

Attachment 2
TABLE 2D
RZ-E Background Comparison

Chemical Name	Depth Interval	Background							RZ-E							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	No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation	p	p			p	p
Aluminum	0_10	31	31	100%	7340	11400	8970	9020	890	36	36	100%	5130	14300	8650	8690	1850	0.6827	0.8413	0.116	0.01952	Yes	3
Aluminum	10_UMCF	13	13	100%	7290	18400	10600	10300	2900	15	15	100%	4050	16100	7760	8410	2820	0.9907	0.998	0.9954	1	No	1
Antimony	0_10	3	31	10%	0.6	3.4	0.9	1.63	1.54	9	36	25%	0.11	20.3	13.2	13.2	10	0.1869	0.8072	0.5851	0.2849	No	
Antimony	10_UMCF	5	13	38%	0.7	1.4	0.9	0.92	0.286	5	15	33%	0.094	0.5	0.5	0.5	NA	0.9432	0.9653	0.9954	1	No	1
Arsenic	0_2	16	16	100%	1.6	4.25	2	2.19	0.645	19	19	100%	0.97	385	4.76	32.1	97.8	0.1	0.000698	0.007493	0.0001812	Yes	
Arsenic	2_10	15	15	100%	2.05	3.13	2.54	2.59	0.321	17	17	100%	2.2	5.2	4.06	3.74	0.885	0.0005201	0.000545	0.005778	2.741E-05	Yes	
Arsenic	10_UMCF	13	13	100%	2.49	22.5	11.6	11.9	6.51	15	15	100%	3.3	31.1	11.1	14.4	9.59	0.3545	0.4633	0.3995	0.2778	No	
Barium	0_10	31	31	100%	111	213	162	166	22.4	36	36	100%	79.8	685	194	228	124	0.005248	0.001909	0.006718	0.0004675	Yes	
Barium	10_UMCF	13	13	100%	79.9	217	97.8	117	42.9	15	15	100%	52.7	266	107	127	61	0.4379	0.4908	0.3995	0.5357	No	
Beryllium	0_10	31	31	100%	0.362	0.588	0.459	0.464	0.0475	36	36	100%	0.245	0.93	0.45	0.448	0.107	0.2112	0.5125	0.2795	0.01952	Yes	3
Beryllium	10_UMCF	13	13	100%	0.328	0.642	0.423	0.442	0.0919	15	15	100%	0.205	0.617	0.353	0.358	0.117	0.979	0.9887	0.9954	1	No	1
Boron	0_10	7	31	23%	3.6	11.7	6.2	6.67	2.68	17	36	47%	3.8	113	25.2	31.2	26.9	0.004847	0.001197	0.0007708	0.0002087	Yes	
Boron	10_UMCF	11	13	85%	12.5	29.6	16.2	18.2	5.63	7	15	47%	5	23.7	18.9	18.7	4.02	0.9827	0.9706	0.7449	1	No	1
Cadmium	0_10	25	31	81%	0.11	0.48	0.19	0.197	0.0853	30	36	83%	0.04	4.47	0.24	0.585	1.02	0.05162	0.3906	0.03431	0.03904	No	
Cadmium	10_UMCF	9	13	69%	0.13	0.26	0.18	0.184	0.0413	14	15	93%	0.041	0.29	0.115	0.139	0.0719	0.7729	0.81	0.8778	0.5357	No	
Chromium (Total)	0_2	16	16	100%	5.57	8.63	7.24	7.11	0.718	19	19	100%	5.2	1470	29	174	377	0.04587	0.000154	0.007493	2.387E-07	Yes	
Chromium (Total)	2_10	15	15	100%	5.6	10.7	8.12	8.43	1.23	17	17	100%	3.98	26.4	9.6	12.1	6.87	0.0134	0.005391	0.01366	0.01366	Yes	
Chromium (Total)	10_UMCF	13	13	100%	6.59	41.7	17.3	17.8	8.56	15	15	100%	6.76	42.5	15.7	18.7	11.7	0.5122	0.6352	0.3995	0.5357	No	
Chromium (VI)	0_10	1	31	3%	0.29	0.29	0.29	0.29	NA	21	36	58%	0.12	36.7	3.38	7.03	10	0.008162	5.93E-05	3.879E-05	2.55E-06	Yes	
Chromium (VI)	10_UMCF	0	13	0%	NA	NA	NA	NA	NA	6	15	40%	0.19	5.23	2.07	2.45	2.29	0.06046	0.4907	0.03056	NA	No	1
Cobalt	0_10	31	31	100%	5.4	9.1	7.3	7.34	0.758	36	36	100%	3.7	62.5	8.8	14.1	14.2	0.006408	0.05022	3.879E-05	6.503E-06	Yes	
Cobalt	10_UMCF	13	13	100%	4.1	7.3	5.3	5.65	1.04	15	15	100%	2.6	11.6	4.4	4.92	2.52	0.93	0.9887	0.9954	0.5357	No	1
Copper	0_10	31	31	100%	15.8	140	19.1	23.1	21.8	36	36	100%	10	446	23.6	63.9	101	0.009172	0.09545	0.0007708	0.03904	Yes	
Copper	10_UMCF	13	13	100%	11.8	21.2	15.6	15.8	2.8	15	15	100%	6.7	26.3	12.3	14.3	4.8	0.9745	0.9936	0.9442	0.5357	No	1
Iron	0_10	31	31	100%	11300	20600	15700	15500	2140	36	36	100%	8930	21700	14700	15100	2910	0.9285	0.9242	0.2795	0.5373	No	
Iron	10_UMCF	13	13	100%	8770	16100	13100	13000	2530	15	15	100%	5460	13900	10000	9740	2420	0.9998	0.9993	0.9954	1	No	1
Lead	0_10	31	31	100%	7.1	72.8	8.9	11.3	11.6	36	36	100%	6.6	2210	20.2	213	521	0.02292	0.004962	0.0007708	0.002202	Yes	
Lead	10_UMCF	13	13	100%	5.2	11.2	6.5	7.14	1.77	15	15	100%	2.4	12	6.2	6.45	2.5	0.9003	0.9331	0.9442	0.5357	No	
Magnesium	0_2	16	16	100%	7700	11500	9120	9300	1110	19	19	100%	6030	48000	10800	17000	13100	0.0227	0.03687	0.07205	0.01672	Yes	
Magnesium	2_10	15	15	100%	9230	13000	10500	10700	1140	17	17	100%	7240	22000	10800	11800	3720	0.2522	0.5301	0.5757	0.1371	No	
Magnesium	10_UMCF	13	13	100%	7890	30000	19200	19100	6140	15	15	100%	5300	47000	14300	18600	11900	0.66	0.8336	0.3995	0.2778	No	
Manganese	0_10	31	31	100%	262	537	360	366	61.3	36	36	100%	154	13800	453	1780	2920	0.007543	0.02489	0.0007708	9.108E-05	Yes	
Manganese	10_UMCF	13	13	100%	142	336	235	239	59.7	15	15	100%	92.8	981	179	274	243	0.4794	0.949	0.7449	0.5357	No	
Mercury	0_2	16	16	100%	0.012	0.362	0.0175	0.0479	0.0871	14	19	74%	0.008	34.2	0.065	2.58	9.1	0.1573	0.1723	0.2796	0.1481	No	
Mercury	2_10	11	15	73%	0.006	0.094	0.012	0.0192	0.025	14	17	82%	0.005	0.154	0.013	0.0263	0.0402	0.3113	0.7813	0.208	0.5312	No	2
Mercury	10_UMCF	9	13	69%	0.004	0.044	0.008	0.0118	0.0124	8	15	53%	0.002	0.073	0.007	0.0186	0.0249	0.4123	0.7108	0.3995	0.5357	No	2
Molybdenum	0_2	15	16	94%	0.31	32.7	0.43	2.56	8.34	19	19	100%	0.36	10.8	1.44	2.55	2.74	0.5299	2.64E-05	0.07205	1	Yes	3
Molybdenum	2_10	15	15	100%	0.34	2.83	0.6	0.791	0.603	15	17	88%	0.29	1.04	0.57	0.578	0.205	0.9524	0.9865	0.9728	1	No	1
Molybdenum	10_UMCF	13	13	100%	0.37	1.82	0.78	1.02	0.594	15	15	100%	0.29	1.15	0.5	0.583	0.276	0.9934	0.9944	0.9954	1	No	1
Nickel	0_10	31	31	100%	12.7	21.4	15.6	15.9	1.78	36	36	100%	11.1	84.8	17	23.6	17.1	0.0123	0.1148	0.006718	0.002202	Yes	
Nickel	10_UMCF	13	13	100%	9.97	16.4	13.8	13.3	2.08	15	15	100%	7.2	13.7	11.4	11.2	2.03	0.9988	0.9983	1	1	No	1
Platinum	0_10	19	31	61%	0.006	0.046	0.01	0.0119	0.00852	32	36	89%	0.005	0.93	0.019	0.0902	0.2	0.06818	0.2243	0.00162	0.1584	Yes	2 3
Platinum	10_UMCF	8	13	62%	0.008	0.014	0.0105	0.0111	0.00203	6	15	40%	0.008	0.014	0.011	0.011	0.00261	0.8949	0.8428	0.7449	1	No	1 2
Potassium	0_2	16	16	100%	1830	4210	2280	2510	726	19	19	100%	1020	3820	2080	2230	763	0.8743	0.8554	0.8646	1	No	1
Potassium	2_10	15	15	100%	1450	2420	1740	1830	333	17	17	100%	1400	2730	1920	1940	352	0.2861	0.2543	0.8515	0.5312	No	
Potassium	10_UMCF	13	13	100%	1590	4250	2140	2270	723	15	15	100%	1050	3790	2040	2100	671	0.9061	0.949	0.7449	1	No	1
Selenium	0_10	3	31	10%	0.8	0.9	0.8	0.833	0.0577	8	36	22%	0.9	3.5	1.05	1.38	0.868	0.346	0.07781	0.1465	0.01094	Yes	3
Selenium	10_UMCF	0	13	0%	NA	NA	NA	NA	NA	1	15	7%	0.8	0.8	0.8	0.8	NA	0.3512	0.955	0.5556	NA	No	1
Silver	0_10	0	31	0%	NA	NA	NA	NA	NA	14	36	39%	0.13	3.3	0.7	1.33	1.29	0.02053	0.2917	0.004639	NA	Yes	
Silver	10_UMCF	2	13	15%	0.6	0.8	0.7	0.7	0.141	5	15	33%	0.097	0.2	0.2	0.2	NA	0.86	0.9851	1	1	No	1 2
Sodium	0_2	16	16	100%	307	864	468	533	181	19	19	100%	345	17200	930	2620	4230	0.02287	0.00027	0.007493	0.0001812	Yes	
Sodium	2_10	15	15	100%	474	1050	729	714	166	17	17	100%	407	5780	995	1630	1560	0.007424	0.008229	0.005778	0.0003015	Yes	
Sodium	10_UMCF	13	13	100%	612	1200	924	887	204	15	15	100%	615	5820	1080	1570	1460	0.0309	0.02648	0.01329	0.005435	Yes	
Strontium	0_2	16	16	100%	129	299	186	189	46.8	19	19	100%	72.5	610	175	233	139	0.262	0.8316	0.6023	0.07403	No	

**Attachment 2
TABLE 2D
RZ-E Background Comparison**

Chemical Name	Depth Interval	Background								RZ-E								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	No. of Detects	Total Samples	% Detects	Minimum Detect	Maximum Detect	Median Detect	Mean Detect	Standard Deviation	p	p	p	p		
Strontium	2_10	15	15	100%	177	339	255	257	45.3	17	17	100%	86.3	358	154	195	85.5	0.9985	0.994	0.9728	0.5312	No	1
Strontium	10_UMCf	13	13	100%	153	2240	386	775	704	15	15	100%	86.5	622	263	279	133	0.9907	0.9857	1	1	No	1
Thallium	0_10	31	31	100%	0.071	0.193	0.092	0.107	0.0329	32	36	89%	0.054	0.89	0.169	0.303	0.266	0.0007138	0.01525	3.879E-05	3.879E-05	Yes	2
Thallium	10_UMCf	13	13	100%	0.061	0.203	0.103	0.112	0.0359	12	15	80%	0.055	0.267	0.087	0.111	0.0601	0.8213	0.9491	0.7449	0.5357	No	2
Tin	0_10	0	31	0%	NA	NA	NA	NA	NA	10	36	28%	0.42	22.6	19.4	20.4	1.88	0.3196	0.211	0.01952	NA	Yes	3
Tin	10_UMCf	1	13	8%	14.3	14.3	14.3	14.3	NA	4	15	27%	0.3	0.46	NA	NA	NA	0.9879	0.9928	0.5556	1	No	1
Titanium	0_10	31	31	100%	480	1080	829	793	162	36	36	100%	438	2480	793	845	376	0.5461	0.8863	0.2795	0.2849	No	
Titanium	10_UMCf	13	13	100%	405	844	664	664	147	15	15	100%	273	745	513	522	120	0.9992	0.9987	0.9954	1	No	1
Tungsten	0_10	30	31	97%	0.12	0.62	0.17	0.214	0.11	35	36	97%	0.13	13.9	0.26	1.36	2.59	0.004086	0.000207	9.108E-05	6.503E-06	Yes	
Tungsten	10_UMCf	12	13	92%	0.16	0.39	0.285	0.288	0.0725	12	15	80%	0.11	2.5	0.27	0.394	0.472	0.1738	0.8554	0.7449	0.1389	No	
Uranium	0_2	16	16	100%	0.655	1.01	0.829	0.817	0.116	19	19	100%	0.705	9.64	1.11	2.25	2.64	0.01714	0.003474	0.007493	0.0001812	Yes	
Uranium	2_10	15	15	100%	0.913	1.94	1.34	1.34	0.332	17	17	100%	0.94	3.62	1.52	1.68	0.684	0.08137	0.1208	0.254	0.1371	No	
Uranium	10_UMCf	13	13	100%	1.07	4.74	3.47	3.32	1.06	15	15	100%	1.38	4.97	2.39	2.97	1.3	0.8738	0.8446	0.7449	0.2778	No	
Vanadium	0_10	31	31	100%	28	54.9	46	43.8	7.58	36	36	100%	28	83.9	40.2	44.1	12.1	0.7652	0.9158	0.4889	0.03904	No	
Vanadium	10_UMCf	13	13	100%	29.4	49.8	41.6	40.5	6.22	15	15	100%	16.5	41.9	32.6	31	6.18	0.9999	0.9996	0.9954	1	No	1
Zinc	0_10	31	31	100%	25.8	254	33.3	40.4	39.9	36	36	100%	20.8	206	35	53.6	39.2	0.06586	0.2141	0.006718	1	Yes	3
Zinc	10_UMCf	13	13	100%	21.9	39.1	27.9	29.1	5.74	14	15	93%	12.2	34.3	20.3	23	6.58	0.9978	0.9972	0.9442	1	No	1

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