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**Assessment Report**

describing

**Exploration mapping and ground geophysical surveys**

At the

**Pain Property**

Pain 1-34          YC49225-YC49258

NTS 106E/02  
Latitude 65°09'N, Longitude 134°54'W  
in the Mayo Mining District  
Yukon Territory

Prepared by  
Cash Minerals Limited

for

Cash Minerals Ltd. and Twenty-Seven Capital Corp.  
by

Russell Smits M.Sc.  
February 2008

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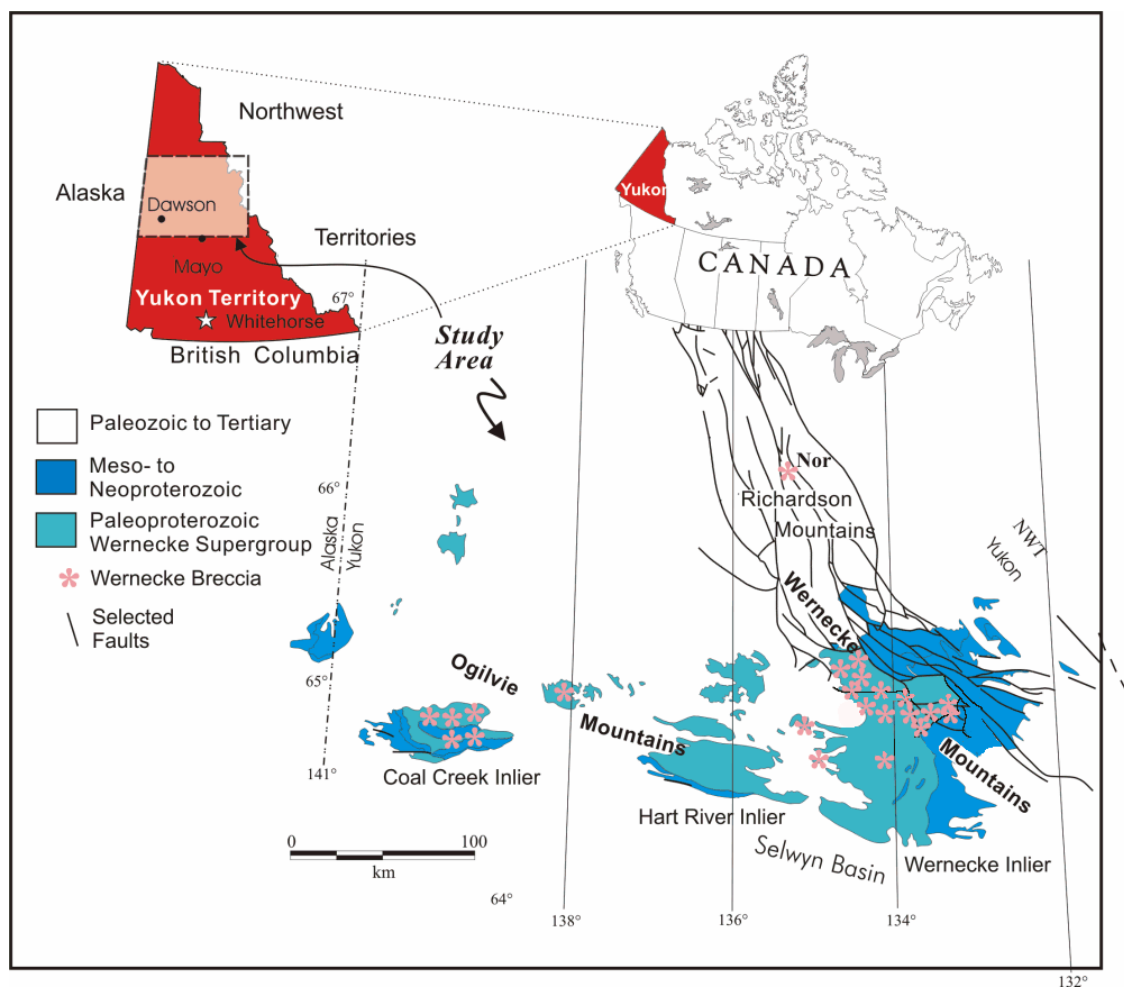
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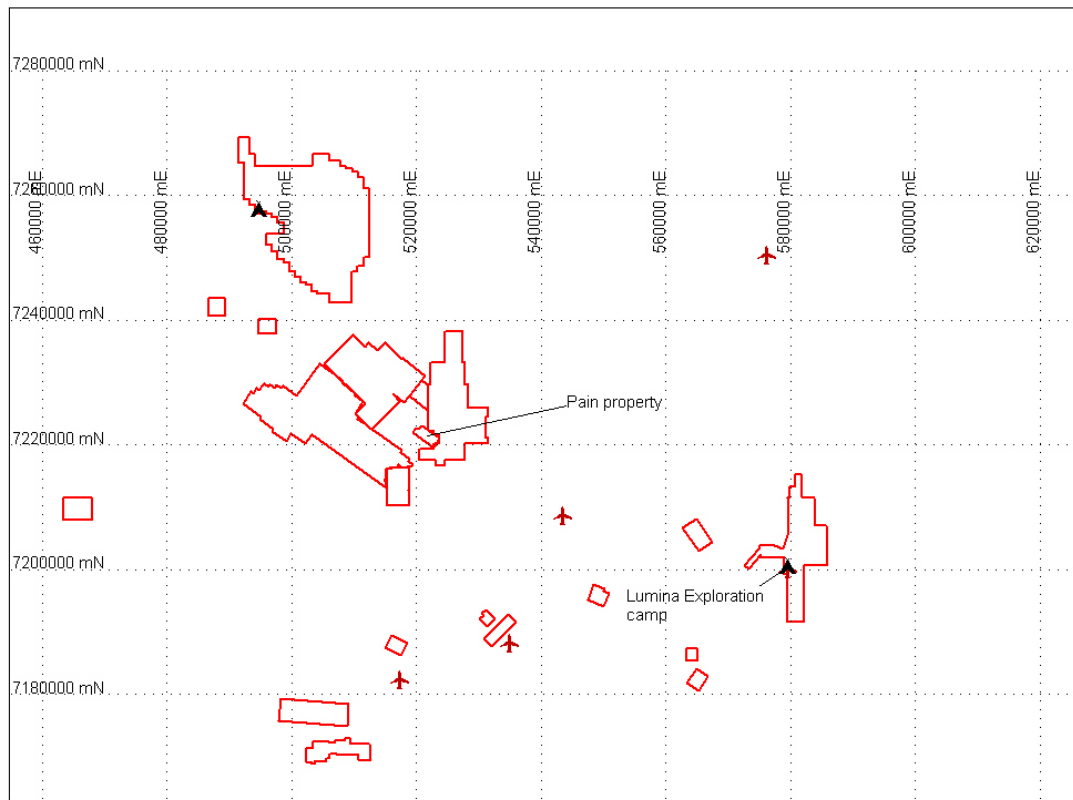
## Introduction

The Pain property hosts iron oxide copper-gold (IOCG) mineralisation in discordant breccia bodies and Uranium in younger veins and fractures. Twenty-Seven Capital Corp. staked the property in March 2006 to cover pitchblende bearing float occurrence discovered in 1976. It and 18 other properties in the Wernecke Mountains, figure 1, owned by Twenty-Seven are under option to Cash Minerals Ltd. as part of the Yukon Uranium Project.



**Figure 1:** Regional location and geological setting of the Werneckes district.

Exploration work in 2007 comprised of mapping and soil sampling to define a potential target. The work was based out of the Lumina camp 61km to the east of the property, see figure 2. Later soil sampling was based out of the Igor camp 10km to the south. This work was conducted with daily helicopter support.



**Figure 2:** Location of the Pain property and the Lumina property which acted as a base for the Pain operations for the mapping and soil sampling.

### *The Property Location, Claim Data and Access*

The property is located in east-central Yukon at latitude 65°09'N and longitude 134°54'W on NTS map sheet 106E02. It comprises of 34 minerals claims covering approximately 340 hectares. The claims were staked under the Yukon Quartz Mining Act and are registered with the Mayo Mining Record in the name of Cash Minerals Ltd, who holds the land under option from Twenty-Seven Capital Corp as part of the Yukon Uranium Project.

Claim Name	Grant Number
Pain 1-34	YC49225-YC49258

**Table 1:** summary of claim registration information, expiry date does not include 2007 work which has not been filed for assessment credit.

The Pain property is located 175km northeast of the Klondike Highway and Silver Trail. Mayo is situated 407km by road north of Whitehorse. The closest road access to the property is at McQuesten Lake which lies 87km by road northeast of Mayo and 11km southwest of the Pain property. From McQuesten Lake the Wind River Trail, an abandoned winter road extends northward towards the Peel Basin. This winter road, the Wind River Trail, passes within 4km of the Pain property. A cat trail branches off the



companies, notably Noranda Minerals Ltd. and Pan Ocean Oil Ltd. Wernecke Joint Venture resumed exploration in 1978 after Eldorado Nuclear began to drop its optioned properties. Systematic Uranium exploration by various parties continued in the Wernecke Mountains until 1982, when uranium prices fell (Eaton and Wober, 2005).

Another wave of regional and property exploration occurred in the mid 1990's when Westmin Resources Ltd. and Newmont Exploration Limited explored some of the Wernecke Breccias for copper and gold using the IOCG model.

### ***Property History***

Mineralisation comprising hematite-rich float was first discovered in the Wernecke mountains by prospectors in 1898. Copper and gold occurrences were identified and staked prior to the 1960's, but no serious exploration was undertaken. A wave of exploration spurred by the discovery of the Crest Iron Deposit and the construction of the Wind River Trail led to the discovery of additional copper occurrences in the early- to mid-1960s (Deklerk and Traynor, 2004).

Uranium was first discovered in the Wernecke Mountains in 1974 at the Igor Property by Ogilvie Joint Venture (Chevron Canada Ltd, Marietta Resources International Ltd and Aquitaine Company of Canada Ltd). The following summer Wernecke. A helicopter borne radiometric survey was conducted by the Wernecke Joint Venture (Chevron and Aquitaine) throughout the district and has been used to claim new ground. Most of these occurrences are associated with large iron oxide-rich breccia bodies that are informally known as the Wernecke Breccias.

The Igor Property was staked in 1974 by Ogilvie Joint Venture. In 1975, geological mapping, grid soil sampling, rock-hip sampling and ground and airborne surveys were conducted. This work identified several uranium and copper showings and outlined extensive soil geochemical anomalies (Archer, 1975).

The property was optioned to Eldorado Nuclear in 1976 but it did not receive significant work. In 1979 Wernecke Joint Venture performed additional prospecting and drilled five holes totaling 485.8 m (Schmidt and Archer, 1979). The following year the joint venture conducted: detailed geological mapping; more prospecting; radiometric surveys; hand-trenching; and 1969 m of diamond drilling in 17 holes (Archer and Eaton, 1980). Continued exploration in 1981 included extensive induced polarization, VLF and magnetic surveys plus another small Max-Min survey (Archer and Eaton, 1981 and Hendrickson, 1981). Finally, in 1982 the joint venture drilled another eight holes totaling 1043.4 m (Eaton and Archer, 1982).

The property was sold to Archer Cathro in 1992 and later that year BHP optioned and briefly examined it. In 1995 Archer Cathro sold the property to Nordac Resources Ltd which later became Strategic Metals Ltd. Aside from minor reclamation work done in 1997, the property was dormant until Strategic staked additional claims in fall 2004. Strategic sold its interest in the property to Twenty-Seven in December 2004. in summer

2005, a total of 1120.74 m of diamond drilling was completed in seven holes at the Igor property (Dumala, 2005). The Pain property occurs to the north of the Igor property.

### ***Physiography and Geomorphology***

The Pain property is located in an alpine setting along the divide between the Bonnet Plume and Win River drainages. It covers a complex system of ridges, broad glacial valleys and cirques immediately southeast of the Bonnet of the Bonnet Plume Plateau. Local elevations range from 550m near the Bonnet Plume Plateau to 1600m atop a peak at the western edge of the property. There is no commercial timber on the property. Vegetation consists of grasses, moss and buckbrush with scattered clumps of stunted spruce.

The climate in the Wernecke Mountains is typical of northern continental regions with long, cold winters, truncated fall and spring seasons and short, cool summers. Average temperatures in January are about -25°C and in July about 10C. Total annual precipitation is approximately 30cm, mainly occurring as rain during the summer months. Maximum snow pack averages about 40cm. Although summers are relatively mild, arctic cold fronts occasionally cover the area and snowfall can happen in any month. Sunlight ranges from 22hrs per day in late June to approximately six hours per day in late December. The property is relatively snow-free from late May until late September.

### ***Geological Setting***

The Wernecke, Hart River and Coal Creek Inliers are exposed within the Cordilleran fold and thrust belt of northwestern Canada (figure 1) (Thorkelson *et al.* 2005). Deformation associated with Cordilleran orogenesis has largely shaped the modern geological configuration of the region. The Canadian Cordillera formed along the western margin of ancestral North America from the Devonian to the Early Cainozoic (Cook *et al.* 2004). Mesozoic – Cainozoic cordilleran orogenesis resulted in the accretion of several allocthonous and pericratonic terranes that incorporated existing Paleoproterozoic terranes with Paleozoic marginal strata, and lead to the formation of syn-orogenic and post-orogenic igneous and sedimentary successions (Gabrielse *et al.* 1991).

Wernecke Supergroup strata are geographically separated from cratonic North America within a series of Inliers (figure 1); thought to represent large-scale structural culminations that have been preferentially exhumed (Thorkelson *et al.* 2005). Smaller outcrops of Early Proterozoic strata are considered to be the cores of folds produced during late Mesozoic shortening (Laramide orogenesis) (Norris 1984). Surrounding the inliers are younger Neoproterozoic to Cenozoic rocks that now comprise part of the Mackenzie platform (figure 1) (Thorkelson *et al.* 2005). This sub-region of Cordilleran foreland belt is associated with Neoproterozoic to Paleozoic platformal assemblages (figure 1) (Gordey & Anderson 1993; Norris 1997). This platformal sequence is juxtaposed to the south of the Dawson Fault by the Selwyn Basin (figure 1), a package of basinal strata also of Neoproterozoic to Lower Paleozoic age (Gordey & Makepeace 1999).

The Wernecke Inlier is crosscut by the Richardson fault array (figure 1) (Thorkelson 2000), a series of deep-seated structures that are continuous for over 600 km that mark the boundary between the deformed Cordilleran fold and thrust belt and the relatively



undeformed Northern Interior Platform (Delaney 1981; Norris 1997; Thorkelson 2000). This region represents a zone of weakened crust within the North American craton – possibly an Early Proterozoic terrane boundary (Thorkelson 2000) – that has been re-activated during the Late Proterozoic and the Tertiary (Hall & Cook 1998) manifested as strike-slip, thrust and normal faults (Norris 1981; Hall & Cook 1998). To the south, the Richardson Fault Array splays to become the Fairchild Lake Fault (Norris 1981). This fault is a major structure in the Wernecke Inlier that intersects strata of the Wernecke Supergroup (Thorkelson 2000). The Fairchild Lake Fault has been interpreted as a normal fault (with possible minor strike-slip motion) with an east-side-down sense of movement (Thorkelson 2000). Early fault activity occurred during the Middle to Late Proterozoic, given by the differential preservation of Early and Mesoproterozoic strata on adjacent sides of the Fairchild Lake fault (Thorkelson 2000). Fault displacement and erosion associated with the Fairchild Lake Fault could control the configuration of many Proterozoic and Paleozoic successions in the region (Thorkelson 2000).

**The Wernecke Supergroup** is comprised of a roughly 13 km thick package of marine sedimentary and carbonate sediments (Delaney 1981) deposited prior to 1.71 Ga (Thorkelson 2000). The Wernecke Supergroup consists of three major successions known from oldest to youngest as the Fairchild Lake Group, Quartet Group and the Gillespie Lake Group (Delaney 1981; Thorkelson 2000), that are dominated by mudstone, siltstone and dolomite (Thorkelson *et al.* 2001b).

**Fairchild Lake Group (FLG)** sediments represent the oldest supracrustal sedimentary succession within the Cordillera, and forms the basal section of the Wernecke Supergroup (Thorkelson 2000). The lower contact of the Fairchild Lake Group is nowhere exposed, but is thought to be structurally decoupled with the crystalline basement as a result of contractional deformation (Thorkelson 2000). Thorkelson (2000) differentiated the ~ 200 m thick upper FLG (uFLG) from the ~ 4.6 km thick lower FLG on the basis of lithological character. Lower FLG strata are generally composed of weakly to moderately metamorphosed (Thorkelson *et al.* 2003) finely laminated to cross-laminated siltstone, mudstone and fine-grained sandstone with locally intercalated dolomite (Thorkelson 2000). Upper FLG sediments generally consist of monotonous alternating sequences of dolomite and siltstone (Thorkelson 2000).

Fairchild Lake Group strata often exhibit a variably intense slaty cleavage (Thorkelson *et al.* 2003), with local zones of higher strain – often the cores of tight folds – producing chlorite and muscovite-rich phyllite to fine grained chlorite-muscovite-chlorite schist, often with additional chloritoid or garnet porphyroblasts (Thorkelson *et al.* 2003).

**The Quartet Group (QG)**- conformably overlies the uppermost Fairchild Lake Group and represents the middle sequence of the Wernecke Supergroup (Thorkelson 2000; Hunt *et al.* 2005). The ~ 5 km thick sequence has been divided into a basal Q-1 unit and an overlying Q-2 unit by Delaney (1981). Q-1 consists of black carbonaceous shale in conformable with contact with an upward coarsening sequence of intercalated pyritic shale, siltstone and fine grained sandstone termed Q-2 (Delaney 1981). Within the uppermost Q-2 sequence, this fine grained sandstone becomes interlayered with buff-brown weathering silty dolomite; indicating the onset of Gillespie Lake Group sedimentation (Thorkelson 2000).

**The Gillespie Lake Group (GLG)**- conformably overlies the upper Quartet Group and represents the uppermost layer of the Wernecke Supergroup as ~ 4 km of shallow water sediments (Delaney 1981). Delaney (1981) subdivided the GLG into seven conformable units known from bottom to top as units G-TR and G-2 to G-7. The basal G-TR unit is delineated from the upper QG on the pronounced increase in the abundance of buff-weathering dolomite that appear as distinctive alternating bands of dolomite and siltstone (Thorkelson 2000). The remainder of the succession (units G2-G7, of Delaney, 1981) is composed of orange-weathering dolomite and silty dolomite sediments; interpreted as deposition in a shallow to intertidal environment (Thorkelson 2000).

**Wernecke Breccia (WBX)**- Voluminous hydrothermal activity occurred in the Yukon during the Early to Middle Proterozoic, that resulted in the formation of extensive zones of fragmental rocks within the Wernecke Supergroup, termed the Wernecke Breccia (figures 1) (Thorkelson *et al.* 2001b). Brecciation occurred in the Wernecke inlier and 300 km to the west in the Coal Creek inlier, hosted predominantly within strata of the Wernecke Supergroup (Figure 1) (Thorkelson *et al.* 2001b). Breccia bodies are present as numerous curvilinear belts over an area of ~ 48,000 km<sup>2</sup> (figure 1) (Archer & Schmidt 1978; Delaney 1981; Bell 1986b; Lane 1990; Wheeler & McFeely 1991; Thorkelson 2000).

Wernecke Breccia typically consists of variably metasomatised angular to sub-angular clasts, surrounded by a matrix of hydrothermal minerals (Thorkelson *et al.* 2001b). Specular hematite is abundant both within fractures and as disseminations within most breccia occurrences (Thorkelson 2000; Thorkelson *et al.* 2001b)

Breccia clasts are sourced predominantly from Wernecke Supergroup dolomites, siltstones, slates, phyllites and schists (Thorkelson 2000). Where brecciation has intersected the Bonnet Plume River intrusions, breccias contain locally abundant igneous clasts. Megaclasts and clasts of volcanic material are found at one locality (Slab occurrence) where brecciation engulfed the Slab volcanics (Thorkelson 2000). Breccia matrix is generally composed of milled and small fragments of clasts and wall rock, cemented by abundant hydrothermally precipitated minerals including: hematite, quartz, carbonate, chlorite, feldspar and mica (Thorkelson 2000; Thorkelson *et al.* 2001b).

Metasomatism associated with the Wernecke Breccia was initiated before and concluded after the main breccia forming event, and is commonly preserved as metasomatic aureoles overprinting breccia and surrounding country rock (Thorkelson *et al.* 2001b). Metasomatic effects are variable regionally, but typically result in the overprinting of clasts and matrix via the precipitation of a range of minerals including: hematite (earthy and specular), magnetite, dolomite, siderite, chlorite, titanite, brannerite and chalcopyrite (Thorkelson *et al.* 2001b).

U-Pb dating of titanite produced an age of ~ 1.6 Ga for the earliest phase of brecciation (Thorkelson *et al.* 2001b). Although this event is recognized as the dominant breccia forming event, at least two other phases of hydrothermal activity occurred at 1.38 and 1.27 Ga (Thorkelson *et al.* 2005).

**Bonnet plume River intrusions (1.71 Ga)**- The Bonnet Plume River intrusions represent the oldest intrusive rocks in the Yukon (figure 1) (Thorkelson 2000; Thorkelson *et al.* 2001b). Intrusion occurred in the form of short dikes and stocks of fine to medium-grained diorites and gabbros (with minor syenite and anorthosite) (Thorkelson *et al.* 2001a) that invaded the Wernecke Supergroup (Delaney 1981; Norris & Dyke 1997;

Thorkelson 2000). This intrusive relationship allows the Bonnet Plume River Intrusions to constrain the minimum age of Wernecke Supergroup deposition and preceding Wernecke basin formation (Thorkelson *et al.* 2001a). Dating of zircon obtained from several Bonnet Plume River Intrusions samples yielded U-Pb ages of ~ 1.71 Ga, providing a lower bracket age for Wernecke Supergroup deposition of > 1.71 Ga (Thorkelson *et al.* 2001a).

The Bonnet Plume River Intrusions are predominantly found as clasts and enclaves – millimeters to hundreds of meters in length – within breccia bodies that formed during voluminous hydrothermal-phreatic activity at ca. 1.6 Ga (Thorkelson *et al.* 2001b). These events lead to the development of regional zones of fragmental rock known as the Wernecke Breccia (Laznicka & Edwards 1979; Bell 1986b; Laznicka & Gaboury 1988. Bonnet Plume River Intrusions also show an association with normal faulting that probably represents syn-magmatic extensional faulting within the Wernecke Mountains (Thorkelson *et al.* 2001a).

**Slab Volcanics (1.71 Ga?)**-The Bonnet Plume River Intrusions are often considered to have a possible co-magmatic extrusive equivalent known as the Slab Volcanics (figure 1) (e.g. Thorkelson 2000; Thorkelson *et al.* 2001a; Thorkelson *et al.* 2005). The Slab volcanics comprise of a sequence of ~ 40 mafic to intermediate thin lava flows, preserved entirely as clasts, including one 250 m thick megaclast (Thorkelson *et al.* 2001a). This megaclast is hosted within an expansive zone of Wernecke breccia; present within schist and metasediment of the Fairchild Lake Group (Thorkelson *et al.* 2005).

### ***Regional Mineralisation***

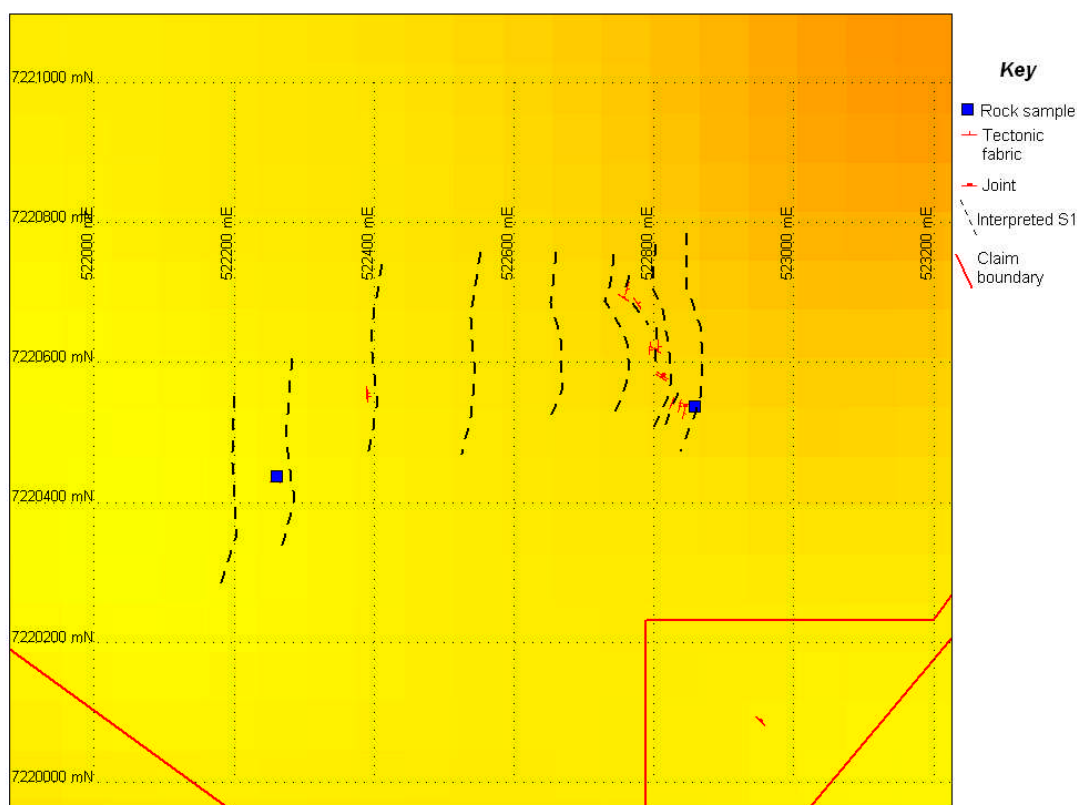
Sixty-five Wernecke breccia bodies within the Wernecke and Ogilvie Mountains have been identified to host prospective IOCG style mineralisation (Archer & Schmidt 1978; Deklerk & Traynor 2005). Mineralisation occurs both within breccia, and in the surrounding rock, as disseminations and veins that record multiple phases of mineralisation (Hunt *et al.* 2005). Common IOCG phases include: magnetite, hematite, chalcopyrite, pitchblende, brannerite, cobaltite and gold (not visible but reports in assay with copper) (Hunt *et al.* 2005).

Mineralised Wernecke breccia appears to show similarities with mineralized breccia associated with the giant Olympic Dam deposit (Thorkelson *et al.* 2005). This correlation is significant for paleogeographic reconstructions that link Australia and Laurentia during the early Proterozoic (e.g. Bell & Jefferson 1987; Dalziel 1991; Moores 1991; Thorkelson *et al.* 2001b; Betts *et al.* 2008).

The mineralisation is commonly copper-gold and less frequently uranium and cobalt. This mineralisation occurs in four of styles: (1) disseminations in albite-quartz-pyrite-chalcopyrite veinlets/replacement veins within sedimentary clasts in the Wernecke Breccia and as rare massive sulphide clasts, (2) disseminations and blebs in breccia matrix, locally forming the entire matrix, (3) as blebs up to 5cm across or disseminations in calcite-chlorite-muscovite-pyrite-chalcopyrite-hematite ± magnetite, quartz-hematite-pyrite-chalcopyrite and calcite ± chalcopyrite veins that cross-cut breccia and the Wernecke Supergroup and (4) as blebs or disseminations in quartz-chalcopyrite ± feldspar ± muscovite ± hematite veins that are parallel to and cross-cut calcareous layers in siltstone (Hunt *et al.* 2005).

### Property Geology

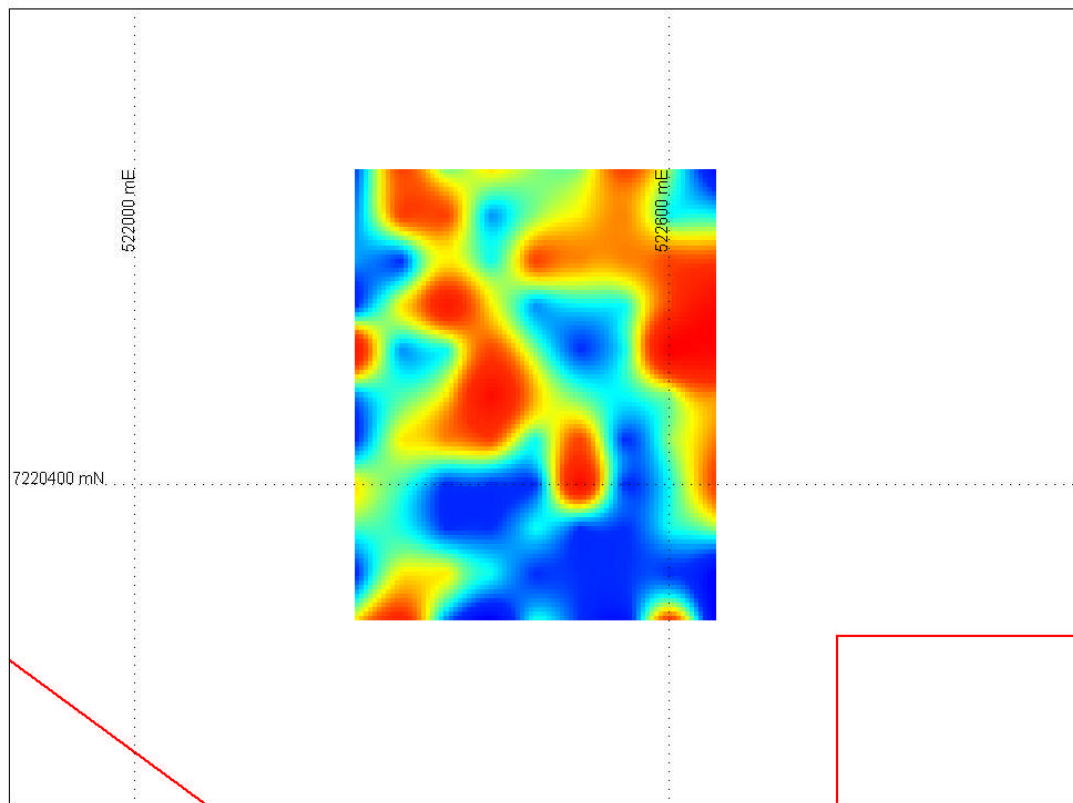
Mapping in the Pain region has identified a deformed and altered region occurring in the southern region of the Pain property, highlighted from the geophysical survey, figure 4. The main lithology observed in the area is pervasively chlorite-muscovite altered sediment. This lithology has preserved laminations in regions where the alteration is less dominant. The presence of these interbedded laminations is likely to reflect the original bedding textures. The main structural feature of the laminations is a north trending tectonic fabric, which is intersected by a later stage brittle jointing. Regions of dilation and jointing are observed with abundant muscovite.



**Figure 4:** Interpreted structure and sample sites on the mapped target on the Pain property, the host lithology is pervasive chlorite-muscovite altered sediments.

Easting	Northing	Sample #	Locality	Description
522858.4	7220537	1102	outcrop	Strongly altered sediments with localised areas of chlorate alteration, Fe-sericite and carbonate alteration is pervasive in the host and aggregates of specular hematite up to 2cm occur
522261.2	7220437	1103	outcrop	Altered sediments with 3mm jarasite rich areas in a pervasive chlorite-muscovite altered matrix

**Table 2:** Samples collected and sent to ALS for geochemical assays, assays in appendix 2.



**Figure 5:** ground scintillometer grid for the mapped region of the Pain property.

### ***Property Mineralisation and Geochemistry***

In the south eastern region of the mapped area is a gossanous outcrop occurring on a steep slope. This region is made up of steeply dipping layers with minor movement along the relict bedding planes. This region has disseminated jarosite aggregates up to 3mm wide occurring in a region with open parasitic folds plunging to the north, with the laminations dipping to the east.

The alteration observed and the structural controls are consistent with an epithermal system. There were no scintillometer anomalies observed in outcrop, and the presence of disseminated jarosite is consistent with Au-Cu mineralisation. Two rock chip samples have been taken from outcrop to test for this mineralisation, though no anomalous results were returned.

***Discussion and Recommendations***

Mapping and sampling in the south has failed to identify any targets that need further work. Minor geophysical anomalies have been identified from the ground radiometric survey, though no mineralisation has been observed in mapping these areas. The potential for the Pain property in the future is for mapping and minor target identification in the northern regions of the property.

Respectfully submitted,  
Cash Minerals Limited

Russell Smits, M.S.c

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***Appendix 1***

I, Russell Smits, exploration geologist, with a business and residential address in Vancouver, British Columbia, do hereby certify that:

1. I graduated in 2005 from Monash University with a Bachelor of Science degree, majoring in geology and a Masters degree in Economic Geology
2. From 2005 to present I have been actively engaged in the Mineral Exploration in Australian and Canadian minerals provinces
3. I personally participated and oversaw the fieldwork reported herein

Russell Smits, M.S.c.

## *Appendix II*

Rock geochemical data from ALS for samples collected from the Pain Property  
All samples assayed for major and trace elements by ME-MS61, besides Au which was  
assayed via Ion Coupling Plasma Au-ICP21

Sample #	1102	1103
Ce ppm	1.94	2.82
Co ppm	220	128
Cr ppm	76.2	46.3
Cs ppm	226	49
Cu ppm	10.55	2.14
Fe %	2.8	19.1
Ga ppm	7.31	3.92
Ge ppm	15.3	19.9
Hf ppm	0.29	0.18
In ppm	6	2.6
Ag ppm	0.153	0.03
K %	0.17	0.01
La ppm	1.39	1.44
Li ppm	113	62.6
Mg %	28.4	32.4
Mn ppm	5.39	1.86
Mo ppm	6310	287
Na %	2.55	1.39
Nb ppm	0.03	2.71
Ni ppm	73.9	7.9
P ppm	177.5	32.6
Al %	3610	740
Pb ppm	3.41	7.72
Rb ppm	4.2	3
Re ppm	101.5	86.4
S %	< 0.002	< 0.002
Sb ppm	0.13	0.42
Sc ppm	1.2	0.25
Se ppm	21.9	12.6
Sn ppm	3	2
Sr ppm	1.5	2.1
Ta ppm	221	61.1
As ppm	3.27	0.61
Te ppm	7	25.8
Th ppm	< 0.05	0.09
Ti %	12.9	15.7
Tl ppm	1.655	0.235
U ppm	0.34	0.37
V ppm	4.5	2.9
W ppm	197	78
Y ppm	1.5	1.2
Zn ppm	38.3	11.7
Zr ppm	13	31
Au ppm	228	86.3
Be ppm	50	380
Ba %	0.002	0.001
Bi ppm	3	2.42
Ca %	0.72	0.34

### *Appendix III*

Geochemical data for soil samples collected from the Pain property and assayed at ALS  
All samples were analyzed using the ME-MS61 ICP-MS procedure

Sample #	1031	1365	1364	1354	1355	1356	1357
Weight (kg)	0.12	0.2	0.16	0.2	0.2	0.14	0.06
Ca (wt. %)	0.35	0.53	0.33	0.35	0.36	0.31	0.31
Cd (ppm)	0.17	0.21	0.18	0.15	0.15	0.14	0.06
Ce (ppm)	93.4	127	113	80.9	77	71.6	54.2
Co (ppm)	15.9	67	17.3	9.9	7.4	9.3	6.2
Cr (ppm)	79	64	55	63	61	61	48
Cs (ppm)	7.26	10.3	9.78	8.04	10.75	9.2	5.91
Cu (ppm)	76.8	134	28.4	18.8	28.2	19.4	12.2
Fe (wt. %)	5.6	4.37	4.52	4.2	3.35	3.93	2.72
Ga (ppm)	19.4	17.4	20.7	18.1	21	21.3	22.7
Ge (ppm)	0.13	0.17	0.15	0.2	0.19	0.17	0.16
Au (ppm)	0.008	0.006	0.002	0.009	0.003	< 0.001	0.006
Hf (ppm)	2.4	2.7	2.4	2.6	3.4	2.9	3.6
In (ppm)	0.068	0.063	0.053	0.053	0.05	0.045	0.038
K (wt. %)	1.2	1.51	1.28	1.22	1.46	1.7	1.6
La (ppm)	49.9	61.4	58.2	41.7	39.4	37.1	27.6
Li (ppm)	26.3	43.9	48.7	38.8	30.8	34.6	28.5
Mg (wt. %)	0.96	1.4	1.14	1.06	0.77	1.26	1.56
Mn (ppm)	665	909	412	554	384	462	240
Mo (ppm)	3.78	2.8	2.04	1.99	2.14	1.8	1.37
Na (wt. %)	0.78	0.87	1.06	0.82	0.76	0.91	0.92
Nb (ppm)	10.6	14.1	10.7	11.1	14.5	10.7	13.1
Ni (ppm)	24.1	53.8	24	17.3	13.8	14.5	12.3
P (ppm)	910	670	490	710	690	630	520
Pb (ppm)	23	19.7	16.7	46.6	42	28.4	30.6
Rb (ppm)	70.2	88.4	83.3	75.6	107.5	122	91.7
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.05	0.02	0.02	0.03	0.03	0.03	0.03
Sb (ppm)	1.02	1.06	0.96	1.25	1.13	0.99	0.63
Sc (ppm)	11.7	11.9	10.8	9.4	10.7	10.7	11.7
Se (ppm)	2	2	2	2	3	2	3
Sn (ppm)	2.2	1.7	1.9	1.8	2.3	2.2	2.5
Ag (ppm)	0.07	0.1	0.12	0.07	0.31	0.06	0.2
Sr (ppm)	70	103.5	77	75.4	85.1	62.9	59.8
Ta (ppm)	0.76	1.11	0.81	0.79	1.04	0.79	0.96
Te (ppm)	0.15	0.1	0.08	0.06	< 0.05	0.06	< 0.05
Th (ppm)	12.9	21.9	14.1	11.5	11	11.1	10.4
Ti (wt. %)	0.346	0.368	0.341	0.341	0.404	0.349	0.336
Tl (ppm)	0.44	0.5	0.46	0.48	0.66	0.59	0.55
U (ppm)	6.4	4.8	3.6	2.7	3.1	2.8	3.7
V (ppm)	121	81	107	107	121	118	114
W (ppm)	1.9	1.4	1.3	1.3	1.8	1.4	1.8
Y (ppm)	13.1	18.7	11.9	10.4	12.2	10.5	12.1
Al (wt. %)	5.56	6.55	6.34	5.85	6.13	6.83	6.48
Zn (ppm)	49	126	127	143	153	148	82
Zr (ppm)	69.2	74	65.9	78.8	97	86.3	106
As (ppm)	13.4	46.6	26.4	22.9	27.5	15.4	17.4
Ba (ppm)	520	610	560	490	600	540	440
Be (ppm)	1.78	2.35	1.71	1.6	1.52	1.85	1.96
Bi (ppm)	0.72	0.93	0.57	0.39	0.36	0.28	0.23

Sample #	1358	1030	1353	1368	1360	1367	1359
Weight (kg)	0.14	0.3	0.28	0.16	0.08	0.16	0.12
Ca (wt. %)	0.41	0.35	0.45	0.53	0.46	0.16	0.38
Cd (ppm)	0.15	0.12	0.18	0.24	0.26	0.05	0.17
Ce (ppm)	60.4	117.5	253	66.2	64	44	98.9
Co (ppm)	8.3	27.4	121	12.2	15.1	12.1	12.3
Cr (ppm)	69	99	60	70	65	63	72
Cs (ppm)	9.5	20.4	13.85	7.66	7.68	5.62	11.8
Cu (ppm)	28.8	81.9	224	35.7	59.2	3.4	42.9
Fe (wt. %)	5.72	5.52	6.66	4.62	4.41	3.61	5.66
Ga (ppm)	23	24	19.85	19.05	22.8	27.5	23.1
Ge (ppm)	0.2	0.24	0.32	0.2	0.21	0.19	0.22
Au (ppm)	0.001	0.072	0.015	0.003	0.006	< 0.001	0.013
Hf (ppm)	3.2	3.6	2.7	2.8	3	3.7	3.4
In (ppm)	0.058	0.071	0.052	0.069	0.074	0.034	0.06
K (wt. %)	1.6	2.19	1.39	1.36	1.84	1.22	1.86
La (ppm)	31.7	56.2	116	34.7	31.4	21.4	49.1
Li (ppm)	42.4	47.3	62.2	47.8	42.8	33.6	22.4
Mg (wt. %)	0.94	1.85	2.28	1.57	0.77	2.92	1.12
Mn (ppm)	360	1035	1760	513	610	333	530
Mo (ppm)	2.74	3.68	7.79	1.92	2.2	0.64	3.18
Na (wt. %)	0.85	0.97	1.21	0.87	1.06	3.02	0.83
Nb (ppm)	13.6	18.7	10.5	12.2	15.2	11.3	15.5
Ni (ppm)	15.8	40.1	67.1	22.9	22.1	27.4	16.4
P (ppm)	500	770	1030	550	580	240	830
Pb (ppm)	64	10.9	19.4	53	34.6	6.8	48.1
Rb (ppm)	97.6	139.5	71.5	75.1	134.5	70.7	111
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.02	0.02	0.04	0.02	0.03	0.01	0.04
Sb (ppm)	1.4	1.02	1.26	1.18	1.01	0.55	1.45
Sc (ppm)	11	14.8	14	11.1	12	12.1	11.2
Se (ppm)	2	3	4	2	3	2	3
Sn (ppm)	2.5	3.2	1.9	1.9	2.8	2.2	2.4
Ag (ppm)	0.08	< 0.01	0.13	0.04	0.09	< 0.01	0.18
Sr (ppm)	84.9	69.1	72.9	111.5	92.5	46.4	68.5
Ta (ppm)	0.99	1.43	0.78	0.87	1.11	0.88	1.19
Te (ppm)	0.08	0.15	0.27	0.07	0.09	< 0.05	0.09
Th (ppm)	11.2	21.3	40.2	10.7	14	13.4	14.7
Ti (wt. %)	0.402	0.32	0.31	0.376	0.39	0.3	0.433
Tl (ppm)	0.68	0.98	0.46	0.55	0.82	0.5	0.68
U (ppm)	3.2	5.5	6.4	2.8	3.5	2.8	3.5
V (ppm)	145	102	89	123	110	100	137
W (ppm)	1.7	3.2	1.3	1.4	1.9	1.5	1.9
Y (ppm)	12	21.8	34.1	11.6	16.5	9.4	13.6
Al (wt. %)	6.94	8.36	6.92	7.08	7.46	8.44	7.17
Zn (ppm)	124	63	116	264	106	40	156
Zr (ppm)	93	102.5	91.6	82	84.7	106.5	95.3
As (ppm)	35.9	9.3	69.5	32	16.8	3.3	56.6
Ba (ppm)	640	750	480	660	840	530	600
Be (ppm)	1.97	3.14	3.27	1.74	2.27	1.46	1.7
Bi (ppm)	0.38	0.65	1.63	0.47	0.8	0.13	0.72

Sample #	1366	1029	1032	1043	1044	1352	1361
Weight (kg)	0.14	0.12	0.16	0.26	0.24	0.2	0.24
Ca (wt. %)	1.01	0.36	0.54	0.8	0.31	0.82	0.71
Cd (ppm)	0.76	0.23	0.12	0.22	0.21	0.11	0.22
Ce (ppm)	132.5	73.6	102	104.5	152	166	102.5
Co (ppm)	61.5	13.1	24.2	23.5	38.4	152.5	35.3
Cr (ppm)	85	54	72	70	71	60	74
Cs (ppm)	16.05	8.52	8.88	7.18	12.4	14.5	8.3
Cu (ppm)	672	24.5	33.4	22.2	59	29.7	162
Fe (wt. %)	4.74	3.02	4.75	3.45	4.92	7.73	5.17
Ga (ppm)	19.35	16.7	20.2	19.95	23.2	20.3	18.95
Ge (ppm)	0.26	0.2	0.23	0.23	0.27	0.29	0.22
Au (ppm)	0.014	NSS	0.012	0.004	< 0.001	0.002	0.004
Hf (ppm)	3.5	2.7	3.3	3.4	3.3	2.2	2.6
In (ppm)	0.103	0.05	0.071	0.072	0.071	0.123	0.072
K (wt. %)	1.84	1.28	1.67	1.78	2.34	1.97	1.67
La (ppm)	68.4	38.4	51.8	50.5	73.6	78.6	47.2
Li (ppm)	46.8	22.2	37.1	34.7	40.2	51.1	49.1
Mg (wt. %)	1.51	0.83	1.28	1.15	1.47	2.82	1.46
Mn (ppm)	871	583	1105	1810	1210	4610	892
Mo (ppm)	2.58	2.07	2.51	2.09	2.26	3.3	2.56
Na (wt. %)	0.96	0.84	1.1	1.05	0.79	0.94	1.19
Nb (ppm)	21.1	9.6	11.5	12.2	18.3	11	12.2
Ni (ppm)	86.7	17.6	28.9	26.8	37	58.8	44.1
P (ppm)	1290	1200	1010	1080	700	750	970
Pb (ppm)	115.5	15.5	15.2	15.5	34.1	18.5	91.1
Rb (ppm)	116	80.6	104	116	144.5	62.2	95.3
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.04	0.07	0.03	0.04	0.05	0.11	0.04
Sb (ppm)	1.51	0.72	0.94	0.75	1.43	0.94	1.2
Sc (ppm)	14	9	12.5	12.9	14.2	14.3	11.7
Se (ppm)	3	3	3	3	3	3	3
Sn (ppm)	2.4	1.9	2.4	2.3	2.8	2.5	2.1
Ag (ppm)	0.23	0.05	< 0.01	0.03	0.06	0.04	0.21
Sr (ppm)	139.5	68.4	103	112.5	65.6	40.7	113.5
Ta (ppm)	1.46	0.7	0.84	0.89	1.49	0.85	0.9
Te (ppm)	0.08	0.06	0.08	0.05	0.08	0.2	0.1
Th (ppm)	17	11.9	16.1	16.9	24.8	35	17.5
Ti (wt. %)	0.46	0.275	0.348	0.362	0.449	0.312	0.358
Tl (ppm)	0.68	0.59	0.65	0.75	0.81	0.51	0.66
U (ppm)	7.4	3.2	3.7	4.5	5.1	5.1	3.8
V (ppm)	107	83	103	101	87	80	96
W (ppm)	1.9	1.3	1.8	1.8	2.6	1.4	1.5
Y (ppm)	28.9	10.7	15.5	18.7	21.9	63.4	23.6
Al (wt. %)	7.23	5.42	7.19	6.99	7.94	8.03	7.79
Zn (ppm)	753	53	66	71	127	95	225
Zr (ppm)	103.5	81.4	93.8	97.5	96.1	62.1	76.4
As (ppm)	186	8.3	12	6.9	22.7	17.5	25.5
Ba (ppm)	660	530	710	780	700	690	730
Be (ppm)	2.69	1.55	2.14	2.27	3.28	3.96	3.1
Bi (ppm)	0.6	0.34	0.5	0.43	0.83	1.15	0.93

Sample #	1369	1362	1363	1028	1033	1042	1347
Weight (kg)	0.16	0.16	0.22	0.14	0.24	0.24	0.24
Ca (wt. %)	0.6	0.54	0.52	0.32	0.33	0.4	0.5
Cd (ppm)	0.09	0.08	0.13	0.06	0.07	0.1	0.12
Ce (ppm)	50	64.4	144.5	67.5	87.1	117.5	104
Co (ppm)	10.3	23	27.9	10.1	9.3	33	22
Cr (ppm)	63	57	61	57	64	61	71
Cs (ppm)	5.9	6.96	12	7.22	5.63	8.41	9.31
Cu (ppm)	19.5	50.6	74.6	8.1	10.4	39.7	18.2
Fe (wt. %)	3.66	4.3	4.39	3.19	4.65	5.54	5.14
Ga (ppm)	24.7	23.1	23.1	21.8	24	21.4	22
Ge (ppm)	0.18	0.19	0.28	0.18	0.2	0.24	0.24
Au (ppm)	0.002	0.003	0.003	< 0.001	0.003	NSS	0.013
Hf (ppm)	3.4	3.1	3.6	2.9	3.1	2.8	3.2
In (ppm)	0.05	0.044	0.065	0.054	0.055	0.067	0.072
K (wt. %)	1.78	1.46	2.21	2.14	1.79	1.69	1.72
La (ppm)	24.9	30.6	71.9	34.6	44.6	55.6	51.5
Li (ppm)	28.7	38.3	37.9	18.8	22.3	31.9	30.2
Mg (wt. %)	0.89	1.74	1.58	0.91	0.85	1.32	1.32
Mn (ppm)	375	494	380	251	489	1210	787
Mo (ppm)	2.53	2.28	2.39	1.7	2.31	3.33	1.97
Na (wt. %)	1.34	1.56	1.12	1.12	0.87	1.38	1.09
Nb (ppm)	11.3	9.8	17	9.9	12.6	9.2	11.8
Ni (ppm)	13.5	24.9	32	16.7	15.5	32.7	32.8
P (ppm)	350	700	830	650	520	860	780
Pb (ppm)	17.2	10.6	26.3	9.4	15.9	13	16.2
Rb (ppm)	100	91.8	146	125	92.5	105.5	116
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.02	0.05	0.05	0.04	0.02	0.03	0.03
Sb (ppm)	0.68	0.59	0.97	0.64	1.25	0.85	0.91
Sc (ppm)	12	11.8	15	11.1	10.9	13.9	13
Se (ppm)	2	3	3	2	2	3	3
Sn (ppm)	2.8	2.1	2.9	2.7	2.6	2.6	2.5
Ag (ppm)	0.02	0.02	0.05	< 0.01	< 0.01	0.02	0.02
Sr (ppm)	103	81.7	54.4	67.2	75.6	79.7	93.8
Ta (ppm)	0.86	0.79	1.42	0.74	0.88	0.7	0.9
Te (ppm)	0.07	0.1	0.05	0.07	0.08	0.1	0.08
Th (ppm)	11.3	15.1	23.6	11.9	12.2	17	16.2
Ti (wt. %)	0.369	0.302	0.436	0.335	0.429	0.277	0.341
Tl (ppm)	0.71	0.56	0.77	0.79	0.62	0.61	0.64
U (ppm)	3.2	3.2	9.3	3.2	2.9	3.7	3.5
V (ppm)	120	104	89	104	173	92	103
W (ppm)	1.6	1.3	2.2	1.7	1.7	2.1	1.9
Y (ppm)	14.1	18.8	24	12.3	10.8	15.9	15
Al (wt. %)	7.21	7.17	7.51	7.11	6.51	7.14	6.81
Zn (ppm)	62	46	118	29	46	46	49
Zr (ppm)	98.6	89.4	100.5	83.7	93.7	81.9	91
As (ppm)	11.6	14.4	17.1	4.6	16.5	11.3	9.6
Ba (ppm)	760	530	560	860	710	610	630
Be (ppm)	2.27	2.87	2.82	1.94	1.37	2.44	2.3
Bi (ppm)	0.43	0.51	0.7	0.4	0.55	0.4	0.38

Sample #	1027	1034	1041	1351	1026	1035	1348
Weight (kg)	0.18	0.14	0.24	0.14	0.16	0.18	0.2
Ca (wt. %)	0.57	0.29	0.6	0.64	0.37	0.3	0.81
Cd (ppm)	0.17	0.12	0.19	0.13	0.06	0.07	0.18
Ce (ppm)	175	79.8	140.5	128	57.6	56.6	141
Co (ppm)	26.2	9.2	28.8	24.1	11.1	7.6	21
Cr (ppm)	78	70	80	70	64	61	64
Cs (ppm)	8.08	6.49	9.18	11.75	7.16	8.65	6.02
Cu (ppm)	23.7	10.2	67	42.3	6.8	2	27
Fe (wt. %)	4.92	3.61	4.38	4.25	4.59	3.09	4.86
Ga (ppm)	19.6	21	18.85	21.5	21.5	21.8	18.7
Ge (ppm)	0.17	0.11	0.16	0.17	0.11	0.1	0.29
Au (ppm)	0.021	0.005	0.006	0.004	< 0.001	0.002	0.003
Hf (ppm)	2.7	2.5	2.8	2.5	2.5	2.3	2.6
In (ppm)	0.082	0.058	0.07	0.078	0.061	0.059	0.077
K (wt. %)	2.08	1.82	2.05	2.04	2.13	2.54	1.71
La (ppm)	72.8	39.1	63.8	69.4	29.3	28.2	67.4
Li (ppm)	36.8	29	36.5	42	27	18.5	36.4
Mg (wt. %)	1.42	0.86	1.52	1.44	0.9	0.81	1.22
Mn (ppm)	1195	473	911	941	330	292	735
Mo (ppm)	2.22	1.86	2.1	2.43	1.75	0.85	1.55
Na (wt. %)	1.1	1.14	1.09	0.94	0.85	1.27	0.99
Nb (ppm)	10.3	10.4	12	9.7	9.6	7.6	12
Ni (ppm)	35	19.6	39.9	36.8	20.1	18.4	31.1
P (ppm)	1140	670	950	1070	440	400	670
Pb (ppm)	13.7	11.7	12.7	13.8	10.9	7.3	18
Rb (ppm)	133	117.5	118	138	141	161	101
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	0.002
S (wt. %)	0.05	0.04	0.02	0.06	0.02	0.02	0.03
Sb (ppm)	0.98	0.88	0.86	0.84	0.86	0.56	0.99
Sc (ppm)	12.4	10.2	12.4	14	10.9	11.4	12.4
Se (ppm)	2	2	2	2	2	1	3
Sn (ppm)	2.6	2.6	2.5	2.6	2.7	3.1	2.1
Ag (ppm)	0.05	0.05	0.04	0.1	0.02	0.02	0.05
Sr (ppm)	104	76.6	108	93.1	80	99.7	122.5
Ta (ppm)	0.71	0.72	0.83	0.65	0.66	0.53	0.84
Te (ppm)	0.05	0.05	0.06	0.07	0.07	< 0.05	0.12
Th (ppm)	20	12.6	19.3	18.7	10.9	11.5	16.2
Ti (wt. %)	0.364	0.361	0.403	0.319	0.381	0.331	0.343
Tl (ppm)	0.75	0.73	0.7	0.86	0.9	0.95	0.7
U (ppm)	4.3	2.9	4.1	4.5	2.8	2.9	4
V (ppm)	95	109	96	104	105	80	92
W (ppm)	1.8	1.6	1.7	1.8	1.7	1.7	1.7
Y (ppm)	35.5	13.1	23.9	26.6	12.6	11.5	26.6
Al (wt. %)	7.96	7.21	7.62	8.34	7.21	7.67	6.74
Zn (ppm)	63	40	69	77	35	24	52
Zr (ppm)	89.8	86.7	92.5	83.2	85.8	78.4	83.1
As (ppm)	6.9	5.7	7.7	8.4	6.6	2.6	7.2
Ba (ppm)	860	750	740	850	850	860	640
Be (ppm)	3.73	2.09	2.99	2.82	2.07	2.29	2.81
Bi (ppm)	0.35	0.27	0.48	0.44	0.51	0.21	0.47

Sample #	1350	1025	1036	1040	1349	1024	1037
Weight (kg)	0.16	0.12	0.14	0.28	0.2	0.16	0.2
Ca (wt. %)	0.55	0.29	0.34	0.35	0.38	0.38	0.29
Cd (ppm)	0.11	0.16	0.1	0.23	0.38	0.29	0.27
Ce (ppm)	113	82.4	70.7	214	152	106.5	108
Co (ppm)	19.2	12.9	7.2	23.3	29.2	18.3	17.2
Cr (ppm)	70	55	59	59	62	58	55
Cs (ppm)	10.35	7.22	4.31	9.06	8.47	7.05	6.97
Cu (ppm)	41.6	10.3	9.4	21.7	60.7	15.3	10.5
Fe (wt. %)	3.9	4.53	4.45	4.73	4.22	4.19	4.39
Ga (ppm)	22.2	22	20.2	18.2	21.5	19.5	18.15
Ge (ppm)	0.28	0.24	0.21	0.32	0.29	0.26	0.23
Au (ppm)	< 0.001	< 0.001	< 0.001	NSS	NSS	NSS	< 0.001
Hf (ppm)	2.8	2.6	2.6	2.2	2.6	2.3	2.2
In (ppm)	0.082	0.071	0.047	0.082	0.063	0.07	0.073
K (wt. %)	2.33	2.07	1.12	1.28	2.29	1.68	1.28
La (ppm)	61.2	41.9	37	87.6	77.1	53.1	48.7
Li (ppm)	41.3	38.7	34.8	57.5	43.2	39.3	39.2
Mg (wt. %)	1.15	1.07	1.09	1.66	1.5	1.53	1.17
Mn (ppm)	648	506	380	1235	521	1920	1435
Mo (ppm)	1.79	1.49	1.36	1.85	1.47	1.16	1.18
Na (wt. %)	1	0.89	1.24	1.13	0.78	1.27	1.03
Nb (ppm)	11.4	7.5	9.9	8	15.4	6.4	8.1
Ni (ppm)	31.8	25	18.6	43.1	35.5	29.1	23.7
P (ppm)	890	830	580	1620	670	1380	1180
Pb (ppm)	14.7	10.6	10.6	11.9	29.6	12.9	12.9
Rb (ppm)	136.5	143	63.9	79.9	134.5	111	77.1
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.04	0.03	0.03	0.07	0.05	0.09	0.06
Sb (ppm)	0.84	0.72	1	0.86	1.14	0.73	0.86
Sc (ppm)	14.7	11.9	9.3	11.8	13.8	11	10.4
Se (ppm)	3	3	3	3	4	3	3
Sn (ppm)	2.4	2.5	1.8	1.7	2.4	1.9	1.8
Ag (ppm)	0.12	0.06	0.06	0.09	0.2	0.07	0.08
Sr (ppm)	98	61.9	73.5	68.7	53	64.9	60.3
Ta (ppm)	0.8	0.52	0.68	0.61	1.21	0.46	0.59
Te (ppm)	0.1	0.11	0.08	0.08	0.09	0.1	0.09
Th (ppm)	17.9	13.2	10	21	23.7	17.9	17.3
Ti (wt. %)	0.328	0.259	0.333	0.239	0.408	0.225	0.265
Tl (ppm)	0.83	0.83	0.44	0.49	0.77	0.67	0.47
U (ppm)	4.1	2.9	2.5	3.8	13.4	3.9	3.3
V (ppm)	101	87	115	75	77	72	90
W (ppm)	1.7	1.4	1.3	1.3	2.2	1.2	1.2
Y (ppm)	21.7	15.4	14.4	18	22	17	12.9
Al (wt. %)	8.07	7.2	6.31	7.16	7.49	7.18	6.61
Zn (ppm)	74	46	55	56	159	64	59
Zr (ppm)	86.9	82.6	88.5	72.8	82.8	74.8	73.4
As (ppm)	9.1	4.1	8.2	6.9	17	5	6.6
Ba (ppm)	830	750	450	420	560	610	460
Be (ppm)	2.76	2.94	2.05	3.14	2.9	2.88	2.13
Bi (ppm)	0.38	0.37	0.25	0.29	0.52	0.31	0.23



Sample #	1039	1023	1038	PO26	PO28	PO04	PO03
Weight (kg)	0.16	0.24	0.12	0.14	0.18	0.1	0.18
Ca (wt. %)	0.34	0.69	0.35	0.26	0.5	0.49	0.45
Cd (ppm)	0.12	0.16	0.16	0.12	0.38	0.1	0.14
Ce (ppm)	107	180.5	99.3	62.1	95	53.1	84.4
Co (ppm)	8.6	29.9	12.1	9.5	49.9	8.8	25
Cr (ppm)	53	63	56	51	56	46	58
Cs (ppm)	5.54	10.25	8.61	7.14	6.4	7.16	7.98
Cu (ppm)	9.2	25.4	9.2	16	32.6	13.7	23.1
Fe (wt. %)	3.64	4.71	4.38	2.86	4.76	2.01	4.26
Ga (ppm)	19.5	19.15	23.1	20.4	22.1	18.15	20.1
Ge (ppm)	0.23	0.36	0.27	0.2	0.23	0.18	0.22
Au (ppm)	< 0.001	0.007	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hf (ppm)	2.3	3	2.7	2.6	2.4	2.6	2.8
In (ppm)	0.043	0.127	0.07	0.037	0.051	0.04	0.05
K (wt. %)	1.41	1.62	1.88	1.33	0.98	1.66	1.55
La (ppm)	52.6	97.4	50.3	31.7	28.5	27	36.8
Li (ppm)	24.3	41.5	42	33.5	68.4	19.1	45.6
Mg (wt. %)	1.11	1.53	0.86	2.17	2.82	0.81	1.55
Mn (ppm)	658	2770	590	293	1450	216	625
Mo (ppm)	0.85	1.79	1.3	0.79	2.9	2.28	1.92
Na (wt. %)	1.94	0.95	0.97	1.66	1.79	1.11	0.83
Nb (ppm)	7.3	9.9	9.4	8.1	7	8.1	8.2
Ni (ppm)	19.6	37.1	20.8	22.4	45.2	11.3	24.2
P (ppm)	710	770	690	670	1570	680	1050
Pb (ppm)	8.5	13.4	10	8.4	45.7	6.9	11.3
Rb (ppm)	90.6	101	135	80.7	70.9	105.5	96.6
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.03	0.02	0.03	0.04	0.07	0.05	0.06
Sb (ppm)	0.74	0.97	0.88	0.61	0.75	0.45	0.68
Sc (ppm)	9.6	16.9	12.5	11.1	12.9	10.9	11.5
Se (ppm)	3	4	3	3	3	3	3
Sn (ppm)	1.9	2	2.6	2	1.4	1.9	1.9
Ag (ppm)	0.05	0.09	0.07	0.09	0.14	0.09	0.09
Sr (ppm)	68.9	118	82.9	55.1	77	84.3	77.6
Ta (ppm)	0.53	0.71	0.64	0.61	0.52	0.59	0.6
Te (ppm)	0.07	0.11	0.1	0.06	0.13	0.09	0.1
Th (ppm)	12.9	23.1	14.1	13.6	22.6	9.6	14.9
Ti (wt. %)	0.249	0.311	0.304	0.238	0.194	0.263	0.261
Tl (ppm)	0.54	0.64	0.78	0.5	0.55	0.64	0.64
U (ppm)	2.7	6.8	3	2.5	3.8	2.6	3.5
V (ppm)	75	90	98	81	80	90	94
W (ppm)	1.2	1.6	1.5	1.2	1.1	1.2	1.1
Y (ppm)	11.9	51.3	14.5	11.1	22	11.1	17.9
Al (wt. %)	7.07	6.58	7.19	6.98	7.54	6.01	6.88
Zn (ppm)	48	56	46	42	126	36	55
Zr (ppm)	77.8	96	85.5	82.5	79	84.4	88.9
As (ppm)	4.2	8.8	6.4	6.6	20.9	7.6	9.6
Ba (ppm)	500	740	690	570	420	560	530
Be (ppm)	1.88	2.99	2.78	1.89	2.82	2.11	2.96
Bi (ppm)	0.18	0.4	0.31	0.16	0.53	0.31	0.32

Sample #	PO02	PO01	PO27	PO05	PO29	PO06	PO32
Weight (kg)	0.1	0.04	0.18	0.12	0.18	0.08	0.2
Ca (wt. %)	1.37	1.2	0.68	0.67	0.55	0.62	0.39
Cd (ppm)	1.07	0.2	0.25	0.09	0.12	0.27	0.14
Ce (ppm)	166.5	41.2	114.5	80.7	53.2	39	140.5
Co (ppm)	50.8	6.6	27.6	12.5	8.9	6.1	21.4
Cr (ppm)	33	37	71	53	58	51	60
Cs (ppm)	8.14	7.77	10.4	8.58	8.53	8.3	7.28
Cu (ppm)	89.8	44.5	24.1	11.7	8.9	8.9	46
Fe (wt. %)	2.63	1.64	4.69	3.09	3.54	2.7	4.9
Ga (ppm)	12.1	11.7	20.7	17.3	21.6	17.75	21
Ge (ppm)	0.31	0.19	0.27	0.22	0.21	0.09	0.2
Au (ppm)	< 0.001	< 0.001	< 0.001	< 0.001	0.003	< 0.001	< 0.001
Hf (ppm)	1.7	1.9	2.3	2.1	2.4	2.1	2.7
In (ppm)	0.043	0.033	0.066	0.05	0.049	0.041	0.047
K (wt. %)	1.1	1.19	1.67	1.78	1.79	1.6	1.8
La (ppm)	99.5	24.3	50.5	34.2	26.7	19.6	71.8
Li (ppm)	19.7	13.5	48.6	22.8	36	20.6	27.6
Mg (wt. %)	0.85	0.5	1.58	0.75	1.03	0.79	1.69
Mn (ppm)	1705	371	1085	398	473	555	744
Mo (ppm)	2.48	1.74	2.29	2.3	0.99	0.96	1.49
Na (wt. %)	0.61	0.99	1.07	0.86	1.74	1.62	1.73
Nb (ppm)	7.1	7.2	8.5	11.1	10	9.4	13.6
Ni (ppm)	19.2	11.8	29.8	17.8	21.3	16.5	31.3
P (ppm)	1210	1140	1330	780	400	770	670
Pb (ppm)	41.3	6.4	10.8	11.1	7	8	15.4
Rb (ppm)	78.6	80.9	134.5	108	144.5	147.5	107.5
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.15	0.15	0.07	0.05	0.03	0.06	0.02
Sb (ppm)	0.63	0.49	0.82	0.81	0.61	0.62	0.81
Sc (ppm)	8.5	8.1	13.2	11.5	11.6	10.6	15
Se (ppm)	4	4	4	3	3	1	1
Sn (ppm)	1.2	1.3	2	2	2.2	2.2	2.6
Ag (ppm)	0.19	0.11	0.2	0.07	0.07	0.06	0.04
Sr (ppm)	61.5	91	125.5	120.5	110	109	42.2
Ta (ppm)	0.57	0.52	0.6	0.78	0.73	0.68	1.1
Te (ppm)	0.05	0.07	0.1	0.09	0.06	< 0.05	0.08
Th (ppm)	14	8	22.8	11.8	10.9	9.9	19.7
Ti (wt. %)	0.207	0.21	0.289	0.332	0.301	0.292	0.444
Tl (ppm)	0.49	0.59	0.93	1.05	0.9	0.69	0.62
U (ppm)	4.7	2.9	4.9	4.5	2.6	2.4	3.9
V (ppm)	45	52	84	95	86	78	109
W (ppm)	0.9	1	1.2	1.6	1.5	1.3	1.9
Y (ppm)	30.9	12.7	27.3	16.8	12.9	10.3	17.6
Al (wt. %)	4.55	4.61	7.05	5.95	7.58	6.45	7.75
Zn (ppm)	77	28	55	46	31	44	76
Zr (ppm)	53	56.9	74.9	69	78.2	71.6	88.2
As (ppm)	9.6	2.6	4.7	7.2	3.6	2.3	8.2
Ba (ppm)	390	470	690	660	750	710	490
Be (ppm)	1.94	1.23	3.12	2.02	2.08	1.62	2.52
Bi (ppm)	0.41	0.13	0.46	0.58	0.16	0.19	0.36

Sample #	PO09	PO31	PO08	PO30	PO07	PO10	PO11
Weight (kg)	0.14	0.08	0.14	0.14	0.12	0.16	0.12
Ca (wt. %)	0.34	0.71	0.49	0.58	0.78	0.37	0.64
Cd (ppm)	0.06	0.1	0.16	0.16	0.09	0.09	0.11
Ce (ppm)	70.4	269	54.5	49.3	69.7	104	54.2
Co (ppm)	8.3	15.2	7.8	7.6	19.3	15.9	10.2
Cr (ppm)	51	50	59	52	63	70	68
Cs (ppm)	9.09	15.1	10.5	9.34	5.06	10.1	9.61
Cu (ppm)	11	104	13.1	4.3	8.8	50.1	14.2
Fe (wt. %)	2.53	2.71	3.27	3.01	3.77	4.32	3.24
Ga (ppm)	19.85	16.3	21.5	20.6	15.95	21	20.2
Ge (ppm)	0.13	0.49	0.12	0.12	0.13	0.16	0.14
Au (ppm)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hf (ppm)	2.6	1.8	2.3	2.4	1.9	2.7	2.4
In (ppm)	0.046	0.049	0.047	0.05	0.054	0.065	0.054
K (wt. %)	1.83	1.28	1.77	1.9	1.57	2.24	2.03
La (ppm)	37	301	29.3	25.3	32.1	52.1	31
Li (ppm)	17.2	26.3	27.9	19.6	38.7	35.5	34
Mg (wt. %)	0.9	0.69	0.88	0.76	0.97	1.41	1.05
Mn (ppm)	347	1080	466	511	656	791	567
Mo (ppm)	1.75	2.29	1.59	0.86	0.9	1.56	1.42
Na (wt. %)	1.37	0.6	1.65	1.44	1.06	1.04	1
Nb (ppm)	11.4	8.3	11.1	10.2	10.6	13.3	15.4
Ni (ppm)	14.6	21	18.2	15.5	35	26.3	29.1
P (ppm)	410	1500	610	710	330	570	750
Pb (ppm)	12.6	11.1	8.1	6.7	9.4	22.9	10.8
Rb (ppm)	140.5	100.5	167.5	164	98.8	150	143
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.03	0.12	0.03	0.05	0.02	0.01	0.03
Sb (ppm)	0.59	0.61	0.67	0.56	0.82	0.73	0.57
Sc (ppm)	11.8	12.3	11.6	12.1	11.6	13.5	12.8
Se (ppm)	1	3	< 1	< 1	< 1	< 1	< 1
Sn (ppm)	2.4	1.6	2.5	2.6	1.9	2.7	2.6
Ag (ppm)	0.06	0.25	0.09	0.07	0.04	0.03	0.03
Sr (ppm)	76	92.9	105	109.5	156	73	135.5
Ta (ppm)	0.83	0.51	0.74	0.71	0.72	0.97	0.94
Te (ppm)	0.05	0.06	0.06	0.05	0.05	0.06	0.07
Th (ppm)	11.1	16.5	11.5	10.6	11.4	15.5	10
Ti (wt. %)	0.323	0.232	0.343	0.314	0.339	0.38	0.425
Tl (ppm)	0.81	1.02	0.83	0.85	0.69	0.85	1
U (ppm)	2.7	9.3	2.8	2.7	2.4	3.1	2.8
V (ppm)	82	72	96	83	87	95	105
W (ppm)	1.6	1.4	1.8	1.9	1.5	1.9	1.9
Y (ppm)	12.3	108.5	12.2	11	14.2	14.2	13.4
Al (wt. %)	6.73	6.16	7.13	7.06	7.07	8.04	7.18
Zn (ppm)	44	38	34	31	60	84	40
Zr (ppm)	85.4	57.3	79.5	79.8	62.2	87	82.6
As (ppm)	6.3	5.6	4.6	2.8	7.1	11.3	4.7
Ba (ppm)	610	690	710	760	730	720	800
Be (ppm)	1.82	2.76	1.79	1.76	2.01	2.29	1.87
Bi (ppm)	0.34	0.26	0.22	0.2	0.19	0.43	0.32

Sample #	PO33	PO12	PO34	PO13	PO16	PO37	PO15
Weight (kg)	0.18	0.16	0.18	0.18	0.06	0.16	0.16
Ca (wt. %)	0.49	0.62	0.56	0.66	0.67	0.5	0.55
Cd (ppm)	0.05	0.08	0.09	0.07	0.1	0.09	0.12
Ce (ppm)	57.9	54.5	52.5	49	62.3	57.7	42.2
Co (ppm)	5.6	9.1	10.1	12.2	14.3	7.1	5.7
Cr (ppm)	61	58	56	58	52	59	59
Cs (ppm)	11.2	12.35	7.88	11.7	7.66	11.25	9.23
Cu (ppm)	10.1	12.6	7.9	8.8	7.2	4.2	4.8
Fe (wt. %)	2.76	3.38	3.83	4.22	3.45	3.57	2.94
Ga (ppm)	25.4	22.9	21.6	24.8	18.85	21	20
Ge (ppm)	0.16	0.16	0.14	0.14	0.15	0.1	0.09
Au (ppm)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hf (ppm)	2.6	2.5	2.3	2.4	2.2	2.5	2.5
In (ppm)	0.057	0.058	0.058	0.062	0.051	0.052	0.051
K (wt. %)	2.48	2.16	2.13	2.6	1.79	2.67	2.6
La (ppm)	30.5	27.8	26.7	24.1	31.1	29.8	21.7
Li (ppm)	18.9	19	30.2	26.3	27.3	27.1	21.1
Mg (wt. %)	0.49	0.63	0.67	0.95	0.74	0.66	0.56
Mn (ppm)	292	442	545	618	756	386	415
Mo (ppm)	2.11	2.3	1.51	1.58	0.98	0.81	1.28
Na (wt. %)	0.93	1.02	0.96	1.05	1.06	1	1.03
Nb (ppm)	14.9	14	10.2	11	9.9	11.5	11.5
Ni (ppm)	12.1	17.2	18.4	22.1	21	15.7	12.2
P (ppm)	340	440	500	320	730	330	370
Pb (ppm)	10.7	10.4	10.5	8.2	14.2	10.9	11.2
Rb (ppm)	155	177.5	150	177.5	116	175	163.5
Re (ppm)	< 0.002	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.02	0.02	0.02	0.01	0.03	0.02	0.02
Sb (ppm)	0.69	0.76	0.77	0.63	0.76	0.6	0.54
Sc (ppm)	13.7	12.5	11.8	12.9	10.9	11.3	10.9
Se (ppm)	< 1	< 1	< 1	< 1	< 1	2	1
Sn (ppm)	3.3	3	2.7	3.1	2.2	3	2.9
Ag (ppm)	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.04	0.03
Sr (ppm)	125.5	129	108.5	122	146.5	136	148.5
Ta (ppm)	1.02	0.97	0.72	0.79	0.69	0.83	0.84
Te (ppm)	0.06	0.07	0.09	0.11	0.05	0.06	0.07
Th (ppm)	8.8	10.5	10	10.8	10.9	10.3	10.2
Ti (wt. %)	0.461	0.42	0.372	0.384	0.338	0.382	0.384
Tl (ppm)	1.27	1.17	1.06	1.19	0.86	0.99	1
U (ppm)	2.6	2.9	2.7	3	2.8	2.7	2.9
V (ppm)	108	105	101	96	81	94	91
W (ppm)	2.5	2.2	1.9	2.2	1.7	2	2.1
Y (ppm)	11.3	12.3	11.6	13.1	13.8	14.1	11.6
Al (wt. %)	7.32	6.79	6.98	7.8	6.26	7.25	7.3
Zn (ppm)	22	26	40	30	42	28	27
Zr (ppm)	92.9	87.1	81.8	83.9	77.2	84.4	82.3
As (ppm)	3	4.3	5.3	3.9	5.5	2.8	2.5
Ba (ppm)	880	810	910	1000	660	840	850
Be (ppm)	1.82	1.78	1.87	2.16	1.81	2.27	2.02
Bi (ppm)	0.32	0.62	0.43	0.67	0.22	0.22	0.25

Sample #	PO36	PO14	PO00	PO17	PO38	PO18	PO39
Weight (kg)	0.18	0.1	0.18	0.1	0.18	0.16	0.18
Ca (wt. %)	0.92	0.47	0.58	0.52	0.62	0.59	0.49
Cd (ppm)	0.21	0.05	0.06	0.14	0.11	0.06	0.11
Ce (ppm)	84	50.1	35.1	44.4	59.6	59.8	49.4
Co (ppm)	12.9	6.4	7.3	6.3	8.8	8.2	8.9
Cr (ppm)	88	61	58	48	70	67	58
Cs (ppm)	7.6	7.32	9.46	7.42	7.75	9.52	8.68
Cu (ppm)	10	5.2	3.3	10.6	11.3	3.4	4.5
Fe (wt. %)	4.93	4.14	3.55	2.38	4.05	3.6	3.68
Ga (ppm)	17.25	22.8	23.1	17.35	19.25	23.6	21.7
Ge (ppm)	0.13	0.12	0.09	0.09	0.11	0.12	0.1
Au (ppm)	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Hf (ppm)	2.7	2.8	2.9	2.8	2.7	3.1	2.8
In (ppm)	0.055	0.05	0.06	0.046	0.056	0.056	0.055
K (wt. %)	1.77	2.04	2.7	1.98	1.92	2.6	2.1
La (ppm)	41.2	25.1	17.3	22.8	30.5	30.4	24.4
Li (ppm)	31	24.4	23.8	15.4	34.7	23.3	27.6
Mg (wt. %)	1.14	0.76	0.83	0.44	0.83	0.91	1.01
Mn (ppm)	649	359	414	469	448	334	378
Mo (ppm)	2.5	1.15	1.12	1.69	1.23	0.8	0.99
Na (wt. %)	1.3	1.28	1.08	0.98	1.06	1.4	1.53
Nb (ppm)	17.4	10.7	11.2	10.1	12.2	11.7	8.2
Ni (ppm)	31.6	19.6	18.5	10.6	22.7	21.1	23
P (ppm)	480	360	250	690	490	250	570
Pb (ppm)	16.9	8	5.3	6.7	12.3	6.8	6.5
Rb (ppm)	104	118	152.5	117.5	111.5	145	126.5
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.02	0.02	0.01	0.05	0.03	0.02	0.03
Sb (ppm)	0.82	0.76	0.41	0.52	0.77	0.49	0.5
Sc (ppm)	10.4	10.8	11.3	9.2	9.8	11.5	10
Se (ppm)	2	2	2	2	2	2	2
Sn (ppm)	2.2	2.9	3.2	2.3	2.5	3.1	2.6
Ag (ppm)	0.04	0.03	0.01	0.09	0.03	0.03	0.12
Sr (ppm)	175	102	105	114	131.5	144	117.5
Ta (ppm)	1.22	0.77	0.8	0.73	0.83	0.79	0.61
Te (ppm)	0.09	0.06	0.14	0.05	0.06	< 0.05	0.06
Th (ppm)	13	11.1	9.8	10.3	11.3	12.1	14.1
Ti (wt. %)	0.53	0.353	0.355	0.299	0.406	0.379	0.285
Tl (ppm)	0.64	0.89	1.09	0.96	0.81	1.04	0.81
U (ppm)	3.1	2.6	2.8	2.7	2.6	3.1	2.8
V (ppm)	116	97	86	76	111	100	80
W (ppm)	1.7	1.7	2.3	1.8	1.6	2	1.5
Y (ppm)	15.4	10.5	10.2	11.1	12.8	12.6	11.4
Al (wt. %)	6.61	6.8	7.56	5.85	6.87	7.93	7.27
Zn (ppm)	67	29	22	24	46	24	25
Zr (ppm)	86.9	77.5	80.7	77.7	75.5	85.6	71
As (ppm)	5.4	4.3	1.6	2.2	6.6	2.6	2.7
Ba (ppm)	680	720	1040	670	740	840	650
Be (ppm)	1.88	1.71	2.07	1.71	1.79	2.21	2.06
Bi (ppm)	0.38	0.31	0.48	0.32	0.29	0.24	0.2

Sample #	PO19	PO29	PO25	PO24	PO23	PO22	PO21
Weight (kg)	0.14	0.1	0.3	0.16	0.22	0.24	0.18
Ca (wt. %)	0.42	0.6	0.46	0.87	0.97	0.94	0.4
Cd (ppm)	0.06	0.05	0.12	0.55	0.16	0.21	0.11
Ce (ppm)	60	36.3	136.5	124	80.8	87.6	145
Co (ppm)	6.4	6.8	15.1	29.8	13.8	16.9	11.7
Cr (ppm)	59	54	69	69	79	66	64
Cs (ppm)	8.6	8.55	10.45	5.08	5.48	5.4	9.14
Cu (ppm)	4.5	4.2	41.6	79	37.2	57.1	11.4
Fe (wt. %)	3.61	3.02	4.04	4.7	3.32	3.86	4.19
Ga (ppm)	22.3	21.5	22	17.05	16.55	15.8	17.8
Ge (ppm)	0.13	0.11	0.19	0.19	0.13	0.15	0.17
Au (ppm)	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.007	< 0.001
Hf (ppm)	3.2	2.8	3.4	3.2	2.9	3	2.4
In (ppm)	0.051	0.052	0.065	0.102	0.06	0.061	0.056
K (wt. %)	1.92	2.43	2.58	1.75	1.72	1.69	1.79
La (ppm)	30.9	17.9	72.4	58	41.2	41.7	66.9
Li (ppm)	30.8	20.6	36.9	39.4	33.6	34.6	35.6
Mg (wt. %)	1.02	0.82	1.49	1.25	1.19	1.03	1.38
Mn (ppm)	268	343	429	1940	801	834	748
Mo (ppm)	1.18	1.77	1.68	1.55	1.21	1.71	0.92
Na (wt. %)	1.39	1.23	0.95	1.2	1.22	1.2	1.23
Nb (ppm)	9.8	9.1	16.9	14.4	16	12.1	6.1
Ni (ppm)	17.2	16.6	28.8	41.8	37.6	32.9	30.5
P (ppm)	260	440	660	990	800	800	1060
Pb (ppm)	8.2	4.9	17.1	42	16.9	23.2	7
Rb (ppm)	116	137.5	137.5	98.7	93.1	85.9	112
Re (ppm)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
S (wt. %)	0.01	0.03	0.03	0.02	0.01	0.01	0.06
Sb (ppm)	0.85	0.41	0.87	1.35	0.9	0.98	0.65
Sc (ppm)	10.8	10.6	12.6	11	10.6	9.8	9.4
Se (ppm)	2	2	2	2	2	2	2
Sn (ppm)	2.9	2.9	2.8	2.1	1.9	1.9	2.1
Ag (ppm)	0.01	0.04	0.04	0.04	0.05	0.06	0.05
Sr (ppm)	100.5	106	71.2	130.5	165	158	94.6
Ta (ppm)	0.73	0.65	1.36	1	1.09	0.86	0.46
Te (ppm)	0.07	0.06	0.06	0.06	< 0.05	< 0.05	0.09
Th (ppm)	10.6	10.2	26.3	18.3	11.9	13.5	19.9
Ti (wt. %)	0.331	0.304	0.47	0.39	0.455	0.375	0.227
Tl (ppm)	0.72	0.92	0.85	0.57	0.64	0.6	0.77
U (ppm)	2.6	3.3	6.1	3.6	3.2	3.2	3.5
V (ppm)	105	77	87	91	101	96	72
W (ppm)	1.6	1.9	2.2	1.6	1.4	1.5	1.4
Y (ppm)	12.2	10.2	20.3	21.9	16.5	17.6	18.4
Al (wt. %)	7	7.19	8.29	6.58	6.51	6.54	6.7
Zn (ppm)	36	18	112	233	91	122	40
Zr (ppm)	85.1	75.8	90.9	87.3	80.4	77.4	66.4
As (ppm)	5.3	2.3	11.1	52.3	9.2	18	2.9
Ba (ppm)	700	930	730	660	750	730	670
Be (ppm)	1.99	1.83	2.68	2.41	1.91	2.19	2.42
Bi (ppm)	0.25	0.32	0.52	0.93	0.39	0.55	0.38