Clean Water Testing

1990 Prospect Ct., Appleton, WI 54914 * 800-801-7590

LIEBAU-LAUN INC
1200 W LIEBAU RD
THIENSVILLE, WI 53092

Home Owner VINTAGE ESTATES
Well ID/Address PUMP HOUSE
Well City
Sample Location PRESSURE TANK
Lab # 556423
Collected By/Date A LIEBAU 2/22/2021

Report Date *05-Mar-21*

Analyte	Result	Units	LOD	LOQ	Dil	Dig Date	Run Date	Mthd	Analyst	QC Code
Organic										
VOC's										
Benzene	**None Detected**	ug/l	0.2	0.8	1		3/1/2021	524.2	SYN	1
Bromobenzene	**None Detected**	ug/l	0.22	0.85	1		3/1/2021	524.2	SYN	1
Bromodichloromethane	**None Detected**	ug/l	0.3	1.19	1		3/1/2021	524.2	SYN	1
Bromoform	**None Detected**	ug/l	0.53	2.08	1		3/1/2021	524.2	SYN	1
Bromomethane	**None Detected**	ug/l	0.72	2.85	1		3/1/2021	524.2	SYN	1
Carbon Tetrachloride	**None Detected**	ug/l	0.27	1.07	1		3/1/2021	524.2	SYN	1
Chlorobenzene	**None Detected**	ug/l	0.19	0.73	1		3/1/2021	524.2	SYN	1
Chloroethane	**None Detected**	ug/l	0.57	2.26	1		3/1/2021	524.2	SYN	1
Chloroform	**None Detected**	ug/l	0.36	1.4	1		3/1/2021	524.2	SYN	1
Chloromethane	**None Detected**	ug/l	0.39	1.55	1		3/1/2021	524.2	SYN	1
2-Chlorotoluene	**None Detected**	ug/l	0.28	1.11	1		3/1/2021	524.2	SYN	1
4-Chlorotoluene	**None Detected**	ug/l	0.22	0.87	1		3/1/2021	524.2	SYN	1
Dibromochloromethane	**None Detected**	ug/l	0.28	1.11	1		3/1/2021	524.2	SYN	1
Dibromomethane	**None Detected**	ug/l	0.34	1.35	1		3/1/2021	524.2	SYN	1
1,4-Dichlorobenzene	**None Detected**	ug/l	0.21	0.82	1		3/1/2021	524.2	SYN	1
1,3-Dichlorobenzene	**None Detected**	ug/l	0.2	0.79	1		3/1/2021	524.2	SYN	1
1,2-Dichlorobenzene	**None Detected**	ug/l	0.25	0.99	1		3/1/2021	524.2	SYN	1
Dichlorodifluoromethane	**None Detected**	ug/l	0.25	0.98	1		3/1/2021	524.2	SYN	1
1,2-Dichloroethane	**None Detected**	ug/l	0.25	0.99	1		3/1/2021	524.2	SYN	1

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Report Date *05-Mar-21*

Analyte	Result	Units	LOD	LOQ	Dil	Dig Date	Run Date	Mthd	Analyst	QC Code
1,1-Dichloroethane	**None Detected**	ug/l	0.22	0.86	1		3/1/2021	524.2	SYN	1
1,1-Dichloroethene	**None Detected**	ug/l	0.3	1.19	1		3/1/2021	524.2	SYN	1
cis-1,2-Dichloroethene	**None Detected**	ug/l	0.35	1.39	1		3/1/2021	524.2	SYN	1
trans-1,2-Dichloroethene	**None Detected**	ug/l	0.49	1.94	1		3/1/2021	524.2	SYN	1
1,2-Dichloropropane	**None Detected**	ug/l	0.3	1.18	1		3/1/2021	524.2	SYN	1
2,2-Dichloropropane	**None Detected**	ug/l	0.23	0.91	1		3/1/2021	524.2	SYN	1
1,3-Dichloropropane	**None Detected**	ug/l	0.26	1.04	1		3/1/2021	524.2	SYN	1
trans-1,3-Dichloropropene	**None Detected**	ug/l	0.23	0.91	1		3/1/2021	524.2	SYN	1
cis-1,3-Dichloropropene	**None Detected**	ug/l	0.24	0.95	1		3/1/2021	524.2	SYN	1
Ethylbenzene	**None Detected**	ug/l	0.26	1.04	1		3/1/2021	524.2	SYN	1
Hexachlorobutadiene	**None Detected**	ug/l	0.55	2.16	1		3/1/2021	524.2	SYN	1
Isopropylbenzene	**None Detected**	ug/l	0.19	0.76	1		3/1/2021	524.2	SYN	1
p-Isopropyltoluene	**None Detected**	ug/l	0.26	1.01	1		3/1/2021	524.2	SYN	1
Methylene chloride	**None Detected**	ug/l	0.41	1.71	1		3/1/2021	524.2	SYN	1
Methyl tert-butyl ether (MTBE)	**None Detected**	ug/l	0.25	0.99	1		3/1/2021	524.2	SYN	1
Naphthalene	**None Detected**	ug/l	0.27	1.07	1		3/1/2021	524.2	SYN	1
Styrene	**None Detected**	ug/l	0.21	0.81	1		3/1/2021	524.2	SYN	1
1,1,2,2-Tetrachloroethane	**None Detected**	ug/l	0.27	1.07	1		3/1/2021	524.2	SYN	1
1,1,1,2-Tetrachloroethane	**None Detected**	ug/l	0.75	2.94	1		3/1/2021	524.2	SYN	1
Tetrachloroethene	**None Detected**	ug/l	0.3	1.18	1		3/1/2021	524.2	SYN	1

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Report Date *05-Mar-21*

Analyte	Result	Units	LOD	LOQ	Dil	Dig Date	Run Date	Mthd	Analyst	QC Code
Toluene	**None Detected**	ug/l	0.22	0.86	1		3/1/2021	524.2	SYN	1
1,2,4-Trichlorobenzene	**None Detected**	ug/l	0.28	1.11	1		3/1/2021	524.2	SYN	1
1,1-Dichloropropene	**None Detected**	ug/l	0.25	1	1		3/1/2021	524.2	SYN	1
1,1,1-Trichloroethane	**None Detected**	ug/l	0.23	0.91	1		3/1/2021	524.2	SYN	1
1,1,2-Trichloroethane	**None Detected**	ug/l	0.3	1.19	1		3/1/2021	524.2	SYN	1
Trichloroethene (TCE)	**None Detected**	ug/l	0.28	1.1	1		3/1/2021	524.2	SYN	1
Trichlorofluoromethane	**None Detected**	ug/l	0.22	0.85	1		3/1/2021	524.2	SYN	1
1,2,3-Trichloropropane	**None Detected**	ug/l	0.42	1.64	1		3/1/2021	524.2	SYN	1
1,2,4-Trimethylbenzene	**None Detected**	ug/l	0.21	0.81	1		3/1/2021	524.2	SYN	1
1,3,5-Trimethylbenzene	**None Detected**	ug/l	0.23	0.91	1		3/1/2021	524.2	SYN	1
Vinyl Chloride	**None Detected**	ug/l	0.2	0.78	1		3/1/2021	524.2	SYN	1
m&p-Xylene	**None Detected**	ug/l	0.83	3.28	1		3/1/2021	524.2	SYN	1
o-Xylene	**None Detected**	ug/l	0.24	0.96	1		3/1/2021	524.2	SYN	1

LOD Limit of Detection None Detected = Result was less than the LOD LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.

SYN denotes sub contract lab - Certification #445037560

Laboratory Director Michael Hunter

Clean Water Testing

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Well City
Sample Location PRESSURE TANK
Lab # 556425
Collected By/Date A LIEBAU 2/22/2021

Report Date *11-Mar-21*

Analyte	Result	Units	LOD	LOQ	Dil	Dig Date	Run Date	Mthd	Analyst	QC Code
Inorganic										
Radiochemistry										
Gross Alpha No Uranium & Ra	**1.92+-0.93**	pci/L	0.78		1		3/8/2021	7110 B	EEA	1
Gross Alpha	**2.1+-0.9**	pci/L	0.78		1		3/8/2021	7110 B	EEA	1
Radioactivity from the erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation. The EPA Maximum Contaminant Level is 15 pCi/L (picocuries per liter).										
Radium 226	**0.31+-0.16**	pci/L	0.11		1		3/9/2021	500-Ra I	EEA	1
Radioactivity from the erosion of natural deposits of certain minerals that are radioactive and may emit forms of radiation. The EPA Maximum Contaminant level is 5.0 pCi/L (picocuries per liter).										
Uranium Total	**0.27+-0.03**	ug/L	0.052	2.01	1		3/8/2021	200.8u	EEA	1
Radioactivity from the erosion of natural deposits of certain minerals that are radioactive and may emit forms of radiation.										
Radium 228	**0.30+-0.49**	pci/L	0.5		1		3/9/2021	500-Ra I	EEA	1
Radioactivity from the erosion of natural deposits of certain minerals that are radioactive and may emit forms of radiation. The EPA Maximum Contaminant Level when combined with Radium 226 is 5.0 pCi/L (picocuries per liter).										
Radium 226/228	**0.61+-0.52**	PCI/L	0.5	5	1		3/9/2021	Calc	EEA	1

LOD Limit of Detection None Detected = Result was less than the LOD LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.

EEA denotes sub contract lab - Certification #999766900

Laboratory Director Michael Hanten

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Collected By/Date A LIEBAU 2/22/2021

Report Date *22-Mar-21*

Analyte	Result	Units	LOD	LOQ	Dil	Dig Date	Run Date	Mthd	Analyst	QC Code
Inorganic										
General										
Fluoride	**0.87**	mg/l	0.23	0.77	1		2/24/2021	300.0		1
(F)...Fluoride is natural in water. Levels around 1.0 mg/L are desirable; levels above 4.0 mg/l may stain teeth. Supplements may or may not be necessary for infants depending on the level contained in your water supply.										
Nitrate Nitrogen	**None Detected**	mg/l	0.08	0.27	1		2/23/2021	4500F	AS	1
NITRATE (as NO3+NO2)…A small amount of nitrate may be natural; however, elevated levels are an indication of nutrients entering the groundwater due to human activity. The maximum contaminant level set by the EPA is 10 mg/L (part per million).										
Nitrate + Nitrite	**None Detected**	mg/l	0.08	0.27	1		2/24/2021	4500F	AS	1
(as NO3+NO2)...A small amount of nitrate may be natural; however, elevated levels are an indication of nutrients entering the groundwater due to human activity. These nutrients could be generated from a number of sources including septic saturation, barnyard runoff, or over fertilization. The maximum contaminant level set by the EPA is 10 mg/L (part per million).										
Nitrite Nitrogen	**None Detected**	mg/l	0.04	0.13	1		2/24/2021	4500B	AS	1
NITRITE (NO2) A small amount of nitrites may be natural, however, elevated levels are a direct indication of raw sewerage, barnyard runoff, or septic saturation. A level of 1 mg/L (part per million) is considered too high for infants or adults to drink.										
Metals										
Antimony	**None Detected**	ug/L	1	3.3	1		3/22/2021	3113B	BP	1
(as total Sb)...Antimony is a metal found in natural deposits as ores containing other elements. The most widely used antimony compound is antimony trioxide, used as a flame retardant. It is also found in batteries, pigments, and ceramics/glass. The EPA has set a maximum contaminant limit of 6 ug/L (parts per billion) because antimony is a known human carcinogen.										
Arsenic, Total	**1.9**	ug/l	0.8	2.7	1		2/24/2021	3113B	BP	1
(as total As) Elevated arsenic levels are believed to cause skin cancer, and blood and nervous system disorders. The EPA and the WI DNR consider levels above 10 ug/L (parts per billion) in drinking water harmful.										

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Barium	**15.6**	ug/l	1.7	5.5	1		3/8/2021	200.7	NMP	1

(as total Ba) Barium is naturally occurring in groundwater and appears in pockets of elevated levels. High levels of barium have severe toxic effects on the heart, blood vessels and nerves. The EPA has set the maximum contaminant level for barium at 2000 ug/L (parts per billion). Barium is easily removed with a water softener, but will foul the media with time. Both the efficiency of your water softener and the barium levels in your water should be monitored.

Beryllium	**None Detected**	ug/l	0.2	0.8	1		3/8/2021	200.7	NMP	1

(as total Be) Beryllium occurs in nature as deposits of beryls in granitic rocks. Beryllium is used in metal alloys, x-ray machines, and nuclear reactors. The EPA has set a maximum contaminant limit of 4ug/L (parts per billion) in drinking water due to beryllium's toxicity to humans at low levels.

Cadmium	**None Detected**	ug/l	0.4	1.3	1		3/8/2021	200.7	NMP	1

(as total Cd) The greatest use of cadmium is primarily for metal plating and coating operations; it is also used in nickel-cadmium and solar batteries and in pigments. Cadmium is extremely toxic and accumulates in the kidneys and liver with prolonged intake at low levels sometimes leading to dysfunction of the kidneys. The EPA primary drinking water standard maximum contaminant limit is 5 ug/L (parts per billion).

Chromium	**None Detected**	ug/l	3.9	12.8	1		3/8/2021	200.7	NMP	1

(as total Cr) Chromium is used in metal alloys such as stainless steel, and its soluble forms are used in wood preservatives. Chromium is considered an essential trace nutrient for animals and humans; however the hexavalent form chromium has been shown to be carcinogenic. For these reasons, the EPA has set a maximum contaminant limit in drinking water at 100 ug/L (parts per billion) for total chromium.

Mercury	**None Detected**	ug/L	0.1	0.34	1	3/2/2021	3/2/2021	245.1	NMP	1

Mercury is found throughout the environment as a result of industrial and agricultural activities. Extensive exposure can produce hallucinations, manic-depressive psychosis. Irreversible brain damage may also result from mercury poisoning. The EPA has set the Maximum Contaminant Level (MCL) for Mercury at 15 ug/l (parts per billion).

Nickel	**None Detected**	ug/l	3.4	11.4	1		3/8/2021	200.7	NMP	1

(as total Ni)...Nickel is used in metal alloys, magnets, protective coatings, and batteries. Long-term exposure of high levels of nickel has the potential to cause decreased body weight, heart and liver damage, and skin irritation. The EPA had remanded the 100 ug/L MCL of nickel on February 9, 1995. This means that while many water suppliers continue to monitor nickel levels in their water, there is currently no EPA legal limit on the amount of nickel in allowed in drinking water.

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Selenium	**None Detected**	ug/l	1.1	3.7	1		3/1/2021	3113B	BP	1

(as total Se)...Selenium is considered an essential trace nutrient for animals and humans. Above trace levels, ingested selenium may be toxic to humans. For these reasons, the EPA has set a maximum contaminant limit in drinking water at 50 ug/L (parts per billion).

Sodium	**25.1**	mg/l	0.19	0.62	1		3/8/2021	200.7	NMP	1

(as total Na)...Sodium is a common element found in ground water and is an essential nutrient for humans. In large concentration it may affect persons with cardiac difficulties. The EPA has set a health advisory limit for sodium in drinking water for 200 mg/L (parts per million). Elevated levels in well water may indicate agricultural or road salt runoff.

Thallium	**None Detected**	ug/L	0.5	1.7	1		3/18/2021	200.9	BP	1

(as total Tl)...Thallium is a metal found in natural deposits as ores containing other elements. The greatest use of thallium is in specialized electronic research equipment. Short-term low level exposure can cause gastrointestinal irritation and nerve damage. Lifetime exposure can damage the liver, kidney and intestinal tissues, and cause hair loss. For these reasons, the EPA has set the maximum contaminant level at 2 ug/L (parts per billion).

LOD Limit of Detection None Detected = Result was less than the LOD LOQ Limit of Quantitation

Code	*Comment*
1	All laboratory QC requirements were met for this sample.

Laboratory Director Michael Hanten