

Attachment 2
TABLE 2A
RZ-B Background Comparison

Chemical Name	Depth Interval	Background								RZ-B							Two-Sample T-test P	Gehan Test P	Quantile Test (0.8) P	Slippage Test P	Greater than Background?	Background Qualifier	
		No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation	No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect							Standard Deviation
Aluminum	0_10	31	31	100%	7340	11400	8970	9020	890	142	142	100%	5060	12000	8850	8740	1150	0.9951	0.9704	0.7342	0.8208	No	1
Aluminum	10_UMCF	13	13	100%	7290	18400	10600	10300	2900	97	97	100%	4130	24700	10600	12100	4710	0.1676	0.4871	0.2157	0.2682	No	
Antimony	0_10	3	31	10%	0.6	3.4	0.9	1.63	1.54	52	142	37%	0.13	2.8	1	1.2	0.562	0.1281	0.2106	0.0239	1	Yes	3
Antimony	10_UMCF	5	13	38%	0.7	1.4	0.9	0.92	0.286	30	97	31%	0.094	2.5	1	1.18	0.436	0.2049	0.18	0.9781	0.4655	No	1
Arsenic	0_2	16	16	100%	1.6	4.25	2	2.19	0.645	67	67	100%	1.24	189	2.46	6.9	24.4	0.05958	0.001561	0.1048	0.02842	Yes	3
Arsenic	2_10	15	15	100%	2.05	3.13	2.54	2.59	0.321	75	75	100%	1.69	26.7	2.74	3.22	2.98	0.02588	0.1065	0.02523	0.01997	Yes	3
Arsenic	10_UMCF	13	13	100%	2.49	22.5	11.6	11.9	6.51	97	97	100%	2.23	44.3	14.1	15.1	9.4	0.1283	0.2238	0.04528	0.04528	No	
Barium	0_10	31	31	100%	111	213	162	166	22.4	142	142	100%	115	508	174	178	41.4	0.02729	0.05918	0.3625	0.06918	No	
Barium	10_UMCF	13	13	100%	79.9	217	97.8	117	42.9	97	97	100%	35.7	870	126	154	136	0.02827	0.2452	0.4945	0.1758	No	
Beryllium	0_10	31	31	100%	0.362	0.588	0.459	0.464	0.0475	142	142	100%	0.323	0.659	0.446	0.451	0.0591	0.9062	0.9191	0.7342	0.5509	No	
Beryllium	10_UMCF	13	13	100%	0.328	0.642	0.423	0.442	0.0919	97	97	100%	0.207	0.878	0.46	0.478	0.146	0.1758	0.325	0.2157	0.2027	No	
Boron	0_10	7	31	23%	3.6	11.7	6.2	6.67	2.68	51	142	36%	2.5	100	13.1	17.2	14.8	0.0009377	0.006588	0.0006805	0.0006455	Yes	
Boron	10_UMCF	11	13	85%	12.5	29.6	16.2	18.2	5.63	70	97	72%	5.6	81.9	25.4	28.9	15	0.02429	0.1736	0.04528	0.01995	Yes	
Cadmium	0_10	25	31	81%	0.11	0.48	0.19	0.197	0.0853	116	142	82%	0.06	8.88	0.21	0.358	0.872	0.05311	0.1805	0.03438	0.08567	No	
Cadmium	10_UMCF	9	13	69%	0.13	0.26	0.18	0.184	0.0413	83	97	86%	0.039	0.64	0.17	0.21	0.113	0.1328	0.3571	0.2157	0.1316	No	
Chromium (Total)	0_2	16	16	100%	5.57	8.63	7.24	7.11	0.718	67	67	100%	4.65	33.2	8.31	10.3	6.2	0.00001226	0.000543	0.02173	9.523E-05	Yes	
Chromium (Total)	2_10	15	15	100%	5.6	10.7	8.12	8.43	1.23	75	75	100%	5.79	63.5	8	10.1	8.51	0.06105	0.7806	0.3796	0.06203	No	
Chromium (Total)	10_UMCF	13	13	100%	6.59	41.7	17.3	17.8	8.56	97	97	100%	4.95	60.8	16.6	19.9	12.3	0.3338	0.5861	0.2157	0.4614	No	
Chromium (VI)	0_10	1	31	3%	0.29	0.29	0.29	0.29	NA	40	142	28%	0.11	31.4	1.03	3.33	5.83	0.001688	0.04041	0.004548	0.0005298	Yes	
Chromium (VI)	10_UMCF	0	13	0%	NA	NA	NA	NA	NA	19	97	20%	0.12	36.4	0.77	6.73	11.4	0.01473	0.1235	0.06198	NA	Yes	3
Cobalt	0_10	31	31	100%	5.4	9.1	7.3	7.34	0.758	142	142	100%	3.8	24.4	7.5	7.71	1.96	0.1401	0.39	0.4665	0.1613	No	
Cobalt	10_UMCF	13	13	100%	4.1	7.3	5.3	5.65	1.04	97	97	100%	2.9	10.4	6.1	6.12	1.67	0.1381	0.2238	0.05303	0.05303	No	
Copper	0_10	31	31	100%	15.8	140	19.1	23.1	21.8	142	142	100%	8.4	153	19.2	23.5	16.6	0.5749	0.7413	0.3625	0.8208	No	
Copper	10_UMCF	13	13	100%	11.8	21.2	15.6	15.8	2.8	97	97	100%	7.6	26.9	16.7	16.7	3.35	0.4399	0.4576	0.241	0.5266	No	
Iron	0_10	31	31	100%	11300	20600	15700	15500	2140	142	142	100%	6910	21800	15500	15300	2320	0.9084	0.8497	0.7342	0.8208	No	
Iron	10_UMCF	13	13	100%	8770	16100	13100	13000	2530	97	97	100%	5780	19700	14100	13600	3180	0.47	0.4521	0.241	0.06198	No	
Lead	0_10	31	31	100%	7.1	72.8	8.9	11.3	11.6	142	142	100%	6.2	185	10	19.1	29.6	0.01385	0.008444	0.08002	0.2443	Yes	
Lead	10_UMCF	13	13	100%	5.2	11.2	6.5	7.14	1.77	97	97	100%	2.8	31.8	8.05	8.67	3.68	0.02613	0.05932	0.4945	0.3078	No	
Magnesium	0_2	16	16	100%	7700	11500	9120	9300	1110	67	67	100%	6330	28800	9530	10600	3800	0.0489	0.3325	0.3559	0.04797	No	
Magnesium	2_10	15	15	100%	9230	13000	10500	10700	1140	75	75	100%	5350	14600	10200	10300	1460	0.9816	0.9455	0.9292	0.4757	No	1
Magnesium	10_UMCF	13	13	100%	7890	30000	19200	19100	6140	97	97	100%	5110	58100	21100	24600	13800	0.04406	0.3817	0.04528	0.01189	Yes	3
Manganese	0_10	31	31	100%	262	537	360	366	61.3	142	142	100%	176	2320	369	462	328	0.002108	0.2897	0.08002	0.0449	Yes	3
Manganese	10_UMCF	13	13	100%	142	336	235	239	59.7	97	97	100%	93.8	2520	252	296	276	0.06484	0.3118	0.241	0.09789	No	
Mercury	0_2	16	16	100%	0.012	0.362	0.0175	0.0479	0.0871	64	67	96%	0.006	0.804	0.0195	0.0645	0.141	0.3656	0.5551	0.5773	0.6497	No	
Mercury	2_10	11	15	73%	0.006	0.094	0.012	0.0192	0.025	70	75	93%	0.005	1.99	0.011	0.045	0.246	0.1897	0.9112	0.3796	0.6929	No	2
Mercury	10_UMCF	9	13	69%	0.004	0.044	0.008	0.0118	0.0124	78	97	80%	0.002	0.074	0.009	0.011	0.0106	0.5492	0.6919	0.5667	0.7766	No	2
Molybdenum	0_2	15	16	94%	0.31	32.7	0.43	2.56	8.34	65	67	97%	0.22	10.8	0.47	0.887	1.59	0.7769	0.04989	0.1048	1	No	1
Molybdenum	2_10	15	15	100%	0.34	2.83	0.6	0.791	0.603	73	75	97%	0.27	3.23	0.49	0.558	0.39	0.9269	0.9977	0.9984	0.8333	No	1
Molybdenum	10_UMCF	13	13	100%	0.37	1.82	0.78	1.02	0.594	96	97	99%	0.23	2.2	0.69	0.764	0.366	0.9538	0.914	0.996	0.7766	No	1
Nickel	0_10	31	31	100%	12.7	21.4	15.6	15.9	1.78	142	142	100%	9.3	22.9	15.6	15.7	2.02	0.9284	0.8845	0.5573	0.8208	No	
Nickel	10_UMCF	13	13	100%	9.97	16.4	13.8	13.3	2.08	97	97	100%	7.27	29.3	14.7	14.8	4.24	0.07724	0.2481	0.04528	0.04528	No	
Platinum	0_10	19	31	61%	0.006	0.046	0.01	0.0119	0.00852	96	142	68%	0.005	0.66	0.01	0.0197	0.072	0.3391	0.6533	0.1426	0.5817	No	2
Platinum	10_UMCF	8	13	62%	0.008	0.014	0.0105	0.0111	0.00203	61	97	63%	0.005	0.019	0.0095	0.0102	0.00326	0.716	0.773	0.365	0.2493	No	2
Potassium	0_2	16	16	100%	1830	4210	2280	2510	726	67	67	100%	1380	8180	2330	2560	1000	0.5422	0.5597	0.8039	0.5214	No	
Potassium	2_10	15	15	100%	1450	2420	1740	1830	333	75	75	100%	1290	6930	2040	2180	787	0.005614	0.02036	0.1427	0.03983	Yes	
Potassium	10_UMCF	13	13	100%	1590	4250	2140	2270	723	97	97	100%	980	5980	2710	2900	1160	0.03964	0.1895	0.2157	0.2027	No	
Selenium	0_10	3	31	10%	0.8	0.9	0.8	0.833	0.0577	2	142	1%	0.9	1.3	1.1	1.1	0.283	0.9182	0.869	0.9892	0.8282	No	1
Selenium	10_UMCF	0	13	0%	NA	NA	NA	NA	NA	3	97	3%	1.1	1.4	1.2	1.23	0.153	0.02134	0.7447	0.2682	NA	Yes	3
Silver	0_10	0	31	0%	NA	NA	NA	NA	NA	18	142	13%	0.088	4	1.1	1.8	1.95	0.08683	0.8931	0.1059	NA	No	1
Silver	10_UMCF	2	13	15%	0.6	0.8	0.7	0.7	0.141	14	97	14%	0.061	1.9	1.9	1.9	NA	0.8453	0.9552	0.9047	0.8818	No	
Sodium	0_2	16	16	100%	307	864	468	533	181	67	67	100%	211	5660	853	1210	1000	1.747E-06	0.00025	0.01654	0.0002004	Yes	
Sodium	2_10	15	15	100%	474	1050	729	714	166	75	75	100%	314	7680	815	1300	1310	0.000497	0.05822	0.02523	0.00586	Yes	
Sodium	10_UMCF	13	13	100%	612	1200	924	887	204	97	97	100%	326	7950	1230	1640	1390	0.00002341	0.05408	0.04528	0.0006193	Yes	
Strontium	0_2	16	16	100%	129	299	186	189	46.8	67	67	100%	93.1	370	186	190	58.6	0.6112	0.659	0.5773	0.3326	No	

Attachment 2
TABLE 2A
RZ-B Background Comparison

Chemical Name	Depth Interval	Background								RZ-B							Two-Sample T-test <i>p</i>	Gehan Test <i>p</i>	Quantile Test (0.8) <i>p</i>	Slippage Test <i>p</i>	Greater than Background?	Background Qualifier	
		No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation	No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect							Standard Deviation
Strontium	2_10	15	15	100%	177	339	255	257	45.3	75	75	100%	107	343	220	224	45	0.9965	0.9973	0.9671	0.8333	No	1
Strontium	10_UMCf	13	13	100%	153	2240	386	775	704	97	97	100%	77.9	3860	264	433	588	0.9397	0.9709	0.996	0.6002	No	1
Thallium	0_10	31	31	100%	0.071	0.193	0.092	0.107	0.0329	127	142	89%	0.063	0.86	0.098	0.124	0.108	0.2301	0.7178	0.7637	0.1986	No	2
Thallium	10_UMCf	13	13	100%	0.061	0.203	0.103	0.112	0.0359	84	97	87%	0.056	0.408	0.128	0.146	0.0756	0.07376	0.3451	0.2157	0.1316	No	2
Tin	0_10	0	31	0%	NA	NA	NA	NA	NA	16	142	11%	0.39	12.6	12.6	12.6	NA	0.9995	0.7715	0.1986	NA	No	1
Tin	10_UMCf	1	13	8%	14.3	14.3	14.3	14.3	NA	13	97	13%	0.27	0.6	NA	NA	NA	0.9709	0.9891	0.7604	1	No	1
Titanium	0_10	31	31	100%	480	1080	829	793	162	142	142	100%	310	1230	757	771	172	0.9371	0.9357	0.9403	0.4504	No	
Titanium	10_UMCf	13	13	100%	405	844	664	664	147	97	97	100%	273	1050	702	692	171	0.5459	0.5479	0.4945	0.09789	No	
Tungsten	0_10	30	31	97%	0.12	0.62	0.17	0.214	0.11	125	142	88%	0.1	2.97	0.18	0.274	0.349	0.09128	0.7654	0.5573	0.1059	No	
Tungsten	10_UMCf	12	13	92%	0.16	0.39	0.285	0.288	0.0725	82	97	85%	0.12	2.23	0.25	0.298	0.253	0.5521	0.9105	0.9288	0.1493	No	
Uranium	0_2	16	16	100%	0.655	1.01	0.829	0.817	0.116	67	67	100%	0.666	1.73	0.863	0.929	0.221	0.002665	0.03236	0.01654	0.01654	Yes	
Uranium	2_10	15	15	100%	0.913	1.94	1.34	1.34	0.332	75	75	100%	0.61	2.67	1.15	1.26	0.401	0.8818	0.9386	0.8553	0.4757	No	
Uranium	10_UMCf	13	13	100%	1.07	4.74	3.47	3.32	1.06	97	97	100%	0.828	14	3.11	3.96	2.75	0.137	0.698	0.05303	0.03283	No	
Vanadium	0_10	31	31	100%	28	54.9	46	43.8	7.58	142	142	100%	17.7	63.8	44.7	44.4	8.52	0.7111	0.6959	0.1933	0.05578	No	
Vanadium	10_UMCf	13	13	100%	29.4	49.8	41.6	40.5	6.22	97	97	100%	21.4	68.8	44.8	43.1	9.9	0.309	0.3085	0.2157	0.06198	No	
Zinc	0_10	31	31	100%	25.8	254	33.3	40.4	39.9	142	142	100%	20.1	229	34.4	38.6	20.4	0.6582	0.1686	0.3625	1	No	1
Zinc	10_UMCf	13	13	100%	21.9	39.1	27.9	29.1	5.74	97	97	100%	16.4	60.2	32.5	34.2	9.7	0.03949	0.1575	0.2157	0.05303	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 distribution

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