Non-linear regressions [Y=b1*(b2^X)] for lichens

		b1	b2	R-sq	P
Antimony (Sb)	mill	3.42	0.997	0.84	<.001
	pit	1.98	0.998	0.75	<.001
	pond	1.2	0.999	0.43	0.004
	all 3	2.77	0.997	0.71	<.001
	m + pit	3.49	0.997	0.8	<.001
Arsenic (As)	mill	33.85	0.997	0.82	<.001
	pit	24	0.997	0.75	<.001
	pond	12.53	0.999	0.34	0.003
	all 3	26.62	0.997	0.66	<.001
	m + pit	32.25	0.997	0.8	<.001
Boron (B)	mill	3.76	0.9995	0.49	<.001
	pit	2.47	0.99994	0.45	0.002
	pond	6.5	1.0002	0.66	<.001
	all 3	3.95	1.00009	0.49	<.001
Cadmium (Cd)	mill	0.704	0.9996	0.86	<.001
	pit	1.06	0.998	0.75	<.001
	pond	0.579	0.9994	0.82	<.001
	all 3	0.739	0.9994	0.8	<.001
Copper (Cu)	mill	3.83	0.9994	0.94	<.001
	pit	4.29	0.999	0.88	<.001
	pond	4.72	0.9997	0.54	<.001
	all 3	4.09	0.9994	0.69	<.001
	m + pit	3.99	0.9993	0.91	<.001
Lead (Pb)	mill	28.89	0.997	0.83	<.001
	pit	20.13	0.997	0.78	<.001
	pond	11.7	0.998	0.29	0.006
	all 3	24.07	0.997	0.82	<.001
	m + pit	28.56	0.997	0.65	<.001
Silver (Ag)	mill	2.58	0.997	0.78	<.001
	pit	0.65	0.998	0.88	<.001
	pond	0.47	0.9994	0.6	<.001
	all 3	1.84	0.997	0.62	<.001
	m + pit	2.55	0.997	0.7	<.001
Magnesium (Mg)	mill	694.56	1.00005	0.84	<.001
	pit	906.93	0.9993	0.85	<.001
	pond	530.24	1.0002	0.91	<.001
	all 3	681.59	0.99992	0.88	<.001
Manganese (Mn)	mill	209.79	1.0004	0.75	<.001
	pit	203.32	0.99995	0.81	<.001
	pond	172.38	1.0008	0.85	<.001
	all 3	186.97	1.0005	0.78	<.001
Nickel (Ni)	mill	0.56	1.0005	0.84	<.001
	pit	0.7	0.9997	0.3	<.001
	pond	0.78	1.00001	0.81	<.001
	all 3	0.65	1.0003	0.53	<.001
	m+pon	0.64	1.0003	0.82	<.001
Uranium (U)	mill	0.037	0.9994	0.7	<.001
	pit	0.029	0.9997	0.67	<.001
	pond	0.034	0.9997	0.68	<.001
	all 3	0.034	0.9996	0.7	<.001
Zinc (Zn)	mill	42.41	0.999997	0.92	<.001
	pit	59.35	0.9993	0.88	<.001
	pond	33.95	1.00007	0.9	<.001
	all 3	43.76	0.9998	0.89	<.001

Lichens Means Summary

Element	Source	Mean	SE	P (mill x pit)	P (mill x pond)	P (pit x pond)
Silver (Ag)	mill	1.23	0.17	0.0001	0.0001	0.38
	pit	0.44	0.05			
	pond	0.42	0.07			
Aluminum (Al)	mill	240.09	12.41	0.03	0.04	0.14
	pit	296.46	25.58			
	pond	384.76	77.21			
Arsenic (As)	mill	13.72	1.81	0.014	0.047	0.46
	pit	8.72	1.21			
	pond	8.42	2.48			
Boron (B)	mill	3.04	0.59	0.16	0.003	0.0007
	pit	2.24	0.52			
	pond	7.35	1.28			
Barium (Ba)	mill	11.08	0.58	0.1	0.07	0.33
	pit	12.48	0.87			
	pond	13.12	1.17			
Calcium (Ca)	mill	2309.55	116.28	0.07	0.002	0.06
	pit	2057.14	125.02			
	pond	1772.94	130.6			
Cadmium (Cd)	mill	0.64	0.06	0.36	0.05	0.045
	pit	0.67	0.08			
	pond	0.5	0.06			
Cobalt (Co)	mill	0.209	0.01	0.014	0.015	0.13
	pit	0.262	0.02			
	pond	0.318	0.04			
Chromium (Cr)	mill	0.59	0.05	0.12	0.007	0.02
	pit	0.68	0.05			
	pond	1.01	0.15			
Copper (Cu)	mill	3.17	0.19	0.21	0.06	0.04
	pit	2.91	0.25			
	pond	4.75	0.96			
Mercury (Hg)	mill	0.015	0.002	0.34	0.09	0.045
	pit	0.014	0.002			
	pond	0.02	0.003			
Potassium (K)	mill	2716.36	174.84	0.31	0.14	0.27
	pit	2595.71	158.53			
	pond	2449.41	167.57			
Magnesium (Mg)	mill	704.59	48.97	0.39	0.09	0.21
	pit	681.81	66.73			
	pond	617.59	40.88			
Manganese (Mn)	mill	237.27	33.94	0.18	0.42	0.09
	pit	201.11	19.14			
	pond	245.59	26.52			

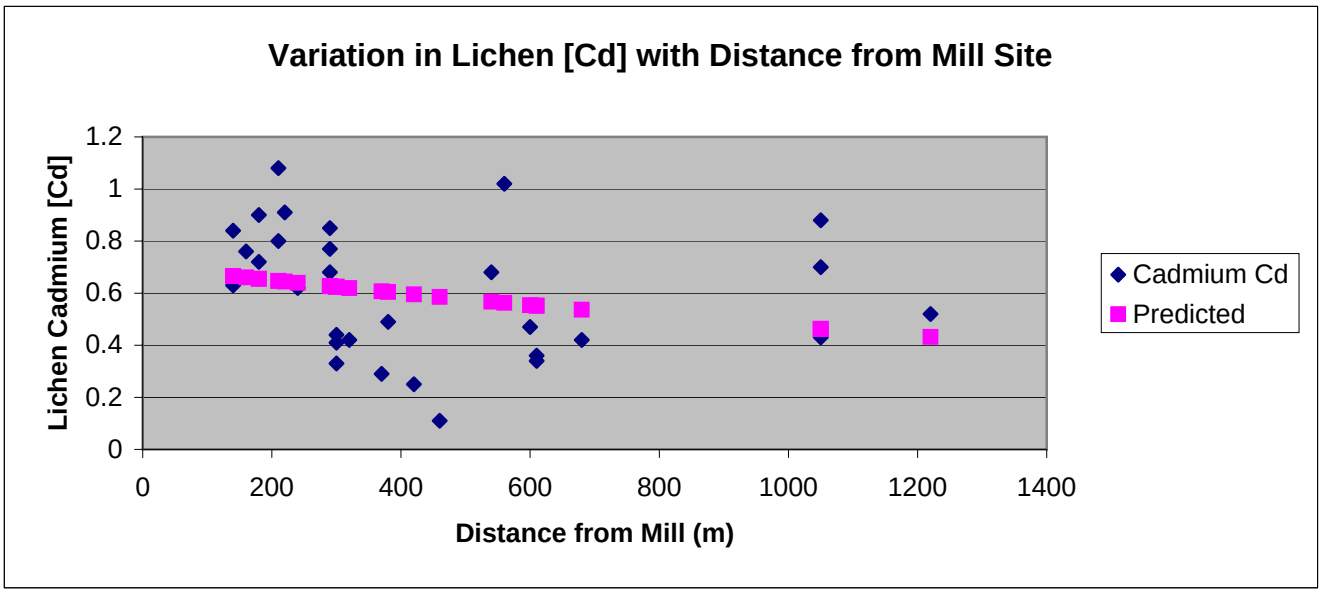
Pairwise T-tests completed for lichen values within 400 m of each potential source of contamination. Highlighted values are 95% significant.

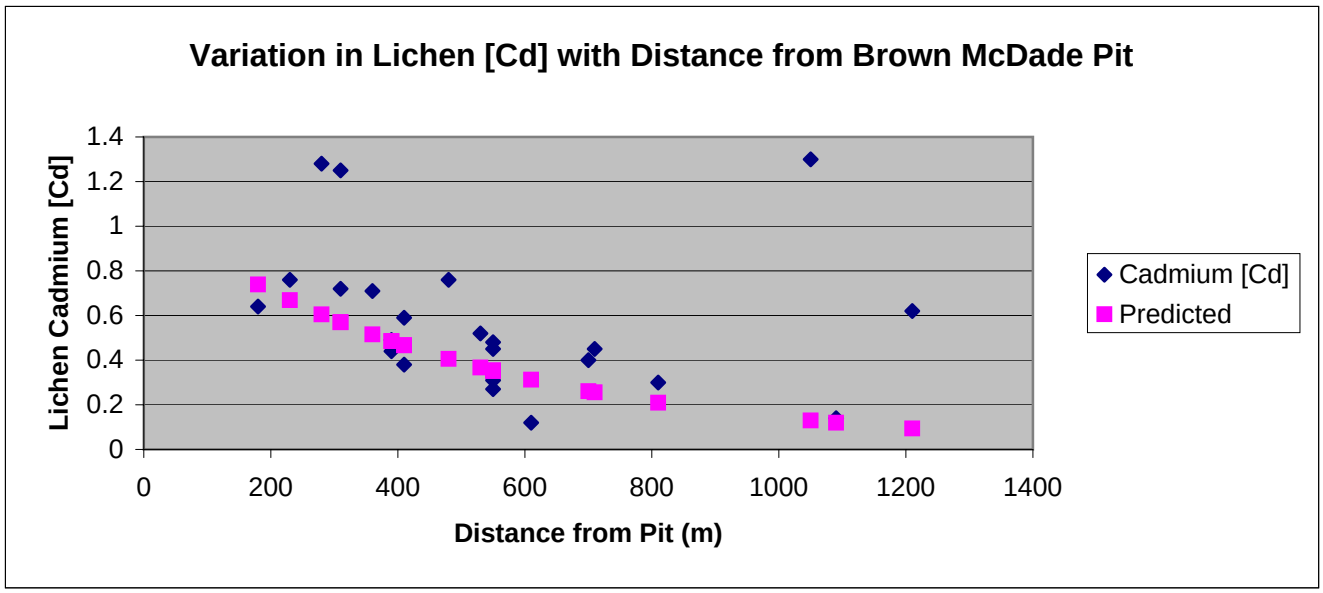
Lichens Means Summary (continued)

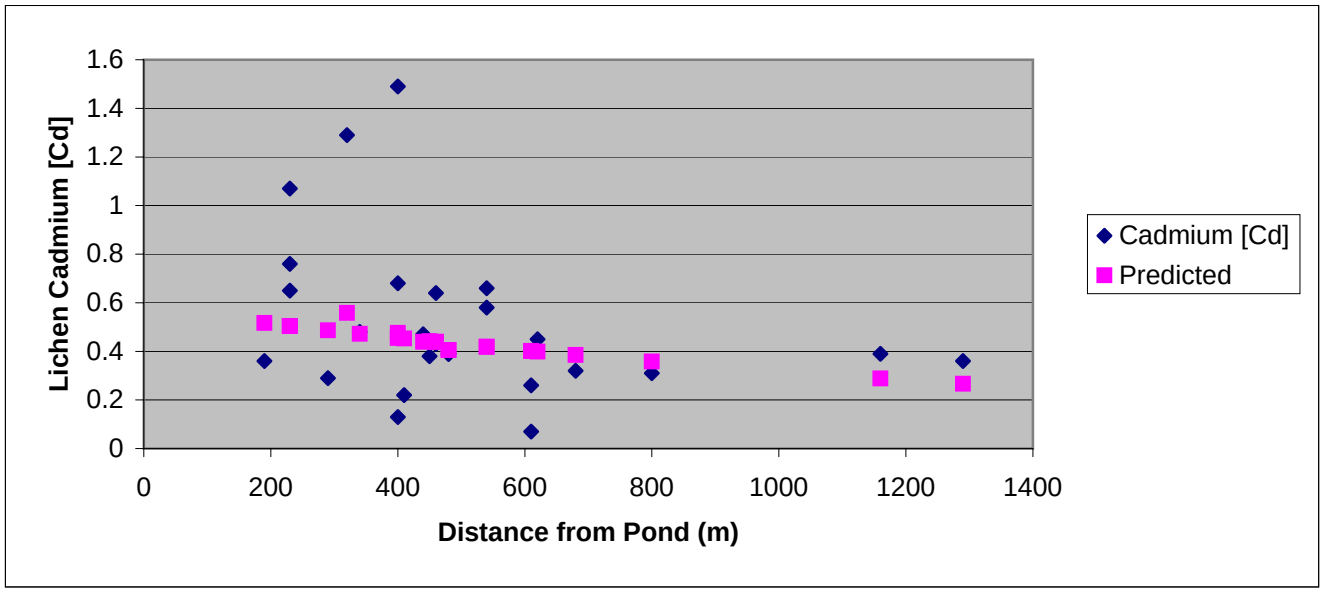
Element	Source	Mean	SE	P (mill x pit)	P (mill x pond)	P (pit x pond)
Molybdenum (Mo)	mill	0.61	0.09	0.004	0.16	0.0005
	pit	0.29	0.08			
	pond	0.74	0.1			
Sodium (Na)	mill	36.36	4.26	0.035	0.25	0.027
	pit	26.52	3.09			
	pond	41.88	6.91			
Nickel (Na)	mill	0.6	0.03	0.31	0.01	0.02
	pit	0.63	0.05			
	pond	0.86	0.1			
P4	mill	2684.14	268.28	0.3	0.11	0.02
	pit	2853.81	189.93			
	pond	2304.71	154.01			
Lead (Pb)	mill	12.01	1.52	0.003	0.048	0.55
	pit	6.8	0.92			
	pond	7.15	2.38			
Antimony (Sb)	mill	1.63	0.19	0.0003	0.025	0.27
	pit	0.79	0.11			
	pond	0.96	0.26			
SiO2	mill	462.55	44.03	0.43	0.4	0.46
	pit	472.52	29.83			
	pond	476.88	31.7			
Tin (Sn)	mill	0.27	0.06	0.34	0.38	0.37
	pit	0.35	0.19			
	pond	0.29	0.05			
Strontium (Sr)	mill	6.48	0.46	0.41	0.03	0.04
	pit	6.65	0.62			
	pond	5.22	0.46			
Tellurium (Te)	mill	0.25	0.03	0.009	0.08	0.0007
	pit	0.16	0.03			
	pond	0.33	0.04			
Titanium (Ti)	mill	13.11	0.66	0.14	0.01	0.02
	pit	14.35	1.42			
	pond	27.62	5.95			
Uranium (U)	mill	0.03	0.004	0.24	0.37	0.17
	pit	0.026	0.004			
	pond	0.032	0.006			
Vanadium (V)	mill	1.15	0.05	0.07	0.027	0.086
	pit	1.33	0.1			
	pond	1.76	0.29			
Zinc (Zn)	mill	43.14	2.72	0.32	0.03	0.02
	pit	45.39	3.83			
	pond	35.48	2.9			

Pairwise T-tests completed for lichen values within 400 m of each potential source of contamination. Highlighted values are 95% significant.

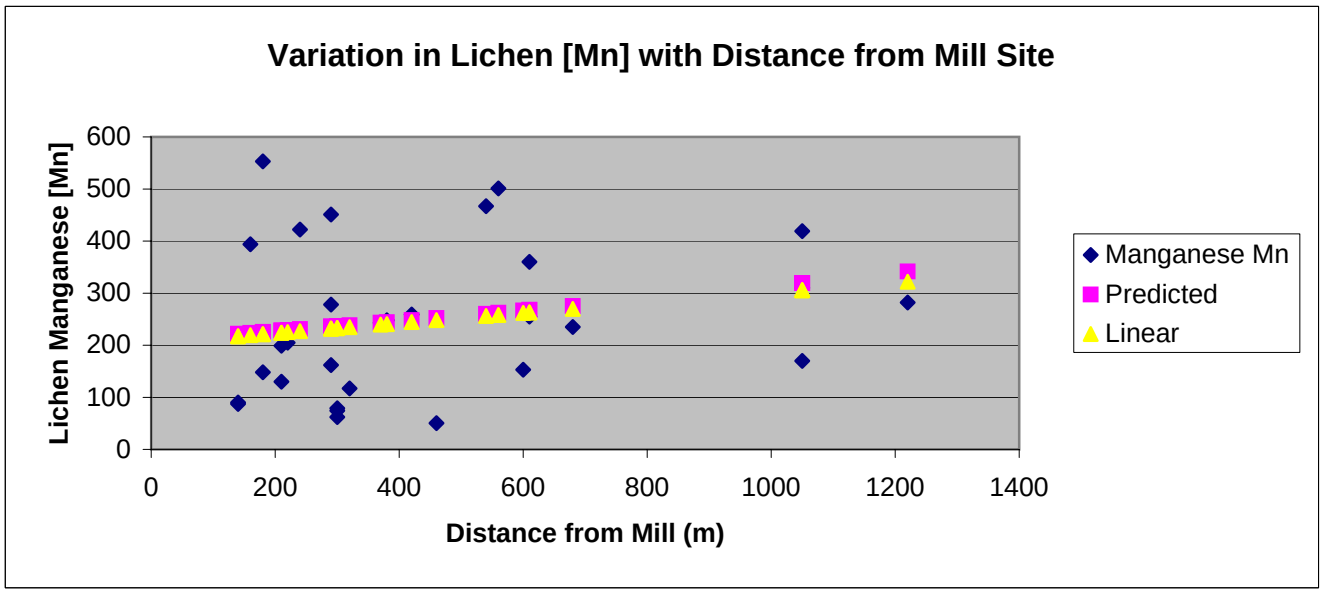
Non-linear Regressions

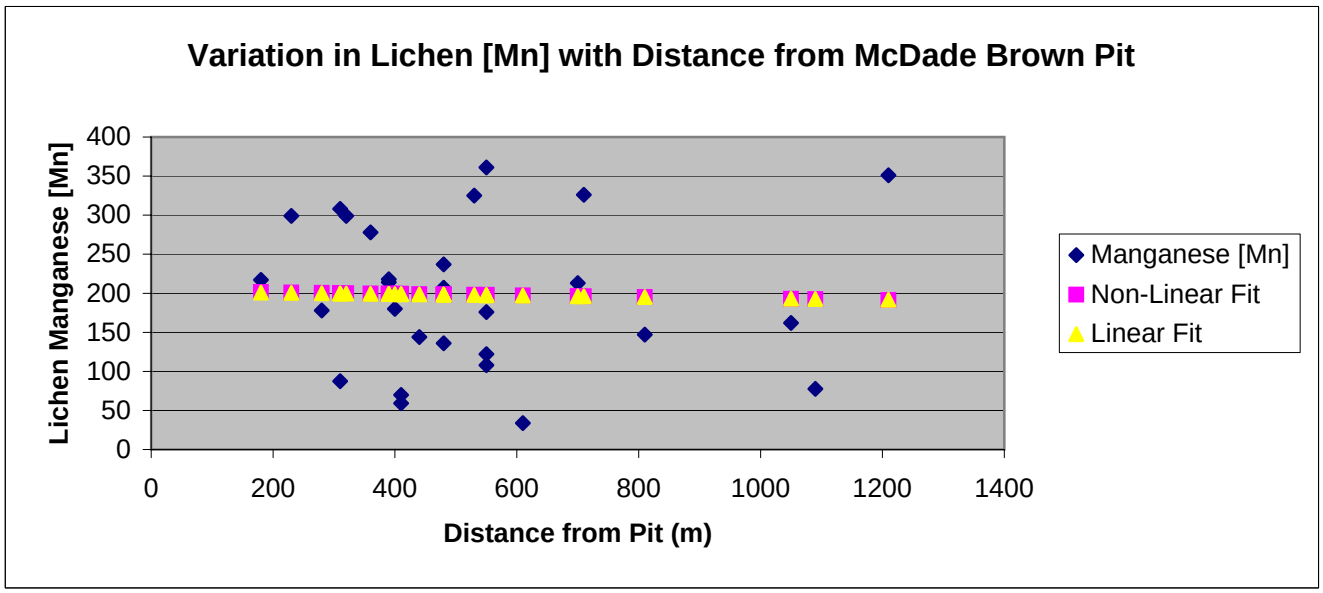


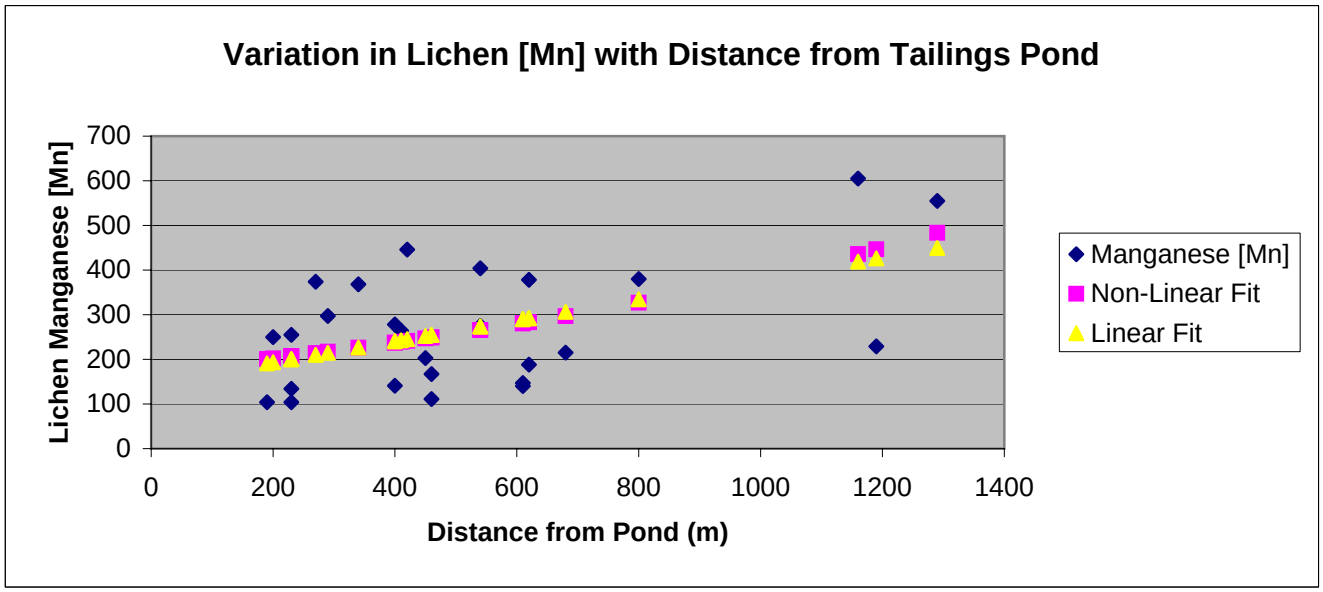




Linear & Non-linear Regressions







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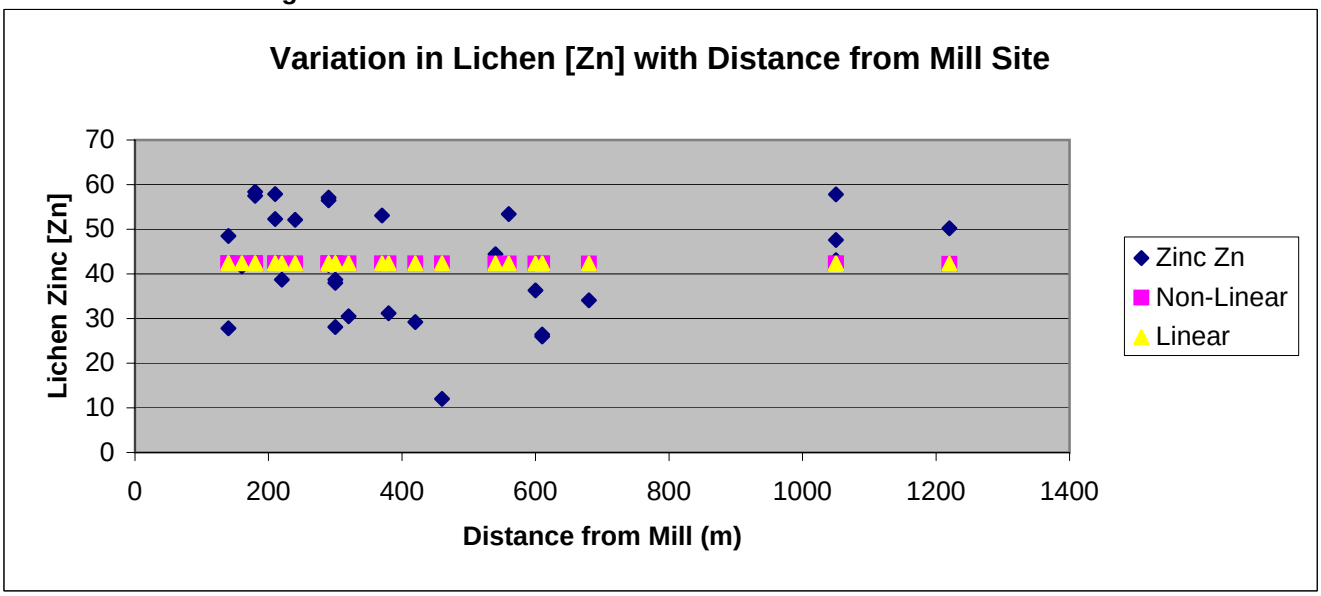

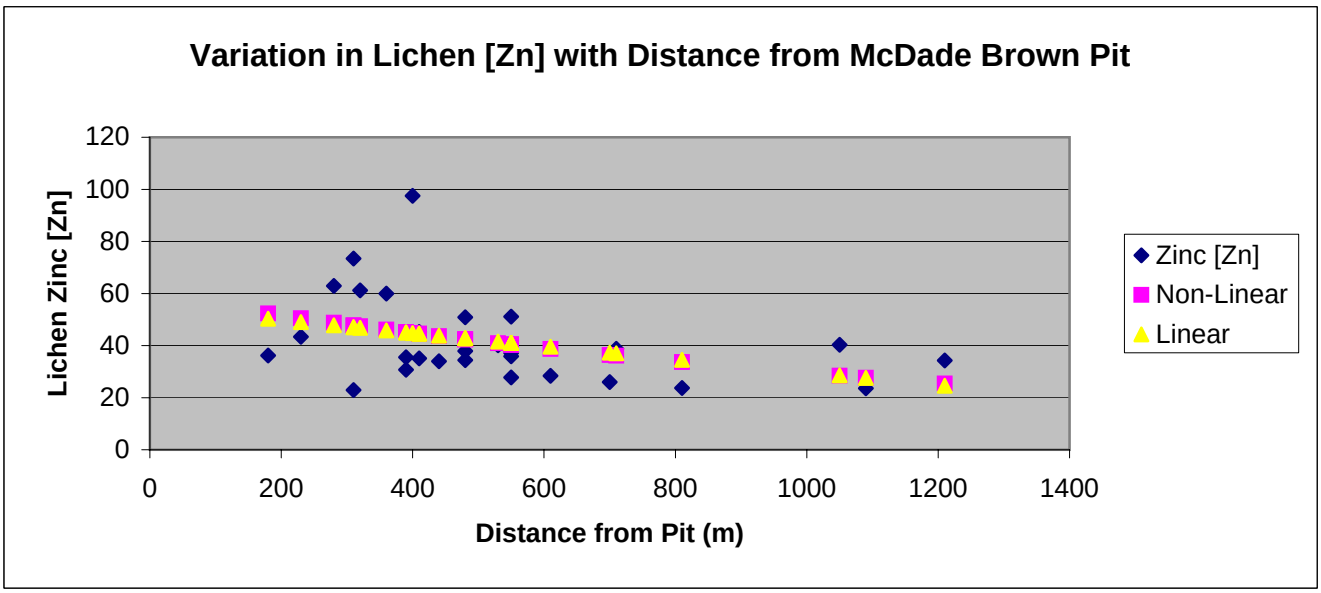

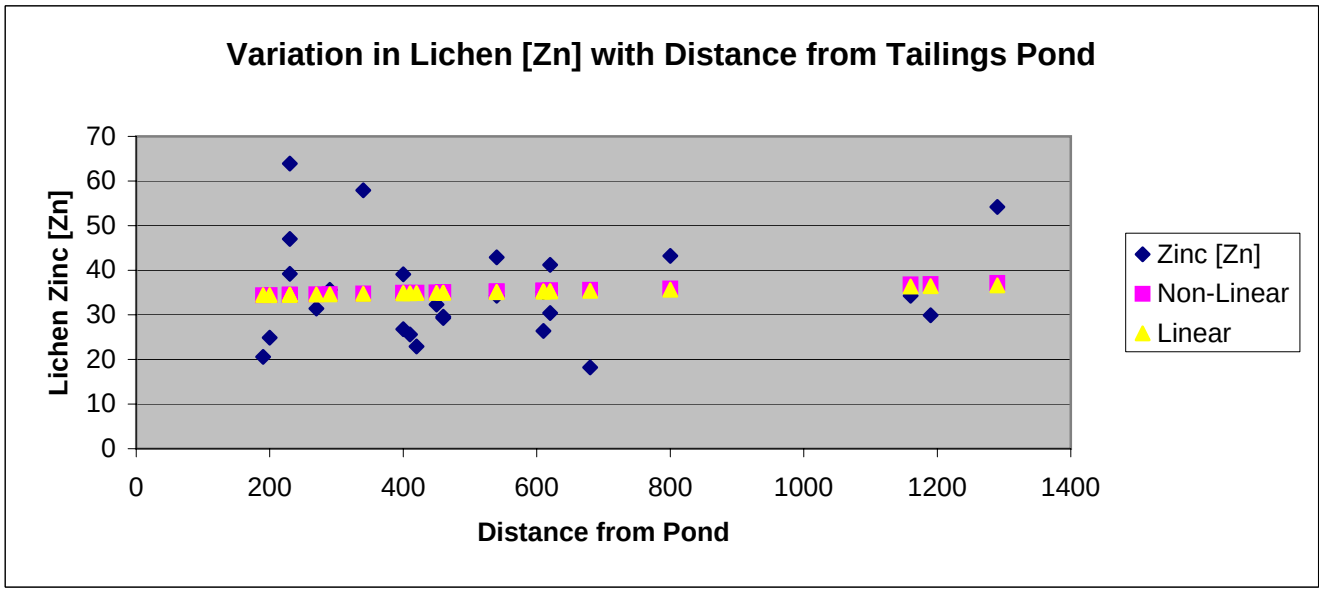

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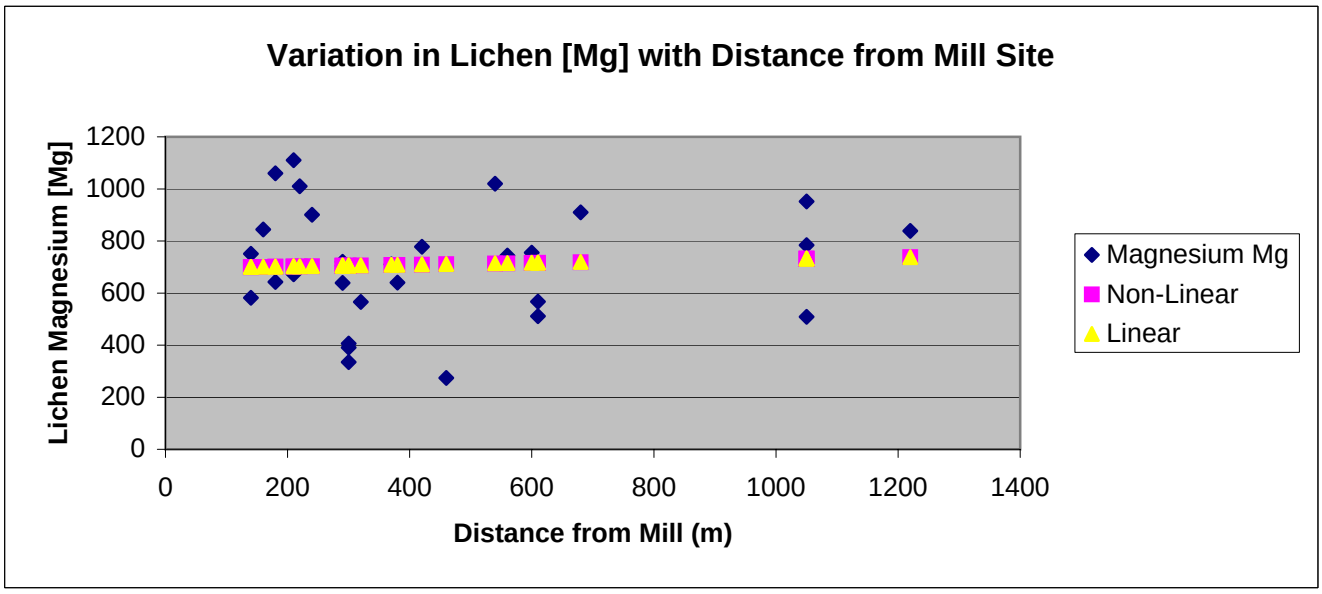
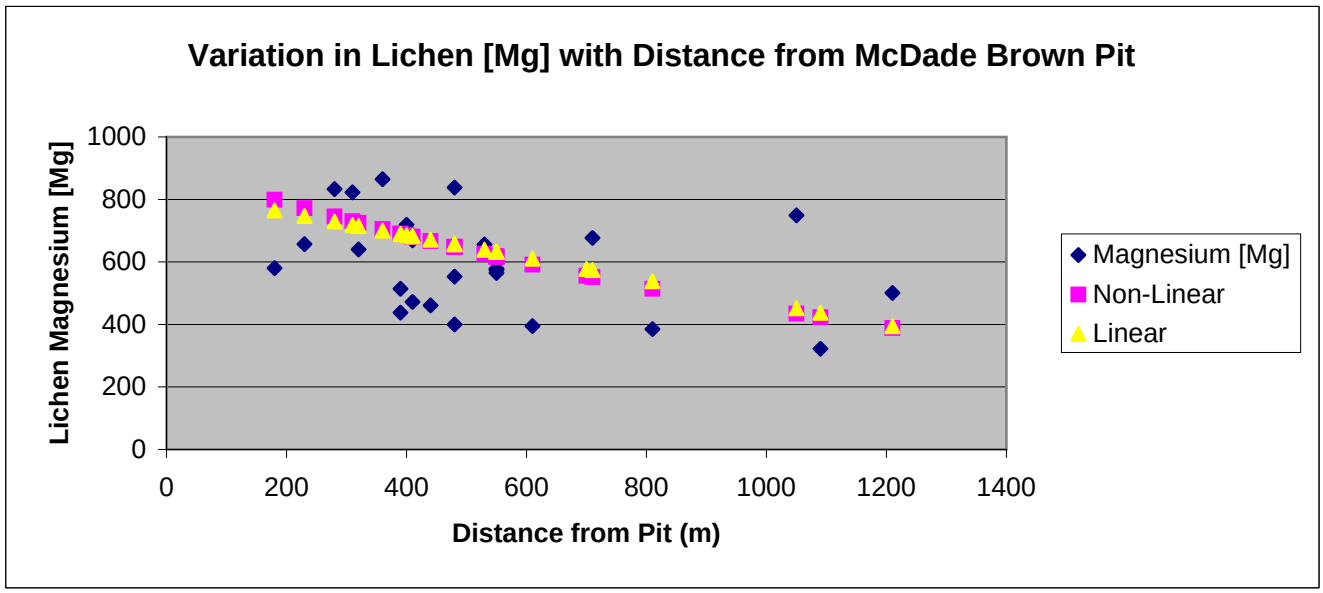
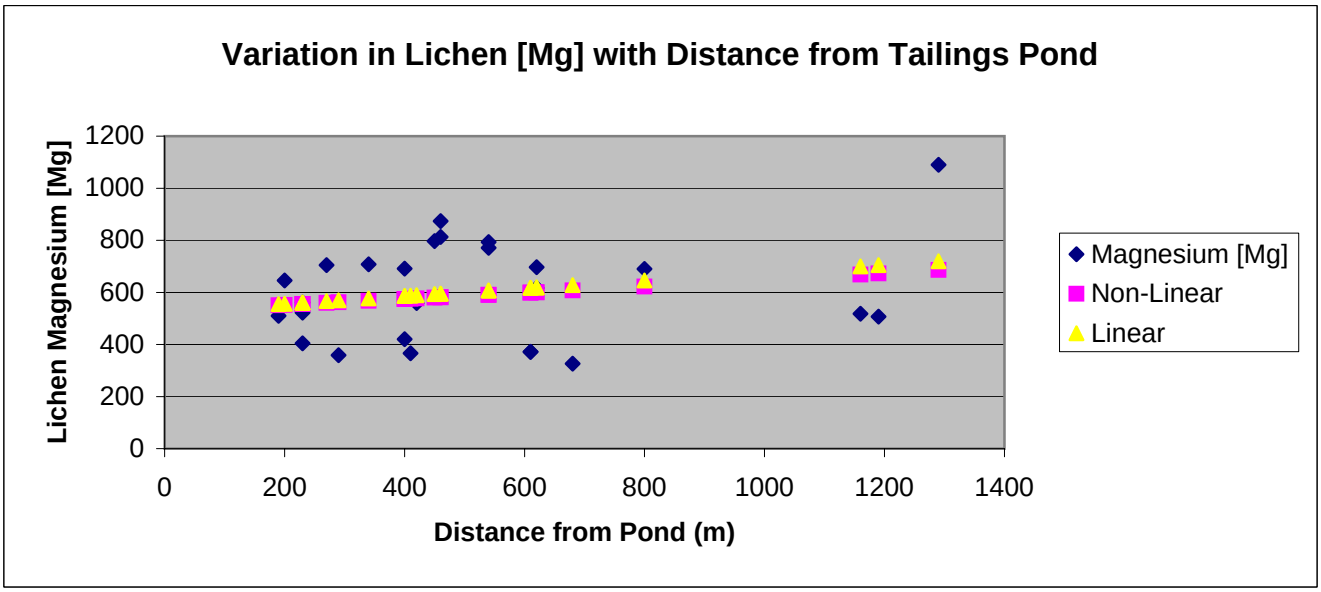
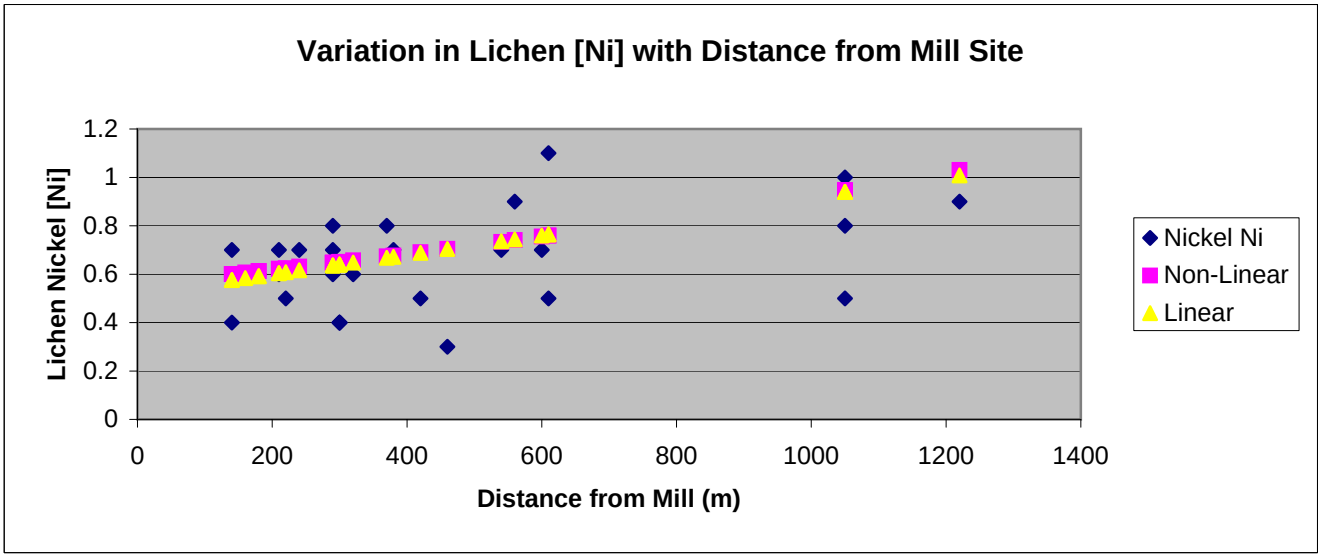
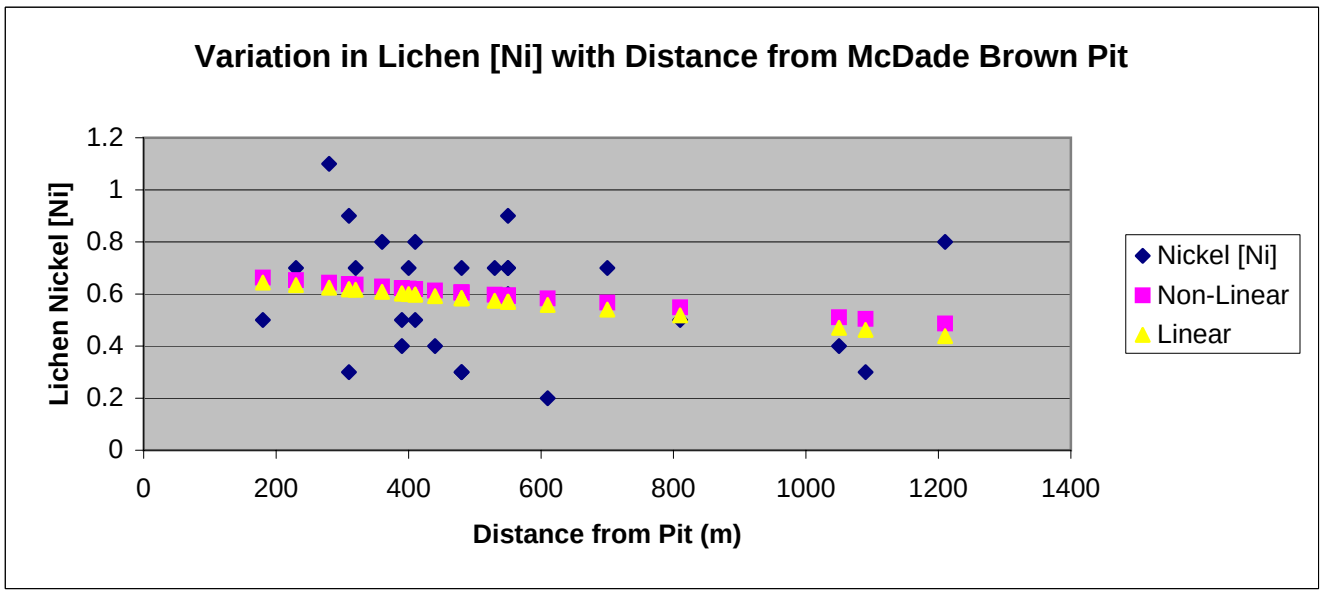


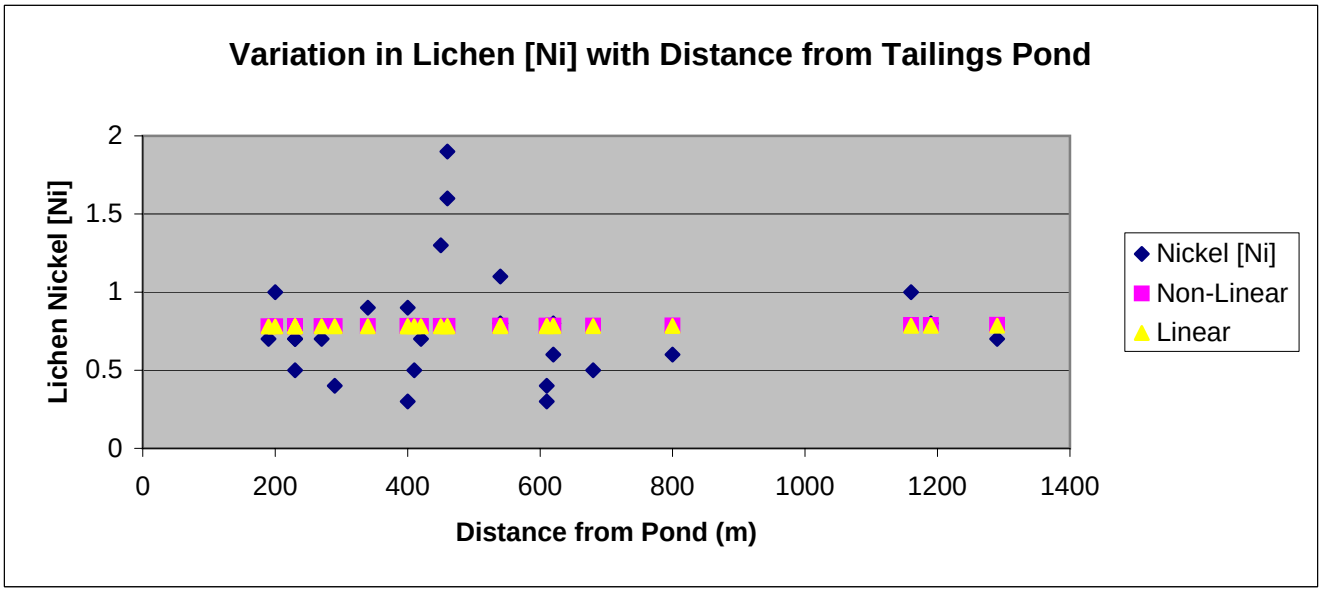




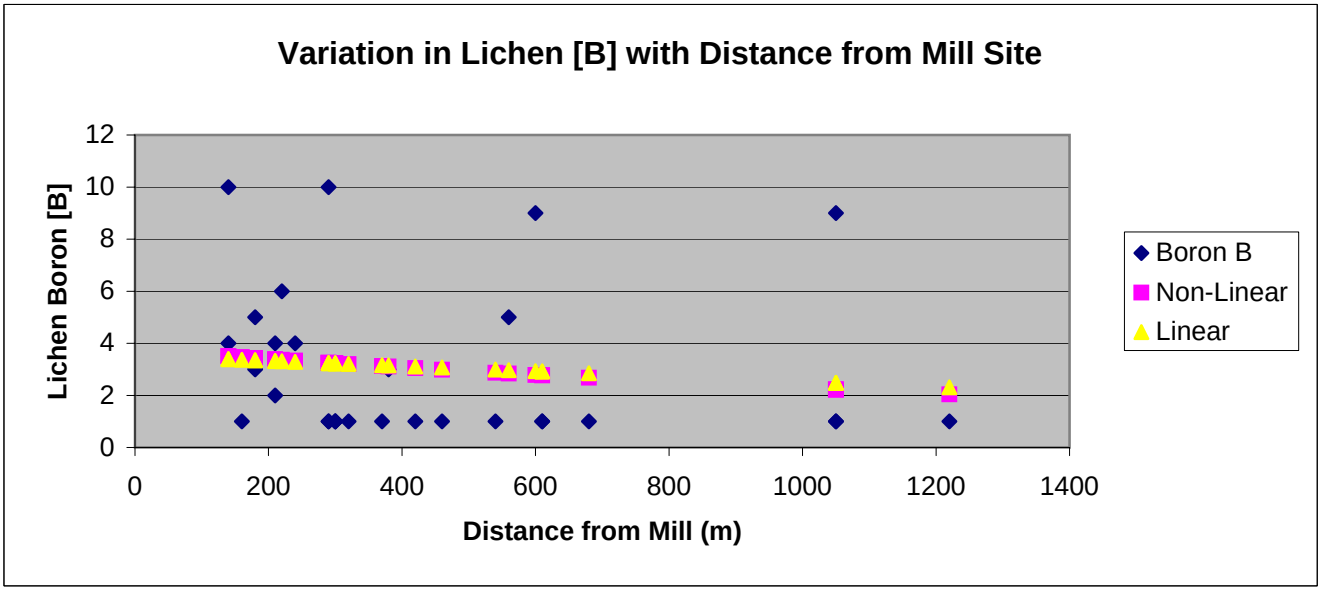
Linear & Non-linear Regressions

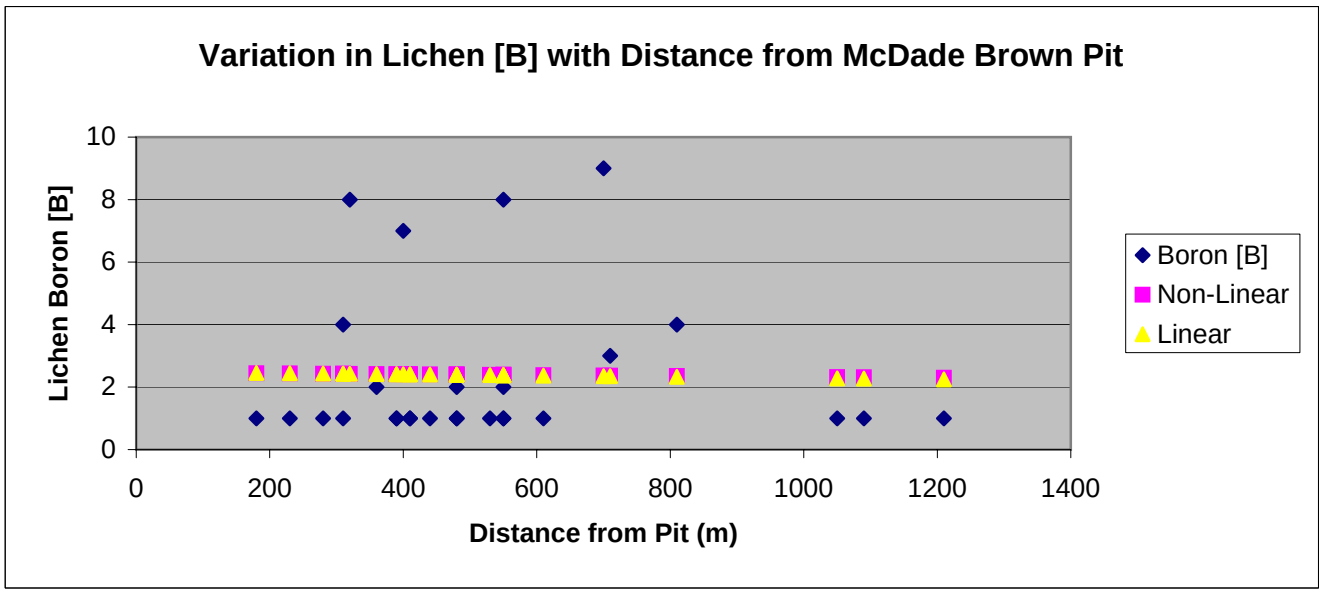


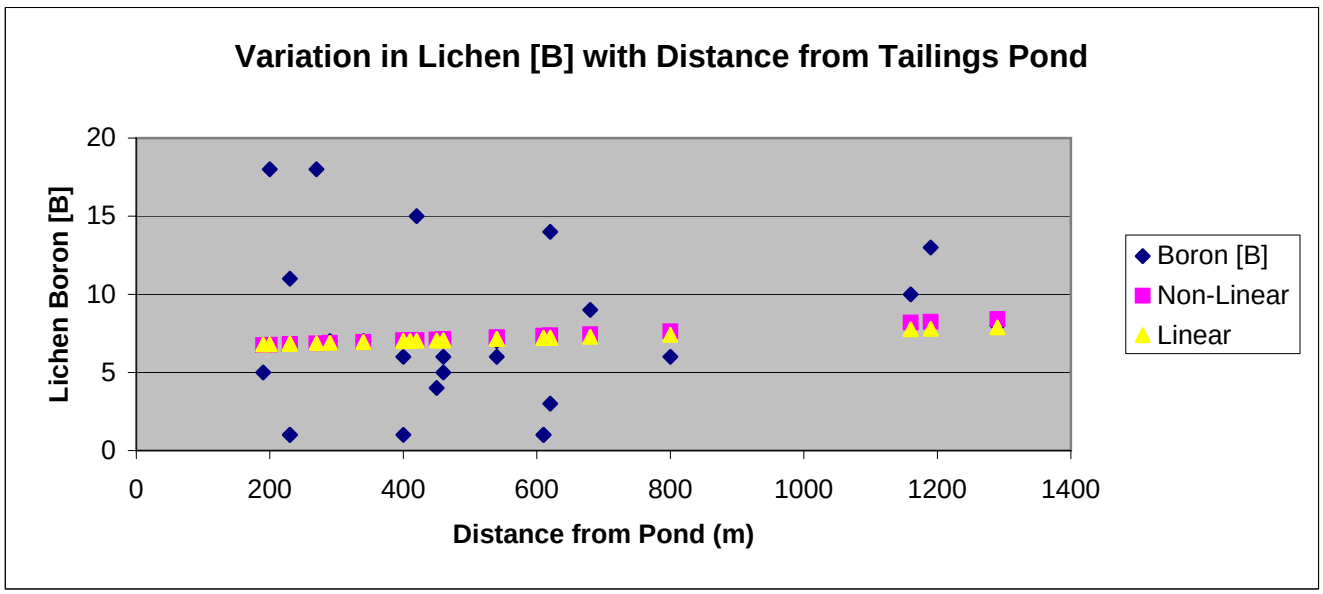




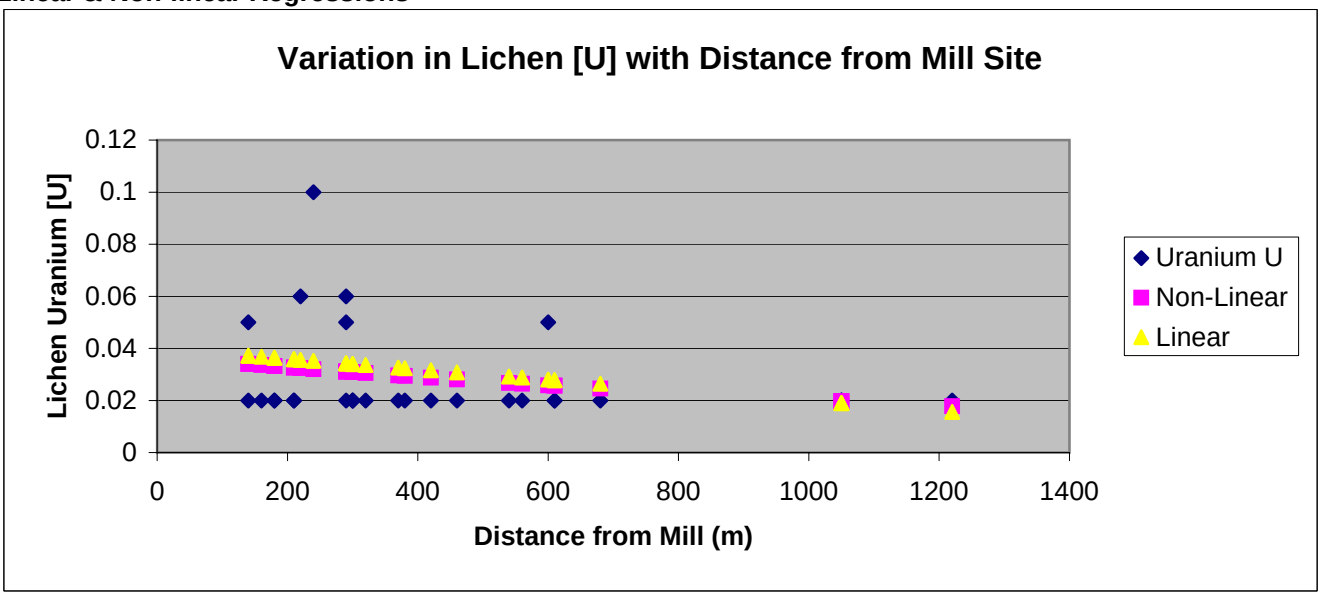
Linear & Non-linear Regressions

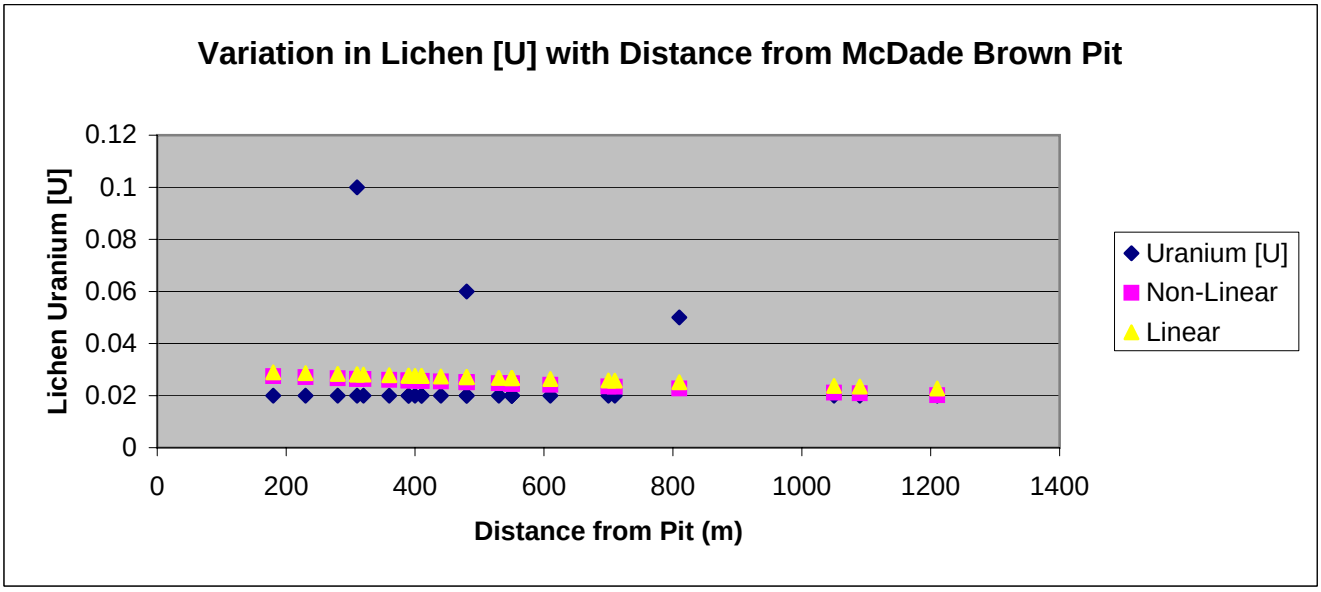


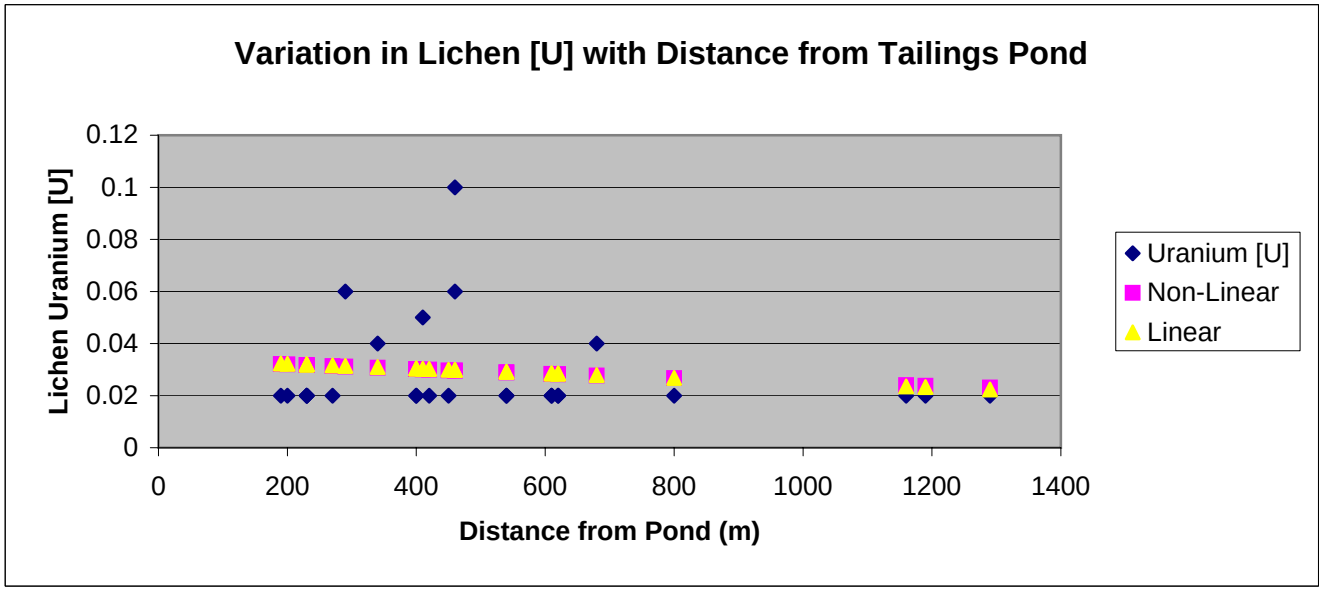




Linear & Non-linear Regressions







Plant Data Statistical Analysis

Antimony (Sb) - Labrador Tea

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Mill	0.061111111	0.000486111	9	8	1.511857892	0.084510102	1.859548033	0.169020203	2.306004133	Fail
Control	0.05	0	5							
Mill	0.061111111	0.000486111	9	8	1.511857892	0.084510102	1.859548033	0.169020203	2.306004133	Fail
Transects	0.05	5.06824E-35	20							
Pond	0.133333333	0.020833333	3	2	1	0.211324865	2.91998558	0.422649731	4.30265273	Fail
Control	0.05	0	5							
Pond	0.133333333	0.020833333	3	2	1	0.211324865	2.91998558	0.422649731	4.30265273	Fail
Transects	0.05	5.06824E-35	20							
Riparian	0.23125	0.223526786	8	7	1.084321882	0.157074797	1.894578604	0.314149594	2.364624251	Fail
Control	0.05	0	5							
Riparian	0.23125	0.223526786	8	7	1.084321882	0.157074797	1.894578604	0.314149594	2.364624251	Fail
Transects	0.05	5.06824E-35	20							

Antimony (Sb) - Willow

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Contam	0.325	0.1075	4	3	1.677484274	0.096020393	2.353363435	0.192040786	3.182446305	Fail
Control	0.05	0	5							
Contam	0.325	0.1075	4	4	1.10452403	0.165667697	2.131846782	0.331335394	2.776445105	Fail
Transects	0.134375	0.046572917	16							
Mill	0.095	0.00525	10	9	1.963961012	0.040563094	1.833112923	0.081126188	2.262157158	Pass
Control	0.05	0	5							
Mill	0.095	0.00525	10	20	-0.671747669	0.254715066	1.724718218	0.509430131	2.085963441	Fail
Transects	0.134375	0.046572917	16							
Pit	0.066666667	0.000833333	3	2	1	0.211324865	2.91998558	0.422649731	4.30265273	Fail
Control	0.05	0	5							
Pit	0.066666667	0.000833333	3	17	-1.199066085	0.123474721	1.739606716	0.246949443	2.109815559	Fail
Transects	0.134375	0.046572917	16							
Pond	0.25	0.0925	3	2	1.138989595	0.186374976	2.91998558	0.372749952	4.30265273	Fail
Control	0.05	0	5							
Pond	0.25	0.0925	3	2	0.629437422	0.296688565	2.91998558	0.593377131	4.30265273	Fail
Transects	0.134375	0.046572917	16							
Riparian	0.055	0.00025	10	9	1	0.171718198	1.833112923	0.343436396	2.262157158	Fail
Control	0.05	0	5							
Riparian	0.055	0.00025	10	15	-1.464940433	0.081790923	1.753050325	0.163581846	2.131449536	Fail
Transects	0.134375	0.046572917	16							

Sites surrounding the sources of contamination were grouped using [Sb] > 1.2 ppm in lichens. The sites potentially used were as follows for each source of contamination:

Mill = G1, G2, H1, H2, H3, I1, I2, J1, J2, K3, L1, L2 Pit = P1, P2, O2

Pond = B1, C1, C2

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test. In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Plant Data Statistical Analysis (continued)

Arsenic (As) - Labrador Tea

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Mill	0.522222222	0.079444444	9	8	4.892086752	0.000602886	1.859548033	0.001205772	2.306004133	Pass
Control	0.06	0.0005	5							
Mill	0.522222222	0.079444444	9	15	3.015643352	0.004345677	1.753050325	0.008691354	2.131449536	Pass
Transects	0.182142857	0.054464286	14							
Pit	0.414285714	0.204761905	7	6	2.067935581	0.042063714	1.943180274	0.084127428	2.446911846	Fail
Control	0.06	0.0005	5							
Pit	0.414285714	0.204761905	7	8	1.27516365	0.119017189	1.859548033	0.238034377	2.306004133	Fail
Transects	0.182142857	0.054464286	14							
Pond	1.35	3.443333333	4	3	1.390288559	0.129316663	2.353363435	0.258633326	3.182446305	Fail
Control	0.06	0.0005	5							
Pond	1.35	3.443333333	4	3	1.255888418	0.149032009	2.353363435	0.298064017	3.182446305	Fail
Transects	0.182142857	0.054464286	14							
Riparian	2.325	17.21642857	8	7	1.543944118	0.083256667	1.894578604	0.166513334	2.364624251	Fail
Control	0.06	0.0005	5							
Riparian	2.325	17.21642857	8	7	1.459400509	0.0939122	1.894578604	0.1878244	2.364624251	Fail
Transects	0.182142857	0.054464286	14							

Arsenic (As) - Willow

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Contam	3.85	11.50333333	4	3	2.217167162	0.056670908	2.353363435	0.113341816	3.182446305	Fail
Control	0.09	0.0005	5							
Contam	3.85	11.50333333	4	3	2.181283058	0.058603953	2.353363435	0.117207905	3.182446305	Fail
Transects	0.15	0.01	7							
Mill	1.135714286	0.630164835	14	13	4.923433637	0.000139128	1.770933383	0.000278255	2.160368652	Pass
Control	0.09	0.0005	5							
Mill	1.135714286	0.630164835	14	14	4.574075516	0.000216669	1.761310115	0.000433337	2.144786681	Pass
Transects	0.15	0.01	7							
Pit	1.25625	1.562455357	8	7	2.638284873	0.016753425	1.894578604	0.03350685	2.364624251	Pass
Control	0.09	0.0005	5							
Pit	1.25625	1.562455357	8	7	2.494088885	0.020674178	1.894578604	0.041348356	2.364624251	Pass
Transects	0.15	0.01	7							
Pond	2.2	4.89	3	2	1.652628856	0.12010769	2.91998558	0.24021538	4.30265273	Fail
Control	0.09	0.0005	5							
Pond	2.2	4.89	3	2	1.604980755	0.124855511	2.91998558	0.249711021	4.30265273	Fail
Transects	0.15	0.01	7							
Riparian	0.435	0.071138889	10	9	4.061948105	0.001416827	1.833112923	0.002833653	2.262157158	Pass
Control	0.09	0.0005	5							
Riparian	0.435	0.071138889	10	12	3.083566899	0.004737455	1.782287548	0.009474911	2.178812827	Pass
Transects	0.15	0.01	7							

Sites surrounding the sources of contamination were grouped using [As] > 8.0 ppm in lichens. The sites potentially used were as follows for each source of contamination:

Mill = G1, G2, H1, H2, H3, I1, I2, J1, J2, K1, K3, L1, L2

Pit = P1, P2, P3, R1, R2, R3 Pond = B1, C1, C2

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test. In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Plant Data Statistical Analysis (continued)

Copper (Cu) - Labrador Tea

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Mill	3.68	0.667	5	6	1.162803799	0.144530742	1.943180274	0.289061484	2.446911846	Fail
Control	3.2	0.185	5							
Mill	3.68	0.667	5	5	0.811494825	0.226981663	2.015048372	0.453963327	2.570581835	Fail
Transects	3.369565217	0.297667984	23							
Pit	3.1	0.01	3	5	-0.497929598	0.31982876	2.015048372	0.639657521	2.570581835	Fail
Control	3.2	0.185	5							
Pit	3.1	0.01	3	20	-2.112991531	0.023684478	1.724718218	0.047368956	2.085963441	Fail
Transects	3.369565217	0.297667984	23							
Pond	3.533333333	0.143333333	3	5	1.144821379	0.152054439	2.015048372	0.304108878	2.570581835	Fail
Control	3.2	0.185	5							
Pond	3.533333333	0.143333333	3	3	0.664605541	0.276912298	2.353363435	0.553824596	3.182446305	Fail
Transects	3.369565217	0.297667984	23							
Riparian	3.675	0.819285714	8	11	1.272171123	0.114773864	1.795884814	0.229547728	2.200985159	Fail
Control	3.2	0.185	5							
Riparian	3.675	0.819285714	8	9	0.899299643	0.195959342	1.833112923	0.391918685	2.262157158	Fail
Transects	3.369565217	0.297667984	23							

Copper (Cu) - Willow

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Contam	7	8.46	4	3	2.235554824	0.055710108	2.353363435	0.111420217	3.182446305	Fail
Control	3.7	0.32	5							
Contam	7	8.46	4	3	2.287466584	0.053101682	2.353363435	0.106203365	3.182446305	Fail
Transects	3.621052632	1.272865497	19							
Mill	4.116666667	0.469666667	6	9	1.104638617	0.148985823	1.833112923	0.297971645	2.262157158	Fail
Control	3.7	0.32	5							
Mill	4.116666667	0.469666667	6	14	1.300332999	0.107243295	1.761310115	0.21448659	2.144786681	Fail
Transects	3.621052632	1.272865497	19							
Pit	3.8	0.07	3	6	0.338384126	0.373300337	1.943180274	0.746600674	2.446911846	Fail
Control	3.7	0.32	5							
Pit	3.8	0.07	3	16	0.595413004	0.279947874	1.745883669	0.559895749	2.119905285	Fail
Transects	3.621052632	1.272865497	19							
Pond	4.866666667	0.363333333	3	4	2.711630723	0.026723539	2.131846782	0.053447079	2.776445105	Fail
Control	3.7	0.32	5							
Pond	4.866666667	0.363333333	3	5	2.872000034	0.017456445	2.015048372	0.03491289	2.570581835	Pass
Transects	3.621052632	1.272865497	19							
Riparian	3.97	0.633444444	10	11	0.756612937	0.232589279	1.795884814	0.465178558	2.200985159	Fail
Control	3.7	0.32	5							
Riparian	3.97	0.633444444	10	24	0.966552522	0.171703705	1.710882067	0.343407409	2.063898547	Fail
Transects	3.621052632	1.272865497	19							

Sites surrounding the sources of contamination were grouped using [Cu] > 3.8 ppm in lichens. The sites potentially used were as follows for each source of contamination:

Mill = G1, G2, H1, H2, I2, L1, L2

Pit = O1, P1, P2, P3, R2 Pond = B1, C1, C2, C3

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test. In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Plant Data Statistical Analysis (continued)

Lead (Pb) - Labrador Tea

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Mill	0.375	0.073571429	8	7	3.389017098	0.005807491	1.894578604	0.011614982	2.364624251	Pass
Control	0.05	0	5							
Mill	0.375	0.073571429	8	9	2.347833544	0.021729523	1.833112923	0.043459047	2.262157158	Pass
Transects	0.135294118	0.020863971	17							
Pit	0.125	0.0075	4	3	1.732050808	0.090845057	2.353363435	0.181690114	3.182446305	Fail
Control	0.05	0	5							
Pit	0.125	0.0075	4	8	-0.184819488	0.42898502	1.859548033	0.85797004	2.306004133	Fail
Transects	0.135294118	0.020863971	17							
Pond	1.05	2.4175	5	4	1.43814197	0.111889144	2.131846782	0.223778287	2.776445105	Fail
Control	0.05	0	5							
Pond	1.05	2.4175	5	4	1.313810521	0.129596755	2.131846782	0.25919351	2.776445105	Fail
Transects	0.135294118	0.020863971	17							
Riparian	1.05625	2.871026786	8	7	1.679702098	0.06845317	1.894578604	0.13690634	2.364624251	Fail
Control	0.05	0	5							
Riparian	1.05625	2.871026786	8	7	1.534701311	0.084365282	1.894578604	0.168730564	2.364624251	Fail
Transects	0.135294118	0.020863971	17							

Lead (Pb) - Willow

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Contam	3.525	9.4425	4	3	2.189860158	0.058134803	2.353363435	0.116269607	3.182446305	Fail
Control	0.16	0.003	5							
Contam	3.525	9.4425	4	3	2.190152708	0.058118881	2.353363435	0.116237762	3.182446305	Fail
Transects	0.157142857	0.027857143	7							
Mill	0.692857143	0.237637363	14	14	4.019520779	0.000633321	1.761310115	0.001266642	2.144786681	Pass
Control	0.16	0.003	5							
Mill	0.692857143	0.237637363	14	18	3.70086275	0.000817757	1.734063592	0.001635514	2.100922037	Pass
Transects	0.157142857	0.027857143	7							
Pit	0.64375	0.311026786	8	7	2.434677775	0.022554914	1.894578604	0.045109827	2.364624251	Pass
Control	0.16	0.003	5							
Pit	0.64375	0.311026786	8	8	2.35051395	0.02332191	1.859548033	0.04664382	2.306004133	Pass
Transects	0.157142857	0.027857143	7							
Pond	2.433333333	9.103333333	3	2	1.304910099	0.160932601	2.91998558	0.321865202	4.30265273	Fail
Control	0.16	0.003	5							
Pond	2.433333333	9.103333333	3	2	1.305823291	0.160804498	2.91998558	0.321608997	4.30265273	Fail
Transects	0.157142857	0.027857143	7							
Riparian	0.14	0.023222222	10	12	-0.21594861	0.416327486	1.782287548	0.832654972	2.178812827	Fail
Transects	0.157142857	0.027857143	7							
Riparian	0.14	0.023222222	10	12	-0.36997585	0.358923838	1.782287548	0.717847677	2.178812827	Fail
Control	0.16	0.003	5							

Sites surrounding the sources of contamination were grouped using [Pb] > 9.3 ppm in lichens. The sites potentially used were as follows for each source of contamination:

Mill = G1, G2, H1, H2, H3, I1, I2, J1, J2, K3, L1, L2

Pit = O1, P1, P2, P3, R2 Pond = B1, C1, C2

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test. In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Plant Data Statistical Analysis (continued)

Silver (Ag) - Labrador Tea

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Mill	0.009091	3.41E-05	11	14	1.526645067	0.074560553	1.761310115	0.149121106	2.144786681	Fail
Control	0.006	0.000005	5							
Mill	0.009091	3.41E-05	11	32	0.206822992	0.418729265	1.693888703	0.837458531	2.036933334	Fail
Transects	0.008478	0.000131	23							
Riparian	0.0275	0.002471	8	7	1.22125865	0.130759935	1.894578604	0.261519869	2.364624251	Fail
Control	0.006	0.000005	5							
Riparian	0.0275	0.002471	8	7	1.072427987	0.159551034	1.894578604	0.319102067	2.364624251	Fail
Transects	0.008478	0.000131	23							

Silver (Ag) - Willow

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Contam	0.05	0.001667	4	3	2.102779576	0.063115407	2.353363435	0.126230815	3.182446305	Fail
Control	0.007	7.5E-06	5							
Contam	0.05	0.001667	4	3	1.384141467	0.130155218	2.353363435	0.260310437	3.182446305	Fail
Transects	0.02075	0.000598	20							
Mill	0.0225	0.000398	12	12	2.63340747	0.010918951	1.782287548	0.021837901	2.178812827	Pass
Control	0.007	7.5E-06	5							
Mill	0.0225	0.000398	12	27	0.22039438	0.413611024	1.703288423	0.827222047	2.051830493	Fail
Transects	0.02075	0.000598	20							
Riparian	0.012	0.000112	10	11	1.401807941	0.094276965	1.795884814	0.188553931	2.200985159	Fail
Control	0.007	7.5E-06	5							
Riparian	0.012	0.000112	10	28	-1.364411742	0.091652281	1.701130908	0.183304562	2.048407115	Fail
Transects	0.02075	0.000598	20							

Sites surrounding the sources of contamination were grouped using [Ag] > 0.78 ppm in lichens. The sites potentially used were as follows for each source of contam

Mill = G1, G2, H1, H2, H3, I1, I2, J1, J2, K1, K2, K3, L1, L2

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test. In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Fish Data Statistical Analysis

Arsenic (As) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	1.4875	0.152679	8	9	4.397054491	0.000863877	1.833112923	0.001727753	2.262157158	Pass
Control (V1)	0.84	0.013	5							
Influence (V3-V4)	1.4875	0.152679	8	8	8.379143553	1.56E-05	1.859548033	3.12E-05	2.306004133	Pass
Control (V5)	0.3	0.005	5							

Cadmium (Cd) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	0.19	0.011571	8	10	-1.511677138	0.080777134	1.812461102	0.161554268	2.228138842	Fail
Control (V1)	0.254	0.00173	5							
Influence (V3-V4)	0.19	0.011571	8	7	4.192522361	0.002036628	1.894578604	0.004073256	2.364624251	Pass
Control (V5)	0.03	5.00E-05	5							

Cobalt (Co) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	0.35	0.005714	8	10	6.573782159	3.14E-05	1.812461102	6.28E-05	2.228138842	Pass
Control (V5)	0.09	0.00425	5							

Copper (Cu) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	3.8875	0.50125	8	8	0.488021519	0.319314224	1.859548033	0.638628448	2.306004133	Fail
Control (V1)	3.76	0.028	5							

Lead (Pb) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	0.25625	0.022455	8	9	1.374136549	0.101323925	1.833112923	0.20264785	2.262157158	Fail
Control (V1)	0.14	0.02175	5							
Influence (V3-V4)	0.25625	0.022455	8	10	2.894826501	0.00798727	1.812461102	0.01597454	2.228138842	Pass
Control (V5)	0.08	0.0045	5							

Selenium (Se) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	4.025	1.527857	8	8	6.897043165	6.25E-05	1.859548033	0.000124901	2.306004133	Pass
Control (V5)	0.86	0.098	5							

Silver (Ag) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	0.015	0.000075	7	7	2.629569194	0.016966926	1.894578604	0.033933851	2.364624251	Pass
Control (V1)	0.006	0.000005	5							
Influence (V3-V4)	0.01563	6.74E-05	8	10	1.826571871	0.048860974	1.812461102	0.097721948	2.228138842	Fail
Control (V5)	0.008	0.000045	5							

Titanium (Ti) - Slimy Sculpin

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
Influence (V3-V4)	17.3625	14.42554	8	10	3.581706057	0.002498754	1.812461102	0.004997508	2.228138842	Pass
Control (V5)	11.82	2.957	5							

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test. In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Bird Statistical Analysis

Arsenic (As) - Gray Jay liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.75	0.005	2	1	14	0.022697871	6.313748599	0.045395742	12.7061503	Pass
RAW	0.05	0	2							

Cadmium (Cd) - Gray Jay liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	6.525	23.18805	2	2	0.728625	0.270999149	2.91998731	0.541998299	4.302655725	Fail
RAW	3.675	7.41125	2							

Copper (Cu) - Gray Jay liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	14.45	2.205	2	1	-0.9006	0.266617042	6.313748599	0.533234083	12.7061503	Fail
RAW	15.4	0.02	2							

Magnesium (Mg) - Gray Jay liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	9.55	1.125	2	2	5.144958	0.01788174	2.91998731	0.03576348	4.302655725	Pass
RAW	5.05	0.405	2							

Lead (Pb) - Gray Jay liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.25	0.005	2	1	4	0.07797913	6.313748599	0.155958261	12.7061503	Fail
RAW	0.05	0	2							

Silver (Ag) - Gray Jay liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.075	0.00245	2	1	0.714286	0.302568457	6.313748599	0.605136914	12.7061503	Fail
RAW	0.05	0	2							

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.

Small Mammal Statistical Analysis

Arsenic (As) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.228571	0.0782143	7	6	1.357232	0.111769112	1.943180905	0.223538223	2.446913641	Fail
RAW	0.083333	0.0008333	3							

Cadmium (Cd) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	12.65857	115.98688	7	6	2.732384	0.017039049	1.943180905	0.034078097	2.446913641	Pass
RAW	1.476667	0.5336333	3							

Chromium (Cr) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.264286	0.0255952	7	7	2.884921	0.011742975	1.894577508	0.023485951	2.36462256	Pass
RAW	0.083333	0.0008333	3							

Copper (Cu) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	16.07143	2.7390476	7	6	-0.5753	0.293001425	1.943180905	0.58600285	2.446913641	Fail
RAW	16.43333	0.0133333	3							

Manganese (Mn) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	11.25714	6.6495238	7	6	1.498516	0.092326877	1.943180905	0.184653754	2.446913641	Fail
RAW	9.266667	2.4433333	3							

Lead (Pb) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.128571	0.014881	7	7	0.922722	0.193425685	1.894577508	0.386851369	2.36462256	Fail
RAW	0.083333	0.0008333	3							

Mercury (Hg) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.078714	0.0010762	7	6	0.356653	0.36677942	1.943180905	0.73355884	2.446913641	Fail
RAW	0.072667	0.0004013	3							

Silver (Ag) - Red-backed Vole liver

	Mean	Variance	N	df	t Stat	P(T<=t) one-tail	t Critical one-tail	P(T<=t) two-tail	t Critical two-tail	Status
MINE	0.023571	0.0002226	7	7	2.591284	0.017938806	1.894577508	0.035877611	2.36462256	Pass
RAW	0.008333	8.33E-06	3							

The significance tests found in the above table(s) were conducted using a two samples t-test assuming unequal variances. An alpha (α) value of 0.05 was used for all tests. Tests were deemed to have passed the test (i.e.-significant difference) if the computed t-stat was greater than that of the t critical value for a two tailed test In order to complete a number of these significance tests, samples which were below the detection limit for a particular element were estimated as half of the detection limit.