GEHitachiUELAPEm Resource

From: Ridge, Christianne
Sent: Tuesday, September 15, 2009 3:25 PM
To: GEHitachiHrgFile Resource
Subject: FW: Requested GNF data for 2006
Attachments: GE Data (LISTED AS TEMPLATE by PC)Template-2006.doc; Sample_key.doc; GEMAP01.doc; GEMAP02.doc

---

From: Dusenbury, Dale [mailto:dale.dusenbury@ncdenr.gov]
Sent: Tuesday, September 01, 2009 10:01 AM
To: Ridge, Christianne
Cc: Dusenbury, Dale
Subject: Requested GNF data for 2006

Here is the GE environmental data for 2006. There may be some gaps in the data due to data system switchovers, but this is what we have. The files are in Word documents and text files by sampling media. I have attached a sample key along with several other files.The sample key gives the designation for each type of sample.There are also several maps of the sampling sites as well.Please contact me if you have questions.

Dale Dusenbury, Health Phyicist Supervisor
NC Radiation Protection Section
3825 Barrett Drive
Raleigh, NC 27616
Phone:919-571-4141
Fax:919-571-4148
e-mail:dale.dusenbury@ncdenr.gov

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

Opinions expressed are not necessarily the official position of the agency.

Hearing Identifier: GEHitachiUE_LicenseApplication_Public
Email Number: 91

Mail Envelope Properties (499C2FC6BB962446994CA8682D8ADF3318BE833357)

Subject: FW: Requested GNF data for 2006
Sent Date: 9/15/2009 3:25:18 PM
Received Date: 9/15/2009 3:25:22 PM
From: Ridge, Christianne

Created By: Christianne.Ridge@nrc.gov

Recipients:
"GEHitachiHrgFile Resource" <GEHitachiHrgFile.Resource@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	1106	9/15/2009 3:25:22 PM
GE Data (LISTED AS TEMPLATE by PC)Template-2006.doc	416834	
Sample_key.doc	27714	
GEMAP01.doc	455746	
GEMAP02.doc	437826	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Section 5: General Electric Uranium Fuel Fabrication Plant, Castle Hayne, North Carolina

Air Particulate - Gross Alpha, (pCi/m^3)

	Indicator (GE-APLV-20)[a] All measurements x 10^{-3} pCi/m^3				Control (GE-APLV-03)[b] All measurements x 10^{-3} pCi/m^3			
	DRP		GE		DRP		GE	
Week	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
1/2/06	-	-	1.31	1.31	-	-	0.98	0.98
1/9/06	-	-	4.02	1.59	-	-	2.99	1.58
1/17/06	-	-	1.35	0.69	-	-	4.27	4.27
1/23/06	-	-	1.44	0.82	-	-	1.53	0.90
1/30/06	-	-	1.37	0.87	-	-	0.85	0.48
2/6/06	-	-	3.59	1.44	-	-	2.75	1.14
2/13/06	-	-	3.52	1.35	-	-	4.66	1.76
2/20/06	-	-	3.10	1.33	-	-	2.84	1.24
2/27/06	-	-	2.15	1.06	-	-	1.78	0.91
3/6/06	-	-	4.01	1.79	-	-	4.56	1.97
3/13/06	1.80	0.40	3.16	1.32	1.60	0.40	4.14	1.65
3/20/06	2.20	0.40	4.35	1.82	1.80	0.40	3.34	1.44
3/27/06	1.70	0.40	1.63	8.48	2.20	0.40	1.62	0.83
4/3/06	2.00	0.40	4.05	1.65	2.10	0.40	2.37	1.08
4/10/06	0.18	0.40	2.38	1.09	1.50	0.40	2.87	1.26
4/17/06	0.90	0.30	2.69	1.11	1.50	0.60	2.44	1.02
4/24/06	1.70	0.40	2.26	9.62	1.50	0.40	1.97	0.85
5/1/06	1.60	0.40	3.07	1.41	1.10	0.30	1.56	0.82
5/8/06	1.60	0.40	4.13	1.56	1.50	0.40	4.67	1.72
5/15/06	2.10	0.40	1.88	8.87	1.80	0.40	2.04	0.92
5/22/06	1.70	0.40	3.11	1.20	1.70	0.40	2.85	1.10
5/30/06	1.20	0.20	2.73	1.06	1.60	0.30	3.17	1.21
6/5/06	4.20	1.10	3.03	1.22	1.70	0.40	3.41	1.34
6/12/06	1.50	0.40	3.51	1.29	1.60	0.40	3.23	1.18
6/19/06	1.20	0.40	2.34	0.90	1.70	0.40	2.91	1.10
6/28/06	0.70	0.20	1.59	0.44	0.90	0.30	1.49	0.76
7/5/06	2.30	0.50	3.03	1.32	10.1	1.70	1.49	0.76
7/10/06	1.00	0.40	0.45	0.45	1.30	0.50	0.41	0.41
7/17/06	1.80	0.40	2.92	1.16	1.30	0.40	1.79	0.87
7/24/06	4.90	0.30	1.84	0.85	5.0	0.30	2.27	0.98
7/31/06	4.50	0.30	2.57	1.10	4.6	0.30	2.16	0.94
8/8/06	5.30	0.30	5.93	2.17	5.10	0.30	4.05	1.50
8/14/06	3.90	0.30	3.34	1.30	4.10	0.30	4.92	1.85
8/21/06	3.90	0.30	3.85	1.54	4.90	0.30	3.48	1.85
8/28/06	4.50	0.30	3.32	1.30	3.80	0.20	2.76	1.10
9/6/06	0.90	0.10	1.02	0.67	0.90	0.10	1.24	0.73
9/11/06	6.0	0.40	5.81	2.25	5.50	0.30	6.34	2.44
9/19/06	3.20	0.20	3.07	1.24	3.00	0.20	3.55	1.40
9/25/06	4.40	0.30	2.61	1.17	4.30	0.30	4.44	1.78
10/2/06	5.10	0.30	3.74	1.45	4.80	0.30	2.83	1.12
10/9/06	3.30	0.20	3.96	1.60	3.40	0.20	4.33	1.71
10/16/06	3.70	0.20	3.40	1.38	4.00	0.30	3.70	3.70
10/24/06	1.80	0.10	3.81	1.44	1.80	0.10	4.86	1.81
10/30/06	2.50	0.20	2.87	1.30	2.90	0.20	3.00	1.33
11/6/06	3.10	0.20	4.86	1.84	2.90	0.20	3.62	1.40
11/13/06	2.30	0.30	2.88	1.19	2.10	0.20	2.21	0.95
11/20/06	2.70	0.20	4.08	1.64	2.00	0.20	3.78	1.53
11/27/06	1.60	0.20	2.48	1.02	1.10	0.20	1.87	0.80
12/4/06	1.50	0.20	1.23	0.70	1.20	0.20	2.15	0.96
12/11/06	2.00	0.20	5.42	2.00	1.90	0.20	5.40	1.99
12/18/06	0.40	0.10	2.70	1.13	0.80	0.10	2.53	1.08
12/27/06	-	-	2.03	0.94	1.00	0.10	2.35	1.05

Air Particulate - Gross Alpha, (pCi/m^3)

	Indicator (GE-APLV-20)[a]				Control (GE-APLV-03)[b]			
	All measurements x 10^{-3} pCi/m^3				All measurements x 10^{-3} pCi/m^3			
	DRP		GE		DRP		GE	
Week	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
Average								
% Diff.								

.

[a] GE-APLV-20 is located at the South Fence of the FMO Building Air Samples are collected weekly at this site by NCDRP and GE. Filters are composited monthly by GE and quarterly by NCDRP.
[b] GE-APLV-03 is located at the GE dock downstream of the discharge canal. Air samples are collected weekly at this site by NCDRP and GE. Filters are composited monthly by GE and quarterly by NCDRP.

Air Particulate - Gross Alpha (pCi/m^3)

	GE-APLV-11[a] All measurements x 10^{-3} pCi/m^3 DRP			GE-APLV-11[a] All measurements x 10^{-3} pCi/m^3 DRP	
Date	Meas.	Error	Date	Meas.	Error
1/4/06	8.60	1.70	7/17/06	0.30	0.10
1/9/06	4.20	1.70	7/24/06	2.10	0.20
1/17/06	2.80	1.50	7/31/06	1.20	0.20
1/23/06	4.00	1.50			
1/30/06	2.40	1.20			
2/6/06	1.70	1.30	8/7/06	2.30	0.20
2/13/06	8.30	1.70	8/14/06	0.70	0.10
2/22/06	5.30	1.70	8/21/06	1.80	0.20
2/27/06	3.20	1.90	8/29/06	1.40	0.20
3/6/06	5.00	2.20	9/5/06	0.15	0.10
3/13/06	3.40	1.50	9/11/06	1.40	0.20
3/27/06	6.40	1.30	9/18/06	0.80	0.10
			9/25/06	0.90	0.10
4/3/06	7.60	2.50	10/2/06	2.10	0.20
4/10/06	4.20	1.60	10/9/06	1.00	0.20
4/17/06	16.90	2.10	10/16/06	0.40	0.10
4/24/06	4.00	2.00	10/24/06	0.60	0.10
5/1/06	5.70	3.30	10/30/06	0.90	0.20
5/11/06	6.00	1.40	11/8/06	2.10	0.20
5/15/06	11.10	2.70	11/13/06	0.60	0.20
5/22/06	4.10	1.60	11/20/06	0.40	0.10
5/30/06	4.50	1.70	11/27/06	1.10	0.20
6/5/06	8.30	1.80	12/4/06	0.50	0.10
6/12/06	3.30	1.70	12/11/06	1.30	0.20
6/19/06	10.60	0.80	12/18/06	0.10	0.10
6/28/06	6.20	1.60	12/22/06	1.70	0.30
			Average		
			% Diff.	-	

[a] GE-APLV-11 is located at the Horticultural Crops Research Station on Hwy. 117 across from GE plant.

Waste Water-Gross Alpha, Gross Beta, and Isotopic Uranium (pCi/l)

Indicator (GE-WW-02)[a]

All measurements in pCi/l

		DRP		GE	
Date	**Isotope**	**Meas.**	**Error**	**Meas.**	**Error**
1/23/06	Alpha	-	-	72.0E+00	14.0E+00
	Beta	-	-	35.5E+00	5.90E+00
2/	Alpha				
	Beta				
3/6/06	Alpha	52.59E+00	3.01E+00	32.3E+00	8.29E+00
	Beta	19.26E+00	1.78E+00	19.2E+00	4.68E+00
4/10/06	Alpha	175.44E+00	5.69E+00	135.0E+00	18.4E+00
	Beta	51.06E+00	2.29E+00	37.2E+00	5.67E+00
5/1/06	Alpha	404.26E+00	10.65E+00	182.0E+00	22.7E+00
	Beta	73.2E+00	2.44E+00	60.1E+00	7.02E+00
6/12/06	Alpha	186.65E+00	7.07E+00	93.2E+00	17.93E+00
	Beta	35.15E+00	1.98E+00	35.1E+00	5.94E+00
7/117/06	Alpha	-	-	73.4E+00	16.1E+00
	Beta	-	-	32.7E+00	5.90E+00
8/31/06	Alpha	-	-	58.4E+00	12.5E+00
	Beta	-	-	27.0E+00	4.25E+00
9/5/06	Alpha	-	-	-	-
	Beta	-	-	-	-
10/2/06	Alpha	-	-	75.6E+00	12.0E+00
	Beta	-	-	39.5E+00	46.7E+00
11/6/06	Alpha	-	-	57.1E+00	10.4E+00
	Beta	-	-	25.2 E+00	3.94E+00

[a] Sample of effluent is collected monthly at site dam.

Surface Water – Gross Alpha, Gross Beta, and Isotopic Uranium, (pCi/l)

		Indicator (GE-SW-03)[a] All measurements in pCi/l				Control (GE-SW-04)[b] All measurements in pCi/l			
		DRP		GE		DRP		GE	
Date	Isotope	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
4/10/06	Alpha	3.32E+00	1.60E+00	12.1E+00	12.1E+00	1.73E+00	1.08E+00	1.76E+00	1.76E+00
	Beta	32.67E+00	2.08E+00	99.7E+00	13.2E+00	3.50E+00	1.53E+00	6.85E+00	3.01 E+00
6/28/06	Alpha	2.57E+00	1.06E+00	3.02E+00	3.02E+00	0.69E+00	1.00E+00	3.12E+00	3.12E+00
	Beta	5.36E+00	1.53E+00	4.45E+00	4.45E+00	3.84E+00	1.50E+00	5.48E+00	3.19E+00
9/07/06	Alpha	-	-	2.49E+00	2.49E+00	-	-	2.52E+00	2.52E+00
	Beta	-	-	4.62E+00	2.93E+00	-	-	4.25E+00	4.25E+00
11/06/07	Alpha	-	-	5.4E+00	5.4E+00	-	-	1.3E+00	1.3E+00
	Beta	-	-	50.0E+00	7.16E+00	-	-	7.39E+00	2.11E+00

[a] GE-SW-03 is located at the site dam and is sampled on a quarterly basis.
[b] GE-SW-04 is located at the Cape Fear River Public Boat Doc and is sampled on a quarterly basis.

Ground Water-Gross Alpha, Gross Beta, and Uranium (pCi/l)

		Indicator (GE-GW-PL3A)[a] All measurements in pCi/l				GE-GW-FW03A[a] All measurements in pCi/l			
		DRP		GE		DRP		GE	
Date	Isotope	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
1/30/06	Alpha	7.88E+00	1.36E+00	5.48E+00	2.81E+00				
	Beta	10.6E+00	1.61E+00	12.4E+00	3.80E+00				
2/01/06	Alpha					1.28E+00	1.03E+00	< 2.19E+00	2.19E+00
	Beta					2.92E+00	1.54E+00	<4.58E+00	4.58E+00
4/24/06	Alpha	8.79E+00	1.59E+00	< 2.50E+00	2.50E+00				
	Beta	11.03E+00	1.72E+00	10.4E+00	3.35E+00				
6/26/06	Alpha								
	Beta								
9/11/06	Alpha							< 2.69E+00	2.69E+00
	Beta							4.37E+00	4.37E+00
	Alpha								
	Beta								

Ground Water - Alpha, Beta, and Uranium, pCi/l

		GE-GW-WT6[a] All measurements in pCi/l				All measurements in pCi/l			
		DRP		GE		DRP		GE	
Date	Isotope	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
6/26/06	Alpha			4.14E+00	2.51E+00				
	Beta			< 4.35E+00	4.35E+00				
	Alpha								
	Beta								
	Alpha								
	Beta								

a. Samples were collected onsite by RTI contract services through GNF, and performed on a semi-annual basis

Terrestrial Vegetation - Gross Alpha, Gross Beta, and Isotopic Uranium, pCi/g

		Indicator (GE-TV-05)[a]				Indicator (GE-TV-06)[b]			
		DRP (pCi/g-ash)		GE (pCi/g-dry)		DRP (pCi/g-ash)		GE (pCi/g-dry)	
Date	Isotope	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
4/17/06	Alpha	6.92E+00	1.9E+00	2.59E-01	1.45E-01	27.35E+00	5.29E+00	1.17E-01	6.79E-02
	Beta	41.37E+00	3.33E+00	12.0E+00	3.47E-01	73.05E+00	7.91E+00	3.13E+00	1.22E-01
8/28/06	Alpha			3.63E+00	8.87E-01			1.48E+00	7.87E-01
	Beta			34.1E+00	1.11E+00			20.0E+00	1.03E+00

[a] GE-TV-05 is located at Tinga Farm and is collected semi-annually.
[b] GE-TV-06 is located near St. Stanislaus Church on Marathon Avenue. Samples are collected semi-annually.

Soil, Alpha, Beta, and Isotopic Uranium, (pCi/gm-dry)

		Indicator (GE-SS-05)[a] All measurements in pCi/g				(GE-SS-06)[b] All measurements in pCi/g			
		DRP		GE		DRP		GE	
Date	Isotope	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
4/18/06	Alpha	5.21E+01	2.65E+00	<2.30E+00	2.30E+00	1.78E+00	3.11E+00	<2.36E+00	2.36E+00
	Beta	7.02E+01	1.65E+01	8.06E+00	1.67E+00	1.36E+00	3.42E+00	3.16E+00	1.33E+00
8/28/06	Alpha			< 2.88E+00	2.88E+00			5.39E+00	2.95E+00
	Beta			10.7E+00	1.76E+00			4.36E+00	1.34E+00

[a] GE-SS-05 is located in neighborhood across from Tinga Farm.
[b] GE-SS-06 is located at Saint Stanislaus Catholic Church on Marathon Avenue. Samples are collected semi-annually.

Sediment-Gross Alpha, Gross Beta and Isotopic Uranium (pCi/g-dry)

		Indicator (GE-SD-02D)[a] All measurements in pCi/g				Control(GE-SD-03)[b] All measurements in pCi/g			
		DRP		GE		DRP		GE	
Date	Isotope	Meas.	Error	Meas.	Error	Meas.	Error	Meas.	Error
4/10/06	Alpha	46.02E+00	4.41E+00	48.3E+00	9.91E+00	2.48E+00	2.56E+00	<3.96E+00	3.96E+00
	Beta	13.59E+00	1.41E+00	41.8E+00	3.36E+00	5.73E+00	1.31E+00	3.26E+00	1.41E+00
	Alpha								
	Beta								
6/28/06	Alpha			216.0+00	21.6E+00			<2.39E+00	2.39E+00
	Beta			284.0E+00	7.67E+00			4.82E+00	1.35E+00

Sediment-Gross Alpha, Gross Beta, and Isotopic Uranium(pCi/g-dry)

		Indicator (GE-SD-04)[c] All measurements in pCi/g			
		DRP		GE	
Date	Isotope	Meas.	Error	Meas.	Error
4/10/06	Alpha	3.73E+00	2.73E+00	<4.98E+00	4.98E+00
	Beta	2.37E+00	2.02E+00	5.52E+00	1.72E+00
6/28/06	Alpha			< 2.59E+00	2.59E+00
	Beta			5.51E+00	1.41E+00

[a] GE-SD-02D is collected below the process lagoon discharge pipe outfall near the dam site.
[b] GE-SD-03 is located at the site dock.
[c] GE-SD-04 is located at the Castle Hayne Boat Landing.

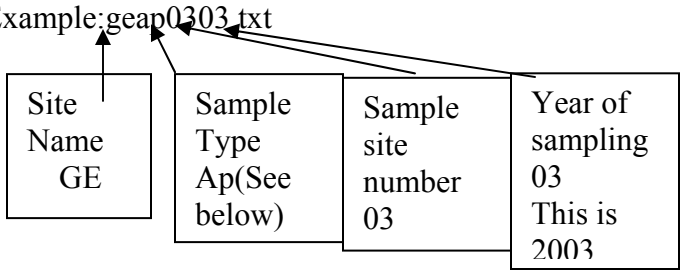
TLD

		All readings in mR/year.							
		1st Qtr		2nd Qtr		3rd Qtr		4th Qtr	
Loc #	Location	Meas	Error	Meas	Error	Meas	Error	Meas	Error
1	Lagoon	44.2	3.0	38.2	0.6	43.3	3.8	37.6	1.6
2	Site Dam	41.2	2.4	39.0	2.1	49.8	4.7	39.9	1.9
3	Site Dock	25.7	0.7	31.7	1.3	35.4	3.6	32.6	2.4
4	Public Dock	39.3	2.2	43.5	1.9	NA		37.3	1.9
5	Tinga Farm	46.2	2.3	44.6	2.0	60.3	5.3	39.4	2.2
	Quarterly Average, All Sites	39.3		39.4		47.2		37.4	
	Yearly Average, All Sites	40.8							

NA=Missing

Key to Standard Designations for GNF samples

1. Sample data is in several forms, ie. Word documents and text documents.
2. Sample data titles are in several forms. Word documents may have an actual title such as "GE-Data Template-2002.
3. Sample data in other formats (such as text files with the .txt suffix) have a title made of identifiers of facility name, sample type, and year as shown below:
   Example:geap0303.txt



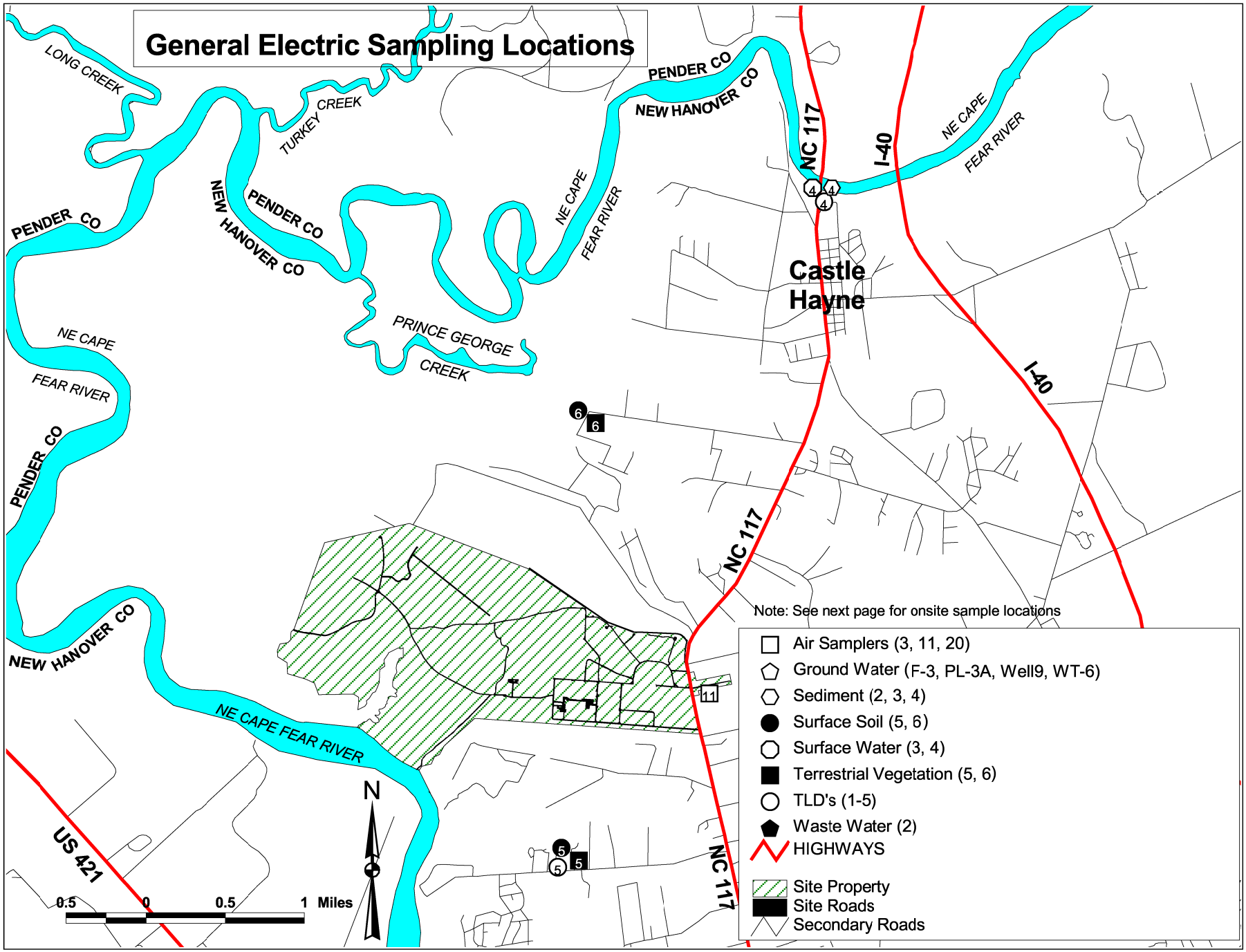
Sample Type Abbreviations

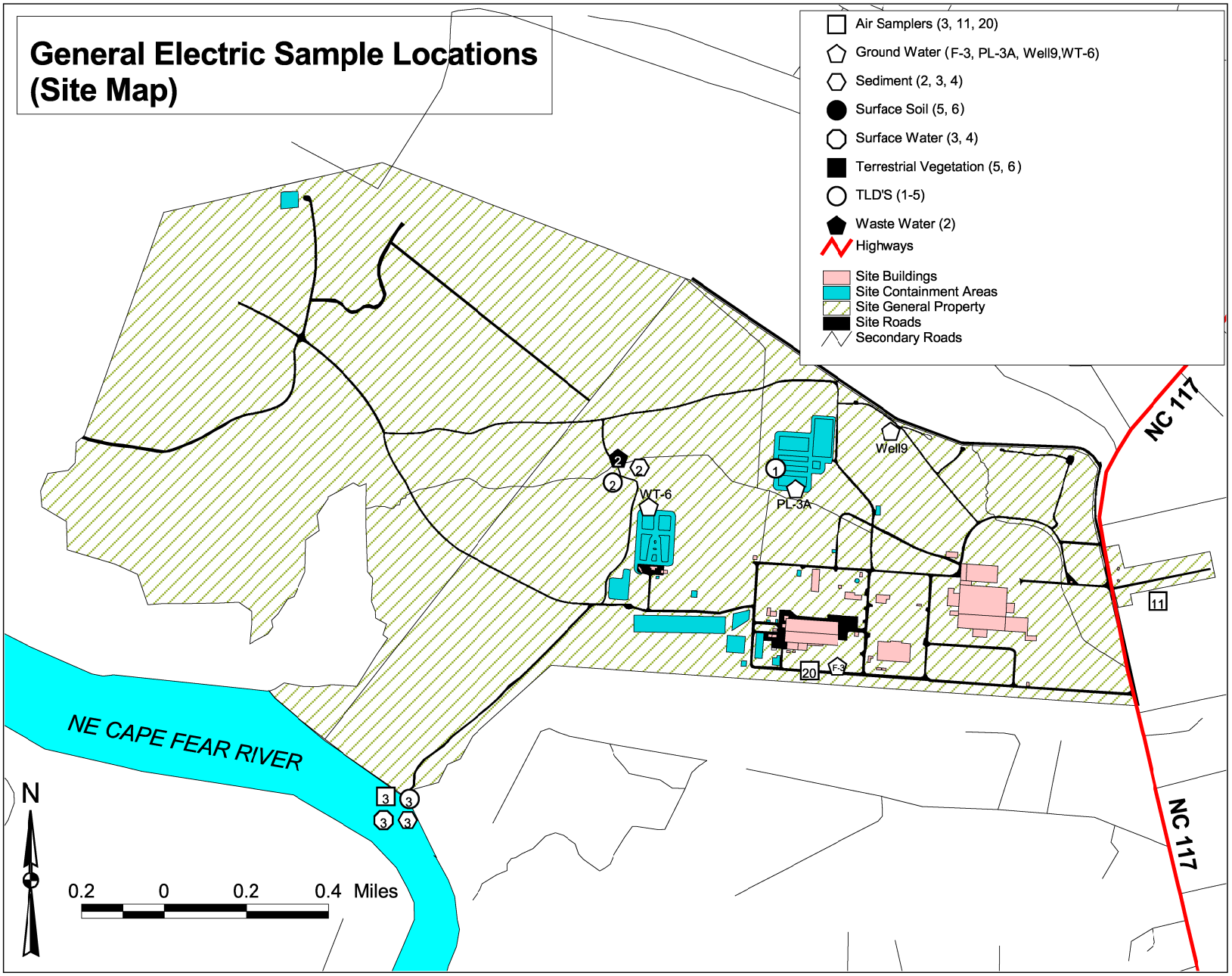
1. Air sample-AP or APLV
2. Surface water-SW
3. Ground water-GW
4. Sediment-SD
5. Soil-SS
6. Waste Water-WW(from outfall lagoon)
7. TV terrestrial vegetation

Examples:

Getv0504-

Facility GE
Sample type:TV –Terrestrial vegetation
05-Sample location number 05
04-Collection year 2004


General Electric Sampling Locations
LONG CREEK
TURKEY CREEK
PENDER CO
NEW HANOVER CO
NE CAPE FEAR RIVER
PRINCE GEORGE CREEK
NC 117
I-40
Castle Hayne
US 421
Note: See next page for onsite sample locations
Air Samplers (3, 11, 20)
Ground Water (F-3, PL-3A, Well9, WT-6)
Sediment (2, 3, 4)
Surface Soil (5, 6)
Surface Water (3, 4)
Terrestrial Vegetation (5, 6)
TLD's (1-5)
Waste Water (2)
HIGHWAYS
Site Property
Site Roads
Secondary Roads
N
0.5 0 0.5 1 Miles


General Electric Sample Locations
(Site Map)
Air Samplers (3, 11, 20)
Ground Water (F-3, PL-3A, Well9,WT-6)
Sediment (2, 3, 4)
Surface Soil (5, 6)
Surface Water (3, 4)
Terrestrial Vegetation (5, 6)
TLD'S (1-5)
Waste Water (2)
Highways
Site Buildings
Site Containment Areas
Site General Property
Site Roads
Secondary Roads
NC 117
NC 117
Well9
PL-3A
WT-6
F-3
NE CAPE FEAR RIVER
N
0.2
0
0.2
0.4
Miles