



CERTIFICATE OF ANALYSIS

Chain of Custody: 612164
Client: Howard County Public School System
Address: 10910 Route 108
Ellicott City, MD 21042
Attention: Jeff Klenk

Job Name: Manor Woods Elementary School
Job Location: 11575 Frederick Road, Ellicott City,
MD 21042
Job Number: 13.052
P.O. Number: Not Provided

Date Submitted: 12/21/2018
Date Analyzed: 12/31/2018
Report Date: 01/02/2019
Date Sampled: 12/11/2018 - 12/12/2018
Person Submitting: Jeff Klenk
Revised: 01/02/2019 (Revision #1)

Summary of Drinking Water Analysis for Metals

AMA Sample Number	Client Sample Number	Sample Collection Information		Analysis Type	Sample Analyte	Reporting Limit	Final Result	Comments
		Date/Time	Location					
612164-1	MWES 2 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-2	MWES 4F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-3	MWES 6F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-4	MWES 8F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-5	MWES 9 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-6	MWES 11F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-7	MWES 13F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-8	MWES 15 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-9	MWES 20 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-10	MWES 22F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-11	MWES 24F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-12	MWES 26F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	1.9 ug/L	
612164-13	MWES 27F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	1.6 ug/L	
612164-14	MWES 28 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-15	MWES 30F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-16	MWES 32F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-17	MWES 34 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	1 ug/L	
612164-18	MWES 36F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	2.2 ug/L	
612164-19	MWES 38F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	2.3 ug/L	



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612164-20	MWES 40F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-21	MWES 41F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-22	MWES 42F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-23	MWES 43F 1st Draw	12/11/2018 5:18 am	CC/B	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-24	MWES 44 1st Draw	12/11/2018 5:18 am	DF/C	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-25	MWES 1 1st Draw	12/12/2018 5:13 am	KS	Furnace AA	Lead	1 ug/L	2.5 ug/L	
612164-26	MWES 3 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	10 ug/L	10.0 ug/L.
612164-27	MWES 4S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	2.2 ug/L	
612164-28	MWES 5 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	3.3 ug/L	
612164-29	MWES 6S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	1.7 ug/L	
612164-30	MWES 7 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	12 ug/L	11.9 ug/L.
612164-31	MWES 8S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	2 ug/L	
612164-32	MWES 10 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	12 ug/L	12.2 ug/L.
612164-33	MWES 11S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	3.5 ug/L	
612164-34	MWES 12 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	1.2 ug/L	
612164-35	MWES 13S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	5.1 ug/L	
612164-36	MWES 14 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	12 ug/L	12.1 ug/L.
612164-37	MWES 16 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	3.4 ug/L	
612164-38	MWES 17 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	4.6 ug/L	



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		Date/Time	Location					
612164-39	MWES 18 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	2.4 ug/L	
612164-40	MWES 19 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	5.1 ug/L	
612164-41	MWES 21 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	6.4 ug/L	
612164-42	MWES 22S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	2.7 ug/L	
612164-43	MWES 23 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	3.1 ug/L	
612164-44	MWES 24S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	2.6 ug/L	
612164-45	MWES 25 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	11 ug/L	10.6 ug/L.
612164-46	MWES 26S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	24 ug/L	23.9 ug/L. This sample has an elevated level of lead (above 20.5 ppb).
612164-47	MWES 27S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	3.8 ug/L	
612164-48	MWES 29 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	9.6 ug/L	
612164-49	MWES 30S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	8.1 ug/L	
612164-50	MWES 31 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	6.1 ug/L	
612164-51	MWES 32S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	1.7 ug/L	
612164-52	MWES 33 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	17 ug/L	16.6 ug/L.
612164-53	MWES 35 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	9.7 ug/L	
612164-54	MWES 36S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	3 ug/L	
612164-55	MWES 37 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	1.9 ug/L	
612164-56	MWES 38S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	2 ug/L	
612164-57	MWES 39 1st Draw	12/12/2018 5:13 am	CR	Furnace AA	Lead	1 ug/L	15 ug/L	15.4 ug/L.



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612164-58	MWES 40S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	2.1 ug/L	
612164-59	MWES 41S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	1.2 ug/L	
612164-60	MWES 42S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	1 ug/L	
612164-61	MWES 43S 1st Draw	12/12/2018 5:13 am	CC/S	Furnace AA	Lead	1 ug/L	1.2 ug/L	
612164-62	MWES 45 1st Draw	12/12/2018 5:13 am	NO	Furnace AA	Lead	1 ug/L	2.7 ug/L	
612164-63	MWES 46 1st Draw	12/12/2018 5:13 am	OT.2	Furnace AA	Lead	1 ug/L	2.1 ug/L	
612164-64	MWES 47 1st Draw	12/12/2018 5:13 am	TL	Furnace AA	Lead	1 ug/L	1.2 ug/L	
612164-65	MWES 48 1st Draw	12/12/2018 5:13 am	IM	Furnace AA	Lead	1 ug/L	< 1 ug/L	
612164-66	MWES 49 1st Draw	12/12/2018 5:13 am	OT.7	Furnace AA	Lead	1 ug/L	3.5 ug/L	
612164-67	MWES 44BW	12/12/2018 5:13 am	OT.1	Furnace AA	Lead	1 ug/L	< 1 ug/L	



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Analysis Methods: Flame AA: APHA SM3111B (1999, 22nd Ed.), Furnace AA: APHA SM3113B (2010, 22nd Ed.), ICP: EPA 200.8 (Rev. 5.4)

Sample Collector: Jeff Klenk
Certification:

mg/L = Parts Per Million (ppm), N/A = Not Applicable, µg/L = Parts Per Billion, N/P = Not Provided

All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy.

Analyst(s): Suphin Chinnapad

Technical Director G. Edward Carney

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client. This report must not be used to claim, and does not imply product certification, approval, or endorsement by NY ELAP, AIHA-LAP, or any agency of the Federal Government. All rights reserved. AMA Analytical Services, Inc.