

**Attachment 2
TABLE 2B
RZ-C Background Comparison**

Chemical Name	Depth Interval	Background								RZ-C							Two-Sample T-test	Gehan Test	Quantile Test (0.8)	Slippage Test	Greater than Background?	Background Qualifier	
		No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation Detect	No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation Detect	<i>p</i>	<i>p</i>	<i>p</i>			<i>p</i>
Aluminum	0_10	31	31	100%	7340	11400	8970	9020	890	193	193	100%	613	20100	9170	9060	2280	0.6351	0.4756	0.1509	0.1594	No	
Aluminum	10_UMCf	13	13	100%	7290	18400	NA	10300	2900	143	143	100%	3970	24500	8370	9410	4120	0.8852	0.9876	0.9765	0.4471	No	1
Antimony	0_10	3	31	10%	0.6	3.4	0.9	1.63	1.54	66	193	34%	0.08	30.3	0.6	3.61	7.53	0.03212	0.9953	0.1361	0.1865	No	1
Antimony	10_UMCf	5	13	38%	0.7	1.4	0.9	0.92	0.286	40	143	28%	0.083	1.7	0.7	0.688	0.458	0.9502	0.9877	0.9887	0.8446	No	1
Arsenic	0_2	16	16	100%	1.6	4.25	2	2.19	0.645	95	95	100%	1.56	476	2.65	16.4	58	0.01129	0.000596	0.02164	0.003305	Yes	
Arsenic	2_10	15	15	100%	2.05	3.13	2.54	2.59	0.321	98	98	100%	0.57	6.85	2.88	3.12	1.01	0.00002399	0.01219	0.0253	0.0005054	Yes	
Arsenic	10_UMCf	13	13	100%	2.49	22.5	11.6	11.9	6.51	143	143	100%	1.52	223	7.89	12.4	22	0.4227	0.8572	0.7578	0.2539	No	
Barium	0_10	31	31	100%	111	213	162	166	22.4	193	193	100%	23.9	6760	178	301	625	0.001514	0.000397	0.0006456	0.0004419	Yes	
Barium	10_UMCf	13	13	100%	79.9	217	97.8	117	42.9	143	143	100%	42.7	468	144	151	72.6	0.01358	0.02927	0.2246	0.2795	Yes	3
Beryllium	0_10	31	31	100%	0.362	0.588	0.459	0.464	0.0475	193	193	100%	0.056	3.59	0.465	0.511	0.318	0.02958	0.2807	0.03159	0.1161	No	
Beryllium	10_UMCf	13	13	100%	0.328	0.642	0.423	0.442	0.0919	143	143	100%	0.161	0.951	0.421	0.432	0.149	0.6624	0.7904	0.7578	0.2795	No	
Boron	0_10	7	31	23%	3.6	11.7	6.2	6.67	2.68	78	193	40%	2.6	1510	14	108	268	0.00127	0.01254	0.0006456	0.0004235	Yes	
Boron	10_UMCf	11	13	85%	12.5	29.6	16.2	18.2	5.63	81	143	57%	3.3	70.5	15.4	20.8	13.9	0.8752	0.9848	0.7578	0.1896	No	1
Cadmium	0_10	25	31	81%	0.11	0.48	0.19	0.197	0.0853	149	193	77%	0.04	21.4	0.17	0.428	1.87	0.09104	0.8483	0.2054	0.1361	No	
Cadmium	10_UMCf	9	13	69%	0.13	0.26	0.18	0.184	0.0413	103	143	72%	0.04	1.84	0.15	0.22	0.257	0.2309	0.8252	0.5264	0.1554	No	
Chromium (Total)	0_2	16	16	100%	5.57	8.63	7.24	7.11	0.718	95	95	100%	3.77	2140	8.71	75.7	295	0.01546	0.001519	0.02164	1.834E-05	Yes	
Chromium (Total)	2_10	15	15	100%	5.6	10.7	8.12	8.43	1.23	98	98	100%	1.31	64.9	7.8	8.87	6.48	0.1767	0.7953	0.3699	0.0855	No	
Chromium (Total)	10_UMCf	13	13	100%	6.59	41.7	17.3	17.8	8.56	143	143	100%	3.65	102	8.88	15.7	15.8	0.8025	0.9939	0.5016	0.3713	No	1
Chromium (VI)	0_10	1	31	3%	0.29	0.29	0.29	0.29	NA	47	193	24%	0.12	84.9	0.82	8.81	20.5	0.003781	0.327	0.005934	0.001172	Yes	
Chromium (VI)	10_UMCf	0	13	0%	NA	NA	NA	NA	NA	35	143	24%	0.22	106	1.23	7.49	20.9	0.02367	0.8791	0.05485	NA	Yes	3
Cobalt	0_10	31	31	100%	5.4	9.1	7.3	7.34	0.758	193	193	100%	0.9	784	7.4	15.1	63.5	0.05287	0.3724	0.2054	0.02261	Yes	3
Cobalt	10_UMCf	13	13	100%	4.1	7.3	5.3	5.65	1.04	143	143	100%	2.2	284	6	10.5	30	0.0326	0.3502	0.06111	0.02235	Yes	3
Copper	0_10	31	31	100%	15.8	140	19.1	23.1	21.8	193	193	100%	5.7	272	19	28.1	35.3	0.2038	0.6862	0.02755	0.4714	No	
Copper	10_UMCf	13	13	100%	11.8	21.2	15.6	15.8	2.8	143	143	100%	6.1	77.1	16	17.8	9.3	0.07733	0.5128	0.2614	0.1717	No	
Iron	0_10	31	31	100%	11300	20600	15700	15500	2140	193	193	100%	3110	25000	15100	14900	3090	0.9495	0.9248	0.7375	0.6382	No	
Iron	10_UMCf	13	13	100%	8770	16100	13100	13000	2530	143	143	100%	5520	21000	12400	12600	3460	0.7667	0.7706	0.5016	0.1717	No	
Lead	0_10	31	31	100%	7.1	72.8	8.9	11.3	11.6	193	193	100%	4.82	825	9.63	30.3	83.4	0.00161	0.04165	0.09858	0.05179	Yes	3
Lead	10_UMCf	13	13	100%	5.2	11.2	6.5	7.14	1.77	143	143	100%	3.3	3280	7.8	48.7	328	0.07181	0.07772	0.5264	0.2091	No	
Magnesium	0_2	16	16	100%	7700	11500	9120	9300	1110	94	95	99%	5670	240000	10300	21600	36300	0.001307	0.03267	0.02164	0.002644	Yes	
Magnesium	2_10	15	15	100%	9230	13000	10500	10700	1140	96	98	98%	4940	230000	10900	13500	23300	0.1827	0.592	0.2071	0.0855	No	
Magnesium	10_UMCf	13	13	100%	7890	30000	19200	19100	6140	143	143	100%	4730	71100	11400	16600	13300	0.9029	0.9899	0.7578	0.1554	No	1
Manganese	0_10	31	31	100%	262	537	360	366	61.3	193	193	100%	48.1	61400	414	2380	7920	0.0003422	0.003148	0.0005344	1.777E-05	Yes	
Manganese	10_UMCf	13	13	100%	142	336	235	239	59.7	143	143	100%	80	9760	274	643	1450	0.0008362	0.1713	0.04919	0.01392	Yes	
Mercury	0_2	16	16	100%	0.012	0.362	0.0175	0.0479	0.0871	89	95	94%	0.005	0.213	0.024	0.0388	0.037	0.7054	0.3205	0.6062	1	No	1 2
Mercury	2_10	11	15	73%	0.006	0.094	0.012	0.0192	0.025	79	98	81%	0.003	0.045	0.011	0.013	0.00855	0.7998	0.9494	0.4048	1	No	1 2
Mercury	10_UMCf	9	13	69%	0.004	0.044	0.008	0.0118	0.0124	114	143	80%	0.001	0.126	0.007	0.0123	0.0176	0.4622	0.8803	0.5016	0.6434	No	2
Molybdenum	0_2	15	16	94%	0.31	32.7	0.43	2.56	8.34	91	95	96%	0.19	82.2	0.73	3.05	10.3	0.429	0.002485	0.1246	0.7314	Yes	3
Molybdenum	2_10	15	15	100%	0.34	2.83	0.6	0.791	0.603	90	98	92%	0.17	1.69	0.41	0.487	0.287	0.9733	0.9999	0.9984	1	No	1
Molybdenum	10_UMCf	13	13	100%	0.37	1.82	0.78	1.02	0.594	137	143	96%	0.08	9.15	0.5	0.761	1.03	0.9414	0.9954	0.9963	0.4902	No	1
Nickel	0_10	31	31	100%	12.7	21.4	15.6	15.9	1.78	193	193	100%	6.54	274	15.1	17.8	23.1	0.1629	0.9781	0.375	0.1865	No	1
Nickel	10_UMCf	13	13	100%	9.97	16.4	13.8	13.3	2.08	143	143	100%	5.99	164	13	15	15.4	0.149	0.6628	0.5016	0.0933	No	
Platinum	0_10	19	31	61%	0.006	0.046	0.01	0.0119	0.00852	113	193	59%	0.005	0.31	0.011	0.0282	0.0512	0.6404	0.7253	0.006517	0.2263	Yes	2 3
Platinum	10_UMCf	8	13	62%	0.008	0.014	0.0105	0.0111	0.00203	74	143	52%	0.005	0.026	0.009	0.0101	0.00454	0.6345	0.7082	0.9123	0.2453	No	2
Potassium	0_2	16	16	100%	1830	4210	2280	2510	726	94	95	99%	840	5650	2490	2600	737	0.4147	0.1714	0.6062	0.7314	No	
Potassium	2_10	15	15	100%	1450	2420	1740	1830	333	96	98	98%	1230	8830	1980	2130	820	0.03962	0.05676	0.3699	0.07228	No	
Potassium	10_UMCf	13	13	100%	1590	4250	2140	2270	723	143	143	100%	1150	6570	1960	2340	1120	0.4274	0.8246	0.5016	0.338	No	
Selenium	0_10	3	31	10%	0.8	0.9	0.8	0.833	0.0577	10	193	5%	0.8	1.1	1	0.97	0.0949	0.5818	0.2264	0.7223	0.4171	No	
Selenium	10_UMCf	0	13	0%	NA	NA	NA	NA	NA	5	143	3%	0.8	1	1	0.94	0.0894	0.001354	0.7531	0.2614	NA	Yes	3
Silver	0_10	0	31	0%	NA	NA	NA	NA	NA	52	193	27%	0.02	9.6	0.0585	0.661	1.88	0.03807	0.951	0.1161	NA	No	1
Silver	10_UMCf	2	13	15%	0.6	0.8	0.7	0.7	0.141	20	143	14%	0.022	2.2	0.047	0.276	0.593	0.8743	0.9836	0.8665	0.9167	No	1

**Attachment 2
TABLE 2B
RZ-C Background Comparison**

Chemical Name	Depth Interval	Background								RZ-C								Two-Sample T- test	Gehan Test	Quantile Test (0.8)	Slippage Test	Greater than Background?	Background Qualifier
		No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation Detect	No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation Detect	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>		
Sodium	0_2	16	16	100%	307	864	468	533	181	94	95	99%	244	32200	843	1720	3570	0.001136	0.000721	0.02164	0.0001802	Yes	
Sodium	2_10	15	15	100%	474	1050	729	714	166	96	98	98%	251	11800	880	1270	1490	0.0007038	0.05256	0.0253	0.01204	Yes	
Sodium	10_UMCf	13	13	100%	612	1200	924	887	204	143	143	100%	358	11700	936	1260	1250	0.001553	0.2334	0.04919	0.01392	Yes	
Strontium	0_2	16	16	100%	129	299	186	189	46.8	93	95	98%	43.9	1200	161	211	166	0.2193	0.8006	0.6062	0.3254	No	
Strontium	2_10	15	15	100%	177	339	255	257	45.3	98	98	100%	31.6	408	255	261	71.8	0.6144	0.61	0.3699	0.119	No	
Strontium	10_UMCf	13	13	100%	153	2240	386	775	704	143	143	100%	89.4	2210	276	396	379	0.9623	0.9441	0.9954	1	No	1
Thallium	0_10	31	31	100%	0.071	0.193	0.092	0.107	0.0329	186	193	96%	0.016	61.8	0.112	0.758	4.77	0.03306	0.01415	0.08816	0.00196	Yes	2
Thallium	10_UMCf	13	13	100%	0.061	0.203	0.103	0.112	0.0359	137	143	96%	0.049	1.78	0.093	0.168	0.223	0.009384	0.8287	0.2246	0.0933	Yes	2 3
Tin	0_10	0	31	0%	NA	NA	NA	NA	NA	16	193	8%	0.43	0.73	NA	NA	NA	0.9999	0.5543	0.2975	NA	No	1
Tin	10_UMCf	1	13	8%	14.3	14.3	14.3	14.3	NA	7	143	5%	0.33	0.63	NA	NA	NA	0.9389	0.998	0.9649	1	No	1
Titanium	0_10	31	31	100%	480	1080	829	793	162	193	193	100%	34	1360	771	765	196	0.8904	0.8915	0.7813	0.4047	No	
Titanium	10_UMCf	13	13	100%	405	844	664	664	147	143	143	100%	296	1180	641	655	178	0.6488	0.6744	0.5016	0.127	No	
Tungsten	0_10	30	31	97%	0.12	0.62	0.17	0.214	0.11	179	193	93%	0.033	158	0.27	3.39	14.9	0.00279	2.28E-05	0.0005344	0.0001128	Yes	
Tungsten	10_UMCf	12	13	92%	0.16	0.39	0.285	0.288	0.0725	130	143	91%	0.12	15.7	0.25	0.57	1.44	0.01967	0.6161	0.04919	0.01191	Yes	
Uranium	0_2	16	16	100%	0.655	1.01	0.829	0.817	0.116	94	95	99%	0.571	7.56	0.922	1.12	0.804	0.0006372	0.002833	0.02164	0.003305	Yes	
Uranium	2_10	15	15	100%	0.913	1.94	1.34	1.34	0.332	96	98	98%	0.19	2.78	1.21	1.34	0.469	0.6368	0.6746	0.6379	0.1644	No	
Uranium	10_UMCf	13	13	100%	1.07	4.74	3.47	3.32	1.06	143	143	100%	0.793	29	2.09	3.12	3.44	0.7164	0.9845	0.9123	0.1554	No	1
Vanadium	0_10	31	31	100%	28	54.9	46	43.8	7.58	193	193	100%	10.2	205	42.7	45.8	19	0.2557	0.7682	0.2054	0.06096	No	
Vanadium	10_UMCf	13	13	100%	29.4	49.8	41.6	40.5	6.22	143	143	100%	16	73.6	40.2	40.9	10.4	0.5021	0.5624	0.2246	0.06801	No	
Zinc	0_10	31	31	100%	25.8	254	33.3	40.4	39.9	193	193	100%	7.3	753	33.8	53.8	86.9	0.1124	0.3048	0.08816	0.4714	No	
Zinc	10_UMCf	13	13	100%	21.9	39.1	27.9	29.1	5.74	143	143	100%	13.7	154	28.9	31.8	17.2	0.157	0.6438	0.5016	0.1406	No	

Notes:

p values in boldface indicate $p < 0.025$

p values less than 10^{-10} shown as 0

NA - value not available because either chemical not detected, only detected in 1 sample, or the test is invalid for the given distributor

Background dataset is from RZ-A, excluding the 6 borings in LOU 62.

Background comparison tests use 1/2 the detection limit for non-detects.

Background Qualifiers:

¹ = Gilbert's Toolbox results imply Site data lower than Background data

² = Less than 25% frequency of detection in either site or background data sets

³ = Failed Gilbert's Toolbox in only 1 out of 4 tests

Depth Intervals:

0_2 - 0 feet below ground surface (bgs) to 2 feet bgs

2_10 - greater than 2 feet bgs to 10 feet bgs

0_10 - 0 feet bgs to 10 feet bgs

10_UMCf - greater than 10 feet bgs to the top of the Upper Muddy Creek formation