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GEOLOGY, GEOCHEMISTRY & MINERALISATION IN EL 16209, BROUGHTON CREEK, QUEENSLAND.

Undertaken on behalf of

Broughton Minerals P/L, CNW P/L & Geosensor Exploration P/L.

By
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APPENDIX 1. (Tables 1 & 2)

FIGURES.

Fig. 1 Broughton Creek Sample Locations

Fig. 1A Pandora Area

Fig. 1B West Area

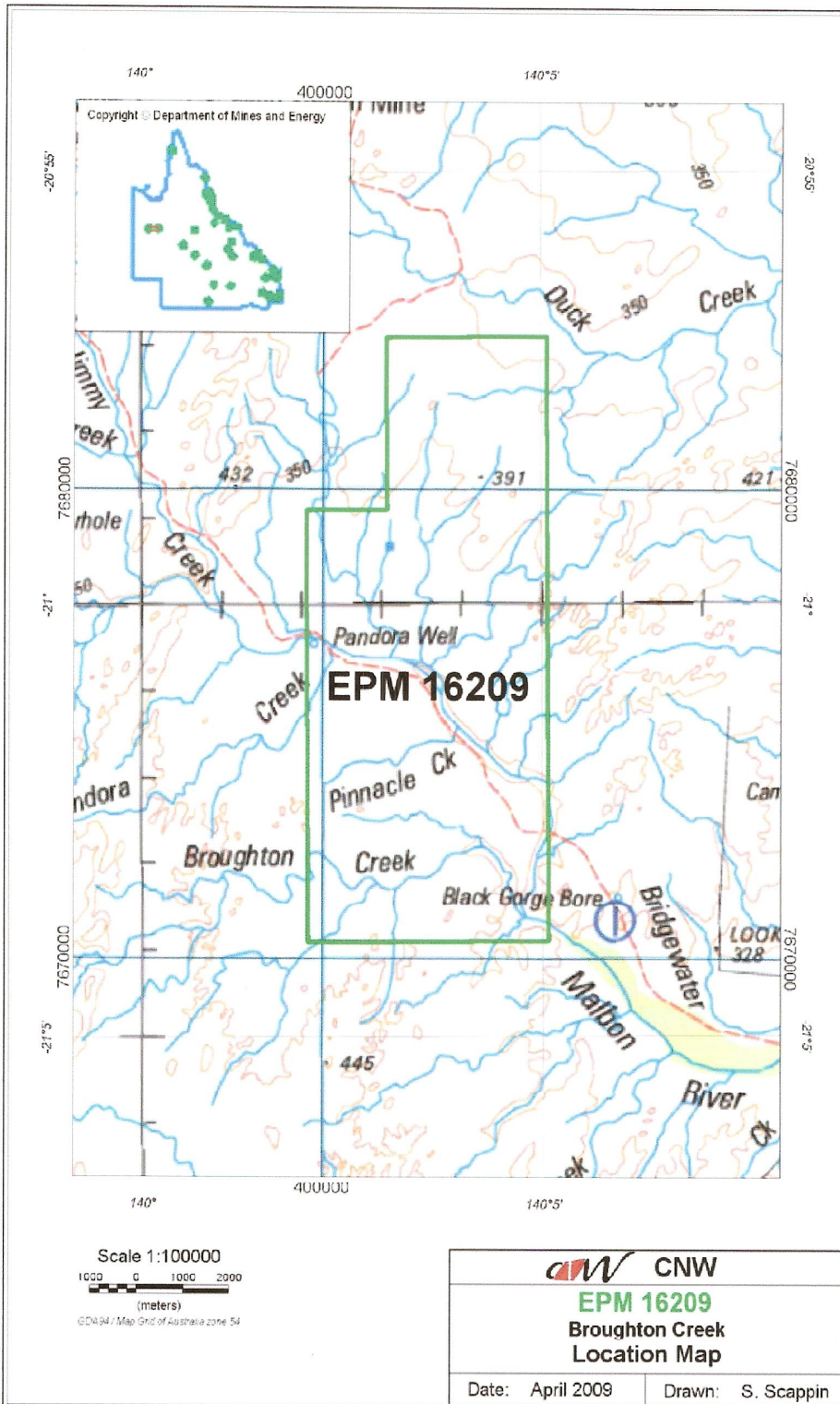
Fig. 1C East Area

Fig. 1D South Area

Fig. 2 Average oxide concentrations



Photo 1. Typical outcrop of pink potassium-altered rocks which contain veins of uranium minerals.



Summary

Approximately 110 rare earth, uranium and thorium rock samples and 58 'country rock' samples were collected from EP16209 in the Broughton Creek area. The sampling sites were selected from anomalies identified in an airborne radiometric survey. Hand held scintillometers were used to traverse these anomalous areas and 'hot spots' were excavated and radiogenic minerals were recovered from depths of up to 40cms. The radioactive minerals appear to relate to thin veins up to 3cms thick with strike lengths of up to one metre. In places these veins are disaggregated and appeared as discrete clasts in the regolith. Several of the vein samples contain extraordinarily high quantities of rare earth elements (up to 12%), uranium (up to 392kg/t) and thorium (up to 62kg/t). A portable Niton XRF analyser was used in the field and was used to estimate the element compositions of the 'country rock' in an approximate ten metre radius of each sample site. The 'country rocks' were re-analysed in the laboratory and are only slightly enriched in these elements, except for a few samples that were collected adjacent to, or within about one metre of the mineralised veins. The presence of gold indicator elements identified by the Niton XRF, alerted the operator to possible gold in brecciated and polyphase silica veins in the Pandora Prospect. Gold up to 8.55ppm was confirmed during laboratory analyses. Further work is needed to assess the possible economic potential of these closely spaced mineralised areas. This work should include detailed ground radiometric surveys, drilling and costeaning, to delineate the actual areas occupied by the radioactive anomalies and the frequency of the radiogenic and vein gold complexes.

1. INTRODUCTION.

An extensive rock sampling program, undertaken during three separate field surveys, was undertaken in EP 16209 located approximately 80km southeast of Mt Isa in the Broughton Creek area (see Location Map). Sampling sites were identified from a semi-detailed airborne radiometric survey and identified on the ground due to pervasive, relatively high, radioactive backgrounds. Scintillometer surveys, undertaken more or less randomly across these anomalous areas, identified localized 'hot spots' where background total counts frequently exceeded 100k counts per minute. These sites were excavated, using hand tools, to depths up to 40cm and fragments of radiogenic minerals were recovered. These fragments tended to have tabular elongate shapes and appeared to be portions of disaggregated vein systems within the regolith. Visual reconstructions of these veins indicate that they were up to three centimetres in width and up to a metre in length. The vertical extent of these steeply inclined veins is not known but it is likely that they are lenticular and occupy dilation zones aligned with shear zones.

During the third phase of field sampling, undertaken from the 12th to 17th of November 2009, a portable Niton XRF analyser was used to obtain analyses of the 'country rocks'. Because of the prevailing high ambient temperatures it was decided, rather than carrying the Niton to the outcrops where it would likely to have been damaged due to overheating, to obtain samples and analyse these in the relative shade of the interior of the 4WD vehicle. These samples were retained and at a later date they were pulverized and the fine

fractions (-425 microns) were placed in plastic capsules and were re-analysed using the same equipment. The two sets of analytical results reflect the differences between fine relatively homogenous and coarse-grained relatively heterogeneous rock types. The powdered samples were then forwarded to an analytical laboratory to obtain more complete analyses. It was found that although the XRF analyser has useful field applications, there are many elements such as rare earths and some potentially valuable elements, such as gold, cannot be identified. The results from uranium and thorium were broadly comparable between the field and the analytical laboratory studies. In addition, the XRF identified, or indicated, the presence of small quantities of mercury, arsenic and bismuth. These are gold pathfinder elements, and in the Pandora Prospect these identifications were confirmed in the analytical laboratory by the presence of gold.

The field and the powder XRF results are appended (Appendix 1). These data can be compared with the analytical laboratory results in Appendix 2.

2. GEOLOGY.

The Broughton Creek tenement area lies within the Palaeoproterozoic Mount Isa Block which is recognized as one of the most fertile provinces on earth for the discovery of metallic mineral deposits. The area examined contains numerous veins and veinlets containing anomalous radioactive minerals, comprising uranium and thorium. Associated with the radioactive minerals are rich concentrations of rare earth oxides which from analyses contain fifteen distinct rare earth elements. In the northern part of the area studied brecciated quartz and polyphase silica veins contain significant quantities of gold and copper.

The rocks in the mineralised areas belong to the Argylla Formation. They comprise granulites, pink feldspathoids, interlayered with pink and black, feldspar-amphibolites, fine to coarsely crystalline black amphibolite with less common lenses of khaki coloured, altered meta-andesite, pelitic schist and fine, pale brown, altered, meta-sandstone. All rock types are generally sheared, with two and sometimes three sets of cleavage directions. The widespread potassic and hematitic alteration is probably related to post-metamorphic migration of hydrothermal fluids and this process probably led to the emplacement of the mineralised veins. Several of the anomalous areas have visible copper mineralisation, associated with quartz veins and support patches of secondarily enriched malachite and chrysocolla in iron-oxide enriched 'gossans'.

Within the radioactive anomalous areas most of the outcrops exhibit close to normal background radioactivity, but are interspaced with smaller zones of high radioactivity. Fracture corridors that were invaded by hydrothermal fluids probably gave rise to rock types that are less resistant to erosion and partial destruction of former uraniferous veins has led to lag deposits of heavy minerals, such as uranium and thorium, in the near surface environment. Back-hoe trenches in these situations encountered uranium minerals in the colluvium, and in a few instances within the underlying rocks. For example, a trench five metres in length and one metre wide and one metre deep typically would expose uranium mineralisation within one or two veinlets. In places, there are larger veins and vuggy cavities that are lined with well formed, euhedral quartz crystals. High

radioactivity associated with these veins also indicated associated uranium mineralisation. To date, only five back-hoe trenches have been excavated to shallow depths and the frequency of occurrences of vein mineralisation is poorly known.

3. METHODOLOGY.

3.1. Sample localities.

All sampling localities were recorded by GPS and are plotted in the Broughton Creek Sample Location map in Figure 1. Each sample site is colour coded to identify the date of the field program in which each individual sample was collected. Most of the samples are clustered in specific areas and these mirror the sites of the individual airborne radiometric anomalies. However, because airborne radiometric anomalies are attenuated or obliterated, due to the presence of regolith, it is possible to interpret these comprising broader, interconnected, mineralised zones. On this premise, the map area has been subdivided and a series of larger scale maps have been generated. These include the Pandora Prospect (Fig. 1A) the West anomalous area (Fig. 1B), the East anomalous area (Fig. 1C) and the South anomalous area (Fig. 1D).

4. GEOCHEMISTRY

4.1 Analytical results.

Results provided by the analytical laboratories give individual element concentrations in parts per million. In a few instances where the concentration of an element is very high, such as for uranium, thorium and copper, they have calculated the concentrations as percentages. However, certain conventions are specified when reporting some elements to the Australian Stock Exchange or to the public generally. For example rare earth elements (REE) are reported as percentages of the equivalent rare earth oxides (REO). Furthermore, the REOs are divided into two groups, light rare earth oxides (LREO) and heavy rare earth oxides (HREO). In the study area the LREO comprise lanthanum, cerium, praseodymium, neodymium, samarium, europium and gadolinium. The HREO comprise terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium. For convenience in this report, yttrium has been added to the HREO group.

Uranium and thorium in the form of their oxides are reported in kilograms per tonne. Copper is reported as a percentage of elemental copper and gold as parts per million (grams per tonne) or parts per billion.

Accordingly, all of the element data for the REE, uranium and thorium were recalculated using standard gravimetric conversion factors (see Table 1) into their equivalent oxides (Table 1). In order to portray these data visually a number of histograms were constructed that show the percentage distribution for selected samples of HREO, LREO, U_3O_8 , ThO_2 and total oxides. High concentrations of copper are shown as percentages of elemental copper and gold concentrations, and are annotated in the histograms in parts per million.

5. RESULTS OF ANALYSES.

An arbitrary cut off of 100ppm was used in the recalculation of individual REE, uranium and thorium occurrences as it seems likely that economic factors during a potential future mining operation would preclude extraction of oxides with less than this concentration.

However, the value of individual elements in the market place has not been considered and it is possible that the 100ppm cut off might be too high for some rare and valuable REE.

5.1 Heavy Rare Earth Oxides.

Heavy rare earth oxides in concentrations above 100ppm REE, were recorded in 78 out of 90 vein rock samples and in five out of 58 'country rock' samples. Yttrium, dysprosium and ytterbium are the commonest HREO, but there are several variations to this theme and in several instances where the concentrations of HREO are high, all oxides in this group are present. Concentrations of HREO range from 0.01 to 2.24% and the average is 0.56% (5.6kg/t). According to the histograms there is no particular area where HREO are dominant, but they are only sporadically present in the Pandora Prospect and in the South anomalous area.

5.2 Light Rare Earth Oxides.

Light rare earth oxides in concentrations above 100ppm REE, were recorded in 89 out of 90 vein rock samples and in five out of 58 'country rocks' sampled. Cesium, lanthanum and neodymium are the commonest LREO, but in many instances lanthanum displaces cesium as the dominant LREO. In instances where concentrations of LREO are high all members of this group are represented and the ordering can be a curious mixture that follows no prescribed pattern. Concentrations of LREO range from 0.01 to 8.24% and the average is 1.36% (13.6kg/t). The histograms (Figs, 1A to 1D) show that the LREO are only sporadically developed in the Pandora Prospect and in the South anomalous area.

5.3 Uranium.

Uranium has a crustal abundance of 2.8ppm. In this review of uranium occurrences any rock sample with less than 100ppm uranium was not included as concentrations below this probably lie below minable grade. For comparison, production from the Mary Kathleen mine graded approximately 1300ppm uranium oxide (1.3kg/t). Ninety of the samples analysed contained above 100ppm uranium oxide and have an average grade of 53407ppm U_3O_8 (53.4kg/t). Histograms of uranium oxide occurrences show that the West (Fig. 1B) and the East (Fig. 1C) map areas have very high concentrations and reach up to 392kg/t.

5.4 Thorium.

Thorium dioxide in concentrations greater than 100ppm (mine cut off grade) was found in 53 out of the total 90 vein rock samples analysed. The average grade is 8500ppm (8.5 kg/t). The histograms show an association between thorium and uranium. Thorium occurs in lesser quantities (approximately 16%) of the total uranium present, in any given sample. The highest concentrations of thorium occur in the West (Fig. 1B) and East (Fig. 1C) map areas.

5.5 Gold and Copper.

Significant gold occurrences that are for the most part above 0.5ppm are restricted to the Pandora Prospect (Fig. 1A). They occur in silica veins that are associated with occurrences of copper (up to 10.05%) and range in values up to 8.55ppm Au. Several of

these veins support an iron oxide crust or gossan and it is probable that the higher grades of Au and Cu have been upgraded due to weathering. The anomalous zone containing the mineralised veins trends in a north easterly direction and is approximately 200m in length and 100m in width. The average gold grade from this area is 3.22ppm (six samples). Further to the southeast, sample 16A contained gold at 1.16ppm. There is no obvious connection with this sample to the main area and it may represent a second area worthy of further exploration. Because the exploration in this area was based on scintillometer detection of radioactive rocks, the significance of gold occurrences was largely overlooked and both areas require careful geological mapping and sampling. Gold pathfinder elements, such as mercury, bismuth and arsenic, were indicated by the Niton XRF analyser, though usually below measurable limits of detection. The actual gold content was confirmed by laboratory analyses (Table 1).

5.6 Average mineralisation of the vein systems.

The average totals of HREO, LREO, U_3O_8 and ThO_2 appear in Figure 2. This histogram shows that there is slightly more than twice the amount of LREO than HREO, and approximately six times more U_3O_8 than ThO_2 in the total number of samples analysed.



Photo 2. Excavated fragments of highly radioactive vein rock.

Broughton Creek Niobium

>100ppm Nb >500ppm highlighted

Sample No	ppm Nb	Area
U10	1697.00	South
U16	140.19	South
U17	409.16	South
U20	205.31	West
U21	208.00	West
U22	114.06	East
U25	124.77	East
U26	111.24	East
U27	1748.00	East
U29	143.35	East
U30	280.00	East
U33	11746.00	Pandora
U34	983.00	West
U37	894.00	West
U38	509.00	West
U39	1105.00	West
U40	131.14	West
U41	475.00	South
U46	270.00	East
U47	156.50	East
U48	441.00	East
U51	620.00	East
U55	1220.00	East
U63	771.00	West
U70	169.50	East
U71	108.50	East
U73	108.00	East
U75	350.00	East
U76	822.00	East
U87	141.50	East
U88	151.50	East
U91	310.00	East
U92	412.00	East
U94	287.00	East
U97	289.00	East
U100	111.00	East
U101	221.00	East
U102	253.00	East
U103	259.00	East
U104	510.00	East
U108	246.00	Pandora

5.7 Other elements of potential economic interest.

5.7.1 Niobium.

Used in alloys, tools and dies and superconductive magnets.

The pure metal is soft and ductile. Although it has excellent corrosion resistance it needs protection against oxidation above about 400° C.

Completely miscible with iron, it is added in the form of ferroniobium to some stainless steels to give stability on welding or heating.

Used as a major alloying element in nickel-based high-temperature alloys and as a minor but important additive to high strength structural steels.

Because of its compatibility with uranium, resistance to corrosion by molten alkali-metal coolants and low thermal-neutron cross section it has been used in nuclear reactor cores.

At Broughton Creek 41 samples resulted in analyses above 100ppm Nb. One sample in the Pandora area (U33) recorded 11746ppm Nb. A cluster of samples from the WEST area (U34, U37, U38, U39, U63) recorded 509 to 1105ppm Nb. However in the EAST area many samples are recorded ranging from 108ppm to 1748ppm Nb with 5 samples being >500ppm Nb.

Broughton Creek Cobalt

>100ppm Co

Sample No.	ppm Co	Area
Au1	242.20	West
Cu1	137.60	Pandora
Cu2	108.50	
23A	136.50	East
37	198.00	Pandora
U35	110.60	West
U43	137.00	South
U58	219.00	West
U91	389.00	East

5.7.2. Cobalt

Used especially for high-temperature and magnetic alloys. Cobalt was used for centuries to impart a blue colour to glazes and ceramics.

Although widely dispersed, cobalt makes up only 0.001% of the Earth's crust.

Cobalt when polished is silver white with a faint bluish tinge.

Most of the cobalt produced is used for special alloys such as magnetic alloys, hard-facing alloys, tool steels, low expansion alloys and alloys used in dentistry and bone surgery.

At Broughton Creek 9 samples resulted in analyses above 100ppm Co. These samples were spread throughout the whole area with no clusters occurring. Cobalt occurs as a secondary mineral in altered, metasomatised rock types associated with amphibolites and quartz veining.

Broughton Creek Scandium

>50ppm Sc

Sample No.	ppm Sc	Area
8	141.00	West
15B	192.00	Pandora
20B	59.00	East
22C	251.00	East
23	51.00	East
23A	98.00	East
24B	93.00	East
27A	84.00	East

5.7.3 Scandium

Very few uses of this unusual metal have been developed. Its low density and high melting point suggest applications as an alloying agent for devices requiring lightweight metals. The only major application of Scandium is its positive effects on aluminium alloys.

The approximate abundance of Scandium in the Earth's crust is from 18 to 25 ppm.

Scandium is present in most of the rare earth element and uranium deposits, but it is extracted from these ores in only a few mines worldwide.

In the Broughton Creek area Scandium was only detected by the XRF and was not an element analysed in the laboratory. Eight samples were found to contain over 50ppm Scandium, and these were mostly clustered in the East area. As such the distribution of Scandium in the Broughton Creek area as a whole is incompletely known.

Broughton Creek Lead

Sample No.	ppm Pb	Area
U10	11444.00	South
U17	4340.00	South
U19	25915.00	West
U20	29701.00	West
U21	7716.00	West
U22	2560.00	East
22C	4870.00	East
U24	3398.00	East
U27	8689.00	East
U28	2162.00	East
U29	2635.00	East
U30	3932.00	East
U34	19386.00	West
U35	2386.00	West
U37	20230.00	West
U38	5668.00	West
U39	35124.00	West
U40	1800.00	West
U41	>10000	South
U46	1110.00	East
U48	>10000	East
U51	>10000	East
U52	9530.00	East
U55	>10000	East
U61	1020.00	East
U63	>10000	West
U66	1110.00	West
U67	5330.00	West
U68	1280.00	West
U70	1240.00	East
U75	8660.00	East
U76	>10000	East
U83	9470.00	East
U85	1050.00	East
U88	>10000	East
U91	>10000	East
U92	9500.00	East
U94	>10000	East
U96	1090.00	East
U97	>10000	East
U101	9200.00	East
U102	1420.00	East
U103	1350.00	East
U104	2340.00	East
U107	7720.00	Pandora
U108	>10000	Pandora

5.7.4 Lead

Lead is a soft silvery-white or greyish metal which is very malleable, ductile and dense, and a poor conductor of electricity.

Lead is used less than in the past due to the dangers it poses for the human body. However there are beneficial uses of lead such as lead batteries in motor vehicles, leaded glass as screening against radiation (TV tubes & screens), cable sheathing, bearings, low-melting alloys and protective shields against X-rays.

Australia is a major producer and exporter of lead.

In the Broughton Creek area 46 samples contained more than 1000ppm lead and 17 samples contained greater than 10000ppm lead with the greatest reading being 35124ppm in U39 in the West area. There does seem to be some correlation between high readings of lead and that of niobium. Although it does appear that the highest readings occur in the West area, samples U41 to U109 were analysed to a maximum of 10000ppm and could therefore have values exceeding those in the West area.

Broughton Creek Titanium

Sample No.	ppm ti	Area
U4	5540	
U5	2610	
U6	2750	
U7	6246	
U10	163612	South
U11	14227	South
U12	7779	South
U13	7518	South
U13a	7334	South
U14	11778	South
U15	9405	South
U16	24544	South
U17	80333	South
U18	9487	South
U19	45257	West
U20	72139	West
U21	38738	West
U22	62169	East
U23	4596	East
U24	62382	East
U25	16609	East
U26	16151	East
U27	199881	East
U28	21996	East
U29	32031	East
U30	23489	East
U31	6639	East
U32	10850	East
U33	15398	Pandora
U34	59349	West
U35	50118	West
U36	7575	West
U37	101705	West
U38	19022	West
U39	39978	West
U40	16044	West
Cu2Hill	3925	West
Au1	13063	West
Au2	6228	West
Au3	1345	

5.7.5 Titanium

Titanium which is widely distributed and plentiful is the 9th most abundant element in The Earth's crust.

The importance of titanium is based on its ability to be alloyed with most metals and some non metals. By alloying titanium its tensile strength can be increased fivefold. Its combination of high strength, low density and corrosion resistance has resulted in its use for aircraft, spacecraft, missiles and ships. It is also used for prosthetic devices, as a deoxidizer in steel, as an alloying addition in many steels, in aluminium to reduce grain size and in copper to produce hardening.

Only one set of Broughton Creek's samples were analysed for titanium. Of this set 40 contained greater than 1000ppm titanium and 25 contained greater than 10000ppm titanium. The high values of titanium are spread throughout the area with the highest reading being 199881ppm in U27.

5.7.6 Other Elements

Mercury and Arsenic were not analysed in the laboratory.

Mercury was found in three samples using the XRF and arsenic in four samples. These are likely to be secondary minerals associated with hydrothermal activity. These elements are pathfinder indicators for gold. Further exploration for gold at Pandora should include arsenic and bismuth in analyses as these are gold pathfinder elements.

6. CONCLUSIONS.

- The Broughton Creek tenement contains several, fairly large areas where vein complexes contain very high levels of uranium, thorium and rare earth oxides.
- An airborne radiometric survey has delineated several zones of anomalous radioactivity; a few of these remain to be evaluated on the ground.
- Several of the radiometric anomalies have been surveyed on the ground and vein systems have been selectively sampled using scintillometers.
- Geological observations and analyses of 'country rocks' within a 10m radius of mineralised veins show low levels of mineralisation. Exceptions are about six samples that were collected within one metre of mineralised veins.
- Although the lengths and widths of mineralised zones can be estimated, very little is known about the depth and the actual density of veins in these areas.
- A significant gold occurrence has been partially delineated in the Pandora Prospect. The economic potential of this gold deposit may be augmented with rare earth oxides, uranium, thorium and copper credits.
- Because of lack of knowledge of the vertical dimension, it is not possible to calculate a measured resource for any of the mineralised areas at this time.

7. RECOMMENDATIONS.

Information regarding the three dimensional aspects of the observed mineralisation is required in order to assess the potential economic value of these deposits. The vein deposits are super rich and in a mining situation may be economic, even though on extraction the ore will be markedly diluted by the surrounding 'country rocks'. Little is known about the strike orientations and frequency of the mineralised veins in the sub-surface. In order to overcome these problems I recommend that the larger radioactive anomalies are mapped in detail using a Pico spectrometer, or similar instrument. Ground radiometric mapping may show that the individual anomalies are interconnected and may merge into one or more larger deposits. This work should be accompanied by detailed geological mapping. The combination of these two data sets should provide collaborative evidence regarding the orientations of the mineralised fracture zones, associated vein systems and nature of the host rocks. If the results warrant it, recourse to diamond drilling and gamma ray logging, or excavation of large costeans, will assist in delineating the potential sizes of ore bodies and calculation of potential measured resources.

The Pandora Prospect gold occurrence will require further geological mapping and sampling in order to estimate its complete surface extent. Recourse to diamond drilling and analyses of drill cores will be required to delineate the economic potential of this deposit.

Competent Persons Statement

This report was prepared by Brian R and Danièle A Senior of the geological consultancy, BR Senior & Associates P/L, a company incorporated in Canberra ACT in 1981.

Dr Brian Senior has overall responsibility for the content and recommendations within this report. He holds a B.Sc (Hons) & M.Sc from Victoria University of Wellington New Zealand and a Ph.D from the University of NSW, Sydney. He is a Chartered Professional (Geology) and a Fellow of the Australasian Institute of Mining & Metallurgy.

Table 1.**Element to oxide conversion factors.**

Group	Element	Symbol	Oxide	Conversion factor
LREE	Lanthanum	La	La ₂ O ₃	1.173
LREE	Cerium	Ce	CeO ₂	1.228
LREE	Praseodymium	Pr	Pr ₆ O ₁₁	1.208
LREE	Neodymium	Nd	Nd ₂ O ₃	1.166
LREE	Samarium	Sm	Sm ₂ O ₃	1.160
LREE	Europium	Eu	Eu ₂ O ₃	1.158
LREE	Gadolinium	Gd	Gd ₂ O ₃	1.153
HREE	Terbium	Tb	Tb ₄ O ₇	1.176
HREE	Dysprosium	Dy	Dy ₂ O ₃	1.148
HREE	Holmium	Ho	Ho ₂ O ₃	1.146
HREE	Erbium	Er	Er ₂ O ₃	1.143
HREE	Thulium	Tm	Tm ₂ O ₃	1.142
HREE	Ytterbium	Yb	Yb ₂ O ₃	1.139
HREE	Lutetium	Lu	Lu ₂ O ₃	1.137
HREE	Yttrium	Y	Y ₂ O ₃	1.270
	Thorium	Th	ThO ₂	1.138
	Uranium	U	U ₃ O ₈	1.179

In the following tables the rare earth elements in parts per million (REE) have been recalculated to their equivalent oxides (REO), using the gravimetric conversion factors listed above. Furthermore, they have been grouped into heavy rare earth oxides (HREO) and light rare earth oxides (LREO). Yttrium, which is sometimes listed as a separate group, has been included with the heavy rare earth elements. As per convention, the totals of the two groups (HREO & LREO) of rare earth oxides, are expressed as percentages of the totals. Uranium and thorium have also been converted to their oxide equivalents. In the example of uranium, it is conventional to calculate the percentages of the oxide (U₃O₈) and report these data in kilograms per tonne. The total amounts of thorium dioxide (ThO₂) are also calculated and reported in kilograms per tonne.

In some areas, notably in the Pandora Prospect, rare earth oxides, uranium and thorium oxides have additional gold and copper credits. Gold is listed in parts per million (ppm) and copper in parts per million and as percentages of the totals.

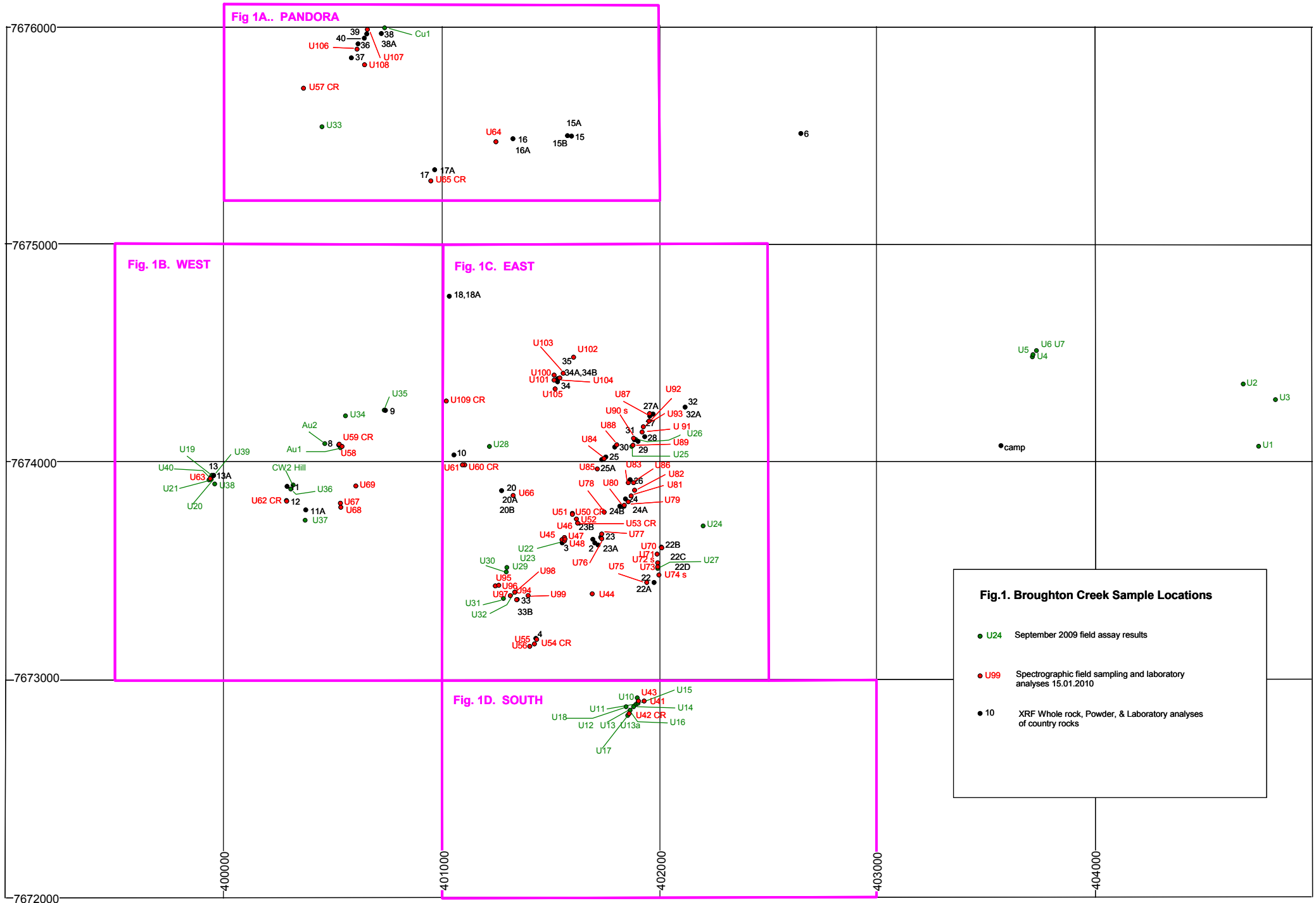
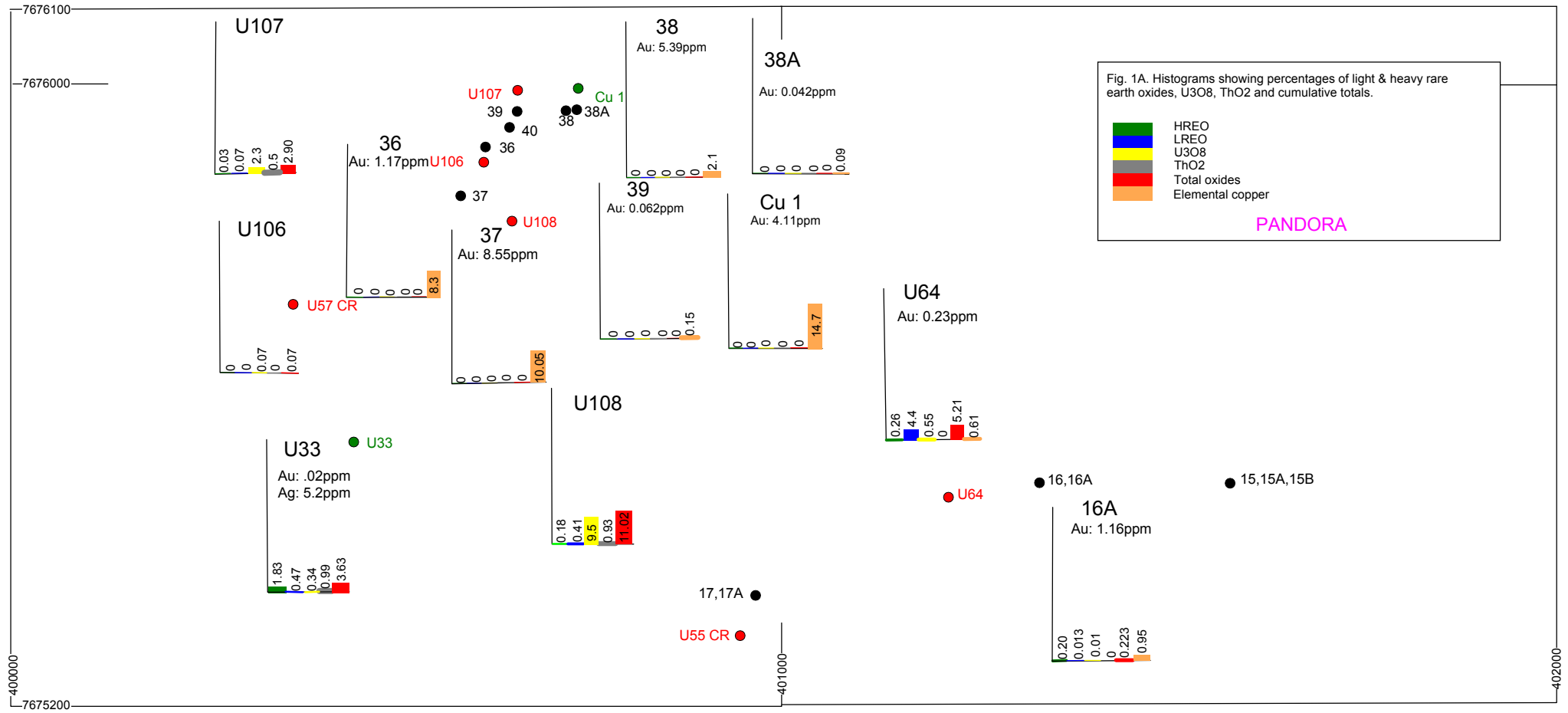
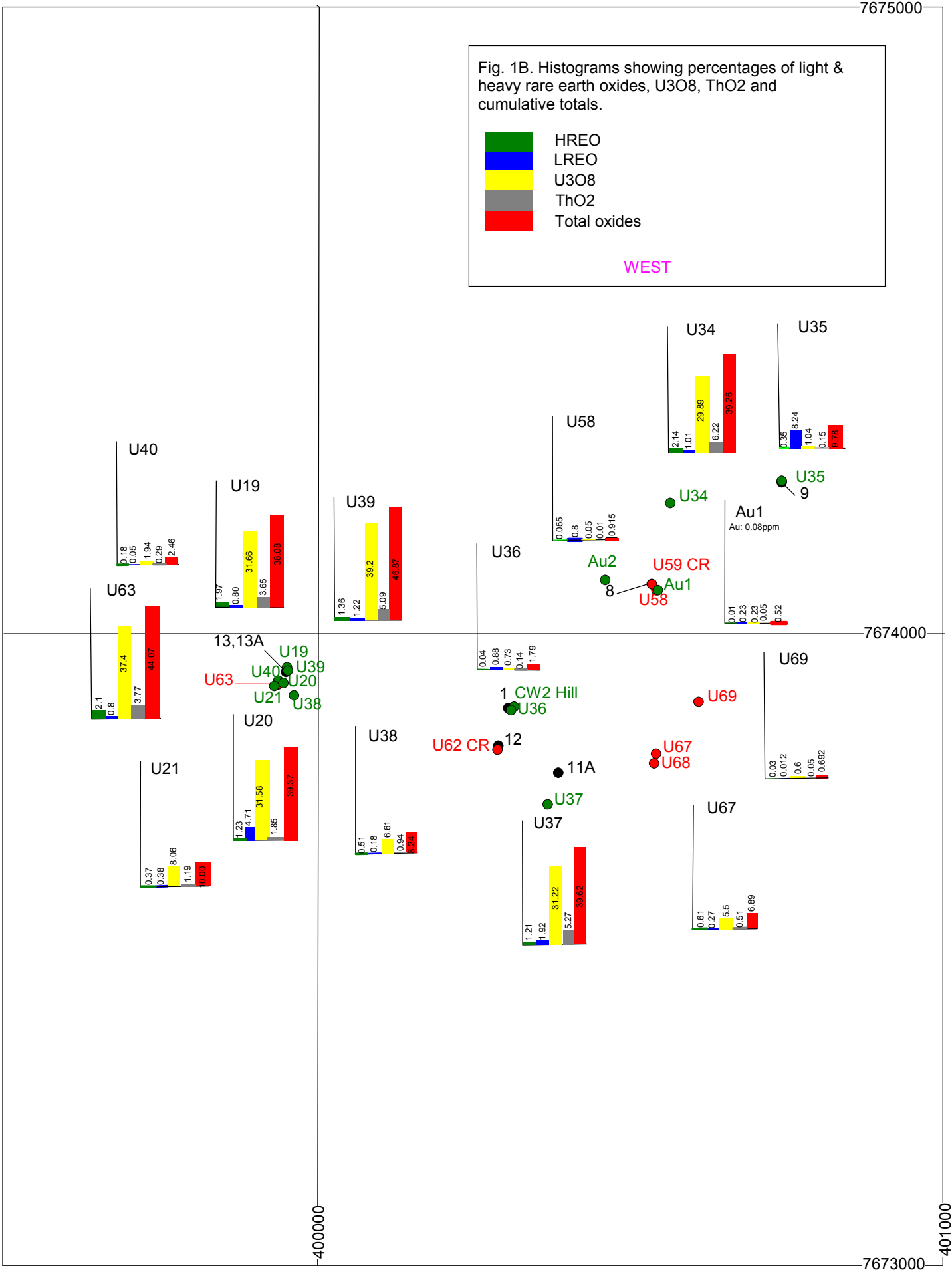
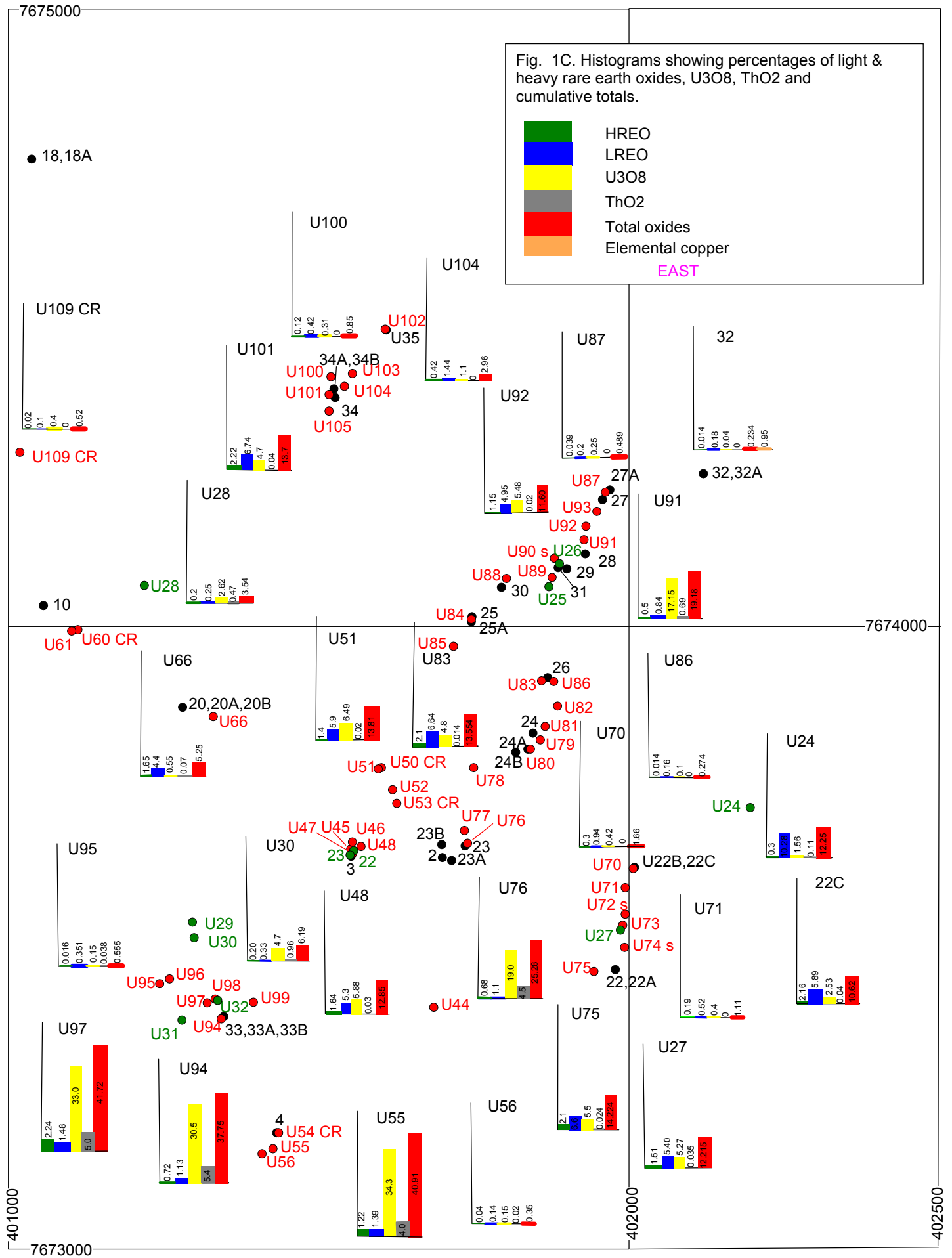


Fig.1. Broughton Creek Sample Locations

- U24 September 2009 field assay results
- U99 Spectrographic field sampling and laboratory analyses 15.01.2010
- 10 XRF Whole rock, Powder, & Laboratory analyses of country rocks







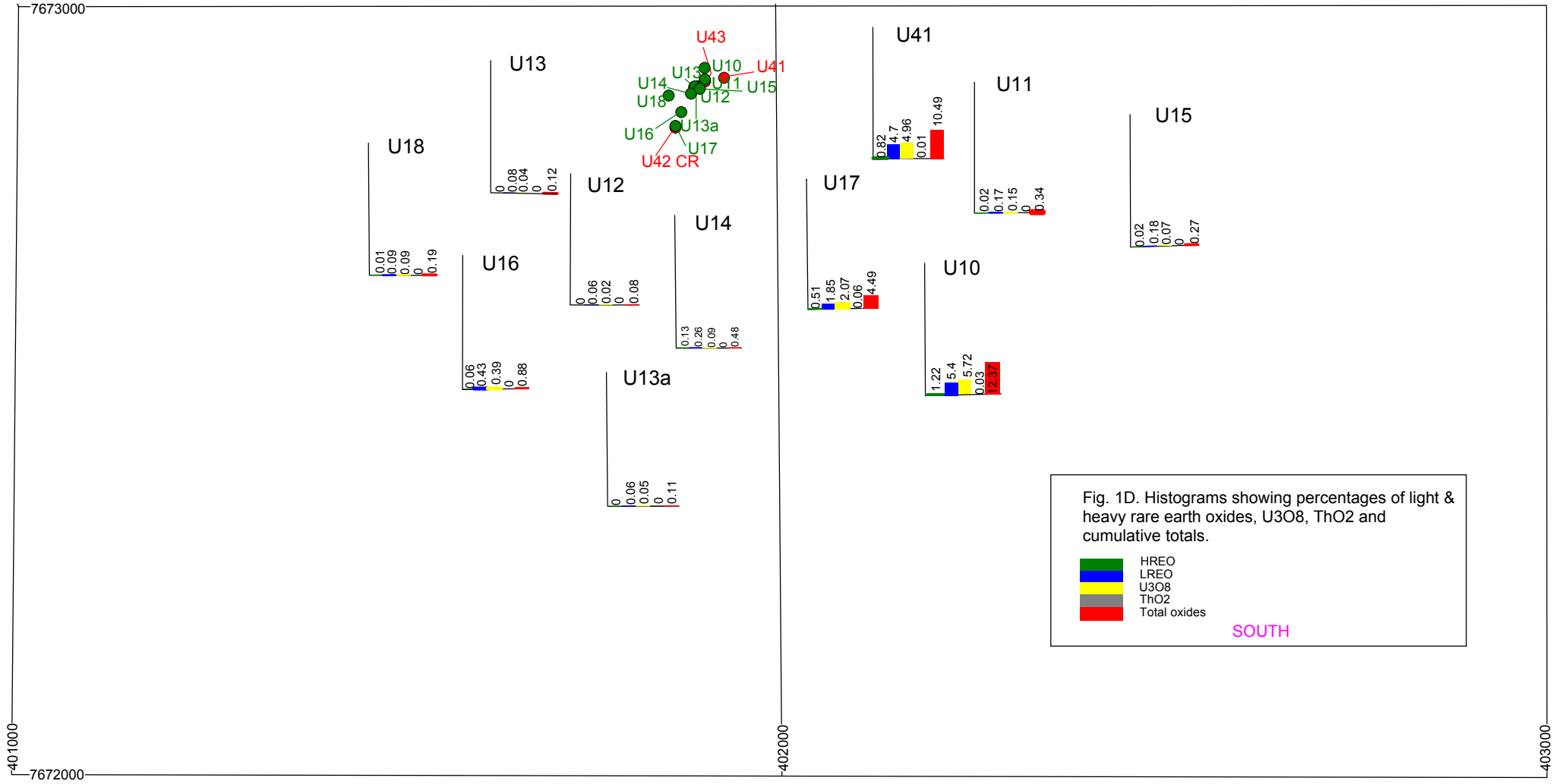


Fig. 1D. Histograms showing percentages of light & heavy rare earth oxides, U3O8, ThO2 and cumulative totals.

- HREO
- LREO
- U3O8
- ThO2
- Total oxides

SOUTH

Fig. 2. Average oxide concentrations in kg/t for all vein rocks analysed

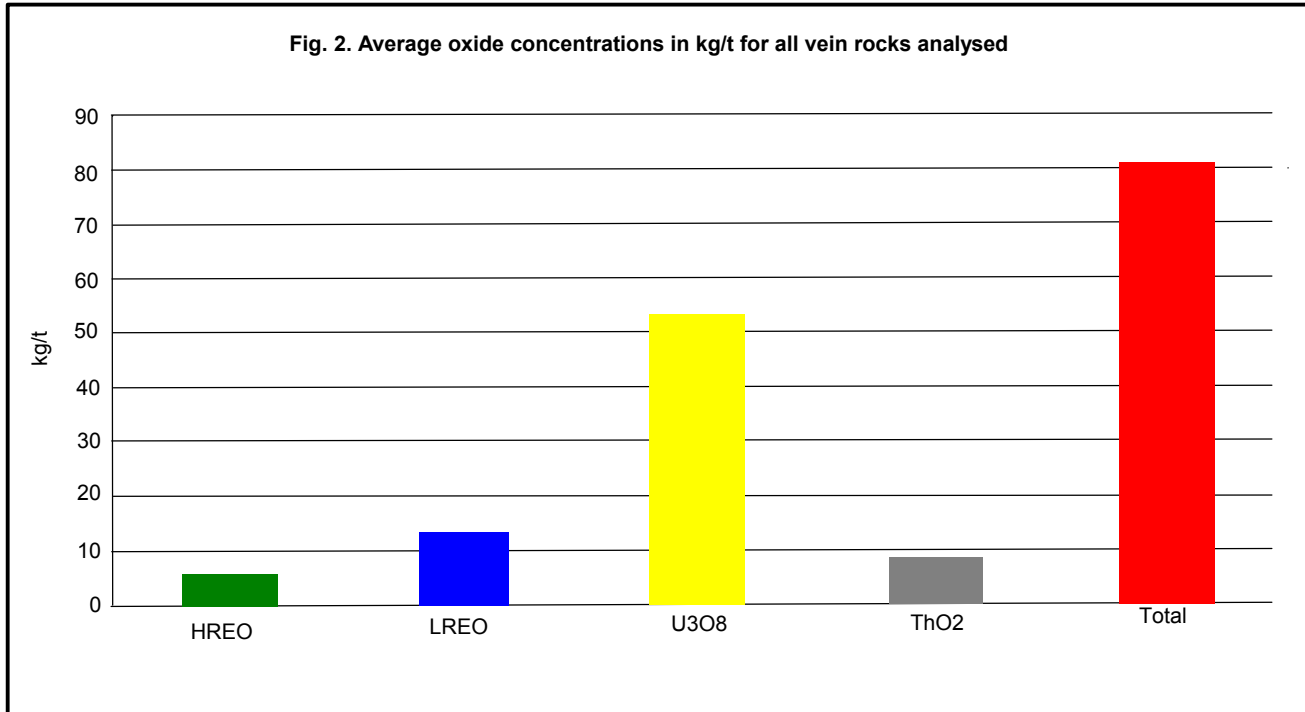


Table 2. WHOLE ROCK & POWDER XRF ANALYSES OF BROUGHTON CREEK ROCKS USING A NITON XRF ANALYSER

Sample 1	U-43	2	XRF Pwd	3	XRF Pwd	4	Xrf Pwd	6	CPN 21-22
401902	7672900	401705	7673632	401556	7673632	401436	7673186	402656	7675510
Gossan	ppm	K feldspar	ppm	ppm	Amphib	ppm	ppm	K Feldspar	ppm
Mo	0		0	0		0	0		0
Zr	0		581	521		137	130		719
Sr	124		31	29		158	128		18
U	0		0	0		0	0		0
Rb	44		321	287		97	62		420
Hg	46		0	0		0	0		0
Se	13		0	0		0	0		0
Th	0		29	36		0	0		15
Pb	0		0	0		0	0		0
As	0		0	12		0	0		0
Zn	0		0	24		35	47		35
Cu	85800		0	83		83	84		0
Co	0		0	0		0	0		0
Ni			0	132			136		
Fe	439400		6943	185300		68100	203700		22200
Mn	1885		75	2587		1564	2883		0
Cr	0		44	479		159	544		22
Ti	0		1699	2743		2512	3709		705
Sc	0		0	0		53	0		11
Ca	30800		931	2828		41900	44900		1389
K	2070		74100	65400		4966	11000		26800
S	0		0	0		1099	0		0

8	U-59	Xrf Pwd	9	U-35?	Xrf Pwd	10	U-60	Xrf Pwd	11	Xrf Pwd	11A	Xrf Pwd		
400534	7674080		400741	7674242		401063	7674035		400293	7673888	400385	7673780		
Andesite	ppm	ppm	Amphib	ppm	ppm	K feldspar	ppm	ppm	Amphib	ppm	ppm	Andesite	ppm	ppm
Mo	0	0		0	0		0	0		8	0		0	0
Zr	668	9		228	599		549	692		807	1027		636	760
Sr	26	12		580	32		20	20		84	22		62	60
U	10	0		125	0		0	0		0	0		13	13
Rb	7	0		51	87		89	86		291	300		17	19
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	0		0	0
Th	26	0		1395	36		30	28		26	35		18	25
Pb	0	0		179	0		0	0		24	0		0	0
As	0	0		0	13		0	0		0	0		0	0
Zn	0	0		49	0		0	0		27	35		15	17
Cu	0	62		62	74		0	33		0	0		0	0
Co	0	0		0	0		0	0		0	0		0	0
Ni					114			103						
Fe	280000	24100		173300	195600		14500	70700		42600	68400		28800	26900
Mn	133	2719		1773	1384		147	493		7292	1218		256	214
V	0	0		504	0		0	0		0	0		0	0
Cr	54	124		1183	683		35	384		53	169		79	65
Ti	3092	0		5469	1960		1159	2203		2636	5771		4495	3582
Sc	19	141		56	0		0	0		0	0		0	0
Ca	3306	317700		23900	4004		3561	7066		4889	10400		5122	8258
K	1966	953		5978	28300		18200	35800		43100	56900		7933	7416
S	0	0		0	0		0	0		0	0		0	0

12	U-62	Xrf Pwd	13	Cent west	Xrf Pwd	13A	Cent west	Xrf Pwd	14	U-63		15		Xrf Pwd
400290	7673823		399952	7673941		399952	7673941		399940	7675467		401597	7675497	
K feldspar	ppm	ppm		ppm	ppm	Quartz	ppm	ppm	Uranium	ppm		K feldspar	ppm	ppm
Mo	0	0		0	0		0	0		0			0	0
Zr	807	1028		704	691		0	17		0			681	564
Sr	27	13		33	33		14	10		36			11	13
U	0	0		0	0		35	17		40200			0	17
Rb	400	450		5	26		0	0		0			154	106
Hg	0	0		0	0		0	0		0			0	0
Se	0	0		0	0		0	0		0			0	0
Th	22	37		37	39		0	0		0			43	30
Pb	0	0		0	0		0	16		6607			0	0
As	0	0		0	8		0	0		692			0	0
Zn	0	25		14	0		0	0		96			15	17
Cu	0	53		0	43		0	58		0			42	80
Co	229	0		0	0		0	0		0			0	0
Ni		0			72			0						72
Fe	28900	38100		9780	61500		1000000	310000		6149			79700	67500
Mn	107	163		129	493		0	894		295			368	565
V	0	0		0	0		0	0		0			0	0
Cr	61	85		48	435		74	235		29			141	420
Ti	1883	4236		1671	3176		35500	64700		6973			8754	3822
Sc	0	0		0	0		80	0		12			0	0
Ca	2555	1307		3633	7370		2833	22700		460			1858	2435
K	17900	77800		1811	5069		0	2621		6949			30700	25400
S	0	0		0	0		0	0		0			0	0
W	0	0		0	0		0	0		693			0	0

15A		Xrf Pwd	15B		Xrf Pwd	16		Xrf Pwd	16A		Xrf Pwd	17		Xrf Pwd
401579	7675497		401579	7675479		401332	7675485		401332	7675485		400970	7675343	
Amphib	ppm	ppm	Calcrete	ppm	ppm	K alteratn	ppm	ppm	Gossan	ppm	ppm	K alteratn	ppm	ppm
Mo	0	0		0	0		0	0		86	290		0	ppm
Zr	48	119		9	19		580	979		0	27		890	937
Sr	427	760		311	305		12	16		14	16		14	17
U	0	0		0	0		0	0		65	129		0	0
Rb	33	99		0	6		355	421		0	0		420	422
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	7		0	0
Th	0	0		0	0		26	36		26	19		39	45
Pb	0	0		0	0		0	0		28	57		0	0
As	0	0		0	0		0	0		0	0		0	0
Zn	24	0		0	0		0	21		0	0		26	26
Cu	109	66		29	113		0	0		9674	10800		0	0
Co	0	0		0	0		0	0		0	0		278	0
Ni		0			0			73			103			0
Fe	64000	72600		2828	20500		32900	39900		32900	156600		52300	49600
Mn	1272	695		200	211		181	243		209	270		233	178
V	112	195		0	0		0	0		38	123		0	0
Cr	47	155		43	169		54	134		44	60		30	72
Ti	1325	9363		198	515		2307	3995		462	773		4764	3882
Sc	0	0		168	192		0	0		14	0		0	0
Ca	40500	62400		300900	272600		1110	2552		707	1747		1324	2388
K	3603	238000		558	1985		68300	84400		0	2383		83100	83100
S	0	0		0	0		0	0		0	0		0	0
W	0	0		0	0		0	0		0	0		0	0

17A		Xrf Pwd	18		Xrf Pwd	18A		Xrf Pwd	19		20		U-66	Xrf Pwd
400970	7675343		401041	7674755		401041	7674755		Not	analysed		401283	7673872	
K alteratn	ppm	ppm	K altertn	ppm	ppm	Gossan	ppm	ppm				K alteratn	ppm	ppm
Mo	0	0		0	0		0	0					0	0
Zr	810	982		847	687		130	970					580	747
Sr	17	19		30	36		10	52					20	26
U	0	0		0	21		39	14					12	0
Rb	323	367		86	78		0	44					32	60
Hg	0	0		0	0		0	0					0	0
Se	0	0		0	0		0	0					0	0
Th	23	27		26	33		12	22					25	30
Pb	0	0		12	0		15	0					0	0
As	0	0		0	0		0	0					0	0
Zn	27	39		15	22		0	0					0	0
Cu	0	0		0	191		24600	15600					0	33
Co	0	0		0	0		0	0					0	167
Ni		0			0			0						0
Fe	55500	47500		21200	43100		6691	33100					11400	25400
Mn	253	319		0	360		192	329					74	214
V	0	0		0	0		259	0					0	0
Cr	76	128		59	296		119	269					66	228
Ti	1141	3382		3815	3004		27000	7530					993	2856
Sc	15	0		0	0		33	0					0	0
Ca	1615	5365		1275	6742		0	7525					1930	6655
K	29800	79900		28400	29900		2041	6929					8640	12500
S	0	0		0	0		0	0					0	0
W	0	0		0	0		0	0					0	0

20A	U-66	Xrf Pwd	20B	U-66	Xrf Pwd	21	U-67	Xrf Pwd	22	Xrf Pwd	22A	Xrf Pwd		
401283	7673872		401283	7673872		400537	7678801		401982	7673450	401982	7673450		
Pit sample	ppm	ppm	Gossan	ppm	ppm	K alteratn	ppm	ppm	K & Fe alt	ppm	ppm	Alt Sst	ppm	ppm
Mo	0	0		0	73		0	0		0	0		0	0
Zr	252	474		0	167		145	135		132	141		303	664
Sr	25	58		5	21		29	70		248	332		15	18
U	17	39		0	0		0	0		0	0		0	12
Rb	80	42		30	256		90	141		586	287		15	17
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	0		0	0
Th	0	17		0	0		10	0		0	0		0	9
Pb	0	18		0	0		14	0		0	0		0	0
As	0	0		0	0		0	0		0	0		0	0
Zn	0	33		0	0		83	62		0	58		0	0
Cu	51	453		15100	23200		52	600		611	2915		0	31
Ni		0			110			0			95			0
Fe	11100	47100		93300	84000		149600	118100		32400	75400		2627	5650
Mn	456	1109		4190	1839		2188	1985		285	1267		0	117
V	119	320		59	148		374	222		94	161		0	42
Cr	0	79		0	52		0	140		133	232		39	76
Ti	22400	37600		1114	12400		15200	8140		3955	6076		404	1646
Sc	0	0		76	59		0	0		42	0		0	0
Ca	12300	58700		28700	41300		56100	53400		24200	53400		1177	3157
K	14000	6095		1262	33400		16400	23000		65100	38800		1760	3120
S	0	0		0	0		0	0		0	0		0	0
W	0	0		0	0		0	0		0	0		0	0

22B		Xrf Pwd	22C		Xrf Pwd	22D		U-72	Xrf Pwd	23		Xrf Pwd	23A		Xrf Pwd
402011	7673613		402011	7673613		402011	7673613			401739	7673649		401717	7673624	
Mica schst	ppm	ppm	Hematite	ppm	ppm	Soil	ppm	ppm		Cu gossan	ppm	ppm	Epidote Cu	ppm	ppm
Mo	0	0		98	90		0				13	113		64	222
Zr	338	387		2320	1459		545			390	100			0	52
Sr	172	10		350	352		33			93	80			869	530
U	39	50		7521	13000		0			0	108			0	19
Rb	155	183		0	0		62			308	290			0	0
Hg	0	0		0	0		0			0	0			0	0
Se	0	0		0	0		0			0	0			0	0
Th	11	0		336	206		14			14	0			0	0
Pb	0	0		2848	2890		0			0	27			0	20
As	12	0		0	0		0			0	0			0	0
Zn	0	47		390	364		51			0	0			0	0
Cu	46	0		337	321		57			3753	12900			1262	3855
Ni	0	0		698	845		0			0	0			0	0
Fe	126000	163800		141400	97600		65200			30300	97900			234600	187300
Mn	1431	1600		1840	1671		553			334	737			977	992
V	172	293		2046	3894		105			157	147			249	226
Cr	205	126		3116	4633		167			46	161			0	82
Ti	5834	10300		163700	194500		3976			10900	7307			317	5037
Sc	0	0		219	251		0			35	51			0	98
Ca	2059	3914		572	2595		4978			34500	26600			124400	67300
K	11200	14300		5070	9792		15000			36700	41400			0	992
S	0	0		0	0		0			0	0			0	0
W	0	0		0	0		0			0	0			0	0
Co	681	0		0	509		633			0	0			0	594

23B		Xrf Pwd	24		Xrf Pwd	24A		Xrf Pwd	24B		Xrf Pwd	25		Xrf Pwd
401700	7673650		401848	7673830		401840	7673804		401820	7673800		401746	7674015	
K alteration	ppm	ppm	Quartz	ppm	ppm	Alt volcs	ppm	ppm	Alt volcs	ppm	ppm	Silic amphi	Ppm	ppm
Mo	0	0		11	0		0	0		0	0		0	0
Zr	496	521		192	263		522	591		89	120		107	108
Sr	25	34		76	93		44	58		83	96		133	132
U	13	0		0	0		0	0		0	0		0	0
Rb	69	89		266	243		459	268		8	15		21	23
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	0		0	0
Th	20	21		0	0		0	0		0	0		0	9
Pb	0	0		16	0		0	0		0	0		0	0
As	0	0		0	0		0	0		0	0		0	0
Zn	15	0		23	58		0	22		26	30		30	52
Cu	0	72		702	553		0	301		0	0		393	47
Ni		75			0			0			0			157
Fe	13200	28000		70300	94100		5268	55400		79200	86200		78600	105800
Mn	0	297		616	808		155	1054		1369	1377		958	1683
V	0	0		155	280		0	129		129	126		70	120
Cr	60	268		69	129		32	77		168	224		126	428
Ti	1811	2477		5781	19200		3340	8729		2384	4233		2227	4122
Sc	0	0		0	0		0	0		58	93		61	0
Ca	2270	3738		32400	39800		1618	23100		36200	48300		34100	49400
K	36700	38900		47100	44800		81900	50600		3182	3997		3494	5005
S	0	0		0	0		0	0		0	0		0	0
W	0	0		0	0		0	0		0	0		0	0
Co	0	0		0	0		0	0		0	0		0	0

25A	U-85	Xrf Pwd	26	U-83	Xrf Pwd	27	Xrf Pwd	27A	Xrf Pwd	28	Central 1	Xrf Pwd		
401740	7674010		401873	7673920		401964	7674207	401967	7674223	401934	7674123			
K alteration	ppm	ppm	K alteration	ppm	ppm	K alt amph	ppm	ppm	?	ppm	ppm	K alt amph	ppm	ppm
Mo	0	0		0	0		0		0	0	0		0	0
Zr	556	545		64	83		427	268		277	300		273	219
Sr	24	22		0	306		124	166		109	38		114	93
U	16	11		0	0		0	0		0	0		0	0
Rb	32	22		332	255		176	195		222	185		110	163
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	0		0	0
Th	23	34		0	0		0	0		12	0		16	0
Pb	0	0		0	0		0	0		0	12		0	0
As	0	0		0	0		0	0		0	0		0	0
Zn	0	0		22	26		30	24		28	35		39	33
Cu	0	0		0	39		67	78		38	0		144	128
Ni		0			87			0			0			0
Fe	11500	22900		38800	81800		57700	146300		58100	71800		97400	102300
Mn	95	131		314	970		564	1284		666	1089		927	1028
V	0	0		77	159		182	345		177	229		294	299
Cr	69	225		91	274		48	0		37	66		219	121
Ti	2202	2283		1273	3059		10300	12400		9980	13200		4717	13200
Sc	0	0		0	0		0	0		49	84		73	0
Ca	2552	4641		37200	58400		42200	62700		33800	58100		32100	45300
K	14400	4113		27100	29400		40100	24500		31100	30500		6908	28000
S	0	0		890	0		0	0		0	0		1656	0
W	0	0		0	0		0	0		0	0		0	0
Co	0	0		0	0		295	0		0	0		0	0

29	Central 1	Xrf Pwd	30	U-88	Xrf Pwd	31	Central 1	Xrf Pwd	32		Xrf Pwd	32A		Xrf Pwd
401902	7674098		401796	7674070		401892	7674097		402125	7674252		402125	767425	
K alteration	ppm	ppm	alt andesite	ppm	ppm	K alteration	ppm	ppm	Gossan	ppm	ppm	Malachite	ppm	ppm
Mo	0	0		0	0		0	0		105	107		0	25
Zr	24	109		0	7		299	177		140	48		301	320
Sr	7	89		22	12		37	45		67	105		41	54
U	29	58		0	0		90	0		143	224		0	39
Rb	76	644		554	663		423	418		80	30		319	282
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	0		0	0
Th	0	0		0	0		15	0		34	32		0	0
Pb	149	30		180	40		35	23		28	87		0	0
As	0	0		33	13		0	0		0	0		0	0
Zn	54	56		0	15		28	15		125	0		0	0
Cu	300	166		264	50		49	0		14600	12000		37200	53600
Ni		0			0		90	0			0			0
Fe	94000	77300		6342	16200		20300	21300		290300	681800		61900	99500
Mn	4057	1059		777	133		2721	555		764	1313		985	1687
V	114	99		53	45		0	0		157	216		114	208
Cr	90	138		40	127		153	160		69	224		124	168
Ti	1382	4674		440	204		39400	7630		3232	1483		893	2112
Sc	108	44		0	0		0	0		35	0		0	0
Ca	39800	21400		130600	19900		30600	14100		2520	4059		1423	2788
K	7063	53500		33800	97700		44600	71400		6322	6832		55500	58700
S	0	0		0	0		0	0		0	0		0	0
W	0	0		0	0		0	0		0	0		0	0
Co	0	0		0	0		0	0		3151	0		0	0

33		Xrf Pwd	33A		Xrf Pwd	33B		Xrf Pwd	34		Xrf Pwd	34A		Xrf Pwd
401350	7673374		401350	7673374		401350	7673374		401526	7674369		401526	7674380	
Qtz vug	ppm	ppm		ppm	ppm	Hematite	ppm	ppm	K alteration	ppm		K & Fe alt	ppm	
Mo	0	0		0	0		0	12		0			0	0
Zr	566	671		563	684		92	56		93	213		194	198
Sr	27	29		26	29		0	15		1513	372		208	111
U	18	25		15	0		26	26		0	0		0	0
Rb	96	90		9	51		47	103		138	329		622	433
Hg	0	0		0	0		0	0		0	0		0	0
Se	0	0		0	0		0	0		0	0		0	0
Th	26	27		47	33		53	21		0	0		16	22
Pb	0	0		0	0		37	30		21	0		0	0
As	0	0		0	0		110	72		0	0		0	0
Zn	0	25		0	16		0	0		0	35		53	45
Cu	30	661		0	178		0	93		0	401		73	135
Ni		0		0	0			0			0			0
Fe	17900	30200		22400	26000		1000000	695000		96300	135000		48900	74500
Mn	231	270		429	186		1736	990		752	951		1223	990
V	0	0		200	64		250	0		239	349		241	230
Cr	50	177		478	163		0	0		0	113		0	133
Ti	1823	2948		637	2575		3406	9057		1471	9732		8380	13500
Sc	0	0		22	0		86	0		132	0		0	0
Ca	3042	5146		5688	6081		0	1068		92100	50800		44900	31800
K	28200	29000		3347	23000		3143	20100		2221	43300		58200	46700
S	0	0		0	0		0	0		0	0		0	0
W	0	0		0	0		0	0		0	0		0	0
Co	0	0		0	0		0	0		0	0		0	0

34B		Xrf Pwd	35		Xrf Pwd	36		Xrf Pwd	37		Xrf Pwd	38		Xrf Pwd
401526	7674380		401612	7674479		400621	7675918		400592	7675861		400714	7675968	
Hematite	ppm	ppm		ppm	ppm	Cu gossan	ppm	ppm	Cu gossan	ppm	ppm	Gossan	ppm	ppm
Mo	0	0		0	27		9	17		0	39		70	32
Zr	0	0		224	227		9	21		0	0		0	46
Sr	0	20		38	54		4	5		0	26		0	21
U	36	0		0	26		0	14		0	0		29	45
Rb	16	0		304	179		5	6		0	8		0	0
Hg	0	0		0	0		0	0		138	0		0	0
Se	0	0		0	0		0	0		34	0		0	0
Th	13	41		0	14		0	0		0	28		0	0
Pb	0	91		0	0		0	0		0	28		78	61
As	0	0		0	0		0	0		0	0		0	0
Zn	0	0		41	0		0	0		0	0		0	0
Cu	1332	2182		175	4885		33700	123800		431300	102700		0	8874
Ni		0		0	0			147			0			0
Fe	2000000	2000000		66300	127600		65700	91900		237800	511200		18700	773100
Mn	7130	1791		616	965		386	325		778	677		1340	655
V	931	1136		175	315		143	176		91	139		0	208
Cr	0	0		76	140		56	103		0	76		0	0
Ti	11200	8680		7427	11800		1832	1348		1368	583		0	0
Sc	79	0		51	0		0	19		0	0		110	0
Ca	784	1872		24400	45900		1782	2827		1934	3077		0	2135
K	3477	3078		29100	30300		2825	1330		2957	1762		0	0
S	0	0		0	0		0	0		0	0		0	0
W	0	0		0	0		0	0		0	0		0	0
Co	0	0		0	0		0	0		1230	0		0	0

38A		Xrf Pwd	39		Xrf Pwd	40		Xrf Pwd	40	
400734	7675968		400666	7675970		400650	7675950		400650	7675950
Fe altered	ppm	ppm	Poly silica	ppm	ppm	Alt volcs	ppm	ppm	Repeat ass	ppm
Mo	0	0		0	0		0	0		0
Zr	980	741		0	0		569	703		615
Sr	64	64		77	98		15	17		16
U	9	0		0	0		0	18		19
Rb	17	9		0	0		135	194		156
Hg	0	0		22	0		0	0		0
Se	0	0		0	0		0	0		0
Th	38	25		0	0		28	21		23
Pb	0	0		0	0		0	0		0
As	0	0		0	0		0	0		0
Zn	41	19		0	0		26	15		36
Cu	894	812		22900	654		41	76		0
Ni		0			0		56	0		0
Fe	51600	50900		43400	7130		60000	27100		67100
Mn	685	260		863	843		911	284		414
V	0	74		0	0		0	0		0
Cr	145	99		0	66		56	79		64
Ti	7466	3738		0	0		4015	4014		4028
Sc	0	0		0	0		0	0		23
Ca	17700	9803		418800	563400		2080	4990		2884
K	2471	1634		0	0		10800	47500		19100
S	0	0		5224	0		0	0		23
W	0	0		0	0		0	0		0
Co	0	0		0	0		0	0		0