



January 10, 2017

Phil Richard  
Department of Natural Resources  
875 S. 4<sup>th</sup> Ave  
Park Falls, WI 54552

Re: Summary Letter Report and Work Plan, Letsos Property - Belknap Street  
902-904 Belknap Street, Superior, WI 54880  
BRRTS# 02-16-560359

Dear Mr. Richard:

This letter report presents the results of soil and groundwater sampling activities performed at the 902-904 Belknap Street property in March and April 2016, in addition to providing a baseline work plan for ongoing corrective action and related sampling efforts.

In March 2016, MSA Professional Services, Inc. (MSA) and Ms. Maria Letsos signed an Environmental Consulting Services Agreement intended to address identified soil contamination at the property.

Sampling activities performed at the site by prior consultants identified soil contamination within a room at the southwest corner of the basement and immediately south of the outside basement door. Data suggested that there is contamination related to dry cleaning solvents in these areas. Further work was completed by MSA at the site to identify the extent of the contamination, evaluate potential risk factors such as the potential for indoor air quality impacts, characterize contaminated soil/debris for handling and disposal during upcoming building modifications, and to evaluate alternatives for managing the discharge of sump water originating from the site.

### Summary of Work

On March 14, 2016, MSA personnel collected a soil sample from the exposed basement soils in the southwest room of the basement and a water sample from the basement sump to be analyzed for volatile organic compounds (VOCs). Soils from the basement were also analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) to provide preliminary evaluation of soils for planned treatment/disposal options and future corrective action. The location of the sump and the contaminated media sample location are indicated on **Figure 2**, attached.

MSA personnel oversaw the advancement of five soil borings (GP-1, GP-2, GP-3, GP-4, and GP-5) at the site on April 18, 2016. Soils from the borings were characterized and ten soil samples were collected and submitted for laboratory analysis. A summary of soil analytical results is included in **Table A.2**, which also includes analytical data for two hand auger borings advanced at the site by Environmental Troubleshooters during previous site assessment. Soil boring locations are indicated on **Figure 2**. Three groundwater samples were collected from three of the soil borings advanced at the site (GP-1, GP-4, and GP-5). The laboratory analytical results have been compiled in **Table A.1**. Groundwater did not accumulate in sufficient quantities within GP-2 and GP-3 to facilitate sample collection.

### Discussion of Results

Based upon data collected from soil borings advanced by MSA and hand auger borings advanced by Environmental Troubleshooters, soil contamination exceeding DNR direct contact residual contaminant levels (RCLs) existed within four

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902-904 Belknap Street  
January 11, 2017

feet of the ground surface beneath the footprint of the 902-904 Belknap Street building. Soil contamination within the building footprint is expected to be from spills of dry cleaning solvents in the basement associated with the building's former use as a dry cleaning facility. It also appears that petroleum soil and groundwater contamination exists in the immediate area of GP-1. This contamination appears to be the likely result of a release from a former underground storage tank (UST) located in that approximate area and referenced on the attached Sanborn Fire Insurance Map (**Attachment 3**).

MSA has recommended that contaminated soils within the earthen portion of the basement of the building be excavated to remove impacted soils identified on the property. Based upon analytical data collected at the site, exposed soils in the basement of the building present a soil direct contact and vapor intrusion hazard into the remainder of the building.

### **Corrective Action and Sampling Plan**

MSA has initiated the excavation of the earthen floor in the room on the southwest corner of the basement on December 2, 2016 and will complete soil sampling at points within the base of the excavation to confirm contamination has been removed and what residual contamination remains. A lined roll-off was mobilized to the property for stockpiling of the contaminated media removed from the basement earthen floor. This process is expected to be completed by the end of January 2017. Following excavation activities, a passive sub slab depressurization (SSD) system and concrete floor will be installed in the basement of the building to prevent remnant volatile organic vapors in the soil from seeping through the basement slab and accumulating in the building. For the interim, a COPPUS® portable ventilator is being used at the site to vent basement air to the outside to prevent soil vapors from entering occupied areas of the building. An activated carbon treatment unit will be installed to address any sump discharge.

Upon completion of the excavation work in the basement and installation of the concrete floor, MSA will provide a formal, written update to the WDNR with a work plan for subsequent sampling and indoor air quality evaluation.

Please contact me with any questions. I may be reached by phone at (218) 499-3175 or by email at [jkanderson@msa-ps.com](mailto:jkanderson@msa-ps.com).

Sincerely,

MSA Professional Services, Inc.



Jeffrey K. Anderson, P.E.  
Senior Project Manager

Cc: Maria Letsos, Owner

Attachments:	Table A.1	Groundwater Analytical Results
	Table A.2	Soil Analytical Results
	Figure 1	Site Location
	Figure 2	Detailed Site Map
	Attachment 1	March 2016 Photo Log
	Attachment 2	December 2016 Photo Log
	Attachment 3	Sanborn Fire Insurance Map (1955)

Attachment A.2. Soil Analytical Table  
 902-904 Belknap Street, Superior, WI  
 BRRTS# 02-16-560359

SAMPLE/BORING #	HA-1 <sup>1</sup>	HA-2 <sup>1</sup>	Basement Soil	GP-1 <sup>2</sup>		GP-2 <sup>2</sup>		GP-3 <sup>2</sup>		GP-4 <sup>2</sup>		GP-5 <sup>2</sup>		Soil RCLs (mg/kg)		
DEPTH to Water Table (ft BGS)				7.55	7.55					11.41	11.41	4.63	4.63			
Date Collected	6/18/2013	6/18/2013	3/14/2016	4/12/2016		4/12/2016		4/12/2016		4/12/2016		4/12/2016				
DEPTH (ft BGS)	2-3	1		7.5-10	12.5-15	7.5-10	12.5-15	7.5-10	12.5-15	5-7.5	7.5-10	5-7.5	7.5-10			
SATURATED OR UNSATURATED				sat	sat					unsat	unsat	sat	sat			
SOIL TYPE														July 2015 DNR Table	Background	
Soil Concentrations in mg/kg (or ppm)														Non-Industrial Direct Contact	Soil to GW	Surficial BTV
<b>VOC ANALYTES</b>																
Benzene	<0.0289	<0.135	<0.0932	<b>7.83</b>	<i>0.418</i>	<i>0.359</i>	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	1.49	0.0051	
n-Butylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	108	NS	
sec-Butylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	145	NS	
1,2-Dichlorobenzene	<0.0723	<0.338	<i>0.788</i>	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	376	1.168	
1,4-Dichlorobenzene	<0.0723	<0.338	<i>0.105</i>	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	3.48	0.144	
1,1-Dichloroethene	<0.0723	<0.338	<i>0.168</i>	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	4.72	0.005	
cis-1,2-Dichloroethene	<i>0.587</i>	<i>35.7</i>	<b>301</b>	<0.0654	<0.0693	<0.0616	<i>0.141</i>	<0.0655	<0.0748	<i>0.468</i>	<i>0.184</i>	<0.0767	<0.0666	156	0.0412	
trans-1,2-Dichloroethene	<0.0723	<i>1.76</i>	<i>2.5</i>	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	1,560	0.0626	
Ethylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	7.47	1.57	
p-Isopropylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	NS	NS	
Methyl tert butyl ether	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	59.4	0.027	
Naphthalene	<0.289	<1.350	<0.466	<0.327	<0.347	<0.308	<0.530	<0.327	<0.374	<0.345	<0.331	<0.384	<0.333	0.854	0.6587	
n-Propylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	264	NS	
Tetrachloroethene	<i>11.6</i>	<i>1.96</i>	<b>2620</b>	<0.0654	<0.0693	<i>2.01</i>	<0.106	<i>0.176</i>	<0.0748	<i>0.749</i>	<i>0.0803</i>	<0.0767	<0.0666	30.7	0.0045	
Toluene	<0.0723	<0.338	<0.466	<0.327	<0.347	<0.308	<0.530	<0.327	<0.374	<0.345	<0.331	<0.384	<0.333	818	1.1072	
1,2,3-Trichlorobenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	48.9	NS	
Trichloroethene	<i>0.832</i>	<i>0.845</i>	<b>259</b>	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<i>0.292</i>	<0.0663	<0.0767	<0.0666	1.26	0.0036	
1,2,4-Trimethylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	89.8	1.3793*	
1,3,5-Trimethylbenzene	<0.0723	<0.338	<0.0932	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	182	1.3793*	
Vinyl chloride	<b>0.123</b>	<b>7.36</b>	<b>2.65</b>	<0.0654	<0.0693	<0.0616	<0.106	<0.0655	<0.0748	<0.0690	<0.0663	<0.0767	<0.0666	0.067	0.0001	
Xylene (Total)	<0.217	<1.01	<0.280	<0.196	<0.208	<0.185	<0.318	<0.196	<0.224	<0.207	<0.199	<0.230	<0.200	258*	3.94*	
No. of Individual Exceedances (DC)	1	1		0	0	0	0	0	0	0	0	0	0			
Cumulative Hazard Index (DC)	0.2435	0.4656		0	0	0	0	0	0	0	0	0	0			
Cumulative Cancer Risk (DC)	2.90E-06	1.10E-04		0	0	0	0	0	0.0	0	0	0	0			

Exceedance Highlights:

**BOLD** font indicates DC RCL exceedance, and BTV exceedance for metals.

*Italic* font indicates GW RCL Exceedance. Groundwater quality (> NR 140 ES) may be affected when GW RCLs are exceeded.

Blanks indicate parameter was not analyzed.

NS: No published standard.

Table Notes:

J: Indicates the analyte was detected between the Laboratory Limit of Detection and Laboratory Limit of Quantitation.

<: Indicates the analyte was not detected above the Laboratory Limit of Quantitation.

\*: Indicates total xylenes (m-,o-,p- combined) and total trimethylbenzenes (1,2,4- and 1,3,5- combined).

1: Hand auger borings completed by Environmental Troubleshooters

2: Soil boring advanced by MSA Professional Services, Inc.

Attachment A.1. Groundwater Analytical Table  
 902-904 Belknap Street, Superior, WI  
 BRRTS# 02-16-560359

	Acetone	Benzene	2-Butanone (MEK)	Chloroform	Chloromethane	Dichlorodifluoromethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Naphthalene	Tetrachloroethene	Toluene	Trichloroethene	Vinyl Chloride	Groundwater Elevation (feet bgs)
NR 140 ES	9000	5	4000	6	30	1000	5	850	70	100	100	5	800	5	0.2	
NR 140 PAL	1800	0.5	800	0.6	3	200	0.5	85	7	20	10	0.5	160	0.5	0.02	
Groundwater Concentrations in ug/l (or ppb)																
<b>GP-1</b>																
4/12/2016	<50.0	<b>986</b>	<10.0	<5.00	<2.50	<5.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<5.00	<1.00	<1.00	7.55
<b>GP-4</b>																
4/12/2016	<50.0	<100	<10.0	<5.00	<2.50	<5.00	<1.00	26.3	<b>4330</b>	16.3	<5.00	<b>1600</b>	<5.00	<b>1730</b>	<b>874</b>	11.41
<b>GP-5</b>																
4/12/2016	<50.0	<1.00	<10.0	<5.00	<2.50	<5.00	<1.00	<1.00	5.62	<1.00	<5.00	<1.00	<5.00	<1.00	<b>15.6</b>	4.63
<b>Basement Sump</b>																
3/14/2016	<1250	<25.0	<250	<125	<62.5	<125	<25.0	61.8	<b>87300</b>	<b>288</b>	<125	<b>51600</b>	<125	<b>22600</b>	<b>11500</b>	

Exceedance Highlights:

**BOLD** font indicates NR 140 Enforcement Standard (ES) exceedance.

*Italic* font indicates NR 140 Preventative Action Limit (PAL) exceedance.

BTEX and other VOC compounds detected in at least one sample are included in table. See laboratory report for all results.

NS: No published standard.

Table Notes:

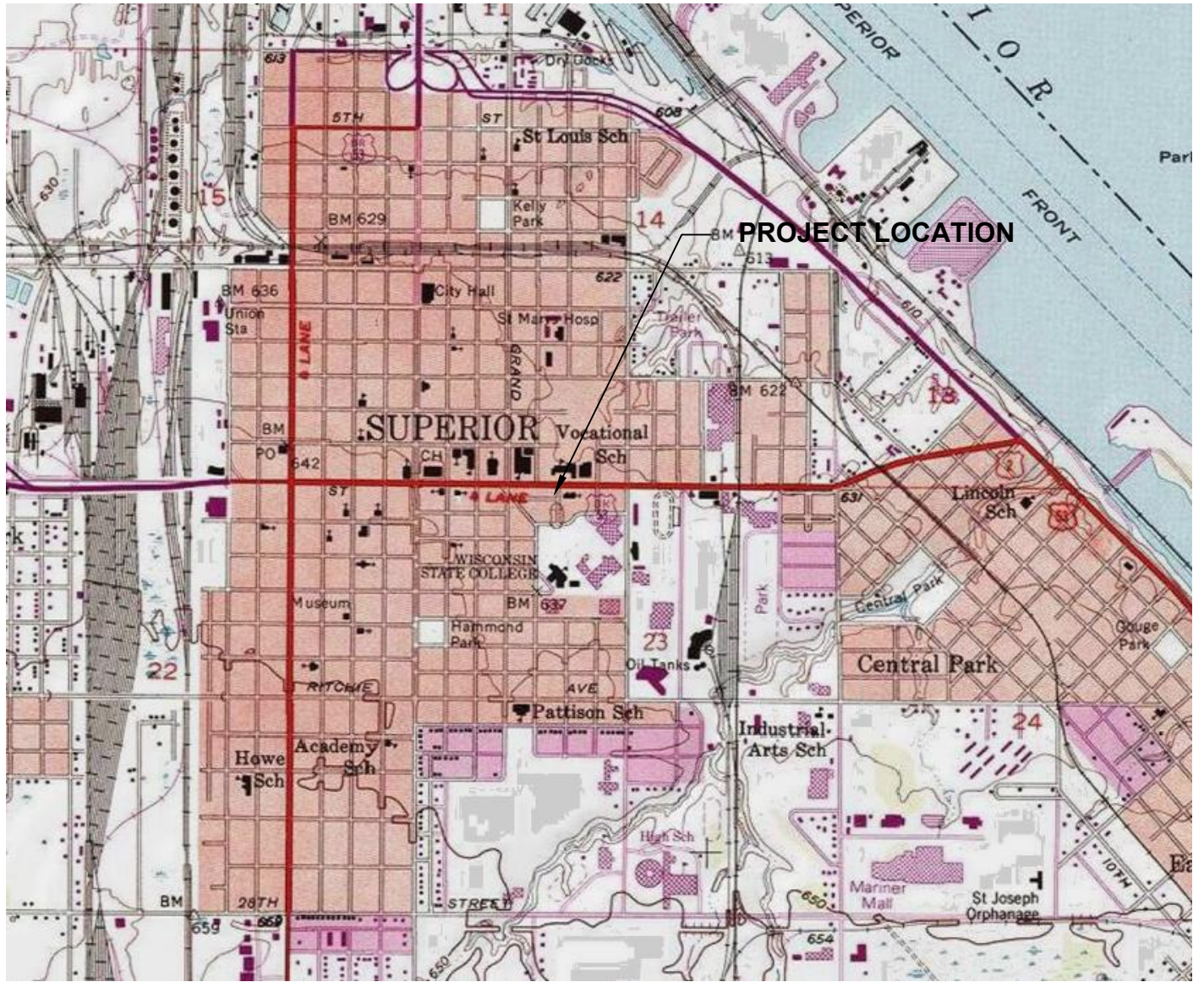
<: Indicates the analyte was not detected above the Laboratory Limit of Quantitation.

\*: Indicates total xylenes (m-,o-,p- combined) and total trimethylbenzenes (1,2,4- and 1,3,5- combined).

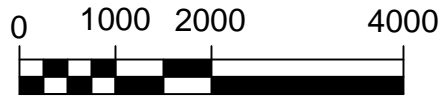
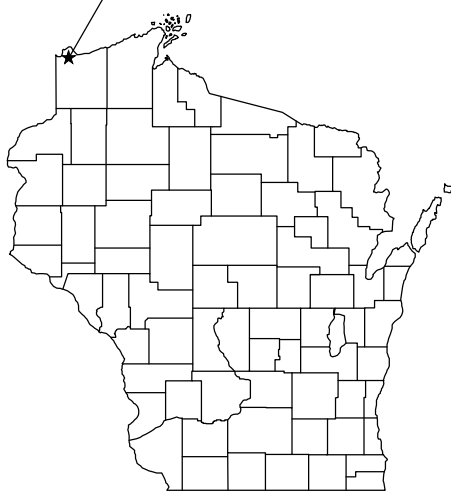
NA: Indicates constituent was not analyzed.

J: Laboratory qualifier indicating the estimated concentration at or above the Limit of Detection and below the Limit of Quantitation.





PROJECT LOCATION



Superior Quadrangle  
 Wisconsin - Douglass County  
 7.5 Minute Series (Topographic)

Contour Interval 10 Feet  
 1954  
 Revised 1993

File Name: P:\17700\17700\1771\1771\1500CAD\DWG\177000 Belknap Street.dwg



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Figure 1

**SITE LOCATION MAP**  
 902-904 BELKNAP STREET  
 SUPERIOR, WI

FILE NO.  
 00639091  
 SHEET  
 1







# PHOTOGRAPHIC LOG

902-904 Belknap Ave Site Investigation

SUPERIOR, WI

MSA Project No. 17711000



West side of property prior to Kwik Trip Construction.



View looking east from west side of property.



South side of building showing basement entrance.



East side of property.



Rear parking area.



Adjacent property use to the east.





**Lot to the west which is currently developed as a Kwik Trip (as of summer of 2016).**



**Another view of basement room subject to corrective action.**



**Interior view of earthen floor room looking south with contaminated soil and debris.**





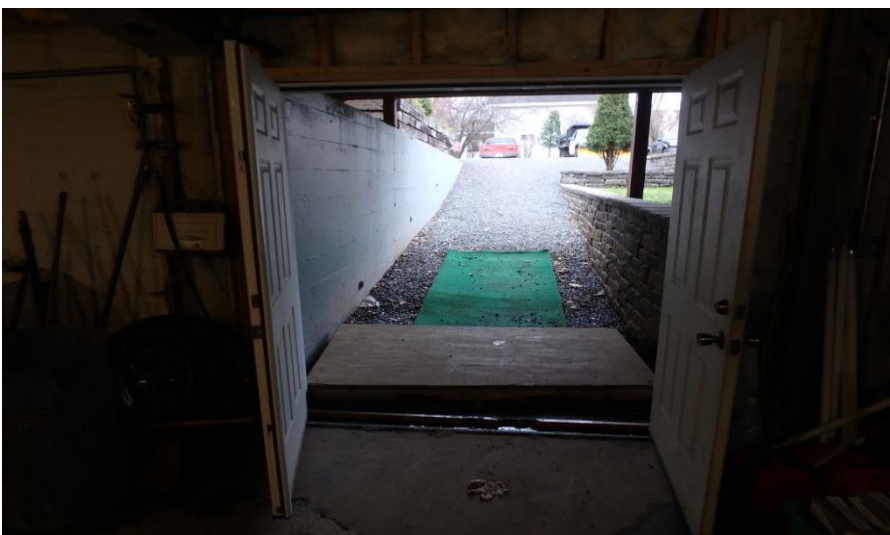
Closeup of contaminated media encountered during initial removal activities.



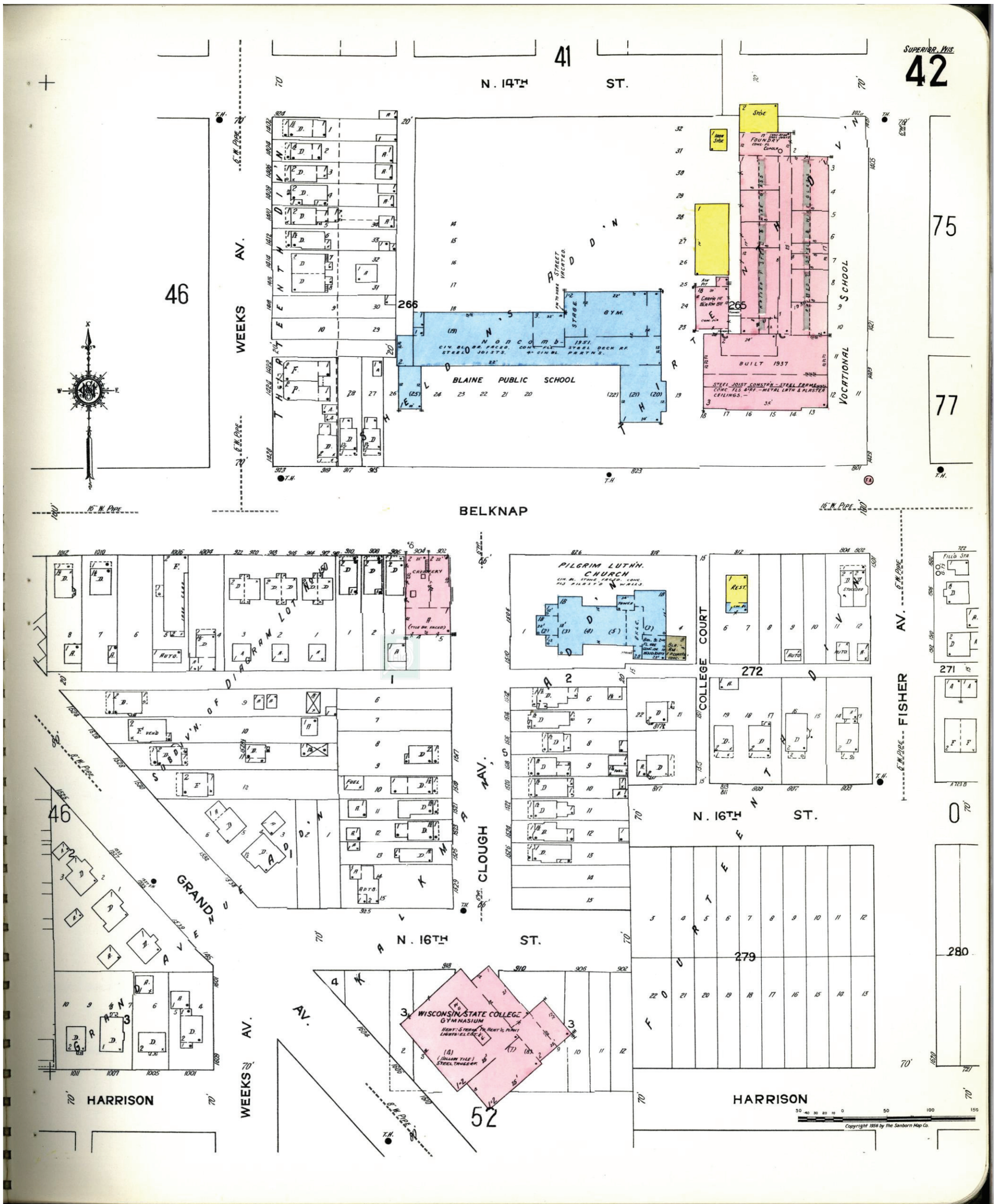
Contaminated media encountered during initial cleanup.



Closeup of earthen floor room prior to initial removal activities.







Map Type: Fire Insurance  
 Publisher: Sanborn Map Co.  
 Map Date: 1914  
 Revised Date: 1955  
 Republished: 1955  
 Sheet Number: 42

1955

Superior, WI  
 HIG Project No. 1629971

