



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WELL #3	TREATED PS#2 400 HESPELER	TREATED PS#3 246 PARK RD. WEST	RAW WELL #5	----
Client sampling date / time					07-Mar-2023 09:08	07-Mar-2023 10:30	07-Mar-2023 08:26	07-Mar-2023 08:17	----	
Analyte	CAS Number	Method	LOR	Unit	WP2302662-001	WP2302662-002	WP2302662-003	WP2302662-004	-----	
					Result	Result	Result	Result	----	
<b>Physical Tests</b>										
Absorbance, UV (@ 254nm)	----	E404	0.0050	AU/cm	0.0600	0.0380	0.0320	0.0470	----	
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290	1.0	mg/L	441	373	365	388	----	
Alkalinity, hydroxide (as OH)	14280-30-9	E290	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	----	
Colour, true	----	E329	5.0	CU	<5.0	<5.0	<5.0	18.2	----	
Conductivity	----	E100	2.0	µS/cm	610	605	587	587	----	
Hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	284	246	233	238	----	
Langelier index (@ 15°C)	----	EC105	0.010	-	1.08	0.855	0.902	0.997	----	
Langelier index (@ 20°C)	----	EC105	0.010	-	1.16	0.929	0.976	1.07	----	
Langelier index (@ 25°C)	----	EC105	0.010	-	1.23	0.999	1.04	1.14	----	
Langelier index (@ 4°C)	----	EC105	0.010	-	0.913	0.681	0.729	0.823	----	
Langelier index (@ 60°C)	----	EC105	0.010	-	1.67	1.44	1.49	1.58	----	
Langelier index (@ 77°C)	----	EC105	0.010	-	1.87	1.64	1.69	1.78	----	
pH	----	E108	0.10	pH units	8.28	8.17	8.26	8.31	----	
Solids, total dissolved [TDS]	----	E162-L	3.0	mg/L	306	312	296	283	----	
Turbidity	----	E121	0.10	NTU	13.3	<0.10	<0.10	11.9	----	
Transmittance, UV (@ 254nm)	----	E404	1.0	% T/cm	87.1	91.6	92.9	89.7	----	
pH, saturation (@ 4°C)	----	EC105	0.010	pH units	7.37	7.49	7.53	7.49	----	
pH, saturation (@ 15°C)	----	EC105	0.010	pH units	7.19	7.31	7.36	7.31	----	
pH, saturation (@ 20°C)	----	EC105	0.010	pH units	7.12	7.24	7.28	7.24	----	
pH, saturation (@ 25°C)	----	EC105	0.010	pH units	7.05	7.17	7.21	7.17	----	
pH, saturation (@ 60°C)	----	EC105	0.010	pH units	6.61	6.73	6.77	6.73	----	
pH, saturation (@ 77°C)	----	EC105	0.010	pH units	6.41	6.53	6.57	6.53	----	
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E303	0.010	mg/L	0.893	<0.010	<0.010	0.798	----	
Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	<0.10	<0.10	----	
Chloride	16887-00-6	E235.Cl	0.50	mg/L	4.07	25.7	24.7	15.3	----	
Fluoride	16984-48-8	E235.F	0.020	mg/L	0.311	0.706	0.704	0.378	----	
Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	----	



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Analyte	CAS Number	Method	LOR	Unit	WP2302662-001	WP2302662-002	WP2302662-003	WP2302662-004	-----	
					Result	Result	Result	Result	----	
<b>Anions and Nutrients</b>										
Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----	
Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	2.02	1.52	0.55	----	
<b>Organic / Inorganic Carbon</b>										
Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.68	3.62	2.72	2.86	----	
Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.34	2.90	2.65	3.01	----	
<b>Ion Balance</b>										
Anion sum	----	EC101A	0.10	meq/L	7.36	6.92	6.74	6.94	----	
Cation sum (total)	----	EC101A	0.10	meq/L	6.95	6.56	6.30	6.62	----	
Ion balance (cations/anions)	----	EC101A	0.01	%	94.4	94.8	93.5	95.4	----	
Ion balance (APHA)	----	EC101A	0.010	%	-2.86	-2.67	-3.37	-2.36	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0.0034	<0.0030	----	
Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	0.00016	----	
Barium, total	7440-39-3	E420	0.00010	mg/L	0.567	0.422	0.186	0.198	----	
Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	----	
Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Boron, total	7440-42-8	E420	0.010	mg/L	0.144	0.186	0.204	0.194	----	
Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	
Calcium, total	7440-70-2	E420	0.050	mg/L	58.4	51.7	47.7	49.8	----	
Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	0.000015	<0.000010	<0.000010	----	
Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Copper, total	7440-50-8	E420	0.00050	mg/L	0.0125	0.00939	0.00221	0.00247	----	
Iron, total	7439-89-6	E420	0.010	mg/L	1.16	0.013	0.136	1.31	----	
Lead, total	7439-92-1	E420	0.000050	mg/L	0.000300	0.000411	0.000083	<0.000050	----	
Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0165	0.0189	0.0182	0.0188	----	
Magnesium, total	7439-95-4	E420	0.0050	mg/L	35.9	29.5	28.8	30.4	----	
Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00801	0.00019	0.00082	0.00644	----	



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Analyte	CAS Number	Method	LOR	Unit	WP2302662-001	WP2302662-002	WP2302662-003	WP2302662-004	-----	
					Result	Result	Result	Result	----	
<b>Total Metals</b>										
Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000784	0.00117	0.00116	0.00110	----	
Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	0.534	0.420	<0.050	----	
Potassium, total	7440-09-7	E420	0.050	mg/L	4.20	4.65	4.73	4.81	----	
Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00256	0.00310	0.00296	0.00293	----	
Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Silicon, total	7440-21-3	E420	0.10	mg/L	8.27	7.60	6.83	7.10	----	
Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Sodium, total	7440-23-5	E420	0.050	mg/L	20.1	32.9	32.8	32.4	----	
Strontium, total	7440-24-6	E420	0.00020	mg/L	0.373	0.344	0.361	0.368	----	
Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	0.94	0.59	<0.50	----	
Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	
Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	
Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	0.000032	0.000022	0.000015	----	
Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0196	0.0045	0.0083	0.0089	----	
Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----	
Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.548	0.415	0.184	0.190	----	
Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	----	
Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.173	0.199	0.216	0.209	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RAW WELL #3	TREATED PS#2 400 HESPELER	TREATED PS#3 246 PARK RD. WEST	RAW WELL #5	----
Client sampling date / time					07-Mar-2023 09:08	07-Mar-2023 10:30	07-Mar-2023 08:26	07-Mar-2023 08:17	----	
Analyte	CAS Number	Method	LOR	Unit	WP2302662-001	WP2302662-002	WP2302662-003	WP2302662-004	-----	
					Result	Result	Result	Result	----	
<b>Dissolved Metals</b>										
Cadmium, dissolved	7440-43-9	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Calcium, dissolved	7440-70-2	E421	0.050	mg/L	56.4	50.5	46.5	47.2	----	
Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000011	0.000015	<0.000010	<0.000010	----	
Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00143	0.00929	0.00199	0.00067	----	
Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	----	
Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	0.000262	<0.000050	<0.000050	----	
Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0164	0.0197	0.0183	0.0183	----	
Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	34.7	29.0	28.4	29.3	----	
Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00768	0.00011	<0.00010	0.00600	----	
Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000766	0.00110	0.00115	0.00104	----	
Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	0.547	0.407	<0.050	----	
Potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.23	4.68	4.95	4.72	----	
Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00264	0.00312	0.00293	0.00298	----	
Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.20	7.38	6.38	6.61	----	
Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Sodium, dissolved	7440-23-5	E421	0.050	mg/L	19.7	31.6	31.7	30.7	----	
Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.372	0.336	0.368	0.367	----	
Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	0.78	<0.50	<0.50	----	
Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	
Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	0.00011	<0.00010	<0.00010	----	
Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	
Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	0.000030	0.000024	0.000012	----	



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Client sampling date / time					07-Mar-2023 09:08	07-Mar-2023 10:30	07-Mar-2023 08:26	07-Mar-2023 08:17	----	
Analyte	CAS Number	Method	LOR	Unit	WP2302662-001	WP2302662-002	WP2302662-003	WP2302662-004	-----	
					Result	Result	Result	Result	----	
<b>Dissolved Metals</b>										
Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0012	0.0103 <sup>RRV</sup>	0.0107	0.0029	0.0029	----
Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	----
Dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	----
<b>Volatile Organic Compounds</b>										
Acetone	67-64-1	E611D	20	µg/L	<20	----	----	<20	<20	----
Benzene	71-43-2	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Bromoform	75-25-2	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Carbon tetrachloride	56-23-5	E611D	0.20	µg/L	<0.20	----	----	<0.20	<0.20	----
Chlorobenzene	108-90-7	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Chloroform	67-66-3	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dibromochloromethane	124-48-1	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	----	----	<0.20	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloromethane	75-09-2	E611D	1.0	µg/L	<1.0	----	----	<1.0	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611D	0.50	µg/L	<0.50	----	----	<0.50	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.30	µg/L	<0.30	----	----	<0.30	<0.30	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.30	µg/L	<0.30	----	----	<0.30	<0.30	----



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					Result	Result	Result	Result	----	
<b>Volatile Organic Compounds</b>										
Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Hexane, n-	110-54-3	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	----	----	<20	----	
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	----	----	<20	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Styrene	100-42-5	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Tetrachloroethylene	127-18-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Toluene	108-88-3	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Trichloroethane, 1,1,2-	79-00-5	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Trichloroethylene	79-01-6	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Trichlorofluoromethane	75-69-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Vinyl chloride	75-01-4	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
Xylene, m+p-	179601-23-1	E611D	0.40	µg/L	<0.40	----	----	<0.40	----	
Xylene, o-	95-47-6	E611D	0.30	µg/L	<0.30	----	----	<0.30	----	
Xylenes, total	1330-20-7	E611D	0.50	µg/L	<0.50	----	----	<0.50	----	
BTEX, total	----	E611D	1.0	µg/L	<1.0	----	----	<1.0	----	
<b>Hydrocarbons</b>										
F1 (C6-C10)	----	E581.F1-L	25	µg/L	<25	----	----	<25	----	
F1-BTEX	----	EC580	25	µg/L	<25	----	----	<25	----	
<b>Hydrocarbons Surrogates</b>										
Dichlorotoluene, 3,4-	95-75-0	E581.F1-L	1.0	%	81.7	----	----	86.5	----	
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	460-00-4	E611D	1.0	%	105	----	----	105	----	
Difluorobenzene, 1,4-	540-36-3	E611D	1.0	%	102	----	----	102	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.