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Memo

To: 200/ Leona Dickens-Adams, *Acting Director of Goddard Child Development Center*

CC: 250/ Lori Levine, *Drinking Water Program Manager, MEMD*

606/ Dan Duffy, *Vice President*

750/ Steve Naus, *Facility Operations Manager*

From: 250/ Hayley Thomas, *Environmental Scientist, SGET*

Date: January 14, 2011

Attachments: 2010 Fourth Quarter Drinking Water Study Sample Results

Re: Fourth Quarter Drinking Water Results for GSFC – Building 090

The Straughan Goddard Environmental Team (SGET) conducted quarterly drinking water testing for Goddard Space Flight Center (GSFC). Samples were collected from the Goddard Child Development Center (GCDC), Building 90. The samples were taken from the kitchen utility sink located in Room 106. The samples were collected on December 14, 2010 and analyzed for the following parameters: alkalinity, bacterial analysis, Free Available Chlorine, chloride, Haloacetic Acids, hardness, metals, nitrate, orthophosphate, pH, sulfate, temperature, Total Dissolved Solids, Total Organic Carbon, and Total Trihalomethanes. A report of these results is attached.

The paragraphs below detail parameters that did not meet the target and were evaluated to assess the risks.

- The Langlier Index is an indication of the water's likeliness to corrode or cause scale build-up in pipes and fittings. Building 90 was found to be mild to moderately corrosive.
- The orthophosphate reporting limit was higher than the target concentration added by our provider (Washington Suburban Sanitary Commission [WSSC]). WSSC adds orthophosphate at 1 ppm which is well below the limit of detection for this reporting period. Therefore, an evaluation cannot be done



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for this parameter. Orthophosphate is added by the provider to prevent pinhole leaks. The absence or presence of orthophosphate does not pose a health risk.

Corrosion can lead to leaching of metals from pipes and fittings into the distributed water, especially after it has remained stagnant in piping for an extended period of time, such as overnight. The results for all metals analyzed in this sampling were below their respective standards or goals and do not pose a health risk. A best practice recommended by the EPA is to flush water lines for approximately one minute or until the water turns cold each day before initial use. I recommend GCDC follow this practice to ensure that the center is consuming the freshest water.

Results of Quarterly Child Development Center Sampling

Date	Time	Bldg	Location	Analyte	Results	Standard and Type	
12/14/2010	10:20	090	kitchen sink	Alkalinity	36,000 ug/l	NA	Our primary lab sub-contracted the orthophosphate analysis while their instrument was down. The reporting limit for orthophosphate was higher than normal, but reflects the labs lowest calibration curve. WSSC adds orthophosphate at 1 ppm which is well below the reporting method for this result. An evaluation cannot be done for this parameter. WSSC adds orthophosphate to prevent pinhole leaks.
				Bromodichloromethane	11 ug/l	80 ug/l P	
				Bromoform	<5 ug/l	80 ug/l P	
				Cadmium	<1 ug/l	5 ug/l P	
				Chloride	32,000 ug/l	250,000 ug/l S	
				Chloroform	44 ug/l	80 ug/l P	
				Copper	3.9 ug/l	1,000 ug/l S	
				Degrees C	13.2 degrees C	NA	
				Dibromoacetic Acid	<1 ug/l	NA	
				Dibromochloromethane	1.7 ug/l	80 ug/l P	
				Dichloroacetic Acid	9.1 ug/l	60 ug/l P	
				E. Coli	<1 CFU	NA	
				Free Available Chlorine	210 ug/l	4,000 ug/l P	
				Haloacetic Acids	28.1 ug/l	60 ug/l P	
				Hardness	63,000 ug/l	NA	
				Heterotrophic Plate Count	<2 CFU	500 CFU P	
				Iron	<100 ug/l	300 ug/l S	
				Langlier Index	-1.66 units	NA	
				Lead	<1 ug/l	15 ug/l AL	
				Monobromoacetic Acid	<1 ug/l	NA	
				Monochloroacetic Acid	<2 ug/l	60 ug/l P	
				Nitrate	800 ug/l	10,000 ug/l P	
				Orthophosphate	<3,000 ug/l	NA	
				pH	6.74 pH	6.5-8.5 pH S	
				Sulfate	7,000 ug/l	250,000 ug/l S	
				Total Coliform	<1 CFU	0 CFU S	
				Total Dissolved Solids	5,000 ug/l	500,000 ug/l S	
				Total Organic Carbon	2,000 ug/l	NA	
				Total Trihalomethanes	56.7 ug/l	80 ug/l P	
				Trichloroacetic Acid	19 ug/l	60 ug/l P	
				Zinc	<20 ug/l	5,000 ug/l S	

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