

# Developing a Calibration

This presentation is designed to provide a step-by-step followthrough. If you have any questions, do not hesitate to contact us.

Make sure you only edit a copy of your spreadsheet, keep the original calibrations

# Developing a Calibration

Note that I am editing a copy, not the original

Make sure you are on the spreadsheet 'PDZ Files'

Sample ID	Sample Name	Durati	Window	MgKa1	AlKa1	SiKa1	CrKa1	MnKa1
1	K0732	10/11/2011 10:28						
2	Admin							
3	OB40Archibarca35	OB40Archibarca35	240	36.07	1024.3	968.25	898.56	
4	OB40Basaltic_Plateau20	OB40Basaltic_Plateau20	240.1	22.89	840.2	738.59	767.49	
5	OB40Big_Southern_Butte06	OB40Big_Southern_Butte06	241	43.83	1071.6	931.37	923.52	
6	OB40Blue_Mountain04	OB40Blue_Mountain04	240.4	32	987.87	928.61	871.65	
7	OB40Burns_Green15	OB40Burns_Green15	240.9	34.22	1035.3	888.23	911.4	894.83 866.48 795.42 754.44 745 747.74 644.05 599.84 406.84 198.19 135.69
8	OB40Cannonball1_22	OB40Cannonball1_22	240.9	34.83	1004.2	928.85	872.73	810.9 791.35 773.45 654.24 658.02 690.44 616.25 555.93 417.58 155.95 138.21 103.87 132.4396603
9	OB40Casa_Diablo10	OB40Casa_Diablo10	240.7	34.18	1060	983.2	887.13	850.18 818.84 798.59 786.02 784.02 789.56 611.42 605.08 495.2 190.17 144.27 87.302 98.7384794
10	OB40Cerro_del_Medio28	OB40Cerro_del_Medio28	240.2	37.13	1049.3	917.61	914.5	877.34 865.1 821.7 859.46 857.92 807.99 676.36 634.97 428.83 183.99 105.67 78.875 130.6828198
11	OB40Chickahominy26	OB40Chickahominy26	241	33.93	976.98	1016.1	866.51	839.71 829.72 846.06 838.01 840.42 844.68 617.1 583.77 450.2 196.46 139.42 101.55 118.9474368
12	OB40Cougar_Mountain29	OB40Cougar_Mountain29	240.2	36.44	1054.1	962.33	955.95	894.59 889 823.9 800.86 785.68 780.99 646.08 587.86 447.87 188.63 150.51 96.255 114.045075
13	OB40Davis_Creek27	OB40Davis_Creek27	240.2	35.73	1092.2	997.26	883.04	931.68 926.31 846.95 784.56 796.9 789.85 639.98 606.48 431.85 203.32 117.97 93.146 120.6271603
14	OB40East_Medicine_lake12	OB40East_Medicine_lake12	240.9	36.38	998.05	985.7	895.89	876.69 877.5 807.08
15	OB40El_Paraiso24	OB40El_Paraiso24	240.1	34.51	1044.1	875.48	922.07	803.2 778.06 749.1
16	OB40El_Peceno40	OB40El_Peceno40	240.1	36.28	1074.8	987.57	908.91	892.54 864.91 869.0
17	OB40Glass_Butttes03	OB40Glass_Butttes03	240.8	34.65	1070	981.42	937.19	870.65 853.32 832.6
18	OB40Grasshopper_Flat13	OB40Grasshopper_Flat13	240	34.81	1052.1	965.27	934.58	859.56 864.78 830.3
19	OB40Gregory_Creek38	OB40Gregory_Creek38	240	36.5	1030.8	1012.8	911.87	952.98 955.54 891.6
20	OB40Guadalupe_Victoria02	OB40Guadalupe_Victoria02	240.2	36.05	1050.9	974.41	962.02	925.08 930.37 888.0
21	OB40Inman_Creek14	OB40Inman_Creek14	240	35.04	1065.2	1010.7	987.56	862.12 851.29 895.7
22	OB40KES_276_18	OB40KES_276_18	240.7	39.77	917.44	936.2	820.51	813.88 804.76 797.7
23	OB40KES_362_17	OB40KES_362_17	240.9	40.46	853.05	821.12	756.71	666.43 669.64 656.3
24	OB40La_Joya16	OB40La_Joya16	240.9	34.66	1067.5	953.97	899.1	792.95 777.32 786.4
25	OB40McDaniel_Tank21	OB40McDaniel_Tank21	240.7	36.08	1062.8	928.86	919.08	885.31 872.3 799.7
26	OB40Meydan_Tepe36	OB40Meydan_Tepe36	240.1	34.84	1073.4	938.69	931.46	890.4 887.46 841.8
27	OB40Mono_Craters07	OB40Mono_Craters07	240.8	37.16	1053.4	974	885.95	848.07 861.86 845.9
28	OB40Mule_Creek19	OB40Mule_Creek19	240	37.31	1000.7	1015.7	923.1	859.4 852.68 818.2
29	OB40Obsidian_Cliffs39	OB40Obsidian_Cliffs39	240.2	36.4	1069.7	998.24	945.63	810.4 784.09 857.41
30	OB40Pachuca30	OB40Pachuca30	240.1	35.59	1045.4	922.97	899.81	870.16 865.06 798.34
31	OB40Paredon34	OB40Paredon34	240.9	36.74	1070.1	978.76	925.88	920.73 890.47 820.16
32	OB40Polvadera31	OB40Polvadera31	240.2	37.75	1084	990.53	980.92	913.13 875.92 843.59
33	OB40RS_Hill08	OB40RS_Hill08	240	43.85	1016.3	953.25	920.53	826.95 846.82 845.0
34	OB40San_Leonel32	OB40San_Leonel32	240.9	35.59	993.4	996.13	930.03	850.81 835.32 839.8
35	OB40Sarikamis37	OB40Sarikamis37	240.1	37.09	1009.7	949.96	975.42	868.09 869.96 831.1
36	OB40Timber_Butte01	OB40Timber_Butte01	240.2	36.77	1070.7	976.63	976.02	890.31 875.98 890.9
37	OB40Tucker_Hill11	OB40Tucker_Hill11	240.1	37.1	1077.7	962.84	962.24	891.74 868.89 862.25

# Developing a Calibration

If you have other reference standards, you can add them by clicking 'Insert PDZ' in under 'S1CalProcess' in the 'Add-Ins' menu

	P	Q	R	S	T
	Lb1	TiKa1	V Ka1	CrKa1	MnKa1
5.58	209.39	119.08	74.774	138.654522	
5.37	375.98	165.3	90.295	242.3811926	
6.59	180.58	132.19	79.102	127.7042772	
1.49	183.92	136.7	86.225	318.261161	
6.84	198.19	135.69	92.013	118.4455647	
7.58	155.95	138.21	103.87	132.4396603	
95.2	190.17	144.27	87.302	98.7384794	
8.83	183.99	105.67	78.875	130.6828198	
50.2	196.46	139.42	101.55	118.9474368	
147.87	188.63	150.51	96.255	114.045075	
431.85	203.32	117.97	93.146	120.6271603	
436.63	200.85	119.76	99.113	113.7590007	
416.75	175.64	117.14	85.006	97.74625587	
483.3	187.19	135.11	79.571	191.3771603	
464.64	206.09	134.96	96.697	111.2443838	
436.65	230.59	117.52	88.246	118.606639	
472.67	204.87	170.75	86.938	155.6271603	
410.92	214.04	121.93	84.627	151.3078198	
452.22	187.46	143.4	88.566	153.0002882	
419.74	255.32	143.62	95.991	218.0403948	
610.2	419.74	255.32	143.62	95.991	
499.07	353.95	218.32	159.81	147.31	376.0142573
567.92	414.61	227.76	120.86	96.078	173.5208095
531.15	478.35	240.52	169.19	80.085	167.4446287
634.68	442.68	179.51	108	95.718	163.3137243
565.69	421.24	174.2	122.13	93.935	109.0304581
463.95	169.64	117.76	80.636	120.732575	
455.9	190.14	143.45	89.363	110.0245537	
429.79	191.46	117.22	89.307	219.4436926	
605.85	417.85	170.13	134.24	89.326	128.7599368
582.2	448.17	174.17	107.63	77.372	126.9611176
534.8	388.71	167.51	113.17	85.844	124.654522
571.26	419.05	180.05	121.56	80.851	119.0929581
620.75	620.75	620.75	620.75	620.75	
434.96	195.51	120.32	102.21	120.8976816	
450.36	183.65	130.03	76.466	187.653586	
572.23	450.36	183.65	130.03	76.466	
450.52	168.98	125.67	68.835	141.937559	

# Developing a Calibration

The screenshot shows the Microsoft Excel interface with the 'S1CalProcess' menu open. The 'Insert PDZ' option is selected, which has opened the 'Insert PDZ Files' dialog box. The dialog box shows the file explorer view for 'c:\BOOTCAMP' with the 'Obsidian Cal Data' folder selected. A list of .pdz files is shown in the lower pane of the dialog box, including 'OB40Archibarca35.pdz', 'OB40Basaltic\_Plateau20.pdz', 'OB40Big\_Southern\_Butte06.pdz', 'OB40Blue\_Mountain04.pdz', 'OB40Burns\_Green15.pdz', 'OB40Cannonball1\_22.pdz', 'OB40Casa\_Diablo10.pdz', and 'OB40Cerro\_del\_Medio28.pdz'. A callout box points to this list with the text: 'Press 'Shift' or 'CTRL' and select the calibration spectra (.pdz) files you will use in your calibration'.

OB40Archibarca35

10/11/2011 10:28 C:\Users\Lee\Desktop\Obsidian K0732\Obsidian Cal Data

Insert PDZ Files

c:\BOOTCAMP

Users

Lee

Desktop

Obsidian K0732

Obsidian Cal Data

OB40Archibarca35.pdz

OB40Basaltic\_Plateau20.pdz

OB40Big\_Southern\_Butte06.pdz

OB40Blue\_Mountain04.pdz

OB40Burns\_Green15.pdz

OB40Cannonball1\_22.pdz

OB40Casa\_Diablo10.pdz

OB40Cerro\_del\_Medio28.pdz

	SnLa1	SnLb1	TiKa1	V Ka1	CrKa1	MnKa1
	584.01	475.58	209.39	119.08	74.774	138.654522
	438.3	785.37	375.98	165.3	90.295	242.3811926
	547.62	386.59	180.58	132.19	79.102	127.7042772
	531.71	391.49	183.92	136.7	86.225	318.261161
	599.84	406.84	198.19	135.69	92.013	118.4455647
	555.93	417.58	155.95	138.21	103.87	132.4396603
	605.08	495.2	190.17	144.27	87.302	98.7384794
	634.97	428.83	183.99	105.67	78.875	130.6828198
	583.77	450.2	196.46	139.42	101.55	118.9474368

Press 'Shift' or 'CTRL' and select the calibration spectra (.pdz) files you will use in your calibration

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

Menu Commands

B3 OB40Archibarca35

When you click 'OK' the new files will be inserted

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
1	K0732	10/11/2011 10:28	C:\Users\Lee\Desktop\Obsidi	Compton																	
2	Admin		Durati	Window	MgKa1																
3	OB40Archibarca35	OB40Archibarca35	240	36.07	1024.3																
4	OB40Basaltic_Plateau20	OB40Basaltic_Plateau20	240.1	22.89	840.8																
5	OB40Big_Southern_Butte06	OB40Big_Southern_Butte06	241	43.83																	
6	OB40Blue_Mountain04	OB40Blue_Mountain04	240.4			928.61	871.65	767.98	782.14	753.25	746.14	745.83	728.96	587.1	531.71	391.49	183.92	136.7	86.225	318.261161	
7	OB40Burns_Green15	OB40Burns_Green15	240.9			1035.3	888.23	911.4	894.83	866.48	795.42	754.44	745	747.74	644.05	599.84	406.84	198.19	135.69	92.013	118.4455647
8	OB40Cannonball1_22	OB40Cannonball1_22	240.9	34.83	1004.2	928.85	872.73	810.9	791.35	773.45	654.24	658.02	690.44	616.25	555.93	417.58	155.95	138.21	103.87	132.4396603	
9	OB40Casa_Diablo10	OB40Casa_Diablo10	240.7	34.18	1060	983.2	887.13	850.18	818.84	798.59	786.02	784.02	789.56	611.42	605.08	495.2	190.17	144.27	87.302	98.7384794	
10	OB40Cerro_del_Medio28	OB40Cerro_del_Medio28	240.2	37.13	1049.3	917.61	914.5	877.34	865.1	821.7	859.46	857.92	807.99	676.36	634.97	428.83	183.99	105.67	78.875	130.6828198	
11	OB40Chickahominy26	OB40Chickahominy26	241	33.93	976.98	1016.1	866.51	839.71	829.72	846.06	838.01	840.42	844.68	617.1	583.77	450.2	196.46	139.42	101.55	118.9474368	
12	OB40Cougar_Mountain29	OB40Cougar_Mountain29	240.2	36.44	1054.1	962.33	955.95	894.59	889	823.9	800.86	785.68	780.99	646.08	587.86	447.87	188.63	150.51	96.255	114.045075	
13	OB40Davis_Creek27	OB40Davis_Creek27	240.2	35.73	1092.2	997.26	883.04	931.68	926.31	846.95	784.56	796.9	789.85	639.98	606.48	431.85	203.32	117.97	93.146	120.6271603	
14	OB40East_Medicine_lake12	OB40East_Medicine_lake12	240.9	36.38	998.05	985.7	895.89	876.69	877.5	807.08	848.73	845.96	801.71	646.13	537	436.63	200.85	119.76	99.113	113.7590007	
15	OB40EI_Paraiso24	OB40EI_Paraiso24	240.1	34.51	1044.1	875.48	922.07	803.2	778.06	749.14	748.31	748.49	724.57	601.12	525.81	416.75	175.64	117.14	85.006	97.74625587	
16	OB40EI_Peceno40	OB40EI_Peceno40	240.1	36.28	1074.8	987.57	908.91	892.54	864.91	869.06	776.45	758.32	717.24	645.61	592.94	483.3	187.19	135.11	79.571	191.3771603	
17	OB40Glass_Buttess03	OB40Glass_Buttess03	240.8	34.65	1070	981.42	937.19	870.65	853.32	832.63	810.6	802.05	792.08	664.27	596.53	464.64	206.09	134.96	96.697	111.2443838	
18	OB40Grasshopper_Flat13	OB40Grasshopper_Flat13	240	34.81	1052.1	965.27	934.58	859.56	864.78	830.35	833.77	832.5	803.15	616.72	580.81	436.65	230.59	117.52	88.246	118.606639	
19	OB40Gregory_Creek38	OB40Gregory_Creek38	240	36.5	1030.8	1012.8	911.87	952.98	955.54	891.65	817.41	811.78	748.22	663.66	551.95	472.67	204.87	170.75	86.938	155.6271603	
20	OB40Guadalupe_Victoria02	OB40Guadalupe_Victoria02	240.2	36.05	1050.9	974.41	962.02	925.08	930.37	888.05	790.54	790.69	804.42	653.03	594.55	410.92	214.04	121.93	84.627	151.3078198	
21	OB40Inman_Creek14	OB40Inman_Creek14	240	35.04	1065.2	1010.7	987.56	862.12	851.29	895.74	822.83	816.86	830.01	627.38	584.61	452.22	187.46	143.4	88.566	153.0002882	
22	OB40KES_276_18	OB40KES_276_18	240.7	39.77	917.44	936.2	820.51	813.88	804.76	797.79	737.07	736.07	683.03	564.57	610.2	419.74	255.32	143.62	95.991	218.0403948	
23	OB40KES_362_17	OB40KES_362_17	240.9	40.46	853.05	821.12	756.71	666.43	669.64	656.37	688.95	689.06	684.71	515.79	499.07	353.95	218.32	159.81	147.31	376.0142573	
24	OB40La_Joya16	OB40La_Joya16	240.9	34.66	1067.5	953.97	899.1	792.95	777.32	786.49	767.16	763.65	758.08	629.59	567.92	414.61	227.76	120.86	96.078	173.5208095	
25	OB40McDaniel_Tank21	OB40McDaniel_Tank21	240.7	36.08	1062.8	928.86	919.08	885.31	872.3	799.71	782.35	782.92	787.54	572.61	531.15	478.35	240.52	169.19	80.085	167.4446287	
26	OB40Meydan_Tepe36	OB40Meydan_Tepe36	240.1	34.84	1073.4	938.69	931.46	890.4	887.46	841.86	808.1	799.5	776.9	591.92	634.68	442.68	179.51	108	95.718	163.3137243	
27	OB40Mono_Craters07	OB40Mono_Craters07	240.8	37.16	1053.4	974	885.95	848.07	861.86	845.94	817.45	814.71	779.91	612.19	565.69	421.24	174.2	122.13	93.935	109.0304581	
28	OB40Mule_Creek19	OB40Mule_Creek19	240	37.31	1000.7	1015.7	923.1	859.4	852.68	818.27	805.92	804.23	784.34	634.12	580	463.95	169.64	117.76	80.636	120.732575	
29	OB40Obsidian_Cliffs39	OB40Obsidian_Cliffs39	240.2	36.4	1069.7	998.24	945.63	810.4	784.09	857.41	838.53	830.68	756.41	628.14	527.37	455.9	190.14	143.45	89.363	110.0245537	
30	OB40Pachuca30	OB40Pachuca30	240.1	35.59	1045.4	922.97	899.81	870.16	865.06	798.34	787.24	771.23	731.71	645.18	563.09	429.79	191.46	117.22	89.307	219.4436926	
31	OB40Paredon34	OB40Paredon34	240.9	36.74	1070.1	978.76	925.88	920.73	890.47	820.16	790.25	785.33	786.01	625.4	605.85	417.85	170.13	134.24	89.326	128.7599368	
32	OB40Polvadera31	OB40Polvadera31	240.2	37.75	1084	990.53	980.92	913.13	875.92	843.59	794.3	779.48	771.54	612.54	582.2	448.17	174.17	107.63	77.372	126.9611176	
33	OB40RS_Hill08	OB40RS_Hill08	240	43.85	1016.3	953.25	920.53	826.95	846.82	845.04	783.2	779.69	785.08	619.28	534.8	388.71	167.51	113.17	85.844	124.654522	
34	OB40San_Leonel32	OB40San_Leonel32	240.9	35.59	993.4	996.13	930.03	850.81	835.32	839.8	790.53	788.19	792.26	602.96	571.26	419.05	180.05	121.56	80.851	119.0929581	
35	OB40Sarikamis37	OB40Sarikamis37	240.1	37.09	1009.7	949.96	975.42	868.09	869.96	831.19	845.72	844.46	792.2	620.75	620.6	434.96	195.51	120.32	102.21	120.8976816	
36	OB40Timber_Butte01	OB40Timber_Butte01	240.2	36.77	1070.7	976.63	976.02	890.31	875.98	890.94	833.37	820.84	810.86	626.62	572.23	450.36	183.65	130.03	76.466	187.653586	
37	OB40Tucker_Hill11	OB40Tucker_Hill11	240.1	37.1	1077.7	962.84	962.24	891.74	868.89	862.26	806.3	794.38	770.44	604.77	592	450.52	168.98	125.67	68.835	141.9337559	

Duplex AICheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready 80%

1:36 PM 3/9/2013

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel

S1CalProcess

Menu Commands

AS43 519.2

	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1													
2	ZrKa1	NbKa1	RhKa1	GL1			MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1
27	121.185385	15.52136473	13.89012859	XRF25A	OB40Obsidian25		1215	43835	278	20	215	186	15.16
28	30.71858321	3.733987258	13.61024069	XRF26A	OB40Obsidian26		434	11808	64	17	7.7	104	26.05
29	9.997210536	2.195908152	12.91757572	XRF27A	OB40Obsidian27		410	5283	28	13	9.6	108	64.34
30	17.3973343	6.891512274	12.85391445	XRF28A	OB40Obsidian28		414	7121	57	16	16.2	150	7.95
31	13.33497133	2.589358275	13.36779494	XRF29A	OB40Obsidian29		308	8148	70	19	6.9	92	34.85
32	94.65663197	11.29559241	14.31515802	XRF30A	OB40Obsidian30		1113	16267	212	18	18.7	198	6.42
33	6.336751533	5.72162226	13.41958908	XRF31A	OB40Obsidian31		448	3810	33	17	16.4	144	9.81
34	46.828652	4.936821693	13.41993851	XRF32A	OB40Obsidian32		255	12382	103	23	14.4	148	4.95
35	22.99986313	3.402888777	13.55305303	XRF33A	OB40Obsidian33		172	10633	39	20	35.8	278	37.86
36	21.95108847	5.636515081	13.4101284	XRF34A	OB40Obsidian34		365	8527	57	24	17.4	164	10.92
37	15.04122617	3.436386559	13.7918465	XRF35A	OB40Obsidian35		546	8666	48	17	14.9	114	402.63
38	27.76681771	4.882906403	13.48972178	XRF36A	OB40Obsidian36		538	9349	73	19	23.7	196	23.45
39	10.2324154	2.749703618	13.57817656	XRF37A	OB40Obsidian37		351	5465	30	16	16.4	131	25.43
40	8.392101687	2.073039651	13.41225572	XRF38A	OB40Obsidian38		670	6491	42	20	3.8	74	171.67
41	11.38528863	1.824739612	13.35330343	XRF39A	OB40Obsidian39		309	7300	30	15	6.9	76	142.46
42	15.5687854	3.618787216	13.26321346	XRF40A	OB40Obsidian40		886	6098	53	17	11.5	215	28
43	15.5687854	3.618787216	13.26321346	XRF40A	Test		519	4255	27	15	7.6		
44													
45													
46													
47	ZrKa1	NbKa1	RhKa1	GL2			MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1
48	6.182091039	4.818946085	13.17009158	XRF1A	OB40Obsidian01		0.0755	0.3690	0.0059	0.0025	0.0012	0.0172	0.0018
49	7.558640436	2.167974226	13.62144512	XRF2A	OB40Obsidian02		0.0519	0.4255	0.0027	0.0015	0.0008	0.0091	0.0062
50	11.25526998	1.980094648	13.49225327	XRF3A	OB40Obsidian03		0.0328	0.6179	0.0028	0.0012	0.0008	0.0094	0.0068
51	38.7455232	3.426984981	13.76834251	XRF4A	OB40Obsidian04		0.1634	2.7448	0.0160	0.0030	0.0006	0.0059	0.0008
52	15.05906049	1.308148719	13.64624604	XRF5A	OB40Obsidian05		0.0592	0.8587	0.0050	0.0019	0.0001	0.0032	0.0236
53	30.4470623	33.20705248	13.2016189	XRF6A	OB40Obsidian06		0.0297	1.1669	0.0253	0.0032	0.0019	0.0273	0.0000
54	11.38161102	3.315942873	12.88138661	XRF7A	OB40Obsidian07		0.0357	0.7773	0.0043	0.0019	0.0019	0.0179	0.0019
55	20.60894968	27.5366107	12.77333752	XRF8A	OB40Obsidian08		0.0441	0.7203	0.0134	0.0026	0.0043	0.0361	0.0007
56	13.27473215	2.148672708	13.5061849	XRF9A	OB40Obsidian09		0.0250	0.7578	0.0032	0.0015	0.0009	0.0113	0.0118
57	21.28448266	2.530419327	13.11527952	XRF10A	OB40Obsidian10		0.0279	0.9278	0.0033	0.0021	0.0015	0.0145	0.0140
58	7.498798936	2.362023058	12.94544735	XRF11A	OB40Obsidian11		0.0521	0.4674	0.0031	0.0018	0.0008	0.0098	0.0047
59	21.2544553	2.177399488	13.6924505	XRF12A	OB40Obsidian12		0.0264	1.0410	0.0034	0.0018	0.0015	0.0141	0.0093
60	19.70241803	2.27235245	13.59558816	XRF13A	OB40Obsidian13		0.0269	0.9234	0.0032	0.0024	0.0013	0.0135	0.0080
61	12.32973388	2.030619351	13.43484729	XRF14A	OB40Obsidian14		0.0537	1.0825	0.0052	0.0019	0.0007	0.0081	0.0180
62	66.45175882	7.070168794	13.29251062	XRF15A	OB40Obsidian15		0.0458	1.7193	0.0126	0.0021	0.0008	0.0098	0.0007

Duplex | AlCheckSTD | QA-Summary | S1 Tracer QA Report | ChemTests | Assay Check | Alloy | PDAFCSheet | PDZFiles | GISort | **GIChem**

Select destination and press ENTER or choose Paste

Average: 508 Count: 10 Sum: 5076 75%

10:41 AM 3/10/2013

Navigate to 'GIChem' and make sure you have raw data for your reference standards entered to the far right (for both GL1 on top of GL2 on bottom)

# Developing a Calibration

The screenshot shows the Microsoft Excel interface with the 'S1CalProcess' add-in menu open. The menu options include: Read PDZ Files, Insert PDZ, Add/Remove Sort Files, Add/Remove Chemistry Files (highlighted), Add/Remove Elements, Create Sort File, Copy to new Sort Sheet, Modify Sort to Chemistry, Update FP to CFZ, Create Chem File, Copy to new Chem Sheet, Chem Test, Sort Check, Chem Check, Build PDA Image, and Add-in Version. The main spreadsheet displays a table with columns for MnKa1, FeKa1, ZnKa1, and GaKa1. The formula bar shows  $=M20/109.1$ . A text box overlay provides instructions on how to access the 'Add/Remove Chemistry Files' option.

After that confirmation, go to 'Add/Remove Chemistry Files' under 'S1CalProcess' in the 'Add-Ins' tab

	C	D	E	F
	MnKa1	FeKa1	ZnKa1	GaKa1
	187.653586	929.2916464	166.3753111	72.62656491
	151.3078198	1090.489603	115.9384627	88.96726783
	111.2443838	1569.482197	99.33562802	74.86556491
	318.261161	6937.224523	256.3529805	82.1658076
	155.1125434	2161.845023	132.2914076	55.48815906
	127.7042772	2900.40012	371.6243192	116.8534017
	109.0304581	1849.634882	147.7214076	94.15740175
	124.654522	1818.841654	242.7382836	137.4503474
	111.4747985	1821.295927	114.6434351	77.45367368
	98.7384794	2159.003613	127.99638	81.82997076
	141.9337559	1130.896012	140.4883938	72.12291637
	113.7590007	2396.71366	108.4204489	68.43421345
	118.606639	2281.204615	141.0064076	81.12291637
	153.0002882	2691.837979	159.1992974	80.69267368
	118.4455647	4323.76786	224.0620494	79.48705029
	173.5208095	4623.003455	238.6539392	77.61440175
	376.0142573	13430.61386	674.6722446	106.1941047
	218.0403948	5315.435506	228.1249805	99.24805029
	120.732575	1717.256063	145.3132974	78.5553766
	242.3811926	14804.93455	195.7341872	52.69267368
	167.4446287	2415.746979	143.1322698	67.74661929
	132.4396603	5645.142416	340.4487463	109.7494813
	170.0646603	6148.100106	301.5978565	92.31305029
	97.74625587	4693.158637	346.3867325	117.8461047
	268.698661	11141.36642	336.6275121	77.51756491
	118.9474368	2732.016844	166.42638	66.55315906
	120.6271603	1304.070421	99.17649025	75.51867368
	130.6828198	1816.51679	167.8864765	73.90115906
	114.045075	1980.634656	170.7902698	63.60313392
	219.4436926	3702.90699	313.8016912	98.52375321
	126.9611776	888.5188283	134.4272974	77.71102514
	119.0929581	2954.128029	218.3420356	82.45256491
	99.01771323	2428.980026	135.5184902	94.2958076
	128.7599368	2091.421883	152.4213663	84.57151052
	138.654522	2043.512884	171.500256	79.36302514
	163.3137243	2339.091341	154.1254214	88.02121345
	120.8976816	1335.194967	111.65438	75.10567368

# Developing a Calibration

The screenshot displays a Microsoft Excel spreadsheet titled "K0732 Obsidian - Copy.xlsx". The spreadsheet contains two tables of raw data. The first table, starting at row 21, has columns for "Column ref.", "Raw Data", and various chemical elements: MnKa1, FeKa1, ZnKa1, GaKa1, ThLa1, RbKa1, SrKa1, Y Ka1, ZrKa1, NbKa1, and RhKa1. The second table, starting at row 46, has a similar structure but includes a "BLANK" column and additional elements: COMPTON, MnKa1, FeKa1, ZnKa1, GaKa1, and ThLa1. An "Add/Remove Chemistry files" dialog box is open over the spreadsheet. It features a "PDZ List" on the left with "Test" selected, and a "Chemistry List" on the right with several entries including "OB40Timber\_Butte01", "OB40Guadalupe\_Victo", "OB40Glass\_Buttes03", "OB40Blue\_Mountain04", "OB40West\_New\_Brita", "OB40Big\_Southern\_B", "OB40Mono\_Craters07", "OB40RS\_Hill08", "OB40Whitewater\_Ridg", "OB40Casa\_Diablo10", and "OB40Tucker\_Hill11". Buttons for "Add", "Unselect", and "Remove" are visible between the lists. A "GL1" dropdown menu is at the bottom of the dialog. A speech bubble on the right side of the image contains the text: "Check on the chemistry files (.pdz) you will use. They do not need to be highlighted unless you are removing or adding them."

Column ref.	Raw Data	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1						
28	OB40Mule_Creek19	120.732575	1717.256063	145.3132974	78.5553766	195.8714159	1923.66864	154.9314941	821.3964983	1464.020423	547.4727223	1723.061942						
4	OB40Basaltic_Plateau20	242.3811926	14804.93455	195.7341872	52.69267368	37.39128319	100.373893	1901.867997	158.9180475	965.7110342	150.4301476	1251.185788						
25	OB40McDaniel_Tank21	167.4446287	2415.746979	143.1322698	67.74661929	153.7204												
8	OB40Cannonball_22	132.4396603	5645.142416	340.4487463	109.7494813	228.706												
41	OB40Witham_Creek23	170.0646603	6148.100106	301.5978565	92.31305029	185.170												
15	OB40EI_Paraiso24	97.74625587	4693.158637	346.3867325	117.8461047	218.352												
38	OB40VNN-2_25	268.698661	11141.36642	336.6275121	77.51756491	136.785												
11	OB40Chickahominy26	118.9474368	2732.016844	166.42638	66.55315906	109.894												
13	OB40Davis_Creek27	120.6271603	1304.070421	99.17649025	75.51867368	104.166												
10	OB40Cerro_del_Medio28	130.6828198	1816.51679	167.8864765	73.90115906	152.004												
12	OB40Cougar_Mountain29	114.045075	1980.634656	170.7902698	63.60313392	93.3355												
30	OB40Pachuca30	219.4436926	3702.90699	313.8016912	98.52375321	149.811												
32	OB40Polvadera31	126.9611176	888.5188283	134.4272974	77.71102514	158.206												
34	OB40San_Leonel32	119.0929581	2954.128029	218.3420356	82.45256491	134.466												
42	OB40Zacualtipan33	99.01771323	2428.980026	135.5184902	94.2958076	234.256												
31	OB40Paredon34	128.7599368	2091.421883	152.4213663	84.57151052	135.531												
3	OB40Archibarca35	138.654522	2043.512884	171.500256	79.36302514	124.376												
26	OB40Meydan_Tepe36	163.3137243	2339.091341	154.1254214	88.02121345	176.269												
35	OB40Sarikamis37	120.8976816	1335.194967	111.65438	75.10567368	139.071												
19	OB40Gregory_Creek38	155.6271603	1548.040606	137.4674214	47.51756491	92.166												
29	OB40Obsidian_Cliffs39	110.0245537	1753.272108	134.5764076	65.12402514	93.0755												
16	OB40EI_Peceno40	191.3771603	1517.706559	182.7971183	89.62656491	120.0514843	1791.271142	2686.865196	469.2110526	1973.9663	458.8260311	1681.642835						
41	Test	187.653586	929.2916464	166.3753111	72.62656491	129.2658085	1469.267741	201.1293719	745.5795883	818.9106895	638.3416932	1744.576181						
													COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	CC
Column ref.	Raw Data	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1	BLANK	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1
36	OB40Timber_Butte01	187.653586	929.2916464	166.3753111	72.62656491	129.2658085	1469.267741	201.1293719	745.5795883	818.9106895	638.3416932	1744.576181						
20	OB40Guadalupe_Victoria02	151.3078198	1090.489603	115.9384627	88.96726783	101.122498	850.3735218	646.6902378	341.4887776	991.0889339	284.2647806	1786.043885						
17	OB40Glass_Buttes03	111.2443838	1569.482197	99.33562802	74.86556491	107.3685117	868.9843008	741.4344654	461.5898345	1458.063949	256.5113612	1747.85395						
6	OB40Blue_Mountain04	318.261161	6937.224523	256.3529805	82.1658076	67.91384956	428.1765149	75.05696097	859.2638965	4378.244121	387.2493029	1555.822704						
39	OB40West_New_Britain1_05	155.1125434	2161.845023	132.2914076	55.48815906	60.70391794	321.7174169	1847.269525	459.2193464	1976.426394	171.6879786	1791.001562						
5	OB40Big_Southern_Butte06	127.7042772	2900.40012	371.6243192	116.8534017	194.2493886	2203.422902	74.55696097	2697.067381	3731.13525	4069.358247	1617.792389						
27	OB40Mono_Craters07	109.0304581	1849.634882	147.7214076	94.15740175	147.2537812	1508.138438	112.8224109	623.324792	1427.59547	415.9187146	1615.712323						
33	OB40RS_Hill08	124.654522	1818.841654	242.7382836	137.4503474	305.5829686	3055.298679	87.22877761	1484.862347	2660.306269	3554.563392	1648.846273						
40	OB40Whitewater_Ridge09	111.4747985	1821.295927	114.6434351	77.45367368	96.29749799	935.7827838	863.4190154	452.3161757	1685.29362	272.7847437	1714.677704						
9	OB40Casa_Diablo10	98.7384794	2159.003613	127.99638	81.82997076	125.8808769	1146.936718	1120.094737	444.657152	2631.294169	312.8230893	1621.376431						

Check on the chemistry files (.pdz) you will use. They do not need to be highlighted unless you are removing or adding them.



# Developing a Calibration

For example, this file is being 'added' using this dialogue.

The screenshot displays a software interface with a spreadsheet titled 'S1CalProcess' and a dialog box titled 'Add/Remove Chemistry files'. The spreadsheet contains two sections of 'Raw Data' with columns for various elements and their peak areas. The dialog box has a 'PDZ List' with 'Test' selected, an 'Add' button, an 'Unselect' button, a 'Remove' button, and a 'Chemistry List' with several entries. A taskbar at the bottom shows various application icons and the system clock.

Column ref.	Raw Data	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	Y Ka1	ZrKa1	NbKa1	RhKa1	BLANK	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1		
21	28 OB40Mule_Creek19	120.732575	1717.256063	145.3132974	78.5553766	195.8714159	1923.6686	3314941	821.3964983	1464.020423	547.4727223	1723.061942							
22	4 OB40Basaltic_Plateau20	242.3811926	14804.93455	195.7341872	52.69267368	37.39128319	100.3738	101.867997	158.9180475	965.7110342	150.4301476	1251.185788							
23	25 OB40McDaniel_Tank21	167.4446287	2415.746979	143.1322698	67.74661929	153.720													
24	8 OB40Cannonball_22	132.4396603	5645.142416	340.4487463	109.7494813	228.706													
25	41 OB40Witham_Creek23	170.0646603	6148.100106	301.5978565	92.31305029	185.170													
26	15 OB40EI_Paraiso24	97.74625587	4693.158637	346.3867325	117.8461047	218.352													
27	38 OB40VNN-2_25	268.698661	11141.36642	336.6275121	77.51756491	136.785													
28	11 OB40Chickahominy26	118.9474368	2732.016844	166.42638	66.55315906	109.894													
29	13 OB40Davis_Creek27	120.6271603	1304.070421	99.17649025	75.51867368	104.166													
30	10 OB40Cerro_del_Medio28	130.6828198	1816.51679	167.8864765	73.90115906	152.004													
31	12 OB40Cougar_Mountain29	114.045075	1980.634656	170.7902698	63.60313392	93.3355													
32	30 OB40Pachuca30	219.4436926	3702.90699	313.8016912	98.52375321	149.811													
33	32 OB40Polvadera31	126.9611176	888.5188283	134.4272974	77.71102514	158.206													
34	34 OB40San_Leonel32	119.0929581	2954.128029	218.3420356	82.45256491	134.466													
35	42 OB40Zacualtipan33	99.01771323	2428.980026	135.5184902	94.2958076	234.256													
36	31 OB40Paredon34	128.7599368	2091.421883	152.4213663	84.57151052	135.531													
37	3 OB40Archibarca35	138.654522	2043.512884	171.500256	79.36302514	124.376													
38	26 OB40Meydan_Tepe36	163.3137243	2339.091341	154.1254214	88.02121345	176.269													
39	35 OB40Sarikamis37	120.8976816	1335.194967	111.65438	75.10567368	139.071													
40	19 OB40Gregory_Creek38	155.6271603	1548.040606	137.4674214	47.51756491	92.166													
41	29 OB40Obsidian_Cliffs39	110.0245537	1753.272108	134.5764076	65.12402514	93.0755													
42	16 OB40EI_Peceno40	191.3771603	1517.706559	182.7971183	89.62656491	120.0514843	1791.271142	2686.865196	469.2110526	1973.9663	458.8260311	1681.642835							
43	41 Test	187.653586	929.2916464	166.3753111	72.62656491	129.2658085	1469.267741	201.1293719	745.5795883	818.9106895	638.3416932	1744.576181							
46	Column ref.	Raw Data	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1	BLANK	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1
47	36 OB40Timber_Butte01	187.653586	929.2916464	166.3753111	72.62656491	129.2658085	1469.267741	201.1293719	745.5795883	818.9106895	638.3416932	1744.576181							
48	20 OB40Guadalupe_Victoria02	151.3078198	1090.489603	115.9384627	88.96726783	101.122498	850.3735218	646.6902378	341.4887776	991.0889339	284.2647806	1786.043885							
49	17 OB40Glass_Buites03	111.2443838	1569.482197	99.33562802	74.86556491	107.3685117	868.9843008	741.4344654	461.5898345	1458.063949	256.5113612	1747.85395							
50	6 OB40Blue_Mountain04	318.261161	6937.224523	256.3529805	82.1658076	67.91384956	428.1765149	75.05696097	859.2638965	4378.244121	387.2493029	1555.822704							
51	39 OB40West_New_Britain1_05	155.1125434	2161.845023	132.2914076	55.48815906	60.70391794	321.7174169	1847.269525	459.2193464	1976.426394	171.6879786	1791.001562							
52	5 OB40Big_Southern_Butte06	127.7042772	2900.40012	371.6243192	116.8534017	194.2493886	2203.422902	74.55696097	2697.067381	3731.13525	4069.358247	1617.792389							
53	27 OB40Mono_Craters07	109.0304581	1849.634882	147.7214076	94.15740175	147.2537812	1508.138438	112.8224109	623.324792	1427.59547	415.9187146	1615.712323							
54	33 OB40RS_Hill08	124.654522	1818.841654	242.7382836	137.4503474	305.5829686	3055.298679	87.22877761	1484.862347	2660.306269	3554.563392	1648.846273							
55	40 OB40Whitewater_Ridge09	111.4747985	1821.295927	114.6434351	77.45367368	96.29749799	935.7827838	863.4190154	452.3161757	1685.29362	272.7847437	1714.677704							
56	9 OB40Casa_Diablo10	98.7384794	2159.003613	127.99638	81.82997076	125.8808769	1146.936718	1120.094737	444.657152	2631.294169	312.8230893	1621.376431							

# Developing a Calibration

And these files were 'removed' using this dialogue.

The screenshot displays a software interface with a data table and a dialog box. The data table has columns for 'Column ref.', 'Raw Data', and various chemical elements (MnKa1, FeKa1, ZnKa1, GaKa1, ThLa1, RbKa1, Y Ka1, ZrKa1, NbKa1, RhKa1, BLANK, MnKa1, FeKa1, ZnKa1, GaKa1, ThLa1). The dialog box, titled 'Add/Remove Chemistry files', contains a 'PDZ List' with 'OB40Big\_Southern\_Butte' and 'OB40Glass\_Buttess03', and a 'Chemistry List' with a scrollable list of files including 'OB40Timber\_Butte01', 'OB40Guadalupe\_Victo', 'OB40Blue\_Mountain04', 'OB40West\_New\_Brita', 'OB40Mono\_Craters07', 'OB40RS\_Hill08', 'OB40Whitewater\_Ridc', 'OB40Casa\_Diablo10', 'OB40Tucker\_Hill11', 'OB40East\_Medicine\_k', and 'OB40Grasshopper\_Fla'. A 'GL1' dropdown is at the bottom of the dialog. The software interface includes a menu bar (File, Home, Insert, Page Layout, Formulas, Data, Review, View, Add-Ins), a ribbon (S1CalProcess), and a taskbar at the bottom with icons for Duplex, AlCheckSTD, QA-Summary, S1 Tracer QA Report, ChemTests, Assay Check, Alloy, PDAFCSheet, PDZFiles, GISort, and GIChem. The system tray shows the date and time as 1:38 PM on 3/9/2013.

Column ref.	Raw Data	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	Y Ka1	ZrKa1	NbKa1	RhKa1	BLANK	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1
36	OB40Timber_Butte01	187.653586	929.2916464	166.3753111	72.62656491	129.2658085	1469.26774	1293719	745.5795883	818.9106895	638.3416932	1744.576181					
20	OB40Guadalupe_Victoria02	151.3078198	1090.489603	115.9384627	88.96726783	101.122498	850.37352	66.6902378	341.4887776	991.0889339	284.2647806	1786.043885					
6	OB40Blue_Mountain04	318.261161	6937.224523	256.3529805	82.1658076	67.9138											
39	OB40West_New_Britain1_05	155.1125434	2161.845023	132.2914076	55.48815906	60.7039											
27	OB40Mono_Craters07	109.0304581	1849.634882	147.7214076	94.15740175	147.253											
33	OB40RS_Hill08	124.654522	1818.841654	242.7382836	137.4503474	305.582											
40	OB40Whitewater_Ridge09	111.4747985	1821.295927	114.6434351	77.45367368	96.2974											
9	OB40Casa_Diablo10	98.7384794	2159.003613	127.99638	81.82997076	125.880											
37	OB40Tucker_Hill11	141.9337559	1130.896012	140.4883938	72.12291637	97.8624											
14	OB40East_Medicine_Lake12	113.7590007	2396.71366	108.4204489	68.43421345	124.114											
18	OB40Grasshopper_Flat13	118.606639	2281.204615	141.0064076	81.12291637	108.187											
21	OB40Inman_Creek14	153.0002882	2691.837979	159.1992974	80.69267368	84.8548											
7	OB40Burns_Green15	118.4455647	4323.76786	224.0620494	79.48705029	97.012											
24	OB40La_Joya16	173.5208095	4623.003455	238.6539392	77.61440175	137.622											
23	OB40KES_362_17	376.0142573	13430.61386	674.6722446	106.1941047	352.653											
22	OB40KES_276_18	218.0403948	5315.435506	228.1249805	99.24805029	186.131											
28	OB40Mule_Creek19	120.732575	1717.256063	145.3132974	78.5553766	195.871											
4	OB40Basaltic_Plateau20	242.3811926	14804.93455	195.7341872	52.69267368	37.3912											
25	OB40McDaniel_Tank21	167.4446287	2415.746979	143.1322698	67.74661929	153.720											
8	OB40Cannonball1_22	132.4396603	5645.142416	340.4487463	109.7494813	228.708											
41	OB40Witham_Creek23	170.0646603	6148.100106	301.5978565	92.31305029	185.170											
15	OB40El_Paraiso24	97.74625587	4693.158637	346.3867325	117.8461047	218.3520917	1735.986757	75.70271649	2177.749172	13973.6281	996.8987165	1571.954712					
38	OB40VNN-2_25	268.698661	11141.36642	336.6275121	77.51756491	136.7851327	1295.263914	133.9942275	1386.996982	12297.89287	1575.108093	1409.57025					
11	OB40Chickahominy26	118.9474368	2732.016844	166.42638	66.55315906	109.8941875	842.448118	264.8166384	768.9438965	3788.522867	460.5126485	1678.550984					
13	OB40Davis_Creek27	120.6271603	1304.070421	99.17649025	75.51867368	104.1662148	955.7129068	653.950849	412.3604032	1328.12942	291.7263981	1716.099935					
10	OB40Cerro_del_Medio28	130.6828198	1816.51679	167.8864765	73.90115906	152.0045253	1249.424135	91.71816641	759.9669058	2263.306206	896.5512893	1672.23					
12	OB40Cougar_Mountain29	114.045075	1980.634656	170.7902698	63.60313392	93.33553902	801.6531938	422.9517828	766.5606452	1709.61	331.9686777	1713.81815					
30	OB40Pachuca30	219.4436926	3702.90699	313.8016912	149.8111464	1595.57393	97.96816641	1503.944461	11428.36846	1363.773349	1728.340604						
32	OB40Polvadera31	126.9611176	888.5188283	134.4272974	77.71102514	158.2068222	1225.256923	109.7442275	491.3836545	849.6316455	767.1551126	1799.298504					
34	OB40San_Leonel32	119.0929581	2954.128029	218.3420356	82.45256491	134.4668222	1200.900611	60.93726657	840.3102377	5802.069983	611.6722078	1662.730381					
42	OB40Zacualtipan33	99.01771323	2428.980026	135.5184902	94.2958076	234.2563475	2256.003025	418.2432938	942.0682046	2810.468275	415.8159942	1656.115315					
31	OB40Paredon34	128.7599368	2091.421883	152.4213663	84.57151052	135.5314843	1319.474709	129.2287776	801.9543846	2829.934325	726.6595243	1728.833753					
3	OB40Archibarca35	138.654522	2043.512884	171.500256	79.36302514	124.3761464	981.4072917	2905.532174	447.8318676	1888.726771	431.5070602	1731.842166					
26	OB40Meydan_Tepe36	163.3137243	2339.091341	154.1254214	88.02121345	176.2690507	1587.946511	225.2490663	938.1082046	3563.593385	626.6722078	1731.270893					
35	OB40Sarikamis37	120.8976816	1335.194967	111.65438	75.10567368	139.0711464	1116.93098	286.6757216	509.5836545	1350.474185	362.9058835	1792.047743					
19	OB40Gregory_Creek38	155.6271603	1548.040606	137.4674214	47.51756491	92.1662148	611.4354078	1353.698048	388.2046307	1055.810313	260.8091184	1687.395893					
29	OB40Obsidian_Cliffs39	110.0245537	1753.272108	134.5764076	65.12402514	93.07553902	692.7547518	1052.605348	341.8339813	1477.582758	236.8147068	1732.991719					

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

Menu Commands

$=M20/109.1$

Column ref.	Raw Data	MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1
36	OB40Timber_Butte01	187.653586	929.2916464	166.3753111	72.62656491	129.2658085	1469.267741	201.1293719	745.5795883	818.9106895	638.3416932	1744.576181
20	OB40Guadalupe_Victoria02	151.3078198	1090.489603	115.9384627	88.96726783	101.122498	850.3735218	645.6902378	341.4887776	991.0889339	284.2647806	1786.043885
6	OB40Blue_Mountain04	318.261161	6937.224523	256.3529805	82.1658076	67.91384						
39	OB40West_New_Britain1_05	155.1125434	2161.845023	132.2914076	55.48815906	60.7039						
27	OB40Mono_Craters07	109.0304581	1849.634882	147.7214076	94.15740175	147.253						
33	OB40RS_Hill08	124.654522	1818.841654	242.7382836	137.4503474	305.582						
40	OB40Whitewater_Fldge09	111.4747985	1821.295927	114.6434351	77.45367368	96.2974						
9	OB40Casa_Diablo10	98.7384794	2159.003613	127.99638	81.82997076	125.880						
37	OB40Tucker_Hill11	141.9337559	1130.896012	140.4883938	72.12291637	97.8624						
14	OB40East_Medicine_Lake12	113.7590007	2396.71366	108.4204489	68.43421345	124.114						
18	OB40Grasshopper_Flat13	118.606639	2281.204615	141.0064076	81.12291637	108.187						
21	OB40Inman_Creek14	153.0002882	2691.837979	159.1992974	80.69267368	84.8548						
7	OB40Burns_Green15	118.4455647	4323.76786	224.0620494	79.48705029	97.012						
24	OB40La_Joya16	173.5208095	4623.003455	238.6539392	77.61440175	137.622						
23	OB40KES_362_17	376.0142573	13430.61386	674.6722446	106.1941047	352.653						
22	OB40KES_276_18	218.0403948	5315.435506	228.1249805	99.24805029	186.131						
28	OB40Mule_Creek19	120.732575	1717.256063	145.3132974	78.5553766	195.871						
4	OB40Basaltic_Plateau20	242.3811926	14804.93455	195.7341872	52.69267368	37.3912						
25	OB40McDaniel_Tank21	167.4446287	2415.746979	143.1322698	67.74661929	153.720						
8	OB40Cannonball1_22	132.4396603	5645.142416	340.4487463	109.7494813	228.708						
41	OB40Witham_Creek23	170.0646603	6148.100106	301.5978565	92.31305029	185.170						
15	OB40E1_Paraiso24	97.74625587	4693.158637	346.3867325	117.8461047	218.3520917	1735.986757	75.70271649	2177.749172	13973.6281	996.89	
38	OB40VNN-2_25	268.698661	11141.36642	336.6275121	77.51756491	136.7851327	1295.263914	133.9942275	1386.996982	12297.89287	1575.108093	1409.57025
11	OB40Chickahominy26	118.9474368	2732.016844	166.42638	66.55315906	109.8941875	842.448118	264.8166384	768.9438965	3788.522867	460.5126485	1678.550984
13	OB40Davis_Creek27	120.6271603	1304.070421	99.17649025	75.51867368	104.1662148	955.7129068	653.950849	412.3604032	1328.12942	291.7263981	1716.099935
10	OB40Cerro_del_Medio28	130.6828198	1816.51679	167.8864765	73.90115906	152.0045253	1249.424135	91.71816641	759.9669058	2263.306206	896.5512893	1672.23
12	OB40Cougar_Mountain29	114.045075	1980.634656	170.7902698	63.60313392	93.33553902	801.6531938	422.9517828	766.5606452	1709.61	331.9686777	1713.81815
30	OB40Pachuca30	219.4436926	3702.90699	313.8016912	149.8111464	98.52375321	1595.57393	97.96816641	1503.944461	11428.36846	1363.773349	1728.340604
32	OB40Polvadera31	126.9611176	888.5188283	134.4272974	77.71102514	158.2068222	1225.256923	109.7442275	491.3836545	849.6316455	767.1551126	1799.298504
34	OB40San_Leonel32	119.0929581	2954.128029	218.3420356	82.45256491	134.4668222	1200.900611	60.93726657	840.3102377	5802.069983	611.6722078	1662.730381
42	OB40Zacualtipan33	99.01771323	2428.980026	135.5184902	94.2958076	234.2563475	2256.003025	418.2432938	942.0682046	2810.468275	415.8159942	1656.115315
31	OB40Paredon34	128.7599368	2091.421883	152.4213663	84.57151052	135.5314843	1319.474709	129.2287776	801.9543846	2829.934325	726.6595243	1728.833753
3	OB40Archibarca35	138.654522	2043.512884	171.500256	79.36302514	124.3761464	981.4072917	2905.532174	447.8318676	1888.726771	431.5070602	1731.842166
26	OB40Meydan_Tepe36	163.3137243	2339.091341	154.1254214	88.02121345	176.2690507	1587.946511	225.2490663	938.1082046	3563.593385	626.6722078	1731.270893
35	OB40Sarikamis37	120.8976816	1335.194967	111.65438	75.10567368	139.0711464	1116.93098	286.6757216	509.5836545	1350.474185	362.9058835	1792.047743
19	OB40Gregory_Creek38	155.6271603	1548.040606	137.4674214	47.51756491	92.1662148	611.4354078	1353.698048	388.2046307	1055.810313	260.8091184	1687.395893
29	OB40Obsidian_Cliffs39	110.0245537	1753.272108	134.5764076	65.12402514	93.07553902	692.7547518	1052.605348	341.8339813	1477.582758	236.8147068	1732.991719

Add/Remove Chemistry files

PDZ List

- OB40Big\_Southern\_Butte
- OB40Glass\_Buttess03

Chemistry List

- OB40Timber\_Butte01
- OB40Guadalupe\_Vic
- OB40Blue\_Mountain
- OB40West\_New\_Br
- OB40Mono\_Craters
- OB40RS\_Hill08
- OB40Whitewater\_
- OB40Casa\_Diablo
- OB40Tucker\_Hill1
- OB40East\_Medic
- OB40Grasshopp

GL1

GL1

GL2

Make sure you do this for both GL1 and GL2

Duplex AlCheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready

75%

1:38 PM 3/9/2013

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review

S1CalProcess

- Read PDZ Files
- Insert PDZ
- Add/Remove Sort Files
- Add/Remove Chemistry Files
- Add/Remove Elements**
- Create Sort File
- Copy to new Sort Sheet
- Modify Sort to Chemistry
- Update FP to CFZ
- Create Chem File
- Copy to new Chem Sheet
- Chem Test
- Sort Check
- Chem Check
- Build PDA Image
- Add-in Version

When you are satisfied with your chem files, it is time to double-check the elements you will be measuring

	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
		MnKa1	FeKa1	ZnKa1	GaKa1											COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	CC
																MnKa1	FeKa1	ZnKa1	GaKa1	ThLa1	
18	22	OB40KES_276_18	218.0403948	5315.435506	228.1249805	99.24805029	186.1314159	1555.842126	557.3466045	1181.295764	12386.74757	3457.700672	1564.30815								
19	28	OB40Mule_Creek19	120.732575	1717.256063	145.3132974	78.5553766	195.8714159	1923.66864	154.9314941	821.3964983	1464.020423	547.4727223	1723.061942								
20	4	OB40Basaltic_Plateau20	242.3811926	14804.93455	195.7341872	52.69267368	37.39128319	100.373893	1901.867997	158.9180475	965.7110342	150.4301476	1251.185788								
21	25	OB40McDaniel_Tank21	167.4446287	2415.746979	143.1322698	67.74661929	153.7204706	1155.376062	1715.290747	692.493247	3682.344435	675.828899	1668.19395								
22	8	OB40Cannonball1_22	132.4396603	5645.142416	340.4487463	109.7494813	228.7066171	2551.811098	94.62453313	1608.350802	12808.04545	1715.133682	1522.976588								
23	41	OB40Witham_Creek23	170.0646603	6148.100106	301.5978565	92.31305029	185.1707401	1529.10393	101.5463498	1332.820072	13015.09221	1315.68346	1515.201142								
24	15	OB40E_Paraiso24	97.74625587	4693.158637	346.3867325	117.8461047	218.3520917	1735.986757	75.70271649	2177.749172	13973.6281	996.8987165	1571.954712								
25	38	OB40VNN-2_25	268.698661	11141.36642	336.6275121	77.51756491	136.7851327	1295.263914	133.9942275	1386.996982	12297.89287	1575.108093	1409.57025								
26	11	OB40Chickahominy26	118.9474368	2732.016844	166.42638	66.55315906	109.8941875	842.448118	264.8166384	768.9438965	3788.522867	460.5126485	1678.550984								
27	13	OB40Davis_Creek27	120.6271603	1304.070421	99.17649025	75.51867368	104.1662148	955.7129068	653.950849	412.3604032	1328.12942	291.7263981	1716.099935								
28	10	OB40Cerro_del_Medio28	130.6828198	1816.51679	167.8864765	73.90115906	152.0045253	1249.424135	91.71816641	759.9669058	2263.306206	896.5512893	1672.23								
29	12	OB40Cougar_Mountain29	114.045075	1980.634656	170.7902698	63.60313392	93.33553902	801.6531938	422.9517828	766.5606452	1709.61	331.9686777	1713.81815								
30	30	OB40Pachuca30	219.4436926	3702.90699	313.8016912	98.52375321	149.8111464	1595.57393	97.96816641	1503.944461	11428.36846	1363.773349	1728.340604								
31	32	OB40Polvadera31	126.9611176	888.5188283	134.4272974	77.71102514	158.2068222	1225.256923	109.7442275	491.3836545	849.6316455	767.1551126	1799.298504								
32	34	OB40San_Leonel32	119.0929581	2954.128029	218.3420356	82.45256491	134.4668222	1200.900611	60.93726657	840.3102377	5802.069983	611.6722078	1662.730381								
33	42	OB40Zacualtipan33	99.01771323	2428.980026	135.5184902	94.2958076	234.2563475	2256.003025	418.2432938	942.0682046	2810.468275	415.8159942	1656.115315								
34	31	OB40Paredon34	128.7599368	2091.421883	152.4213663	84.57151052	135.5314843	1319.474709	129.2287776	801.9543846	2829.934325	726.6595243	1728.833753								
35	3	OB40Archibarca35	138.654522	2043.512884	171.500256	79.36302514	124.3761464	981.4072917	2905.532174	447.8318676	1888.726771	431.5070602	1731.842166								
36	26	OB40Meydan_Tepe36	163.3137243	2339.091341	154.1254214	176.2690507	88.02121345	1587.946511	225.2490663	938.1082046	3563.593385	626.6722078	1731.270893								
37	35	OB40Sarikamis37	120.8976816	1335.194967	111.65438	75.10567368	139.0711464	1116.93098	286.6757216	509.5836545	1350.474185	362.9058835	1792.047743								
38	19	OB40Gregory_Creek38	155.6271603	1548.040606	137.4674214	47.51756491	92.1662148	611.4354078	1353.698048	388.2046307	1055.810313	260.8091184	1687.395893								
39	29	OB40Obsidian_Cliffs39	110.0245537	1753.272108	134.5764076	65.12402514	93.07553902	692.7547518	1052.605348	341.8339813	1477.582758	236.8147068	1732.991719								

Duplex AlCheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready Calculate 75%

1:38 PM 3/9/2013

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

Menu Commands

$f_x$  =M20/109.1

Review the elements

Add/Remove Chemistry Elements

PDZ Element List

- MqKa1
- AlKa1
- SiKa1
- P Ka1
- ZrLa1
- NbLa1
- MoLa1
- S Ka1
- MoLb1
- AgLa1

Elements Used

- MnKa1
- FeKa1
- ZnKa1
- GaKa1
- ThLa1
- RbKa1
- SrKa1
- Y Ka1
- ZrKa1
- NbKa1
- RhKa1

GL1

	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON				
2	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1	GL1	MnKa1	FeKa1	
3									OB40Timbe					
4									OB40Guada					
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24									OB40Canno					
25									OB40Withar					
26									OB40EI_Par					
27									OB40VNN-2					
28									OB40Chicke					
29									OB40Davis					
30									OB40Cerro					
31									OB40Couga					
32									OB40Pachu					
33									OB40Polvac					
34									OB40San_L					
35									OB40Zacual					
36									OB40Pared					
37									OB40Archib					
38									OB40Meyda					
39									OB40Sarika					

Duplex AlCheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready

75%

1:40 PM 3/9/2013

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

Menu Commands

$f_x$  =M20/109.1

Don't forget to do this for both GL1 and GL2

Add/Remove Chemistry Element

PDZ Element List

- MgKa1
- AlKa1
- SiKa1
- P Ka1
- ZrLa1
- NbLa1
- MoLa1
- S Ka1
- MoLb1
- AgLa1

Elements Used

- MnKa1
- FeKa1
- ZnKa1
- GaKa1
- ThLa1
- RbKa1
- SrKa1
- Y Ka1
- ZrKa1
- NbKa1
- RhKa1

GL1

GL1

GL2

S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON	COMPTON				
2	FeKa1	ZnKa1	GaKa1	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1	GL1	MnKa1	FeKa1
3											OB40Timbe	1.416627683	7.015374978
4											OB40Guada	1.153964459	8.316729733
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													
33													
34													
35													
36													
37													
38													
39													

Duplex AICheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready

75%

1:40 PM 3/9/2013

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

- Read PDZ Files
- Insert PDZ
- Add/Remove Sort Files
- Add/Remove Chemistry Files
- Add/Remove Elements
- Create Sort File
- Copy to new Sort Sheet
- Modify Sort to Chemistry
- Update FP to CFZ
- Create Chem File**
- Copy to new Chem Sheet
- Chem Test
- Sort Check
- Chem Check
- Build PDA Image
- Add-in Version

$f_x = M20/109.1$

When you are satisfied, proceed to 'Create Chem File'

	AI	AJ	AK	AL	AM	AN	AO
	ThLa1	RbKa1	SrKa1	Y Ka1	ZrKa1	NbKa1	RhKa1
18							
19							
20							14.33829652
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							

Duplex AICheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready Calculate 75%

1:40 PM 3/9/2013

# Developing a Calibration

Make sure you are in the folder where your reference .pdz files are located

Select either GL1 or GL2

**Create Chemistry files**

Chemistry Name: **GL 1 \***

& Deconvolution exists

\* Chem calculated

Compton Energy Range

Start (kV): 19.5

End (kV): 22

Chemistry Intensity: **Compton**

OB40VNN-2 2.647799182 109.7887901 3.317180844 0.763870368 1.347902372 12.76379497 1.32040035 13.66768804 121.185385 15.52136473 13.89012859

OB40Chick 0.964464743 22.15208663 1.349439553 0.539634793 0.891058035 6.830844983 2.147219966 6.234848751 30.71858321 3.733987258 13.61024069

OB40Davis 0.907995185 9.8161156 0.746529848 0.568450686 0.784088933 7.193924778 4.922475341 3.103954861 9.997210536 2.195908152 12.91757572

OB40Cerro 1.004518389 13.96300235 1.290491383 0.568055337 1.16841174 9.60393662 0.705009158 5.841630392 17.3973343 6.891512274 12.85391445

OB40Coug 0.889552474 15.44896577 1.332165437 0.496104941 0.728017932 6.252901164 3.299027204 5.979179012 13.33497133 2.589358275 13.36779494

OB40Pachu 1.817564854 30.6697063 2.599094638 0.816033074 1.24082616 13.21550445 0.81143137 12.45657399 94.65663197 11.29559241 14.31515802

OB40Polvac 0.94690571 6.626781237 1.002590225 0.579587001 1.179943483 9.138252705 0.818498117 3.664854225 6.336751533 5.72162226 13.41958908

OB40San\_L 0.961202244 23.84284124 1.762244032 0.665476714 1.085285086 9.692498876 0.491826203 6.782164953 46.828652 4.936821693 13.41933851

OB40Zacual 0.810325408 19.87790029 1.10903466 0.771683028 1.917069827 18.46231863 3.422752926 7.709547892 22.99986313 3.402888777 13.55305303

OB40Pared 0.99875843 16.22263328 1.182294184 0.655999926 1.05128362 10.2348333 1.00239511 6.220558366 21.95108847 5.636515081 13.4101284

OB40Archib 1.10420102 16.27389411 1.365774118 0.63202218 0.990492525 7.815619111 23.13874471 3.566392192 15.04122617 3.436386559 13.7918465

OB40Meyda 1.27250837 18.22573898 1.200914924 0.685843957 1.373453722 12.37296642 1.755096355 7.309554345 27.76681771 4.882906403 13.48972178

OB40Sarika 0.91603032 10.11664621 0.845994696 0.569068599 1.053728947 8.462880586 2.172114878 3.861067241 10.2324154 2.749703618 13.57817656



# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

Menu Commands

$f_x$  =M20/109.1

COMPTON COMPTON COMPTON COMPTON COMPTON COMPTON COMPTON COMPTON COMPTON COMPTON

FeKa1 ZnKa1 GaKa1 ThLa1 RbKa1 SrKa1

**Create Chemistry files**

c: [BOOTCAMP]

C:\  
Users  
Lee  
Desktop  
Obsidian K0732  
Obsidian Cal Data

OB40Archibarca35.pdz  
OB40Basaltic\_Plateau20.pdz  
OB40Big\_Southern\_Butte06.pdz  
OB40Blue\_Mountain04.pdz  
OB40Burns\_Green15.pdz  
OB40Cannonball1\_22.pdz  
OB40Casa\_Diablo10.pdz  
OB40Cerro\_del\_Medio28.pdz

Chemistry Name  
GL 1 \*

& Deconvolution ex

\* Chem calculated

Compton Energy Range

Start (kV) 19.5

End (kV) 22

Chemistry Intensity  
Compton

Cancel

OK

This is the default normalization keV

'Compton' is the recommended default

58599	5.628502535	6.182091039	4.818946085	13.17009158							
48794	2.604398853	7.558640436	2.167974226	13.62144512							
37385	3.563162102	11.25526998	1.980094648	13.49225327							
20894	7.604105278	38.7455232	3.426984981	13.76834251							
37067	3.498947361	15.05906049	1.308148719	13.64624604							
04757	22.00879172	30.4470623	33.20705248	13.2016189							
35059	4.969503245	11.38161102	3.315942873	12.88138661							
46815	11.50298135	20.60894968	27.5366107	12.77333752							
34722	3.562807103	13.27473215	2.148672708	13.5061849							
22544	3.596822261	21.28448266	2.530419327	13.1527952							
05188	3.430805545	7.498798936	2.362023058	12.94544735							
48948	4.124111124	21.2544553	2.177399488	13.6924505							
14994	4.285851425	19.70241803	2.27235245	13.59558816							
28698	2.671733973	12.32973388	2.030619351	13.43484729							
27529	9.632553048	66.45175882	7.070168794	13.29251062							
51752	8.354829451	77.72216787	8.231353563	13.42253796							
40508	41.1223126	323.3218366	70.18848826	14.70603368							
34826	10.8276422	113.5357247	31.69294841	14.33829652							
23274	6.349940074	11.31784951	4.232327489	13.32041237							
00063	1.761255099	10.70277108	1.667185499	13.86662737							
38772	5.537952314	29.44815414	5.404685505	13.34074893							
38323	14.2476928	113.4610041	15.19363672	13.49139911							
72755	11.82154483	115.4383095	11.6695504	13.43918703							
34076	18.91392368	121.3620644	8.658144142	13.65255091							
OB40VNN-2	2.647799182	109.7887	17.180844	0.763870368	1.347902372	12.76379497	1.32040035	13.66768804	121.185385	15.52136473	13.89012859
OB40Chick	0.964464743		1.349439553	0.539634793	0.891058035	6.830844983	2.147219966	6.234848751	30.71858321	3.733987258	13.61024069
			0.746529848	0.568450686	0.784088933	7.193924778	4.922475341	3.103954861	9.997210536	2.195908152	12.9175752
			1.290491383	0.568055337	1.16841174	9.60393662	0.705009158	5.841630392	17.3973343	6.891512274	12.85391445
			1.332165437	0.496104941	0.728017932	6.252901164	3.299027204	5.979179012	13.33497133	2.589358275	13.36779494
			2.599094638	0.816033074	1.24082616	13.21550445	0.81143137	12.45657399	94.65663197	11.29559241	14.31515802
			1.002590225	0.579587001	1.179943483	9.138252705	0.818498117	3.664854225	6.336751533	5.72162226	13.41958908
			1.762244032	0.665476714	1.085285086	9.692498876	0.491826203	6.782164953	46.828652	4.936821693	13.41993851
			1.109034466	0.771683028	1.917069827	18.46231863	3.422752926	7.709547892	22.99986313	3.402888777	13.55305303
			1.182294184	0.655999926	1.05128362	10.2348333	1.00239511	6.22058366	21.95108847	5.636515081	13.4101284
			1.365774118	0.63202218	0.990492525	7.815619111	23.13874471	3.566392192	15.04122617	3.436386559	13.7918465
			1.200914924	0.685843957	1.373453722	12.37296642	1.755096355	7.309554345	27.76681771	4.882906403	13.48972178
			0.845994696	0.569068599	1.053728947	8.462880586	2.172114878	3.861067241	10.2324154	2.749703618	13.57817656

Duplex AlCheckSTD

Ready Calculate

Sheet PDZFiles GISort GIChem

75%

1:42 PM 3/9/2013

# Developing a Calibration

The screenshot shows the 'Create Chemistry files' dialog box in Microsoft Excel. The dialog box is open over a spreadsheet with columns for various elements like Fe, Zn, Ga, Th, Rb, Sr, Y, Zr, Nb, and Rh. The dialog box has fields for 'Chemistry Name' (GL 1 \*), 'Compton Energy Range' (Start: 19.5, End: 22), and 'Chemistry Intensity' (Compton). A list of files is shown in the left pane, and a file named 'OB40Cerro\_del\_Medio28.pdz' is selected. A callout arrow points to the 'End (kV)' field.

19.5 to 22 keV is the default portion of normalization. If you have very low Niobium, you can use 18.5 to 19.0 keV

# Developing a Calibration

The screenshot shows a Microsoft Excel spreadsheet with a 'Create Chemistry files' dialog box open. The dialog box has the following fields and options:

- Location: c: [BOOTCAMP]
- Chemistry Name: GL 1 \*
- & Deconvolution exists: (checkbox)
- \* Chem calculated: (checkbox)
- Compton Energy Range:
  - Start (kV): 19.5
  - End (kV): 22
- Chemistry Intensity: Compton

The spreadsheet background shows a table of peak data. The columns are labeled with element symbols and peak types (e.g., FeKa1, ZnKa1, GaKa1, ThLa1, RbKa1, SrKa1, Y Ka1, ZrKa1, NbKa1, RhKa1). The values in the cells represent peak intensities or counts.

It is important to keep in mind that the Niobium  $K_{\text{beta}}$  peak falls within 18.5 to 19.0 keV in that event

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

GL1 Delta-I Model Selection

Element	Slope	BG S	Omit Std	MnKa1	Given	Calc	Diff
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01	OB40Timber_Butte01	755.2366	799.8862	-44.6496
FeKa1	FeKa1	FeKa1	OB40Guadalupe_Victoria02	OB40Guadalupe_Victoria02	519.2000	576.1484	-56.9484
ZnKa1	ZnKa1	ZnKa1	OB40Glass_Buttess03	OB40Glass_Buttess03	327.5199	301.2432	26.2767
GaKa1	GaKa1	GaKa1	OB40Blue_Mountain04	OB40Blue_Mountain04	1,633.5616	1,548.7159	84.8457
ThLa1	ThLa1	ThLa1	OB40West_New_Britain1_05	OB40West_New_Britain1_05	592.4702	567.1038	25.3664
RbKa1	RbKa1	RbKa1	OB40Big_Southern_Butte06	OB40Big_Southern_Butte06	297.3767	417.1076	-119.7309
SrKa1	SrKa1	SrKa1	OB40Mono_Craters07	OB40Mono_Craters07	357.3806	300.3442	57.0364
Y Ka1	Y Ka1	Y Ka1	OB40RS_Hill08	OB40RS_Hill08	440.6457	388.4773	52.1684
ZrKa1	ZrKa1	ZrKa1	OB40Whitewater_Ridge09	OB40Whitewater_Ridge09	249.8348	309.7287	-59.8939
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10	OB40Casa_Diablo10	279.1894	224.7252	54.4642
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11	OB40Tucker_Hill11	521.4916	514.1903	7.3013
			OB40East_Medicine_lake12	OB40East_Medicine_lake12	264.4189	312.8054	-48.3865
			OB40Grasshopper_Flat13	OB40Grasshopper_Flat13	268.7620	363.6432	-94.8812
			OB40Inman_Creek14	OB40Inman_Creek14	537.0204	568.5834	-31.5630
			OB40Burns_Green15	OB40Burns_Green15	457.5342	323.1145	134.4197
			OB40La_Joya16	OB40La_Joya16	581.5132	696.5786	-115.0654
			OB40KES_362_17	OB40KES_362_17	1,774.9977	1,800.0357	-25.0380
			OB40KES_276_18	OB40KES_276_18	1,076.7073	1,069.0170	7.6903
			OB40Mule_Creek19	OB40Mule_Creek19	402.7178	363.6647	39.0531
			OB40Basaltic_Plateau20	OB40Basaltic_Plateau20	1,082.3973	1,069.2942	13.1031
			OB40McDaniel_Tank21	OB40McDaniel_Tank21	632.0000	686.1911	-54.1911
			OB40Cannonball1_22	OB40Cannonball1_22	460.6701	419.6821	40.9880

Const.  Save

Avg Diff:51.36276436

These are your elements you are calibrating for

Ready | Duplex | AlCheckSTD | QA-Summary | S1 Tracer QA Report | ChemTests | Assay Check | Alloy | PDAPCSheet | PDZFiles | GSort | GChem

75% | 1:42 PM | 3/9/2013

# Developing a Calibration

**GL1 Delta-I Model Selection**

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1	OB40Glass_Buttos03
GaKa1	GaKa1	GaKa1	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1	OB40Whitewater_Ridge09
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11

MnKa1	Given	Calc	Diff
OB40Timber_Butte01	755.2366	799.8862	-44.6496
OB40Guadalupe_Victoria02	519.2000	576.1484	-56.9484
OB40Glass_Buttos03	327.5199	301.2432	26.2767
OB40Blue_Mountain04	1,633.5616	1,548.7159	84.8457
OB40West_New_Britain1_05	592.4702	567.1038	25.3664
OB40Big_Southern_Butte06	297.3767	417.1076	-119.7309
OB40Mono_Craters07	357.3806	300.3442	57.0364
OB40RS_Hill08	440.6457	388.4773	52.1684
OB40Whitewater_Ridge09	249.8348	309.7287	-59.8939
OB40Casa_Diablo10	279.1894	224.7252	54.4642
OB40Tucker_Hill11	521.4916	514.1903	7.3013
OB40East_Medicine_lake12	264.4189	312.8054	-48.3865

Const. Avg Diff: 51.36276436

Save

These are the elements used to calculate the slope (calibration is a regression technique, in part)

# Developing a Calibration

GL1 Delta-I Model Selection

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber...
FeKa1	FeKa1	FeKa1	OB40Glass...
ZnKa1	ZnKa1	ZnKa1	OB40Glass_Buttes03
GaKa1	GaKa1	GaKa1	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1	OB40Whitewater_Ridge09
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11
			OB40East_Medicine_lake12
			OB40Grasshopper_Flat13
			OB40Inman_Creek14
			OB40Burns_Green15
			OB40La_Joya16
			OB40KES_362_17
			OB40KES_276_18
			OB40Mule_Creek19
			OB40Basaltic_Plateau20
			OB40McDaniel_Tank21
			OB40Cannonball1_22
			OB40Witham_Creek23
			OB40El_Paraiso24
			OB40VNN-2_25
			OB40Chickahominy26
			OB40Davis_Creek27
			OB40Cerro_del_Medio28
			OB40Cougar_Mountain29
			OB40Pachuca30
			OB40Polvadera31
			OB40San_Leonel32
			OB40Zacualtipan33
			OB40Paredon34
			OB40Archibarca35
			OB40Meydan_Tepe36
			OB40Sarikamis37
			OB40Gregory_Creek38
			OB40Obsidian_Cliffs39

Const.  
Avg Diff:51.36276436  
Save

'BG S' are the elements used to contribute data in the calibration. Highlighted elements are considered when calibrating for elements in the 'Element' column to the left

'BG S' are the elements used to contribute data in the calibration. Highlighted elements are considered when calibrating for elements in the 'Element' column to the left

# Developing a Calibration

**GL1 Delta-I Model Selection**

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1	OB40Glass_Buttess03
GaKa1	GaKa1	GaKa1	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1	OB40Whitewater_Ridge09
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11

MnKa1	Given	Calc	Diff
OB40Timber_Butte01	755.2366	799.8862	-44.6496
OB40Guadalupe_Victoria02	519.2000	576.1484	-56.9484
OB40Glass_Buttess03	327.5199	301.2432	26.2767
OB40Blue_Mountain04	1,633.5616	1,548.7159	84.8457
OB40West_New_Britain1_05	592.4702	567.1038	25.3664
OB40Big_Southern_Butte06	297.3767	417.1076	-119.7309
OB40Mono_Craters07	357.3806	300.3442	57.0364
OB40RS_Hill08	440.6457	388.4773	52.1684
OB40Whitewater_Ridge09	249.8348	309.7287	-59.8939
OB40Casa_Diablo10	279.1894	224.7252	54.4642
OB40Tucker_Hill11	521.4916	514.1903	7.3013
OB40East_Medicine_lake12	264.4189	312.8054	-48.3865
OB40Grasshopper_Flat13	269.7620	262.6422	71.1198
OB40Inman_Creek14			
OB40Burns_Green15			
OB40La_Joya16			
OB40KES_362_17			
OB40KES_276_18			
OB40Mule_Creek19			
OB40Basaltic_Plateau20			
OB40McDaniel_Tank21			
OB40Cannonball1_22			
OB40Witham_Creek23			
OB40El_Paraiso24			
OB40VNN_2_25			
OB40Chickahominy26			
OB40Davis_Creek27			
OB40Cerro_del_Medio28			
OB40Cougar_Mountain29			
OB40Pachuca30			
OB40Polvadera31			
OB40San_Leonel32			
OB40Zacualtipan33			
OB40Paredon34			
OB40Archibarca35			
OB40Meydan_Tepe36			
OB40Sarikamis37			
OB40Gregory_Creek38			
OB40Obsidian_Cliffs39			

Const. Avg Diff: 51.36276436

Save

In this column, you can omit standards for certain elements. This may be advisable in some cases

# Developing a Calibration

Press 'CTRL' and select each element

As you so, an asterisk (\*) will appear next to each element name, indicating that it has been checked

The screenshot displays the 'GL1 Delta-I Model Selection' dialog box in Microsoft Excel. The dialog box has a list of elements on the left and a list of standard names on the right. The elements are: MnKa1, FeKa1, ZnKa1, GaKa1, ThLa1, RbKa1, SrKa1, Y Ka1, ZrKa1, NbKa1, RhKa1. The standard names are: OB40Timber\_Butte01, OB40Guadalupe\_Victoria02, OB40Blue\_Mountain04, OB40West\_New\_Britain1\_05, OB40Big\_Southern\_Butte06, OB40Mono\_Craters07, OB40RS\_Hill08, OB40Whitewater\_Ridge09, OB40Casa\_Diablo10, OB40Tucker\_Hill11, OB40East\_Medicine\_Lake12, OB40Grasshopper\_Flat13, OB40Inman\_Creek14, OB40Burns\_Green15, OB40La\_Joya16, OB40KES\_362\_17, OB40KES\_276\_18, OB40Mule\_Creek19, OB40Basaltic\_Plateau20, OB40McDaniel\_Tank21, OB40Cannonball1\_22, OB40Witham\_Creek23, OB40EI\_Paraiso24, OB40VNN-2\_25, OB40Chickahominy26, OB40Davis\_Creek27, OB40Cerro\_del\_Medio28, OB40Cougar\_Mountain29, OB40Pachuca30, OB40Polvadera31, OB40San\_Leonel32, OB40Zacualtipan33, OB40Paredon34, OB40Archibarca35, OB40Meydan\_Tepe36, OB40Sarikamis37, OB40Gregory\_Creek38, OB40Obsidian\_Cliffs39. The 'GaKa1' element is selected, and its standard name 'OB40Grasshopper\_Flat13' is highlighted. A callout box points to the asterisk (\*) next to 'GaKa1' in the list, stating: 'As you so, an asterisk (\*) will appear next to each element name, indicating that it has been checked'. The dialog box also has a 'Save' button and a 'Const.' checkbox. The background shows a spreadsheet with columns for element names and numerical values. The spreadsheet has columns labeled 'AQ', 'AR', 'AS', 'MnKa1', 'OB40Obsidian01', 'OB40Obsidian02', 'OB40Obsidian03', 'OB40Obsidian04', 'OB40Obsidian05', 'OB40Obsidian06', 'OB40Obsidian07', 'OB40Obsidian08', 'OB40Obsidian09', 'OB40Obsidian10', 'OB40Obsidian11', 'OB40Obsidian12', 'OB40Obsidian13', 'OB40Obsidian14', 'OB40Obsidian15', 'OB40Obsidian16', 'OB40Obsidian17', 'OB40Obsidian18', 'OB40Obsidian19', 'OB40Obsidian20', 'OB40Obsidian21', 'OB40Obsidian22', 'OB40Obsidian23', 'OB40Obsidian24', 'OB40Obsidian25', 'OB40Obsidian26', 'OB40Obsidian27', 'OB40Obsidian28', 'OB40Obsidian29', 'OB40Obsidian30', 'OB40Obsidian31', 'OB40Obsidian32', 'OB40Obsidian33', 'OB40Obsidian34', 'OB40Obsidian35', 'OB40Obsidian36', 'OB40Obsidian37'. The spreadsheet also has a column for 'Avg Diff:3.24258533'. The taskbar at the bottom shows the Windows taskbar with various icons and the system clock showing 1:43 PM on 3/9/2013.



# Developing a Calibration

The screenshot shows the 'GL1 Delta-I Model Selection' dialog box in Microsoft Excel. The dialog box is divided into several sections:

- Element, Slope, BG S, Omit Std:** Lists various elements and standards. The 'Omit Std' column is currently empty.
- Table:** A table with columns: Y Ka1, Given, Calc, and Diff. It lists 40 standards with their corresponding 'Given' and 'Calc' values and the resulting 'Diff'.
- Bottom:** A checkbox for 'Const.' (checked) and a 'Save' button. The 'Avg Diff' is displayed as 4.56276893.

A callout box with the text "Keep an eye on 'Avg Diff' below, you want smaller numbers here" points to the 'Avg Diff' value.

Y Ka1	Given	Calc	Diff
OB40Guadalupe_Victoria02	14.5540	13.3094	1.2446
OB40Glass_Buttres03	26.8070	22.1800	4.6270
OB40West_New_Britain1_05	30.3400	23.3606	6.9794
OB40Big_Southern_Butte06	206.8420	199.0570	7.7850
OB40Mono_Craters07	26.5610	33.9545	-7.3935
OB40RS_Hill08	85.2570	95.0094	-9.7524
OB40Whitewater_Ridge09	23.0310	22.4565	0.5745
OB40Casa_Diablo10	14.7050	23.4793	-8.7743
OB40Tucker_Hill11	24.9380	20.4956	4.4424
OB40East_Medicine_lake12	24.6280	27.5757	-2.9477
OB40Grasshopper_Flat13	25.6910	29.0078	-3.3168
OB40Inman_Creek14	19.3660	15.2521	4.1139
OB40Burns_Green15	77.4320	78.9075	-1.4755
OB40La_Joya16	69.9880	67.3259	2.6621
OB40KES_362_17	415.1300	417.0687	-1.9387
OB40KES_276_18	87.5970	92.6716	-5.0746
OB40Mule_Creek19	39.0790	46.6143	-7.5353
OB40Basaltic_Plateau20	21.4590	9.0599	12.3991
OB40McDaniel_Tank21	38.5280	42.2499	-3.7219
OB40Cannonball1_22	118.1930	124.6375	-6.4445
OB40Witham_Creek23	100.9850	101.3694	-0.3844
OB40VNN-2_25	135.5060	119.3809	16.1251
OB40Chickahominy26	52.8770	46.4144	6.4626
OB40Davis_Creek27	18.0740	17.8593	0.2147
OB40Cerro_del_Medio28	42.1540	42.0727	0.0813
OB40Cougar_Mountain29	50.4550	43.6955	6.7595
OB40Pachuca30	108.1570	106.7066	1.4504
OB40Polvadera31	21.1190	21.9694	-0.8504
OB40San_Leonel32	52.0990	51.6776	0.4214
OB40Paredon34	45.8650	45.7573	0.1077
OB40Archibarca35	20.2640	25.7310	-5.4670
OB40Meydan_Tepe36	50.0600	56.1285	-6.0685
OB40Sarikamis37	23.3290	24.1343	-0.8053
OB40Gregory_Creek38	22.4730	18.7763	3.6967
OB40Obsidian_Cliffs39	16.3070	14.3245	1.9825
OB40EI_Peceno40	16.3990	26.5781	-10.1791

# Developing a Calibration

K0732 Obsidian - Copy.xlsx - Microsoft Excel (Trial)

GL1 Delta-I Model Selection

Element	Slope	BG S	Omit Std	Y Ka1	Given	Calc	Diff
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01	OB40Guadalupe_Victoria02	14.5540	13.3094	1.2446
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02	OB40Glass_Buttess03	26.8070	22.1800	4.6270
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttess03	OB40West_New_Britain1_05	30.3400	23.3606	6.9794
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04	OB40Big_Southern_Butte06	206.8420	199.0570	7.7850
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain1_05	OB40Mono_Craters07	26.5610	33.9545	-7.3935
RbKa1	RbKa1	RbKa1*	OB40Big_Southern_Butte06	OB40RS_Hill08	85.2570	95.0094	-9.7524
SrKa1	SrKa1	SrKa1*	OB40Mono_Craters07	OB40Whitewater_Ridge09	23.0310	22.4565	0.5745
Y Ka1	Y Ka1	Y Ka1	OB40RS_Hill08	OB40Casa_Diablo10	14.7050	23.4793	-8.7743
ZrKa1	ZrKa1	ZrKa1	OB40Whitewater_Ridge09	OB40Tucker_Hill11	24.9380	20.4956	4.4424
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10	OB40East_Medicine_lake12	24.6280	27.5757	-2.9477
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11	OB40Grasshopper_Flat13	25.6910	29.0078	-3.3168
			OB40East_Medicine_lake12	OB40Inman_Creek14	19.3660	15.2521	4.1139
			OB40Grasshopper_Flat13	OB40Burns_Green15	77.4320	78.9075	-1.4755
			OB40Inman_Creek14	OB40La_Joya16	69.9880	67.3259	2.6621
			OB40Burns_Green15	OB40KES_362_17	415.1300	417.0687	-1.9387
			OB40La_Joya16	OB40KES_276_18	87.5970	92.6716	-5.0746
			OB40KES_362_17	OB40Mule_Creek19	39.0790	46.6143	-7.5353
			OB40KES_276_18	OB40Basaltic_Plateau20	21.4590	9.0599	12.3991
			OB40Mule_Creek19	OB40McDaniel_Tank21	38.5280	42.2499	-3.7219
			OB40Basaltic_Plateau20	OB40Cannonball1_22	118.1930	124.6375	-6.4445
			OB40McDaniel_Tank21	OB40Witham_Creek23	100.9850	101.3694	-0.3844
				OB40VNN-2_25	135.5060	119.3809	16.1251
				OB40Chickahominy26	52.8770	46.4144	6.4626
				OB40Davis_Creek27	18.0740	17.8593	0.2147
				OB40Cerro_del_Medio28	42.1540	42.0727	0.0813
				OB40Cougar_Mountain29	50.4550	43.6955	6.7595
				OB40Pachuca30	108.1570	106.7066	1.4504
				OB40Polvadera31	21.1190	21.9694	-0.8504
				OB40San_Leonel32	52.0990	51.6776	0.4214
				OB40Paredon34	45.8650	45.7573	0.1077
				OB40Archibarca35	20.2640	25.7310	-5.4670
				OB40Meydan_Tepe36	50.0600	56.1285	-6.0685
				OB40Sarikamis37	23.3290	24.1343	-0.8053
				OB40Gregory_Creek38	22.4730	18.7763	3.6967
				OB40Obsidian_Cliffs39	16.3070	14.3245	1.9825
				OB40EI_Peceno40	16.3990	26.5781	-10.1791

Const.  
Avg Diff: 4.56276893

Save

In this case, there is a large number for Y, **4.56**

Duplex | AlCheckSTD | QA-Summary | S1 Tracer QA Report | ChemTests | Assay Check | Alloy | PDAPCSheet | PDZfiles | GSort | GChem

Ready | 75% | 1:43 PM 3/9/2013

# Developing a Calibration

**Y: 4.56**

To address this, we will try including Rubidium in BG S with 'CTRL' + mouse click

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttess03
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1*	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1*	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1	OB40Casa_Diablo10
NbKa1	NbKa1	NbKa1	OB40Tucker_Hill11
RhKa1	RhKa1	RhKa1	OB40East_Medicine_Lake12
			OB40Grasshopper_Flat13
			OB40Inman_Creek14
			OB40Burns_Green15
			OB40La_Joya16
			OB40KES_362_17
			OB40KES_276_18
			OB40Mule_Creek19
			OB40Basaltic_Plateau20
			OB40McDaniel_Tank21
			OB40Cannonball1_22
			OB40Witham_Creek23
			OB40EI_Paraiso24
			OB40VNN-2_25
			OB40Chickahominy26
			OB40Davis_Creek27
			OB40Cerro_del_Medio28
			OB40Cougar_Mountain29
			OB40Pachuca30
			OB40Polvadera31
			OB40San_Leonel32
			OB40Zacualtipan33
			OB40Paredon34
			OB40Archibarca35
			OB40Meydan_Tepe36
			OB40Sarikamis37
			OB40Gregory_Creek38
			OB40Obsidian_Cliffs39

Const.  
Avg Diff: 4.56276893

Save

OB40Mule_Creek19	39.0790	46.6143	-7.5353
OB40Basaltic_Plateau20	21.4590	9.0599	12.3991
OB40McDaniel_Tank21	38.5280	42.2499	-3.7219
OB40Cannonball1_22	118.1930	124.6375	-6.4445
OB40Witham_Creek23	100.9850	101.3694	-0.3844
OB40VNN-2_25	135.5060	119.3809	16.1251
OB40Chickahominy26	52.8770	46.4144	6.4626
OB40Davis_Creek27	18.0740	17.8593	0.2147
OB40Cerro_del_Medio28	42.1540	42.0727	0.0813
OB40Cougar_Mountain29	50.4550	43.6955	6.7595
OB40Pachuca30	108.1570	106.7066	1.4504
OB40Polvadera31	21.1190	21.9694	-0.8504
OB40San_Leonel32	52.0990	51.6776	0.4214
OB40Paredon34	45.8650	45.7573	0.1077
OB40Archibarca35	20.2640	25.7310	-5.4670
OB40Meydan_Tepe36	50.0600	56.1285	-6.0685
OB40Sarikamis37	23.3290	24.1343	-0.8053
OB40Gregory_Creek38	22.4730	18.7763	3.6967
OB40Obsidian_Cliffs39	16.3070	14.3245	1.9825
OB40EI_Peceno40	16.3990	26.5781	-10.1791

# Developing a Calibration

GL1 Delta-I Model Selection

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttess03
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain05
RbKa1	RbKa1	RbKa1*	OB40Mono_Craters07
SrKa1	SrKa1	SrKa1*	OB40RS_Hill08
Y Ka1	Y Ka1	Y Ka1	OB40Whitewater_Ridge09
ZrKa1	ZrKa1	ZrKa1	OB40Casa_Diablo10
NbKa1	NbKa1	NbKa1	OB40Tucker_Hill11
RhKa1	RhKa1	RhKa1	OB40East_Medicine_Lake12
			OB40Grasshopper_Flat13
			OB40Inman_Creek14
			OB40Burns_Green15
			OB40La_Joya16
			OB40KES_362_17
			OB40KES_276_18
			OB40Mule_Creek19
			OB40Basaltic_Plateau20
			OB40McDaniel_Tank21
			OB40Cannonball1_22
			OB40Witham_Creek23
			OB40EI_Paraiso24
			OB40VNN-2_25
			OB40Chickahominy26
			OB40Davis_Creek27
			OB40Cerro_del_Medio28
			OB40Cougar_Mountain29
			OB40Pachuca30
			OB40Polvadera31
			OB40San_Leonel32
			OB40Zacualtipan33
			OB40Paredon34
			OB40Archibarca35
			OB40Meydan_Tepe36
			OB40Sarikamis37
			OB40Gregory_Creek38
			OB40Obsidian_Cliffs39

Y: 2.39

Const.

Avg Diff: 2.39882082

OB40Davis_Creek27	18.0740	17.6165	0.4575
OB40Cerro_del_Medio28	42.1540	42.3919	-0.2379
OB40Cougar_Mountain29	50.4550	49.2487	1.2063
OB40Pachuca30	108.1570	109.4957	-1.3387
OB40Polvadera31	21.1190	19.8819	1.2371
OB40San_Leonel32	52.0990	52.7785	-0.6795
OB40Paredon34	45.8650	45.5937	0.2713
OB40Archibarca35	20.2640	24.4090	-4.1450
OB40Meydan_Tepe36	50.0600	54.1844	-4.1244
OB40Sarikamis37	23.3290	23.2513	0.0777
OB40Gregory_Creek38	22.4730	21.8184	0.6546
OB40Obsidian_Cliffs39	16.3070	16.0019	0.3051
OB40EI_Peceno40	16.3990	15.9761	0.4229

Save

Rubidium is now selected, and our average difference has dropped, meaning the calibration is improved for that element

# Developing a Calibration

Standards can also be omitted to improve the calibration. For example, KES standards (from Kenya) have very large amounts of Niobium

Nb: 1.97

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttes03
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1*	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1*	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1*	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1*	OB40Whitewater_Ridge09
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11
			OB40East_Medicine_Lake12
			OB40Grasshopper_Flat13
			OB40Inman_Creek14
			OB40Burns_Green15
			OB40La_Joya16
			OB40KES_362_17
			OB40KES_276_18
			OB40Mule_Creek19
			OB40Basaltic_Plateau20
			OB40McDaniel_Tank21
			OB40Cannonball1_22
			OB40Witham_Creek23
			OB40EI_Paraiso24
			OB40VNN-2_25
			OB40Chickahominy26
			OB40Davis_Creek27
			OB40Cerro_del_Medio28
			OB40Cougar_Mountain29
			OB40Pachuca30
			OB40Polvadera31
			OB40San_Leonel32
			OB40Zacualtipan33
			OB40Paredon34
			OB40Archibarca35
			OB40Meydan_Tepe36
			OB40Sarikamis37
			OB40Gregory_Creek38
			OB40Obsidian_Cliffs39

Const.  
Avg Diff:1.97251707

Save

# Developing a Calibration

**Nb: 1.97**

This may not be needed for our calibration, so we will omit those standards and see if our Niobium assessment improves. 'CTRL' + mouse click

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttess03
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1*	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1*	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1*	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1*	OB40Whitewater_Ridge09
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11
			OB40East_Medicine_lake12
			OB40Grasshopper_Flat13
			OB40Inman_Creek14
			OB40Burns_Green15
			OB40La_Joya16
			OB40KES_362_17
			OB40KES_276_18
			OB40Mule_Creek19
			OB40Basaltic_Plateau20
			OB40McDaniel_Tank21
			OB40Cannonball1_22
			OB40Witham_Creek23
			OB40EI_Paraiso24
			OB40VNN-2_25
			OB40Chickahominy26
			OB40Davis_Creek27
			OB40Cerro_del_Medio28
			OB40Cougar_Mountain29
			OB40Pachuca30
			OB40Polvadera31
			OB40San_Leonel32
			OB40Zacualtipan33
			OB40Paredon34
			OB40Archibarca35
			OB40Meydan_Tepe36
			OB40Sarikamis37
			OB40Gregory_Creek38
			OB40Obsidian_Cliffs39

Const.  
Avg Diff:1.97251707

Save

# Developing a Calibration

GL1 Delta-I Model Selection

Element	Slope	BG S	Omit Std	Nb
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01	OB40Timb
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02	OB40Guadalu
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttess03	OB40Glass
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04	OB40Blue_
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain1_05	OB40West_Ne
RbKa1	RbKa1	RbKa1*	OB40Big_Southern_Butte06	OB40Big_Sou
SrKa1	SrKa1	SrKa1*	OB40Mono_Craters07	OB40Mond
Y Ka1	Y Ka1	Y Ka1*	OB40RS_Hill08	OB40R
ZrKa1	ZrKa1	ZrKa1*	OB40Whitewater_Ridge09	OB40Whitew
NbKa1	NbKa1	NbKa1	OB40Casa_Diablo10	OB40Casa
RhKa1	RhKa1	RhKa1	OB40Tucker_Hill11	OB40Tuc
			OB40East_Medicine_Lake12	OB40East_Me
			OB40Grasshopper_Flat13	OB40Grassh
			OB40Inman_Creek14	OB40Inma
			OB40Burns_Green15	
			OB40La_Joya16	
			OB40KES_362_17	
			OB40KES_276_18	
			OB40Mule_Creek19	OB40Mule
			OB40Basaltic_Plateau20	OB40Basalt
			OB40McDaniel_Tank21	OB40McDa
			OB40Cannonball1_22	OB40Cann
			OB40Witham_Creek23	OB40Witha
			OB40El_Paraiso24	OB40El_
			OB40VNN-2_25	OB40V
			OB40Chickahominy26	OB40Chick
			OB40Davis_Creek27	OB40Davis_C
			OB40Cerro_del_Medio28	OB40Cerro_
			OB40Cougar_Mountain29	OB40Cougar_
			OB40Pachuca30	OB40Pachu
			OB40Polvadera31	OB40Polv
			OB40San_Leonel32	OB40San_
			OB40Zacualtipan33	OB40Zacu
			OB40Paredon34	OB40P
			OB40Archibarca35	OB40Arch
			OB40Meydan_Tepe36	OB40Mey
			OB40Sarikamis37	OB40Sari
			OB40Gregory_Creek38	OB40Greg
			OB40Obsidian_Cliffs39	OB40Obs

Const.  Save

Avg Diff: 1.79844220

Nb: 1.79

With KES omitted, our Niobium average difference falls, indicating a slight improvement in the measurement of that element

# Developing a Calibration

When every element listed in 'BG S' has an asterisk (\*) next to it, then you are able to proceed to create your calibration file

Click 'Save'

Element	Slope	BG S	Omit Std
MnKa1	MnKa1	MnKa1*	OB40Timber_Butte01
FeKa1	FeKa1	FeKa1*	OB40Guadalupe_Victoria02
ZnKa1	ZnKa1	ZnKa1*	OB40Glass_Buttess03
GaKa1	GaKa1	GaKa1*	OB40Blue_Mountain04
ThLa1	ThLa1	ThLa1*	OB40West_New_Britain1_05
RbKa1	RbKa1	RbKa1*	OB40Big_Southern_Butte06
SrKa1	SrKa1	SrKa1*	OB40Mono_Craters07
Y Ka1	Y Ka1	Y Ka1*	OB40RS_Hill08
ZrKa1	ZrKa1	ZrKa1*	OB40Casa_Diablo10
NbKa1	NbKa1	NbKa1*	OB40Tucker_Hill11
RhKa1	RhKa1	RhKa1*	OB40East_Medicine_Lake12
			OB40Grasshopper_Flat13
			OB40Inman_Creek14
			OB40Burns_Green15
			OB40La_Joya16
			OB40KES_362_17
			OB40KES_276_18
			OB40Mule_Creek19
			OB40Basaltic_Plateau20
			OB40McDaniel_Tank21
			OB40Cannonball1_22
			OB40Witham_Creek23
			OB40El_Paraiso24
			OB40VNN-2_25
			OB40Chickahominy26
			OB40Davis_Creek27
			OB40Cerro_del_Medio28
			OB40Cougar_Mountain29
			OB40Pachuca30
			OB40Polvadera31
			OB40San_Leonel32
			OB40Zacualtipan33
			OB40Paredon34
			OB40Archibarca35
			OB40Meydan_Tepe36
			OB40Sarikamis37
			OB40Gregory_Creek38
			OB40Obsidian_Cliffs39

OB40El_Paraiso24	0.0000	0.0000	0.0000
OB40VNN-2_25	0.0000	0.0000	0.0000
OB40Chickahominy26	0.0000	0.0000	0.0000
OB40Davis_Creek27	0.0000	0.0000	0.0000
OB40Cerro_del_Medio28	0.0000	0.0000	0.0000
OB40Cougar_Mountain29	0.0000	0.0000	0.0000
OB40Pachuca30	0.0000	0.0000	0.0000
OB40Polvadera31	0.0000	0.0000	0.0000
OB40San_Leonel32	0.0000	0.0000	0.0000
OB40Zacualtipan33	0.0000	0.0000	0.0000
OB40Paredon34	0.0000	0.0000	0.0000
OB40Archibarca35	0.0000	0.0000	0.0000
OB40Meydan_Tepe36	0.0000	0.0000	0.0000
OB40Sarikamis37	0.0000	0.0000	0.0000
OB40Greaorv_Creek38	0.0000	0.0000	0.0000

Const.  Avg Diff:0.00000000

Save



# Developing a Calibration

Then simply navigate to the folder where you will save your calibration file

And then click 'OK'

Name	Date modified	Typ
OB40Tucker_Hill11	0.0000	0.0000
OB40East_Medicine_lake12	0.0000	0.0000
OB40Grasshopper_Flat13	0.0000	0.0000
OB40Inman_Creek14	0.0000	0.0000
OB40Burns_Green15	0.0000	0.0000
OB40La_Joya16	0.0000	0.0000
OB40KES_362_17	0.0000	0.0000
OB40KES_276_18	0.0000	0.0000
OB40Mule_Creek19	0.0000	0.0000
OB40Basaltic_Plateau20	0.0000	0.0000
OB40McDaniel_Tank21	0.0000	0.0000
OB40Cannonball1_22	0.0000	0.0000
OB40Witham_Creek23	0.0000	0.0000
OB40EI_Paraiso24	0.0000	0.0000

RF	Obsidian	
RF21A	OB40Obsidian21	6
RF22A	OB40Obsidian22	4
RF23A	OB40Obsidian23	6
RF24A	OB40Obsidian24	2
RF25A	OB40Obsidian25	12
RF26A	OB40Obsidian26	4
RF27A	OB40Obsidian27	4
RF28A	OB40Obsidian28	4
RF29A	OB40Obsidian29	3
RF30A	OB40Obsidian30	11
RF31A	OB40Obsidian31	4
RF32A	OB40Obsidian32	2
RF33A	OB40Obsidian33	1
RF34A	OB40Obsidian34	3
RF35A	OB40Obsidian35	5
RF36A	OB40Obsidian36	5
RF37A	OB40Obsidian37	3

OB40Cougar\_Mountain29  
OB40Pachuca30  
OB40Polvadera31  
OB40San\_Leonel32  
OB40Zacualtipan33  
OB40Paredon34  
OB40Archibarca35  
OB40Meydan\_Tepe36  
OB40Sarikamis37  
OB40Gregory\_Creek38  
OB40Obsidian\_Cliffs39

Save

Const.   
Avg Diff:0.00000000

# Developing a Calibration

File Home Insert Page Layout Formulas Data Review View Add-Ins

S1CalProcess

- Read PDZ Files
- Insert PDZ
- Add/Remove Sort Files
- Add/Remove Chemistry Files
- Add/Remove Elements
- Create Sort File
- Copy to new Sort Sheet
- Modify Sort to Chemistry
- Update FP to CFZ
- Create Chem File**
- Copy to new Chem Sheet
- Chem Test
- Sort Check
- Chem Check
- Build PDA Image
- Add-in Version

fx =M20/109.1

COMPTON COMPTON COMPTON COMPTON COMPTON COMPTON

La1 RbKa1 SrKa1

COMPTON Y Ka1 ZrKa1 NbKa1 RhKa1

58599 5.628502535 6.182091039 4.818946085 13.17009158

48794 2.604398853 7.558640436 2.167974226 13.62144512

37385 3.563162102 11.25526998 1.980094648 13.49225327

20894 7.604105278 38.7455232 3.426984981 13.76834251

37067 3.498947361 15.05906049 1.308148719 13.64624604

04757 22.00879172 30.4470623 33.20705248 13.2016189

35059 4.969503245 11.38161102 3.315942873 12.88138661

46815 11.50298135 20.60894968 27.5366107 12.77333752

34722 3.562807103 13.27473215 2.148672708 13.5061849

22544 3.596822261 21.28448266 2.530419327 13.1527952

05188 3.430805545 7.498798936 2.362023058 12.94544735

48948 4.124111124 21.2544553 2.177399488 13.6924505

14994 4.285851425 19.70241803 2.27235245 13.59558816

28698 2.671733973 12.32973388 2.030619351 13.43484729

27529 9.632553048 66.45175882 7.070168794 13.29251062

51752 8.354829451 77.72216787 8.231353563 13.42253796

40508 41.1223126 323.3218366 70.18848826 14.70603368

34826 10.8276422 113.5357247 31.69294841 14.33829652

23274 6.349940074 11.31784951 4.232327489 13.32041237

00063 1.761255099 10.70277108 1.667185499 13.86662737

38772 5.537952314 29.44815414 5.404685505 13.34074893

38323 14.2476928 113.4610041 15.19363672 13.49139911

72755 11.82154483 115.4383095 11.6695504 13.43918703

34076 18.91392368 121.3620644 8.658144142 13.65255091

OB40VNN-2 2.647799182 109.7887901 3.317180844 0.763870368 1.347902372 12.76379497 1.32040035 13.66768804 121.185385 15.52136473 13.89012859

OB40Chick 0.964464743 22.15208663 1.349439553 0.539634793 0.891058035 6.830844983 2.147219966 6.234848751 30.71858321 3.733987258 13.61024069

OB40Davis 0.907995185 9.81611156 0.746529848 0.568450686 0.784088933 7.193924778 4.922475341 3.103954861 9.997210536 2.195908152 12.91757572

OB40Cerro 1.004518389 13.96300235 1.290491383 0.568055337 1.16841174 9.60393662 0.705009158 5.841630392 17.3973343 6.891512274 12.85391445

OB40Coug 0.889552474 15.44896577 1.332165437 0.496104941 0.728017932 6.252901164 3.299027204 5.979179012 13.33497133 2.589358275 13.36779494

OB40Pachu 1.817564854 30.6697063 2.599094638 0.816033074 1.24082616 13.21550445 0.81143137 12.45657399 94.65663197 11.29559241 14.31515802

OB40Polvac 0.94690571 6.626781237 1.002590225 0.579587001 1.179943483 9.138252705 0.818498117 3.664854225 6.336751533 5.72162226 13.41958908

OB40San\_L 0.961202244 23.84284124 1.762244032 0.665476714 1.085285086 9.692498876 0.491826203 6.782164953 46.828652 4.936821693 13.41993851

OB40Zacual 0.810325408 19.87790029 1.10903466 0.771683028 1.917069827 18.46231863 3.422752926 7.709547892 22.99986313 3.402888777 13.55305303

OB40Pared 0.99875843 16.22263328 1.182294184 0.655999926 1.05128362 10.2348333 1.00239511 6.22058366 21.95108847 5.636515081 13.4101284

OB40Archib 1.10420102 16.27389411 1.365774118 0.63202218 0.990492525 7.815619111 23.13874471 3.566392192 15.04122617 3.436386559 13.7918465

OB40Meyda 1.27250837 18.22573898 1.200914924 0.685843957 1.373453722 12.37296642 1.755096355 7.309554345 27.76681771 4.882906403 13.48972178

OB40Sarika 0.91603032 10.11664621 0.845994696 0.569068599 1.053728947 8.462880586 2.172114878 3.861067241 10.2324154 2.749703618 13.57817656

Duplex AlCheckSTD QA-Summary S1 Tracer QA Report ChemTests Assay Check Alloy PDAFCSheet PDZFiles GISort GIChem

Ready Calculate 75%

1:40 PM 3/9/2013

Don't forget to go back and do the same thing for GL2

# Developing a Calibration

The screenshot shows a Windows desktop with a file explorer window open. The window title is 'Obsidian Cal Files' and the address bar shows the path 'Obsidian K0732 > Obsidian Cal Files'. The file list is as follows:

Name	Date modified	Type	Size
GL1.CFZ	3/7/2013 8:23 PM	CFZ File	5 KB
GL1.SRZ	1/29/2013 10:50 PM	SRZ File	7 KB
GL2.CFZ	3/7/2013 8:23 PM	CFZ File	5 KB
T3VaXXX	1/29/2013 10:50 PM	File	3 KB

A callout box points to the 'GL2.CFZ' file. The text in the callout box reads:

When you have done this process for both GL1 and GL2, you will have '.CFZ' files ready for your calibration

The desktop background is a winter scene with snow-covered trees. The taskbar at the bottom shows icons for File Explorer, Chrome, Firefox, PowerPoint, and Excel. The system tray in the bottom right corner shows the time as 1:48 PM on 3/9/2013.