

Fall 2022 Summary Report

LRI Landfill Residential Drinking Water Well Sampling

November 2022
Drinking Water Program
Residential Water Sampling Project



TABLE OF CONTENTS

Summary	1
Table 1 - Water Quality Results	3
Table 2 - VOC Results	5
Table 3 - Water Quality Duplicate Results	6
Table 4 - VOC Duplicate Results	7
Water Quality Abbreviations and Notes	8
Appendix A	9

Summary

BACKGROUND

This report summarizes the water quality sampling event conducted in Fall 2022.

All drinking water wells within one-half (1/2) mile of the LRI Landfill boundary are eligible for free water quality sampling once a year. Substances chosen for testing by the Health Department are to assess groundwater quality. These tests can show information about possible groundwater impacts from the landfill.

Property owners have their well water sampled in the Fall of each year and participation is voluntary.

Water samples are tested annually for twenty characteristics and substances, including conductivity, pH, ammonia, nitrate, chloride, iron, manganese, magnesium and coliform bacteria. In addition to the annual water quality tests, participants will have their water tested every five years for 'Volatile Organic Compounds' (VOCs). Starting in Spring 2015, members of the Woodbrook Homeowners Association are eligible for annual VOC testing because of their legal settlement over the relocation of Woodbrook Road (317th Street East).

Although coliform bacteria in groundwater from a landfill is unusual, the Health Department included coliform bacteria testing as part of the sampling program. These tests are included because of the known health effects of bacterial contamination in drinking water.

The Health Department requires the landfill operator to maintain an on-site groundwater monitoring program. This on-site monitoring program has been in effect since 1999 and every 3 months the landfill samples and tests nine wells around the perimeter of the landfill property. All groundwater monitoring data from these wells is available from the Health Department.

FALL 2022 SAMPLING EVENT

The Fall 2022 event collected water samples at 31 properties between September 26-29, 2022. Am Test Laboratories performed bacteriological analyses and OnSite Environmental Inc. performed organic and inorganic chemical analyses. Fall 2022 participants received detailed water quality test results in November 2022. No landfill-related impacts to groundwater quality were identified from the water quality test results.

A complete list of water quality test results is in **Table 1**.

The Fall 2022 sampling event tested VOC water samples from 17 residential wells. One property had a chloroform result below the MCL and Health Department staff contacted the homeowner. They had recently added chlorination treatment system to their well, which they did not have before. Chloroform detection can be common for chlorinated wells.

The remaining Fall 2022 water quality test results are consistent with water quality test results from previous sampling events. The results show groundwater near the landfill is still typical of

groundwater chemistry in Pierce County. Iron and manganese levels are consistently above the secondary standards set by the Washington State Department of Health. Elevated iron and manganese levels are typical of groundwater conditions throughout much of Pierce County due to the underlying geology.

The Washington State Department of Health considers iron and manganese a “secondary contaminant.” Secondary contaminants pose aesthetic problems rather than health concerns. High levels of iron and manganese can give water a metallic taste, cause odors and can cause brown or black staining of porcelain fixtures exposed to the water.

Tables 1 and 2 show the water quality sample results. Results that exceed the state water quality standards are shown in bold. For quality control purposes, duplicate samples were taken at four locations. **Tables 3 and 4** show the results of the quality control samples.

BACTERIA

During this sampling event, 4 of the 31 wells tested had bacteria present in their well water (bacteria in the water is shown as an “unsatisfactory” test result and indicated as a “U” on Table 1). Coliform bacteria can be a common problem in drinking water wells. If there is concern about bacteria in a well, we recommend shock chlorination as this will typically resolve the issue.

CONTACTS

For questions about this report or the sample results, please contact the Health Department’s Drinking Water Program.

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TABLE 1: Fall 2022 Water Quality Result
Chemical or Analyte*----->

		Dissolved Metals											Total Metals		General Chemistry								
Site	Sample Date	Arsenic	Barium	Calcium	Copper	Iron	Magnesium	Manganese	Potassium	Sodium	Vanadium	Zinc	Iron	Manganese	Ammonia	Chloride	Nitrate	Nitrite	Sulfate	Total Dissolved Solids	Conductivity	Bacteria	pH
MCL		0.01	2		1.3								0.3	0.05		250	10	1	250	500	700		
SR0117338	9/29/2022	ND	ND	12	ND	ND	9	0.029	1.5	6.5	ND	ND	0.26	0.034	ND	4.3	0.43	ND	ND	130	170	S	7.7
SR0117447	9/26/2022	ND	ND	12	0.044	ND	9.1	ND	1.4	7.6	ND	ND	ND	ND	ND	ND	1.3	ND	ND	130	170	S	6.9
SR0117449	9/27/2022	ND	ND	19	ND	ND	7.3	0.16	ND	11	ND	ND	0.15	0.15	ND	2.3	ND	ND	ND	140	210	S	7.8
SR0117456	9/26/2022	ND	ND	ND	ND	ND	ND	ND	ND	110	ND	ND	ND	ND	ND	82	0.054	ND	17	360	580	S	7.6
SR0117459	9/26/2022	ND	ND	14	ND	ND	8.6	0.16	ND	11	ND	ND	0.69	0.19	ND	ND	ND	ND	ND	150	190	S	7.6
SR0117478	9/27/2022	ND	ND	16	ND	0.36	6.7	0.18	ND	10	ND	ND	1.5	0.18	ND	3.2	ND	ND	ND	150	190	S	7.6
SR0117480	9/28/2022	ND	ND	17	ND	0.32	9.6	0.5	ND	19	ND	ND	0.78	0.49	ND	ND	ND	ND	ND	140	250	S	7.4
SR0120518	9/27/2022	0.0033	ND	ND	ND	0.078	ND	ND	ND	48	ND	ND	0.19	ND	ND	2.8	ND	ND	ND	160	210	S	7.8
SR0120529	9/27/2022	ND	ND	15	ND	0.3	7	0.16	ND	8.2	ND	0.035	0.89	0.17	ND	2.5	ND	ND	ND	130	170	S	7.7
SR0120559	9/26/2022	0.0046	ND	16	ND	ND	7	0.094	ND	12	ND	ND	0.32	0.1	ND	ND	ND	ND	ND	130	200	S	7.8
SR0120633	9/29/2022	ND	ND	16	ND	ND	6.1	0.15	ND	13	ND	ND	0.24	0.16	ND	3.1	ND	ND	ND	130	190	U	8.2
SR0120637	9/27/2022	0.0032	ND	27	ND	ND	16	0.073	2.1	7.5	ND	ND	0.25	0.28	ND	11	ND	ND	9.6	200	320	U	7.7
SR0120639	9/29/2022	5.1	ND	24	ND	ND	14	0.46	2.8	9	ND	ND	0.68	0.51	0.22	6.1	ND	ND	6.7	190	280	S	8.2
SR0126808	9/26/2022	ND	ND	12	0.012	ND	18	ND	1.2	7.5	0.012	ND	ND	ND	ND	5.5	3.9	ND	ND	200	240	S	7.6
SR0126809	9/26/2022	0.0045	ND	17	ND	ND	7.2	0.048	ND	9	ND	ND	0.19	0.09	ND	ND	ND	ND	ND	120	170	S	7.9
SR0133428	9/28/2022	ND	ND	16	ND	ND	6.5	0.14	ND	11	ND	ND	0.85	0.16	ND	ND	ND	ND	ND	110	190	U	7.8
SR0142928	9/29/2022	ND	ND	12	ND	1.5	8.4	0.097	1.6	8	ND	ND	3	0.094	ND	3.5	ND	ND	ND	150	160	S	7.4
SR0169553	9/28/2022	0.0053	ND	23	ND	ND	9.3	0.069	2.5	12	ND	0.061	ND	0.073	ND	5	0.067	ND	ND	150	270	S	8.0
SR0169704	9/27/2022	0.0034	ND	17	ND	0.096	6.7	0.096	ND	11	ND	ND	0.3	0.1	ND	2.1	ND	ND	ND	130	200	S	7.8
SR0170781	9/28/2022	0.0068	ND	29	ND	ND	15	0.65	3.2	13	ND	ND	3.1	0.71	0.61	2.4	ND	ND	ND	210	350	S	7.5
SR0185993	9/26/2022	ND	ND	15	ND	0.082	7.9	0.13	ND	9.7	ND	ND	0.29	0.13	ND	ND	ND	ND	ND	120	180	S	7.8
SR0192658	9/29/2022	4.7	ND	ND	ND	ND	ND	ND	ND	64	ND	ND	ND	ND	ND	6.1	0.051	ND	ND	200	310	U	9.5
SR0198408	9/28/2022	ND	ND	19	ND	0.15	9.3	0.59	ND	13	ND	ND	0.53	0.63	ND	ND	ND	ND	ND	130	240	S	7.4
SR0217737	9/28/2022	ND	ND	ND	ND	ND	ND	ND	ND	41	ND	ND	ND	ND	ND	ND	ND	ND	ND	130	190	S	7.7
SR0219859	9/27/2022	0.0034	ND	25	ND	ND	15	0.27	2.5	7.4	ND	ND	0.37	0.26	ND	9.5	ND	ND	11	210	310	S	7.8
SR0254903	9/29/2022	ND	ND	14	ND	ND	11	ND	1.8	7.9	ND	ND	ND	ND	ND	5.1	1.9	ND	ND	180	200	S	7
SR0254905	9/29/2022	ND	ND	ND	ND	ND	ND	ND	ND	75	ND	ND	ND	ND	ND	3.8	ND	ND	ND	220	350	S	9.5
SR0277945	9/28/2022	ND	ND	16	ND	ND	8.1	0.058	1.5	7.9	ND	ND	0.19	0.079	ND	ND	1.8	ND	ND	150	190	S	7.2
SR0278346	9/28/2022	0.005	ND	ND	ND	ND	ND	ND	ND	81	ND	ND	ND	ND	ND	6.3	ND	ND	ND	200	350	S	7.9
SR0278347	9/28/2022	0.0032	ND	12	ND	0.33	7.3	0.19	1.5	6.6	ND	ND	0.45	0.2	ND	ND	ND	ND	ND	100	160	S	7.4
SR0278348	9/27/2022	ND	ND	14	ND	ND	8.4	0.053	1.3	7	ND	ND	1	0.055	ND	2.6	0.23	ND	ND	160	180	S	7.2

Units of measurement = Parts Per Million (mg/L), except for bacteria, conductivity, and pH
ND = Not detected at the specified laboratory detection limit
U = Unsatisfactory (bacteria are present in the sample)
S = Satisfactory
E = E. coli present
MCL = Maximum Contamination Level
Please refer to the “Water Quality and Abbreviation and Notes” page for information about the terms used on this table.

TABLE 2: Fall 2022 Water Quality Result VOC Results

	MCL	SR0117449	SR0117478	SR0117480	SR0120518	SR0120529	SR0120637	SR0133428	SR0169553	SR0169704	SR0170781	SR0198408	SR0217737	SR0219859	SR0277945	SR0278346	SR0278347	SR0278348
1,1,1,2-Tetrachloroethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CFC-11	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CFC-12	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobromomethane	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene dibromide	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m, p-Xylene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Units of measurement = Parts per Billion (ug/L)
ND = Not detected at the specified laboratory detection limit
MCL = Maximum Contamination Level

TABLE 3: Fall 2022 Water Quality Duplicate Results

Chemical or Analyte*----->

		Dissolved Metals											Total Metals		General Chemistry								
Site	Sample Date	Arsenic	Barium	Calcium	Copper	Iron	Magnesium	Manganese	Potassium	Sodium	Vanadium	Zinc	Iron	Manganese	Ammonia	Chloride	Nitrate	Nitrite	Sulfate	Total Dissolved Solids	Conductivity	Bacteria	pH
MCL		0.1	2		1.3							5	0.3	0.05		250	10	1	250	500			
SR0120559	9/26/2022	0.0045	ND	17	ND	ND	6.9	0.098	ND	13	ND	ND	0.26	0.11	ND	ND	ND	ND	ND	130	190	S	7.8
SR0170781	9/28/2022	0.0073	ND	29	ND	ND	15	0.66	3.2	13	ND	ND	2.6	0.74	0.72	ND	ND	ND	ND	210	350	S	7.4
SR0192658	9/29/2022	5.2	ND	ND	ND	ND	ND	ND	ND	66	ND	ND	ND	ND	ND	6.2	0.06	ND	ND	210	310	U	9.4
SR0219859	9/27/2022	0.0036	ND	26	ND	ND	15	0.27	2.5	7.6	ND	ND	0.35	0.27	ND	10	ND	ND	11	200	310	S	7.8

Units of measurement = Parts Per Million (mg/L)

ND = Not detected at the specified laboratory detection limit
MCL = Maximum Contamination Level

MCL exceedances for Iron and Manganese do not pose a health risk.

Please refer to the “Water Quality and Abbreviation and Notes” page for information about the terms used on this table

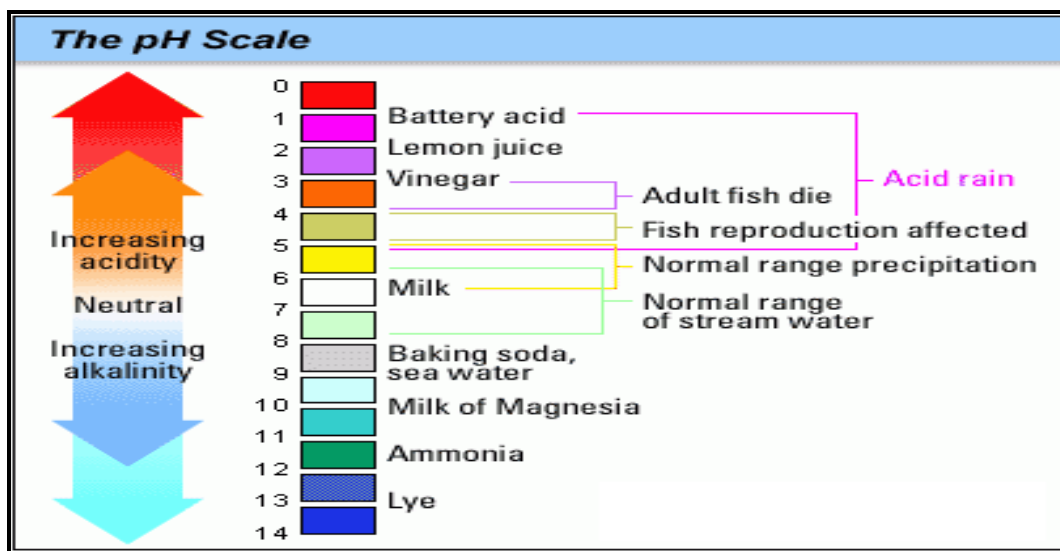
TABLE 4: Fall 2022 Water Quality VOC Duplicate Results

Duplicates	MCL	SR0170781	SR0219859
1,1,1,2-Tetrachloroethane	---	ND	ND
1,1,1-Trichloroethane	0.2	ND	ND
1,1,2,2-Tetrachloroethane	---	ND	ND
1,1,2-Trichloroethane	---	ND	ND
1,1-Dichloroethane	1	ND	ND
1,1-Dichloroethene	---	ND	ND
1,1-Dichloropropene	---	ND	ND
1,2,3-Trichlorobenzene	---	ND	ND
1,2,3-Trichloropropane	---	ND	ND
1,2,4-Trichlorobenzene	---	ND	ND
1,2,4-Trimethylbenzene	---	ND	ND
1,2-Dibromo-3-chloropropane	---	ND	ND
1,2-Dichlorobenzene	---	ND	ND
1,2-Dichloroethane	0.5	ND	ND
1,2-Dichloropropane	0.6	ND	ND
1,3,5-Trimethylbenzene	---	ND	ND
1,3-Dichlorobenzene	---	ND	ND
1,3-Dichloropropane	---	ND	ND
1,4-Dichlorobenzene	4	ND	ND
2,2-Dichloropropane	---	ND	ND
2-Butanone	---	ND	ND
2-Chlorotoluene	---	ND	ND
2-Hexanone	---	ND	ND
4-Chlorotoluene	---	ND	ND
Acetone	---	ND	ND
Benzene	1	ND	ND
Bromobenzene	---	ND	ND
Bromochloromethane	0.3	ND	ND
Bromoform	5	ND	ND
Bromomethane	---	ND	ND
Carbon Disulfide	---	ND	ND
Carbon Tetrachloride	0.3	ND	ND
CFC-11	---	ND	ND
CFC-12	---	ND	ND
Chlorobenzene	---	ND	ND
Chloroethane	---	ND	ND
Chloroform	7	ND	ND
Chloromethane	---	ND	ND
Cis-1,2-Dichloroethene	---	ND	ND
Cis-1,3-Dichloropropene	---	ND	ND
Dibromochloromethane	---	ND	ND
Dibromomethane	---	ND	ND
Dichlorobromomethane	---	ND	ND
Ethylbenzene	---	ND	ND
Ethylene dibromide	---	ND	ND
Hexachlorobutadiene	---	ND	ND
Isopropylbenzene	---	ND	ND
m, p-Xylene	---	ND	ND
Methyl Iodide	---	ND	ND
Methyl Isobutyl Ketone	---	ND	ND
Methyl t-Butyl Ether	---	ND	ND
Methylene Chloride	5	ND	ND
Naphthalene	---	ND	ND
n-Butylbenzene	---	ND	ND
n-Propylbenzene	---	ND	ND
o-Xylene	---	ND	ND
p-Isopropyltoluene	---	ND	ND
sec-Butylbenzene	---	ND	ND
Styrene	---	ND	ND
tert-Butylbenzene	---	ND	ND
Tetrachloroethene	---	ND	ND
Toluene	---	ND	ND
Trans-1,2-Dichloroethene	---	ND	ND
Trans-1,3-Dichloropropene	---	ND	ND
Trichloroethene	---	ND	ND
Vinyl Acetate	---	ND	ND
Vinyl Chloride	0.02	ND	ND

Units of measurement = Parts per Billion (ug/L)
ND = Not detected at the specified laboratory detection limit
MCL = Maximum Contamination Level

Water Quality Abbreviations and Notes:

Analyte:	The chemical or metal tested for in the water sample.
Result:	The level of the chemical or mineral detected by the laboratory in this water sample.
ND:	Non-Detect, the chemical or metal was not detected in this water sample.
Unit:	The unit of measure reported by the laboratory.
mg/l:	milligrams per liter, or 1 part per million.
MCL:	“Maximum Contaminant Level”. The water quality standard established by state or federal regulation.
#/100ml:	The number of bacteria colonies detected in 100 milliliters of water. Note: An MCL of “0.00” means that there should be no bacteria detected in the water sample.
uS/cm:	microSiemens per centimeter, a measurement of the ability of the water to conduct an electrical charge (sometimes reported as microMhos). Used to help determine the presence of some chemical ions.
pH:	A numerical measure of the level of acidity or alkalinity of the water. See the table below.



ppb:	Parts per billion often expressed as micrograms per liter (ug/L)
Unit:	The unit of measure reported by the laboratory.
#/100ml:	Unit of measure for <i>Bacteria</i> test, the number of bacteria colonies detected in 100 milliliters of water. Note: An MCL of “0/100” means that there should be zero bacteria detected in the 100-milliliter water sample.
(---):	The Environmental Protection Agency and/or the Centers for Disease Control and Prevention have not established a health-risk based maximum contaminant level (MCL) for this chemical, metal, or property.

APPENDIX A

Sampling for Volatile Organic Compounds

In 2007, several program participants and members of the Graham Land Use Advisory Commission asked why ‘volatile organic compounds’ (VOCs) had not been included in the original LRI Landfill residential drinking water sampling program. They asked to have the sampling program modified to include testing for these volatile organic compounds. Because of the request and inquiries, the sampling program changed to include 68 VOCs for analysis.

The program modification included a provision to test each participating well every five-year period for VOCs. This modification began during the Fall 2007 sampling event with the testing of nine residential wells for VOCs.

Where do VOCs come from?

Common artificial sources of VOCs are many and varied, but can include paint thinners, dry cleaning solvents, and some constituents of petroleum-based fuels (e.g., gasoline and natural gas). Landfills, through the anaerobic digestion of waste generates methane gas, which is also considered a VOC.