

Mine Waste Technology Program

Linking Waterfowl with Contaminant Speciation in Riparian Soils

**Appendix A: D.G. Strawn's Final Report to MSE,
Dated January 26, 2006**

Pages through A-99

Table A.1. Raw elemental composition data (mg kg⁻¹) for soils in Table 1.1, showing three replicates of each soil composite and the wavelength used for each element.

Sample ID	As	Cd	Fe	Mn	P	Pb	S	Si	Zn
	189.042	228.802	239.562	257.61	178.768	220.353	182.034	251.612	202.548
2(a) Avg	77.129	28.093	77,986.074	5,626.674	23,256.561	4,959.829	1,656.133	237,680.771	2,279.861
Stddev	0.0156	0.0014	1.0940	0.1128	0.5787	0.0526	0.0527	3.7510	0.0729
2(b) Avg	79.348	30.832	79,427.359	5,922.587	24,257.688	5,318.134	1,800.371	247,348.887	2,395.281
Stddev	0.0212	0.0016	3.0370	0.2667	1.3990	0.2264	0.0318	12.4400	0.1389
2(c) Avg	85.591	31.668	78,399.582	5,666.841	24,837.866	5,253.661	1,759.414	242,913.180	2,366.109
Stddev	0.0110	0.0038	2.5390	0.1861	1.4090	0.1705	0.1015	5.8130	0.0942
2 Avg.	80.6893	30.1980	78,604.3383	5,738.7008	24,117.3719	5,177.2078	1,738.6394	242,647.6126	2,347.0835
StDev	4.3876	1.8701	742.1388	160.5120	799.9361	190.9960	74.3295	4,839.5256	60.0161
4(a) Avg	126.027	16.199	85,933.437	7,332.293	252,522.101	4,568.383	1,894.696	262,350.494	2,831.513
Stddev	0.0245	0.0018	1.2190	0.0909	7.3380	0.0853	0.0313	0.7848	0.0483
4(b) Avg	139.433	16.101	84,538.376	7,466.630	280,033.370	4,468.854	1,843.993	261,401.557	2,811.457
Stddev	0.0178	0.0014	1.6960	0.1803	12.5000	0.1002	0.0623	4.3520	0.1260
4(c) Avg	141.241	16.814	83,863.399	7,137.643	288,581.856	4,470.803	1,784.932	263,555.787	2,888.425
Stddev	0.0074	0.0003	0.7681	0.0692	0.6260	0.0430	0.0766	2.2400	0.0050
4 Avg.	135.5669	16.3714	84,778.4042	7,312.1888	273,712.4425	4,502.6800	1,841.2071	262,435.9462	2,843.7986
StDev	8.3111	0.3867	1,055.6867	165.4120	18,842.5604	56.9086	54.9348	1,079.6542	39.9278
6(a) Avg	40.650	11.220	40,103.567	1,482.451	17,079.977	3,550.058	453.682	290,851.554	764.384
Stddev	0.0308	0.0015	1.7420	0.0654	0.7613	0.1943	0.0912	10.8900	0.0331
6(b) Avg	37.252	11.065	40,066.225	1,388.245	16,846.026	3,526.490	420.530	300,496.689	767.936
Stddev	0.0164	0.0015	0.5197	0.0212	0.2928	0.0142	0.0224	2.2880	0.0178
6(c) Avg	35.654	11.208	40,321.730	1,446.994	16,977.848	3,599.684	421.941	296,677.215	775.053
Stddev	0.0197	0.0002	0.7011	0.0293	0.6114	0.0100	0.0318	3.3270	0.0067
6 Avg.	37.8519	11.1642	40,163.8408	1,439.2299	16,967.9505	3,558.7437	432.0510	296,008.4858	769.1244
StDev	2.5516	0.0860	138.0049	47.5805	117.2889	37.3619	18.7466	4,857.2171	5.4326

Table A.1. Continued

Sample ID	As 189.042	Cd 228.802	Fe 239.562	Mn 257.61	P 178.768	Pb 220.353	S 182.034	Si 251.612	Zn 202.548
8(a) Avg	55.330	9.560	48,873.626	2,840.659	543.681	3,862.637	459.066	298,076.923	1,096.703
Stddev	0.0113	0.0012	1.8260	0.1207	0.1347	0.1850	0.0330	9.0440	0.0450
8(b) Avg	56.764	9.629	48,328.912	2,790.451	705.570	3,832.891	464.191	301,326.260	1,102.387
Stddev	0.0164	0.0013	1.0290	0.0691	0.0839	0.1394	0.0475	4.9840	0.0170
8(c) Avg	55.553	8.965	46,316.360	2,625.677	454.767	3,659.263	448.267	293,607.801	1,060.130
Stddev	0.0052	0.0013	1.1270	0.0723	0.0898	0.0450	0.0294	4.4390	0.0285
8 Avg.	55.8820	9.3848	47,839.6328	2,752.2625	568.0062	3,784.9306	457.1745	297,670.3279	1,086.4069
StDev	0.7718	0.3649	1,347.0149	112.4638	127.1587	109.8427	8.1290	3,875.2604	22.9332

Table A.2. Raw data from particle size analysis of composite soil samples reported in Table 1.2.

	Units	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Sand Total	Silt Total	Clay Total	Total	Original Total
Comp 2	g	0.039	0.043	0.039	1.478	6.821	8.420	5.059	0.958	14.437	14.632
Very Fine Sandy Loam	%	0.27	0.30	0.27	10.24	47.25	58.32	35.04	6.64	98.67	
Comp 4	g	0.021	0.007	0.012	2.683	5.750	8.473	5.012	0.718	14.202	14.319
Very Fine Sandy Loam	%	0.15	0.05	0.09	18.89	40.48	59.66	35.29	5.06	99.18	
Comp 6	g	0.049	0.109	0.086	0.899	3.905	5.049	7.847	1.298	14.194	14.364
Silt Loam	%	0.34	0.77	0.61	6.34	27.51	35.57	55.29	9.14	98.82	
Comp 8	g	0.009	0.002	0.020	0.959	2.790	3.780	9.017	1.393	14.190	14.305
Silt Loam	%	0.06	0.01	0.14	6.76	19.66	26.64	63.55	9.82	99.19	

Table A.3. Electron Microprobe Elemental Associations:

Strongly associated = 4

Moderately associated = 3

Weakly associated = 2

No visual association = 1

Plot 2 Associations								
Sample	Area of Interest (x,y)	Fe-Pb	Mn-Pb	P-Pb	Fe-P	Mn-P	Mn-Fe	Fe-Si
P2C7	308,231	2	4	3	4	2	2	1
P2C7	346,230	2	2	2	2	2	2	2
P2C7	360,310	2	2	2	3	2	4	2
P2C7	369,291	2	2	2	4	2	3	2
P2C7	441,181	3	3	2	4	3	3	3
P2C7	447,145	2	1	2	4	1	4	1
P2C8	303,178	1	1	2	2	1	4	1
P2C8	314,272	2	1	2	4	3	4	2
P2C8	376,249	2	2	2	4	2	4	2
P2C8	427,161	3	4	2	3	3	4	1
P2C8	439,161	2	4	2	4	2	3	2
P2C8	482,255	1	1	2	3	2	4	1
P2C9	312,123	3	2	2	4	2	3	2
P2C9	320,109	2	1	2	3	2	3	2
P2C9	348,105	2	2	2	4	3	3	2
P2C9	372,114	2	2	2	4	2	4	1
P2C9	394,083	2	2	2	4	2	2	2
P2C9	428,243	2	2	2	4	2	3	2

Table A.3. Continued

Plot 4 Associations								
Sample	Area of Interest (x,y)	Fe-Pb	Mn-Pb	P-Pb	Fe-P	Mn-P	Mn-Fe	Fe-Si
P4C7	333, 151	2	2	1	1	1	4	2
P4C7	403, 199	1	1	1	1	1	4	1
P4C7	428, 198	1	2	1	1	1	3	3
P4C7	456, 153	1	2	1	1	1	4	1
P4C7	485, 208	1	1	1	1	1	4	1
P4C7	486, 202	1	4	1	1	1	3	2
P4C8	354, 306	1	1	1	1	1	2	2
P4C8	370, 216	3	2	3	3	2	2	2
P4C8	391, 328	4	1	1	1	1	4	2
P4C8	408, 221	1	1	1	1	1	4	3
P4C8	424, 202	1	2	1	2	1	4	4
P4C8	424, 217	2	4	2	1	1	2	2
P4C8	470, 208	1	3	1	1	1	3	3
P4C8	473, 203	2	2	2	2	2	3	2
P4C9	319, 289	3	2	3	2	1	4	2
P4C9	338, 313	4	3	4	3	2	4	3
P4C9	443, 152	4	3	3	2	2	4	3
P4C9	452, 298	4	2	3	2	2	3	2
P4C9	459, 210	3	3	2	2	2	3	3
P4C9	487, 204	4	2	3	3	2	3	2

Table A.3. Continued

Plot 6 Associations								
Sample	Area of Interest (x,y)	Fe-Pb	Mn-Pb	P-Pb	Fe-P	Mn-P	Mn-Fe	Fe-Si
P6C7	312, 242	2	2	3	4	2	2	2
P6C7	344, 248	1	1	1	3	1	1	3
P6C7	356, 231	2	3	2	3	2	3	2
P6C7	358, 261	2	3	2	4	2	4	3
P6C7	371, 216	3	2	3	4	2	2	3
P6C7	378, 276	1	3	2	2	2	2	2
P6C7	398, 208	3	3	2	3	2	3	2
P6C7	402, 315	2	2	2	4	3	2	2
P6C7	434, 278	2	2	2	3	2	4	2
P6C7	465, 249	2	3	2	4	2	2	2
P6C7	498, 110	3	2	2	4	2	2	2
P6C8	354, 256	2	3	2	3	2	3	2
P6C8	361, 147	1	1	1	1	1	4	1
P6C8	399, 228	2	4	2	3	2	4	2
P6C8	400, 208	3	2	3	4	2	2	2
P6C8	454, 290	1	1	1	3	1	2	2
P6C9	331, 212	2	2	2	3	2	3	3
P6C9	357, 180	1	2	1	2	1	4	2
P6C9	395, 183	2	2	2	4	2	3	3
P6C9	452, 188	1	1	1	3	1	2	2
P6C9	482, 224	3	2	2	3	2	3	2

Table A.3. Continued

Plot 8 Associations								
Sample	Area of Interest (x,y)	Fe-Pb	Mn-Pb	P-Pb	Fe-P	Mn-P	Mn-Fe	Fe-Si
P8C7	312, 164	3	3	2	1	2	3	2
P8C7	325, 245	2	3	1	1	1	2	----
P8C7	380, 269	3	2	1	2	1	3	2
P8C7	398, 323	1	3	1	1	1	2	2
P8C7	456, 196	3	2	1	1	1	2	2
P8C7	490, 265	1	4	1	1	1	2	----
P8C8	302, 323	1	4	1	2	1	3	2
P8C8	328, 376	2	3	2	2	1	3	3
P8C8	333, 340	1	3	1	1	1	2	2
P8C8	354, 225	1	4	1	2	1	3	2
P8C8	361, 241	2	3	2	2	2	3	3
P8C8	395, 203	2	2	2	3	2	3	3
P8C8	399, 204	2	3	1	2	1	3	4
P8C8	413, 208	2	3	1	1	2	3	3
P8C8	429, 346	2	3	2	3	1	2	2
P8C8	442, 252	3	2	1	3	1	3	2
P8C8	472, 213	2	3	2	3	2	3	2
P8C9	413, 154	2	4	1	1	1	2	3
P8C9	448, 239	2	2	1	3	1	3	2
P8C9	451, 293	2	3	1	2	2	2	2
P8C9	456, 227	2	3	2	2	1	3	1
P8C9	484, 269	1	3	1	1	1	3	2

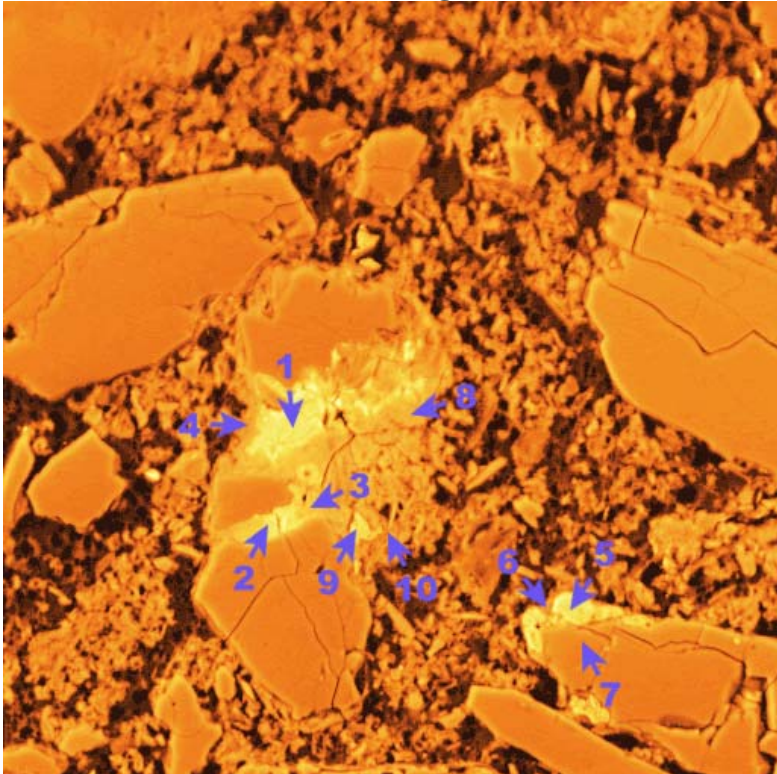
Table A.4. Raw data from ICP-AES analysis of AOD- and CBD-extracted soils shown in Table 1.4, showing three replicates of each soil composite and the wavelength used for each element.

Sample ID	AOD Fe 240.488	AOD Mn 257.610	CBD Fe 238.204	CBD Mn 259.373
2(a) Avg	57,260.8696	4,033.9130	58,904.5936	4,064.4876
Stddev	0.4666	0.0302	0.1752	0.0124
2(b) Avg	62,269.0058	3,937.3099	59,547.9204	3,503.6166
Stddev	0.1050	0.0059	0.2211	0.0130
2(c) Avg	61,688.8889	4,236.8889	52,934.7826	3,143.1159
Stddev	0.2408	0.0127	0.2085	0.0120
2 Avg.	60,406.2548	4,069.3706	57,129.0989	3,570.4067
StDev	2,739.3831	152.9046	3,646.5990	464.3028
4(a) Avg	48,382.4701	4,276.4940	29,774.3682	2,103.7906
Stddev	0.0350	0.0034	0.1359	0.0094
4(b) Avg	50,382.6715	4,527.0758	28,297.0297	2,151.4851
Stddev	0.0482	0.0078	0.0952	0.0071
4(c) Avg	51,185.4545	4,288.1455	29,103.6907	2,246.0457
Stddev	0.1292	0.0087	0.1285	0.0092
4 Avg.	49,983.5320	4,363.9051	29,058.3629	2,167.1072
StDev	1,443.4904	141.4300	739.7116	72.4028
6 (a) Avg	24,338.2550	1,074.3624	32,686.0254	1,155.1724
Stddev	0.1200	0.0027	0.0725	0.0025
6 (b) Avg	22,719.7183	1,014.0845	28,892.1569	1,282.3529
Stddev	0.0024	0.0003	0.0342	0.0015
6 (c) Avg	24,883.7545	1,307.4368	31,320.5645	1,221.7742
Stddev	0.0669	0.0026	0.0784	0.0026
6 Avg.	23,980.5760	1,131.9612	30,966.2489	1,219.7665
StDev	1,125.4839	154.9262	1,921.5916	63.6140
8(a) Avg	25,385.9779	2,268.4871	34,396.0396	2,538.6139
Stddev	0.1012	0.0063	0.0832	0.0052
8(b) Avg	26,225.6055	2,485.9516	33,916.9675	2,454.8736
Stddev	0.2325	0.0204	0.1066	0.0077
8(c) Avg	26,248.3271	2,473.6059	33,745.2471	2,532.3194
Stddev	0.0276	0.0018	0.0906	0.0064
8 Avg.	25,953.3035	2,409.3482	34,019.4181	2,508.6023
StDev	491.4498	122.1454	337.2755	46.6367

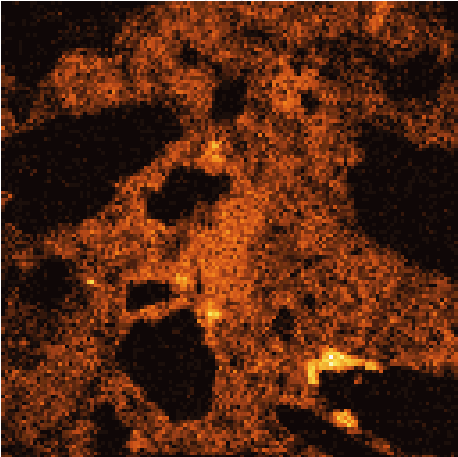
Appendix Images for Microprobe Analysis of Plots, 2, 4, 6, 8

Organized by plot, cell, and location on thin section. Each WDS image is 512 x 512 μm .

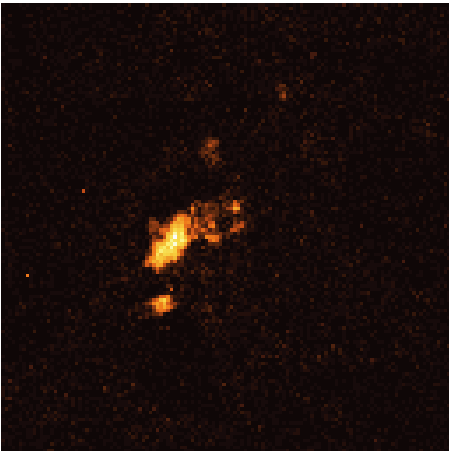
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BSE Image



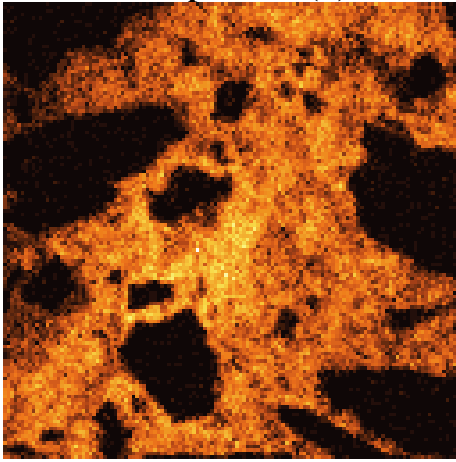
Iron (Fe)



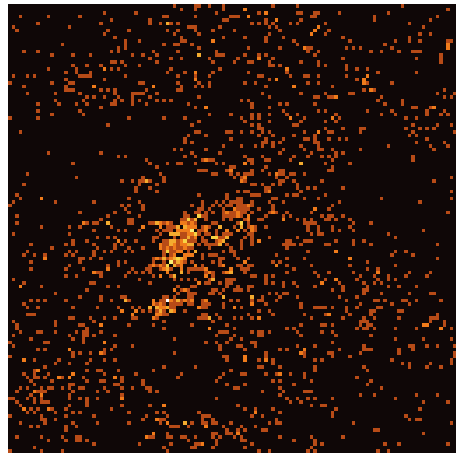
Manganese (Mn)



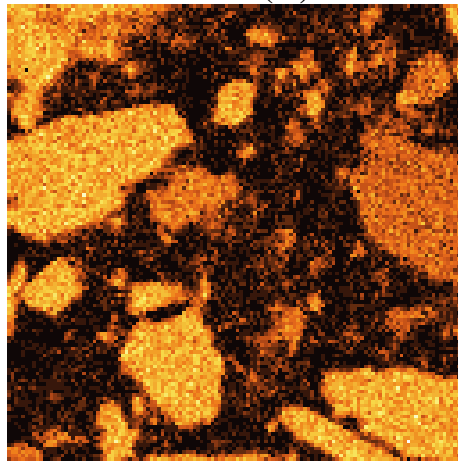
Phosphorous (P)



Lead (Pb)



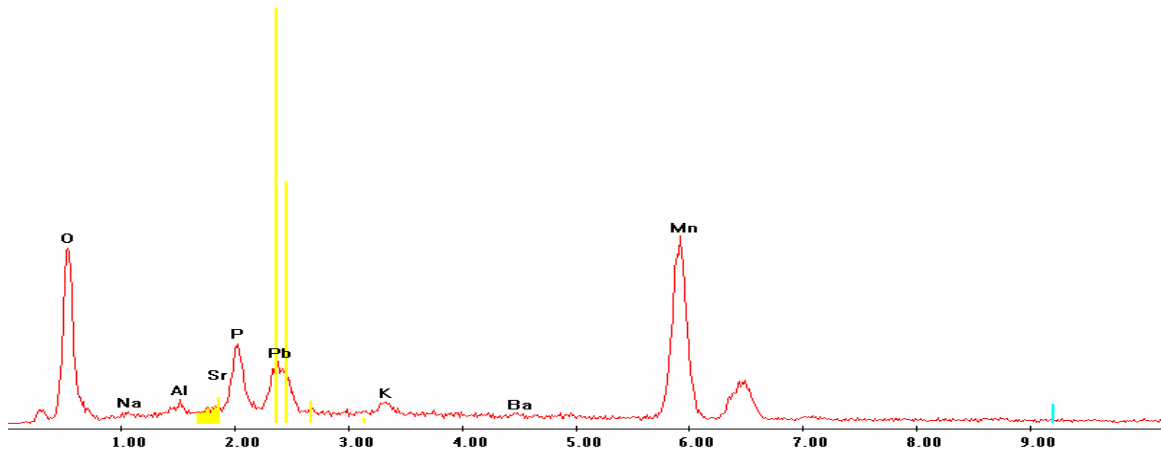
Silicon (Si)



**EDS Profiles by Analysis Point
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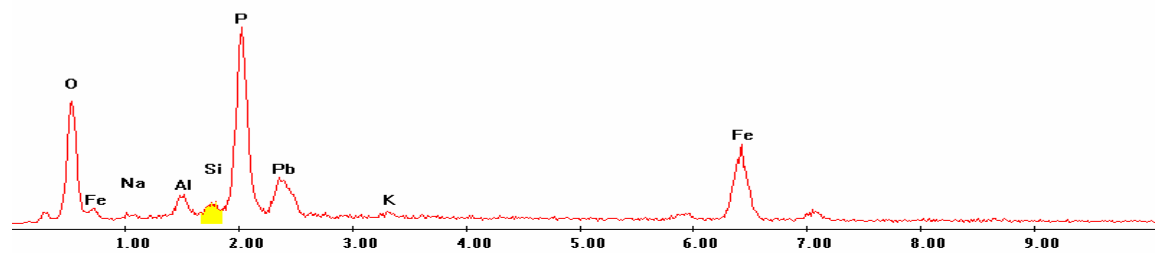
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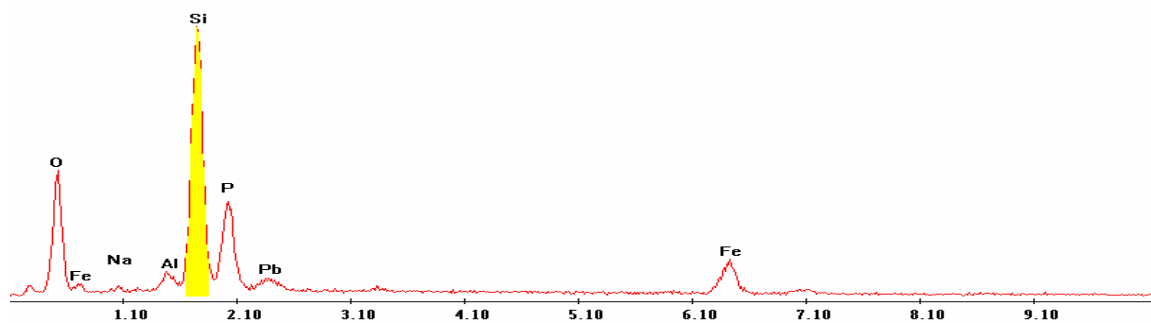
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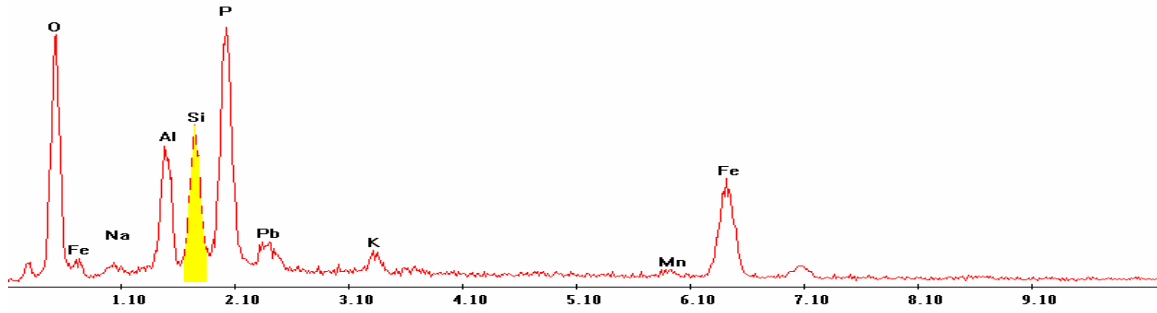
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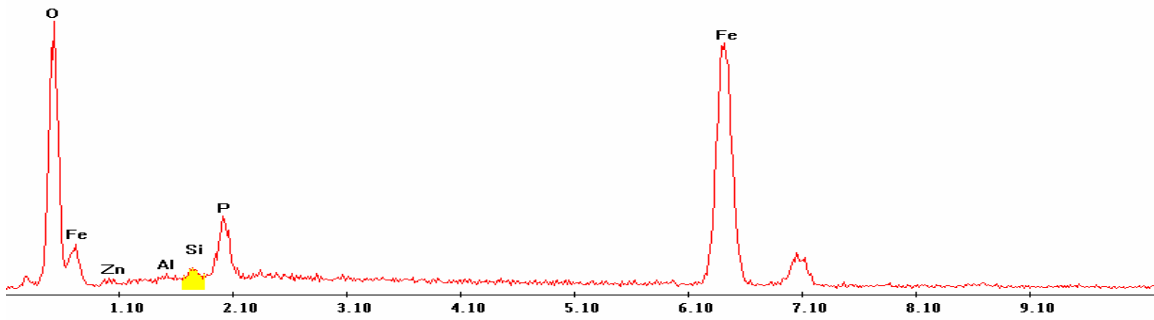
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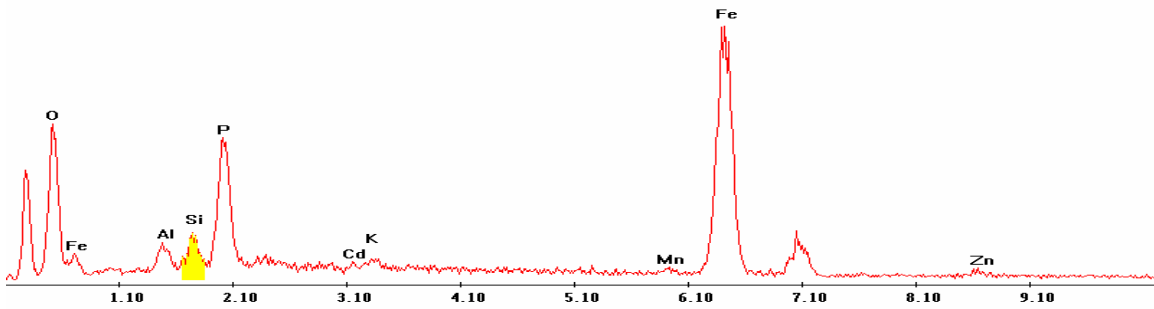
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Point 6

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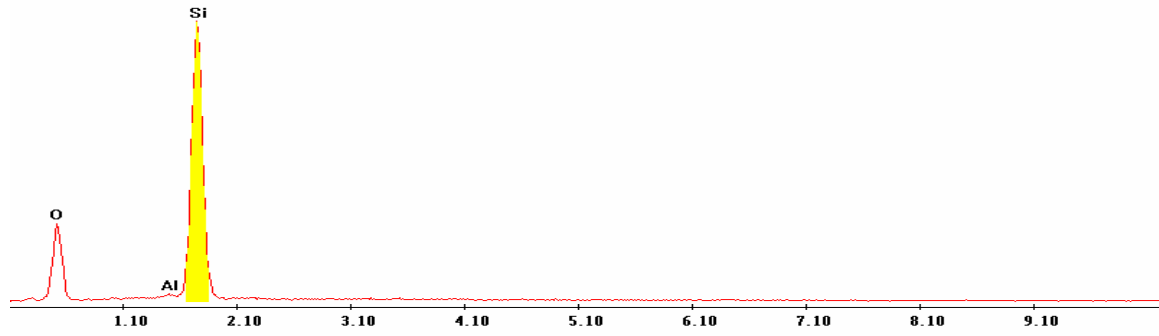
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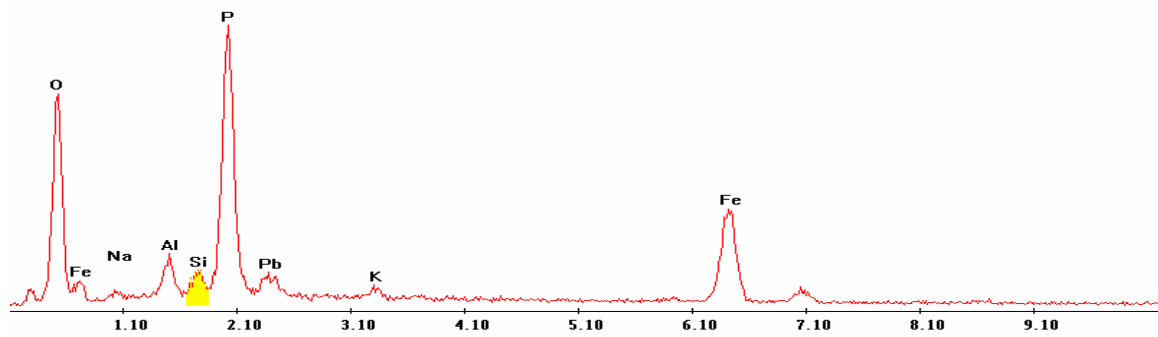
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Point 8

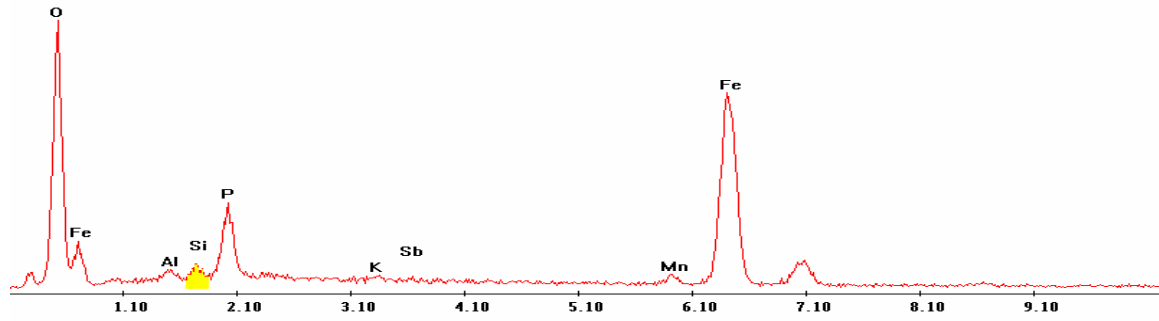
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Point 9

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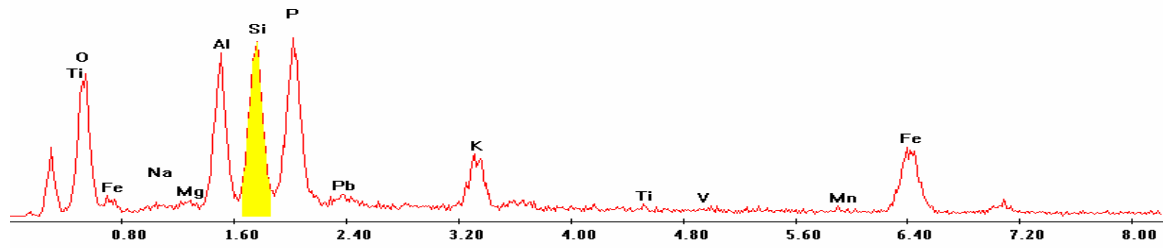
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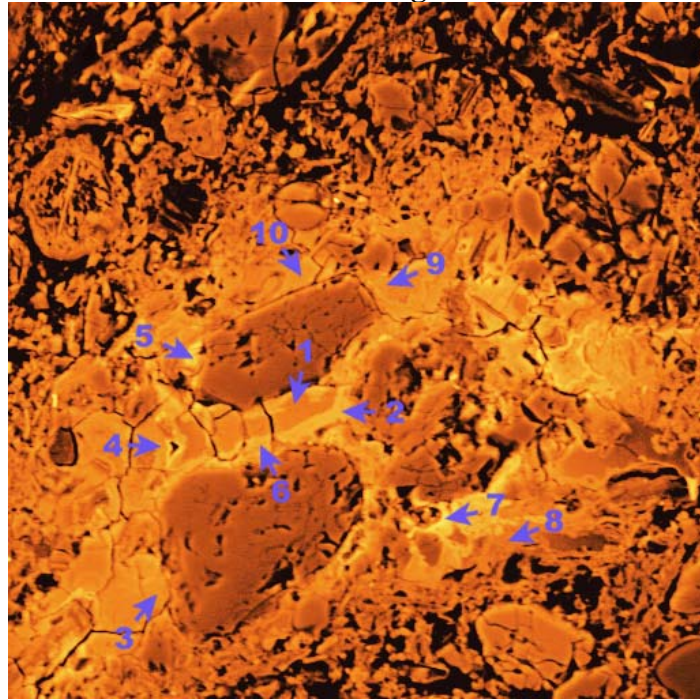
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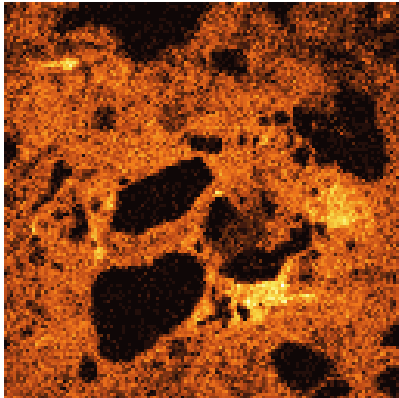
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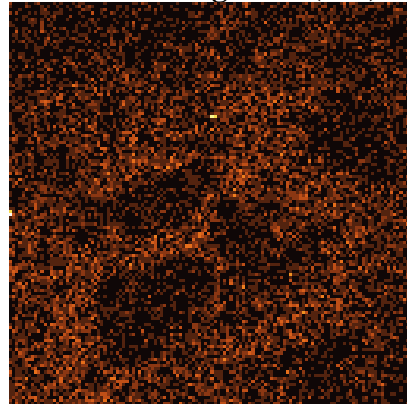
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BSE Image



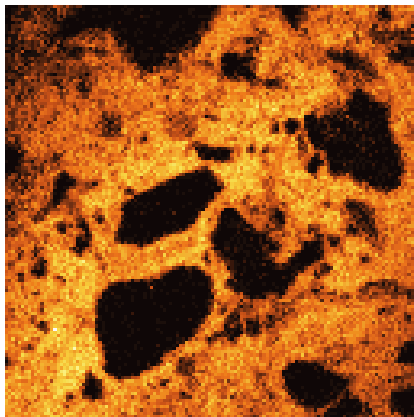
Iron (Fe)



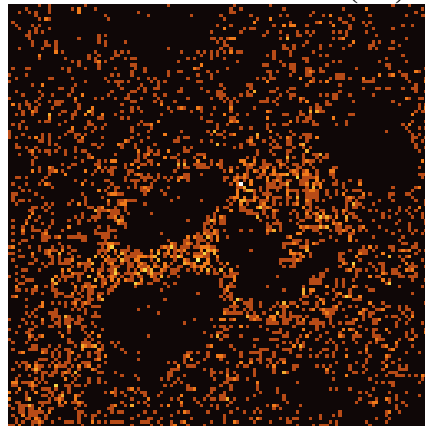
Manganese (Mn)



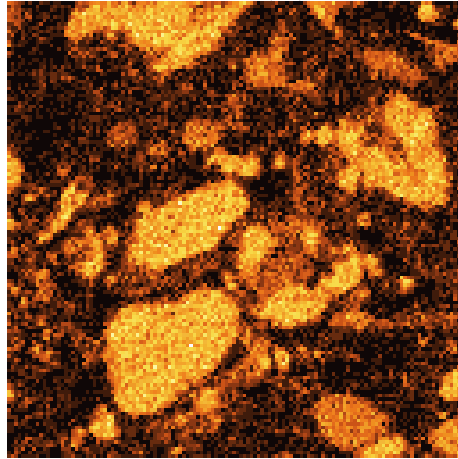
Phosphorous (P)



Lead (Pb)



Silicon (Si)

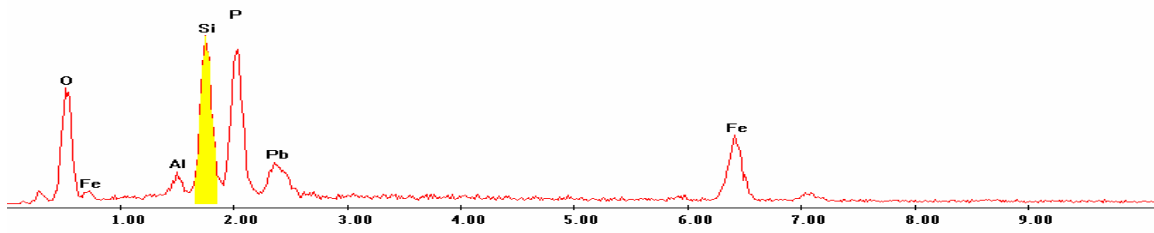


EDS Scan Images by Point

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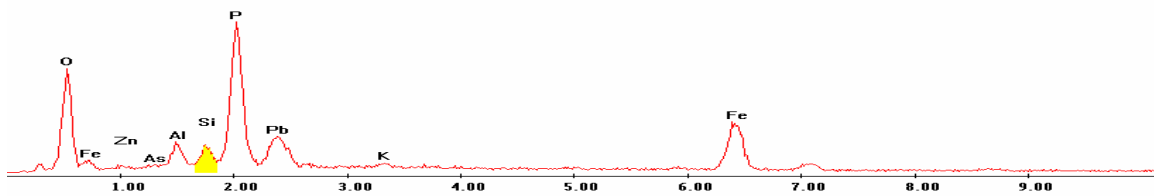
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Point 2

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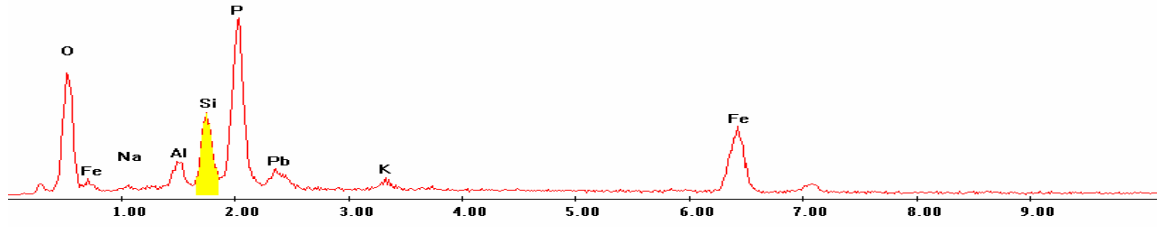
Label A: 01jun04 P2C7 346 230 Point 2



Point 3

c:\edax32\genesis\genspc.spc

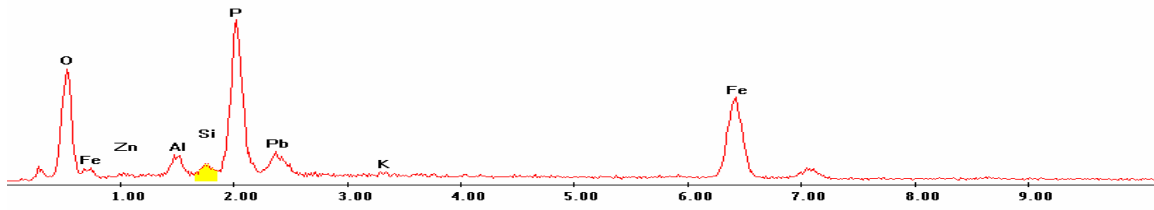
Label A: 01jun04 P2C7 346 230 Point 3



Point 4

c:\edax32\genesis\genspc.spc

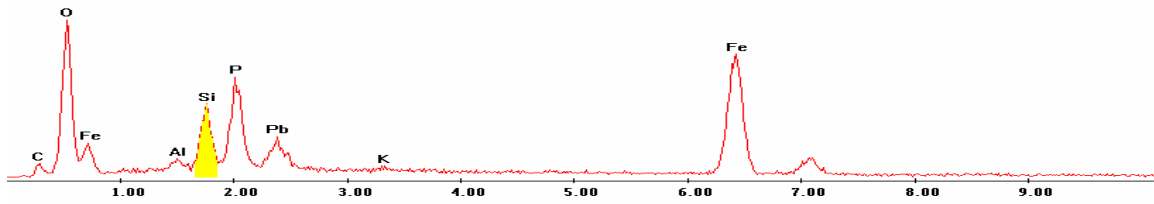
Label A: 01jun04 P2C7 346 230 Point 4



Point 5

c:\edax32\genesis\genspc.spc

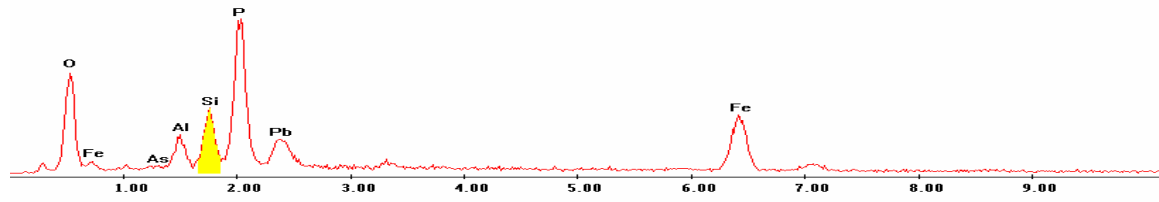
Label A: 01jun04 P2C7 346 230 Point 5



Point 6

c:\edax32\genesis\genspc.spc

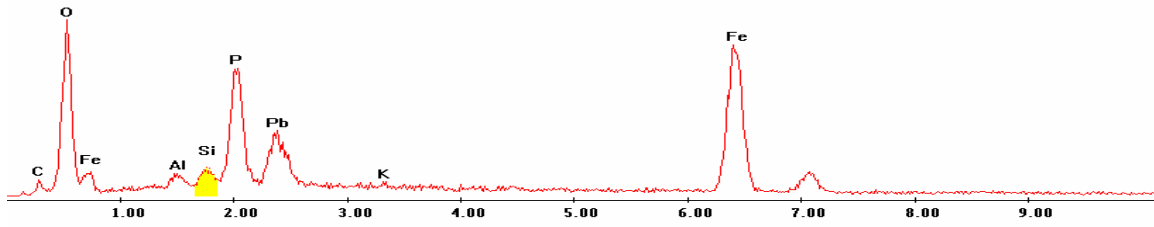
Label A: 01jun04 P2C7 346 230 Point 6



Point 7

c:\edax32\genesis\genspc.spc

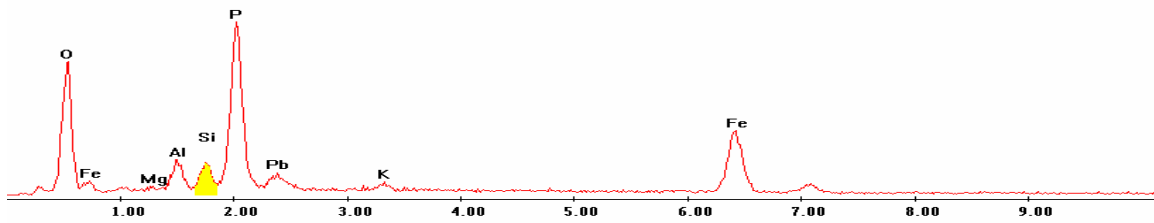
Label A: 01jun04 P2C7 346 230 Point 7



Point 8

c:\edax32\genesis\genspc.spc

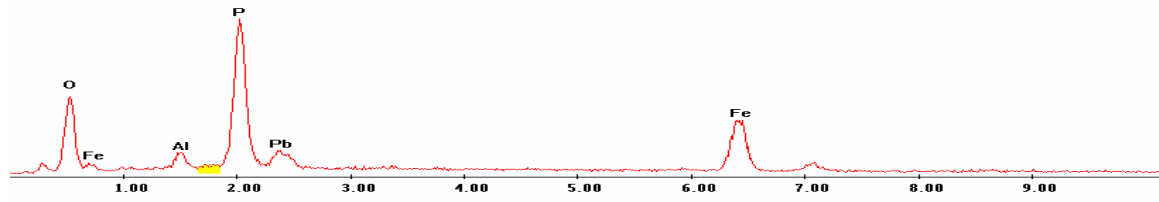
Label A: 01jun04 P2C7 346 230 Point 8



Point 9

c:\edax32\genesis\genspc.spc

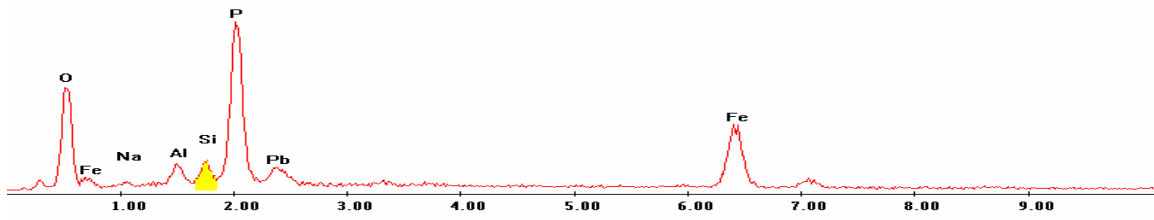
Label A: 01jun04 P2C7 346 230 Point 9



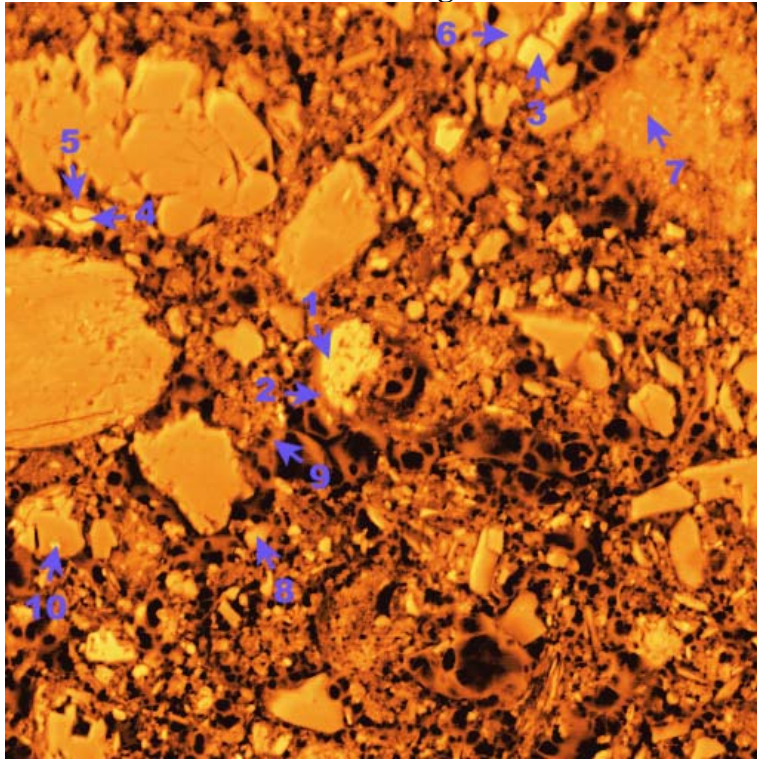
Point 10

c:\edax32\genesis\genspc.spc

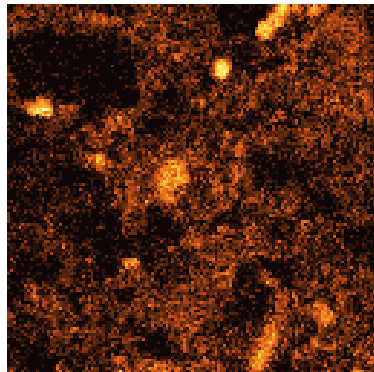
Label A: 01jun04 P2C7 346 230 Point 10



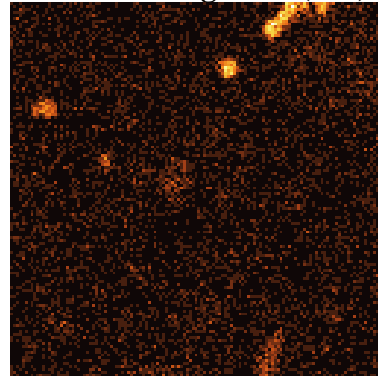
P2C7 – 360, 310
BSE Image



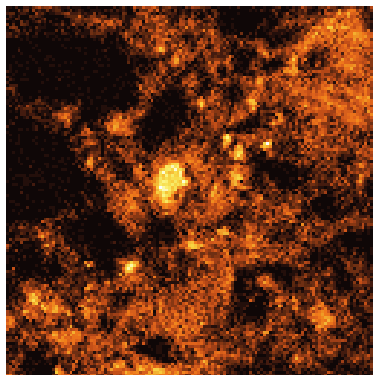
Iron (Fe)



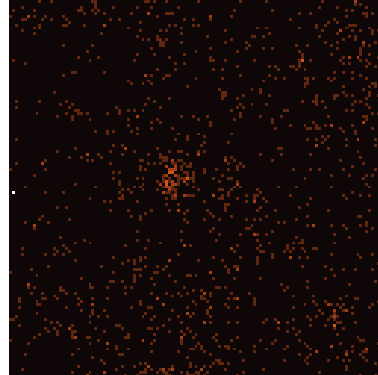
Manganese (Mn)



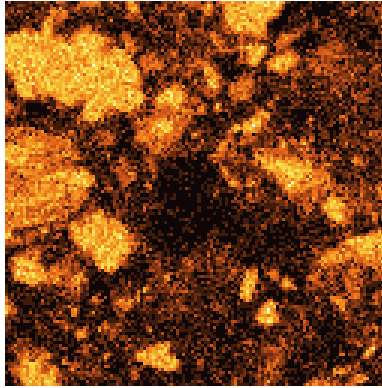
Phosphorous (P)



Lead (Pb)



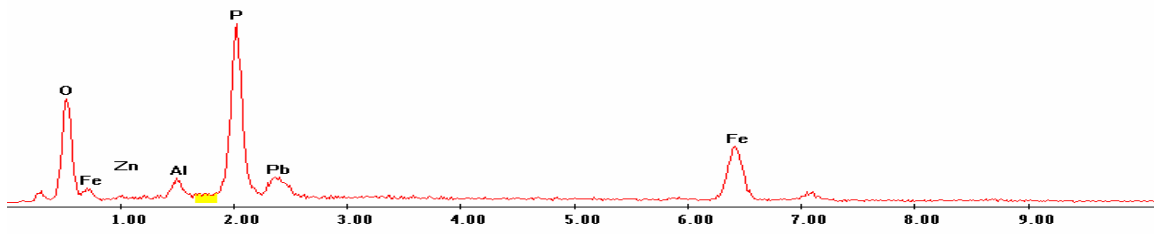
Silicon (Si)



EDS Scan Images by Point Point 1

c:\edax32\genesis\genspc.spc

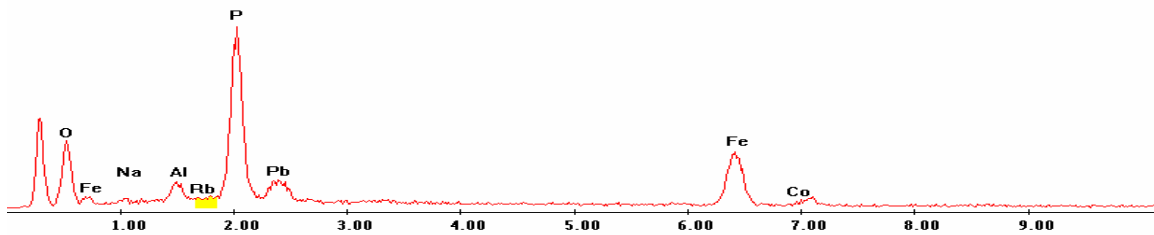
Label A: 01jun04 P2C7 360 310 Point 1



Point 2

c:\edax32\genesis\genspc.spc

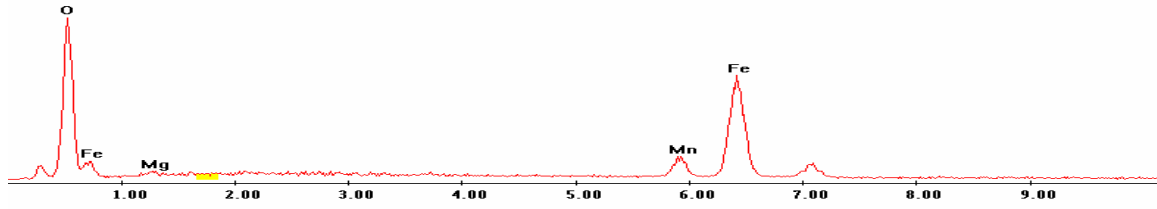
Label A: 01jun04 P2C7 360 310 Point 2



Point 3

c:\edax32\genesis\genspc.spc

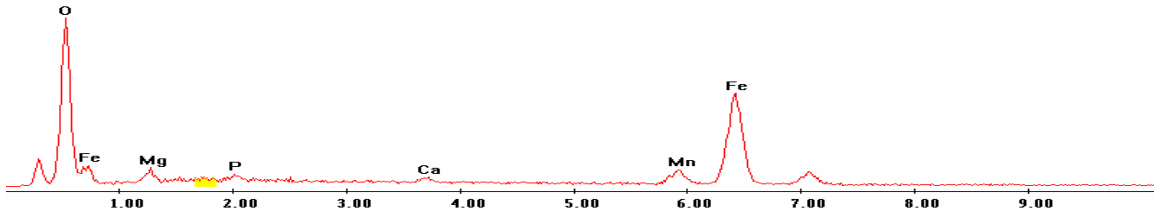
Label A: 01jun04 P2C7 360 310 Point 3



Point 4

c:\edax32\genesis\genspc.spc

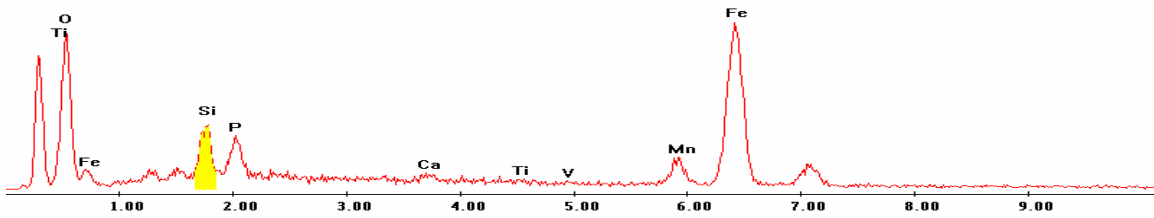
Label A: 01jun04 P2C7 360 310 Point 4



Point 5

c:\edax32\genesis\genspc.spc

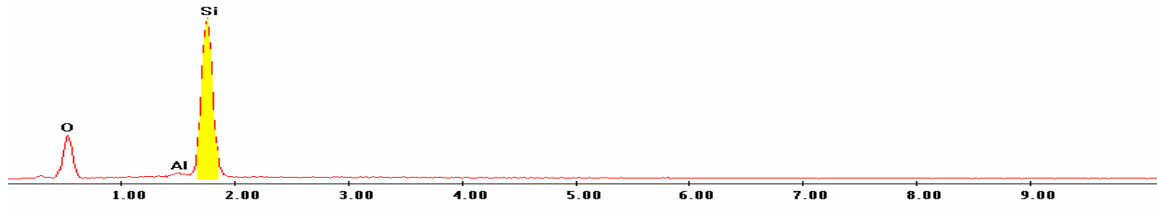
Label A: 01jun04 P2C7 360 310 Point 5



Point 6

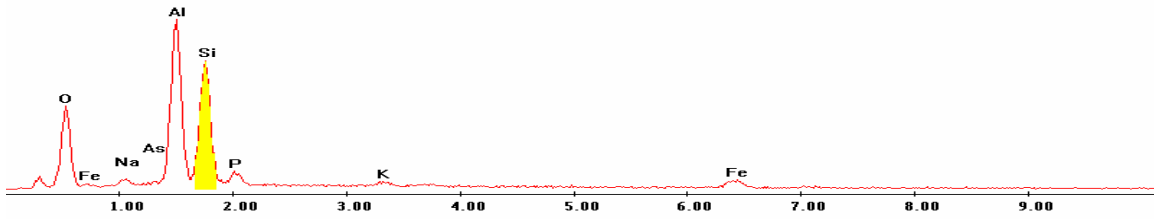
c:\edax32\genesis\genspc.spc

Label A: 01jun04 P2C7 360 310 Point 6



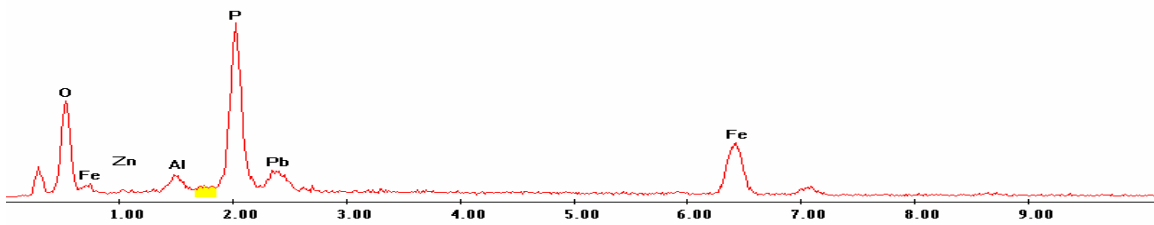
Point 7

Label A: 01jun04 P2C7 360 310 Point 7



Point 8

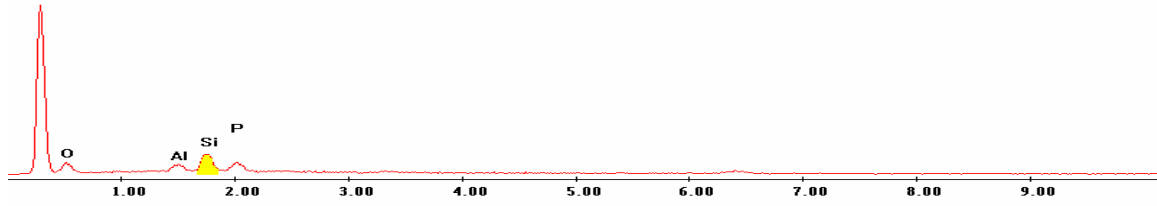
Label A: 01jun04 P2C7 360 310 Point 8



Point 9

c:\edax32\genesis\genspc.spc

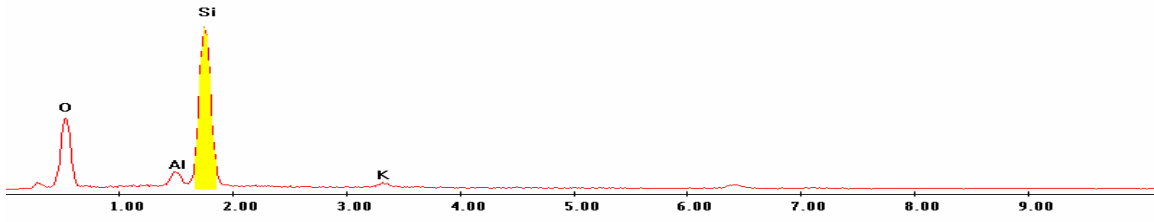
Label A: 01jun04 P2C7 360 310 Point 9



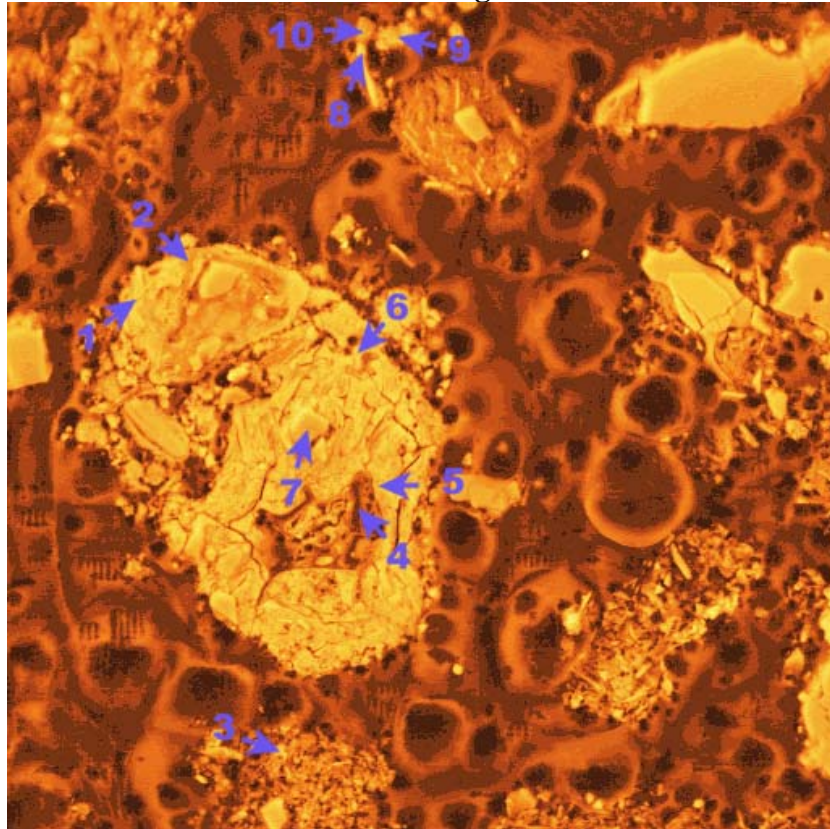
Point 10

c:\edax32\genesis\genspc.spc

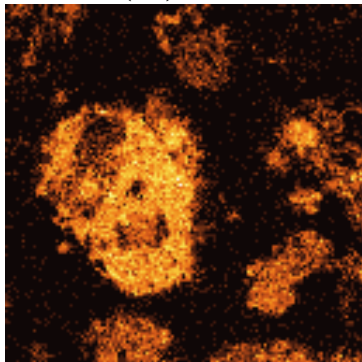
Label A: 01jun04 P2C7 360 310 Point 10



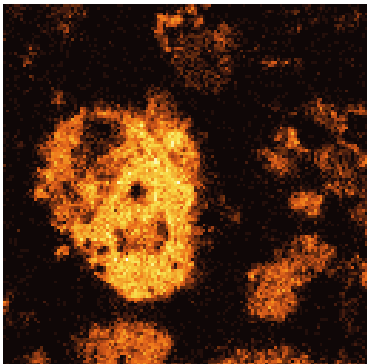
P2C7 – 441, 181
BSE Image



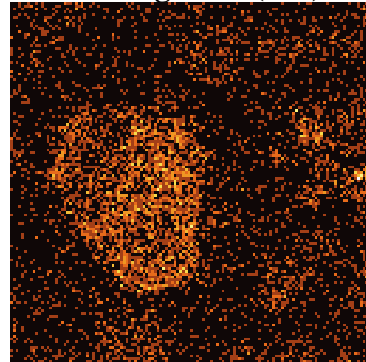
Iron (Fe)



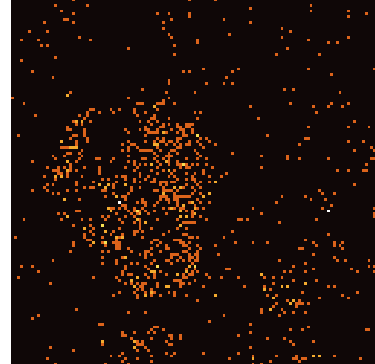
Phosphorous (P)



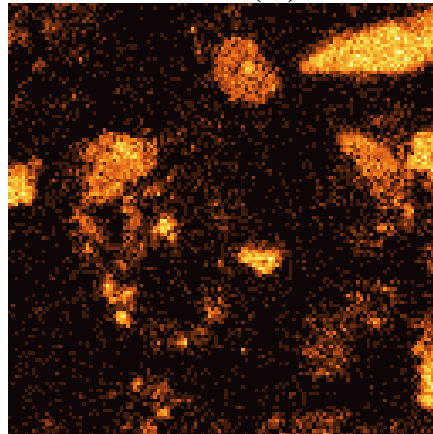
Manganese (Mn)



Lead (Pb)



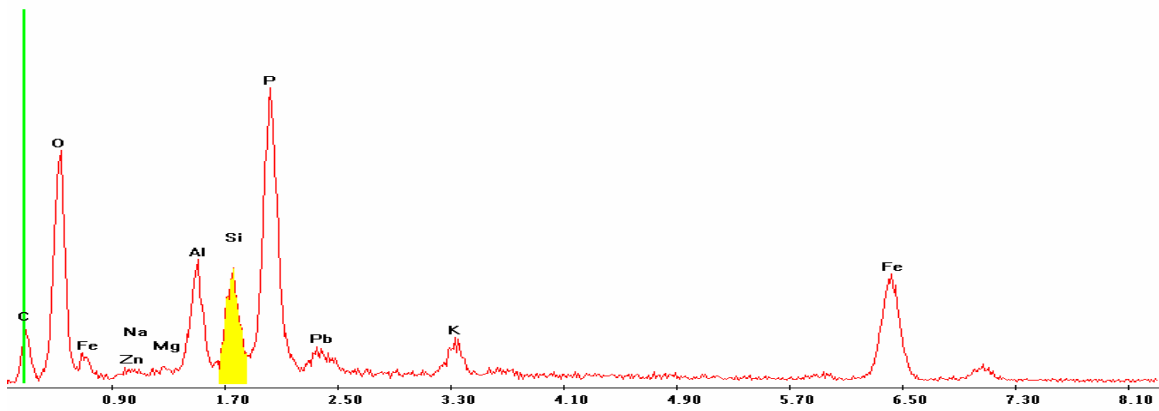
Silicon (Si)



EDS Scan Images by Point

Point 1

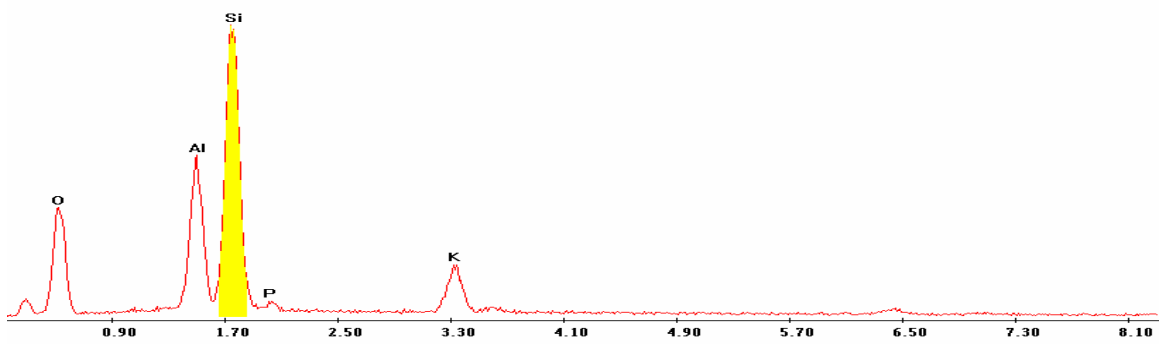
Label A: 01Jun04 P2C7 441 181 Point 1



Point 2

c:\edax32\genesis\genspc.spc

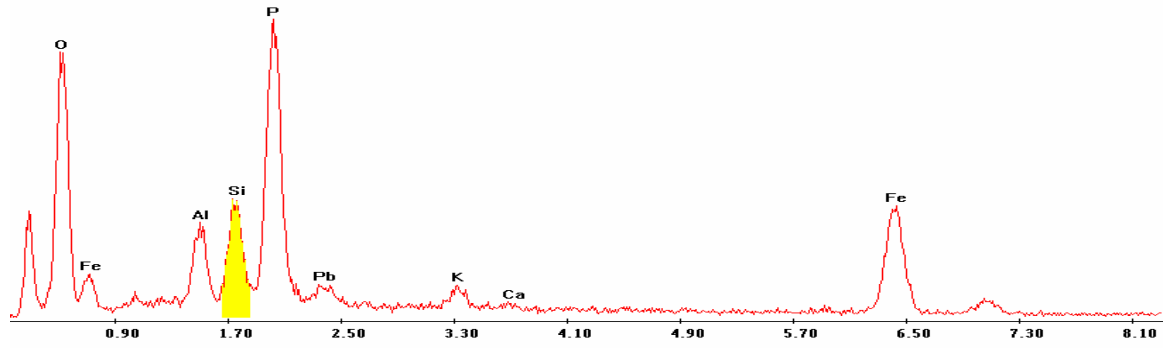
Label A: 01Jun04 P2C7 441 181 Point 2



Point 3

c:\edax32\genesis\genspc.spc

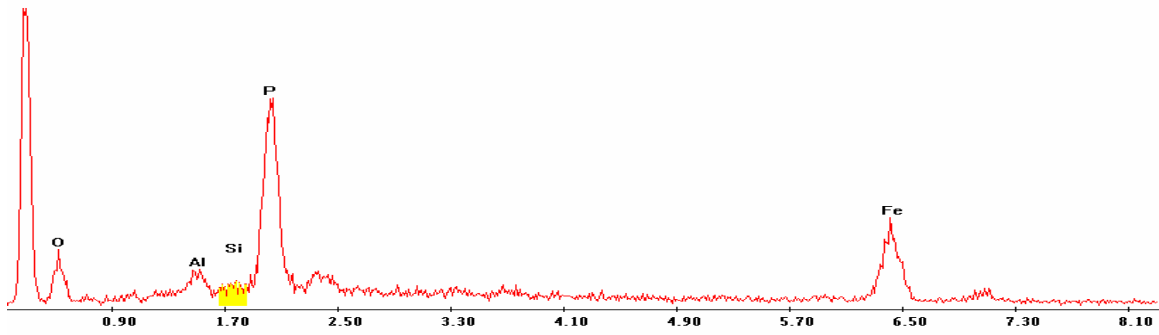
Label A: 01jun04 P2C7 441 181 Point 3



Point 4

c:\edax32\genesis\genspc.spc

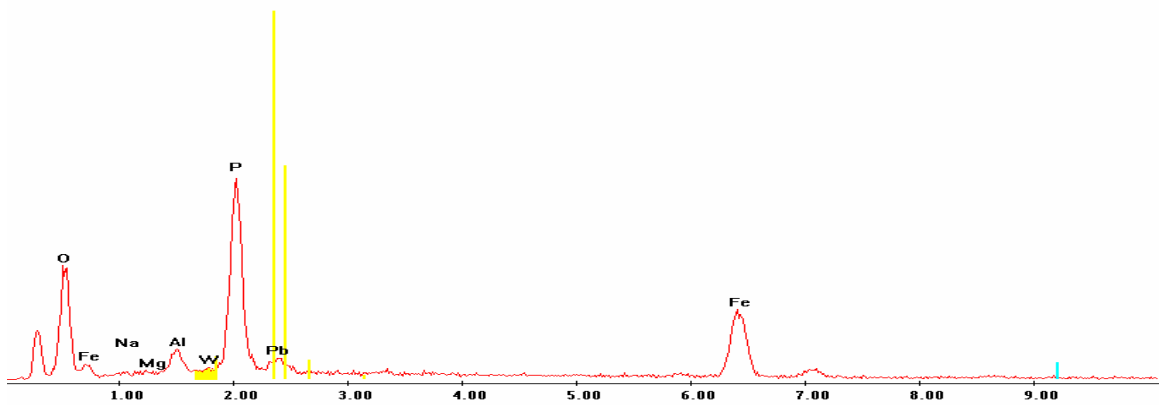
Label A: 01jun04 P2C7 441 181 Point 4



Point 5

c:\edax32\genesis\genspc.spc

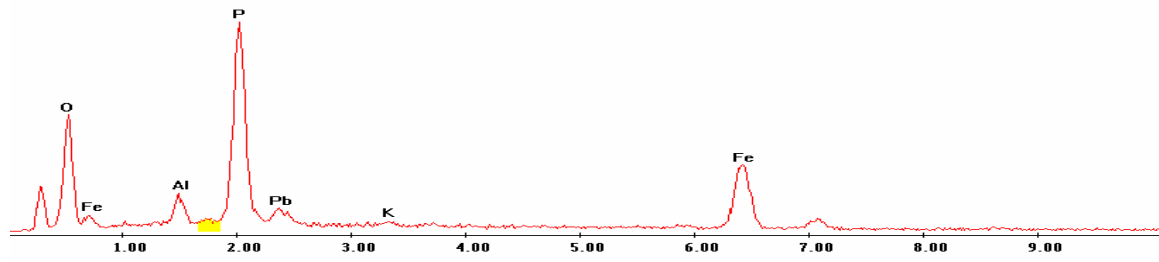
Label A: 01jun04 P2C7 441 181 Point 5



Point 6

c:\edax32\genesis\genspc.spc

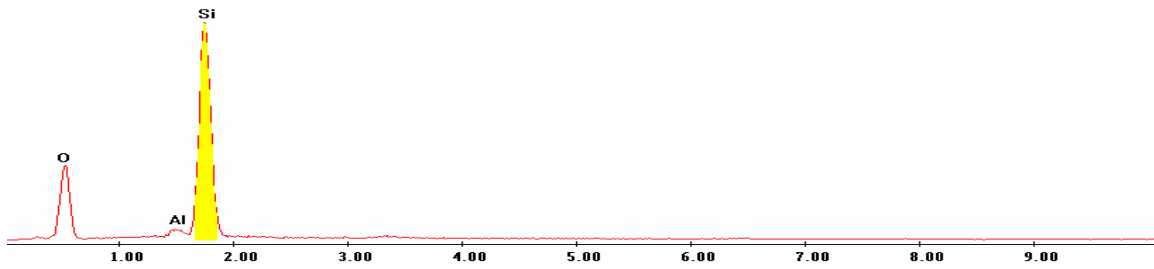
Label A: 01jun04 P2C7 441 181 Point 6



Point 7

c:\edax32\genesis\genspc.spc

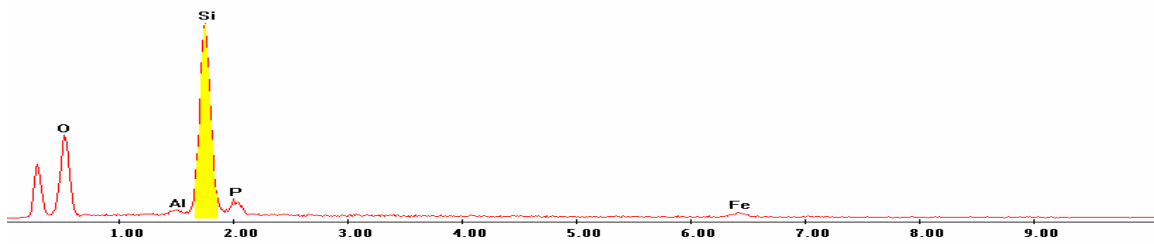
Label A: 01jun04 P2C7 441 181 Point 7



Point 8

c:\edax32\genesis\genspc.spc

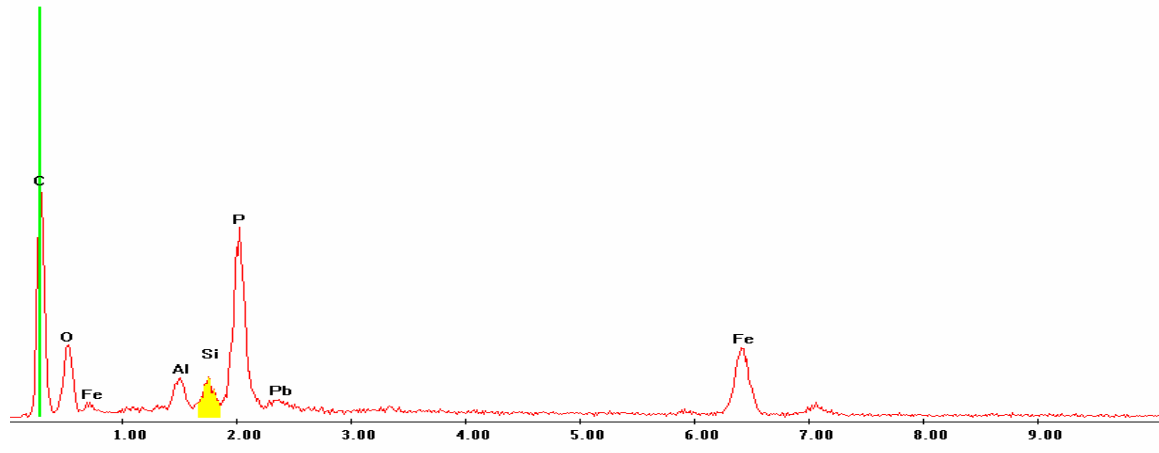
Label A: 01jun04 P2C7 441 181 Point 8



Point 9

c:\edax32\genesis\genspc.spc

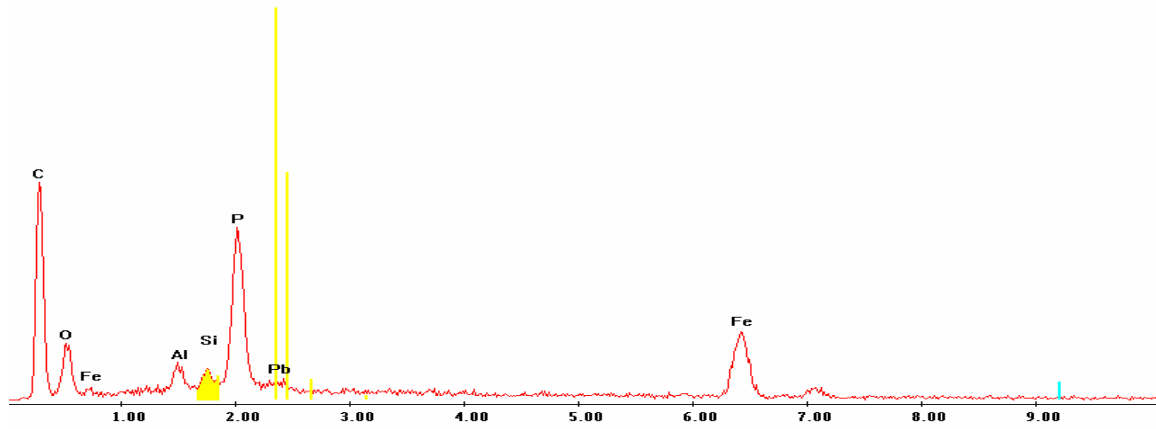
Label A: 01jun04 P2C7 441 181 Point 9



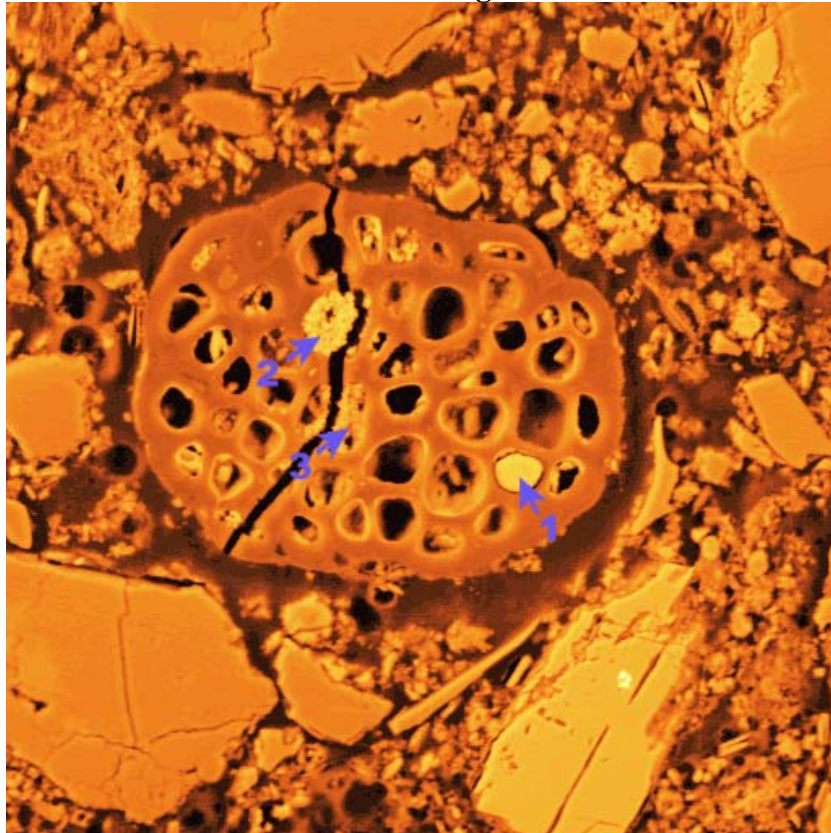
Point 10

c:\edax32\genesis\genspc.spc

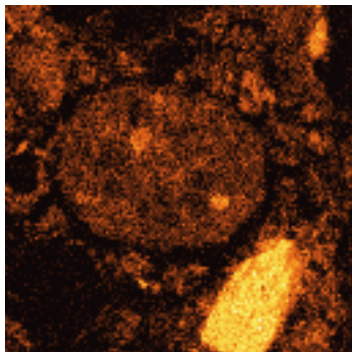
Label A: 01jun04 P2C7 441 181 Point 10



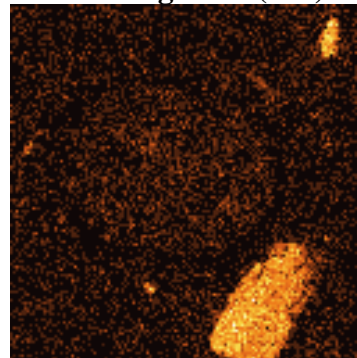
P2C7 – 447, 145
BSE Image



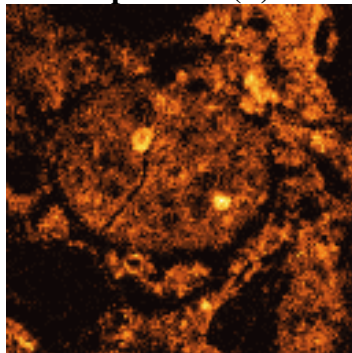
Iron (Fe)



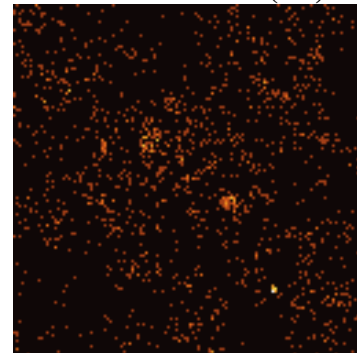
Manganese (Mn)



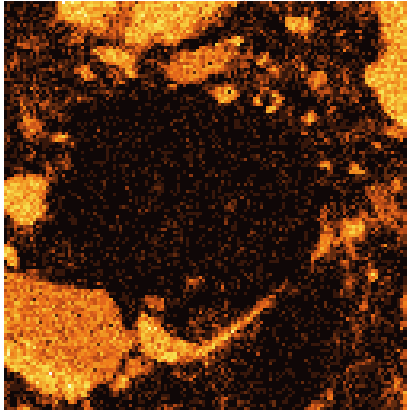
Phosphorous (P)



Lead (Pb)



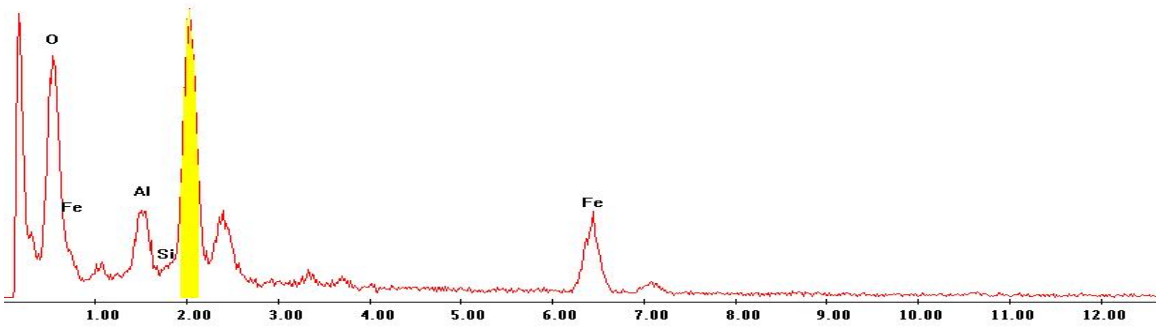
Silicon (Si)



EDS Scan Images by Point Point 1

c:\edax32\genesis\genspc.spc

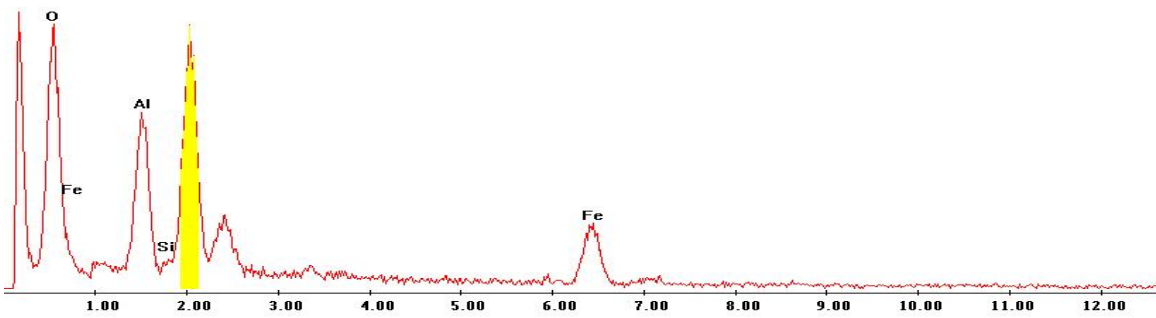
Label A: P2C7 X-444 Y-145 Point 1 11mar04



Point 2

c:\edax32\genesis\genspc.spc

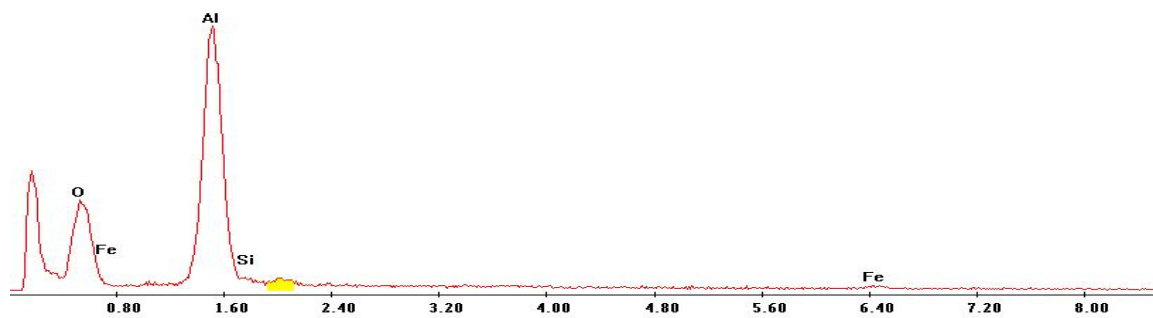
Label A: P2C7 X-444 Y-145 Point 2 11mar04



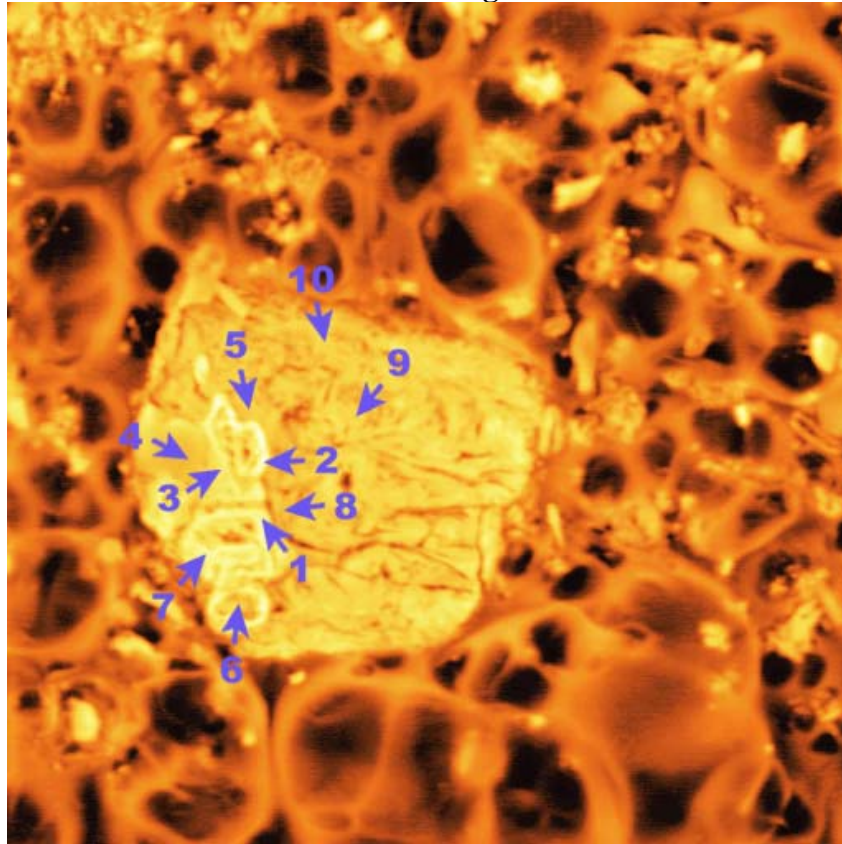
Point 3

c:\edax32\genesis\genspc.spc

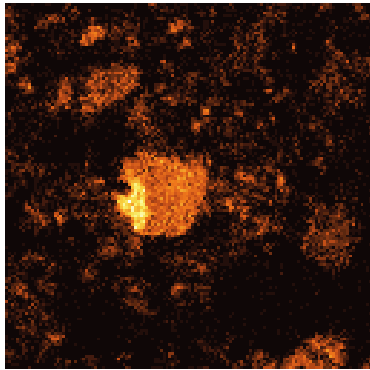
Label A: P2C7 X-444 Y-145 Point 3 11mar04



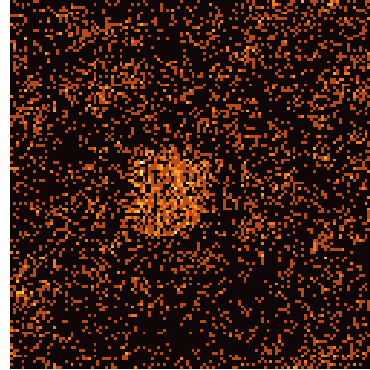
P2C7 – 369, 291
BSE Image



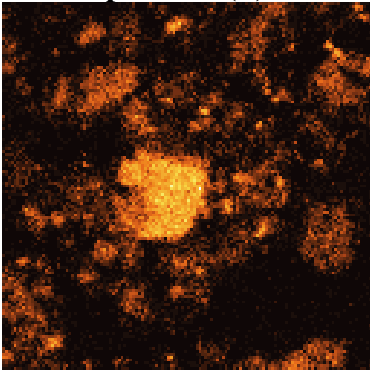
Iron (Fe)



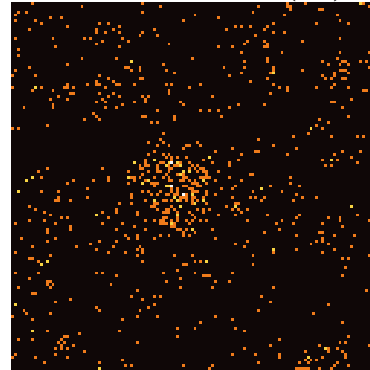
Manganese (Mn)



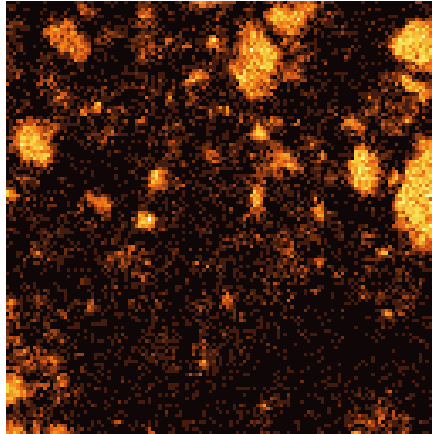
Phosphorous (P)



Lead (Pb)



Silicon (Si)

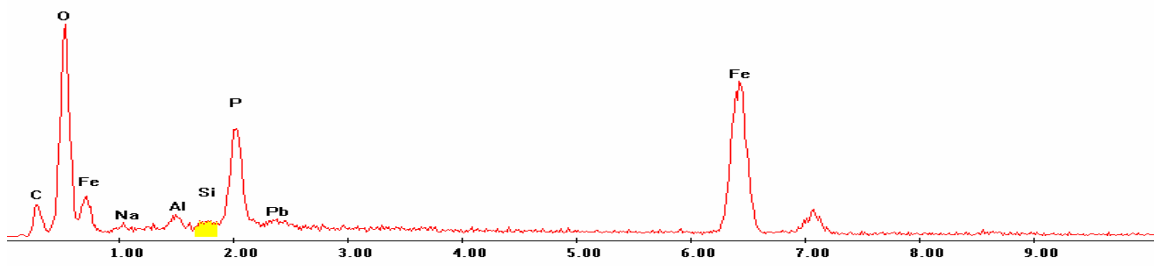


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

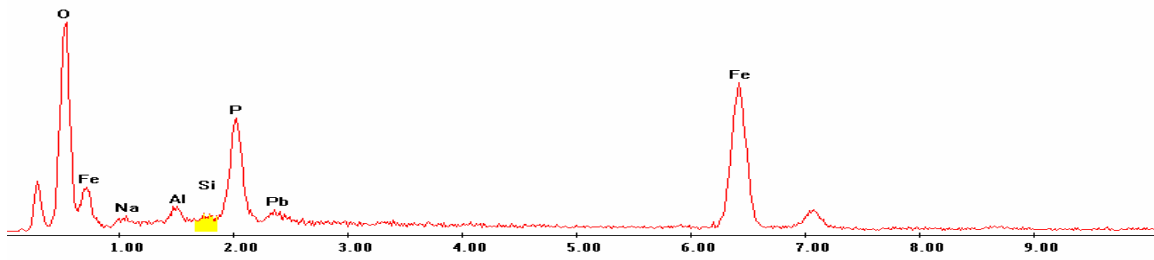
Label A: 01jun04 P2C7 369 291 Point 1



Point 2

c:\edax32\genesis\genspc.spc

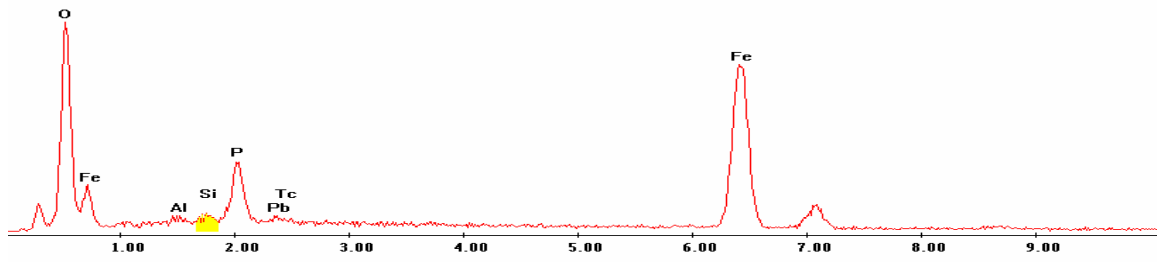
Label A: 01jun04 P2C7 369 291 Point 2



Point 3

c:\edax32\genesis\genspc.spc

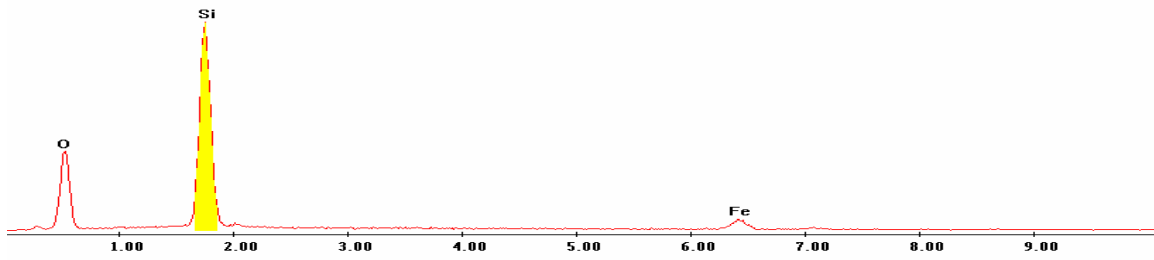
Label A: 01jun04 P2C7 369 291 Point 3



Point 4

c:\edax32\genesis\genspc.spc

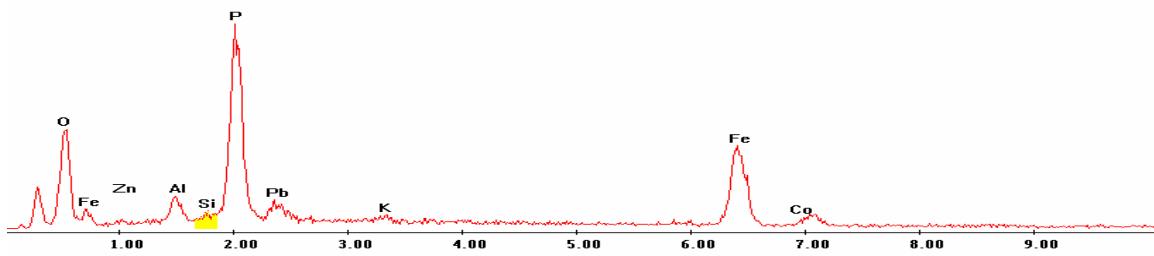
Label A: 01jun04 P2C7 369 291 Point 4



Point 5

c:\edax32\genesis\genspc.spc

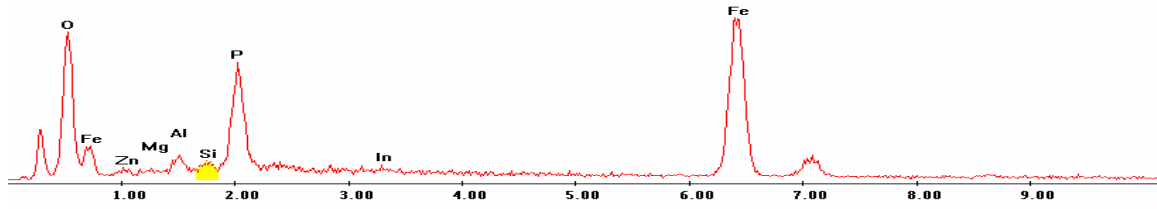
Label A: 01jun04 P2C7 369 291 Point 5



Point 6

c:\edax32\genesis\genspc.spc

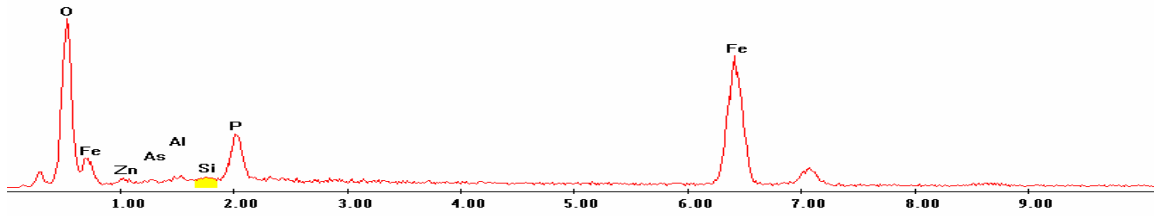
Label A: 01jun04 P2C7 369 291 Point 6



Point 7

c:\edax32\genesis\genspc.spc

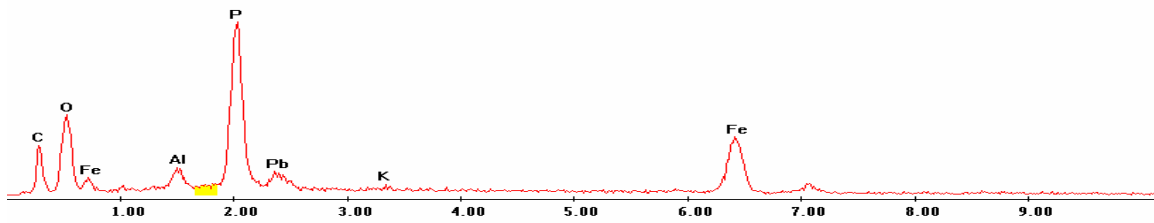
Label A: 01jun04 P2C7 369 291 Point 7



Point 8

c:\edax32\genesis\genspc.spc

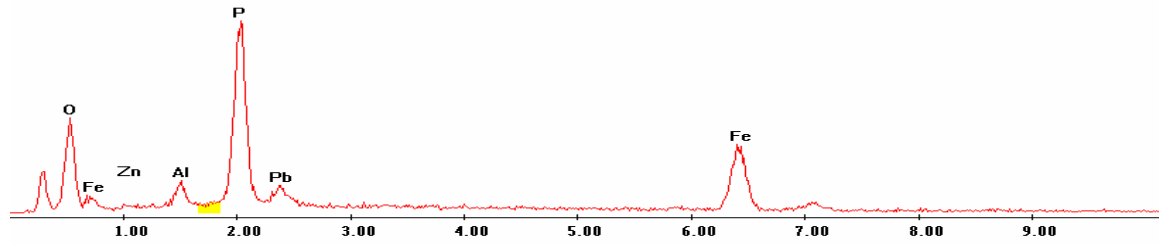
Label A: 01jun04 P2C7 369 291 Point 8



Point 9

c:\edax32\genesis\genspc.spc

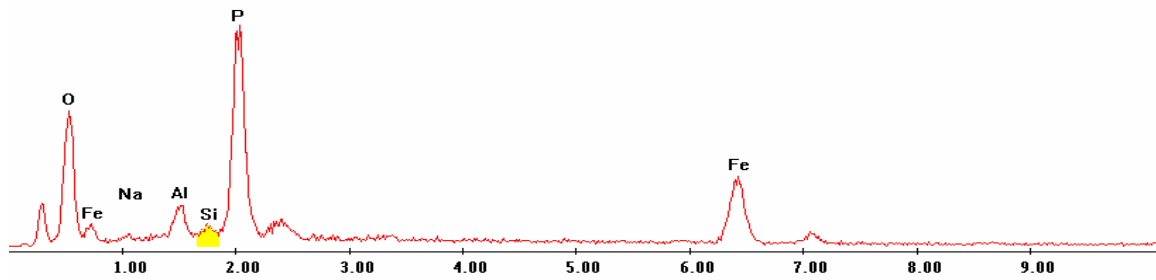
Label A: 01jun04 P2C7 369 291 Point 9



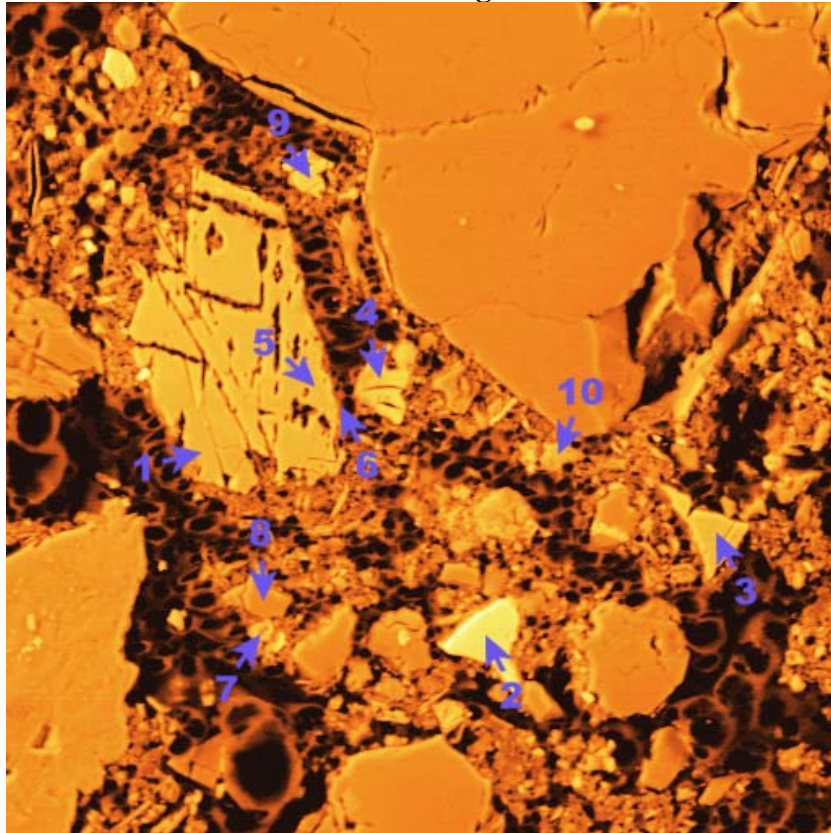
Point 10

c:\edax32\genesis\genspc.spc

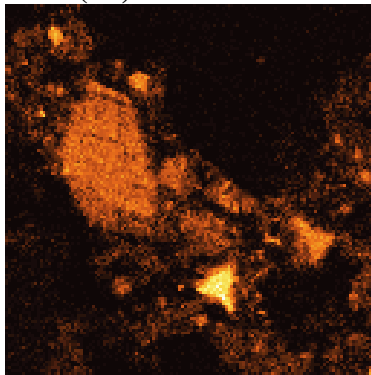
Label A: 01jun04 P2C7 369 291 Point 10



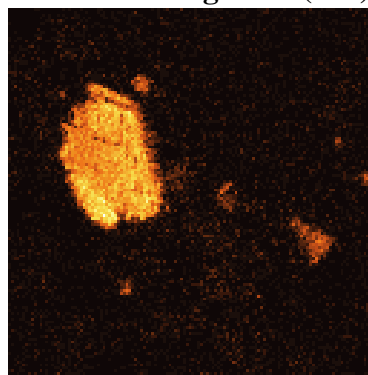
P2C8 – 303, 178
BSE Image



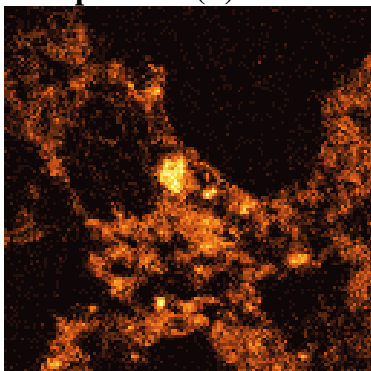
Iron (Fe)



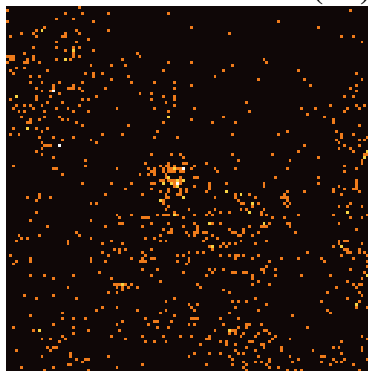
Manganese (Mn)



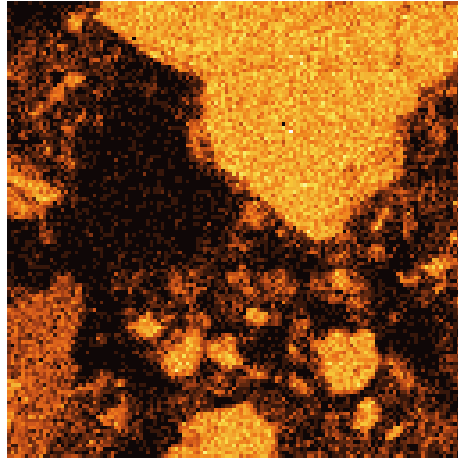
Phosphorous (P)



Lead (Pb)



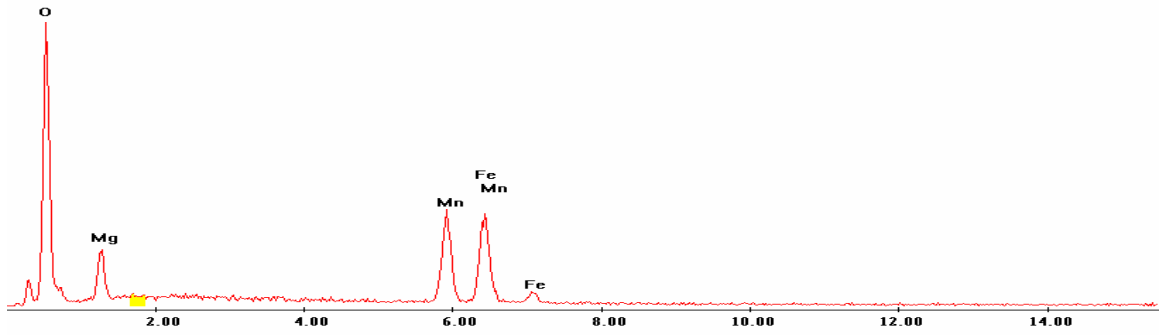
Silicon (Si)



EDS Scan Images by Point

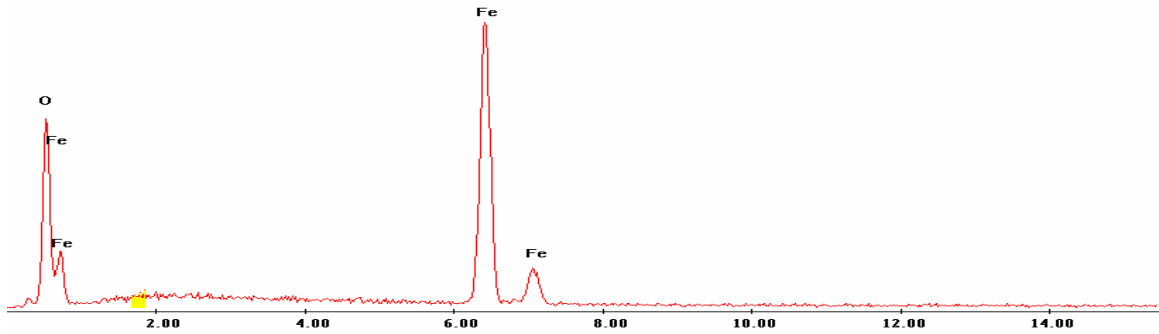
Point 1

Label A: 27may04 P2C8 303 178 Point 1



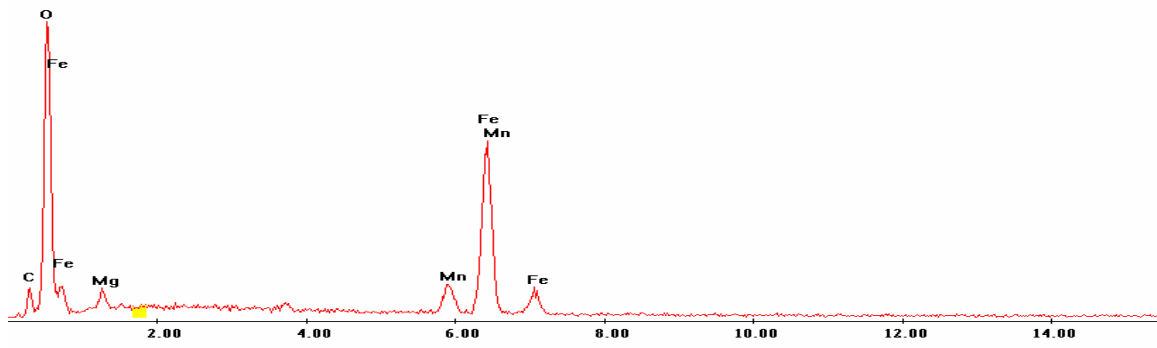
Point 2

Label A: 27may04 P2C8 303 178 Point 2



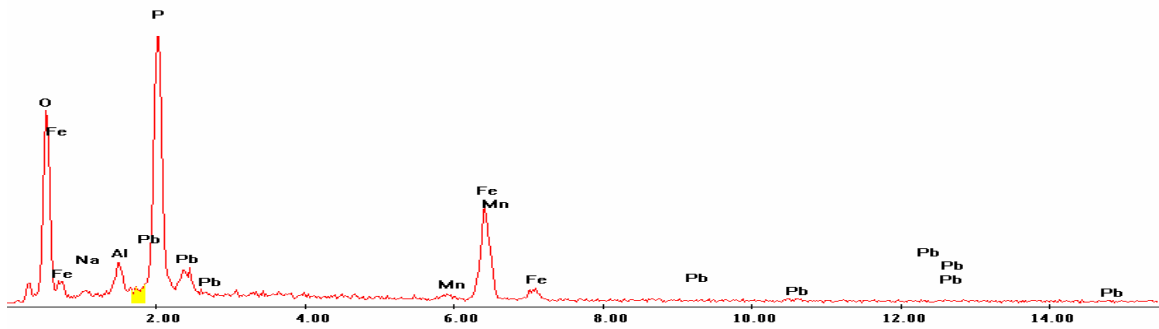
Point 3

Label A: 27may04 P2C8 303 178 Point 3



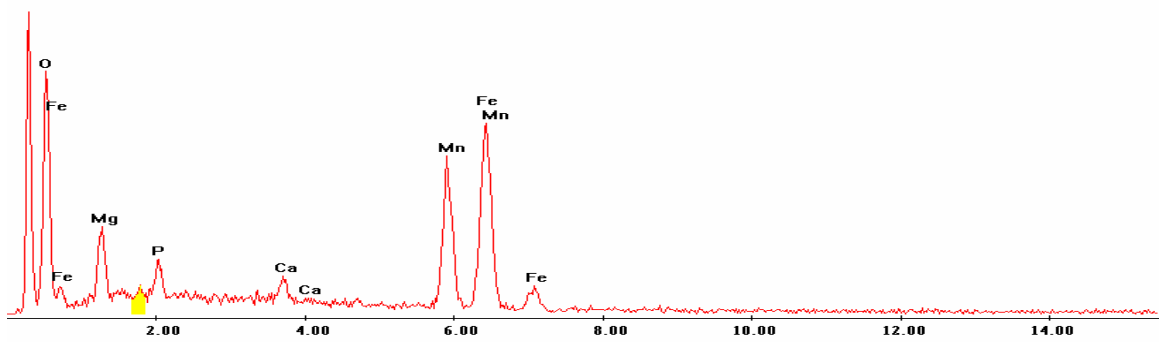
Point 4

Label A: 27may04 P2C8 303 178 Point 4



Point 5

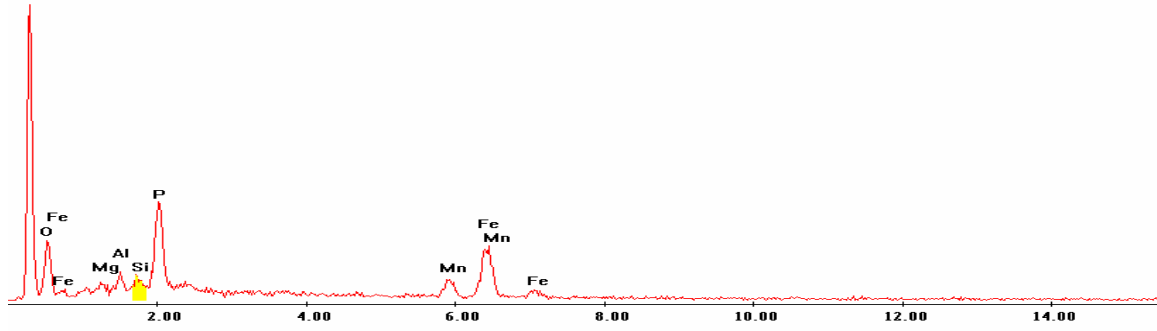
Label A: 27may04 P2C8 303 178 Point 5



Point 6

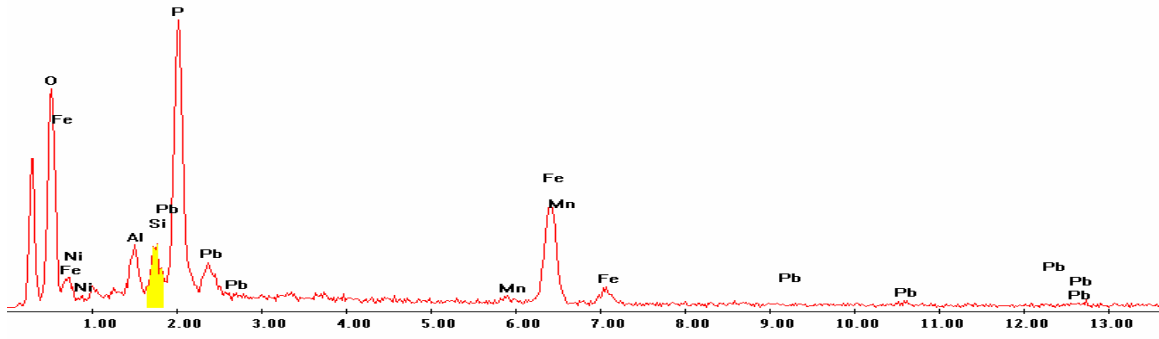
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Label A: 27may04 P2C8 303 178 Point 6



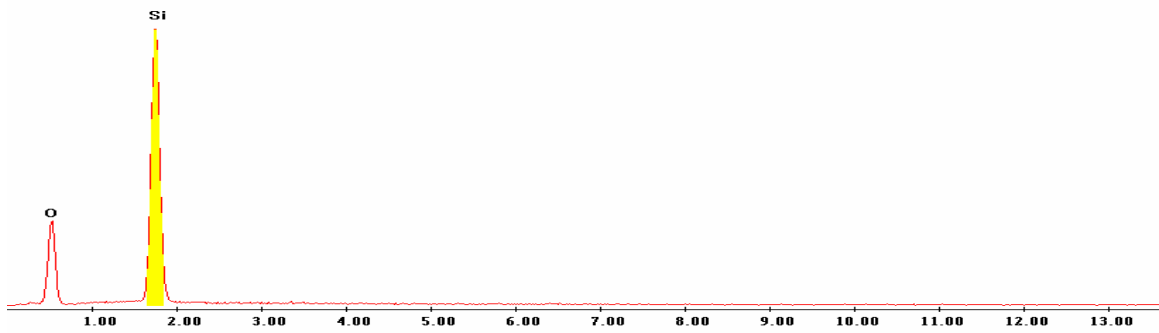
Point 7

Label A: 27may04 P2C8 303 178 Point 7



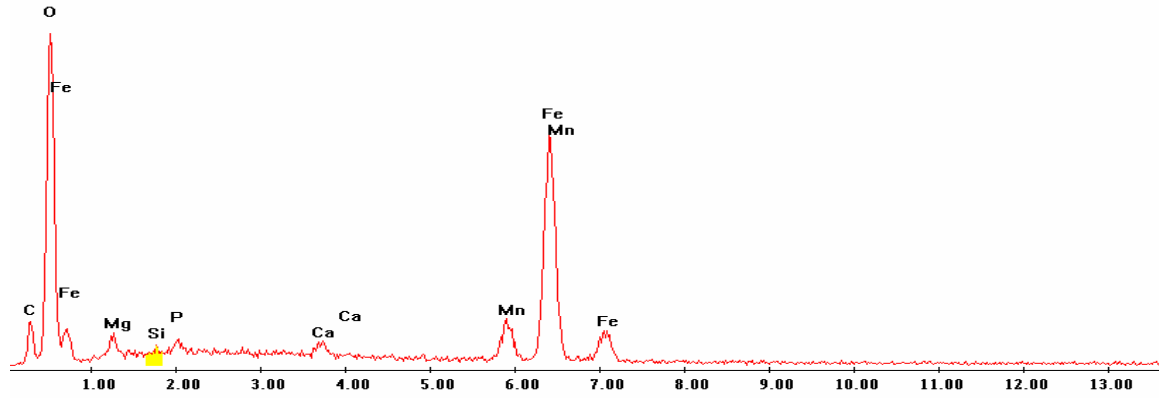
Point 8

Label A: 27may04 P2C8 303 178 Point 8



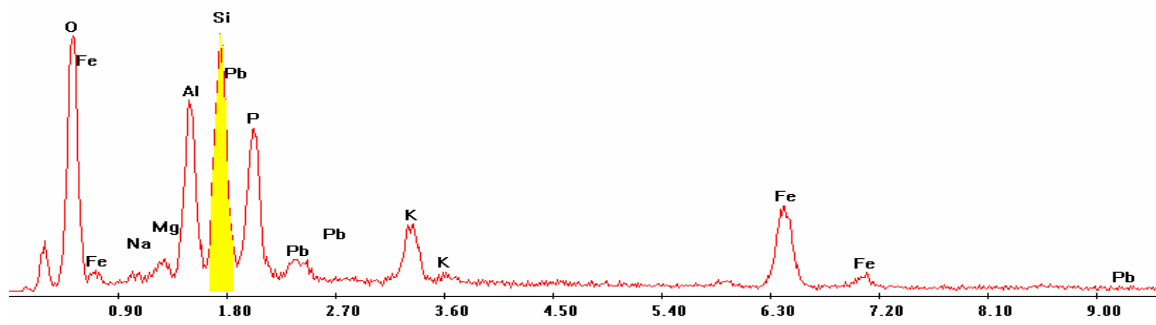
Point 9

Label A: 27may04 P2C8 303 178 Point 9

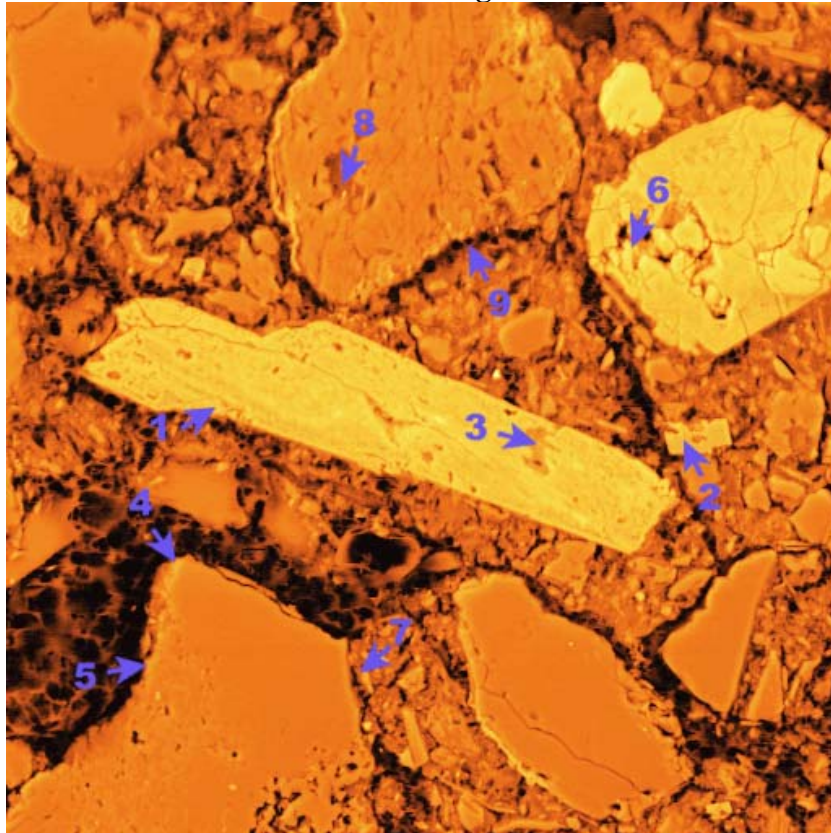


Point 10

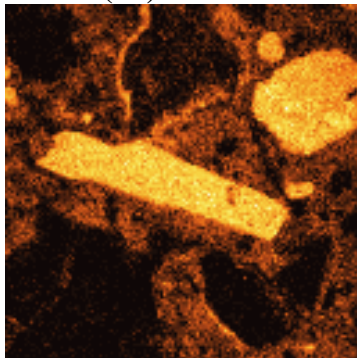
Label A: 27may04 P2C8 303 178 Point 10



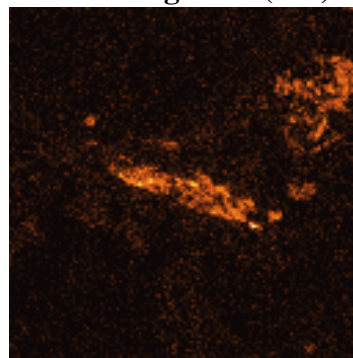
P2C8 – 314, 272
BSE Image



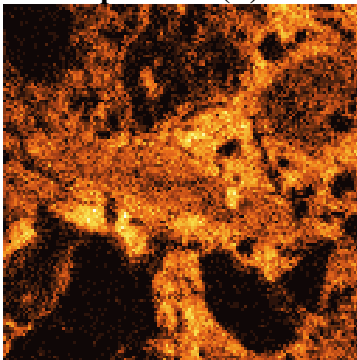
Iron (Fe)



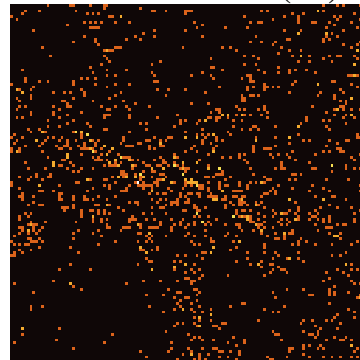
Manganese (Mn)



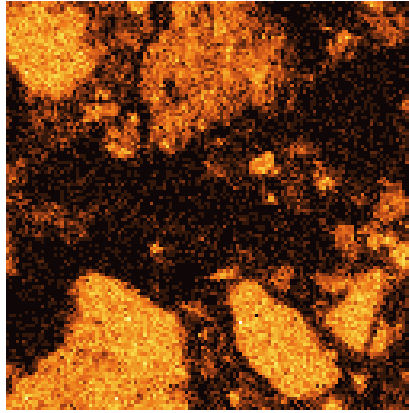
Phosphorous (P)



Lead (Pb)



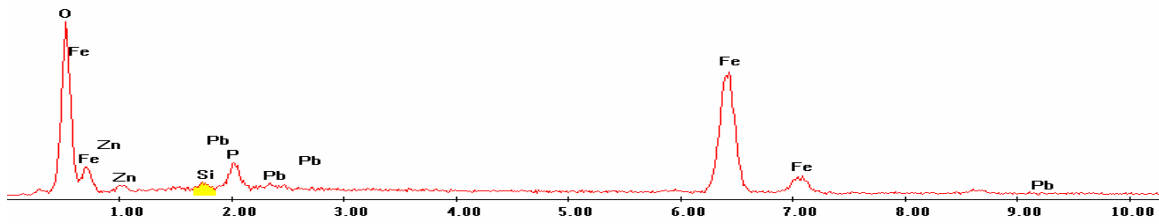
Silicon (Si)



EDS Scan Images by Point

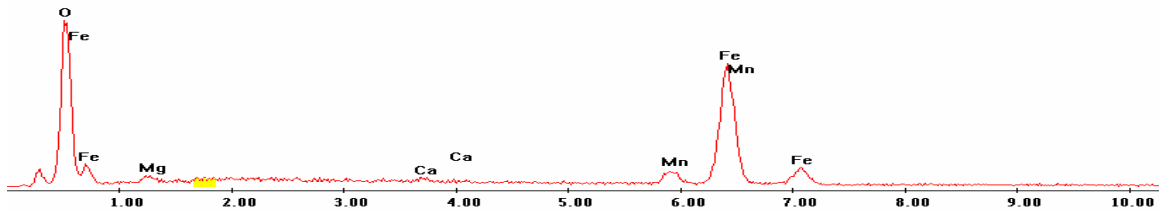
Point 1

Label A: 27may04 P2C8 314 272 Point 1



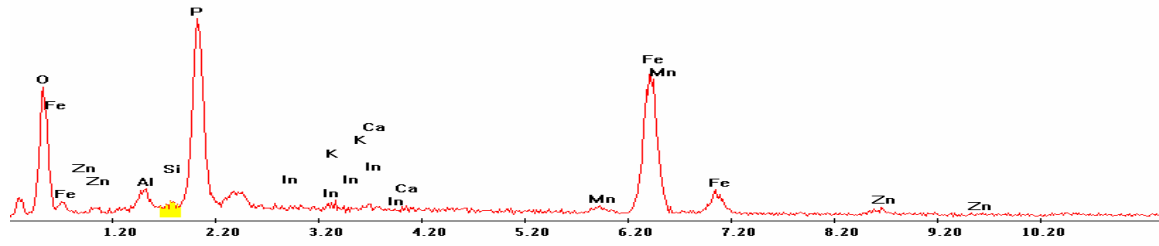
Point 2

Label A: 27may04 P2C8 314 272 Point 2



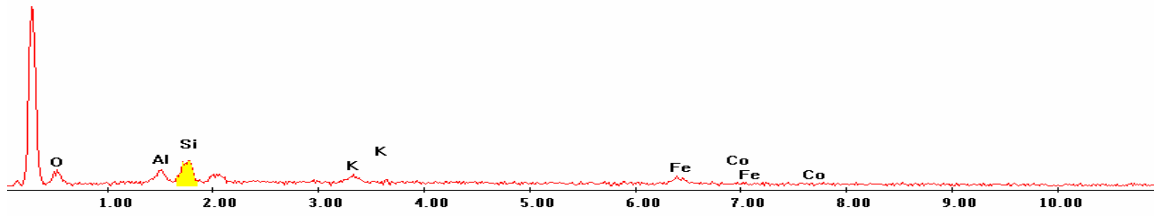
Point 3

Label A: 27may04 P2C8 314 272 Point 3



Point 4

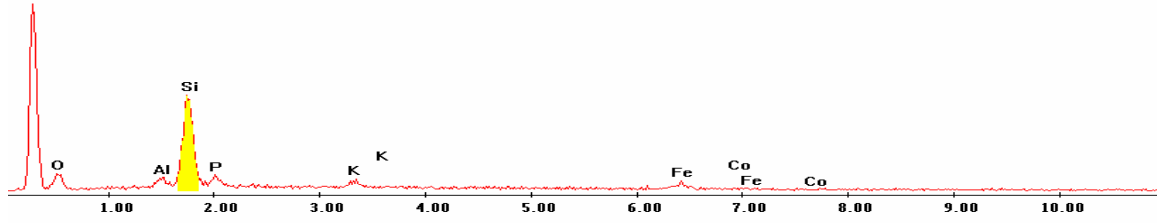
Label A: 27may04 P2C8 314 272 Point 4



Point 5

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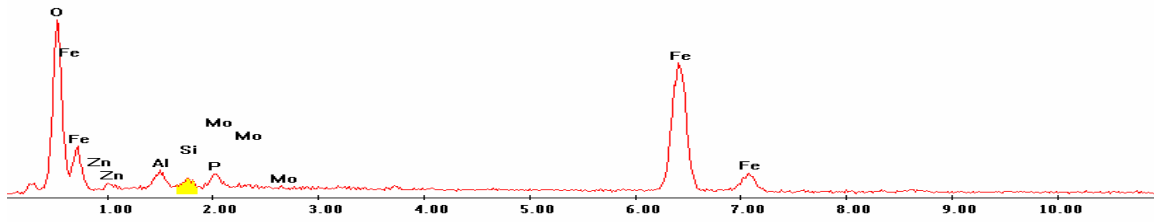
Label A: 27may04 P2C8 314 272 Point 5



Point 6

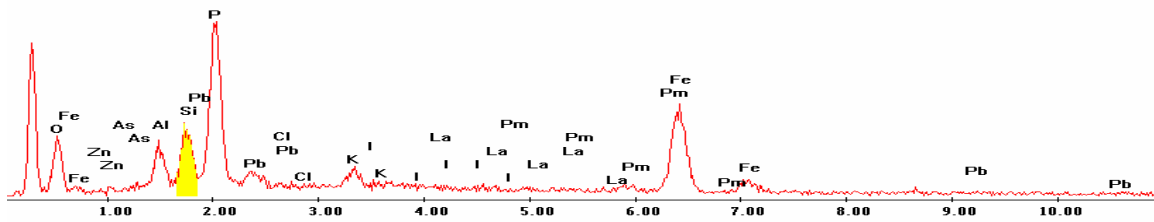
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Label A: 27may04 P2C8 314 272 Point 6



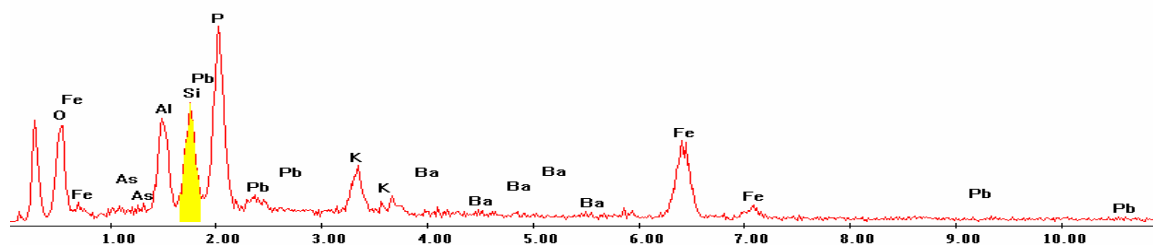
Point 7

Label A: 27may04 P2C8 314 272 Point 7

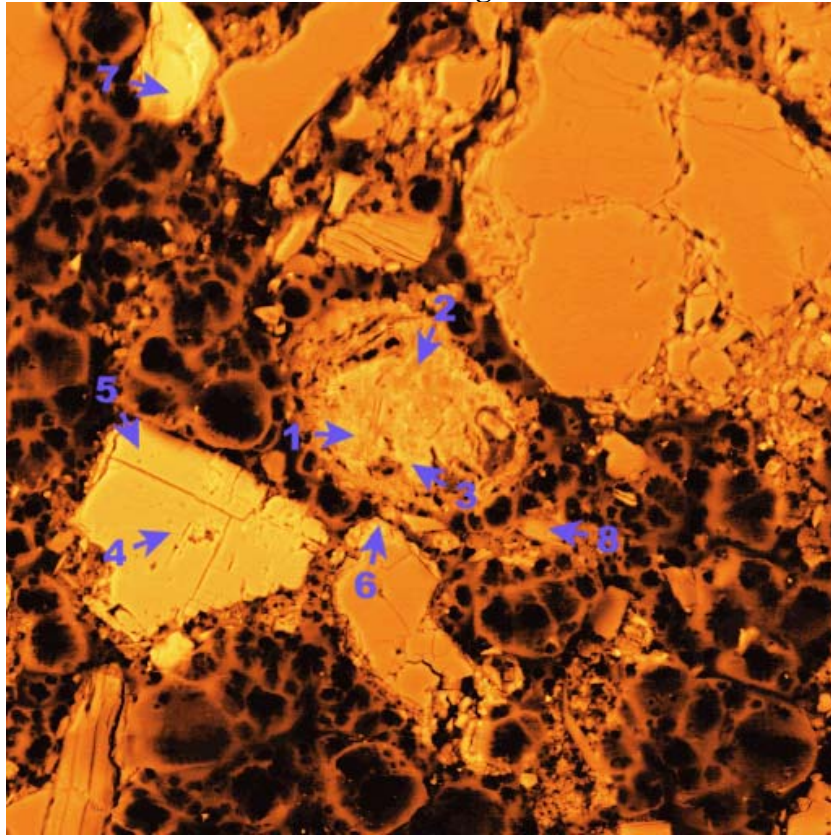


Point 8

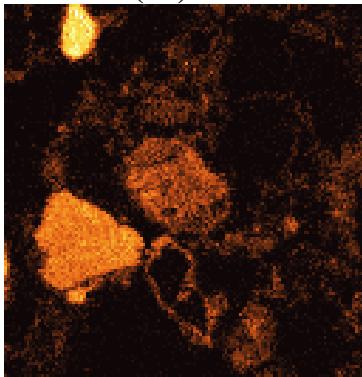
Label A: 27may04 P2C8 314 272 Point 8



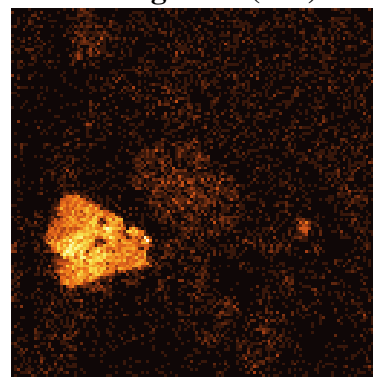
P2C8 – 376, 249
BSE Image



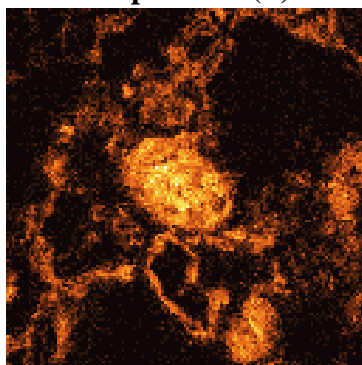
Iron (Fe)



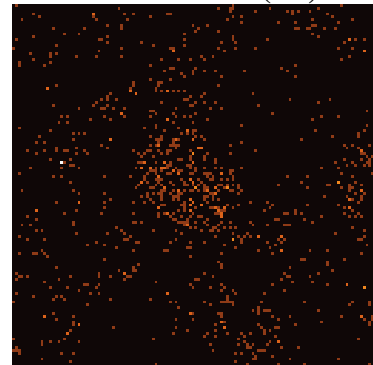
Manganese (Mn)



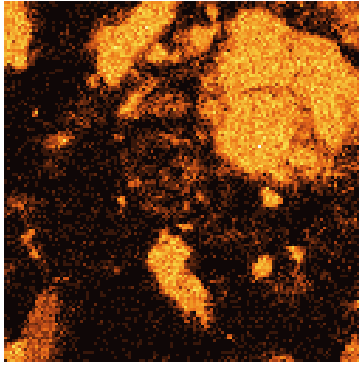
Phosphorous (P)



Lead (Pb)



Silicon (Si)

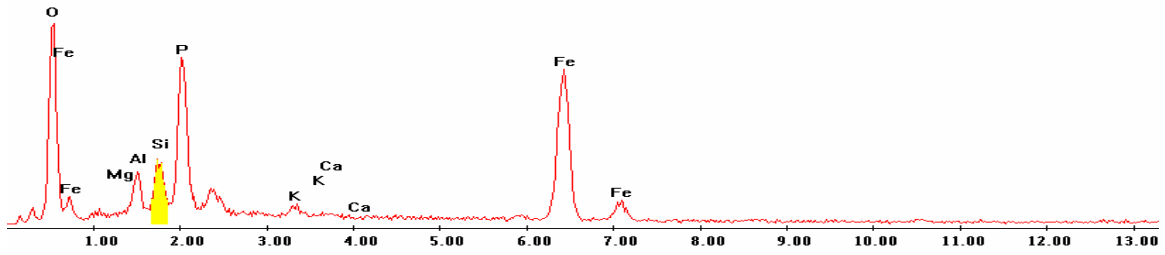


EDS Scan Images by Point

Point 1

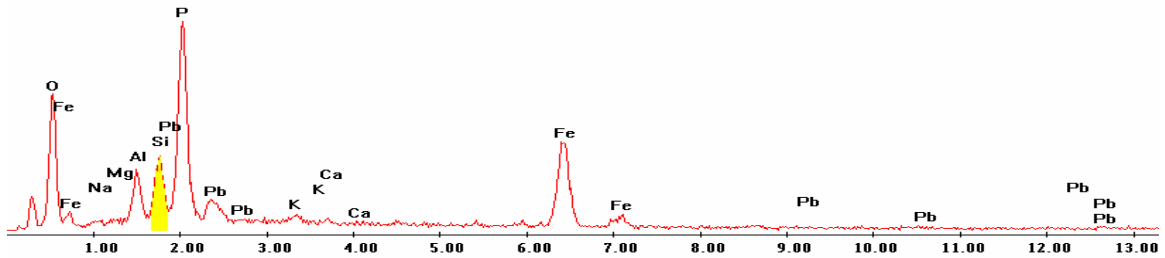
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Label A: 27may04 P2C8 376 249 Point 1



Point 2

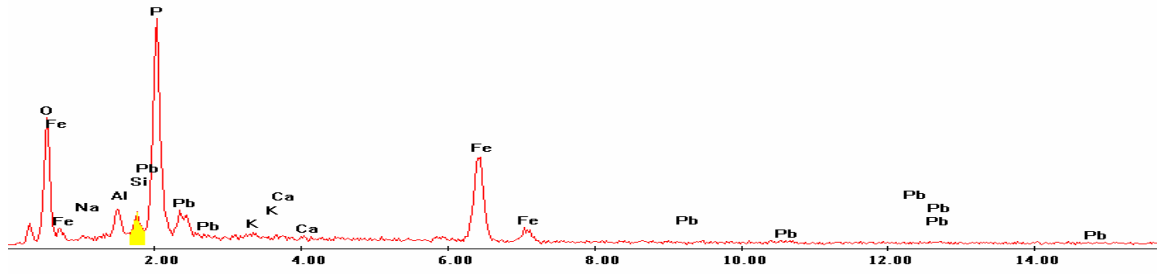
Label A: 27may04 P2C8 376 249 Point 2



Point 3

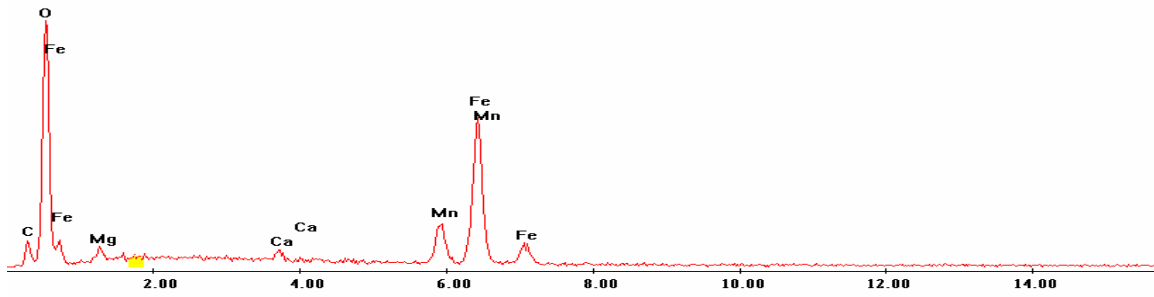
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Label A: 27may04 P2C8 376 249 Point 3



Point 4

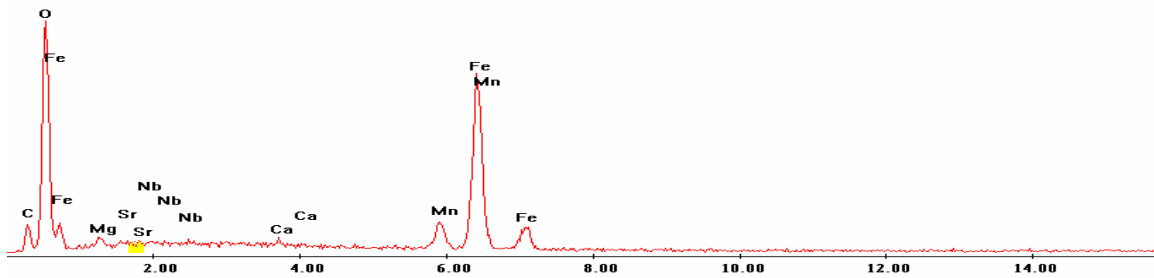
Label A: 27may04 P2C8 376 249 Point 4



Point 5

c:\edax32\genesis\genspc.spc

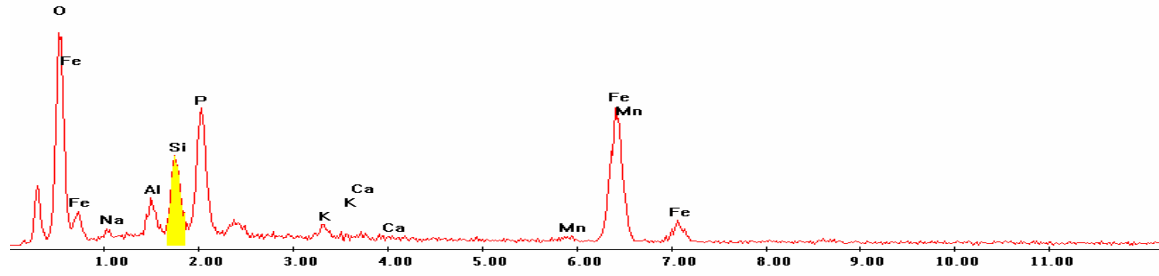
Label A: 27may04 P2C8 376 249 Point 5



Point 6

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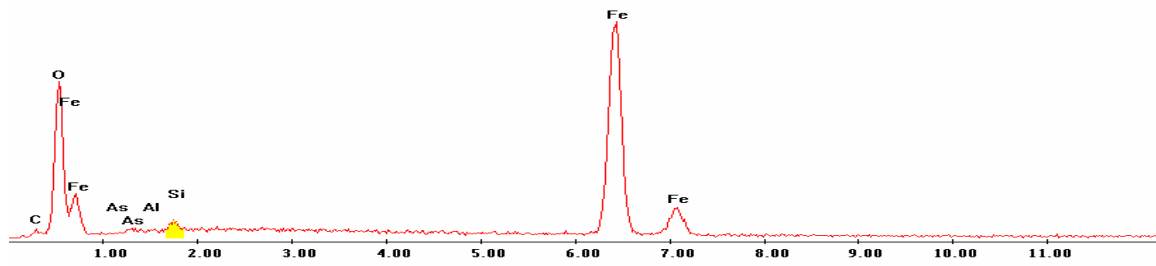
Label A: 27may04 P2C8 376 249 Point 6



Point 7

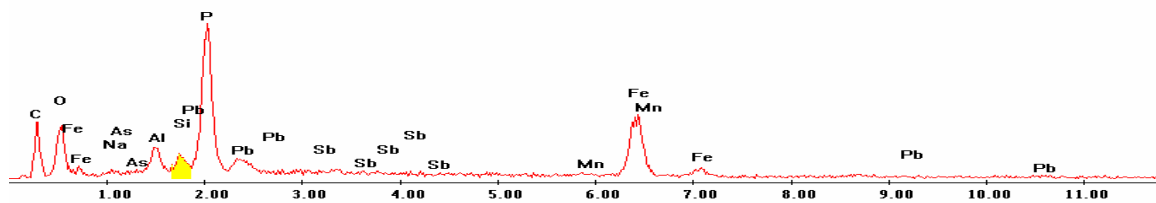
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Label A: 27may04 P2C8 376 249 Point 7

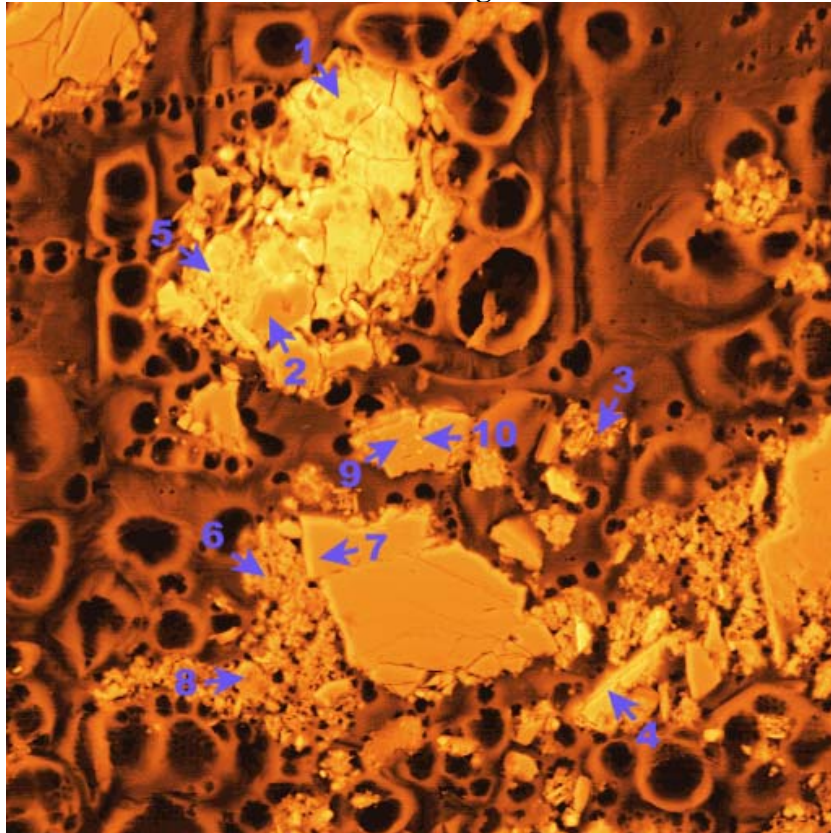


Point 8

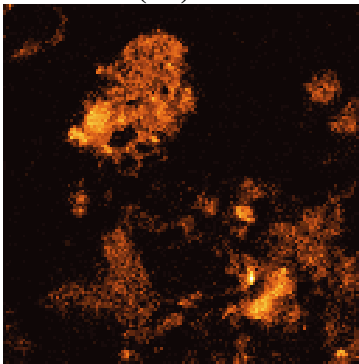
Label A: 27may04 P2C8 376 249 Point 8



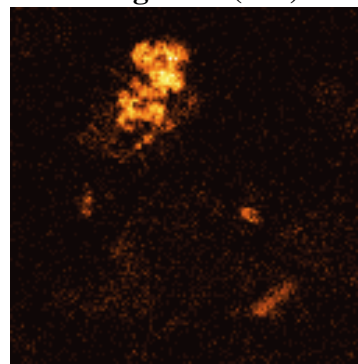
P2C8 – 427, 161
BSE Image



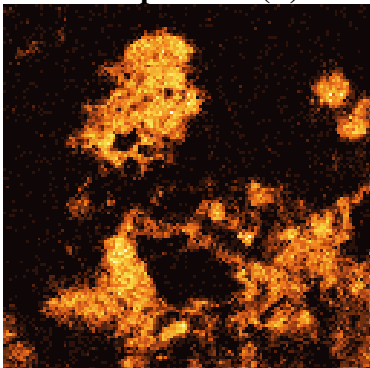
Iron (Fe)



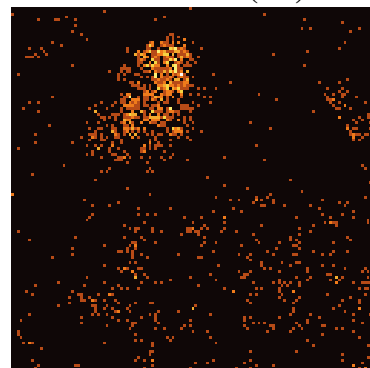
Manganese (Mn)



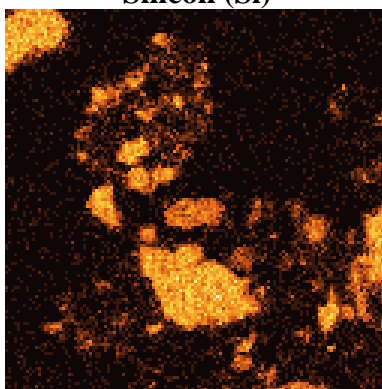
Phosphorous (P)



Lead (Pb)



Silicon (Si)

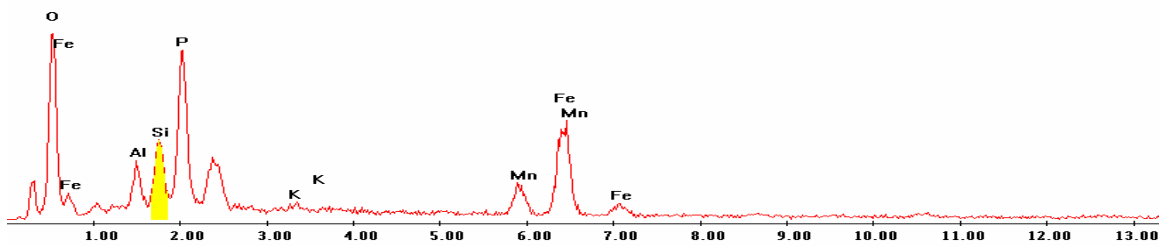


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

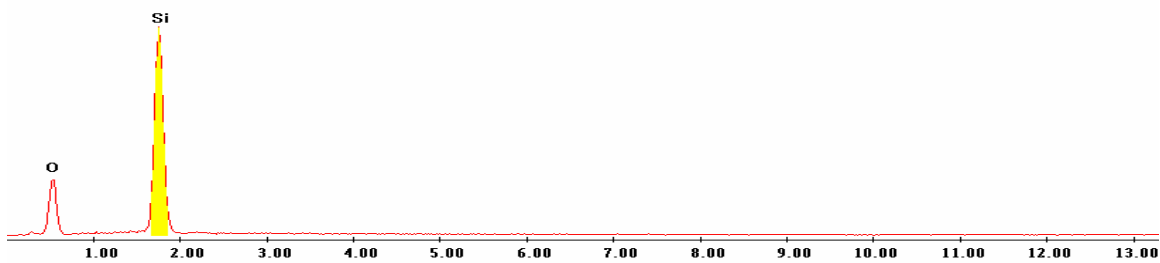
Label A: 27may04 P2C8 427 161 Point 1



Point 2

c:\edax32\genesis\genspc.spc

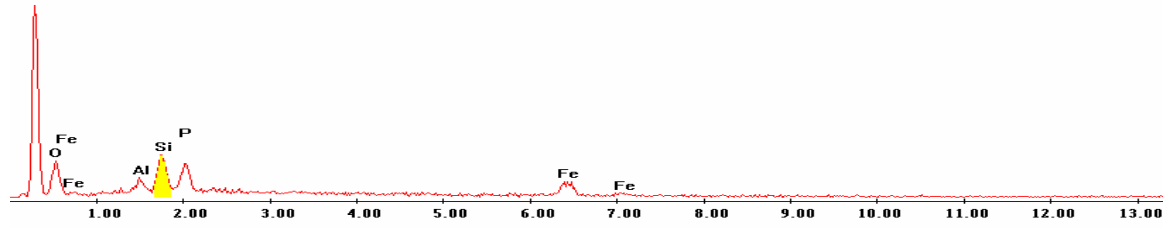
Label A: 27may04 P2C8 427 161 Point 2



Point 3

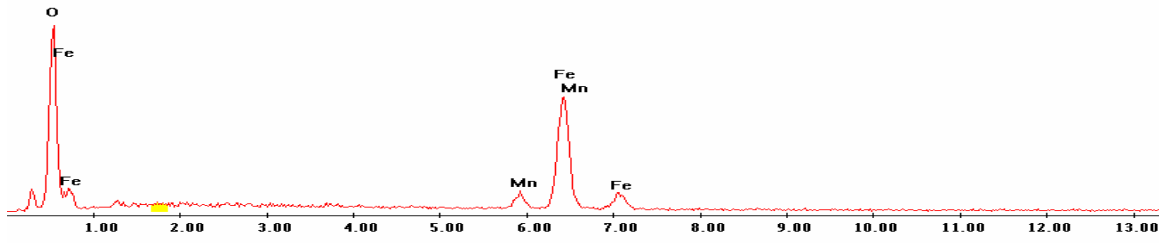
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Label A: 27may04 P2C8 427 161 Point 3



Point 4

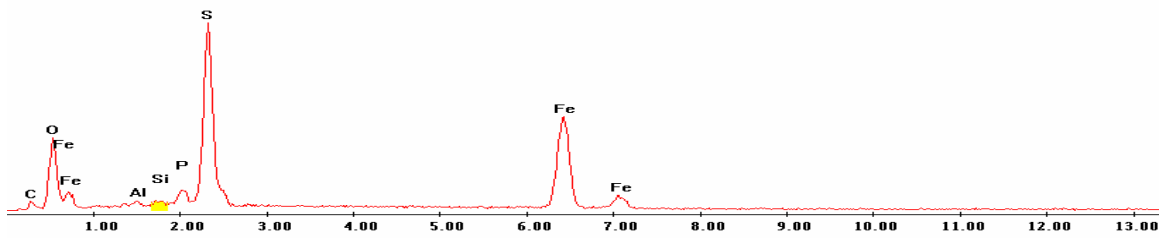
Label A: 27may04 P2C8 427 161 Point 4



Point 5

c:\edax32\genesis\genspc.spc

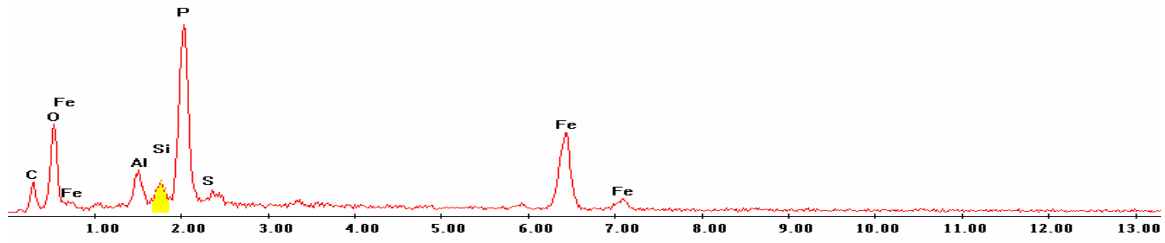
Label A: 27may04 P2C8 427 161 Point 5



Point 6

c:\edax32\genesis\genspc.spc

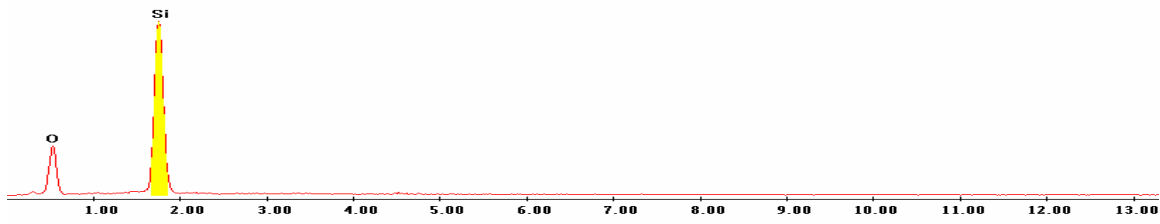
Label A: 27may04 P2C8 427 161 Point 6



Point 7

c:\edax32\genesis\genspc.spc

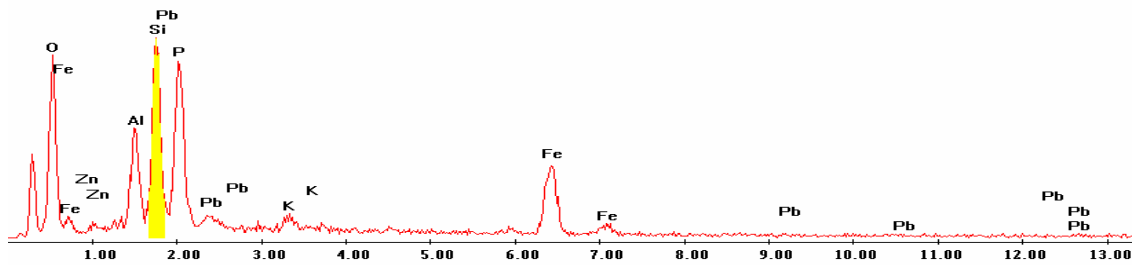
Label A: 27may04 P2C8 427 161 Point 7



Point 8

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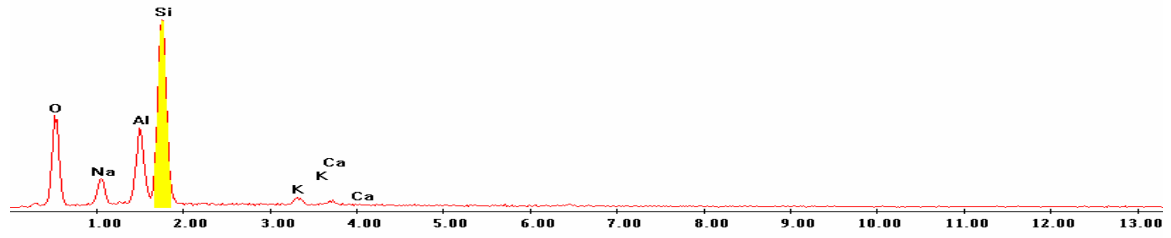
Label A: 27may04 P2C8 427 161 Point 8



Point 9

c:\edax32\genesis\genspc.spc

Label A: 27may04 P2C8 427 161 Point 9



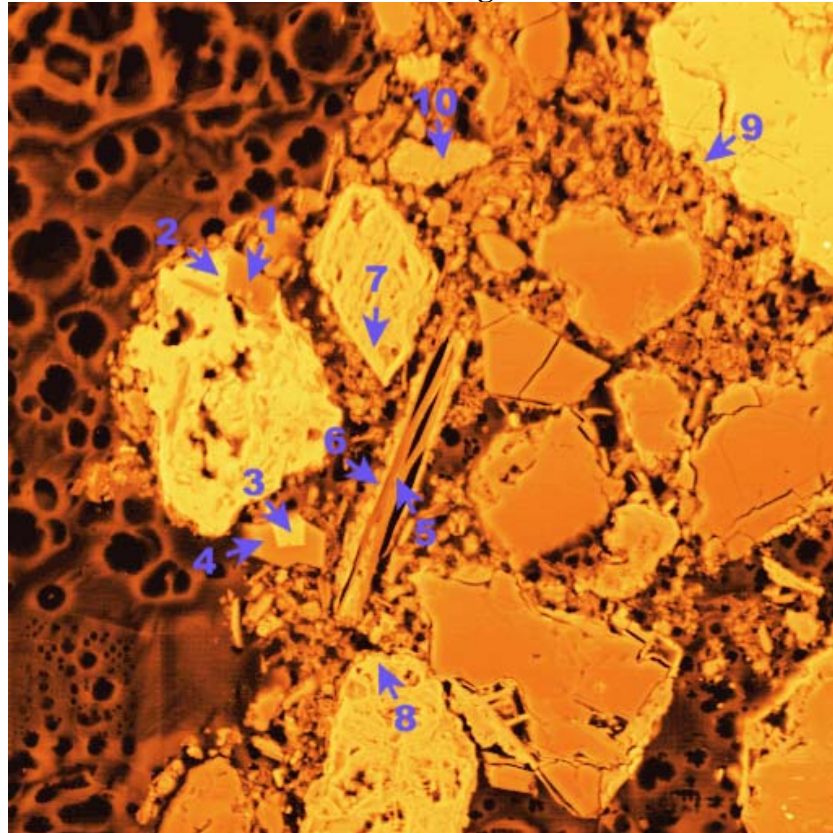
Point 10

c:\edax32\genesis\genspc.spc

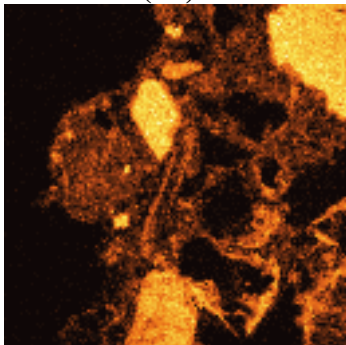
Label A: 27may04 P2C8 427 161 Point 10



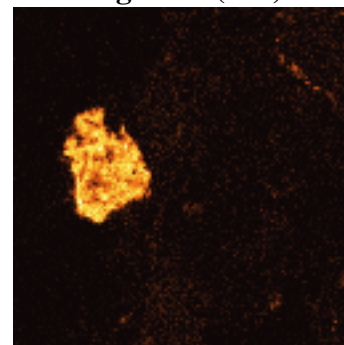
P2C8 – 439, 136
BSE Image



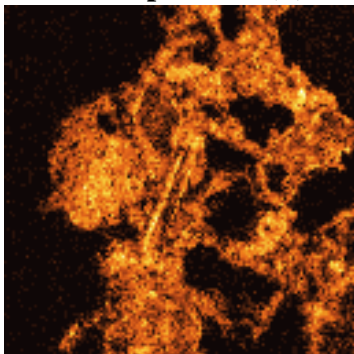
Iron (Fe)



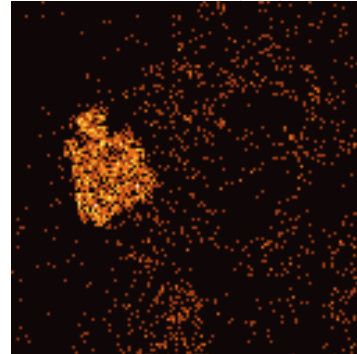
Manganese (Mn)



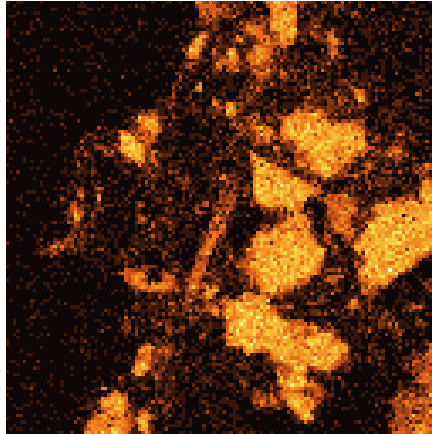
Phosphorous (P)



Lead (Pb)



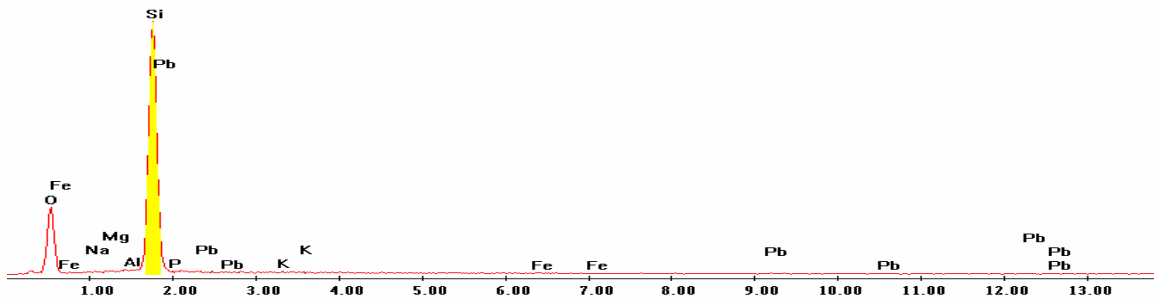
Silicon (Si)



EDS Scan Images by Point Point 1

c:\edax32\genesis\genspc.spc

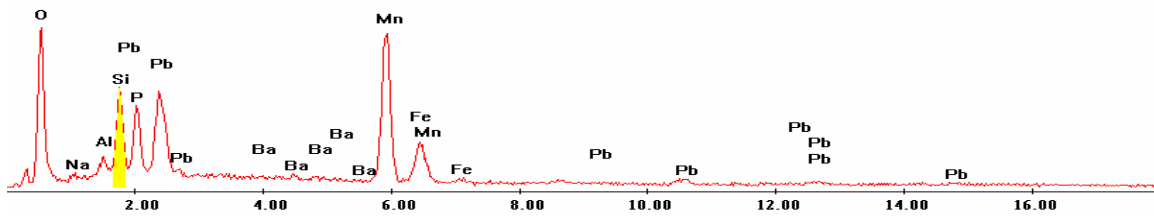
Label A: 27may04 P2C8 439 136 Point 1



Point 2

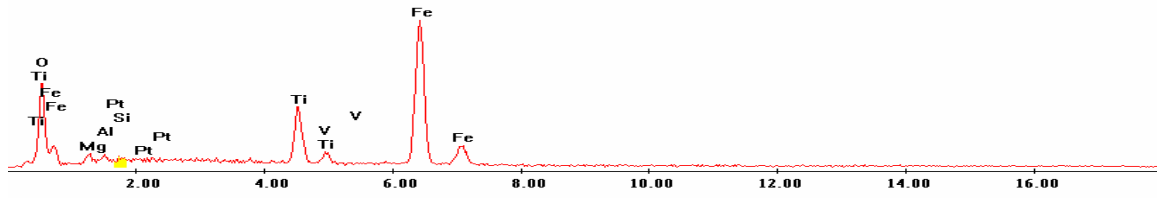
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Label A: 27may04 P2C8 439 136 Point 2



Point 3

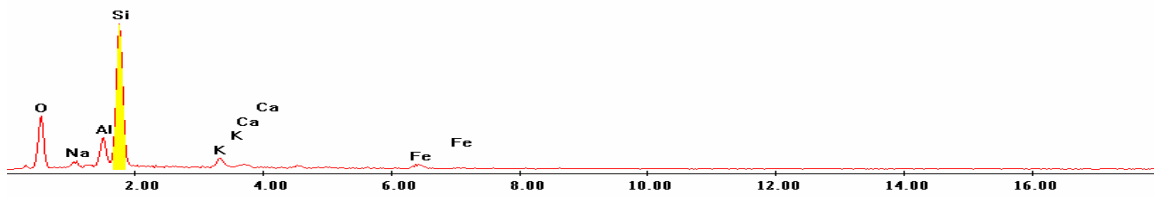
Label A: 27may04 P2C8 439 136 Point 3



Point 4

c:\edax32\genesis\genspc.spc

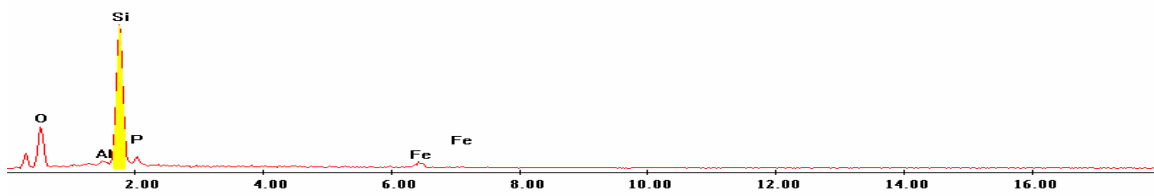
Label A: 27may04 P2C8 439 136 Point 4



Point 5

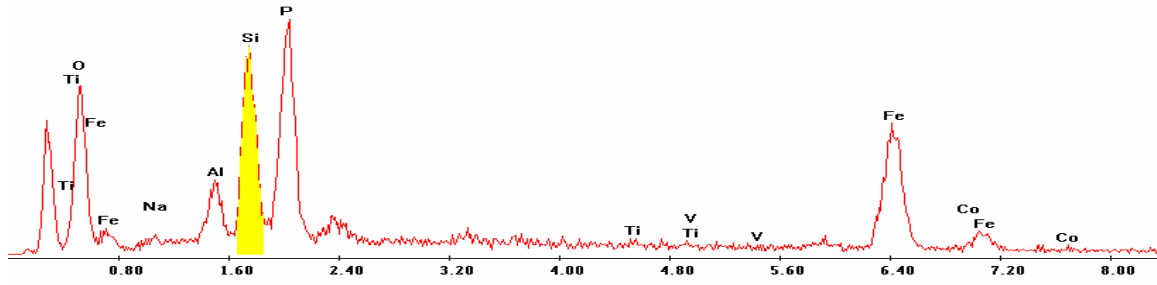
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Label A: 27may04 P2C8 439 136 Point 5



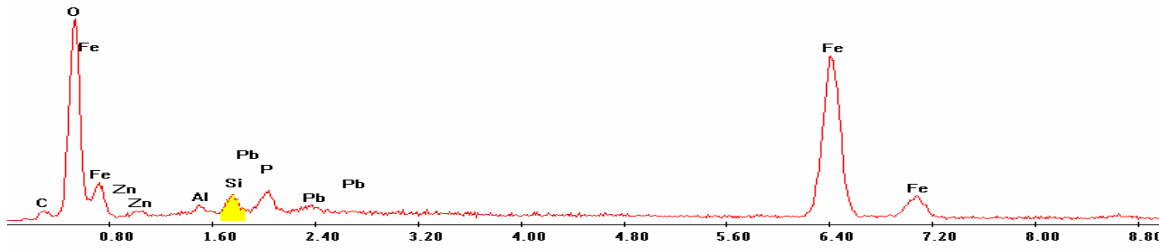
Point 6

Label A: 27may04 P2C8 439 136 Point 6



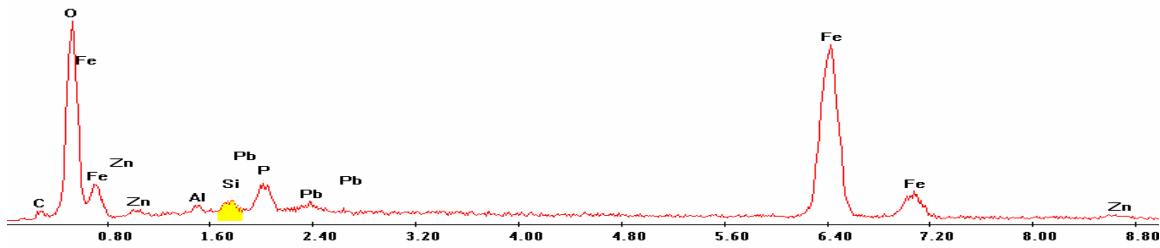
Point 7

Label A: 27may04 P2C8 439 136 Point 7



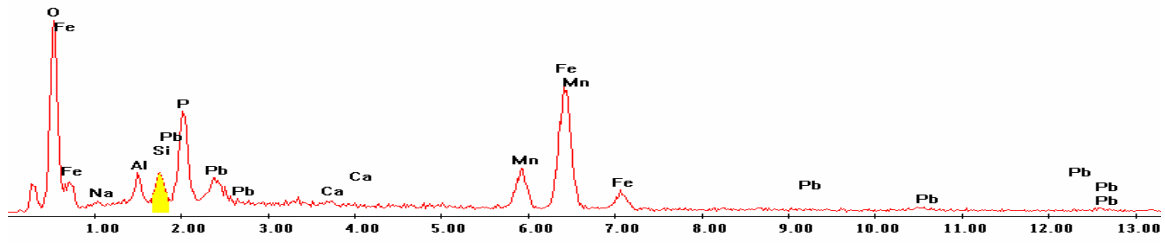
Point 8

Label A: 27may04 P2C8 439 136 Point 8



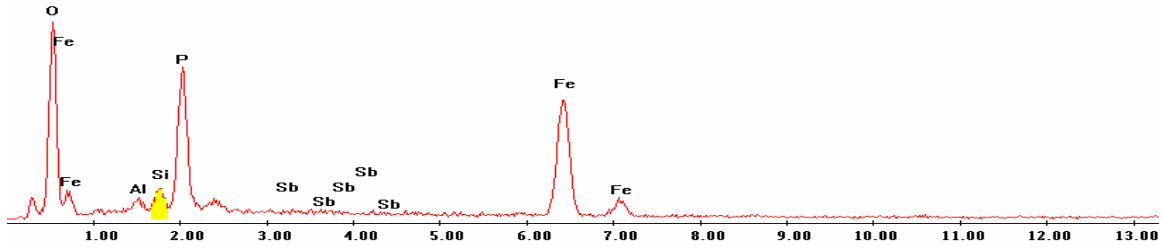
Point 9

Label A: 27may04 P2C8 439 136 Point 9

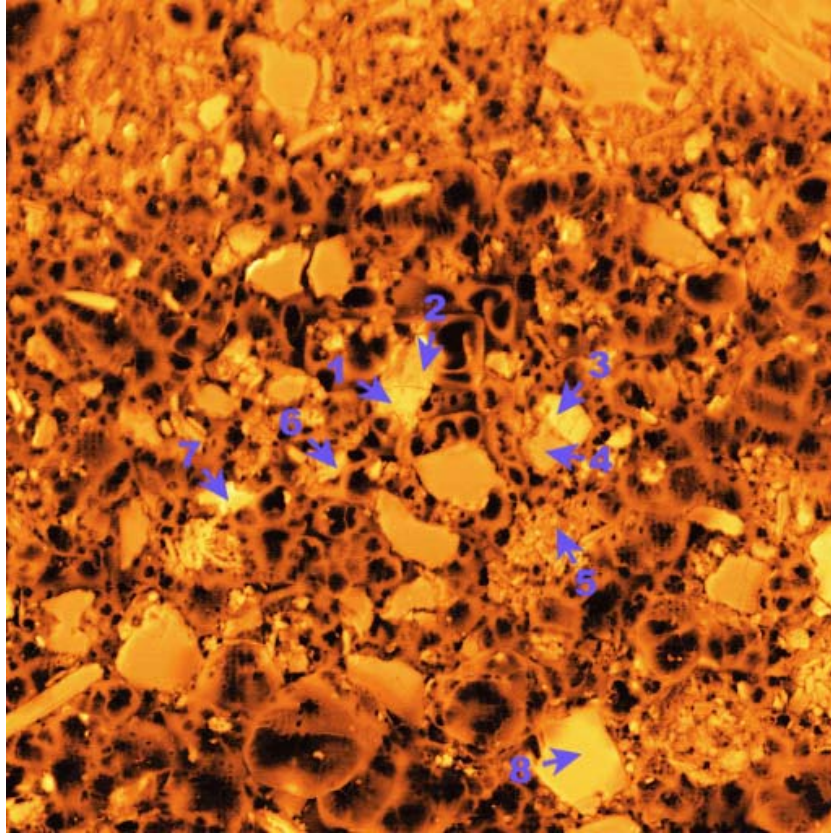


Point 10

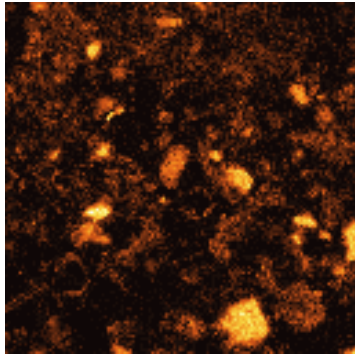
Label A: 27may04 P2C8 439 136 Point 10



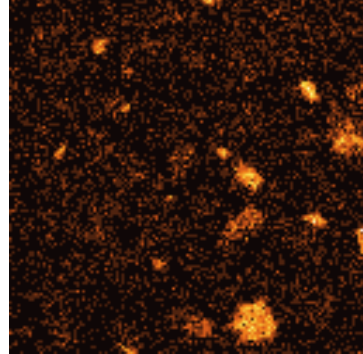
P2C8 – 482, 255
BSE Image



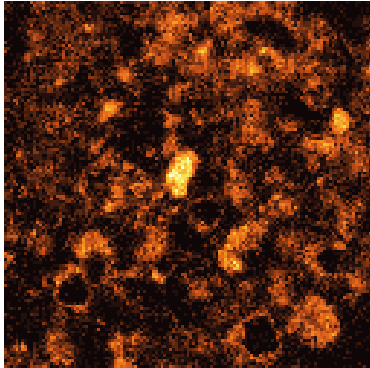
Iron (Fe)



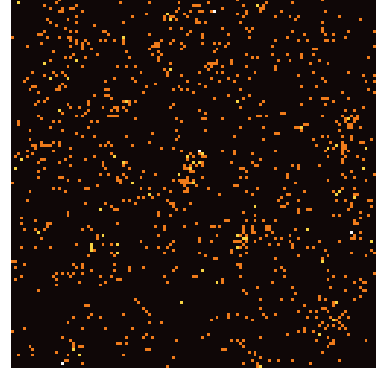
Manganese (Mn)



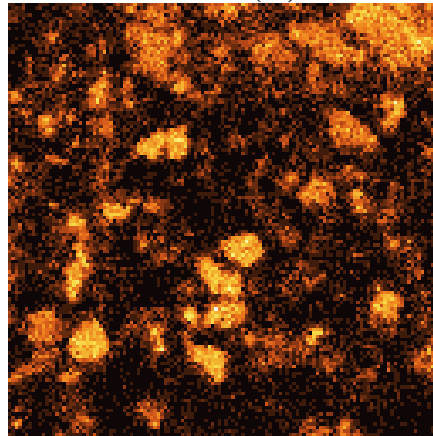
Phosphorous (P)



Lead (Pb)



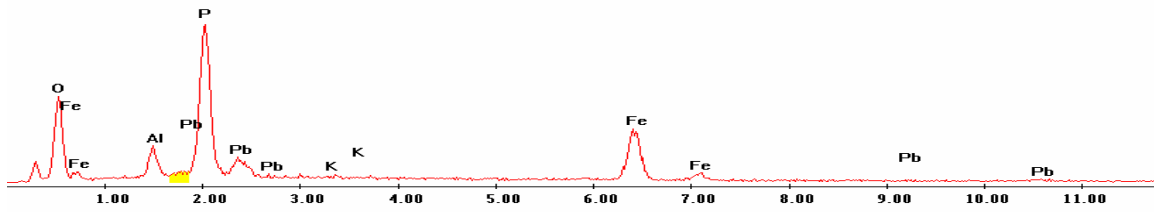
Silicon (Si)



EDS Scan Images by Point

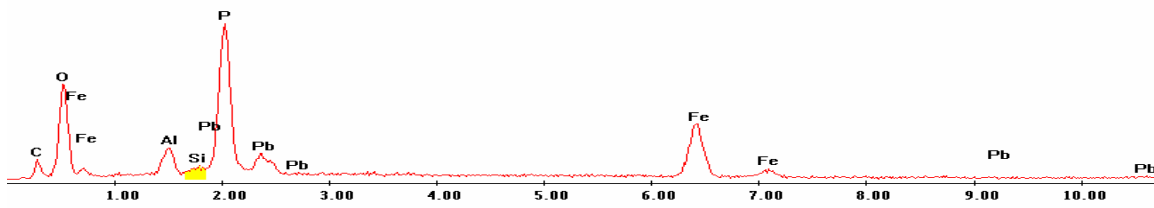
Point 1

Label A: 27may04 P2C8 482 255 Point 1



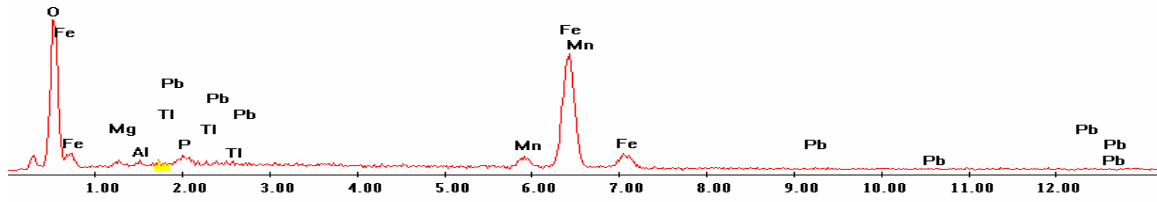
Point 2

Label A: 27may04 P2C8 482 255 Point 2



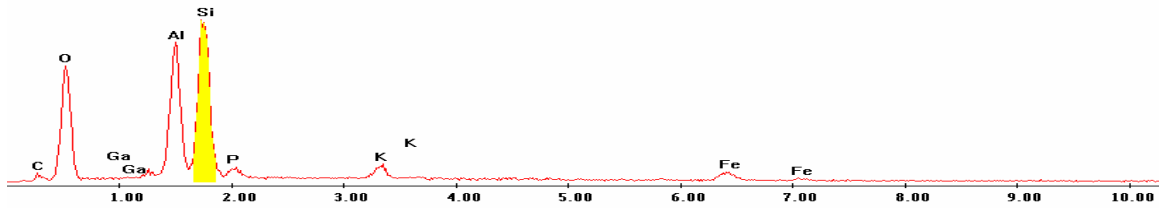
Point 3

Label A: 27may04 P2C8 482 255 Point 3



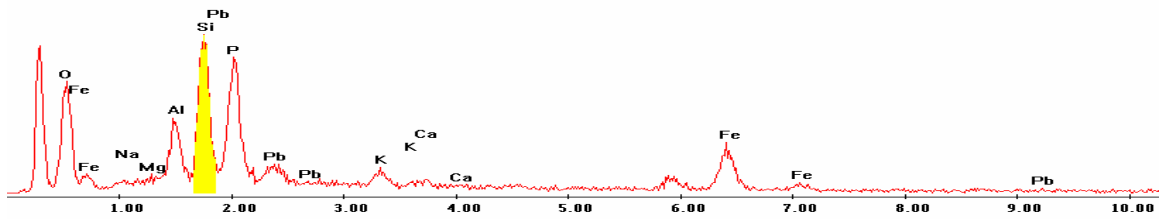
Point 4

Label A: 27may04 P2C8 482 255 Point 4



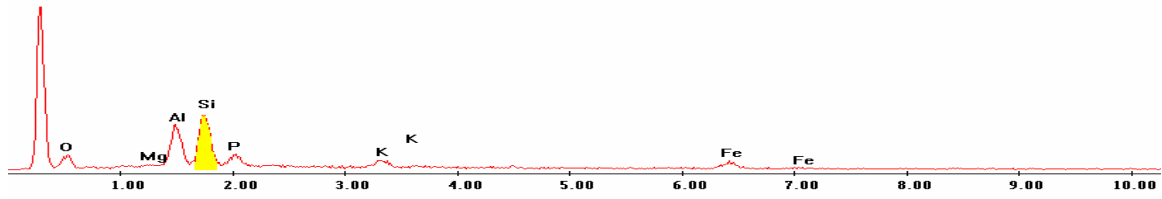
Point 5

Label A: 27may04 P2C8 482 255 Point 5



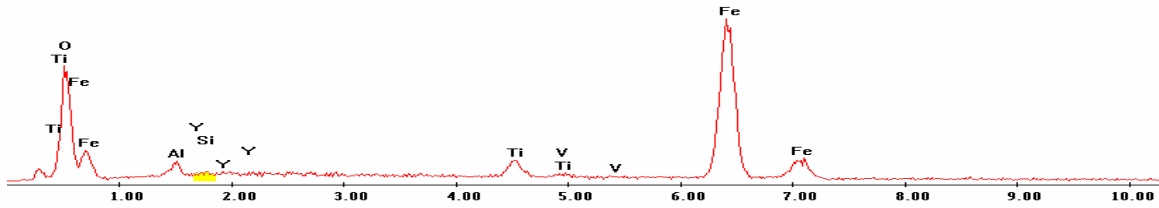
Point 6

Label A: 27may04 P2C8 482 255 Point 6



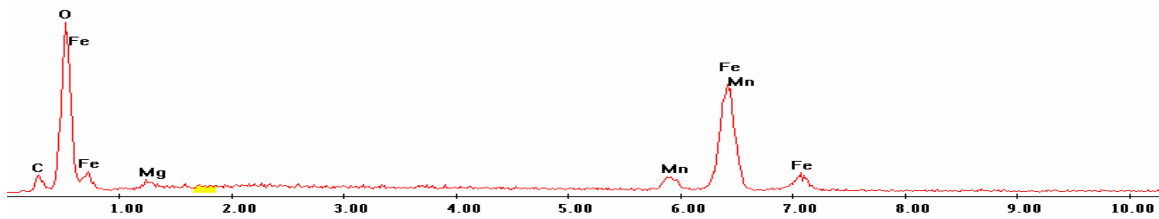
Point 7

Label A: 27may04 P2C8 482 255 Point 7

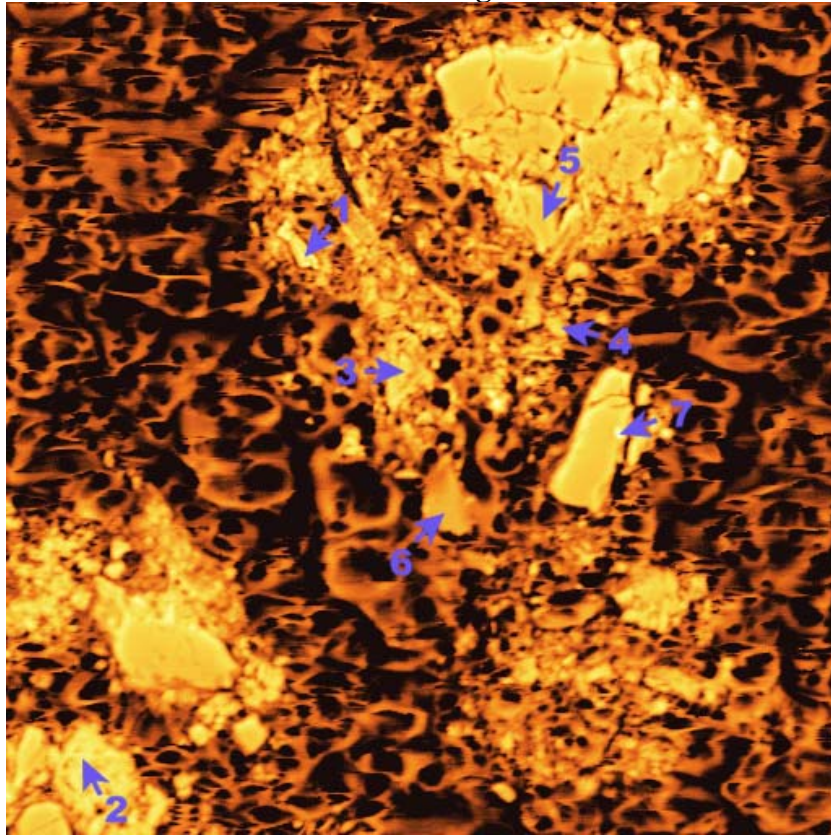


Point 8

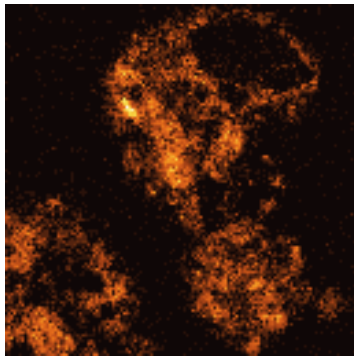
Label A: 27may04 P2C8 482 255 Point 8



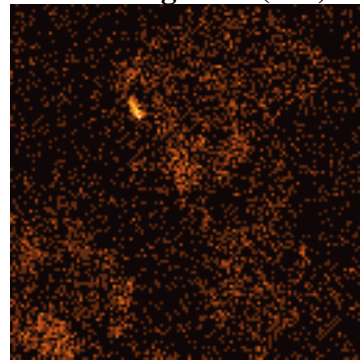
P2C9 – 312, 123
BSE Image



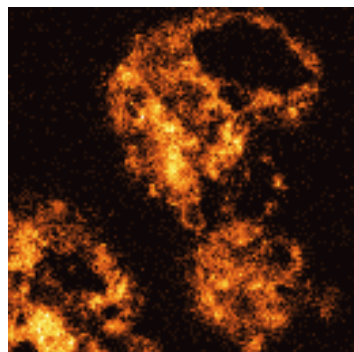
Iron (Fe)



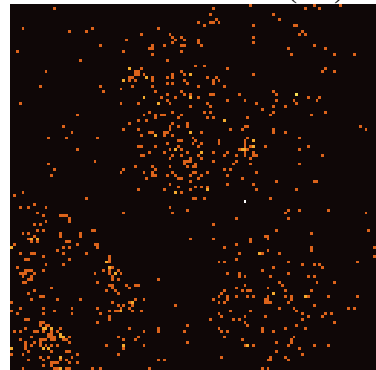
Manganese (Mn)



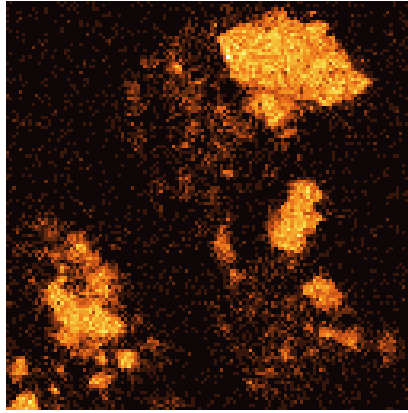
Phosphorous (P)



Lead (Pb)



Silicon (Si)

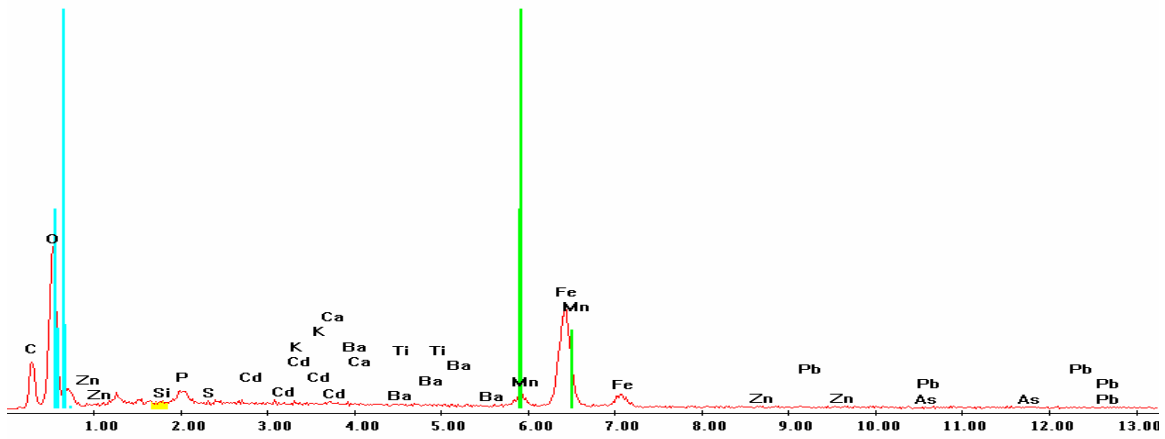


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

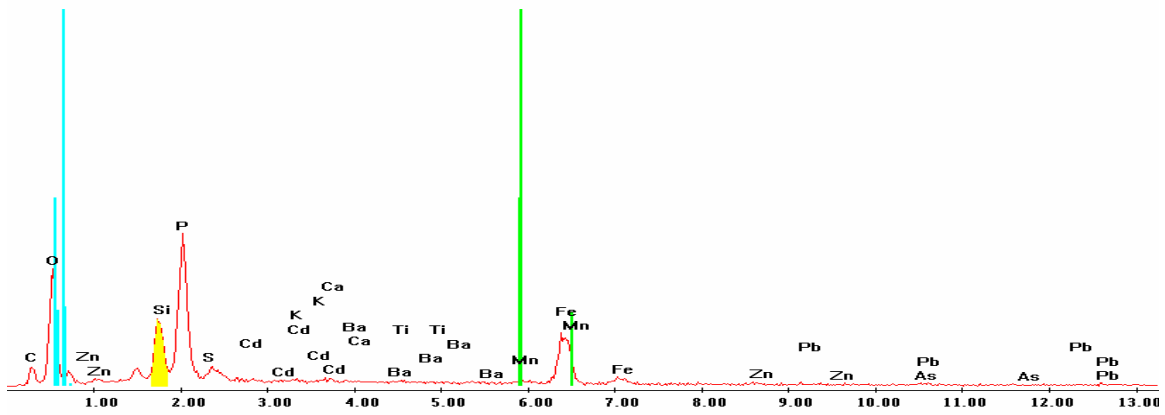
Label A: 27may04 P2C9 312 123 Point 1



Point 2

c:\edax32\genesis\genspc.spc

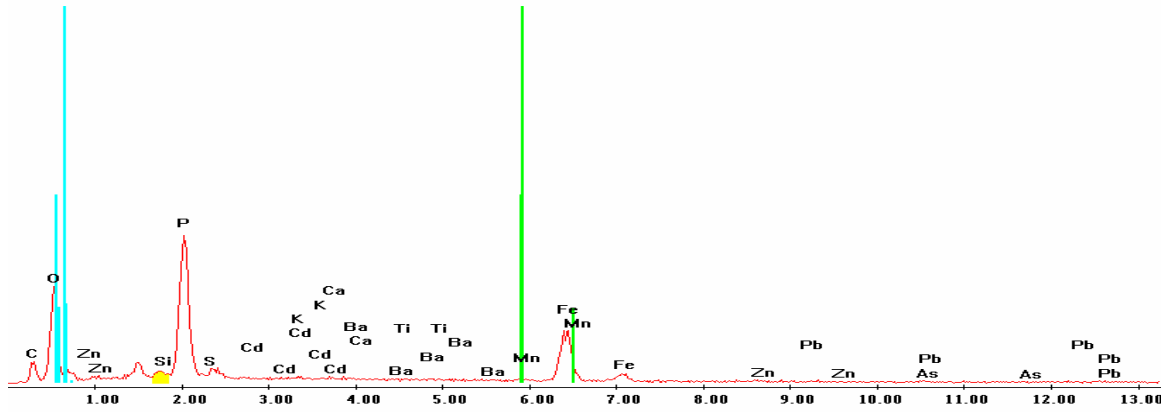
Label A: 27may04 P2C9 312 123 Point 2



Point 3

c:\edax32\genesis\genspc.spc

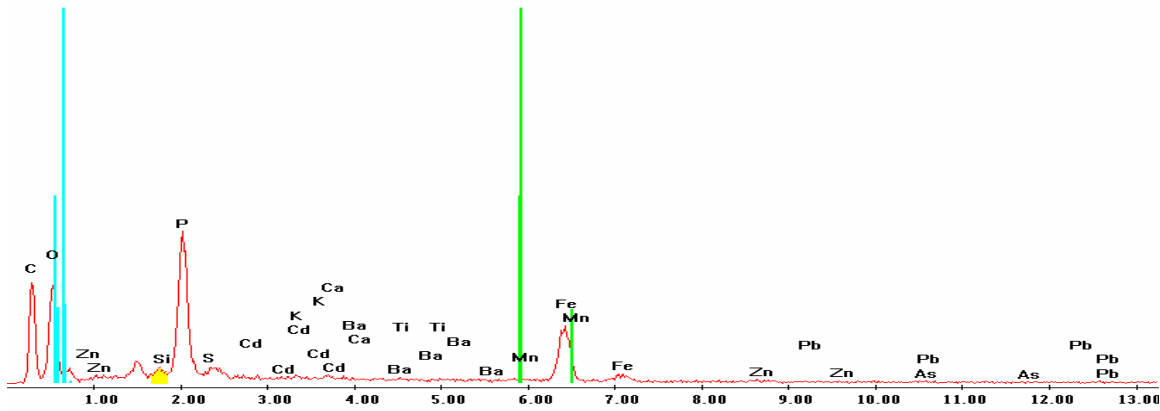
Label A: 27may04 P2C9 312 123 Point 3



Point 4

c:\edax32\genesis\genspc.spc

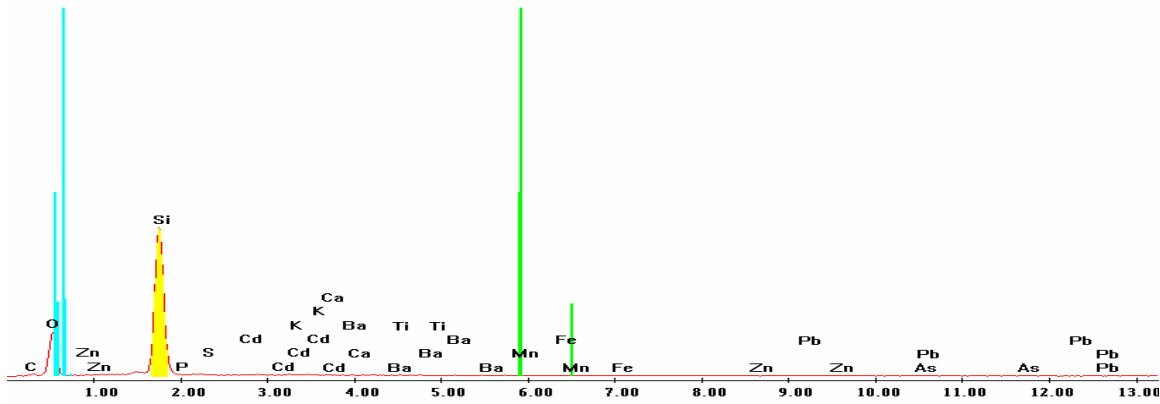
Label A: 27may04 P2C9 312 123 Point 4



Point 5

c:\edax32\genesis\genspc.spc

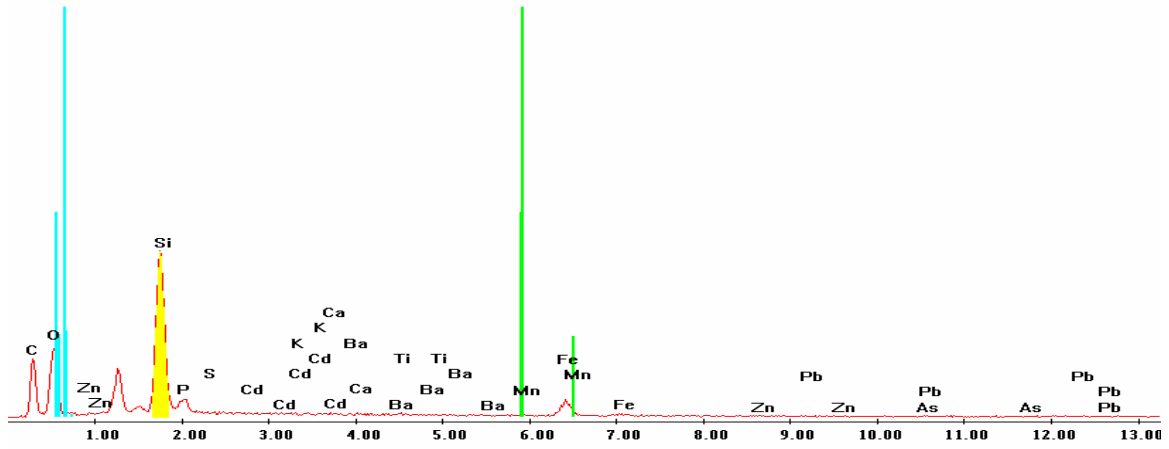
Label A: 27may04 P2C9 312 123 Point 5



Point 6

c:\edax32\genesis\genspc.spc

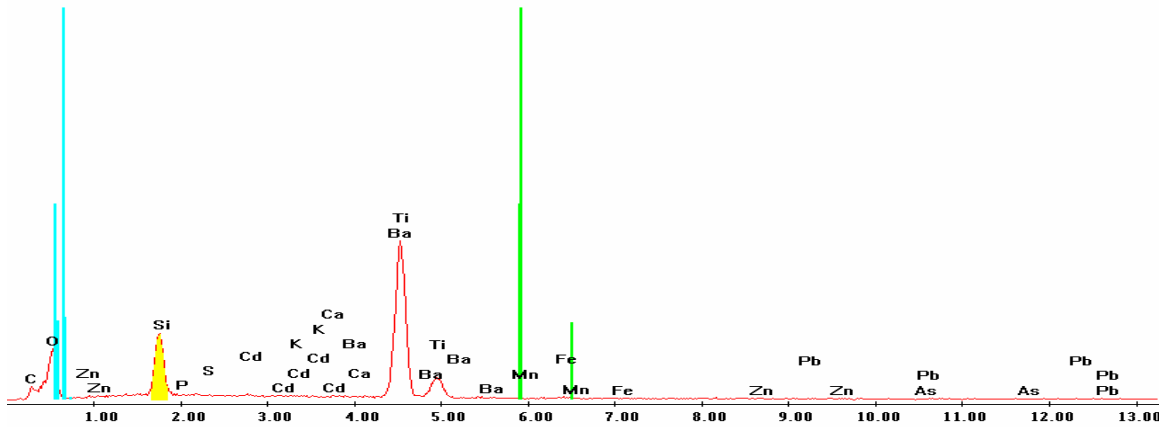
Label A: 27may04 P2C9 312 123 Point 6



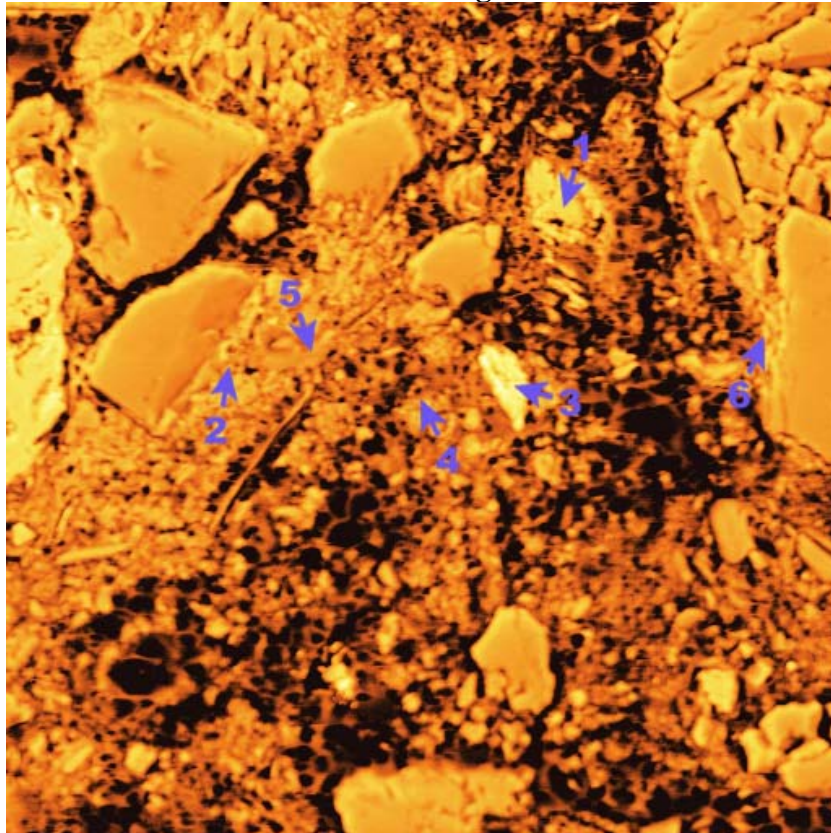
Point 7

c:\edax32\genesis\genspc.spc

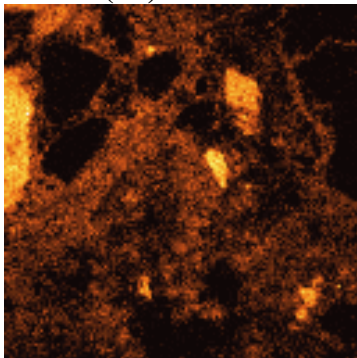
Label A: 27may04 P2C9 312 123 Point 7



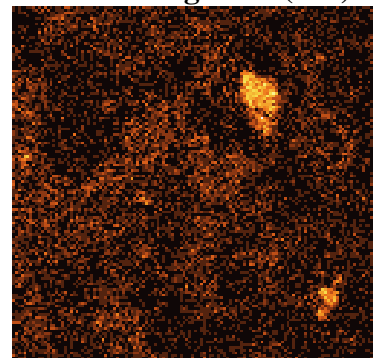
P2C9 – 320, 109
BSE Image



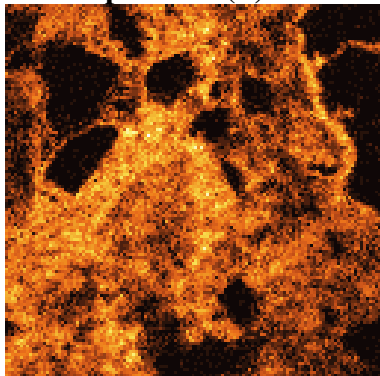
Iron (Fe)



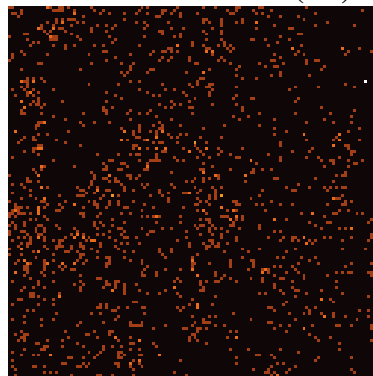
Manganese (Mn)



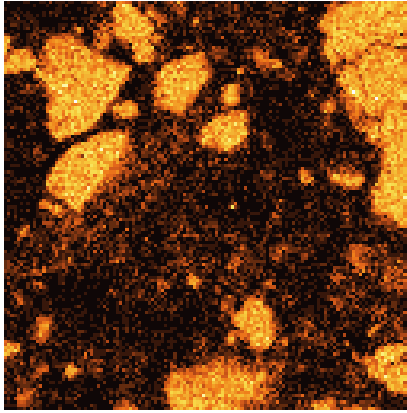
Phosphorous (P)



Lead (Pb)



Silicon (Si)

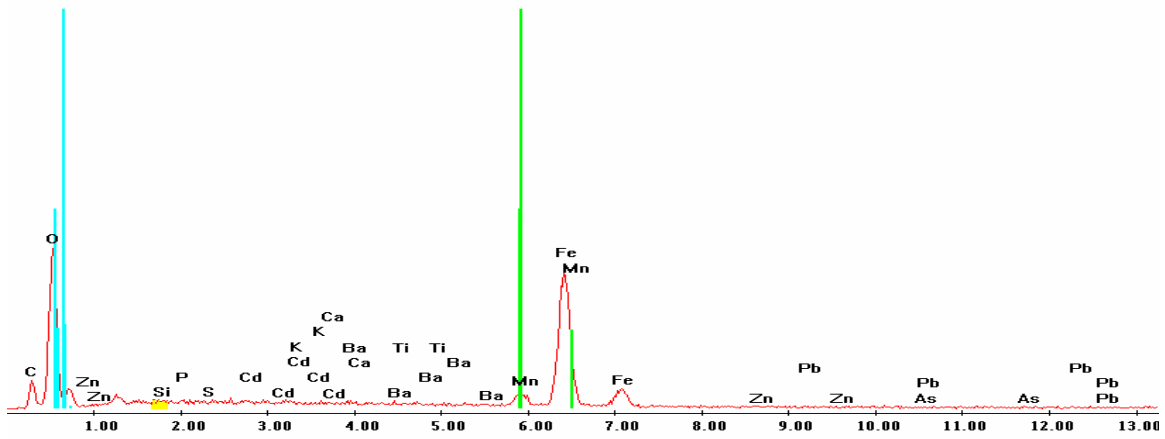


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

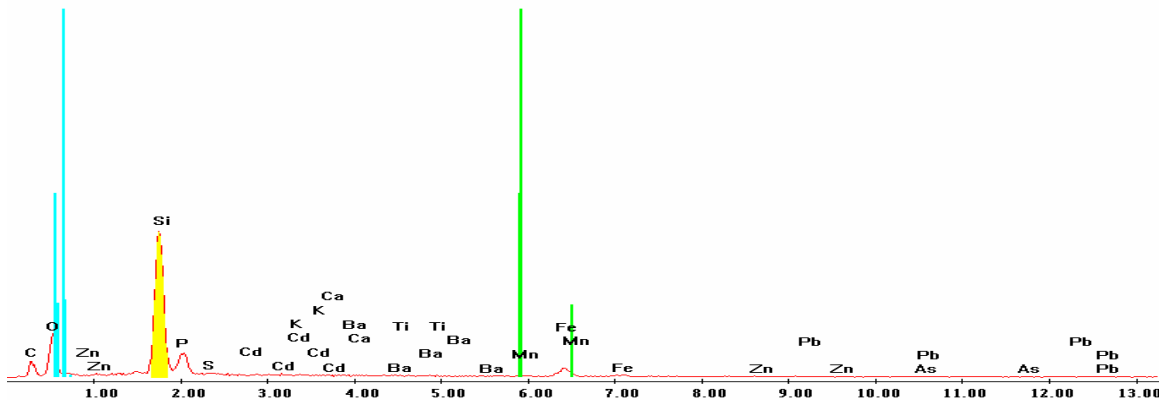
Label A: 27may04 P2C9 320 109 Point 1



Point 2

c:\edax32\genesis\genspc.spc

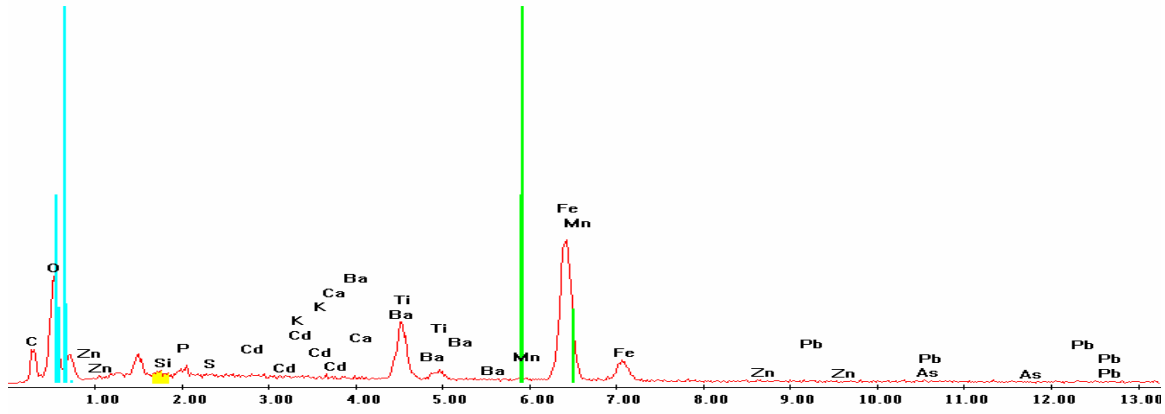
Label A: 27may04 P2C9 320 109 Point 2



Point 3

c:\edax32\genesis\genspc.spc

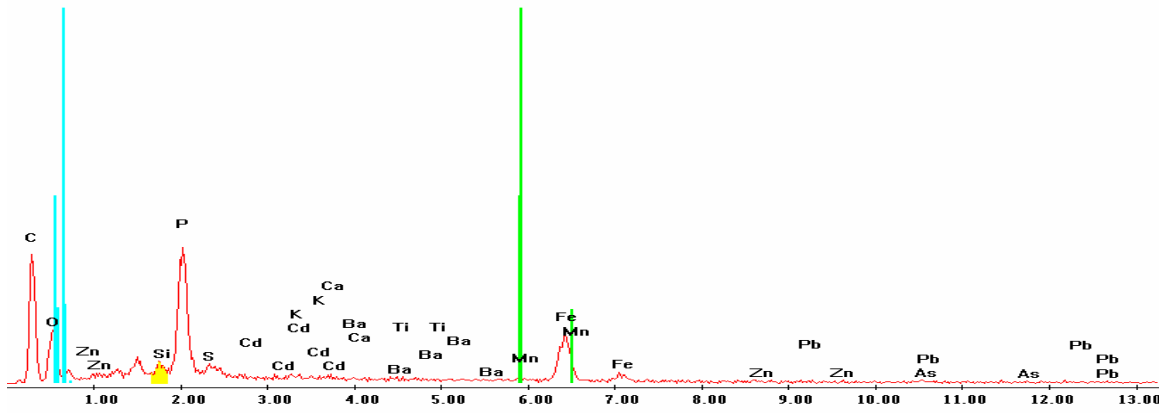
Label A: 27may04 P2C9 320 109 Point 3



Point 4

c:\edax32\genesis\genspc.spc

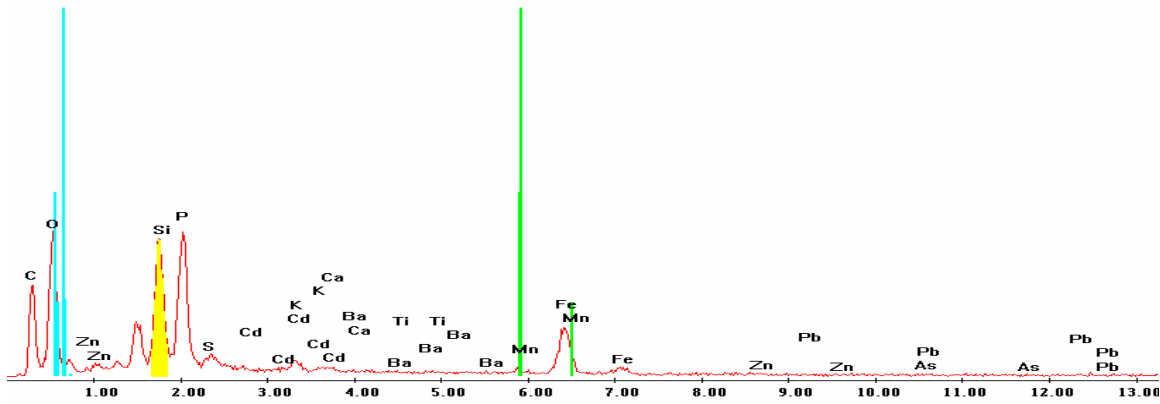
Label A: 27may04 P2C9 320 109 Point 4



Point 5

c:\edax32\genesis\genspc.spc

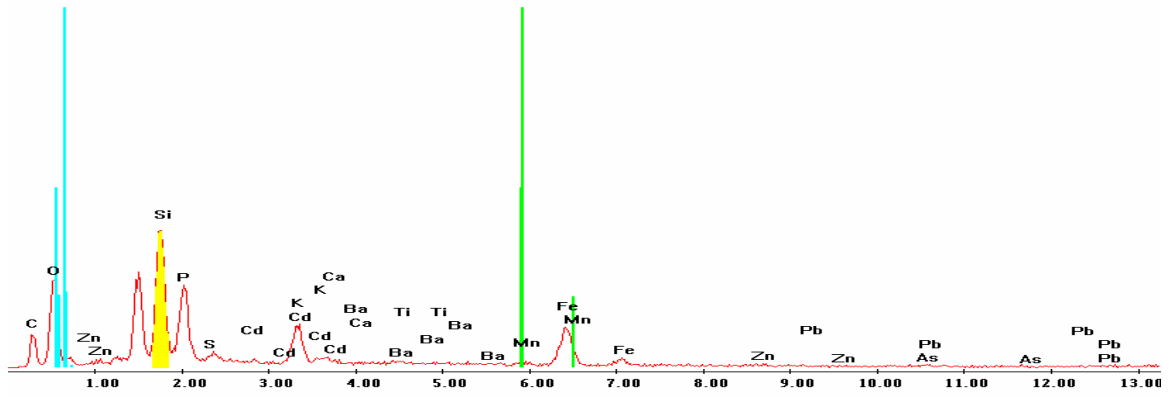
Label A: 27may04 P2C9 320 109 Point 5



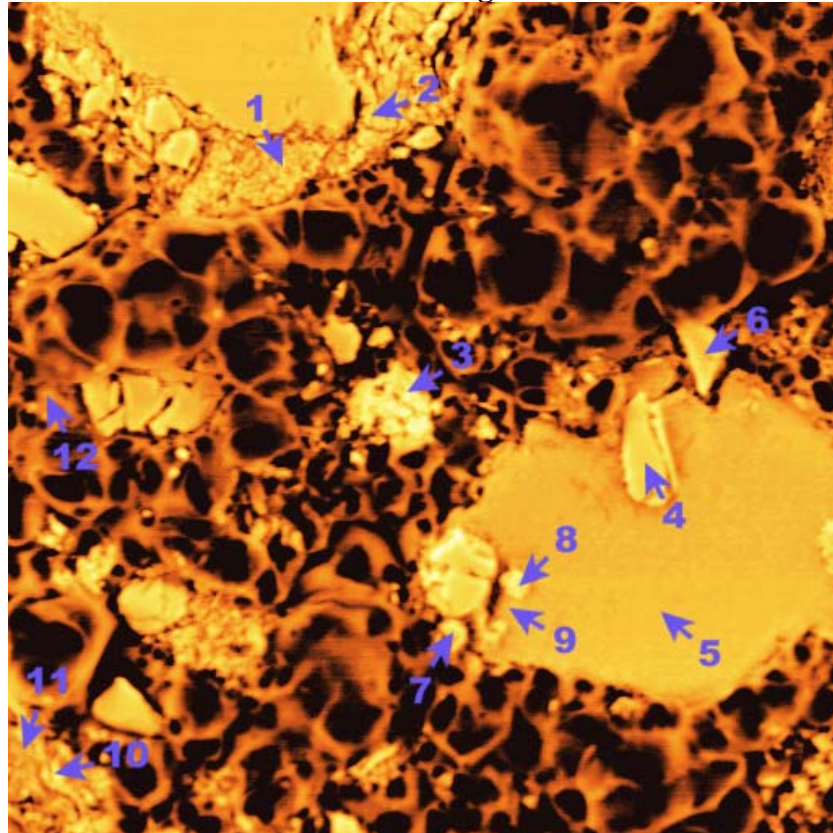
Point 6

c:\edax32\genesis\genspc.spc

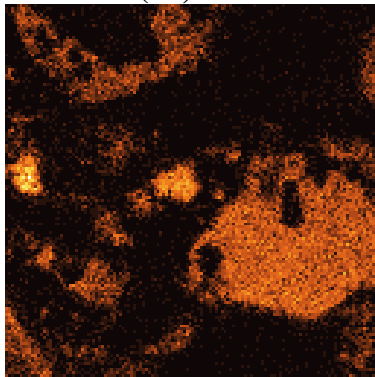
Label A: 27may04 P2C9 320 109 Point 6



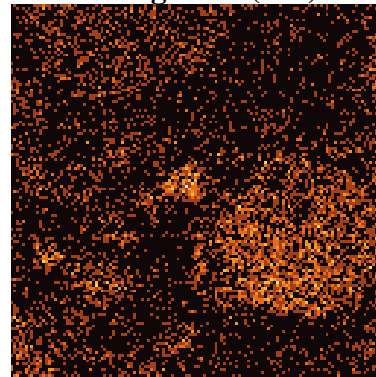
P2C9 – 348, 105
BSE Image



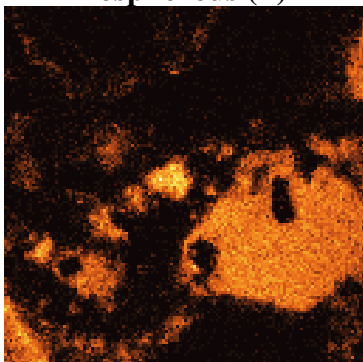
Iron (Fe)



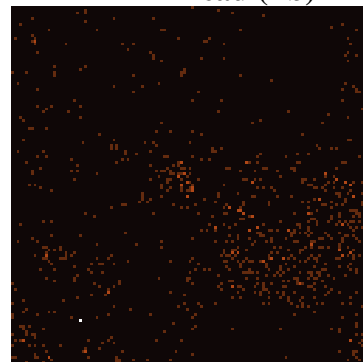
Manganese (Mn)



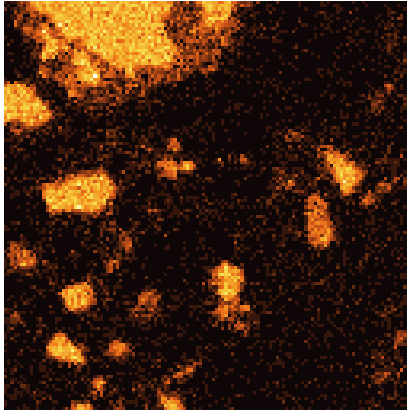
Phosphorous (P)



Lead (Pb)



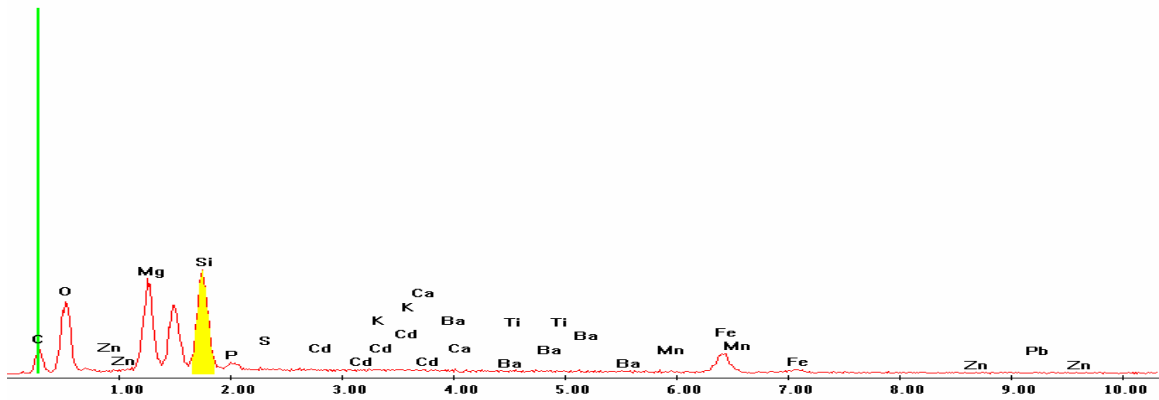
Silicon (Si)



EDS Scan Images by Point

Point 1

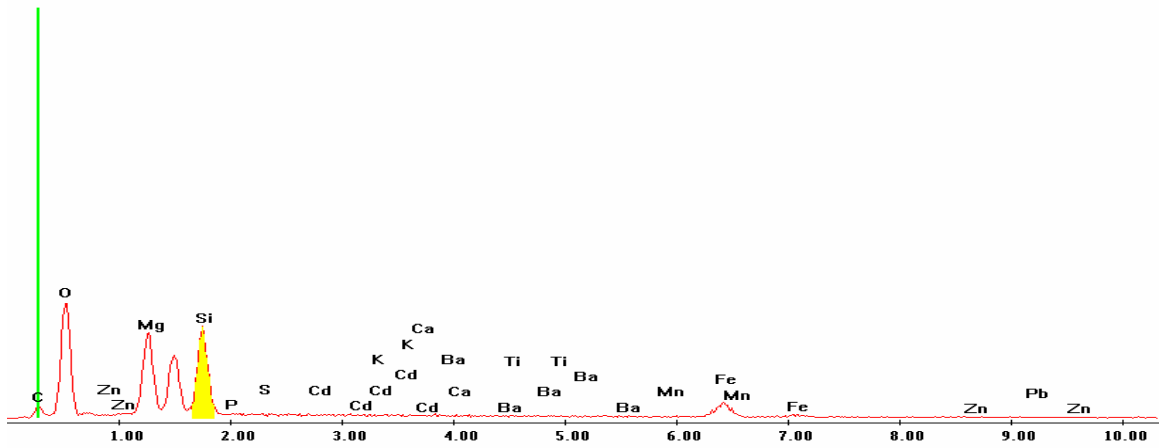
Label A: 27may04 P2C9 348 105 Point 1



Point 2

c:\edax32\genesis\genspc.spc

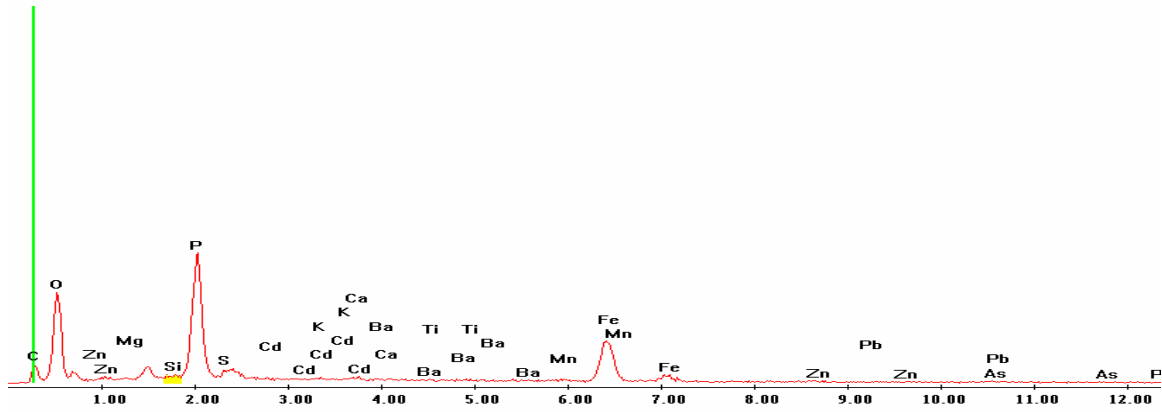
Label A: 27may04 P2C9 348 105 Point 2



Point 3

c:\edax32\genesis\genspc.spc

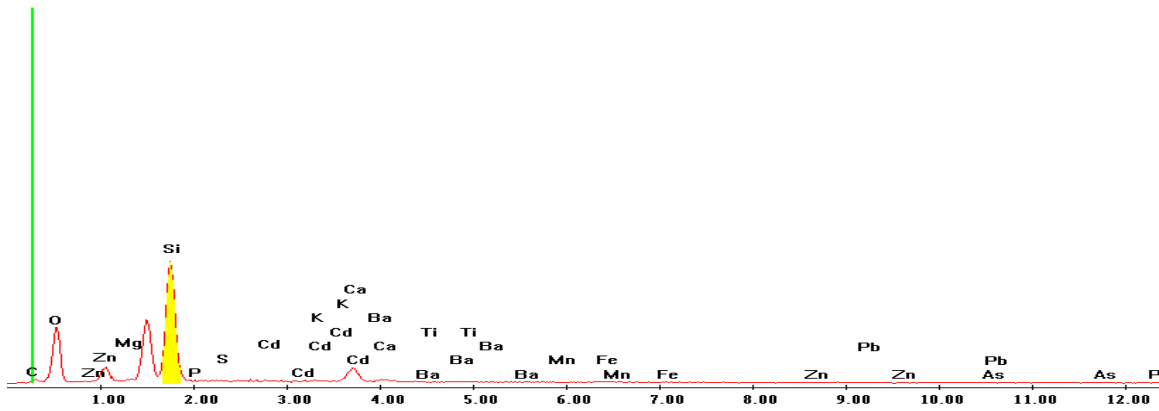
Label A: 27may04 P2C9 348 105 Point 3



Point 4

c:\edax32\genesis\genspc.spc

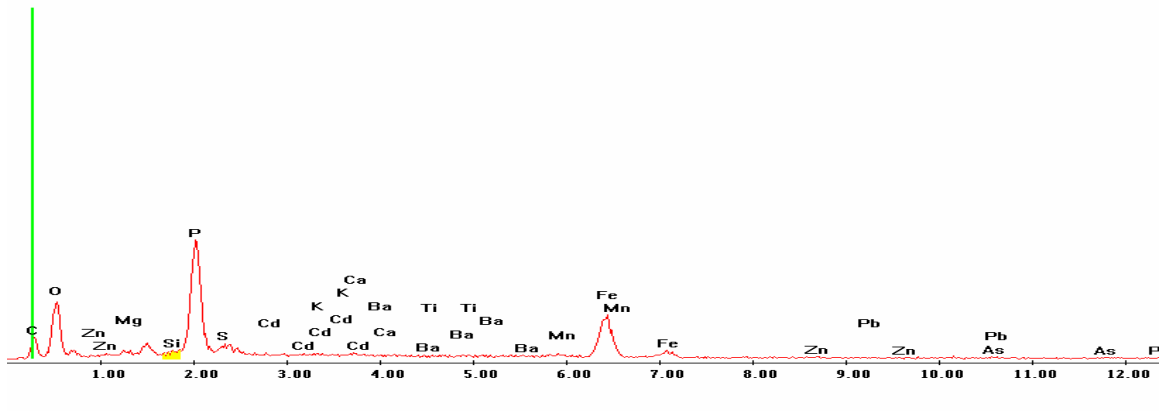
Label A: 27may04 P2C9 348 105 Point 4



Point 5

c:\edax32\genesis\genspc.spc

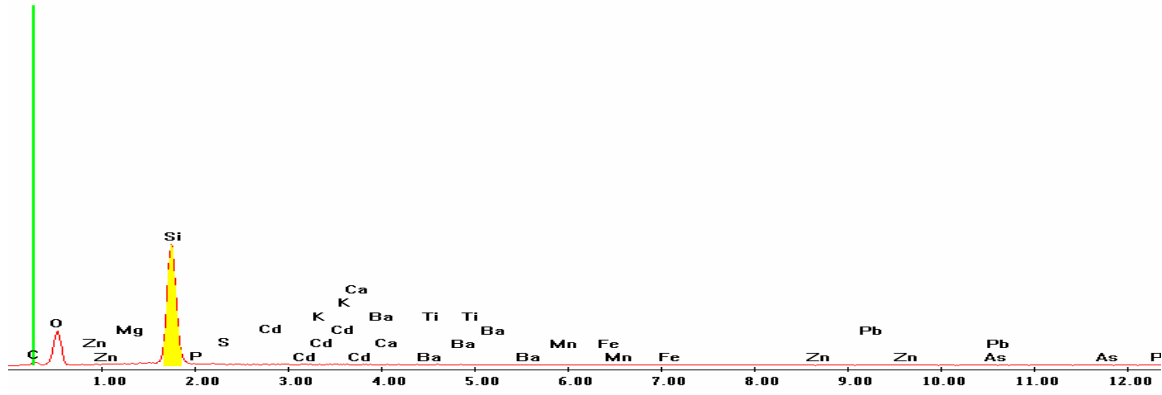
Label A: 27may04 P2C9 348 105 Point 5



Point 6

c:\edax32\genesis\genspc.spc

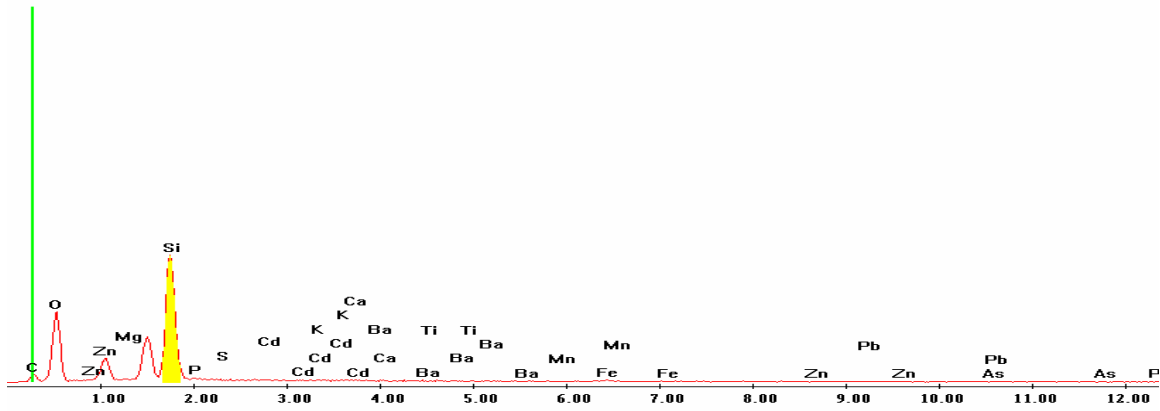
Label A: 27may04 P2C9 348 105 Point 6



Point 7

c:\edax32\genesis\genspc.spc

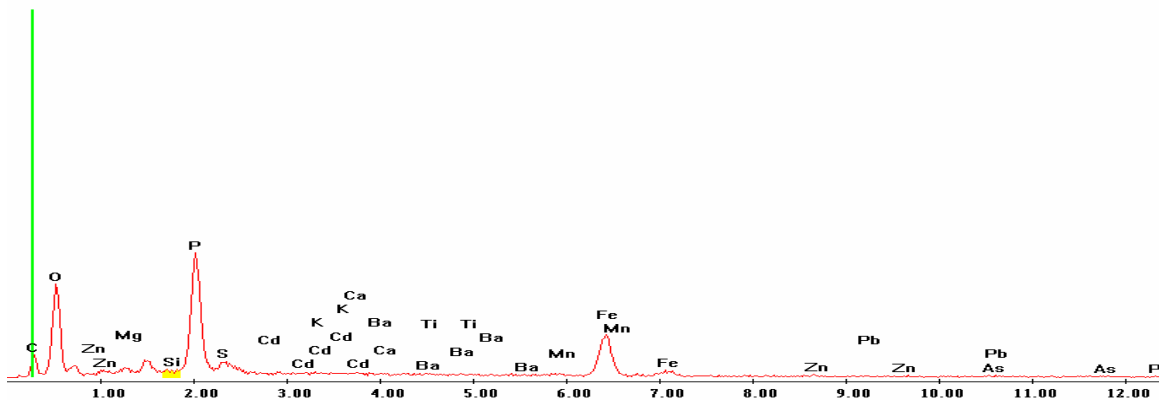
Label A: 27may04 P2C9 348 105 Point 7



Point 8

c:\edax32\genesis\genspc.spc

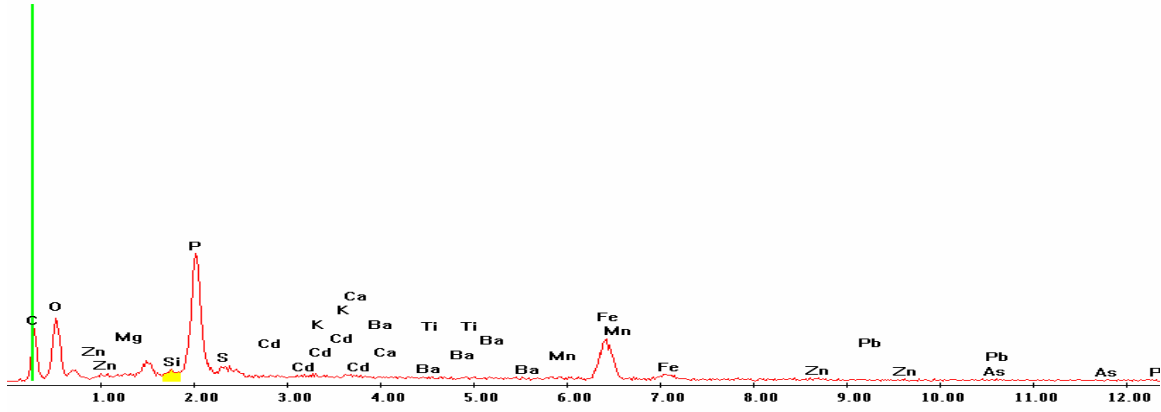
Label A: 27may04 P2C9 348 105 Point 8



Point 9

c:\edax32\genesis\genspc.spc

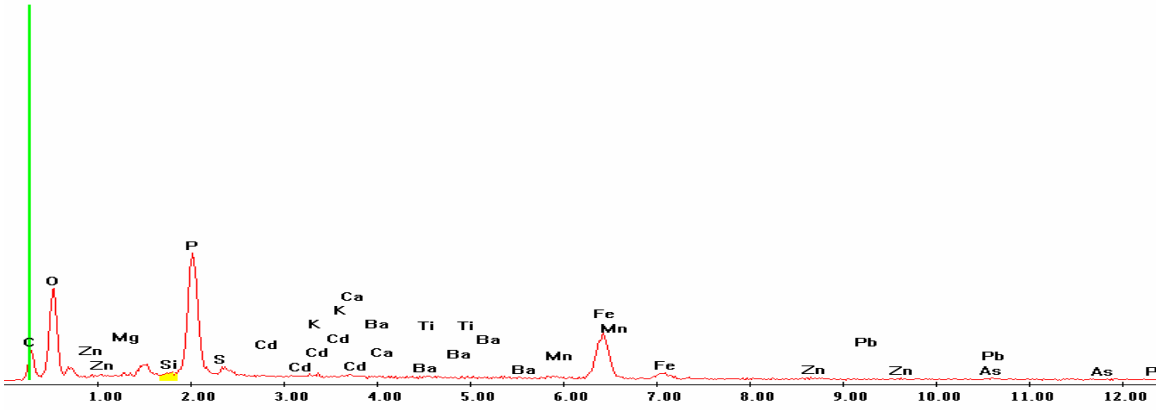
Label A: 27may04 P2C9 348 105 Point 9



Point 10

c:\edax32\genesis\genspc.spc

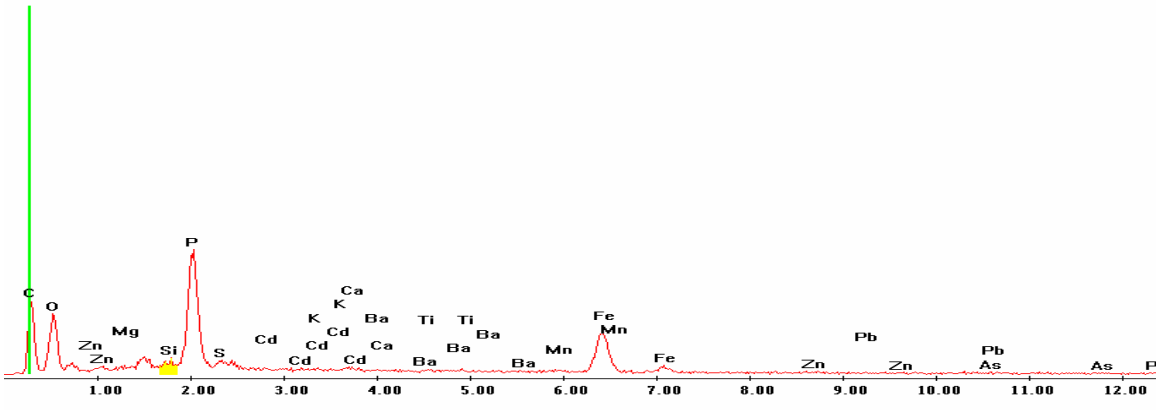
Label A: 27may04 P2C9 348 105 Point 10



Point 11

c:\edax32\genesis\genspc.spc

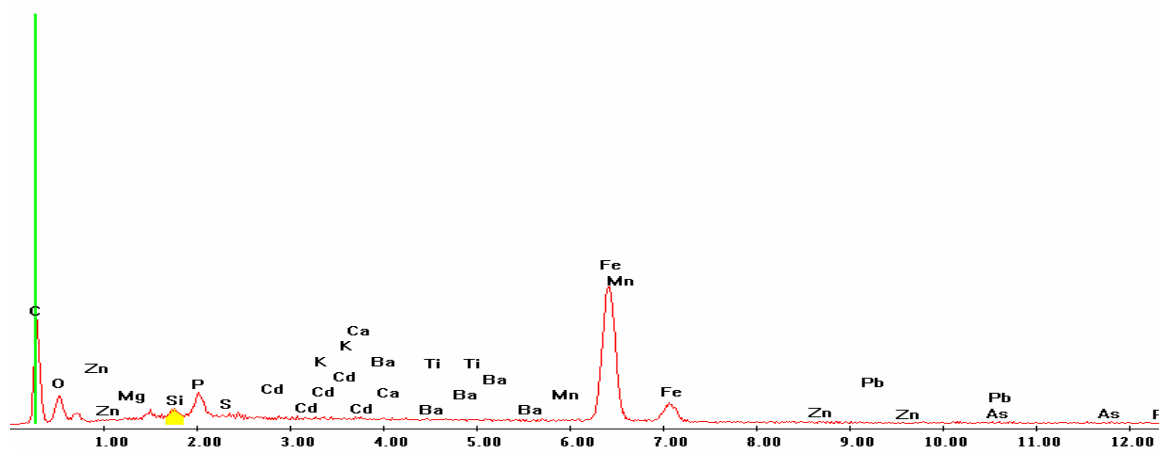
Label A: 27may04 P2C9 348 105 Point 11



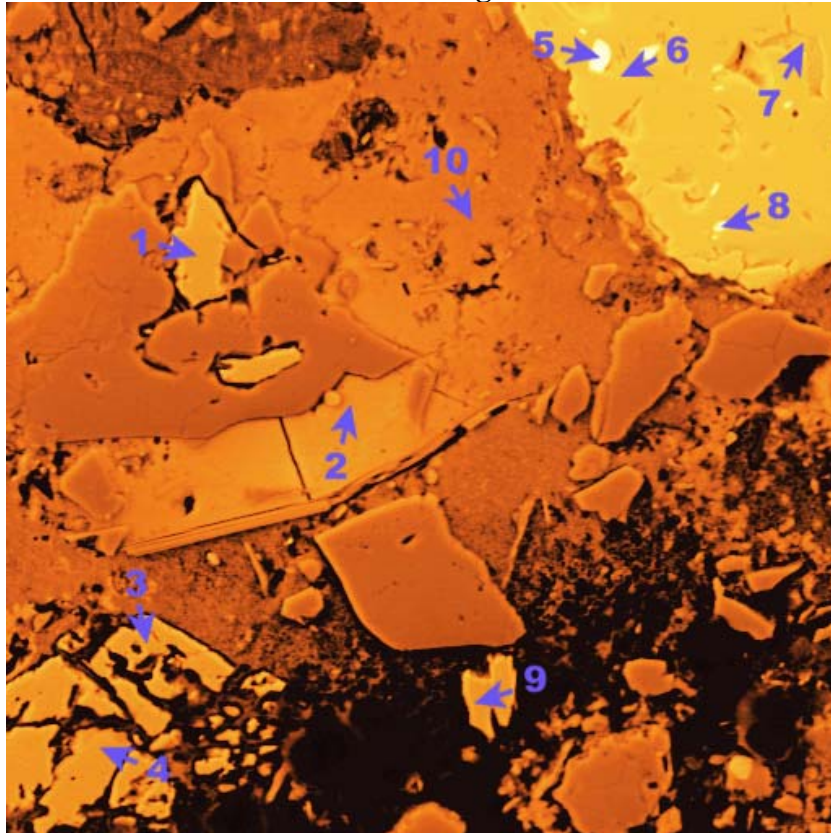
Point 12

c:\edax32\genesis\genspc.spc

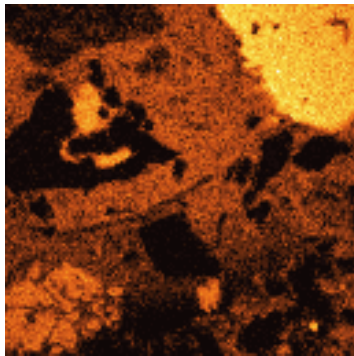
Label A: 27may04 P2C9 348 105 Point 12



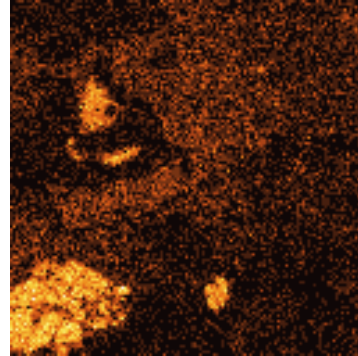
P2C9 – 372, 114
BSE Image



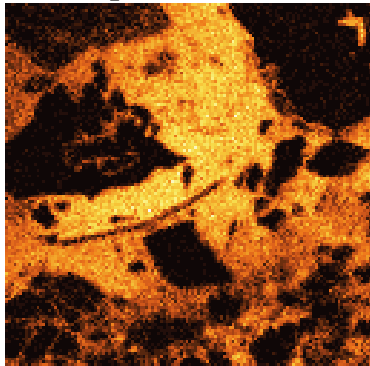
Iron (Fe)



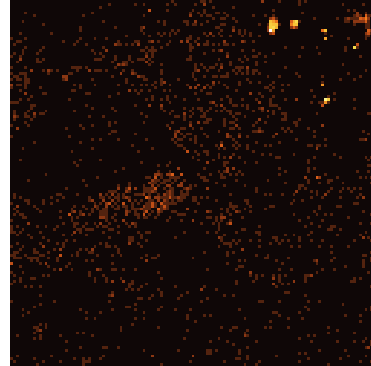
Manganese (Mn)



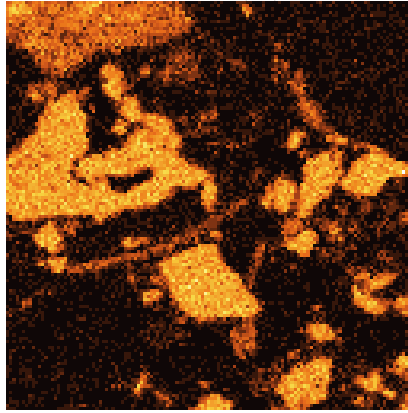
Phosphorous (P)



Lead (Pb)



Silicon (Si)

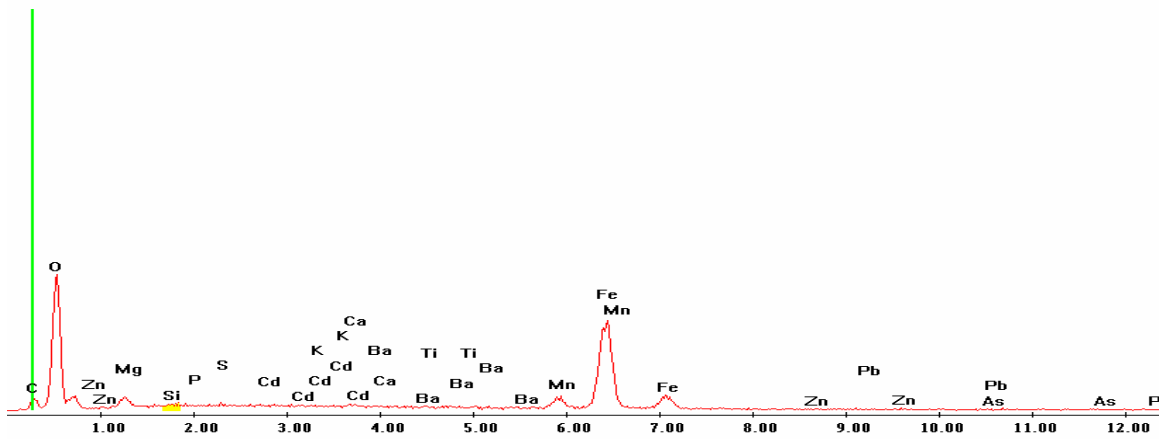


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

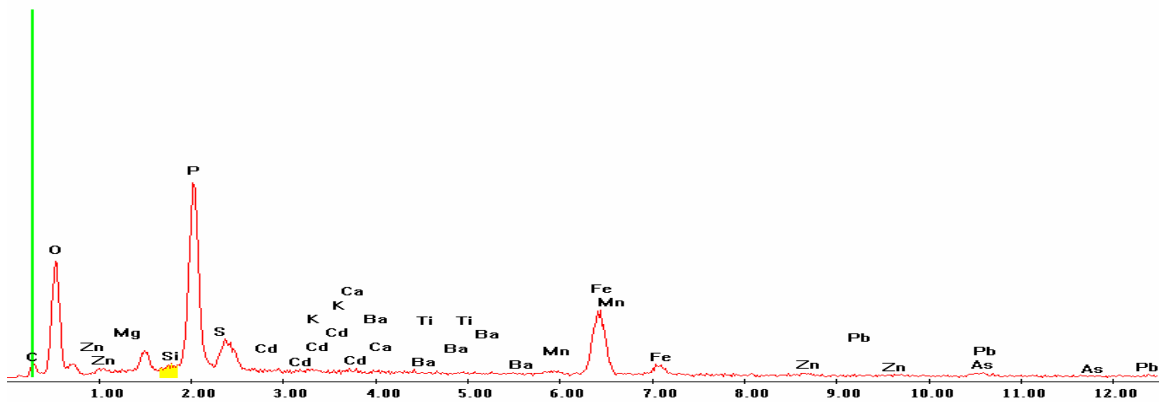
Label A: 27may04 P2C9 372 114 Point 1



Point 2

c:\edax32\genesis\genspc.spc

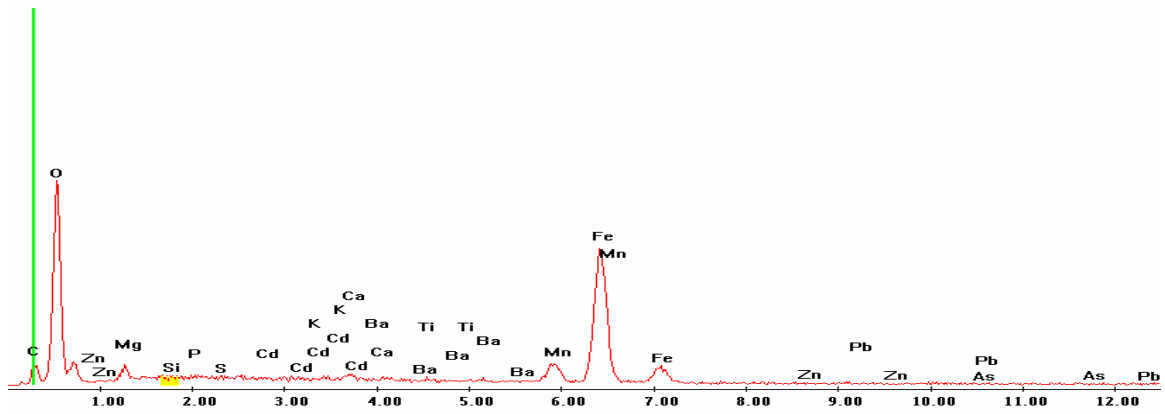
Label A: 27may04 P2C9 372 114 Point 2



Point 3

c:\edax32\genesis\genspc.spc

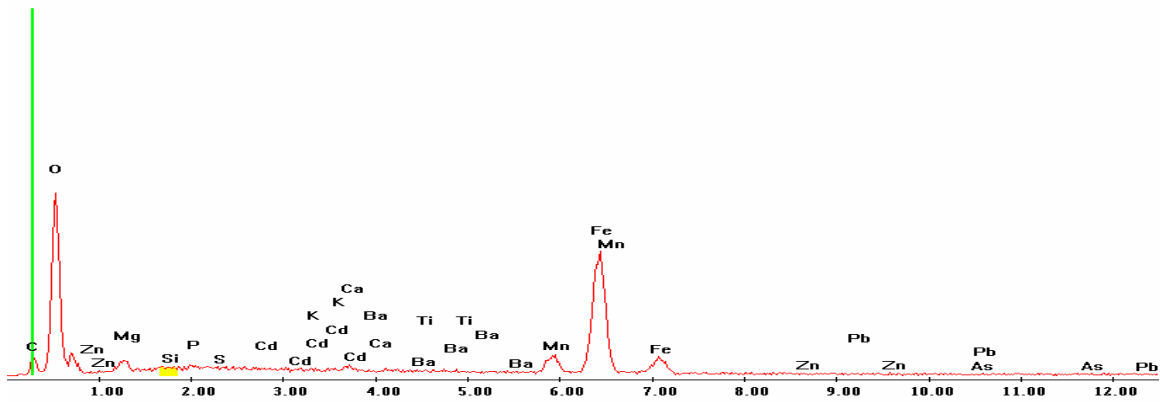
Label A: 27may04 P2C9 372 114 Point 3



Point 4

c:\edax32\genesis\genspc.spc

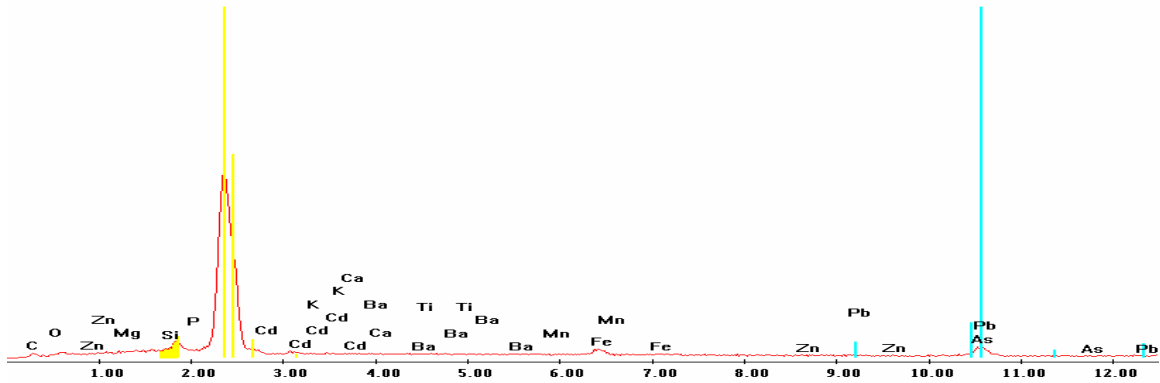
Label A: 27may04 P2C9 372 114 Point 4



Point 5

c:\edax32\genesis\genspc.spc

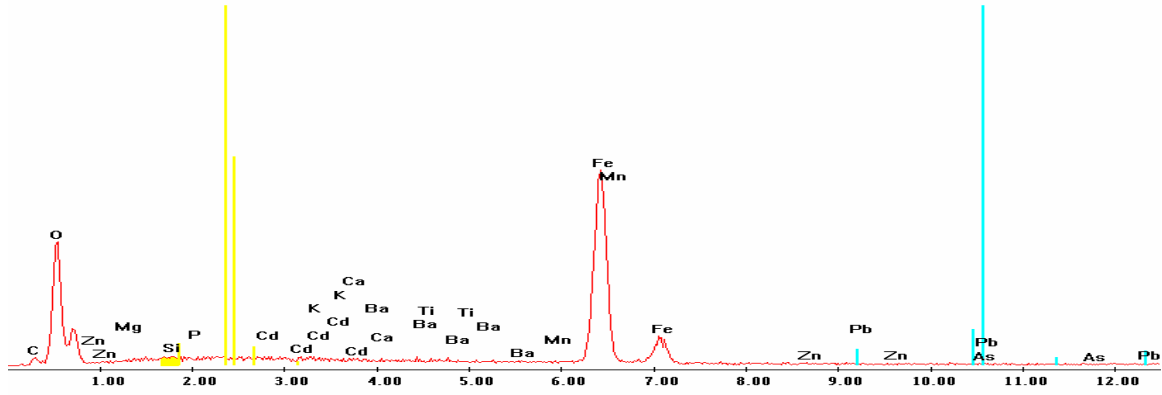
Label A: 27may04 P2C9 372 114 Point 5



Point 6

c:\edax32\genesis\genspc.spc

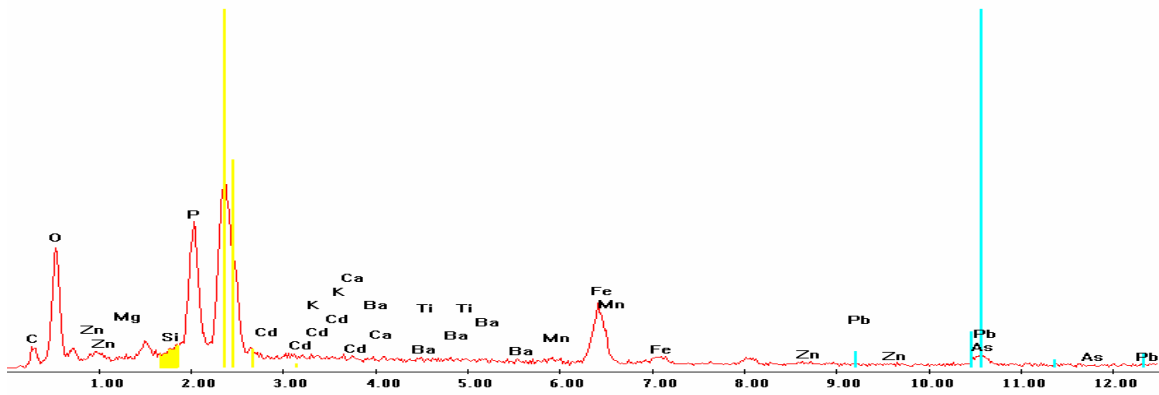
Label A: 27may04 P2C9 372 114 Point 6



Point 7

c:\edax32\genesis\genspc.spc

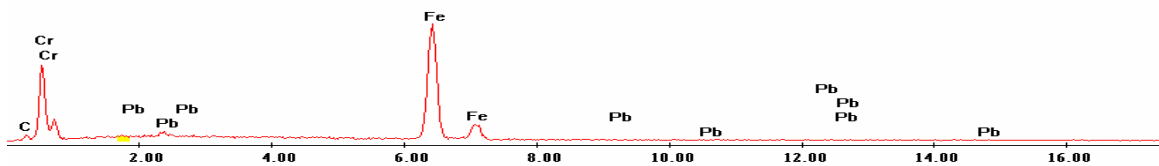
Label A: 27may04 P2C9 372 114 Point 7



Point 8

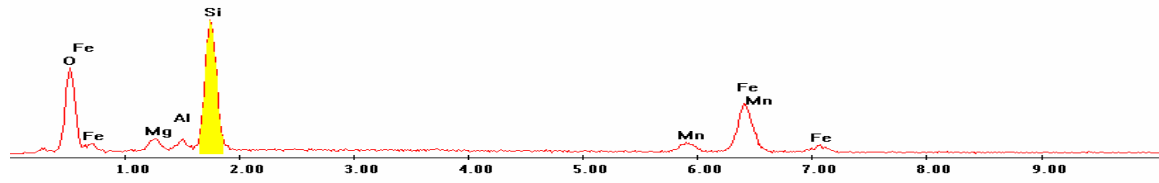
c:\edax32\genesis\genspc.spc

Label A: 27may04 P2C9 372 114 Point 8



Point 9

Label A: 27may04 P2C9 372 114 Point 9

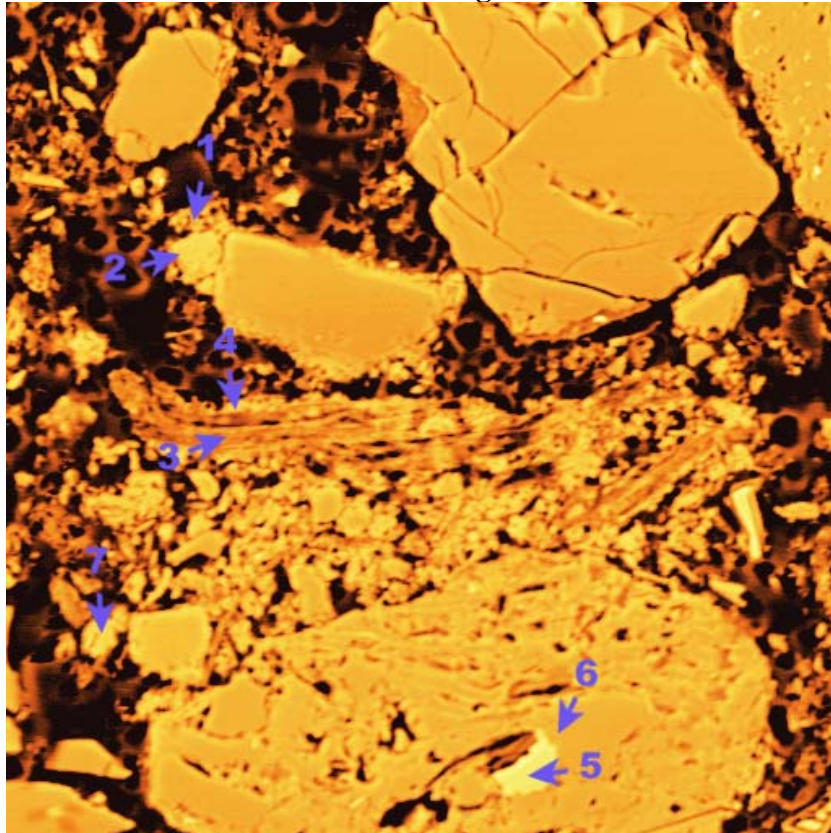


Point 10

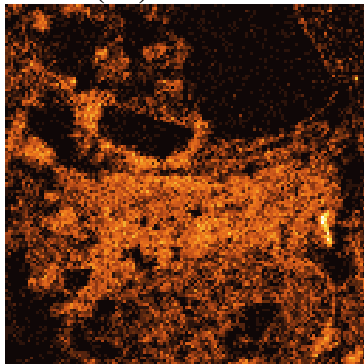
Label A: 27may04 P2C9 372 114 Point 10



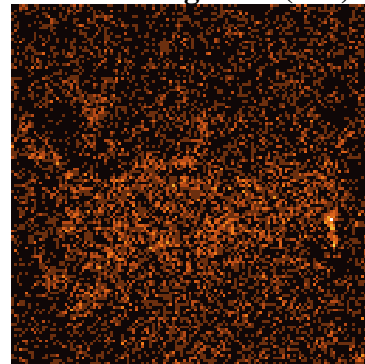
P2C9 – 394, 083
BSE Image



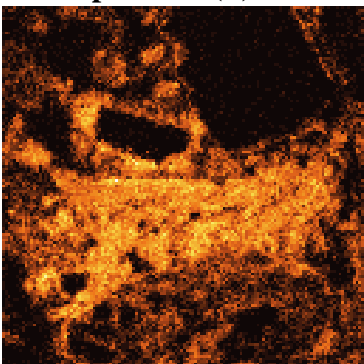
Iron (Fe)



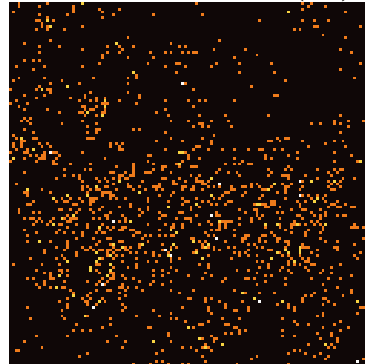
Manganese (Mn)



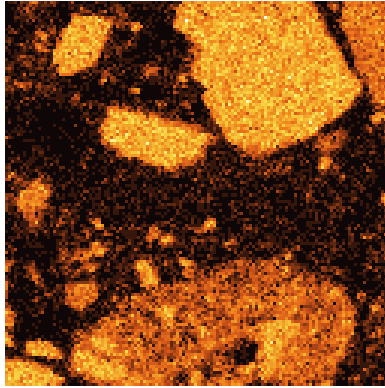
Phosphorous (P)



Lead (Pb)



Silicon (Si)

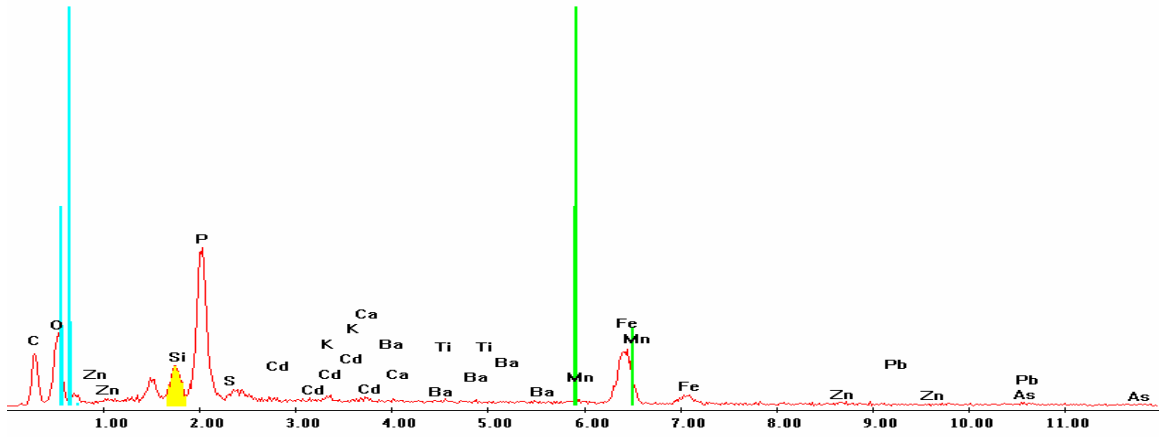


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

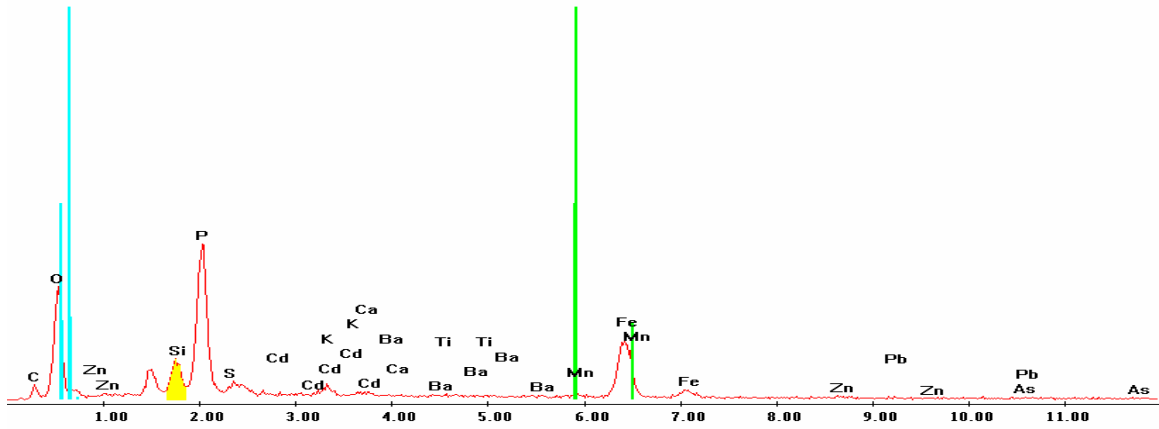
Label A: 27may04 P2C9 394 083 Point 1



Point 2

c:\edax32\genesis\genspc.spc

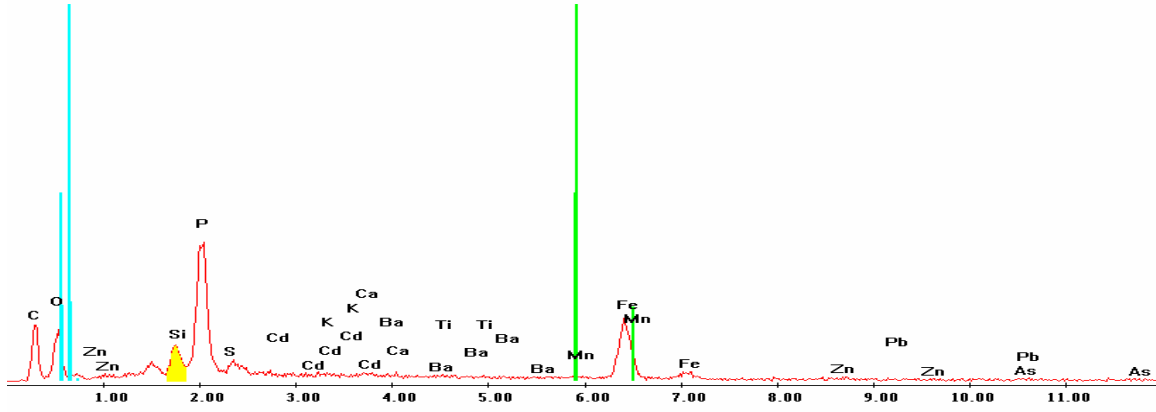
Label A: 27may04 P2C9 394 083 Point 2



Point 3

c:\edax32\genesis\genspc.spc

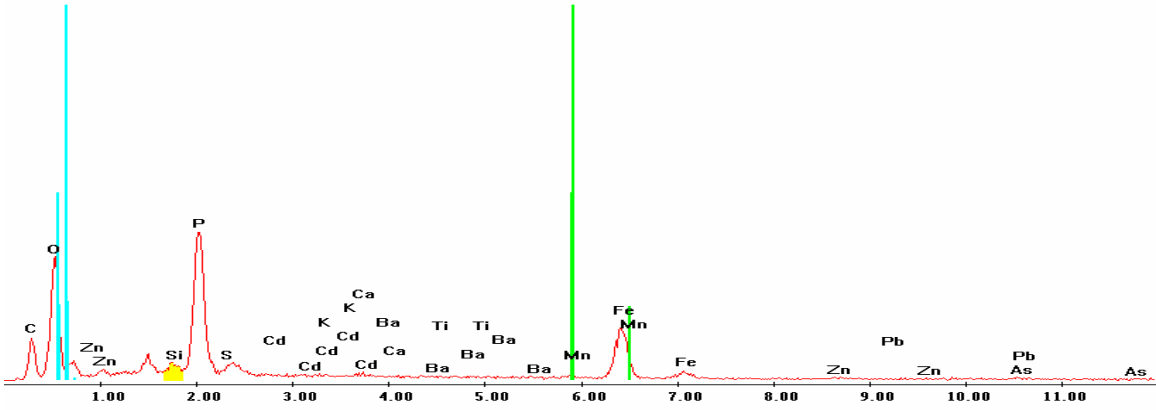
Label A: 27may04 P2C9 394 083 Point 3



Point 4

c:\edax32\genesis\genspc.spc

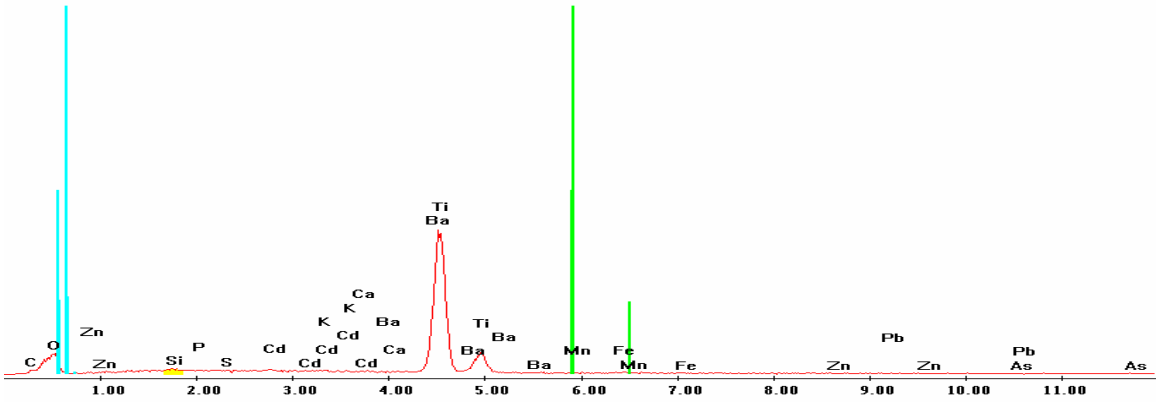
Label A: 27may04 P2C9 394 083 Point 4



Point 5

c:\edax32\genesis\genspc.spc

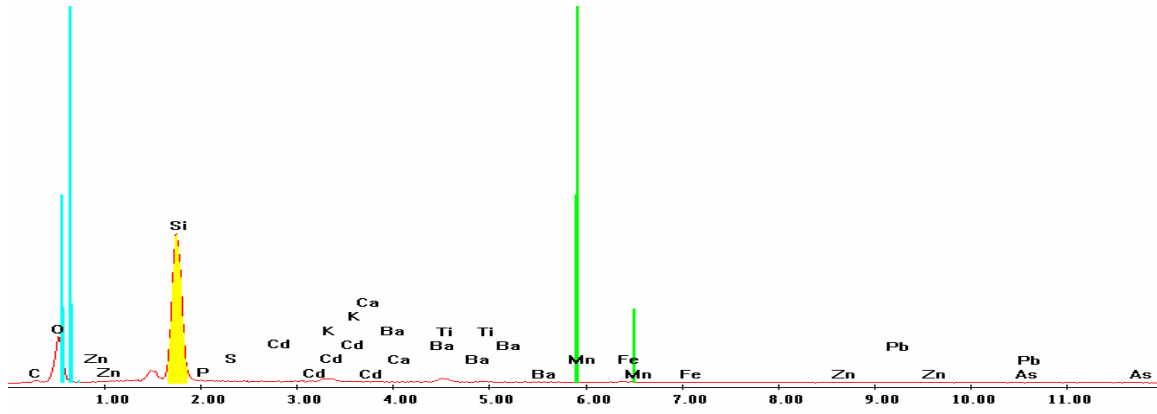
Label A: 27may04 P2C9 394 083 Point 5



Point 6

c:\edax32\genesis\genspc.spc

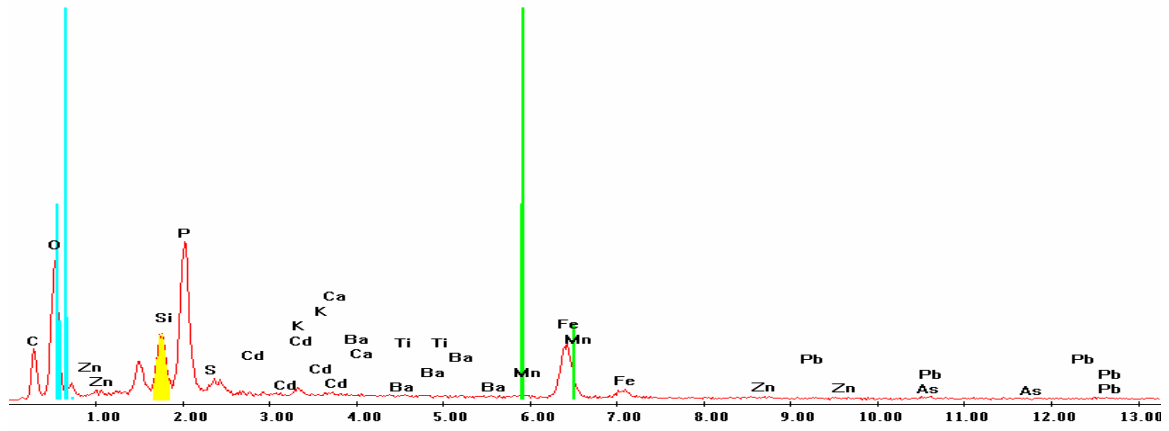
Label A: 27may04 P2C9 394 083 Point 6



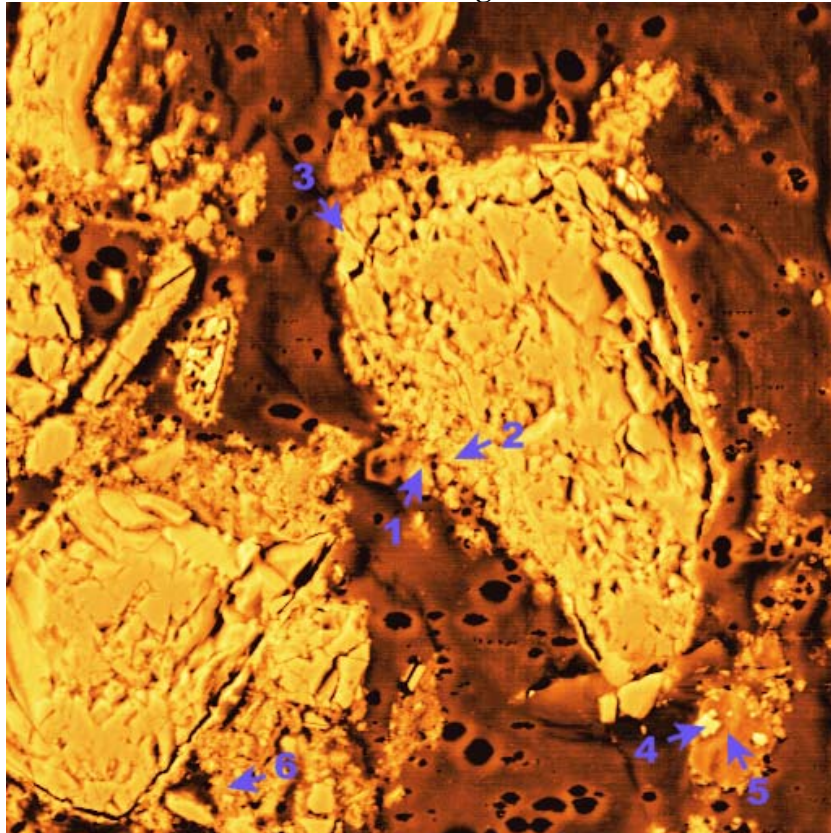
Point 7

c:\edax32\genesis\genspc.spc

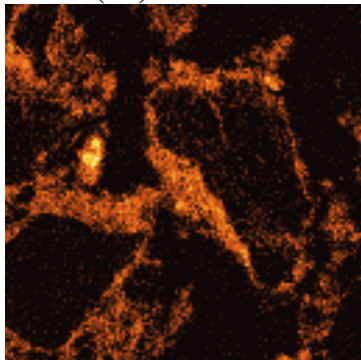
Label A: 27may04 P2C9 394 083 Point 7



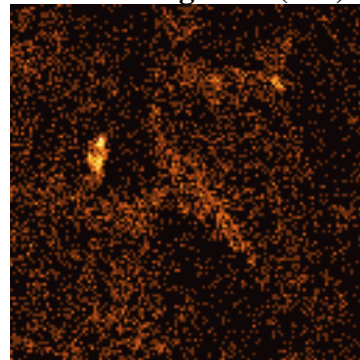
P2C9 – 428, 243
BSE Image



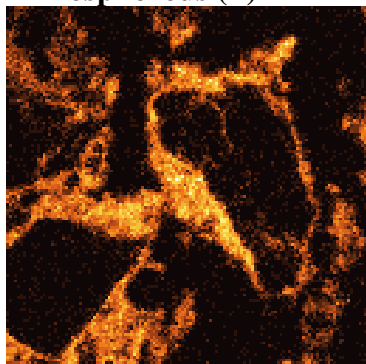
Iron (Fe)



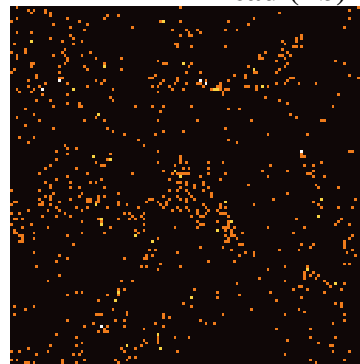
Manganese (Mn)



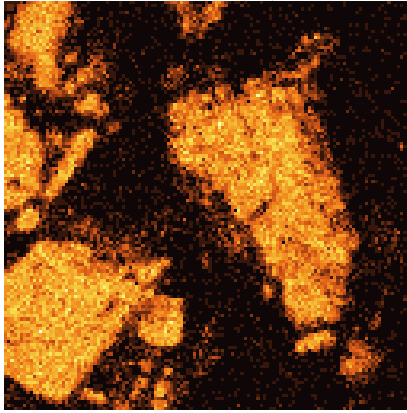
Phosphorous (P)



Lead (Pb)



Silicon (Si)

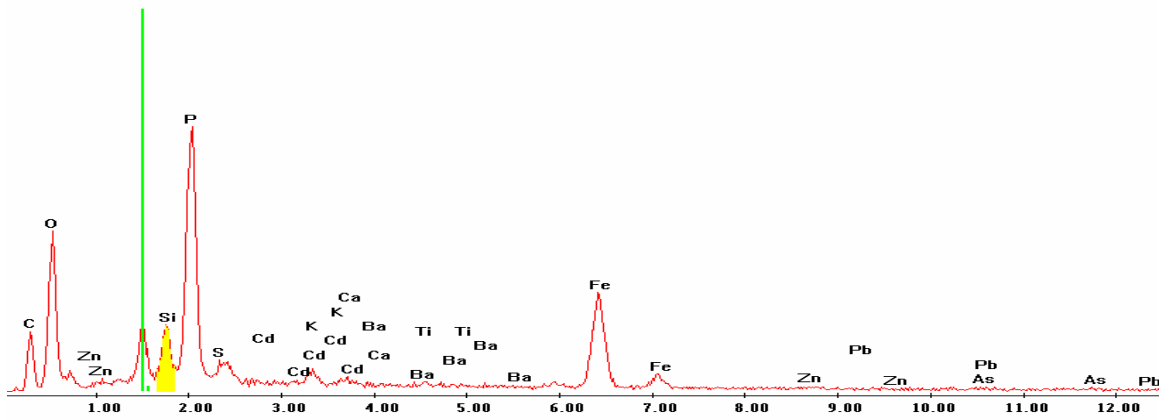


EDS Scan Images by Point

Point 1

c:\edax32\genesis\genspc.spc

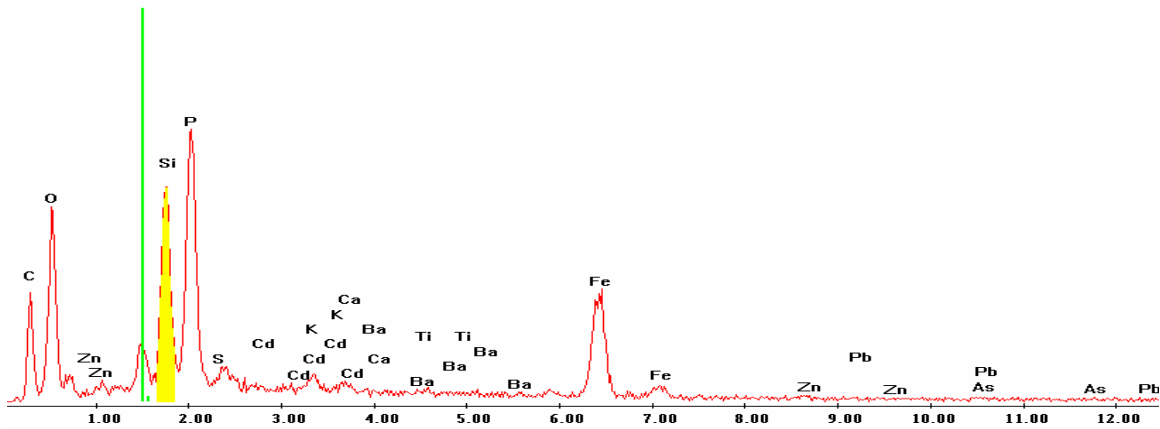
Label A: 27may04 P2C9 428 243 Point 1



Point 2

c:\edax32\genesis\genspc.spc

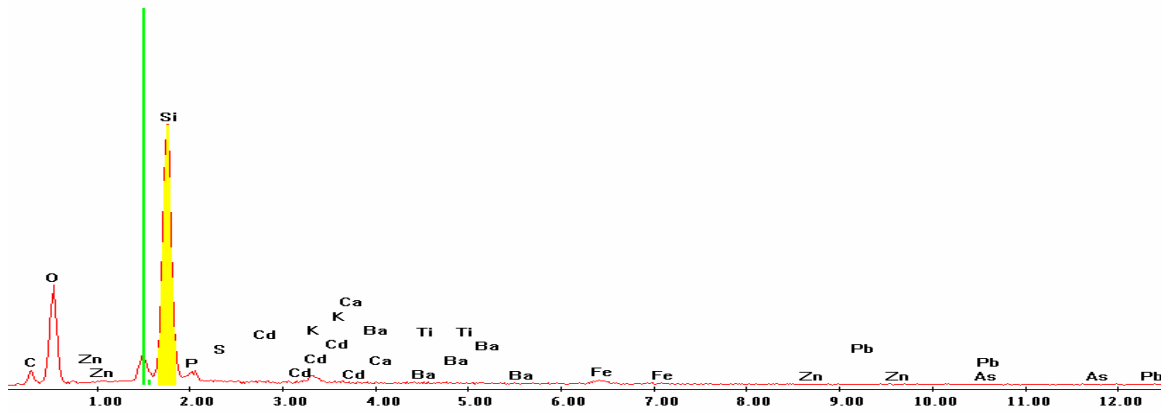
Label A: 27may04 P2C9 428 243 Point 2



Point 3

c:\edax32\genesis\genspc.spc

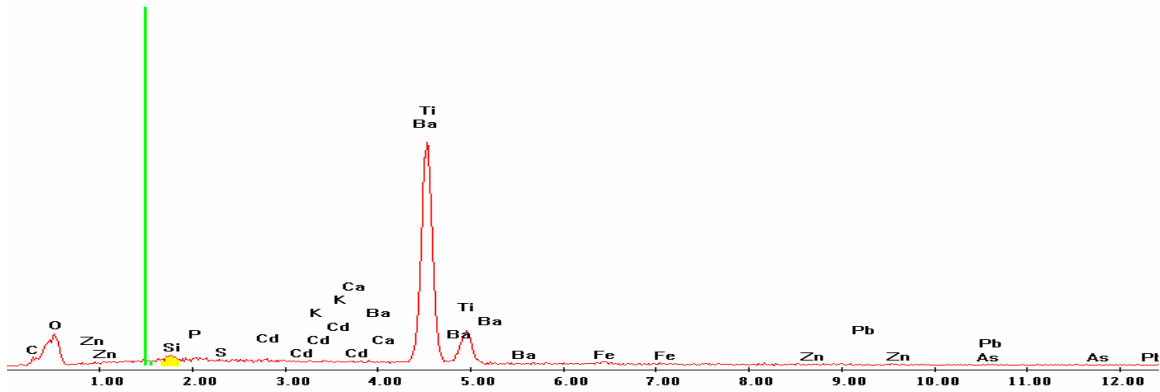
Label A: 27may04 P2C9 428 243 Point 3



Point 4

c:\edax32\genesis\genspc.spc

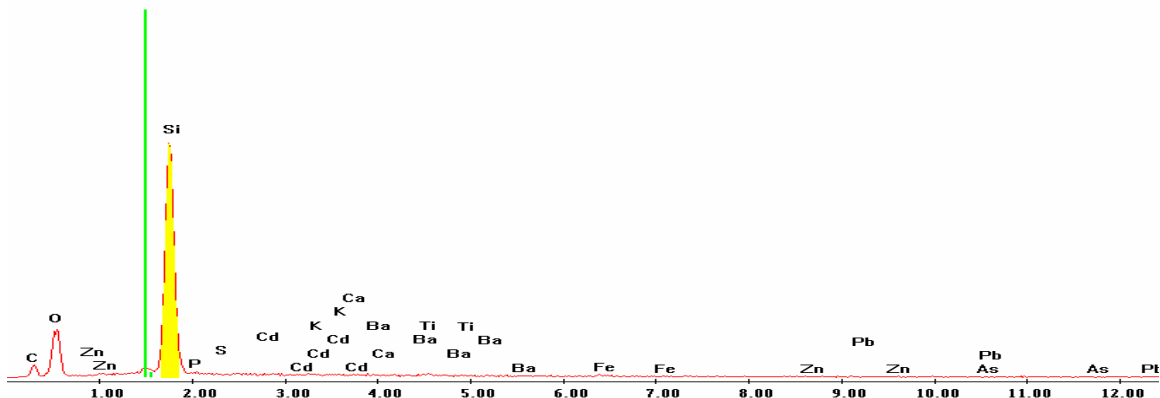
Label A: 27may04 P2C9 428 243 Point 4



Point 5

c:\edax32\genesis\genspc.spc

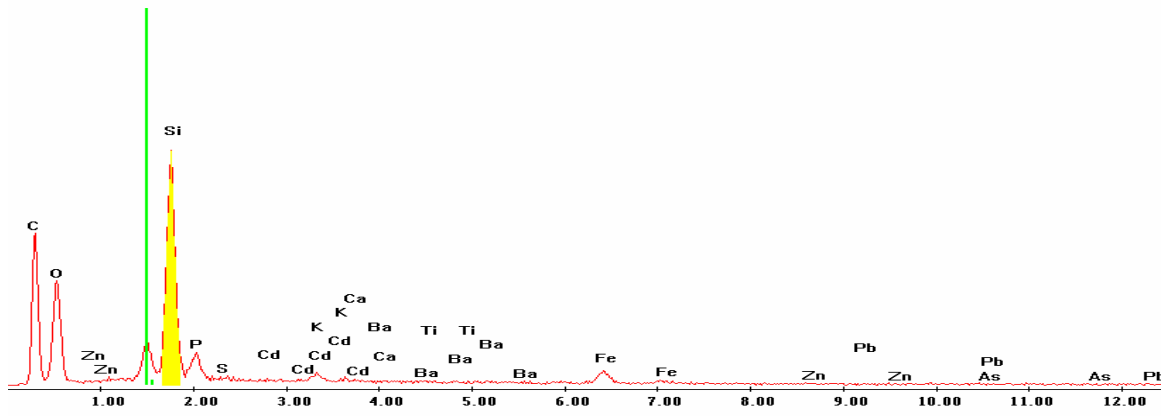
Label A: 27may04 P2C9 428 243 Point 5



Point 6

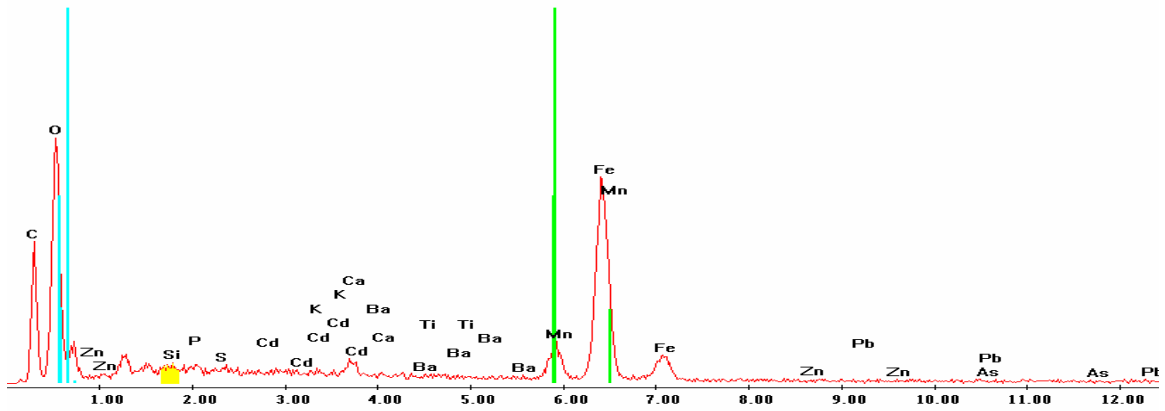
c:\edax32\genesis\genspc.spc

Label A: 27may04 P2C9 428 243 Point 6



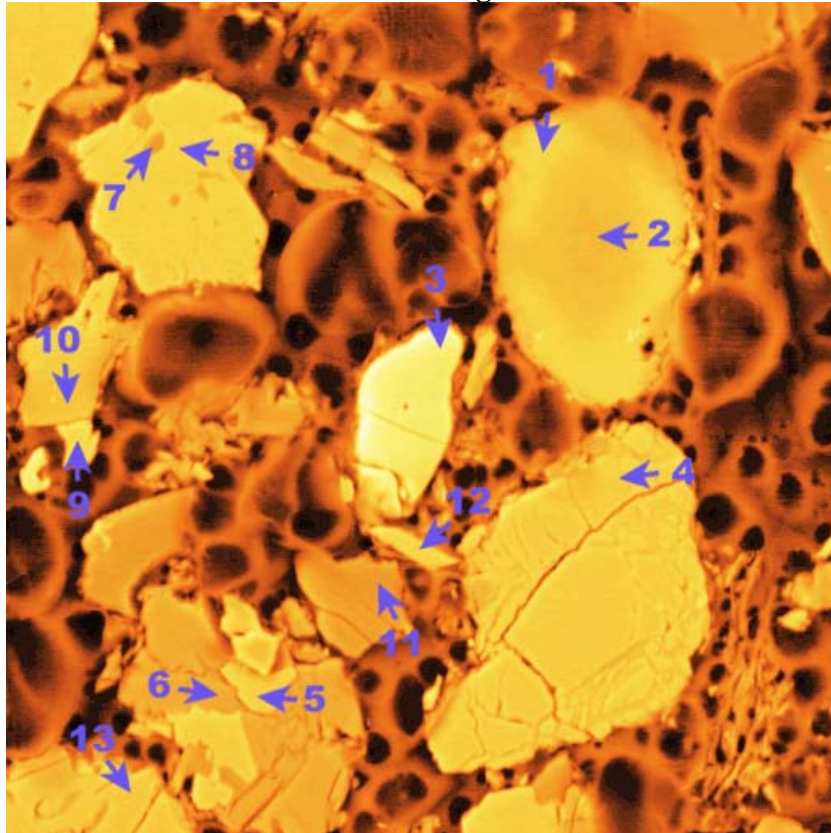
Point 7

Label A: 27may04 P2C9 428 243 Point 7

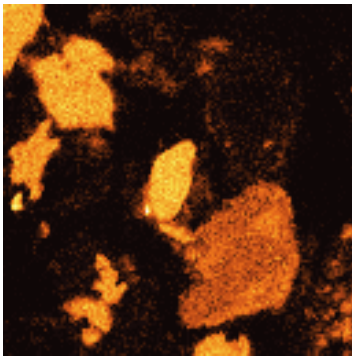


Plot 4

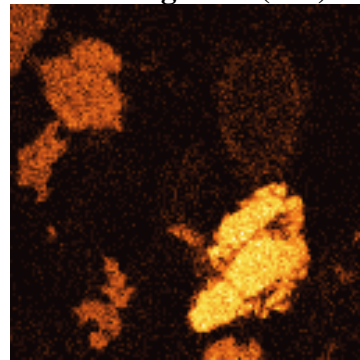
P4C7 – 333, 151
BSE Image



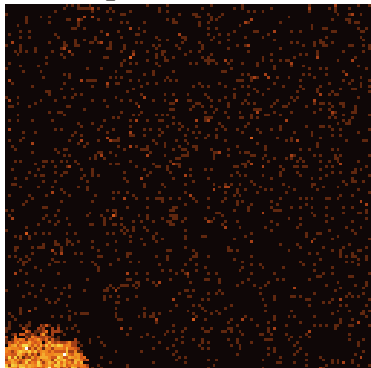
Iron (Fe)



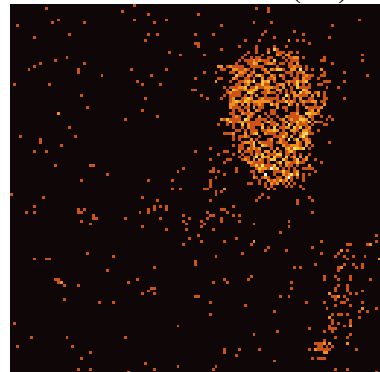
Manganese (Mn)



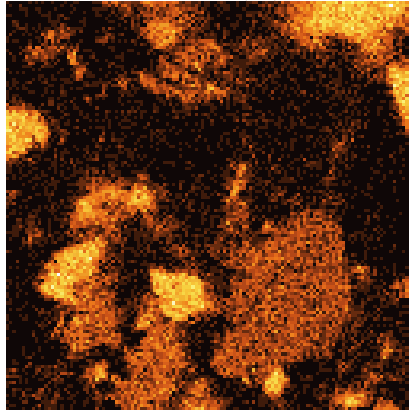
Phosphorous (P)



Lead (Pb)

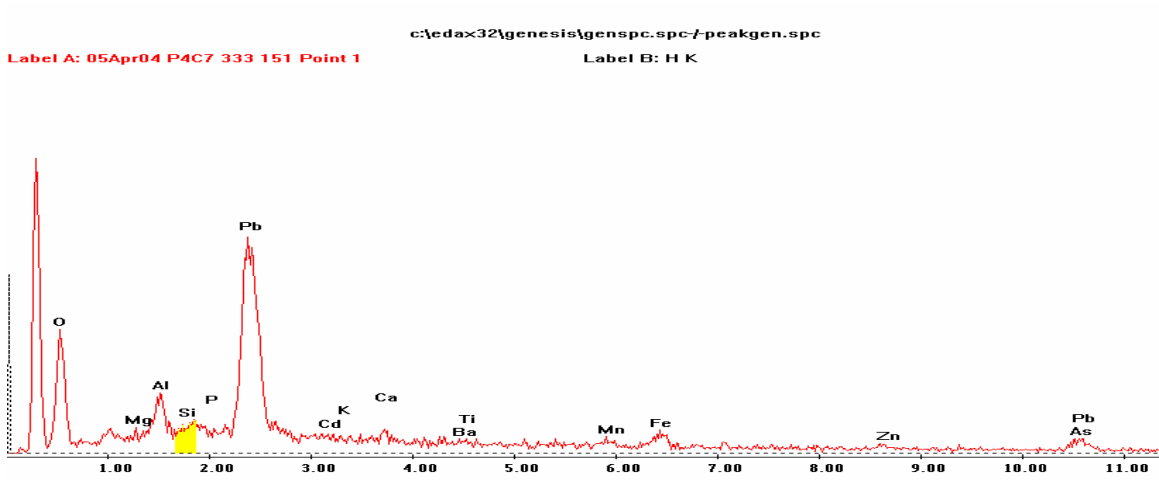


Silicon (Si)

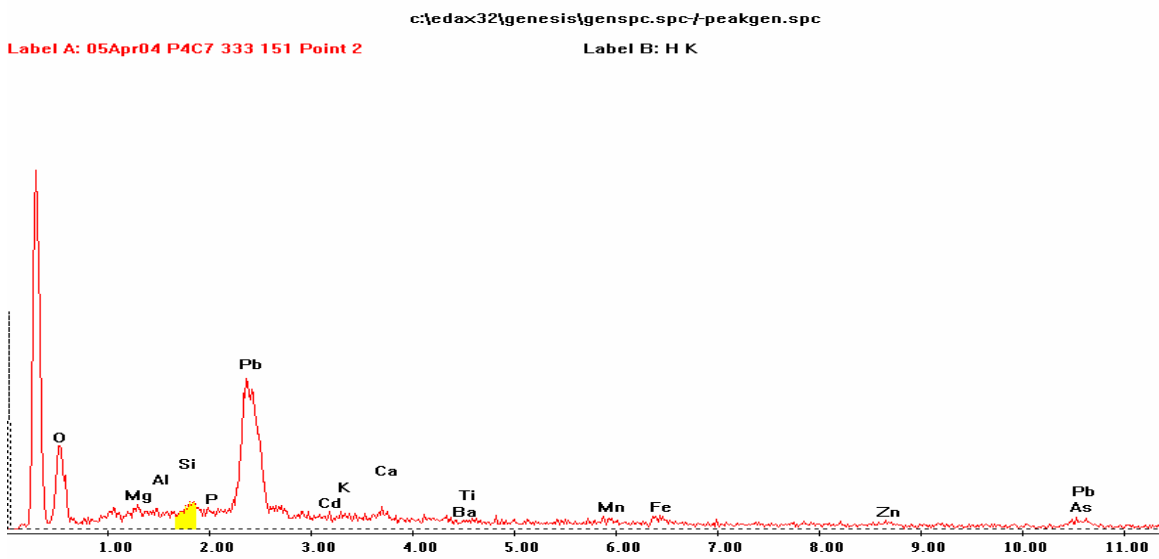


EDS Scan Images by Point

Point 1



Point 2

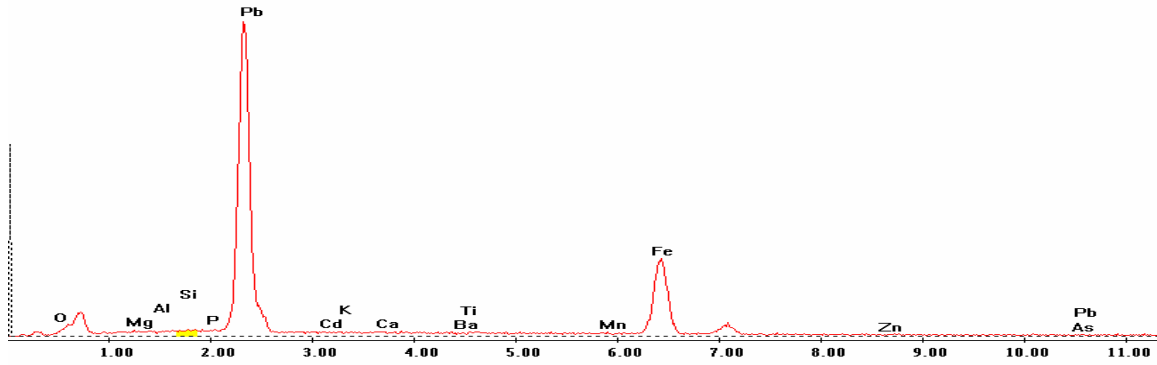


Point 3

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 3

Label B: H K

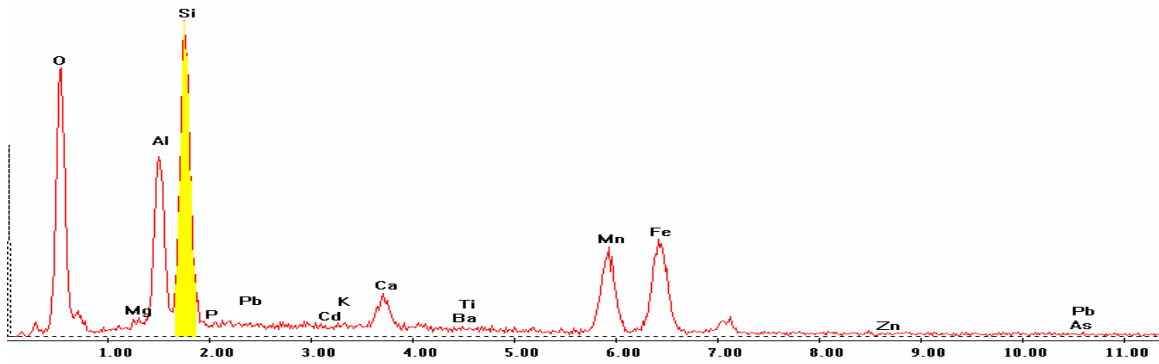


Point 4

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 4

Label B: H K

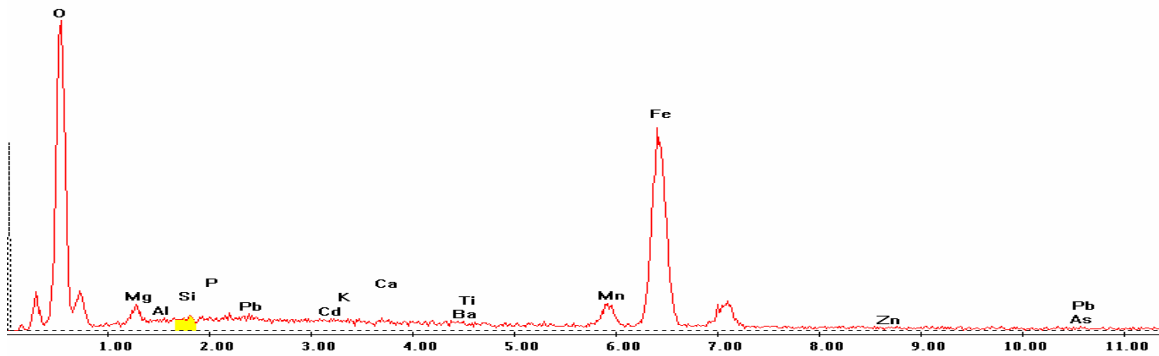


Point 5

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 5

Label B: H K

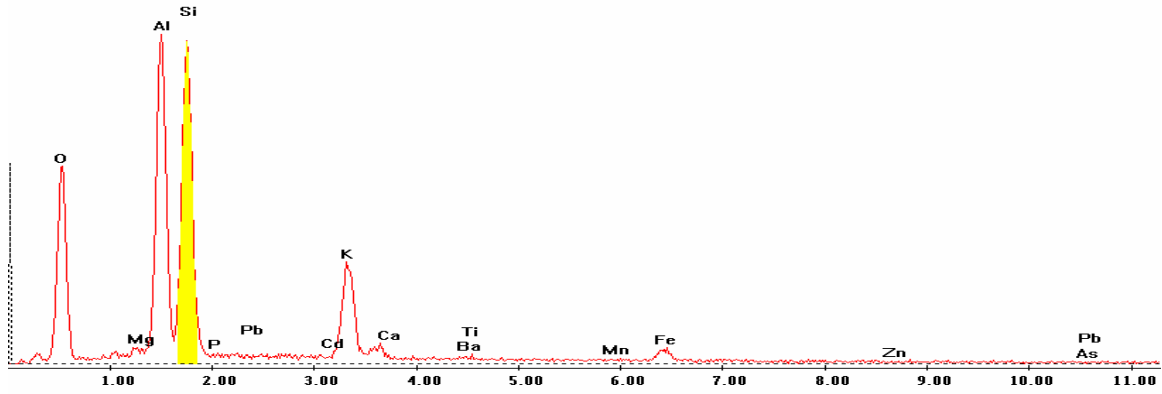


Point 6

c:\edax32\genesis\genspc.spc-/peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 6

Label B: H K

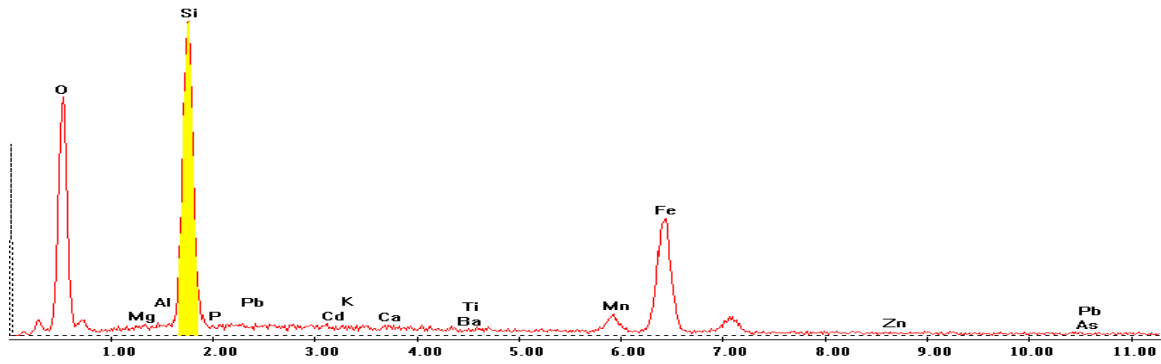


Point 7

c:\edax32\genesis\genspc.spc-/peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 7

Label B: H K

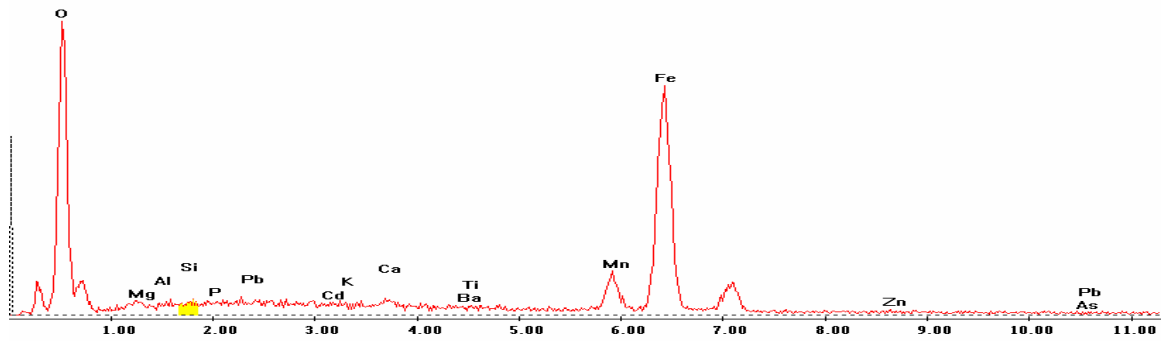


Point 8

c:\edax32\genesis\genspc.spc-/peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 8

Label B: H K

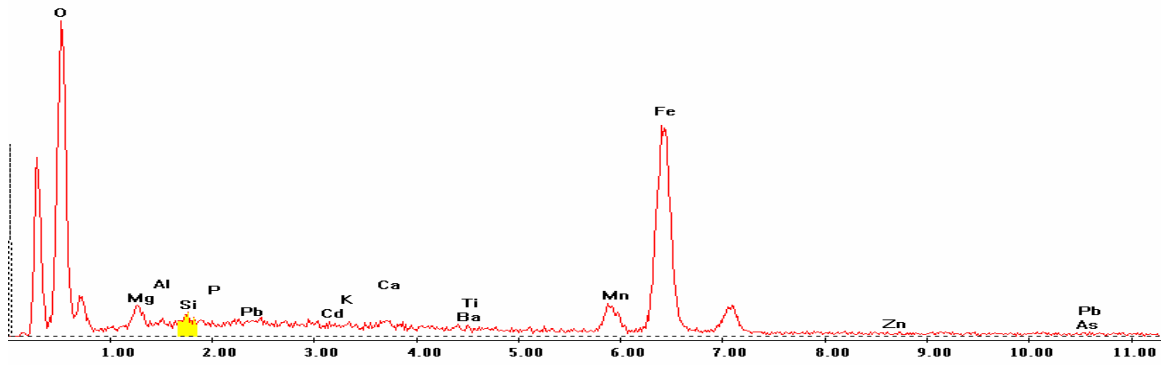


Point 9

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 9

Label B: H K

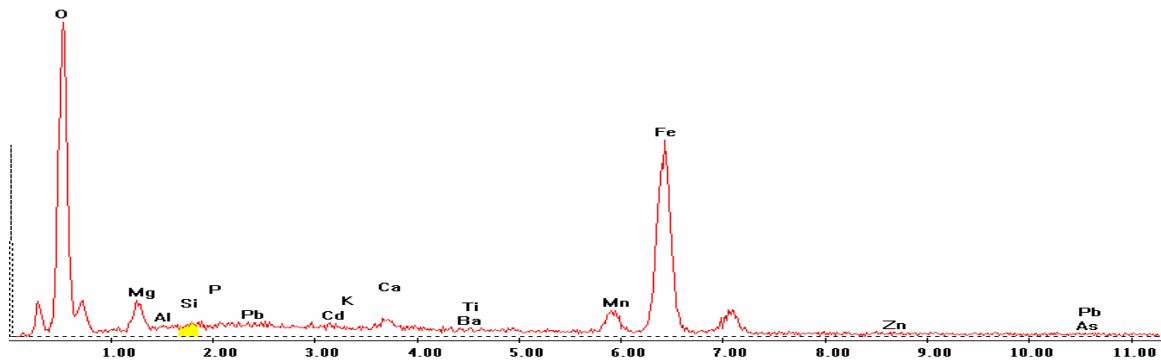


Point 10

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 10

Label B: H K

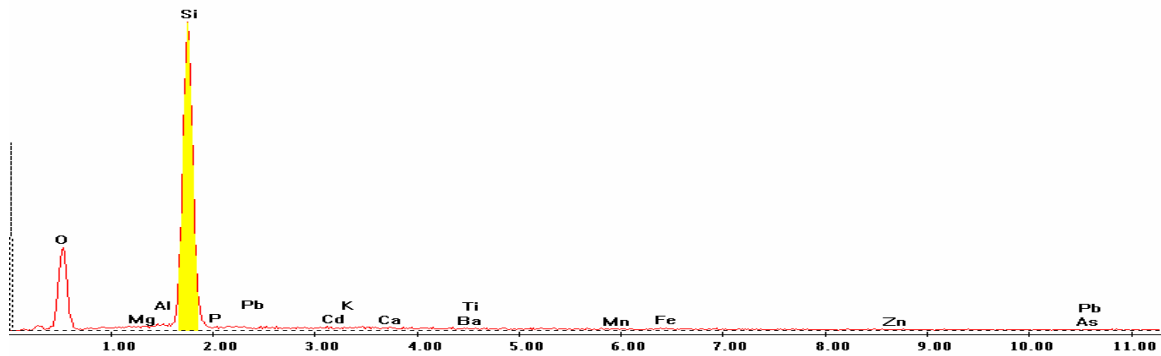


Point 11

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 11

Label B: H K

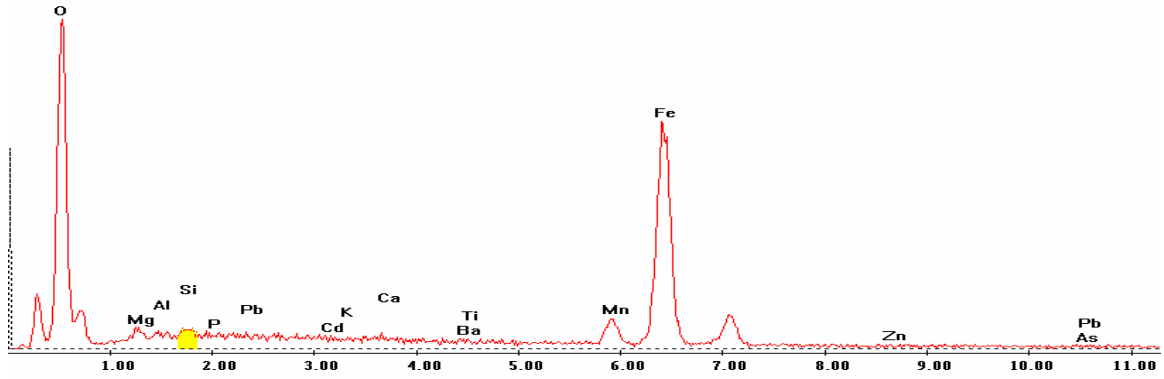


Point 12

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 12

Label B: H K



Point 13

c:\edax32\genesis\genspc.spc/~peakgen.spc

Label A: 05Apr04 P4C7 333 151 Point 13

Label B: H K

