September 7, 2023

Bronaugh R-VI School District
Beth Sandness
527 6th Street
Bronaugh, Missouri 64728

Project: Limited Lead in Drinking Water Testing
Address: 527 6th Street, Bronaugh, Missouri 64728

Mrs. Beth Sandness

On July 18, 2023, Kameron O'Donnell of Axiom Service Professionals (ASP), conducted lead in drinking water sampling at the above referenced address. Inspector certification is provided in Appendix A. A total of 10 samples were collected from various potential drinking water outlets including sources used for drinking, cooking, or cleaning of cooking and eating utensils throughout the building.

Drinking Water Standards

The use of lead solder and other lead-containing materials as defined in the EPA Safe Drinking Water Act in connecting household plumbing to public water supplies was prohibited as of 1986. The act established the definition of “lead free” to be less than 8% as a weighted average across wetted surfaces of a pipe, pipe fitting, plumbing fitting, and fixture and 0.2% lead for solder and flux. In 2011, the definition of “lead free” as it applied to wetted surfaces of a pipe, pipe fitting, and plumbing fitting and fixture was reduced from 8% to 0.25% as a weighted average. Many older structures still have lead pipe or lead-soldered plumbing internally, which may substantially increase the lead content of water at the tap. Nationwide regulations controlling the lead content of drinking-water coolers in schools went into effect in 1989.

In 1991, the EPA published the Lead and Copper Rule establishing limits on the amount of lead and copper in drinking water. This regulation can be found under 40 CFR Part 141, Subpart I. Reference: https://www.epa.gov/dwreginfo/lead-and-copper-rule

The EPA has set lead in drinking water standards as outlined below.

- For lead, the maximum contaminant level goal (MCLG) is zero. This is the levels determined to be safe by toxicological and biomedical considerations, independent of feasibility. EPA's National Primary Drinking Water Regulations for Lead establish a treatment level of **0.015 mg/L** or **15 ppb** (parts per billion) in municipal drinking water systems.

The Missouri Senate Bill 681 “Get the Lead Out of School Drinking Water Act”, passed in 2022, has set the standard summarized below.
Reference: https://www.senate.mo.gov/22info/BTS_Web/Bill.aspx?SessionType=R&BillID=71259862

- On or before January 1, 2024, each school shall conduct an inventory of all drinking water outlets and all outlets that are used for dispensing water for cooking or for cleaning cooking and eating utensils in each of the school’s buildings. A plan for testing should then be developed, prioritizing early childhood education programs and elementary schools, and made available to the public.
- The bill outlines that beginning in the 2023-2024 school year and for each subsequent school year, each school shall provide drinking water with a lead concentration below five parts per billion (**5 ppb**). Any school with greater than or equal to 5 ppb shall provide results and remediation plans to parents and staff within 7 business days of receiving results.

Drinking Fountain Identification

Drinking fountains throughout the school were visually assessed to determine if they matched those listed by the EPA to be lead-containing. The list of drinking fountains reported by the EPA to contain lead-lined holding tanks or solder joints is presented as Appendix B. Below is a list of drinking fountains within the school that match those reported by the EPA to be lead-containing.

Location	Make	Model #	Serial #
None Matching			

Water Sampling Methods:

Water samples were collected from each selected location as “first draw” and/or “flush”. First draw samples typically represent worst case sample results. A flush sample is typically collected to determine if an elevation is originating beyond the fixture in the fixture supply line or beyond. Samples were deposited into a non-preserved 250-milliliter sterile Nalgene screw top bottle. Immediately following sample collection, the samples were delivered to Keystone Laboratories located at 835 South Saint Paul, Kansas City, Kansas 66105. Upon arrival at the laboratory, samples were preserved through addition of nitric acid.

Keystone Laboratories is accredited through the Missouri Department of Natural Resources for analysis of lead in water.

Below is a summary of the water sampling results as reported in Appendix C by Keystone Laboratories. Results exceeding the applicable drinking water standards are shown in red text.

July 18, 2023 Water Sampling Results:

Sample #	Location	Source Under Test	Test Type	Lead Result (ppb)
527-1-FD	Elementary School - Room B106	Sink Tap	First Draw	1.4
527-2-FD	Elementary School - Room B105	Sink Tap	First Draw	1.2
527-3-FD	Elementary School - Main Hallway North End	Drinking Fountain	First Draw	<0.4
527-4-FD	Elementary School - Main Hallway North End	Bottle Filler	First Draw	<0.4
527-5-FD	Elementary School - Men’s Restroom Left	Sink Tap	First Draw	0.6
527-6-FD	Elementary School - Men’s Restroom Right	Sink Tap	First Draw	<0.4
527-7-FD	Elementary School - Women’s Restroom Left	Sink Tap	First Draw	4.4

Sample #	Location	Source Under Test	Test Type	Lead Result (ppb)
527-8-FD	Elementary School - Women's Restroom Right	Sink Tap	First Draw	0.5
527-9-FD	Elementary School - Main Hallway South End	Drinking Fountain	First Draw	<0.4
527-10-FD	Elementary School - Main Hallway South End	Bottle Filler	First Draw	<0.4

Photos of the sampling locations are provided in Appendix D. A diagram containing identifiers on the outlets tested is provided in Appendix E.

Required Communication

- Contact staff and parents via written notification within seven (7) business days after receiving the test result.
- The notification shall include at least:
- The test results and a summary that explains such results;
- A description of any remedial steps taken; and
- A description of general health effects of lead contamination and community specific resources; and
- Provide bottled water if there is not enough water to meet the drinking water needs of the students, teachers, and staff.
- Submit such annual testing results to the Missouri Department of Health and Senior Services (DHSS).
- Before August 1, 2024, or the first day on which students will be present in the building, whichever is later, and annually thereafter, each school shall conduct testing for lead by first-draw and follow-up flush samples of a random sampling of at least twenty-five percent (25%) of remediated drinking water outlets until all remediated sources have been tested as recommended by the 2018 version of the United States Environmental Protection Agency's "Training, Testing, and Taking Action" program. The testing shall be conducted and the results analyzed for both types of tests by an entity or entities approved by the department.
- Any measures taken to remediate any elevated lead levels identified must be recorded and documented.

General Recommendations

- Retesting of all potential cooking and drinking water sources is required five (5) years from previous testing completed.
- If the condition changes or significant alterations to existing plumbing is undertaken, consider performing additional lead in drinking water sampling.
- Ensure that the plumbing system is not used as an electrical ground.
- If equipment is added that could affect water pH, alkalinity, or hardness, consider performing lead in drinking water sampling.

Any work resulting from this report should be conducted in accordance with the EPA Safe Drinking Water Act, Missouri SB 681 & 662, HUD Lead Regulations 24 CFR 35, EPA Lead Regulations 40 CFR 745, and Consumer Product Safety Commission document #5056.

If you have any questions concerning this report, please contact me at 816-914-5595.

Sincerely,

Kameron O'Donnell
Axiom Service Professionals LLC
Kamerono@axiomservicepros.com

Limitations Drinking Water Testing

The presence or absence of lead and copper (if collected) in drinking water applies only to the test locations on the date of the field visit and it should be understood that conditions may change due to deterioration, pH, alkalinity, hardness, use levels, or maintenance. The results noted within this report were accurate at the time of the evaluation and in no way reflect the conditions at the property before or after the date of the evaluation. No other environmental concerns or conditions were addressed during this evaluation.

Appendix A
Certifications

STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Kameron G. O'Donnell

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Inspector
Category of License

Issuance Date:	**4/13/2022**
Expiration Date:	**4/13/2024**
License Number:	**220413-300006264**

Paula F. Nickelson
Acting Director
Department of Health and Senior Services

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102

STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Jeffrey A. Hurst

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Risk Assessor
Category of License

Issuance Date:	**8/1/2022**
Expiration Date:	**8/1/2024**
License Number:	**000801-200166567**

Paula F. Nickelson
Acting Director
t of Health and Senior Services

son City, MO 65102

Appendix B
EPA Listed Lead Containing Drinking Fountains

Table C-1
Water Coolers With Other Lead Components

EBCO Manufacturing

- All pressure bubbler water coolers with shipping dates from 1962 through 1977 have a bubbler valve containing lead. The units contain a single, 50-50 tin-lead solder joint on the bubbler valve. Model numbers for coolers in this category are not available.

- The following models of pressure bubbler coolers produced from 1978 through 1981 contain one 50-50 tin-lead solder joint each.

CP3	DP15W	DPM8	7P	13P	DPM8H	DP15M	DP3R	DP8A
DP16M	DP5S	C10E	PX-10	DP7S	DP13SM	DP7M	DP7MH	DP7WD
WTC10	DP13M-60	DP14M	CP10-50	CP5	CP5M	DP15MW	DP3R	DP14S
DP20-50	DP7SM	DP10X	DP13A	DP13A-50	EP10F	DP5M	DP10F	CP3H
CP3-50	DP13M	DP3RH	DP5F	CP3M	EP5F	13PL	DP8AH	DP13S
CP10	DP20	DP12N	DP7WM	DP14A-50/60				

Halsey Taylor

- Lead solder was used in these models of water coolers manufactured between 1978 and the last week of 1987:

WMA-1	SCWT/SCWT-A	SWA-1	DC/DHC-1
S3/5/10D	BFC-4F/7F/4FS/7FS	S300/500/100D	

- The following coolers manufactured for Haws Drinking Faucet Company (Haws) by Halsey Taylor from November 1984 through December 18, 1987 are not lead-free because they contain 2 tin-lead solder joints. The model designations for these units are as follows:

HC8WT	HC14F	HC6W	HWC7D	HC8WTH	HC14FH	HC8W	HC2F	HC14WT
HC14FL	HC14W	HC2FH	HC14WTH	HC8FL	HC4F	HC5F	HC14WL	HCBF7D
HC4FH	HC10F	HC16WT	HCBF7HO	HC8F	HC8FH	HC4W	HWC7	

Table C-2
Halsey Taylor Water Coolers With Lead-Lined Tanks

- The following six model numbers have one or more units in the model series with lead-lined tanks:

WM8A WT8A GC10ACR GC10A GC5A RWM13A

- The following models and serial numbers contain lead-lined tanks:

WM14A Serial No. 843034	WM14A Serial No. 843006	WT11A Serial No. 222650
WT21A Serial No. 64309550	WT21A Serial No. 64309542	LL14A Serial No. 64346908

Appendix C
Laboratory Analytical Report

ANALYTICAL REPORT

August 09, 2023

Work Order: 1GG2313

Report To	Work Order Information
Jeff Hurst AXIOM Service Professionals PO Box 47166 Kansas City, MO 64188	Date Received: 7/25/2023 9:12:00AM Collector: O'Donnell, Kameron Phone: (816) 678-7894 PO Number: Bronaugh-Elementary-527

Project: Lead Analysis

Project Number: Bronaugh-Elementary-527

Analyte		Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GG2313-01	527-1-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:46	
Lead, total		**1.4 ppb**	**0.4**	1GH0449	200.8	RVV	08/08/23 21:46	
1GG2313-02	527-2-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:48	
Lead, total		**1.2 ppb**	**0.4**	1GH0449	200.8	RVV	08/08/23 21:50	
1GG2313-03	527-3-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:53	
Lead, total		<0.4 ppb	0.4	1GH0449	200.8	RVV	08/08/23 21:54	
1GG2313-04	527-4-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:54	
Lead, total		<0.4 ppb	0.4	1GH0449	200.8	RVV	08/08/23 21:59	
1GG2313-05	527-5-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:56	
Lead, total		**0.6 ppb**	**0.4**	1GH0449	200.8	RVV	08/08/23 22:03	
1GG2313-06	527-6-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:57	
Lead, total		<0.4 ppb	0.4	1GH0449	200.8	RVV	08/08/23 22:07	
1GG2313-07	527-7-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:58	
Lead, total		**4.4 ppb**	**0.4**	1GH0449	200.8	RVV	08/08/23 22:11	
1GG2313-08	527-8-FD				Matrix: Drink Wtr		Collected: 07/18/23 09:59	
Lead, total		**0.5 ppb**	**0.4**	1GH0449	200.8	RVV	08/08/23 22:16	
1GG2313-09	527-9-FD				Matrix: Drink Wtr		Collected: 07/18/23 10:01	
Lead, total		<0.4 ppb	0.4	1GH0452	200.8	RVV	08/08/23 22:37	
1GG2313-10	527-10-FD				Matrix: Drink Wtr		Collected: 07/18/23 10:02	
Lead, total		<0.4 ppb	0.4	1GH0452	200.8	RVV	08/08/23 22:49	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

AXIOM Service Professionals
PO Box 47166
Kansas City, MO 64188

Work Order: 1GG2313

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GH0449 - DW Metals Prep										
Blank (1GH0449-BLK1)				Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	ND	0.2	ppb							
LCS (1GH0449-BS1)				Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	20.0	0.2	ppb	20.0000		100	85-115			
Matrix Spike (1GH0449-MS1)		**Source: 1GG2309-18**		Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	39.8	0.4	ppb	40.8163	0.2	97.0	70-130			
Matrix Spike Dup (1GH0449-MSD1)		**Source: 1GG2309-18**		Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	38.5	0.4	ppb	40.8163	0.2	93.8	70-130	3.36	20	
Batch 1GH0452 - DW Metals Prep										
Blank (1GH0452-BLK1)				Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	ND	0.2	ppb							
LCS (1GH0452-BS1)				Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	19.8	0.2	ppb	20.0000		99.2	85-115			
Matrix Spike (1GH0452-MS1)		**Source: 1GG2313-09**		Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	37.3	0.4	ppb	40.8163	ND	91.4	70-130			
Matrix Spike Dup (1GH0452-MSD1)		**Source: 1GG2313-09**		Prepared: 08/07/23 Analyzed: 08/08/23						
Lead, total	37.1	0.4	ppb	40.8163	ND	90.8	70-130	0.645	20	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
200.8 in Drink Wtr		
	Lead, total	SIA1X,MO-NT

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2024
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

AXIOM Service Professionals
PO Box 47166
Kansas City, MO 64188

August 09, 2023
Page 3 of 5

Work Order: 1GG2313

End of Report

Sue Thompson

Keystone Laboratories

Sue Thompson
Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Keystone LABORATORIES
A Microbac Company

___ 600 E. 17th St. S Newton, IA 50208 Phone: 641-792-8451	___ 3012 Ansborough Ave Waterloo, IA 50701 Phone: 319-235-4440	X 835 S St. Paul Kansas City, KS 66105 Phone: 913-321-7856	___ 205 E Van Buren St Centerville, IA 52544 Phone: 641-437-7023

PRINT OR TYPE INFO BELOW:		REPORT TO:		BILL TO:	
SAMPLER:		NAME:	Jeff Hurst	NAME:	Jeff Hurst
SITE NAME:	Elementary School	CO. NAME:		CO. NAME:	
ADDRESS:	527 6th Street	ADRESS:	PO Box 47166	ADDRESS:	PO Box 47166
CITY/ST/ZIP:	Bronaugh, Missouri 64728	CITY/ST/ZIP:	Kansas City, Missouri 64188	CITY/ST/ZIP:	Kansas City, Missouri 64188
PHONE:	913-837-6034	PHONE:	816-678-7894	PHONE:	816-678-7894
		EMAIL:	jeffh@axiomservicepros.com	EMAIL:	jeffh@axiomservicepros.com

CLIENT SAMPLE #	DATE	TIME		# OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: Lead							LAB USE ONLY: Sample Condition	Sample #
														Wk Order #: 1GG2313	
														Short Hold:	
														Rush:	
														Temp: oC 26.9	
527-1-FD	7/18/2023	09:46	Elementary School - Sink Tap - Room B106	1	Water	Grab	X								01
527-2-FD	7/18/2023	09:48	Elementary School - Sink Tap - Room B105	1	Water	Grab	X								02
527-3-FD	7/18/2023	09:53	Elementary School - Drinking Fountain - Main Hallway North End	1	Water	Grab	X								03
527-4-FD	7/18/2023	09:54	Elementary School - Bottle Filler - Main Hallway North End	1	Water	Grab	X								04
527-5-FD	7/18/2023	09:56	Elementary School - Sink Tap - Men's Restroom Left	1	Water	Grab	X								05
527-6-FD	7/18/2023	09:57	Elementary School - Sink Tap - Men's Restroom Right	1	Water	Grab	X								06
527-7-FD	7/18/2023	09:58	Elementary School - Sink Tap - Women's Restroom Left	1	Water	Grab	X								07

Relinquied by: (Signature)	Date:		Received by: (Signature)	Date:		Remarks:
	Time:			Time:		
Relinquied by: (Signature)	Date:		Received by: (Signature)	Date:		
	Time:			Time:		

1GG2313

AXIOM Service Professionals

PM: Sue Thompson

Keystone LABORATORIES
A Microbac Company

___ 600 E. 17th St. S Newton, IA 50208 Phone: 641-792-8451	___ 3012 Ansborough Ave Waterloo, IA 50701 Phone: 319-235-4440	X 835 S St. Paul Kansas City, KS 66105 Phone: 913-321-7856	___ 205 E Van Buren St Centerville, IA 52544 Phone: 641-437-7023

PRINT OR TYPE INFO BELOW:		REPORT TO:		BILL TO:	
SAMPLER:		NAME:	Jeff Hurst	NAME:	Jeff Hurst
SITE NAME:	Elementary School	CO. NAME:		CO. NAME:	
ADDRESS:	527 6th Street	ADRESS:	PO Box 47166	ADDRESS:	PO Box 47166
CITY/ST/ZIP:	Bronaugh, Missouri 64728	CITY/ST/ZIP:	Kansas City, Missouri 64188	CITY/ST/ZIP:	Kansas City, Missouri 64188
PHONE:	913-837-6034	PHONE:	816-678-7894	PHONE:	816-678-7894
		EMAIL:	jeffh@axiomservicepros.com	EMAIL:	jeffh@axiomservicepros.com

CLIENT SAMPLE #	DATE	TIME		# OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED: Lead							LAB USE ONLY: Sample Condition	Sample #
527-8-FD	7/18/2023	09:59	Elementary School - Sink Tap - Women's Restroom Right	1	Water	Grab	X								08
527-9-FD	7/18/2023	10:01	Elementary School - Drinking Fountain - Main Hallway South End	1	Water	Grab	X								09
527-10-FD	7/18/2023	10:02	Elementary School - Bottle Filler - Main Hallway South End	1	Water	Grab	X								10

LAB USE ONLY
Wk Order #:
Short Hold:
Rush:
Temp: oC

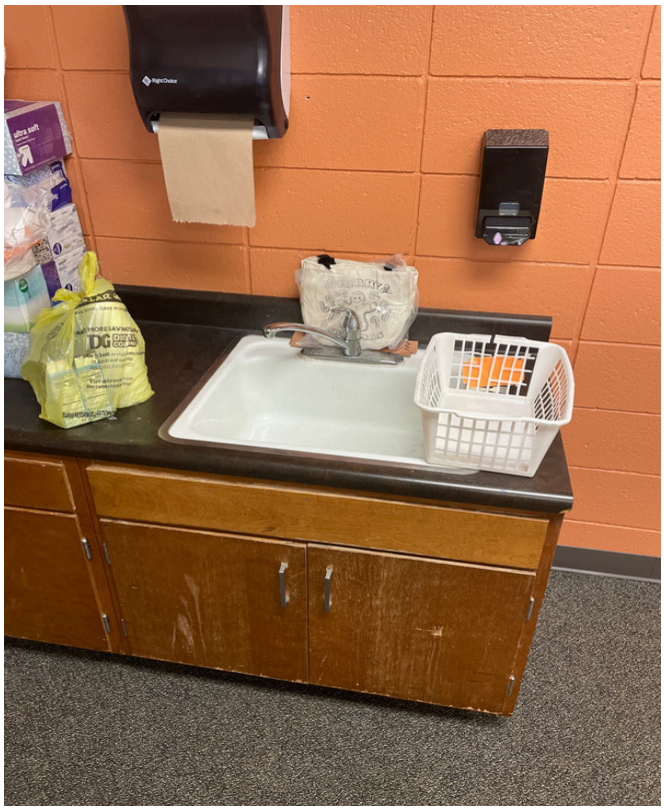
Relinquied by: (Signature)	Date:		Received by: (Signature)	Date:		Remarks:
	Time:			Time:		
Relinquied by: (Signature)	Date:		Received by: (Signature)	Date:		
	Time:			Time:		

1 G G 2 3 1 3

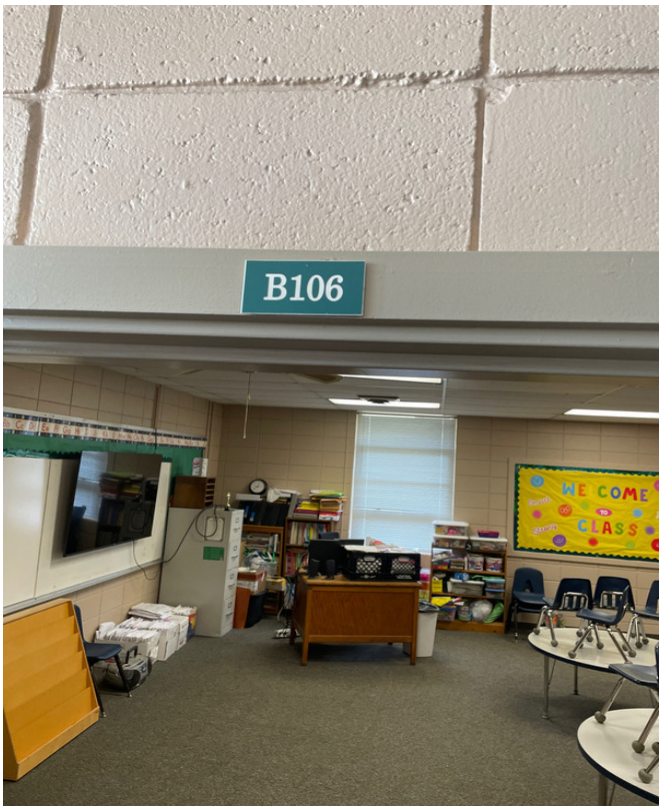
AXIOM Service Professionals

PM: Sue Thompson

Appendix D
Photo Log



527-1 - Elementary School - Room B106



527-1 - Elementary School - Room B106

527-2 - Elementary School - Room B105

527-2 - Elementary School - Room B105

527-3 - Elementary School - Main Hallway North End

527-4 - Elementary School - Main Hallway North End

527-5 - Elementary School - Men’s Restroom Left

527-6 - Elementary School - Men’s Restroom Right

527-7 - Elementary School - Women’s Restroom Left

527-8 - Elementary School - Women’s Restroom Right

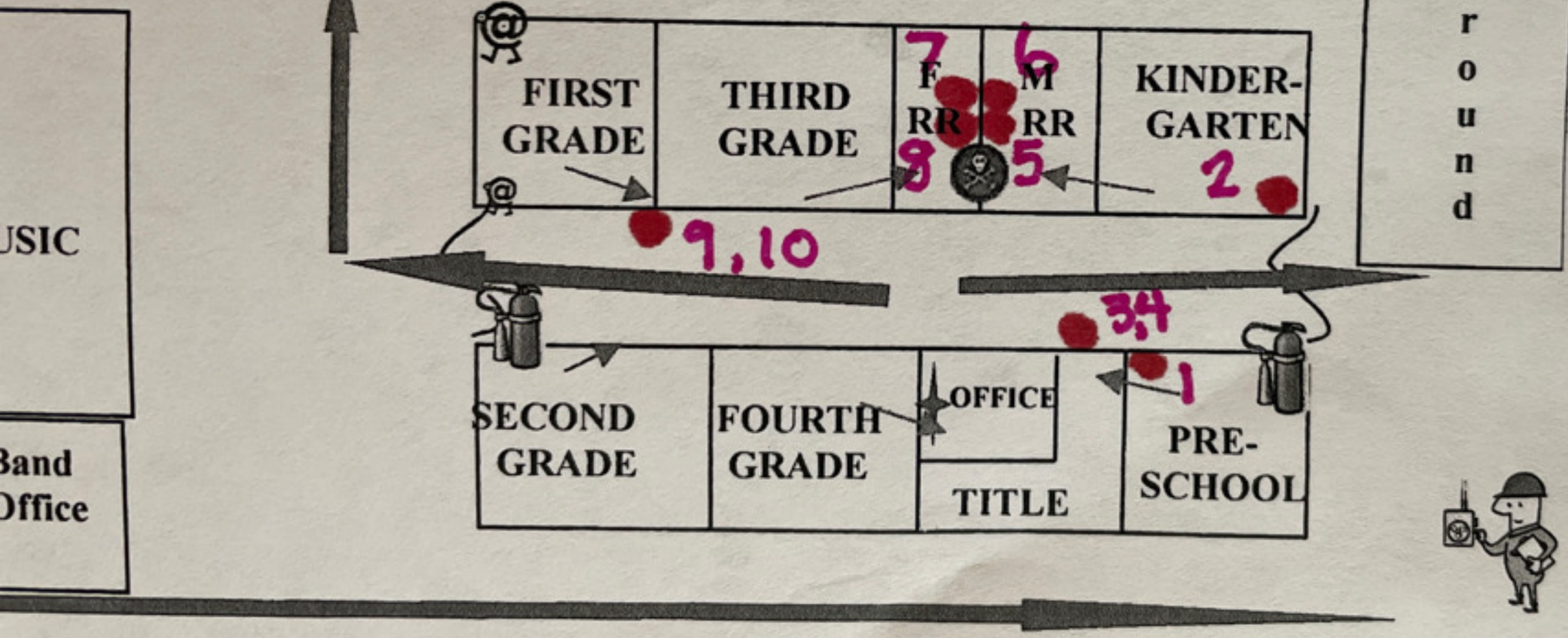
527-9 - Elementary School - Main Hallway South End

527-10 - Elementary School - Main Hallway South End

Appendix E
Source Identification Diagram

Outdoor Classroom Area

BRONAUGH R-VII SCHOOLS



FIRE- Six, short rings/