

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HEALTH

OFFICE OF RADIOLOGICAL HEALTH
109 Governor Street, 7th Floor, Richmond, Virginia 23219
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**ENVIRONMENTAL
RADIATION
MONITORING
PROGRAM**

**2023
Second Quarter Report**

COMMONWEALTH OF VIRGINIA
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Sampling Locations

Sampling Locations for Surry & North Anna Nuclear Power Station



Surry Power Station



North Anna Power Station

Air

SPS-A-1	Surry Power Station	Beta Air Filter Gamma Charcoal & Filter
SPS-A-2	Jamestown	Beta Air Filter Gamma Charcoal & Filter
PSP-A-1	Pocahontas State Park	Beta Air Filter Gamma Charcoal & Filter
NAPS-A-1	Louisa (Outside North Anna Power Station)	Beta Air Filter Gamma Charcoal & Filter
NAPS-A-2	Bumpass	Beta Air Filter Gamma Charcoal & Filter

Water

SPS-W-1	Surry Power Station Discharge Canal	Gamma, Tritium
SPS-W-2	James River @ Robious Landing	Gamma, Tritium
SPS-W-3	James River @ Lawnes Creek	Gamma, Tritium
NAPS-W-1	North Anna Power Station Discharge Canal	Gamma, Tritium
NAPS-W-2	North Anna River @ Rt 651	Gamma, Tritium
NAPS-W-3	Pleasants Landing	Gamma, Tritium

Sample Analysis Results for Surry & North Anna Power Stations

WEEK	FREQUENCY	PAGE	COMMENTS
Week 1: 01/02/23- 01/09/23	Weekly	12	
Week 2: 01/09/23 - 01/16/23	Weekly	13	
Week 3: 01/16/23 - 01/23/23	Weekly	14	
Week 4: 01/23/23 - 01/30/23	Weekly	15	
Week 5: 01/30/23 - 02/06/23	Weekly	16	
Week 6: 02/06/23 - 02/13/23	Weekly	17	
Week 7: 02/13/23 - 02/20/23	Weekly	18	
Week 8: 02/20/23 - 02/27/23	Weekly	19	
Week 9: 02/27/23 - 03/06/23	Weekly	20	
Week 10: 03/06/23 - 03/13/23	Weekly	21	
Week 11: 03/13/23 - 03/20/23	Weekly	22	
Week 12: 03/20/23- 03/27/23	Weekly	23	
Week 13: 03/27/23 - 04/03/23	Weekly	24	
Week 14: 04/03/23 - 04/10/23	Weekly	25	
Week 15: 04/10/23 - 04/17/23	Weekly	26	
Week 16: 04/17/23 - 04/24/23	Weekly	27	
Week 17: 04/24/23 - 05/01/23	Weekly	28	
Week 18: 05/01/23 - 05/08/23	Weekly	29	
Week 19: 05/08/23 - 05/15/23	Weekly	30	
Week 20: 05/15/23 - 05/22/23	Weekly	31	
Week 21: 05/22/23- 05/29/23	Weekly	32	
Week 22: 05/29/23 - 06/05/23	Weekly	33	
Week 23: 06/05/23 - 06/12/23	Weekly	34	
Week 24: 06/12/23 - 06/19/23	Weekly	35	
Week 25: 06/19/23 - 06/26/23	Weekly	36	
Week 26: 06/26/23 - 07/03/23	Weekly	37	
Week 27: 07/03/23 - 07/10/23	Weekly	38	
Week 28: 07/10/23 - 07/17/23	Weekly	39	
Week 29: 07/17/23- 07/24/23	Weekly	40	
Week 30: 07/24/23 - 07/31/23	Weekly	41	
Week 31: 07/31/23 - 08/07/23	Weekly	42	
Week 32: 08/07/23 - 08/14/23	Weekly	43	
Week 33: 08/14/23 - 08/21/23	Weekly	44	
Week 34: 08/21/23 - 08/28/23	Weekly	45	
Week 35: 08/28/23 - 09/04/23	Weekly	46	
Week 36: 09/04/23 - 09/11/23	Weekly	47	
Week 37: 09/11/23 - 09/18/23	Weekly	48	

WEEK	FREQUENCY	PAGE	COMMENTS
Week 38: 09/18/23 - 09/25/23	Weekly	49	
Week 39: 09/25/23 - 10/02/23	Weekly	50	
Week 40: 10/02/23 - 10/09/23	Weekly	51	
Week 41: 10/09/23 - 10/16/23	Weekly	52	
Week 42: 10/16/23 - 10/23/23	Weekly	53	
Week 43: 10/23/23 - 10/30/23	Weekly	54	
Week 44: 10/30/23 - 11/06/23	Weekly	55	
Week 45: 11/06/23 - 11/13/23	Weekly	56	
Week 46: 11/13/23 - 11/20/23	Weekly	57	
Week 47: 11/20/23 - 11/27/23	Weekly	58	
Week 48: 11/27/23 - 12/04/23	Weekly	59	
Week 49: 12/04/23 - 12/11/23	Weekly	60	
Week 50: 12/11/23 - 12/18/23	Weekly	61	
Week 51: 12/18/23 - 12/25/23	Weekly	62	
Week 52: 12/25/23 - 01/01/24	Weekly	63	

Other Sample Locations

We are currently working with both facilities to determine the sampling frequency moving forward

SAMPLE	LOCATION	TYPE	FREQUENCY	PAGE
<u>Surface Water</u>				
NNSB-W-1	James River - NNSB-Pier 1	Surface Water	TBD*	64
NNSB-W-2	James River - NNSB-Shipway 11	Surface Water	TBD*	64
NNSY-W-1	Elizabeth River - NNSY - Drydock #4	Surface Water	TBD*	65
NNSY-W-2	Elizabeth River - NNSY - Drydock #8	Surface Water	TBD*	66
NNSY-W-3	Elizabeth River - NNSY - Wet Slip #1	Surface Water	TBD*	67
<u>Silt</u>				
NNSB-S-1	James River - NNSB - Pier 1	Silt	TBD*	68
NNSB-S-2	James River - NNSB-Shipway 11	Silt	TBD*	69
NNSY-S-1	Elizabeth River - NNSY - Drydock #4	Silt	TBD*	70
NNSY-S-2	Elizabeth River - NNSY - Drydock #8	Silt	TBD*	71
NNSY-S-3	Elizabeth River - NNSY - Wet Slip #1	Silt	TBD*	72

*Sampling frequency and dates determined by staff at NNSY. No samples collected in the 1st quarter. VDH staff were unable to sample with NNSY staff in the second quarter due to scheduling conflicts.

Other Sample Types for Surry & North Anna Power Stations

Sample	Location	Description	Frequency	Page
SILT				
SPS-S-1	James River – 1 ½ Mile Off Discharge Canal	Silt	2x per year	73
NAPS-S-1	Waste Treatment Shoreline Soil	Soil	2x per year	73
FISH				
NAPS-F-1	North Anna Lake – Second Cooling Lagoon	Edible Fish	2x per year	74-75
SPS-F-1	James River – .5 miles off Discharge Canal	Edible Fish	2x per year	74-75
SPS-R-1	James River- Various Locations	Shellfish	Annually	76
MILK				
SPS-M-1	Williamsburg - MO Smith Farm	Raw	2x per year	77-78
VEGETATION				
SPS-V-1	Surry County – Local Farmers	Edible Vegetation	2x per year	79
NAPS-V-1	Louisa County – Local Farmers	Edible Vegetation	2x per year	79

Dosimetry Locations for Surry & North Anna Power Stations

Dosimetry	Station	Frequency	Description	Page
Jamestown – Historical site	SPS-D-1	Quarterly	Gamma in Air	80-83
Williamsburg – Airport	SPS-D-2	Quarterly	Gamma in Air	80-83
Williamsburg – Busch Gardens	SPS-D-3	Quarterly	Gamma in Air	80-83
Newport News - Lee Hall	SPS-D-4	Quarterly	Gamma in Air	80-83
Naval Weapons Station – 1	SPS-D-5	Quarterly	Gamma in Air	80-83
Newport News – Fort Eustis	SPS-D-6	Quarterly	Gamma in Air	80-83
Surry – Route 628	SPS-D-7	Quarterly	Gamma in Air	80-83
Surry – Lawnes Creek	SPS-D-8	Quarterly	Gamma in Air	80-83
Surry Power Station	SPS-D-9	Quarterly	Gamma in Air	80-83
Surry – Hog Point	SPS-D-10	Quarterly	Gamma in Air	80-83
Surry – Bacon’s Castle	SPS-D-11	Quarterly	Gamma in Air	80-83
Surry – Alliance	SPS-D-12	Quarterly	Gamma in Air	80-83
Surry – Scotland Wharf	SPS-D-13	Quarterly	Gamma in Air	80-83
Surry – Lebanon Baptist Church	SPS-D-14	Quarterly	Gamma in Air	80-83
Louisa County - Mineral	NAPS-D-1	Quarterly	Gamma in Air	80-83
Louisa County – Wares Crossroads	NAPS-D-2	Quarterly	Gamma in Air	80-83
Louisa County – Good Hope Church	NAPS-D-3	Quarterly	Gamma in Air	80-83
Spotsylvania – Route 713	NAPS-D-4	Quarterly	Gamma in Air	80-83
Spotsylvania Route 614	NAPS-D-5	Quarterly	Gamma in Air	80-83
Spotsylvania – Levy	NAPS-D-6	Quarterly	Gamma in Air	80-83
Louisa County – Bumpass Fire Dept.	NAPS-D-7	Quarterly	Gamma in Air	80-83
Louisa County – Fred Hall	NAPS-D-8	Quarterly	Gamma in Air	80-83
Louisa County – Aspen Hill	NAPS-D-9	Quarterly	Gamma in Air	80-83
Louisa County – Route 685	NAPS-D-10	Quarterly	Gamma in Air	80-83
Louisa County – Route 700	NAPS-D-11	Quarterly	Gamma in Air	80-83
North Anna Power Station	NAPS-D-12	Quarterly	Gamma in Air	80-83
Pocahontas State Park (Control)	PSP-D-1	Quarterly	Gamma in Air	80-83
Radiological Health	ORH-D-1	Quarterly	Gamma in Air	80-83

Radiological Health	ORH-D-2	Quarterly	Gamma in Air	80-83
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Sampling Locations - Babcock & Wilcox

SAMPLE	LOCATION	TYPE	FREQUENCY	PAGE
<u>AIR</u>				
B&W-A-1	Eastern Site Boundary - Ballfield	Air Particulate	Quarterly	85
<u>SOIL</u>				
B&W-S-1	Eastern Site Boundary - Ballfield	Soil	Annually	86
B&W-S-2	James River Riverside Park	Soil	Annually	86
<u>SURFACE WATER</u>				
B&W-W-1	Eastern Site Boundary - Ballfield	Surface Water	Annually	86
B&W-W-2	James River Riverside Park	Surface Water	Annually	86
<u>VEGETATION</u>				
B&W-V-1	Eastern Site Boundary - Ballfield	Grass	Annually	87
B&W-V-2	James River Riverside Park	Grass	Annually	87

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NO DETECTABLE RESULTS "NDR"

In order for a nuclide to be identified in the spectrum and entered into this report, constraints set by the HPGe analysis software need to be satisfied and the results of the confidence index calculation must be greater than the threshold (usually 0.3).

For the maximum confidence index, the following conditions need to be met.

- The nuclide energy peak needs to be within the energy tolerance of the library lines for that nuclide.
- A nuclide with multiple lines, must match the library peaks in the spectrum.
- The number of half-lives that has elapsed, between when the sample was taken and when it was counted, must be less than 10 half-lives or the confidence in the identification is small.

If the confidence index threshold and/or any of the three criteria are not met, then the nuclide is deemed no detectable results, (NDR).

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Analytical Results

Virginia Department of Health

Week 1: 01/02/23 – 01/09/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.004
SPS-A-2	NDR	NDR	NDR	0.03+/0.005
PSP-A-1	NDR	NDR	NDR	0.03+/0.004
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.03+/0.004

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	300+/-70
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-222
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	150+/-70
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7808+/-422
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-222
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7883+/-428

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 2: 01/09/23– 01/16/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.04+/0.006
PSP-A-1	NDR	NDR	NDR	0.04+/0.006
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.06+/0.009

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1426+/-172
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	976+/-140
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	751+/-140
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7958+/-427
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-122
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7733+/-427

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 3: 01/16/23– 01/23/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.04+/0.006
SPS-A-2	NDR	NDR	NDR	0.05+/0.008
PSP-A-1	NDR	NDR	NDR	0.03+/0.005
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.05+/0.007

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	2703+/-253
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1201+/-157
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1126+/-157
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	8333+/-439
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	976+/-157
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	8108+/-433

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health

Week 4: 01/23/23– 01/30/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.01+/0.003
SPS-A-2	NDR	NDR	NDR	0.02+/0.003
PSP-A-1	NDR	NDR	NDR	0.02+/0.003
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.03+/0.005

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	300+/-71
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	150+/-71
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	450+/-100
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	9009+/-463
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1051+/-158
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	8634+/-446

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 5: 01/30/23 – 02/06/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.004
SPS-A-2	NDR	NDR	NDR	0.04+/0.005
PSP-A-1	NDR	NDR	NDR	0.03+/0.005
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.03+/0.006

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 37	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	75+/-211
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-211
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-211
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7132+/-434
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	75+/-70
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7057+/-422

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 6: 02/06/23– 02/13/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.02+/0.004
SPS-A-2	NDR	NDR	NDR	0.04+/0.005
PSP-A-1	NDR	NDR	NDR	0.03+/0.005
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.03+/0.005

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	3604+/-285
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-285
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-285
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6381+/-390
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-285
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6381+/-396

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 7: 02/13/23– 02/20/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.004
SPS-A-2	NDR	NDR	NDR	0.04+/0.005
PSP-A-1	NDR	NDR	NDR	0.03+/0.005
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.04+/0.006

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 37	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	526+/-122
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-211
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	75+/-70
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7207+/-416
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-211
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7132+/-410

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 8: 02/20/23– 02/27/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.04+/0.006
PSP-A-1	NDR	NDR	NDR	0.03+/0.005
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.04+/0.006

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	676+/-123
SPS-W-2**											
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	526+/-100
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6682+/-400
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	601+/-123
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7658+/-425

*NAPS-A-1 not collected due to equipment malfunction

**SPS-W-2 not collected due to weather related conditions

Virginia Department of Health

Week 9: 02/27/23 – 03/06/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.04+/0.006
PSP-A-1	NDR	NDR	NDR	0.06+/0.008
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.07+/0.010

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1126+/-158
SPS-W-2**											
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	150+/-71
NAPS-W-1***											
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-212
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6907+/-412

*NAPS-A-1 not collected due to equipment malfunction

**SPS-W-2 not collected due to high water level at sample site

***NAPS-W-1 not collected due to main access road closure due to erosion related damage

Virginia Department of Health

Week 10: 03/06/23– 03/13/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.03+/0.005
PSP-A-1	NDR	NDR	NDR	0.04+/0.006
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.04+/0.006

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-353
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-353
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-353
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	4805+/-346
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-353
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	4505+/-338

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health
Week 11: 03/13/23 – 03/20/23*

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

*No samples were collected due to other program activities

Virginia Department of Health
Week 12: 03/20/23 - 03/27/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.02+/0.003
SPS-A-2	NDR	NDR	NDR	0.02+/0.003
PSP-A-1	NDR	NDR	NDR	0.03+/0.004
NAPS-A-1*				
NAPS-A-2	NDR	NDR	NDR	0.04+/0.005

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	901+/-140
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	225+/-70
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	225+/-70
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6456+/-397
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-210
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6607+/-397

*NAPS-A-1 not collected due to equipment malfunction

Virginia Department of Health

Week 13: 03/27/23– 04/03/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.04+/0.006
SPS-A-2*				
PSP-A-1	NDR	NDR	NDR	0.06+/0.009
NAPS-A-1	NDR	NDR	NDR	0.05+/0.007
NAPS-A-2	NDR	NDR	NDR	0.06+/0.008

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	3153+/-264
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1577+/-187
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1051+/-158
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7357+/-418
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	676+/-122
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7132+/-412

*SPS-A-2 not collected due to equipment malfunction

Virginia Department of Health
Week 14: 04/03/23 – 04/10/23*

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

*No samples were collected due to other program activities

Virginia Department of Health

Week 15: 04/10/23 – 04/17/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.02+/0.003
SPS-A-2*				
PSP-A-1	NDR	NDR	NDR	0.03+/0.004
NAPS-A-1	NDR	NDR	NDR	0.03+/0.005
NAPS-A-2	NDR	NDR	NDR	0.04+/0.006

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-307
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-307
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-307
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5781+/-365
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-307
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5781+/-365

*SPS-A-2 not collected due to equipment malfunction

Virginia Department of Health
Week 16: 04/17/23 – 04/24/23*

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

*No samples were collected due to other program activities

Virginia Department of Health
Week 17: 04/24/23 – 05/01/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.02+/0.003
SPS-A-2	NDR	NDR	NDR	0.07+/0.009
PSP-A-1	NDR	NDR	NDR	0.03+/0.004
NAPS-A-1	NDR	NDR	NDR	0.03+/0.004
NAPS-A-2	NDR	NDR	NDR	0.03+/0.004

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1502+/-187
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	450+/-100
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	450+/-100
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7508+/-418
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-245
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6907+/-400

Note: SPS-A-2 had elapsed sample collection time of 173 hours.

Virginia Department of Health
Week 18: 05/01/23 – 05/08/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.01+/0.003
SPS-A-2	NDR	NDR	NDR	0.02+/0.004
PSP-A-1	NDR	NDR	NDR	0.02+/0.004
NAPS-A-1	NDR	NDR	NDR	0.02+/0.003
NAPS-A-2	NDR	NDR	NDR	0.03+/0.004

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	2027+/-223
SPS-W-2*											
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-331
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5781+/-373
NAPS-W-2**											
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5556+/-366

*Note: No sample collected at SPS-W-2 due to unsafe condition at sample collection site.

**Note: No sample collected at NAPS-W-2 due to flooding at sample collection site.

Virginia Department of Health
Week 19: 05/08/23 – 05/15/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.05+/0.008
PSP-A-1	NDR	NDR	NDR	0.03+/0.006
NAPS-A-1	NDR	NDR	NDR	0.06+/0.009
NAPS-A-2	NDR	NDR	NDR	0.08+/0.011

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	2928+/-264
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-212
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	300+/-100
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6532+/-400
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-212
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6682+/-400

Virginia Department of Health
Week 20: 05/15/23 - 05/22/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.04+/0.006
SPS-A-2	NDR	NDR	NDR	0.06+/0.008
PSP-A-1	NDR	NDR	NDR	0.06+/0.008
NAPS-A-1	NDR	NDR	NDR	0.07+/0.009
NAPS-A-2	NDR	NDR	NDR	0.08+/0.011

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	4204+/-300
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1051+/-158
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1276+/-173
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7432+/-424
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	601+/-122
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6982+/-406

Virginia Department of Health

Week 21: 05/22/23 – 05/29/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.06+/0.009
PSP-A-1	NDR	NDR	NDR	0.04+/0.006
NAPS-A-1	NDR	NDR	NDR	0.06+/0.008
NAPS-A-2	NDR	NDR	NDR	0.06+/0.008

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	2102+/-213
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	976+/-142
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1126+/-159
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	7132+/-413
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	450+/-100
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6532+/-395

Virginia Department of Health
Week 22: 05/29/23 – 06/05/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.01+/0.002
SPS-A-2	NDR	NDR	NDR	0.02+/0.003
PSP-A-1	NDR	NDR	NDR	0.02+/0.003
NAPS-A-1	NDR	NDR	NDR	0.03+/0.004
NAPS-A-2	NDR	NDR	NDR	0.02+/0.004

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	826+/-141
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	225+/-71
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	300+/-71
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5706+/-366
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	150+/-71
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5330+/-360

Virginia Department of Health
Week 23: 06/05/23 - 06/12/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.04+/0.007
PSP-A-1	NDR	NDR	NDR	0.06+/0.008
NAPS-A-1	NDR	NDR	NDR	0.06+/0.008
NAPS-A-2	NDR	NDR	NDR	0.08+/0.012

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-299
SPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-299
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-299
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	4429+/-323
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-299
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	4279+/-323

Virginia Department of Health
Week 24: 06/12/23 – 06/19/23*

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

*No samples were collected due to other program activities

Virginia Department of Health
Week 25: 06/19/23 – 06/26/23*

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

*No samples were collected due to other program activities

Virginia Department of Health
Week 26: 06/26/23 - 07/03/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1	NDR	NDR	NDR	0.03+/0.005
SPS-A-2	NDR	NDR	NDR	0.06+/0.008
PSP-A-1	NDR	NDR	NDR	0.04+/0.006
NAPS-A-1	NDR	NDR	NDR	0.04+/0.007
NAPS-A-2	NDR	NDR	NDR	0.04+/0.007

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	1351+/-173
SPS-W-2*											
SPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-212
NAPS-W-1	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	5706+/-368
NAPS-W-2	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	0+/-212
NAPS-W-3	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	NDR	6081+/-381

*Note: No sample collected for SPS-W-2 due to onset of inclement weather threat at sample collection site.

Virginia Department of Health
Week 27: 07/03/23 – 07/10/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 28: 07/10/23 – 07/17/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 29: 07/17/23 - 07/24/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 30: 07/24/23 – 07/31/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 31: 07/31/23 - 08/07/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 32: 08/07/23 - 08/14/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 33: 08/14/23 - 08/22/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 34: 08/22/23 - 08/28/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 35: 08/28/23 - 09/04/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 36: 09/04/23 – 09/11/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 37: 09/11/23 - 09/18/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 38: 09/18/23 - 09/25/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 39: 09/25/23 - 10/02/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 40: 10/02/23 - 10/09/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 41: 10/09/23 – 10/16/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											

Virginia Department of Health
Week 42: 10/16/23 – 10/23/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health

Week 43: 10/23/23 – 10/30/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 44: 10/30/23 – 11/06/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 45: 11/06/23 – 11/13/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 46: 11/13/23 – 11/20/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 47: 11/20/23 – 11/27/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 48: 11/27/23 – 12/04/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 49: 12/04/23 – 12/11/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 50: 12/11/23 – 12/18/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health

Week 51: 12/18/23 - 12/25/23

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity - pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health
Week 52: 12/26/23 – 01/01/24

Air

Site	Gamma & Radiogas in Air			Air Particulate
	I-131 Activity pCi/meter ³	Cs-134 Activity pCi/meter ³	Cs-137 Activity pCi/meter ³	Gross Beta Activity pCi/meter ³
SPS-A-1				
SPS-A-2				
PSP-A-1				
NAPS-A-1				
NAPS-A-2				

Water

Site	Gamma and Tritium Activity – pCi/Liter										
	Mn 54	Co 58	Fe 59	Co 60	Zn 65	Zr 95	I 131	Cs 134	Cs 137	Ba 140	H3 Activity
SPS-W-1											
SPS-W-2											
SPS-W-3											
NAPS-W-1											
NAPS-W-2											
NAPS-W-3											

Virginia Department of Health

SURFACE WATER

January 1, 2023 through December 31, 2023

Newport News Shipbuilder

Qtr.	Date collected	Gamma Activity – pCi/liter					
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95
1st*							
2nd*							
3rd							
4th							

James River – Shipway #11 NNSB-W-2

Qtr.	Date collected	Gamma Activity – pCi/liter					
		Ba-140	Cs-137	I-131	Mn-54	Zn-65	Zr95/Nb95
1st							
2nd							
3rd							
4th							

SURFACE WATER

January 1, 2023 through December 31, 2023

Norfolk Naval Shipyard

Elizabeth River – Dry Dock #4
Norfolk Naval Shipyard NNSY-W-1

Qtr.	Date collected	Gamma Activity – pCi/liter				
1st		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				
2nd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				
3rd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				
4th		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				

Virginia Department of Health

SURFACE WATER

January 1, 2023 through December 31, 2023

Norfolk Naval Shipyard

Elizabeth River – Dry Dock #8
Norfolk Naval Shipyard NNSY-W-2

Qtr.	Date collected	Gamma Activity – pCi/liter				
1st		Ba-140	Cs-137	I-131	Mn-54	Zn-65
						Zr95/Nb95
2nd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
						Zr95/Nb95
3rd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
						Zr95/Nb95
4th		Ba-140	Cs-137	I-131	Mn-54	Zn-65
						Zr95/Nb95

Virginia Department of Health

SURFACE WATER

January 1, 2023 through December 31, 2023

Norfolk Naval Shipyard

Elizabeth River – Wet Slip #1
Norfolk Naval Shipyard NNSY-W-3

Qtr.	Date collected	Gamma Activity – pCi/liter				
1st		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				
2nd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				
3rd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				
4rd		Ba-140	Cs-137	I-131	Mn-54	Zn-65
		Zr95/Nb95				

Virginia Department of Health

SILT

January 1, 2023 through December 31, 2023

Newport News Shipbuilder

Location	Date Collected	Gamma Activity pCi/gram			
James River – Pier 1 NNSB-S-1		Cs-134	Cs-137	Co-58	Co-60
James River – Pier 1 NNSB-S-1		Cs-134	Cs-137	Co-58	Co-60
James River – Pier 1 NNSB-S-1		Cs-134	Cs-137	Co-58	Co-60
James River – Pier 1 NNSB-S-1		Cs-134	Cs-137	Co-58	Co-60

Virginia Department of Health SILT

January 1, 2023 through December 31, 2023

Newport News Shipbuilder

Location	Date Collected	Gamma Activity pCi/gram			
James River – Shipway 11 NNSB-S-2		Cs-134	Cs-137	Co-58	Co-60
James River – Shipway 11 NNSB-S-2		Cs-134	Cs-137	Co-58	Co-60
James River – Shipway 11 NNSB-S-2		Cs-134	Cs-137	Co-58	Co-60
James River – Shipway 11 NNSB-S-2		Cs-134	Cs-137	Co-58	Co-60

Virginia Department of Health SILT

January 1, 2023 through December 31, 2023

Norfolk Naval Shipyard

Location	Date Collected	Gamma Activity pCi/gram		
Elizabeth River Drydock #4 NNSY-S-1	Cs134	Cs137	Co58	Co60
Elizabeth River Drydock #4 NNSY-S-1	Cs134	Cs137	Co58	Co60
Elizabeth River Drydock #4 NNSY-S-1	Cs134	Cs137	Co58	Co60
Elizabeth River Drydock #4 NNSY-S-1	Cs134	Cs137	Co58	Co60

Virginia Department of Health SILT

January 1, 2023 through December 31, 2023

Norfolk Naval Shipyard

Location	Date	Gamma Activity			
	Collected	pCi/gram			
Elizabeth River Drydock #8 NNSY-S-2	Cs134	Cs137	Co58	Co60	
Elizabeth River Drydock #8 NNSY-S-2	Cs134	Cs137	Co58	Co60	
Elizabeth River Drydock #8 NNSY-S-2	Cs134	Cs137	Co58	Co60	
Elizabeth River Drydock #8 NNSY-S-2	Cs134	Cs137	Co58	Co60	

Virginia Department of Health SILT

January 1, 2023 through December 31, 2023

Location	Date Collected	Gamma Activity		
		pCi/gram		
Elizabeth River Wet Slip #1				
NNSY-S-3	Cs134	Cs137	Co58	Co60
Elizabeth River Drydock #8				
NNSY-S-3	Cs134	Cs137	Co58	Co60
Elizabeth River Drydock #8				
NNSY-S-3	Cs134	Cs137	Co58	Co60
Elizabeth River Drydock #8				
NNSY-S-3	Cs134	Cs137	Co58	Co60

Virginia Department of Health

SILT

January 1, 2023 through December 31, 2023

North Anna Power Station Discharge Canal, North Anna River – NAPS-S-1

Date Collected	Gamma Activity pCi/gram			
	Cs-134	Cs-137	Co-58	Co-60
05-02-23	NDR	NDR	NDR	NDR
	Cs-134	Cs-137	Co-58	Co-60

Surry Power Station Discharge Canal SPS-S-1

Date Collected	Gamma Activity pCi/gram			
	Cs-134	Cs-137	Co-58	Co-60
02-14-23	NDR	NDR	NDR	NDR
	Cs-134	Cs-137	Co-58	Co-60

Note: Silt samples are collected bi-annually.

Virginia Department of Health

FISH

January 1, 2023 through December 31, 2023

Dominion Nuclear Power Station

Location Type of fish	Date Collected	Isotope	pCi/gram
North Anna Cooling Lagoon	01/18	Ba-140	<.098
		Cs-134	<.006
		Cs-137	<.008
		Co-58	<.008
		Co-60	<.006
NAPS- F-1	05/23/2023	I-131	<.076
(Fish)		Fe-59	<.017
		Mn-54	<.007
		Ru-106	<.064
		Ag-110M	<.007
		Zn-65	<.013
		Nb-95	<.015
Surry Discharge Canal			
		Ba-140	<.060
		Cs-134	<.004
		Cs-137	<.005
		Co-58	<.005
		Co-60	<.004
SPS-F-1	04/20/2023	I-131	<.044
(Fish)		Fe-59	<.011
		Mn-54	<.004
		Ru-106	<.044
		Ag-110M	<.005
		Zn-65	<.009
		Nb-95	<.011

Note: Fish samples collected bi-annually

Virginia Department of Health FISH

January 1, 2023 through December 31, 2023

Dominion Nuclear Power Station

Location Type of fish	Date Collected	Isotope	pCi/gram
North Anna Cooling Lagoon		Ba-140	
		Cs-134	
		Cs-137	
		Co-58	
	NAPS- F-1	Co-60	
	(Fish)	I-131	
		Fe-59	
		Mn-54	
		Ru-106	
		Ag-110	
Surry Discharge Canal		Zn-65	
		Nb-95	
		Ba-140	
		Cs-134	
		Cs-137	
		Co-58	
		Co-60	
	SPS-F-1	I-131	
	(Fish)	Fe-59	
		Mn-54	
		Ru-106	
		Ag-110M	
		Zn-65	
		Nb-95	

Note: Fish samples collected bi-annually

Virginia Department of Health

SHELLFISH

January 1, 2023 through December 31, 2023

Dominion Nuclear Power Station

Location Type of fish	Date Collected	Isotope	pCi/gram
Surry Power Station		Ba-140	
		Cs-134	
		Cs-137	
		Co-58	
		Co-60	
SPS-R-1 (Clams and Oysters)		I-131	
		Fe-59	
		Mn-54	
		Ru-106	
		Ag-110M	
		Zn-65	
		Nb-95	

Note: Shellfish are collected annually when available.

Virginia Department of Health

Milk

January 1, 2023 through December 31, 2023

Williamsburg MO Smith Farm SPS-M-1 1st Quarter Date: No sample collected this quarter	
Isotope	Results - pCi/liter
Ba-140	
Cs-134	
Cs-137	
K-40	
I-131	
Sr-89	
Sr-90	
Williamsburg MO Smith Farm SPS-M-1 2nd Quarter Date:	
Isotope	Results - pCi/liter
Ba-140	
Cs-134	
Cs-137	
K-40	
I-131	
Sr-89	
Sr-90	
Williamsburg MO Smith Farm SPS-M-1 3rd Quarter Date:	
Isotope	Results - pCi/liter
Ba-140	
Cs-134	
Cs-137	
K-40	
I-131	
Sr-89	
Sr-90	

Virginia Department of Health

Milk

January 1, 2023 through December 31, 2023

Williamsburg MO Smith Farm	
SPS-M-1	
4th Quarter Date:	
Isotope	Results - pCi/liter
Ba-140	
Cs-134	
Cs-137	
K-40	
I-131	
Sr-89	
Sr-90	

Virginia Department of Health

VEGETATION

January 1, 2023 through December 31, 2023

Location	Date collected	Type	Isotope	Results pCi/Gram (wet weight)
Various locations within the 10 mile EPZ	2nd Quarter	Mixed Greens	I-131	
SPS-V-1			Cs-134	
			Cs-137	
Various locations within the 10 mile EPZ	2nd Quarter	Mixed Greens	I-131	
NAPS-V-1			Cs-134	
			Cs-137	
Surry Count Various locations within the 10 mile EPZ	4th Quarter	Mixed Greens	I-131	
SPS-V-1			Cs-134	
			Cs-137	
Various locations within the 10 mile EPZ	4th Quarter	Mixed Greens	I-131	
NAPS-V-1			Cs-134	
			Cs-137	

Note: Vegetation is collected bi-annually when available.

Virginia Department of Health

AMBIENT GAMMA EXPOSURE

FIRST QUARTER

Location	Station	Net Exposure Rate mR/Std Qtr +/- 2S.D.		
Jamestown – Historical site	SPS-D-1	22.280	+/-	9.44
Williamsburg – Airport	SPS-D-2	22.314	+/-	9.45
Williamsburg – Busch Gardens	SPS-D-3	22.351	+/-	9.46
Newport News - Lee Hall	SPS-D-4	27.979	+/-	10.58
Naval Weapons Station – 1	SPS-D-5	19.709	+/-	8.88
Newport News – Fort Eustis	SPS-D-6	24.098	+/-	9.82
Surry – Route 628	SPS-D-7	20.988	+/-	9.16
Surry – Lawnes Creek	SPS-D-8	26.288	+/-	10.25
Surry Power Station	SPS-D-9	22.741	+/-	9.54
Surry – Hog Point	SPS-D-10	20.480	+/-	9.05
Surry – Bacon's Castle	SPS-D-11	21.595	+/-	9.29
Surry – Alliance	SPS-D-12	20.517	+/-	9.06
Surry – Scotland Wharf	SPS-D-13	23.122	+/-	9.62
Surry – Lebanon Baptist Church	SPS-D-14	28.283	+/-	10.64
Louisa County - Mineral	NAPS-D-1	24.748	+/-	9.95
Louisa County – Wares Crossroads	NAPS-D-2	21.595	+/-	9.29
Spotsylvania – Good Hope Church	NAPS-D-3	28.953	+/-	10.76
Spotsylvania – Route 713	NAPS-D-4	23.058	+/-	9.60
Spotsylvania Route 614	NAPS-D-5	25.249	+/-	10.05
Spotsylvania – Levy	NAPS-D-6	24.173	+/-	9.83
Louisa County – Bumpass Fire	NAPS-D-7	29.644	+/-	10.89
Louisa County – Fred Hall	NAPS-D-8	24.106	+/-	9.82
Louisa County – Aspen Hill	NAPS-D-9	30.347	+/-	11.02
Louisa County – Route 685	NAPS-D-10	25.075	+/-	10.01
Louisa County – Route 700	NAPS-D-11	27.163	+/-	10.42
North Anna Power Station	NAPS-D-12	26.614	+/-	10.32
Pocahontas State Park (Control)	PSP-D-1	28.062	+/-	10.59
Radiological Health	ORH-D-1	14.126	+/-	7.52
Radiological Health	ORH-D-2	14.120	+/-	7.52

Virginia Department of Health

AMBIENT GAMMA EXPOSURE

**OSLD missing on collection date

SECOND QUARTER

Location	Station	Net Exposure Rate mR/Std Qtr +/- 2S.D.		
Jamestown – Historical site	SPS-D-1	23.55	+/-	9.70
Williamsburg – Airport	SPS-D-2	32.24	+/-	11.36
Williamsburg – Busch Gardens	SPS-D-3	32.68	+/-	11.43
Newport News - Lee Hall	SPS-D-4	41.61	+/-	12.90
Naval Weapons Station – 1	SPS-D-5	29.40	+/-	10.85
Newport News – Fort Eustis	SPS-D-6	30.31	+/-	11.01
Surry – Route 628	SPS-D-7	21.78	+/-	9.33
Surry – Lawnes Creek	SPS-D-8	38.45	+/-	12.40
Surry Power Station	SPS-D-9	32.89	+/-	11.47
Surry – Hog Point	SPS-D-10	28.90	+/-	10.75
Surry – Bacon's Castle	SPS-D-11	28.12	+/-	10.61
Surry – Alliance	SPS-D-12	28.74	+/-	10.72
Surry – Scotland Wharf	SPS-D-13	29.04	+/-	10.78
Surry – Lebanon Baptist Church	SPS-D-14	28.23	+/-	10.63
Louisa County - Mineral	NAPS-D-1	36.11	+/-	12.02
Louisa County – Wares Crossroads	NAPS-D-2	26.87	+/-	10.37
Louisa County – Good Hope Church	NAPS-D-3	36.95	+/-	12.16
Spotsylvania – Route 713	NAPS-D-4	21.81	+/-	9.34
Spotsylvania Route 614	NAPS-D-5	35.93	+/-	11.99
Spotsylvania – Levy	NAPS-D-6	29.24	+/-	10.82
Louisa County – Bumpass Fire Dep	NAPS-D-7	35.48	+/-	11.91
Louisa County – Fred Hall	NAPS-D-8	***	+/-	*
Louisa County – Aspen Hill	NAPS-D-9	41.90	+/-	12.95
Louisa County – Route 685	NAPS-D-10	35.72	+/-	11.95
Louisa County – Route 700	NAPS-D-11	37.52	+/-	12.25
North Anna Power Station	NAPS-D-12	39.44	+/-	12.56
Pocahontas State Park (Control)	PSP-D-1	45.35	+/-	13.47
Radiological Health	ORH-D-1	14.94	+/-	7.73
Radiological Health	ORH-D-2	11.33	+/-	6.73

Virginia Department of Health

AMBIENT GAMMA EXPOSURE

THIRD QUARTER

Location	Station	Net Exposure Rate mR/Std Qtr +/- 2S.D.
Jamestown – Historical site	SPS-D-1	+/-
Williamsburg – Airport	SPS-D-2	+/-
Williamsburg – Busch Gardens	SPS-D-3	+/-
Newport News - Lee Hall	SPS-D-4	+/-
Naval Weapons Station – 1	SPS-D-5	+/-
Newport News – Fort Eustis	SPS-D-6	+/-
Surry – Route 628	SPS-D-7	+/-
Surry – Lawnes Creek	SPS-D-8	+/-
Surry Power Station	SPS-D-9	+/-
Surry – Hog Point	SPS-D-10	+/-
Surry – Bacon’s Castle	SPS-D-11	+/-
Surry – Alliance	SPS-D-12	+/-
Surry – Scotland Wharf	SPS-D-13	+/-
Surry – Lebanon Baptist Church	SPS-D-14	+/-
Louisa County - Mineral	NAPS-D-1	+/-
Louisa County – Wares Crossroads	NAPS-D-2	+/-
Louisa County – Good Hope Church	NAPS-D-3	+/-
Spotsylvania – Route 713	NAPS-D-4	+/-
Spotsylvania Route 614	NAPS-D-5	+/-
Spotsylvania – Levy	NAPS-D-6	+/-
Louisa County – Bumpass Fire Dept.	NAPS-D-7	+/-
Louisa County – Fred Hall	NAPS-D-8	+/-
Louisa County – Aspen Hill	NAPS-D-9	+/-
Louisa County – Route 685	NAPS-D-10	+/-
Louisa County – Route 700	NAPS-D-11	+/-
North Anna Power Station	NAPS-D-12	+/-
Pocahontas State Park (Control)	PSP-D-1	+/-
Radiological Health	ORH-D-1	+/-
Radiological Health	ORH-D-2	+/-

Virginia Department of Health

AMBIENT GAMMA EXPOSURE

FOURTH QUARTER

Location	Station	Net Exposure Rate mR/Std Qtr +/- 2S.D.
Jamestown – Historical site	SPS-D-1	+/-
Williamsburg – Airport	SPS-D-2	+/-
Williamsburg – Busch Gardens	SPS-D-3	+/-
Newport News - Lee Hall	SPS-D-4	+/-
Naval Weapons Station – 1	SPS-D-5	+/-
Newport News – Fort Eustis	SPS-D-6	+/-
Surry – Route 628	SPS-D-7	+/-
Surry – Lawnes Creek	SPS-D-8	+/-
Surry Power Station	SPS-D-9	+/-
Surry – Hog Point	SPS-D-10	+/-
Surry – Bacon’s Castle	SPS-D-11	+/-
Surry – Alliance	SPS-D-12	+/-
Surry – Scotland Wharf	SPS-D-13	+/-
Surry – Lebanon Baptist Church	SPS-D-14	+/-
Louisa County - Mineral	NAPS-D-1	+/-
Louisa County – Wares Crossroads	NAPS-D-2	+/-
Louisa County – Good Hope Church	NAPS-D-3	+/-
Spotsylvania – Route 713	NAPS-D-4	+/-
Spotsylvania Route 614	NAPS-D-5	+/-
Spotsylvania – Levy	NAPS-D-6	+/-
Louisa County – Bumpass Fire Dept.	NAPS-D-7	+/-
Louisa County – Fred Hall	NAPS-D-8	+/-
Louisa County – Aspen Hill	NAPS-D-9	+/-
Louisa County – Route 685	NAPS-D-10	+/-
Louisa County – Route 700	NAPS-D-11	+/-
North Anna Power Station	NAPS-D-12	+/-
Pocahontas State Park (Control)	PSP-D-1	+/-
Radiological Health	ORH-D-1	+/-
Radiological Health	ORH-D-2	+/-

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF HEALTH

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BABCOCK & WILCOX

Virginia Department of Health

AIR PARTICULATE COMPOSITE SAMPLES

January 1, 2023 through December 31, 2023

Eastern Site Boundary – Ball field

FIRST QUARTER REPORT

	Start	Date	Stop	Gross Alpha Activity pCi/meter ³
B&W-A-1				
1st	01/11/23	-	01/17/23	0.001 +/- 0.0005

SECOND QUARTER REPORT

	Start	Date	Stop	Gross Alpha Activity pCi/meter ³
B&W-A-1				
2nd	04/05/2023	-	04/11/2023	0.002 +/- 0.0007

THIRD QUARTER REPORT

	Start	Date	Stop	Gross Alpha Activity pCi/meter ³
B&W-A-1				
3rd				

FOURTH QUARTER REPORT

	Start	Date	Stop	Gross Alpha Activity pCi/meter ³
B&W-A-1				
4th				

Virginia Department of Health

SOIL

January 1, 2023 through December 31, 2023

Location	Date	Distance & Direction	Type	Alpha Activity Ppm
Eastern Site Boundary Ball field B&W-S-1		Site Boundary	Soil	
James River Shoreline Near Six Mile Bridge "control" B&W-S-2		1.5 miles SW	Soil	

Soil samples collected annually.

Note: Uranium separation followed by alpha counting.

SURFACE WATER

January 1, 2023 through December 31, 2023

Location	Date	Distance & Direction	Alpha Activity Ppb
James River Shoreline Near Ball field at eastern site boundary B&W-W-1		Approx. 3 miles downstream	
James River Shoreline Near Six Mile Bridge "control" B&W-W-2		Approx. 1.5 miles upstream	

Surface water samples collected annually.

Note: Uranium separation followed by alpha counting.

Virginia Department of Health

VEGETATION

January 1, 2023 through June 30, 2023

Eastern Site Boundary / James River Shoreline

Location	Date	Distance & Direction	Alpha Activity ppm
Eastern site boundary Ball field B&W-V-1		Approx. 3 miles downstream	
James River Shoreline off Rt. 460 "control" B&W-V-2		Approx. 4.5 Miles SW	

Vegetation collected annually.

Note: Uranium separation followed by alpha counting.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HEALTH

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EMERGENCY PREPAREDNESS

EMERGENCY PREPAREDNESS

The Office of Radiological Health (ORH) located within the Virginia Department of Health (VDH) is one of the lead response agencies for emergencies involving the potential or actual release of radioactive materials. Overall, state level emergency response is described in the Commonwealth of Virginia Radiological Emergency Response Plan (COVERERP), which is developed and maintained by the Virginia Department of Emergency Management (VDEM). In addition to generic guidelines for responding to any major radiological emergency, the response procedures contain segments addressing response to several specific types of radiological incidents. This includes sections which provide information needed for response to Licensee and Transportation accidents. Other sections contain background information and response guidance for accidents at fixed nuclear facilities. Plans are also being developed to respond to possible radiological terrorist attacks, which may include detonation of a radiological dispersion device (RDD aka “dirty bomb”), an improvised nuclear device (IND), or a military grade nuclear warhead.

When responding to any radiological emergency, the primary tasks of the Office of Radiological Health are to locate, identify, and predict the impact of any radioactive materials released to the environment. Based on the predicted or known impact, ORH then recommends appropriate measures to protect the public. ORH would also be tasked with helping to supervise the cleanup of radiological contamination and ensuring the proper disposal of radioactive waste. An ORH duty officer maintains 24-hour coverage to provide initial assessment/assistance for local responders and may also initiate the mobilization/deployment of other trained staff to respond to a radiological emergency when needed.

Under the provisions of current Federal Emergency Management Agency (FEMA) regulations, ORH conducts or participates in periodic drills that are designed to provide team training and to test emergency plans and procedures. The scope of these drills ranges from receiving and acknowledging simulated emergency communications to full-scale team deployment.

Federal regulations for commercial nuclear power generating facilities stipulate that a full-scale exercise involving appropriate local government participation and testing all significant response elements must be conducted and evaluated every other year. Because there are two such facilities, Surry and North Anna Nuclear Power Stations, Commonwealth of Virginia agencies will perform exercise activities on a yearly basis, alternating between the sites each year.