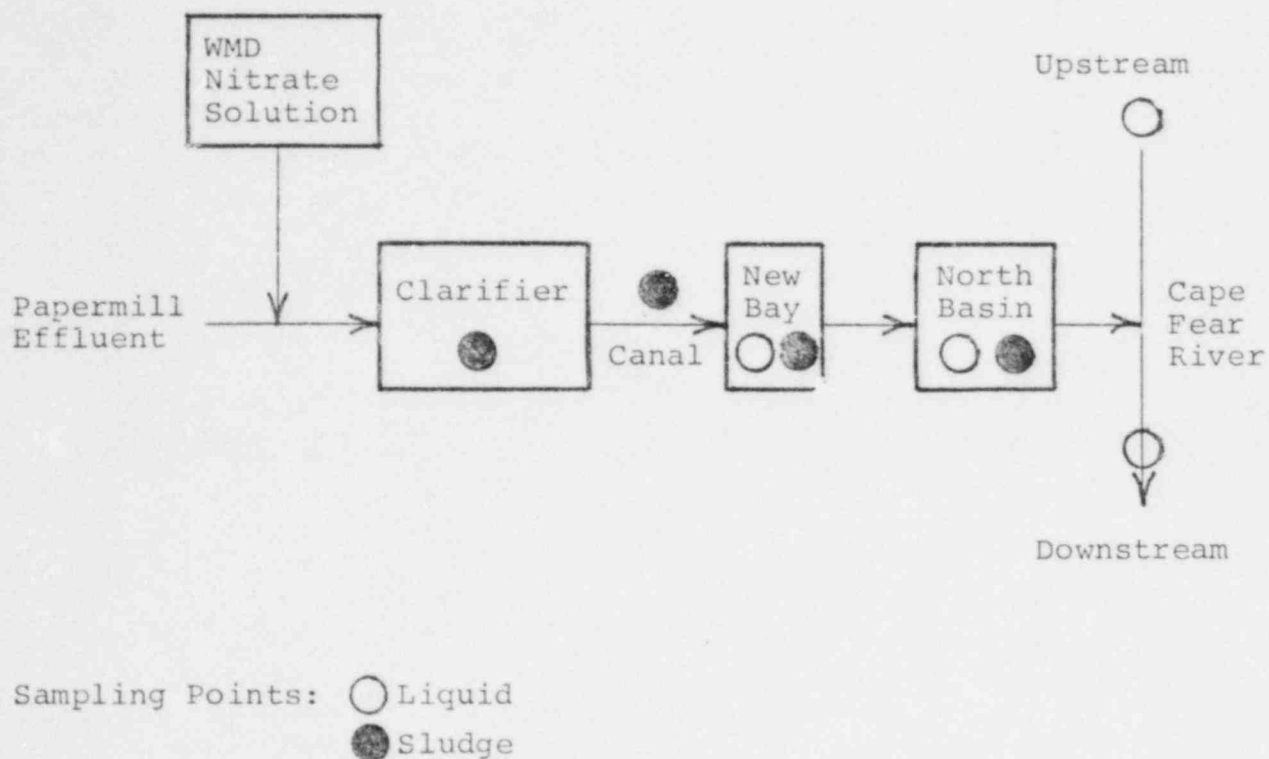
FIGURE 5
 AMBIENT AIR SAMPLING SITES



□ Ambient air sampling site

FIGURE 7

OFFSITE NITRATE WASTE UTILIZATION
FLOW DIAGRAM



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