National Aeronautics and Space Administration

Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337-5099

May 9, 2019

eply to Attn of: 250.W

Office of Drinking Water
Attn: Mr. Dixon Tucker
District Engineer
Virginia Department of Health
830 South Hampton Avenue
Norfolk, VA 23510

Subject: April 2019 Water Chlorination and Orthophosphate Reports

Ref: PWSID: 3001500 Main Base, PWSID: 3001535 Mainland/Island, NASA Wallops Flight Facility

In accordance with the Virginia Department of Health Drinking Water Regulations, please find enclosed:

1. Apr 2019 Chlorination Reports for Main Base and Island Locations (Enclosures 1 and 2)
2. Apr 2019 Orthophosphate Reports for Main Base and Island Locations (Enclosures 3 and 4)
3. Apr 2019 Chincoteague Water Readings from Main Base NASA Grid (Enclosure 5)
4. Public Notice of Low Chlorine Residual in Mainland/Island Waterworks (Enclosure 6)

As indicated by previous correspondence, chlorine residual for the Mainland/Island waterworks dropped below the 0.17 mg/L threshold for 4-log inactivation of viruses on April 3, 2019, due to a leak in the chlorine dosing station, which was repaired shortly after discovery. Signs were promptly posted in all occupied buildings and a public notice was issued on April 9, 2019.

If you have any questions or comments concerning this report, please contact Mr. Jason Freischlag at (757) 824-2352.

For T.J. Meyer
Associate Chief, Medical and Environmental Management Division

5 Enclosures
cc: (w/o encls.)
227/Mr. W. Redmond
250/Mr. R. Hooks

VIRGINIA STATE DEPARTMENT
OF HEALTH
WATER CHLORINATION REPORT

No. of Connections: 206
No. of people served: 1625

Year 2019 Month April
County: Accomack
Supply: NASA Wallops Flight Facility
PWSID: 3001500 Mainbase

DATE	Residual Chlorine								Lbs. of solution injected	No. Gal. Water Treated	Comments
	North End Results			Entry Point		South End Results					
	Bldg.	Free	Total	Free	Total	Bldg.	Free	Total			
1	D-50	0.45	0.53	1.09	1.17	N-162	0.44	0.91	34	91,000	
2	D-50	0.53		1.00		N-162	0.90		50	124,000	
3	D-50	0.72		1.41		N-162	0.89		52	118,000	
4	D-50	0.50		1.59		N-162	0.82		88	161,000	
5	D-50	1.09	1.17	1.73	1.86	N-162	0.91	1.18	47	132,000	
6	D-50	1.02		1.44		N-162	1.17		44	114,000	
7	D-50	0.45		1.48		N-162	1.21		70	160,000	
8	D-50	0.36	0.41	1.41	1.60	N-162	0.67	1.13	36	80,000	
9	D-50	0.62		1.44		N-162	1.35		56	130,000	
10	D-50	0.54		1.24		N-162	1.25		57	125,000	
11	D-50	0.88		1.17		N-162	1.09		59	132,000	
12	D-50	0.56		1.17		N-162	1.06		48	117,000	
13	D-50	0.56		1.07		N-162	1.08		48	107,000	
14	D-50	0.28		0.94		N-162	0.75		62	157,000	
15	D-50	0.37	0.42	0.85	0.88	N-162	0.64	0.72	24	77,000	
16	D-50	0.15		0.91		N-162	0.69		60	118,000	
17	D-50	0.17		1.16		N-162	0.66		60	126,000	
18	D-50	0.59		1.60		N-162	0.68		72	101,000	
19	D-50	0.39	0.45	1.78	1.74	N-162	0.59	0.57	52	105,000	
20	D-50	0.42		1.54		N-162	0.63		32	112,000	
21	D-50	0.19		1.37		N-162	1.44		78	163,000	
22	D-50	0.21	0.27	1.32	1.44	N-162	1.20	1.28	36	84,000	
23	D-50	0.27		1.28		N-162	1.18		50	119,000	
24	D-50	0.16		1.20		N-162	1.16		59	118,000	
25	D-50	0.36		1.24		N-162	1.11		50	118,000	
26	D-50	0.62		1.34		N-162	1.14		68	139,000	
27	D-50	0.50		>2.20		N-162	1.19		110	111,000	
28	D-50	0.61		1.97		N-162	1.49		32	119,000	
29	D-50	0.42	0.51	1.93	2.17	N-162	0.68	0.92	52	107,000	
30	D-50	0.12		1.72		N-162	1.40		58	132,000	
Totals		14.11	3.76	39.39	10.86		29.47	6.71	1,644	3,597,000	
Min		0.12	0.27	0.85	0.88		0.44	0.57	24	77,000	
Max		1.09	1.17	1.97	2.17		1.49	1.28	110	163,000	
Ave		0.47	0.54	1.36	1.55		0.98	0.96	55	119,900	

Signed: Robert Wilt
Printed Name: Robert Wilt

VIRGINIA STATE DEPARTMENT
OF HEALTH
WATER CHLORINATION REPORT

No. of Connections: 38
No. of people served: 400

Year 2019 Month April
County: Accomack
Supply: NASA Wallops Flight Facility
PWSID: 3001535 Mainland(Island)

DATE	Residual Chlorine								Lbs. of solution injected	No. Gal. Water Treated	Comments
	North End Results			Entry Point		South End Results					
	Bldg.	Free	Total	Free	Total	Bldg.	Free	Total			
1	W 71	0.81	0.85	1.30	1.24	Y 61	0.79	0.93	12	12,598	
2	W 71	0.74		0.64		Y 61	1.11		26	71,661	filling tower
3	W 71	0.47		0.00		Y 61	0.39		4	62,896	filling tower
4	W 71	1.52		1.20		Y 61	0.02		26	36,397	
5	W 71	0.57	0.68	1.36	1.50	Y 61	0.51	0.62	10	28,287	
6	W 71	0.08		1.91		Y 61	0.55		24	28,360	
7	W 71	0.71		2.15		Y 61	0.56		25	38,708	
8	W 71	0.87	0.89	2.01	2.16	Y 61	1.58	1.66	5	23,340	filling tower
9	W 71	0.82		1.10		Y 61	1.71		26	46,217	filling deluge
10	W 71	1.40		1.55		Y 61	1.50		20	28,219	
11	W 71	0.76		2.06		Y 61	1.25		14	28,600	
12	W 71	0.73		1.90		Y 61	1.27		10	19,662	
13	W 71			1.99		Y 61			12	27,215	weather
14	W 71	1.18		2.00		Y 61	1.49		28	27,541	
15	W 71	1.04	0.99	1.85	2.07	Y 61	1.26	1.25	14	19,749	
16	W 71	1.15		1.85		Y 61	1.45		10	27,732	
17	W 71	1.37		1.94		Y 61	1.47		20	41,381	launch day
18	W 71	1.40		1.20		Y 61	1.37		30	50,093	
19	W 71	1.30	1.44	1.35	1.52	Y 61	1.22	1.42	10	28,227	
20	W 71	1.17		1.52		Y 61	1.21		16	19,429	
21	W 71	0.91		1.38		Y 61	1.02		22	28,261	
22	W 71	0.95	1.05	1.77		Y 61	1.05	1.13	13	17,989	
23	W 71	1.12		1.94		Y 61	1.18		13	28,018	
24	W 71	1.04		1.51		Y 61	1.05		12	18,670	
25	W 71			1.82		Y 61	1.20		24	35,431	W71 blocked
26	W 71	1.17		2.07		Y 61	1.22		13	27,235	
27	W 71	0.98		1.76		Y 61	1.19		14	19,540	
28	W 71	1.01		1.69		Y 61	1.10		10	18,556	
29	W 71	0.93	0.99	1.60	1.7	Y 61	1.21	1.28	14	19,060	
30	W 71	1.05		1.67		Y 61	1.13		7	27,419	
Totals		27.25	6.89	48.09	10.15		32.06	8.29	484	906,491	
Min		0.08	0.68	0.00	1.24		0.02	0.62	4	12,598	
Max		1.52	1.44	2.15	2.16		1.71	1.66	30	71,661	
Ave		0.97	0.98	1.60	1.69		1.11	1.18	16	30,216	

Signed: Robert Wiff
Printed Name: Robert Wiff

VIRGINIA STATE DEPARTMENT
OF HEALTH
ORTHOPHOSPHATE REPORT

No. of Connections: 206
No. of people served: 1625

Year 2019 Month April
County: Accomack
Supply: NASA Wallops Flight Facility
PWSID: 3001500 Mainbase

	Zinc Orthophosphate										
DATE	North End Results			Entry Point		South End Results			Lbs. of solution injected	No. Gal. Water Treated	Comments
	Bldg.	Free	Total	Free	Total	Bldg.	Free	Total			
1	D-50		2.34			N-162		3.23	9	91,000	
2	D-50					N-162			10	124,000	
3	D-50		3.06			N-162		3.21	10	118,000	
4	D-50					N-162			8	161,000	
5	D-50		2.87			N-162		3.14	10	132,000	
6	D-50					N-162			10	114,000	
7	D-50					N-162			14	160,000	
8	D-50		2.30			N-162		2.88	6	80,000	
9	D-50					N-162			11	130,000	
10	D-50		2.83			N-162		3.03	8	125,000	
11	D-50					N-162			13	132,000	
12	D-50		2.47			N-162		2.91	8	117,000	
13	D-50					N-162			10	107,000	
14	D-50					N-162			14	157,000	
15	D-50		2.70			N-162		2.99	6	77,000	
16	D-50					N-162			10	118,000	
17	D-50		2.53			N-162		2.94	10	126,000	
18	D-50					N-162			8	101,000	
19	D-50		2.60			N-162		2.71	12	105,000	
20	D-50					N-162			10	112,000	
21	D-50					N-162			16	163,000	
22	D-50		2.46			N-162		3.32	6	84,000	
23	D-50					N-162			12	119,000	
24	D-50		2.61			N-162		2.89	13	118,000	
25	D-50					N-162			9	118,000	
26	D-50		2.68			N-162		2.90	12	139,000	
27	D-50					N-162			8	111,000	
28	D-50					N-162			10	119,000	
29	D-50		2.56			N-162		2.71	4	107,000	
30	D-50					N-162			2	132,000	
Totals			34.01					38.86	289	3,597,000	
Min			2.30					2.71	2	77,000	
Max			3.06					3.32	16	163,000	
Ave			2.62					2.99	10	119,900	

Signed: Robert Witt
Printed Name: Robert Witt

VIRGINIA STATE DEPARTMENT
OF HEALTH
ORTHOPHOSPHATE REPORT

No. of Connections: 38
No. of people served: 400

Year 2019 Month April
County: Accomack
Supply: NASA Wallops Flight Facility
PWSID: 3001535 Mainland(Island)

	Zinc Orthophosphate										
DATE	North End Results			Entry Point		South End Results			Lbs. of solution injected	No. Gal. Water Treated	Comments
	Bldg.	Free	Total	Free	Total	Bldg.	Free	Total			
1	W-71		3.00			Y-61		2.78	1	12,598	
2	W-71					Y-61			6	71,661	filling tower
3	W-71					Y-61			5	62,896	filling tower
4	W-71					Y-61			4	36,397	
5	W-71		3.14			Y-61		2.50	2	28,287	
6	W-71					Y-61			2	28,360	
7	W-71					Y-61			5	38,708	
8	W-71		3.21			Y-61		2.86	3	23,340	filling tower
9	W-71					Y-61			4	46,217	filling deluge
10	W-71		3.07			Y-61		3.12	2	28,219	
11	W-71					Y-61			3	28,600	
12	W-71		2.68			Y-61		3.01	2	19,662	
13	W-71					Y-61			1	27,215	weather
14	W-71					Y-61			4	27,541	
15	W-71		2.68			Y-61		3.61	2	19,749	
16	W-71					Y-61			2	27,732	
17	W-71		3.04			Y-61		3.07	4	41,381	launch day
18	W-71					Y-61			3	50,093	
19	W-71		2.94			Y-61		2.94	3	28,227	
20	W-71					Y-61			2	19,429	
21	W-71					Y-61			4	28,261	
22	W-71		3.13			Y-61		2.97	0	17,989	
23	W-71					Y-61			3	28,018	
24	W-71		3.00			Y-61		2.97	2	18,670	
25	W-71					Y-61			4	35,431	W71 blocked
26	W-71		2.97			Y-61		2.88	1	27,235	
27	W-71					Y-61			2	19,540	
28	W-71					Y-61			3	18,556	
29	W-71		2.77			Y-61		2.98	1	19,060	
30	W-71					Y-61			3	27,419	
Totals			35.63					35.69	83	906,491	
Min			2.68					2.50	0	12,598	
Max			3.21					3.61	6	71,661	
Ave			2.97					2.97	3	30,216	

Signed: Robert Witt
Printed Name: Robert Witt

April 2019 Chincoteague Water Readings / from NASA grid		
Date	Current reading	gallons used
April 4th	63,124,000	505,000
April 12th	63,642,000	518,000
April 18th	64,009,000	367,000
April 25th	64,497,000	488,000
April total		1,878,000

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

NASA Wallops Flight Facility (WFF) Island Drinking Water System Did Not Meet a Treatment Technique Requirement

WFF Island water system that supplies both the Mainland and Island drinking water, recently violated a drinking water standard. Although this situation does not require that you take immediate action, as our customers, you have a right to know what happened, what you should do and what we did to correct the situation.

As part of WFF waterworks' treatment requirements to assure adequate treatment to eliminate viruses, bacteria, or parasites, WFF is required to maintain a 0.17 ppm chlorine residual at the distribution tank; however, on the morning of April 4, 2019, our routine test at the distribution point on Wallops Mainland/Island indicated chlorine levels fell below 0.17 ppm. By late afternoon, repairs were made to chlorine pumping equipment and the disinfectant residual chlorine was back above the minimum level at the distribution point. We are not sure when or for how long the residual was below 0.17 ppm, but the routine tests performed the day before (on April 3) and the evening after repairs (April 4) showed adequate disinfectant levels of 0.64 and 1.20 ppm, respectively.

What should you do?

- **You do not need to boil your water or take other actions.** We do not know of any contamination and none of our testing has shown disease-causing organisms in the drinking water.

- People with severely compromised immune systems, and some elderly may have been at slight increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1 (800) 426-4791.

What does this mean?

The lack of chlorine residual has no direct negative health effect on its own. However, the lack of chlorine residual over time can allow microscopic organisms (bacteria, viruses, and parasites) to have an impact on health. Those impacts may include symptoms such as nausea, cramps, diarrhea, and associated headaches. These symptoms are not caused only by microorganisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What is being done?

The reduction in chlorine residual was the result of equipment failure on the evening of April 3rd. The equipment was repaired the next day and put back into operation. Residual chlorine readings since then have been acceptable.

For information, please contact Mr. R. Owen Hooks, WFF Water Programs Manager at 757-824-1941.

Please disseminate this information to all NASA WFF employees, tenants, and partners who drink WFF water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place or distributing copies by hand or email.

This notice is being distributed by NASA WFF, Code 250 Environmental Team
State Water System ID#: 3001535