ARK MINES LTD.

ASX ANNOUNCEMENT

6 November 2024

SANDY MITCHELL PROJECT EXPLORATION TARGET UPDATE

- Updated Exploration Target Estimated for Sandy Mitchell 1.3 billion tonnes to 1.5 billion tonnes at 1,286 to 1,903 ppm monazite equivalent (MzEq).

  The potential quantity and grade of the Exploration Target is conceptual in nature; there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in estimation of a Mineral Resource.

  Monazite equivalent (MzEq) calculation:

  MzEq = 1 x monazite ppm + 1 x xenotime ppm + 0.361 X zircon pm + 0.281 x rutile ppm x 0.165 x high Ti leucoxene ppm + 0.126 x low Ti leucoxene ppm + 0.072 x altered ilmenite ppm + 0.065 x ilmenite ppm.

  The ppm concentrations of economic heavy minerals used are based on the QEM scan actual deportments of valuable elements into economic heavy minerals (details of the calculation, purpose and derivation of the MzEq are provided in **Attachment 1** Appendix A).

- Exploration Target represents an increase in the MzEq grade from the July 2024 estimate (1.3 billion tonnes to 1.5 billion tonnes @ 1,250 to 1,490 ppm MzEq), and places Sandy Mitchell as potentially one of the world's largest surface-expressed terrestrial sand based rare earth deposits.

- The Exploration Target builds considerably on the recently announced updated measured Mineral Resource Estimate of 71.8 million tonnes at 1,733 ppm MzEq, calculated at a lower cut-off grade of 700 ppm MzEq.

- The Exploration Target, like the Resource, is based on mineralisation from surface down to an average depth of approximately 11m ±1 of unconsolidated material (requiring no drill and blast) without overburden, affording simple low cost, low impact mining.

- The Exploration Target is summarised in Table 1 below and shown in Figure 2.

Exploration Target Range	Exploration Target	MzEq	Monazite	Xenotime	Zircon	Rutile	High Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	ilmenite
From Grade ppm		1,285.8	976.0	36.3	520.7	60.6	174.6	111.1	180.7	195.6
From Dry Tonnes	1,316,705,000	1,693,000	1,285,000	48,000	686,000	80,000	230,000	146,000	238,000	258,000
To Grade ppm		1,903.6	1,444.9	53.7	770.9	89.7	258.5	164.5	267.5	289.6
To Dry Tonnes	1,580,046,000	3,008,000	2,283,000	85,000	1,218,000	142,000	408,000	260,000	423,000	458,000

Exploration Target Range	Exploration Target	TREO	TREO+Y	LREO	HREO	CREO	MagREO
From Grade ppm		315.4	338.1	305.2	10.2	85.1	77.6
From Dry Tonnes	1,316,705,000	415,000	445,000	402,000	13,000	112,000	102,000
To Grade ppm		466.9	500.6	451.9	15.1	125.9	114.9
To Dry Tonnes	1,580,046,000	738,000	791,000	714,000	24,000	199,000	182,000

- The Exploration Target includes a basket of high value Heavy Minerals (HM) totalling 4.5 to 7.9 million tonnes of contained HM, comprised of the following:
  - Monazite from 1,2885,000 tonnes to 2,283,000 tonnes, grading from 976 ppm to 1,445 ppm,
  - Xenotime from 48,000 tonnes to 85,000 tonnes, grading from 36 ppm to 54 ppm,
  - Zircon from 686,000 tonnes to 1,218,000 tonnes, grading from 521 ppm to 771 ppm,
  - Rutile from 721,000 tonnes to 1,032,000 tonnes, grading from 550 ppm to 650 ppm,
  - Titanium HM from 872,000 tonnes to 1,549,000 tonnes, grading 662 ppm to 980 ppm.

- The update has made no changes to overall tonnage and involves grade adjustment based on increased accuracy from finalised QEM Scan data from ALS.

Executive Director Ben Emery said:

"The sheer scale of the Sandy Mitchell Exploration Target, up to 1.5 billion tonnes, delivers a clear statement that this project is emerging as one of the world's largest surface-expressed terrestrial placer Rare Earth deposits. The finalised, quantitative evaluation of minerals using a scanning electron microscopy (QEM Scan) resulted in valuable element departments across the heavy mineral basket. We are excited to move forward with development for what is a very large deposit within a simple mineralised structure, which can be extracted with an extremely low environmental impact. The increase in MzEq grades as part of this updated Exploration Target will be incorporated into a forthcoming Scoping Study for Sandy Mitchell, and we look forward to providing further updates on project development once the results of the Scoping Study are announced."

Ark Mines Limited (ASX: AHK) is pleased to report an update to the Exploration Target at its 100 % owned Sandy Mitchell rare earth and heavy mineral project in North Queensland Australia. The Exploration Target, prepared independently by Empirical Earth Science (full independent report provided in **Attachment 1**) is summarised in Table 1 and show in Figure 2. Most of the Exploration Target lies immediately to the north of the project's Measured Mineral Resource, which is estimated at 71.8 million tonnes at 1,733 ppm monazite equivalent (MzEq), calculated using a 700 ppm MzEq cut-off grade (refer ASX Announcement October 2 2024).

The potential quantity and grade of the Exploration Target is conceptual in nature, and there has been insufficient exploration to estimate a Mineral Resource. Furthermore, it is uncertain if further exploration will result in defining additional Mineral Resources at Sandy Mitchell.

The update to the Exploration Target involved grade adjustments only, based on newly received QEM Scan element deportments to economic minerals carried out by ALS as part of the metallurgical investigations Ark has commissioned through Downer Mineral Technologies.

Table 1: Sandy Mitchell Exploration Target. No cut-off grades, top-cuts or interval exclusions are applied apart from excluding intervals within the underlying bedrock. Full detail of the construction of the exploration target and its underlying data are provided in **Attachment 1**.

Exploration Target Range	Exploration Target	MzEq	Monazite	Xenotime	Zircon	Rutile	High Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	ilmenite
From Grade ppm		1,285.8	976.0	36.3	520.7	60.6	174.6	111.1	180.7	195.6
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Exploration Target Range	Exploration Target	TREO	TREO+Y	LREO	HREO	CREO	MagREO
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To Dry Tonnes	1,580,046,000	738,000	791,000	714,000	24,000	199,000	182,000

Details of the calculations defining the Exploration Target are given in the EES report provided here as **Attachment 1**. It also contains several relevant appendices:
Appendix A details the purpose and derivation of the monazite equivalent.
Appendix B provides a detailed review and analysis of Ark Mines QAQC measures.
Appendix C sets out the JORC Code 2012 Table 1.
Appendix D provides full tables of reconnaissance drilling used to calculate the Exploration Target.

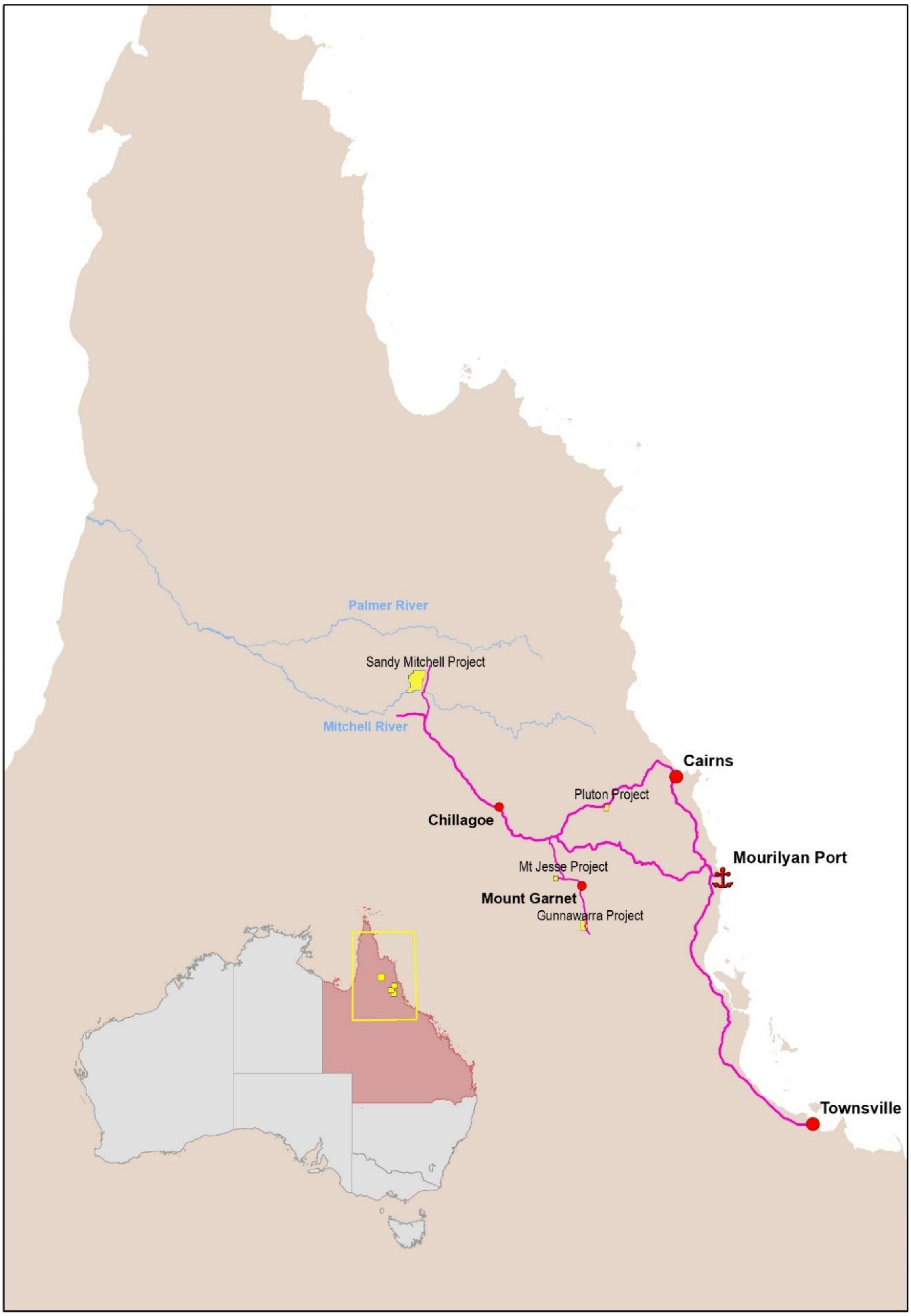

Figure 1: Sandy Mitchell Project location

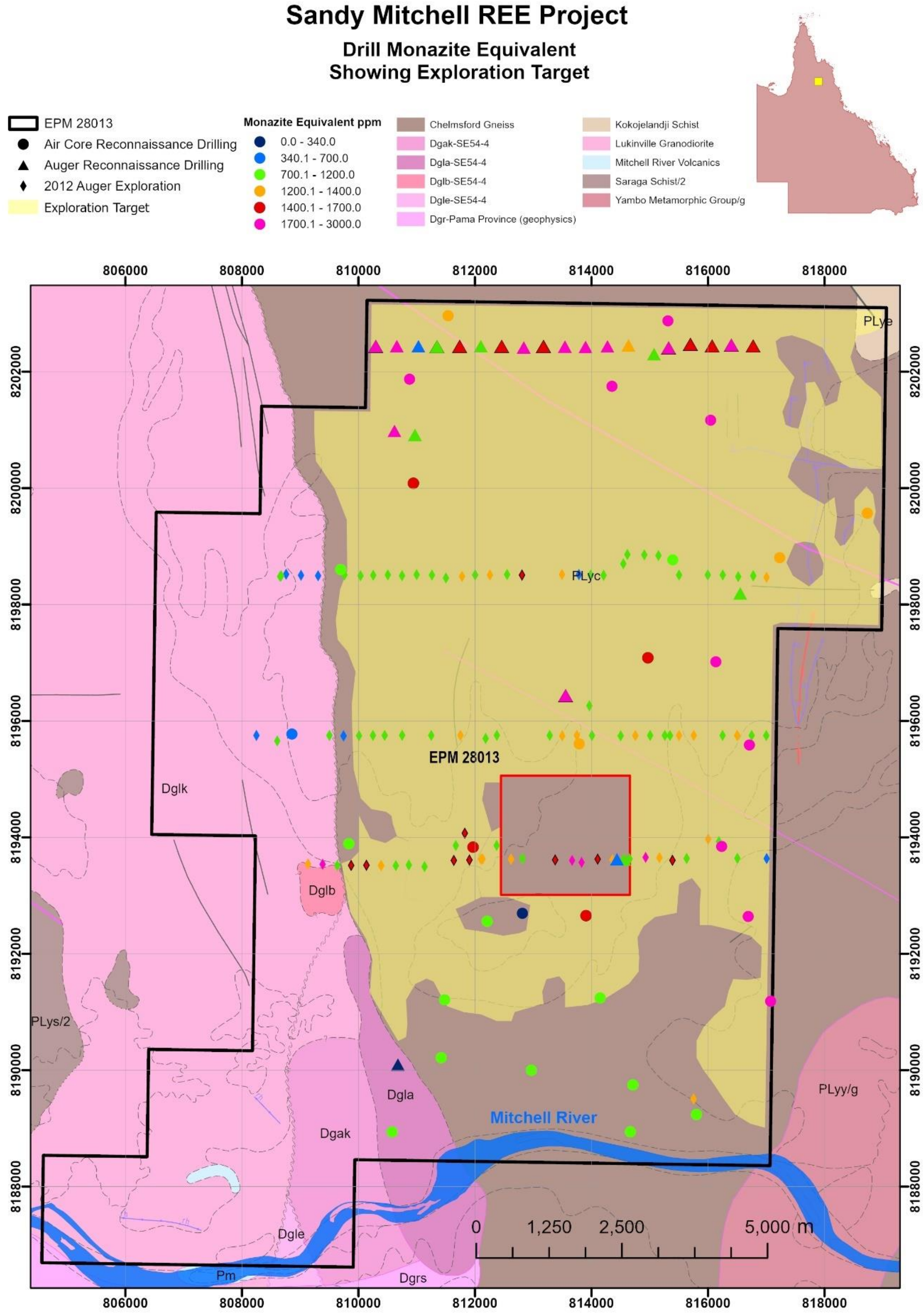

Figure 2: The JORC Exploration Target (yellow) with all generations of exploration drilling shown, coloured by monazite equivalent. The red square is the resource coloured. The Exploration Target area is 86.6 km^2 excluding the 4.5 km^2 resource area.

ARK MINES LTD.

ASX ANNOUNCEMENT

6 November 2024

AUTHORITY FOR RELEASE

This announcement has been approved for release to the ASX by the Board of Ark Mines Ltd.

Roger Jackson

Executive Chairman

6 November 2024

FURTHER INFORMATION

For further information please contact:

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Or visit our website and social media:
www.arkmines.com | www.twitter.com/arkmineslimited

ABOUT ARK MINES LIMITED

Ark Mines is an ASX listed Australian mineral exploration company focused on developing its 100% owned projects located in the prolific Mt Garnet and Greenvale mineral fields of Northern Queensland. The Company's exploration portfolio consists of three four quality projects that are prospective for copper, iron ore, nickel-cobalt porphyry gold and rare earth elements.

Sandy Mitchell Rare Earth and heavy Mineral Project

- Ark has recently Acquired the 161km^2 EPM 28013 'Sandy Mitchell' – an advanced Rare Earths Project in North Queensland with additional 138km^2 of sub-blocks under application
- Project contains all critical Light Rare Earths as well as Heavy Rare Earths including dysprosium (Dy), terbium (Tb), holmium (Ho), erbium (Er), thulium (Tm) ytterbium (Yb), yttrium (Y) and excluding only Lutetium
- Up to 25% of the TREO is Nd and Pr (magnet metals)
- Rare Earths at 'Sandy Mitchell' are amenable to panning a concentrate; Planned low-cost, fast start up, straightforward beneficiation by gravity processing

Mt Jesse Copper-Iron project

- Project covers a tenure area of 12.4km^2 located ~25km west of Mt Garnet
- Cantered on a copper rich magnetite skarn associated with porphyry style mineralization
- Three exposed historic iron formations
- Potential for near term production via toll treat and potential to direct ship

Gunnawarra Nickel-Cobalt Project

- Comprised of 11 sub-blocks covering 36km^2
- Borders Australian Mines Limited Sconi project - the most advanced Cobalt-Nickel-Scandium project in Australia
- Potential synergies with local processing facilities with export DSO Nickel/Cobalt partnership options

Pluton Porphyry Gold Project

- Located ~90km SW of Cairns near Mareeba, QLD covering 18km^2
- Prospective for gold and associated base metals (Ag, Cu, Mo)
- Porphyry outcrop discovered during initial field inspection coincides with regional scale geophysical interpretation.

EXPLORATION TARGET STATEMENT

The Exploration Target classified in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (JORC, 2012). The Exploration Target was completed by Daemon de Chaeney of Empirical Earth Science. Mr de Chaeney has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr de Chaeney consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

COMPETENT PERSONS STATEMENT

The Information in this report that relates to exploration results, mineral resources or ore reserves is based on information compiled by Mr Roger Jackson, who is a Fellow of the Australian Institute of Mining and Metallurgy and a Fellow of the Australasian Institute of Geoscientists. Mr Jackson is a shareholder and director of the Company. Mr Jackson has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the `Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves '(the JORC Code). Mr Jackson consents to the inclusion of this information in the form and context in which it appears in this report. Mr Jackson confirms information in this market announcement is an accurate representation of the available data for the exploration areas being acquired.

FORWARD LOOKING STATEMENTS AND IMPORTANT NOTICE

This report contains forecasts, projections and forward-looking information. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions it can give no assurance that these will be achieved. Expectations and estimates and projections and information provided by the Company are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are out of Ark Mines 'control.

Actual results and developments will almost certainly differ materially from those expressed or implied. Ark Mines has not audited or investigated the accuracy or completeness of the information, statements and opinions contained in this announcement. To the maximum extent permitted by applicable laws, Ark Mines makes no representation and can give no assurance, guarantee or warranty, express or implied, as to, and takes no responsibility and assumes no liability for the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omission from, any information, statement or opinion contained in this report and without prejudice, to the generality of the foregoing, the achievement or accuracy of any forecasts, projections or other forward looking information contained or referred to in this report.
Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.

Attachment 1

Ark Mines Sandy Mitchell Project Exploration Target Update.

Empirical Earth Science

Prepared by

Empirical Earth Science, 93 Windsor Drive, Mount Hallen, QLD. Australia. 4312.

Daemon de Chaeney, dechaeney@outlook.com

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4 November, 2024.

Project ID: ARK-004.2

Disclaimer

Contents

Figures

Statement of Independence

Neither Empirical Earth Science nor Daemon de Chaeney have any material interest or entitlement in the securities or assets of Ark Mines Ltd. Empirical Earth Science will be paid a fee for this report comprising its normal professional rates and reimbursable expenses. Such fee is not contingent on the conclusions of this report.

JORC Compliance Statement

The information in this report that relates to Exploration Targets or Exploration Results, is based on information compiled by Mr Daemon de Chaeney, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy (3003799), and the Australian Institute of Geoscientists (8284). Mr de Chaeney is a Principal Geologist employed by Empirical Earth Science (EES).

Mr de Chaeney has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr de Chaeney consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Purpose

The purpose of this document is to provide Ark Mines Ltd with an updated formal Exploration Target based on exploration air core, reverse circulation and auger drill sample assay and log data, informed by the Stage 2 Sandy Mitchell resource evaluation (Hawker 2024; Ark Mines Ltd 2024) and the final quantitative evaluation of minerals by scanning electron microscopy (QEM scan) by ALS (de Nooy 2024) including the CODES laser ablation ICP-MS mineral grain assays. Such an Exploration Target is conceptual in nature due to insufficient exploration to estimate a mineral resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade (or quality), relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource (JORC 2012, p.9).

Though reference and comparison is made between exploration results and the Sandy Mitchell Stage 1 Mineral Resource, it is important to note that this report refers to the Sandy Mitchell Exploration Target and this is not to be misconstrued as a statement of Resource or Reserve.

ARK MINES LTD.

ASX ANNOUNCEMENT

6 November 2024

Executive Summary

In 2023 Ark Mines Ltd conducted substantial drilling within the Sandy Mitchell Project. This included 393m of AC reconnaissance and 128.6m of auger and OP reconnaissance. This has allowed the delineation of the best correlated exploration area for further progression, and together with the resource definition works including 3915m of AC drilling, affords calculation of a JORC 2012 compliant Exploration Target. The potential quantity and grade of the Exploration Target is conceptual in nature; there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in estimation of a Mineral Resource. The update of this Exploration Target applies changes in grades only, as no changes in data that affect spatial dimensions, volumes or tonnages have occurred.

Ark Mines Ltd Sandy Mitchell Project November 2024 Exploration Target:

Exploration Target Range	Exploration Target	MzEq	Monazite	Xenotime	Zircon	Rutile	High Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	ilmenite
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Sandy Mitchell Project Location, Access & Tenure

The Sandy Mitchell Project in EPM 28013 is located on Mount Mulgrave Station, 105 km northwest of Chillagoe and 203 km west northwest of Cairns (See Figure 1). Access is via the Bourke Development Road from Chillagoe, then past the Wrotham Park airfield turning north on Mount Mulgrave Road (also named Palmerville Rd on some maps), and then station tracks west from the Mount Mulgrave Station house.

The initial application for EPM 28013 was made by Aurum Vale Pty Ltd on 8 September 2021 and granted from 22 August 2022 for five years ending 21 August 2027. In March 2023 Ark Mines Ltd took over Aurum Vale Pty Ltd as a wholly owned subsidiary, including EPM 28013. On 15 December 2023 EPM 28013 was transferred to Ark Mines Ltd (AHK). The tenement comprises 49 sub-blocks equating to 161.2 km^2 (see Figure 2).

Sandy Mitchell Geology & Mineralisation

EPM 28013 is underlain by the Paleo- to Mesoproterozoic Chelmsford Gneiss in its eastern two thirds (see Figure 2). The Chelmsford Gneiss is part of the Yambo Metamorphic Group. It is a sillimanite biotite garnet gneiss of upper amphibolite to granulite grade, and incorporates spatially associated two mica granite, hornblende amphibolite, a two pyroxene mafic granulite and areas of metapelites including quartzite (Withnall, Blewett & Champion 2013). Migmatisation is apparent in some areas of outcrop with clear separation of leucosome and melanosome components. Outcrop is sparse and largely confined to low hills.

The western third of the tenement is underlain by later intrusions belonging to the Kintore Supersuite, dominated by the early Devonian, foliated and porphyritic, S-type, Lukinville Granodiorite. Geochemically, the Lukinville Granodiorite is known to show positive Eu anomalism (Bultitude, Champion & Hutton 2013), thought to be related to incorporation of cumulate plagioclase, but is not genetically related to the Sandy Mitchell mineralisation. Three other early Devonian intrusives have been identified by the QLD Geological Survey, based on remote geophysics, but are unnamed. These are mapped as Dglb, Dgak and Dgla (see Figure 2).

From the intrusive mapped as Dlgb, north to the tenement boundary and beyond, the contact between the Lukinville Granodiorite and the Chelmsford Gneiss is marked by a sheer zone. This sheer turns westward of the contact at the southern margin of Dlgb and continues on the west side of Dgak.

The tenement is prospective for rare earth elements (REE) in the form of monazite and xenotime, as well as zircon, and Ti heavy minerals (HM) including rutile, leucoxene, ilmenite and their altered and intermediate phases.

The REE bearing material is the fine to very fine sand fraction (de Nooy 2010) in a polymictic, polymodal, angular to sub-rounded, unconsolidated sediment package which is largely devoid of clays below the top two metres. This unconsolidated HM sediment is located over the Chelmsford Gneiss and in minor ephemeral streams that are fed from, or cross, the Chelmsford Gneiss. This includes Sandy Creek which traverses the Lukinville Granodiorite but starts within the gneiss north of the tenement and is fed from multiple minor streams that drain the gneiss area in the wet season. The HM sands are well correlated with a strong thorium band radiometric anomaly (see Figure 3 in comparison with Figure 2) which also highlights their relationship with local drainage.

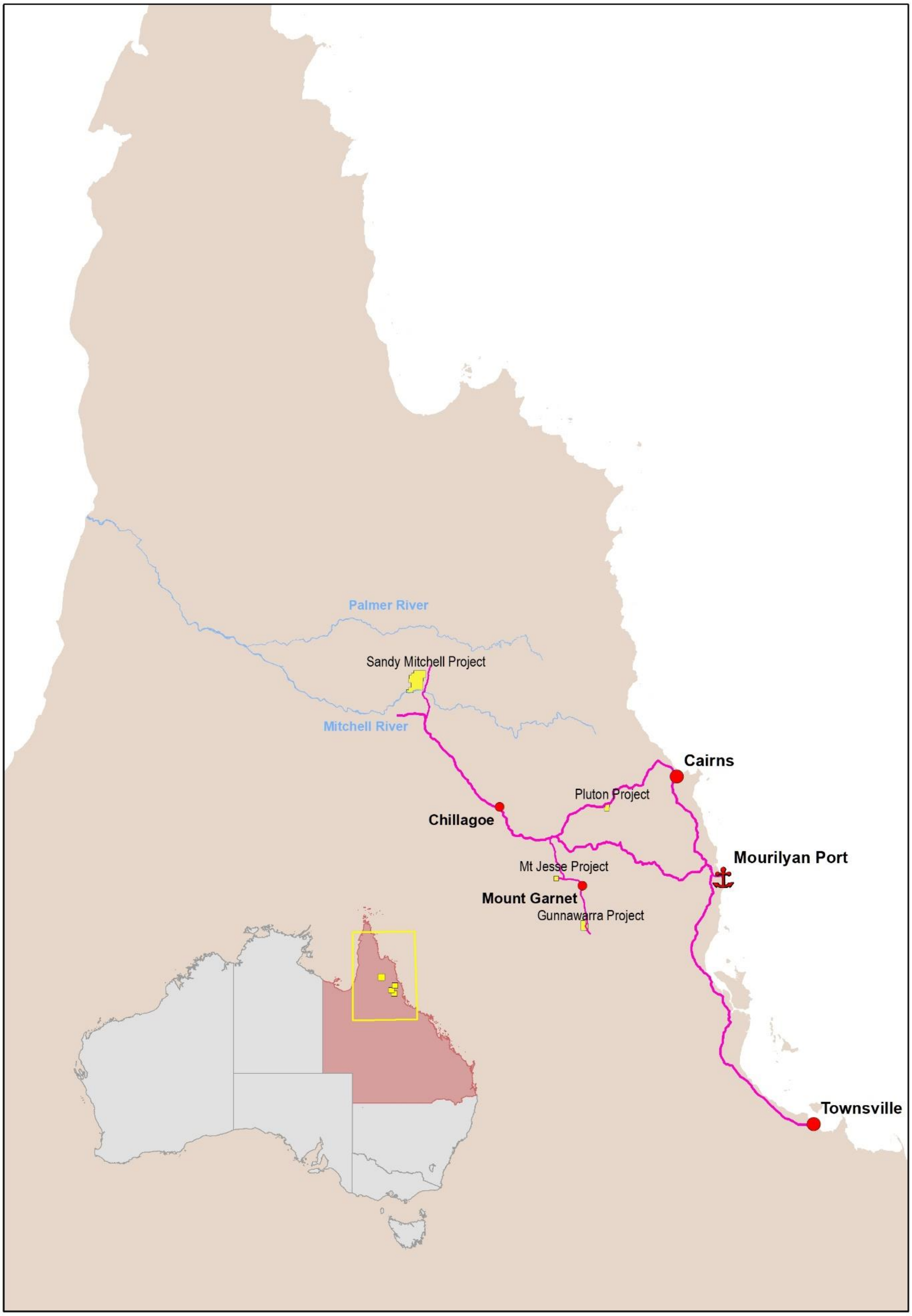

Figure 1: Sandy Mitchell Project Location.

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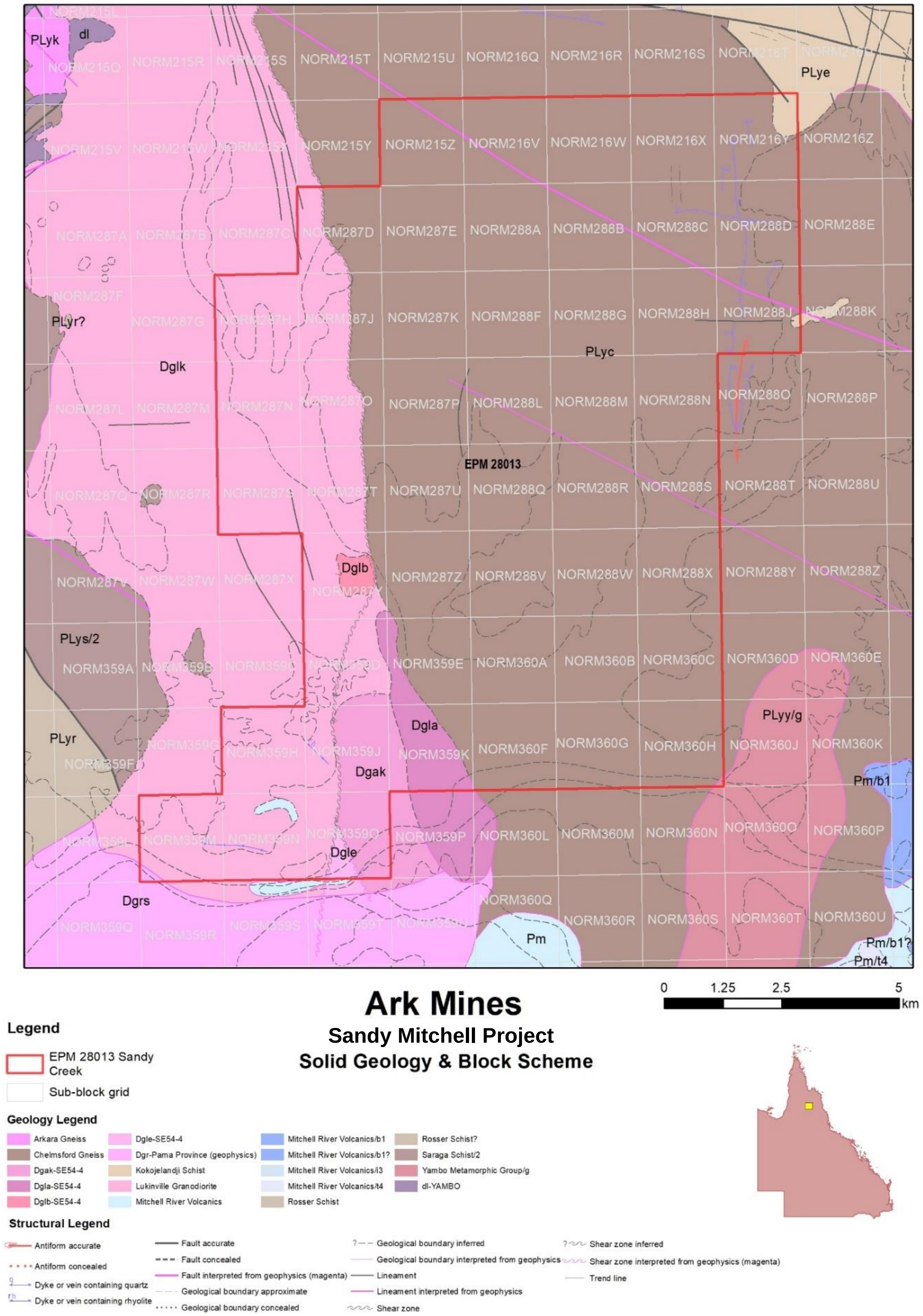


Figure 2: Geology of the Sandy Mitchell Project showing the EPM 28013 boundary and graticular block scheme.

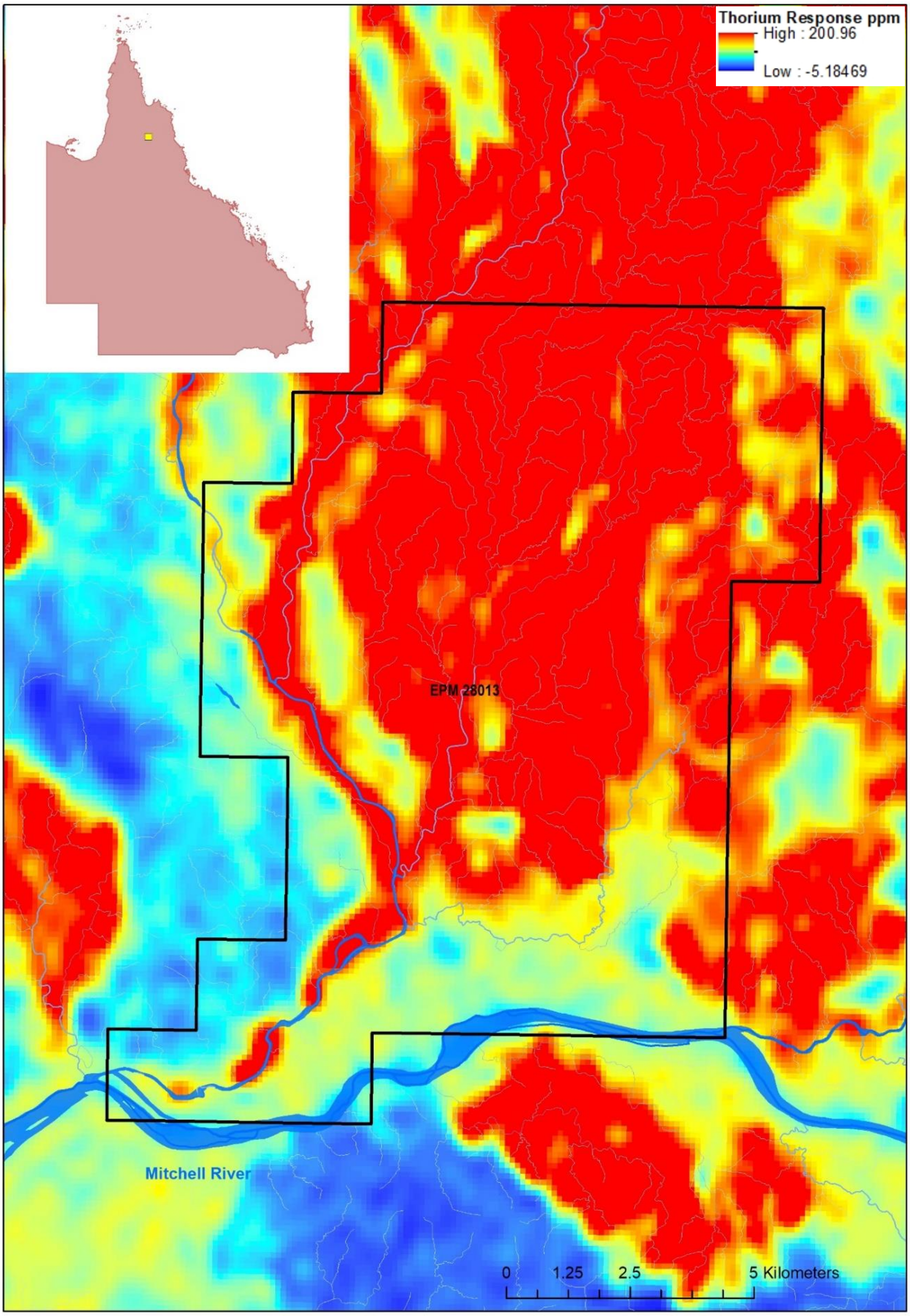


Figure 3: EPM 28013 thorium band radiometric anomaly.

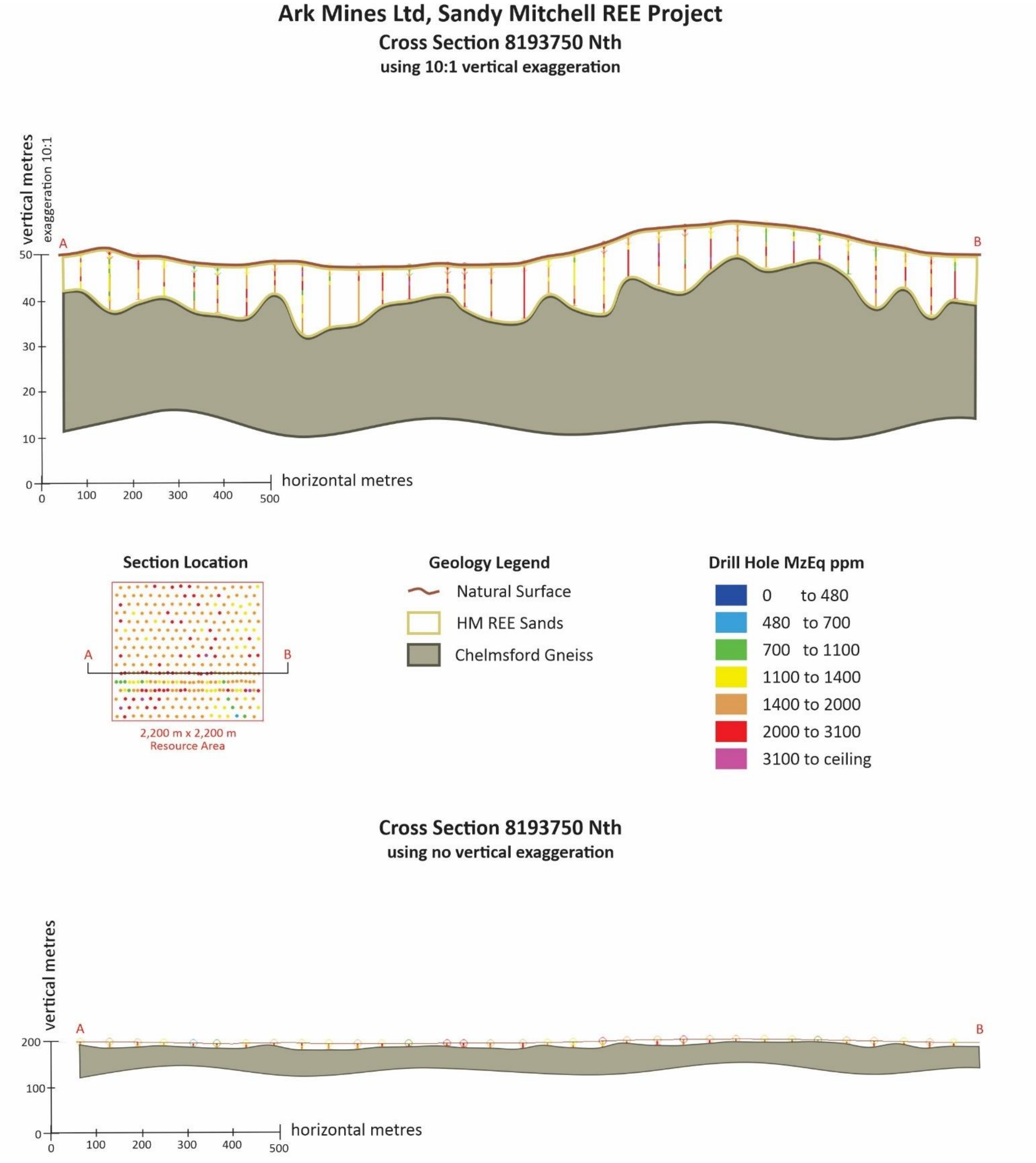


Figure 4: Sandy Mitchell Project west to east cross section at 8193750 m north through the REE & HM sand, showing drill data from the Stage 1 resource AC drill grid coloured for monazite equivalent.

The upper section has a vertical exaggeration of 10x to afford visibility of the drill data at the scale of the drill section. The lower section is the same section without vertical exaggeration, i.e. at true scale, illustrating why exaggeration is required to visualise the data. Note, the vertical exaggeration has the effect of magnifying topological variation as well as making the drill data visible. The lower section provides a realistic idea of the topography and basement variability of this relatively low relief terrain.

The HM sands are considered to have formed in situ by weathering driven disaggregation of the underlying Chelmsford Gneiss in the wet tropical environment. There are several compelling lines of evidence to support this in Ark's exploration data:

- Angular clasts of moderately soft monazite and xenotime are pervasive.
- Muscovite flakes and well crystalised biotite books up to 15mm in size are common throughout.
- The polymictic clasts identified in logging were Chelmsford lithologies such as biotite amphibolite or mafic granulite with occasional quartzites or muscovite quartzite.
- The sands, which can be over 20m thick in places, are extremely tightly packed to the point where a boosted air core rig struggles to penetrate.
- There is no real sorting; even though rounded to subrounded pebble sized material occurs in definite horizons these are dispersed throughout the sand layer.
- The HM grades are relatively evenly distributed with respect to profile depth, with no substantial lagging enrichment at the top of the pile, or gravity settling at the bottom, however, there is very substantial enrichment in even the smallest ephemeral stream.
- Where drilling penetrates the gneiss, the grades of REE and HM are only slightly lower than the overlying sands.

This type of HM sand mineralisation is sometimes referred to as saprolite sands, though this is a misnomer in the case of the Sandy Mitchell Project, as there is very little secondary clay through the profile, and surficial clays in the top two metres are considered transported by the wet season flood wash.

The entire sand horizon, and the top of the underlying bedrock is fully oxidised. Figure 4 shows a typical cross section through the REE and HM sands from within the heavily drilled Stage 1 resource area.

Sandy Mitchell Drilling

There are four generations of drilling within the Sandy Mitchell Project, detailed below and summarised in Table 1:

In 2012 Walter Scott & Partners drilled 101 auger holes (Scott W, 2013):

- Drilling was 3 fences approx. 9km long with holes at approx. 250m.
- Depths were not recorded but a 102mm auger on a mini excavator was used, with a reach of 6m and drilling was to refusal with all holes vertical.
- Sample was collected off the collar and riffle split 25:75 to yield a representative single composite sample.
- Assay was for Ce, Cs, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Tm, Al, Ca, Cr, Fe, K, Mg, Mn, Na, P, Si, Ti, Zr, Y and Yb.
- QC included dupes at 1 in 13 and twins at 1 in 100.
- Collar survey was by hand held GPS.

In June to July 2023 AHK drilled its Stage 1 resource programme; 144 air core (AC) holes for 1488.3m:

- Drilling was by 100mm AC bit using a Comacchio track mounted rig and auxiliary compressor.
- Drilling consisted of 3 lines at 60m x 120m plus 3 lines at 120m x 120m.
- Depths varied between 3.0 and 18.0 m with the mean depth being 10.3m and holes were pushed to refusal at the bedrock horizon, with all holes vertical (Figure 4).
- Sample was collected by the metre by passing through a cyclone and opening a manual gate at the end of each metre to release the sample into a tuff tub, which was then put through a 12.5:87.5 splitter to produce a metre representative sample in a prenumbered calico bag, and a conserved reject in a plastic bag.
- Assay was conducted at North Australian Laboratories (an AusTest facility):
    - Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As were assayed by sodium peroxide fusion in nickel crucibles with ICP-MS finish.
    - Al, Ca, Cr, Fe, Mg, P, S, Si and Ti were assayed by sodium peroxide fusion in nickel crucibles with ICP-OES finish.
    - Na and K were assayed by 4 acid digest with ICP-OES finish.
    - Gravimetric moisture was measured at 1 in 5.
    - Gravimetric dry loose bulk density was measured at 1 in 3.
- QC included:
    - Field duplicates at 1 in 40 by 50:50 riffle split of representative sample.
    - Lab repeats at 1 in 8.
    - Standards at 1 in 24
    - Grind size tests at 1 in 34.
    - 1 drill twin.
- Sample was logged by the metre on site and drilling/sampling operations were under geological supervision.
- Survey was by qualified surveyor using RTKdGPS

In November to December 2023 AHK drilled its Stage 2 resource programme; 185 AC/RC holes for 2427m.

- Drilling was by 102mm air core bit with 102mm RC face hammer finish, using a AusRoc 4000 multi-purpose rig with on board air.
- Drilling consisted of 10 lines at 120m x 120m
- Depths varied between 5.0 and 26m with an average of 11.9m and the last metre finishing in bedrock by face hammer, with all holes vertical.
- Sample was collected by the metre by passing through a cyclone and opening a manual gate at the end of each metre to release the sample through a rig mounted 12.5:87.5 splitter to produce a metre representative sample in a prenumbered calico bag, and a conserved reject in a plastic bag.
- Assay was conducted at North Australian Laboratories (an AusTest facility):
  - Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As were assayed by sodium peroxide fusion in nickel crucibles with ICP-MS finish.
  - Al, Ca, Cr, Fe, Mg, P, S, Si and Ti were assayed by sodium peroxide fusion in nickel crucibles with ICP-OES finish.
  - PPB Au by low level Fire assay with ICP-MS finish on second metre and last metre samples.
  - Na and K were assayed by 4 acid digest with ICP-OES finish.
  - Gravimetric moisture was measured at 1 in 4.
  - LOI was measured at 1 in 8.
  - Gravimetric dry loose bulk density was measured at 1 in 3.
- QC included:
  - Field duplicates at 1 in 45 by 12.5:87.5 riffle split of bulk reject sample.
  - Lab repeats at 1 in 9.
  - Standards at 1 in 10.
  - 8 AC Drill twins equating to 1 in 22.
- Sample was logged by the metre on site and drilling/sampling operations were under geological supervision.
- Survey was by qualified surveyor using RTKdGPS

This Stage 2 resource programme was accompanied by a Stage 2 reconnaissance programme of 32 AC/RC holes for 393m.

- The drill, sampling methodology, assay regime, survey and QAQC were in all respects identical to the Stage 2 resource programme.
- Depths varied between 3.0 and 30m with an average of 12.3m and the last metre finishing in bedrock by face hammer, with all holes vertical.
- Drilling was widely spaced to cover as much of the tenement as possible, with distribution controlled by rig access on existing tracks and fence lines.

In December 2023 AHK commenced its Stage 3 auger exploration grid to test the total prospective area of the tenement. The initial line of this programme was drilled in December as a proof of concept with:

- Drilling was by 105mm auger bit using a Rockmaster ute mounted auger.
- Hole spacing was approx. 360m.

- Depth varied between 1.5 and 5.0m with an average of 3.0m, and were controlled by penetration refusal in the very tight sands using this relatively light weight rig.
- All holes were vertical.
- Sample was collected by the metre by being lifted up a collection tube via rotation of the auger flights, then passing through a collection chute into a tuff tub which was then put through a 12.5:87.5 splitter to produce a metre representative sample in a prenumbered calico bag, and the reject allowed to spill.
- Assay regime and QAQC were in all respects identical to the Stage 2 resource programme.
    - 2 auger twins of AC holes within the stage 2 resource grid (5.8m and 4.1m) were produced for auger programme QC, and these are not counted as reconnaissance metres.
- Survey was by hand held GPS, which is considered adequate for this type of widely spaced reconnaissance work.

In December 2023 AHK drilled 2 water monitoring bores of 32m and 30m.

- These vertical holes were drilled by 102mm open hole percussion bit.
- Hole location was set out by AHKs hydrologist.
- Sample was collected at the collar by spear and release into a prenumbered calico bag without splitting.
- Assay regime and QAQC were as per the Stage 2 resource grid, with the exception that no field duplicates were taken.
- For analytical purposes this report treats the above bedrock assay data of these holes as part of the auger reconnaissance data set due to the outside sample passage.

- Survey was Survey was by qualified surveyor using RTKdGPS.

Table 1:Summary of Sandy Mitchell Project drilling excluding.

Stage	Purpose	Type	Driller	Collars	Metres	Max Depth	Min Depth	Mean Depth	Max Sand	Min Sand	Mean Sand
units:				*n*	*m*	*m*	*m*	*m*	*m*	*m*	*m*
Historic:	**exploration**	**Auger**	**W Scot**	**101**	**~500**	**~5**	**?**	**?**	**6.0**	**?**	**~5**
Total Ark Drilling:				385	4437.0	32.0	1.5	13.1	29.0	1.5	10.4
1	**All Stage 1**			**144**	**1488.3**	**18.0**	**3.0**	**10.3**	**18.0**	**3.0**	**10.3**
1	resource	AC	Saxon	143	1477.3	18.0	3.0	10.3	18.0	3.0	10.3
1	resource twin	AC	Saxon	1	11.0	11.0	11.0	11.0	11.0	11.0	11.0
2	**All Stage 2**			**217**	**2820.1**	**30.0**	**3.0**	**13.0**	**29.0**	**2.0**	**12.1**
2	resource	AC/RC	AED	177	2343.1	26.0	5.0	13.2	25.5	4.0	12.3
2	resource twin	AC/RC	AED	8	84.0	17.0	6.0	10.5	16.5	5.0	9.6
2	reconnaissance	AC/RC	AED	32	393.0	30.0	3.0	12.3	29.0	2.0	11.3
3	**All Stage 3**			**24**	**128.6**	**32.0**	**1.5**	**5.4**	**22.0**	**1.5**	**4.0**
3	reconnaissance	Auger	Ark	22	66.6	5.0	1.5	3.0	5.0	1.5	3.0
3	monitoring bore	OP	WB QLD	2	62.0	32.0	30.0	31.0	22.0	8.0	15.0

Detailed analysis of AHK Stage 1 and Stage 2 QAQC shows a well conditioned and comprehensive series of checks that have been applied to self-correct sampling issues as they arose. Few assay anomalies are present, such as a slight downward bias of some elements in some standards, and they have been quantified as minor and not materially significant (see Appendix B for QAQC analysis).

Stage 3 is considered to be of equivalent QAQC quality with QAQC matching that of the Stage 2 resource programme, with the results being considered as below resource confidence due only to the drill type involving outside sample return with concomitant contamination potential, equivalent to a RAB sample. The data is of good quality for exploration purposes and examination of the data shows none of the patterns or biases typical of significant up hole contamination.

Exploration Results

The results of all stages of drilling are shown in Figure 5 and Figure 6. Figure 5 shows the drill data weight averaged for the entire drill hole, by drill generation and coloured for monazite equivalent (MzEq). The monazite equivalent is an assay based factor which uses economic data to equate the concentration of monazite, xenotime, zircon, rutile, high and low Ti leucoxene, altered ilmenite and ilmenite, as a single number which best represents the economic HM and REE bearing mineral content. The formula for and derivation of MzEq is provided in Appendix A. Figure 6 shows the same data with colouring by TREO + Y, which represents the REE concentration of HM, based on assay (the way total rare earth oxide or TREO is calculated is provided in Appendix A). The mean assay results for all generations of all holes are given in Table 2, full drill data tables for Stage 2 and 3 reconnaissance, and monitoring bores is provided in Appendix D.

Table 2: The length weighted average grade of key HM sand commodities in each generation of drilling at Sandy Mitchell. NB: the values for the historic auger programme are simple averages, since depth data was not recorded.

Stage	Purpose	Type	MzEq	Monazite	Xenotime	Zircon	Rutile	Hi Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	Ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO
units:			*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*
Historic:	**exploration**	**Auger**	**1,098.9**	**412.0**	**48.1**	**868.2**	**82.1**	**236.4**	**150.5**	**244.7**	**264.9**	**282.5**	**293.4**	**273.9**	**6.6**	**71.7**	**74.1**
Total Ark Drilling:			1,641.2	1,242.7	47.0	667.7	78.3	225.4	143.5	233.3	252.7	398.4	427.9	385.2	13.2	108.4	98.2
1	**All Stage 1**		**1,708.1**	**1,285.1**	**51.4**	**705.5**	**82.8**	**238.5**	**151.8**	**246.9**	**265.6**	**443.7**	**476.4**	**429.8**	**13.9**	**119.1**	**107.7**
1	resource	AC	1,710.4	1,285.8	51.5	708.0	83.2	239.7	152.6	248.1	266.9	443.2	476.0	429.2	13.9	118.9	107.4
1	resource twin	AC	1,396.2	1,192.4	32.4	367.8	27.4	78.8	50.1	81.5	88.3	510.0	528.9	501.9	8.1	135.3	145.9
2	**All Stage 2**		**1,618.1**	**1,230.3**	**44.9**	**650.9**	**76.5**	**220.5**	**140.3**	**228.2**	**247.1**	**379.7**	**407.6**	**366.8**	**12.9**	**103.8**	**94.4**
2	resource	AC/RC	1,654.0	1,263.3	44.6	660.3	76.4	220.0	140.0	227.6	246.5	390.8	418.5	378.0	12.8	105.8	97.3
2	resource twin	AC/RC	1,641.5	1,251.6	44.3	678.4	71.3	205.4	130.8	212.6	230.2	445.6	472.9	432.8	12.8	115.4	110.3
2	reconnaissance	AC/RC	1,399.0	1,028.6	46.6	589.2	78.7	226.6	144.2	234.5	254.0	299.1	328.6	286.0	13.2	89.2	73.6
3	**All Stage 3**		**1,372.5**	**1,022.6**	**43.6**	**599.3**	**63.7**	**183.5**	**116.8**	**189.9**	**226.7**	**285.4**	**312.6**	**272.7**	**12.7**	**85.1**	**71.6**
3	reconnaissance	Auger	1,828.1	1,358.3	48.2	844.3	82.8	238.4	151.8	246.8	267.2	385.0	414.7	370.7	14.3	107.9	97.0
3	monitoring bore	OP	883.0	662.0	38.7	336.2	43.2	124.4	79.2	128.7	183.1	178.5	202.9	167.4	11.1	60.6	44.3

Table 2 shows that the historic auger grades are relatively low compared to AHK's work, however, this is considered to be a result of the assay method, as REE, Hf, Zr, Ti and many other elements are known to produce a lower assay grade with 4 acid digest methods, which are not a true total digest for incompatible elements, compared to the more costly and time consuming fusion process used by AHK.

It is also evident that the Stage 2 reconnaissance drilling is of lower grade tenor, but that the other generations are reasonably close in grades. Looking at Figure 7 in relation to Figure 5 and Figure 6 it can be seen that several reconnaissance holes do not correlate with the Th anomaly, which we have already noted, is itself correlated strongly and in fact genetically, with the HM sands.

The holes that fall into the granitoid can be classified as uncorrelated and the few that show grades of interest are intersecting stream alluvium of limited extent. Another line of low grades represents a band along the Lukinville Chelmsford contact sheer zone, and these too can be classified as uncorrelated. There are a small number of low grade holes scattered within the low Th areas within the anomaly boundary, and these represent topographic highs where the sands have been removed by peneplaining, and can also be considered as uncorrelated.

The final category of uncorrelated drill data is that in the area from the south of the high grade Th anomaly, to the Mitchell River. In this area the sands thin through erosion towards the Mitchell River but are also covered by thin layers of foreign topsoil deposited by the wet season flooding of the Mitchell. 20 to 30mm of foreign material is sufficient to completely obscure a radiometric signal, which must be considered a surface effect only, due to the limits of gamma penetration.

Classification into correlated and uncorrelated drill data allows delineation of the area of highest correlation with viable HM & REE sands (see Figure 8). This area of maximum correlation covers 9,115.2 ha (91.2 km^2) within EPM 28013, and affords division of the reconnaissance drilling data into correlated and uncorrelated, rather than generationally, as per Table 3.

Table 3: Length weighted average sand depths and assay grades, by correlation category. Note that sand depths exclude the bedrock portion of each hole.

Data Categpry	Metres	Mean Sand	MzEq	Monazite	Xenotime	Zircon	Rutile	Hi Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	Ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO
units:	Metres	m	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
All Recon Data	521.6	8.2	1,392.5	1,027.1	45.9	591.7	75.0	216.0	137.5	223.5	247.2	295.8	324.7	282.7	13.1	88.2	73.1
All Correlated Recon	342.6	7.1	1,647.9	1,225.4	49.0	694.4	87.0	250.6	159.5	259.3	281.2	336.2	366.9	322.1	14.1	97.8	83.0
Correlated AC/RC	244.0	10.6	1,672.4	1,255.7	49.4	668.6	89.2	257.0	163.6	265.9	288.0	331.8	362.9	317.7	14.1	97.0	81.3
Correlated Auger	98.6	3.9	1,587.4	1,150.6	48.0	758.4	81.5	234.7	149.4	242.9	264.4	347.0	376.7	332.8	14.1	99.9	87.1
Uncorrelated	179.0	12.2	903.6	647.7	39.9	395.2	52.0	149.7	95.3	155.0	182.2	218.4	243.8	207.4	11.0	69.8	54.2

From Table 3 we can see that the auger reconnaissance data within the correlated exploration area is a good match for the other data generations from Table 2, which themselves are unaffected because they do not extend outside the correlated area. The data is also a good match for the Stage 2 JORC 2012 Mineral Resource Estimation summarised in Table 4; the correlated reconnaissance data averages only 4.9% below the stage 2 measured Resource Estimate grade in MzEq, and 3.7% below the stage 1 average resource drilling MzEq grade. The correlated reconnaissance data averages only 6ppm below the Stage 2 drilling mean grade in MzEq.

Table 4: Sandy Mitchell Stage 2 mineral resource estimate (Ark Mines Ltd 02 October 2024, Hawker 2024) calculated at a cut-off grade of 700 ppm MzEq, provided for grade context and comparison.

	Measured Resource	Monazite Equivalent	THM	Monazite	Xenotime	Zircon	Rutile	High Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	Ilmenite
Grade ppm		1,732.7	3,263.0	1,229.0	115.7	663.0	105.3	304.0	192.7	313.8	339.7
Tonnes	71,789,616	124,386	234,251	88,228	8,302	47,593	7,557	21,820	13,835	22,530	24,385

	Measured Resource	Treo+Y+Sc	TREO	LREO	HREO	MagREO	CREO
Grade ppm		457.2	403.5	389.6	13.9	99.4	110.9
Tonnes	71,789,616	32,821	28,965	27,970	995	7,132	7,960

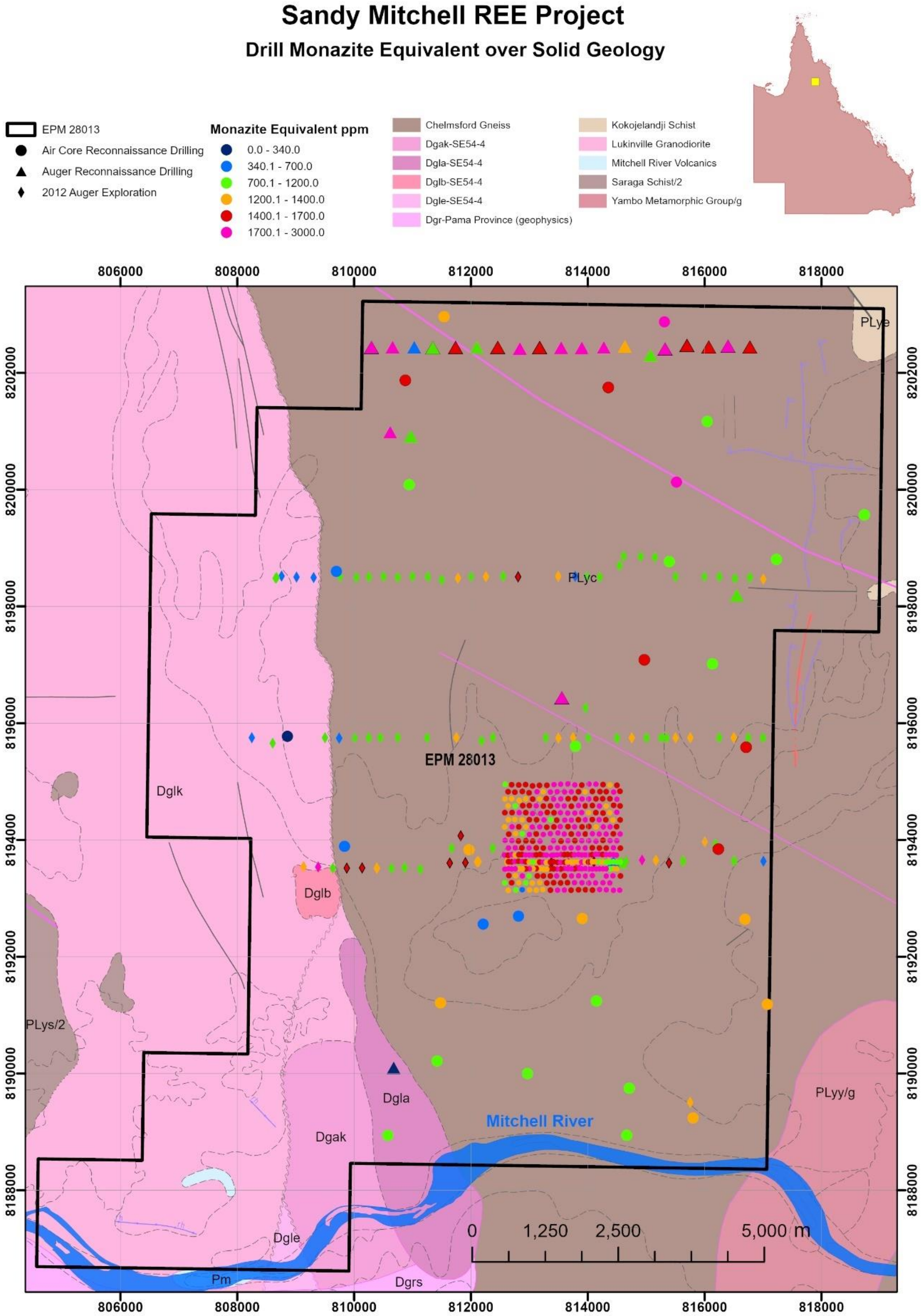


Figure 5: All generations of Sandy Mitchell drilling, coloured by monazite equivalent and shown against geology. Note that grades are the weighted average of the total hole length for each collar.

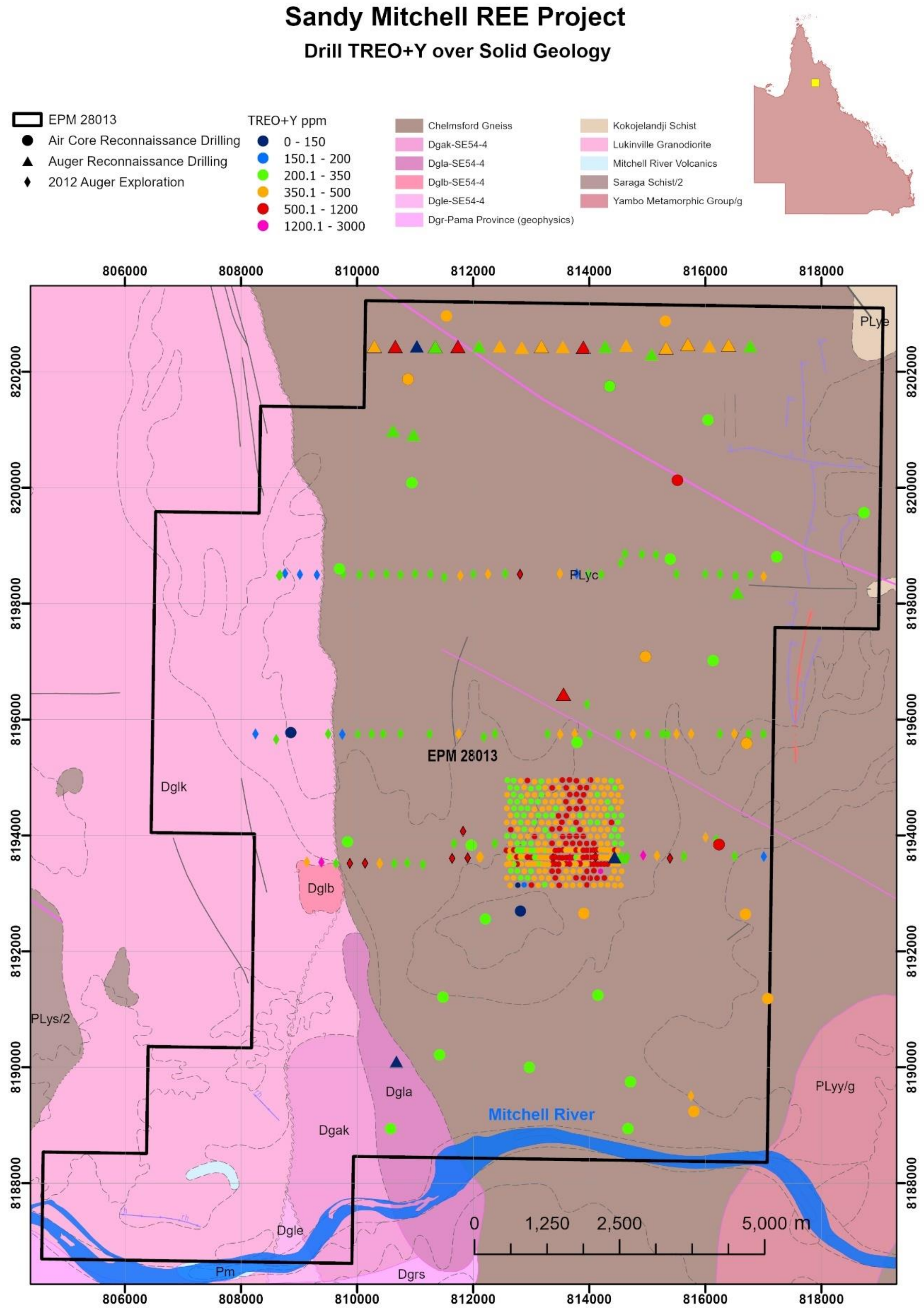


Figure 6: All generations of Sandy Mitchell drilling, coloured by TREO+Y and shown against geology. Note that grades are the weighted average of the total hole length for each collar.

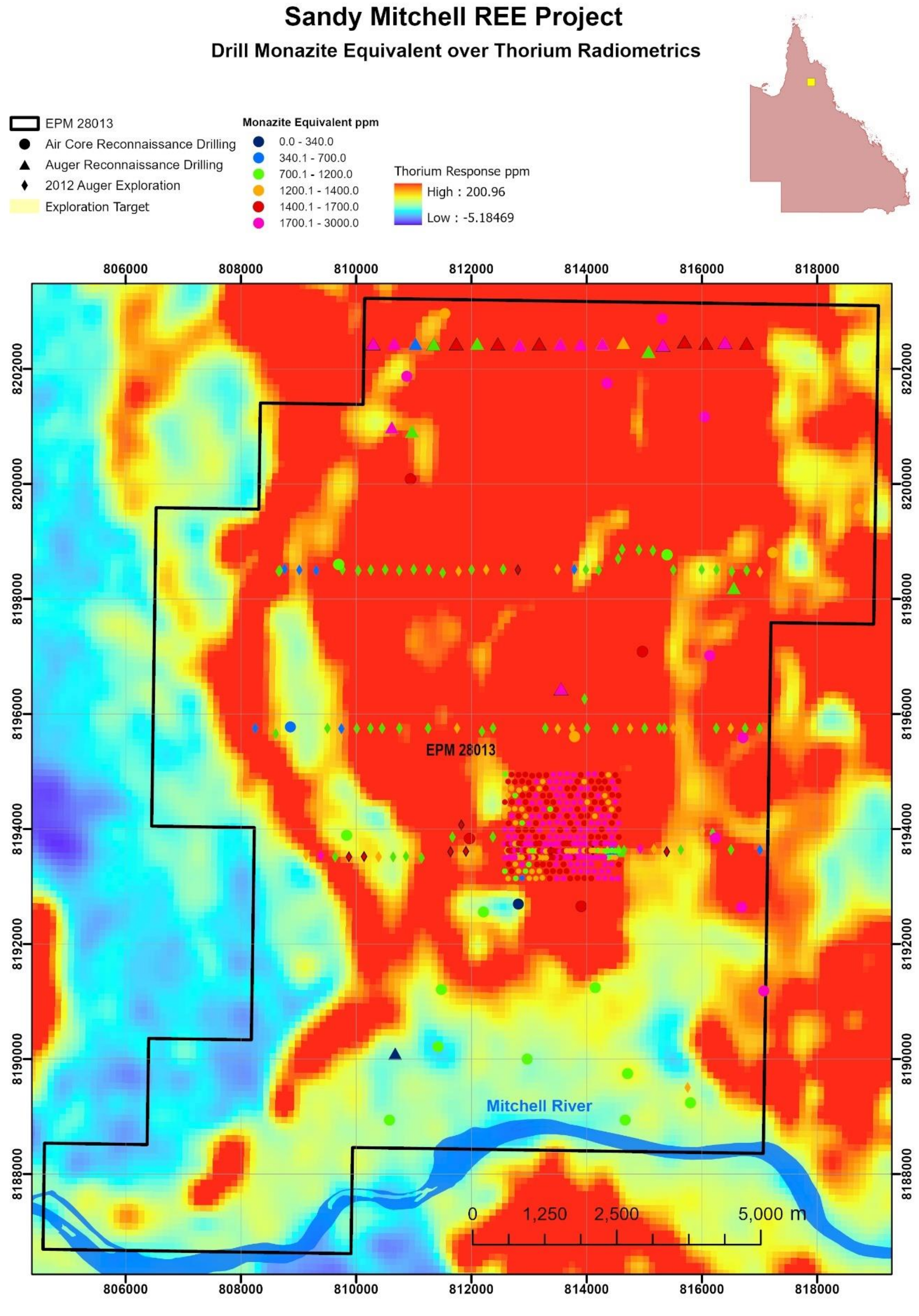


Figure 7: All generations of Sandy Mitchell drilling, coloured by monazite equivalent and shown against the thorium band radiometric anomaly. Note that grades are the weighted average of the total hole length for each collar.

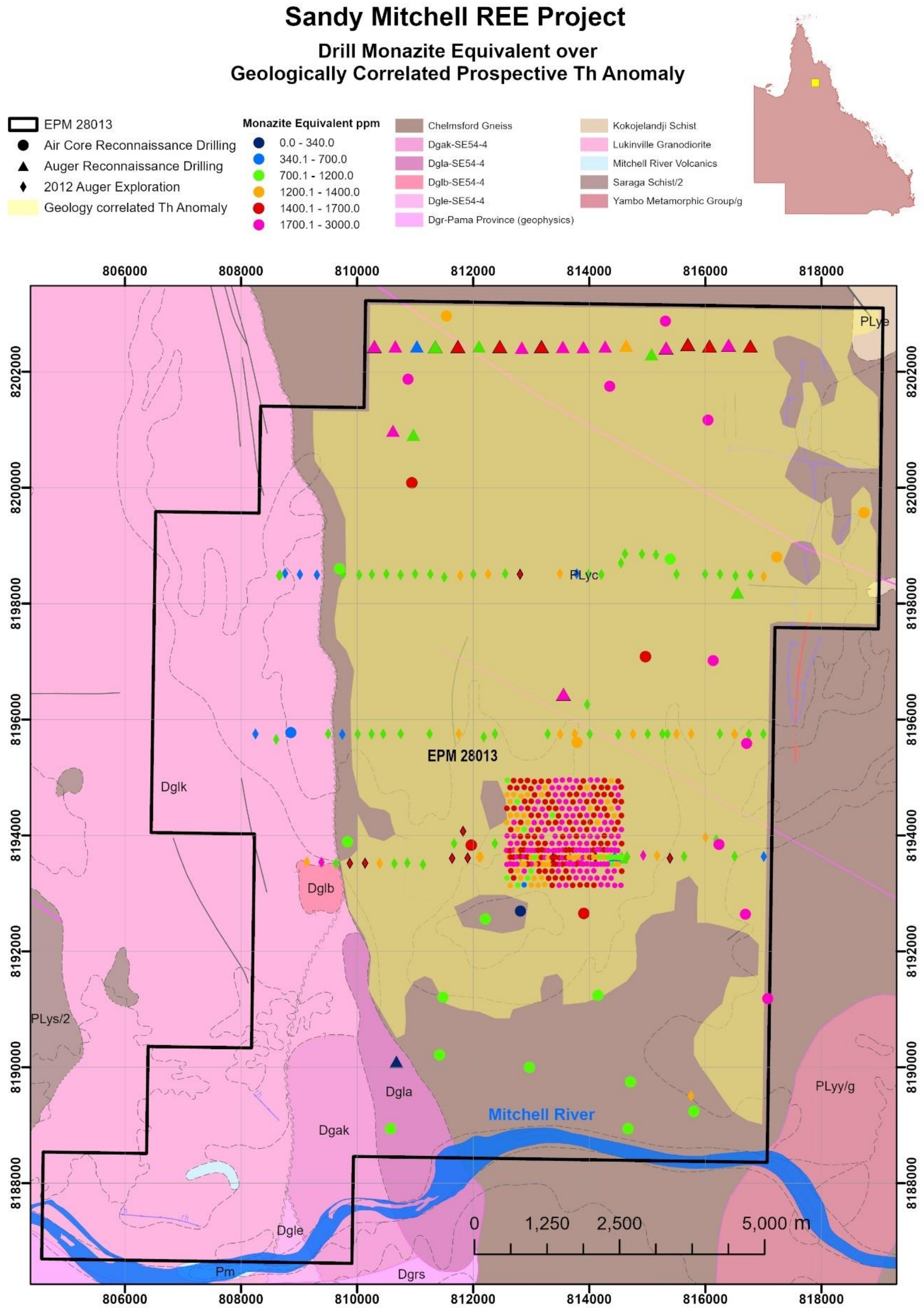
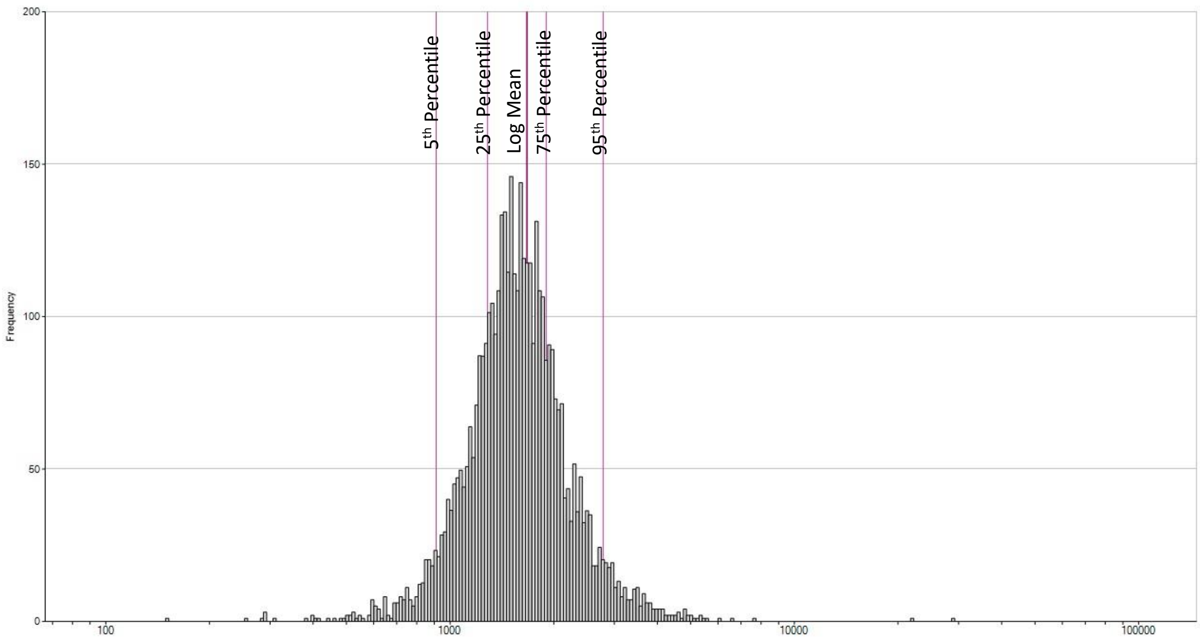


Figure 8: The yellow polygon equates to the Th anomaly area which correlates to viable reconnaissance drilling results. The drilling within the yellow area is classified as correlated, whilst the drilling outside the yellow area is classified as uncorrelated, for the purposes of analysing the drilling results.

Range Delineation

The grade range of the initial Exploration Target was defined by simple value distances from the resource model, however, to make a more internally consistent and rigorous evaluation of potential grade ranges, we can evaluate the correlated data statistically (Graph 1 Graph 2 and Table 5.) The correlated data used includes all the correlated data sets shown in Table 3 as well as the stage 1 and 2 resource data in Table 2, which is also fully within the correlated area. This equates to 4292 samples.

Graph 1: Log histogram of length weighted monazite equivalent for all correlated area data.



Graph 2: Log probability plot of length weighted monazite equivalent for all correlated area data.

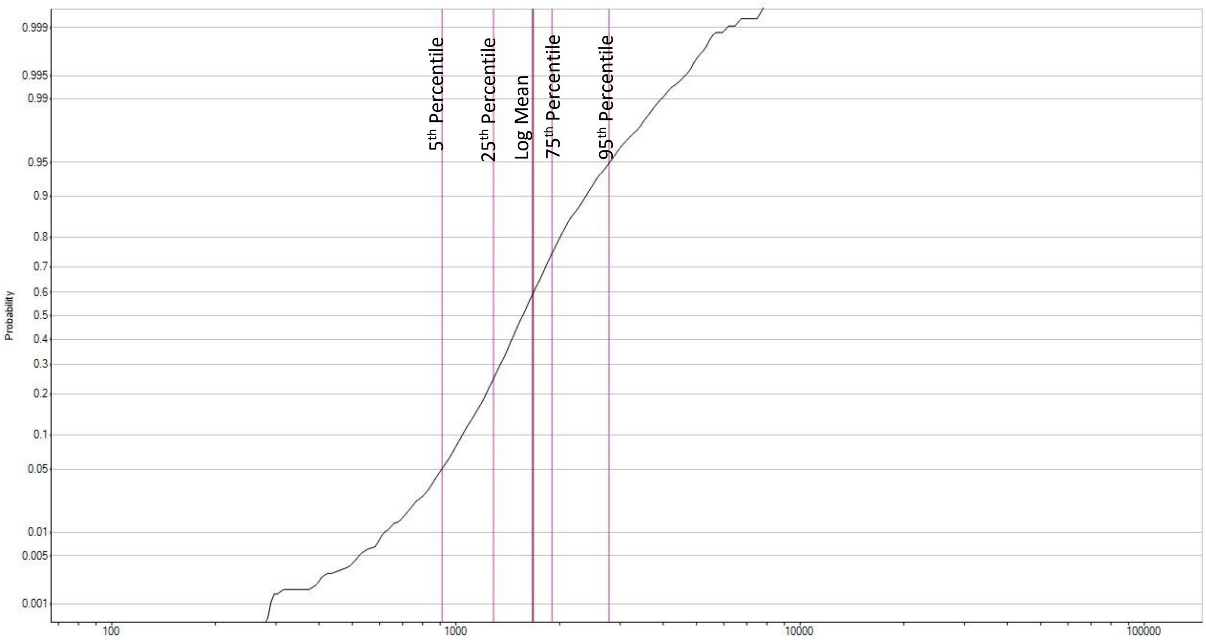


Table 5: Statistics for monazite equivalent for all correlated area data.

Statistic	MzEq	Statistic	MzEq
Min	149.2	5th Percentile	911.7
Max	29230.7	25th Percentile	1285.5
Range	29081.5	75th Percentile	1901.5
Std Dev	814.1	95th Percentile	2782.8
Skewness	13.6	Kurtosis	400.1
Mean	1676.5	Log Mean	1669.8
CoV	0.49	Sample Count	4292

The skewness and kurtosis tell us that the data is not normally distributed and Graph 1 demonstrates that a log distribution fits the data very well. The data set has no top-cut or background removal and Graph 2 shows that both an outlier population and a background are both present. This widens the data range and causes inflation of the sample standard deviation with respect to the correlated area mineralisation subset. Nevertheless, the log distribution is very well conditioned as shown by the coefficient of variation of 0.49 and the log mean is only 6.7 ppm (0.3%) below the normal mean (Table 5) Though some minor residual skew is still present the tails outside the 5th and 95th percentile are very even within the main population.

From Graph 1 it can be seen that the residual skew places more data between the mean and the 25th percentile than between the mean and the 75th percentile equating to a negative range bias, but in general this range contains half the data and it is highly unlikely that the mean value of further drilling, given the performance of the correlated area reconnaissance data, will occur outside this range. The 25th percentile equates to -23% from the log mean, and the 75th percentile equates to +14% from the log mean based on MzEq. The MzEq encompasses all critical assay and all valuable heavy mineral, and is thus the ideal measuring parameter, which is its designed purpose. The derivation of the MzEq is given in Appendix A. The resulting range is shown in Table 6.

Table 6: Correlated exploration area HM and REE grade range determined as -23% to +14% of the log mean correlated data set MzEq grade. The formula and factors relating these to raw element grades are provided in Appendix A.

Correlated Area Range	MzEq	Monazite	Xenotime	Zircon	Rutile	High Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	ilmenite
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*
Minima	1285.77	975.97	36.26	520.70	60.61	174.57	111.12	180.66	195.64
Log Mean	1669.83	1267.49	47.09	676.24	78.72	226.71	144.31	234.63	254.07
Maxima	1903.60	1444.94	53.69	770.91	89.74	258.45	164.52	267.48	289.64

	TREO	TREO+Y	LREO	HREO	CREO	MagREO
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*
Minima	315.4	338.1	305.2	10.2	85.1	77.6
Log Mean	409.6	439.1	396.4	13.2	110.5	100.8
Maxima	466.9	500.6	451.9	15.1	125.9	114.9

Noting that the mean sand depth over the wide distribution of correlated AC reconnaissance is 10.6m (as per Table 3, excluding auger depths which do not reach bedrock), and that the Stage 1 resource grid sand mean depth is 10.3m while the Stage 2 resource grid mean sand depth is 12.1m (with this difference likely due to failure to reach bedrock with the Stage1 drill), an empirically well supported and conservative sand thickness for the correlated area can be set within the range of 10m to 12m. If the Stage 1 and Stage 2 Resource areas, 452.7 ha, are subtracted from the area of correlation, a correlated exploration area of 8,662.5 ha or 86.6 km^2 is derived and this yields a volume range of 866.3 million to 1,039.5 million bank cubic metres (BCM).

AHK's test work also well constrained the density of the HM REE sands: Based on 1,447 laboratory measurements of loose dry bulk density, the volume weighted density of the HM REE sands is 1.52, which is within the normal range for dry sands (the density of damp sands rises dramatically with moisture due to hydrogen bonding, by up to 27%). This allows calculation of a dry tonnage range for the correlated exploration area of 1,316.7 million to 1,580.0 million dry metric tonnes.

Exploration Target

With the ranges for volume, tonnage and grade in place for the specified 86.6 km^2 area of correlation (excluding the 4.5 km^2 resource area), all the necessary preconditions are in place to define a JORC 2012 Exploration Target. However, it should be noted that the potential quantity and grade is conceptual in nature; there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in estimation of a Mineral Resource. The Sandy Mitchell Exploration Target is given in Table 7 and is shown in Figure 9.

Table 7: Ark Mines Ltd Sandy Mitchell Exploration Target. No cut-off grades, top-cuts or interval exclusions are applied. The calculations and factors used are described in Appendix A, raw drill hole assay data is supplied in Appendix B.

Exploration Target Range	Exploration Target	MzEq	Monazite	Xenotime	Zircon	Rutile	High Ti Leucoxene	Low Ti Leucoxene	Altered Ilmenite	ilmenite
From Grade ppm		1,285.8	976.0	36.3	520.7	60.6	174.6	111.1	180.7	195.6
From Dry Tonnes	1,316,705,000	1,693,000	1,285,000	48,000	686,000	80,000	230,000	146,000	238,000	258,000
To Grade ppm		1,903.6	1,444.9	53.7	770.9	89.7	258.5	164.5	267.5	289.6
To Dry Tonnes	1,580,046,000	3,008,000	2,283,000	85,000	1,218,000	142,000	408,000	260,000	423,000	458,000

Exploration Target Range	Exploration Target	TREO	TREO+Y	LREO	HREO	CREO	MagREO
From Grade ppm		315.4	338.1	305.2	10.2	85.1	77.6
From Dry Tonnes	1,316,705,000	415,000	445,000	402,000	13,000	112,000	102,000
To Grade ppm		466.9	500.6	451.9	15.1	125.9	114.9
To Dry Tonnes	1,580,046,000	738,000	791,000	714,000	24,000	199,000	182,000

Further Exploration

AHK plans to continue to test the Exploration Target by proceeding with the Stage 3 auger programme. 223 collars have been planned, of which 189 are directly testing the Exploration Target, and the remaining 34 are testing the southern uncorrelated area (see Figure 10). The Stage 3 auger programme over the Exploration Target will progress during the 2024 and 2025 dry season. The portion of the programme testing the southern uncorrelated area is of lower priority and will be conditional on the arrival of the wet season.

The southern uncorrelated area covers 14.9 km^2 and grades above cut-off (700 ppm MzEq) in the Stage 2 AC reconnaissance data show that there is a reasonable probability of delineating areas of viable mineralisation beneath the thin layer of sediment shielding the Th gamma emissions.

The Exploration Target is expected to take approx. 567m, whilst the southern uncorrelated area is expected to take approx. 102m with sampling and assay methodology is planned to remain as per the Stage 3 auger work already completed.

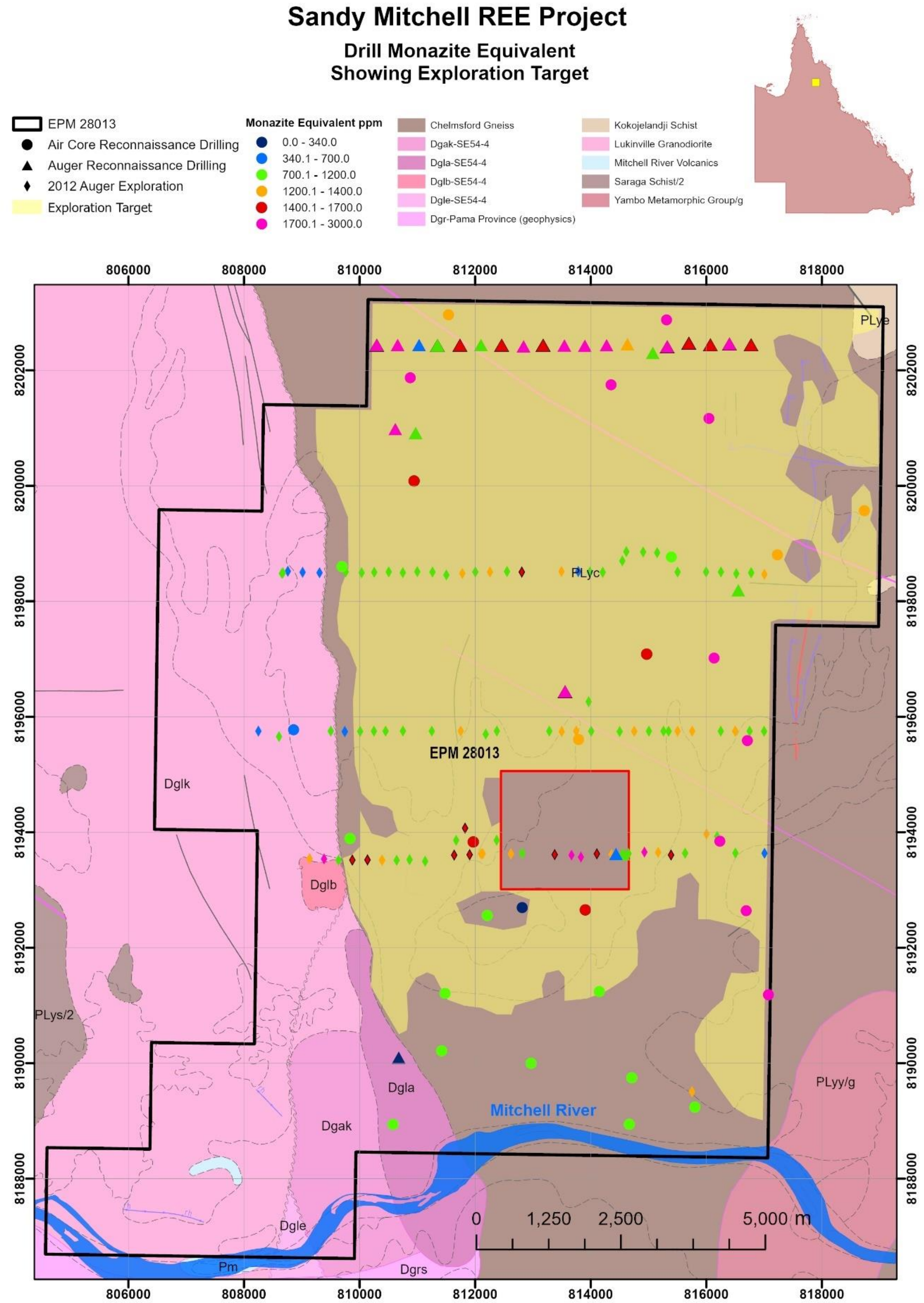


Figure 9: The JORC Exploration Target (yellow) with all generations of exploration drilling shown coloured by monazite equivalent.

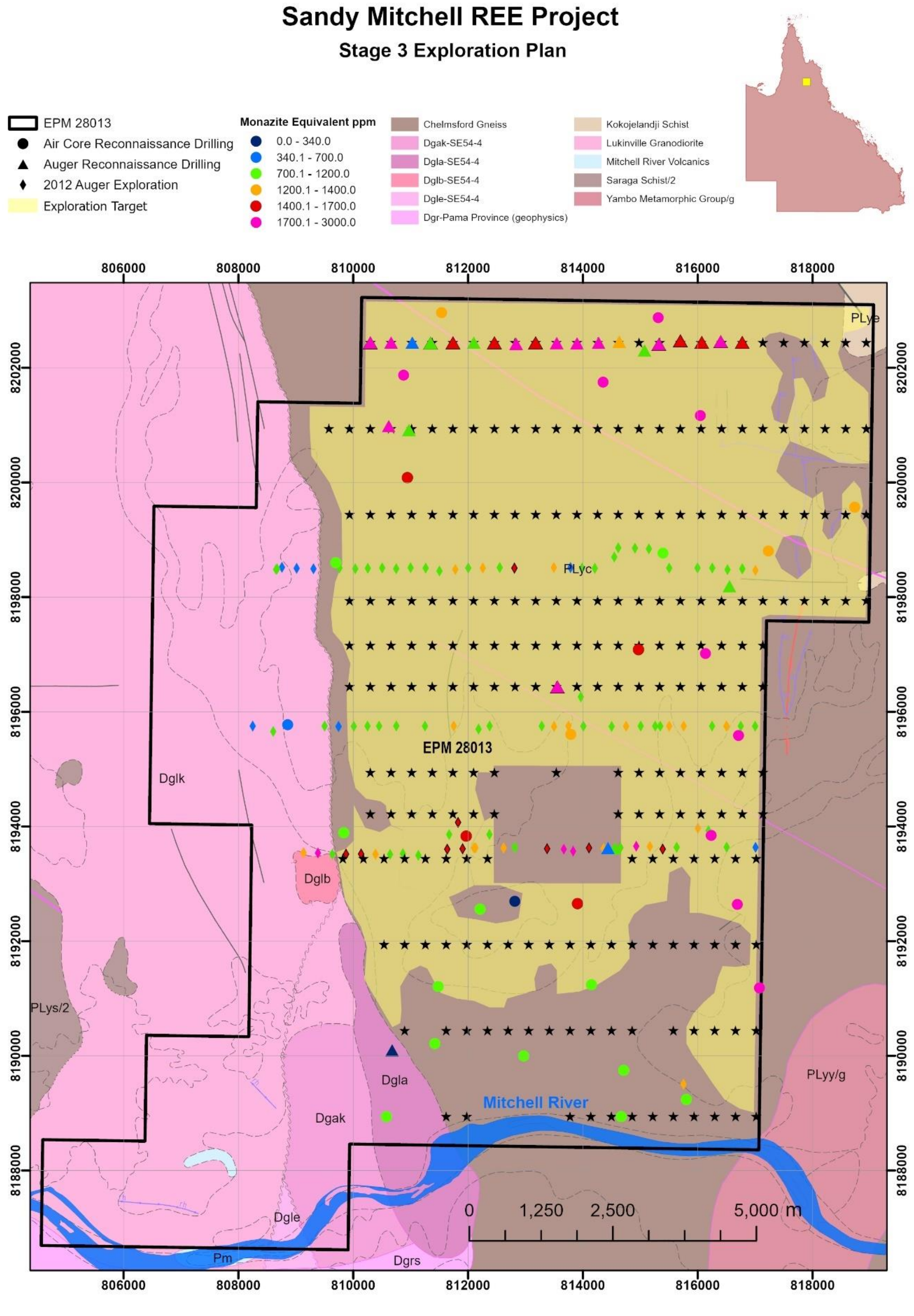


Figure 10: Sandy Mitchell Stage 3 auger exploration design (black stars), planned for 2024 and 2025 coverage of the Exploration Target. Coverage south of the Exploration Target is second priority and completion is wet season dependent.

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Appendix A

Ark Mines Sandy Mitchell Project Updated Monazite Equivalent: Purpose and Derivation.

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Contents

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Neither Empirical Earth Science nor Daemon de Chaeney have any material interest or entitlement in the securities or assets of Ark Mines Ltd. Empirical Earth Science will be paid a fee for this report comprising its normal professional rates and reimbursable expenses. Such fee is not contingent on the conclusions of this report.

Purpose

The purpose of this document is to provide Ark Mines Ltd with EES's summarised report regarding the derivation of the monazite equivalent calculation used to express the cut-off grade of the Sandy Mitchell resource estimate, and unify the polymineralic grade data within that estimate, whilst providing a rational for its use.

Executive Summary

Ark Mines Ltd (Ark) has determined that a monazite equivalent (MzEq) grade can be calculated that allows the suite of economic heavy minerals at the Sandy Mitchell Project to be represented as a single number. This simplifies polymineralic grade evaluation in drill, resource and grade control data, thus significantly reducing human error.

The MzEq incorporates only elements in recoverable heavy minerals by incorporating the elemental deportment into heavy minerals as determined by QEM scan. It relates the values of each heavy mineral in the Sandy Mitchell suite by factors derived from an analysis of an extensive market data set which determined that the FY24 data was optimal for deriving the factors that calculate the value equivalence of heavy minerals to monazite.

The MzEq thus calculated is robust and relatively insensitive to minor variation in commodity prices with respect to Arks cut-off grade.

Purpose of the monazite equivalent

The Sandy Mitchell Project, located in North Queensland, is a weathered in-situ heavy mineral sand which is enriched in a range of economic minerals including REE bearing monazite and xenotime, zircon, and a suite of Ti minerals; rutile, high titanium leucoxene, low titanium leucoxene, altered ilmenite and ilmenite, as determined by assay, mineralogy and QEM scan (de Nooy 2024). It may also have byproduct garnet but this is not modelled and not considered here.

Polymineralic and polymetallic deposits have always had a problem in which the number of minerals or metals to be tracked, all with different market values, makes interpreting drill results, resource models and grade control results with respect to cut-off grades, complex and prone to error. Note the difficulty is in the usage of the data, not its generation or estimation.

Typically, polymetallic deposits may simplify interpretation by implementation of a metal equivalent that uses economic factors to bring all commercially creditable elements into equivalence with a single dominant element. For example, a base metal producer may apply a zinc equivalent to its drill data, resource models and grade control, which factors the quantitative gold, silver, lead, and copper concentrations to be expressed as value equivalent concentrations of zinc. All data remain present, but the unifying zinc equivalent simplifies grade assessments and reduces errors in usage and interpretation of data. Red River Resources was one such producer and its published zinc equivalent expression was:

(EQ 1) ZnEq = (Zn x 1.0) + (Cu x 3.3) + (Pb x 0.9) + (Ag x 0.025) + (Au x 0.5)

The factors each element was multiplied by represented value equivalencies that incorporated differential recovery and refining costs as well as metal prices relative to zinc (Carolan 2019), that is, all metal concentrations were expressed as an increased value equivalent zinc concentration. A problem of the zinc equivalent was its sensitivity to fluctuations in grade of high value lower concentration accessories, especially as overall grade reduced. For example, in a low grade area a small percentage difference in Cu might be sufficient to push sub-economic material into economic grades but be within assay risk.

Conversely, many (though not all) mineral sand projects express their polymineralic suite of commodities as a total heavy mineral (THM) concentration which is a simple addition of mineral concentrations irrespective of differential value, that is, 1000 ppm of low value ilmenite and 500 ppm of high value monazite give a THM of 1500 ppm. Such a simplistic representation masks the significant value differences between contained commodities and risks errors of data interpretation.

Other producers use other similar locally specific equivalencies, for example, MMG use a copper equivalent at High Lake underground, and a zinc equivalent at high lake open pit (Berthelsen et. al. 2019). MMG also uses an NSR, net smelter return, at Rosebery (Berthelsen et. al. 2019), which is based on direct monetary value equivalence where the concentrations of elements are converted to monetary values and summed. This has its own problems relating to the need for frequent re-evaluations to keep the NSR market aligned.

Ark Mines Ltd has chosen to express the Sandy Mitchell mineralisation in terms of a monazite equivalent (MzEq) in order to reduce the polymineralic nature of the mineralisation to a single easily interpreted number with direct real world equivalence to the concentration of the contained mineral suite and thus to simplify evaluation of mineralisation in drilling, resource, grade control and minimise error. Expressing the lower value commodities as equivalencies to the dominant highest value commodity has the benefit of rendering the MzEq relatively insensitive to fluctuations in those minerals which have higher concentrations but are of lower economic value. The MzEq also includes the deportment of elements into economic heavy minerals, thus avoiding non-recoverable elements.

Derivation of the Sandy Mitchell monazite equivalent

Ark's Sandy Mitchell MzEq is derived from the assay determined concentration of each economic mineral commodity, multiplied by a market value derived factor equating each mineral's value to that of monazite using the factors given in Table 1. This is shown in its simplest form in EQ 2 but the full form which includes the deportment of elements into heavy minerals is given later in EQ 3

(EQ 2) MzEq ppm= (1.000 * monazite ppm) + (1.000 * xenotime ppm) + (0.361 * zircon ppm) + (0.281 * rutile ppm) + (0.165 * high Ti leucoxene ppm) + (0.126 * low Ti leucoxene ppm) + (0.072 * altered ilmenite ppm) + (0.065 * ilmenite ppm)

Table 1: Monazite equivalence factors and commodity market values used to calculate MzEq for Sandy Mitchell data.

Mineral		Value	Factor
monazite		9001.77	1.000
xenotime		9001.77	1.000
zircon		3251.91	0.361
rutile	$TiO_2 > 95\%$	2527.86	0.281
hi Ti leucoxene	$TiO_2 > 85\%$	1482.31	0.165
lo Ti leucoxene	$TiO_2 > 70\%$	1134.90	0.126
altered ilmenite	$TiO_2 > 55\%$	645.48	0.072
ilmenite	$TiO_2 > 50\%$	584.41	0.065

The factors were derived from analysis by EES of long term market values for all Sandy Mitchell commodities ranging from January 2013 to September 2024. Data informing this analysis was sourced from commercial market data aggregators FerroAlloyNet and Argus Metals International. The data tables themselves are commercial in confidence and cannot be included here but are adequately represented in Figure 1. A Z-scores test was applied to the data to identify outliers. This showed that monazite data for 15/02/2022 to 2/8/2022 and 7/12/2022 to 3/3/2023 could be considered as outliers in terms of the total monazite data range, and all commodity data within this range was excluded. This is easily visible as the massive peaks in Figure 1.

Because the purpose of the MzEq is to relate the minerals to each other by equating them to monazite, the same evaluation range is required for all commodities, and it can be seen in Figure 1 that the mineral sand concentrate commodity values move proportionally to each other. This validates the concept of MzEq as a viable representation of the Sandy Mitchell data set.

A sensitivity analysis was carried out to determine how much effect the relative values have on the MzEq calculated at length weighted average mean drill hole grade for the total resource drill data set. Six scenarios were evaluated across different time periods including the market high outlier period, the total data set, several different year data sets and the current year to date. This analysis showed a range of 110.3 ppm MzEq with a mean of 1720.5 ppm MzEq and a standard deviation of 35.2 ppm MzEq. This shows that despite the massive range in the data, for example, monazite has a range of 14551.9 and a standard deviation of 3599.1, the MzEq is relatively variable insensitive. This is a byproduct of the both the proportional relationship between commodity values, and the mathematical ratios informing the MzEq. This stability means that minor value changes in any commodity are unable to exert undue influence on MzEq block grades relative to Ark's 700 ppm MzEq cut-off grade. This indicates that the MzEq is a suitable and appropriate equivalence factor to represent the mineralisation.

The data range chosen to calculate the MzEq ratios was the 1/7/2023 to 30/6/2024, that is the FY24 data segment. This data segment avoids the outlier data range and its extreme highs, it biases the overall range to recent data and is thus pertinent, takes into account a reasonable spread of high and low range values, showed a mean data set MzEq of 1720.54 ppm MzEq was very close the multi-scenario mean of 1720.5 ppm MzEq and thus very representative, whilst encapsulating market fluctuation with respect to Australia's financial year which will govern operations.

The Table 1 factors were calculated over the selected FY24 range by dividing the mean individual commodity values by the mean monazite value. It is considered that the individual factors and thus the current MzEq will have reasonably long service life since the selected set is so well representative of the long term data and insensitive to minor fluctuations. This will negate the need for frequent updates and recalculations which is the bane of the NSR type methodology.

No differential recoveries are assumed or applied in the MzEq. The MzEq is applicable to drill and resource data which has the purpose of representing the mineralisation in the ground to the accuracy of the assay and resource estimation. It is not a reserve equivalent that factors in losses through mining and processing. Such recoveries may be applied later as recovery factors forming a component of reserve calculation, and are dependent on such things as plant throughput, screening and equipment type. However, the percentage of valuable elements that report to recoverable heavy minerals, as opposed to the percentage lost to non-economic non-recoverable minerals is captured. This is calculated by the percentage of elemental deportment to heavy minerals, as measured by QEM Scan (de Nooy 2024). The deportments of valuable elements to individual minerals are shown along with the stoichiometric element to mineral conversion factor in Table 2.

Note the low deportment of titanium into the five heavy oxides, compared to high deportment of other elements to their respective minerals. This is because a substantial percentage of Ti is partitioned into valueless and non-recoverable light minerals such as biotite (de Nooy 2024), as Ti does not have the low compatibility of the REE, Zr and Hf.

Table 2: Heavy mineral formulae alongside stoichiometric conversion factor and element of value deportment percentage.

Oxides	Stoichiometry	Deportment %	Phosphates	Stoichiometry	Deportment %	Silicates	Stoichiometry	Deportment %
Sc_2O_3	1.5338	0.51	$Ca(PO_4)$	3.3696	0.97	$Hf(SiO_4)$	1.5159	100.00
TiO_2	1.6685	10.39	$Sr(PO_4)$	2.0839	6.47	$Zr(SiO_4)$	2.0094	100.00
Y_2O_3	1.2699	95.21	$Sc(PO_4)$	3.1125	0.51			
ZrO_2	1.3508	100.00	$Y(PO_4)$	2.0682	95.21			
HfO_2	1.1793	100.00	$La(PO_4)$	1.6837	99.28			
La_2O_3	1.1728	99.28	$Ce(PO_4)$	1.6778	99.21			
CeO_2	1.2284	99.21	$Pr(PO_4)$	1.6740	99.71			
Pr_6O_{11}	1.2082	99.71	$Nd(PO_4)$	1.6584	99.07			
Nd_2O_3	1.1664	99.07	$Sm(PO_4)$	1.6316	99.15			
Sm_2O_3	1.1596	99.15	$Eu(PO_4)$	1.6250	96.46			
Eu_2O_3	1.1579	96.46	$Gd(PO_4)$	1.6039	98.46			
Gd_2O_3	1.1526	98.46	$Tb(PO_4)$	1.5976	97.56			
Tb_4O_7	1.1762	97.57	$Dy(PO_4)$	1.5844	96.69			
Dy_2O_3	1.1477	96.69	$Ho(PO_4)$	1.5758	95.65			
Ho_2O_3	1.1455	95.65	$Er(PO_4)$	1.5678	94.49			
Er_2O_3	1.1435	94.49	$Tm(PO_4)$	1.5622	92.91			
Tm_2O_3	1.1421	92.91	$Yb(PO_4)$	1.5488	90.69			
Yb_2O_3	1.1387	90.69	$Lu(PO_4)$	1.5428	88.48			
Lu_2O_3	1.1372	88.48	$Pb(PO_4)$	1.4583	64.39			
ThO_2	1.1379	99.60	$Th(PO_4)$	1.4093	99.60			
U_3O_8	1.1792	88.30	$U(PO_4)$	1.3990	88.30			

In EQ 2 deportments are hidden within the calculation to derive the concentration of the given mineral. The fully expanded monazite equivalent is thus:

(EQ 3) **MzEq** = **1.000** * **(**(0 / 100 * Sc) * 3.1125 + (31.68 / 100 * Y) * 2.0682 + (99.27 / 100 * La) * 1.6837 + (99.17 / 100 * Ce) * 1.6778 + (99.6 /100 * Pr) * 1.6740 + (98.74 / 100 * Nd) * 1.6584 + (96.75 / 100 * Sm) * 1.6316 + (90.99 / 100 * Eu) * 1.6250 + (87.96 / 100 * Gd) * 1.6039 + + (73.26 / 100 * Tb) * 1.5976 + (54.32 / 100 * Dy) * 1.5844 + (36.49 / 100 * Ho) * 1.5758 + (20.76 / 100 * Er) * 1.5678 + (9.84 / 100 * Tm) * 1.5622 + (5.27 / 100 * Yb) * 1.5488 + (3.10 / 100 * Lu) * 1.5428 + (64.20 / 100 * Pb) * 1.4583 + (98.98 / 100 * Th) * 1.4093 + (71.35 / 100 * U) * 1.3990 + (0.97 / 100 * Ca) * 3.3696 + (6.35 / 100 * Sr) * 2.0839**)** + **1.000** * **(**(0.51 / 100 * Sc) * 3.1125 + (63.53 / 100 * Y) * 2.0682 + (0.01 / 100 * La) * 1.6837 + (0.04 / 100 * Ce) * 1.6778 + (0.11 /100 * Pr) * 1.6740 + (0.33 / 100 * Nd) * 1.6584 + (2.4 / 100 * Sm) * 1.6316 + (5.47 / 100 * Eu) * 1.6250 + (10.5 / 100 * Gd) * 1.6039 + (24.31 / 100 * Tb) * 1.5976 + (42.37 / 100 * Dy) * 1.5844 + (59.16 / 100 * Ho) * 1.5758 + (73.73 / 100 * Er) * 1.5678 + (83.07 / 100 * Tm) * 1.5622 + (85.42 / 100 * Yb) * 1.5488 + (85.38 / 100 * Lu) * 1.5428 + (0.19 / 100 * Pb) * 1.4583 + (0.62 / 100 * Th) * 1.4093 + (16.95 / 100 * U) * 1.3990 + (0 / 100 * Ca) * 3.3696 + (0.12 / 100 * Sr) * 2.0839**)** + **0.361** * **(**(100 / 100 * Hf) * 1.5159 + (100 / 100 * Zr) * 2.0094**)** + **0.281** * **(**(1.23 / 100 * Ti) * 1.6685**)** + **0.165** * **(**(3.03 / 100 * Ti) * 1.9507**)** + **0.126** * **(**(1.84 / 100 * Ti) * 2.0448**)** + **0.072** * **(**(2.20 / 100 * Ti) * 2.7805**)** + **0.065** * **(**(2.09 / 100 * Ti) * 3.1694**)**

This is made up of the valuable element deportment adjusted mineral expressions, multiplied by the MzEq factors shown in Table 1. The individual valuable heavy mineral expressions are:

(EQ 4) **Monazite** = (0 / 100 * Sc) * 3.1125 + (31.68 / 100 * Y) * 2.0682 + (99.27 / 100 * La) * 1.6837 + (99.17 / 100 * Ce) * 1.6778 + (99.6 /100 * Pr) * 1.6740 + (98.74 / 100 * Nd) * 1.6584 + (96.75 / 100 * Sm) * 1.6316 + (90.99 / 100 * Eu) * 1.6250 + (87.96 / 100 * Gd) * 1.6039 + + (73.26 / 100 * Tb) * 1.5976 + (54.32 / 100 * Dy) * 1.5844 + (36.49 / 100 * Ho) * 1.5758 + (20.76 / 100 * Er) * 1.5678 + (9.84 / 100 * Tm) * 1.5622 + (5.27 / 100 * Yb) * 1.5488 + (3.10 / 100 * Lu) * 1.5428 + (64.20 / 100 * Pb) * 1.4583 + (98.98 / 100 * Th) * 1.4093 + (71.35 / 100 * U) * 1.3990 + (0.97 / 100 * Ca) * 3.3696 + (6.35 / 100 * Sr) * 2.0839

(EQ 5) **Xenotime** = (0.51 / 100 * Sc) * 3.1125 + (63.53 / 100 * Y) * 2.0682 + (0.01 / 100 * La) * 1.6837 + (0.04 / 100 * Ce) * 1.6778 + (0.11 /100 * Pr) * 1.6740 + (0.33 / 100 * Nd) * 1.6584 + (2.4 / 100 * Sm) * 1.6316 + (5.47 / 100 * Eu) * 1.6250 + (10.5 / 100 * Gd) * 1.6039 + (24.31 / 100 * Tb) * 1.5976 + (42.37 / 100 * Dy) * 1.5844 + (59.16 / 100 * Ho) * 1.5758 + (73.73 / 100 * Er) * 1.5678 + (83.07 / 100 * Tm) * 1.5622 + (85.42 / 100 * Yb) * 1.5488 + (85.38 / 100 * Lu) * 1.5428 + (0.19 / 100 * Pb) * 1.4583 + (0.62 / 100 * Th) * 1.4093 + (16.95 / 100 * U) * 1.3990 + (0 / 100 * Ca) * 3.3696 + (0.12 / 100 * Sr) * 2.0839

(EQ 6) **Zircon** = (100 / 100 * Hf) * 1.5159 + (100 / 100 * Zr) * 2.0094

(EQ 7) **Rutile** = (1.23 / 100 * Ti) * 1.6685

(EQ 8) **High Ti Leucoxene** = (3.03 / 100 * Ti) * 1.9507

(EQ 9) **Low Ti Leucoxene** = (1.84 / 100 * Ti) * 2.0448

(EQ 10) **Altered Ilmenite** = (2.20 / 100 * Ti) * 2.7805

(EQ 11) **Ilmenite** = (2.09 / 100 * Ti) * 3.1694

The individual heavy mineral expressions are made up of the element concentration multiplied by the element deportment multiplied by the stoichiometric conversion factor. All stoichiometric conversion factors are based on IUPAC (2022). The fully expanded monazite equivalent expression is comprised of each individual mineral expression, multiplied by its MzEq factor, and summed.

Conclusion

The monazite equivalent (MzEq) is a robust concentration based number expressing the recoverable contained heavy mineral suite at Ark Mines Sandy Mitchell Project in terms of value based equivalence to monazite.

It is calculated by EQ 3 or, if concentrations of heavy minerals have already been calculated using the deportment of elements in Table 2, as shown in EQ 3 to EQ 11, then using those heavy mineral concentrations it can be calculated by EQ 2.

The MzEq thus derived is specific to Ark Mines Sandy Mitchell Project.

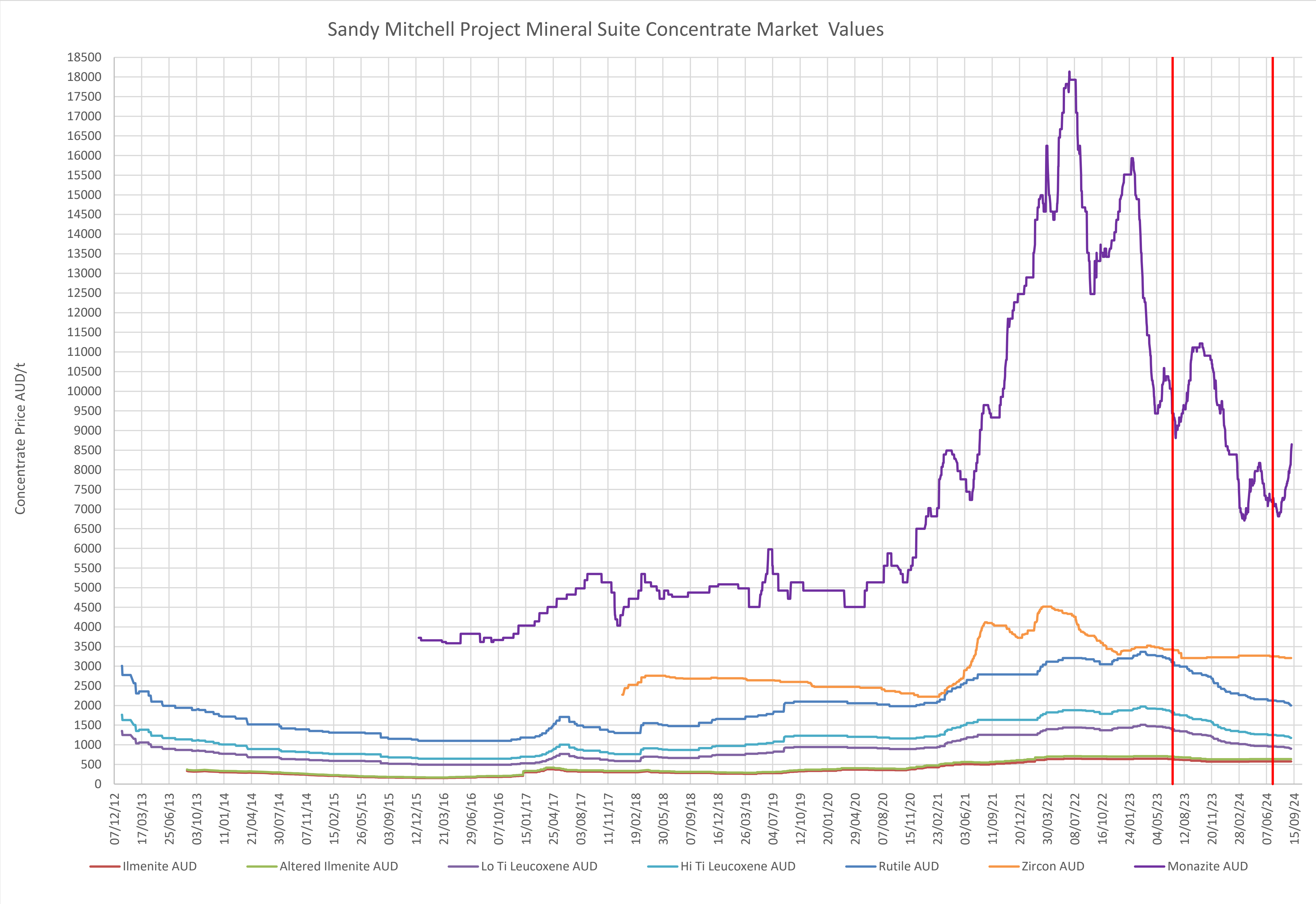

Figure 1: Concentrate market values of the Sandy Mitchell Project mineral suite from January 2013 to September 2024. The vertical red lines mark the data segment chosen to represent the Sandy Mitchell data in calculating the monazite equivalent.

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Appendix B:

Review of the Ark Mines Sandy Mitchell Project Stage 1 & 2 QAQC.

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Disclaimer

Contents

Statement of Independence

Neither Empirical Earth Science nor Daemon de Chaeney have any material interest or entitlement in the securities or assets of Ark Mines Ltd. Empirical Earth Science will be paid a fee for this report comprising its normal professional rates and reimbursable expenses. Such fee is not contingent on the conclusions of this report.

Purpose

The purpose of this document is to provide Ark Mines Ltd with EES's summarised opinion regarding the quality assurance and quality control measures applied to sampling and assay of the Sandy Mitchell Project in North Queensland, based on field practices applied and assay results received from North Australian Laboratories, an Austest mineral assay laboratory in Pine Creek Northern Territory.

Executive Summary

In June 2023 Ark Mines completed the first stage of a grid drilling programme to inform a maiden resource on the Sandy Mitchell REE Project. The Stage 1 air core drill programme, sampling unconsolidated residual in-situ sands, drilled 1488.3 m on 144 collars with an average depth of 10.5m.

In November 2023 Ark Mines completed the second stage of the grid drilling programme to inform the complete initial resource on the Sandy Mitchell Project. The Stage 2 AC RC programme drilled 2958.6 m on 243 collars with an average depth of 12.2 m. Of these 2830 m on 219 collars were for resource, the remainder we exploration reconnaissance.

The quality assurance measures applied to drilling and sampling were excellent with the procedural deficits identified and corrected on site.

The quality control measures applied to sample and assay were best practice and the resultant QC data affords comprehensive analysis of the assay set. The minor anomalies identifiable in the QC data are of small enough magnitude that they are not material.

The QAQC shows the assay data to be of good quality and fit for the purpose of estimating a JORC 2012 resource mode with good confidence.

Review of Ark Mines Quality Assurance

Quality assurance measure are those protocols and procedures emplaced to ensure the quality of sample meets the standards required for the end purpose. In this case, that purpose is to yield assay to inform a JORC 2012 compliant resource model, estimation and report on the Sandy Mitchell REE + Zr + Ti deposit in North Queensland.

The material to be sampled was polymodal sand in the size range 9 µm to 250 µm, mean 145 µm (de Nooy 2024), with occasional gangue pebble horizons contributing approx. 13% of the total volume.

The average grain size of economic minerals is given in Table 1

Table 1: Average economic mineral grain size (de Nooy 2010, de Nooy 2024).

Mineral	2010 Mean Grain Size µm	2024 P_{80} Passing size µm
Monazite	91.7	97.0
Xenotime	79.7	79.0
Zircon	107.0	98.0
Ti Oxides	84.0	103.0

Stage 1 Drilling was carried out with a Comacchio track mounted air core rig using a 100 mm air core bit sampled at 1m intervals bar the final interval, which may be less than 1m, depending on the refusal depth at the bedrock intersection.

Stage 2 drilling was carried out with an Ausroc 4000 multi purpose rig using 100 mm air core and switching to 100 mm RC near basement, with bit type recorded per metre. Bedrock depth was recorded by drillers and loggers. Sampling was by metre intervals.

This yields an ideal sample volume of 0.008 m^3 per metre which at the mean dry loose bulk density of 1.52 yields ideal sample of 11.94 kg/m.

Stage 1 sample was passed through a cyclone and retained by a manual gate to minimise fines loss, with the gate opened at the end of each sampling interval to pass into a collection bucket. The collection bucket was distributed across the riffles of a truck mounted 87.5/12.5 riffle splitter derive a 1.5 kg representative sample caught in a pre-numbered calico sample bag, and a 10.4 kg reject caught in a green bag and retained for pan concentrate production and for further metallurgical testing.

Stage 2 sampling was carried out as per stage 1, with the exception that the splitter was mounted beneath the cyclone.

Given the fine particle size of the minerals of interest (Table 1), the sample size is considered adequately representative and suitable for assay.

The splitter was cleaned after each metre. The cyclone was cleaned by air blast after each metre, and by opening and air hosing after each hole.

Only 7 samples of the 4,495 making up the drill programme were returned with detectable dampness, all in stage 1, and this was insufficient to prevent free flow of the sample, or cause clumping.

During Stage 1, 1 in 40 samples was split by 50:50 riffle splitter into two pre-numbered calico bags, to yield field duplicates. This produced a field duplicate of nominal 750g weight and this is too small for a high precision repeat as discussed in the QC section on field duplicates. The sample size is adequate to demonstrate the adequacy of sample procedures, which is the purpose of field duplicates.

During Stage 2, the procedure for field duplicates was changed to passing the whole reject sample through an 87.5/12.5 to produce duplicates of approx. 1.5 kg at a rate of 1 in 45. These Stage 2 duplicates showed very good assay repeatability.

Recoveries were estimated volumetrically with comparison to weights obtained by digital scale to maintain accuracy. The mean complete sample weight was 12.12 kg/m including bag, based on 4,400 samples weighed to date, which compares favourably with the 11.94 kg ideal within reasonable error limits. There was a recovery bias against the first two metres, as would be expected with an air rig penetrating unconsolidated material.

Samples were logged by the metre on site by EES and EES provided senior geologist oversite of drilling and sampling. At the end of the programme, drill collar coordinates were picked up by Twine Surveys using RTK GPS equipment with 20mm accuracy; considered best practice.

Sample was driven to the Chillagoe each night and locked up in the Ark Mines undercover laydown, where it was stored in pumpkin crates. At the end of the programme, the pumpkin crates were wrapped in plastic and transported to North Australian Laboratories (NAL) in Pine Creek, Northern Territory for assay. NAL is an Austest facility.

The sample was submitted for:

- Sodium peroxide fusion in nickel crucibles for ICP-MS assay of Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As.
- Sodium peroxide fusion in nickel crucibles for ICP-OES assay of Al, Ca, Cr, Fe, Mg, P, S, Si and Ti.
- Four acid digest for ICP-OES assay of Na and K.
- Gravimetric moisture measurement at a rate of 1 in 5 samples.
- Gravimetric dry loose bulk density at a rate of 1 in 4 samples.
- Stage 2 only, gravimetric LOI was measure at a rate of 1 in 8 samples.

The elements of economic interest are Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Zr, Hf, Ti ± Nb, defining the minerals monazite, xenotime, zircon, rutile and ilmenite.

The assay techniques applied are considered suitable for the elements of interest, and are considered to be total digest methods.

Samples were prepared by weighing, kiln drying, re-weighing, pulverisation in LM-5 to 94% passing 75 µm, followed by two aliquots taken by laboratory splitter for fusion and four acid digest.

Review of Ark Mines Quality Control

Quality control measure are the use of control samples and statistical analysis of assay results to ensure suitability and reliability of the assay results for their end purpose. In this case to yield assay to inform a JORC 2012 compliant resource model, estimation and report.

The QC procedures put in place were:

- Nine pairs of twin holes were drilled.
- Field duplicates at 1 in 40 in stage 1 and 1 in 45 stage 2.
- Laboratory repeats at 1 in 9.
- Standards at 1 in 24 stage 1 and 1 in 10 stage 2.
- Blank flush of the LM-5 after each grind, with blanks assayed at 1 in 40.
- Grind size testing at 1 in 34 during stage 1.

Laboratory Repeats Stage 1

203 lab repeats were carried out, from the 1508 samples submitted. See Table 3 for pair statistics and the matrix of graphs which show the assay pair properties for the elements of primary interest.

Several assay jobs were re-assayed due to high scatter of the critical elements in repeats, and those reported here are the updated assays and QC.

Some outliers are still present, as is normal for this quantity of assay, but no systematic, conditional or constant bias is seen in any of the elements scatter plots except for that of Lu.

The Lu scatter plot shows a constant (non-conditional, non-systematic) bias in favour of the repeat, of approx. 0.25 ppm or half detection in magnitude. Only 60 of the 203 Lu assays were above detection and the pair mean assay is only 0.7ppm; 0.2ppm above detection. This degree of Lu repeat bias is not material at these grades and in the resource model will manifest as a miniscule under call in Lu.

The ranked half absolute relative difference plots (HARD) show an empirical measure of scatter or imprecision in the data. This is tabulated as the 90th percentile HARD% value, which is a standard measure of scatter. It should also be noted when assessing the HARD plots that the instrumental accuracy of the MS is ±10% which is generally between the 2nd and 3rd standard deviation.

For those elements where the mean assay is not near the detection limit, and the majority of the assays are above detection, the degree of scatter is quite low and precision is shown to be very good; around 10% HARD at the 90th percentile. This includes Sc, Y, La, Ce, Pr, Nd, Sm, Gd, Th, Zr, Nb, Ti.

For the elements Eu, Tb, Dy, Ho, Er, Yb, U, Hf, the scatter increases into the range of 15 to 20% HARD at the 90th percentile. This due to decrease in the instrumental precision as the detection limit is approached. However, the precision is still good and better than a typical gold data set.

For the elements Tm, Lu, the number of pairs above detection is 60 and 48 respectively and the scatter plots show sample where one of a pair were below detection and assigned half the detection limit as grade to allow statistical processing of the data set; this artificially increases scatter along the 0.25 ppm lines in both axes of both elements, and also impacts the HARD precision.

Tm has relatively poor precision with a 90th percentile HARD% of 33.3 but mean assay is only 0.2 ppm above detection and 143 pairs had below detection sample.

Lu also shows poor precision with a 90th percentile HARD% of 33.3 and has only 48 pairs above the detection limit with a mean assay of 0.7 ppm, 0.2 ppm above detection. However the precision of the Lu data is largely affected by the asymmetrical below detection assay, and the scatter plot shows that the in detection data has a relatively modest scatter similar to that of Yb.

Though the QC data shows imprecision in the assays of Tm and Lu, the magnitude of the assay mean in the total data set (as opposed to just the QC pairs) is 0.7 ppm for Tm on 422 assays above detection, and 0.8 ppm for Lu for 345 assay above detection, indicates that the degree of imprecision is immaterial and is in fact still adequate to the resource.

Overall, the bias and precision of the data set is shown to be good to excellent and well able to support model estimation.

Laboratory Repeats Stage 2

345 lab repeats were carried out in Stage 2 as seen in Table 9 and its graph matrix. Tm and Lu showed reduced precision as per Stage 1, related to the detection limit. However, the overall HARD% at the 90th percentile was across the board around half that of Stage 1, or less, for all elements indicating outstanding repeat precision. No material bias is present in any element.

Overall, the bias and precision of the data set is shown to be excellent and well able to support model estimation.

Standards Stage 1

Three certified reference materials were used: 59 assays of Oreas 460, 24 assays of Oreas 461 and 10 assays of Oreas 462. Oreas 465 was also tried but was too far outside the mean of the assay batches and was withdrawn by the lab. The total standards assayed was 93, equating to 1 in 16 assays, which is substantially in excess of the acceptable requirement of 1 in 25 to 1 in 40.

The properties of Oreas 460 against the total data assay means can be seen in Table 4 and the Oreas 460 graph matrix. This CRM is the lowest value standard used and is well conditioned to represent the assay set, but is not certified for Sc and the Sc parameters shown are the Oreas indicative parameters.

The majority of standards for the majority of elements are of good quality with no significant bias and no significant scatter. Some systematic bias can be seen in repeating patterns that correspond to assay runs between instrumental calibration, and this is not unusual. Most of this falls within 1s, and nearly all falls with 2s.

There are some outliers in in several elements outside 3s, and this would be considered a failed standard. The total fails of this type is approx. 3 and has no real impact on the total data set quality.

The Hf assay for the first job are all biased low. In the context of the total data set, this may indicate a very small downward bias and result in a very small Hf under call in the resultant resource model, however, the total data set mean for Hf is only 9.8 ppm and thus this potential minor bias is not material. This bias is confirmed as real by Oreas 462.

There is substantial scatter in the Ce results with a significant failure percentage and many Oreas 460 Ce assays were repeated with similar effect. The standard scatter is significantly higher than the repeat scatter, and thus this is believed to be an attribute of the Oreas 460 batch used. The overall bias, even if real, is downward by approx. 15 ppm and is not considered a risk of erroneously inflating the resource, or biasing it to a significant degree. The Oreas 461 CRM does not show undue scatter in Ce.

There is a similar very high scatter in the Ti data for Oreas 460, with another high standard fail rate and again, this scatter is not at all reflected in the Ti repeat pair data. This suggests another Oreas 460 batch problem. However, if real, the bias is again downward by approx. 400 ppm. Thus, this is not at risk of inflating the resource and given the comparison to the repeat pair scatter, is not considered material to the resource. The Oreas 461 standard does not show this scatter.

The Sc data is shown against the non-certified indicative CRM parameters and shows a fair degree of scatter around the indicative value, but this is to be expected for a non-certified element.

The properties of Oreas 461 against the total data assay means can be seen in Table 5 and its graph matrix. Again, Oreas 461 is not certified for Sc, and the Oreas published indicative parameters are used.

This standard appears to be far better in its intrinsic repeatability across the board, compared to Oreas 460, with 1 standard assay considered a near field failure in Sc, 1 in Nb (a notoriously difficult element to assay accurately) and 2 in the low range Er assays. None of these are extreme and barely exceed 3s. Overall, the majority of assays are within 1s with excursion to 2s in Nb, Er, Sm and the uncertified Sc.

There is evidence, especially in the lower range elements, of minor systematic bias across assay runs between instrumental calibration, though the degree is relatively minor, and no overall bias is noted in any element.

The properties of Oreas 462 against the total data assay means can be seen in Table 6 and the accompanying graph matrix. This is the highest range standard in use but is a good match for the data set maxima. This standard is not certified for Sc and has no published indicative value for that element.

The standard performs well in general with 2 near field fails in Sm, 1 in Er, 1 in U and 1 in Tb. There is some systematic bias across assay runs between calibrations, and this is where the fails fall. There is no overall bias on most elements.

However, Lu shows an upward bias on the last assay run, but this is believed to be a rounding error and not real assay values. This bias is not evident in the other standards.

Hf shows a downward bias on the first assay run, in parity with that seen on Oreas 460 and confirming this minor downward bias. As discussed, this is not considered to be material or deleterious to the resource estimation.

The other elements are well conditioned and for the most part fall into 1s to 2s, except Ti which only has 4 assays on Oreas 462, but shows high scatter with no real bias.

Overall, the standards are good and show that no significant bias is present in the total data set that will impact the validity of an estimation based on these assays.

Standards Stage 2

Oreas 460 in Stage 2 is shown in Table 10 and its graph matrix. It showed very similar scatter patterns to those of Stage 1 on a per element basis with the same systematic calibration timing bias weakly detectable, but no other significant biases. The Ti scatter is substantially reduced compared to Stage 1 but the Ce scatter is similar and again all evidence points to a failure in the CRM to be repeatable in Ce. The overall failure rate averages 1.7% excluding Ce, and this is acceptable.

Oreas 461 in Stage 2 is shown in Table 11 and its graph matrix. Scatter appears higher than Stage , but this is an artifact of the increase in data set size and overall the divergence is similar with the exception of increased scatter but no real bias in the first and second assay job. This is believed to have arisen due to standards being placed at the end of fusion lines. This was reported to the lab and the procedural problem was corrected. The sample did not suffer from this ‘end of the line’ effect as shown by the tightness of repeat scatter patterns in Table 9. The average failure rate was 3.3% which is up on the smaller Stage 1 data set. Overall the result is acceptable.

Oreas 462 in Stage 2 is shown in Table 11 and its graph matrix and had a smaller data set than Stage 1, as it was recognised that this standard sat well above the mean sample range in many elements. Scatter and precision are very comparable to Stage 1 with only 1 failure in Tb which also showed the highest failure rate in Stage 1.

Blanks Stage 1

Thirty seven blanks were assayed, equating to a rate of 1 in 40. Unfortunately, the blanks used were chosen for their suitability for Au preparation, and were not blank in the elements of interest. The assay statistics for the blanks can be found in Table 7 and were not graphed. Across the board, the blanks can be seen to assay at a substantial percentage of the data set mean, and in some cases, above the data set mean, and are thus of absolutely no use in proving laboratory hygiene. The performance of this material was graphed in Stage 2 on the Table 14 graph matrix.

Blanks Stage 2

Blank assays were continued in Stage 2 at 1 in 40 and initially used the same arkosic material as Stage 1, which was optimised for Au hygiene. This can be seen in the two thirds of Table 14 and its graph matrix. The lab, aware of the problem, took some time to source clean blank material and the switch to this can be seen in the dramatic change for the last third of each graph in the Table 14 matrix.

It is considered that the 'dirty' blanks had no ill effect on equipment hygiene and this is evidenced by the very tight lab repeat patterns which would be disrupted by even minor contamination. Once the new 'clean' blank material was sourced, the results were exemplary with two minor peaks across multiple but not all elements indicating trace blank contamination rather dirty equipment.

Grind Size Testing Stage 1

Forty Four grind sizing tests were carried out, equating to a rate of 1 in 34. Table 2 shows the grind test statistics. With a mean of 94% passing 75 µm the grind is very good and the s1 of 2.19 indicates good homogeneity. With respect to the mean mineral grainsizes shown in Table 1, grind is not believed to be a significant contributor to variance or scatter in the data.

Grind size testing was not continued in Stage 2 as Stage 1 had already shown the material was responding to the lab prep proceedudes.

Table 2: Grind test statistics passing 75 µm.

MEAN% p75	94.00
MIN	90.10
MAX	98.70
COUNT	44.00
1sd	2.19

Field Duplicates Stage 1

Forty field duplicates were taken by 50:50 riffle split of the representative sample. One was destroyed in transit, thirty nine were assayed, equating to 1 in 38. This is an acceptable rate to represent the data set. The repeat pair statistics and graph matrix are shown in Table 8.

The discussion regarding assay precision near the detection limit and low pair counts above detection from the section on lab repeats applies equally to field duplicates and need not be repeated.

It should be remembered when contrasting the precision and scatter of the field duplicates with the lab repeats, that these are split with less precision and at a far coarse grain size than the repeats, and it is not realistic to expect the same level of performance.

On average across all elements, 75% of pairs passed at less than 1 standard deviation divergence, and 96% were within 2s. This is a very good result for field repeats with the mean failure rate of 0.8% and no element showing pairs of less than 92% passing 2s (the lowest being Eu at a mean 1.4 ppm).

The scatter plots for all elements are obviously less clean than the lab repeats, as expected, and though some outliers are present eg Sc, Nd, Eu, Lu and Zr, the majority of the pair points of all elements are simply showing an unbiased distribution in a less precise cluster.

This is reflected in higher HARD% at the 90th percentile across all elements but the plots are well formed and for context, about as good as would be expected for lab repeats of a narrow vein gold data set.

The increased scatter is thought to be related to splitting the sample which includes sparse coarse grains of the economic minerals in a finer grained mass, as shown by QEMscan data (de Nooy 2010) to too small a size (=<750g). It was suspected that the 50:50 split of the representative samples to yield a duplicate had reduced the sample size too far, but no other splitter was available to complete the work in a realistic timeframe. This was remediated in the stage 2 programme by using an 87.5/12.5 riffle splitter to reprocess the bulk split in order to yield another duplicate representative sample of representative size.

Despite the scatter, the repeatability is very good. The purpose of field duplicates is to provide a QC check on the sample QA applied in the field, and the field duplicate data from the Sandy Mitchell stage 1 programme shows the sampling methodology to be good with the expectation of no degradation or bias passed into resource estimation from the sampling.

Field Duplicates Stage 2

Field duplicates in Stage 2, shown in Table 13 and its graph matrix, were produced at a slightly lower rate of 1 in 45 but, as has been mentioned, at a more representative mass. Overall, scatter was less than half that of Stage 1 duplicates as can be seen by the 90th percentile HARD measure in Table 13 and the graphs themselves. Though not at the level of repeatability as lab repeats, which reflects the stage of material processing at point of duplication, the results are very good for field duplicates and even low detection limit elements like Tb, Tm and Lu have well formed HARD plots.

Anomalous elements with respect to dupe' repeatability are Zr, Hf and Nb; all with relatively high scatter and high HARD% not related to detection limits. In the case of Zr and Hf, this is believed due to occasional coarse zircons analogous to nugget gold in its affect on sample. Nb is probably similarly effected by occasional coarse biotite grains where rare books were identified up to 20mm. Overall duplicate results were excellent.

Twin Study

Nine pairs of twins were drilled between 2 and 4 metres apart. One pair was drilled in Stage 1, four pairs were drilled in Stage 2 and the remaining four pairs had the primary hole drilled in stage 1 and the twin drilled in Stage 2.

Table 15 the scatter plots and HARD plot pairs for the elements of interest and, as expected, the degree of scatter in most elements is approx. double that of the field duplicates. This is normal given that this is the crudest form of duplication. Nevertheless, 94.5% of pairs fall within 2 sd and with one exception, only the low level elements show HARD% > 50 at the 90th percentile (those same elements that have been low concentration affected in all analysis presented). This is a good degree of relationship given the distance between sample and potential for imperfect profile correlation, as well as the natural variance (as modelled in down hole variograms), but it doesn't reveal a great deal.

Table 16 and its graph matrix show on cerium data (which is a relatively well behaved element) split between Stage 1 primary and Stage 2 twins, Stage 2 primary and Stage 2 twins, and Stage 1 primary and Stage 1 twins, alongside the all twins data. This addresses the real purpose of twins in this context, which is to validate QA procedures between drill stages using different rigs with different sample systems (though it should be noted that only one pair were drilled in Stage 1 which was time constrained by the rig leaving for another booking).

The comparison between Stage 1 and Stage 2 vs the those pairs drilled with the same rig shows pair scatter and HARD of within a close order of magnitude and demonstrates that the generational data sets are compatible and fit to use in estimation without further statistical processing to address bias or other data artifacts.

Independent Check Assays

Independent check assay have been planned, with an independent laboratory chosen and sample selected, but these have not been completed at this time and, with no substantial deficits in the assay QC, this is not a critical issue.

Conclusion

Ark's QA was best practice except in one point:

- The rig types were appropriate for the material to be drilled.
- The sampling methodology was appropriate to controlled high quality sample, fit for purpose.
- Sample hygiene was good and consistently applied.
- The sample masses were appropriate for the target grainsize and for the assay techniques to be applied.
- The recoveries were good, well monitored and mass validated well.
- Logging was consistent and complete.
- Sample handling, security, storage and tracking were good.
- The assay suite was appropriate for the target mineralisation and the total digest assay methods and detection limits were appropriate to generate high quality data to inform a JORC 2012 resource.

- The bulk density and its related moisture data were taken at sufficient density and spread to allow good statistical modelling of density, and the methodology was appropriate to the material.
- The grind size in comparison to the mean target mineral grainsize was appropriate.
- The duplicate splitting method was acceptable but not optimal in Stage 1, and resulted in duplicates which were slightly too small. This deficit was identified on site during the programme, and adjusted for the stage 2 drill programme with notable improvement in results.

EES considers that no bias or error has been introduced into the assay data by the drill, sample and QA methodology.

Ark's QC data show that the assay work is of good quality and precision with good accuracy and, in the few instances where a bias is detectable, its magnitude is small and its vector is downward; introducing no inflation to the eventual resource grades and insufficient to cause material changes to an estimation:

- Lab repeats showed good precision and no bias for all elements of interest except:
  - Lu, which showed a lack of precision due to the low number of assays above detection and the proximity of these to the detection limit.
  - Tm repeats also showed relatively poor precision, again due to the small number of assays above detection and their proximity to the detection limit.
  - These total mean assay of these lower precision elements is low and the precision decrease is not sufficient to make a material change to the assay values.
- The three standards used show a very low fail rate, good accuracy and no material bias for the elements of interest.
- Oreas 460 itself is suspected to be of low quality when results are compared to Oreas 461 and 462.
- Stage 1 Field duplicates show good precision given the small duplicate size and the coarser grainsize of the split, and show no bias.
- Stage 2 Field duplicates were substantially better than Stage 1 with the improvement in methodology and showed good repeatability and no bias.
- The grind size testing shows an appropriate grind with a tight spread of results indicating process reliability.
- The Arkosic blanks provide no useful data since they are not blank in the any of the elements of interest but the implementation of clean quartz blanks for the last part of the programme validated the assumption of good lab hygiene.
- The twin study shows that there is no bias or skew between Stage 1 and Stage 2 data set generated with different rigs.
- Check assays are planned but not yet completed.
- The overall frequency, spread types of the QC assays carried out is best practice or exceeding best practice, and provides coverage for the entire data set.

EES considers that no significant or material bias or error is identifiable in the assay data, and that the QC data is sufficient to warrant high confidence in the assay. Where biases were detected, they were of such small magnitude as to be immaterial and downward, thus not at risk of introducing a material inaccuracy in the resulting estimation and modelling.

Overall, the QAQC is of good quality and indicates that the sample is representative of the mineralisation and sufficiently accurate to inform a JORC 2012 model with good confidence.

References

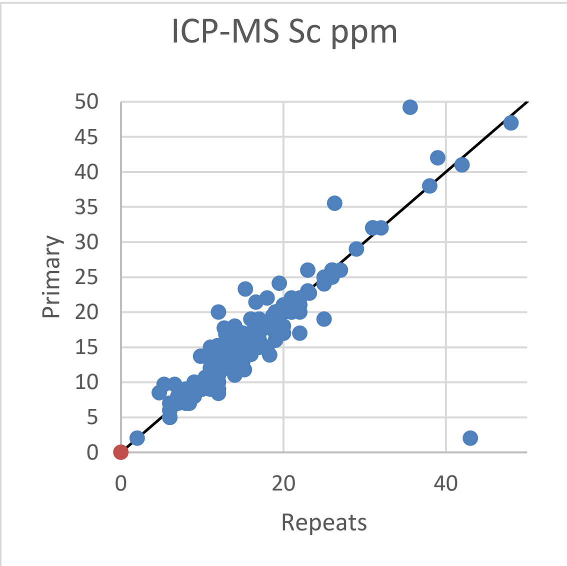
de Nooy, D. 2010, *Mineralogical investigation of three mineral sand samples using QEMSCAN particle mineral analysis methods*, SGS Job No: S0580, Japan Organisation for Metals and Energy Security [JOGMEC], Sydney.

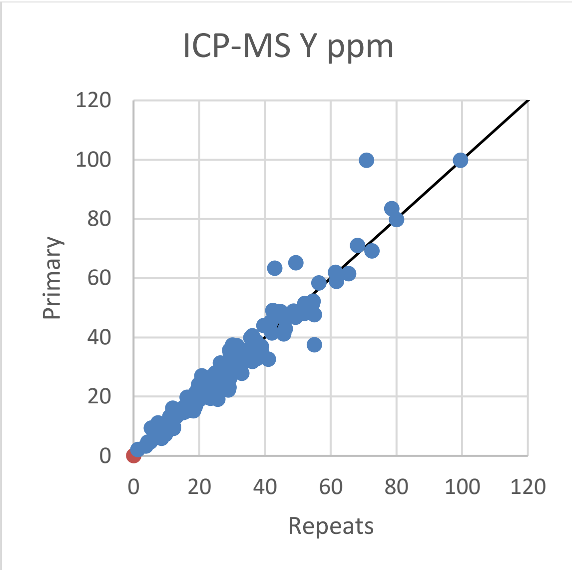
de Nooy, D. 2024, *Quantitative automated mineralogical analysis conducted on two size fractions of composite feed +2.85 SG from the Sandy Mitchell Project for Mineral Technologies, Mineralogy Report MIN6934 ALS Job A25937,* Ark Mines Ltd.: Sydney.

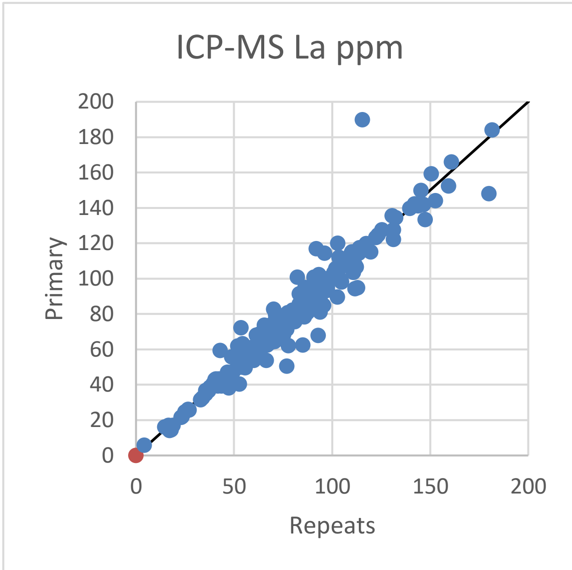
Stage 1 QC Tables and Graphs

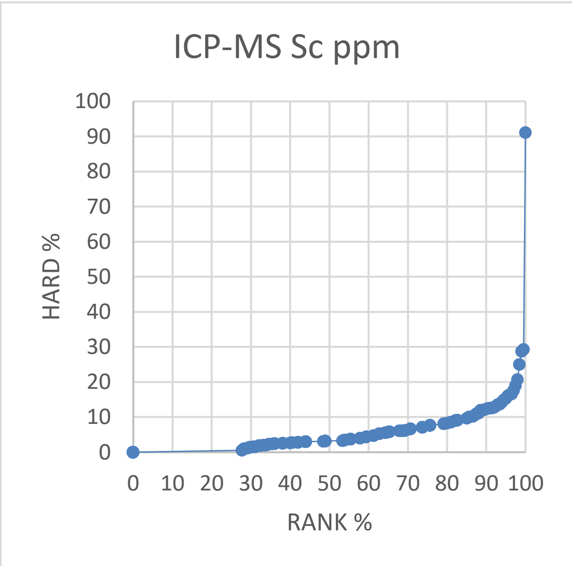
Table 3: Stage 1 lab repeat assay pair statistics & graph matrix showing repeat assay scatter plots and HARD plots.

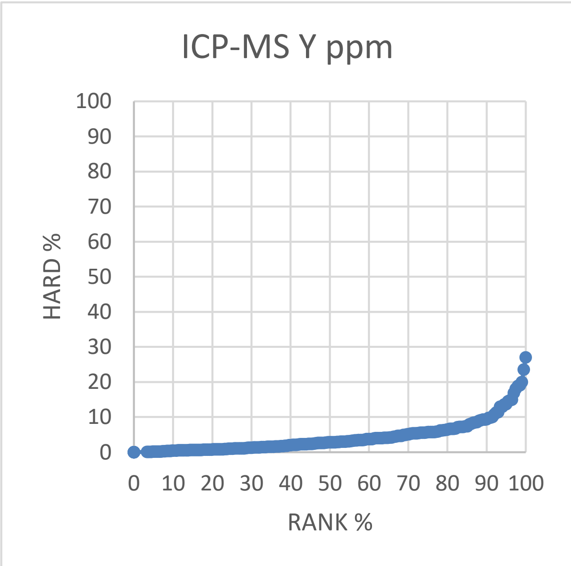
Element ppm	Sc	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	Zr	Hf	Nb	Ti
Pair Assay Count	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203
Count >= detection limit	**203**	**203**	**203**	**203**	**203**	**203**	**202**	**203**	**181**	**202**	**170**	**196**	**60**	**192**	**48**	**203**	**203**	**201**	**203**	**203**	**203**	**203**
Detection limit ppm	**1**	**0.5**	**0.5**	**0.5**	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**10**
Mean assay	16.0	79.9	166.5	18.4	65.7	11.8	1.5	7.7	1.1	5.0	1.0	2.7	0.7	2.5	0.7	27.5	33.0	2.1	346.0	9.8	16.1	3909.2
90th percentile HARD%	**12.3**	**8.2**	**9.1**	**9.9**	**8.1**	**11.7**	**18.8**	**10.8**	**20.0**	**15.7**	**14.3**	**20.0**	**33.3**	**20.0**	**33.3**	**9.4**	**8.7**	**16.7**	**8.0**	**11.3**	**16.1**	**7.9**
Samp% within 1s	79.8	72.9	73.4	67.5	71.9	70.4	76.8	70	72.4	69.5	70.9	79.3	88.7	83.3	92.1	75.4	67.5	63.1	74.4	71.9	76.8	78.8
Samp% within 2s	**95.6**	**95.1**	**96.1**	**94.6**	**95.6**	**96.1**	**95.1**	**94.6**	**97**	**96.6**	**99.5**	**97.5**	**96.6**	**99.5**	**97**	**97**	**96.1**	**96.6**	**96.1**	**95.1**	**97**	**97.5**
Samp% within 3s	99	100	100	100	100	100	99	100	100	100	100	99.5	100	99.5	99.5	100	100	100	99	98.5	100	100
Samp% outside 3s	1	0	0	0	0	0	1	0	0	0	0	0.5	0	0.5	0.5	0	0	0	1	1.5	0	0

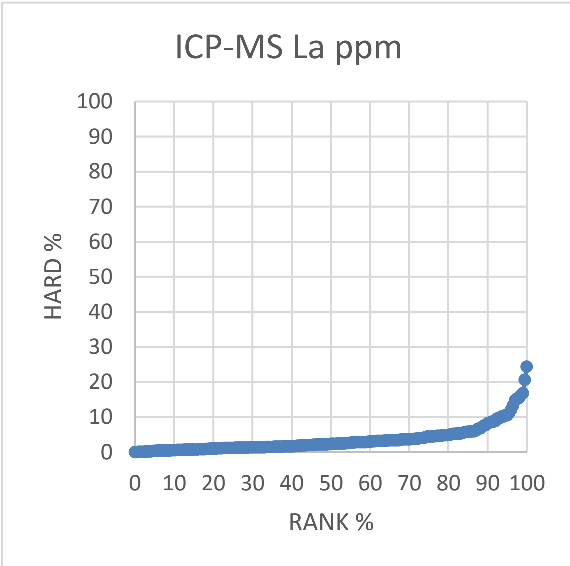


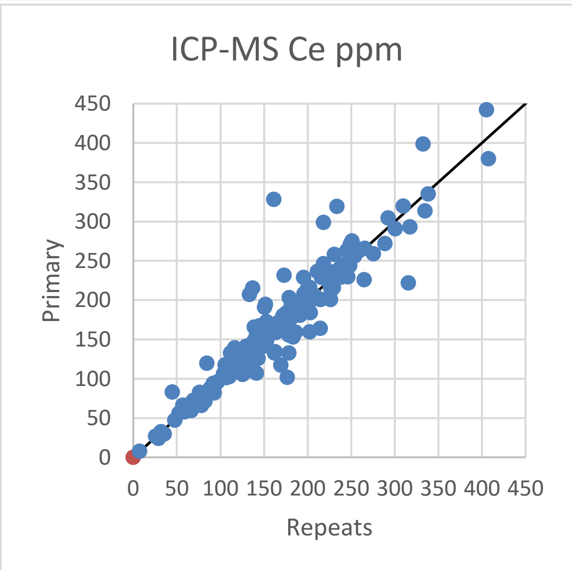


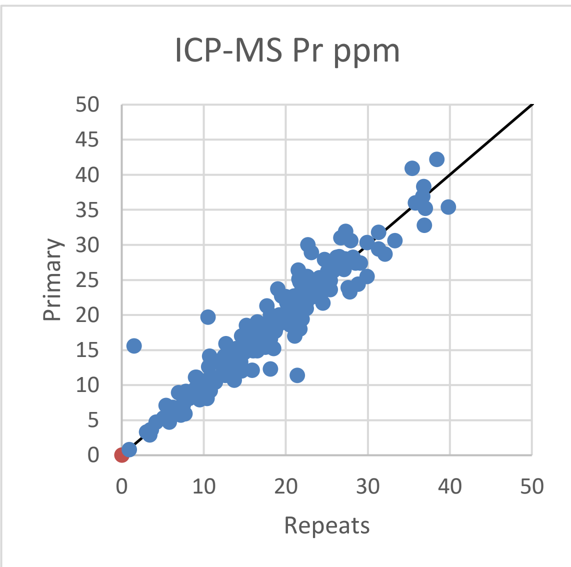


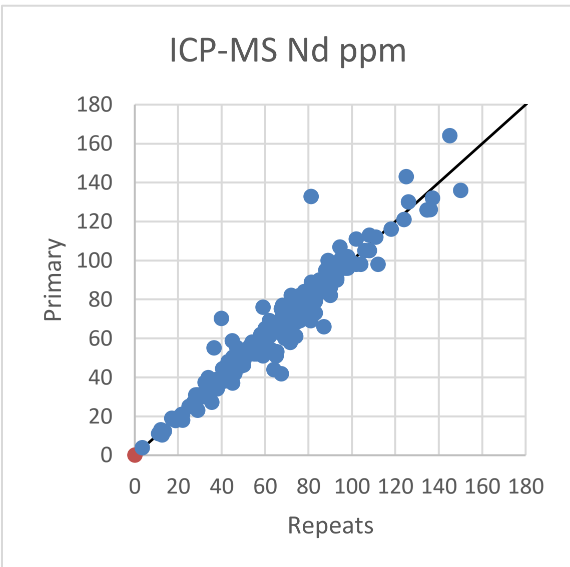


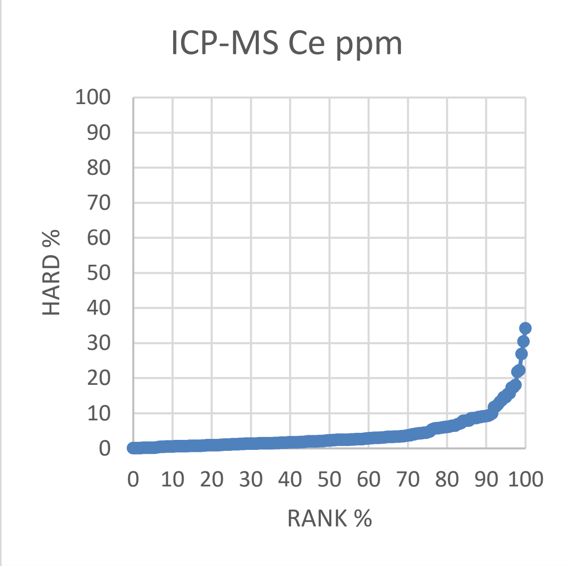








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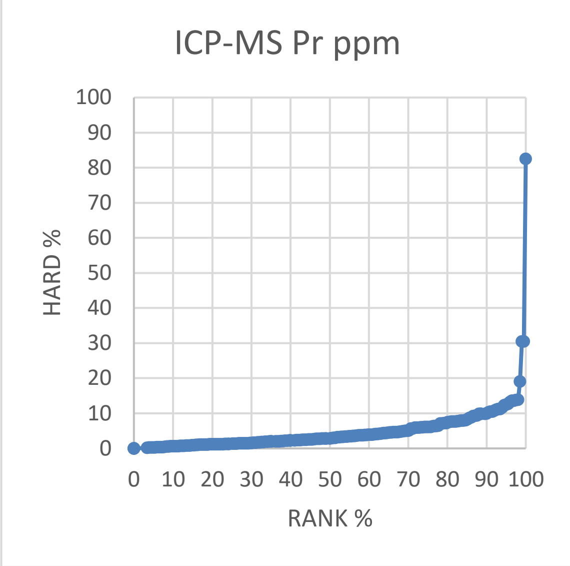
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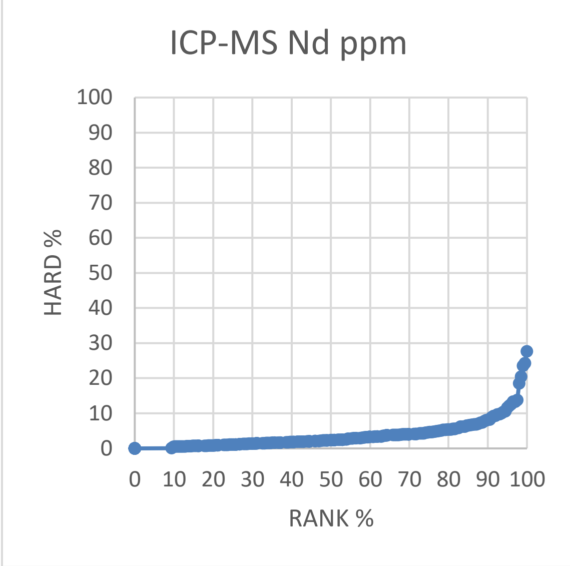
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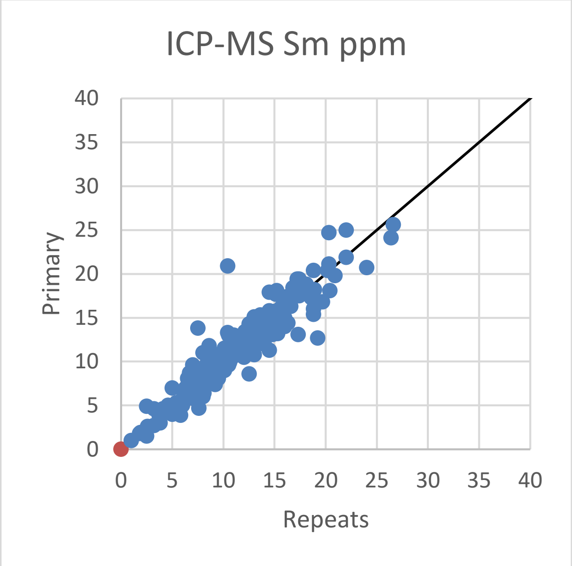
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Primary
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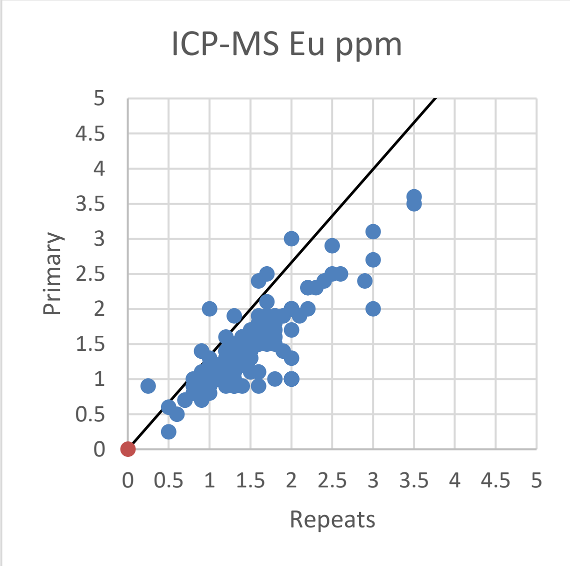
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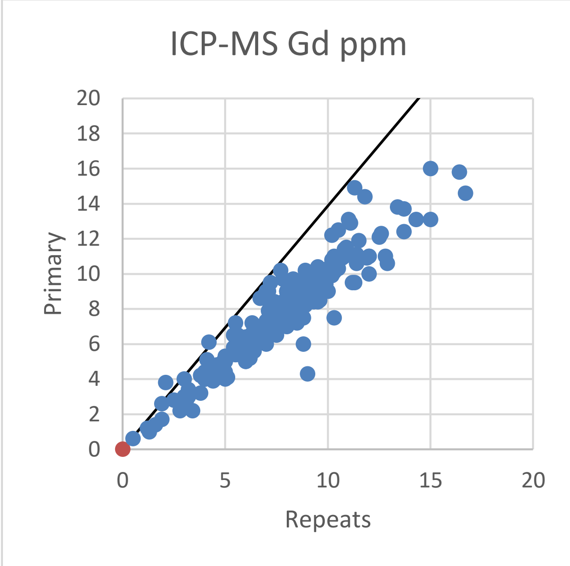
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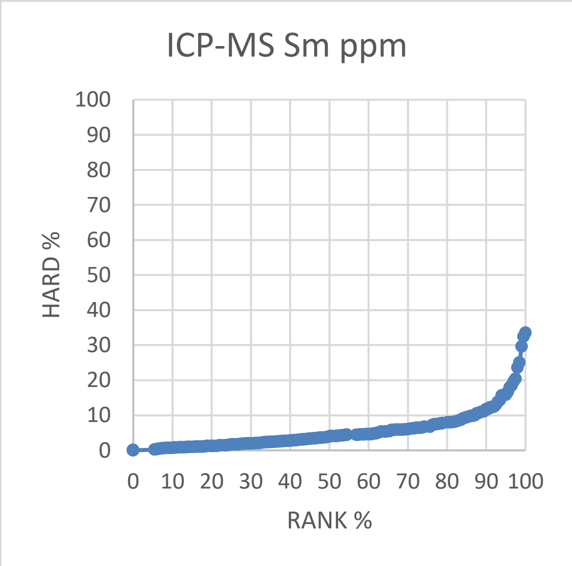
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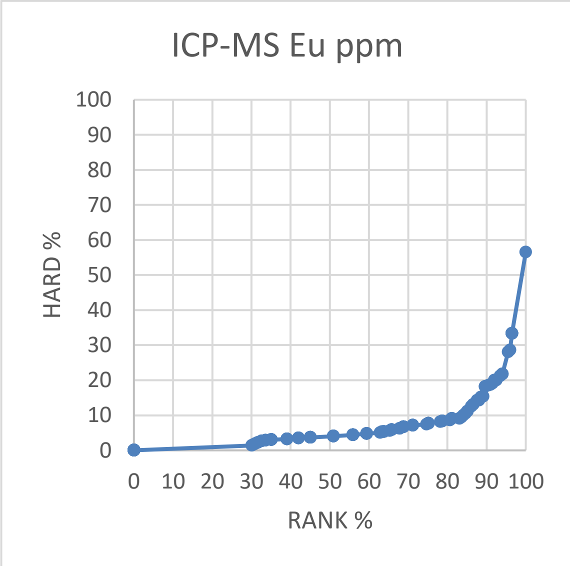
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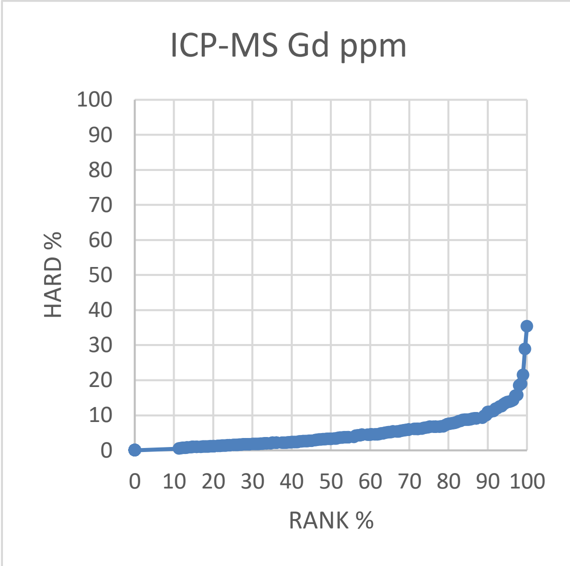
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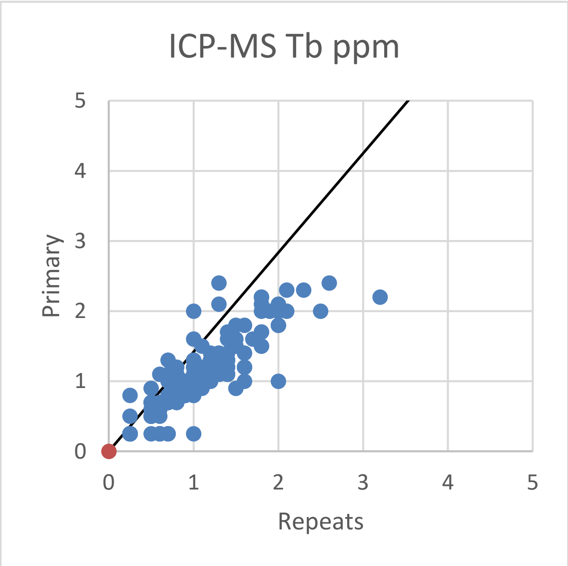
RANK %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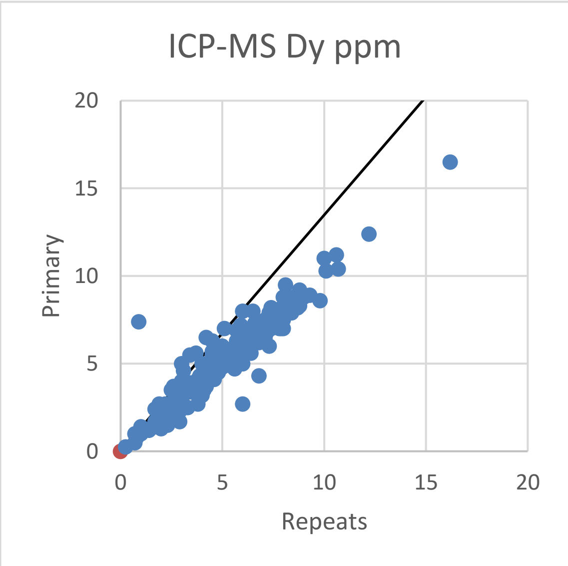
Primary
Repeats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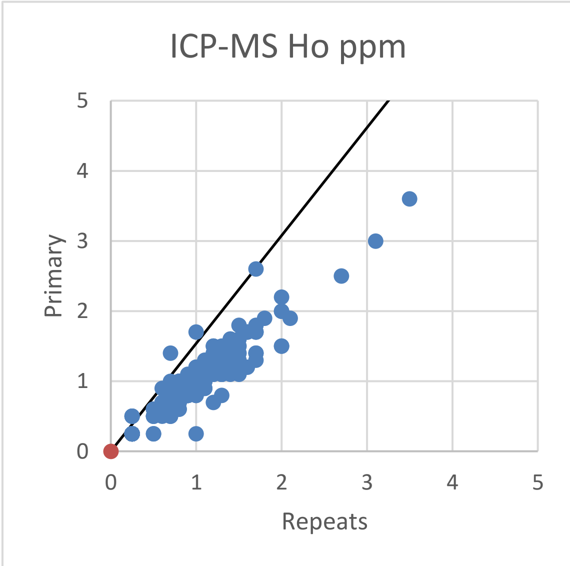
Repeats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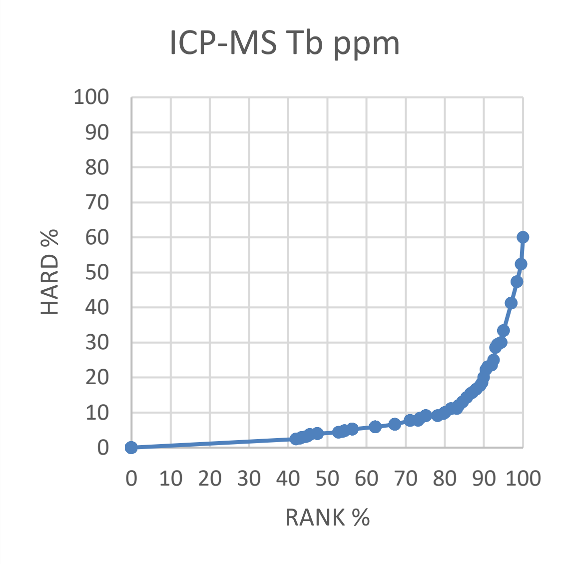
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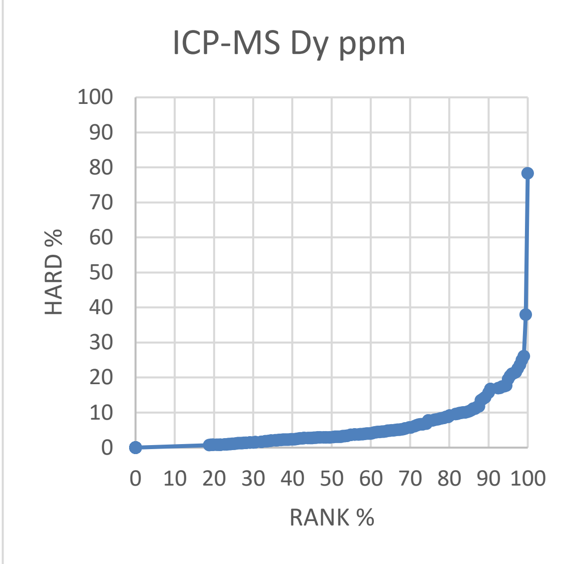
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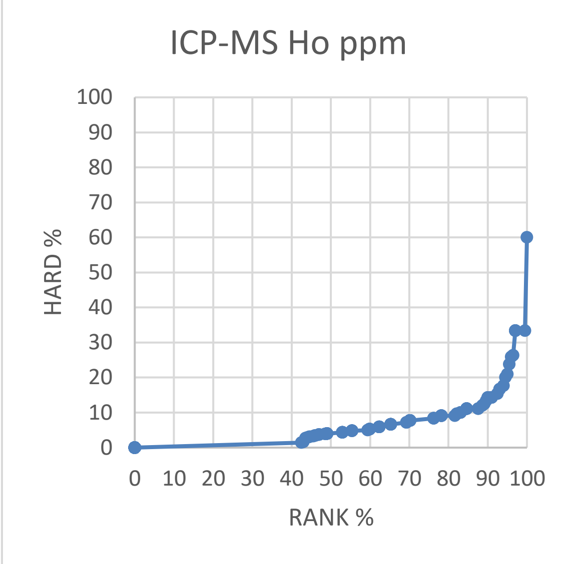
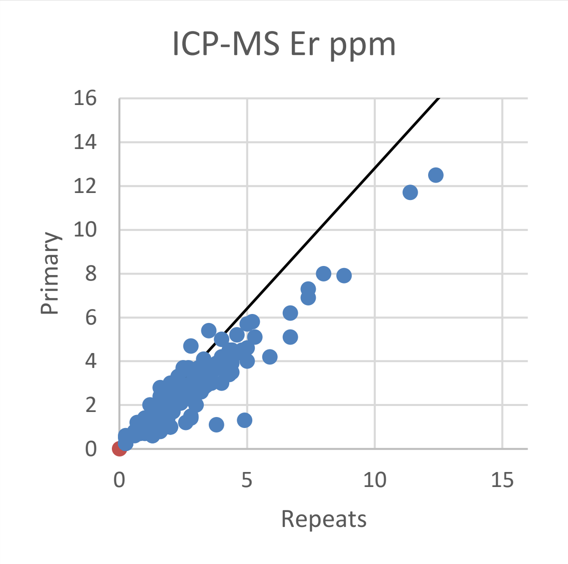
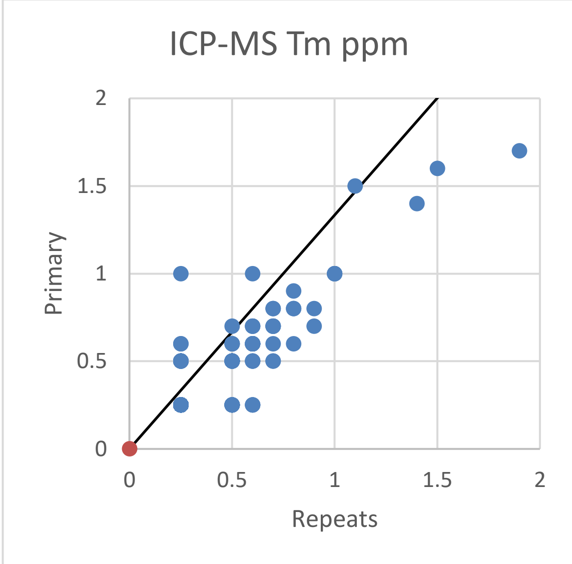
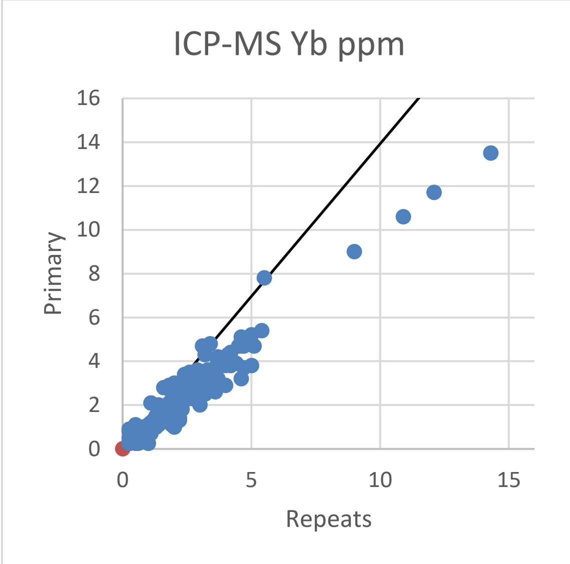
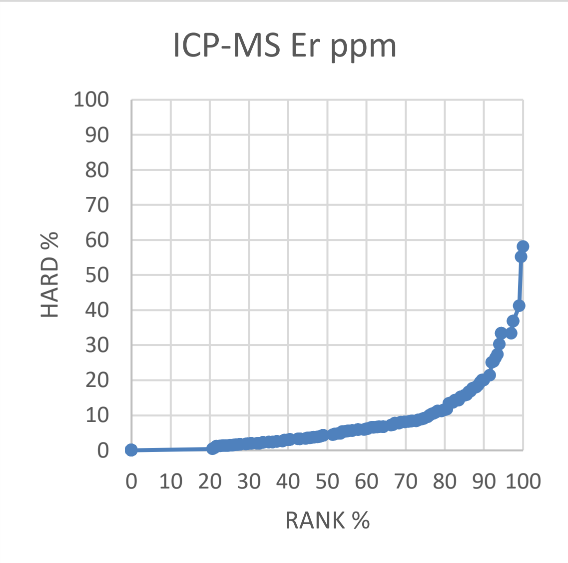
0 10 20 30 40 50 60 70 80 90 100
RANK %

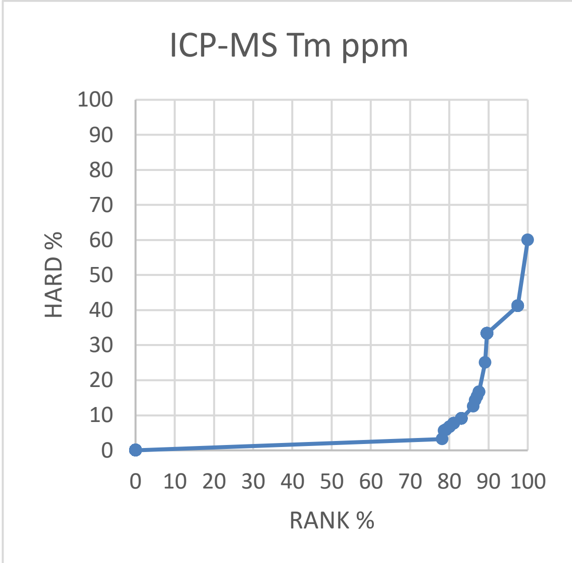

ICP-MS Ho ppm
HARD %
0 10 20 30 40 50 60 70 80 90 100
0 10 20 30 40 50 60 70 80 90 100
RANK %

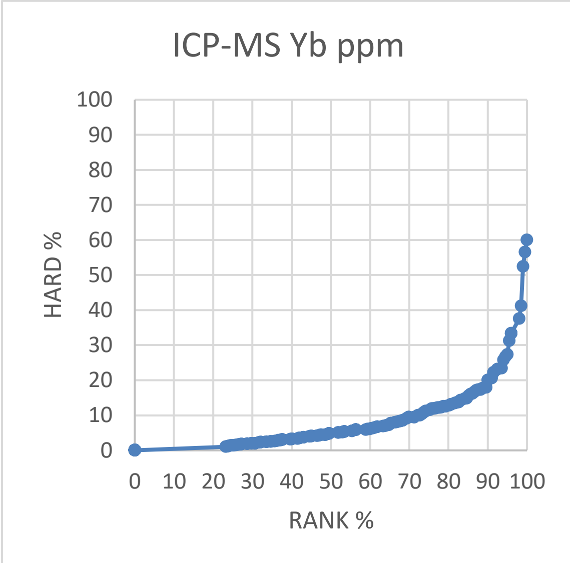

ICP-MS Er ppm
Primary
0 2 4 6 8 10 12 14 16
0 5 10 15
Repeats

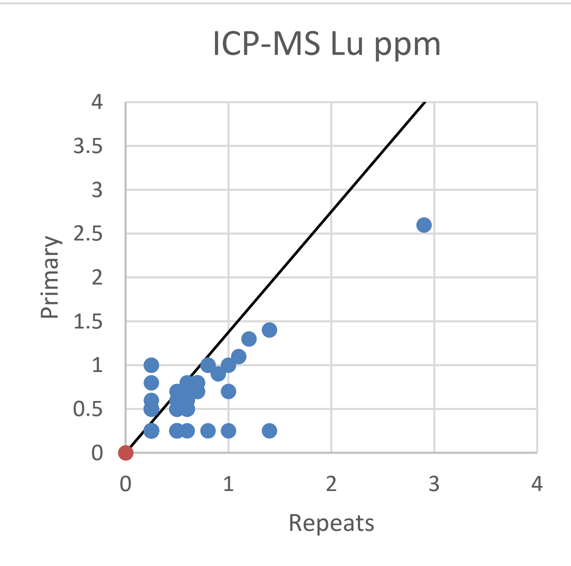

ICP-MS Tm ppm
Primary
0 0.5 1 1.5 2
0 0.5 1 1.5 2
Repeats

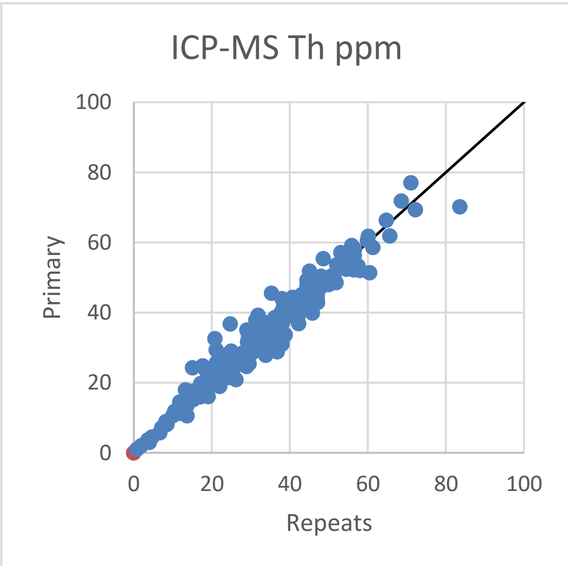

ICP-MS Yb ppm
Primary
0 2 4 6 8 10 12 14 16
0 5 10 15
Repeats

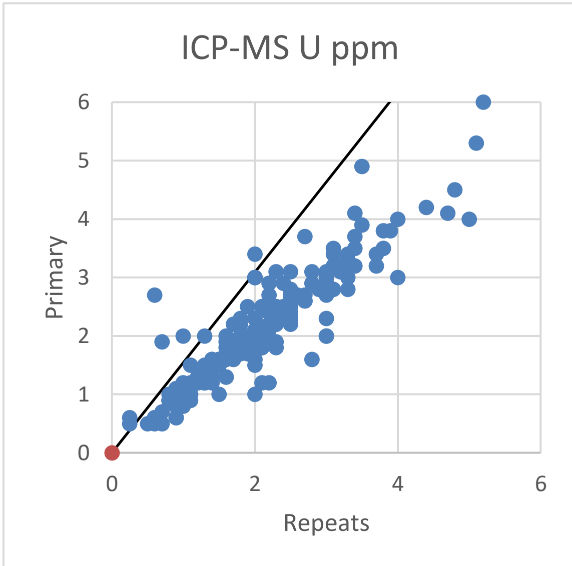

ICP-MS Er ppm
HARD %
0 10 20 30 40 50 60 70 80 90 100
0 10 20 30 40 50 60 70 80 90 100
RANK %

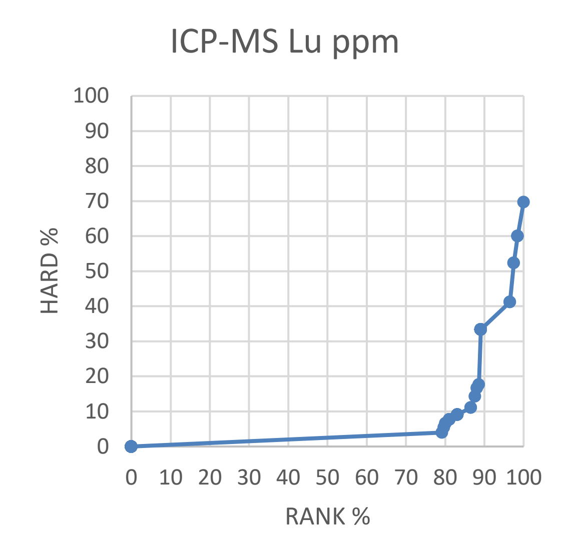

ICP-MS Tm ppm
HARD %
0 10 20 30 40 50 60 70 80 90 100
0 10 20 30 40 50 60 70 80 90 100
RANK %

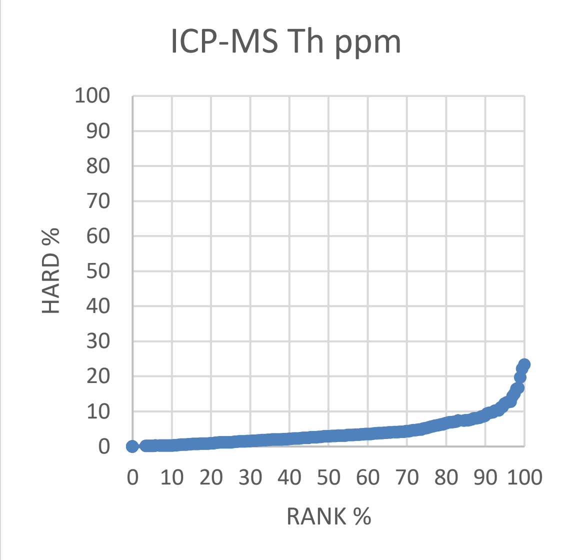

ICP-MS Yb ppm
HARD %
0 10 20 30 40 50 60 70 80 90 100
0 10 20 30 40 50 60 70 80 90 100
RANK %

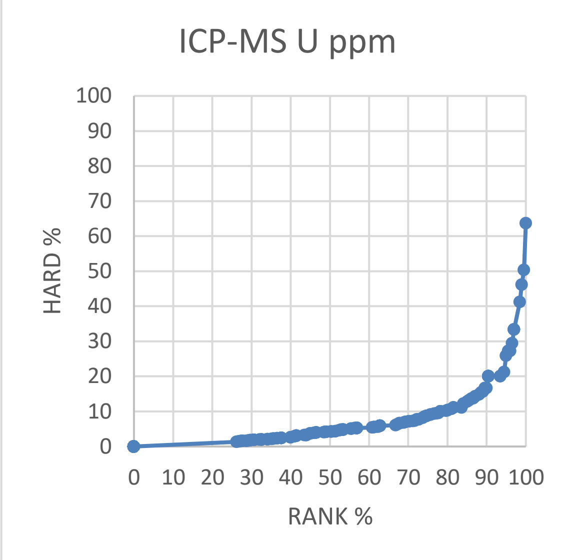

ICP-MS Lu ppm
Primary
0 0.5 1 1.5 2 2.5 3 3.5 4
0 1 2 3 4
Repeats

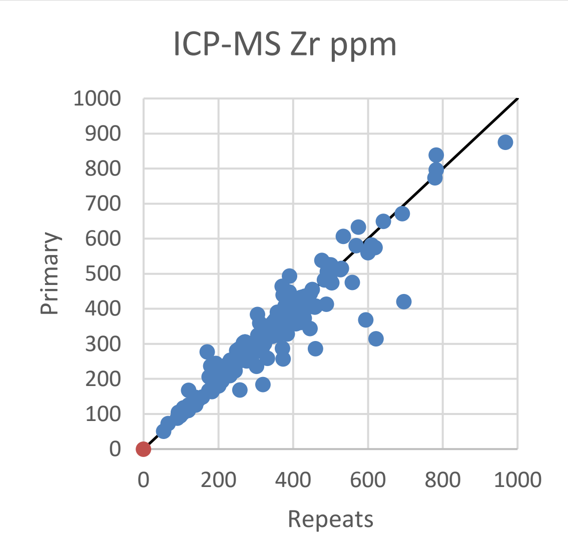

ICP-MS Th ppm
Primary
0 20 40 60 80 100
0 20 40 60 80 100
Repeats

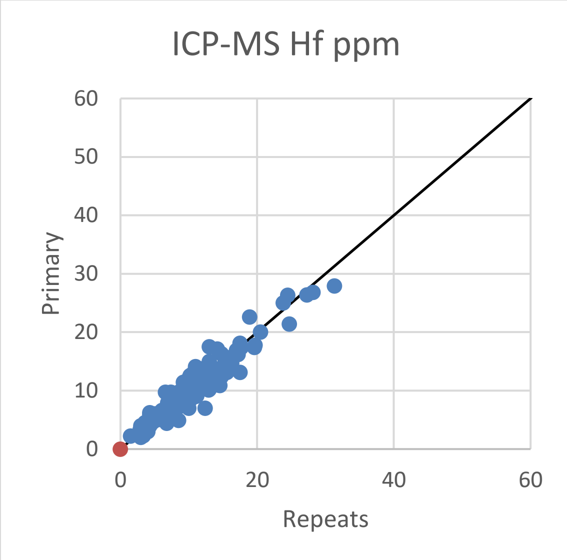

ICP-MS U ppm
Primary
0 1 2 3 4 5 6
0 2 4 6
Repeats

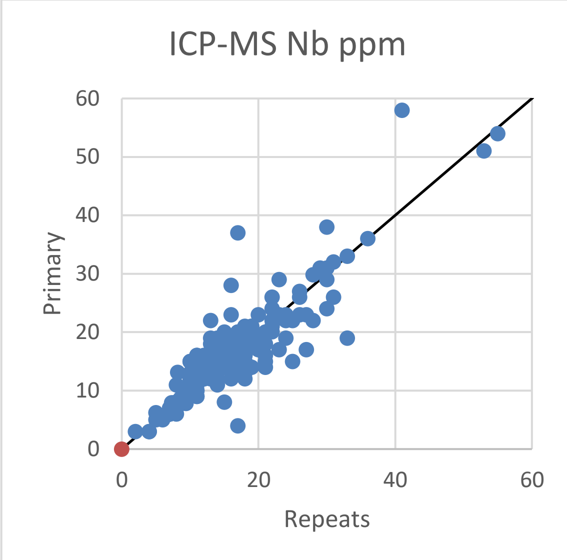

ICP-MS Lu ppm
HARD %
RANK %

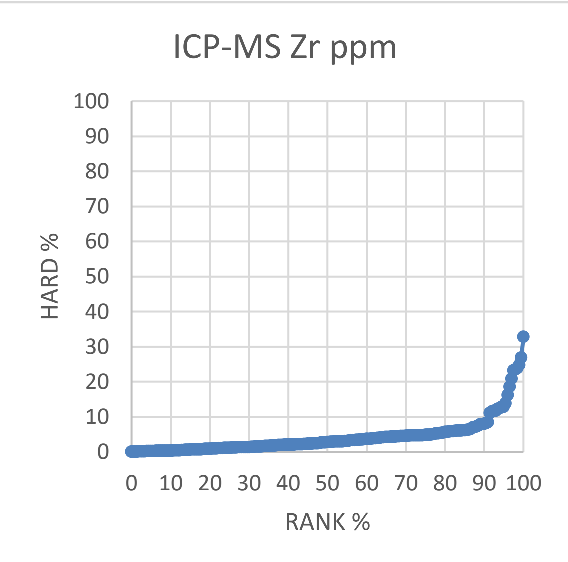

ICP-MS Th ppm
HARD %
RANK %

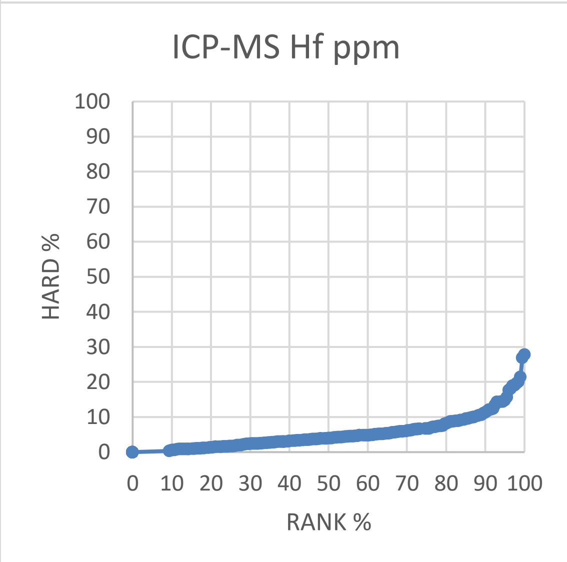

ICP-MS U ppm
HARD %
RANK %

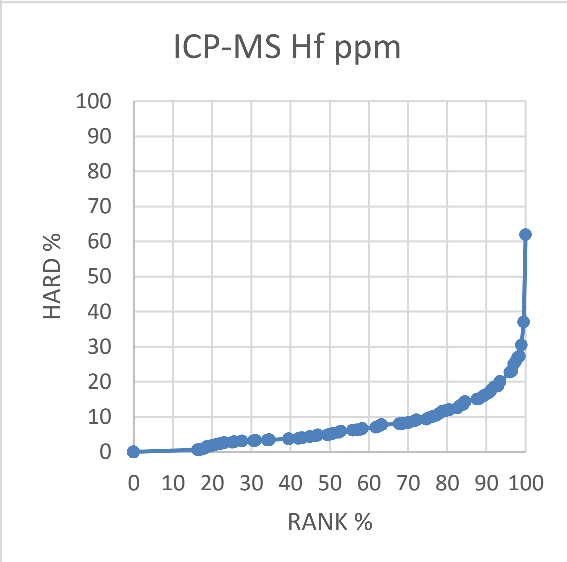

ICP-MS Zr ppm
Primary
Repeats

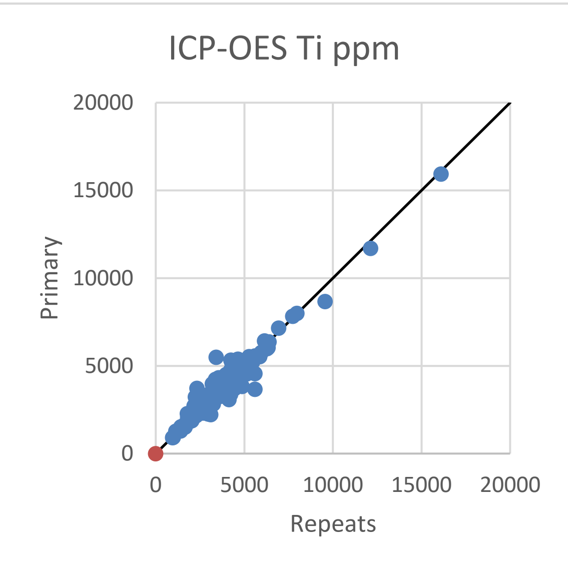

ICP-MS Hf ppm
Primary
Repeats


ICP-MS Nb ppm
Primary
Repeats


ICP-MS Zr ppm
HARD %
RANK %


ICP-MS Hf ppm
HARD %
RANK %


ICP-MS Hf ppm
HARD %
RANK %


ICP-OES Ti ppm
Primary
Repeats

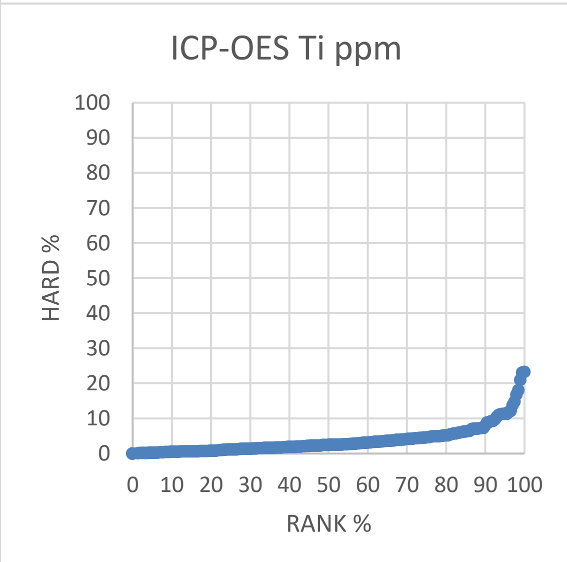
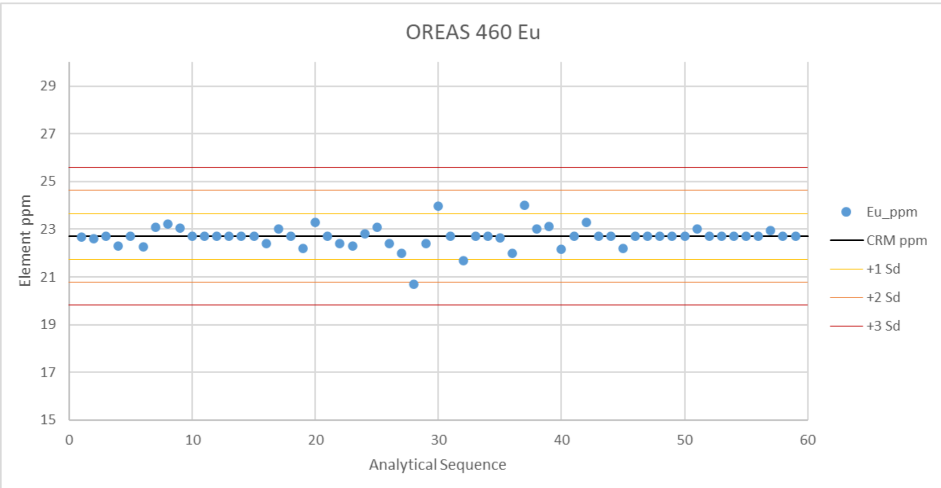
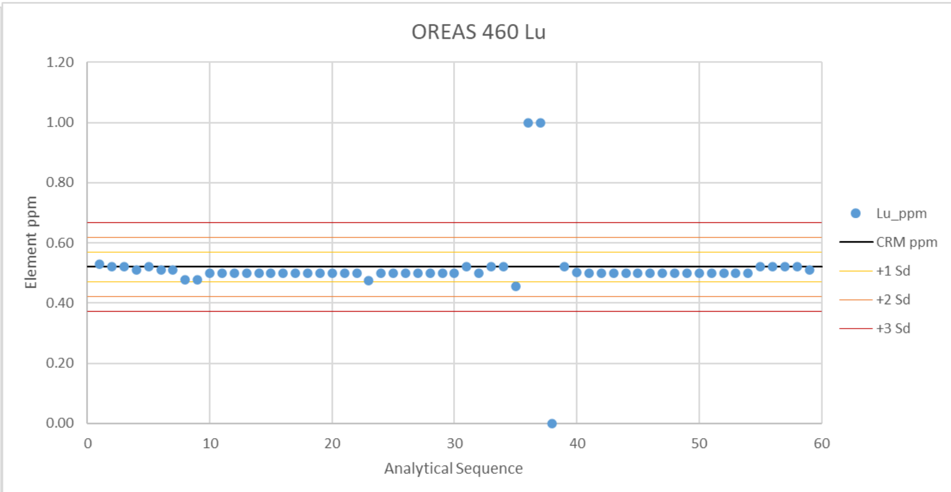
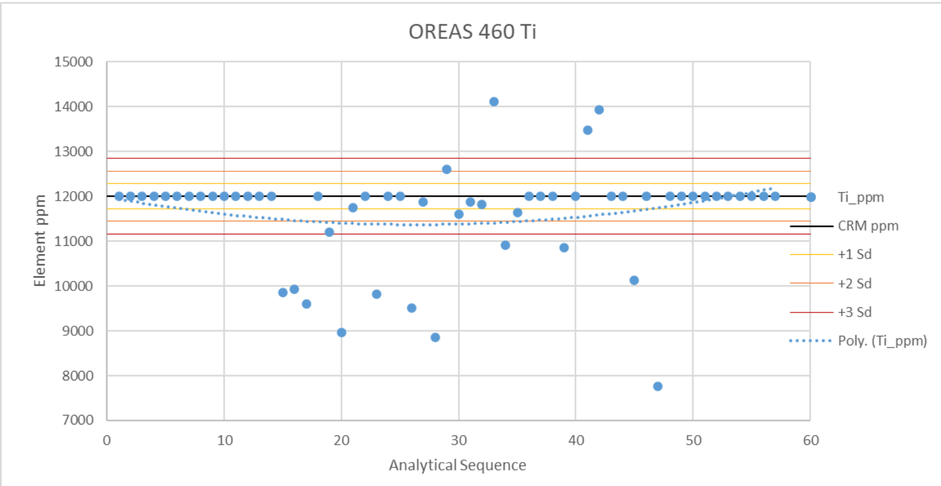

ICP-OES Ti ppm
HARD %
RANK %

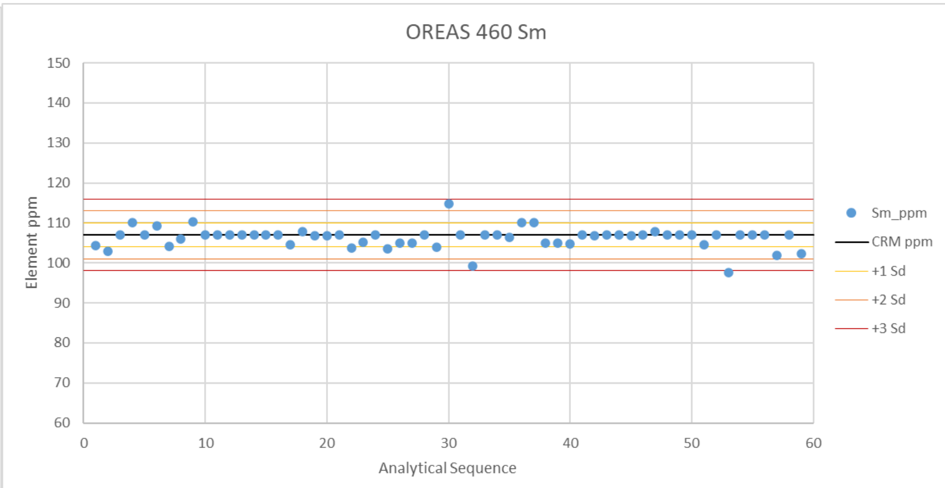
Table 8:Stage 1 CRM Oreas 460 properties against the total data set average, & CRM graph matrix for the 59 Oreas 460 standard assays. Sc parameters in red are indicative only and not certified.

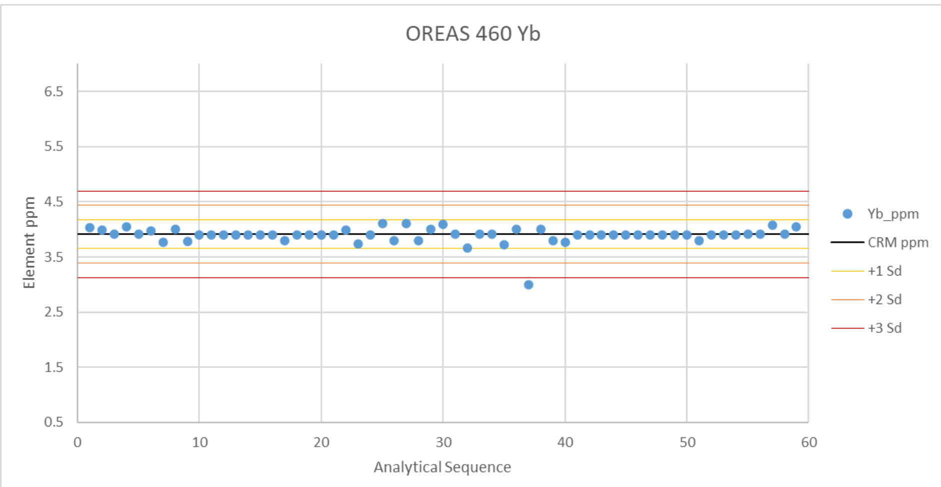
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Zr	Hf	Nb	Ti
Data Set Mean	16.02	27.07	83.14	170.65	19.08	67.43	11.92	1.49	7.78	1.19	5.05	1.08	2.62	0.71	2.51	0.75	33.58	2.29	343.72	9.79	18.91	4038.17
Data Set Min	2.00	2.10	1.40	2.60	0.80	1.00	1.00	0.40	0.60	0.50	0.50	0.20	0.20	0.20	0.20	0.24	0.50	0.40	9.20	0.40	1.00	32.00
Data Set Max	103.20	169.20	4961.00	6443.60	985.90	2812.80	435.20	113.10	240.30	19.70	82.00	11.50	28.10	4.10	31.20	5.80	272.50	203.90	5307.70	137.50	1617.00	67998.00
CRM ppm	**34.50**	**60.00**	**1369.00**	**1798.00**	**244.00**	**781.00**	**107.00**	**22.70**	**50.00**	**4.84**	**19.80**	**2.77**	**6.01**	**0.70**	**3.91**	**0.52**	**116.00**	**4.21**	**472.00**	**11.80**	**698.00**	**12000.00**
1s ppm	1.26	2.60	75.00	7.20	8.00	47.00	3.00	0.96	3.00	0.21	0.75	0.22	0.35	0.05	0.26	0.05	3.00	0.19	21.00	0.56	39.00	280.00
-95% conf		58.00	1344.00	1754.00	239.00	754.00	106.00	22.20	48.00	4.73	19.40	2.65	5.83	0.68	3.76	0.50	114.00	4.11	458.00	11.50	673.00	11800.00
+95% conf		61.00	1394.00	1844.00	249.00	809.00	109.00	23.30	52.00	4.96	20.30	2.90	6.19	0.73	4.05	0.55	118.00	4.31	487.00	12.10	722.00	12200.00

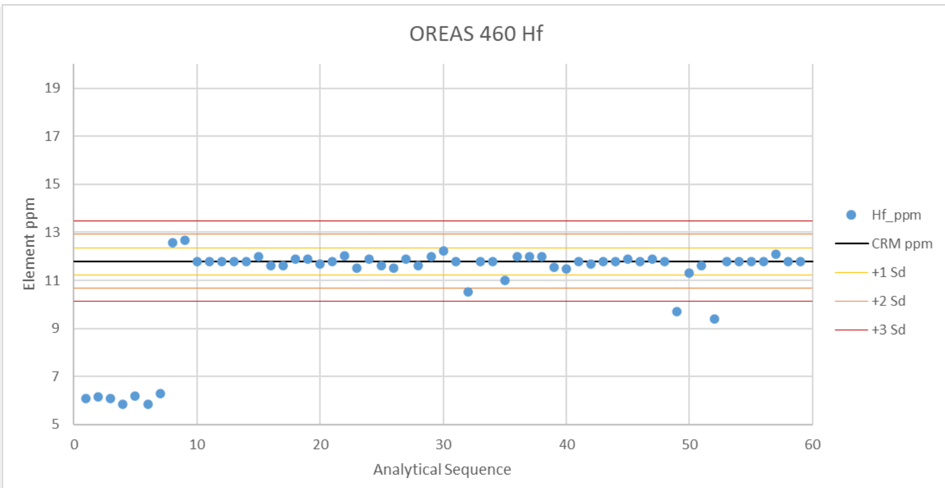


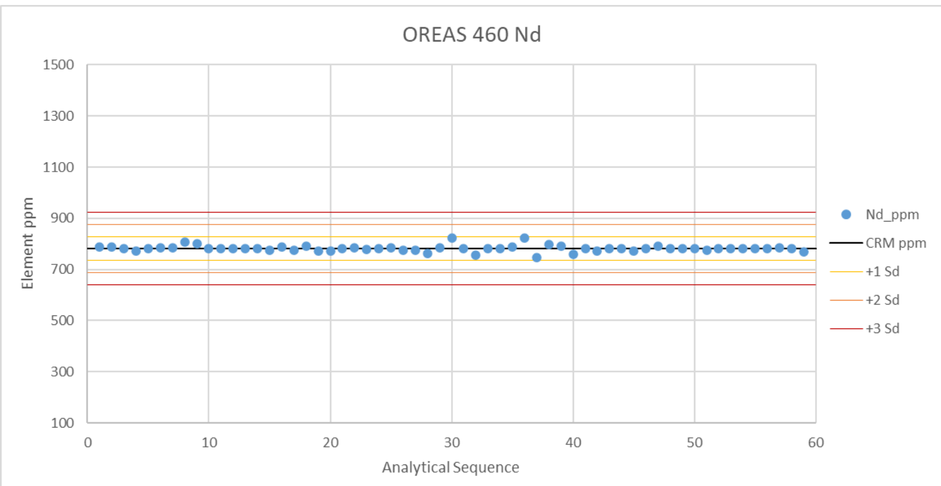


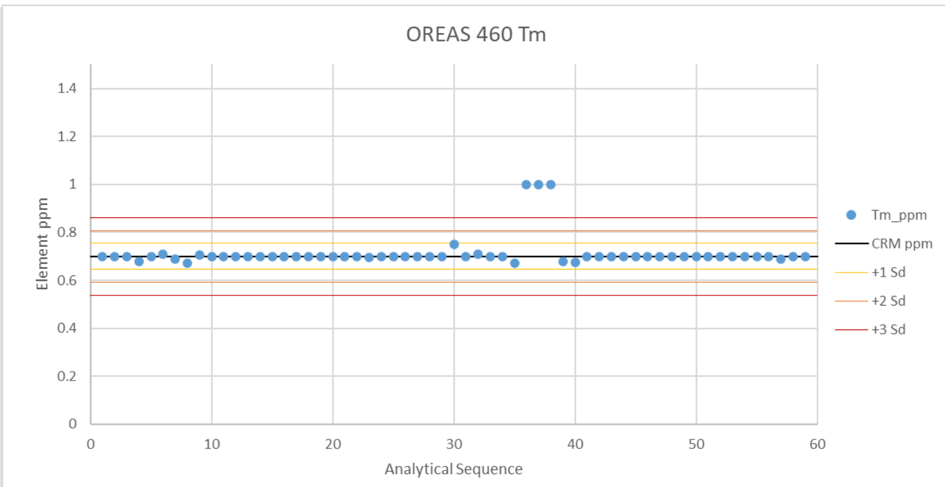


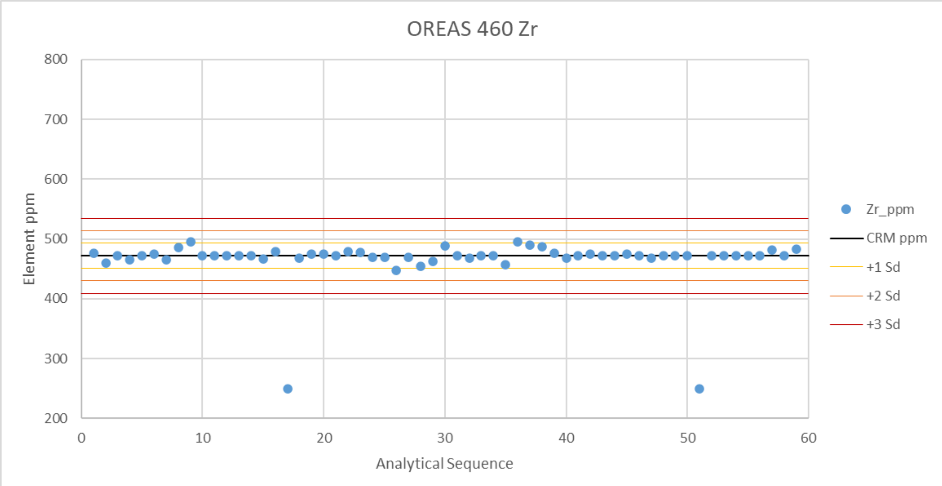


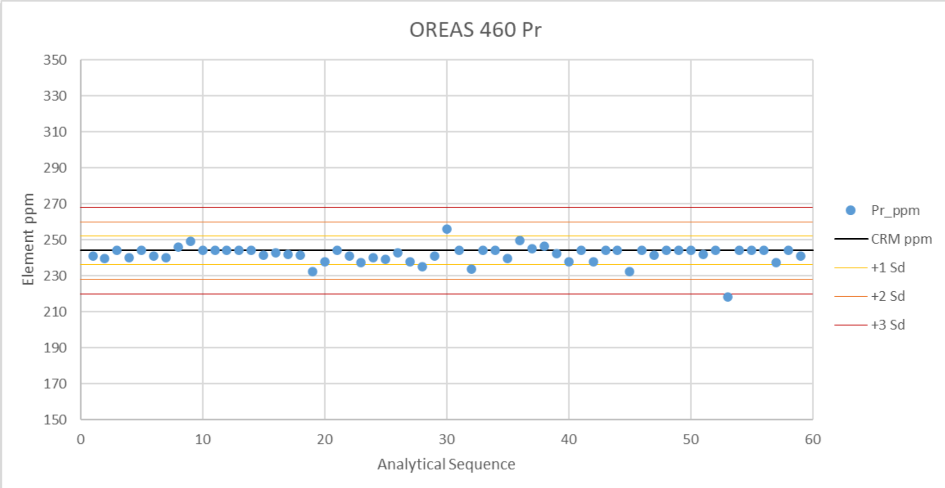


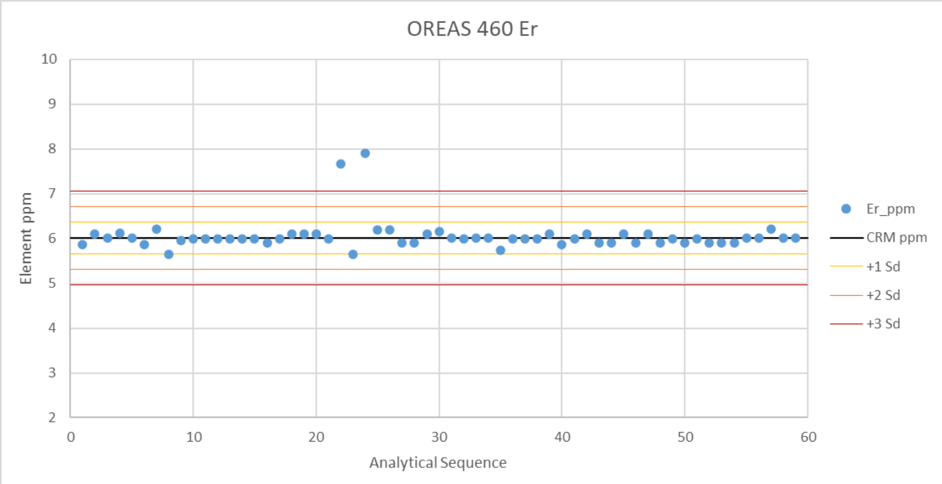


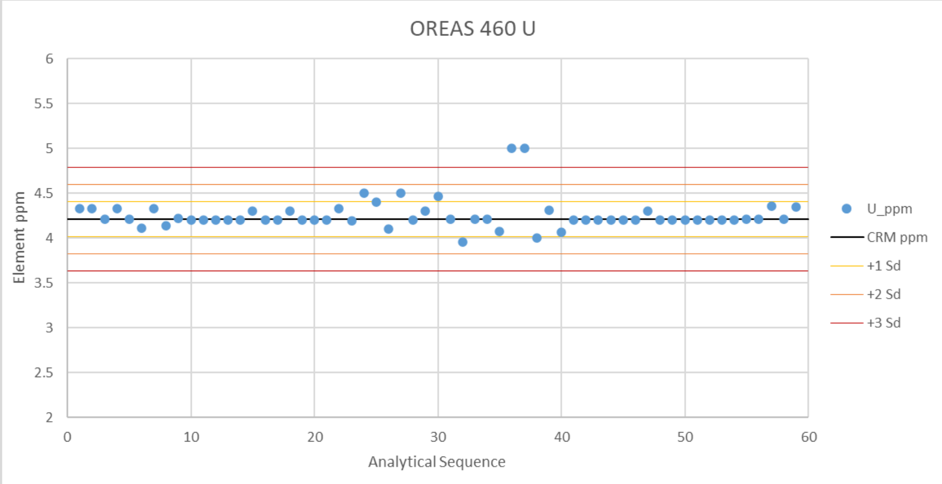


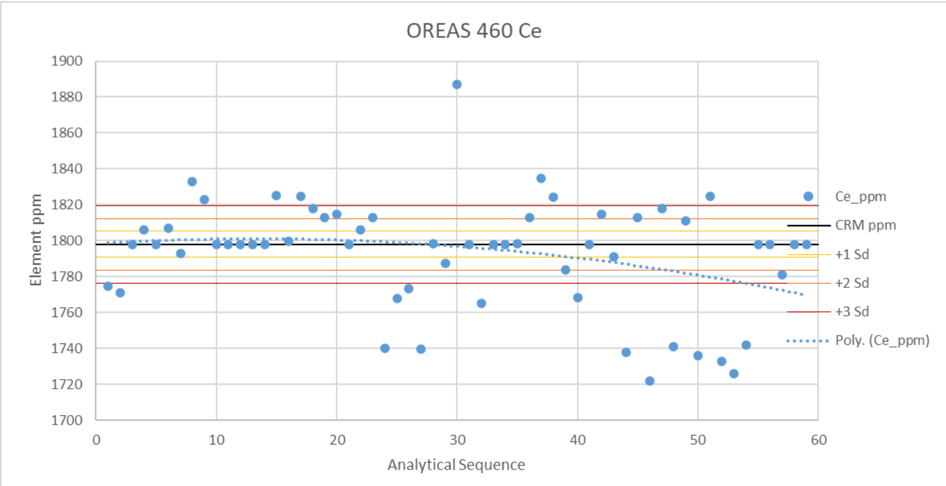


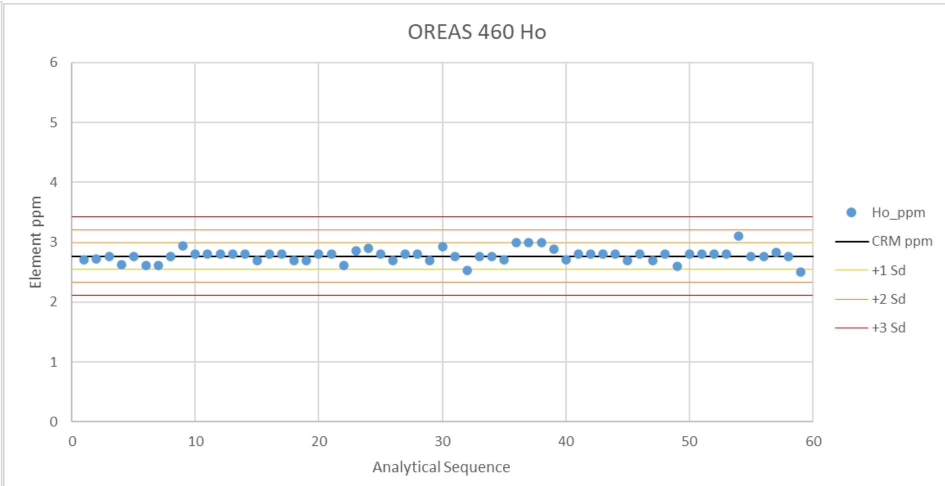

OREAS 460 Zr
Element ppm
Analytical Sequence
Zr_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

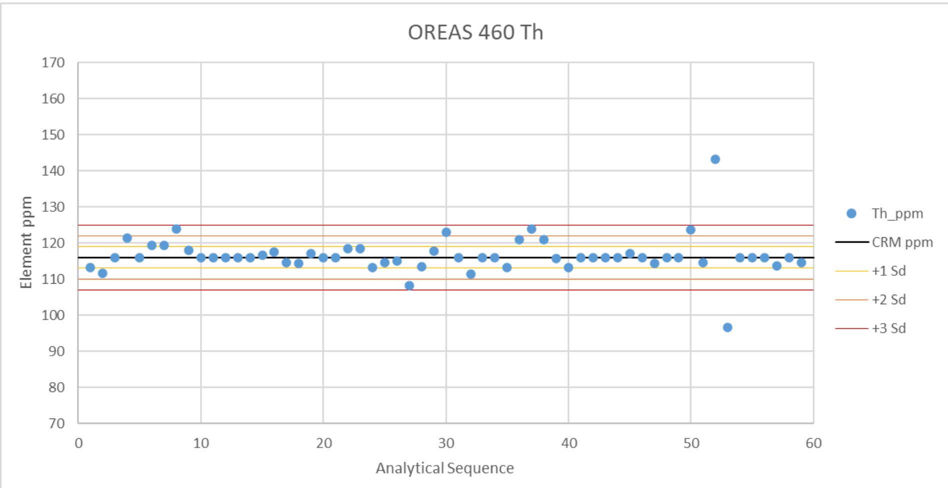

OREAS 460 Pr
Element ppm
Analytical Sequence
Pr_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

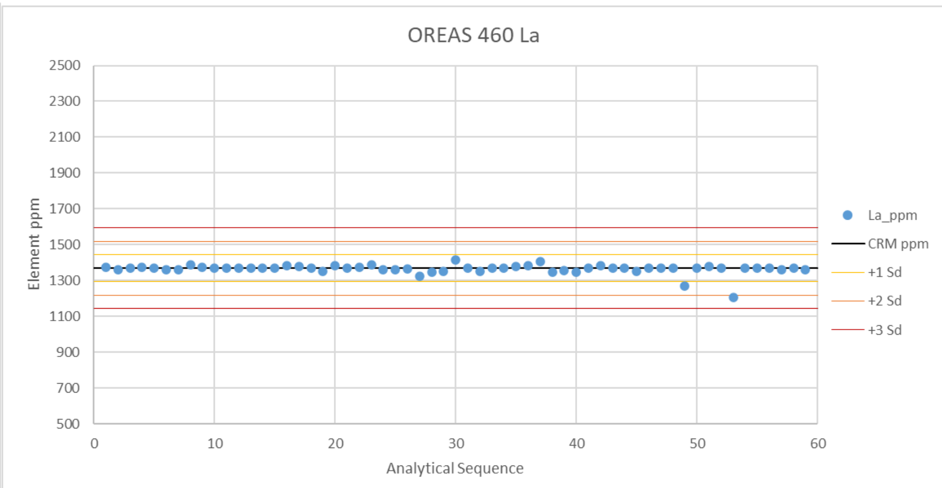

OREAS 460 Er
Element ppm
Analytical Sequence
Er_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

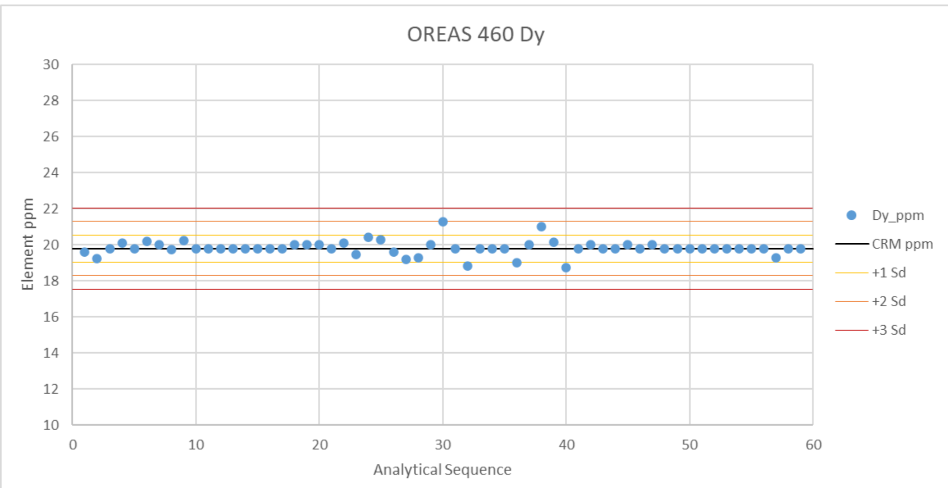

OREAS 460 U
Element ppm
Analytical Sequence
U_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

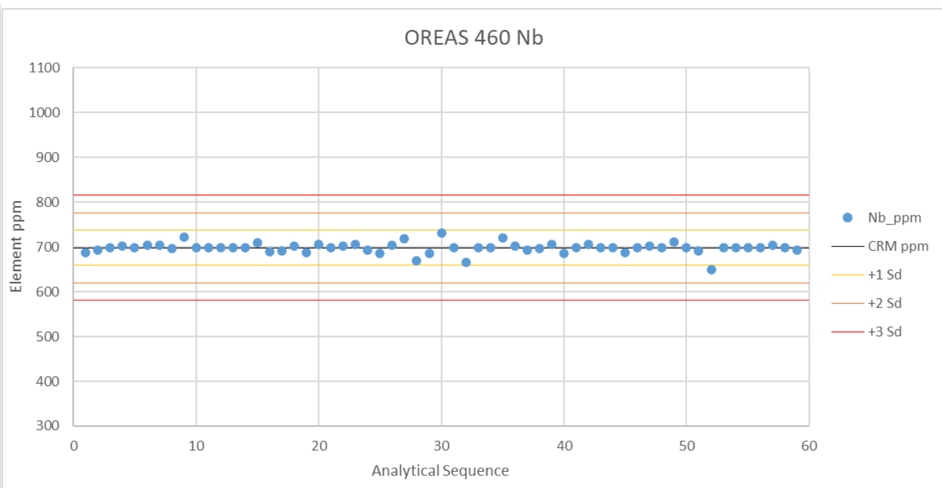

OREAS 460 Ce
Element ppm
Analytical Sequence
Ce_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Poly. (Ce_ppm)

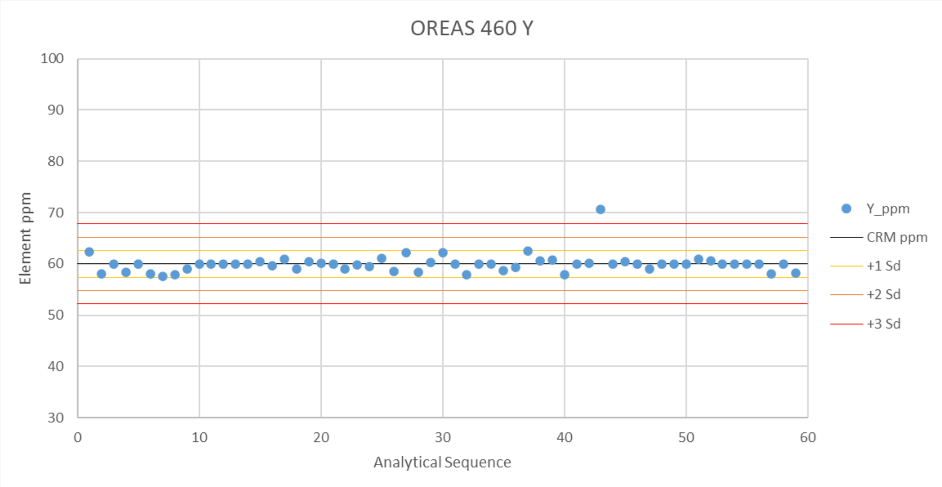

OREAS 460 Ho
Element ppm
Analytical Sequence
Ho_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

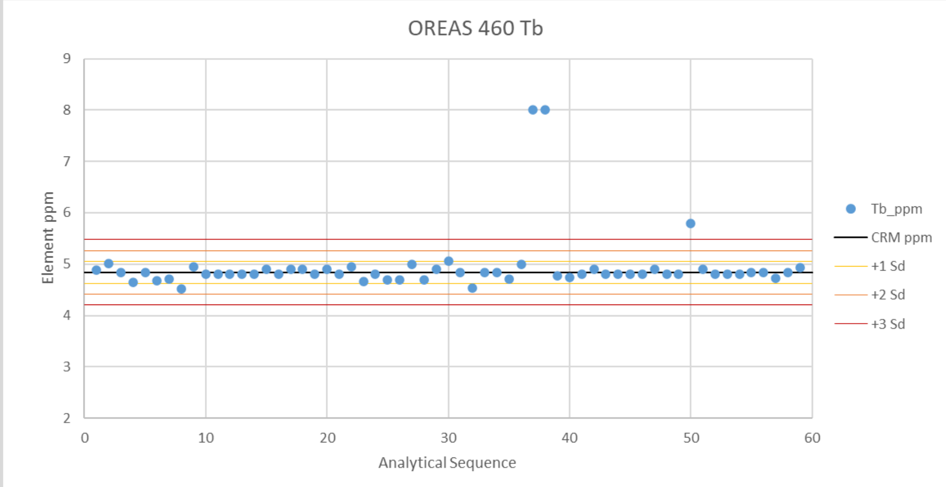

OREAS 460 Th
Element ppm
Analytical Sequence
Th_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

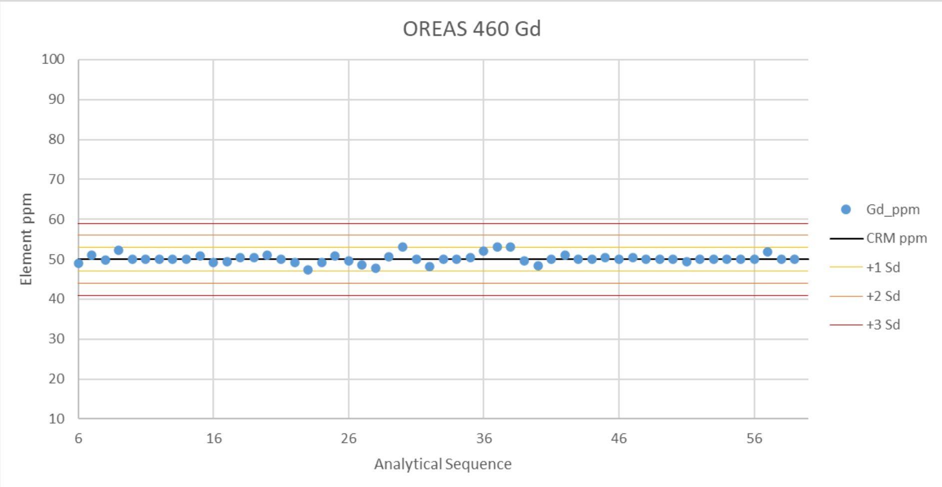

OREAS 460 La
Element ppm
Analytical Sequence
La_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 460 Dy
Element ppm
Analytical Sequence
Dy_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 460 Nb
Element ppm
Analytical Sequence
Nb_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 460 Y
Element ppm
Analytical Sequence
Y_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 460 Tb
Element ppm
Analytical Sequence
Tb_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 460 Gd
Element ppm
Analytical Sequence
Gd_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

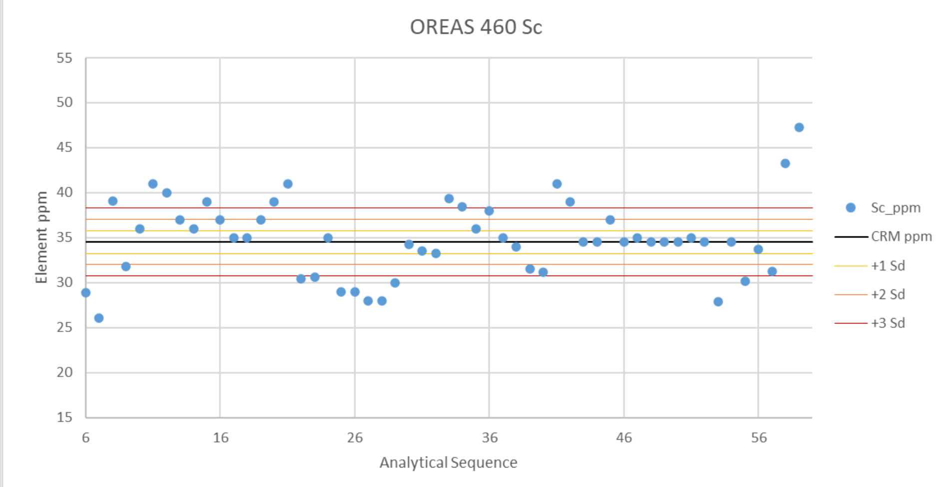
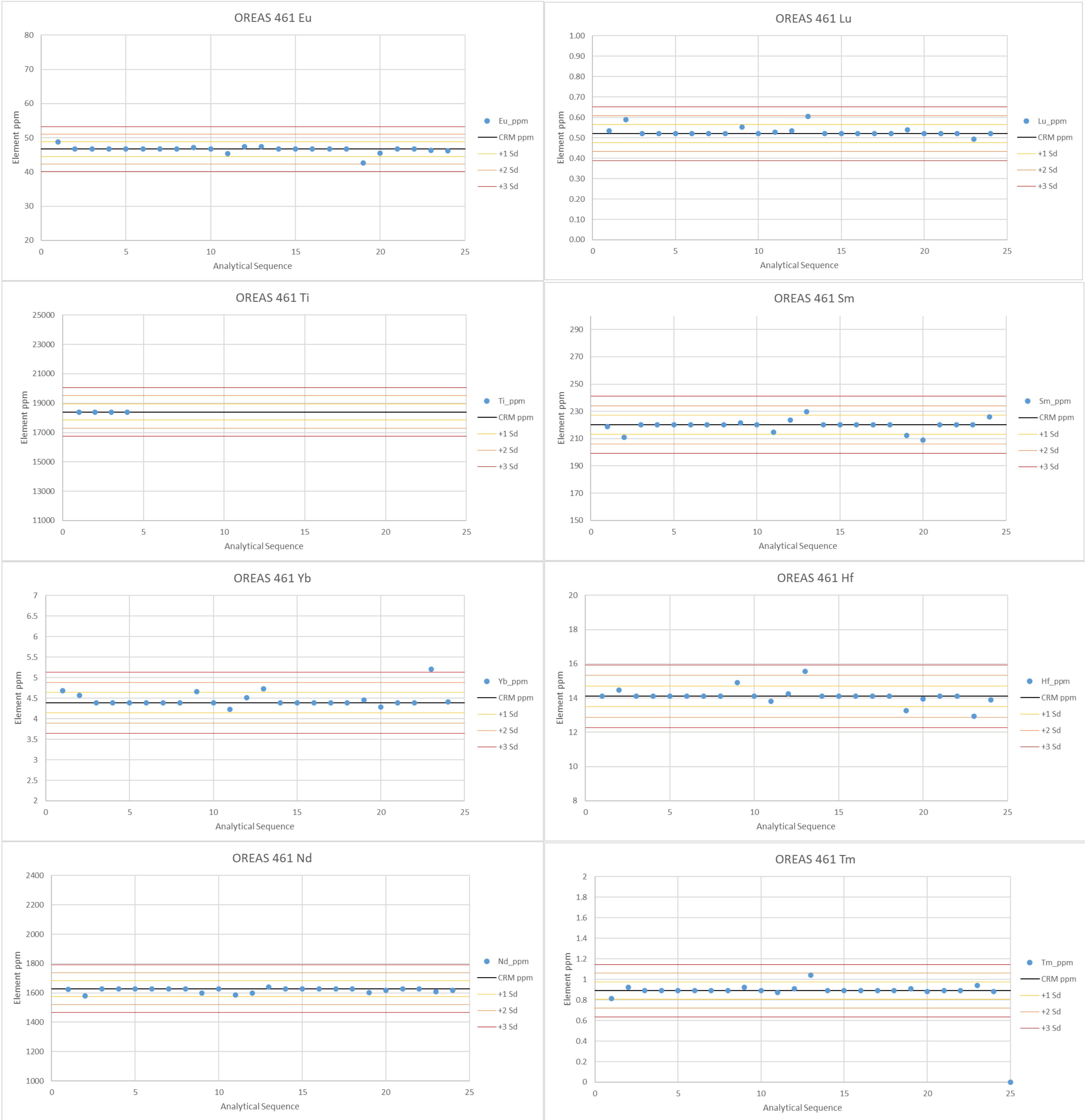
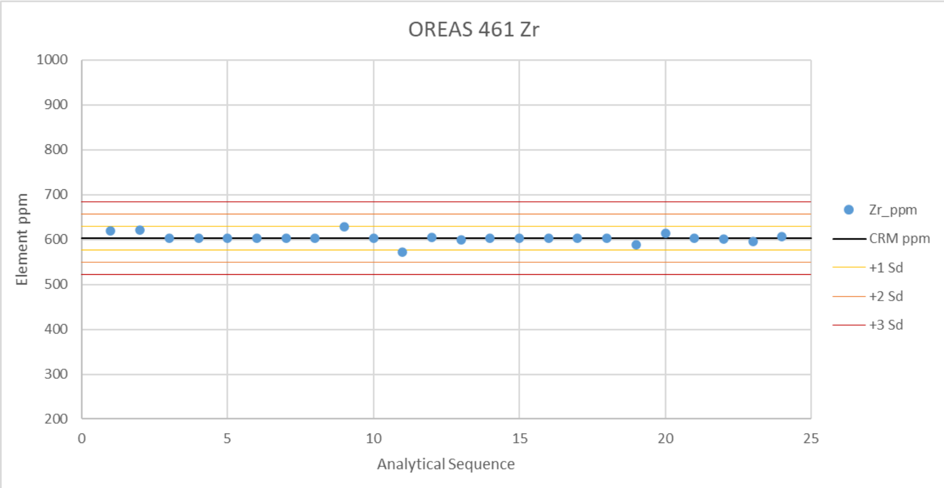
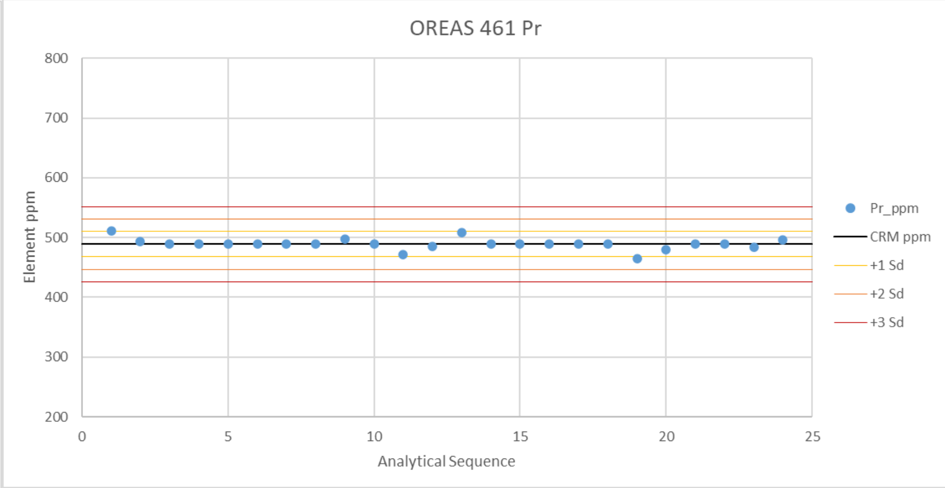

OREAS 460 Sc
Element ppm
Analytical Sequence
Sc_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

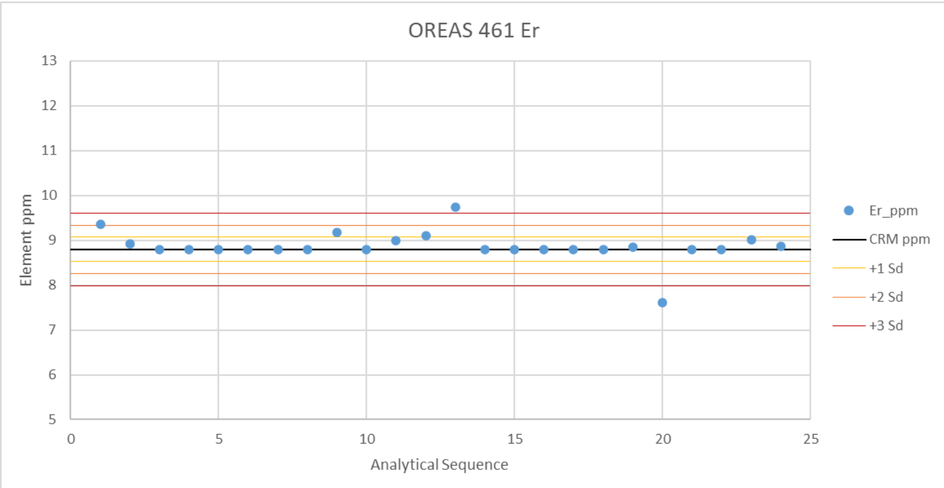
Table 9: Stage 1 CRM Oreas 461 properties against the total data set average, & CRM graph matrix for the 24 Oreas 461 standard assays. Sc parameters in red are indicative only and not certified.

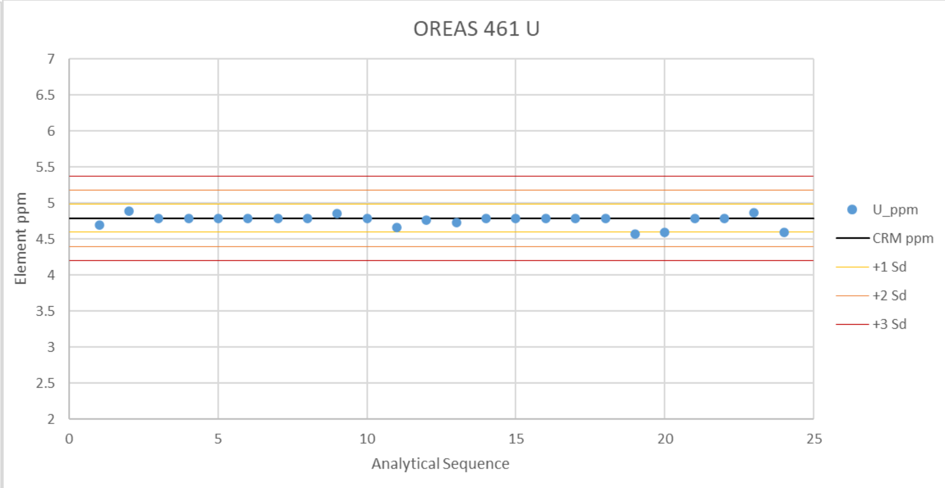
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Zr	Hf	Nb	Ti
Data Set Mean	16.02	27.07	83.14	170.65	19.08	67.43	11.92	1.49	7.78	1.19	5.05	1.08	2.62	0.71	2.51	0.75	33.58	2.29	343.72	9.79	18.91	4038.17
Data Set Min	2.00	2.10	1.40	2.60	0.80	1.00	1.00	0.40	0.60	0.50	0.50	0.20	0.20	0.20	0.20	0.24	0.50	0.40	9.20	0.40	1.00	32.00
Data Set Max	103.20	169.20	4961.00	6443.60	985.90	2812.80	435.20	113.10	240.30	19.70	82.00	11.50	28.10	4.10	31.20	5.80	272.50	203.90	5307.70	137.50	1617.00	67998.00
CRM ppm	**44.00**	**91.00**	**2690.00**	**3510.00**	**489.00**	**1629.00**	**220.00**	**46.70**	**100.00**	**9.08**	**34.80**	**4.56**	**8.80**	**0.89**	**4.39**	**0.52**	**210.00**	**4.79**	**603.00**	**14.10**	**1296.00**	**18400.00**
1s ppm	1.70	4.40	158.00	132.00	21.00	54.00	7.00	2.19	8.00	0.31	1.44	0.31	0.27	0.09	0.25	0.04	7.00	0.20	27.00	0.61	98.00	550.00
-95% conf		88.00	2601.00	3437.00	477.00	1597.00	216.00	45.40	95.00	8.92	34.00	4.38	8.64	0.68	4.27	0.49	206.00	4.69	585.00	13.70	1231.00	18000.00
+95% conf		94.00	2779.00	3583.00	500.00	1660.00	223.00	48.00	105.00	9.23	35.60	4.74	8.96	0.73	4.52	0.54	214.00	4.89	621.00	14.50	1361.00	18800.00

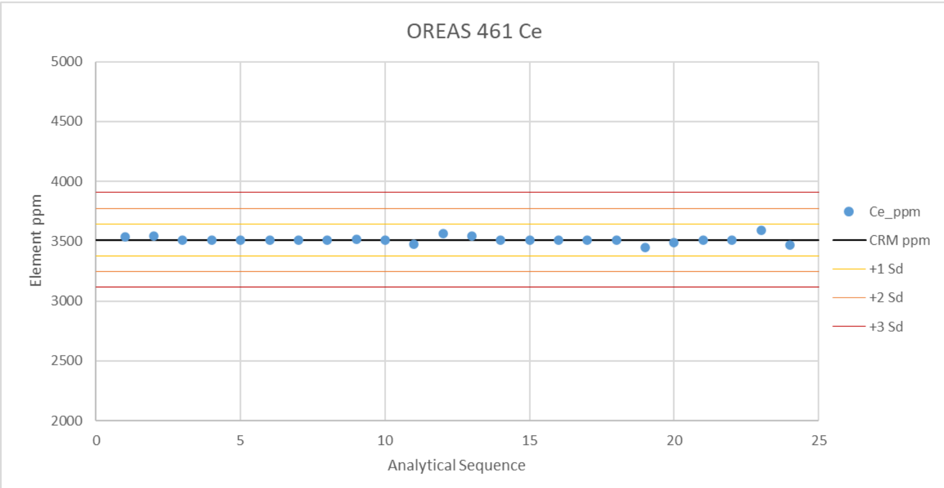


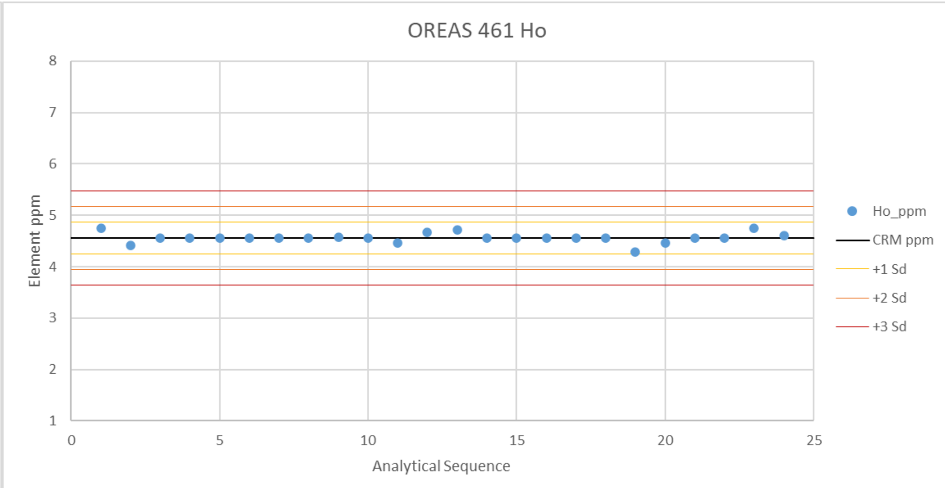

OREAS 461 Zr
Element ppm
Analytical Sequence
Zr_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Pr
Element ppm
Analytical Sequence
Pr_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Er
Element ppm
Analytical Sequence
Er_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 U
Element ppm
Analytical Sequence
U_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Ce
Element ppm
Analytical Sequence
Ce_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd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Element ppm
Analytical Sequence
Ho_ppm
CRM ppm
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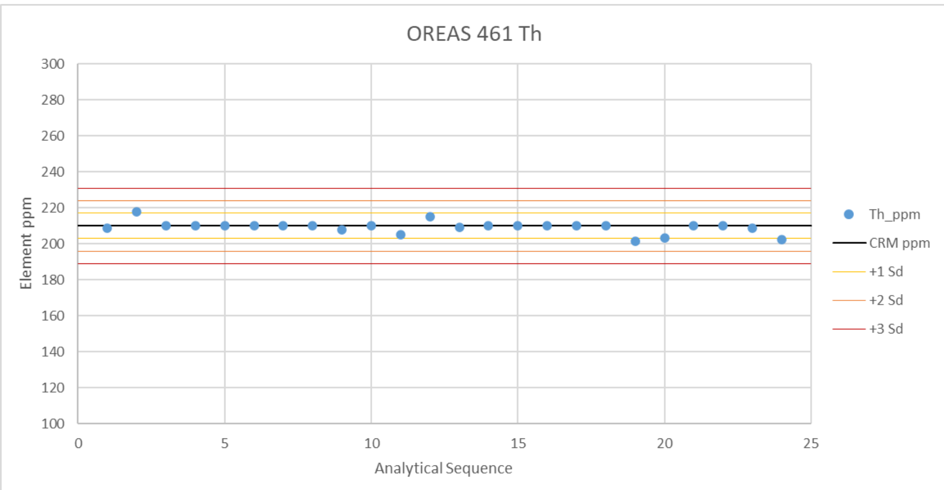
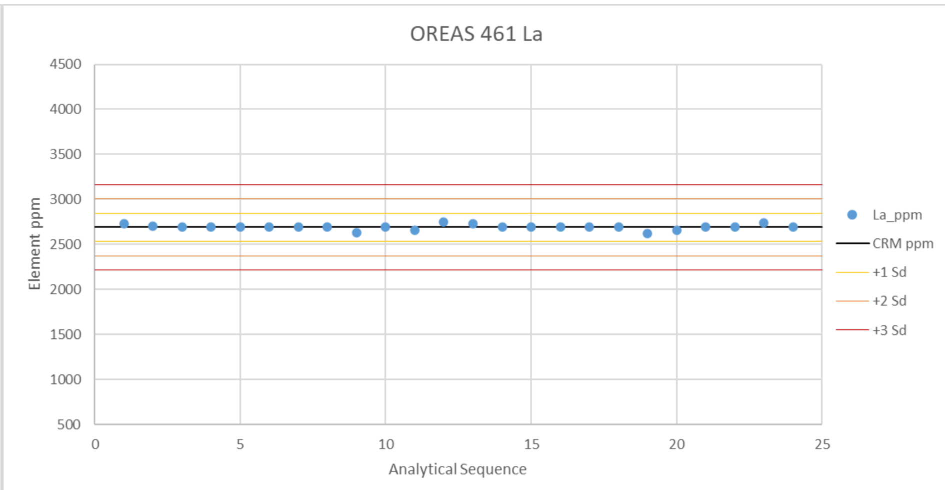
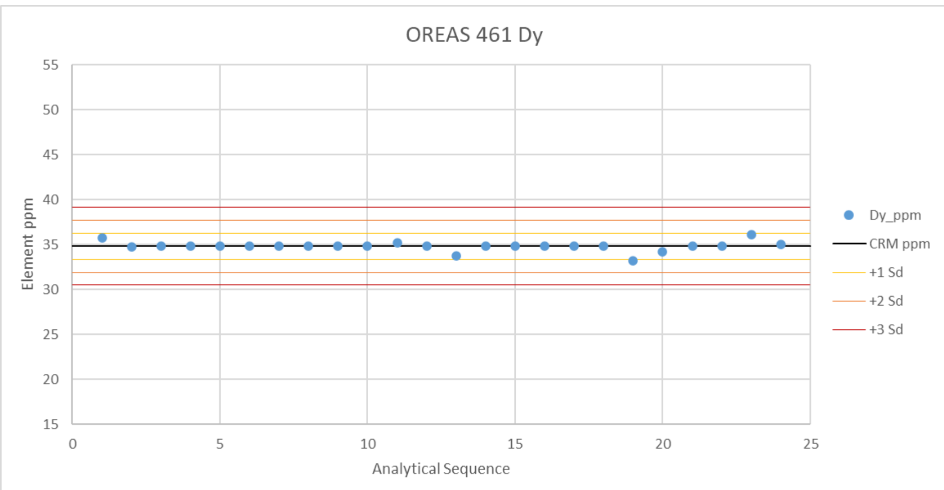
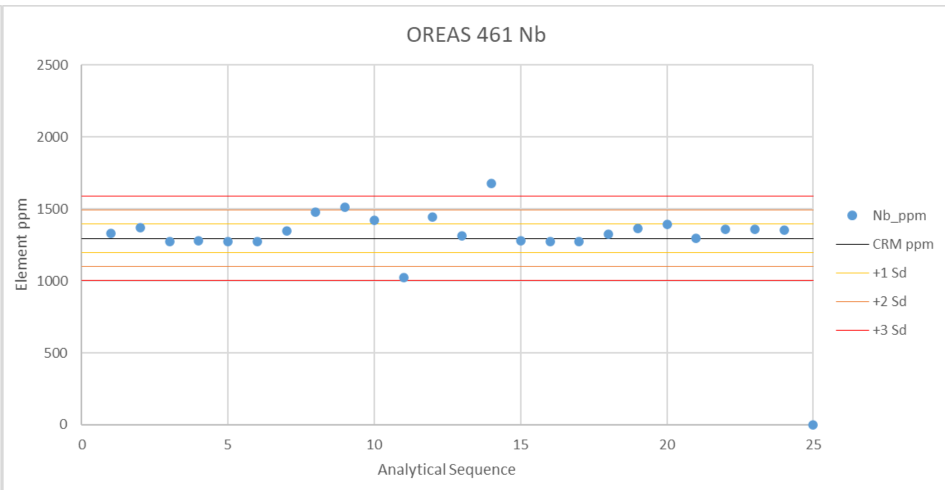
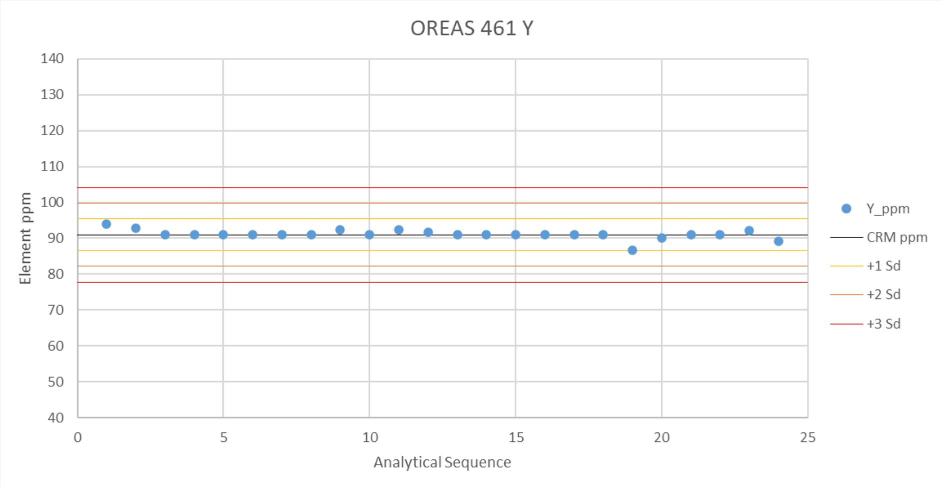
+2 Sd
+3 Sd

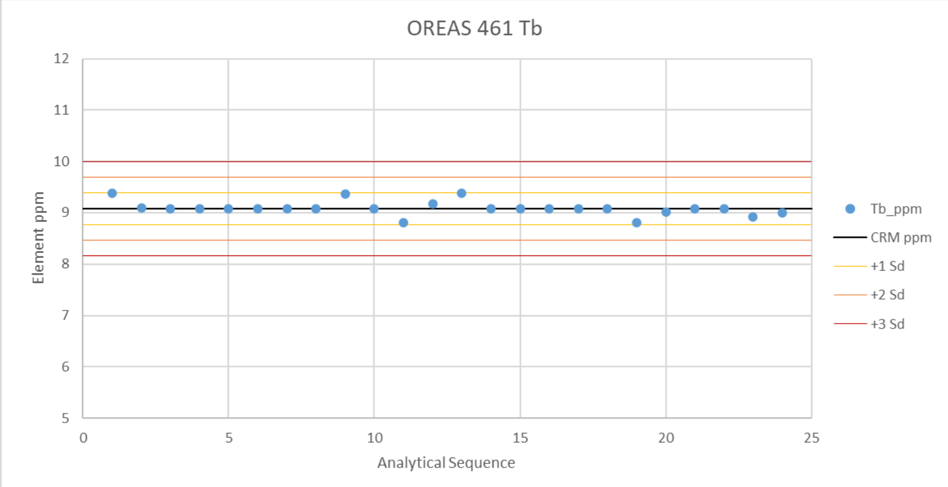

OREAS 461 Th
Element ppm
Analytical Sequence
Th_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

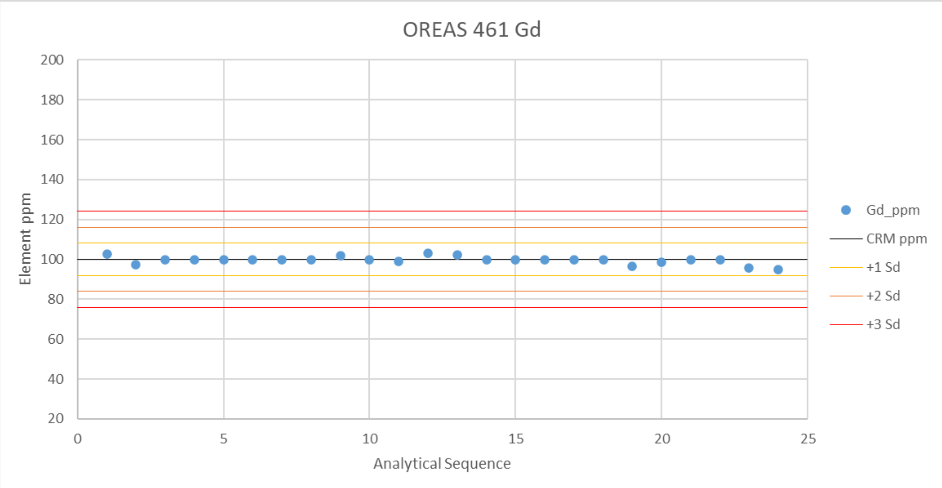

OREAS 461 La
Element ppm
Analytical Sequence
La_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Dy
Element ppm
Analytical Sequence
Dy_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Nb
Element ppm
Analytical Sequence
Nb_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Y
Element ppm
Analytical Sequence
Y_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Tb
Element ppm
Analytical Sequence
Tb_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 461 Gd
Element ppm
Analytical Sequence
Gd_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

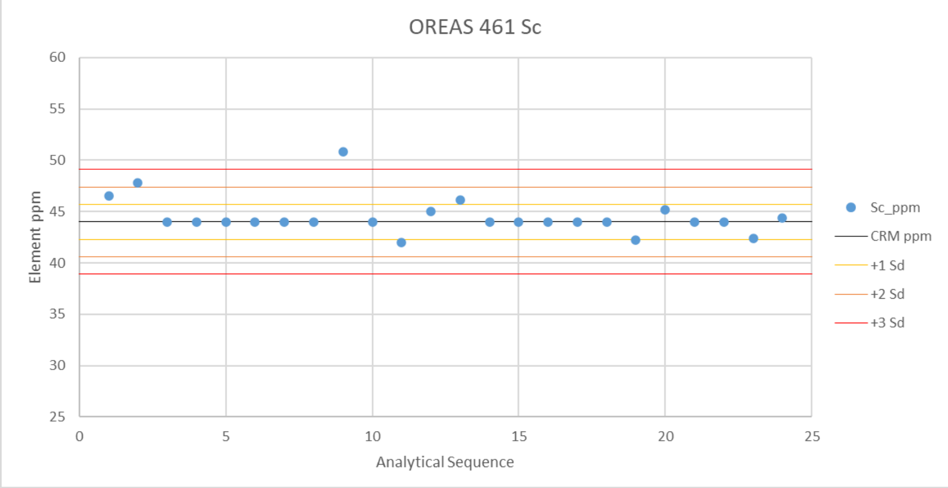
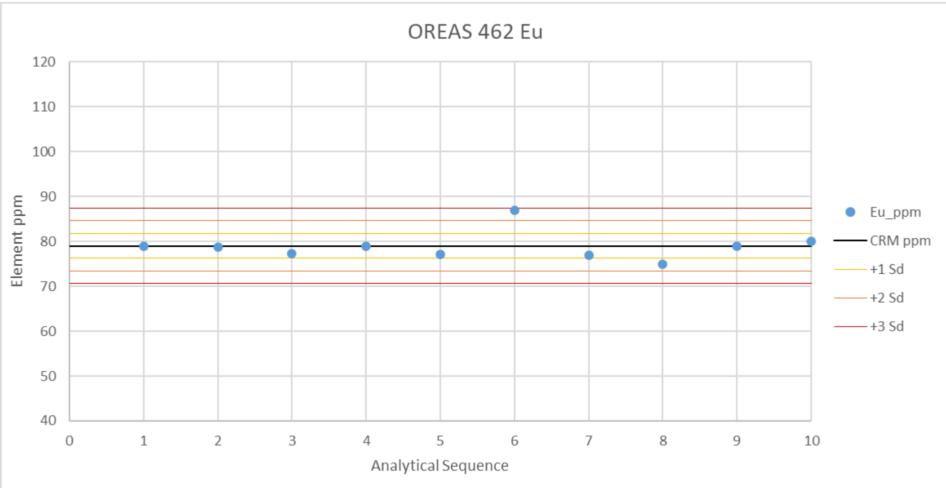
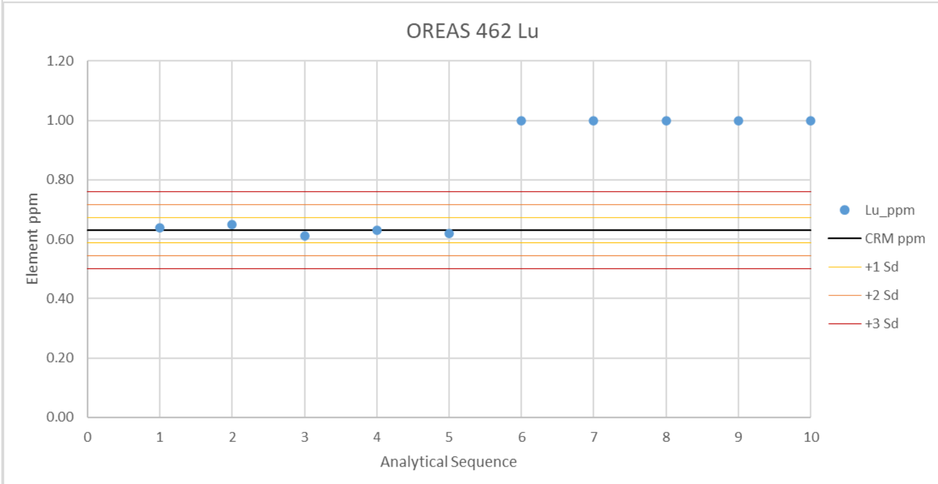
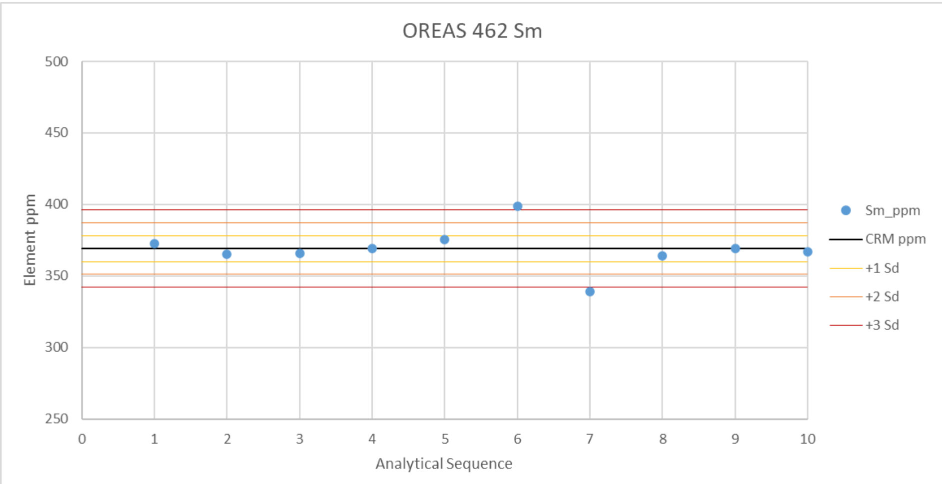

OREAS 461 Sc
Element ppm
Analytical Sequence
Sc_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

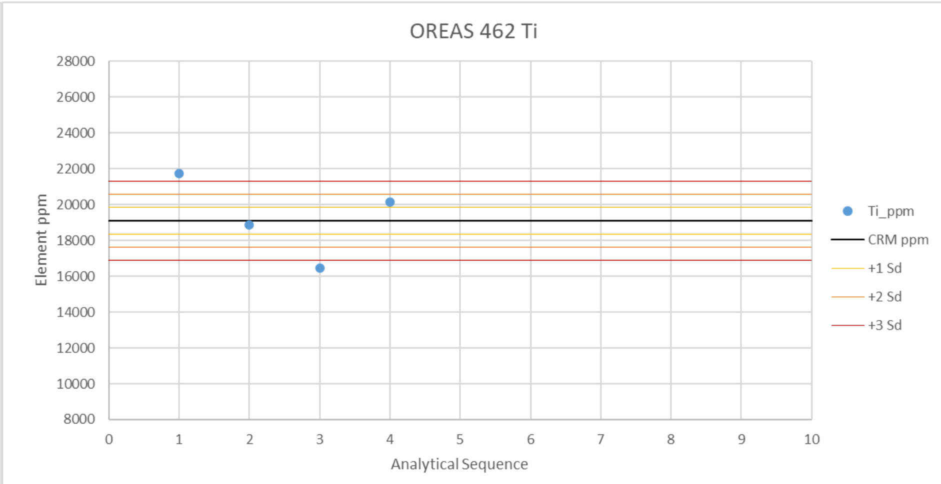
Table 10: Stage 1 CRM Oreas 462 properties against the total data set average, & CRM graph matrix for the 10 Oreas 462 standard assays. Sc parameters in red are indicative only and not certified.

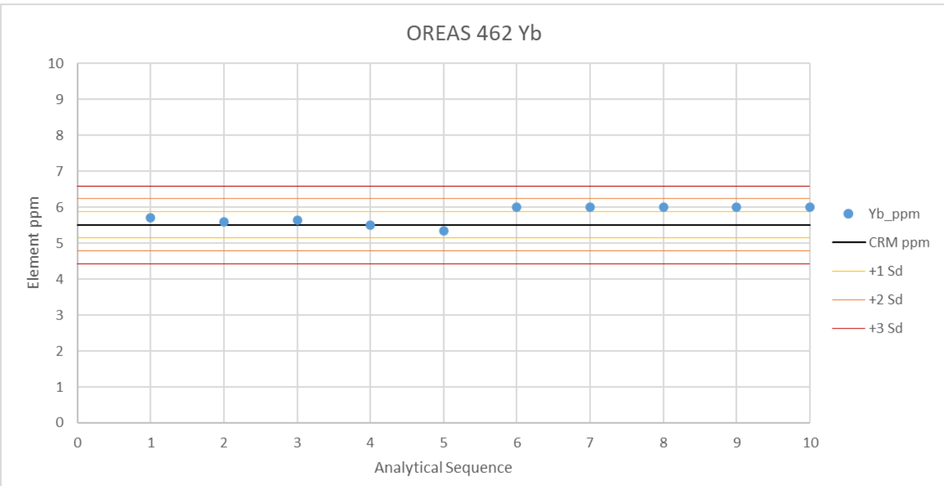
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Zr	Hf	Nb	Ti
Data Set Mean	16.02	27.07	83.14	170.65	19.08	67.43	11.92	1.49	7.78	1.19	5.05	1.08	2.62	0.71	2.51	0.75	33.58	2.29	343.72	9.79	18.91	4038.17
Data Set Min	2.00	2.10	1.40	2.60	0.80	1.00	1.00	0.40	0.60	0.50	0.50	0.20	0.20	0.20	0.20	0.24	0.50	0.40	9.20	0.40	1.00	32.00
Data Set Max	103.20	169.20	4961.00	6443.60	985.90	2812.80	435.20	113.10	240.30	19.70	82.00	11.50	28.10	4.10	31.20	5.80	272.50	203.90	5307.70	137.50	1617.00	67998.00
CRM ppm		**133.00**	**3794.00**	**4951.00**	**735.00**	**2560.00**	**369.00**	**79.00**	**165.00**	**14.40**	**51.00**	**6.50**	**12.20**	**1.20**	**5.51**	**0.63**	**249.00**	**6.15**	**593.00**	**14.00**	**1447.00**	**19100.00**
1s ppm		6.00	73.00	208.00	34.00	128.00	9.00	2.80	7.00	0.54	2.20	0.46	0.56	0.10	0.36	0.04	9.00	0.27	27.00	0.78	39.00	740.00
-95% conf		129.00	3765.00	4848.00	718.00	2487.00	365.00	77.00	161.00	14.10	50.00	6.25	11.90	1.15	5.34	0.61	244.00	6.03	577.00	13.70	1422.00	18600.00
+95% conf		136.00	3824.00	5054.00	752.00	2632.00	373.00	80.00	169.00	14.70	52.00	6.74	12.50	1.25	5.68	0.65	254.00	6.27	610.00	14.30	1473.00	19600.00

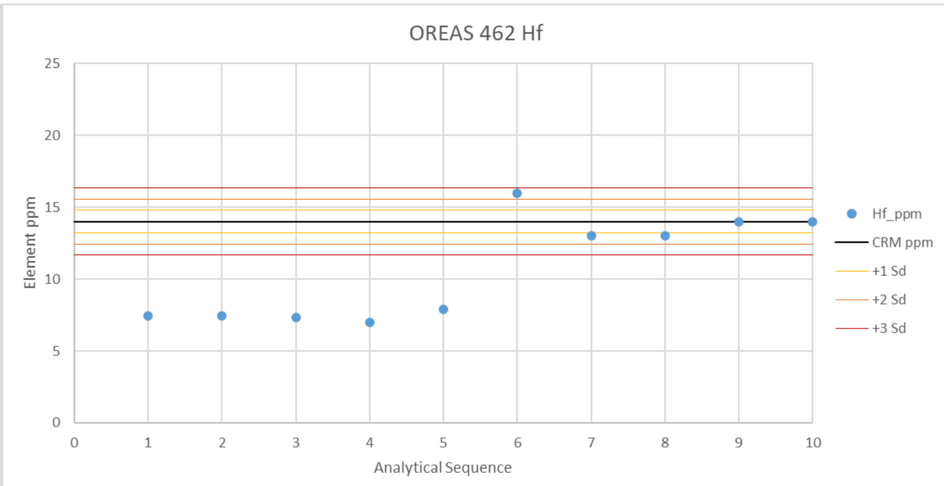


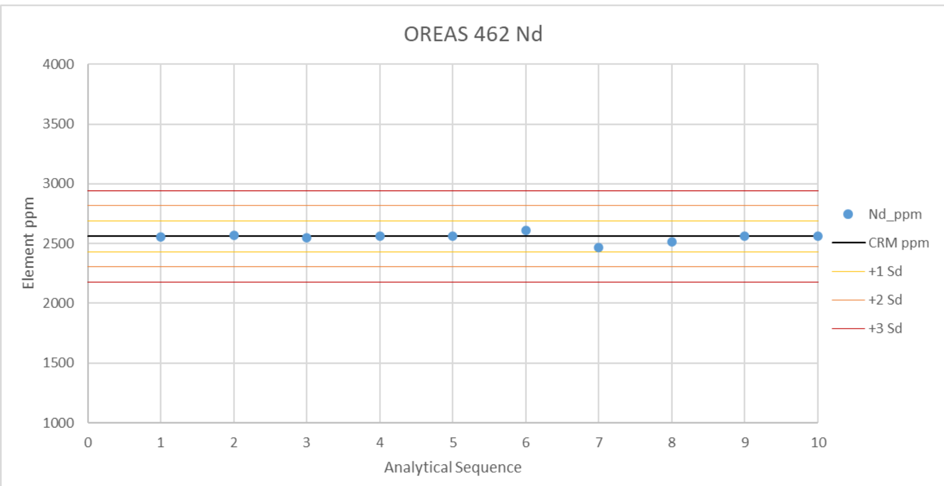


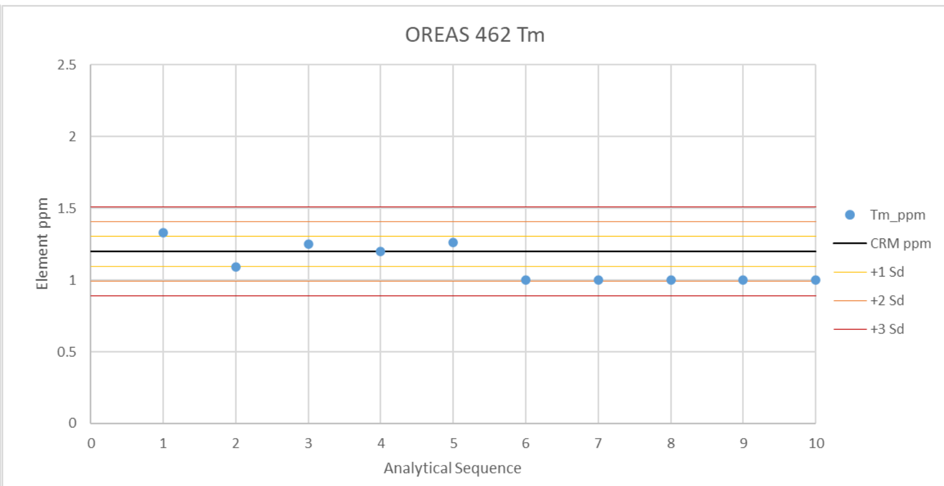


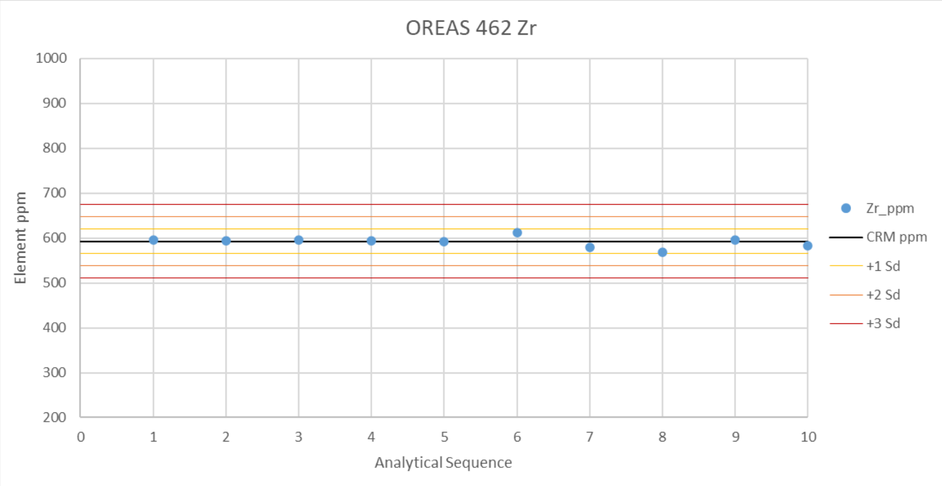








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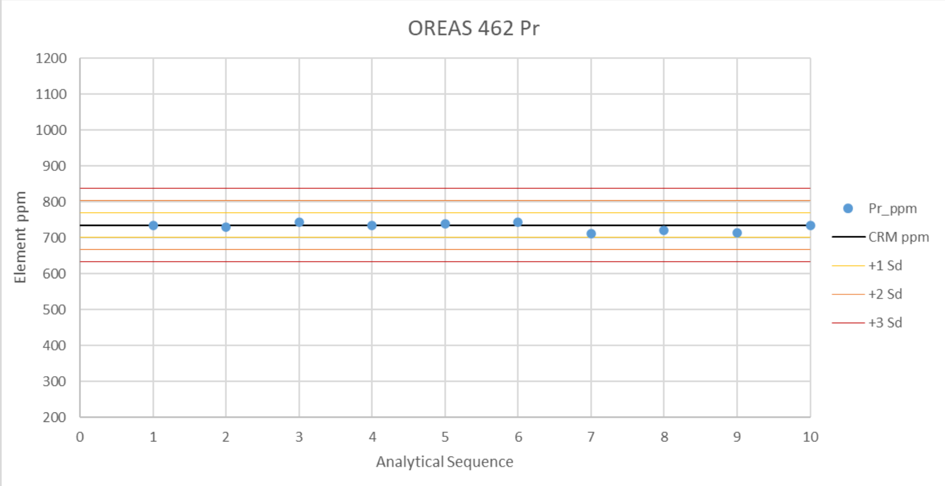
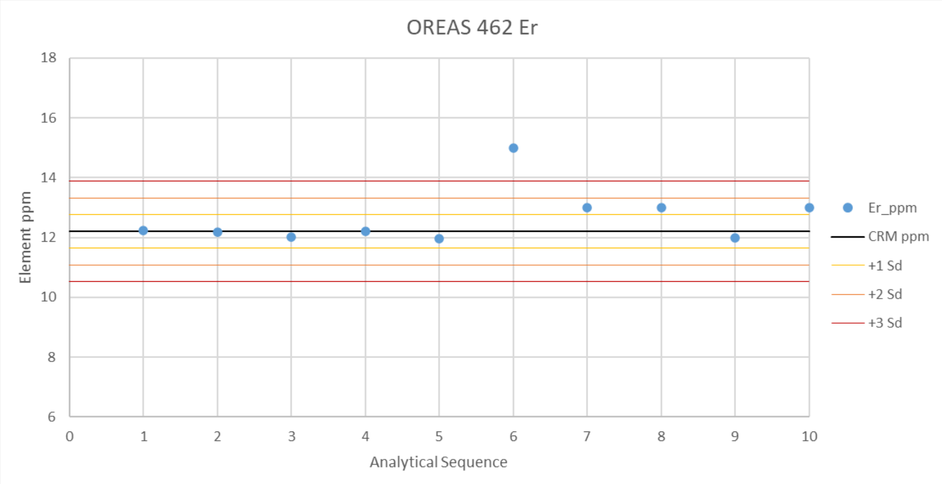
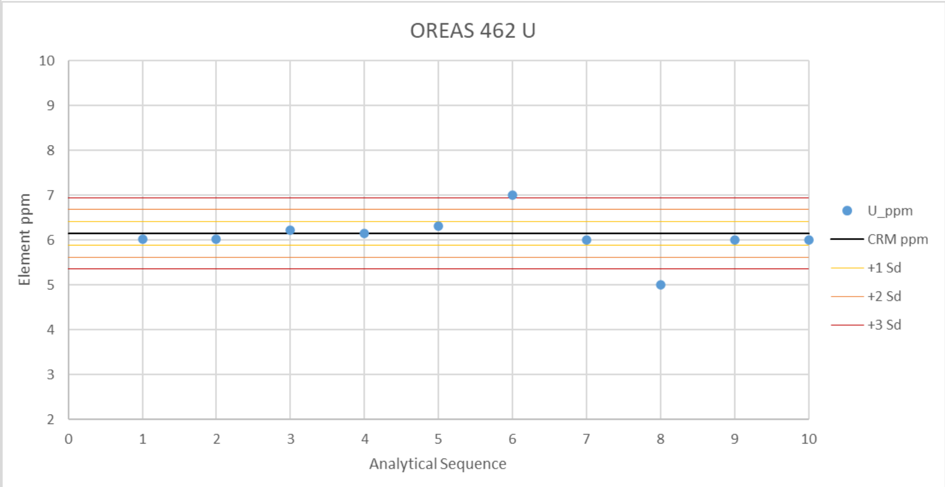
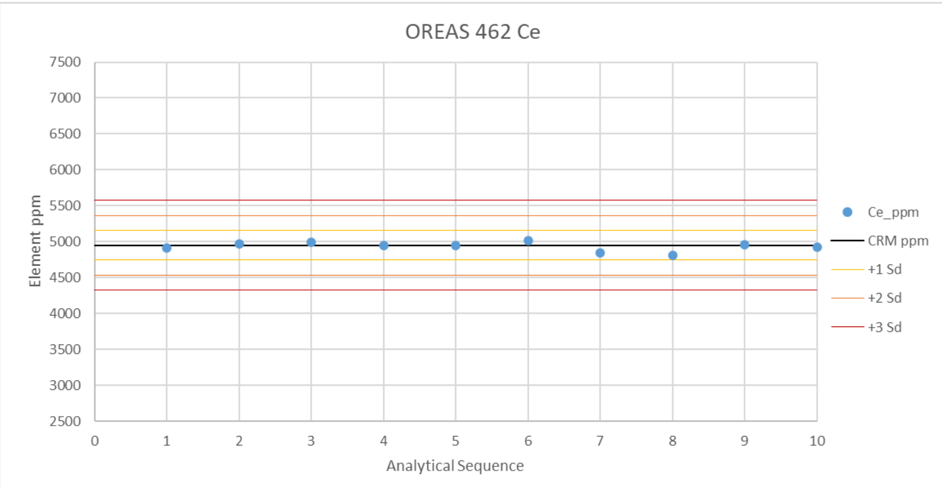
Element ppm
Analytical Sequence
Zr_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 462 Pr
Element ppm
Analytical Sequence
Pr_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 462 Er
Element ppm
Analytical Sequence
Er_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 462 U
Element ppm
Analytical Sequence
U_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd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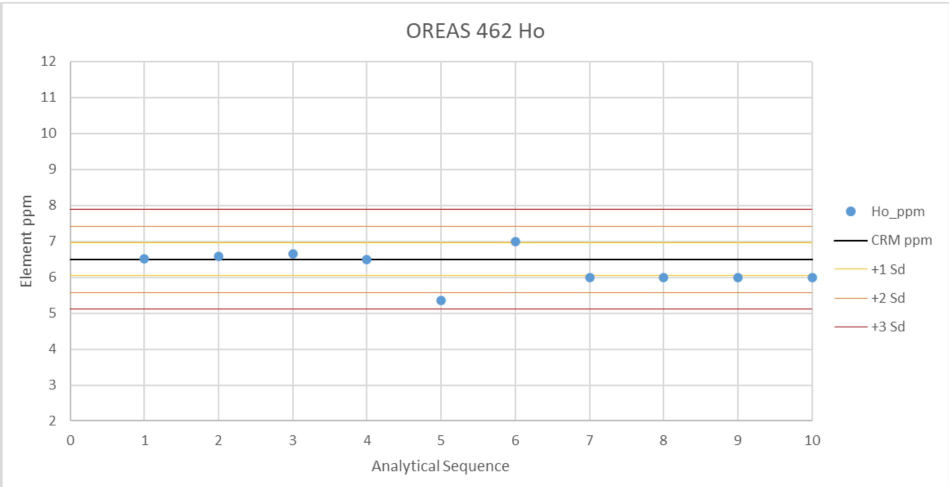
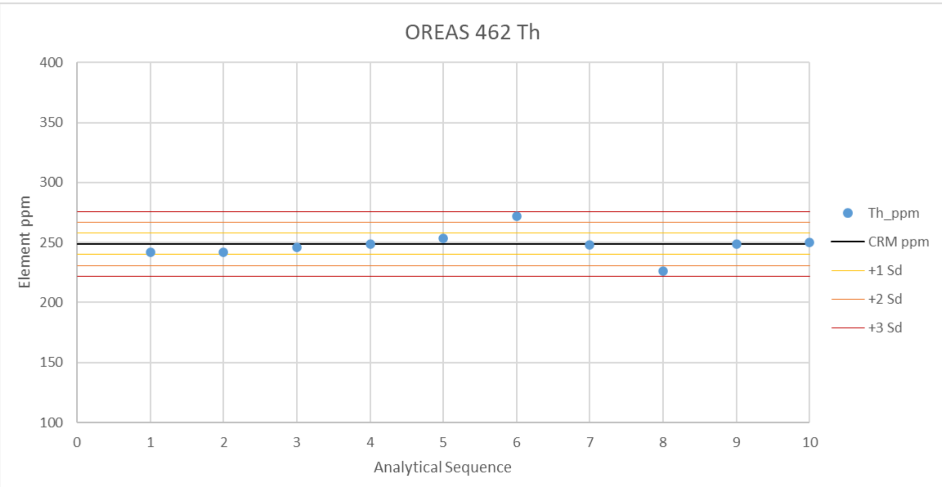
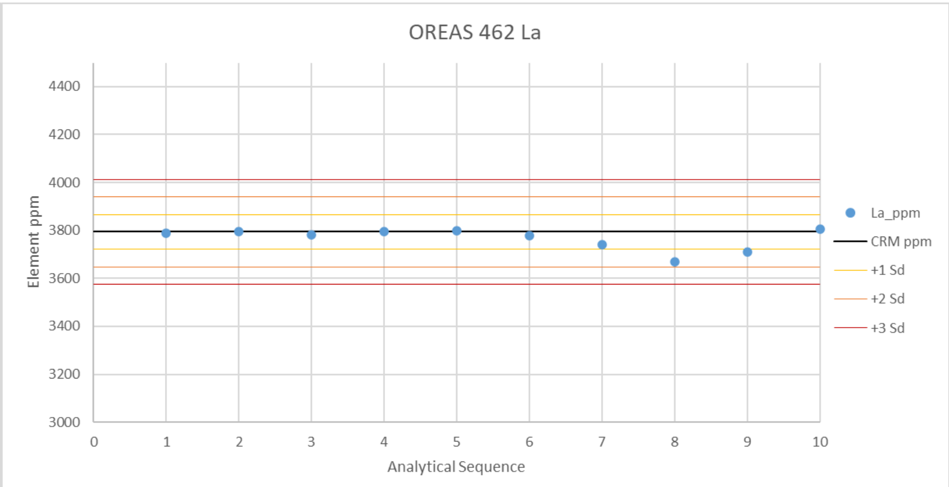
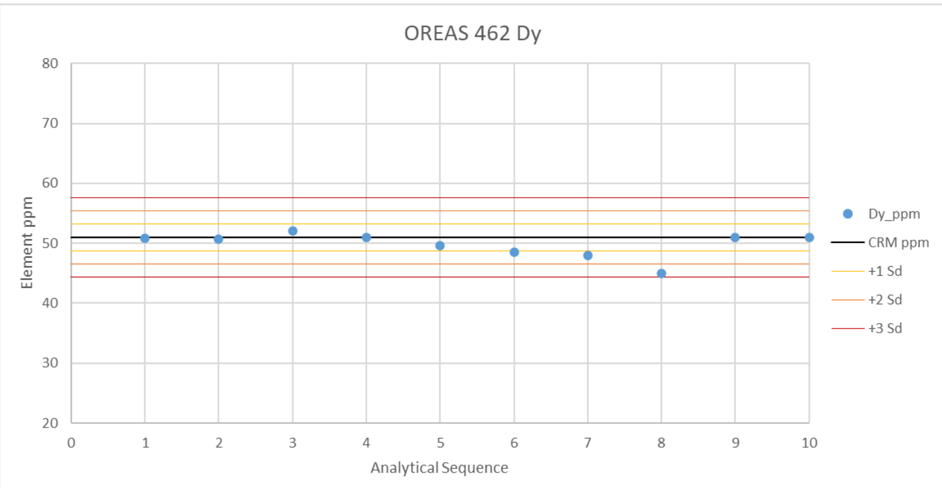
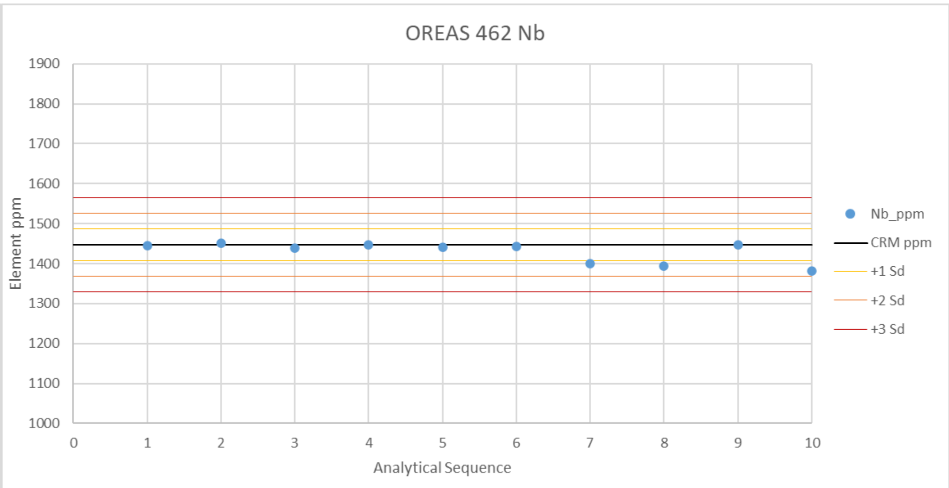
Element ppm
Analytical Sequence
Ce_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

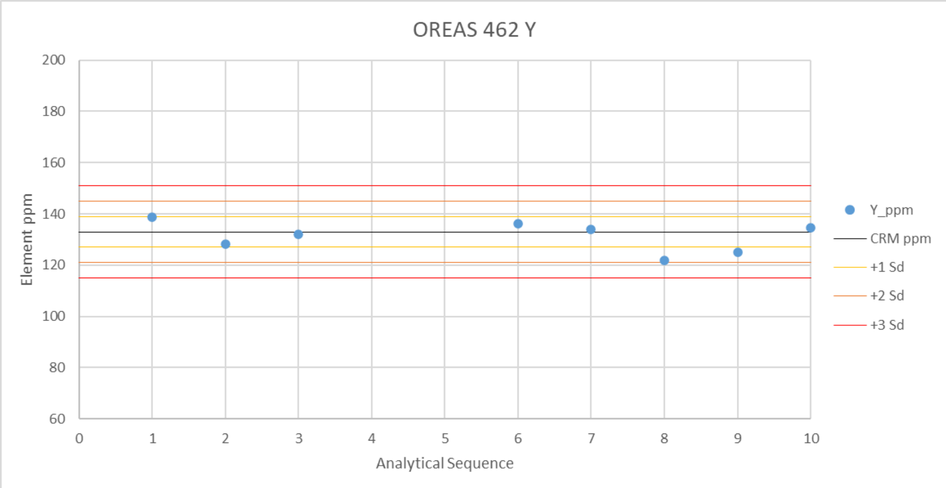

OREAS 462 Ho
Element ppm
Analytical Sequence
Ho_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

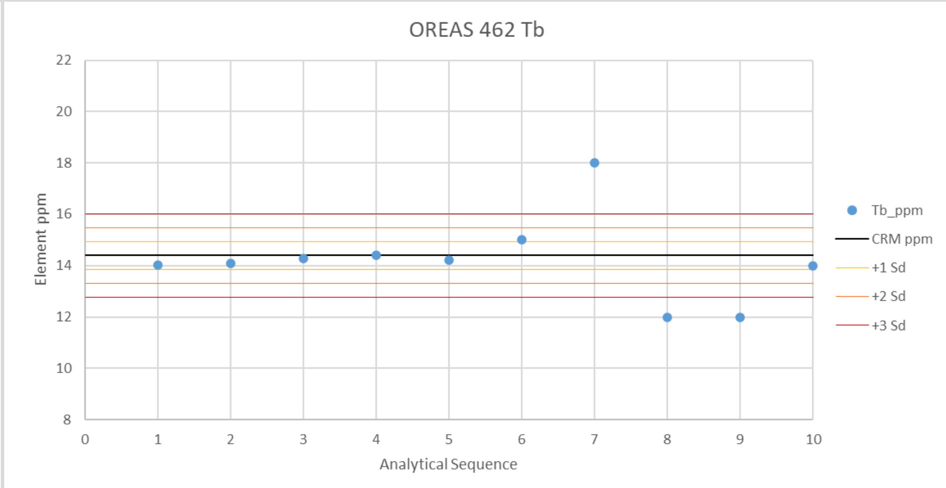

OREAS 462 Th
Element ppm
Analytical Sequence
Th_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd

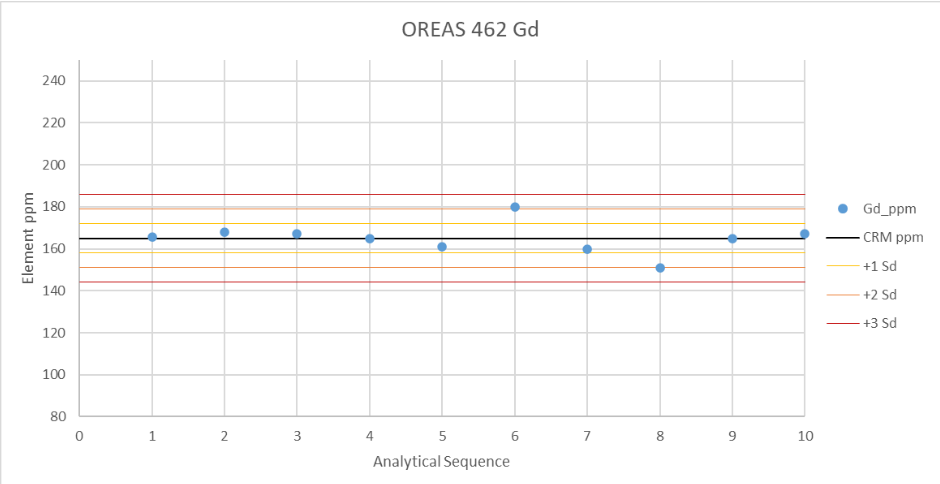

OREAS 462 La
Element ppm
Analytical Sequence
La_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 462 Dy
Element ppm
Analytical Sequence
Dy_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd


OREAS 462 Nb
Element ppm
Analytical Sequence
Nb_ppm
CRM ppm
+1 Sd
+2 Sd
+3 Sd







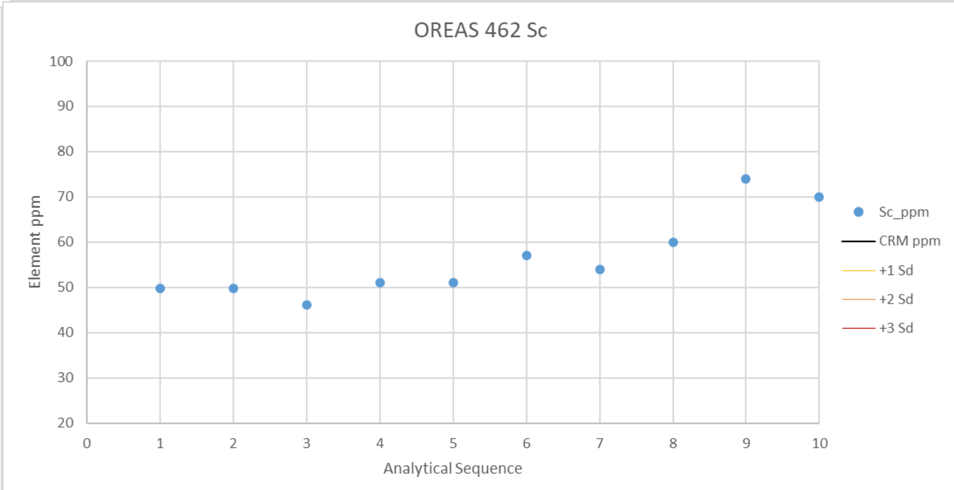
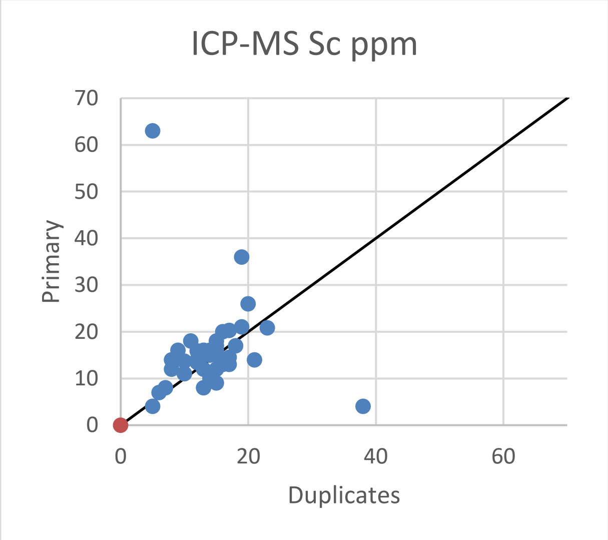


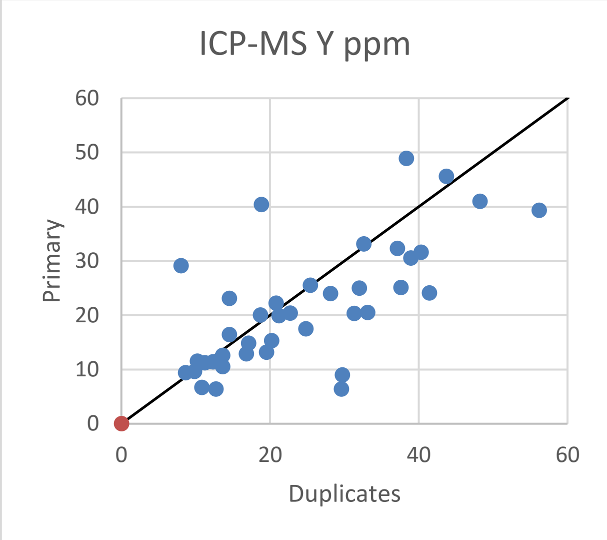
Table 11: Sandy Mitchell Stage 1 blanks, compared to total data set averages.

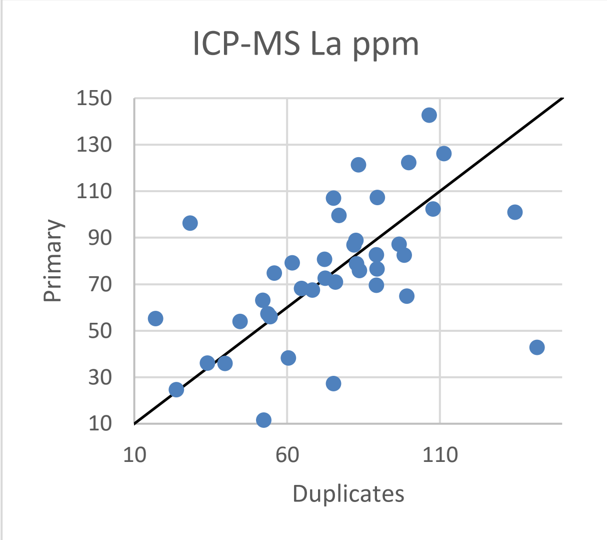
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Zr	Hf	Nb	Ti
Data Set Mean	**16.0**	**27.1**	**83.1**	**170.6**	**19.1**	**67.4**	**11.9**	**1.5**	**7.8**	**1.2**	**5.0**	**1.1**	**2.6**	**0.7**	**2.5**	**0.8**	**33.6**	**2.3**	**343.7**	**9.8**	**18.9**	**4038.2**
Data Set Min	2.0	2.1	1.4	2.6	0.8	1.0	1.0	0.4	0.6	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.4	9.2	0.4	1.0	32.0
Data Set Max	103.2	169.2	4961.0	6443.6	985.9	2812.8	435.2	113.1	240.3	19.7	82.0	11.5	28.1	4.1	31.2	5.8	272.5	203.9	5307.7	137.5	1617.0	67998.0
Blank Mean	**8.2**	**10.4**	**26.9**	**43.9**	**4.4**	**11.8**	**2.3**	**0.9**	**1.8**	**2.3**	**1.6**	**1.3**	**1.0**	**34.8**	**1.7**	**8.5**	**10.9**	**3.1**	**86.4**	**3.1**	**8.8**	**462.4**
Blank Max	84.0	31.4	170.7	258.2	20.2	74.0	12.1	2.7	7.7	10.8	5.7	3.7	4.1	63.0	10.6	20.1	37.2	12.5	253.4	7.4	54.0	4238.0
Blank Min	1.0	0.8	0.8	0.6	1.0	1.0	0.5	0.3	0.6	0.3	0.7	0.5	0.6	0.5	0.5	0.5	0.6	0.5	12.0	0.7	1.0	42.0
Blank Range	83.0	30.6	169.9	257.6	19.2	73.0	11.6	2.4	7.1	10.5	5.0	3.2	3.5	62.5	10.1	19.6	36.6	12.0	241.4	6.7	53.0	4196.0
Blank Sd	14.2	6.4	36.6	55.2	4.4	13.0	2.0	0.7	1.6	3.3	1.0	1.1	0.7	30.7	2.4	9.4	6.3	2.3	53.2	1.4	10.8	659.5

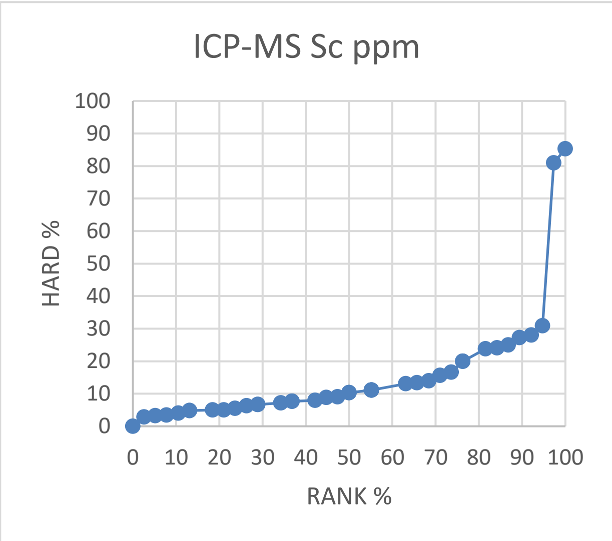
Table 12: Stage 1 field duplicate assay pair statistics & graph matrix showing repeat assay scatter plots and HARD plots.

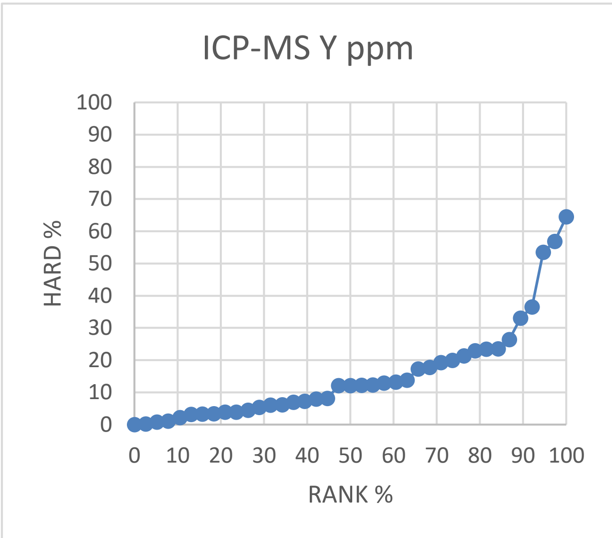
Element ppm	Sc	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	Zr	Hf	Nb	Ti
Pair Assay Count	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
Count >= detection limit	**39**	**39**	**39**	**39**	**39**	**39**	**39**	**39**	**33**	**39**	**27**	**38**	**9**	**34**	**6**	**39**	**39**	**39**	**39**	**39**	**39**	**39**
Detection limit ppm	**1**	**0.5**	**0.5**	**0.5**	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**10**
Mean assay	14.1	75.3	158.6	18.4	63.3	10.4	1.4	7.1	0.9	4.3	0.8	2.3	0.3	1.8	0.3	24.7	30.7	2.0	306.7	8.5	15.8	3787.7
90th percentile HARD%	**27.3**	**46.9**	**46.7**	**30.7**	**32.0**	**20.0**	**25.0**	**17.6**	**41.2**	**32.2**	**41.2**	**36.8**	**33.3**	**52.3**	**33.3**	**32.9**	**24.7**	**35.4**	**20.2**	**36.2**	**26.7**	**44.6**
Samp% within 1s	89.7	71.9	76.9	69.23	71.8	66.7	74.4	69.2	76.9	71.8	64.1	66.7	76.9	59	100	66.7	74.4	61.5	87.2	66.7	87.2	100
Samp% within 2s	**97.4**	**94.8**	**97.4**	**94.9**	**94.9**	**94.9**	**92.3**	**100**	**94.9**	**100**	**94.9**	**89.7**	**100**	**94.9**	**100**	**94.9**	**100**	**94.9**	**97.4**	**94.9**	**94.9**	**100**
Samp% within 3s	100	100	97.4	100	97.4	100	97.4	100	100	100	100	97.4	100	97.4	100	97.4	100	100	100	97.4	100	100
Samp% outside 3s	0	0	2.6	0	2.6	0	2.6	0	0	0	0	2.6	0	2.6	0	2.6	0	0	0	2.6	0	0

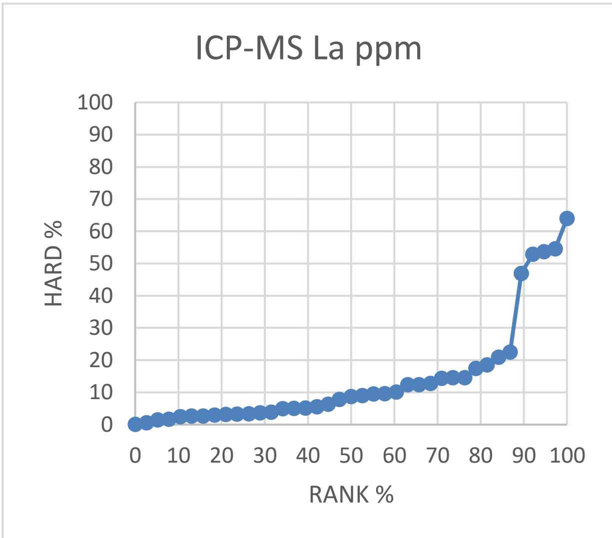


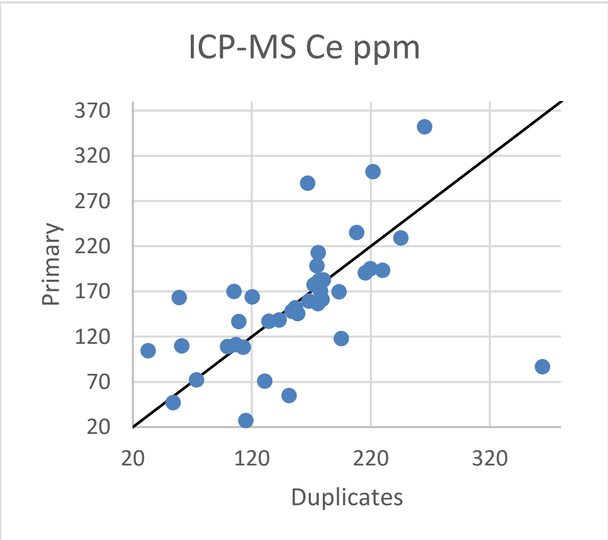


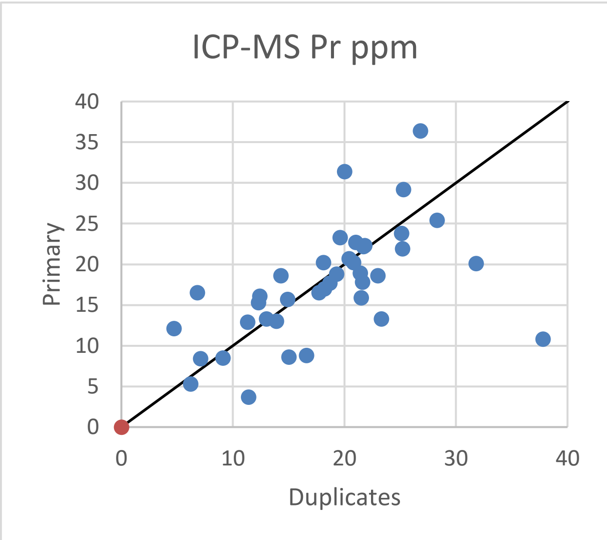


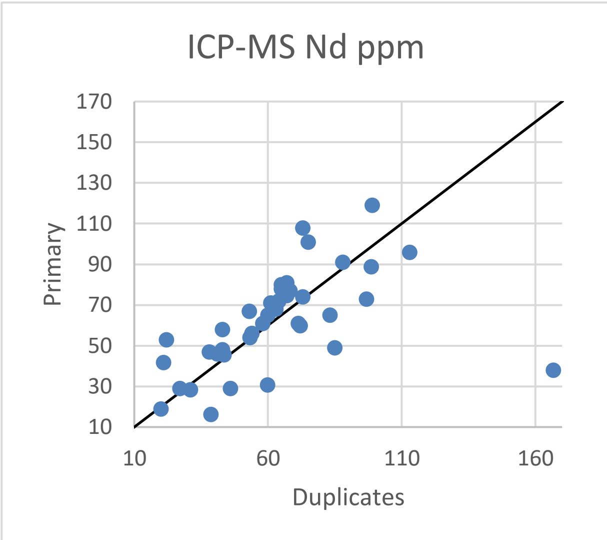


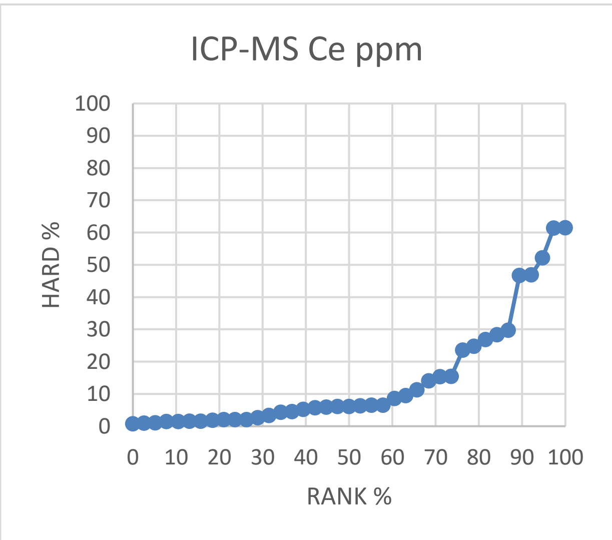


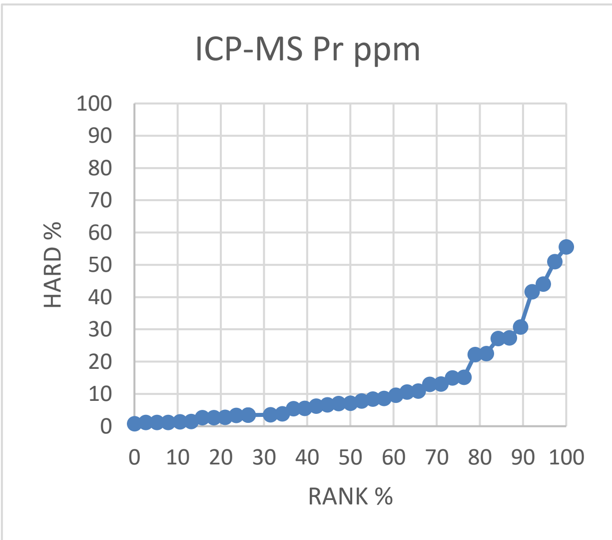


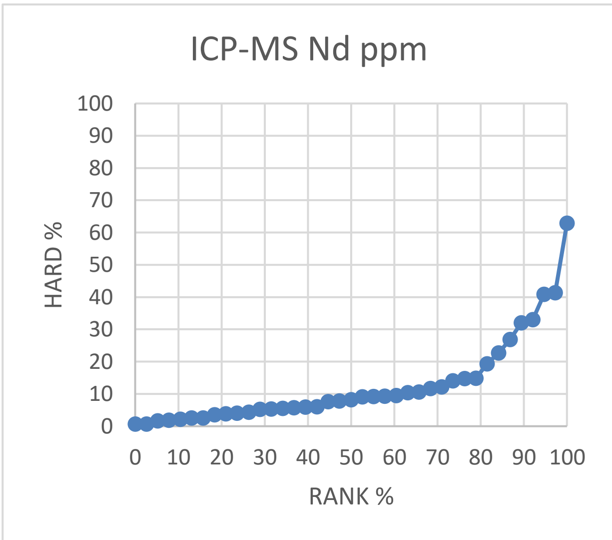


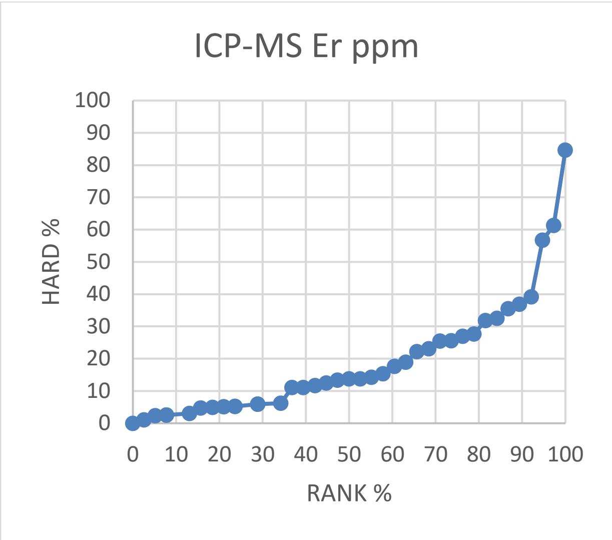


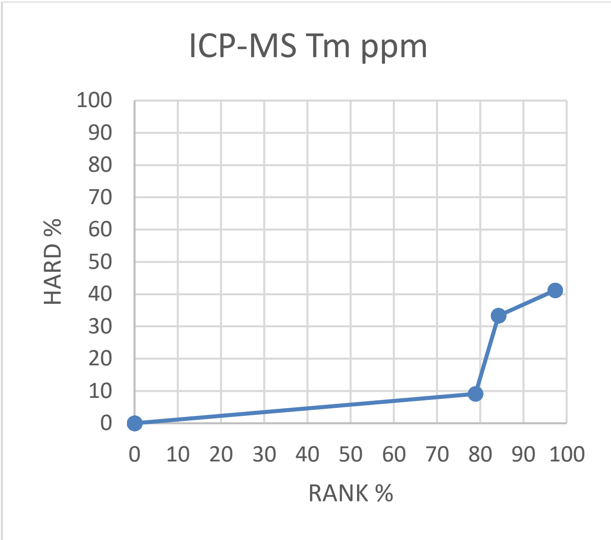


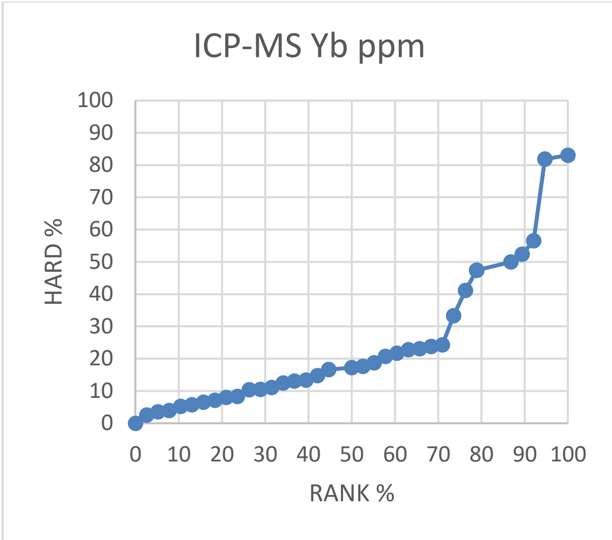


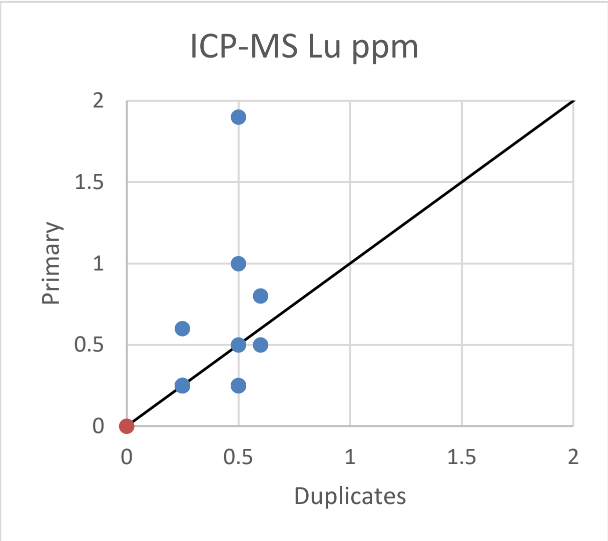


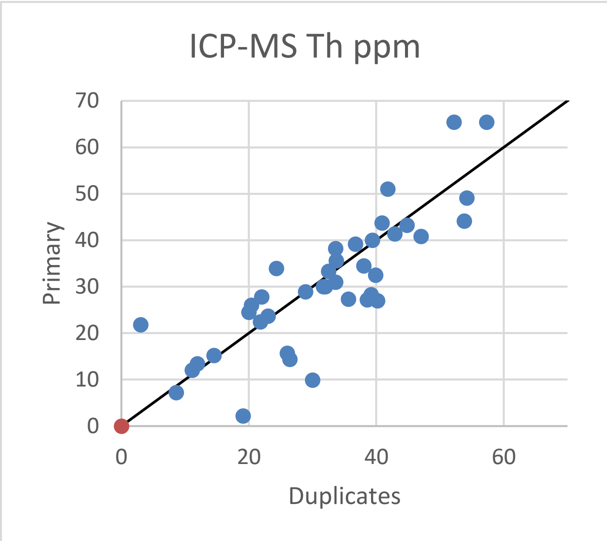


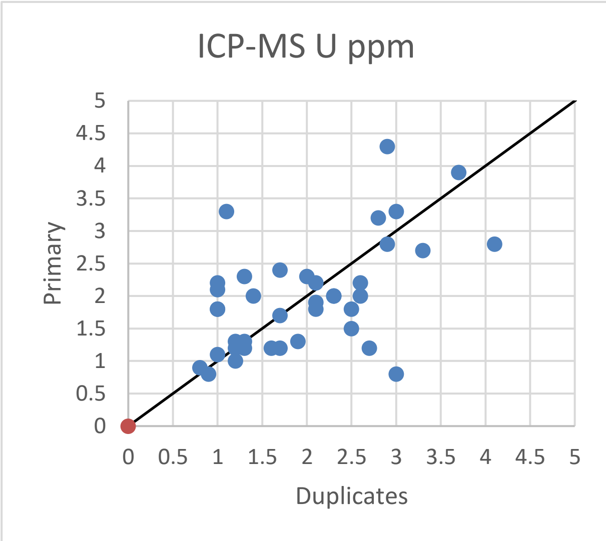

ICP-MS Er ppm
HARD %
RANK %

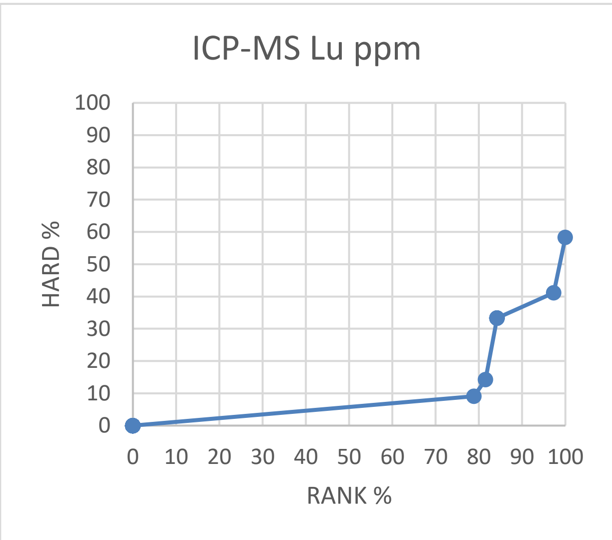

ICP-MS Tm ppm
HARD %
RANK %

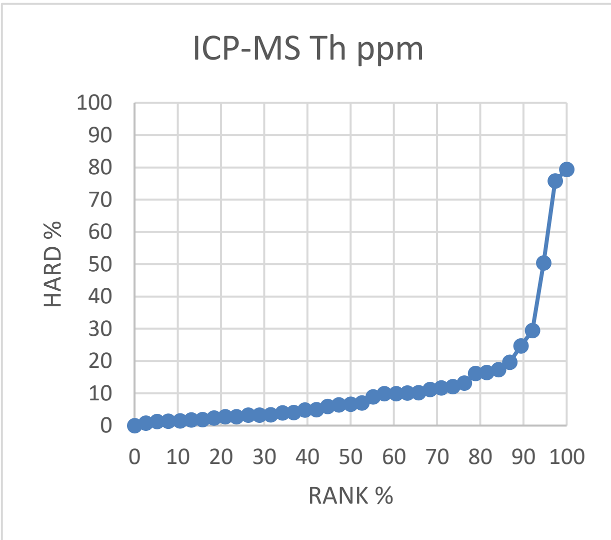

ICP-MS Yb ppm
HARD %
RANK %

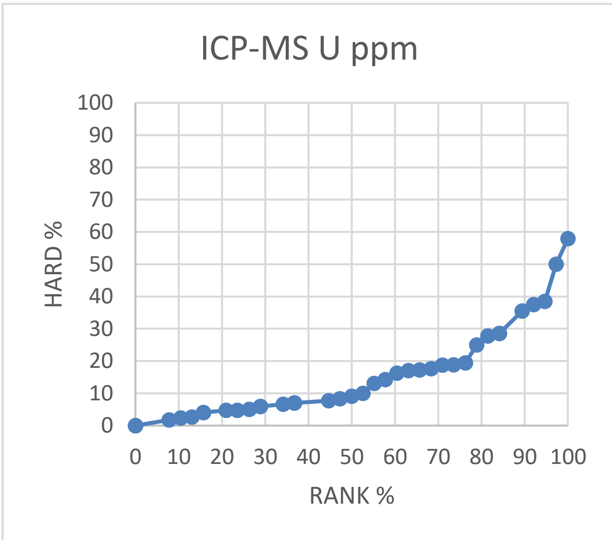

ICP-MS Lu ppm
Primary
Duplicates

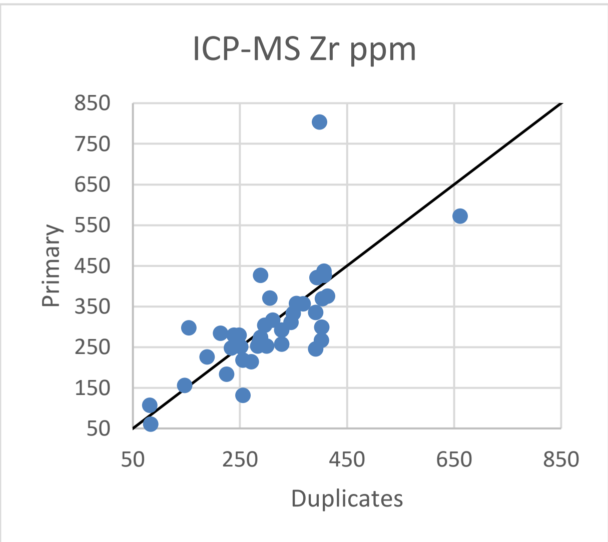

ICP-MS Th ppm
Primary
Duplicates

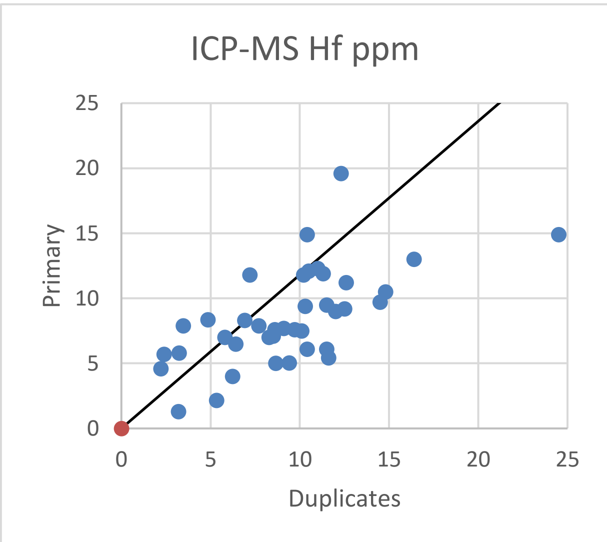

ICP-MS U ppm
Primary
Duplicates

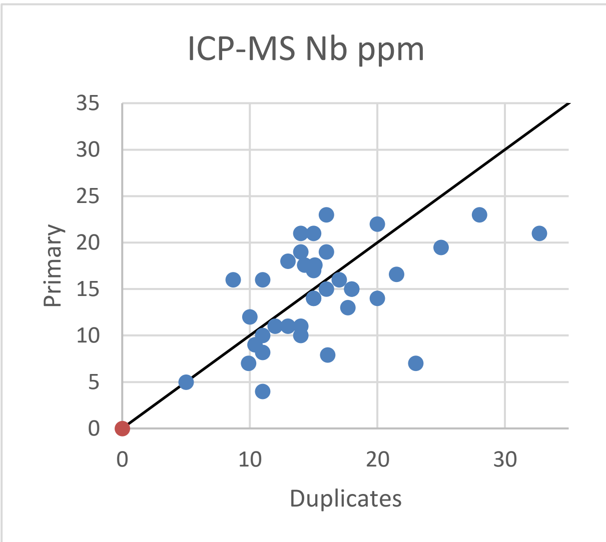

ICP-MS Lu ppm
HARD %
RANK %

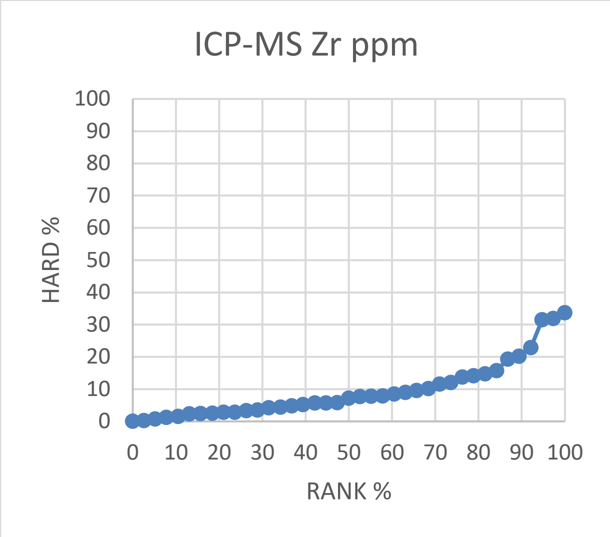

ICP-MS Th ppm
HARD %
RANK %

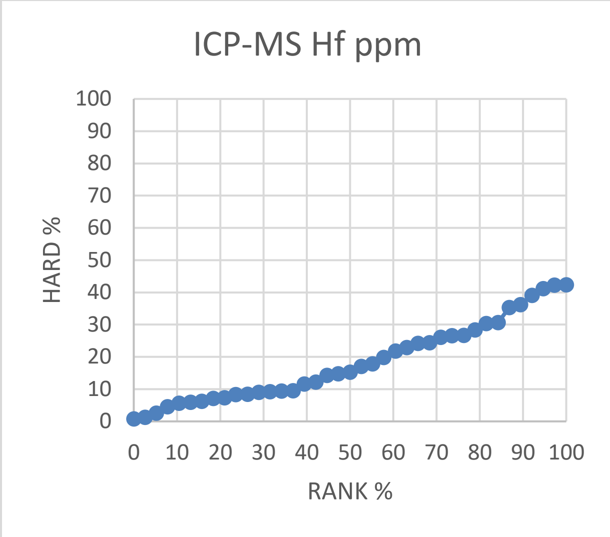

ICP-MS U ppm
HARD %
RANK %

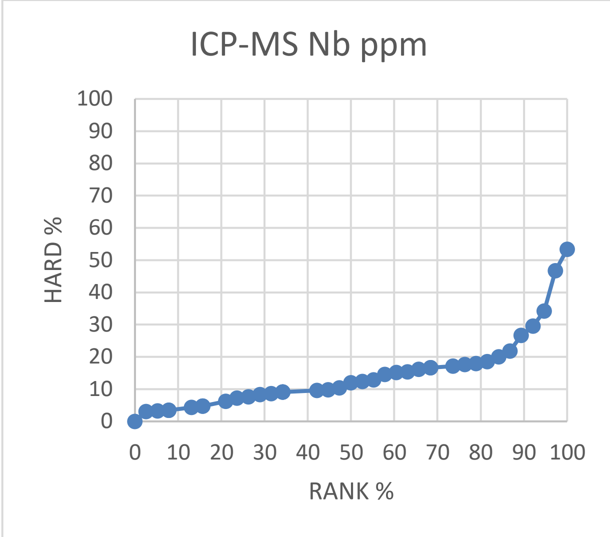

ICP-MS Zr ppm
Primary
Duplicates

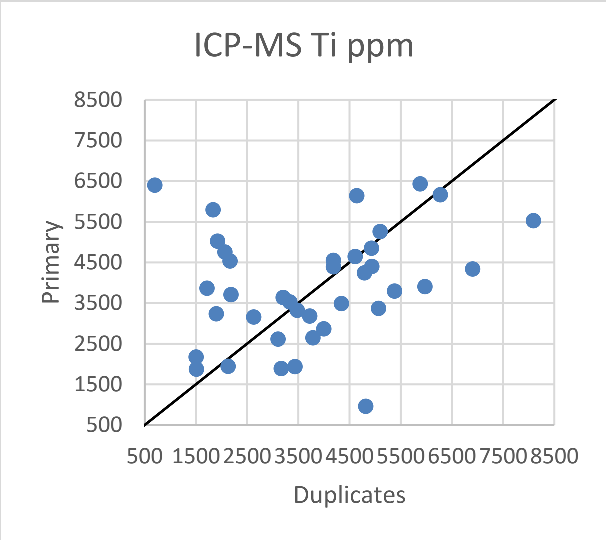

ICP-MS Hf ppm
Primary
Duplicates

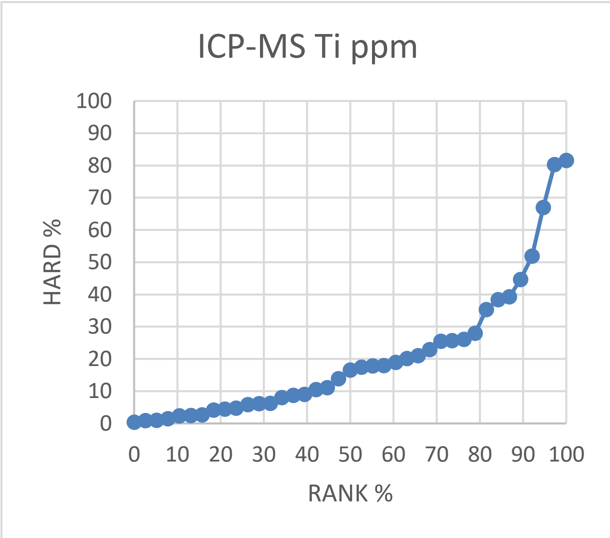

ICP-MS Nb ppm
Primary
Duplicates


ICP-MS Zr ppm
HARD %
RANK %


ICP-MS Hf ppm
HARD %
RANK %


ICP-MS Nb ppm
HARD %
RANK %

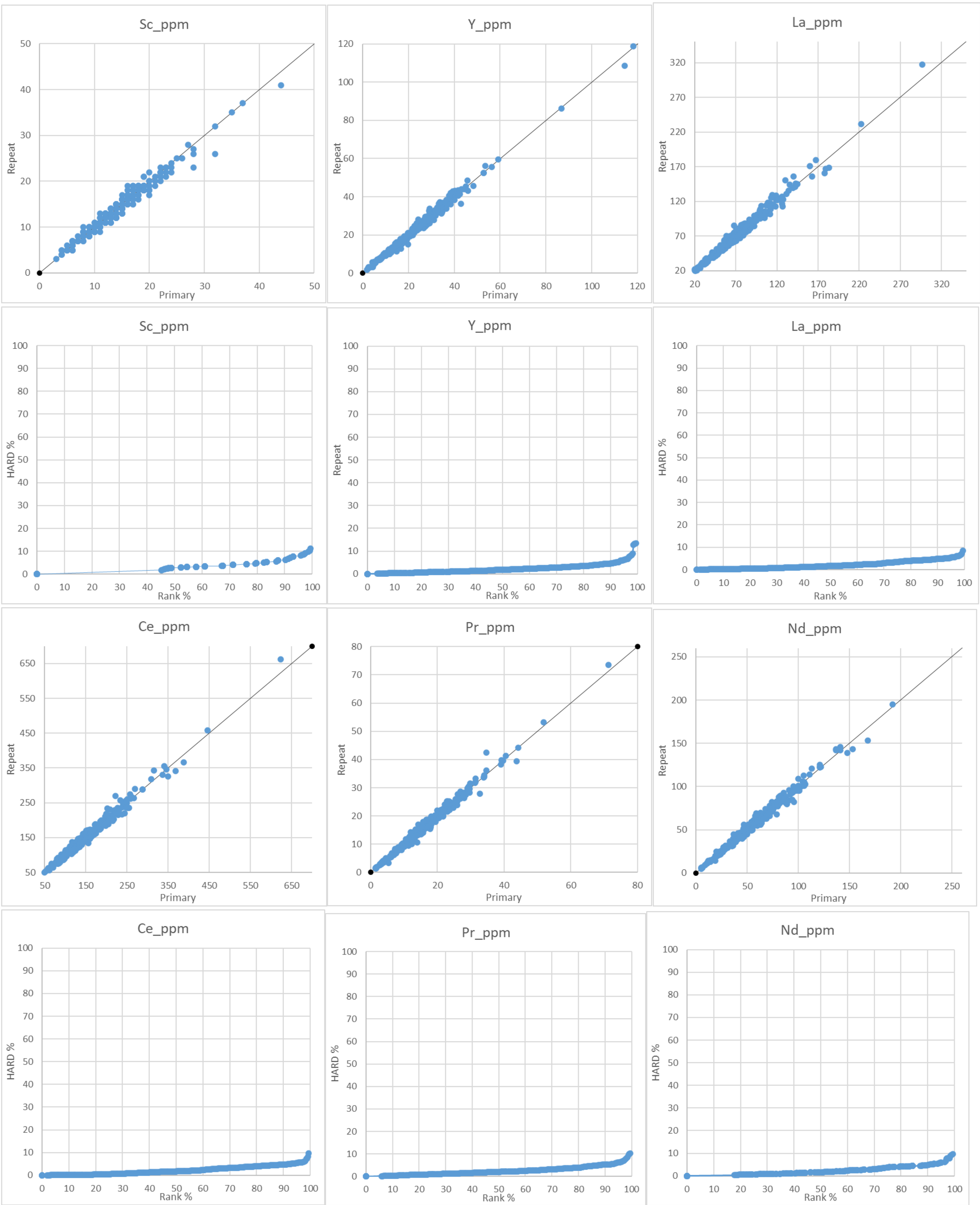

ICP-MS Ti ppm
Primary
Duplicates

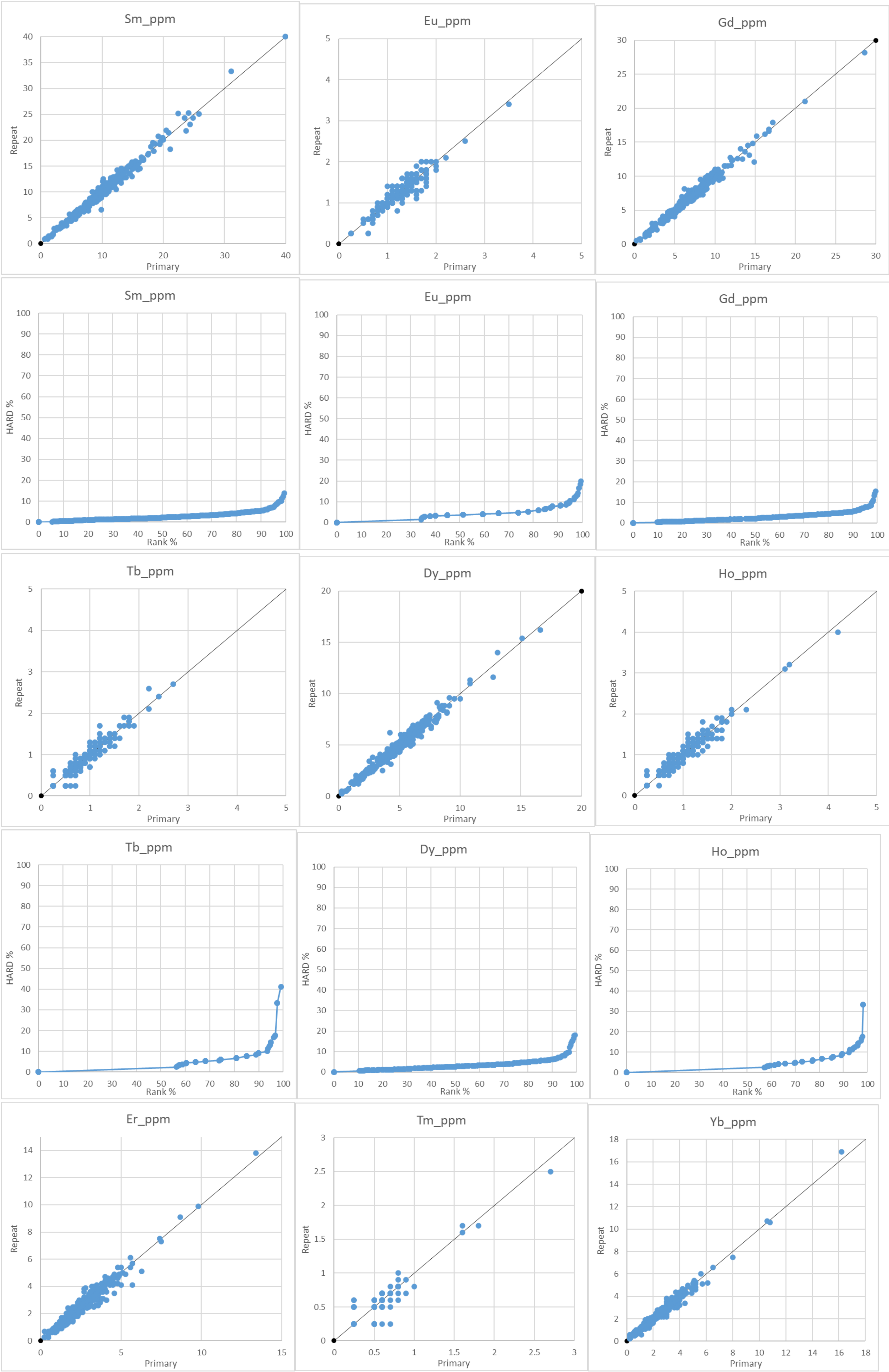

ICP-MS Ti ppm
HARD %
RANK %

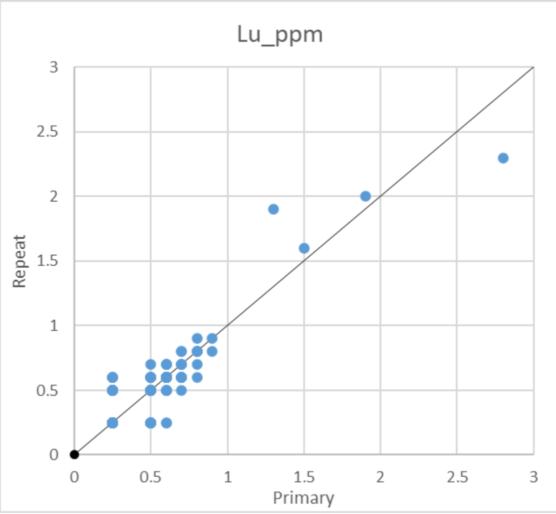
Stage 2 QC Tables and Graphs

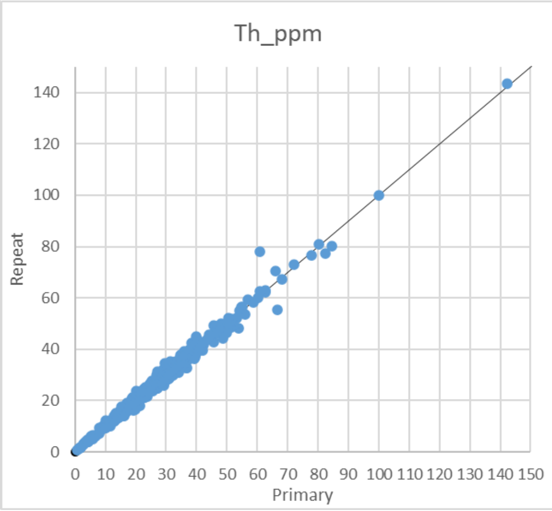
Table 13: Stage 2 lab repeat assay pair statistics & graph matrix showing repeat assay scatter plots and HARD plots.

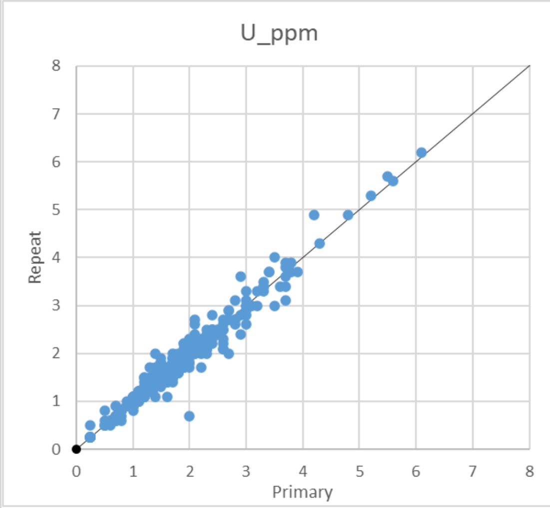
Element ppm	Sc	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	Zr	Hf	Nb	Ti
Pair Assay Count	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345
Count >= detection limit	**345**	**345**	**345**	**345**	**345**	**345**	**342**	**345**	**289**	**342**	**277**	**335**	**106**	**329**	**79**	**345**	**345**	**334**	**345**	**345**	**345**	**345**
Detection limit ppm	**1**	**0.5**	**0.5**	**0.5**	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**10**
Mean assay	14.1	70.4	140.8	16.3	58.0	10.1	1.3	6.7	0.8	4.8	0.9	2.5	0.4	2.5	0.4	23.7	28.9	1.8	308.9	8.3	13.8	3780.7
90th percentile HARD%	**6.3**	**4.9**	**4.6**	**5.2**	**4.9**	**5.4**	**8.1**	**5.5**	**9.1**	**6.1**	**9.1**	**10.6**	**11.1**	**9.1**	**9.1**	**4.6**	**4.9**	**7.7**	**4.7**	**5.9**	**7**	**2.8**
Samp% within 1s	76.8	75.1	74.8	75.4	75.4	77.1	78.6	77.1	72.5	70.4	66.4	75.7	91.3	77.7	84.3	74.8	74.5	75.1	84.3	82.3	72.8	87.5
Samp% within 2s	**97.4**	**95.7**	**96.2**	**95.9**	**95.9**	**95.9**	**93.6**	**96.8**	**96.2**	**96.8**	**97.7**	**98**	**98**	**98.3**	**98.3**	**97.7**	**95.9**	**95.1**	**95.1**	**95.4**	**95.4**	**98.8**
Samp% within 3s	98.8	99.1	98.8	98.6	99.1	98.6	98	98.6	98.8	98.8	99.1	98.6	98.8	98.8	98.8	99.1	98.8	98.3	98	97.7	98.6	98.8
Samp% outside 3s	1.2	0.9	1.2	1.4	0.9	1.4	2	1.4	1.2	1.2	0.9	1.4	1.2	1.2	1.2	0.9	1.2	1.7	2	2.3	1.4	1.2

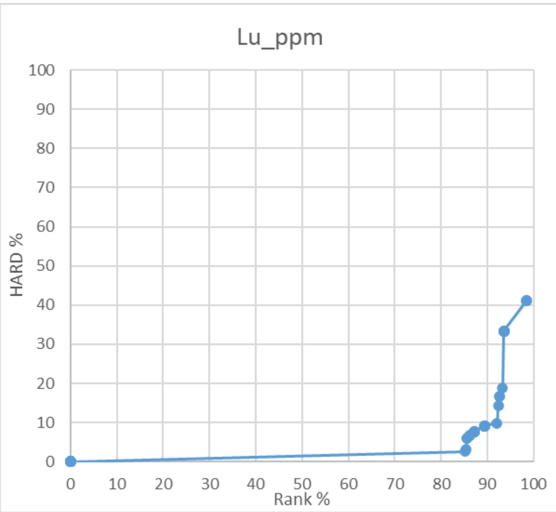


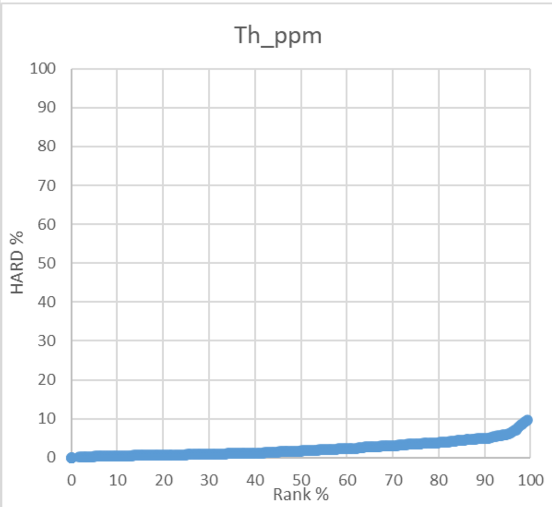

Sm_ppm
Repeat
Primary
Eu_ppm
Repeat
Primary
Gd_ppm
Repeat
Primary
Sm_ppm
HARD %
Rank %
Eu_ppm
HARD %
Rank %
Gd_ppm
HARD %
Rank %
Tb_ppm
Repeat
Primary
Dy_ppm
Repeat
Primary
Ho_ppm
Repeat
Primary
Tb_ppm
HARD %
Rank %
Dy_ppm
HARD %
Rank %
Ho_ppm
HARD %
Rank %
Er_ppm
Repeat
Primary
Tm_ppm
Repeat
Primary
Yb_ppm
Repeat
Primary

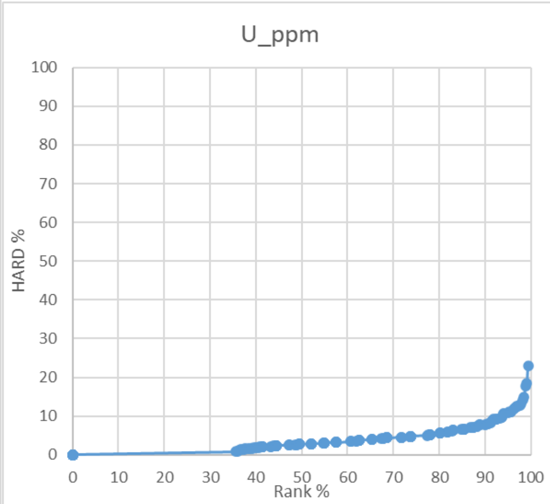

Lu_ppm
Repeat
Primary

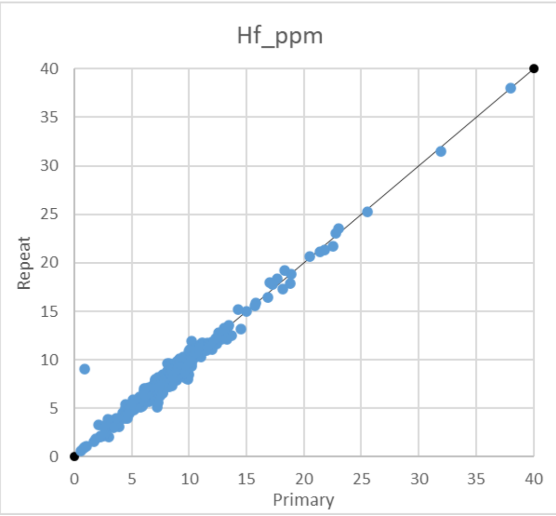

Th_ppm
Repeat
Primary

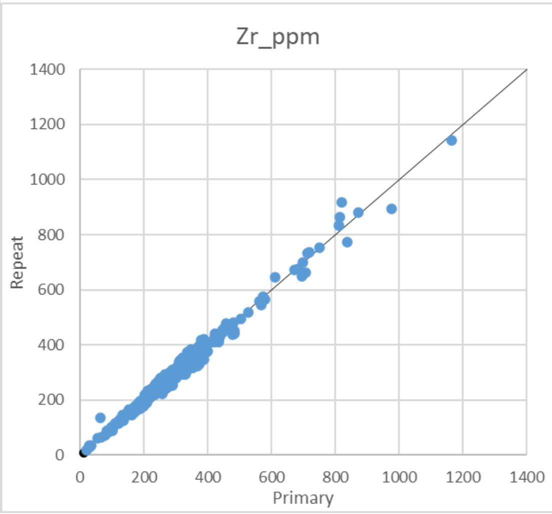

U_ppm
Repeat
Primary

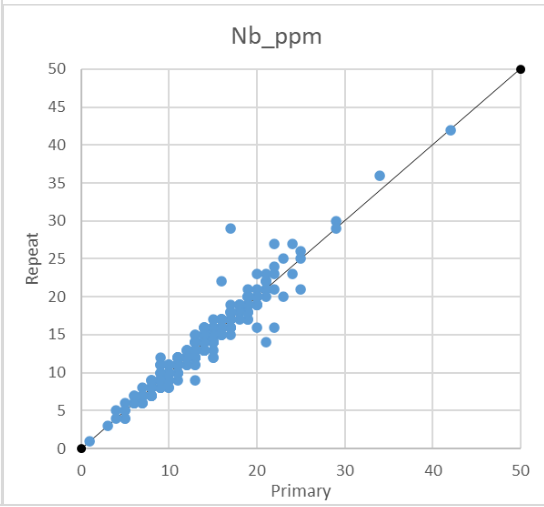

Lu_ppm
HARD %
Rank %

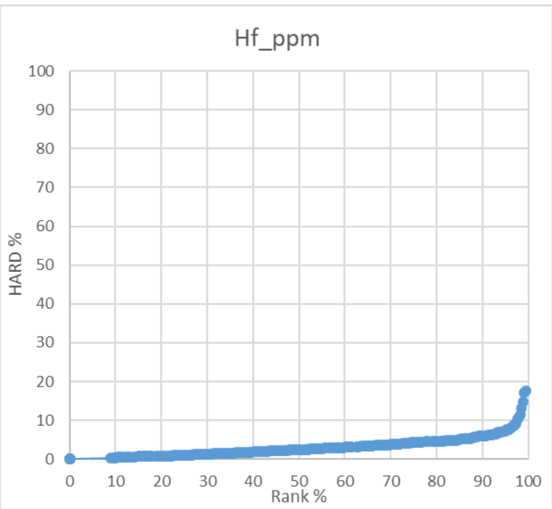

Th_ppm
HARD %
Rank %

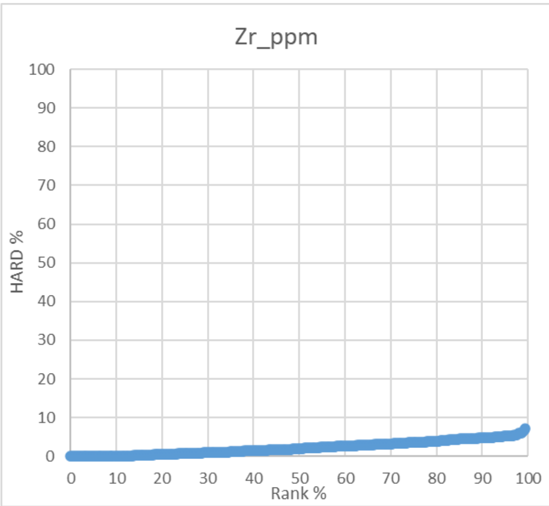

U_ppm
HARD %
Rank %

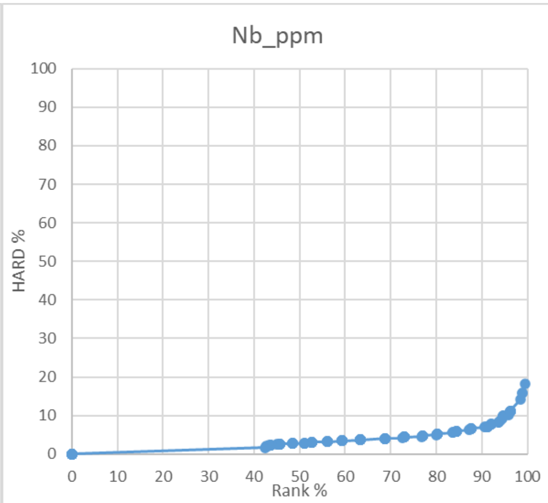

Hf_ppm
Repeat
Primary

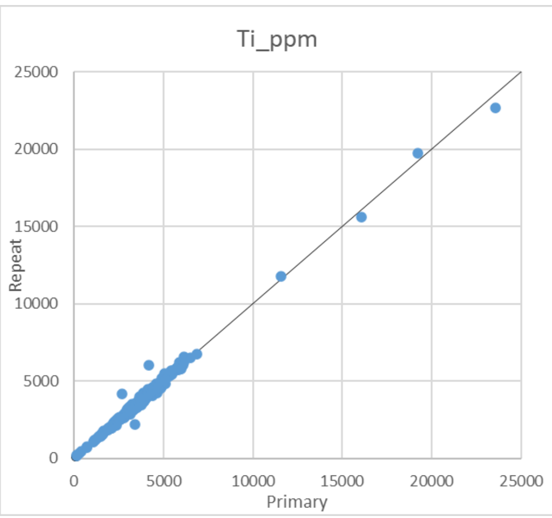

Zr_ppm
Repeat
Primary


Nb_ppm
Repeat
Primary


Hf_ppm
HARD %
Rank %


Zr_ppm
HARD %
Rank %


Nb_ppm
HARD %
Rank %


Ti_ppm
Repeat
Primary

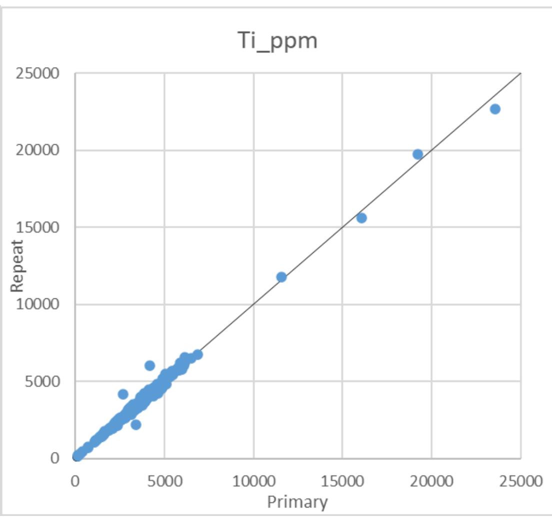
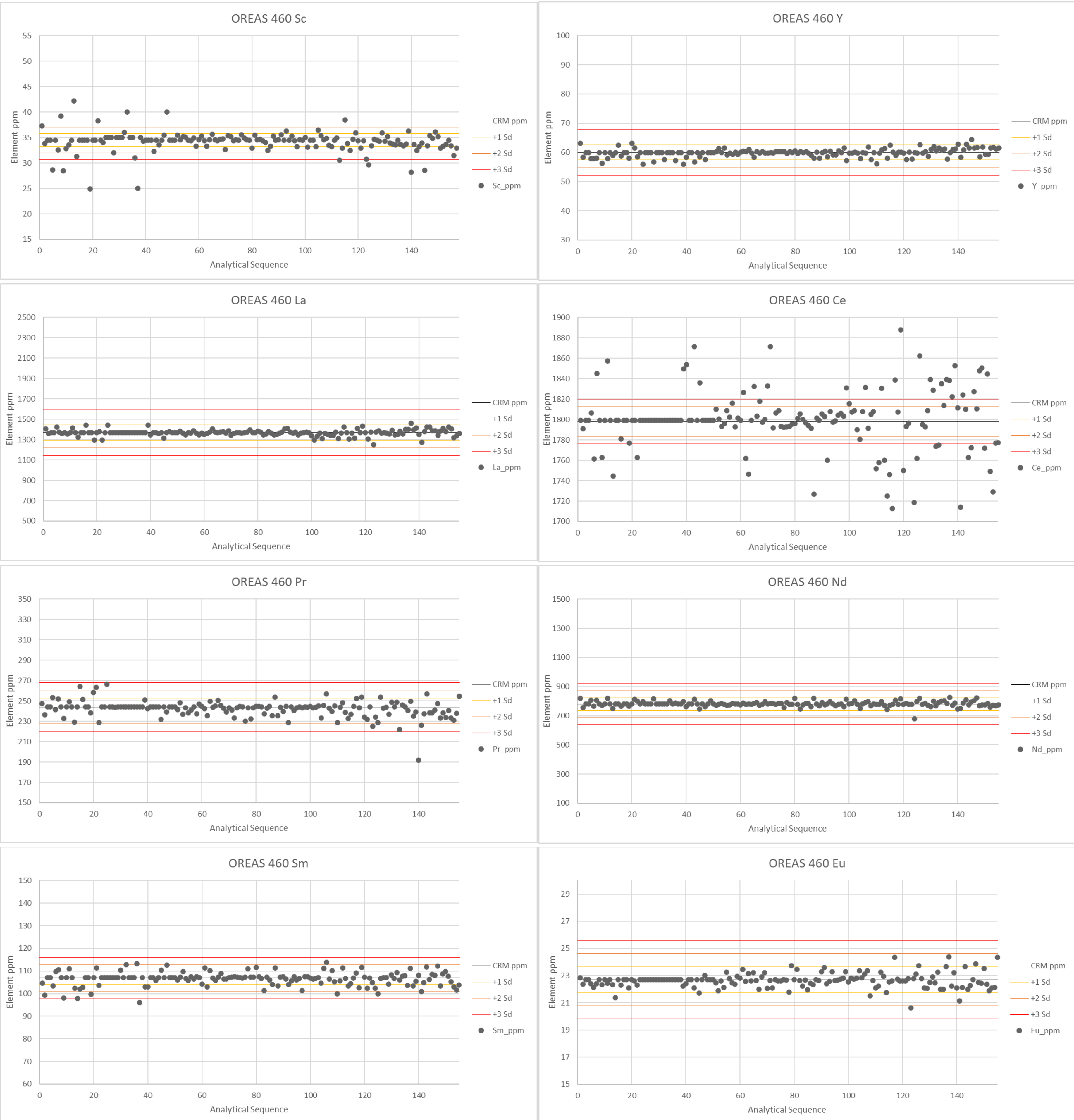
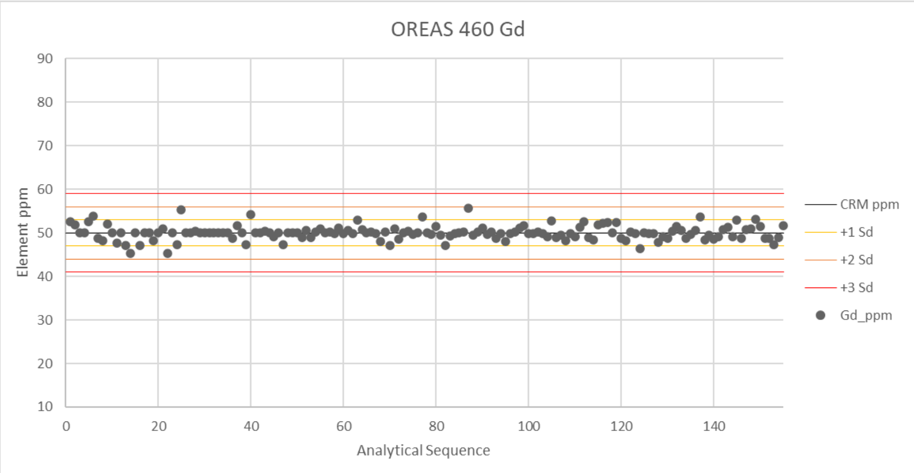
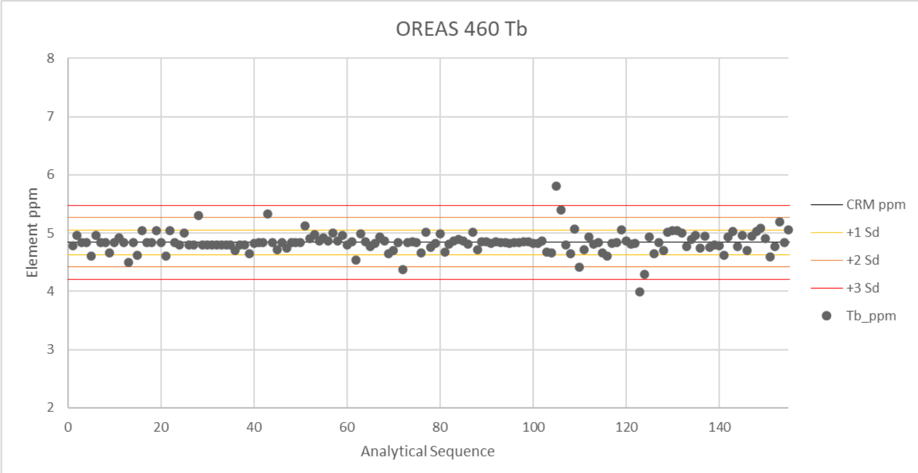

Ti_ppm
Repeat
Primary

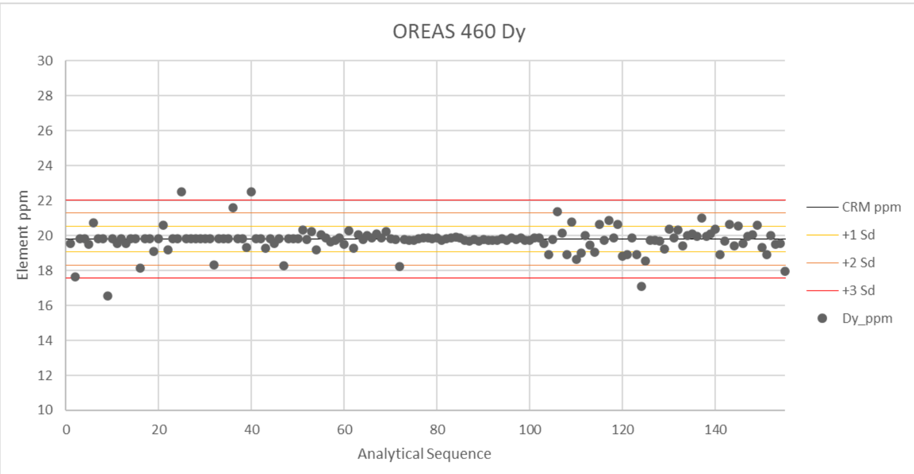
Table 14: Stage 2 CRM Oreas 460 properties against the total data set average, & CRM graph matrix for the 59 Oreas 460 standard assays. Sc parameters in red are indicative only and not certified.

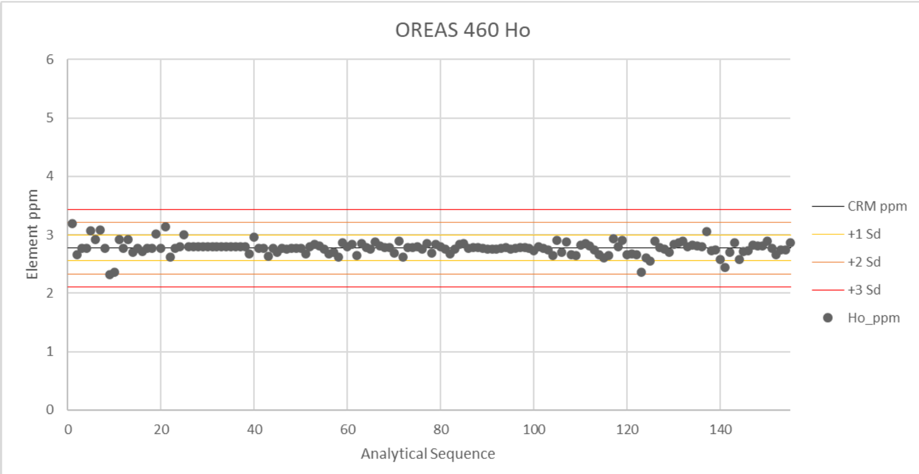
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Hf	Zr	Nb	Ti
Data Set Mean	34.32	59.41	1370.00	1801.59	244.42	783.05	106.34	22.55	49.87	4.85	19.72	2.79	6.24	0.70	3.87	0.51	116.21	4.25	11.79	477.97	698.68	12015.07
Data Set Min	24.91	55.90	1294.10	1744.60	228.58	745.91	96.00	21.37	45.26	4.49	16.57	2.32	5.20	0.60	2.92	0.48	102.93	3.77	9.52	437.50	591.00	11221.00
Data Set Max	42.22	63.12	1443.43	1871.63	266.50	819.79	113.20	23.24	55.30	5.32	22.50	3.19	6.97	0.74	4.40	0.55	133.30	5.08	14.18	633.05	762.65	18358.00
CRM ppm	**34.50**	**60.00**	**1369.00**	**1798.00**	**244.00**	**781.00**	**107.00**	**22.70**	**50.00**	**4.84**	**19.80**	**2.77**	**6.01**	**0.70**	**3.91**	**0.52**	**116.00**	**4.21**	**11.80**	**472.00**	**698.00**	**12000.00**
1s ppm	1.26	2.60	75.00	7.20	8.00	47.00	3.00	0.96	3.00	0.21	0.75	0.22	0.35	0.05	0.26	0.05	3.00	0.19	0.56	21.00	39.00	280.00
-95% conf		58.00	1344.00	1754.00	239.00	754.00	106.00	22.20	48.00	4.73	19.40	2.65	5.83	0.68	3.76	0.50	114.00	4.11	11.50	458.00	673.00	11800.00
+95% conf		61.00	1394.00	1844.00	249.00	809.00	109.00	23.30	52.00	4.96	20.30	2.90	6.19	0.73	4.05	0.55	118.00	4.31	12.10	487.00	722.00	12200.00

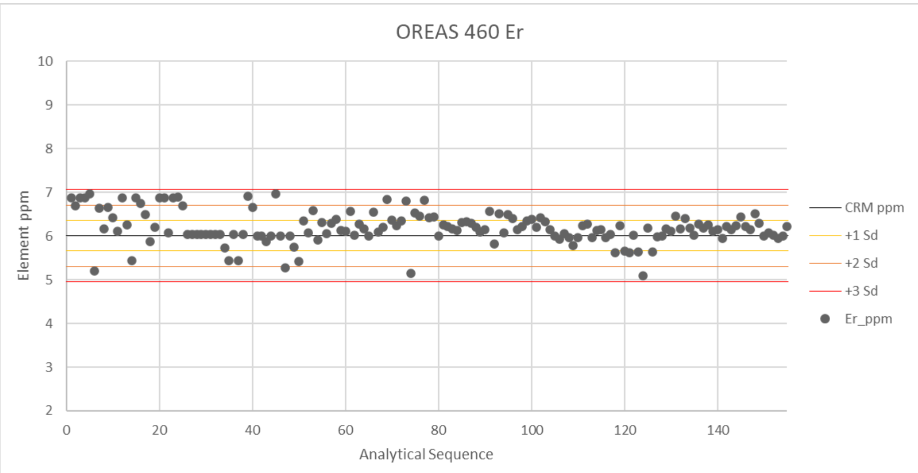


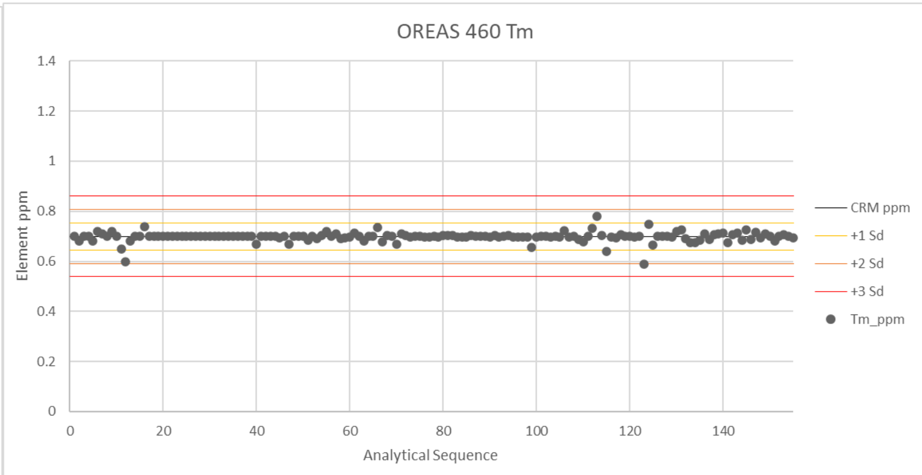

OREAS 460 Gd
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Gd_ppm

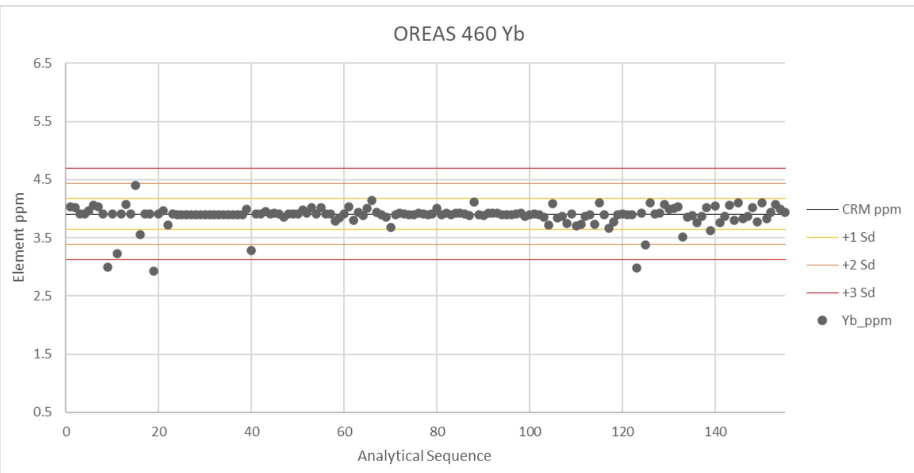

OREAS 460 Tb
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Tb_ppm

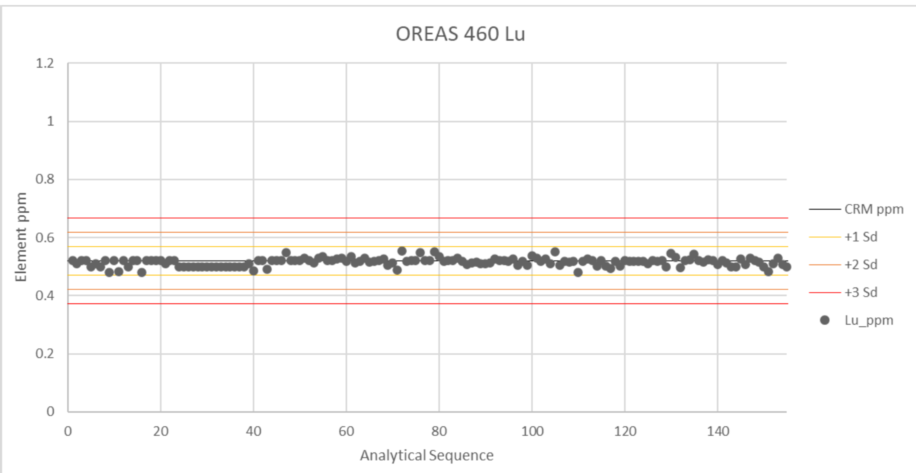

OREAS 460 Dy
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Dy_ppm

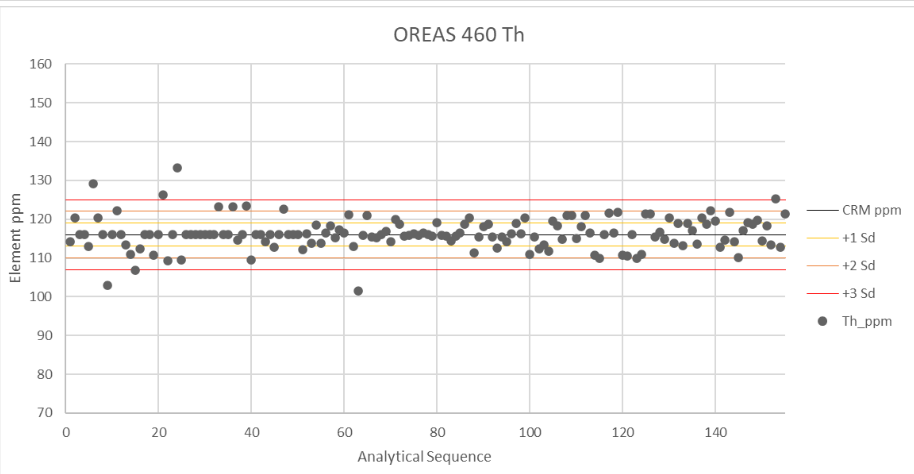

OREAS 460 Ho
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Ho_ppm

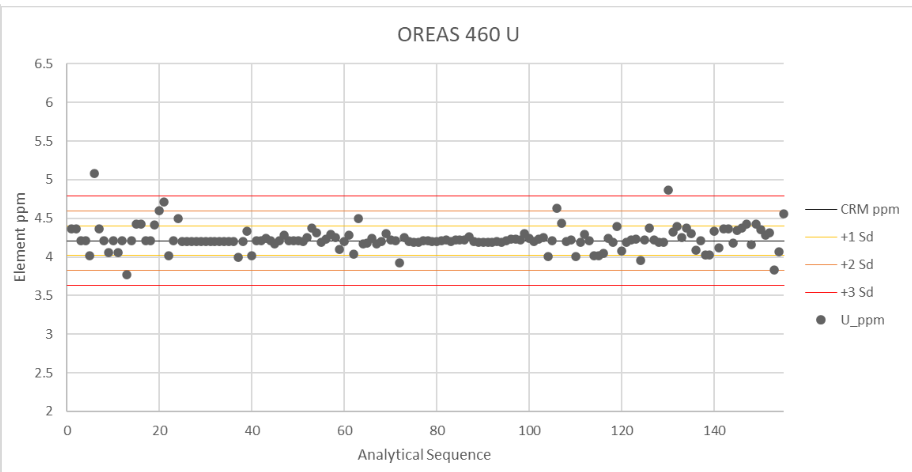

OREAS 460 Er
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Er_ppm

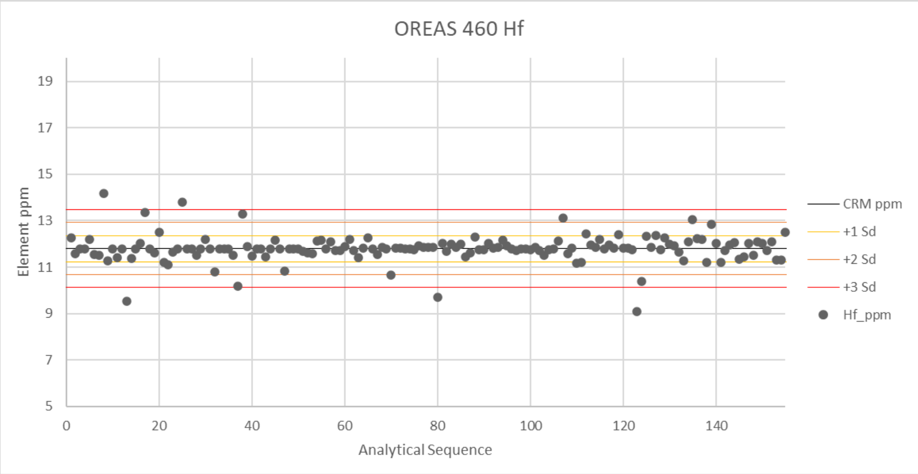

OREAS 460 Tm
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Tm_ppm

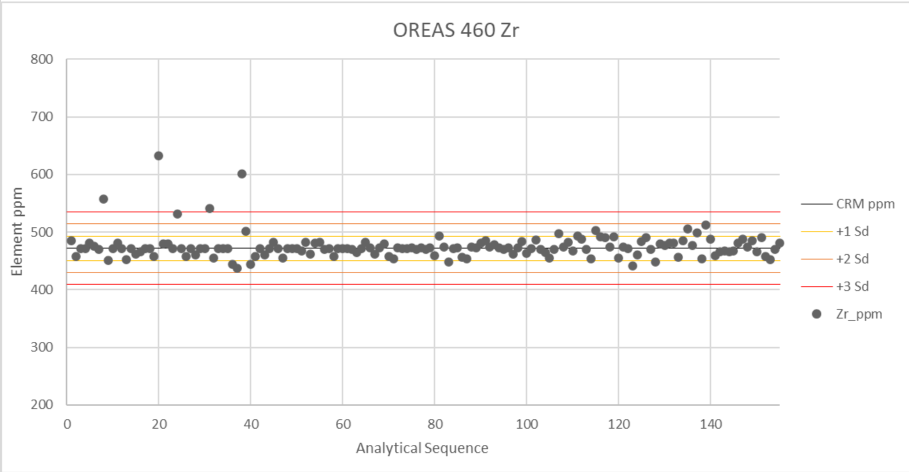

OREAS 460 Yb
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Yb_ppm

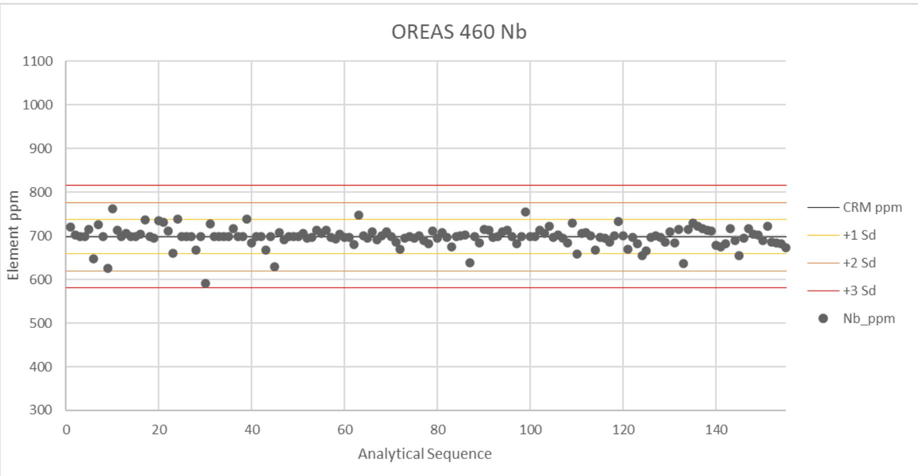

OREAS 460 Lu
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Lu_ppm


OREAS 460 Th
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Th_ppm


OREAS 460 U
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
U_ppm


OREAS 460 Hf
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Hf_ppm


OREAS 460 Zr
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Zr_ppm


OREAS 460 Nb
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Nb_ppm

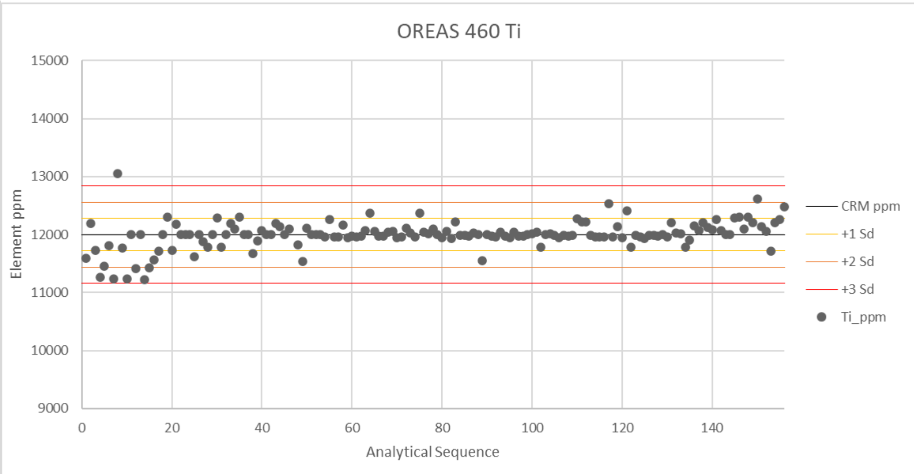
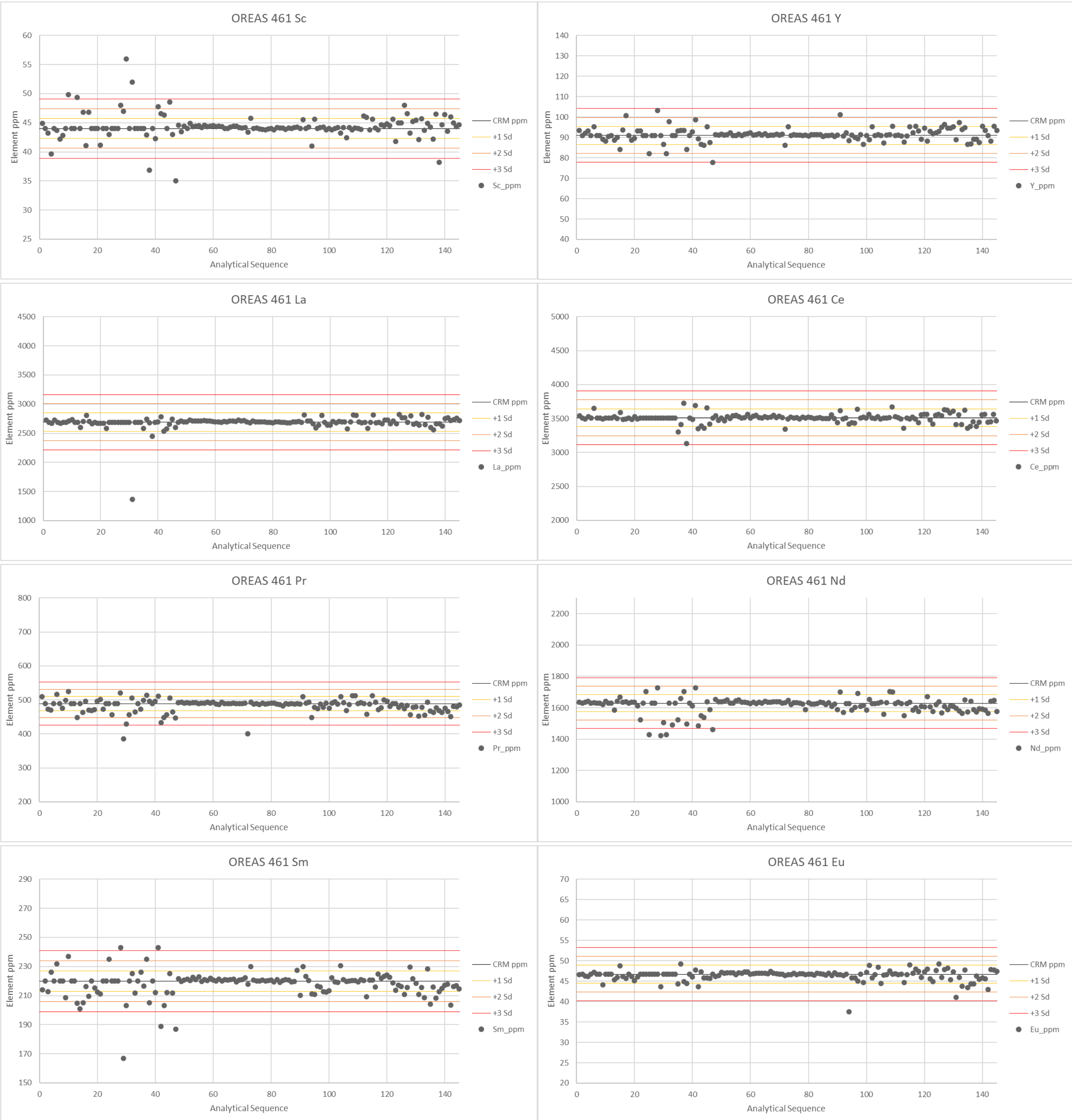
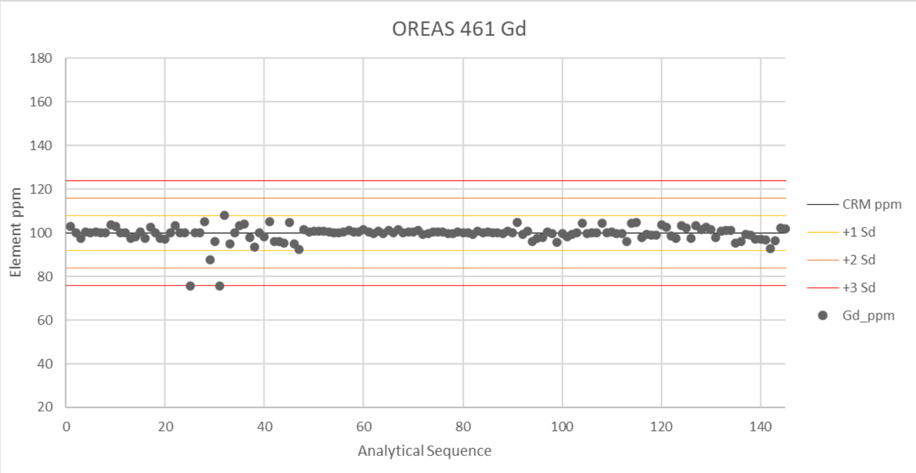
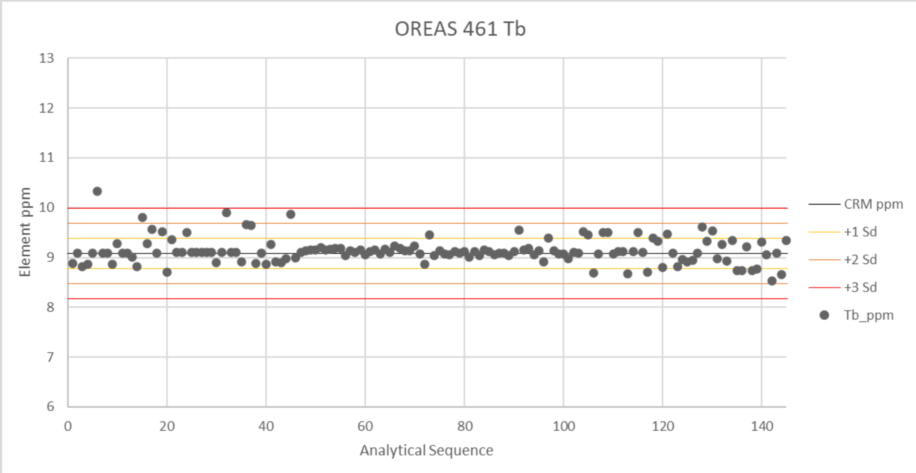

OREAS 460 Ti
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Ti_ppm

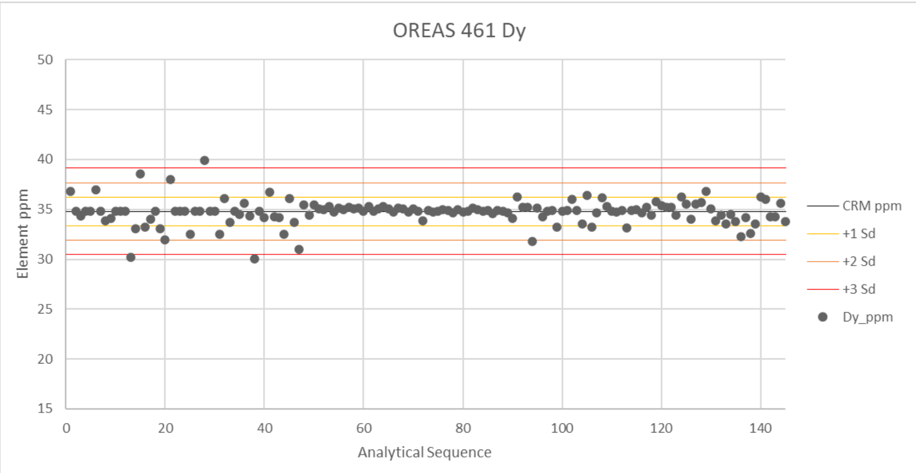
Table 15: Stage 2 CRM Oreas 461 properties against the total data set average, & CRM graph matrix for the 24 Oreas 461 standard assays. Sc parameters in red are indicative only and not certified.

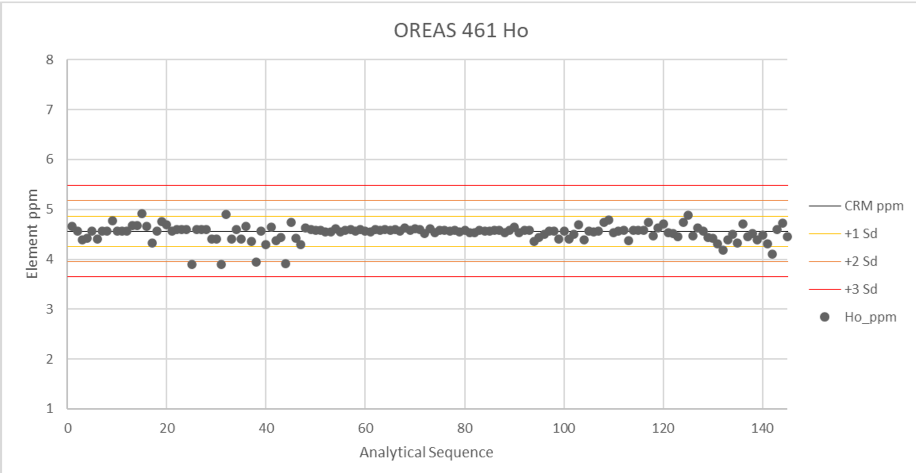
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Hf	Zr	Nb	Ti
Data Set Mean	44.46	90.91	2659.95	3502.17	482.44	1608.26	216.97	46.38	98.85	9.17	34.60	4.52	8.84	0.88	4.48	0.52	211.40	4.81	13.87	604.71	1271.06	18397.07
Data Set Min	35.00	77.70	1369.00	3135.05	385.70	1424.00	166.90	43.67	75.70	8.71	30.02	3.90	4.61	0.79	3.81	0.42	185.70	4.42	10.40	543.90	1025.00	16896.00
Data Set Max	56.00	103.30	2803.30	3728.25	524.30	1728.00	242.90	49.26	107.90	10.33	39.90	4.91	11.50	1.00	5.30	0.60	259.10	6.30	15.81	690.10	1683.73	19752.00
CRM ppm	**44.00**	**91.00**	**2690.00**	**3510.00**	**489.00**	**1629.00**	**220.00**	**46.70**	**100.00**	**9.08**	**34.80**	**4.56**	**8.80**	**0.89**	**4.39**	**0.52**	**210.00**	**4.79**	**14.10**	**603.00**	**1296.00**	**18400.00**
1s ppm	1.70	4.40	158.00	132.00	21.00	54.00	7.00	2.19	8.00	0.31	1.44	0.31	0.27	0.09	0.25	0.04	7.00	0.20	0.61	27.00	98.00	550.00
-95% conf		88.00	2601.00	3437.00	477.00	1597.00	216.00	45.40	95.00	8.92	34.00	4.38	8.64	0.68	4.27	0.49	206.00	4.69	13.70	585.00	1231.00	18000.00
+95% conf		94.00	2779.00	3583.00	500.00	1660.00	223.00	48.00	105.00	9.23	35.60	4.74	8.96	0.73	4.52	0.54	214.00	4.89	14.50	621.00	1361.00	18800.00

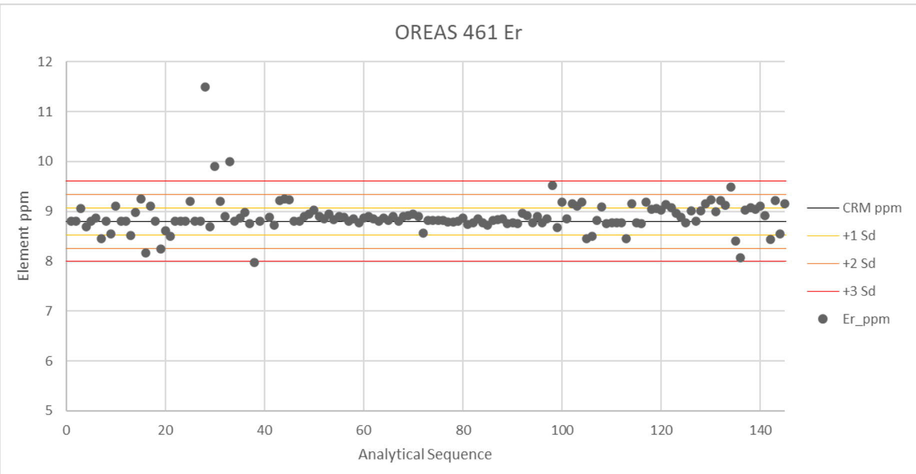


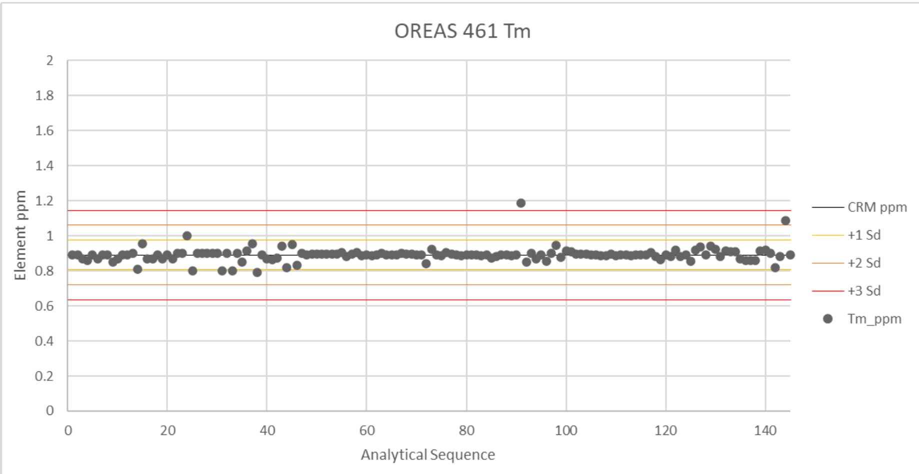

OREAS 461 Gd
180 160 140 120 100 80 60 40 20
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Gd_ppm

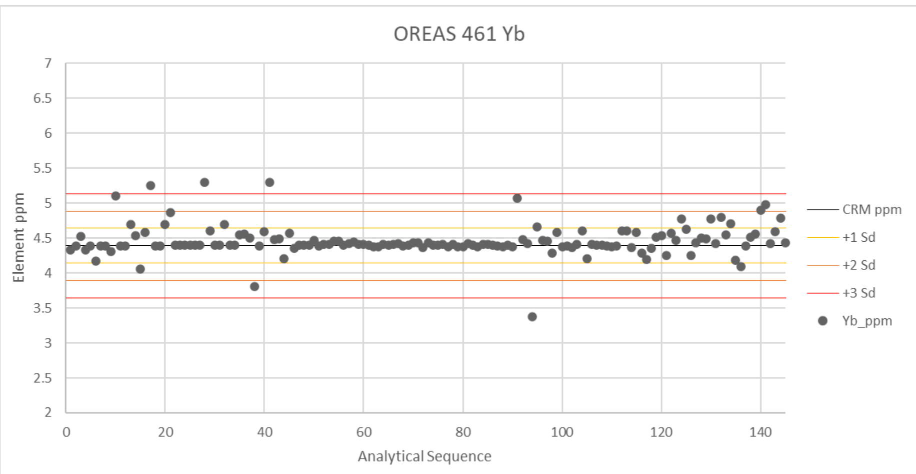

OREAS 461 Tb
13 12 11 10 9 8 7 6
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Tb_ppm

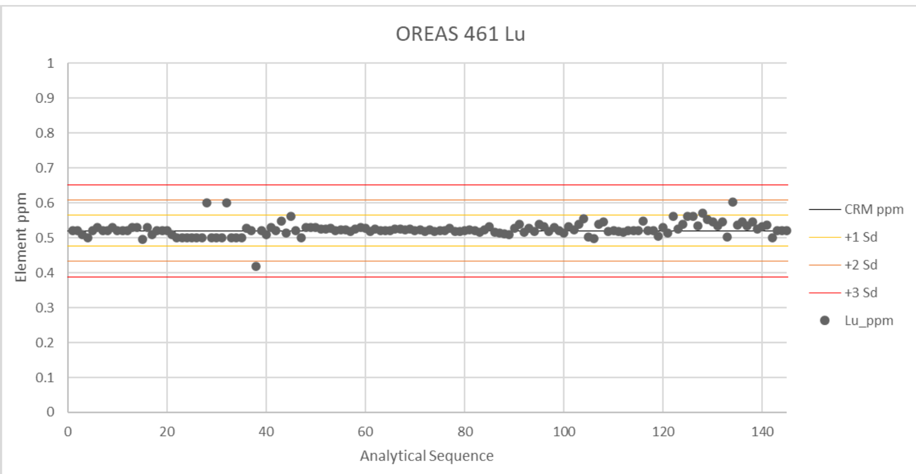

OREAS 461 Dy
50 45 40 35 30 25 20 15
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Dy_ppm

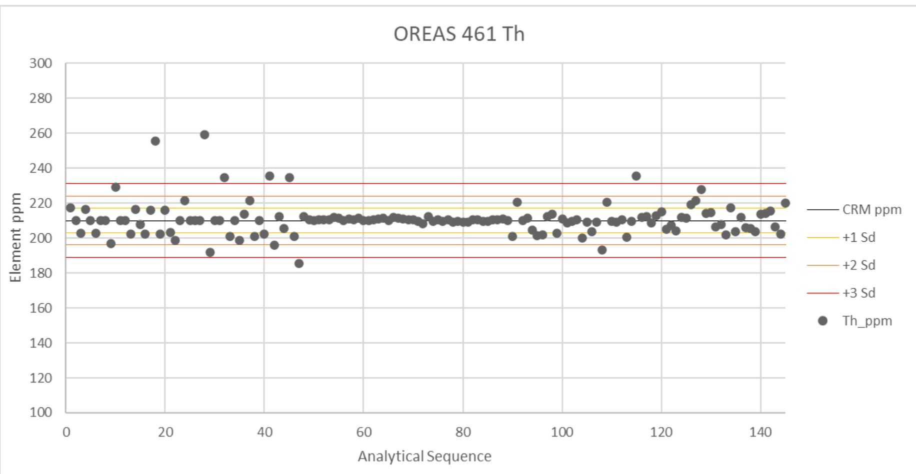

OREAS 461 Ho
8 7 6 5 4 3 2 1
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Ho_ppm

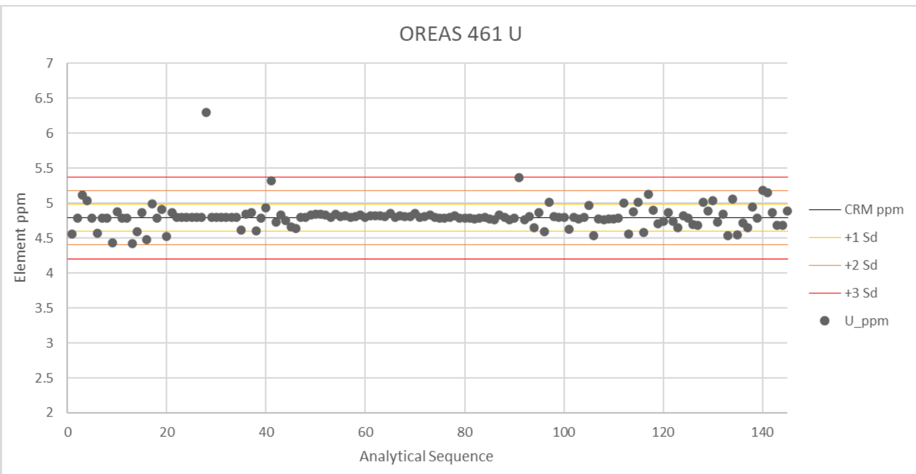

OREAS 461 Er
12 11 10 9 8 7 6 5
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Er_ppm

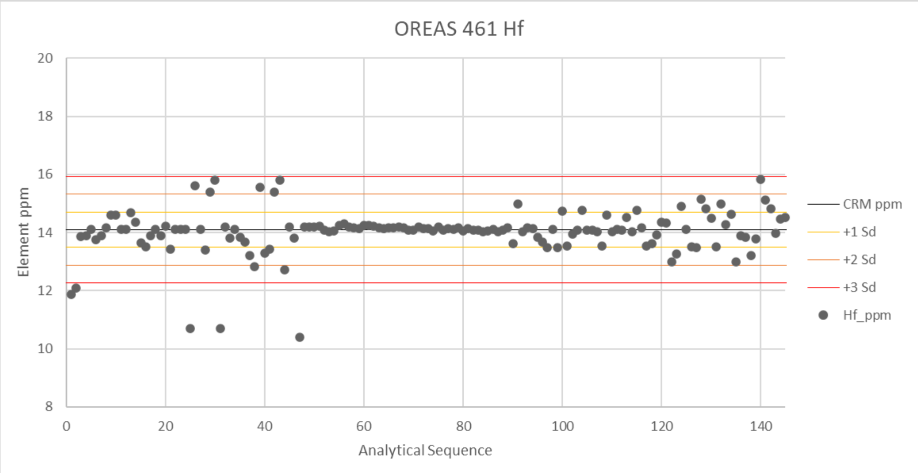

OREAS 461 Tm
2 1.8 1.6 1.4 1.2 1 0.8 0.6 0.4 0.2 0
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Tm_ppm

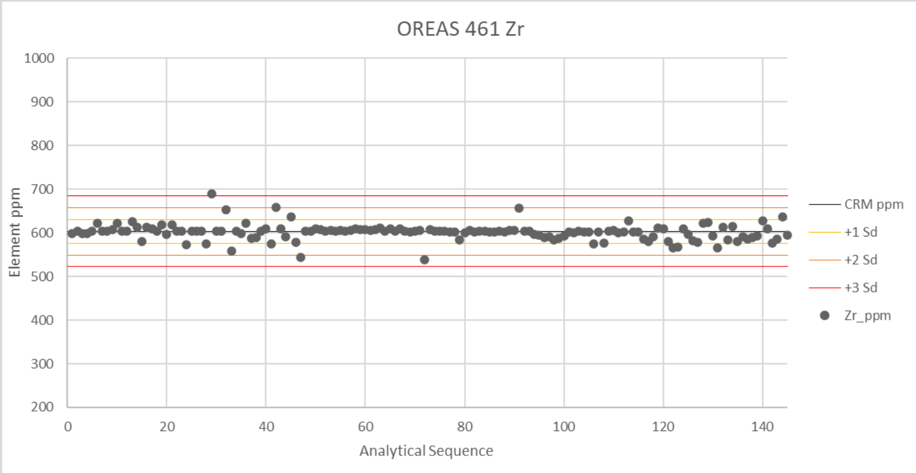

OREAS 461 Yb
7 6.5 6 5.5 5 4.5 4 3.5 3 2.5 2
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Yb_ppm

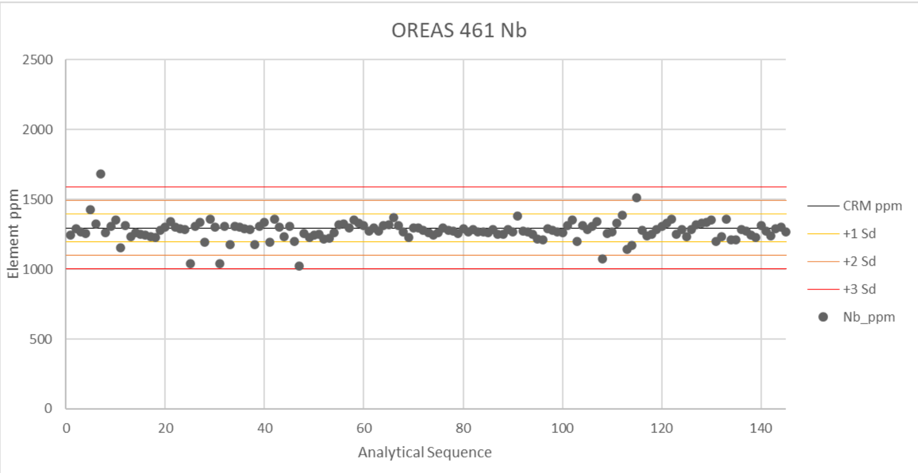

OREAS 461 Lu
1 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Lu_ppm


OREAS 461 Th
300 280 260 240 220 200 180 160 140 120 100
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Th_ppm


OREAS 461 U
7 6.5 6 5.5 5 4.5 4 3.5 3 2.5 2
Element ppm
0 20 40 60 80 100 120 140
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
U_ppm


OREAS 461 Hf
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Hf_ppm


OREAS 461 Zr
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Zr_ppm


OREAS 461 Nb
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Nb_ppm

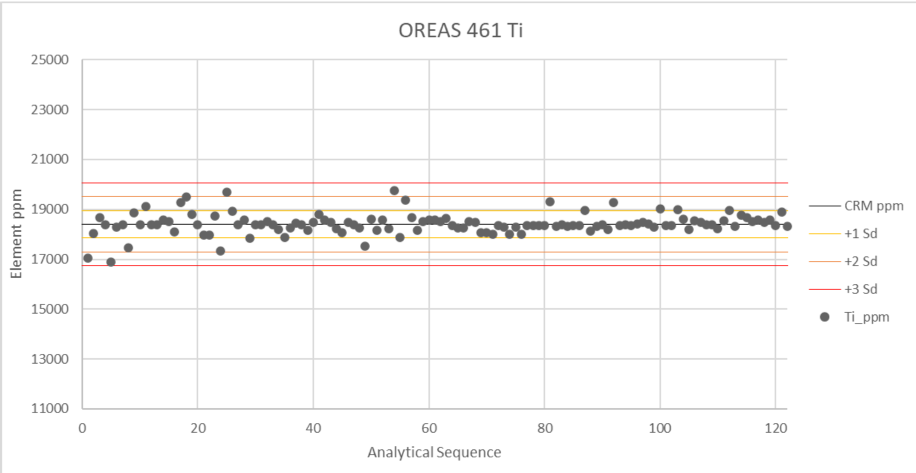
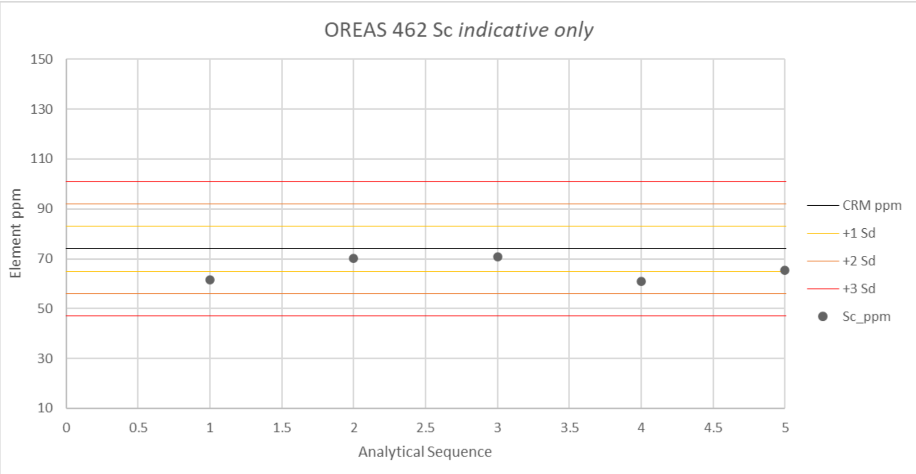
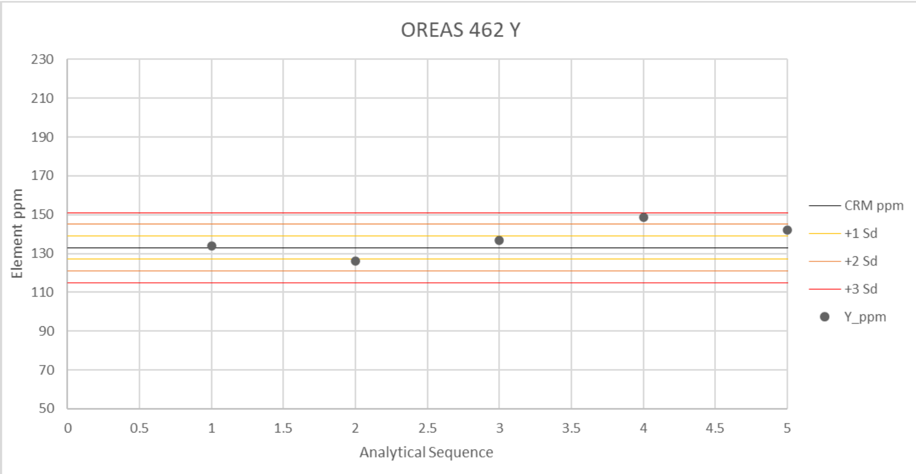
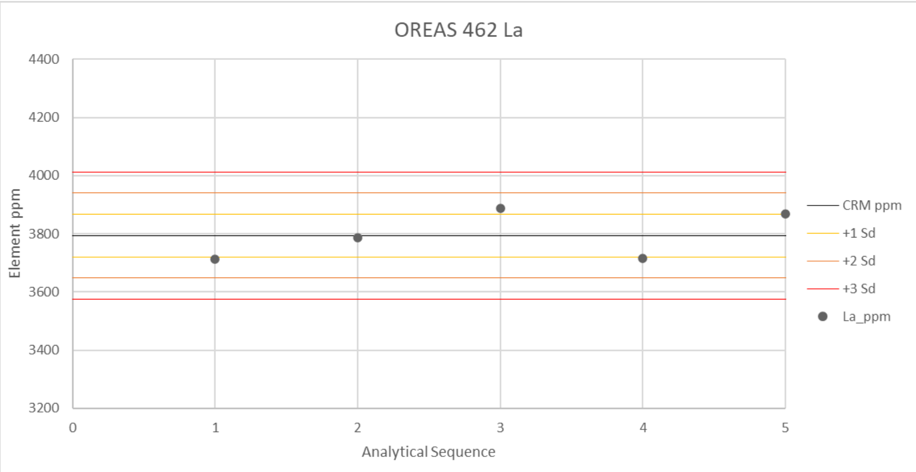

OREAS 461 Ti
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Ti_ppm

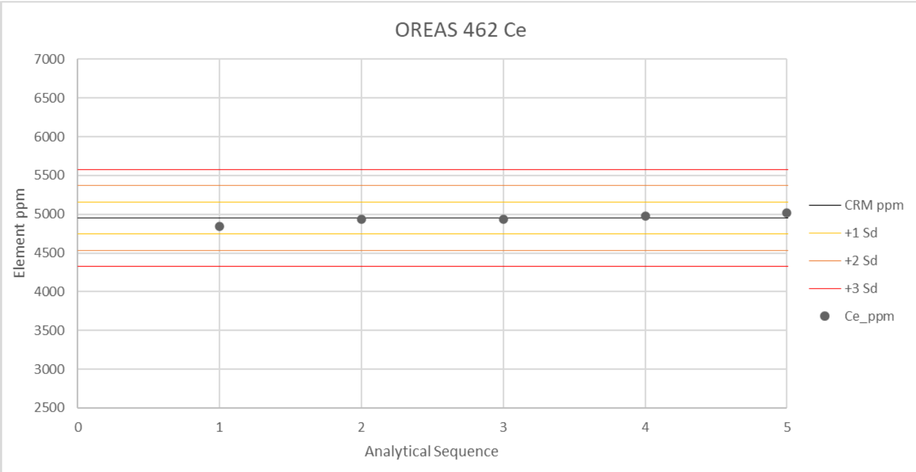
Table 16: Stage 2 CRM Oreas 462 properties against the total data set average, & CRM graph matrix for the 10 Oreas 462 standard assays. Sc parameters in red are indicative only and not certified.

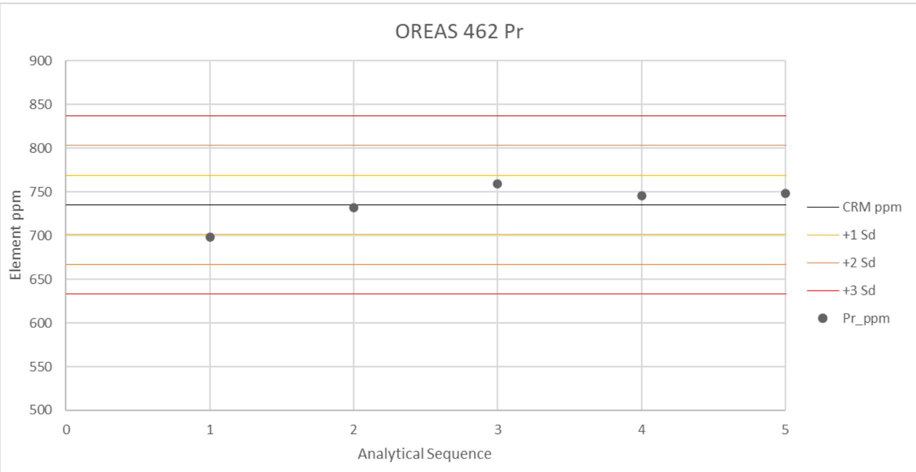
Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Hf	Zr	Nb	Ti
Data Set Mean	65.78	137.44	3794.28	4940.20	736.43	2533.09	366.37	77.66	164.58	15.82	51.09	6.58	11.55	1.24	5.74	0.64	252.07	6.22	14.19	596.00	1439.31	19053.33
Data Set Min	61.06	126.00	3713.37	4842.94	698.15	2468.40	355.91	76.50	158.38	14.75	49.30	6.36	10.84	1.19	5.51	0.61	237.78	5.58	13.27	567.35	1381.20	19032.50
Data Set Max	70.68	148.46	3888.51	5017.78	759.08	2583.11	386.95	78.67	172.24	17.06	53.96	6.78	12.51	1.27	6.40	0.66	268.47	6.58	15.31	622.43	1492.29	19071.00
CRM ppm		**133.00**	**3794.00**	**4951.00**	**735.00**	**2560.00**	**369.00**	**79.00**	**165.00**	**14.40**	**51.00**	**6.50**	**12.20**	**1.20**	**5.51**	**0.63**	**249.00**	**6.15**	**14.00**	**593.00**	**1447.00**	**19100.00**
1s ppm		6.00	73.00	208.00	34.00	128.00	9.00	2.80	7.00	0.54	2.20	0.46	0.56	0.10	0.36	0.04	9.00	0.27	0.78	27.00	39.00	740.00
-95% conf		129.00	3765.00	4848.00	718.00	2487.00	365.00	77.00	161.00	14.10	50.00	6.25	11.90	1.15	5.34	0.61	244.00	6.03	13.70	577.00	1422.00	18600.00
+95% conf		136.00	3824.00	5054.00	752.00	2632.00	373.00	80.00	169.00	14.70	52.00	6.74	12.50	1.25	5.68	0.65	254.00	6.27	14.30	610.00	1473.00	19600.00

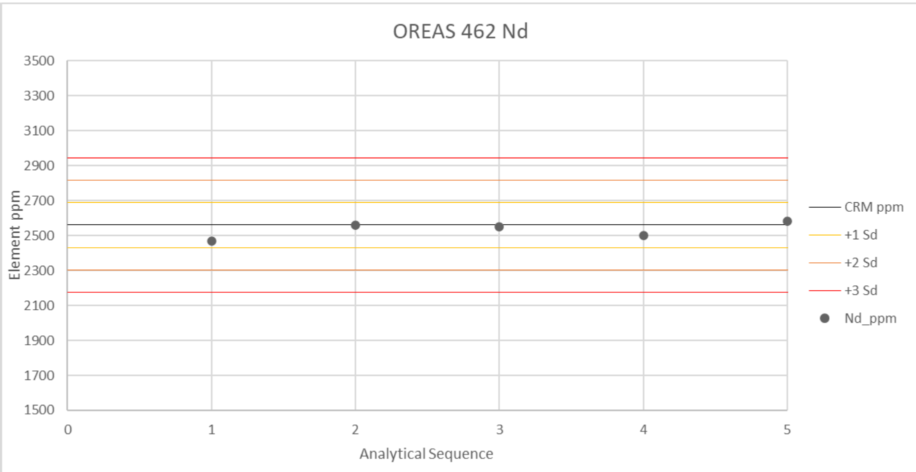


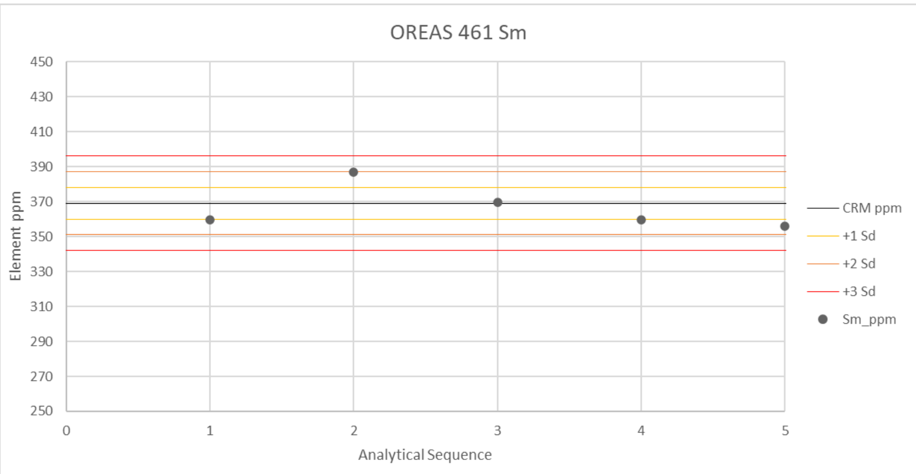


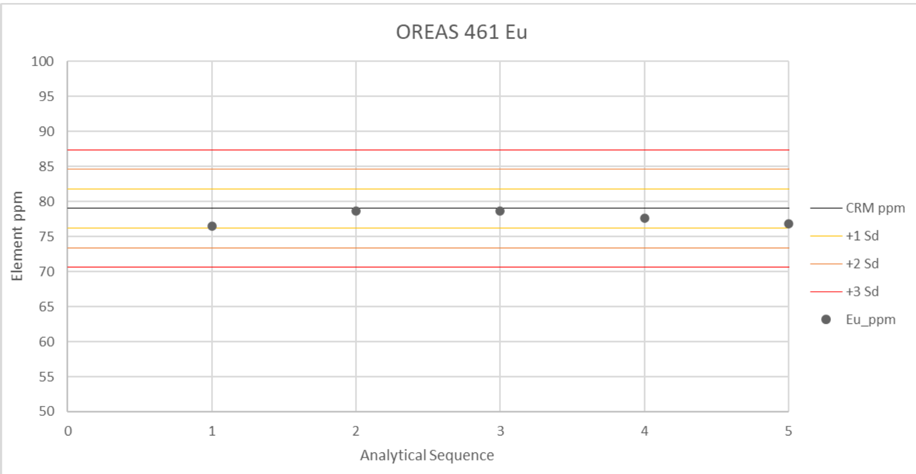


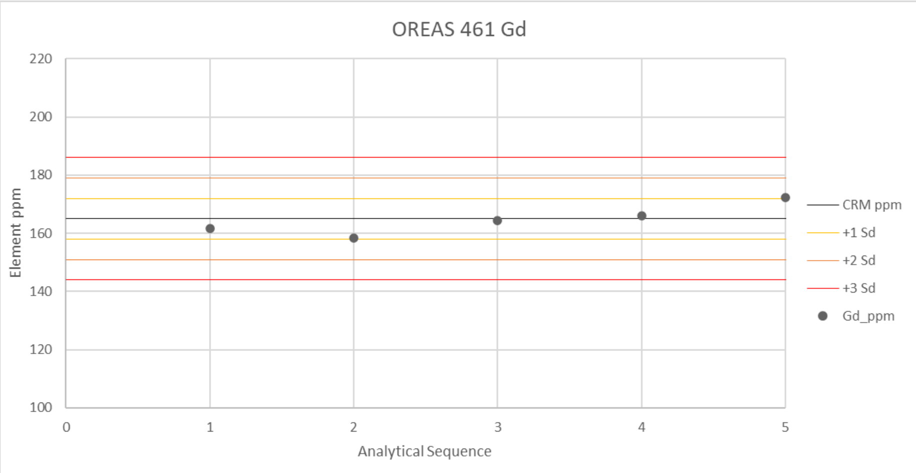


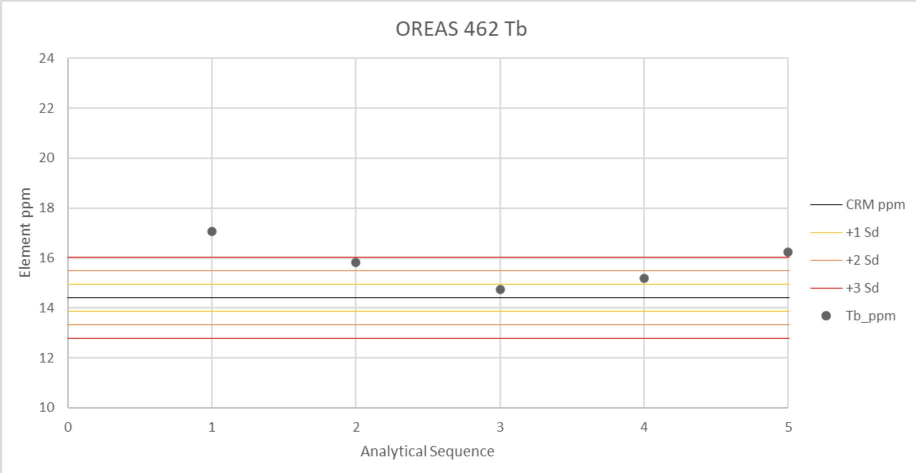


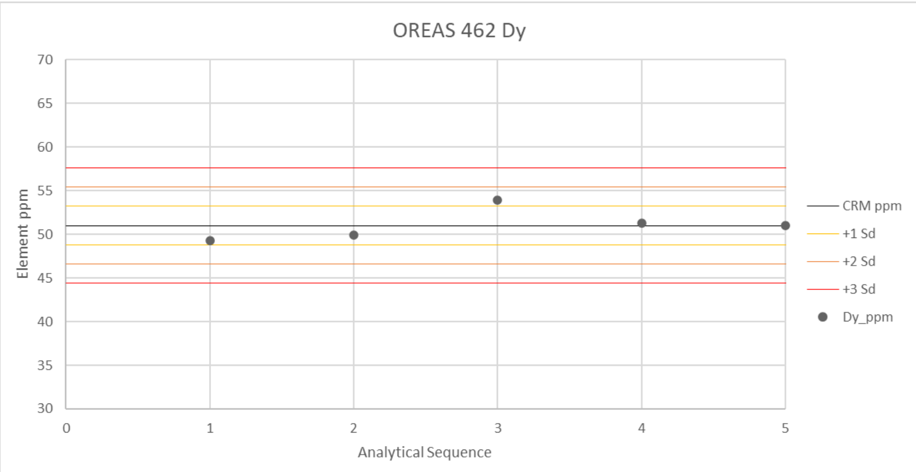


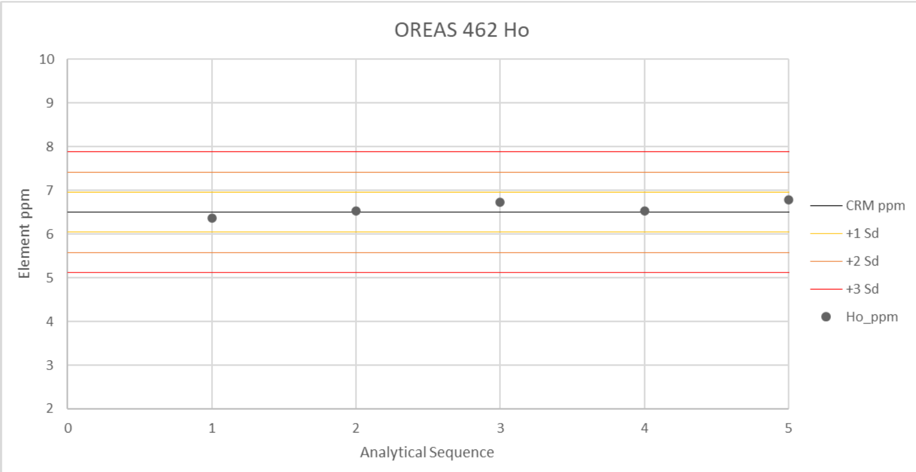


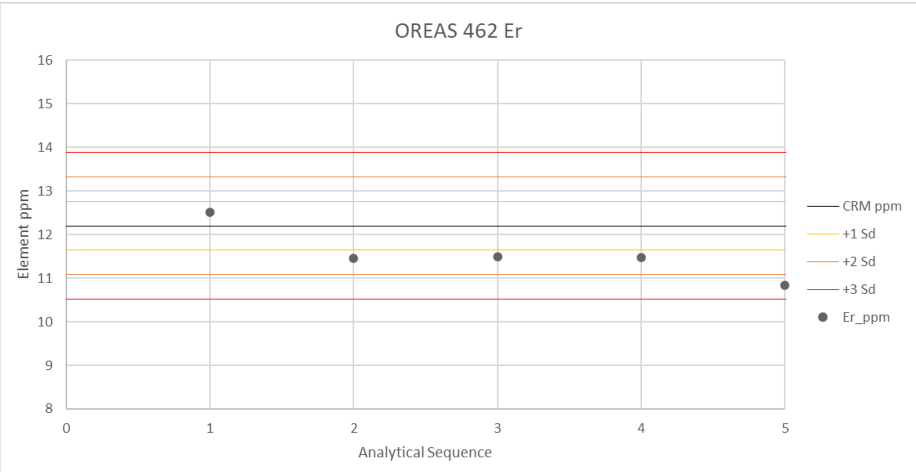


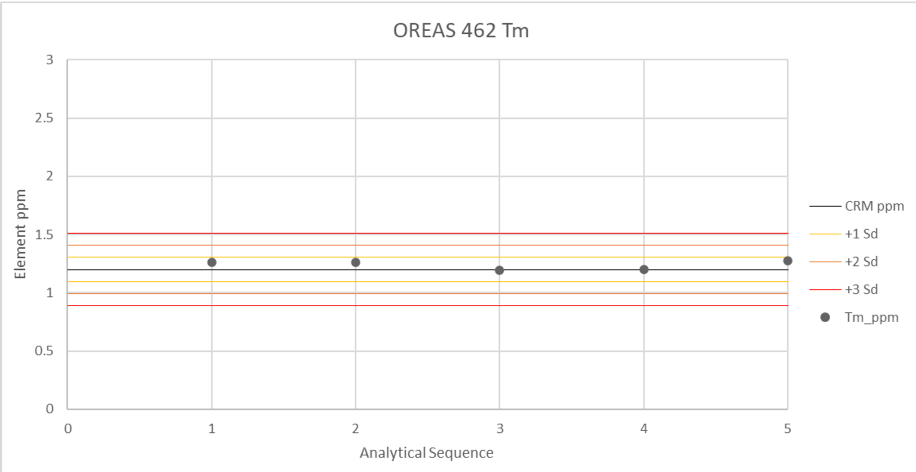

OREAS 461 Gd
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Gd_ppm

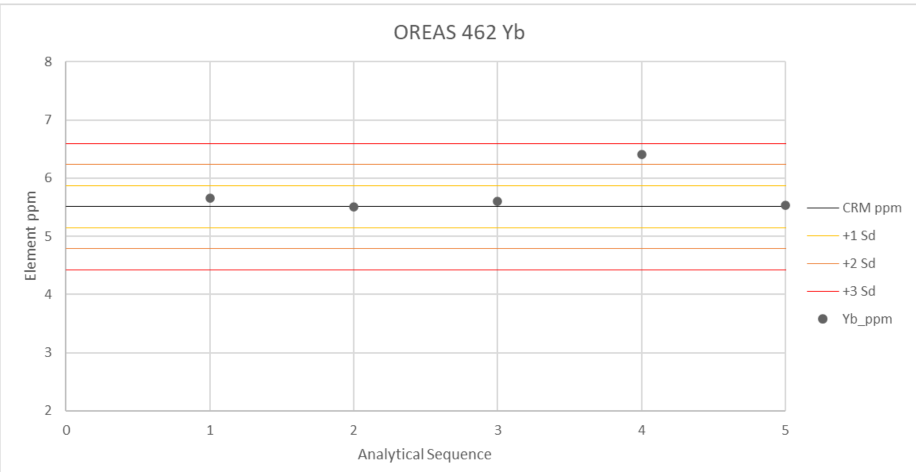

OREAS 462 Tb
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Tb_ppm

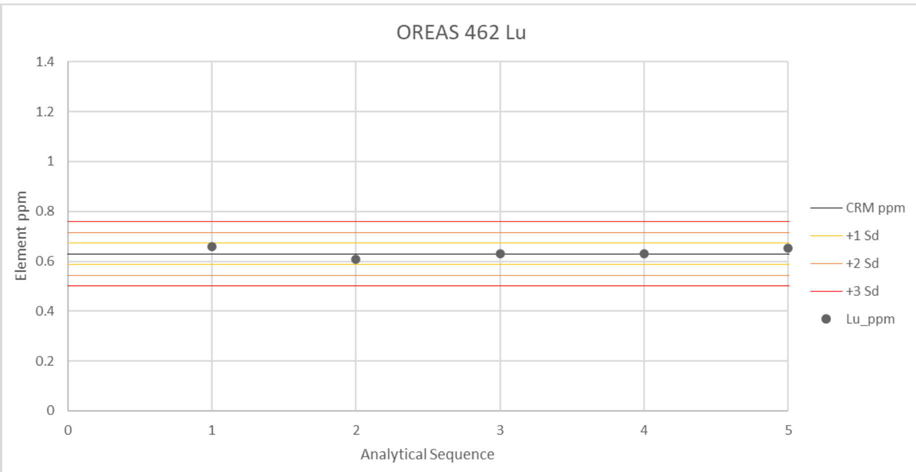

OREAS 462 Dy
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Dy_ppm

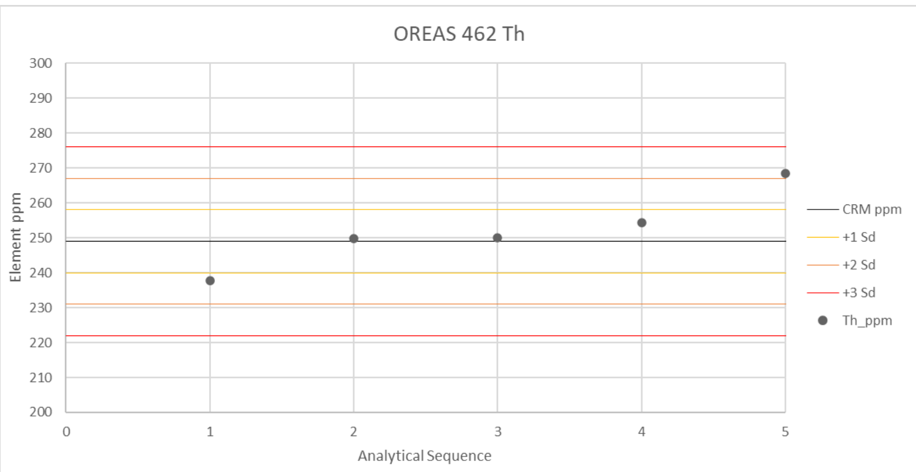

OREAS 462 Ho
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Ho_ppm

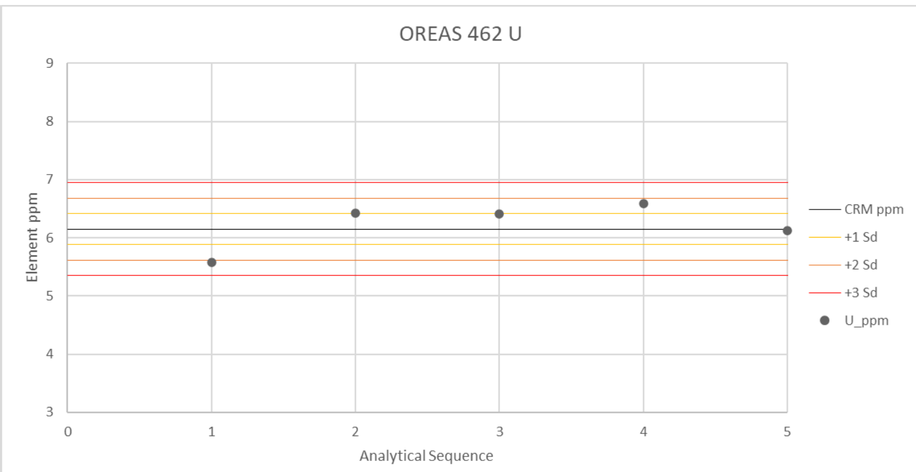

OREAS 462 Er
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Er_ppm

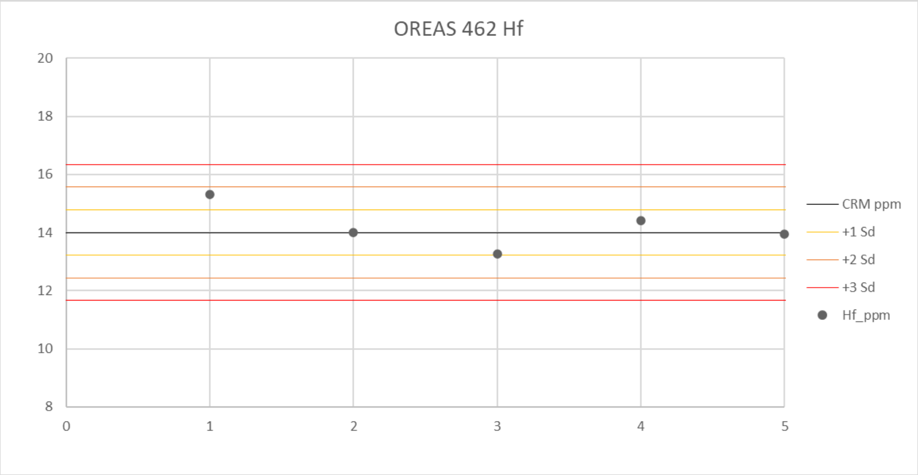

OREAS 462 Tm
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Tm_ppm

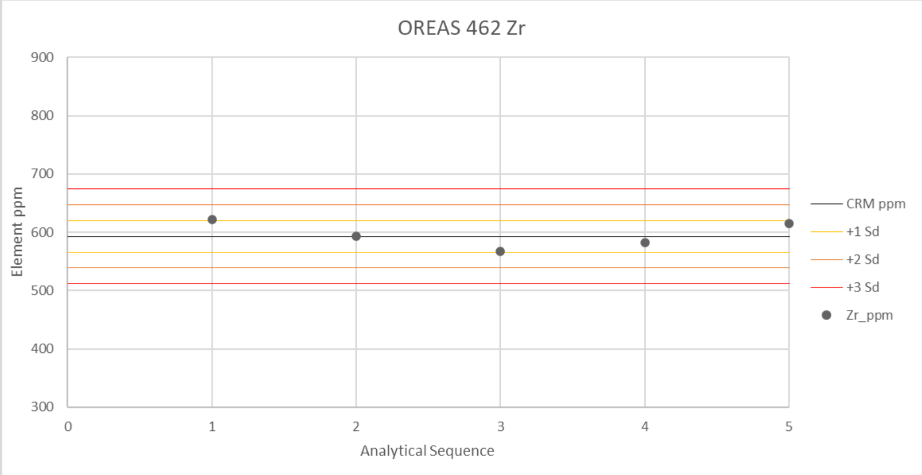

OREAS 462 Yb
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Yb_ppm

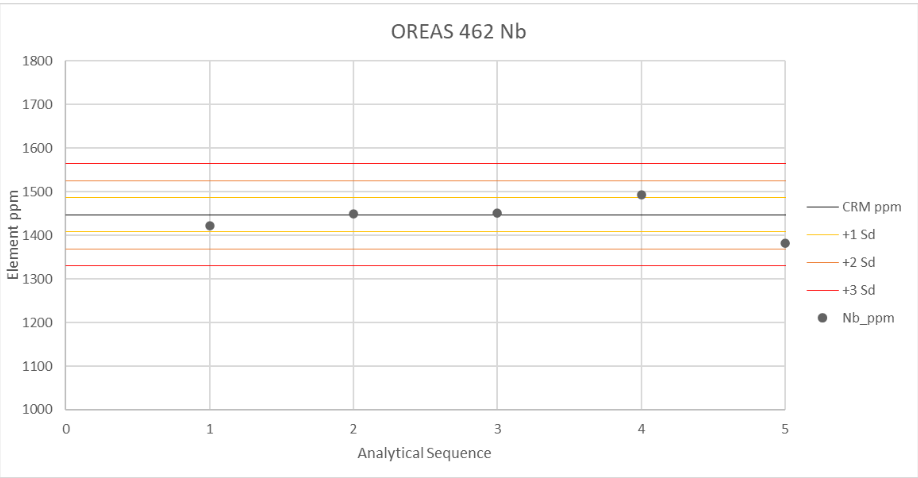

OREAS 462 Lu
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Lu_ppm


OREAS 462 Th
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Th_ppm


OREAS 462 U
Element ppm
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
U_ppm


OREAS 462 Hf
20
18
16
14
12
10
8
0 1 2 3 4 5
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Hf_ppm


OREAS 462 Zr
900
800
700
600
500
400
300
Element ppm
0 1 2 3 4 5
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Zr_ppm


OREAS 462 Nb
1800
1700
1600
1500
1400
1300
1200
1100
1000
Element ppm
0 1 2 3 4 5
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Nb_ppm

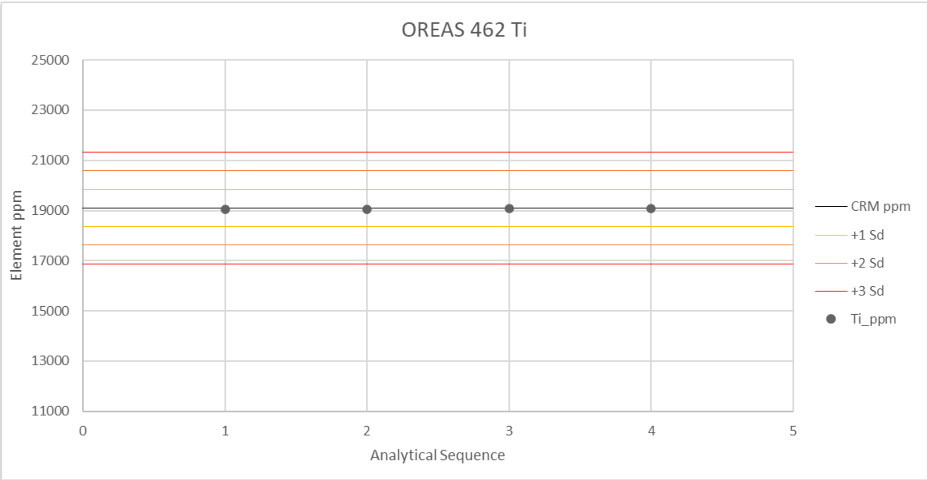
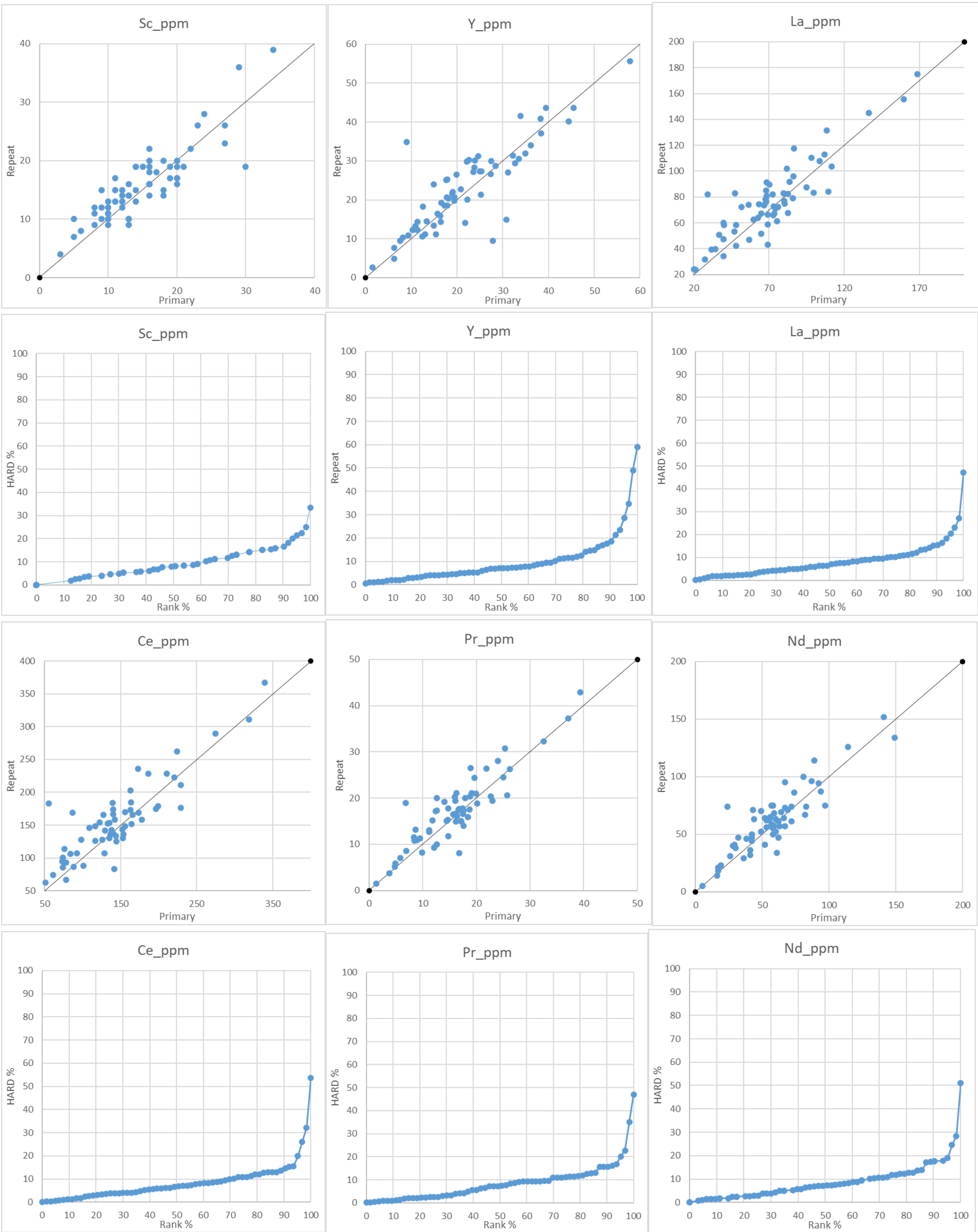
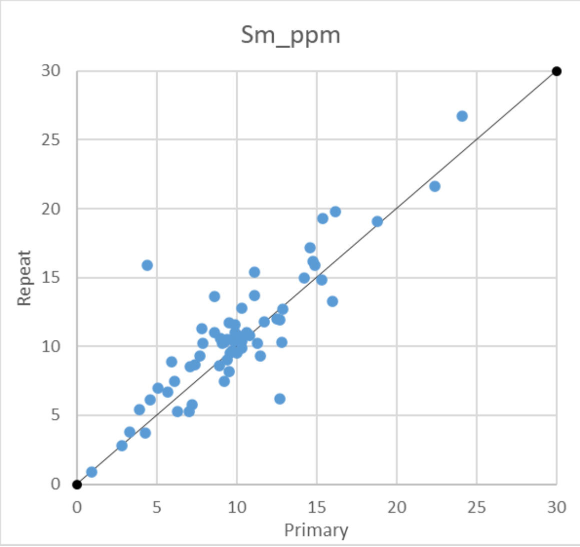
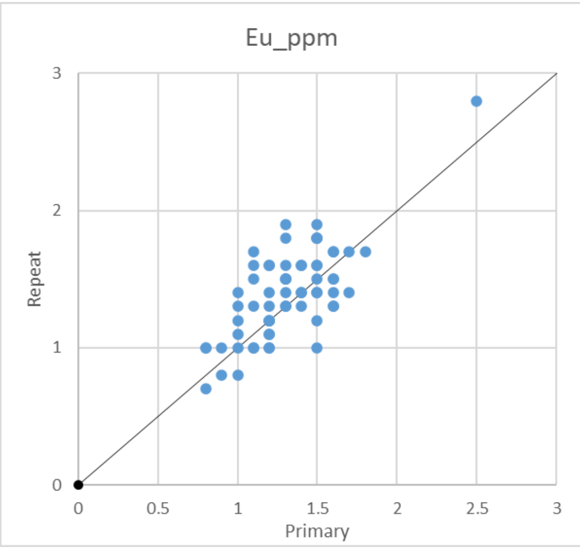

OREAS 462 Ti
25000
23000
21000
19000
17000
15000
13000
11000
Element ppm
0 1 2 3 4 5
Analytical Sequence
CRM ppm
+1 Sd
+2 Sd
+3 Sd
Ti_ppm

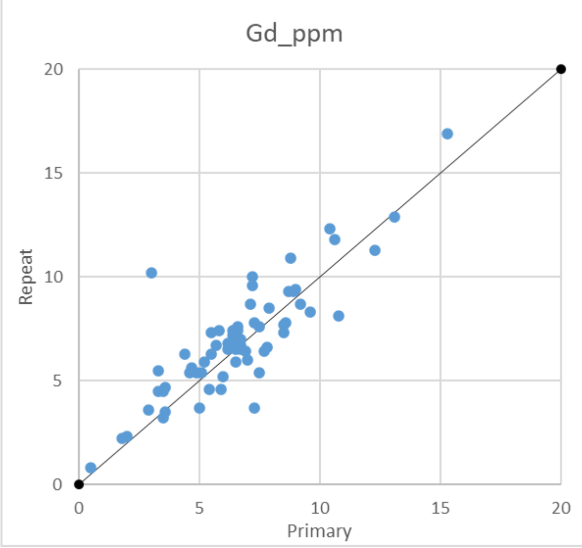
Table 17: Stage2 field duplicate assay pair statistics & graph matrix showing repeat assay scatter plots and HARD plots.

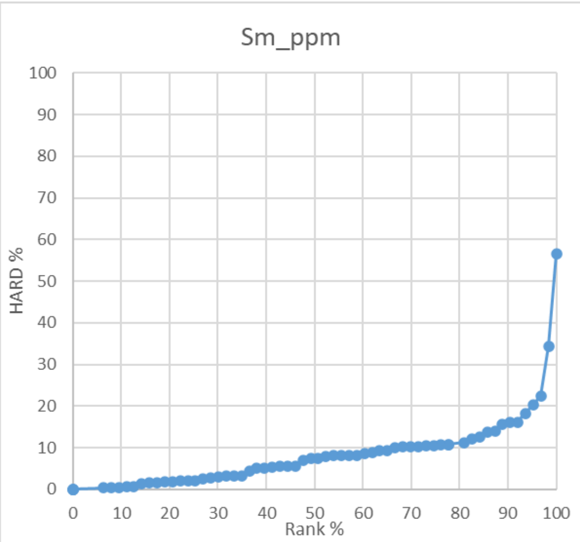
Element ppm	Sc	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	Zr	Hf	Nb	Ti
Pair Assay Count	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
Count >= detection limit	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**55**	**63**	**51**	**62**	**13**	**61**	**12**	**64**	**64**	**61**	**64**	**64**	**64**	**64**
Detection limit ppm	**1**	**0.5**	**0.5**	**0.5**	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**10**
Mean assay	15.0	69.6	137.7	16.1	57.9	10.1	1.3	6.6	0.8	4.5	0.8	2.2	0.3	2.2	0.3	21.7	28.3	1.6	280.6	7.6	13.9	3813.8
90th percentile HARD%	**16.7**	**15.5**	**14.6**	**15.7**	**17.6**	**16.1**	**15.4**	**16.3**	**25.0**	**16.5**	**47.4**	**21.7**	**33.3**	**30.6**	**41.2**	**18.6**	**14.9**	**27.3**	**23.2**	**22.8**	**27.3**	**22.2**
Samp% within 1s	82.8	75	73.4	71.9	73	70.3	50	68.8	75	76.6	68.8	70.3	82.8	68.8	76.6	73.4	68.8	76.6	62.5	60.9	78.1	92.2
Samp% within 2s	**95.3**	**92.2**	**95.3**	**92.2**	**93.8**	**90.6**	**93.8**	**93.8**	**96.9**	**95.3**	**93.8**	**96.9**	**87.5**	**96.9**	**92.2**	**95.3**	**93.8**	**93.8**	**89.1**	**87.5**	**93.8**	**96.9**
Samp% within 3s	96.9	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	100	100	98.4	100	100	98.4	96.9	96.9	98.4	98.4	98.4	96.9
Samp% outside 3s	3.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0	0	1.6	0	0	1.6	3.1	3.1	1.6	1.6	1.6	3.1

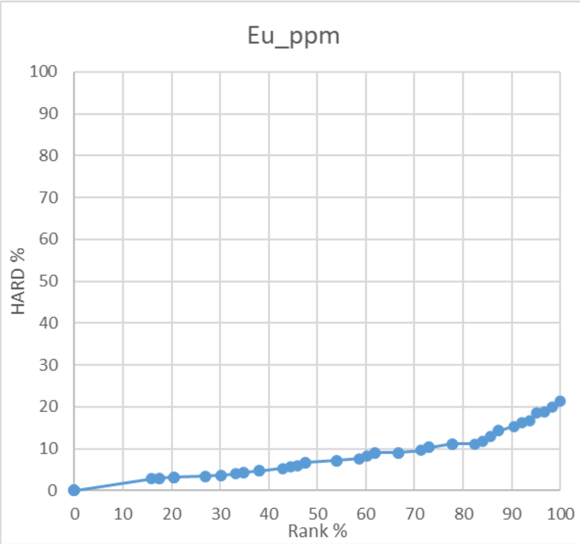


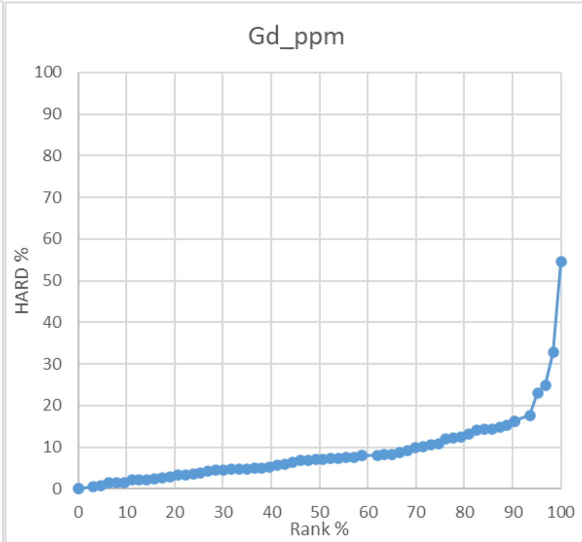

Sm_ppm
Repeat
Primary

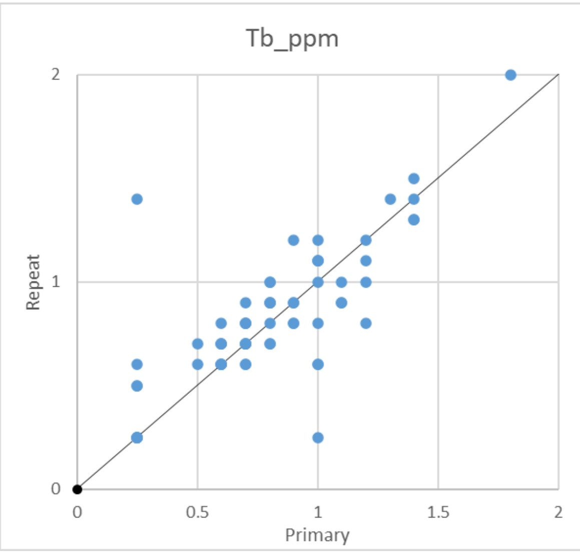

Eu_ppm
Repeat
Primary

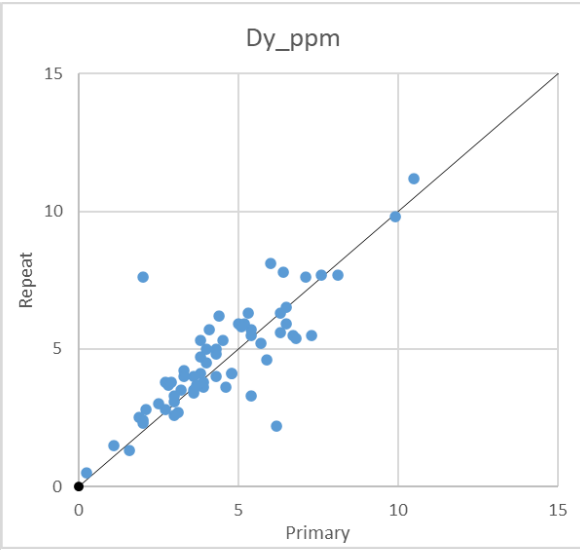

Gd_ppm
Repeat
Primary

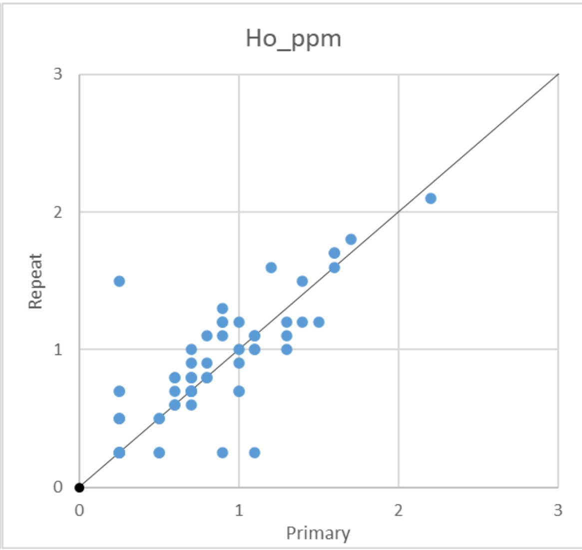

Sm_ppm
HARD %
Rank %

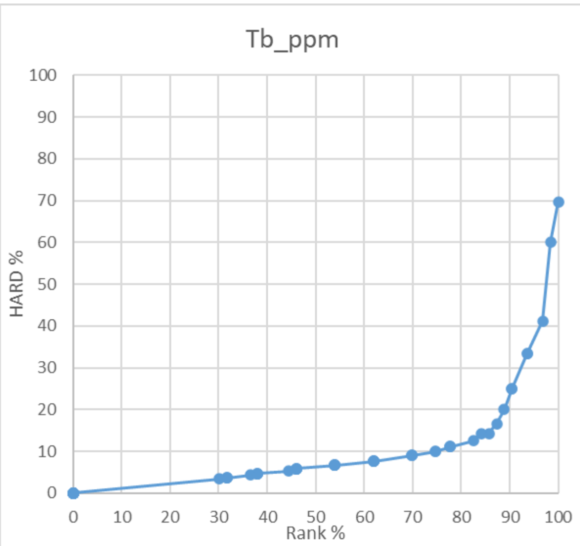

Eu_ppm
HARD %
Rank %

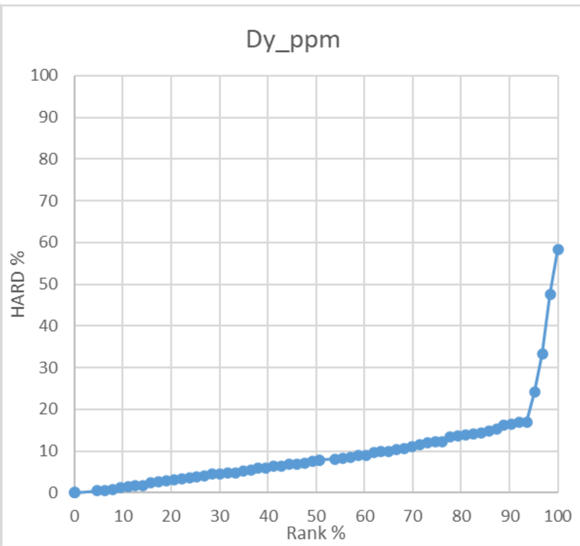

Gd_ppm
HARD %
Rank %

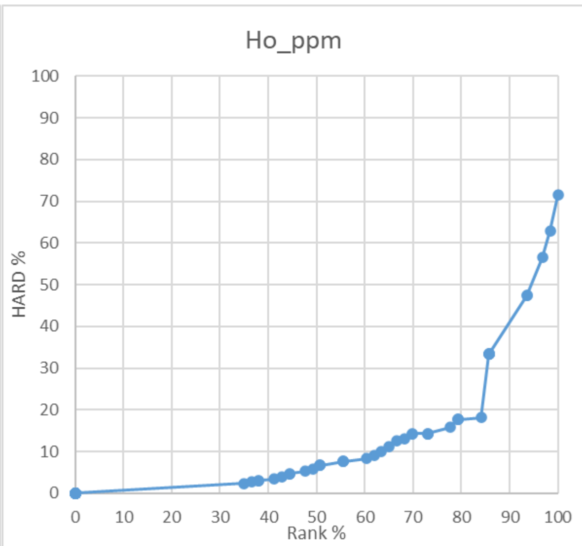

Tb_ppm
Repeat
Primary

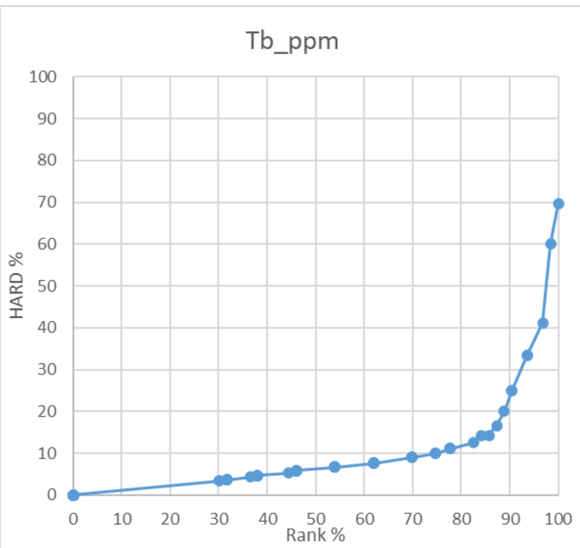

Dy_ppm
Repeat
Primary

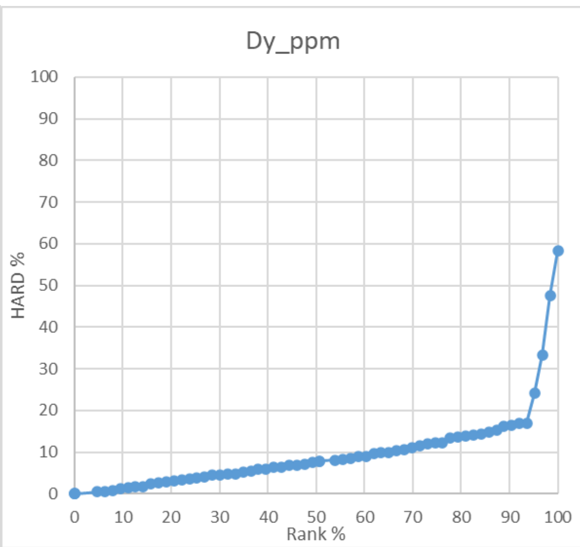

Ho_ppm
Repeat
Primary

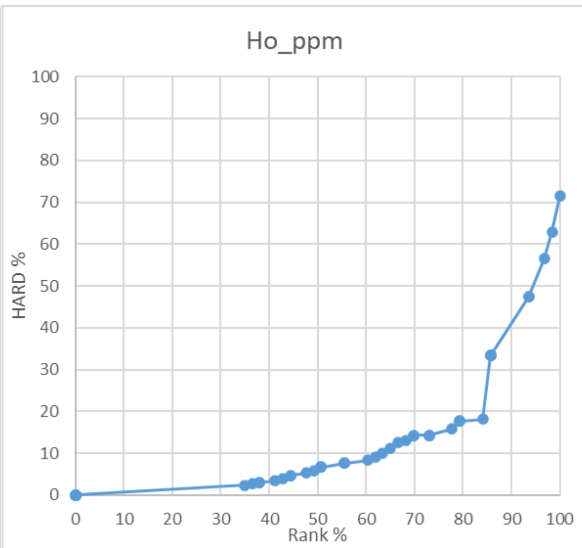

Tb_ppm
HARD %
Rank %

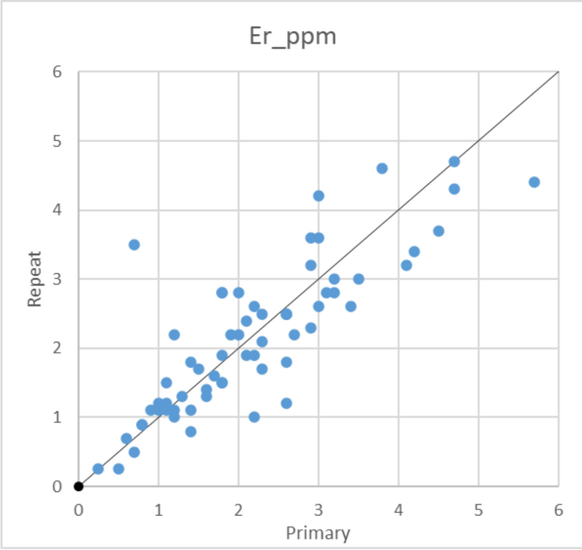

Dy_ppm
HARD %
Rank %

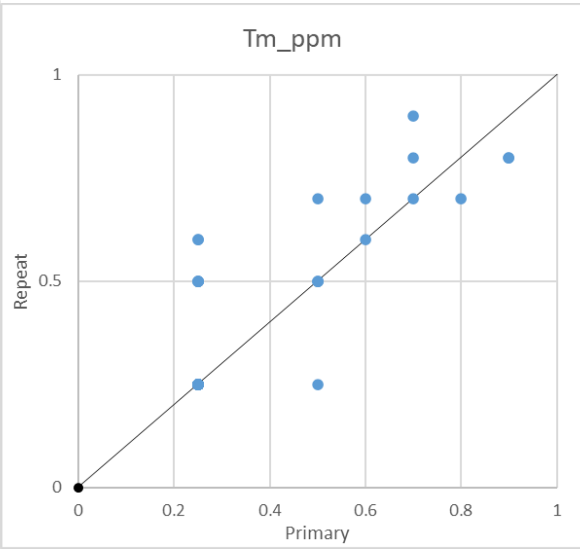

Ho_ppm
HARD %
Rank %

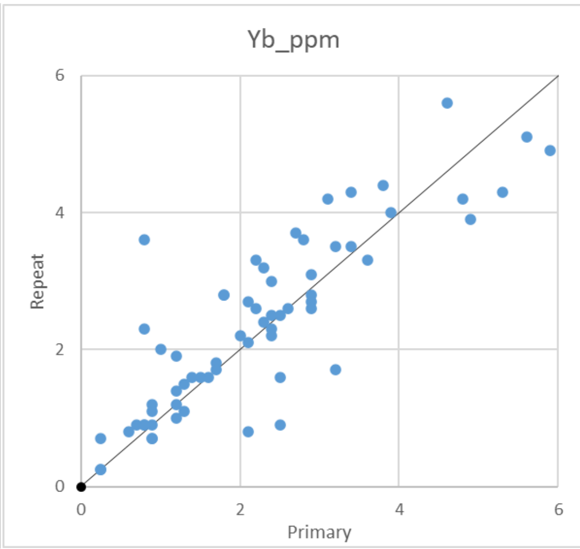

Tb_ppm
HARD %
Rank %

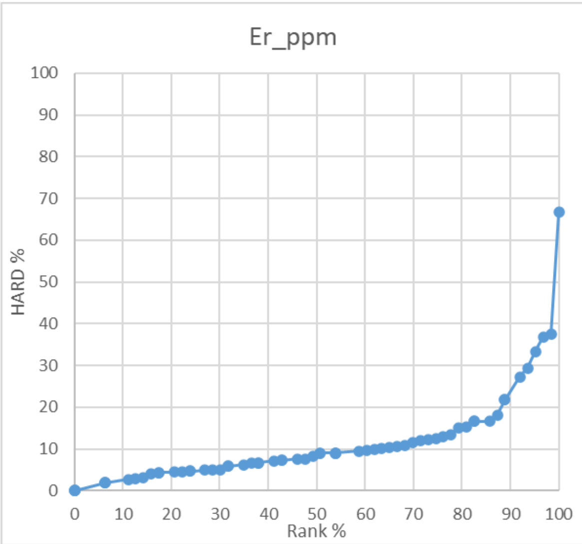

Dy_ppm
HARD %
Rank %

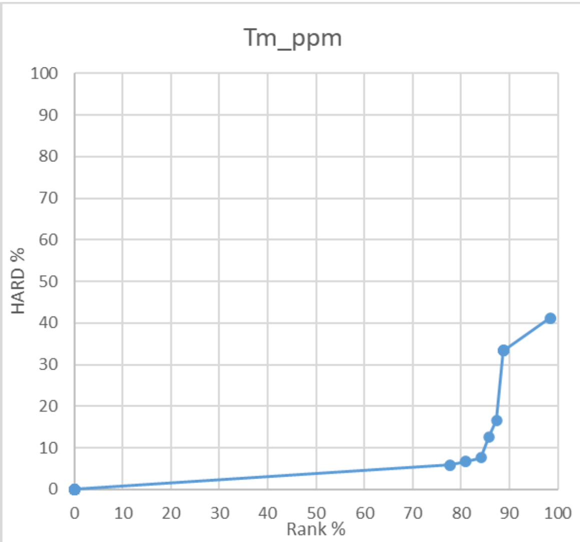

Ho_ppm
HARD %
Rank %

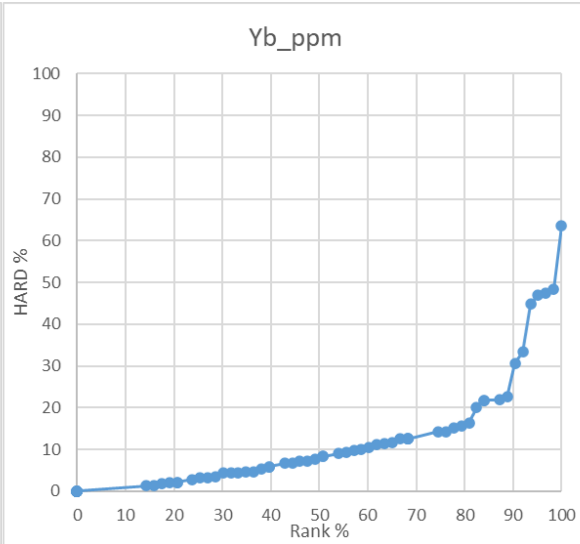

Er_ppm
Repeat
Primary

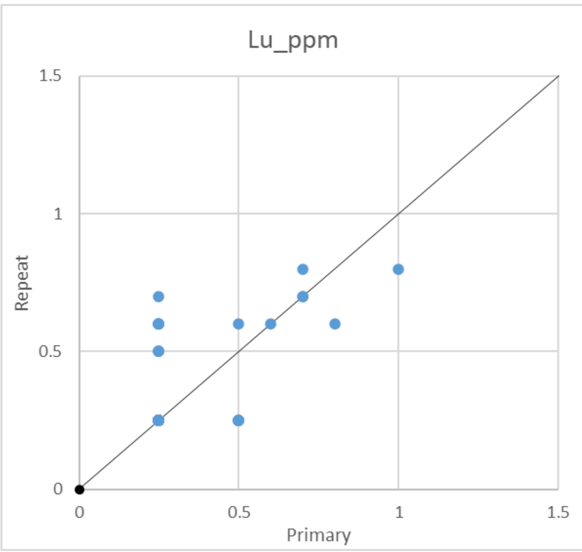

Tm_ppm
Repeat
Primary

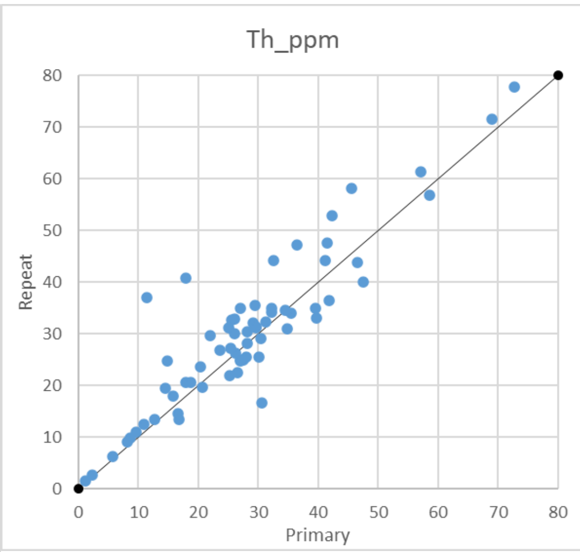

Yb_ppm
Repeat
Primary

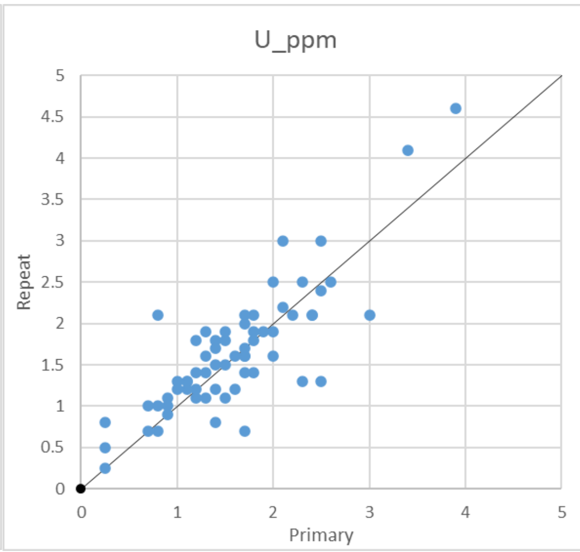

Er_ppm
HARD %
Rank %

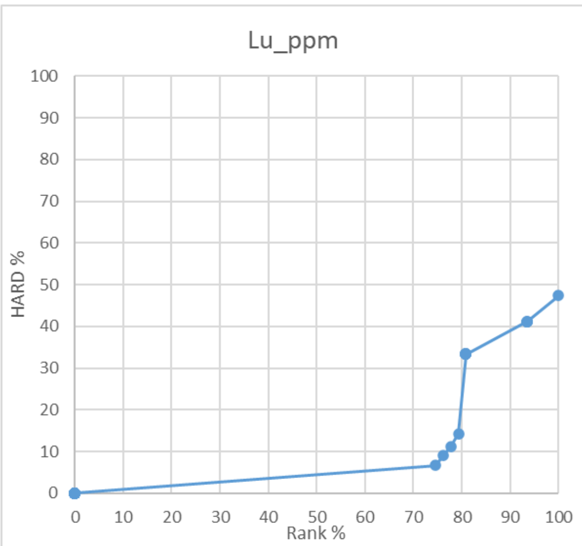

Tm_ppm
HARD %
Rank %

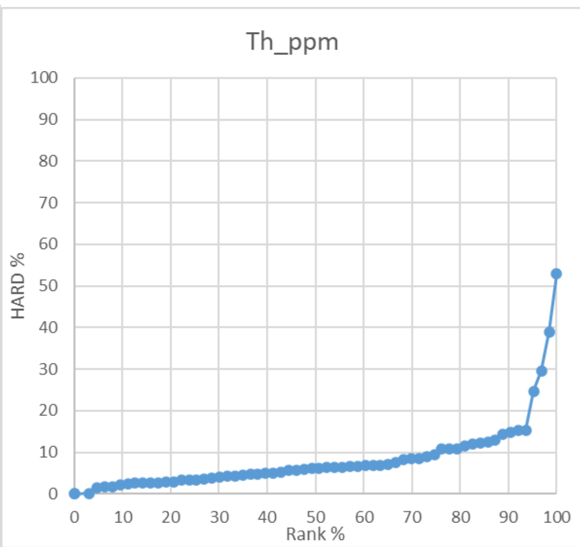

Yb_ppm
HARD %
Rank %

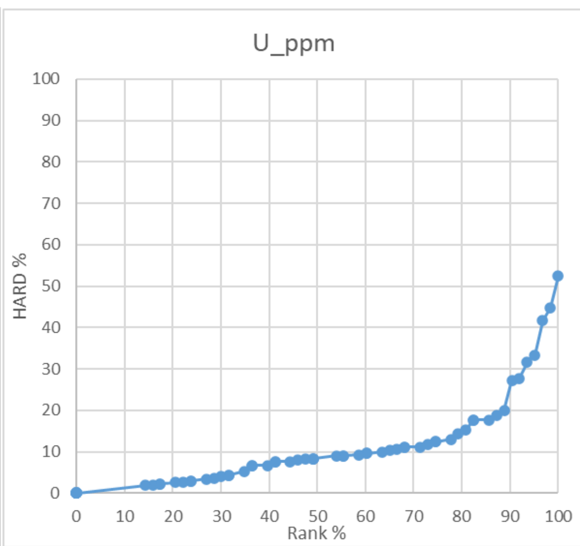

Lu_ppm
Repeat
Primary

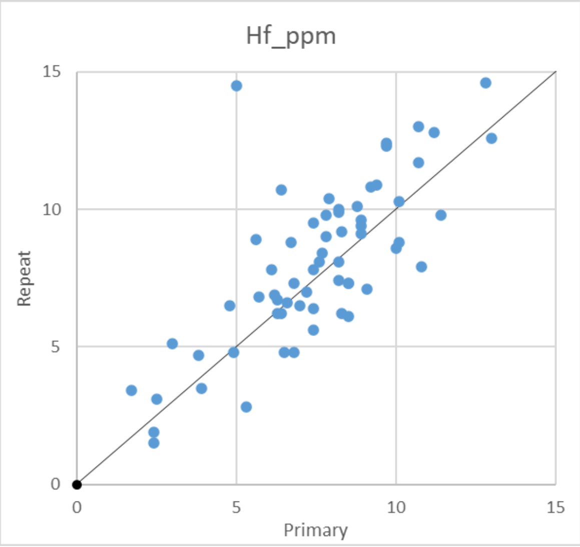

Th_ppm
Repeat
Primary

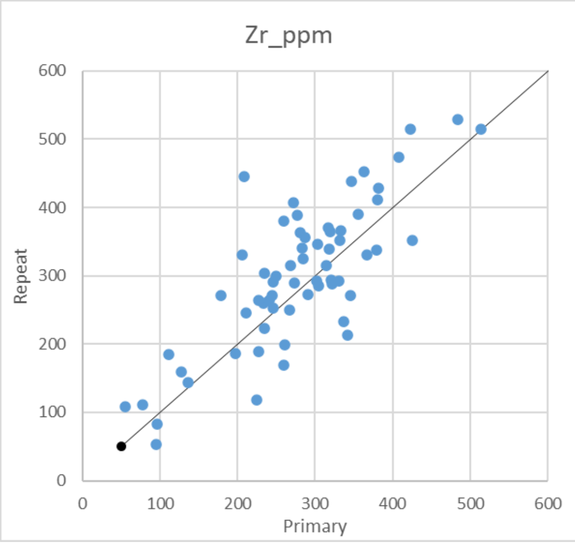

U_ppm
Repeat
Primary

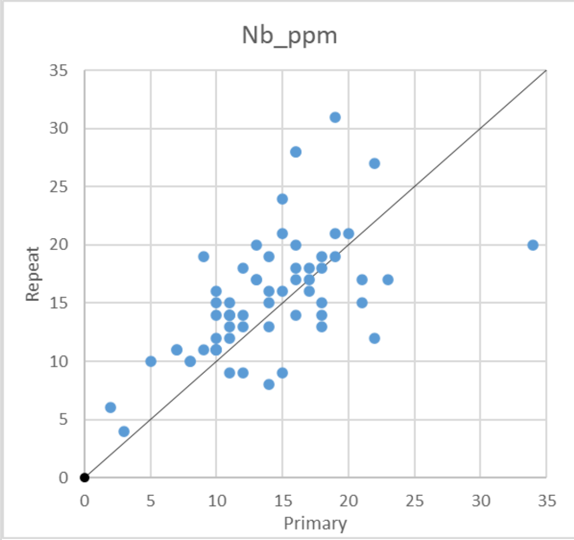

Lu_ppm
HARD %
Rank %

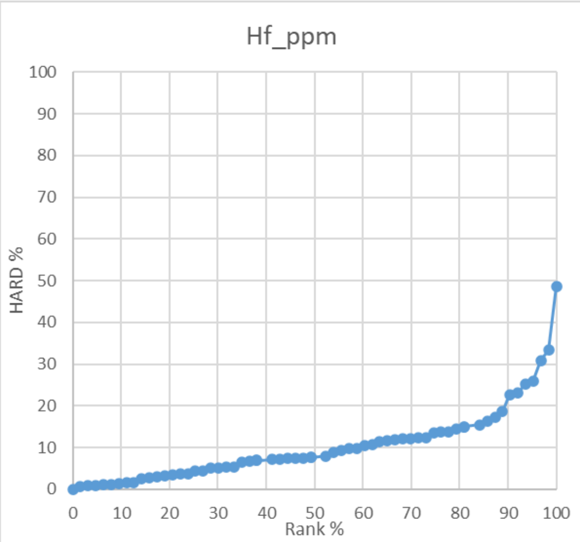

Th_ppm
HARD %
Rank %

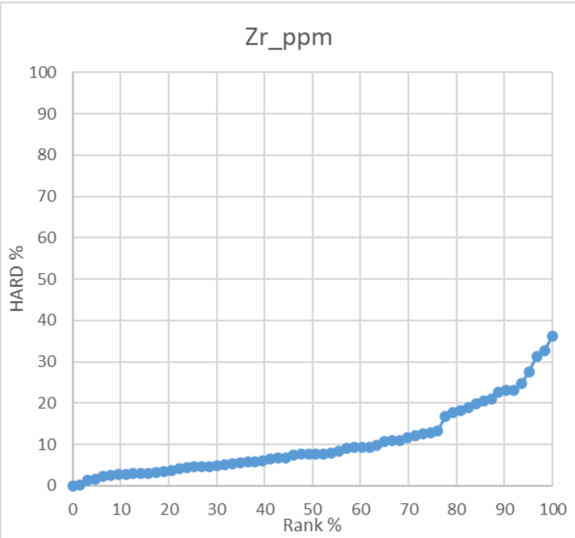

U_ppm
HARD %
Rank %

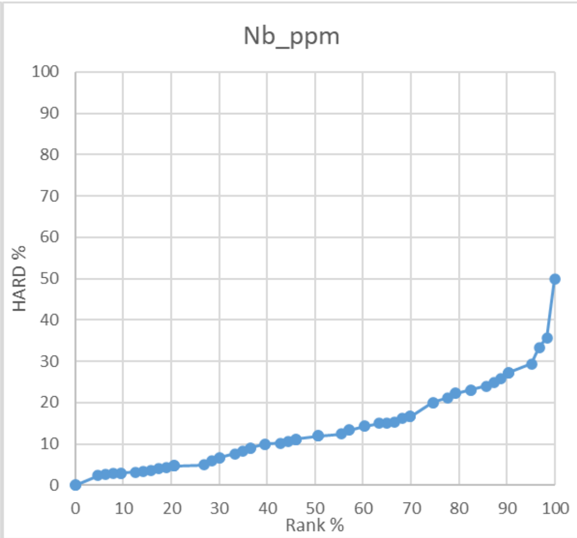

Hf_ppm
Repeat
Primary

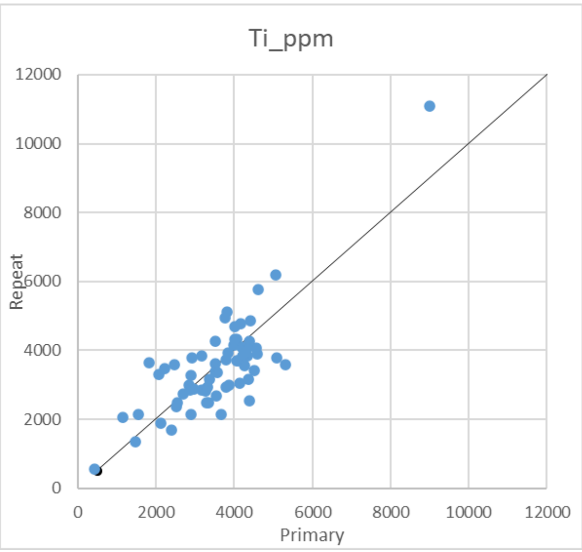

Zr_ppm
Repeat
Primary


Nb_ppm
Repeat
Primary


Hf_ppm
HARD %
Rank %


Zr_ppm
HARD %
Rank %


Nb_ppm
HARD %
Rank %


Ti_ppm
Repeat
Primary

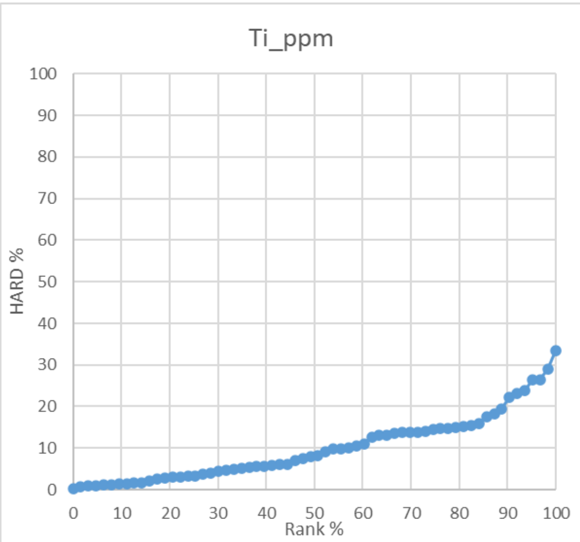
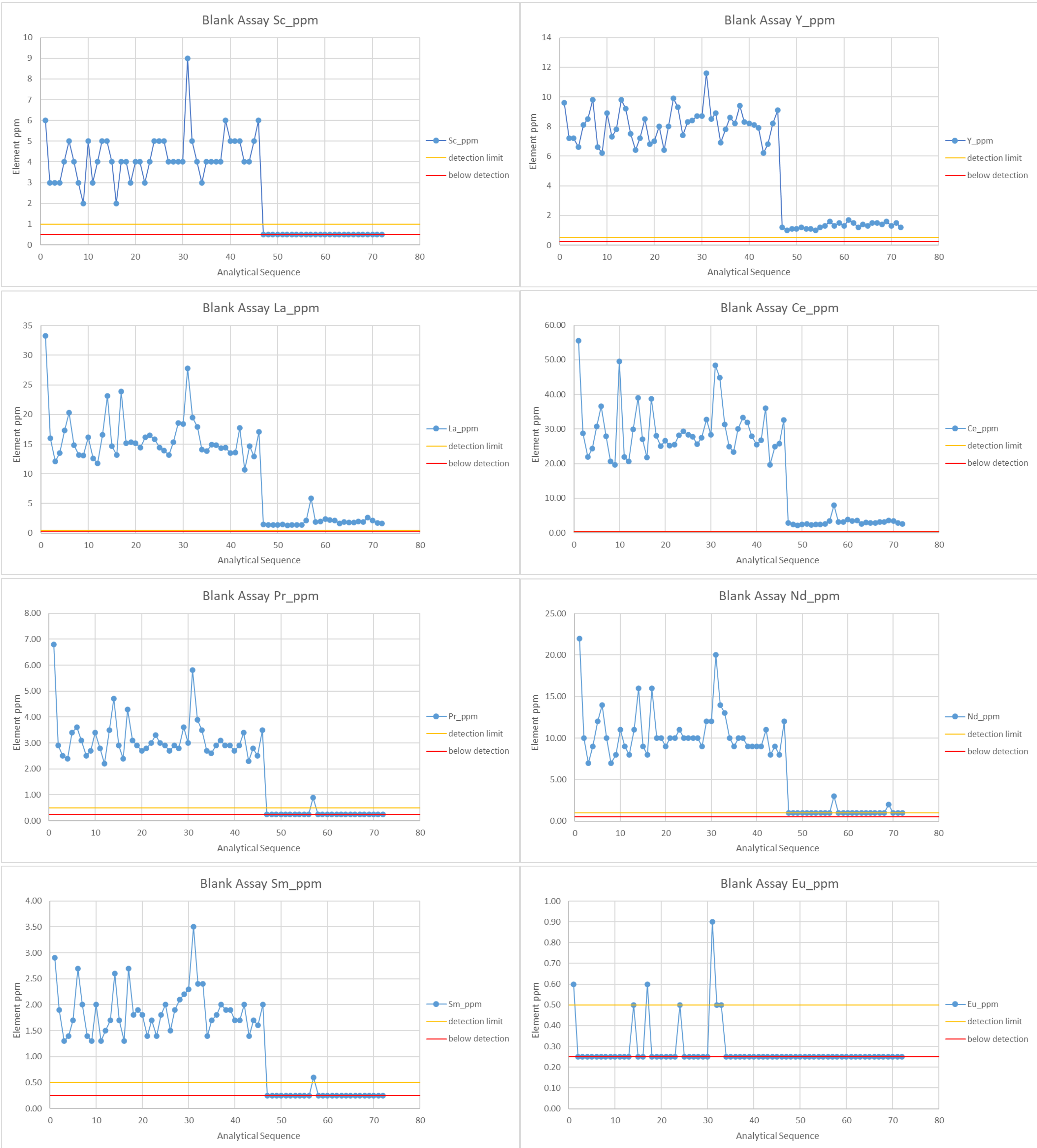
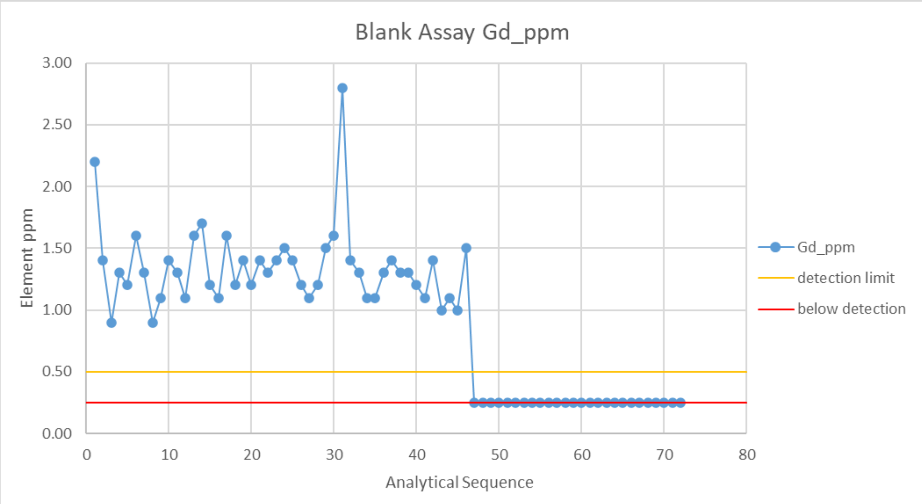
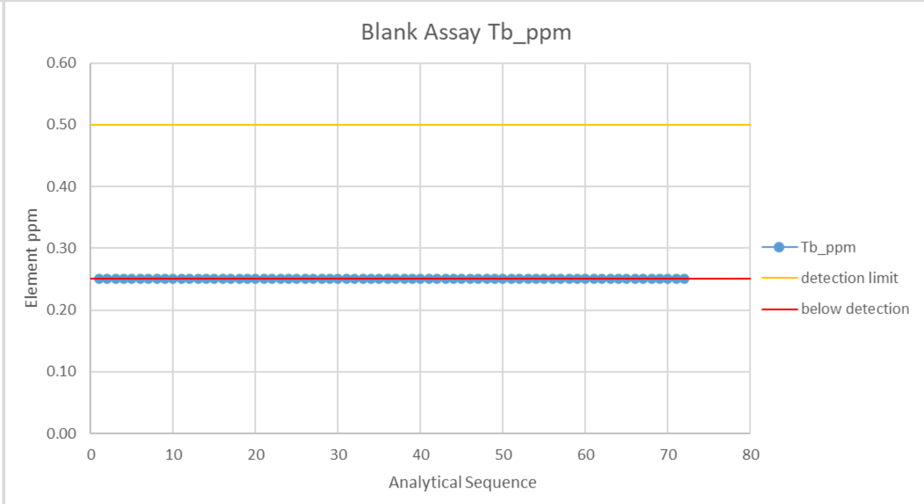

Ti_ppm
HARD %
Rank %

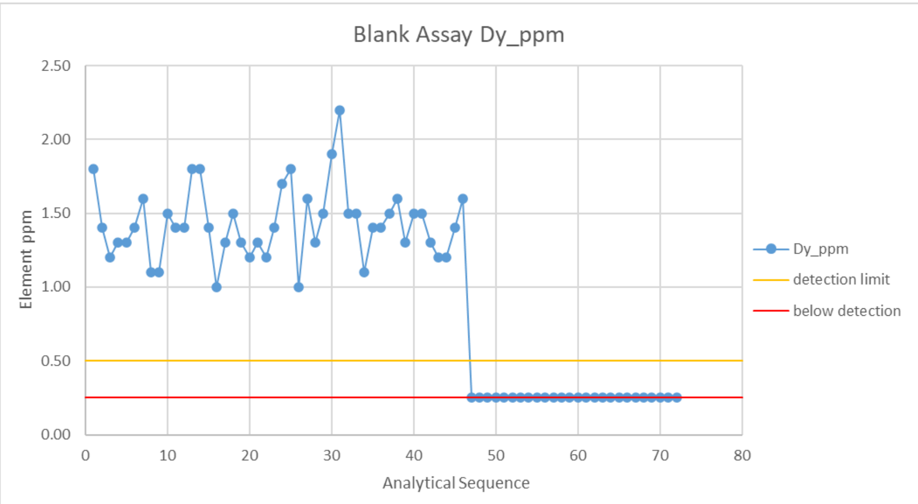
Table 18: Stage 2 blank quartz flush assays split between dirty arkosic Au flushes and clean quartz flushes, with graph matrix.

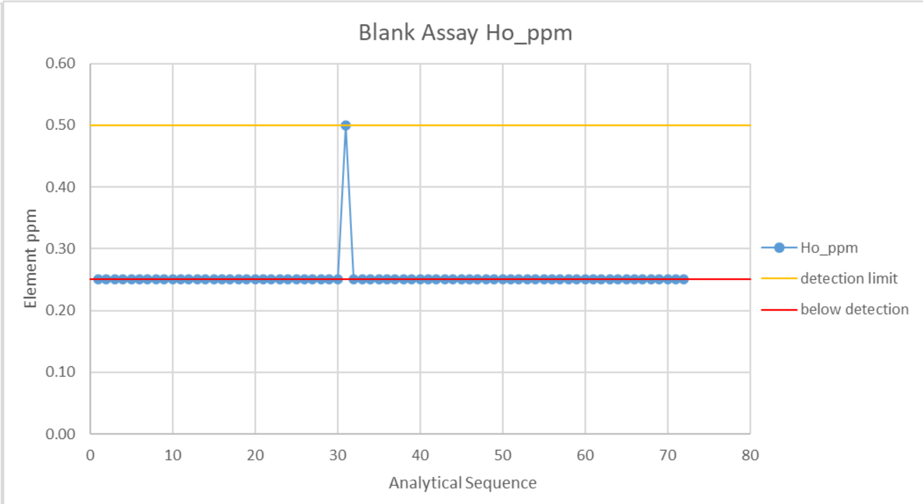
	Element	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U	Hf	Zr	Nb	Ti
Sample Data	**Data Set Mean**	**14.3**	**23.1**	**70.7**	**141.3**	**16.4**	**58.4**	**10.3**	**1.3**	**6.8**	**0.8**	**4.7**	**0.9**	**2.4**	**0.4**	**2.4**	**0.3**	**29.3**	**1.8**	**8.5**	**316.5**	**14.1**	**3703.4**
	Data Set Min	0.5	0.3	0.3	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	10.6	1.0	38.0
	Data Set Max	89.0	118.3	605.7	1159.0	120.8	408.0	67.2	4.1	34.1	4.2	20.6	4.2	15.4	2.8	22.1	3.9	324.4	12.7	756.8	28099.4	164.0	29288.0
	Detection Limit	1.0	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	10.0
Dirty Arkose	**Blank Mean**	**8.2**	**10.4**	**26.9**	**43.9**	**4.4**	**11.8**	**2.3**	**0.9**	**1.8**	**2.3**	**1.6**	**1.3**	**1.0**	**34.8**	**1.7**	**8.5**	**10.9**	**3.1**	**3.1**	**86.4**	**8.8**	**582.6**
	Blank Max	9.0	11.6	33.3	55.5	6.8	22.0	3.5	0.9	2.8	0.3	2.2	0.5	1.4	0.3	1.4	0.3	20.8	3.5	4.6	191.0	137.0	4238.0
	Blank Min	2.0	6.2	10.7	19.6	2.2	7.0	1.3	0.3	0.9	0.3	1.0	0.3	0.6	0.3	0.7	0.3	9.2	0.6	1.7	61.2	1.0	223.0
	Blank Range	7.0	5.4	22.6	35.9	4.6	15.0	2.2	0.7	1.9	0.0	1.2	0.3	0.8	0.0	0.7	0.0	11.6	2.9	2.9	129.8	136.0	4015.0
	Blank Sd	1.2	1.1	4.1	7.8	0.8	3.0	0.5	0.1	0.3	0.0	0.2	0.0	0.2	0.0	0.2	0.0	1.9	0.4	0.7	24.3	20.3	465.5
Clean Quartz	**Blank Mean**	**0.5**	**1.3**	**1.9**	**3.1**	**0.3**	**1.1**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**3.9**	**2.2**	**5.0**
	Blank Max	0.5	1.7	5.9	8.0	0.9	3.0	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	9.7	8.0	5.0
	Blank Min	0.5	1.0	1.3	2.2	0.3	1.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	1.0	5.0
	Blank Range	0.0	0.7	4.6	5.8	0.7	2.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	7.0	0.0
	Blank Sd	0.0	0.2	0.9	1.1	0.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	1.4	0.0

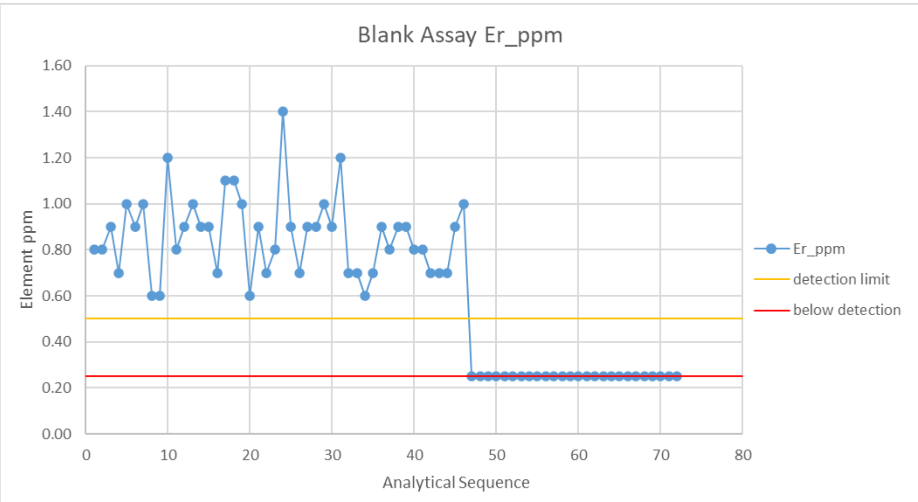


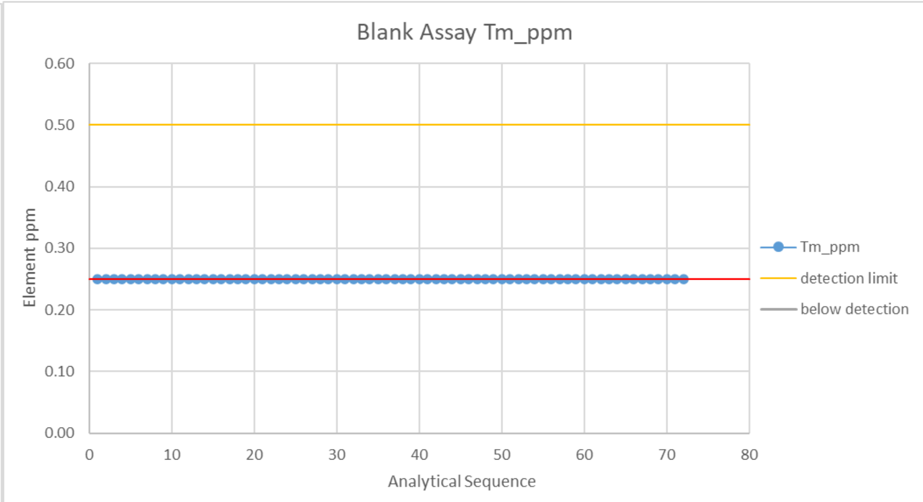

Blank Assay Gd_ppm
Element ppm
Analytical Sequence
Gd_ppm
detection limit
below detection

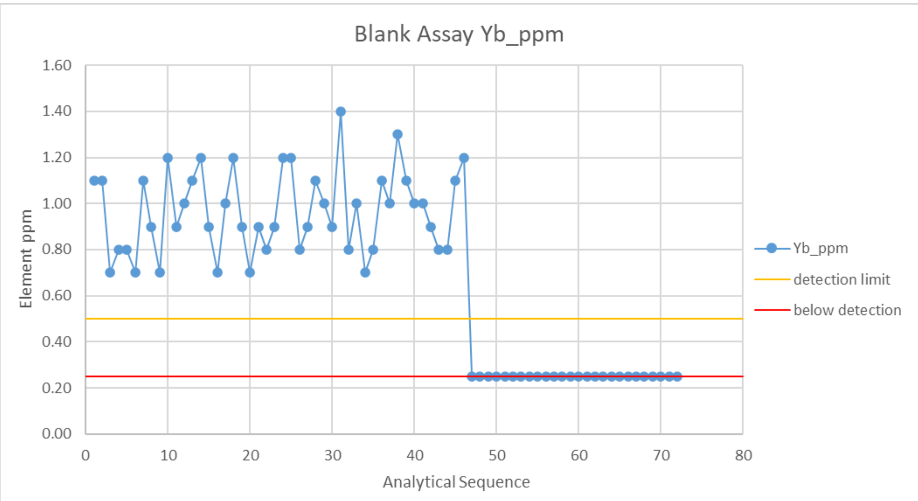

Blank Assay Tb_ppm
Element ppm
Analytical Sequence
Tb_ppm
detection limit
below detection

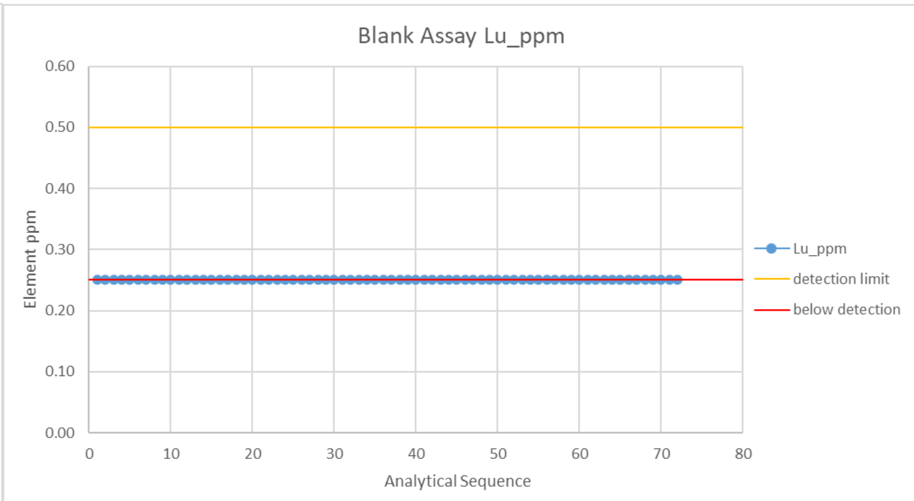

Blank Assay Dy_ppm
Element ppm
Analytical Sequence
Dy_ppm
detection limit
below detection

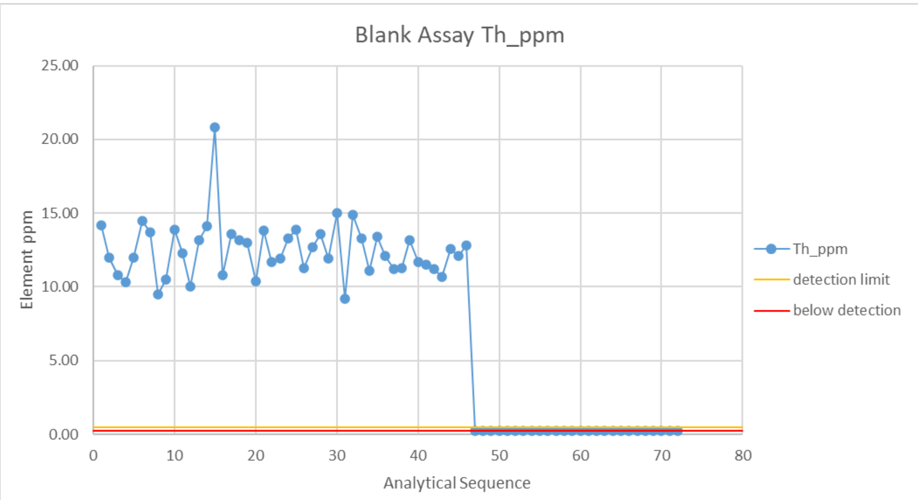

Blank Assay Ho_ppm
Element ppm
Analytical Sequence
Ho_ppm
detection limit
below detection

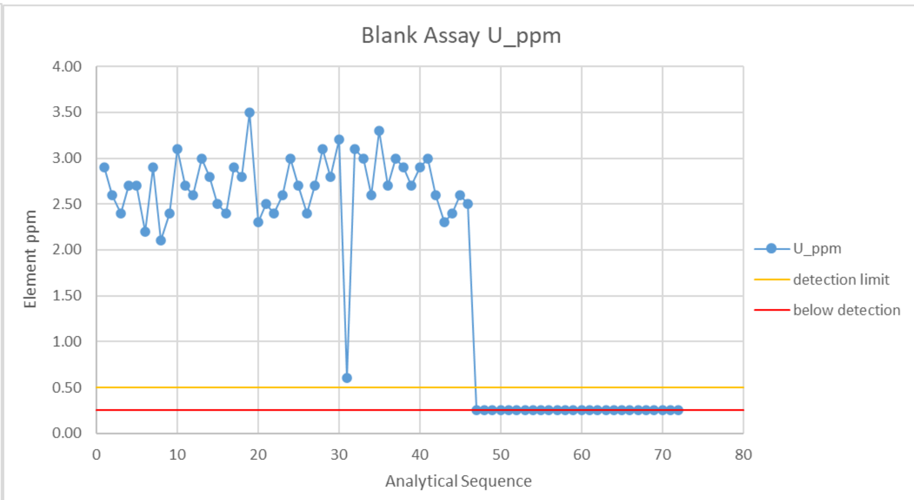

Blank Assay Er_ppm
Element ppm
Analytical Sequence
Er_ppm
detection limit
below detection

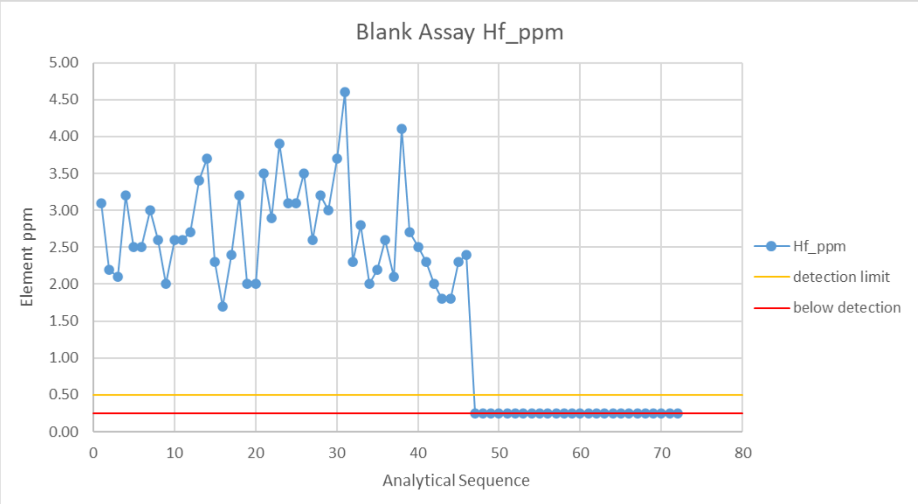

Blank Assay Tm_ppm
Element ppm
Analytical Sequence
Tm_ppm
detection limit
below detection

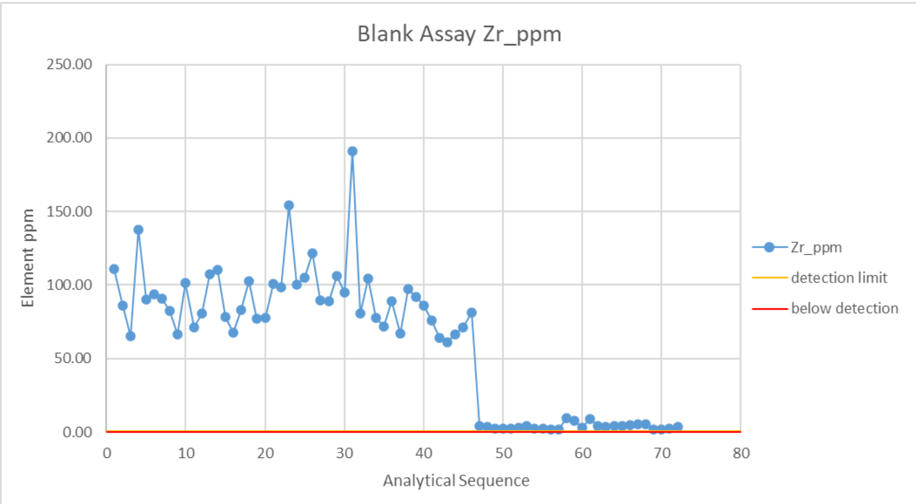

Blank Assay Yb_ppm
Element ppm
Analytical Sequence
Yb_ppm
detection limit
below detection

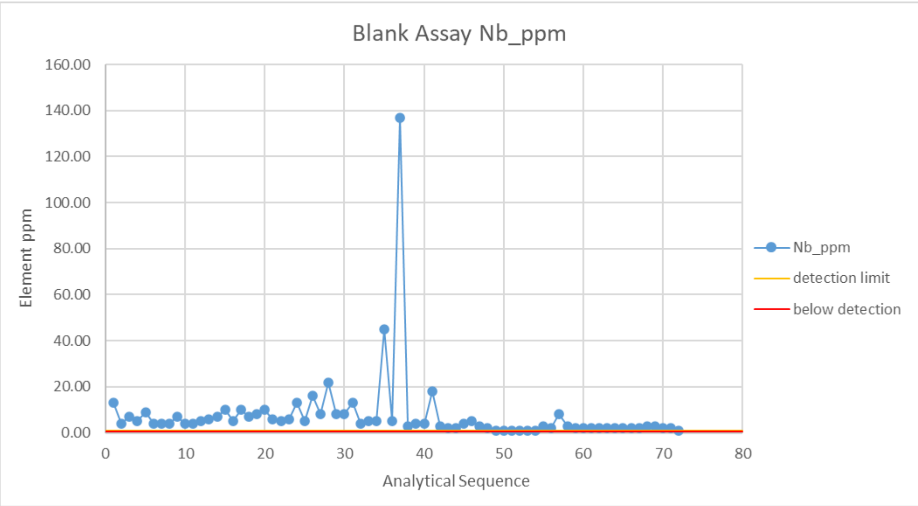

Blank Assay Lu_ppm
Element ppm
Analytical Sequence
Lu_ppm
detection limit
below detection

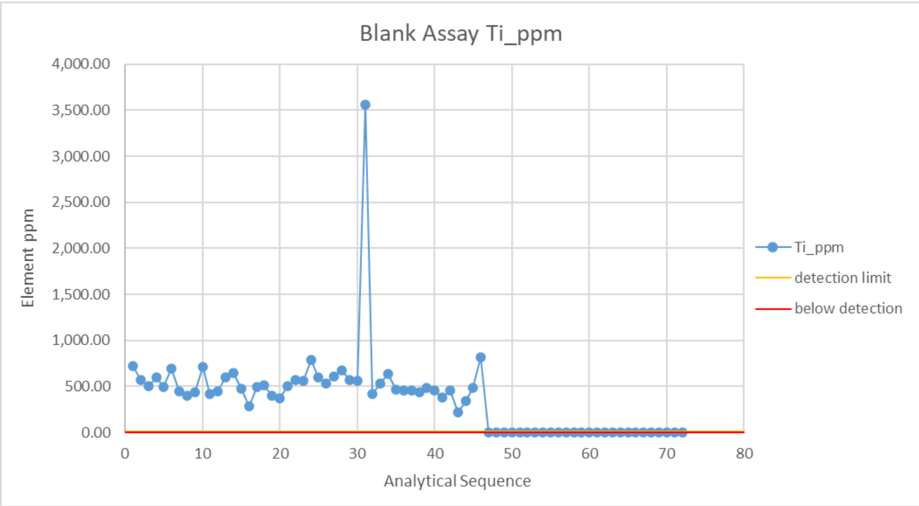

Blank Assay Th_ppm
Element ppm
Analytical Sequence
Th_ppm
detection limit
below detection


Blank Assay U_ppm
Element ppm
Analytical Sequence
U_ppm
detection limit
below detection


Blank Assay Hf_ppm
Element ppm
Analytical Sequence
Hf_ppm
detection limit
below detection


Blank Assay Zr_ppm
Element ppm
Analytical Sequence
Zr_ppm
detection limit
below detection

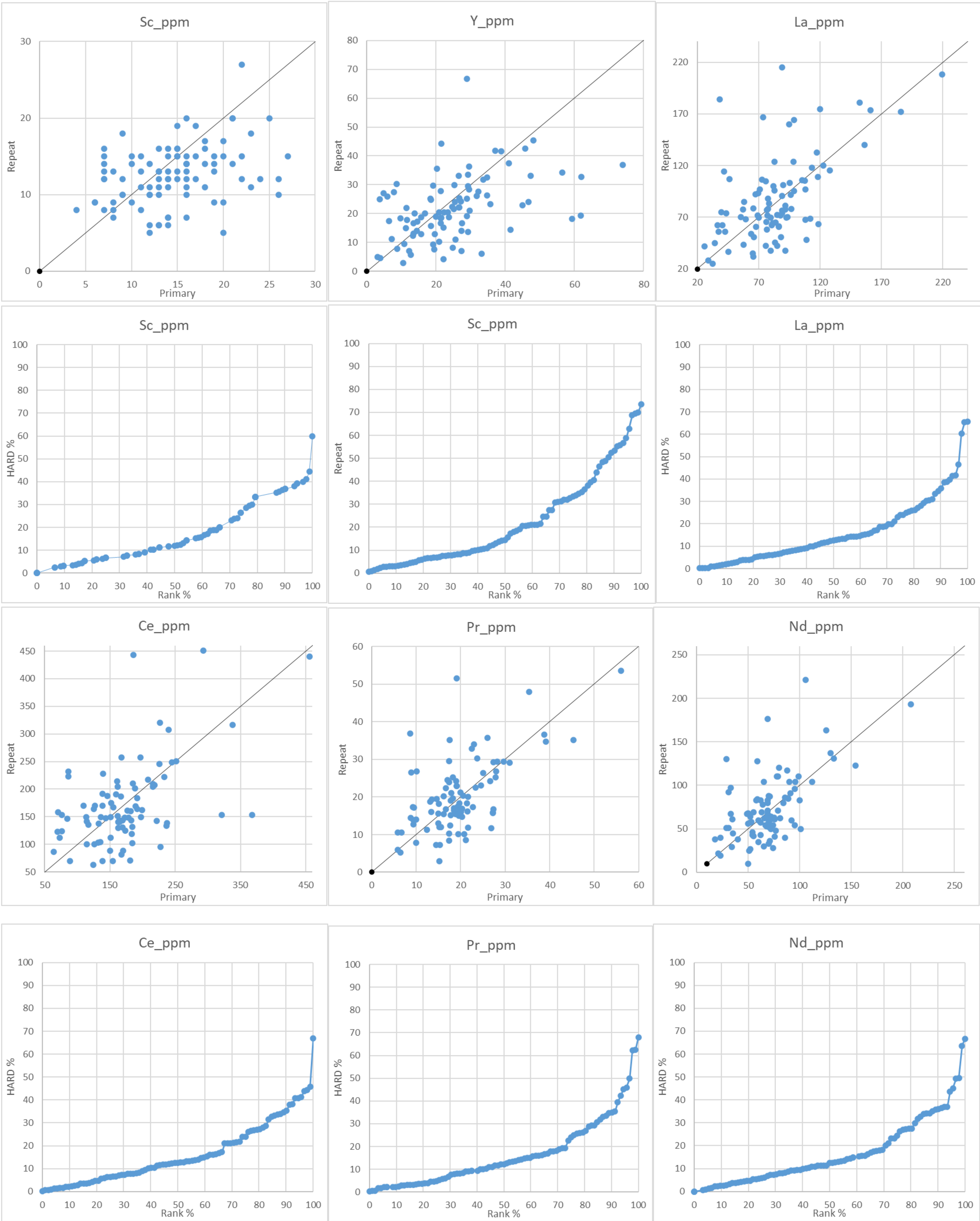

Blank Assay Nb_ppm
Element ppm
Analytical Sequence
Nb_ppm
detection limit
below detection

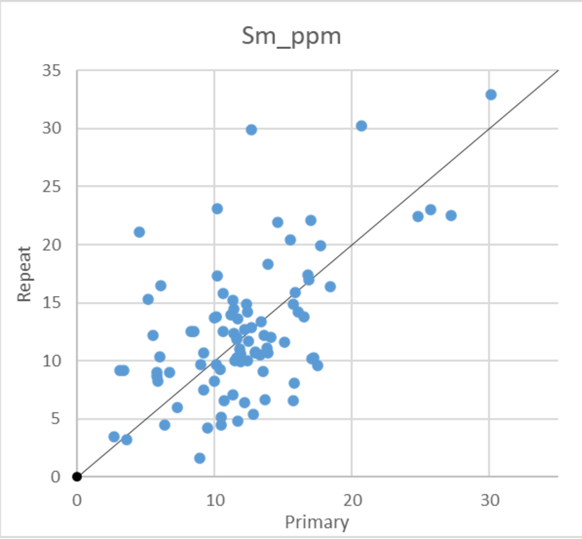

Blank Assay Ti_ppm
Element ppm
Analytical Sequence
Ti_ppm
detection limit
below detection

Twin Hole Tables and Graphs

Table 19: Nine twin hole assay pair statistics & graph matrix showing repeat assay scatter plots and HARD plots.

Element ppm	Sc	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	Zr	Hf	Nb	Ti
Pair Assay Count	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93
Count >= detection limit	**93**	**93**	**93**	**93**	**93**	**93**	**93**	**93**	**82**	**93**	**79**	**90**	**24**	**87**	**19**	**93**	**93**	**91**	**93**	**93**	**93**	**92**
Detection limit ppm	**1**	**0.5**	**0.5**	**0.5**	**1**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1**	**10**
Mean assay	14.6	83.1	168.4	19.5	69.7	12.1	1.4	8.1	0.9	4.9	0.9	2.5	0.4	2.2	0.3	25.5	36.0	2.0	304.5	9.1	14.5	4112.4
90th percentile HARD%	**36.8**	**35.9**	**35.3**	**34.9**	**35.9**	**40.7**	**20.0**	**42.9**	**56.5**	**52.9**	**54.8**	**53.3**	**41.2**	**60.0**	**41.2**	**53.3**	**39.9**	**47.4**	**31.9**	**38.5**	**44.4**	**56.4**
Samp% within 1s	73.1	65.6	69.9	66.7	64.5	66.7	68.8	69.9	73.1	73.1	74.2	69.9	90.3	74.2	89.2	78.5	65.6	62.4	77.4	76.3	64.5	100
Samp% within 2s	**98.9**	**87.1**	**91.4**	**92.5**	**90.3**	**89.2**	**88.2**	**92.5**	**95.7**	**95.7**	**98.9**	**97.8**	**98.9**	**98.9**	**96.8**	**98.9**	**93.5**	**92.5**	**93.5**	**93.5**	**94.6**	**100**
Samp% within 3s	100	94.6	95.7	95.7	95.7	95.7	92.5	96.8	98.9	98.9	98.9	98.9	100	100	98.9	100	96.8	96.8	95.7	96.8	97.8	100
Samp% outside 3s	0	5.4	4.3	4.3	4.3	4.3	7.5	3.2	1.1	1.1	1.1	1.1	0	0	1.1	0	3.2	3.2	4.3	3.2	2.2	0

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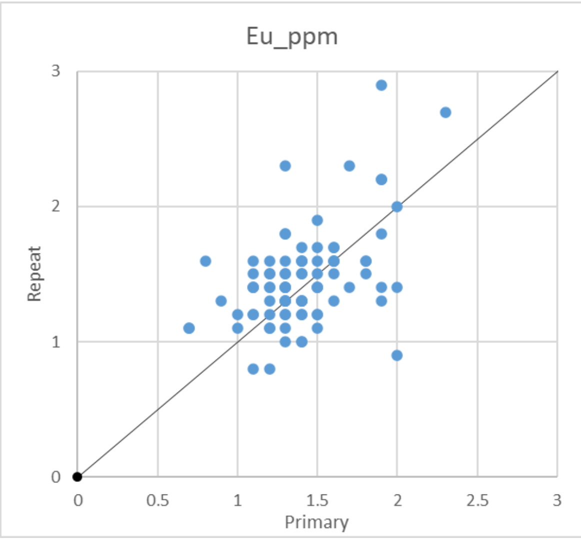
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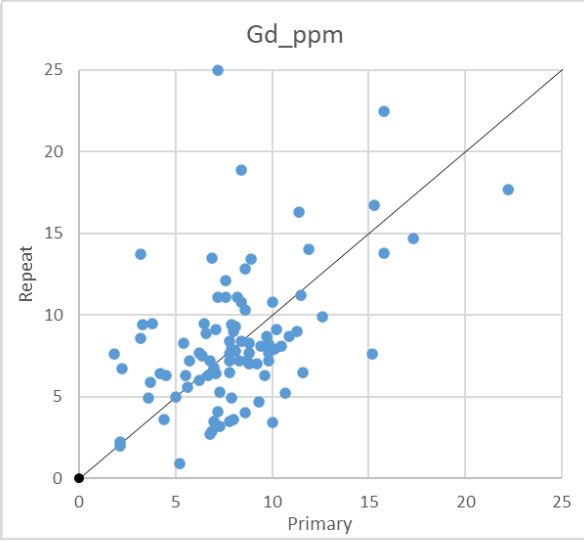
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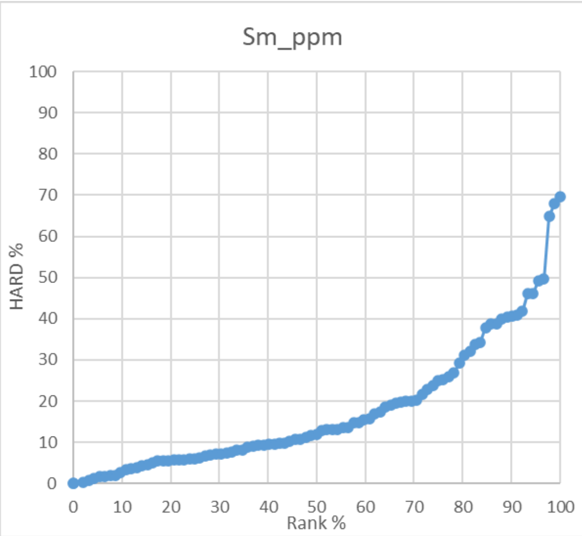
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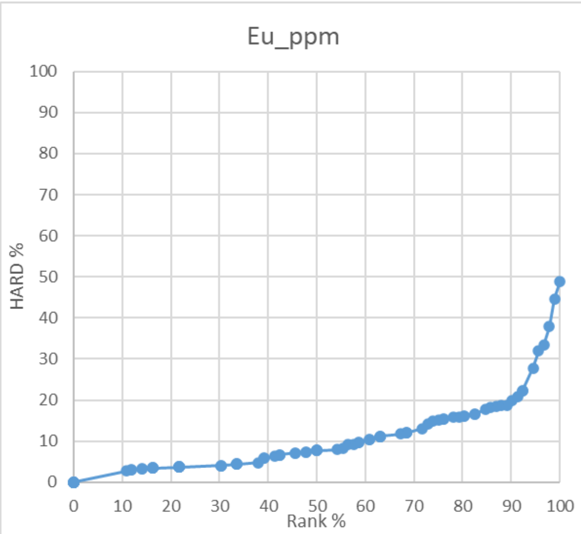
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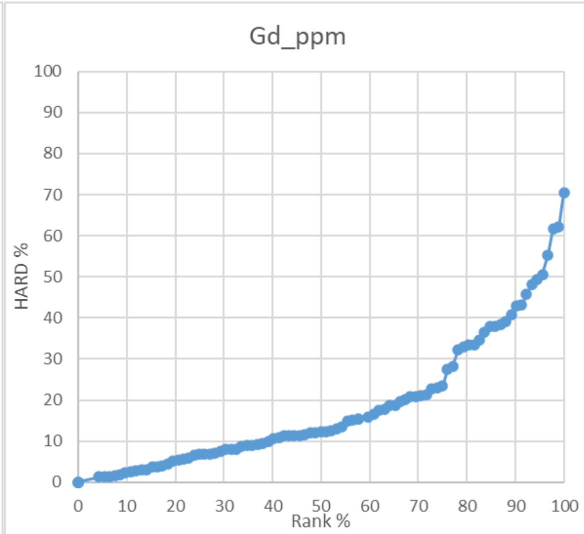
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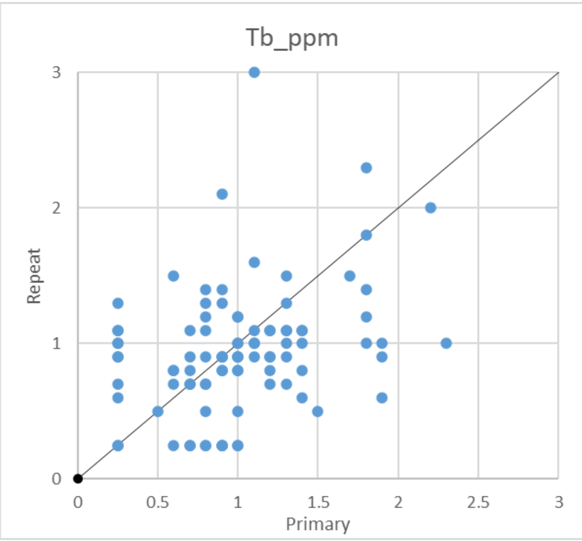
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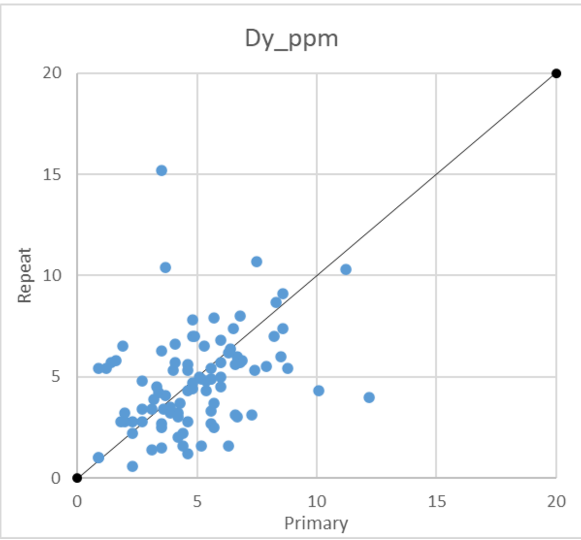
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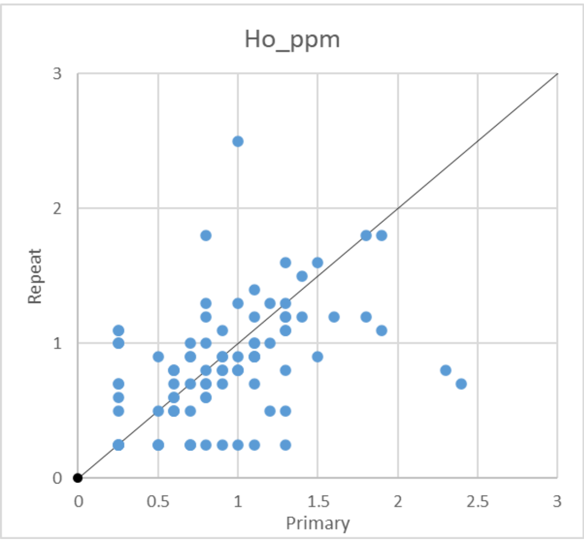
Ho_ppm
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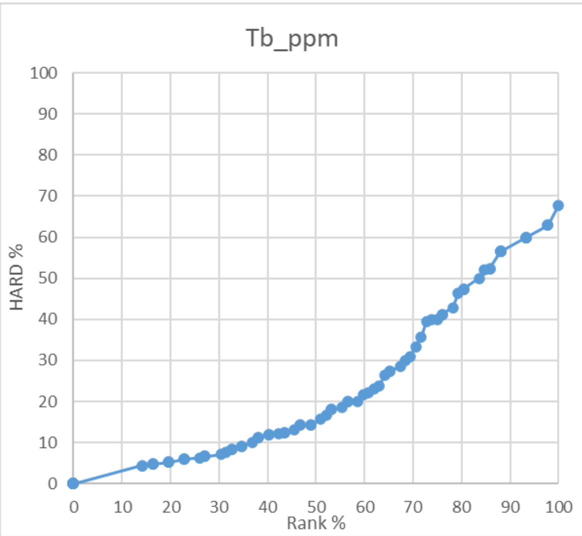
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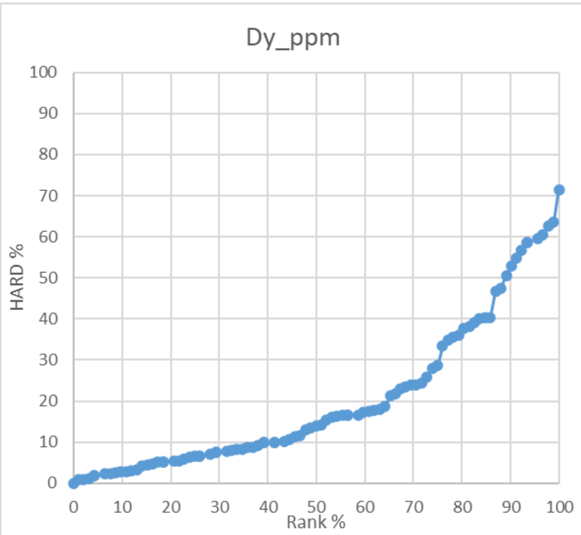
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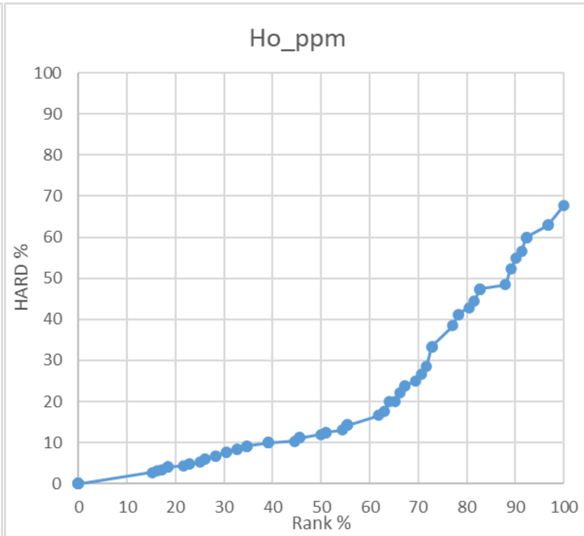
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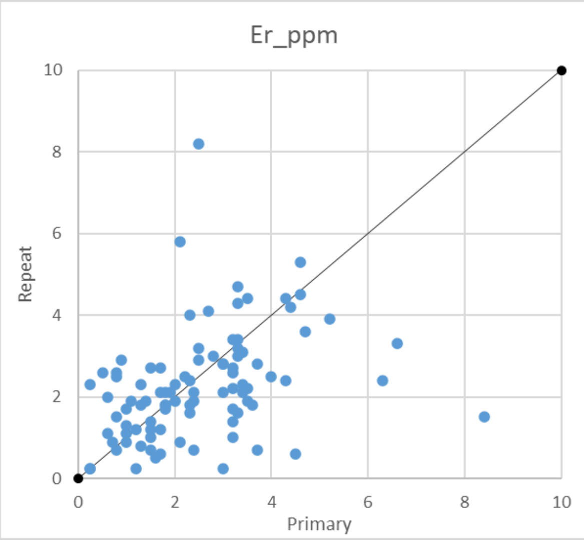
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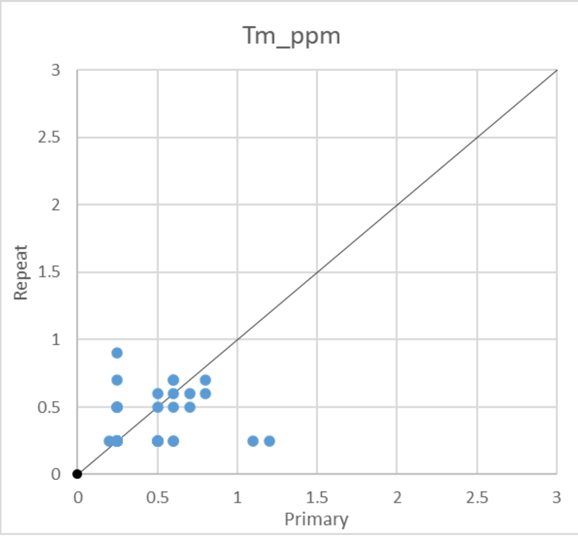
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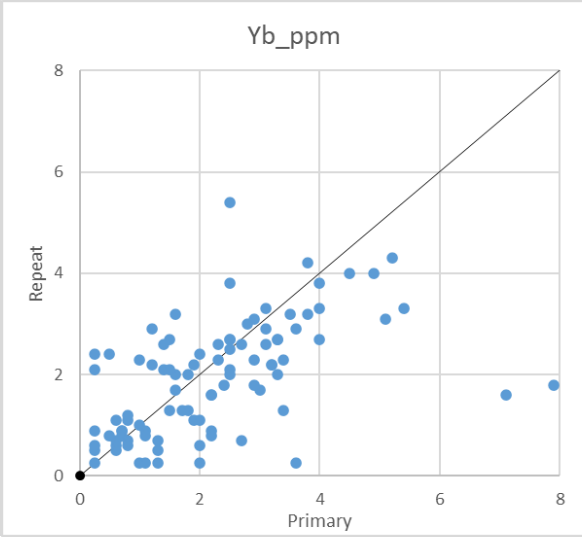
Yb_ppm
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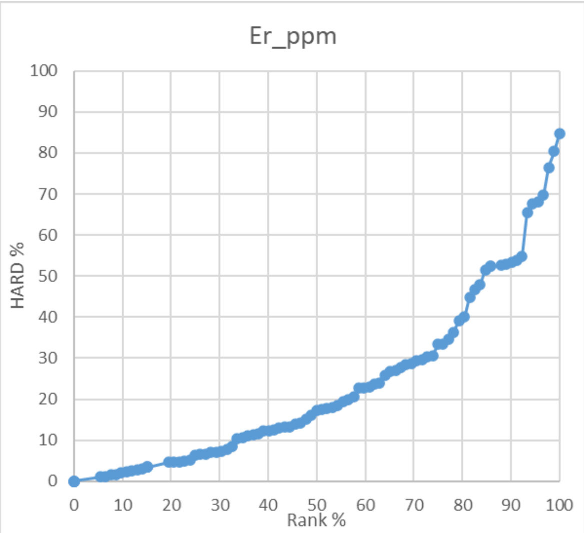
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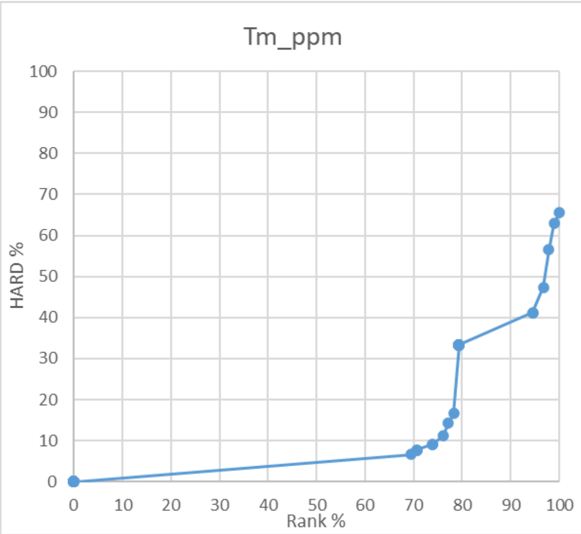
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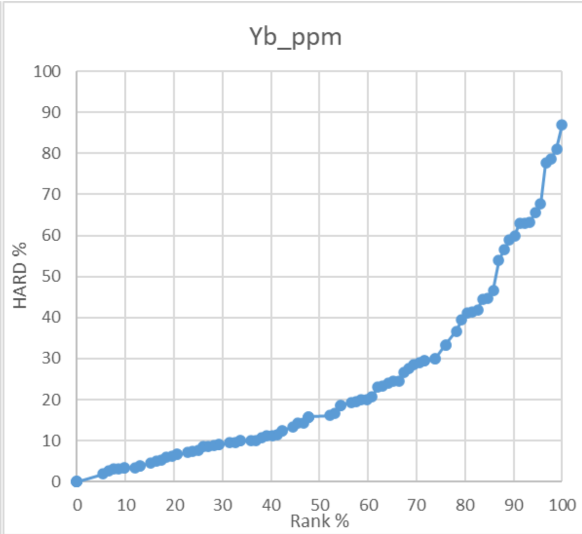
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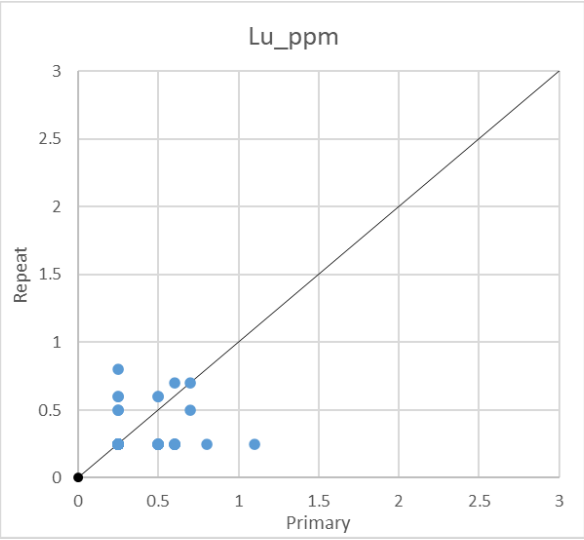
Lu_ppm
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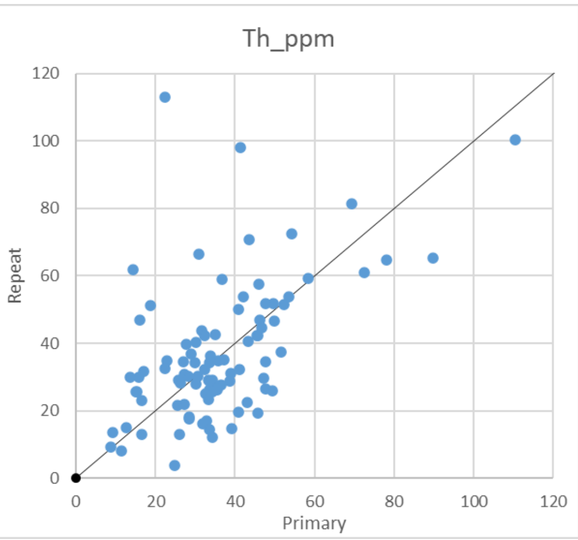
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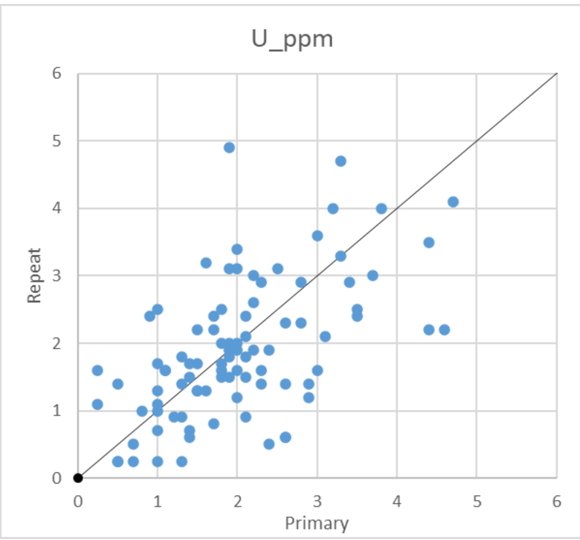
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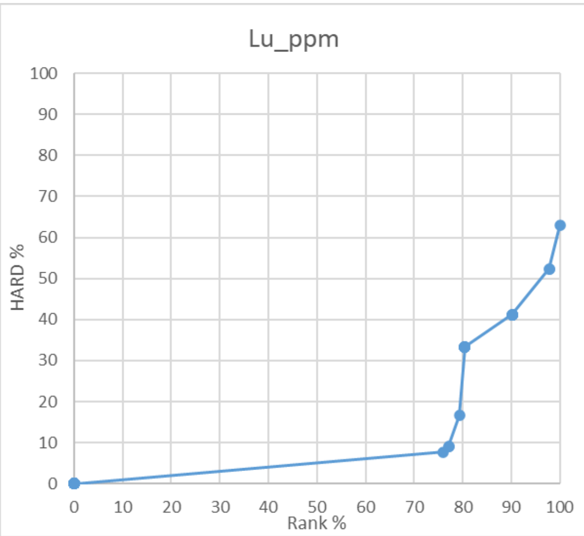
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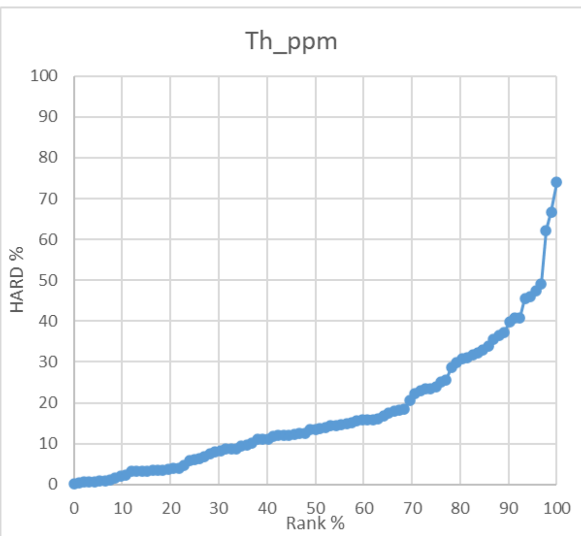
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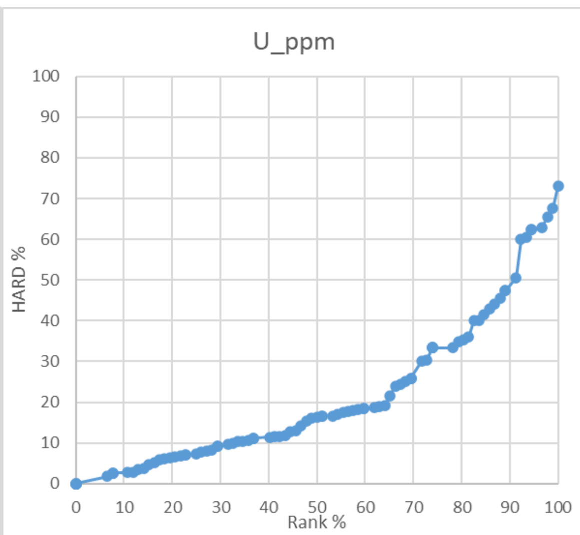
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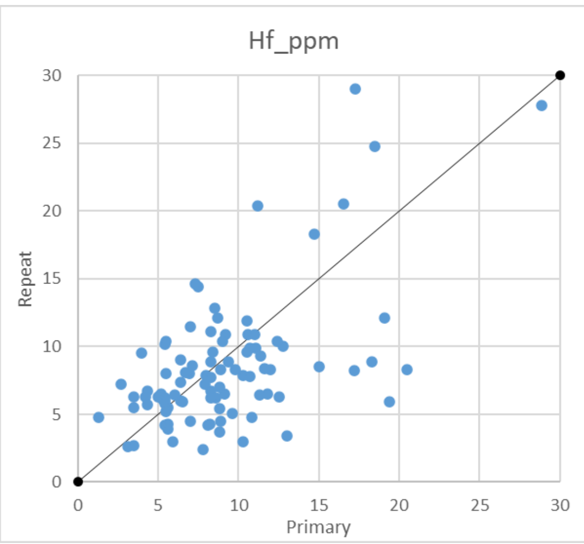
Hf_ppm
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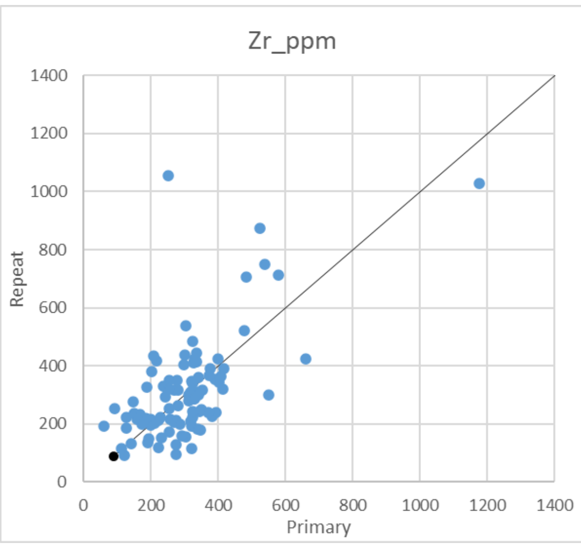
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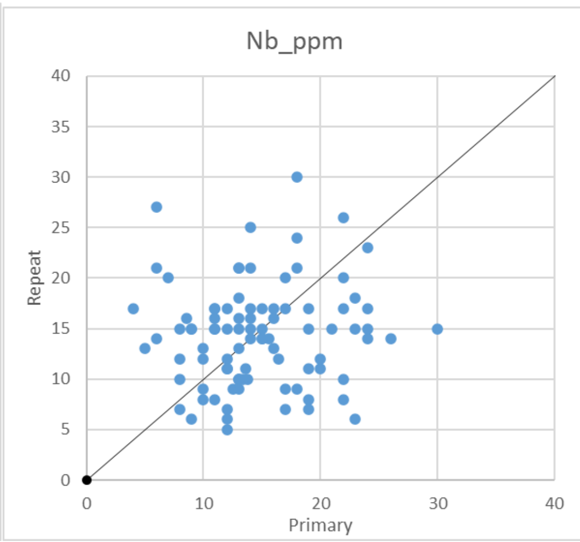
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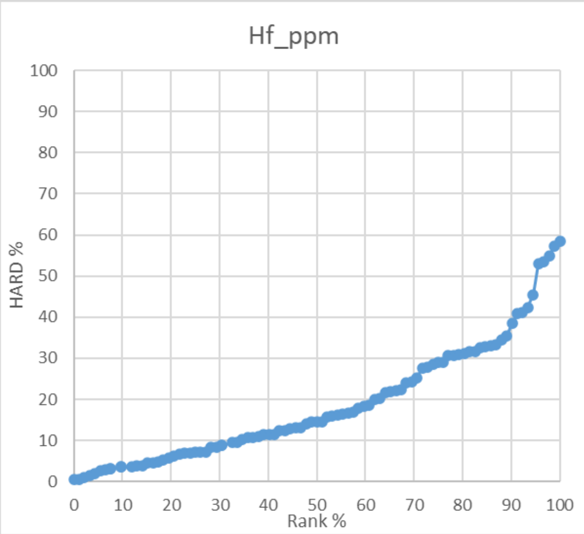
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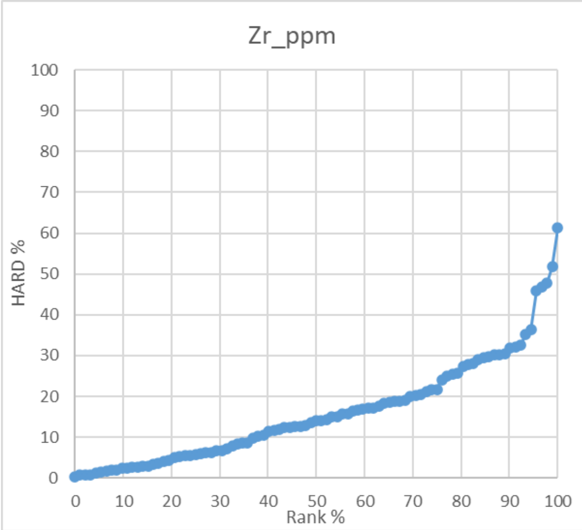
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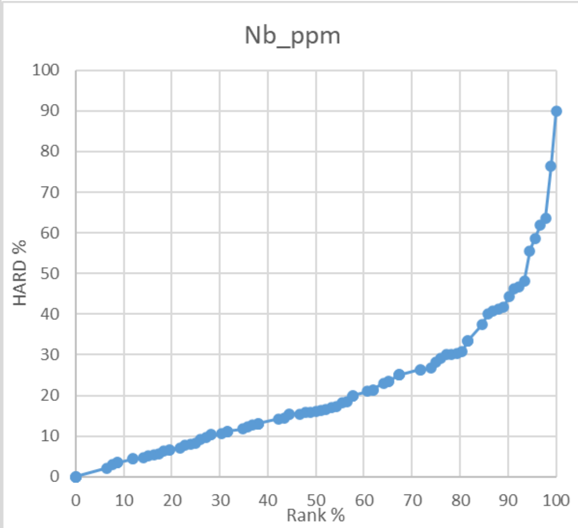
Nb_ppm
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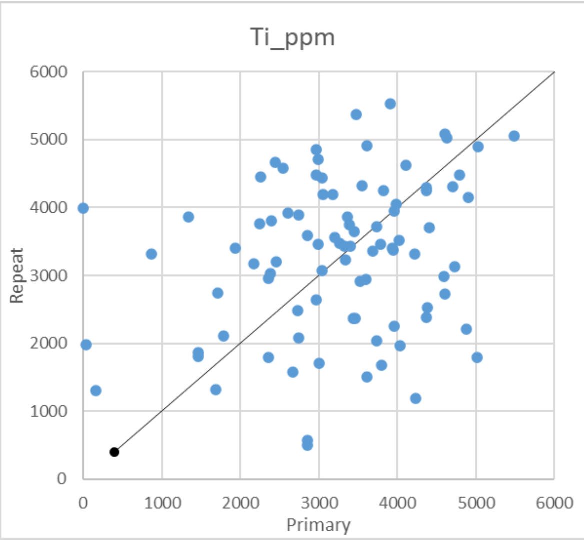
Ti_ppm
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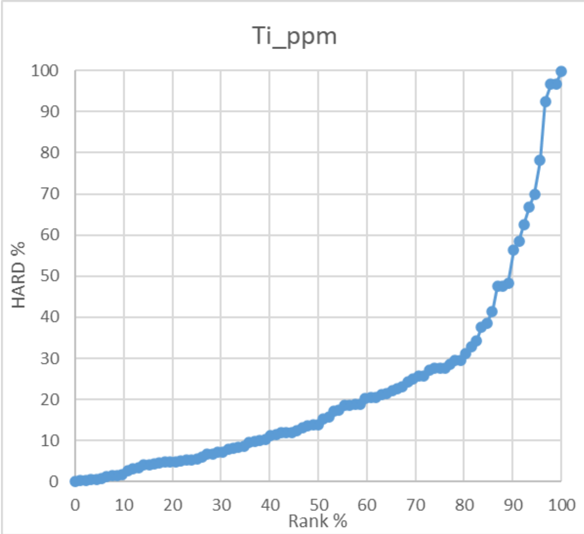

Ti_ppm
HARD %
Rank %

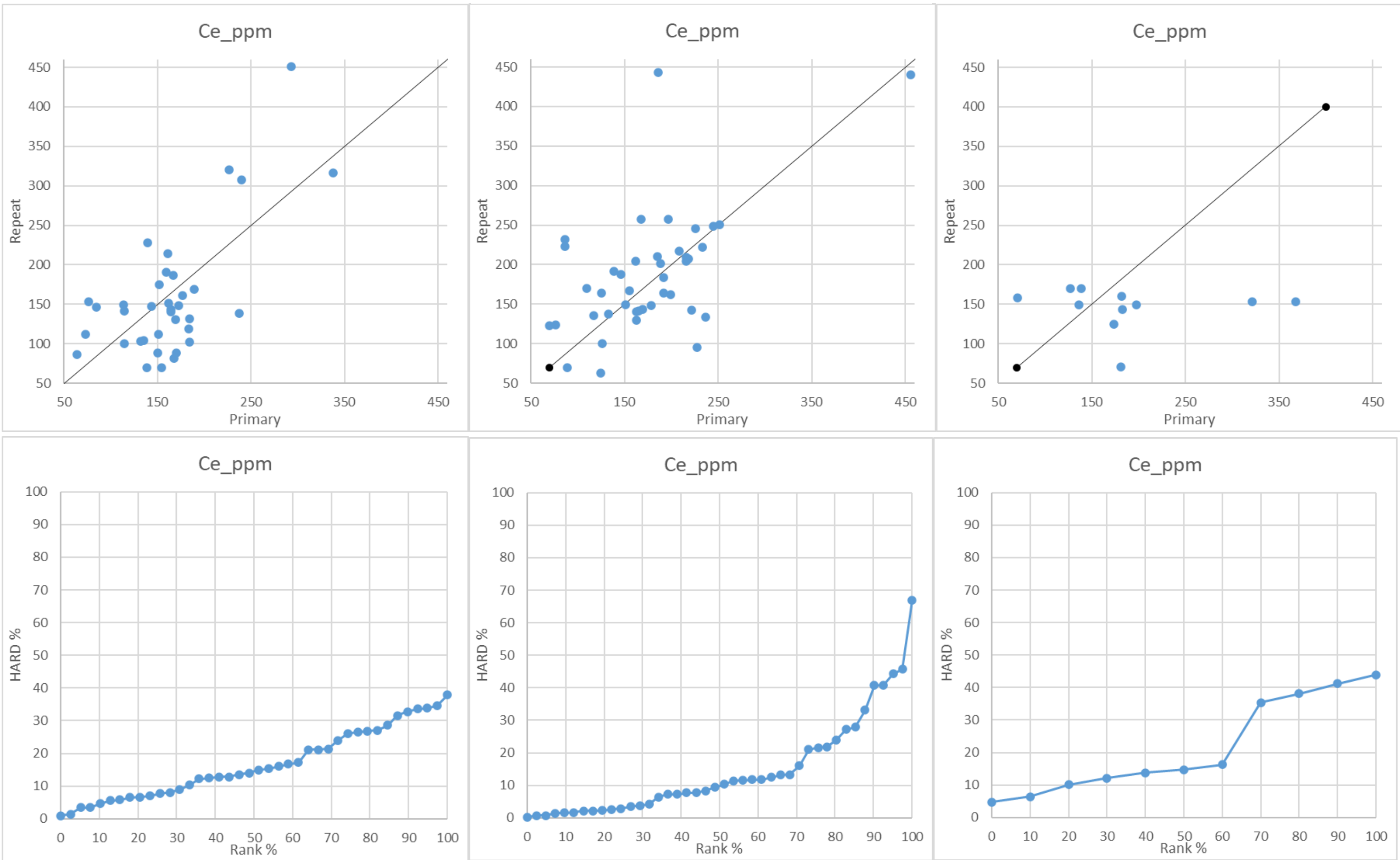
Table 20: Twin comparison, Stage 2 vs Stage 1, Stage 2 vs Stage 2, Stage 1 vs Stage 1 and all twins, in the element Ce.

	S1 vs S2	S2 vs S2	S1 vs S1	All vs All
Element ppm	**Ce**	**Ce**	**Ce**	**Ce**
Pair Assay Count	40	42	11	93
Count >= detection limit	**40**	**42**	**11**	**93**
Detection limit ppm	**0.5**	**0.5**	**0.5**	**0.5**
Mean assay	156.7	174.3	188.9	168.4
90th percentile HARD%	**32.7**	**40.8**	**41.2**	**35.3**
Samp% within 1s	62.5	71.4	90.9	69.9
Samp% within 2s	**87.5**	**92.9**	**100**	**91.4**
Samp% within 3s	95	95.2	100	95.7
Samp% outside 3s	5	4.8	0	4.3

Ce Stage 2 twins vs Stage 1 primary holes

Ce Stage 2 twins vs Stage 2 primary holes

Ce Stage 1 twins vs Stage 1 primary holes



Appendix C: JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed*	Ark Mines May to June 2023 Sandy Mitchell programme sampling techniques: • Samples are rock chips and accompanying bulk fines collected on 1m intervals by air core drill using 100mm bit. • Sample was passed through an 82.5: 12.5 riffle splitter to yield a representative aliquot of approx. 1.5 kg collected in prenumbered calico bag, and a remainder retained in a numbered plastic bag, with recoveries volumetrically estimated with periodic checks by mass using digital scale, compared against laboratory loose bulk density measurements. • Historic works by SGS (SGS Oretest Job No: S0580, 2010 for JOGMEC) shows mineralisation to have grainsize < = 125µm (very fine sand) and thus the sample mass is adequate for representivity. • Sample for total digest assay was sent to North Australian Laboratories for Assay. • Sample for pan concentration was sub-sampled by spade channel through the remainder sample to a mass of approx. 1kg per metre as determined by digital scales. These were then panned to a concentrate and the subsequent concentrates composited per hole. • Pan Con composite samples were sent to IHC Mining where samples were screened to -1mm, heavy minerals were further separated by heavy liquid separation with yields weighed at each stage. • The final heavy mineral concentrate was subject to Portable XRF analysis for a limited indicative assay. • Samples for preliminary metallurgical testing were sent to Downer Mineral Technologies and comprised the entire bulk metre remainder after riffle splitting the representative aliquot and removal of the 1kg pan concentrate aliquot. Ark Mines November to December 2023 Sandy Mitchell programme sampling techniques: • All sampling methodologies were as per the June programme, but the air core bit was exchanged for a reverse circulation face hammer to complete the end of hole, at the same diameter. • The bedrock horizon was determined by geological chip logging supported by driller's run sheet records of penetration. Ark Mines December 2023 Sandy Mitchell auger programme: • All sampling methodologies were as per the June

Criteria	JORC Code explanation	Commentary
	information.	programme, but the drilling was via 100mm auger using 105mm bit sampled on 1m intervals. • Bedrock was not intersected and depth was constrained by penetration. • No concentrate or metallurgical samples were produced
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Ark Mines May to June 2023 Sandy Mitchell programme: • Drill was by Comacchio track mounted air core rig using 100mm air core bit. • All holes were vertical and drilled to refusal or 17.5m, whichever came first. Ark Mines November to December 2023 Sandy Mitchell programme: • Drill was by AusRoc 4000 multi-purpose rig using 100mm and changing to slim line 100mm RC face hammer at depth. • All holes were vertical and drilled to complete the final metre in bedrock. Ark Mines November to December 2023 Sandy Mitchell auger programme sampling techniques: • Drilling was by Rockmaster utility mounted auger using 100mm flights and 105mm bit. • All holes were vertical and drilled to refusal whilst still in sands.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Recoveries were assessed by volumetric estimation by the metre based on total sample weights using a digital scale with comparison made via laboratory loose bulk density measurements. • Sample was passed through a cyclone with a gated chute to allow fines to fall out of the air stream. The chute was kept closed until the end of each metre had been drilled, then opened to collect sample, and closed prior to recommencement of drilling. • No relationship between recovery and grade has been identified. Ark Mines November to December 2023 Sandy Mitchell auger programme sampling techniques: • Recoveries were not estimated and the samples wit potential contamination by outside return, are treated as soils.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Sample was logged by the metre for all drilling, by the site geology team for both qualitative and quantitative criteria. • Drill logs for 100% of drilling are available with overall length of 3914.2m.

Criteria	JORC Code explanation	Commentary
	studies and metallurgical studies. • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Logging is sufficient to support resource estimation, mining and metallurgical studies. Ark Mines November to December 2023 Sandy Mitchell programme sampling techniques: • Sample was logged by the metre for basic qualitative criteria only.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Ark Mines May to June 2023 Sandy Mitchell programme: • All sample passed through the drill cyclone dry. • Sub-sampling for laboratory assay was by 87.5:12.5 riffle splitter: the bulk sample was passed evenly through the riffles with the assay aliquot collected in a pre-numbered calico bag, and the reject collected in a numbered plastic bag. • Field duplicates were taken at 1:40 by 50:50 riffle splitter. • Historic works by SGS (SGS Oretest Job No: S0580, 2010 for JOGMEC) shows mineralisation to have grainsize < 125µm (very fine sand) and thus the sample mass is representative. • Sample for pan concentration was sub-sampled by spade channel through the reject to a mass of approx. 1kg per metre as determined by digital scales. • Sample for preliminary metallurgical testing was selected from the 11m twinned hole SMDH 00014b and comprised the entire 87.5% bulk metre sample after riffle splitting to yield the representative sample and removal of the 1kg pan concentrate aliquot. Ark Mines November to December 2023 Sandy Mitchell programme: • All sampling was conducted as per the June 2023 programme, but duplicates at 1 in 40 were taken by passing the total reject sample through an 87.5:12.5 riffle splitter in the same manner as the primary sample. Ark Mines November to December 2023 Sandy Mitchell auger programme sampling techniques: • Sample was funneled up by spiral flights through a closed steel collar tube, to a collector plate, then funneled through a chute to a plastic collection tub. • Sub-sampling for laboratory assay was by 87.5:12.5 riffle splitter: the bulk sample was passed evenly through the riffles with the assay aliquot collected in a pre-numbered calico bag, and the reject was allowed to spill. • but duplicates at 1 in 40 were taken by passing the total reject sample through an 87.5:12.5 riffle splitter in the same manner as the primary sample.

Criteria	JORC Code explanation	Commentary

Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*
	• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*
		Ark Mines May to June 2023 Sandy Mitchell programme:
		• Metre samples were sent to North Australian Laboratories (NAL) for total digest assay:
		• Samples were weighed then kiln dried and re-weighed.
		• 1 in 5 samples was tested for moisture content.
		• 1 in 3 samples was tested for dry loose bulk density.
		• Sample was then pulverization in an LM-5 to 94% passing 75 µm with assay aliquot selected by laboratory splitter.
		• Al, Ca, Cr, Fe, Mg, P, S, Si and Ti were assayed by sodium peroxide fusion in nickel crucibles with ICP-OES finish.
		• Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As were assayed by sodium peroxide fusion in nickel crucibles with ICP-MS finish.
		• Na and K were assayed by 4 acid digest with ICP-OES finish.
		• Field duplicates were taken at 1:40 by 50:50 riffle split of the assay aliquot.
		• For total digest samples:
		  ◦ Laboratory repeats were assayed at than 1 in 8.
		  ◦ Standard insertion was carried out by the laboratory at 1 in 24.
		  ◦ Assay of blank quartz flushes was carried out at 1 in 40.
		  ◦ Grind size testing was carried out at 1 in 34.
		• For pan concentrate samples
		  ◦ Laboratory repeats were requested at no less than 1 in 40.
		  ◦ Standard insertion was requested of the laboratory at no less than 1 in 40.
		  ◦ Assay of blank quartz flushes was requested at 1 in 40.
		• Total radiometric count was measured on all assay samples using a SAIC Exploranium GR-110G hand held scintillometer, hired from Terra Search Townsville, pre-calibrated.
		• Reading times were 10 second accumulations, which was the machine maximum, with 100x10 second background accumulations taken per day, per measuring station.
		• IHC Mining Laboratory procedures for pan concentrate composite samples was:
		  ◦ Creation of duplicates by split at a rate of 1 in 24
		  ◦ Screen to -1mm and weigh
		  ◦ Heavy liquid separation and weigh
		  ◦ Pulverization of the heavy mineral fines by extended grind
		  ◦ Portable XRF analysis of the pulp
		• QAQC implemented is believed sufficient to establish accuracy and precision with any batches showing QAQC anomalies retested by batch.

Criteria	JORC Code explanation	Commentary

		• Mineral Technologies preliminary met' samples were processed at bench scale by:
		  • 55.2kg of individual samples were combined by rotary homogenisation then split to yield a representative aliquot of 38.3 kg for process testing.
		  • The composite sample was screened to 2000 µm, 500 µm and wet screened at 20 µm with the 500 to 20 µm fraction then passed through 2 stages of gravity separation using Wilfley table (rougher stage).
		  • The Wilfley concentrate was passed through a bromoform heavy liquid separation flask (cleaner stage).
		  • The HLS sinks were attrition cleaned for 5 minutes at a 65% wet weight density and deslimed, then passed through a Geoteknica FM3 froth floatation cell using starch depressant and sodium silicate surfactant.
		  • Both sinks and floats were separately processed through a dry induced Reading magnetic separator.
		  • This yielded 4 final streams of mag and non-mag floats (containing the bulk of REE) and mag and non-mag sinks, containing the bulk of zircon, as well as various tails from each previous stage.
		  • Percentages of material passing or rejecting at each stage were determined by mass.
		  • The float magnetic fraction was further refined by semi-lift magnetic separator to determine feasibility of individual mineral species separation, but the yields of this process were not assayed due to volumetric limits from this round of processing.
		• Mineral Technologies sent samples of the tails and product concentrates, excluding SLM stage products, to Bureau Veritas Brisbane for assay:
		  • Samples were dried and pulverised using tungsten carbide bowls in a vibrating pulveriser to 90% passing 75 µm with a BQF before each sample.
		  • Sample was fused to a glass bead to determine Fe, Si, Al, Cr, Mg, Mn, P, U, Th, V, Nb, S, Ca, K, Ce, Sn, Ti, and Zr oxides by XRF.
		  • LOI was determined by mass after heating to 105°C (drying temp) and 1000°C (fusing temp).
		  • Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Tm, Y and Yb were determined by laser ablation of fused bead with ICP-MS finish.
		  • Standards were assayed at 1 in 3 to cover all elements in the suite for both assay methods.
		  • Laboratory repeats were carried out at 1 in 4.

Criteria	JORC Code explanation	Commentary

		Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme:
		• Metre samples were sent to North Australian Laboratories (NAL) for total digest assay:
		• Samples were weighed then kiln dried and re-weighed.
		• 1 in 10 samples was tested for moisture content.
		• 1 in 10 samples was tested for LOI.
		• 1 in 3 samples was tested for dry loose bulk density.
		• Sample was then pulverization in an LM-5 to 94% passing 75 µm with assay aliquot selected by laboratory splitter.
		• Al, Ca, Cr, Fe, Mg, P, S, Si and Ti were assayed by sodium peroxide fusion in nickel crucibles with ICP-OES finish.
		• Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As were assayed by sodium peroxide fusion in nickel crucibles with ICP-MS finish.
		• Na and K were assayed by 4 acid digest with ICP-OES finish.
		• Field duplicates were taken at 1:40 by 87.5:12.5 riffle split of the bulk reject.
		• For total digest samples:
		    • Laboratory repeats were requested at no less than 1 in 40 but carried out by the laboratory at 1 in 8.
		    • Standard insertion was carried out by the laboratory at 1 in 24.
		    • Assay of blank quartz flushes was requested at 1 in 40.
		    • Grind size testing was carries out at 1 in 34.
		• Total radiometric count, K%, U ppm and Th ppm was measured on all assay samples using an RSI RS-230 103 cm^3 bismuth germanate oxide crystal high sensitivity hand held spectrometer, purchased for the Project and, pre-calibrated.
		• Reading times were 30 second accumulations, with 20x30 second background accumulations taken per day, per measuring station, one set before and one set after measurement.
		
		Ark Mines December 2023 Sandy Mitchell auger programme sampling techniques:
		• Laboratory, analytical procedures, analytes and QC were identical to that described for the AC programme above .

Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme (including auger): • Significant intersections have not been separately determined or reported. • 11 twin holes have been drilled for a total of 104.85 twin metres Two of these twins are using power auger to twin air core, to support reconnaissance works.

Criteria	JORC Code explanation	Commentary

	holes.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*
	• *Discuss any adjustment to assay data.*
		• Data was entered into MS excel then verified against hard copy data, followed by import into Datamine Studio RM for validation.
		• Primary data is stored as hard copy, electronic tables in CSV format and Datamine format.
		• Assay data yielding elemental concentrations for rare earths (REE) within the sample are converted to their stoichiometric oxides (REO) in a calculation performed using the conversion factors in the table below.
		• Rare Earth oxide is the industry accepted form for reporting rare earths. The following calculations have been used for reporting:
		  ◦ **TREO** = La2O3 + Ce02 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Lu2O3+ Y2O3
		  ◦ **CREO** = Nd2O3 + Eu2O3 + Tb4O7 + Dy2O3 + Y2O3
		  ◦ **LREO** = La2O3 + Ce02 + Pr6O11
		  ◦ **HREO** = Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Lu2O3+ Y2O3
		  ◦ **MagREO =** Pr6O11 + Nd2O3 + Tb4O7 + Dy2O3
		  ◦ **Where stated as +Y and or +Sc,** the calculated values above have the addition of Y2O3 and or Sc2O3
		  ◦ ND/Pr = Nd2O3 + Pr6O11
		  ◦ TREO – Ce = TREO – CeO2
		  ◦ %NdPr + NdPr/TREO
		• Economic heavy minerals, monazite, xenotime, zircon, rutile, high titanium leucoxene, low titanium leucoxene, altered ilmenite and ilmenite are potentially marketable materials contained in the mineralisation as demonstrated by IHC pan concentrate work and Downer Mineral Technologies gravity concentration work and ALS QEM Scan work to date.
		• Assay data yielding elemental concentrations for rare earths (REE), Zr, Hf and Ti within the sample are converted to their stoichiometric heavy mineralogy in a calculation performed using the conversion factors in the table below. For elements that occur in more than one mineral, the proportions of occurrence in each were reported by ALS (ALS Mineralogy Report MIN 6943, 2024 for Mineral Technologies, commissioned by Ark Mines) and the assayed element is assigned by a percentage determined by these proportion, into the appropriate mineral species.
		• The following calculated mineralogy has been used for reporting:
		  ◦ **Monazite** = (0 / 100 * Sc) * 3.1125 + (31.68 / 100 * Y) * 2.0682 + (99.27 / 100 * La) * 1.6837 + (99.17 / 100 * Ce) * 1.6778 + (99.6 /100 * Pr) * 1.6740 + (98.74 / 100 * Nd) *

Criteria	JORC Code explanation	Commentary
		1.6584 + (96.75 / 100 * Sm) * 1.6316 + (90.99 / 100 * Eu) * 1.6250 + (87.96 / 100 * Gd) * 1.6039 + + (73.26 / 100 * Tb) * 1.5976 + (54.32 / 100 * Dy) * 1.5844 + (36.49 / 100 * Ho) * 1.5758 + (20.76 / 100 * Er) * 1.5678 + (9.84 / 100 * Tm) * 1.5622 + (5.27 / 100 * Yb) * 1.5488 + (3.10 / 100 * Lu) * 1.5428 + (64.20 / 100 * Pb) * 1.4583 + (98.98 / 100 * Th) * 1.4093 + (71.35 / 100 * U) * 1.3990 + (0.97 / 100 * Ca) * 3.3696 + (6.35 / 100 * Sr) * 2.0839 • **Xenotime** = (0.51 / 100 * Sc) * 3.1125 + (63.53 / 100 * Y) * 2.0682 + (0.01 / 100 * La) * 1.6837 + (0.04 / 100 * Ce) * 1.6778 + (0.11 /100 * Pr) * 1.6740 + (0.33 / 100 * Nd) * 1.6584 + (2.4 / 100 * Sm) * 1.6316 + (5.47 / 100 * Eu) * 1.6250 + (10.5 / 100 * Gd) * 1.6039 + (24.31 / 100 * Tb) * 1.5976 + (42.37 / 100 * Dy) * 1.5844 + (59.16 / 100 * Ho) * 1.5758 + (73.73 / 100 * Er) * 1.5678 + (83.07 / 100 * Tm) * 1.5622 + (85.42 / 100 * Yb) * 1.5488 + (85.38 / 100 * Lu) * 1.5428 + (0.19 / 100 * Pb) * 1.4583 + (0.62 / 100 * Th) * 1.4093 + (16.95 / 100 * U) * 1.3990 + (0 / 100 * Ca) * 3.3696 + (0.12 / 100 * Sr) * 2.0839 • **Zircon** = (100 / 100 * Hf) * 1.5159 + (100 / 100 * Zr) * 2.0094 • **Rutile** = (1.23 / 100 * Ti) * 1.6685 • **High Ti Leucoxene** = (3.03 / 100 * Ti) * 1.9507 • **Low Ti Leucoxene** = (1.84 / 100 * Ti) * 2.0448 • **Altered Ilmenite** = (2.20 / 100 * Ti) * 2.7805 • **Ilmenite** = (2.09 / 100 * Ti) * 3.1694 • Stoichiometric Oxide Table:

Oxides	Stoichiometry	Deportment %
Sc_2O_3	1.5338	0.51
TiO_2	1.6685	10.39
Y_2O_3	1.2699	95.21
ZrO_2	1.3508	100.00
HfO_2	1.1793	100.00
La_2O_3	1.1728	99.28
CeO_2	1.2284	99.21
Pr_6O_{11}	1.2082	99.71
Nd_2O_3	1.1664	99.07
Sm_2O_3	1.1596	99.15
Eu_2O_3	1.1579	96.46
Gd_2O_3	1.1526	98.46
Tb_4O_7	1.1762	97.57
Dy_2O_3	1.1477	96.69
Ho_2O_3	1.1455	95.65
Er_2O_3	1.1435	94.49
Tm_2O_3	1.1421	92.91
Yb_2O_3	1.1387	90.69
Lu_2O_3	1.1372	88.48
ThO_2	1.1379	99.60
U_3O_8	1.1792	88.30

• Stoichiometric Mineral Table:

Mineral	Formula	Element	Deportment%
Monazite	$Ca(PO_4)$	Ca	0.97
Xenotime	$Ca(PO_4)$	Ca	0.00
Monazite	$Sr(PO_4)$	Sr	6.35

Criteria	JORC Code explanation	Commentary

Xenotime	$Sr(PO_4)$	Sr	0.12
Monazite	$Sc(PO_4)$	Sc	0.00
Xenotime	$Sc(PO_4)$	Sc	0.51
Monazite	$Y(PO_4)$	Y	31.68
Xenotime	$Y(PO_4)$	Y	63.53
Monazite	$La(PO_4)$	La	99.27
Xenotime	$La(PO_4)$	La	0.01
Monazite	$Ce(PO_4)$	Ce	99.17
Xenotime	$Ce(PO_4)$	Ce	0.04
Monazite	$Pr(PO_4)$	Pr	99.60
Xenotime	$Pr(PO_4)$	Pr	0.11
Monazite	$Nd(PO_4)$	Nd	98.74
Xenotime	$Nd(PO_4)$	Nd	0.33
Monazite	$Sm(PO_4)$	Sm	96.75
Xenotime	$Sm(PO_4)$	Sm	2.40
Monazite	$Eu(PO_4)$	Eu	90.99
Xenotime	$Eu(PO_4)$	Eu	5.47
Monazite	$Gd(PO_4)$	Gd	87.96
Xenotime	$Gd(PO_4)$	Gd	10.50
Monazite	$Tb(PO_4)$	Tb	73.26
Xenotime	$Tb(PO_4)$	Tb	24.31
Monazite	$Dy(PO_4)$	Dy	54.32
Xenotime	$Dy(PO_4)$	Dy	42.37
Monazite	$Ho(PO_4)$	Ho	36.49
Xenotime	$Ho(PO_4)$	Ho	59.16
Monazite	$Er(PO_4)$	Er	20.76
Xenotime	$Er(PO_4)$	Er	73.73
Monazite	$Tm(PO_4)$	Tm	9.84
Xenotime	$Tm(PO_4)$	Tm	83.07
Monazite	$Yb(PO_4)$	Yb	5.27
Xenotime	$Yb(PO_4)$	Yb	85.42
Monazite	$Lu(PO_4)$	Lu	3.10
Xenotime	$Lu(PO_4)$	Lu	85.38
Monazite	$Pb(PO_4)$	Pb	64.20
Xenotime	$Pb(PO_4)$	Pb	0.19
Monazite	$Th(PO_4)$	Th	98.98
Xenotime	$Th(PO_4)$	Th	0.62
Monazite	$U(PO_4)$	U	71.35
Xenotime	$U(PO_4)$	U	16.95
Zircon	$Hf(SiO_4)$	Hf	100.00
Zircon	$Zr(SiO_4)$	Zr	100.00
Rutile	TiO_2	Ti	1.23
Hi Ti Leucoxene	$Ti_3O_3(OH)_6.TiO_2$	Ti	3.03
Lo Ti Leucoxene	$Ti_3O_3(OH)_6$	Ti	1.84
Altered Ilmenite	$Fe_2Ti_3O_9$	Ti	2.20
Ilmenite	$FeTiO_3$	Ti	2.09

- Because other elements can occur in both xenotime and monazite, the calculation for these minerals

Criteria	JORC Code explanation	Commentary
		should be considered the minimum. • Because Ti and to a far lesser extent Zr, can occur in other minerals not included in calculation, the calculated mineralogy for these elements should be considered a maximum. • However, in all case the quantity of economic heavy mineral is modified by the QEM Scan deportment percentage in the above table, such that only that percentage of each element that occurs in recoverable economic minerals is used to calculate the quantity and concentration of oxide or mineral.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • An initial collar survey by hand held GPS was conducted as a failsafe, with expected accuracy of ±5000mm in x and y, and ±50000mm in z. • Full survey by Twine Surveys was subsequently carried out using RTKdGPS with accuracy of ±20mm in x and y, and ±200mm in z • Twine's professional RTK survey was implemented between drill collars and used to generate a digital terrain model for high quality topographic control. • All survey data is recorded in MGA 2020 zone 54 and AHD. Ark Mines December 2023 Sandy Mitchell auger programme: • Collar survey was by hand held GPS with expected accuracy of ±5000mm in x and y, and ±50000mm in z.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Data spacing for 3 lines of drilling is 60m x 120m. • Data spacing for the remaining 13 lines is 120m x 120m • No compositing has been applied to 1m samples for total digest assay. • Pan concentrates were composited per drill hole. • Preliminary metallurgical sample was composited as discussed under *Laboratory Tests.* • Representative metre samples for total digest assay were not composited, residual sub-metre hole ends were similarly assayed separately to preserve geometric representation. Ark Mines December 2023 Sandy Mitchell auger programme: • Data spacing was approx. 360m. • Representative metre samples for total digest assay were not composited, residual sub-metre hole ends were similarly assayed separately to preserve geometric representation.
Orientation of data in	• *Whether the orientation of sampling*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme (including auger):

Criteria	JORC Code explanation	Commentary
relation to geological structure	*achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Deposit type is unconsolidated restite sand derived by in-situ weathering, sometimes called saprolite sand, with minor perturbation by small scale fluvial channels. • The applied vertical sampling is the optimal orientation for the deposit type. • No bias by orientation or spatial relationships has been identified.
Sample security	• *The measures taken to ensure sample security.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme (including auger): • Samples were collected after logging and transported at the end of each day to the company locked storage in Chillagoe. • Samples were boxed in closed pumpkin crates, wrapped in plastic for shipping by courier to the laboratory in Pine Creek, NT. • Samples for IHC Mining and Downer Mineral Technologies were similarly boxed, wrapped and couriered to the laboratories, but prior to shipping were stored on site at the Ark fenced bulk bag farm. • Bagged reject was stored on site in Ark's fenced secure bag farm and covered in UV resistant tarping for future use except for auger samples where rejects were not collected.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Full audit of sampling techniques and data available to date was carried out by geological consultants, Empirical Earth Science. • EES notes that the composited concentrate samples results in assay representing diluted material with no internal separation possible. • EES noted that the hand panning process of such fine material is prone to heavy mineral loss, with the possibility that concentrates underrepresent the total heavy mineral fraction. • ESS noted that the pXRF technique used in initial concentrate assays is not suited to yield full REE data, but that the results can inform approximate proxy calculations for the full REE suite. • EES noted that none of these factors apply to the representative metre samples and total digest assays, which meet best practice. • EES noted that the preliminary metallurgy was of insufficient volume and source dispersion to

Criteria	JORC Code explanation	Commentary
		represent the entire eventual resource, but was well suited to its stated purpose of proof of concept, testing recovery technique, and process to inform the next stage of bulk metallurgy. • EES also noted that the preliminary metallurgy was selected by reviewing pan con composite results, representing a median grade material within that data set, and is thus a reasonable preliminary representation of grade and recovery performance. • EES noted that the extensive QAQC in both Stage 1 and @ resource drilling, as well as reconnaissance drilling, was of good quality without significant bias, and showed that the data was fit for use in resource estimation in terms of accuracy, precision and bias. • EES noted that the reconnaissance auger data correlated within acceptable limits with the AC data and showed no undue bias or significant contamination, given the short hole depths, metre sampling and full QC suite.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• EPM 28013 Sandy Mitchell is 100% owned by Ark Mines Limited and was purchased on the 23rd of February 2023. • This tenement was formally EPM18308. • There are no third party agreements. • No known issues impeding on the security of the tenure of Ark Mines ability to operate in the area exist.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	A number of companies and individuals have explored the area for gold and base metals and for heavy minerals. The summaries presented below are from the IRTM source: • ATP 597M was granted to Laskan Minerals Pty Ltd in 1969 over the Reid Creek area, north of the Mitchell River. From assays of rock chip and

Criteria	JORC Code explanation	Commentary
		stream sediment samples, it was concluded that there was little chance of economic mineralisation occurring in the Authority. Although good monazite grades were obtained, the samples were from creeks with little available wash. Good concentrations of monazite and ilmenite were present in large areas of sandy, alluvial sheet wash in the Reid's Creek area. It was believed that there was a potential for economic exploitation if the monazite concentrations occurred in a large enough volume of sandy material. No further work was reported. • In 1970, Altarama Search Pty Ltd was granted ATP 833M over the Mitchell River in the Reid Creek, Sandy Creek and Mount Mulgrave Homestead area. Four hundred stream sediment samples, at an average density of 1.25 samples/km^2, were collected for assay. Copper and lead contents were low. Half of the zinc results were considered to be possibly anomalous. A two population distribution was obtained for zinc, with a standard threshold of about 15 ppm. It was suggested that the two population distributions represented normal background ranges present in different strata. No other work was carried out. • ATP 2580M was granted to Tacam Pty Ltd over Sandy Creek and its tributaries. Stream sediment samples averaged 0.18% monazite (0.01 to 0.45%), 0.07% rutile (0.15% in terraces), and 0.06% zircon (0.14% in terraces). The area had low economic potential and the Authority was abandoned in August 1981. • The principals involved in Tacam Pty Ltd combined with Metcalfe Holdings Pty Ltd in 1986 to take up 4 Authorities to Prospect - 4400,4401,4402 and 4403 centred on Mt Mulgrave, Arkara Creek, Sandy Creek and the Kennedy River respectively. The investigations were for the possibility of locating large-scale heavy minerals in association with major drainages and lower slope eluvial deposits associated with Cretaceous weathering as indicated in previous investigations. EPM 4400, 4401, 4402 and 4403 • Barron and O'Toole focused on Mt Mulgrave for Ilmenite, rutile, REE, Monzonite, Zircon, and

Criteria	JORC Code explanation	Commentary
		Gold.Tenement EPM 4400 consisted of 96 sub-blocks centred on Mount Mulgrave (7665, 7765), EPM 4401 consisted of 97 sub-blocks centred on Arkara Creek (7665), EPM 4402 consisted of 100 sub- blocks centred on Sandy Creek (7665) and EPM 4403 consisted of 86 sub-blocks centred on Kennedy River (7666, 7766) were granted to P.T.C. Barron, A. O'Toole and Metcalfe Holdings Pty Ltd on 22 September 1986 to explore for heavy minerals and precious metals. After three years of exploration the EPMs were surrendered on 22 August 1989. • Tenement EPM 10185 consisted of 157 sub-blocks was granted to Palmer Gold Pty Ltd on 25 October 1994 for an initial 2 year period. The exploration permit was renewed for a further 3 years on 25 October 1996 and surrendered on 3 October 2001. The tenement was situated 200km west of Cooktown. Rationale Significant gold-silver, tin and base metal deposits are known from the Georgetown and southern Dargalong Inliers to the south of EPM 10185 (e.g. Etheridge, Croydon and Oaks goldfields), from the Hodgkinson Province to the east (e.g. Palmer, Hodgkinson, Russell River, Starcke, Jordon Ck, Mareeba and Mount Peter goldfields, and Herberton-Mt Garnet tinfield), and the Coen Inlier to the north (e.g. Alice River & Potallah goldfields). However, other than brief reference to sub-economic alluvial gold occurrences near the junction of the Palmer and Mitchell Rivers, and in the Staaten, Lynd and Walsh Rivers (Culpeper 1993), no precious or base metal deposits are known to occur within rocks of the Yambo Inlier. Application for the area was made after structural interpretation of the region showed prospectivity for gold occurrence. Base metal anomalies delineated from previous exploration were also targeted for follow-up work. • In 2007 exploration activity was carried out by BHP Billiton Minerals Pty Ltd under an extremely large area (2,850 sub-blocks) of the Coen Yambo area from 2005 to 2007. EPM's 14438 and 14445 covered the majority of the Yambo Inlier. BHP targeted Ni sulphide and PGM and carried out AEM surveying, field mapping and sampling and drilling. The AEM targets were found to be

Criteria	JORC Code explanation	Commentary
		related to sedimentary lithological units or obvious shear zones. • In 2007 - 2009 - MTY Resources Ltd undertook bulk sampling program along with a Panned Concentrate sampling program. • In 2012 Waverley Nominees undertook an Augur sampling program.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The tenement covers a portion of the southern extent of the Yambo Inlier, one of the several Proterozoic inliers to the west of the Palmerville Fault System. Rocks of the Yambo Inlier covered by the tenement comprise those of the middle Proterozoic Yambo Metamorphic Group of mainly amphibolites and gneisses ranging in age from ~1690 Ma to ~1585 Ma. • The dominant Yambo member on the tenement is the Chelmsford Gneiss, and this is thought to be the source of REE sands. • These rocks have been intruded by Silurian-Devonian granites of the Lukinville Suite which form an integral part of the Cape York Batholith. Within the tenement they form a belt roughly 10 km wide trending NNW. • Extensive intrusions of Carboniferous-Permian dolerites occur throughout the Inlier, with only a few occurrences within the tenement. • The tenement is largely gold deficient except for the gold reporting to sediments within the Palmer River to the north. Recent Governmental radiometric surveys have highlighted areas of anomalous radiometric emission within the Yambo Inlier. The project tenements cover the majority of the anomalous radiometric areas. • The project area in the tenement has a 3 to 25m, average 10.3m (stage 1 drilling) to 12.3m (stage 2 drilling), covering of disaggregated fine to very fine sand with sparse pebble or cobble horizons. These sands carry REE as monazite and lesser xenotime, zircon, rutile, illmenite and garnet. The sands are believed to derive from weathering of the Chelmsford Gneiss, with minimal fluvial transport largely constrained to the upper 2m. There is minor clay in the top 1 to 2m of sand which extends from daylight to the bedrock.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of*	• Ark Mines 2023 drill data, refer to table in Appendix D

Criteria	JORC Code explanation	Commentary
	the following information for all Material drill holes: o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No high or Low-grade top/bottom-cut has been applied to the data presented in Appendix D, which is the total data set. • REE Equivalent TREO (total REE oxides) is reported as this is the industry standard for presentation of REE data. Stoichiometric calculation of REE oxide equivalents were performed in units of ppm, with TREO, LREO (light REE oxides), HREO (heavy REE Oxides), CREO (critical REE oxides) and Mag REO (magnet production REE oxides), as per Table 1 page 5 to 7, yielding these factors as concentrations and percentages of TREO concentration. These are modified by the elemental deportment percentages tabulated in Table 1 Sectio 1, which reduces the reported assay to only that percentage which is contained in economic heavy minerals. • Calculated mineralogy reduced by the deportment percentages is used to derive a monazite equivalent, which represents the economic heavy minerals proportional to their value (as determined by an analysis of extensive market data), with respect the concentration of monazite. • The assayed elements, coupled with QEMSCAN element proportions in ALS Job No: *MIN6934*, 2024 for Downer Mineral Technologies, allow calculation of monazite, xenotime, zircon, rutile, high titanium leucoxene, low titanium

Criteria	JORC Code explanation	Commentary

leucoxene, altered ilmanite and ilmenite concentrations stoichiometrically, as described in Table 1 page 5 to 7.

- The ratio of 5 year median values of these minerals to monazite, yields a table of unitless factors:

Mineral		Ratio
monazite		1.000
xenotime		1.000
zircon		0.361
rutile	$TiO_2 > 95\%$	0.281
hi Ti leucoxene	$TiO_2 > 85\%$	0.165
lo Ti leucoxene	$TiO_2 > 70\%$	0.126
altered ilmenite	$TiO_2 > 55\%$	0.072
ilmenite	$TiO_2 > 50\%$	0.065

- These factors are applied to the corresponding separate mineral concentrations in PPM for a given element assay, and the results are summed to give a monazite equivalent in PPM for that assay:

MzEq = 1.000 * monazite + 1.000 * xenotime + 0.361 * zircon + 0.281 * rutile + 0.165 * hi Ti leucoxene + 0.126 * lo Ti leucoxene + 0.072 * altered ilmenite + 0.065 * ilmenite

- If the stoichiometric conversions to mineral mass, the QEM deportment to economic heavy minerals, and the monazite equivalent factors are applied as a single equation, this can be expressed as:

MzEq = **1.000** * ((0 / 100 * Sc) * 3.1125 + (31.68 / 100 * Y) * 2.0682 + (99.27 / 100 * La) * 1.6837 + (99.17 / 100 * Ce) * 1.6778 + (99.6 /100 * Pr) * 1.6740 + (98.74 / 100 * Nd) * 1.6584 + (96.75 / 100 * Sm) * 1.6316 + (90.99 / 100 * Eu) * 1.6250 + (87.96 / 100 * Gd) * 1.6039 + + (73.26 / 100 * Tb) * 1.5976 + (54.32 / 100 * Dy) * 1.5844 + (36.49 / 100 * Ho) * 1.5758 + (20.76 / 100 * Er) * 1.5678 + (9.84 / 100 * Tm) * 1.5622 + (5.27 / 100 * Yb) * 1.5488 + (3.10 / 100 * Lu) * 1.5428 + (64.20 / 100 * Pb) * 1.4583 + (98.98 / 100 * Th) * 1.4093 + (71.35 / 100 * U) * 1.3990 + (0.97 / 100 * Ca) * 3.3696 + (6.35 / 100 * Sr) * 2.0839) + **1.000** * ((0.51 / 100 * Sc) * 3.1125 + (63.53 / 100 * Y) * 2.0682 + (0.01 / 100 * La) * 1.6837 + (0.04 / 100 * Ce) * 1.6778 + (0.11 /100 * Pr) * 1.6740 + (0.33 / 100 * Nd) * 1.6584 + (2.4 / 100 * Sm) * 1.6316 + (5.47 / 100 * Eu) * 1.6250 + (10.5 / 100 * Gd) * 1.6039 + (24.31 / 100 * Tb) * 1.5976 + (42.37 / 100 * Dy) * 1.5844 + (59.16 / 100 * Ho) * 1.5758 + (73.73 / 100 * Er) * 1.5678 + (83.07 / 100 * Tm) * 1.5622 + (85.42 / 100 * Yb) * 1.5488 + (85.38 / 100 * Lu) * 1.5428 + (0.19 / 100 * Pb) * 1.4583 + (0.62 / 100 * Th) * 1.4093 + (16.95 / 100 * U) * 1.3990 + (0 / 100 * Ca) * 3.3696 + (0.12 / 100 * Sr) * 2.0839) + **0.361** * ((100 / 100 * Hf) * 1.5159 + (100 / 100 * Zr) * 2.0094) + **0.281** * ((1.23 / 100 * Ti) * 1.6685) + **0.165** * ((3.03 / 100 * Ti) * 1.9507) + **0.126** * ((1.84 / 100 * Ti) * 2.0448) + **0.072** * ((2.20 / 100 * Ti) * 2.7805) + **0.065** * ((2.09 / 100 * Ti) * 3.1694)

- The basket of heavy mineral concentrations is

Criteria	JORC Code explanation	Commentary
		equated proportional to monazite concentration. These proportions are set by their respective average market values across the 2024 financial year, which was found to be well representative of the market data set from 2016 to date when outliers had been excluded as calculated using the Z test. • The monazite equivalent purpose is to afford relative data and grade comparison and assessment as a concertation, and does not directly represent actual product value. Its main benefit is simplification of interpretation of a complex data set and reduction of human error. • The cutoff grade is calculated on monazite equivalent (Mz Eq) which allows the value in the potentially saleable commodities to be tied together in a single calculation, and visible in the drill data in a single instance. • The cutoff grade applied is 700 ppm Mz Eq.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Ark Mines May to June 2023 drill data shows no regular variation in REE distribution beyond the top 1m where obvious and avoidable fluvial action may result in some supergene enrichment or silt deposition based dilution. • The mineralisation is essentially flat lying, and thus intercept width on the vertical holes drilled is at or approaching the geometric minimum width, which is optimal. • Consequently, only down hole length are reported and these are equivalent to true thickness.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Diagrams as appropriate accompany the announcement
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths*	• Appendix D, contains the total data set.

Criteria	JORC Code explanation	Commentary
	should be practiced to avoid misleading reporting of Exploration Results.	
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All data material to this report that has been collected to date has been reported textually, graphically or both.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Ark plans further resource estimation based on the November to December 2023 drilling when assays are returned. • Ark plans further gravity beneficiation and metallurgical test work on a larger sample basis, investigating several different techniques to determine optimal processing. • Ark also plans pilot plant test work and other feasibility studies. • Ak plans further auger reconnaissance works across the tenement.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• The database was created by HGS Australia for the purpose of conducting a resource evaluation. • The resource evaluation was conducted by HGS Australia

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>• Data validation procedures used.</td><td></td></tr>
<tr><td>Site visits</td><td>• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.
• If no site visits have been undertaken indicate why this is the case.</td><td>• No site visits were conducted by HGS Australia</td></tr>
<tr><td>Geological interpretation</td><td>• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.
• Nature of the data used and of any assumptions made.
• The effect, if any, of alternative interpretations on Mineral Resource estimation.
• The use of geology in guiding and controlling Mineral Resource estimation.
• The factors affecting continuity both of grade and geology.</td><td>• The resource area has been sufficiently interpreted by geological consultants and the geology matches grade and geological interpretations as anticipated.
• Criteria used in the interpretations were:
  • Interpretations were based on the MzEq (monzonite equivalent) grade defined from element ratios and formulas.
  • A nominal 700ppm MzEq lower cut-off grade with flexibility for geological continuity.
  • Sections extended half the distance from the previous section.</td></tr>
<tr><td>Dimensions</td><td>• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>• Mineralised outlines were interpreted by HGS within the coordinates:
  ○ 8193000N – 8195100N
  ○ 812400E – 814700E
  ○ 130mRL – 190mRL</td></tr>
<tr><td>Estimation and modelling techniques</td><td>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation</td><td>• The models were created using Surpac software.
• Reported Interpolation method used is Ordinary Kriging
• Interpolation validation method of inverse distance squared was conducted as a check.
• Grade cutting was variable within the 24 elements due to significant outliers. A list of the cut elements are as follows:
<table><tr><th>Element</th><th>High Grade Cut Use</th></tr><tr><td>Sc</td><td>50</td></tr><tr><td>Y</td><td>87</td></tr></table></td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	method was chosen include a description of computer software and parameters used. • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	

La	295
Ce	No cutting
Pr	71
Nd	207
Sm	41
Eu	10
Gd	23
Tb	No Cutting
Dy	22
Ho	No cutting
Er	12.3
Tm	No Cutting
Yb	13.5
Lu	No cutting
Th	180
U	10
Zr	1400
Hf	65
Nb	76
As	85
Ti	15800
S	5100
Ca	133400

Criteria	JORC Code explanation	Commentary

Type	Northing	Easting	Elevation
Minimum Coordinates	8193000	812400	130
Maximum Coordinates	8195100	814700	190
User Block Size	50	25	2
Min. Block Size	12.5	6.25	0.5
Rotation	0	0	0
Total Blocks	331730		
Storage Efficiency %	95.52		

- Model sizes and parameters are:

Attribute Name	Type	Decimals	Background	Description
alt_ilmenite	Float	2	0	Calculation for Altered Ilmenite
creo	Float	2	0	calculated CREO
hi_ti_leucoxene	Float	2	0	Calculated Hi Ti Leucoxene
hreo	Float	2	0	calculated HREO
ilmenite	Float	2	0	Calculated Ilmenite
lo_ti_leucoxene	Float	2	0	Calculated Lo Ti Leucoxene
lode	Integer	-	0	Lode = 1 waste=0
lreo	Float	2	0	calculated LREO
magreo	Float	2	0	calculated MagREO
monazite	Float	2	0	Calculated monazite
mzeq	Float	2	0	Calculated Monazite Equivilent MzEq
ok1	Float	2	0	Sc interpolation using Ordinary Kriging
ok10	Float	2	0	Tb interpolation using Ordinary Kriging
ok11	Float	2	0	Dy interpolation using Ordinary Kriging

Criteria	JORC Code explanation	Commentary				
		ok12	Float	2	0	Ho interpolation using Ordinary Kriging
		ok13	Float	2	0	Er interpolation using Ordinary Kriging
		ok14	Float	2	0	Tm interpolation using Ordinary Kriging
		ok15	Float	2	0	Yb interpolation using Ordinary Kriging
		ok16	Float	2	0	Lu interpolation using Ordinary Kriging
		ok17	Float	2	0	Th interpolation using Ordinary Kriging
		ok18	Float	2	0	U interpolation using Ordinary Kriging
		ok19	Float	2	0	Zr interpolation using Ordinary Kriging
		ok2	Float	2	0	Y interpolation using Ordinary Kriging
		ok20	Float	2	0	Hf interpolation using Ordinary Kriging
		ok21	Float	2	0	Nb interpolation using Ordinary Kriging
		ok22	Float	2	0	As interpolation using Ordinary Kriging
		ok23	Float	2	0	Ti interpolation using Ordinary Kriging
		ok24	Float	2	0	S interpolation using Ordinary Kriging
		ok25	Float	2	0	Ca interpolation using Ordinary Kriging
		ok3	Float	2	0	La interpolation using Ordinary Kriging
		ok4	Float	2	0	Ce interpolation using Ordinary Kriging
		ok5	Float	2	0	Pr interpolation using Ordinary Kriging
		ok6	Float	2	0	Nd interpolation using Ordinary Kriging

Criteria	JORC Code explanation	Commentary
		<table><tr><td>ok7</td><td>Float</td><td>2</td><td>0</td><td>Sm interpolation using Ordinary Kriging</td></tr><tr><td>ok8</td><td>Float</td><td>2</td><td>0</td><td>Eu interpolation using Ordinary Kriging</td></tr><tr><td>ok9</td><td>Float</td><td>2</td><td>0</td><td>Gd interpolation using Ordinary Kriging</td></tr><tr><td>rutile</td><td>Real</td><td>-</td><td>0</td><td>calculated rutile</td></tr><tr><td>sg</td><td>Float</td><td>2</td><td>0</td><td>interpolated density data</td></tr><tr><td>treo</td><td>Float</td><td>2</td><td>0</td><td>calculated TREO</td></tr><tr><td>treo_y_sc</td><td>Float</td><td>2</td><td>0</td><td>calculated TREO + Y + Sc</td></tr><tr><td>xenotime</td><td>Float</td><td>2</td><td>0</td><td>calculated xenotime</td></tr><tr><td>zircon</td><td>Float</td><td>2</td><td>0</td><td>calculated zircon</td></tr></table> • The interpolation pass parameters used are as follows for all elements: • Pass 1: 6-30 samples 100m max search • Pass 2: 3-30 samples 200m max search • Pass 3: 1-30 samples 500m max search
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were estimated as dry basis
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Univariate statistics were conducted. Upper cut determinations were conducted from histograms and probability plots.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider*	• Resource economics identifies the probable lower cut-off to be 700ppm MzEq • The resource is flat and exposes the surface to a max depth of 15m. The anticipated mining method will be either excavator, continuous minor or scrapers. Blasting is not considered. A large scale cheap mining method can be employed and all mineralisation will be considered for this evaluation.

Criteria	JORC Code explanation	Commentary
	potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Ark conducted metallurgical testwork following encouraging results from initial exploration and to assist with next stage development. • The work was conducted by Mineral Technologies Carrara Laboratory in Queensland and conducted on drill core samples sourced from the deposit. • The metallurgical characterisation was performed using approximately 40kg of feed material and using bench-scale equipment to assess response of the ore sample to conventional beneficiation techniques and show product purity after each stage of separation. The simulated industrial stages and their aims are listed below: • Size classification to remove slimes, trash oversize and prepare sand suitable for beneficiation, Gravity separation to recover the valuable heavy mineral components to concentrate, Mechanical attrition to clean mineral surfaces, followed by froth flotation to extract rare earth minerals, Magnetic separation to perform a final upgrade of the flotation rare-earth concentrate. • The final concentrate assays 51.9% TREO, and contained mostly heavy rare-earth elements La, Ce, Pr and Nd. • Direct CeO_2 recovery from gravity feed to REM concentrate is estimated to be 71.7%. • It is noted that approximately 16.9% of Ce-minerals were stranded in laboratory test work intermediate streams which would normally be recycled in a continuous operation, thereby suggesting overall recovery of 83.8% may be achieved.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts*	• No assessments have been made yet

Criteria	JORC Code explanation	Commentary
	of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk densities for 495 samples were conducted from the drill program and interpolated into the model. Densities ranged from 1.24t/m³ to 1.92 t/m³ with an average of 1.52 t/m³
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken*	• The classification for this resource is conducted according to JORC 2012 guidelines. HGS considers the resource to be sufficiently drilled to be classified as **measured**. The reasons are: • Consistency of the drilling data on a 100m x 100m staggered pattern is such that any infill drilling will have no impact on

Criteria	JORC Code explanation	Commentary
	of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	the structure or grade distribution. Mineralisation and interpretation is consistent throughout the drilling area. • Quality control and quality assurance of the drilling was conducted to a high level industry standard that can identify issues in drilling methods and laboratory assaying. There were no issues raised regarding the method of drilling, quality of the sampling or laboratory preparation and assaying. • Collar pickups were conducted by a qualified surveyor. • Drill density is sufficient to have good understanding mineralisation controls. • There is a strong recognition of the geological controls on the mineralisation. • Variability in the grade distribution is sufficient to create quality variograms. • A good degree of metallurgical understanding. • Shallow mineralisation from surface indicates a simple and cheap mining method. • The results reflect the competent person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• None available
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical*	• The competent person has confidence in the interpretation with regards to accuracy for the classification announced. • The interpolation process was run in inverse distance squared to compare a complex algorithm to a simple one. •

Criteria	JORC Code explanation	Commentary
	and economic evaluation. Documentation should include assumptions made and the procedures used. • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Appendix D: Sandy Mitchell Stage 2 AC/RC & Stage 3 auger complete assay returns

See Appendix A for stoichiometric oxide factors and REE calculations used.

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	m	m	m	m	m	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
SMDH 00546	814666.5	8188941.6	157.8	0	1	15	1062.2	2324.8	621.6	65.4	747.5	74.7	215.1	136.9	222.6	241.0	326.7	369.3	308.8	17.9	108.8	82.0	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	1	2	30	904.5	2160.0	453.1	66.5	786.0	71.7	206.4	131.4	213.6	231.3	236.8	280.1	218.4	18.4	91.7	59.2	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	2	3	40	849.9	2018.4	448.9	67.1	643.4	72.1	207.5	132.1	214.8	232.6	223.3	267.9	205.5	17.8	90.7	56.3	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	3	4	40	758.8	1917.6	371.2	49.3	663.5	69.9	201.4	128.2	208.4	225.7	194.4	227.0	181.4	13.0	73.1	49.3	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	4	5	40	1052.3	2506.7	602.7	55.9	720.7	94.6	272.4	173.4	281.9	305.2	212.8	249.2	197.5	15.3	79.9	52.9	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	5	6	50	852.9	2076.5	448.6	54.3	674.9	75.4	217.1	138.2	224.7	243.3	217.2	252.5	202.3	14.9	78.9	53.7	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	6	7	70	933.5	2096.7	556.3	61.2	580.5	75.4	217.1	138.2	224.7	243.3	235.1	275.3	218.6	16.6	89.2	59.5	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	7	8	50	1282.4	2477.0	889.8	69.5	590.9	77.7	223.9	142.5	231.7	250.9	275.1	320.1	256.3	18.8	101.2	68.4	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	8	9	80	1304.2	2581.4	901.3	71.1	582.6	86.1	248.0	157.8	256.6	277.9	282.1	328.3	263.1	19.0	103.7	69.9	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	9	10	70	1443.2	2616.2	1078.2	70.3	498.4	81.3	234.2	149.1	242.4	262.4	274.0	319.9	255.2	18.8	102.1	68.7	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	10	11	75	1176.9	2510.7	794.9	73.7	469.5	98.4	283.3	180.3	293.2	317.5	287.9	335.9	268.0	19.8	107.1	71.7	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	11	12	85	884.8	2153.4	501.4	65.9	534.8	88.2	254.0	161.7	262.9	284.6	256.4	299.2	238.2	18.2	96.3	64.8	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	12	13	60	1146.0	2397.1	779.4	64.3	488.1	89.4	257.4	163.8	266.3	288.4	267.7	309.5	250.2	17.6	97.5	67.6	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	13	14	90	1233.0	2484.0	851.3	67.6	530.8	86.7	249.8	159.0	258.6	280.0	260.4	304.3	242.1	18.3	97.3	64.8	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	14	15	90	1053.9	2376.2	662.1	68.6	529.4	93.6	269.6	171.6	279.1	302.2	274.4	319.0	255.7	18.6	101.9	69.4	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	15	16	50	871.3	2115.8	528.6	62.3	411.4	93.4	269.0	171.2	278.4	301.5	266.9	307.5	249.8	17.1	96.5	67.5	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	16	17	85	837.5	2053.8	481.2	61.7	476.7	86.7	249.8	159.0	258.6	280.0	253.8	294.1	236.9	16.9	93.3	64.3	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	17	18	90	828.7	2000.8	458.3	54.8	574.9	76.6	220.5	140.4	228.2	247.1	239.2	275.3	224.5	14.6	85.8	60.2	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	18	19	90	830.5	1914.7	496.2	49.3	506.5	72.4	208.4	132.7	215.7	233.6	240.9	272.6	227.0	13.9	82.0	61.8	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	19	20	70	881.6	2141.1	472.6	51.9	683.0	78.3	225.6	143.6	233.4	252.8	244.4	277.4	229.5	14.9	84.8	63.4	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	20	21	75	779.2	1758.7	447.7	43.2	569.5	58.6	168.7	107.4	174.6	189.1	216.4	243.7	204.2	12.2	71.9	54.3	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	21	22	80	984.2	2165.9	639.7	29.2	569.0	77.8	224.2	142.7	232.0	251.3	333.3	350.7	324.4	8.8	83.9	83.1	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	22	23	90	849.6	1928.7	556.0	27.6	439.9	75.9	218.7	139.2	226.3	245.1	299.5	316.2	291.5	8.0	76.7	74.6	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	23	24	95	754.6	1630.7	572.2	16.1	176.8	72.6	209.1	133.1	216.4	234.4	246.2	255.3	241.7	4.6	57.0	59.3	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	24	25	85	1194.6	2202.5	941.1	20.1	356.4	74.2	213.8	136.1	221.3	239.6	449.2	460.2	443.2	5.9	100.3	111.2	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	25	26	98	1129.6	2080.6	858.7	28.8	415.5	65.2	187.8	119.6	194.4	210.5	303.9	321.0	295.4	8.5	77.4	74.6	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	26	27	95	1022.3	1705.4	825.7	17.7	316.9	45.7	131.7	83.8	136.3	147.6	206.5	216.9	201.7	4.8	51.7	50.0	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	27	28	90	1105.6	1642.7	952.1	17.4	232.9	36.9	106.4	67.7	110.1	119.2	160.1	170.5	155.5	4.7	42.2	38.0	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	28	29	98	1376.0	2314.9	1111.8	26.3	406.0	64.6	186.2	118.5	192.7	208.7	223.3	239.5	216.0	7.3	60.8	54.5	uncorrelated
SMDH 00546	814666.5	8188941.6	157.8	29	30	85	1069.4	1756.3	862.0	25.3	326.9	45.5	131.0	83.4	135.6	146.8	173.0	188.6	166.3	6.7	50.2	41.8	uncorrelated
SMDH 00547	812207.4	8192556.8	170.6	0	1	20	724.3	1268.8	553.4	27.8	254.4	36.3	104.7	66.6	108.3	117.3	215.6	233.0	207.6	8.1	61.8	55.0	uncorrelated
SMDH 00547	812207.4	8192556.8	170.6	1	2	20	674.7	1099.0	522.8	28.6	240.8	25.7	74.1	47.2	76.7	83.1	247.0	264.8	238.7	8.3	68.9	63.1	uncorrelated
SMDH 00547	812207.4	8192556.8	170.6	2	3	75	843.0	1269.9	690.9	32.8	224.8	26.9	77.6	49.4	80.3	87.0	279.2	299.2	269.9	9.3	78.5	70.9	uncorrelated
SMDH 00547	812207.4	8192556.8	170.6	3	4	75	831.4	1282.4	684.3	21.6	235.6	28.6	82.3	52.4	85.2	92.3	249.7	262.9	243.6	6.1	64.3	63.5	uncorrelated
SMDH 00548	813906.2	8192654.3	166.3	0	1	75	1140.1	2134.8	774.0	47.1	673.9	53.7	154.6	98.4	160.0	173.2	386.7	416.8	373.7	13.0	106.1	95.5	correlated
SMDH 00548	813906.2	8192654.3	166.3	1	2	80	1589.7	2194.0	1352.9	56.6	359.8	35.6	102.6	65.3	106.2	115.0	287.4	324.6	272.3	15.0	95.1	71.5	correlated
SMDH 00548	813906.2	8192654.3	166.3	2	3	60	1459.5	2591.4	1049.4	77.5	656.2	67.8	195.3	124.3	202.1	218.9	352.8	403.2	331.6	21.2	122.5	88.7	correlated
SMDH 00548	813906.2	8192654.3	166.3	3	4	60	1352.0	2415.1	976.0	62.5	620.3	63.4	182.7	116.3	189.1	204.7	446.9	487.0	429.5	17.5	129.3	111.0	correlated
SMDH 00548	813906.2	8192654.3	166.3	4	5	90	1490.5	2668.6	1069.7	83.0	652.7	72.4	208.5	132.7	215.8	233.7	473.0	526.6	450.1	22.8	148.4	117.2	correlated
SMDH 00548	813906.2	8192654.3	166.3	5	6	85	2283.0	3667.3	1844.7	64.3	683.7	90.1	259.6	165.2	268.7	290.9	444.0	484.2	425.3	18.7	131.9	113.5	correlated
SMDH 00548	813906.2	8192654.3	166.3	6	7	98	1783.4	3261.0	1282.3	95.5	753.2	94.8	273.0	173.8	282.5	306.0	441.7	503.5	415.1	26.6	153.2	113.6	correlated
SMDH 00548	813906.2	8192654.3	166.3	7	8	90	1469.5	2557.7	1140.1	34.6	540.4	70.7	203.6	129.6	210.7	228.1	312.1	333.9	302.6	9.5	85.1	78.4	correlated
SMDH 00548	813906.2	8192654.3	166.3	8	9	90	1715.9	2662.2	1393.7	44.2	548.5	56.7	163.3	103.9	169.0	183.0	392.6	418.8	378.4	14.1	102.3	95.7	correlated
SMDH 00548	813906.2	8192654.3	166.3	9	10	90	1667.2	3025.1	1234.8	47.7	735.0	84.5	243.4	154.9	251.9	272.8	461.6	490.5	447.3	14.3	121.1	116.0	correlated
SMDH 00548	813906.2	8192654.3	166.3	10	11	75	1816.9	2911.5	1484.5	29.1	568.0	69.6	200.5	127.6	207.5	224.7	437.7	454.4	428.8	8.9	99.5	104.6	correlated
SMDH 00549	816691.0	8192640.6	163.0	0	1	40	1478.6	2809.8	857.0	43.0	1452.7	38.3	110.4	70.3	114.3	123.7	523.6	550.1	511.2	12.4	128.6	128.8	correlated
SMDH 00549	816691.0	8192640.6	163.0	1	2	50	1296.5	2672.0	835.4	43.5	846.3	79.4	228.7	145.6	236.7	256.4	438.2	465.2	425.8	12.4	112.0	105.7	correlated
SMDH 00549	816691.0	8192640.6	163.0	2	3	75	1488.3	2854.9	1082.1	41.4	659.1	90.0	259.1	164.9	268.1	290.3	371.1	396.7	359.0	12.1	97.3	87.5	correlated
SMDH 00549	816691.0	8192640.6	163.0	3	4	50	3939.9	4901.5	3644.7	31.3	489.6	61.7	177.8	113.2	184.0	199.3	292.8	312.0	283.8	9.0	74.7	69.1	correlated
SMDH 00549	816691.0	8192640.6	163.0	4	5	95	2496.9	3828.6	2073.3	36.9	755.3	80.8	232.6	148.1	240.8	260.7	416.1	438.6	405.6	10.4	100.0	97.3	correlated
SMDH 00549	816691.0	8192640.6	163.0	5	6	90	2781.1	4196.2	2344.0	64.5	663.5	94.3	271.6	172.9	281.1	304.4	587.4	627.8	569.2	18.2	158.4	145.9	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	
SMDH 00549	816691.0	8192640.6	163.0	6	7	80	1718.5	2990.3	1312.0	51.8	668.4	80.4	231.5	147.3	239.5	259.4	452.7	484.8	437.6	15.1	125.3	114.8	correlated
SMDH 00549	816691.0	8192640.6	163.0	7	8	90	1937.2	3180.0	1559.7	35.1	637.6	79.5	228.9	145.7	236.9	256.5	445.6	466.8	435.3	10.3	111.8	111.7	correlated
SMDH 00549	816691.0	8192640.6	163.0	8	9	80	2843.1	4228.2	2408.3	48.2	728.7	87.5	252.0	160.4	260.8	282.4	508.2	538.2	494.3	13.8	134.7	129.2	correlated
SMDH 00549	816691.0	8192640.6	163.0	9	10	80	1931.1	2954.3	1634.0	36.4	448.1	70.1	201.9	128.5	209.0	226.3	368.9	391.0	358.0	10.9	93.9	89.6	correlated
SMDH 00549	816691.0	8192640.6	163.0	10	11	85	1539.7	2724.5	1214.4	30.2	493.9	82.7	238.2	151.6	246.5	266.9	283.0	301.3	274.1	8.8	74.1	68.6	correlated
SMDH 00549	816691.0	8192640.6	163.0	11	12	80	1256.5	2338.4	950.1	31.1	472.3	74.2	213.8	136.1	221.3	239.6	316.1	334.9	306.9	9.2	79.7	76.6	correlated
SMDH 00549	816691.0	8192640.6	163.0	12	13	50	1418.8	2439.0	1114.0	27.0	511.4	66.0	190.0	121.0	196.7	213.0	299.6	315.3	291.2	8.4	73.0	72.0	correlated
SMDH 00549	816691.0	8192640.6	163.0	13	14	98	1837.4	3104.8	1436.3	41.0	690.2	78.6	226.4	144.1	234.3	253.8	498.9	523.9	487.3	11.7	118.7	117.5	correlated
SMDH 00550	812814.5	8192694.3	194.8	0	1	80	696.7	1532.8	353.4	25.7	745.8	34.2	98.5	62.7	102.0	110.4	174.9	192.6	169.9	5.0	49.6	40.5	uncorrelated
SMDH 00550	812814.5	8192694.3	194.8	1	2	80	246.3	698.6	128.0	8.9	176.8	32.3	93.0	59.2	96.2	104.2	43.6	48.9	40.8	2.8	13.7	10.0	uncorrelated
SMDH 00550	812814.5	8192694.3	194.8	2	3	95	269.3	728.6	143.0	12.9	187.9	32.3	93.0	59.2	96.2	104.2	51.5	59.5	47.8	3.7	17.7	12.1	uncorrelated
SMDH 00550	812814.5	8192694.3	194.8	3	4	60	244.6	612.2	140.5	11.9	155.6	25.5	73.5	46.8	76.0	82.3	51.4	58.7	48.0	3.5	17.0	12.1	uncorrelated
SMDH 00550	812814.5	8192694.3	194.8	4	5	80	244.8	672.4	135.7	11.6	145.6	31.8	91.7	58.4	94.9	102.7	40.5	47.4	36.9	3.6	14.3	9.2	uncorrelated
SMDH 00550	812814.5	8192694.3	194.8	5	6	90	210.2	575.9	110.3	11.8	141.6	26.2	75.4	48.0	78.1	84.5	30.6	37.8	26.8	3.8	13.7	7.8	uncorrelated
SMDH 00550	812814.5	8192694.3	194.8	6	7	70	194.6	533.1	110.1	8.3	111.8	25.4	73.2	46.6	75.7	82.0	25.1	30.2	22.5	2.6	10.1	5.8	uncorrelated
SMDH 00551	811966.9	8193830.8	156.4	0	1	30	1374.5	2982.9	888.0	56.5	777.7	105.8	304.6	193.9	315.2	341.3	279.2	314.8	263.0	16.3	89.2	66.7	correlated
SMDH 00551	811966.9	8193830.8	156.4	1	2	40	1061.3	2637.5	593.8	57.1	722.1	106.1	305.5	194.4	316.1	342.3	291.5	328.0	275.1	16.3	96.9	74.0	correlated
SMDH 00551	811966.9	8193830.8	156.4	2	3	50	1084.6	2227.1	714.0	37.2	654.1	68.9	198.5	126.4	205.5	222.5	416.1	438.1	404.6	11.5	110.7	106.7	correlated
SMDH 00551	811966.9	8193830.8	156.4	3	4	40	751.7	1699.1	489.2	35.2	363.6	68.0	195.9	124.7	202.8	219.6	190.8	213.4	180.8	10.0	62.8	48.5	correlated
SMDH 00551	811966.9	8193830.8	156.4	4	5	75	612.3	1431.2	375.7	28.2	357.6	56.2	161.8	103.0	167.4	181.3	145.9	163.7	137.7	8.2	47.6	36.3	correlated
SMDH 00551	811966.9	8193830.8	156.4	5	6	70	1228.3	2747.8	815.6	57.2	550.1	111.1	320.1	203.7	331.2	358.7	289.9	326.5	273.9	16.0	96.1	72.6	correlated
SMDH 00551	811966.9	8193830.8	156.4	6	7	70	1229.4	2672.5	761.8	59.7	777.9	90.0	259.2	165.0	268.3	290.5	341.6	380.2	325.0	16.6	108.5	86.4	correlated
SMDH 00551	811966.9	8193830.8	156.4	7	8	70	1348.1	2983.8	819.3	62.5	895.7	101.2	291.4	185.5	301.6	326.6	380.6	420.1	362.8	17.7	117.1	96.6	correlated
SMDH 00551	811966.9	8193830.8	156.4	8	9	60	2843.9	4623.7	2146.2	80.0	1376.3	85.7	246.7	157.0	255.3	276.5	763.3	814.0	741.3	22.0	203.7	191.8	correlated
SMDH 00551	811966.9	8193830.8	156.4	9	10	70	4072.0	5212.6	3833.7	36.1	178.1	97.7	281.4	179.1	291.2	315.3	130.6	153.8	121.3	9.2	52.9	35.0	correlated
SMDH 00551	811966.9	8193830.8	156.4	10	11	85	3550.1	5968.0	3107.5	53.3	234.6	215.8	621.5	395.6	643.2	696.5	243.6	278.5	229.5	14.1	87.4	63.6	correlated
SMDH 00551	811966.9	8193830.8	156.4	11	12	75	1830.9	5266.5	1210.7	71.2	318.0	307.6	885.8	563.8	916.7	992.7	141.1	188.1	121.6	19.5	85.4	43.4	correlated
SMDH 00551	811966.9	8193830.8	156.4	12	13	80	1415.0	3138.8	1057.8	45.0	293.2	146.2	421.0	268.0	435.7	471.8	190.0	218.9	177.3	12.7	70.4	49.9	correlated
SMDH 00551	811966.9	8193830.8	156.4	13	14	85	1730.2	4312.6	1241.7	67.0	271.3	229.2	660.2	420.2	683.2	739.8	158.3	202.4	139.9	18.3	82.3	43.9	correlated
SMDH 00551	811966.9	8193830.8	156.4	14	15	80	642.9	988.5	544.0	31.5	76.1	28.3	81.4	51.8	84.2	91.2	86.2	106.5	77.3	8.9	41.1	23.6	correlated
SMDH 00551	811966.9	8193830.8	156.4	15	16	60	1156.4	3591.8	697.2	51.7	292.3	213.9	616.2	392.2	637.7	690.6	132.3	165.4	117.3	15.0	63.7	34.6	correlated
SMDH 00551	811966.9	8193830.8	156.4	16	17	60	834.9	1628.9	626.5	14.9	315.4	56.4	162.4	103.4	168.0	182.0	80.0	88.7	75.9	4.1	24.8	18.4	correlated
SMDH 00551	811966.9	8193830.8	156.4	17	18	80	1527.7	4080.4	1050.1	57.0	282.4	225.7	650.1	413.8	672.8	728.5	161.1	197.4	144.3	16.8	75.1	44.4	correlated
SMDH 00553	814966.2	8197083.5	179.2	0	1	30	1846.9	3514.9	1140.9	79.7	1461.7	69.8	201.1	128.0	208.2	225.4	667.5	718.2	645.3	22.2	190.6	178.7	correlated
SMDH 00553	814966.2	8197083.5	179.2	1	2	20	1419.8	3055.4	842.9	62.3	1071.4	90.5	260.6	165.9	269.7	292.1	417.0	456.0	398.8	18.2	117.4	98.2	correlated
SMDH 00553	814966.2	8197083.5	179.2	2	3	40	1481.9	2838.6	1050.5	59.0	690.9	87.1	250.8	159.6	259.5	281.1	313.2	350.9	296.7	16.5	95.7	71.8	correlated
SMDH 00553	814966.2	8197083.5	179.2	3	4	50	1553.4	2718.0	1142.5	61.9	699.8	68.3	196.6	125.1	203.5	220.3	386.1	425.3	368.9	17.2	112.7	91.6	correlated
SMDH 00553	814966.2	8197083.5	179.2	4	5	60	2135.3	3297.7	1718.7	61.7	722.4	66.7	192.0	122.2	198.7	215.2	362.9	402.3	345.8	17.1	107.0	84.6	correlated
SMDH 00553	814966.2	8197083.5	179.2	5	6	90	1556.9	2796.5	1148.6	57.4	670.1	77.2	222.4	141.5	230.1	249.2	329.6	365.3	312.8	16.8	99.4	79.1	correlated
SMDH 00553	814966.2	8197083.5	179.2	6	7	60	1653.1	2878.8	1230.0	78.2	655.3	76.8	221.1	140.8	228.8	247.8	368.5	416.8	344.8	23.7	120.6	88.1	correlated
SMDH 00553	814966.2	8197083.5	179.2	7	8	85	1850.5	3546.6	1290.9	47.9	1031.7	98.7	284.1	180.9	294.0	318.4	462.6	492.3	448.8	13.8	117.8	110.8	correlated
SMDH 00553	814966.2	8197083.5	179.2	8	9	90	1832.3	3349.1	1329.1	55.0	888.4	90.3	260.1	165.5	269.2	291.5	492.9	526.9	476.8	16.2	128.9	119.1	correlated
SMDH 00553	814966.2	8197083.5	179.2	9	10	70	2021.8	3507.7	1500.0	56.4	966.3	82.6	238.0	151.5	246.3	266.7	587.0	621.6	570.6	16.5	147.6	141.7	correlated
SMDH 00553	814966.2	8197083.5	179.2	10	11	75	1307.1	2354.5	933.9	68.6	595.8	63.4	182.7	116.3	189.1	204.7	245.1	289.5	225.5	19.6	95.3	61.7	correlated
SMDH 00554	809694.5	8198598.7	177.5	0	1	40	555.9	890.4	384.8	29.4	351.4	10.5	30.1	19.2	31.2	33.8	218.2	237.0	210.2	8.0	60.2	52.0	uncorrelated
SMDH 00554	809694.5	8198598.7	177.5	1	2	50	497.0	713.8	424.4	15.9	100.3	14.5	41.8	26.6	43.3	46.9	121.1	130.8	116.7	4.4	32.6	27.6	uncorrelated
SMDH 00554	809694.5	8198598.7	177.5	2	3	50	1219.4	1522.9	1101.1	33.0	161.8	19.0	54.9	34.9	56.8	61.5	355.8	375.9	346.6	9.2	88.9	84.5	uncorrelated
SMDH 00554	809694.5	8198598.7	177.5	3	4	60	850.1	1113.4	737.8	34.7	153.4	15.7	45.3	28.8	46.9	50.7	232.4	254.1	222.9	9.5	69.8	57.3	uncorrelated
SMDH 00555	815394.7	8198766.3	181.7	0	1	20	1527.8	3026.8	971.9	59.3	1073.0	77.4	222.9	141.9	230.7	249.8	556.9	594.6	540.0	16.9	151.1	142.2	correlated
SMDH 00555	815394.7	8198766.3	181.7	1	2	40	1318.6	2441.8	964.6	38.8	597.2	70.6	203.2	129.4	210.3	227.7	399.6	423.3	388.3	11.3	104.2	99.9	correlated
SMDH 00555	815394.7	8198766.3	181.7	2	3	30	992.7	1786.3	738.5	45.7	370.1	53.0	152.7	97.2	158.0	171.1	257.3	286.7	244.7	12.6	81.7	64.2	correlated
SMDH 00555	815394.7	8198766.3	181.7	3	4	70	1041.9	1914.1	770.7	50.3	377.5	60.0	172.9	110.1	178.9	193.8	324.2	356.5	310.1	14.1	96.9	79.7	correlated
SMDH 00555	815394.7	8198766.3	181.7	4	5	75	1038.5	1826.4	784.4	41.5	388.4	51.3	147.9	94.1	153.0	165.7	334.2	359.8	321.9	12.3	92.3	82.8	correlated
SMDH 00555	815394.7	8198766.3	181.7	5	6	80	1118.7	2137.8	833.1	31.8	425.2	71.1	204.8	130.4	212.0	229.5	230.8	250.5	221.7	9.0	67.1	58.1	correlated
SMDH 00555	815394.7	8198766.3	181.7	6	7	70	863.1	1698.0	606.5	38.2	386.1	56.0	161.2	102.6	166.8	180.6	227.7	252.1	217.0	10.7	72.5	58.5	correlated
SMDH 00555	815394.7	8198766.3	181.7	7	8	85	974.6	1839.1	742.2	26.5	326.1	62.4	179.8	114.5	186.1	201.5	181.7	198.2	174.7	7.0	52.7	43.9	correlated
SMDH 00555	815394.7	8198766.3	181.7	8	9	90	1054.6	1940.6	794.8	28.5	408.0	59.5	171.4	109.1	177.3	192.0	235.9	253.1	227.7	8.2	63.1	56.8	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	Classification
SMDH 00555	815394.7	8198766.3	181.7	9	10	70	1107.6	1860.9	867.8	40.9	355.2	50.1	144.2	91.8	149.3	161.6	351.4	376.4	339.3	12.0	94.1	86.3	correlated
SMDH 00555	815394.7	8198766.3	181.7	10	11	60	1796.1	2631.1	1562.3	56.6	236.3	65.1	187.4	119.3	194.0	210.0	237.8	274.3	222.3	15.4	84.2	58.5	correlated
SMDH 00556	817229.6	8198805.0	190.7	0	1	20	1538.7	3505.1	764.8	37.4	1717.0	82.7	238.2	151.6	246.5	266.9	425.4	447.2	413.7	11.7	102.3	101.4	correlated
SMDH 00556	817229.6	8198805.0	190.7	1	2	40	719.0	1594.7	444.3	28.9	466.1	55.0	158.3	100.8	163.9	177.5	212.9	230.8	204.2	8.7	52.8	42.6	correlated
SMDH 00556	817229.6	8198805.0	190.7	2	3	50	1112.0	1787.4	898.4	46.2	278.9	47.3	136.2	86.7	141.0	152.7	195.6	226.1	183.3	12.2	77.9	57.7	correlated
SMDH 00556	817229.6	8198805.0	190.7	3	4	75	2042.8	2769.3	1820.5	32.5	335.0	48.8	140.4	89.4	145.3	157.4	228.0	247.6	218.2	9.9	65.7	56.9	correlated
SMDH 00556	817229.6	8198805.0	190.7	4	5	95	1274.9	2299.8	949.1	49.6	503.6	66.9	192.7	122.7	199.4	215.9	341.6	373.5	327.9	13.7	99.6	83.1	correlated
SMDH 00557	815518.8	8200127.6	187.6	0	1	20	2171.1	4295.9	1345.8	86.4	1648.2	102.0	293.6	186.9	303.9	329.1	737.2	791.5	712.6	24.6	194.9	177.3	correlated
SMDH 00557	815518.8	8200127.6	187.6	1	2	50	1707.8	3316.8	1180.4	77.0	851.7	101.3	291.8	185.7	301.9	327.0	494.9	543.5	473.3	21.6	144.9	120.1	correlated
SMDH 00557	815518.8	8200127.6	187.6	2	3	60	3386.2	5295.1	2767.9	78.7	1029.2	119.1	342.9	218.3	354.9	384.3	341.8	393.0	320.5	21.2	121.9	86.4	correlated
SMDH 00557	815518.8	8200127.6	187.6	3	4	60	3491.1	4723.2	3054.1	81.5	690.6	75.2	216.7	137.9	224.3	242.8	470.7	522.4	447.4	23.2	149.7	118.4	correlated
SMDH 00557	815518.8	8200127.6	187.6	4	5	85	5422.4	6696.5	5025.1	54.0	625.8	83.2	239.6	152.5	247.9	268.5	477.9	511.4	462.7	15.2	129.5	115.6	correlated
SMDH 00558	814350.3	8201748.7	195.8	0	1	20	1488.9	2831.0	1221.0	38.2	179.9	116.8	336.3	214.0	348.0	376.8	237.9	261.7	227.2	10.7	73.0	60.7	correlated
SMDH 00558	814350.3	8201748.7	195.8	1	2	30	1896.3	4080.5	1218.6	72.2	1134.5	138.8	399.9	254.5	413.8	448.1	382.7	427.9	361.8	20.9	121.5	95.3	correlated
SMDH 00558	814350.3	8201748.7	195.8	2	3	30	1587.6	3813.6	1036.8	59.6	698.4	169.3	487.7	310.4	504.7	546.6	268.5	306.4	251.3	17.3	92.9	67.4	correlated
SMDH 00558	814350.3	8201748.7	195.8	3	4	50	1587.0	2871.9	1161.4	37.5	783.4	74.6	214.9	136.8	222.4	240.9	194.8	218.1	184.4	10.4	60.8	45.9	correlated
SMDH 00558	814350.3	8201748.7	195.8	4	5	80	1754.5	3887.6	1274.0	55.4	503.5	172.3	496.4	316.0	513.7	556.3	268.7	303.6	252.3	16.3	90.0	67.2	correlated
SMDH 00558	814350.3	8201748.7	195.8	5	6	90	1993.4	3832.3	1432.7	74.3	869.8	122.1	351.6	223.8	363.9	394.1	492.8	539.1	470.9	21.9	144.6	122.4	correlated
SMDH 00558	814350.3	8201748.7	195.8	6	7	75	1823.8	3492.8	1349.6	64.3	675.0	117.8	339.2	215.9	351.0	380.1	374.8	414.9	356.1	18.8	114.7	93.0	correlated
SMDH 00558	814350.3	8201748.7	195.8	7	8	95	1934.4	4203.0	1436.2	62.3	476.8	186.9	538.2	342.6	557.0	603.1	223.8	264.0	205.9	18.0	89.1	58.9	correlated
SMDH 00558	814350.3	8201748.7	195.8	8	9	85	1899.3	3306.2	1446.9	61.0	735.8	89.1	256.7	163.4	265.7	287.7	341.7	379.8	324.0	17.7	106.9	84.8	correlated
SMDH 00559	816043.9	8201165.5	196.0	0	1	20	3087.0	3759.0	2858.5	24.5	413.4	38.8	111.8	71.1	115.7	125.3	140.4	155.7	133.8	6.6	42.9	32.9	correlated
SMDH 00559	816043.9	8201165.5	196.0	1	2	40	2958.8	3912.6	2612.0	54.1	598.1	54.4	156.6	99.7	162.1	175.5	272.9	307.6	257.8	15.1	88.3	65.6	correlated
SMDH 00559	816043.9	8201165.5	196.0	2	3	40	3036.6	4369.2	2585.8	60.3	768.9	80.0	230.5	146.7	238.6	258.3	376.9	415.5	359.9	17.0	112.2	91.4	correlated
SMDH 00559	816043.9	8201165.5	196.0	3	4	30	2416.7	3757.4	1961.2	61.3	778.3	80.2	231.1	147.1	239.2	259.0	294.3	333.4	277.0	17.3	96.1	69.6	correlated
SMDH 00559	816043.9	8201165.5	196.0	4	5	50	1526.1	2503.4	1205.3	27.0	590.9	57.1	164.3	104.6	170.1	184.1	72.1	89.4	65.0	7.1	32.0	16.4	correlated
SMDH 00559	816043.9	8201165.5	196.0	5	6	50	1869.5	3242.6	1449.3	52.2	667.0	90.1	259.5	165.2	268.5	290.8	184.4	218.0	170.0	14.3	70.6	44.3	correlated
SMDH 00559	816043.9	8201165.5	196.0	6	7	75	1546.6	2518.3	1188.1	46.5	659.8	52.3	150.7	95.9	156.0	168.9	278.2	308.0	265.6	12.7	84.4	66.7	correlated
SMDH 00559	816043.9	8201165.5	196.0	7	8	50	1488.0	2543.3	1156.9	62.8	460.0	72.4	208.6	132.8	215.9	233.8	351.6	391.5	333.9	17.7	108.8	84.8	correlated
SMDH 00559	816043.9	8201165.5	196.0	8	9	50	1610.5	2859.1	1192.4	64.3	676.1	77.7	223.8	142.4	231.6	250.8	443.1	483.5	424.9	18.2	127.4	109.0	correlated
SMDH 00559	816043.9	8201165.5	196.0	9	9.5	40	1597.2	2856.8	1197.0	57.4	631.1	81.5	234.7	149.4	242.8	263.0	371.7	407.6	355.4	16.3	107.9	89.3	correlated
SMDH 00559	816043.9	8201165.5	196.0	9.5	10	40	1597.2	2856.8	1197.0	57.4	631.1	81.5	234.7	149.4	242.8	263.0	371.7	407.6	355.4	16.3	107.9	89.3	correlated
SMDH 00560	810578.4	8188936.8	315.5	0	1	35	892.0	2229.4	403.7	65.9	882.5	73.6	212.0	134.9	219.4	237.5	196.9	240.2	179.3	17.6	86.2	51.7	uncorrelated
SMDH 00560	810578.4	8188936.8	315.5	1	2	50	962.1	2230.1	534.6	71.4	675.2	79.6	229.2	145.9	237.2	256.9	271.7	317.6	252.1	19.6	105.5	71.2	uncorrelated
SMDH 00560	810578.4	8188936.8	315.5	2	3	50	982.7	2183.6	600.7	67.7	556.1	80.4	231.7	147.5	239.8	259.7	274.1	318.0	255.3	18.8	104.9	72.6	uncorrelated
SMDH 00560	810578.4	8188936.8	315.5	3	4	70	721.1	1448.9	453.6	48.8	439.8	42.5	122.4	77.9	126.7	137.2	180.0	212.4	167.1	12.9	71.8	47.1	uncorrelated
SMDH 00560	810578.4	8188936.8	315.5	4	5	95	404.4	546.5	344.0	20.1	76.9	8.8	25.5	16.2	26.4	28.5	75.0	87.8	69.9	5.1	28.8	18.6	uncorrelated
SMDH 00561	808856.5	8195774.3	166.6	0	1	40	383.7	464.1	328.4	26.0	67.3	3.6	10.2	6.5	10.6	11.5	73.1	89.3	65.7	7.4	31.0	17.7	uncorrelated
SMDH 00561	808856.5	8195774.3	166.6	1	2	60	578.6	771.0	491.8	30.6	110.1	11.6	33.5	21.3	34.6	37.5	79.3	99.5	71.6	7.7	36.9	19.6	uncorrelated
SMDH 00561	808856.5	8195774.3	166.6	2	3	75	494.1	623.3	412.9	35.1	104.7	5.9	17.1	10.9	17.7	19.1	93.6	115.9	83.9	9.6	41.6	23.1	uncorrelated
SMDH 00562	818734.8	8199568.0	347.5	0	1	30	1234.5	2848.3	681.2	58.3	1011.2	92.1	265.2	168.8	274.4	297.2	321.2	358.8	304.7	16.5	102.2	79.2	correlated
SMDH 00562	818734.8	8199568.0	347.5	1	2	30	1165.6	2511.6	736.5	56.7	696.5	85.7	246.9	157.2	255.5	276.7	220.2	256.6	203.9	16.3	78.1	50.3	correlated
SMDH 00562	818734.8	8199568.0	347.5	2	3	30	1662.6	3008.1	1190.5	120.6	620.5	90.3	260.1	165.5	269.2	291.5	216.4	294.7	182.3	34.1	119.3	47.8	correlated
SMDH 00562	818734.8	8199568.0	347.5	3	4	70	1259.9	2168.4	926.5	78.8	481.7	57.2	164.6	104.8	170.4	184.5	207.6	259.4	185.2	22.5	90.3	45.1	correlated
SMDH 00562	818734.8	8199568.0	347.5	4	5	75	1401.0	2723.7	925.7	76.5	803.7	77.0	221.7	141.1	229.5	248.5	260.6	307.4	236.8	23.8	91.3	53.8	correlated
SMDH 00562	818734.8	8199568.0	347.5	5	6	85	1177.4	2236.7	773.5	79.6	661.4	60.6	174.5	111.1	180.6	195.5	223.7	271.6	198.4	25.3	90.3	51.2	correlated
SMDH 00562	818734.8	8199568.0	347.5	6	7	90	1097.7	2207.9	773.4	43.0	480.4	76.4	220.1	140.1	227.8	246.7	186.4	214.1	174.3	12.1	63.2	42.3	correlated
SMDH 00562	818734.8	8199568.0	347.5	7	8	98	960.6	2019.6	703.3	28.6	314.4	81.6	235.1	149.7	243.3	263.5	96.9	114.9	88.6	8.4	36.4	21.7	correlated
SMDH 00562	818734.8	8199568.0	347.5	8	9	80	1124.2	2236.4	759.7	71.4	522.6	74.0	213.3	135.8	220.7	239.0	232.4	278.8	212.1	20.3	93.2	56.9	correlated
SMDH 00562	818734.8	8199568.0	347.5	9	10	80	1215.3	2255.2	915.9	23.9	493.5	68.9	198.5	126.4	205.5	222.5	137.1	152.3	130.6	6.5	43.0	32.6	correlated
SMDH 00562	818734.8	8199568.0	347.5	10	11	80	1378.5	2919.3	902.7	66.8	734.3	102.0	293.6	186.9	303.9	329.1	286.7	330.3	267.9	18.8	98.9	67.6	correlated
SMDH 00562	818734.8	8199568.0	347.5	11	12	85	1312.6	2659.9	858.5	78.3	707.9	85.1	245.2	156.1	253.8	274.8	248.0	298.5	225.4	22.7	100.6	63.8	correlated
SMDH 00562	818734.8	8199568.0	347.5	12	13	90	1482.9	3124.2	1013.9	113.1	492.5	126.2	363.5	231.4	376.2	407.4	260.9	334.9	228.3	32.7	131.4	68.1	correlated
SMDH 00562	818734.8	8199568.0	347.5	13	14	85	1497.8	3076.2	1055.9	100.8	468.9	121.7	350.4	223.1	362.7	392.7	293.4	360.3	265.3	28.2	131.3	76.3	correlated
SMDH 00562	818734.8	8199568.0	347.5	14	15	95	1391.9	2816.3	982.5	68.2	544.6	102.4	294.9	187.7	305.2	330.5	278.8	323.1	259.7	19.1	101.0	67.3	correlated
SMDH 00562	818734.8	8199568.0	347.5	15	16	80	870.4	1981.2	556.6	34.5	473.2	76.9	221.5	141.0	229.3	248.3	174.8	197.5	165.6	9.2	56.2	40.8	correlated
SMDH 00562	818734.8	8199568.0	347.5	16	17	70	953.7	2442.4	480.0	26.9	897.1	87.1	250.9	159.7	259.6	281.1	237.4	254.2	230.0	7.4	61.1	55.4	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	
SMDH 00563	810941.3	8200082.0	182.3	0	1	15	753.5	1316.4	536.8	29.2	406.9	28.8	83.0	52.8	85.9	93.0	308.9	327.0	300.5	8.4	76.4	73.3	correlated
SMDH 00563	810941.3	8200082.0	182.3	1	2	40	1227.2	2589.0	771.0	37.0	858.6	77.4	222.8	141.8	230.6	249.7	455.6	478.2	444.6	11.0	106.4	104.6	correlated
SMDH 00563	810941.3	8200082.0	182.3	2	3	50	1143.3	2163.9	894.9	33.9	281.4	80.0	230.4	146.7	238.4	258.2	157.0	178.8	147.8	9.2	56.7	41.3	correlated
SMDH 00563	810941.3	8200082.0	182.3	3	4	50	2132.1	2989.5	1864.5	14.8	499.9	51.2	147.4	93.8	152.6	165.2	221.0	229.6	217.1	3.9	51.5	53.6	correlated
SMDH 00563	810941.3	8200082.0	182.3	4	5	95	3231.2	4029.0	2977.0	26.6	437.7	49.3	142.0	90.4	146.9	159.1	177.8	194.6	170.7	7.1	53.4	44.8	correlated
SMDH 00563	810941.3	8200082.0	182.3	5	6	95	1353.6	2164.7	1046.0	40.4	575.3	42.2	121.5	77.4	125.8	136.2	169.0	195.2	158.4	10.6	60.8	41.2	correlated
SMDH 00563	810941.3	8200082.0	182.3	6	7	50	1392.2	2154.6	1216.4	40.0	121.1	65.2	187.7	119.5	194.3	210.4	78.7	104.9	68.0	10.6	46.6	23.6	correlated
SMDH 00563	810941.3	8200082.0	182.3	7	8	90	2176.0	2921.1	2001.3	46.5	101.8	64.7	186.4	118.6	192.9	208.9	99.2	130.2	87.4	11.8	55.8	28.4	correlated
SMDH 00565	812966.7	8189998.4	154.2	0	1	20	975.6	2362.8	517.8	60.6	766.4	85.4	245.9	156.6	254.5	275.6	251.3	291.1	235.1	16.2	91.5	63.3	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	1	2	40	992.2	2299.0	543.4	64.6	758.5	78.2	225.3	143.4	233.1	252.4	279.1	320.5	261.2	18.0	99.4	70.8	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	2	3	30	923.9	2120.6	514.1	63.2	675.2	72.8	209.7	133.5	217.0	235.0	249.1	290.2	231.5	17.6	93.6	63.5	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	3	4	40	955.6	2185.0	509.9	57.7	809.9	67.7	195.1	124.2	201.9	218.6	248.5	286.0	232.4	16.1	91.6	64.9	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	4	5	50	1043.3	2334.4	606.3	58.1	746.7	77.5	223.1	142.0	230.9	250.0	240.2	277.5	223.6	16.7	88.0	61.6	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	5	6	70	916.9	2082.7	540.1	57.2	592.4	74.9	215.7	137.3	223.3	241.8	228.7	265.6	212.6	16.1	82.8	55.9	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	6	7	50	838.3	2011.4	443.8	52.0	672.4	70.7	203.7	129.7	210.9	228.3	225.3	258.9	210.8	14.5	79.7	55.4	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	7	8	80	984.2	2064.3	647.8	49.4	515.7	71.4	205.7	130.9	212.9	230.5	251.3	282.9	237.5	13.8	84.8	64.2	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	8	9	40	1063.6	2248.6	676.5	48.3	652.8	73.1	210.4	133.9	217.8	235.8	302.9	333.9	289.7	13.1	91.8	75.2	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	9	10	40	857.1	2028.0	497.6	46.5	565.9	77.0	221.8	141.2	229.5	248.5	261.3	291.1	248.4	12.9	82.3	64.5	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	10	11	80	763.5	1337.8	562.7	35.9	318.8	35.3	101.5	64.6	105.1	113.8	294.0	316.7	284.0	10.0	78.7	70.1	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	11	12	90	1007.9	1617.5	812.5	38.9	271.1	41.5	119.6	76.1	123.7	134.0	399.5	423.5	388.4	11.1	101.6	97.8	uncorrelated
SMDH 00565	812966.7	8189998.4	154.2	12	13	70	753.8	1223.2	591.9	33.6	237.1	30.3	87.1	55.5	90.2	97.6	299.3	319.9	289.1	10.2	81.1	74.1	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	0	1	20	496.5	1189.3	220.2	26.0	571.5	31.2	89.8	57.2	92.9	100.6	106.3	123.6	99.5	6.8	38.3	26.1	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	1	2	15	488.5	1203.1	223.1	24.7	525.9	36.0	103.7	66.0	107.4	116.3	110.1	126.3	103.5	6.6	38.0	26.7	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	2	3	20	562.8	1405.3	286.9	28.9	486.7	50.6	145.6	92.7	150.7	163.2	138.2	156.5	130.2	7.9	43.9	30.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	3	4	20	390.0	925.6	214.7	23.2	291.2	33.2	95.8	61.0	99.1	107.3	101.3	116.2	95.0	6.3	35.5	25.0	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	4	5	85	580.9	1076.6	417.9	18.2	284.3	29.9	86.1	54.8	89.1	96.4	177.9	188.9	172.9	5.0	45.5	42.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	5	6	90	828.6	1226.4	700.0	15.1	218.1	24.6	70.8	45.1	73.3	79.4	161.2	170.1	157.1	4.1	41.0	39.1	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	6	7	80	715.5	906.0	649.6	9.5	112.0	11.3	32.6	20.7	33.7	36.5	115.9	121.2	113.3	2.6	28.9	27.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	7	8	98	1049.5	1770.9	839.5	12.5	365.7	46.4	133.6	85.1	138.3	149.8	234.7	241.4	231.1	3.7	51.8	55.1	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	8	9	85	1059.9	1775.1	841.0	18.6	378.7	45.0	129.7	82.5	134.2	145.3	289.0	299.5	283.6	5.4	64.9	66.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	9	10	85	1275.7	2212.3	991.6	20.4	500.9	58.7	168.9	107.5	174.8	189.3	363.5	375.0	357.8	5.7	80.4	85.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	10	11	98	957.0	2208.7	583.6	22.2	665.1	78.7	226.6	144.2	234.5	253.9	305.8	319.3	299.5	6.3	71.4	72.6	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	11	12	98	1048.0	1570.8	886.2	15.2	277.7	32.9	94.6	60.2	97.9	106.1	177.6	186.3	173.6	4.0	40.3	39.7	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	12	13	95	1228.5	1698.0	1090.5	16.2	213.6	31.7	91.3	58.1	94.4	102.3	244.2	253.3	239.8	4.5	59.2	59.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	13	14	80	1432.2	2268.2	1187.6	20.5	406.3	54.8	157.9	100.5	163.4	177.0	375.1	386.8	369.3	5.9	85.2	91.2	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	14	15	95	1314.3	2301.0	1042.1	23.0	424.1	68.1	196.1	124.8	203.0	219.8	242.1	255.8	235.6	6.5	60.8	56.8	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	15	16	95	1224.8	2773.2	868.4	19.3	469.1	118.8	342.2	217.8	354.1	383.5	215.6	227.3	210.7	4.9	46.6	42.9	uncorrelated
SMDH 00566	811420.1	8190212.7	157.0	16	17	95	1348.5	2791.3	975.6	18.7	582.9	101.8	293.3	186.7	303.5	328.7	283.8	294.6	278.8	5.0	60.2	61.4	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	0	1	30	1045.5	2814.2	541.9	73.1	701.2	125.7	361.9	230.4	374.5	405.6	279.6	328.5	260.5	19.1	109.5	72.9	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	1	2	40	1196.4	2743.7	750.8	75.3	590.6	111.3	320.6	204.1	331.8	359.3	338.3	387.3	317.7	20.6	115.9	81.0	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	2	3	30	995.4	2425.5	518.3	67.9	789.5	88.1	253.6	161.4	262.5	284.2	275.8	320.1	257.2	18.6	103.1	71.2	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	3	4	50	984.8	2472.7	560.0	71.2	558.7	107.6	309.9	197.3	320.7	347.3	281.4	328.2	262.4	18.9	106.8	72.8	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	4	5	70	867.6	2076.4	472.3	61.9	621.5	77.2	222.4	141.6	230.2	249.3	254.2	295.2	237.8	16.3	98.7	69.8	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	5	6	60	1025.5	2378.1	570.2	66.4	753.0	82.9	238.8	152.0	247.1	267.6	261.0	304.2	242.4	18.6	96.8	64.8	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	6	7	20	944.4	2149.0	534.9	52.7	708.4	71.5	206.0	131.2	213.2	230.9	196.5	231.2	182.3	14.2	76.9	51.2	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	7	8	80	1356.5	2686.0	930.1	46.1	733.1	81.9	236.0	150.2	244.2	264.4	180.7	211.0	168.5	12.2	68.9	46.9	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	8	9	85	2409.8	3672.7	2016.9	52.9	619.0	82.5	237.7	151.3	246.0	266.4	212.9	247.9	198.9	14.0	79.5	54.0	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	9	10	75	882.2	2044.7	506.7	57.2	589.0	74.8	215.4	137.1	223.0	241.4	229.6	267.9	214.8	14.8	88.0	59.8	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	10	11	90	909.6	1928.0	580.8	49.7	517.0	65.5	188.6	120.0	195.1	211.3	299.3	331.8	286.1	13.2	94.6	76.1	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	11	12	70	914.1	2072.0	565.4	45.7	536.1	77.6	223.4	142.2	231.2	250.4	276.6	305.7	263.7	12.9	86.1	69.7	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	12	13	50	642.0	1423.6	374.2	39.4	448.5	47.1	135.7	86.3	140.4	152.0	183.3	208.3	171.8	11.5	62.2	45.5	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	13	14	60	640.1	1338.9	422.6	34.3	324.9	46.7	134.6	85.7	139.3	150.8	176.1	198.1	166.6	9.5	59.6	45.6	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	14	15	80	401.7	733.4	293.2	19.0	163.6	21.6	62.2	39.6	64.4	69.8	94.6	106.7	89.5	5.1	31.1	23.2	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	15	16	75	1501.9	2823.4	1126.3	30.2	609.9	88.7	255.3	162.5	264.3	286.2	424.9	442.8	416.2	8.6	100.0	102.9	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	16	17	85	1627.8	2248.6	1305.9	83.2	564.4	24.8	71.3	45.4	73.8	79.9	324.5	376.0	299.7	24.8	118.7	81.9	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	17	18	80	1097.9	2047.2	853.0	47.9	252.2	75.0	216.0	137.5	223.5	242.0	261.6	291.3	247.5	14.2	85.2	67.4	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	18	19	60	793.6	1742.6	556.8	60.6	177.1	79.5	229.0	145.8	237.0	256.7	80.9	119.0	63.0	17.9	59.2	22.8	uncorrelated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	
SMDH 00567	814710.6	8189744.3	154.8	19	20	80	938.2	1909.1	552.0	26.7	832.5	41.8	120.3	76.6	124.5	134.8	245.7	262.4	238.2	7.5	64.7	60.2	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	20	21	85	1308.4	3574.6	822.8	98.3	301.3	197.3	568.3	361.7	588.1	636.8	148.9	213.8	120.7	28.1	109.1	49.3	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	21	22	70	1615.7	3937.9	1041.9	161.8	363.9	198.8	572.6	364.5	592.6	641.7	298.8	405.1	252.7	46.1	178.1	84.8	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	22	23	90	1022.4	2003.2	785.6	51.0	196.5	81.4	234.4	149.2	242.5	262.6	178.5	211.8	164.6	13.9	74.9	48.9	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	23	24	90	1466.3	2365.0	1188.0	66.1	332.1	65.3	188.1	119.8	194.7	210.8	432.1	473.9	413.5	18.6	129.5	107.8	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	24	25	75	1806.1	3209.9	1483.8	32.6	367.7	111.2	320.3	203.9	331.5	359.0	471.9	491.6	463.2	8.8	110.5	113.6	uncorrelated
SMDH 00567	814710.6	8189744.3	154.8	25	26	60	1468.7	2773.0	1119.8	30.7	519.5	92.5	266.5	169.6	275.8	298.6	405.5	423.9	396.9	8.6	96.7	98.2	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	0	1	15	874.0	2009.8	492.0	59.9	616.0	70.6	203.4	129.5	210.5	227.9	257.8	296.8	241.3	16.5	94.3	67.6	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	1	2	20	1132.5	2406.8	729.2	72.2	581.5	85.9	247.4	157.5	256.0	277.2	315.7	362.5	296.1	19.6	110.8	78.1	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	2	3	30	933.3	2023.0	551.7	60.8	633.9	65.1	187.6	119.4	194.2	210.2	239.5	280.4	224.1	15.5	96.0	66.9	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	3	4	50	957.1	2249.1	577.5	58.7	535.3	90.4	260.3	165.7	269.4	291.7	263.9	301.9	247.7	16.2	92.0	65.4	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	4	5	60	943.1	2181.3	523.7	56.9	712.8	74.5	214.5	136.5	222.0	240.4	265.9	302.2	249.4	16.5	95.3	70.2	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	5	6	60	1237.4	2351.2	858.4	62.2	607.5	69.0	198.8	126.6	205.8	222.8	287.9	328.4	271.4	16.5	97.8	69.5	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	6	7	50	1028.8	2199.6	623.3	63.6	671.0	70.6	203.3	129.4	210.4	227.9	275.0	316.5	257.8	17.2	101.6	71.6	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	7	8	75	939.9	2114.8	586.6	55.6	508.4	80.9	232.9	148.3	241.1	261.1	232.7	269.2	218.1	14.6	86.0	59.6	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	8	9	80	549.8	1016.5	373.3	36.7	280.6	27.3	78.7	50.1	81.5	88.2	142.7	166.6	132.9	9.8	53.2	35.6	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	9	10	60	1277.8	2481.0	935.0	22.9	575.0	79.5	229.0	145.8	237.0	256.7	348.1	361.3	341.5	6.6	82.7	86.1	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	10	11	95	1187.2	2510.7	760.8	19.2	833.5	75.3	216.7	138.0	224.3	242.9	289.9	300.7	284.1	5.7	66.4	68.3	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	11	12	95	1275.9	2435.1	940.3	26.1	559.1	76.3	219.8	139.9	227.4	246.3	372.9	388.0	365.0	7.9	88.7	92.5	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	12	13	85	1427.0	2980.5	1003.9	34.6	653.6	108.1	311.3	198.1	322.1	348.8	537.6	558.1	527.3	10.3	122.4	128.2	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	13	14	95	1204.5	2639.9	807.2	23.7	656.9	96.6	278.3	177.2	288.1	311.9	302.8	316.5	295.7	7.0	76.4	76.9	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	14	15	85	1262.8	2895.3	812.1	26.5	744.5	110.1	317.0	201.8	328.1	355.2	432.5	447.7	424.5	8.0	101.7	107.9	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	15	16	85	1080.1	2241.4	735.8	29.4	577.5	75.4	217.1	138.2	224.7	243.3	387.0	404.5	378.2	8.8	95.6	97.7	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	16	17	95	1040.6	2256.6	708.4	31.0	501.2	85.2	245.5	156.3	254.0	275.1	361.7	380.4	352.8	8.9	89.9	88.4	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	17	18	98	1021.3	2289.3	672.3	22.5	567.7	86.1	248.1	157.9	256.7	278.0	355.9	368.7	348.9	7.0	83.2	87.5	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	18	19	95	1210.9	2567.2	824.2	24.4	654.5	89.3	257.1	163.6	266.0	288.1	429.6	443.4	421.8	7.8	99.9	107.6	uncorrelated
SMDH 00568	815801.2	8189236.3	156.3	19	20	98	1709.4	3345.5	1217.6	53.8	793.1	107.5	309.5	197.0	320.3	346.8	679.0	712.2	662.9	16.0	149.6	145.4	uncorrelated
SMDH 00570	811478.3	8191209.2	151.0	0	1	50	1587.6	3217.0	990.9	94.3	1030.6	92.4	266.0	169.3	275.3	298.1	439.2	498.2	411.5	27.7	143.5	105.7	correlated
SMDH 00570	811478.3	8191209.2	151.0	1	2	50	982.6	2275.6	602.1	73.1	486.2	93.5	269.2	171.3	278.6	301.7	302.6	348.7	281.7	20.8	109.1	77.2	correlated
SMDH 00570	811478.3	8191209.2	151.0	2	3	60	888.6	2291.2	527.3	70.3	372.6	110.8	319.1	203.1	330.3	357.6	291.9	336.5	271.5	20.4	103.0	71.4	correlated
SMDH 00570	811478.3	8191209.2	151.0	3	4	75	739.1	1723.1	441.8	46.7	430.4	67.5	194.3	123.7	201.1	217.7	251.0	280.8	237.9	13.2	80.4	62.1	correlated
SMDH 00570	811478.3	8191209.2	151.0	4	5	60	937.2	1740.3	631.7	47.9	543.9	43.3	124.8	79.5	129.2	139.9	365.3	394.6	350.9	14.4	100.6	89.7	correlated
SMDH 00570	811478.3	8191209.2	151.0	5	6	60	718.5	1465.0	482.9	31.0	379.6	47.9	138.1	87.9	142.9	154.7	220.5	239.3	211.4	9.0	63.0	55.0	correlated
SMDH 00570	811478.3	8191209.2	151.0	6	7	50	648.0	1250.0	464.0	19.3	304.7	38.7	111.6	71.0	115.5	125.1	162.8	174.2	157.1	5.7	43.2	39.3	correlated
SMDH 00570	811478.3	8191209.2	151.0	7	8	70	1239.9	2391.5	881.0	49.9	560.9	75.5	217.3	138.3	224.9	243.6	380.9	412.1	366.6	14.3	102.0	89.4	correlated
SMDH 00570	811478.3	8191209.2	151.0	8	9	95	1471.1	3453.5	1001.6	51.2	552.8	155.0	446.4	284.2	462.0	500.3	323.1	355.0	307.8	15.3	94.6	78.1	correlated
SMDH 00570	811478.3	8191209.2	151.0	9	10	50	1719.7	5054.1	1083.8	74.7	412.0	292.2	841.6	535.7	871.0	943.1	165.5	213.4	144.0	21.5	87.2	46.3	correlated
SMDH 00570	811478.3	8191209.2	151.0	10	11	98	1621.7	4914.1	987.1	87.7	380.1	290.1	835.7	531.9	864.8	936.5	219.2	275.9	194.1	25.1	105.8	58.6	correlated
SMDH 00570	811478.3	8191209.2	151.0	11	12	80	1406.6	2093.9	1210.6	34.1	253.0	50.0	144.0	91.7	149.1	161.4	539.7	559.2	528.9	10.8	117.3	124.6	correlated
SMDH 00570	811478.3	8191209.2	151.0	12	13	85	1000.3	1840.3	744.8	27.2	419.7	54.4	156.7	99.7	162.2	175.6	368.4	383.7	359.6	8.8	83.9	85.7	correlated
SMDH 00570	811478.3	8191209.2	151.0	13	14	95	530.5	845.3	407.0	18.5	227.9	16.1	46.3	29.5	48.0	51.9	132.5	143.2	127.1	5.4	38.1	32.4	correlated
SMDH 00571	814147.1	8191240.6	156.5	0	1	40	1385.3	3170.5	827.0	62.8	929.0	113.4	326.5	207.8	337.9	365.9	395.7	435.3	377.6	18.1	117.5	96.3	correlated
SMDH 00571	814147.1	8191240.6	156.5	1	2	40	902.1	2078.1	557.2	39.9	534.1	79.4	228.7	145.6	236.7	256.4	248.2	273.4	236.7	11.5	73.3	59.5	correlated
SMDH 00571	814147.1	8191240.6	156.5	2	3	40	543.6	1340.7	346.4	30.6	216.2	62.7	180.6	114.9	186.9	202.4	139.6	159.2	131.1	8.5	48.7	35.2	correlated
SMDH 00571	814147.1	8191240.6	156.5	3	4	60	686.4	1564.7	441.8	35.3	332.0	63.4	182.5	116.2	188.9	204.6	195.7	218.2	185.6	10.1	63.0	49.3	correlated
SMDH 00571	814147.1	8191240.6	156.5	4	5	50	588.3	1269.0	382.7	23.5	329.7	44.7	128.8	82.0	133.3	144.3	164.9	179.7	158.5	6.4	47.3	40.6	correlated
SMDH 00571	814147.1	8191240.6	156.5	5	6	40	1263.7	2508.5	841.1	39.7	783.9	70.8	203.9	129.8	211.0	228.5	432.4	456.6	420.7	11.8	109.4	106.8	correlated
SMDH 00571	814147.1	8191240.6	156.5	6	7	50	1143.9	2330.6	780.2	29.9	633.8	74.4	214.2	136.4	221.7	240.1	343.1	361.2	334.4	8.7	85.9	84.2	correlated
SMDH 00571	814147.1	8191240.6	156.5	7	8	75	1705.6	2822.5	1379.7	33.9	515.8	74.9	215.7	137.3	223.3	241.8	351.9	373.2	342.5	9.4	90.7	86.3	correlated
SMDH 00571	814147.1	8191240.6	156.5	8	9	70	2008.2	3195.0	1637.2	23.9	681.9	71.5	205.8	131.0	213.0	230.6	242.7	257.0	236.0	6.7	61.1	57.8	correlated
SMDH 00571	814147.1	8191240.6	156.5	9	10	80	1198.7	2104.2	937.8	20.9	430.1	60.0	172.8	110.0	178.9	193.7	252.3	264.8	246.3	6.1	62.3	61.9	correlated
SMDH 00571	814147.1	8191240.6	156.5	10	11	70	1239.2	2192.0	986.7	21.7	374.0	67.9	195.6	124.5	202.4	219.2	230.3	243.5	224.1	6.2	58.3	56.1	correlated
SMDH 00571	814147.1	8191240.6	156.5	11	12	50	1198.1	2196.9	898.6	30.6	489.8	65.2	187.9	119.6	194.5	210.6	403.7	422.1	394.5	9.2	95.8	97.5	correlated
SMDH 00571	814147.1	8191240.6	156.5	12	13	90	1138.0	2066.8	876.9	38.8	354.7	66.8	192.4	122.5	199.1	215.6	212.4	237.6	201.8	10.7	69.0	53.3	correlated
SMDH 00571	814147.1	8191240.6	156.5	13	14	85	1460.8	2600.2	1130.1	53.7	450.1	81.0	233.4	148.6	241.6	261.6	267.2	302.7	252.6	14.6	90.3	66.6	correlated
SMDH 00571	814147.1	8191240.6	156.5	14	15	85	1415.8	2648.7	1029.3	97.0	450.0	90.0	259.1	164.9	268.1	290.3	298.4	363.7	272.5	25.9	129.0	76.6	correlated
SMDH 00571	814147.1	8191240.6	156.5	15	16	100	1086.6	2167.5	792.8	33.9	417.0	77.5	223.2	142.1	231.0	250.1	179.3	201.3	170.1	9.3	59.7	45.6	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	
SMDH 00572	817075.3	8191184.7	163.7	0	1	20	646.1	1548.2	318.0	18.4	685.3	44.2	127.2	81.0	131.6	142.5	198.2	209.2	192.8	5.4	48.5	46.8	correlated
SMDH 00572	817075.3	8191184.7	163.7	1	2	50	1121.4	2663.2	643.5	30.5	873.3	93.6	269.6	171.6	279.0	302.1	407.0	424.8	397.7	9.3	85.6	83.1	correlated
SMDH 00572	817075.3	8191184.7	163.7	2	3	50	2500.0	3738.0	2061.3	59.6	773.2	70.8	203.9	129.8	211.0	228.5	428.0	464.3	409.9	18.1	113.2	98.9	correlated
SMDH 00572	817075.3	8191184.7	163.7	3	4	50	2584.8	3211.5	2398.0	30.4	262.6	43.7	125.8	80.1	130.2	141.0	359.3	377.3	350.6	8.7	91.2	91.2	correlated
SMDH 00572	817075.3	8191184.7	163.7	4	5	70	1133.9	2399.3	698.9	54.8	764.1	73.9	213.0	135.6	220.4	238.7	391.9	426.5	376.1	15.8	116.7	101.8	correlated
SMDH 00572	817075.3	8191184.7	163.7	5	6	75	2421.8	3714.5	2015.3	43.8	686.9	81.2	233.9	148.9	242.1	262.2	405.9	433.4	393.8	12.1	106.0	98.6	correlated
SMDH 00572	817075.3	8191184.7	163.7	6	7	80	2526.6	3378.5	2274.6	22.4	418.5	55.6	160.2	102.0	165.8	179.5	267.4	281.0	261.4	6.1	67.0	66.4	correlated
SMDH 00572	817075.3	8191184.7	163.7	7	8	80	1478.8	2531.9	1184.7	24.0	467.6	71.8	206.7	131.6	213.9	231.6	344.6	359.0	337.6	7.0	81.7	83.4	correlated
SMDH 00572	817075.3	8191184.7	163.7	8	9	70	1565.8	2812.8	1221.7	30.2	532.2	86.3	248.5	158.2	257.2	278.5	393.0	411.1	384.0	9.0	98.8	99.4	correlated
SMDH 00572	817075.3	8191184.7	163.7	9	10	60	1346.6	2505.3	1010.7	29.0	549.8	76.8	221.2	140.8	229.0	247.9	343.7	361.4	335.1	8.7	87.7	86.3	correlated
SMDH 00572	817075.3	8191184.7	163.7	10	11	80	1634.1	2858.7	1293.2	37.0	506.8	85.7	246.8	157.1	255.4	276.6	454.0	476.4	442.7	11.3	113.0	111.9	correlated
SMDH 00572	817075.3	8191184.7	163.7	11	12	90	1810.1	3119.7	1404.5	36.1	703.4	81.8	235.7	150.0	243.9	264.2	462.6	484.4	451.9	10.7	115.1	115.3	correlated
SMDH 00572	817075.3	8191184.7	163.7	12	13	85	1475.3	2605.8	1144.2	32.1	535.0	75.0	216.1	137.6	223.6	242.2	381.4	401.2	372.3	9.1	93.7	92.1	correlated
SMDH 00572	817075.3	8191184.7	163.7	13	14	90	1561.8	2801.6	1172.0	41.5	660.6	77.8	224.1	142.6	231.9	251.1	398.5	425.0	387.2	11.4	104.9	97.3	correlated
SMDH 00572	817075.3	8191184.7	163.7	14	15	95	1770.5	3154.0	1365.6	35.0	668.8	91.0	262.0	166.8	271.2	293.6	521.0	542.3	510.9	10.1	124.3	128.0	correlated
SMDH 00573	816234.3	8193843.2	166.0	0	1	40	2955.5	6153.4	1694.7	98.7	2662.5	142.4	410.1	261.0	424.4	459.6	1052.4	1113.3	1022.7	29.7	240.7	224.4	correlated
SMDH 00573	816234.3	8193843.2	166.0	1	2	50	1233.8	2966.5	766.8	46.5	682.3	123.4	355.4	226.2	367.8	398.2	381.0	410.1	367.4	13.7	103.5	91.4	correlated
SMDH 00573	816234.3	8193843.2	166.0	2	3	60	1827.7	2981.9	1420.7	36.8	782.1	62.3	179.3	114.2	185.6	201.0	474.8	497.5	464.9	9.9	116.3	117.1	correlated
SMDH 00573	816234.3	8193843.2	166.0	3	4	60	1987.1	3280.0	1595.4	57.5	583.3	87.5	252.2	160.5	261.0	282.6	472.8	509.2	456.6	16.2	129.4	115.8	correlated
SMDH 00573	816234.3	8193843.2	166.0	4	5	80	2095.7	3346.8	1692.5	55.2	654.0	79.3	228.3	145.3	236.3	255.9	522.8	557.6	507.4	15.5	140.0	130.8	correlated
SMDH 00573	816234.3	8193843.2	166.0	5	6	80	1779.3	2931.7	1459.7	21.1	522.4	77.9	224.3	142.8	232.1	251.4	397.5	409.4	391.3	6.2	85.5	92.7	correlated
SMDH 00573	816234.3	8193843.2	166.0	6	7	75	1440.7	2502.2	1168.5	26.1	376.1	78.1	225.0	143.2	232.9	252.2	431.2	445.7	423.7	7.4	94.5	101.0	correlated
SMDH 00573	816234.3	8193843.2	166.0	7	8	90	1699.4	3047.6	1308.4	33.9	639.5	89.4	257.5	163.9	266.5	288.5	482.0	502.3	471.9	10.2	117.0	120.4	correlated
SMDH 00573	816234.3	8193843.2	166.0	8	9	95	1496.9	2702.0	1108.1	39.4	681.8	73.2	210.8	134.2	218.2	236.3	419.7	444.1	408.5	11.2	109.3	105.4	correlated
SMDH 00573	816234.3	8193843.2	166.0	9	10	85	1420.5	2581.6	1065.8	37.7	585.1	74.9	215.7	137.3	223.3	241.8	346.5	369.8	335.9	10.6	89.7	82.4	correlated
SMDH 00573	816234.3	8193843.2	166.0	10	11	95	1514.9	2702.4	1191.4	33.5	474.4	84.1	242.3	154.3	250.8	271.6	381.3	401.4	371.3	10.0	95.1	92.8	correlated
SMDH 00574	809836.5	8193888.1	156.3	0	1	25	582.7	1340.2	340.3	28.0	409.8	47.2	135.8	86.5	140.6	152.2	154.1	172.3	146.8	7.3	48.3	37.2	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	1	2	50	794.2	1834.7	454.4	39.9	581.9	63.6	183.2	116.6	189.6	205.3	228.3	253.7	216.9	11.4	70.7	56.0	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	2	3	40	797.7	1909.3	495.5	49.4	376.0	82.9	238.8	152.0	247.1	267.6	228.3	260.5	214.8	13.5	78.0	55.4	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	3	4	40	578.5	1166.2	395.9	21.4	298.7	37.8	108.8	69.2	112.6	121.9	166.6	180.1	160.8	5.7	46.9	41.5	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	4	5	40	1385.8	2968.6	790.7	52.0	1201.0	77.6	223.4	142.2	231.2	250.4	448.9	481.7	433.9	15.0	121.1	110.7	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	5	6	70	1191.1	2408.2	747.8	49.2	838.0	64.9	186.8	118.9	193.3	209.3	410.3	441.4	396.2	14.1	111.8	101.4	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	6	7	40	1969.7	3878.4	1199.2	67.4	1623.3	82.9	238.8	152.0	247.1	267.6	689.2	730.7	669.4	19.8	174.1	167.5	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	7	8	60	1414.4	2267.4	1063.6	131.7	379.7	58.1	167.3	106.5	173.1	187.5	613.5	700.3	578.1	35.3	206.1	149.2	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	8	9	60	803.4	1367.3	634.6	27.7	237.7	39.2	112.9	71.9	116.8	126.5	269.1	286.2	261.1	7.9	70.4	66.8	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	9	10	60	717.9	955.5	616.8	31.9	135.2	14.4	41.4	26.4	42.9	46.4	188.3	209.8	181.2	7.1	59.9	45.5	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	10	11	70	866.6	989.6	807.7	19.1	84.8	6.5	18.9	12.0	19.5	21.1	118.1	129.8	112.9	5.2	36.7	28.9	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	11	12	80	1017.0	1120.4	963.8	21.0	66.6	5.8	16.7	10.6	17.3	18.7	119.9	133.0	114.3	5.6	38.3	29.2	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	12	13	60	663.2	814.7	591.0	27.2	89.6	9.0	25.8	16.4	26.7	28.9	114.6	132.3	107.6	7.1	42.0	28.1	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	13	14	90	816.0	944.0	762.4	17.5	68.4	8.0	23.1	14.7	23.9	25.9	116.7	127.4	112.0	4.8	34.2	27.7	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	14	15	90	580.2	733.8	511.4	24.3	86.8	9.3	26.9	17.1	27.8	30.1	111.6	127.2	105.3	6.3	38.5	26.6	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	15	16	70	1076.0	1210.1	1005.7	28.3	87.0	7.5	21.5	13.7	22.3	24.1	158.5	176.5	151.0	7.5	49.8	37.8	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	16	17	85	868.9	1002.2	804.4	23.7	82.8	7.7	22.0	14.0	22.8	24.7	117.8	133.0	111.7	6.0	39.3	28.0	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	17	18	60	433.1	588.7	359.0	33.9	70.2	10.5	30.3	19.3	31.4	34.0	136.9	158.9	127.8	9.0	50.9	33.7	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	18	19	60	389.3	525.7	331.4	20.1	70.7	8.7	25.0	15.9	25.9	28.0	97.9	110.5	92.5	5.4	32.5	23.5	uncorrelated
SMDH 00574	809836.5	8193888.1	156.3	19	20	80	403.4	514.3	357.4	15.1	58.1	7.0	20.2	12.9	20.9	22.7	82.3	91.5	78.1	4.2	26.3	19.8	uncorrelated
SMDH 00575	813787.1	8195606.2	165.9	0	1	15	729.6	1784.1	394.3	31.8	588.3	64.6	186.0	118.4	192.4	208.4	192.7	212.5	183.3	9.4	55.6	44.6	correlated
SMDH 00575	813787.1	8195606.2	165.9	1	2	30	1122.5	2580.8	588.6	47.9	1054.2	74.7	215.0	136.9	222.5	241.0	288.5	318.9	274.6	13.9	85.9	68.8	correlated
SMDH 00575	813787.1	8195606.2	165.9	2	3	40	2001.6	3404.3	1533.3	53.9	821.4	83.5	240.6	153.1	249.0	269.6	436.6	470.8	421.4	15.1	118.4	106.4	correlated
SMDH 00575	813787.1	8195606.2	165.9	3	4	60	1397.9	2279.4	1093.0	32.9	558.5	49.9	143.7	91.5	148.8	161.1	269.7	290.2	260.1	9.6	73.5	66.2	correlated
SMDH 00575	813787.1	8195606.2	165.9	4	5	80	1449.9	2738.7	1061.4	46.8	612.4	85.4	245.9	156.6	254.5	275.6	323.7	354.0	310.9	12.8	92.7	78.3	correlated
SMDH 00575	813787.1	8195606.2	165.9	5	6	90	1420.5	2397.7	1070.0	36.0	666.1	52.5	151.1	96.2	156.4	169.4	251.9	274.5	241.9	10.1	73.0	63.2	correlated
SMDH 00575	813787.1	8195606.2	165.9	6	7	80	1612.4	2729.3	1220.8	41.6	726.8	62.1	178.8	113.8	185.0	200.4	279.1	305.8	267.9	11.3	83.8	70.7	correlated
SMDH 00576	816709.9	8195586.5	169.3	0	1	50	1307.1	2957.6	716.3	48.8	1163.9	86.3	248.5	158.2	257.2	278.5	394.9	426.2	381.4	13.5	110.9	98.6	correlated
SMDH 00576	816709.9	8195586.5	169.3	1	2	40	1484.2	3169.6	864.5	51.9	1241.1	84.9	244.5	155.7	253.1	274.0	408.6	441.7	394.1	14.4	114.4	102.0	correlated
SMDH 00576	816709.9	8195586.5	169.3	2	3	40	1679.5	3454.5	979.6	63.7	1445.5	81.0	233.3	148.5	241.4	261.5	486.5	526.2	467.9	18.5	133.9	117.9	correlated
SMDH 00576	816709.9	8195586.5	169.3	3	4	50	5215.9	6640.8	4922.2	40.3	225.5	121.9	351.0	223.4	363.2	393.3	139.9	166.1	129.1	10.8	62.7	43.8	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific
units:	m	m	m	m	m	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Classification
SMDH 00576	816709.9	8195586.5	169.3	4	5	75	4545.4	5847.9	4219.6	38.1	409.7	99.0	285.2	181.5	295.1	319.6	183.2	207.5	172.1	11.1	64.9	50.3	correlated
SMDH 00576	816709.9	8195586.5	169.3	5	6	75	3650.2	5317.3	3128.5	72.1	820.0	108.8	313.3	199.4	324.2	351.1	360.4	406.8	339.9	20.6	121.1	91.8	correlated
SMDH 00576	816709.9	8195586.5	169.3	6	7	60	2981.3	4655.7	2412.7	58.1	1037.8	96.2	277.1	176.4	286.8	310.5	372.3	409.7	356.1	16.2	112.9	93.5	correlated
SMDH 00576	816709.9	8195586.5	169.3	7	8	70	2433.8	4067.3	1938.7	63.5	771.4	108.5	312.6	199.0	323.5	350.3	394.4	434.9	376.7	17.7	122.6	101.7	correlated
SMDH 00576	816709.9	8195586.5	169.3	8	9	80	1416.0	2866.4	982.8	42.2	713.0	94.7	272.6	173.5	282.1	305.5	340.4	366.6	328.1	12.2	94.2	84.4	correlated
SMDH 00576	816709.9	8195586.5	169.3	9	10	60	1590.4	2799.9	1161.8	65.8	728.3	70.8	203.9	129.8	211.0	228.5	395.3	437.0	376.3	19.0	123.1	100.1	correlated
SMDH 00576	816709.9	8195586.5	169.3	10	11	90	2417.1	4121.3	1883.1	82.1	810.5	112.9	325.1	206.9	336.4	364.3	465.6	517.8	442.0	23.6	148.2	118.4	correlated
SMDH 00576	816709.9	8195586.5	169.3	11	12	95	2314.9	4110.5	1797.0	38.2	867.0	118.1	340.2	216.6	352.1	381.3	374.9	398.3	363.8	11.0	95.7	91.0	correlated
SMDH 00576	816709.9	8195586.5	169.3	12	13	98	2370.6	4644.4	1765.7	91.8	754.5	170.5	491.0	312.6	508.1	550.3	308.4	367.9	282.9	25.5	124.2	79.1	correlated
SMDH 00576	816709.9	8195586.5	169.3	13	14	95	2296.9	3964.3	1947.9	53.7	259.3	142.9	411.5	261.9	425.9	461.2	132.2	167.5	117.5	14.7	68.2	38.4	correlated
SMDH 00576	816709.9	8195586.5	169.3	14	15	85	2520.9	4962.0	1928.6	48.9	783.3	184.6	531.8	338.5	550.4	596.0	371.3	401.0	356.7	14.6	104.3	93.1	correlated
SMDH 00576	816709.9	8195586.5	169.3	15	16	90	1928.1	4104.8	1474.3	40.3	440.2	180.3	519.4	330.6	537.5	582.1	184.9	210.1	173.0	11.9	65.0	47.8	correlated
SMDH 00577	816135.6	8197017.0	177.2	0	1	40	1077.0	2383.0	545.8	30.5	1182.1	52.4	150.9	96.1	156.2	169.1	318.6	337.3	309.6	9.0	74.5	70.8	correlated
SMDH 00577	816135.6	8197017.0	177.2	1	2	50	1078.3	2483.3	682.5	47.4	580.3	98.4	283.4	180.4	293.3	317.6	343.4	373.8	330.4	13.0	95.6	80.9	correlated
SMDH 00577	816135.6	8197017.0	177.2	2	3	40	1422.6	2715.4	936.9	79.5	845.1	71.6	206.3	131.3	213.5	231.2	513.3	563.4	489.8	23.5	155.4	130.2	correlated
SMDH 00577	816135.6	8197017.0	177.2	3	4	50	1569.2	2498.7	1271.6	34.6	502.3	57.9	166.7	106.1	172.6	186.9	220.6	242.3	210.9	9.8	64.1	52.8	correlated
SMDH 00577	816135.6	8197017.0	177.2	4	5	60	2503.8	3027.3	2339.8	15.2	284.9	32.5	93.6	59.6	96.8	104.9	68.0	76.8	63.9	4.1	22.9	16.7	correlated
SMDH 00577	816135.6	8197017.0	177.2	5	6	70	2878.2	3738.7	2609.7	24.0	468.6	53.4	153.7	97.9	159.1	172.3	153.7	168.5	147.6	6.2	44.8	37.3	correlated
SMDH 00577	816135.6	8197017.0	177.2	6	7	60	3417.8	4117.6	3196.6	37.2	327.0	46.7	134.5	85.6	139.2	150.8	243.6	266.8	233.7	9.9	71.7	60.2	correlated
SMDH 00577	816135.6	8197017.0	177.2	7	8	90	1602.2	2655.0	1307.6	17.0	495.2	70.1	201.8	128.5	208.8	226.1	52.7	63.1	48.1	4.5	22.5	13.5	correlated
SMDH 00580	815309.8	8202873.0	195.2	0	1	20	1954.6	4690.0	1004.0	62.2	1893.1	145.2	418.1	266.2	432.7	468.6	591.3	628.6	571.7	19.6	163.4	152.5	correlated
SMDH 00580	815309.8	8202873.0	195.2	1	2	60	1997.3	4344.8	1134.0	71.2	1732.5	118.0	339.9	216.4	351.8	380.9	569.3	613.6	548.7	20.6	159.6	140.0	correlated
SMDH 00580	815309.8	8202873.0	195.2	2	3	70	1564.8	3015.0	1105.9	70.8	702.2	95.3	274.4	174.7	284.0	307.6	365.9	410.4	345.4	20.5	118.8	92.6	correlated
SMDH 00580	815309.8	8202873.0	195.2	3	4	75	2025.3	3354.0	1513.0	149.0	671.5	85.6	246.5	156.9	255.1	276.3	411.4	506.0	366.5	44.9	185.5	106.9	correlated
SMDH 00580	815309.8	8202873.0	195.2	4	5	85	2987.3	8348.2	1992.8	103.8	620.3	472.3	1360.4	866.0	1407.9	1524.6	211.3	279.0	180.3	31.0	128.9	66.7	correlated
SMDH 00581	810876.3	8201871.0	178.4	0	1	20	1798.2	4068.8	1032.6	81.0	1379.5	132.2	380.7	242.3	393.9	426.6	428.8	480.4	405.6	23.1	134.5	102.1	correlated
SMDH 00581	810876.3	8201871.0	178.4	1	2	40	1885.0	3713.3	1290.7	63.0	1038.3	110.8	319.2	203.2	330.3	357.7	328.4	367.9	310.6	17.7	103.7	79.5	correlated
SMDH 00581	810876.3	8201871.0	178.4	2	3	40	1962.7	4024.7	1180.5	70.6	1579.7	100.2	288.4	183.6	298.5	323.3	483.5	528.1	463.3	20.1	139.1	117.3	correlated
SMDH 00581	810876.3	8201871.0	178.4	3	4	60	1737.0	3925.8	981.5	70.7	1420.3	121.9	351.1	223.5	363.4	393.5	452.3	496.9	431.8	20.4	132.6	108.2	correlated
SMDH 00581	810876.3	8201871.0	178.4	4	5	70	1405.4	2925.8	918.9	53.9	830.0	94.2	271.3	172.7	280.8	304.0	434.7	468.9	419.5	15.2	119.0	105.4	correlated
SMDH 00581	810876.3	8201871.0	178.4	5	6	40	1534.6	2387.8	1195.9	49.9	633.1	42.7	122.9	78.3	127.2	137.8	665.9	696.2	651.0	14.8	160.0	162.3	correlated
SMDH 00581	810876.3	8201871.0	178.4	6	7	50	1291.2	2074.3	1025.6	46.1	415.4	49.3	141.9	90.3	146.8	159.0	553.6	582.3	540.5	13.2	134.9	133.1	correlated
SMDH 00581	810876.3	8201871.0	178.4	7	8	60	1516.6	2797.6	1041.5	51.4	914.4	66.3	190.9	121.5	197.6	214.0	574.3	606.2	559.6	14.7	139.9	135.5	correlated
SMDH 00581	810876.3	8201871.0	178.4	8	9	50	2083.8	4227.7	1261.5	76.3	1664.9	102.8	296.0	188.4	306.3	331.7	678.3	724.8	655.0	23.3	174.1	160.0	correlated
SMDH 00581	810876.3	8201871.0	178.4	9	10	15	1897.9	3599.1	1229.8	65.5	1359.4	79.2	228.2	145.2	236.1	255.7	660.0	700.5	640.7	19.2	165.7	156.8	correlated
SMDH 00581	810876.3	8201871.0	178.4	10	11	60	2780.0	5457.5	1668.0	95.0	2389.2	109.5	315.3	200.7	326.3	353.4	915.6	975.2	888.5	27.2	235.4	222.1	correlated
SMDH 00581	810876.3	8201871.0	178.4	11	12	75	1851.2	3817.7	1286.6	10.0	1055.6	122.9	354.1	225.4	366.4	396.8	60.1	64.8	57.4	2.6	16.9	13.2	correlated
SMDH 00581	810876.3	8201871.0	178.4	12	13	60	2381.5	4242.9	1817.1	11.2	1101.7	110.1	317.2	201.9	328.2	355.4	235.6	240.7	232.9	2.7	49.4	53.9	correlated
SMDH 00581	810876.3	8201871.0	178.4	13	14	50	2074.3	4347.3	1459.2	9.0	1092.7	149.8	431.5	274.7	446.6	483.6	95.1	99.1	92.7	2.4	23.4	22.1	correlated
SMDH 00581	810876.3	8201871.0	178.4	14	15	40	1908.6	4308.0	1265.6	9.2	1132.5	159.4	459.2	292.3	475.2	514.6	43.0	47.5	40.8	2.3	13.9	9.9	correlated
SMDH 00581	810876.3	8201871.0	178.4	15	16	40	1892.7	3822.8	1351.3	8.3	994.9	123.2	354.7	225.8	367.1	397.5	50.1	53.9	48.0	2.2	14.2	11.3	correlated
SMDH 00581	810876.3	8201871.0	178.4	16	17	50	1781.7	3566.7	1283.8	9.1	904.9	114.8	330.7	210.5	342.3	370.6	60.6	65.1	58.3	2.3	16.5	13.2	correlated
SMDH 00581	810876.3	8201871.0	178.4	17	18	30	1655.9	3010.7	1255.8	6.7	768.3	82.2	236.7	150.7	245.0	265.3	49.1	51.9	47.2	1.9	12.7	9.9	correlated
SMDH 00582	811537.2	8202962.1	182.7	0	1	25	1171.5	2304.9	818.5	49.6	549.5	74.4	214.4	136.5	221.9	240.3	312.6	344.0	298.6	14.0	92.5	75.8	correlated
SMDH 00582	811537.2	8202962.1	182.7	1	2	40	1170.4	2632.6	770.0	48.5	565.4	104.7	301.7	192.0	312.2	338.1	226.0	257.5	212.7	13.3	76.7	55.5	correlated
SMDH 00582	811537.2	8202962.1	182.7	2	3	40	1006.1	2411.3	626.6	48.7	516.4	102.3	294.7	187.6	304.9	330.2	226.7	258.1	213.1	13.6	77.9	56.4	correlated
SMDH 00582	811537.2	8202962.1	182.7	3	4	30	1191.8	2773.2	708.3	55.1	785.3	102.7	295.8	188.3	306.2	331.5	342.8	377.6	326.8	15.9	103.4	84.8	correlated
SMDH 00582	811537.2	8202962.1	182.7	4	5	75	1675.5	3300.6	1098.7	58.9	1089.0	88.4	254.6	162.1	263.5	285.4	567.2	603.4	549.6	17.6	146.4	138.6	correlated
SMDH 00582	811537.2	8202962.1	182.7	5	6	75	720.2	1349.2	541.0	25.4	252.1	44.5	128.2	81.6	132.7	143.7	208.7	224.6	201.8	7.0	55.3	50.0	correlated
SMDH 00582	811537.2	8202962.1	182.7	6	7	75	750.1	1260.0	595.5	26.4	216.9	35.3	101.7	64.8	105.3	114.0	154.9	171.4	147.3	7.5	47.1	37.7	correlated
SMDH 00582	811537.2	8202962.1	182.7	7	8	85	1477.1	2792.3	1059.0	57.6	667.9	84.5	243.5	155.0	252.0	272.8	481.4	517.2	464.8	16.6	129.6	117.3	correlated
SMDH 00582	811537.2	8202962.1	182.7	8	9	80	1494.3	2853.6	1070.4	57.1	669.7	88.6	255.2	162.5	264.1	286.0	485.8	521.0	468.9	16.9	130.5	119.3	correlated
SMDH 00582	811537.2	8202962.1	182.7	9	10	80	1552.5	2917.3	1099.7	53.4	785.5	82.1	236.4	150.5	244.7	265.0	438.7	472.0	423.6	15.1	116.6	104.6	correlated
SMDH 00582	811537.2	8202962.1	182.7	10	11	90	1327.9	2612.1	978.1	43.1	487.5	92.6	266.6	169.7	275.9	298.7	351.9	378.6	339.6	12.2	95.0	85.0	correlated
SMDH 00582	811537.2	8202962.1	182.7	11	12	80	1336.7	2604.1	937.5	51.0	646.7	81.3	234.1	149.0	242.2	262.3	430.4	462.4	415.9	14.4	115.5	104.2	correlated
SMDH 00582	811537.2	8202962.1	182.7	12	13	60	1331.0	2565.8	943.8	61.1	582.2	82.1	236.4	150.5	244.7	265.0	393.0	431.9	375.9	17.1	116.3	95.5	correlated
SMDH 00582	811537.2	8202962.1	182.7	13	14	95	1455.5	2699.8	1057.1	45.6	674.7	77.4	222.8	141.8	230.6	249.7	416.6	445.0	403.7	12.8	109.5	100.7	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific
units:	m	m	m	m	m	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Classification
SMDH 00582	811537.2	8202962.1	182.7	14	15	75	1432.5	2748.9	1041.6	54.1	581.2	89.9	259.0	164.8	268.0	290.2	425.4	460.2	411.1	14.3	116.8	102.4	correlated
SMMB 001	816553.8	8198191.2	184.0	0	1		801.0	1791.0	465.2	30.7	625.5	56.2	161.8	103.0	167.4	181.3	294.9	313.5	285.8	9.1	76.3	72.6	correlated
SMMB 001	816553.8	8198191.2	184.0	1	2		1444.8	2646.8	1031.5	95.7	567.6	79.9	230.0	146.4	238.0	257.7	323.8	388.6	300.1	23.8	133.2	82.8	correlated
SMMB 001	816553.8	8198191.2	184.0	2	3		1310.9	2622.0	927.4	85.6	443.0	97.8	281.7	179.3	291.5	315.7	377.2	432.1	352.9	24.3	131.2	95.7	correlated
SMMB 001	816553.8	8198191.2	184.0	3	4		1130.7	2498.3	710.6	82.8	558.4	96.2	277.0	176.3	286.6	310.4	269.4	322.6	246.1	23.2	106.8	67.1	correlated
SMMB 001	816553.8	8198191.2	184.0	4	5		1027.1	2309.0	662.8	61.6	473.9	93.2	268.3	170.8	277.7	300.7	286.9	326.3	269.4	17.5	97.8	73.1	correlated
SMMB 001	816553.8	8198191.2	184.0	5	6		1203.5	2529.2	781.5	57.5	677.6	84.9	244.6	155.7	253.2	274.2	318.4	354.4	301.2	17.2	100.3	81.0	correlated
SMMB 001	816553.8	8198191.2	184.0	6	7		1851.9	2969.1	1484.2	44.4	629.5	68.0	195.9	124.7	202.8	219.6	258.7	286.5	245.7	12.9	81.0	66.6	correlated
SMMB 001	816553.8	8198191.2	184.0	7	8		1579.9	2595.6	1218.5	67.7	571.7	61.9	178.2	113.4	184.4	199.7	259.8	303.7	240.2	19.6	96.8	65.0	correlated
SMMB 001	816553.8	8198191.2	184.0	8	9		1541.4	2849.0	1185.4	48.8	478.0	95.3	274.6	174.8	284.2	307.8	325.4	357.4	311.7	13.7	96.0	78.7	correlated
SMMB 001	816553.8	8198191.2	184.0	9	10		1534.7	2841.4	1128.9	55.5	635.4	85.7	246.8	157.1	255.4	276.6	351.9	387.2	335.9	16.0	108.2	89.2	correlated
SMMB 001	816553.8	8198191.2	184.0	10	11		1156.4	2454.8	755.5	60.3	604.1	86.8	250.0	159.2	258.8	280.2	445.1	481.9	426.4	18.7	124.9	110.2	correlated
SMMB 001	816553.8	8198191.2	184.0	11	12		992.0	2246.4	605.1	63.5	562.9	85.1	245.2	156.1	253.7	274.8	349.7	389.4	330.8	18.9	108.8	85.3	correlated
SMMB 001	816553.8	8198191.2	184.0	12	13		952.7	2267.4	530.5	41.8	740.8	80.1	230.6	146.8	238.6	258.4	215.1	241.7	203.3	11.8	69.2	51.8	correlated
SMMB 001	816553.8	8198191.2	184.0	13	14		1341.2	2728.8	889.8	53.9	767.3	85.4	245.9	156.5	254.5	275.6	559.9	592.8	543.8	16.1	140.7	136.0	correlated
SMMB 001	816553.8	8198191.2	184.0	14	15		1034.0	2264.4	697.7	26.6	525.3	85.1	245.2	156.1	253.7	274.8	436.0	451.6	428.1	7.8	97.8	103.2	correlated
SMMB 001	816553.8	8198191.2	184.0	15	16		833.3	1931.3	515.5	44.6	456.9	76.7	220.9	140.6	228.6	247.5	291.7	320.0	279.3	12.4	85.9	70.7	correlated
SMMB 001	816553.8	8198191.2	184.0	16	17		742.4	1690.3	471.6	36.5	388.8	66.6	191.7	122.0	198.4	214.8	262.0	285.0	251.6	10.4	75.2	64.3	correlated
SMMB 001	816553.8	8198191.2	184.0	17	18		597.1	1205.1	390.8	20.1	380.3	34.7	100.0	63.7	103.5	112.1	157.8	170.1	152.2	5.6	42.2	36.9	correlated
SMMB 001	816553.8	8198191.2	184.0	18	19		938.2	1831.0	710.4	23.5	306.6	66.3	191.0	121.6	197.6	214.0	138.1	152.7	131.5	6.7	40.4	31.6	correlated
SMMB 001	816553.8	8198191.2	184.0	19	20		757.0	1963.7	420.0	36.3	503.8	84.2	242.5	154.3	250.9	271.7	241.1	263.0	229.3	11.8	69.4	60.4	correlated
SMMB 001	816553.8	8198191.2	184.0	20	21		857.8	1755.8	575.8	54.3	389.3	61.8	177.9	113.3	184.1	199.4	181.6	215.0	164.9	16.6	71.6	46.9	correlated
SMMB 001	816553.8	8198191.2	184.0	21	22		874.7	1561.1	681.0	19.5	298.1	47.2	135.9	86.5	140.6	152.3	73.7	85.5	67.8	5.9	26.9	17.9	correlated
SMMB 001	816553.8	8198191.2	184.0	22	23		929.2	2009.0	625.7	36.8	442.2	75.9	218.5	139.1	226.1	244.8	207.7	229.7	195.8	11.9	63.4	52.2	correlated
SMMB 001	816553.8	8198191.2	184.0	23	24		944.7	2162.1	555.3	52.0	631.9	77.4	223.0	141.9	230.7	249.9	256.3	288.1	240.1	16.3	81.5	62.5	correlated
SMMB 001	816553.8	8198191.2	184.0	24	25		918.7	2250.9	507.6	44.3	683.0	85.2	245.5	156.3	254.0	275.1	230.7	257.6	216.8	13.9	75.1	60.2	correlated
SMMB 001	816553.8	8198191.2	184.0	25	26		899.6	2106.3	554.8	44.1	503.8	84.2	242.5	154.3	250.9	271.7	244.7	272.5	231.5	13.2	77.2	62.0	correlated
SMMB 001	816553.8	8198191.2	184.0	26	27		1071.7	2699.4	561.0	40.6	913.8	99.3	286.0	182.1	296.0	320.5	186.4	211.4	174.1	12.3	60.9	45.1	correlated
SMMB 001	816553.8	8198191.2	184.0	27	28		1339.9	3535.3	751.0	17.5	1005.0	147.8	425.6	270.9	440.5	477.0	214.6	224.6	208.9	5.6	52.6	53.8	correlated
SMMB 001	816553.8	8198191.2	184.0	28	29		543.2	1261.3	158.7	29.3	940.5	11.1	32.1	20.4	33.2	36.0	88.5	106.9	80.7	7.8	37.2	22.1	correlated
SMMB 001	816553.8	8198191.2	184.0	29	30		1444.7	2986.9	999.7	48.8	686.9	105.0	302.3	192.5	312.9	338.8	188.1	219.0	174.0	14.1	68.4	45.9	correlated
SMMB 001	816553.8	8198191.2	184.0	30	31																		correlated
SMMB 001	816553.8	8198191.2	184.0	31	32																		correlated
SMMB 002	810675.6	8190095.2	157.0	0	1		492.5	777.0	345.3	45.4	230.7	13.1	37.6	23.9	38.9	42.1	160.5	190.5	148.4	12.2	62.8	40.5	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	1	2		813.3	982.1	734.2	29.7	97.3	10.1	29.2	18.6	30.2	32.7	170.8	190.1	163.0	7.8	55.3	43.4	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	2	3		573.5	695.3	508.1	30.2	69.0	7.4	21.3	13.5	22.0	23.8	79.0	98.9	71.2	7.8	36.9	20.0	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	3	4		535.5	652.4	469.6	28.3	79.3	6.3	18.1	11.6	18.8	20.3	53.1	71.2	45.6	7.5	29.6	13.1	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	4	5		760.8	875.5	715.1	15.4	54.5	7.6	21.9	13.9	22.6	24.5	98.3	107.3	93.9	4.4	29.3	24.1	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	5	6		661.8	761.3	603.8	27.9	60.8	5.8	16.6	10.6	17.2	18.6	75.3	92.8	67.5	7.8	33.0	17.8	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	6	7		652.8	800.2	570.5	39.3	84.2	8.9	25.7	16.3	26.5	28.7	109.2	133.2	96.2	13.0	48.2	28.6	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	7	8		593.3	666.3	528.1	40.6	53.9	3.7	10.6	6.7	10.9	11.9	54.9	80.8	43.2	11.7	37.7	13.3	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	8	9																		uncorrelated
SMMB 002	810675.6	8190095.2	157.0	9	10		752.6	855.6	706.8	15.0	62.2	6.0	17.3	11.0	17.9	19.4	74.1	82.7	69.5	4.7	24.0	19.2	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	10	11		507.5	559.7	467.4	22.6	38.5	2.6	7.6	4.8	7.8	8.5	41.2	54.9	34.3	6.8	22.8	10.0	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	11	12		613.5	677.9	556.2	35.1	49.1	3.1	9.0	5.8	9.4	10.1	78.8	101.4	69.1	9.7	40.1	19.9	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	12	13		599.0	702.3	528.0	37.4	71.3	5.5	15.8	10.1	16.4	17.8	65.8	90.0	55.2	10.6	39.7	17.3	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	13	14		682.9	780.0	625.7	29.5	53.1	6.0	17.3	11.0	17.9	19.4	74.3	93.0	65.9	8.4	34.5	18.4	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	14	15		928.2	1083.5	848.2	21.3	137.4	6.4	18.5	11.8	19.1	20.7	129.0	142.4	123.5	5.5	40.4	32.5	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	15	16		943.9	1167.2	852.4	21.0	146.9	12.3	35.5	22.6	36.7	39.7	118.5	131.5	112.9	5.6	35.3	27.5	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	16	17		751.9	827.2	702.1	21.9	64.8	3.2	9.3	5.9	9.6	10.4	85.9	100.2	80.5	5.3	33.0	21.5	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	17	18		601.4	683.6	556.4	14.4	71.2	3.5	10.0	6.4	10.4	11.3	70.3	79.4	66.7	3.6	23.7	16.9	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	18	19		786.7	896.9	720.0	28.7	84.4	5.4	15.4	9.8	16.0	17.3	77.1	96.5	70.6	6.5	35.7	18.9	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	19	20		616.7	692.1	562.6	24.3	71.4	2.8	8.2	5.2	8.4	9.1	79.0	94.4	72.5	6.5	32.3	19.5	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	20	21		640.0	694.5	596.0	23.6	47.3	2.3	6.7	4.3	6.9	7.5	66.3	80.8	59.5	6.8	29.7	17.4	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	21	22		593.5	648.9	548.9	23.9	48.0	2.4	6.8	4.3	7.0	7.6	61.4	76.5	54.9	6.5	28.1	15.2	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	22	23		626.5	704.7	559.1	34.0	83.5	2.4	6.8	4.3	7.0	7.6	70.0	91.1	60.3	9.7	35.8	17.3	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	23	24		612.1	666.3	565.8	27.5	41.7	2.6	7.6	4.8	7.8	8.5	74.9	92.3	67.4	7.5	32.7	18.6	uncorrelated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	
SMMB 002	810675.6	8190095.2	157.0	24	25		652.2	728.9	587.1	37.2	64.0	3.4	9.8	6.2	10.2	11.0	75.9	99.7	65.4	10.5	41.7	20.6	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	25	26		560.9	596.5	503.9	40.5	42.8	0.8	2.2	1.4	2.3	2.5	57.0	83.1	45.9	11.1	38.0	13.5	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	26	27		797.4	871.3	713.6	55.1	68.4	2.9	8.3	5.3	8.6	9.3	82.7	118.7	67.7	14.9	54.3	21.1	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	27	28		634.9	711.9	586.7	23.7	51.6	4.2	12.1	7.7	12.5	13.5	76.1	91.3	70.1	5.9	30.5	18.4	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	28	29		685.7	789.8	610.5	33.1	102.4	3.7	10.6	6.7	10.9	11.9	80.5	101.2	71.2	9.3	37.9	20.4	uncorrelated
SMMB 002	810675.6	8190095.2	157.0	29	30		643.7	758.8	578.9	25.9	85.3	5.8	16.6	10.6	17.2	18.6	71.4	88.4	65.0	6.4	32.3	18.2	uncorrelated
SMDH 00303	812837.0	8202419.0	190.0	0	1		1682.1	3060.7	1242.4	71.0	667.1	90.6	261.0	166.1	270.1	292.5	400.3	444.5	379.3	21.0	124.7	99.0	correlated
SMDH 00303	812837.0	8202419.0	190.0	1	2		1741.8	2919.3	1403.5	45.5	489.1	82.3	237.0	150.9	245.3	265.6	282.6	310.9	269.2	13.4	85.3	69.3	correlated
SMDH 00304	813175.0	8202436.0	182.0	0	1		1338.9	2709.3	824.1	66.7	959.7	72.0	207.5	132.1	214.7	232.5	484.6	525.5	464.0	20.7	139.4	122.0	correlated
SMDH 00304	813175.0	8202436.0	182.0	1	2		1609.0	2752.1	1219.8	50.7	672.3	67.9	195.5	124.5	202.4	219.1	412.1	444.5	397.8	14.3	117.3	104.6	correlated
SMDH 00295	813542.0	8202434.0	191.0	0	1		1500.2	2753.6	991.7	56.3	1031.7	56.5	162.8	103.6	168.5	182.4	593.3	627.9	576.6	16.7	154.8	149.2	correlated
SMDH 00295	813542.0	8202434.0	191.0	1	2		2478.3	3336.7	2198.9	29.0	491.1	51.8	149.2	95.0	154.5	167.3	410.3	427.4	401.7	8.6	97.3	100.1	correlated
SMDH 00295	813542.0	8202434.0	191.0	2	3		1911.3	3093.7	1579.4	27.5	529.0	80.3	231.4	147.3	239.5	259.3	294.2	310.4	286.3	7.9	73.3	70.8	correlated
SMDH 00305	813898.0	8202426.0	194.0	0	1		2433.3	4746.8	1650.2	79.2	1428.5	133.3	383.8	244.3	397.2	430.2	961.9	1010.1	938.3	23.5	240.4	240.3	correlated
SMDH 00305	813898.0	8202426.0	194.0	1	2		1358.2	2633.0	1005.9	24.2	570.2	86.6	249.5	158.8	258.2	279.6	307.5	321.7	300.3	7.2	74.3	74.7	correlated
SMDH 00305	813898.0	8202426.0	194.0	2	3		1812.3	3179.1	1403.5	42.8	662.9	89.7	258.5	164.5	267.5	289.7	487.1	513.3	474.2	12.9	121.1	119.1	correlated
SMDH 00305	813898.0	8202426.0	194.0	3	4		1885.4	3215.5	1494.3	39.4	628.8	88.3	254.4	161.9	263.3	285.1	522.6	545.7	510.2	12.3	127.0	130.3	correlated
SMDH 00306	814272.0	8202437.0	196.0	0	1		1247.2	2693.8	775.0	31.7	894.7	83.2	239.7	152.6	248.1	268.7	216.2	236.2	207.3	8.9	64.0	53.9	correlated
SMDH 00306	814272.0	8202437.0	196.0	1	2		1739.2	3006.5	1345.7	17.3	748.5	75.1	216.2	137.6	223.8	242.3	165.0	174.9	160.0	5.1	43.7	41.0	correlated
SMDH 00306	814272.0	8202437.0	196.0	2	3		5037.6	6199.1	4664.7	55.1	587.7	74.8	215.4	137.1	222.9	241.4	439.1	473.5	423.0	16.1	122.4	110.6	correlated
SMDH 00307	814633.0	8202453.0	200.0	0	1		1042.6	2339.9	669.1	42.9	568.2	88.9	256.0	163.0	264.9	286.9	374.4	401.4	362.1	12.3	102.3	93.7	correlated
SMDH 00307	814633.0	8202453.0	200.0	1	2		987.6	2216.2	627.9	36.0	576.5	81.8	235.7	150.0	243.9	264.2	348.1	370.1	337.3	10.8	91.7	87.2	correlated
SMDH 00307	814633.0	8202453.0	200.0	2	3		2015.7	3670.5	1537.8	43.7	770.2	110.6	318.6	202.8	329.7	357.0	468.8	495.5	455.8	13.0	116.2	113.9	correlated
SMDH 00307	814633.0	8202453.0	200.0	3	4		1487.6	2961.2	1053.6	20.4	783.5	92.6	266.6	169.7	275.9	298.8	249.3	261.1	243.2	6.1	58.4	58.9	correlated
SMDH 00308	815072.0	8202301.0	194.0	0	1		1250.8	2964.5	622.0	64.8	1212.9	89.3	257.2	163.7	266.2	288.3	291.4	333.4	273.5	17.8	100.3	72.0	correlated
SMDH 00308	815072.0	8202301.0	194.0	1	2		845.3	2137.2	438.5	44.2	687.4	81.1	233.7	148.7	241.8	261.8	215.3	244.1	203.2	12.1	73.5	54.6	correlated
SMDH 00308	815072.0	8202301.0	194.0	2	3		622.3	1272.9	392.6	28.0	415.5	36.6	105.5	67.2	109.2	118.2	199.6	217.0	191.2	8.4	57.8	50.0	correlated
SMDH 00308	815072.0	8202301.0	194.0	3	4		1669.4	3726.1	914.4	60.4	1520.5	103.2	297.4	189.3	307.8	333.3	507.7	544.7	489.6	18.1	140.3	127.6	correlated
SMDH 00291	813554.0	8196438.0	176.0	0	1		2168.7	3950.4	1471.2	73.0	1399.9	84.4	243.1	154.8	251.6	272.4	883.5	926.7	860.6	22.9	226.2	231.6	correlated
SMDH 00291	813554.0	8196438.0	176.0	1	2		1566.8	2859.1	1163.4	33.6	713.0	79.6	229.3	145.9	237.3	256.9	388.1	408.0	377.7	10.4	105.1	105.6	correlated
SMDH 00291	813554.0	8196438.0	176.0	2	3		2746.3	3589.5	2506.5	35.1	332.2	60.0	172.9	110.1	178.9	193.8	395.7	416.4	385.2	10.5	102.3	102.3	correlated
SMDH 00291	813554.0	8196438.0	176.0	3	4		2613.0	3433.4	2377.0	20.0	384.6	54.7	157.5	100.2	163.0	176.5	356.3	367.3	350.1	6.2	84.1	92.0	correlated
SMDH 00309	815323.0	8202411.0	191.0	0	1		1757.6	3950.6	1013.4	59.6	1417.6	122.5	352.7	224.5	365.0	395.3	560.8	596.4	542.4	18.4	151.7	145.0	correlated
SMDH 00309	815323.0	8202411.0	191.0	1	2		2533.7	3818.1	2171.1	39.9	545.7	89.0	256.4	163.2	265.4	287.4	308.1	332.4	296.0	12.2	89.3	81.2	correlated
SMDH 00309	815323.0	8202411.0	191.0	2	3		3115.4	4189.4	2786.2	49.3	493.0	72.2	208.0	132.4	215.3	233.1	391.3	421.0	376.3	15.0	111.3	102.5	correlated
SMDH 00311	816071.0	8202444.0	198.0	0	1		1646.0	3498.0	1003.4	53.6	1236.4	101.0	291.0	185.2	301.1	326.1	546.8	579.7	530.8	16.0	149.5	144.5	correlated
SMDH 00311	816071.0	8202444.0	198.0	1	2		1518.0	2724.2	1145.5	51.4	578.3	79.6	229.3	145.9	237.3	256.9	453.3	485.0	438.3	15.1	125.4	117.0	correlated
SMDH 00311	816071.0	8202444.0	198.0	2	3		1390.1	2422.1	1041.8	30.5	651.3	58.6	168.8	107.4	174.6	189.1	220.3	238.4	211.3	9.0	62.9	54.7	correlated
SMDH 00310	815697.0	8202471.0	197.0	0	1		1040.6	2110.6	666.0	44.7	677.0	60.6	174.7	111.2	180.8	195.7	339.6	367.0	325.9	13.7	97.4	87.2	correlated
SMDH 00310	815697.0	8202471.0	197.0	1	2		1438.5	2763.6	933.1	61.9	964.8	67.4	194.2	123.6	200.9	217.6	425.5	463.4	406.8	18.7	138.0	122.9	correlated
SMDH 00310	815697.0	8202471.0	197.0	2	3		1848.5	3518.1	1167.9	87.5	1340.2	77.4	222.8	141.8	230.6	249.7	518.3	572.6	491.7	26.6	163.6	135.2	correlated
SMDH 00312	816400.0	8202460.0	202.0	0	1		1861.2	3832.3	1236.3	78.6	1023.0	125.4	361.0	229.8	373.6	404.6	539.6	589.4	516.9	22.7	158.2	133.0	correlated
SMDH 00312	816400.0	8202460.0	202.0	1	2		1526.0	3166.0	1040.3	71.3	705.8	113.1	325.8	207.4	337.2	365.1	409.2	453.5	387.9	21.3	125.3	99.4	correlated
SMDH 00312	816400.0	8202460.0	202.0	2	3		3186.2	5182.7	2478.5	73.7	1329.4	109.1	314.3	200.1	325.3	352.3	821.2	865.5	799.7	21.5	205.0	200.9	correlated
SMDH 00312	816400.0	8202460.0	202.0	3	4		2899.5	4058.9	2557.4	35.8	547.4	77.0	221.8	141.2	229.6	248.6	183.0	205.8	173.6	9.3	59.3	44.5	correlated
SMDH 00312	816400.0	8202460.0	202.0	4	5		2517.7	4341.1	1967.8	36.9	974.2	114.3	329.1	209.5	340.6	368.8	105.2	128.7	94.8	10.4	46.3	26.5	correlated
SMDH 00313	816774.0	8202445.0	199.0	0	1		1423.4	2736.9	1026.8	52.1	610.8	87.8	253.0	161.0	261.8	283.5	293.8	326.4	278.7	15.0	91.1	71.0	correlated
SMDH 00313	816774.0	8202445.0	199.0	1	2		1855.3	3332.4	1433.3	72.5	549.2	107.1	308.6	196.4	319.4	345.8	393.7	439.4	372.9	20.8	124.6	95.7	correlated
SMDH 00313	816774.0	8202445.0	199.0	2	3		1540.6	2816.7	1156.9	53.7	576.0	86.4	248.8	158.4	257.5	278.9	233.7	267.7	218.5	15.2	82.1	57.4	correlated
SMDH 00325	810969.0	8200913.0	182.0	0	1		1277.6	2714.7	823.5	34.6	822.9	86.7	249.7	159.0	258.4	279.9	516.5	537.1	506.4	10.1	119.7	123.8	correlated
SMDH 00325	810969.0	8200913.0	182.0	1	2		725.9	2010.2	353.0	29.4	621.5	84.4	243.1	154.8	251.6	272.4	195.3	213.4	186.7	8.5	54.0	43.7	correlated
SMDH 00325	810969.0	8200913.0	182.0	2	3		945.9	2006.7	624.5	15.9	592.5	64.9	187.0	119.0	193.5	209.5	138.2	147.3	133.3	4.9	37.0	33.5	correlated
SMDH 00325	810969.0	8200913.0	182.0	3	4		1069.5	2076.8	766.4	32.5	491.7	65.9	189.9	120.9	196.5	212.8	124.5	144.9	115.1	9.4	47.8	32.3	correlated
SMDH 00324	810618.0	8200985.0	181.0	0	1		867.2	1767.9	583.5	35.0	464.3	57.5	165.5	105.3	171.3	185.5	298.5	319.8	287.5	11.0	81.3	74.5	correlated
SMDH 00324	810618.0	8200985.0	181.0	1	2		2992.2	3908.0	2717.6	32.0	434.6	60.7	174.8	111.3	180.9	195.9	180.3	199.6	170.6	9.6	56.0	44.1	correlated
SMDH 00324	810618.0	8200985.0	181.0	2	2.5		3391.5	4138.7	3139.0	41.3	403.0	46.6	134.2	85.4	138.9	150.4	144.3	170.3	132.8	11.6	56.1	36.2	correlated
SMDH 00299	811346.0	8202433.0	180.0	0	1		1205.6	3021.2	612.3	50.9	1085.3	106.8	307.5	195.7	318.2	344.6	323.3	355.2	308.4	14.9	97.5	80.6	correlated

BHID	East	North	AHD	FROM	TO	Rec	Mz EQ	THM	monazite	xenotime	zircon	rutile	hi Ti leucoxene	lo Ti leucoxene	alt ilmenite	ilmenite	TREO	TREO+Y	LREO	HREO	CREO	MagREO	Report Specific Classification
units:	*m*	*m*	*m*	*m*	*m*	*%*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	
SMDH 00299	811346.0	8202433.0	180.0	1	2		1117.5	2771.8	612.6	52.1	837.8	106.5	306.6	195.2	317.4	343.7	271.0	304.4	256.6	14.4	86.7	65.3	correlated
SMDH 00298	811028.0	8202440.0	188.0	0	1		1778.4	2638.7	1536.2	29.7	352.5	60.4	174.0	110.8	180.1	195.0	147.5	166.0	138.9	8.6	48.7	37.3	correlated
SMDH 00298	811028.0	8202440.0	188.0	1	2		4217.0	4715.5	4105.7	14.8	107.4	40.9	117.8	75.0	121.9	132.0	34.2	43.1	30.2	4.0	17.8	10.4	correlated
SMDH 00298	811028.0	8202440.0	188.0	2	2.5		3419.8	3968.4	3286.2	17.5	154.3	42.8	123.3	78.5	127.6	138.2	42.4	53.2	37.9	4.5	21.2	12.3	correlated
SMDH 00302	812457.0	8202439.0	186.0	0	1		1358.9	2874.3	827.7	57.4	982.2	84.5	243.3	154.9	251.8	272.6	386.1	421.3	368.0	18.1	117.3	101.1	correlated
SMDH 00302	812457.0	8202439.0	186.0	1	2		1051.6	1976.3	746.8	42.5	501.9	57.5	165.5	105.3	171.3	185.5	414.5	440.4	401.1	13.4	114.6	109.7	correlated
SMDH 00302	812457.0	8202439.0	186.0	2	3		1467.3	2521.8	1148.8	58.3	430.9	74.1	213.5	135.9	220.9	239.3	426.1	461.9	407.9	18.2	125.6	111.6	correlated
SMDH 00302	812457.0	8202439.0	186.0	3	3.85		2510.5	3685.4	2147.4	61.8	521.4	80.1	230.6	146.8	238.7	258.5	467.8	506.6	450.1	17.6	134.7	118.5	correlated
SMDH 00297	810658.0	8202439.0	182.0	0	1		1971.0	4329.7	1097.3	73.3	1757.4	117.6	338.6	215.6	350.4	379.5	512.6	558.5	491.8	20.9	145.1	125.3	correlated
SMDH 00297	810658.0	8202439.0	182.0	1	2		2392.4	5200.8	1231.0	81.2	2554.6	111.9	322.3	205.1	333.5	361.1	652.3	702.3	628.3	23.9	176.2	158.9	correlated
SMDH 00297	810658.0	8202439.0	182.0	2	3		2900.0	6374.9	1465.9	90.1	3187.9	136.8	394.0	250.8	407.8	441.6	769.8	825.9	743.9	25.9	204.8	186.7	correlated
SMDH 00296	810297.0	8202439.0	186.0	0	1		2976.7	6068.7	1661.0	93.7	2931.6	116.0	334.0	212.6	345.6	374.3	895.7	954.1	868.8	26.9	236.3	224.0	correlated
SMDH 00296	810297.0	8202439.0	186.0	1	2		1094.6	1646.3	927.3	6.5	315.2	33.3	96.0	61.1	99.3	107.6	44.1	47.2	42.0	2.2	12.4	9.8	correlated
SMDH 00296	810297.0	8202439.0	186.0	2	2.3		1250.3	1693.3	1131.3	5.2	197.1	30.2	86.9	55.3	89.9	97.4	34.2	36.0	32.3	1.9	9.8	7.9	correlated
SMDH 00300	811738.0	8202439.0	187.0	0	1		1271.1	2650.0	795.5	39.9	910.3	75.9	218.5	139.1	226.1	244.8	457.3	481.2	444.7	12.6	117.1	116.8	correlated
SMDH 00300	811738.0	8202439.0	187.0	1	1.45		2258.3	3958.5	1682.8	133.9	775.1	114.6	330.2	210.2	341.7	370.0	806.4	890.1	766.0	40.4	258.8	216.1	correlated
SMDH 00301	812098.0	8202439.0	185.0	0	1		1004.5	2452.8	491.4	51.3	971.6	78.7	226.7	144.3	234.7	254.1	278.6	310.5	262.4	16.2	94.4	75.5	correlated
SMDH 00301	812098.0	8202439.0	185.0	1	2		1249.3	2551.7	798.2	56.0	800.0	75.3	216.8	138.0	224.4	243.0	311.1	345.9	293.6	17.4	98.8	79.1	correlated

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00546	0.1	42.6	69.7	145.4	17.0	56.6	11.0	1.2	7.8	1.1	7.2	1.4	3.5	0.5	3.6	0.5	27.1	3.9	11.1	492.9	630.8		
SMDH 00546	0.1	43.3	49.4	103.1	11.9	39.3	7.6	1.1	6.0	1.0	7.0	1.4	3.9	0.6	3.9	0.5	22.1	4.4	11.7	518.3	605.4		
SMDH 00546	0.1	44.6	46.0	96.2	11.3	37.0	7.9	1.1	6.0	1.0	7.0	1.4	3.6	0.6	3.6	0.5	21.1	3.6	10.1	423.7	608.7	0.8	1.44
SMDH 00546	0.1	32.6	41.2	84.5	9.9	33.5	6.4	1.0	4.9	0.8	5.1	1.1	2.7	0.3	2.8	0.3	15.9	3.1	10.1	437.3	590.6		
SMDH 00546	0.1	36.4	43.9	94.1	10.5	35.8	6.9	1.1	5.2	0.8	5.8	1.2	3.1	0.5	3.3	0.5	16.1	3.2	10.7	475.2	798.8		
SMDH 00546	0.1	35.3	45.3	96.3	11.2	35.8	7.4	1.1	5.2	0.9	5.8	1.2	3.0	0.5	3.2	0.3	19.2	3.9	10.6	444.5	636.7		1.38
SMDH 00546	0.1	40.1	49.6	101.9	11.7	40.4	7.8	1.2	5.9	1.0	6.3	1.3	3.5	0.5	3.4	0.5	18.5	3.7	9.1	382.4	636.7	1.1	
SMDH 00546	0.1	45.0	58.3	120.8	13.7	46.2	8.9	1.6	6.8	1.1	7.3	1.5	3.8	0.6	3.8	0.6	21.8	5.8	9.7	388.9	656.7		
SMDH 00546	0.1	46.2	59.7	123.3	14.0	47.4	10.1	1.6	7.0	1.1	7.4	1.5	3.8	0.6	3.9	0.5	23.3	5.7	9.3	383.6	727.2		1.22
SMDH 00546	0.1	45.9	57.5	120.5	14.0	46.2	8.6	1.5	6.9	1.1	7.3	1.5	3.9	0.6	3.7	0.5	21.4	5.4	8.0	328.1	686.8	10.2	
SMDH 00546	0.1	48.0	62.6	123.8	14.2	48.5	10.0	1.7	7.1	1.1	7.8	1.5	4.1	0.6	4.0	0.6	24.7	5.5	8.0	308.7	830.9		
SMDH 00546	0.1	42.8	55.3	109.2	12.8	43.9	9.0	1.5	6.6	1.0	7.1	1.4	3.8	0.6	3.7	0.5	21.9	4.2	9.0	351.7	744.9		1.19
SMDH 00546	0.1	41.7	58.1	114.9	13.4	46.2	9.4	1.6	6.6	1.0	7.0	1.3	3.7	0.5	3.5	0.5	23.5	4.4	8.1	321.1	754.8		
SMDH 00546	0.1	43.9	56.8	111.1	12.9	43.9	9.3	1.5	6.6	1.0	7.0	1.4	3.8	0.6	3.9	0.5	22.8	4.8	8.7	349.3	732.8		
SMDH 00546	0.1	44.6	60.0	116.5	13.6	47.4	9.8	1.6	6.9	1.1	7.2	1.4	3.9	0.6	3.8	0.5	23.9	4.3	8.8	348.2	790.9	2.1	1.21
SMDH 00546	0.1	40.6	58.8	113.7	13.3	46.2	9.4	1.7	6.7	1.0	7.0	1.4	3.5	0.5	3.4	0.3	23.1	3.9	7.1	270.4	788.9		
SMDH 00546	0.1	40.3	54.4	109.2	12.6	43.9	8.9	1.5	6.5	1.0	6.7	1.3	3.5	0.5	3.4	0.5	22.3	3.4	8.0	313.5	732.8		
SMDH 00546	0.1	36.1	52.6	103.0	11.8	41.6	8.6	1.2	5.7	0.9	5.9	1.2	3.1	0.3	3.0	0.3	20.3	3.1	9.1	378.6	646.8	1.1	1.22
SMDH 00546	0.1	31.7	50.2	106.3	12.5	42.8	8.3	1.1	5.9	0.9	5.5	1.1	3.0	0.3	2.8	0.3	20.1	3.0	8.4	333.2	611.3	1.1	
SMDH 00546	0.1	33.0	51.0	106.1	12.8	43.9	8.5	1.2	5.9	0.9	5.8	1.1	3.1	0.5	3.2	0.3	19.0	3.1	11.4	449.3	661.5		
SMDH 00546	0.1	27.3	45.3	96.6	11.0	38.1	6.9	1.2	5.0	0.7	4.5	0.9	2.7	0.3	2.9	0.3	17.8	2.7	9.6	374.6	494.8		0.98
SMDH 00546	0.1	17.4	73.1	154.5	17.8	60.1	10.8	1.2	6.8	0.9	4.2	0.7	1.4	0.3	1.1	0.3	28.9	3.3	9.8	374.0	657.5		
SMDH 00546	0.1	16.7	67.5	137.0	15.9	54.3	9.5	1.3	5.9	0.7	3.7	0.5	1.4	0.3	1.1	0.3	24.8	3.0	7.7	289.1	641.4	1.4	
SMDH 00546	0.1	9.1	55.2	115.5	13.0	43.9	7.8	1.7	4.5	0.3	2.1	0.3	0.8	0.3	0.6	0.3	21.3	1.1	2.9	116.3	613.3		1.4
SMDH 00546	0.1	11.0	100.6	210.0	24.1	83.2	14.6	2.2	8.5	0.8	3.1	0.3	1.0	0.3	0.3	0.3	39.2	1.5	5.9	234.5	627.0		
SMDH 00546	0.1	17.2	66.5	140.6	16.0	54.3	10.0	1.7	6.2	0.7	3.6	0.7	1.6	0.3	1.4	0.3	26.0	1.9	7.3	273.0	550.9		
SMDH 00546	0.1	10.4	47.4	94.6	10.5	37.0	6.4	1.8	4.1	0.3	2.2	0.3	0.8	0.3	0.7	0.3	16.1	1.2	4.8	208.8	386.2	0.6	1.52
SMDH 00546	0.1	10.4	37.5	72.5	8.0	27.7	4.7	1.8	3.3	0.3	2.0	0.3	0.9	0.3	0.7	0.3	13.1	1.2	3.4	153.6	312.0		
SMDH 00546	0.1	16.2	50.9	101.2	11.4	39.3	7.0	1.6	4.7	0.6	3.2	0.5	1.3	0.3	1.1	0.3	18.0	2.2	6.4	267.5	546.1		
SMDH 00546	0.1	15.6	39.2	78.0	8.7	30.0	5.4	1.5	3.5	0.3	2.8	0.3	1.3	0.3	1.5	0.3	13.4	2.2	5.0	215.5	384.2		1.47
SMDH 00547	0.1	17.4	46.7	97.0	11.3	39.3	7.7	0.8	4.8	0.7	3.7	0.5	1.4	0.3	1.2	0.3	17.3	1.8	3.9	167.6	307.0		
SMDH 00547	0.0	17.8	54.0	110.2	13.5	45.1	9.0	1.5	5.6	0.8	3.8	0.7	1.4	0.3	1.1	0.3	18.8	2.1	3.8	158.6	217.4		1.78
SMDH 00547	0.1	20.1	60.4	123.8	14.8	50.8	10.9	2.3	6.7	0.8	4.4	0.7	1.6	0.3	1.2	0.3	23.2	2.7	3.9	147.8	227.6		
SMDH 00547	0.0	13.2	55.2	112.9	13.6	46.2	9.2	1.2	5.3	0.7	3.0	0.3	0.9	0.3	0.7	0.3	19.8	1.6	3.7	155.2	241.5	0.4	

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00548	0.1	30.1	84.6	178.7	20.8	68.2	12.3	1.3	7.7	1.0	5.4	1.0	2.6	0.3	2.5	0.3	33.9	2.0	10.7	443.7	453.3		1.52
SMDH 00548	0.1	37.2	63.7	127.5	15.1	49.7	9.0	1.3	6.1	0.9	5.9	1.1	3.0	0.5	3.3	0.3	25.3	1.6	5.9	236.8	300.9		
SMDH 00548	0.1	50.4	73.7	157.6	17.9	62.4	11.3	1.3	7.4	1.0	7.3	1.5	5.0	0.7	4.9	0.7	29.5	1.7	10.3	432.3	572.8	1.1	
SMDH 00548	0.1	40.0	95.7	206.7	23.1	79.7	13.9	1.5	8.9	1.1	7.0	1.3	3.6	0.5	3.4	0.5	38.3	2.0	9.6	408.8	535.8		1.48
SMDH 00548	0.2	53.7	100.1	216.4	24.2	83.2	14.8	1.7	9.6	1.4	8.4	1.8	4.9	0.7	5.0	0.7	39.4	2.5	10.5	429.7	611.6		
SMDH 00548	0.2	40.3	95.8	196.1	23.7	80.9	16.1	1.8	10.9	1.4	7.5	1.4	3.3	0.6	3.7	0.6	38.1	2.3	11.2	450.0	761.4	1.2	1.49
SMDH 00548	0.2	61.8	92.3	193.5	23.7	78.6	14.5	1.6	10.9	1.5	9.8	2.0	5.4	1.0	6.0	1.0	37.1	2.6	11.9	496.0	800.7		
SMDH 00548	0.1	21.9	70.0	140.8	17.0	56.6	10.0	1.8	6.5	0.8	4.0	0.8	1.7	0.3	1.7	0.3	28.0	0.9	7.5	356.7	597.0		
SMDH 00548	0.1	26.2	78.9	188.4	21.2	68.2	13.1	1.6	7.0	1.0	5.3	1.0	3.8	0.3	2.5	0.3	34.2	1.8	8.8	361.1	478.8	0.7	1.68
SMDH 00548	0.1	28.9	100.6	210.3	25.4	83.2	16.2	1.7	9.9	1.3	6.1	1.1	2.8	0.3	2.5	0.3	39.9	2.8	11.6	484.1	713.9		
SMDH 00548	0.1	16.7	99.6	204.4	24.1	75.1	14.4	2.3	9.0	1.0	4.3	0.7	1.4	0.3	0.9	0.3	36.9	1.9	8.7	374.3	588.0	1.0	1.58
SMDH 00549	0.1	26.5	113.2	248.1	27.3	94.8	17.0	0.7	10.1	1.1	5.5	0.9	2.2	0.3	2.2	0.3	47.4	2.9	21.5	958.0	323.8		
SMDH 00549	0.1	27.1	94.8	207.3	21.9	77.4	14.1	1.1	9.1	1.0	5.3	0.9	2.3	0.3	2.4	0.3	33.3	2.4	13.1	557.6	670.9	1.7	
SMDH 00549	0.1	25.6	88.5	167.3	19.0	62.4	11.5	3.2	7.0	0.9	5.1	0.9	2.3	0.3	2.4	0.3	16.7	1.0	10.0	434.4	759.8		
SMDH 00549	0.1	19.2	65.1	138.3	15.1	49.7	8.7	1.5	5.4	0.7	3.7	0.7	1.7	0.3	1.8	0.3	24.8	1.2	7.4	322.7	521.5		
SMDH 00549	0.1	22.5	89.9	201.2	21.4	70.5	12.9	1.7	8.1	0.9	4.4	0.8	1.9	0.3	1.9	0.3	37.7	1.6	11.1	498.2	682.3	1.0	
SMDH 00549	0.1	40.4	124.4	274.9	29.5	107.5	19.3	1.7	11.9	1.4	7.5	1.4	3.3	0.6	3.6	0.3	53.7	2.6	10.1	437.3	796.6		
SMDH 00549	0.1	32.2	95.8	209.1	22.9	84.4	14.5	1.2	9.6	1.3	6.3	1.1	3.0	0.3	2.9	0.3	41.4	2.2	11.0	439.8	678.9	1.2	1.55
SMDH 00549	0.1	21.2	95.2	209.1	22.6	83.2	14.5	1.7	9.0	1.0	4.8	0.8	1.7	0.3	1.4	0.3	42.2	2.0	10.1	419.8	671.4		
SMDH 00549	0.1	30.0	107.8	235.5	25.7	95.9	17.8	1.2	10.4	1.3	6.3	1.0	2.4	0.3	2.4	0.3	45.9	2.2	11.3	480.1	739.0		
SMDH 00549	0.1	22.1	80.6	173.8	19.2	64.7	10.9	1.3	7.5	0.9	4.8	0.9	2.3	0.3	1.5	0.3	33.2	1.7	6.7	295.4	592.2		
SMDH 00549	0.1	18.4	60.5	133.9	14.5	49.7	8.5	1.6	5.4	0.7	3.8	0.7	1.6	0.3	1.5	0.3	23.8	1.2	7.3	325.7	698.6		
SMDH 00549	0.1	18.7	70.8	147.3	16.9	55.5	9.1	1.2	6.1	0.7	3.6	0.7	2.1	0.3	1.8	0.3	26.6	1.4	7.0	311.5	627.0	1.3	1.58
SMDH 00549	0.1	15.7	68.7	138.1	16.1	52.0	9.4	1.3	5.6	0.7	3.2	0.5	1.9	0.3	1.4	0.3	24.7	1.1	7.7	337.2	557.3		
SMDH 00549	0.1	25.0	109.3	240.9	25.7	85.5	14.8	1.8	9.2	1.0	5.3	0.9	2.1	0.3	1.9	0.3	39.7	2.1	10.1	455.2	664.1		
SMDH 00550	0.0	17.7	40.4	79.3	8.8	30.0	9.0	0.3	2.0	0.3	1.3	0.3	1.2	0.3	1.4	0.3	13.3	2.3	6.0	496.1	289.0	1.6	
SMDH 00550	0.0	5.3	13.0	16.5	1.9	6.9	1.4	0.3	0.8	0.3	0.9	0.3	0.3	0.3	0.5	0.3	8.8	1.0	2.5	116.7	272.7		
SMDH 00550	0.1	8.0	13.9	20.2	2.7	8.1	1.6	0.3	1.1	0.3	1.1	0.3	0.6	0.3	0.8	0.3	8.5	1.1	2.8	123.9	272.7		
SMDH 00550	0.1	7.3	14.1	20.2	2.7	8.1	1.3	0.3	1.4	0.3	1.1	0.3	0.5	0.3	0.7	0.3	9.3	1.1	2.6	102.4	215.5		1.69
SMDH 00550	0.1	6.9	12.2	14.7	2.0	5.8	1.0	0.3	0.8	0.3	1.1	0.3	0.5	0.3	0.8	0.3	10.8	0.9	2.5	95.8	268.9	1.2	
SMDH 00550	0.1	7.1	7.1	11.3	1.6	4.6	0.9	0.3	1.0	0.3	1.3	0.3	0.6	0.3	0.7	0.3	6.8	0.8	2.1	93.3	221.2		
SMDH 00550	0.0	5.1	7.5	9.1	1.1	3.5	0.3	0.3	0.8	0.3	1.0	0.3	0.3	0.3	0.3	0.3	6.1	0.8	1.8	73.6	214.6		1.67
SMDH 00551	0.1	35.5	62.2	125.0	14.3	46.2	8.2	1.3	5.7	0.8	5.3	1.2	4.1	0.5	3.7	0.6	21.3	1.8	11.0	513.3	893.3		
SMDH 00551	0.2	36.5	64.4	127.5	14.9	52.0	8.7	1.3	6.2	0.9	6.1	1.3	3.3	0.5	3.6	0.5	23.3	1.7	12.1	474.9	895.9		
SMDH 00551	0.1	22.0	96.8	183.9	19.0	82.0	13.8	1.1	7.9	0.8	4.8	0.9	2.5	0.3	2.1	0.3	42.8	2.0	9.9	431.2	582.3		
SMDH 00551	0.1	22.6	41.6	84.7	9.3	34.7	6.0	1.0	3.6	0.6	4.0	0.8	2.1	0.3	2.1	0.3	15.6	1.1	5.9	239.4	574.7	1.4	
SMDH 00551	0.1	17.8	31.7	64.8	7.3	25.4	4.5	0.9	3.1	0.3	3.2	0.7	1.7	0.3	1.8	0.3	11.9	1.1	5.9	235.3	474.5		1.4
SMDH 00551	0.2	36.6	62.6	128.2	14.7	50.8	9.4	1.6	6.5	0.9	6.1	1.2	3.1	0.6	3.5	0.5	23.1	1.9	9.8	361.3	938.7		
SMDH 00551	0.1	38.6	73.8	153.3	17.7	61.2	10.7	1.2	7.0	1.0	6.4	1.2	3.2	0.5	3.5	0.6	29.6	2.1	12.7	512.0	760.3		
SMDH 00551	0.1	39.5	86.4	165.7	20.7	68.2	12.5	1.7	7.6	1.0	6.7	1.3	3.6	0.6	3.9	0.6	28.4	2.5	14.5	589.6	854.7	2.6	
SMDH 00551	0.1	50.8	168.2	351.6	40.7	139.8	23.6	1.8	15.5	1.8	9.4	1.6	4.0	0.6	3.8	0.6	68.1	3.5	20.0	907.9	723.6		
SMDH 00551	0.1	23.2	27.0	53.7	6.4	24.3	4.9	1.1	3.9	0.6	3.8	0.8	1.9	0.3	1.7	0.3	7.3	1.1	2.7	117.4	825.2		
SMDH 00551	0.2	34.8	58.8	97.6	13.0	43.9	8.4	2.0	5.8	0.9	5.8	1.2	2.9	0.3	2.8	0.3	9.1	1.4	3.7	154.5	1822.9		1.44
SMDH 00551	0.3	47.0	22.6	48.9	7.0	27.7	6.9	1.9	6.6	1.1	7.5	1.6	3.9	0.7	3.9	0.6	6.8	1.4	5.1	209.4	2597.9	1.5	
SMDH 00551	0.2	28.9	39.4	80.1	10.1	33.5	7.1	1.8	5.3	0.9	5.3	1.0	2.5	0.3	2.5	0.3	11.9	1.1	4.7	193.0	1234.8		
SMDH 00551	0.3	44.1	27.7	61.1	7.7	27.7	7.6	2.0	6.1	1.0	7.4	1.4	3.6	0.6	3.7	0.5	7.1	1.6	4.4	178.6	1936.2		1.41
SMDH 00551	0.0	20.3	16.5	32.7	4.2	15.0	3.9	1.5	3.5	0.6	3.8	0.8	1.6	0.3	1.7	0.3	2.4	0.5	1.2	50.1	238.7		
SMDH 00551	0.3	33.1	23.9	53.4	5.8	22.0	5.4	1.7	5.2	0.8	6.1	1.3	3.2	0.3	3.0	0.3	6.7	1.7	4.5	192.6	1807.2	0.8	
SMDH 00551	0.1	8.7	17.5	35.3	3.9	12.7	2.9	1.6	2.0	0.3	1.6	0.3	0.8	0.3	0.7	0.3	4.8	1.1	5.5	207.2	476.2		
SMDH 00551	0.2	36.3	30.2	62.8	7.7	28.9	6.4	2.1	6.2	1.0	6.8	1.3	3.5	0.5	3.2	0.5	7.7	1.9	4.6	185.9	1906.6		
SMDH 00553	0.1	50.7	159.5	279.0	39.9	128.3	23.2	1.1	14.3	1.6	9.0	1.6	4.3	0.6	4.3	0.7	40.2	4.0	22.5	963.1	589.9	1.0	
SMDH 00553	0.2	39.0	86.4	199.6	21.1	69.3	13.1	1.2	8.1	1.1	6.7	1.3	3.7	0.6	4.0	0.7	37.7	2.2	16.3	706.2	764.3		1.28
SMDH 00553	0.2	37.7	65.8	148.8	15.3	49.7	9.5	1.5	6.1	0.9	5.9	1.2	3.6	0.5	3.8	0.6	28.4	1.6	10.4	455.5	735.6		
SMDH 00553	0.1	39.3	84.1	180.4	19.6	64.7	11.4	1.5	7.3	0.9	6.3	1.3	3.5	0.6	3.9	0.6	33.3	2.9	10.3	461.6	576.6		
SMDH 00553	0.1	39.4	78.2	171.0	18.3	58.9	10.8	1.3	7.1	1.0	6.3	1.3	3.5	0.5	3.8	0.6	30.3	2.7	11.1	476.0	563.2	0.7	1.46
SMDH 00553	0.2	35.7	71.0	151.8	16.7	55.5	9.9	1.3	6.5	0.9	6.0	1.2	3.6	0.6	3.9	0.6	24.9	2.2	10.6	441.3	652.2		
SMDH 00553	0.2	48.2	79.2	166.8	17.2	62.4	10.5	1.5	7.3	1.0	7.4	1.6	6.2	0.7	5.9	0.8	27.4	1.8	12.0	430.1	648.5		

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00553	0.1	29.7	101.4	220.1	24.2	79.7	13.5	1.6	8.3	1.0	5.8	1.1	2.7	0.3	2.7	0.3	38.8	1.4	16.2	679.6	833.3		1.48
SMDH 00553	0.1	34.0	106.9	232.8	25.8	85.5	14.8	1.6	9.4	1.1	6.7	1.2	2.9	0.5	3.2	0.5	40.5	1.6	14.3	584.9	762.8	0.4	
SMDH 00553	0.1	34.6	128.5	278.1	30.6	102.8	17.5	1.9	11.1	1.4	6.9	1.2	3.0	0.3	3.2	0.5	48.6	1.7	15.3	636.4	697.9		
SMDH 00553	0.1	44.4	49.6	107.0	11.8	41.6	8.2	1.1	6.2	1.0	7.2	1.6	4.0	0.7	4.2	0.7	17.0	1.2	9.2	392.5	535.8		1.6
SMDH 00554	0.0	18.7	46.1	103.5	11.1	37.0	7.1	0.6	4.9	0.6	3.3	0.7	1.5	0.3	1.4	0.3	21.1	1.9	5.4	231.5	88.4		1.75
SMDH 00554	0.0	9.7	25.5	58.1	5.8	19.6	3.9	1.1	2.6	0.3	1.9	0.3	0.8	0.3	0.7	0.3	9.1	0.8	1.8	65.9	122.7		
SMDH 00554	0.1	20.1	75.6	168.8	17.8	61.2	12.6	2.1	8.4	1.0	4.4	0.7	1.4	0.3	1.1	0.3	29.8	2.7	2.8	106.3	160.9	1.0	1.58
SMDH 00554	0.1	21.6	49.1	104.6	11.6	40.4	8.6	2.5	6.1	0.9	4.3	0.8	1.6	0.3	1.3	0.3	21.3	2.7	2.6	100.9	132.8		
SMDH 00555	0.1	37.7	124.8	250.8	30.1	102.8	18.2	1.2	12.0	1.5	7.8	1.3	3.0	0.3	2.8	0.3	39.9	3.3	15.9	707.5	653.7	0.4	
SMDH 00555	0.1	23.7	90.0	182.7	21.2	72.8	11.8	1.8	7.9	0.9	5.0	0.9	2.1	0.3	2.0	0.3	28.8	2.2	9.1	393.6	596.0		1.56
SMDH 00555	0.1	29.4	57.1	113.5	13.5	45.1	8.4	1.6	5.7	0.8	4.9	1.0	2.6	0.3	2.8	0.3	17.8	1.6	5.8	243.8	447.8		
SMDH 00555	0.1	32.3	77.0	141.1	17.0	55.5	10.7	1.9	6.9	1.0	6.2	1.1	2.6	0.3	2.7	0.3	20.2	2.4	5.9	248.7	507.1		
SMDH 00555	0.1	25.6	75.3	150.0	17.6	58.9	11.3	1.5	7.3	1.0	5.2	1.0	2.3	0.3	2.3	0.3	26.0	2.5	5.9	256.0	433.7	0.4	1.59
SMDH 00555	0.1	19.7	51.8	102.1	12.2	41.6	7.7	1.5	4.9	0.7	3.7	0.7	1.7	0.3	1.8	0.3	16.5	1.6	6.1	280.6	600.7		
SMDH 00555	0.1	24.4	50.3	99.9	11.8	41.6	7.4	1.3	4.7	0.7	4.4	0.8	2.1	0.3	2.3	0.3	15.8	1.5	6.5	254.0	472.7		
SMDH 00555	0.1	16.6	40.1	82.9	9.5	31.2	5.6	1.8	3.6	0.3	2.9	0.5	1.3	0.3	1.4	0.3	12.8	1.2	5.0	214.9	527.4		1.58
SMDH 00555	0.1	17.2	54.6	106.4	12.5	40.4	7.6	1.7	4.4	0.6	3.2	0.7	1.5	0.3	1.8	0.3	16.9	1.8	6.6	268.5	502.6	0.4	
SMDH 00555	0.1	25.0	78.6	160.5	18.3	62.4	11.3	1.1	7.1	0.9	4.7	0.9	2.4	0.3	2.7	0.3	27.9	2.0	6.8	232.9	423.0		
SMDH 00555	0.3	36.5	51.2	104.7	11.9	40.4	7.5	1.1	5.4	0.8	5.3	1.2	3.3	0.6	3.5	0.6	16.9	1.0	4.2	155.2	549.7		1.4
SMDH 00556	0.1	21.8	88.1	206.9	21.4	74.0	13.7	0.6	9.0	1.0	5.0	0.8	2.1	0.3	2.4	0.3	39.1	3.9	26.5	1131.3	698.6		1.68
SMDH 00556	0.1	17.9	35.3	118.7	8.6	30.0	6.4	0.9	4.3	0.6	3.4	0.8	1.7	0.3	1.7	0.3	14.2	1.5	7.0	307.3	464.4	2.5	
SMDH 00556	0.1	30.5	55.7	61.3	11.7	40.4	7.2	1.5	5.6	0.7	4.9	1.0	2.5	0.3	2.7	0.3	10.7	0.9	4.4	183.7	399.6		
SMDH 00556	0.1	19.6	47.2	105.3	11.7	40.4	7.6	0.9	5.1	0.7	4.1	0.8	1.8	0.3	2.0	0.3	18.0	1.5	4.7	221.1	411.9		1.57
SMDH 00556	0.1	31.9	73.6	158.8	16.6	60.1	10.8	1.2	6.8	0.9	5.4	1.1	2.8	0.3	2.9	0.3	28.3	1.7	7.2	332.3	565.1		
SMDH 00557	0.1	54.3	167.8	339.4	37.9	128.3	23.5	1.3	14.4	1.7	9.3	1.8	5.0	0.8	5.3	0.7	71.1	3.5	24.3	1087.0	861.2		
SMDH 00557	0.1	48.6	108.6	225.9	25.1	86.7	15.3	1.2	10.4	1.1	7.2	1.6	4.9	0.8	5.3	0.6	44.8	1.9	12.6	561.7	855.7	1.8	
SMDH 00557	0.2	51.3	74.9	148.8	16.9	61.2	10.2	1.1	7.4	0.9	7.3	1.6	4.5	0.8	5.4	0.6	29.5	1.5	15.3	678.6	1005.6		1.48
SMDH 00557	0.2	51.7	111.0	201.7	22.3	86.7	14.4	1.8	9.6	1.3	8.2	2.1	5.1	0.8	5.1	0.7	43.1	1.7	11.6	454.3	635.5		
SMDH 00557	0.1	33.5	109.1	220.0	21.8	86.7	13.9	2.2	9.0	1.1	6.0	1.1	3.1	0.5	3.1	0.3	44.1	1.4	11.0	411.2	702.6		
SMDH 00558	0.1	23.8	53.9	103.1	13.3	42.8	7.6	1.8	4.8	0.7	4.0	0.9	2.3	0.3	2.4	0.3	19.3	1.0	17.7	105.6	986.2		
SMDH 00558	0.2	45.2	85.0	169.4	20.6	67.0	11.3	1.6	6.9	0.9	6.8	1.5	4.6	0.8	5.4	0.8	29.4	1.1	17.8	747.3	1172.8		1.3
SMDH 00558	0.2	37.8	55.5	119.4	14.1	46.2	8.5	1.7	5.8	0.9	6.2	1.3	3.7	0.6	4.0	0.5	19.2	0.5	10.7	460.2	1430.4	0.9	
SMDH 00558	0.1	23.3	43.4	89.0	9.9	32.4	5.4	1.5	3.0	0.3	3.3	0.8	2.5	0.3	3.0	0.3	14.5	0.5	12.1	516.1	630.3		1.56
SMDH 00558	0.3	34.9	56.4	119.9	13.7	46.2	8.7	1.6	5.8	0.9	6.3	1.3	3.2	0.5	3.5	0.5	20.2	0.5	7.8	331.8	1455.9		
SMDH 00558	0.2	46.3	106.9	226.4	25.8	87.8	14.1	1.7	8.2	1.1	7.7	1.8	4.6	0.8	5.2	0.7	42.3	0.7	13.7	572.9	1031.3	1.2	
SMDH 00558	0.2	40.1	82.0	169.2	19.9	65.9	11.3	1.5	6.5	0.9	6.3	1.4	3.9	0.7	4.8	0.7	28.8	0.6	10.4	444.8	994.7		1.55
SMDH 00558	0.3	40.1	45.2	94.2	11.6	39.3	7.9	1.7	6.0	1.0	7.0	1.4	3.7	0.6	3.7	0.5	14.1	0.6	7.3	314.2	1578.4		
SMDH 00558	0.2	38.1	74.8	153.9	17.7	60.1	9.7	1.7	6.2	0.9	6.1	1.3	3.8	0.6	4.3	0.6	28.0	1.0	11.1	485.1	752.9		
SMDH 00559	0.1	15.4	32.6	62.9	7.0	23.1	4.0	1.6	2.6	0.3	2.6	0.3	1.4	0.3	1.5	0.3	9.5	0.6	6.6	272.2	327.8		1.56
SMDH 00559	0.1	34.7	61.9	122.4	13.3	46.2	7.7	1.2	5.1	0.8	5.3	1.1	3.1	0.5	3.7	0.5	20.2	1.0	9.3	394.0	459.4		
SMDH 00559	0.1	38.6	85.7	170.5	19.0	64.7	11.6	1.2	7.1	0.9	6.8	1.3	3.3	0.5	3.6	0.5	32.2	1.1	12.1	506.4	676.1		
SMDH 00559	0.1	39.2	66.6	132.5	14.1	48.5	8.5	1.3	5.4	0.8	6.2	1.3	3.6	0.6	4.1	0.6	22.8	1.0	11.9	512.9	677.8	0.3	1.66
SMDH 00559	0.1	17.3	16.2	30.1	3.3	10.4	2.1	1.6	1.5	0.3	2.4	0.5	1.5	0.3	1.8	0.3	3.2	0.3	8.7	389.7	481.9		
SMDH 00559	0.1	33.6	40.6	80.3	8.8	30.0	5.1	1.5	3.7	0.6	4.9	1.1	3.1	0.5	3.6	0.5	13.8	0.8	10.3	439.6	761.0		
SMDH 00559	0.1	29.7	63.1	126.9	13.9	47.4	7.8	1.8	4.8	0.7	4.8	1.0	2.7	0.3	3.0	0.3	21.8	0.8	10.3	434.7	442.1		1.73
SMDH 00559	0.1	39.9	78.6	158.9	17.5	60.1	10.7	1.6	6.6	0.9	6.3	1.3	3.8	0.6	4.1	0.6	28.2	1.1	7.2	303.0	612.0	0.5	
SMDH 00559	0.1	40.4	97.2	202.9	23.7	77.4	13.5	1.8	8.4	1.0	6.8	1.3	3.7	0.6	4.1	0.6	36.7	2.3	9.7	446.2	656.3		
SMDH 00559	0.1	35.9	83.0	169.0	18.9	63.6	12.1	1.7	7.1	0.9	5.9	1.2	3.3	0.6	3.8	0.5	31.8	1.7	10.1	415.5	688.2		
SMDH 00559	0.1	35.9	83.0	169.0	18.9	63.6	12.1	1.7	7.1	0.9	5.9	1.2	3.3	0.6	3.8	0.5	31.8	1.7	10.1	415.5	688.2		
SMDH 00560	0.1	43.3	40.4	80.4	9.8	34.7	7.2	1.0	5.8	1.0	6.2	1.4	3.9	0.6	3.8	0.6	16.7	4.7	13.1	581.9	621.7		
SMDH 00560	0.1	45.8	57.5	113.3	13.0	49.7	8.9	1.6	8.2	1.3	7.2	1.5	4.1	0.6	4.2	0.6	22.7	7.0	10.0	445.2	672.3		
SMDH 00560	0.1	43.9	57.1	114.6	13.1	50.8	10.2	1.6	7.9	1.3	7.3	1.5	3.8	0.6	3.7	0.5	21.6	4.6	8.0	366.9	679.6	1.9	
SMDH 00560	0.0	32.4	37.4	75.7	8.7	32.4	6.9	1.0	5.1	0.9	5.1	1.1	2.6	0.3	2.7	0.3	13.4	2.7	6.4	290.2	359.0		1.23
SMDH 00560	0.0	12.8	15.5	31.0	3.7	12.7	3.3	1.1	2.6	0.3	1.9	0.3	1.0	0.3	1.1	0.3	5.4	0.8	1.1	50.8	74.7		
SMDH 00561	0.0	16.2	16.4	29.2	3.5	11.6	2.6	0.7	1.7	0.3	2.3	0.3	1.6	0.3	2.4	0.3	3.3	0.9	1.4	44.0	30.0		
SMDH 00561	0.1	20.2	16.0	33.1	3.7	12.7	3.0	0.8	2.3	0.3	2.9	0.5	1.6	0.3	1.9	0.3	4.8	1.5	2.0	72.3	98.1		
SMDH 00561	0.0	22.4	18.6	38.5	4.6	15.0	3.9	0.7	2.6	0.3	3.2	0.7	2.1	0.3	2.9	0.3	6.3	1.5	2.0	68.6	50.1	0.2	1.64

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00562	0.1	37.6	70.1	144.9	15.9	55.5	9.5	1.3	7.5	1.0	6.8	1.2	2.8	0.5	3.6	0.5	24.3	2.4	15.7	666.2	777.7	1.3	
SMDH 00562	0.1	36.4	49.0	98.7	10.0	33.5	6.2	1.5	5.0	0.8	6.0	1.3	3.3	0.6	3.7	0.5	11.7	1.1	10.0	459.5	724.1		1.57
SMDH 00562	0.2	78.3	47.9	86.8	8.8	27.7	4.6	2.0	4.5	1.0	10.2	2.7	8.1	1.4	9.2	1.4	6.7	0.7	10.0	408.5	762.8		
SMDH 00562	0.1	51.7	50.1	88.5	8.3	27.7	4.0	1.8	4.8	0.9	8.1	1.8	4.9	0.7	5.4	0.7	6.3	0.3	7.7	317.2	482.8		
SMDH 00562	0.2	46.8	63.0	115.5	11.4	34.7	5.5	2.1	4.5	0.8	6.9	1.8	5.2	1.1	6.9	1.2	7.9	0.8	13.1	529.0	650.3	0.9	
SMDH 00562	0.2	47.9	50.5	92.6	10.6	33.5	5.4	1.8	4.0	0.8	6.3	1.8	5.9	1.2	8.1	1.2	7.8	0.6	10.8	435.2	511.8		1.45
SMDH 00562	0.1	27.7	44.2	82.9	8.6	28.9	4.5	1.7	3.6	0.7	4.2	1.0	2.6	0.3	3.1	0.3	9.3	0.3	7.8	316.2	645.6		
SMDH 00562	0.1	18.0	23.5	40.6	4.5	13.9	2.5	1.1	2.5	0.3	3.1	0.7	1.7	0.3	2.1	0.3	3.7	0.3	5.0	207.1	689.6	1.6	1.39
SMDH 00562	0.2	46.4	50.8	99.8	11.8	37.0	6.2	1.7	4.9	0.9	7.2	1.5	4.5	0.7	4.6	0.7	12.2	0.7	8.4	344.0	625.5		
SMDH 00562	0.1	15.2	35.4	57.6	6.6	23.1	3.8	1.8	2.3	0.3	2.6	0.3	1.3	0.3	1.5	0.3	4.4	0.3	7.2	325.5	582.3		
SMDH 00562	0.1	43.6	65.1	128.5	13.7	46.2	7.5	1.3	5.6	0.9	6.8	1.5	3.8	0.6	4.5	0.6	14.6	0.7	11.0	484.1	861.2		
SMDH 00562	0.2	50.5	52.9	102.7	15.4	39.3	7.5	1.7	5.9	0.9	8.2	1.6	4.9	0.8	5.4	0.8	10.7	1.1	10.6	466.7	719.3		
SMDH 00562	0.3	74.0	51.3	104.7	12.5	41.6	8.5	1.9	7.7	1.6	12.3	2.6	6.8	1.2	7.1	1.0	9.6	1.0	7.7	324.5	1066.1		1.45
SMDH 00562	0.3	66.9	60.0	121.0	13.7	49.7	9.9	1.8	9.2	1.5	11.4	2.3	5.5	1.0	5.8	0.7	13.7	1.1	7.0	309.2	1027.8		1.46
SMDH 00562	0.2	44.2	60.2	123.0	13.0	46.2	7.8	2.5	7.0	1.0	7.0	1.5	4.0	0.7	4.3	0.5	15.9	0.9	7.5	359.6	865.1	1.2	
SMDH 00562	0.1	22.6	42.0	77.3	8.1	28.9	4.8	0.9	3.6	0.3	3.6	0.8	1.8	0.3	2.3	0.3	9.2	0.5	6.4	312.6	649.7		
SMDH 00562	0.1	16.8	56.1	110.3	11.9	40.4	6.1	0.8	4.3	0.3	2.8	0.3	1.6	0.3	2.0	0.3	15.0	0.7	13.1	591.8	735.7		1.57
SMDH 00563	0.1	18.1	66.1	149.5	15.7	53.2	9.3	0.7	6.0	0.8	3.7	0.7	1.4	0.3	1.3	0.3	22.8	2.0	6.3	268.1	243.4		
SMDH 00563	0.1	22.6	93.8	229.2	22.2	76.3	13.3	1.3	8.4	1.0	5.1	0.9	1.8	0.3	1.7	0.3	32.0	2.4	13.6	565.4	653.6		1.38
SMDH 00563	0.3	21.8	36.8	63.0	8.2	28.9	5.1	1.8	4.1	0.6	3.7	0.8	1.8	0.3	1.9	0.3	9.0	1.0	4.5	185.3	675.7	1.3	
SMDH 00563	0.1	8.6	49.8	104.4	12.0	39.3	6.3	1.3	3.9	0.3	2.0	0.3	0.5	0.3	0.3	0.3	15.9	1.4	7.2	329.9	432.4		
SMDH 00563	0.1	16.8	39.8	78.6	9.2	32.4	5.9	1.0	3.9	0.3	3.0	0.5	1.4	0.3	1.3	0.3	11.1	1.6	6.1	288.9	416.4		1.54
SMDH 00563	0.1	26.2	35.3	75.8	8.0	28.9	5.4	1.3	3.7	0.6	3.8	0.8	2.4	0.3	2.6	0.3	9.9	1.7	8.3	379.6	356.4		
SMDH 00563	0.4	26.2	16.8	25.0	4.0	15.0	3.6	0.8	3.0	0.6	4.0	0.9	2.3	0.3	2.4	0.3	2.8	0.7	2.1	79.6	550.6	0.3	
SMDH 00563	0.3	31.1	21.9	33.5	4.8	18.5	4.1	1.1	3.4	0.6	4.5	1.0	2.6	0.3	2.6	0.3	3.7	1.4	1.7	67.0	546.6		1.46
SMDH 00565	0.1	39.8	55.0	107.2	13.0	42.8	9.4	1.3	6.4	1.0	6.5	1.3	3.1	0.6	3.3	0.3	19.8	4.5	12.0	504.8	721.3	1.4	
SMDH 00565	0.1	41.3	59.1	120.9	14.3	48.5	9.5	1.6	7.1	1.1	6.8	1.4	3.5	0.6	3.9	0.6	22.0	5.4	12.0	499.5	660.7		
SMDH 00565	0.1	41.1	57.4	102.5	12.4	42.8	8.0	1.3	7.0	0.9	7.4	1.3	3.7	0.5	3.5	0.3	19.4	4.4	9.4	445.8	615.1		
SMDH 00565	0.1	37.5	55.0	104.3	12.2	45.1	8.0	1.3	6.5	0.9	6.8	1.2	3.1	0.5	3.3	0.3	19.5	3.9	11.7	534.4	572.1	2.2	1.37
SMDH 00565	0.1	37.2	51.8	102.5	12.0	41.6	8.2	1.2	6.2	1.0	6.9	1.2	3.5	0.5	3.3	0.3	19.5	4.6	11.1	492.4	654.2		
SMDH 00565	0.1	36.9	49.4	99.1	11.3	37.0	8.0	1.3	6.5	1.0	6.5	1.3	3.1	0.5	3.3	0.3	18.6	4.5	8.5	390.9	632.8		
SMDH 00565	0.1	33.6	46.8	101.8	10.4	38.1	7.0	1.0	5.7	0.8	6.1	1.2	2.9	0.3	3.0	0.3	18.1	4.3	10.0	443.3	597.6		1.4
SMDH 00565	0.1	31.7	54.7	108.8	12.4	45.1	8.9	1.3	6.2	0.8	5.9	1.1	2.7	0.3	2.8	0.3	20.7	3.9	7.5	340.1	603.3		
SMDH 00565	0.1	31.1	66.6	136.4	15.8	53.2	9.7	1.3	6.8	0.9	5.3	1.1	2.6	0.3	2.7	0.3	23.7	3.0	9.8	430.4	617.2		
SMDH 00565	0.1	29.9	54.6	119.9	13.4	45.1	8.4	1.3	5.7	0.9	5.1	1.0	2.6	0.3	2.8	0.3	19.8	2.9	8.5	373.1	650.4		1.34
SMDH 00565	0.1	22.7	63.5	139.8	15.2	49.7	8.9	1.0	6.0	0.8	4.4	0.8	1.8	0.3	1.7	0.3	25.3	2.8	5.0	210.0	297.8		
SMDH 00565	0.1	24.1	85.7	189.0	21.4	70.5	12.5	1.1	8.1	1.0	4.9	0.9	1.9	0.3	1.9	0.3	34.5	2.8	4.1	178.7	350.7	1.4	
SMDH 00565	0.1	20.6	63.2	140.5	14.5	54.3	9.9	0.9	5.8	0.8	4.5	0.8	2.2	0.3	1.4	0.3	26.9	2.4	3.3	156.6	255.5		1.72
SMDH 00566	0.0	17.3	24.2	46.4	5.4	17.3	3.2	0.3	2.6	0.3	3.1	0.3	1.2	0.3	1.4	0.3	9.5	1.7	9.6	375.9	263.3		
SMDH 00566	0.0	16.2	24.6	48.0	5.2	18.5	4.3	0.3	2.7	0.3	2.8	0.5	1.3	0.3	1.1	0.3	10.5	1.8	8.0	346.6	304.2	1.0	
SMDH 00566	0.0	18.4	33.3	62.4	5.7	22.0	3.9	0.3	2.7	0.3	3.0	0.7	1.6	0.3	1.9	0.3	14.1	2.8	6.6	321.5	427.2		1.5
SMDH 00566	0.0	14.9	25.0	40.8	4.9	17.3	3.7	0.6	2.6	0.3	2.4	0.5	1.2	0.3	1.3	0.3	10.3	2.2	4.6	191.8	280.8		
SMDH 00566	0.1	11.0	41.5	81.5	9.3	31.2	5.3	0.9	3.3	0.3	2.1	0.3	1.0	0.3	0.8	0.3	14.8	1.6	4.5	187.2	252.4	1.2	1.48
SMDH 00566	0.1	8.8	36.7	74.5	8.2	28.9	4.7	1.2	3.0	0.3	1.8	0.3	0.6	0.3	0.6	0.3	12.4	1.0	3.5	143.6	207.7		
SMDH 00566	0.0	5.3	27.1	52.5	5.8	20.8	3.6	1.5	2.0	0.3	1.0	0.3	0.3	0.3	0.3	0.3	8.8	0.5	1.7	73.9	95.5		
SMDH 00566	0.1	6.6	55.0	110.4	11.4	41.6	7.0	1.5	4.2	0.3	1.8	0.3	0.5	0.3	0.3	0.3	17.7	0.8	5.3	241.3	392.0	1.4	1.48
SMDH 00566	0.1	10.5	67.4	135.6	14.2	49.7	9.4	1.7	5.6	0.6	2.4	0.3	0.8	0.3	0.8	0.3	22.1	1.0	6.0	249.4	380.3		
SMDH 00566	0.1	11.5	87.2	169.5	19.2	63.6	10.0	2.1	6.2	0.6	2.7	0.3	0.9	0.3	0.8	0.3	26.2	1.7	7.2	330.5	495.5		
SMDH 00566	0.1	13.5	72.2	143.0	15.7	53.2	8.5	0.9	6.1	0.7	3.1	0.3	1.0	0.3	0.7	0.3	21.9	1.8	9.7	438.7	664.5		1.45
SMDH 00566	0.0	8.7	41.6	83.0	9.9	27.7	5.6	1.8	4.0	0.3	1.8	0.3	0.6	0.3	0.5	0.3	14.7	0.8	4.4	182.9	277.5	0.8	
SMDH 00566	0.1	9.1	56.9	110.8	12.0	45.1	7.5	2.2	5.2	0.6	2.2	0.3	0.6	0.3	0.3	0.3	17.9	0.8	3.4	140.6	267.7		
SMDH 00566	0.1	11.7	97.1	165.4	20.5	67.0	10.8	2.8	5.7	0.7	3.0	0.3	0.9	0.3	0.5	0.3	20.6	1.1	6.1	267.9	463.2		1.65
SMDH 00566	0.1	13.7	58.8	110.5	11.8	41.6	6.4	2.2	4.2	0.6	2.8	0.5	1.2	0.3	0.9	0.3	15.8	1.0	6.8	279.2	575.2		
SMDH 00566	0.1	11.7	59.0	101.6	9.8	31.2	4.8	1.7	2.6	0.3	1.7	0.3	1.3	0.3	0.8	0.3	4.6	1.4	7.4	308.9	1003.6		
SMDH 00566	0.2	10.8	71.0	135.8	13.6	45.1	7.1	1.7	4.5	0.3	2.4	0.3	0.9	0.3	0.6	0.3	16.7	1.5	9.7	383.5	860.2		1.5
SMDH 00567	0.1	48.8	58.0	119.9	13.7	49.7	10.1	1.5	7.6	1.1	8.3	1.4	3.6	0.6	3.5	0.5	23.8	5.0	9.8	462.9	1061.5		
SMDH 00567	0.1	49.0	69.9	156.6	15.7	55.5	10.2	1.6	8.3	1.3	8.7	1.5	4.1	0.6	3.9	0.5	26.3	6.2	9.0	389.3	940.3		1.48

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00567	0.1	44.2	57.5	119.4	13.7	48.5	9.5	1.5	7.0	1.1	7.8	1.4	3.2	0.6	4.1	0.3	21.6	5.2	11.1	521.1	743.9	3.0	
SMDH 00567	0.1	46.8	58.1	119.6	14.3	49.7	10.7	1.6	8.5	1.1	7.7	1.5	4.0	0.5	3.8	0.3	22.7	5.0	8.8	368.0	908.9		
SMDH 00567	0.1	41.0	56.2	101.9	13.5	48.5	8.9	1.3	7.5	1.1	6.7	1.3	3.2	0.5	3.2	0.3	20.3	4.1	9.7	409.4	652.3		1.52
SMDH 00567	0.1	43.2	51.0	118.6	12.4	43.9	8.0	1.2	7.3	1.1	7.3	1.5	3.7	0.6	4.0	0.3	20.7	4.0	11.4	496.3	700.4		
SMDH 00567	0.1	34.7	42.1	82.3	10.1	34.7	6.6	1.1	5.4	0.8	5.7	1.1	2.9	0.3	3.2	0.3	17.3	2.9	10.7	467.0	604.3	2.0	
SMDH 00567	0.1	30.2	38.7	77.3	9.0	32.4	5.6	0.9	4.7	0.7	4.8	1.0	2.6	0.3	2.7	0.3	16.5	2.9	11.0	483.3	692.0		1.49
SMDH 00567	0.1	34.9	47.2	89.8	10.6	37.0	7.4	1.1	5.9	0.8	5.7	1.1	2.8	0.3	3.1	0.3	15.6	3.1	9.3	408.1	697.1		
SMDH 00567	0.1	38.3	50.4	96.5	11.3	41.6	7.6	1.1	6.2	0.9	6.0	1.3	2.9	0.5	2.9	0.3	17.9	3.1	8.6	388.5	631.9		
SMDH 00567	0.1	32.5	72.9	125.8	15.5	54.3	9.0	1.6	7.0	0.9	5.3	1.1	2.7	0.3	2.7	0.3	17.9	2.8	7.8	340.8	553.0	1.7	1.42
SMDH 00567	0.1	29.1	65.7	118.5	14.1	49.7	8.5	1.3	5.9	0.8	5.1	1.0	2.5	0.3	3.0	0.3	17.5	2.7	8.3	353.2	655.3		
SMDH 00567	0.1	25.0	40.3	80.1	9.0	31.2	5.9	0.8	4.5	0.7	4.5	0.9	2.3	0.3	2.6	0.3	14.2	2.3	7.1	295.4	397.9		
SMDH 00567	0.1	22.0	37.7	76.4	8.8	32.4	5.5	0.8	5.0	0.6	3.9	0.8	1.9	0.3	1.9	0.3	15.2	2.2	5.3	213.8	394.7		1.72
SMDH 00567	0.0	12.1	20.1	43.0	4.7	16.2	2.6	0.6	2.3	0.3	2.0	0.3	1.0	0.3	1.0	0.3	8.4	1.7	2.7	107.7	182.5	0.8	
SMDH 00567	0.1	17.9	95.7	198.9	22.6	75.1	13.2	1.9	8.7	0.9	4.2	0.7	1.3	0.3	1.0	0.3	37.3	2.9	10.4	401.1	748.9		
SMDH 00567	0.1	51.5	66.8	139.3	16.5	56.6	10.9	1.8	7.7	1.0	7.8	1.9	5.3	1.0	7.0	0.9	24.7	2.1	8.7	371.9	209.1		1.47
SMDH 00567	0.1	29.6	61.5	108.5	13.7	47.4	8.6	2.0	5.8	0.8	5.4	1.0	2.9	0.3	3.5	0.3	13.4	2.4	4.2	165.9	633.4		
SMDH 00567	0.1	38.1	11.1	25.0	3.3	12.7	4.1	1.6	5.3	0.8	6.0	1.2	3.3	0.6	5.3	0.6	3.3	2.2	3.2	116.3	671.8	1.1	
SMDH 00567	0.0	16.7	53.3	116.1	12.5	43.9	7.4	0.3	4.7	0.6	3.2	0.5	1.2	0.3	1.4	0.3	23.9	2.4	11.9	549.4	352.8		
SMDH 00567	0.4	64.9	21.1	45.2	6.7	28.9	7.4	1.6	9.9	1.8	11.9	2.3	5.4	0.8	5.3	0.6	3.5	2.1	4.6	198.6	1666.7		1.66
SMDH 00567	0.5	106.3	52.3	110.8	14.6	50.8	11.5	1.6	11.1	2.4	17.0	3.5	9.3	1.6	10.8	1.5	15.9	2.7	5.3	240.0	1679.5		
SMDH 00567	0.3	33.4	34.6	74.3	8.7	33.5	6.3	1.3	5.8	0.9	5.8	1.1	2.8	0.3	2.8	0.3	14.3	1.5	3.3	129.3	687.4		
SMDH 00567	0.1	41.8	95.1	193.4	21.9	77.4	14.1	1.8	9.6	1.4	7.1	1.5	3.8	0.5	3.8	0.5	37.3	2.7	5.4	218.6	551.8	1.2	1.48
SMDH 00567	0.1	19.7	107.7	220.9	25.2	83.2	14.3	2.3	9.5	1.0	4.2	0.8	1.4	0.3	0.8	0.3	42.4	2.1	5.8	242.2	939.4		
SMDH 00567	0.1	18.4	92.8	187.8	21.7	71.6	12.5	1.8	8.6	0.9	4.0	0.7	1.5	0.3	1.0	0.3	36.0	2.1	7.5	342.7	781.5		
SMDH 00568	0.1	39.0	55.9	110.0	13.5	46.2	7.8	1.1	6.7	1.0	6.9	1.3	3.3	0.3	3.4	0.3	20.5	4.7	9.4	405.9	596.5		1.53
SMDH 00568	0.1	46.8	65.8	141.7	15.7	53.2	10.8	1.6	7.4	1.3	8.0	1.4	3.8	0.6	3.9	0.6	24.8	6.4	9.2	383.0	725.5		
SMDH 00568	0.1	40.9	50.8	97.5	13.1	46.2	9.4	1.3	5.7	0.8	6.8	1.3	2.6	0.5	3.2	0.3	21.1	3.9	8.4	418.9	550.2	1.6	
SMDH 00568	0.1	38.0	55.9	116.1	12.9	45.1	8.4	1.5	7.8	1.1	6.3	1.4	3.3	0.5	3.2	0.3	21.3	4.0	9.1	352.0	763.5		
SMDH 00568	0.1	36.3	56.4	114.2	12.4	49.7	8.4	1.2	7.1	1.0	7.1	1.4	3.2	0.3	3.2	0.3	22.6	4.6	10.5	470.1	629.1		1.6
SMDH 00568	0.1	40.5	61.8	129.9	13.4	48.5	8.3	1.2	8.3	1.0	6.5	1.4	3.7	0.3	3.3	0.3	22.0	4.7	9.1	400.5	583.2		
SMDH 00568	0.1	41.5	62.1	113.2	12.9	50.8	9.8	1.3	7.7	1.0	6.9	1.4	3.6	0.5	3.5	0.3	21.1	4.4	9.0	443.3	596.3	3.4	
SMDH 00568	0.1	36.5	51.9	97.0	11.2	41.6	8.2	1.1	7.0	1.0	5.8	1.2	3.0	0.3	3.1	0.3	19.0	3.9	8.0	334.9	683.2		1.51
SMDH 00568	0.1	23.9	31.0	60.4	7.0	24.3	5.3	0.7	4.3	0.6	3.8	0.7	2.3	0.3	2.0	0.3	12.5	2.6	4.0	185.2	230.9		
SMDH 00568	0.1	13.2	79.8	159.8	17.3	64.7	11.0	0.8	8.1	0.8	3.2	0.3	1.0	0.3	0.8	0.3	29.4	3.2	9.3	378.5	671.8		
SMDH 00568	0.1	10.9	67.9	136.4	14.1	50.8	7.6	1.3	6.0	0.7	2.7	0.3	0.9	0.3	0.7	0.3	24.9	2.1	11.6	550.3	635.7	2.0	1.35
SMDH 00568	0.1	15.1	82.3	173.1	20.6	67.0	12.6	1.7	7.7	0.9	4.0	0.5	1.1	0.3	0.8	0.3	34.9	2.1	8.4	368.6	644.5		
SMDH 00568	0.1	20.4	114.6	260.9	27.7	93.6	17.8	1.5	11.2	1.4	5.5	0.8	1.3	0.3	0.8	0.3	51.5	4.0	10.7	430.1	912.9		1.34
SMDH 00568	0.1	13.8	65.9	137.3	15.9	56.6	10.7	1.7	7.6	0.8	3.6	0.5	0.9	0.3	0.7	0.3	26.1	2.0	11.0	432.1	816.3	1.6	
SMDH 00568	0.1	15.2	97.3	200.0	22.8	79.7	13.8	1.3	9.5	0.9	4.4	0.5	0.9	0.3	0.7	0.3	38.4	3.1	11.9	490.2	929.7		
SMDH 00568	0.1	17.5	90.0	174.3	20.5	71.6	12.9	0.9	8.1	0.9	4.7	0.5	1.2	0.3	0.9	0.3	34.1	3.7	9.1	380.4	636.7		1.45
SMDH 00568	0.1	18.7	82.4	166.4	18.3	64.7	12.0	1.1	7.9	0.9	4.4	0.7	1.4	0.3	0.9	0.3	32.9	3.6	8.1	329.9	720.0		
SMDH 00568	0.0	12.8	82.8	163.8	18.1	64.7	11.4	1.0	7.1	0.8	3.9	0.3	0.9	0.3	0.6	0.3	32.8	3.3	9.0	373.9	727.6	2.3	
SMDH 00568	0.1	13.8	97.7	198.6	22.6	79.7	13.5	1.1	8.5	0.9	4.3	0.5	0.9	0.3	0.6	0.3	39.1	2.7	10.4	431.0	753.9		1.37
SMDH 00568	0.1	33.2	174.0	317.6	31.1	104.0	19.5	2.1	14.6	1.8	8.4	1.2	2.4	0.3	1.7	0.3	50.5	4.2	12.5	522.4	907.7		
SMDH 00570	0.2	59.0	95.9	191.5	23.0	70.5	16.2	1.9	12.5	1.8	10.3	2.4	5.9	1.1	5.4	0.8	34.1	7.3	16.3	678.8	780.3		
SMDH 00570	0.1	46.2	65.9	126.3	16.0	52.0	10.7	1.8	9.1	1.4	7.8	1.9	4.6	0.7	3.9	0.5	23.1	7.1	7.9	320.0	789.5		
SMDH 00570	0.2	44.6	63.2	125.3	14.7	47.4	10.6	1.7	8.6	1.4	8.0	1.6	4.4	0.7	3.5	0.7	22.1	4.8	6.0	245.3	936.0		
SMDH 00570	0.1	29.7	54.7	110.2	12.9	42.8	9.1	1.5	6.8	1.0	5.4	1.1	2.8	0.3	2.3	0.3	19.2	3.7	6.8	283.4	569.8	3.0	1.5
SMDH 00570	0.1	29.3	79.6	163.8	19.9	62.4	13.6	1.6	10.1	1.5	5.9	1.3	2.9	0.3	2.3	0.3	28.7	4.3	8.7	358.1	366.1		
SMDH 00570	0.1	18.9	47.2	98.1	12.3	38.1	8.3	1.5	6.0	0.8	3.8	0.8	1.7	0.3	1.4	0.3	18.0	3.0	6.3	249.8	405.0		
SMDH 00570	0.1	11.4	36.7	72.0	8.4	27.7	6.6	1.0	4.7	0.6	2.6	0.3	1.1	0.3	0.7	0.3	12.8	2.2	4.6	200.9	327.3		
SMDH 00570	0.1	31.2	79.9	180.9	20.2	61.2	12.4	1.7	10.3	1.1	6.8	1.1	2.6	0.3	2.2	0.3	25.8	3.9	10.3	368.2	637.4	2.5	1.4
SMDH 00570	0.2	31.9	63.7	152.2	17.5	52.0	10.7	2.1	9.6	1.3	7.3	1.1	2.7	0.3	2.4	0.3	17.6	3.0	10.0	363.0	1309.4		
SMDH 00570	0.5	47.9	30.4	61.1	8.8	27.7	7.0	1.8	7.3	1.3	8.5	1.6	4.5	0.6	4.2	0.6	6.9	3.2	8.0	270.0	2468.3		
SMDH 00570	0.4	56.7	37.3	90.4	11.3	35.8	8.0	1.8	9.4	1.5	10.0	2.1	5.1	0.7	5.0	0.8	9.3	2.8	7.8	248.8	2450.9		
SMDH 00570	0.1	19.5	113.3	267.6	29.5	87.8	16.2	2.8	11.7	1.3	6.0	0.8	1.4	0.3	0.8	0.3	38.2	2.2	4.8	165.9	422.5	1.5	1.54
SMDH 00570	0.1	15.4	79.5	177.8	18.9	61.2	11.3	1.7	9.2	0.9	4.7	0.5	1.3	0.3	0.8	0.3	24.3	2.9	7.8	275.4	459.6		

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00570	0.0	10.8	29.1	59.1	6.7	23.1	4.5	1.7	2.8	0.3	2.2	0.3	1.0	0.3	1.1	0.3	9.0	1.4	3.7	150.1	135.9		
SMDH 00571	0.1	39.7	84.2	183.5	20.0	68.2	12.2	1.6	7.9	1.1	7.0	1.3	3.6	0.6	3.8	0.6	30.8	3.2	14.2	612.3	957.6		
SMDH 00571	0.1	25.3	53.0	115.4	12.6	41.6	7.7	1.2	5.1	0.7	4.5	0.9	2.3	0.3	2.6	0.3	18.9	1.6	8.3	351.9	670.9		1.56
SMDH 00571	0.1	19.6	29.5	61.2	7.2	24.3	4.7	1.1	3.2	0.3	3.4	0.7	1.7	0.3	1.9	0.3	10.5	1.4	3.4	142.4	529.6	2.6	
SMDH 00571	0.1	22.5	42.7	86.8	10.0	34.7	6.1	1.1	4.2	0.7	4.0	0.8	2.1	0.3	2.1	0.3	14.4	1.8	5.1	218.8	535.3		
SMDH 00571	0.1	14.7	36.8	74.7	8.8	28.9	5.3	0.7	3.4	0.3	2.7	0.3	1.3	0.3	1.3	0.3	14.3	1.4	5.4	216.9	377.7		1.55
SMDH 00571	0.1	24.2	94.9	201.7	22.6	77.4	14.0	1.1	8.9	1.0	5.7	0.9	1.9	0.3	1.8	0.3	36.2	3.2	12.5	516.1	597.9		
SMDH 00571	0.1	18.1	77.4	158.8	17.8	61.2	10.8	1.3	6.9	0.9	4.2	0.7	1.3	0.3	1.1	0.3	29.2	2.5	10.0	417.4	628.2	1.4	
SMDH 00571	0.1	21.3	78.4	163.4	18.1	62.4	11.6	1.2	7.4	1.0	4.8	0.7	1.4	0.3	1.0	0.3	29.1	3.1	8.6	339.3	632.8		1.47
SMDH 00571	0.1	14.3	54.7	113.3	12.4	41.6	7.6	1.5	4.9	0.6	3.2	0.3	1.1	0.3	1.0	0.3	19.8	1.9	11.2	448.7	603.6		
SMDH 00571	0.1	12.5	56.6	117.0	13.1	45.1	8.3	1.1	5.1	0.7	3.0	0.3	1.0	0.3	0.6	0.3	20.2	1.7	7.0	283.1	506.9		
SMDH 00571	0.1	13.2	52.4	105.8	12.0	40.4	7.6	1.1	4.8	0.7	2.9	0.3	1.1	0.3	0.7	0.3	17.7	1.5	6.1	246.1	573.6	0.9	1.63
SMDH 00571	0.1	18.4	89.4	191.6	21.2	70.5	12.8	1.1	7.9	1.0	4.8	0.7	1.3	0.3	0.9	0.3	35.0	2.4	7.8	322.6	551.1		
SMDH 00571	0.1	25.1	46.1	94.9	10.8	37.0	6.6	1.5	4.9	0.8	4.7	0.9	2.1	0.3	1.8	0.3	15.9	1.1	5.7	233.6	564.3		
SMDH 00571	0.2	35.4	57.2	119.4	13.5	45.1	9.1	1.8	6.6	1.1	6.9	1.2	2.8	0.3	2.1	0.3	20.4	1.4	7.2	296.4	684.6		1.63
SMDH 00571	0.4	65.3	60.1	128.5	14.6	49.7	10.0	1.7	8.1	1.6	10.8	2.1	5.5	0.8	4.4	0.6	21.4	1.6	7.4	296.1	759.8	0.5	
SMDH 00571	0.1	22.0	38.1	78.8	9.4	31.2	6.4	1.5	4.7	0.7	4.3	0.8	1.7	0.3	1.2	0.3	12.1	1.1	6.6	274.6	654.6		
SMDH 00572	0.1	11.0	43.7	94.7	9.6	34.7	6.0	0.3	3.9	0.3	2.2	0.3	1.0	0.3	1.1	0.3	16.2	1.2	9.9	452.1	373.1		
SMDH 00572	0.1	17.8	78.0	221.7	16.1	62.4	10.8	0.9	7.7	0.6	4.0	0.7	1.8	0.3	1.8	0.3	30.8	2.5	14.9	574.2	790.7		
SMDH 00572	0.2	36.4	86.3	210.5	23.5	67.0	11.6	1.5	9.5	1.1	7.2	1.4	3.6	0.5	3.6	0.6	29.2	2.1	13.9	507.8	597.9	4.4	1.42
SMDH 00572	0.1	18.0	80.7	164.9	19.5	67.0	10.2	1.5	6.8	0.7	4.0	0.7	1.5	0.3	1.3	0.3	31.2	1.2	4.5	172.6	368.9		
SMDH 00572	0.1	34.6	98.4	160.4	21.7	72.8	12.3	2.0	8.5	1.1	6.2	1.2	2.9	0.5	3.3	0.5	26.0	1.7	12.1	503.2	624.6		
SMDH 00572	0.1	27.6	91.8	186.2	21.6	70.5	13.1	1.3	9.3	1.1	5.4	0.9	2.2	0.3	2.0	0.3	33.1	2.2	10.4	452.8	686.1	1.6	1.44
SMDH 00572	0.1	13.5	62.6	121.4	14.1	48.5	7.6	1.1	6.0	0.7	3.1	0.3	0.9	0.3	0.6	0.3	20.6	1.4	6.4	275.8	469.8		
SMDH 00572	0.1	14.4	77.5	163.2	17.7	61.2	10.0	1.6	6.4	0.8	3.7	0.5	1.0	0.3	0.5	0.3	27.4	1.4	7.7	307.7	606.2		
SMDH 00572	0.1	18.1	86.3	181.6	20.0	74.0	12.9	1.2	8.1	1.0	4.4	0.7	1.3	0.3	1.0	0.3	31.2	2.2	8.5	350.4	729.0		
SMDH 00572	0.1	17.7	75.0	160.0	17.3	63.6	10.8	1.1	7.3	0.9	4.4	0.7	1.3	0.3	0.8	0.3	28.8	2.2	9.4	361.5	648.9	1.3	1.48
SMDH 00572	0.1	22.4	101.5	211.9	23.0	82.0	13.7	1.8	8.7	1.0	5.8	0.9	1.8	0.3	1.2	0.3	36.2	2.1	8.1	333.6	723.9		
SMDH 00572	0.1	21.8	101.4	216.9	23.5	85.5	14.3	1.6	8.7	1.3	5.0	0.9	1.7	0.3	1.3	0.3	38.1	2.3	10.7	463.6	691.3		
SMDH 00572	0.1	19.8	88.6	177.2	19.9	67.0	11.3	1.6	6.8	0.8	4.4	0.7	1.5	0.3	1.1	0.3	30.1	1.6	7.9	352.8	633.8	0.3	
SMDH 00572	0.1	26.5	91.8	183.8	20.5	70.5	11.5	1.6	7.6	1.0	5.3	0.9	2.1	0.3	1.5	0.3	30.8	1.9	9.8	435.6	657.2		
SMDH 00572	0.1	21.3	126.8	236.5	27.1	94.8	14.7	2.1	8.9	1.0	5.1	0.8	1.6	0.3	1.0	0.3	35.0	1.8	10.4	440.6	768.5		1.48
SMDH 00573	0.1	60.8	253.5	508.6	45.9	162.9	28.7	1.3	21.8	2.4	13.2	2.0	5.3	0.7	5.5	0.6	103.2	5.5	38.8	1756.3	1202.8	1.4	
SMDH 00573	0.2	29.0	81.4	179.5	18.6	65.9	12.3	1.6	8.2	0.9	6.1	1.0	2.4	0.3	2.8	0.3	30.1	1.6	9.4	450.5	1042.2		
SMDH 00573	0.1	22.7	108.6	219.7	25.1	86.7	14.0	1.6	9.2	0.9	4.4	0.8	1.6	0.3	1.7	0.3	41.1	1.1	12.3	515.2	526.0		1.54
SMDH 00573	0.1	36.4	105.0	217.8	24.6	83.2	14.4	1.8	9.9	1.1	6.9	1.3	3.1	0.3	3.2	0.3	40.8	1.8	9.1	384.3	739.5	1.7	
SMDH 00573	0.1	34.8	116.0	241.3	27.0	95.9	15.3	1.3	10.6	1.4	6.5	1.3	2.8	0.3	2.9	0.3	44.9	2.0	9.8	431.2	669.7		1.5
SMDH 00573	0.1	12.0	87.8	194.3	20.6	68.2	12.1	1.5	6.9	0.7	3.2	0.3	0.9	0.3	0.6	0.3	37.3	0.7	7.8	344.5	657.9		
SMDH 00573	0.1	14.5	97.6	207.3	22.6	74.0	12.6	1.7	7.9	0.8	3.6	0.5	1.1	0.3	0.9	0.3	34.1	5.2	5.4	248.1	660.0	1.0	
SMDH 00573	0.1	20.3	107.4	225.1	25.5	89.0	14.3	1.8	8.9	1.0	4.9	0.8	1.5	0.3	1.4	0.3	43.0	1.1	10.3	421.0	755.1		
SMDH 00573	0.1	24.4	92.2	194.6	22.0	77.4	12.4	1.6	8.2	0.9	5.0	0.9	1.9	0.3	2.0	0.3	36.5	0.9	10.5	449.3	618.4		
SMDH 00573	0.1	23.3	78.0	162.7	17.6	60.1	10.0	1.6	5.9	0.7	4.0	0.8	2.2	0.3	2.5	0.3	27.9	0.7	8.3	386.2	632.8	0.9	1.62
SMDH 00573	0.1	20.1	85.2	177.7	19.5	68.2	11.7	1.7	7.3	0.8	4.3	0.9	1.8	0.3	1.7	0.3	29.7	0.9	7.3	312.6	710.8		
SMDH 00574	0.1	18.3	32.3	72.0	7.7	26.6	4.7	0.6	3.0	0.3	2.7	0.5	1.6	0.3	1.7	0.3	12.4	1.0	6.1	270.2	398.4		
SMDH 00574	0.1	25.4	49.4	103.6	11.7	39.3	7.4	1.0	4.7	0.7	4.3	0.9	2.5	0.3	2.5	0.3	17.9	1.6	9.2	383.2	537.4		
SMDH 00574	0.2	32.2	49.0	102.9	11.2	38.1	7.0	1.7	4.9	0.7	5.3	1.1	3.0	0.3	2.9	0.3	14.6	1.6	5.8	247.7	700.4		1.42
SMDH 00574	0.1	13.5	36.8	76.4	8.8	30.0	5.1	0.7	3.1	0.3	2.3	0.3	1.2	0.3	1.1	0.3	14.1	1.0	4.5	196.9	319.0	4.2	
SMDH 00574	0.1	32.8	98.5	208.4	23.5	79.7	14.3	1.1	8.4	1.1	6.3	1.1	3.0	0.3	2.9	0.3	37.9	2.7	18.8	791.2	655.3		
SMDH 00574	0.1	31.1	90.0	190.1	21.7	72.8	13.0	1.0	7.6	1.0	5.9	1.1	2.9	0.3	2.7	0.3	35.4	2.5	12.4	552.6	547.8		1.39
SMDH 00574	0.1	41.6	150.2	326.2	36.3	121.3	21.3	1.2	12.8	1.6	8.3	1.4	3.9	0.5	3.5	0.5	60.7	4.1	24.2	1070.4	700.4		
SMDH 00574	0.1	86.8	132.0	277.9	31.2	104.0	19.2	1.2	12.6	1.8	12.2	2.6	8.3	1.3	8.0	1.1	51.5	4.1	5.5	250.4	490.6	1.6	
SMDH 00574	0.1	17.2	61.4	123.1	14.2	48.5	8.5	0.7	4.8	0.6	3.4	0.5	1.5	0.3	1.3	0.3	22.9	1.8	3.4	156.8	331.1		1.53
SMDH 00574	0.1	21.5	41.7	85.8	8.8	33.5	6.0	1.7	3.7	0.3	2.9	0.7	1.4	0.3	1.3	0.3	15.4	1.4	2.0	89.2	121.5		
SMDH 00574	0.0	11.7	25.5	52.2	5.7	20.8	4.3	1.8	2.7	0.3	2.1	0.3	1.1	0.3	0.9	0.3	8.4	0.8	1.4	55.8	55.3		
SMDH 00574	0.0	13.1	26.0	52.9	5.8	20.8	4.4	1.8	2.7	0.3	2.3	0.3	1.2	0.3	1.0	0.3	8.2	0.8	1.2	43.8	48.9	0.6	1.46
SMDH 00574	0.1	17.7	24.2	50.0	5.4	19.6	3.9	1.7	2.7	0.3	2.8	0.5	1.5	0.3	1.4	0.3	7.7	0.8	1.4	59.0	75.8		
SMDH 00574	0.1	10.6	25.5	52.0	5.8	19.6	4.5	1.7	2.8	0.3	2.0	0.3	0.9	0.3	0.8	0.3	8.4	1.1	1.2	45.0	67.8		

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm³*
SMDH 00574	0.1	15.6	23.9	49.2	5.4	18.5	3.9	1.7	2.7	0.3	2.4	0.3	1.4	0.3	1.3	0.3	7.8	0.9	1.4	57.1	78.9		1.28
SMDH 00574	0.0	18.0	34.7	71.0	7.8	26.6	5.4	1.8	3.6	0.3	3.1	0.5	1.6	0.3	1.4	0.3	11.1	1.0	1.5	57.1	63.1	1.7	
SMDH 00574	0.0	15.2	25.4	52.2	5.8	19.6	4.3	1.8	2.7	0.3	2.3	0.3	1.3	0.3	1.3	0.3	8.2	0.8	1.4	54.4	64.7		
SMDH 00574	0.0	22.0	29.2	58.9	6.7	23.1	4.6	1.9	3.4	0.3	3.6	0.8	2.1	0.3	1.9	0.3	9.3	1.0	1.2	46.2	88.9		1.49
SMDH 00574	0.0	12.6	21.4	43.0	5.1	16.2	3.0	1.5	2.4	0.3	2.0	0.3	1.2	0.3	1.1	0.3	6.0	0.9	1.1	46.6	73.3		
SMDH 00574	0.0	9.2	17.9	36.0	4.1	13.9	2.9	1.5	1.9	0.3	1.6	0.3	0.8	0.3	0.8	0.3	5.6	0.7	0.9	38.2	59.3		
SMDH 00575	0.1	19.8	38.2	94.3	9.5	31.2	5.7	0.7	3.6	0.6	3.3	0.7	2.2	0.3	2.2	0.3	20.5	0.8	9.2	387.5	545.4		1.38
SMDH 00575	0.1	30.5	58.1	139.5	14.3	48.5	8.2	1.0	4.9	0.8	5.1	1.1	3.1	0.5	3.0	0.3	25.7	1.0	16.0	694.9	630.7		
SMDH 00575	0.1	34.2	95.2	204.6	23.4	76.3	13.5	1.1	7.4	1.0	5.8	1.1	3.3	0.5	3.1	0.3	38.8	1.0	12.6	541.3	705.6		
SMDH 00575	0.1	20.6	57.6	126.3	14.2	47.4	8.4	1.0	5.2	0.7	3.9	0.8	1.9	0.3	1.8	0.3	21.8	0.8	8.5	368.1	421.6	0.9	1.56
SMDH 00575	0.1	30.3	70.0	152.1	17.1	55.5	9.4	1.2	5.6	0.8	4.9	1.0	2.9	0.3	2.7	0.3	25.6	0.8	9.2	403.8	721.3		
SMDH 00575	0.1	22.6	54.7	115.5	13.9	45.1	7.5	1.1	4.1	0.6	3.7	0.8	2.2	0.3	2.4	0.3	21.6	0.6	10.5	438.7	443.3		
SMDH 00575	0.1	26.7	59.5	128.2	14.9	50.8	8.4	1.3	4.7	0.7	4.2	0.9	2.4	0.3	2.6	0.3	21.1	0.7	11.0	479.1	524.4		
SMDH 00576	0.1	31.3	91.3	177.2	20.2	71.6	12.2	1.2	7.6	0.9	5.8	1.0	2.6	0.3	2.7	0.3	26.0	2.6	19.9	765.2	728.8		1.42
SMDH 00576	0.1	33.1	93.3	182.9	22.0	72.8	13.1	1.3	8.6	1.0	6.1	1.1	2.8	0.3	2.9	0.3	25.7	2.6	20.0	817.0	717.2		
SMDH 00576	0.1	39.8	106.4	225.9	25.2	84.4	15.2	1.5	9.4	1.3	7.1	1.3	3.7	0.6	3.9	0.6	43.9	2.5	22.8	952.0	684.2		
SMDH 00576	0.2	26.2	30.0	48.3	8.3	30.0	5.9	1.0	5.6	0.8	4.7	0.9	1.9	0.3	2.0	0.3	5.4	0.5	3.7	148.5	1029.4		
SMDH 00576	0.2	24.3	36.9	79.1	10.6	34.7	5.4	0.9	4.5	0.8	4.2	1.0	2.3	0.3	2.3	0.3	12.5	0.3	5.4	270.7	836.4		1.42
SMDH 00576	0.2	46.4	75.0	162.1	18.4	64.7	11.4	1.2	7.0	1.1	7.5	1.8	4.4	0.7	4.3	0.6	27.0	0.8	13.0	540.0	918.8	2.5	
SMDH 00576	0.2	37.4	79.3	169.8	19.2	67.0	11.6	1.1	8.2	1.0	6.3	1.4	3.2	0.5	3.4	0.3	27.7	0.9	15.9	683.9	812.7		
SMDH 00576	0.2	40.5	84.6	177.3	20.7	74.0	11.0	1.1	7.9	1.0	6.0	1.4	3.8	0.5	4.4	0.5	30.1	1.1	12.6	507.6	916.7		1.62
SMDH 00576	0.1	26.2	75.0	156.6	17.7	61.2	10.0	1.2	6.4	0.8	4.7	1.0	2.5	0.3	2.8	0.3	25.5	0.9	11.8	469.1	799.5		
SMDH 00576	0.1	41.7	84.1	178.4	20.2	71.6	11.8	1.5	8.6	1.0	7.2	1.5	4.0	0.6	4.0	0.6	30.1	0.9	11.3	479.8	598.1	1.1	
SMDH 00576	0.2	52.2	98.0	209.6	24.0	84.4	14.3	1.6	10.2	1.5	8.5	1.9	4.8	0.8	5.3	0.8	35.1	1.1	12.3	534.2	953.5		1.63
SMDH 00576	0.1	23.5	88.5	172.7	20.2	65.9	9.1	1.5	6.0	0.7	4.2	0.8	2.4	0.3	2.5	0.3	24.7	0.9	14.0	570.7	997.8		
SMDH 00576	0.3	59.5	63.5	132.2	15.7	54.3	9.3	1.2	6.7	1.1	8.0	2.1	5.6	1.1	6.7	0.9	21.6	1.1	11.2	497.5	1440.1		
SMDH 00576	0.3	35.3	24.6	50.0	6.5	25.4	4.8	1.0	5.2	0.9	5.5	1.2	2.9	0.3	3.6	0.3	7.1	0.6	4.1	170.7	1206.9	3.1	1.64
SMDH 00576	0.3	29.7	79.8	170.3	19.6	67.0	11.4	1.1	7.5	0.9	5.5	1.0	3.1	0.3	3.5	0.3	28.9	2.4	12.9	515.5	1559.7		
SMDH 00576	0.3	25.3	36.7	81.5	9.2	33.5	6.3	1.1	4.7	0.7	4.4	0.9	2.6	0.3	2.8	0.3	12.7	0.7	6.8	290.0	1523.3		
SMDH 00577	0.1	18.6	64.5	163.3	15.5	50.8	9.2	0.6	5.7	0.7	3.8	0.7	1.6	0.3	1.8	0.3	25.7	2.3	18.9	778.3	442.6		1.73
SMDH 00577	0.2	30.3	75.7	161.0	17.0	57.8	10.8	1.3	6.8	0.9	5.2	1.1	2.6	0.3	2.7	0.3	28.1	2.2	8.7	382.5	831.2		
SMDH 00577	0.1	50.1	115.9	225.0	27.0	92.4	16.2	2.1	11.2	1.6	9.2	1.9	4.5	0.7	4.8	0.8	33.0	3.0	13.1	556.8	605.0		
SMDH 00577	0.1	21.6	47.2	103.0	11.3	37.0	6.8	1.0	4.7	0.7	3.8	0.8	1.9	0.3	2.1	0.3	19.8	1.2	7.3	331.4	489.0		1.48
SMDH 00577	0.1	8.8	16.0	28.9	3.4	11.6	2.0	0.8	1.4	0.3	1.4	0.3	0.8	0.3	0.8	0.3	6.2	1.2	4.4	187.8	274.4	2.2	
SMDH 00577	0.1	14.7	33.8	71.2	8.0	26.6	4.4	0.8	3.0	0.3	2.4	0.3	1.3	0.3	1.3	0.3	10.2	0.9	7.1	308.9	450.9		
SMDH 00577	0.1	23.2	52.5	112.0	12.6	42.8	7.7	0.9	5.2	0.7	4.1	0.8	1.9	0.3	1.9	0.3	19.4	2.4	4.7	215.7	394.6		1.48
SMDH 00577	0.2	10.4	10.8	21.3	2.4	9.2	1.8	1.0	1.5	0.3	1.6	0.3	0.9	0.3	1.0	0.3	2.7	0.5	7.1	326.8	591.8		
SMDH 00580	0.1	37.2	127.7	267.4	27.5	115.6	20.2	1.1	12.3	1.4	8.1	1.4	3.7	0.6	4.1	0.3	56.8	3.0	34.1	1243.1	1226.3		
SMDH 00580	0.1	44.4	125.4	260.8	25.9	105.2	18.7	1.1	11.6	1.4	7.5	1.6	4.1	0.7	4.5	0.6	55.0	2.7	29.8	1138.9	997.0		
SMDH 00580	0.2	44.5	77.2	163.4	19.8	64.7	11.5	1.5	7.4	1.1	7.0	1.5	4.5	0.7	4.9	0.7	30.6	1.5	11.2	462.4	804.9		
SMDH 00580	0.3	94.5	83.0	168.4	17.6	72.8	13.0	1.7	10.0	1.7	14.8	3.8	10.3	1.8	10.8	1.7	33.4	1.4	12.1	440.9	723.1		1.55
SMDH 00580	0.3	67.7	27.9	73.5	8.3	42.8	12.6	2.8	12.4	2.1	13.5	2.6	5.9	1.0	5.2	0.7	4.8	0.7	11.0	407.5	3990.0	1.0	
SMDH 00581	0.1	51.6	90.1	199.7	21.0	71.6	12.8	1.8	8.6	1.3	8.2	1.8	5.1	0.7	5.3	0.8	30.6	2.7	21.0	909.2	1116.4		1.31
SMDH 00581	0.1	39.5	70.9	148.8	16.7	55.5	10.5	1.5	6.8	1.0	6.2	1.3	3.9	0.6	4.0	0.6	25.2	4.8	16.2	684.0	936.1	1.4	
SMDH 00581	0.1	44.6	105.5	224.4	24.1	84.4	14.5	1.3	9.2	1.3	7.5	1.4	4.4	0.6	4.2	0.6	40.0	2.7	22.9	1042.1	846.0		
SMDH 00581	0.2	44.6	104.1	204.9	22.0	77.4	13.2	1.9	8.3	1.1	7.5	1.5	4.5	0.6	4.3	0.7	31.7	2.4	20.9	936.8	1029.7		1.25
SMDH 00581	0.1	34.2	96.8	201.7	21.9	76.3	13.2	1.2	8.4	1.0	6.2	1.1	3.3	0.3	3.0	0.3	33.8	2.5	11.8	547.7	795.7		
SMDH 00581	0.1	30.3	151.0	312.6	33.9	120.2	20.1	1.2	12.0	1.4	6.9	1.1	2.7	0.3	2.3	0.3	55.5	3.0	9.3	417.5	360.6	0.9	
SMDH 00581	0.1	28.7	126.8	259.7	27.9	98.2	16.9	1.1	9.8	1.1	5.8	1.0	2.6	0.3	2.2	0.3	46.2	2.3	6.1	273.9	416.1		1.51
SMDH 00581	0.1	31.9	128.1	274.7	28.8	99.4	17.2	1.2	10.2	1.1	6.2	1.1	3.0	0.3	2.7	0.3	49.5	2.7	13.6	603.0	559.9		
SMDH 00581	0.1	46.5	146.8	324.8	33.9	115.6	20.1	1.5	12.4	1.5	9.1	1.6	5.4	0.6	4.3	0.7	57.9	3.3	25.2	1097.4	868.0		
SMDH 00581	0.1	40.5	146.5	313.8	33.0	114.4	19.8	1.5	11.8	1.4	8.0	1.4	3.9	0.5	3.5	0.5	56.0	3.1	20.5	896.1	669.2		1.1
SMDH 00581	0.2	59.6	196.0	437.4	48.2	160.6	28.1	1.9	16.3	2.1	11.2	2.0	5.5	0.8	4.9	0.7	76.4	4.6	34.4	1576.4	924.9		
SMDH 00581	0.1	4.7	14.0	26.6	2.9	9.2	1.8	1.9	1.0	0.3	0.8	0.3	0.3	0.3	0.5	0.3	3.3	1.1	14.7	696.9	1038.4		
SMDH 00581	0.1	5.1	55.7	113.5	12.0	40.4	6.0	2.5	2.8	0.3	1.1	0.3	0.3	0.3	0.3	0.3	18.4	1.0	15.6	727.1	930.2		1.36
SMDH 00581	0.1	4.0	22.9	42.9	4.8	16.2	2.4	2.1	1.4	0.3	0.8	0.3	0.3	0.3	0.3	0.3	5.0	0.8	15.4	721.2	1265.7	0.9	
SMDH 00581	0.1	4.5	10.0	18.2	2.0	6.9	1.3	1.6	0.8	0.3	0.7	0.3	0.3	0.3	0.3	0.3	1.6	1.0	15.9	747.5	1346.8		

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm^3*
SMDH 00581	0.1	3.7	11.2	22.4	2.4	8.1	1.4	1.6	0.9	0.3	0.6	0.3	0.3	0.3	0.3	0.3	2.4	1.0	14.3	656.5	1040.3		1.42
SMDH 00581	0.1	4.5	13.9	27.8	3.0	9.2	1.6	1.8	1.0	0.3	0.7	0.3	0.3	0.3	0.3	0.3	3.3	0.8	12.9	597.2	969.9		
SMDH 00581	0.1	2.8	11.4	21.9	2.4	6.9	1.4	2.5	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	0.5	11.8	506.3	694.3	0.3	
SMDH 00582	0.1	31.4	68.3	142.6	16.1	53.2	10.5	1.5	6.5	0.9	5.5	1.1	2.9	0.3	3.0	0.3	25.8	2.3	8.4	362.1	628.8	0.3	1.49
SMDH 00582	0.2	31.4	49.1	100.5	11.6	38.1	7.2	1.3	4.8	0.8	5.0	1.0	2.9	0.3	3.1	0.3	16.5	1.2	8.8	372.4	884.8		
SMDH 00582	0.1	31.4	48.3	100.9	11.3	39.3	7.1	1.3	4.8	0.7	5.1	1.1	3.0	0.3	3.2	0.3	16.4	1.2	7.8	340.4	864.2		
SMDH 00582	0.1	34.8	73.2	157.0	17.7	60.1	10.5	1.5	6.9	0.9	6.1	1.2	3.2	0.5	3.4	0.5	27.3	1.8	12.0	517.5	867.7		1.38
SMDH 00582	0.1	36.1	124.2	266.5	29.6	100.5	17.0	1.2	10.4	1.3	7.2	1.3	3.5	0.5	3.3	0.5	49.0	2.6	16.5	717.8	746.8	2.5	
SMDH 00582	0.1	15.8	47.0	96.3	11.2	35.8	6.9	0.7	3.9	0.3	2.7	0.5	1.4	0.3	1.5	0.3	18.0	0.8	3.7	166.3	376.0		
SMDH 00582	0.1	16.6	33.0	71.4	8.0	26.6	4.6	0.8	3.1	0.3	2.9	0.5	1.6	0.3	1.7	0.3	13.5	0.8	3.1	143.2	298.3		1.58
SMDH 00582	0.1	35.8	104.6	224.1	25.3	84.4	15.4	1.8	9.3	1.1	6.5	1.2	3.3	0.5	3.3	0.5	40.7	2.4	10.1	440.2	714.1		
SMDH 00582	0.1	35.2	104.7	226.3	25.8	85.5	15.5	1.8	9.3	1.3	6.8	1.3	3.2	0.5	3.3	0.5	40.7	2.4	10.1	441.4	748.6	1.9	
SMDH 00582	0.1	33.2	97.2	204.7	22.9	75.1	13.8	1.7	8.2	1.0	5.5	1.1	3.3	0.5	3.3	0.3	36.5	2.1	11.9	517.8	693.4		1.37
SMDH 00582	0.1	26.7	76.4	164.5	18.4	61.2	10.9	1.7	6.5	0.8	4.5	0.9	2.7	0.3	2.8	0.3	28.6	1.6	7.2	321.5	781.8		
SMDH 00582	0.1	32.0	93.0	202.3	22.3	75.1	13.6	1.6	8.1	1.0	5.8	1.1	3.1	0.3	2.9	0.3	34.8	2.1	9.9	426.2	686.5		
SMDH 00582	0.1	38.9	84.8	181.8	19.9	68.2	12.1	1.7	7.5	1.0	6.4	1.3	3.7	0.5	3.6	0.5	32.4	2.1	8.5	384.0	693.4	0.6	1.42
SMDH 00582	0.1	28.4	91.5	195.2	21.4	72.8	13.0	1.8	7.9	1.0	5.4	1.0	2.6	0.3	2.3	0.3	34.2	2.7	10.3	444.7	653.6		
SMDH 00582	0.1	34.8	94.1	198.6	21.9	74.0	13.0	1.6	7.9	1.0	5.4	1.1	2.9	0.3	3.3	0.3	33.8	2.1	8.4	383.5	759.5		
SMMB 001	0.1	18.6	67.5	134.9	15.2	53.2	8.5	0.3	6.2	0.9	3.3	0.7	1.9	0.3	1.8	0.3	26.5	2.7	10.7	411.2	474.5		
SMMB 001	0.1	64.8	69.2	138.0	16.1	57.8	9.0	1.7	8.4	1.3	7.7	2.0	6.1	0.8	5.3	0.7	19.4	1.9	10.3	372.7	674.5	1.6	
SMMB 001	0.2	54.9	84.3	159.9	20.6	65.9	11.2	1.2	9.9	1.5	7.8	1.9	5.9	0.8	5.7	0.7	26.4	1.7	7.9	291.0	826.2		1.31
SMMB 001	0.2	53.2	57.4	113.3	14.2	45.1	8.7	0.8	6.6	1.1	6.7	1.6	5.8	1.0	6.2	0.8	18.4	1.6	10.0	366.7	812.4		
SMMB 001	0.2	39.4	63.6	123.7	15.3	50.8	8.4	0.7	6.9	1.0	5.9	1.2	4.1	0.6	4.1	0.5	19.2	1.7	8.4	311.4	786.9		
SMMB 001	0.1	36.0	71.6	139.1	17.3	56.6	8.9	0.7	7.0	1.1	5.9	1.1	4.1	0.5	3.8	0.6	21.6	1.4	11.1	445.9	717.5	1.4	1.36
SMMB 001	0.1	27.8	53.9	116.1	13.6	47.4	8.5	0.3	5.9	0.8	4.8	1.0	2.9	0.3	2.7	0.5	18.9	1.4	10.7	413.9	574.7	1.5	
SMMB 001	0.1	43.9	53.2	115.9	12.6	43.9	8.3	0.6	5.7	1.1	7.3	1.6	4.4	0.7	3.6	0.7	17.0	1.6	9.1	376.5	522.7		
SMMB 001	0.1	32.0	84.5	140.1	15.8	55.5	8.6	1.0	6.1	0.7	6.8	1.1	2.5	0.3	2.2	0.3	18.4	1.7	7.7	314.7	805.4		1.39
SMMB 001	0.1	35.3	74.3	158.7	17.6	63.6	12.1	1.3	8.4	1.3	6.8	1.2	3.2	0.3	2.7	0.6	23.2	2.1	11.0	417.7	723.9		
SMMB 001	0.1	36.8	97.0	203.0	23.4	78.6	13.6	1.3	9.5	1.4	6.9	1.3	4.0	0.6	3.8	0.7	30.8	2.2	10.5	397.0	733.3	0.5	
SMMB 001	0.1	39.7	74.8	158.3	17.5	60.1	11.5	1.3	7.4	1.1	6.5	1.4	3.9	0.7	4.4	0.7	25.0	2.1	9.9	369.8	719.1		1.42
SMMB 001	0.1	26.6	46.2	98.0	11.0	35.8	6.1	1.8	4.4	0.7	4.3	0.9	2.6	0.3	2.8	0.3	15.2	1.4	12.7	487.0	676.3		
SMMB 001	0.1	32.9	124.9	262.0	29.0	99.4	16.4	0.9	11.1	1.4	6.2	1.2	3.2	0.5	3.3	0.3	40.2	2.5	12.6	504.9	721.2		
SMMB 001	0.1	15.6	113.4	195.7	23.0	76.3	10.9	2.0	6.8	0.7	3.2	0.5	1.4	0.3	1.4	0.3	21.6	1.4	8.0	346.2	719.1	0.8	1.62
SMMB 001	0.1	28.3	65.4	131.9	14.5	50.8	9.1	1.5	6.1	0.7	4.7	1.0	2.7	0.3	2.9	0.3	20.4	1.8	7.8	300.4	647.8		
SMMB 001	0.1	23.0	56.9	119.7	13.3	46.2	8.9	1.2	5.4	0.8	4.0	0.8	2.2	0.3	2.2	0.3	18.0	1.8	6.3	256.0	562.2		
SMMB 001	0.1	12.3	36.7	72.4	8.1	26.6	4.8	1.0	2.6	0.3	2.0	0.3	1.2	0.3	1.3	0.3	11.7	0.8	5.5	250.8	293.3		1.72
SMMB 001	0.1	14.5	29.9	65.0	7.0	22.0	3.8	1.3	2.5	0.3	2.3	0.3	1.8	0.3	1.4	0.3	9.1	0.6	5.4	201.4	560.1	0.4	
SMMB 001	0.1	21.9	52.4	109.8	13.5	41.6	6.9	0.6	4.5	0.7	4.7	0.8	2.3	0.3	2.9	0.3	17.0	1.4	8.0	331.8	711.1	0.4	
SMMB 001	0.1	33.5	36.4	76.9	9.6	31.2	5.6	0.9	4.2	0.7	5.3	1.0	3.3	0.6	5.0	0.7	11.4	1.6	6.6	256.0	521.8		
SMMB 001	0.1	11.7	15.8	31.3	4.1	11.6	2.2	1.3	1.5	0.3	2.0	0.3	1.2	0.3	1.7	0.3	3.7	0.6	5.4	195.7	398.5		1.51
SMMB 001	0.1	22.0	43.7	92.9	11.6	35.8	6.8	0.8	4.3	0.7	4.1	0.9	2.5	0.3	3.2	0.3	14.5	1.1	7.4	290.8	640.7		
SMMB 001	0.1	31.8	59.6	109.7	13.5	42.8	8.2	0.7	5.7	0.8	5.4	1.2	3.3	0.6	4.1	0.7	16.5	1.5	10.7	415.5	653.9	0.3	
SMMB 001	0.1	27.0	48.6	100.1	12.6	41.6	8.4	0.7	4.9	0.8	5.1	1.0	2.7	0.3	3.5	0.5	15.1	2.2	10.6	450.0	720.0		1.42
SMMB 001	0.1	27.8	52.3	109.8	13.3	42.8	7.5	0.7	5.2	0.7	5.3	1.0	2.7	0.3	3.0	0.3	15.8	1.7	8.0	331.8	711.1		
SMMB 001	0.1	25.0	39.6	83.2	10.1	30.0	6.2	0.9	4.0	0.6	4.3	0.8	2.6	0.3	3.3	0.5	12.7	1.6	15.9	600.6	838.9		
SMMB 001	0.1	10.0	47.6	98.3	12.2	38.1	7.5	1.0	4.2	0.7	2.8	0.3	0.6	0.3	0.7	0.3	15.1	2.0	15.7	662.0	1248.3	0.6	1.44
SMMB 001	0.2	18.4	19.2	35.8	4.3	15.0	2.9	1.1	2.3	0.3	2.4	0.5	2.2	0.3	1.9	0.3	3.3	1.5	16.6	617.9	94.1		
SMMB 001	0.2	30.9	44.0	79.8	9.4	31.2	5.3	0.9	3.4	0.7	4.7	1.0	3.3	0.3	3.6	0.5	9.9	1.4	11.8	451.6	886.7		1.52
SMMB 001																							
SMMB 001																							
SMMB 002	0.0	30.0	33.5	67.2	8.6	26.6	6.6	0.9	5.1	0.8	4.5	0.9	3.2	0.3	2.2	0.3	11.7	1.5	3.9	151.7	110.3	0.3	
SMMB 002	0.1	19.2	39.8	70.2	9.4	30.0	6.4	2.1	5.0	0.8	3.1	0.5	1.6	0.3	1.2	0.3	10.3	0.6	2.2	63.5	85.6		
SMMB 002	0.0	19.8	16.0	31.2	4.1	12.7	3.3	1.1	2.8	0.6	2.7	0.5	1.9	0.3	1.5	0.3	4.8	0.6	1.3	45.3	62.4		1.59
SMMB 002	0.0	18.1	10.2	19.6	2.7	8.1	1.8	1.0	2.2	0.3	2.1	0.5	1.8	0.3	2.2	0.3	2.9	0.6	1.5	52.0	53.2		
SMMB 002	0.1	8.9	21.0	43.3	4.8	17.3	3.7	1.1	2.7	0.3	1.7	0.3	0.9	0.3	0.8	0.3	7.1	0.5	0.8	35.9	64.1		
SMMB 002	0.0	17.5	15.0	30.6	3.4	11.6	2.9	1.1	3.0	0.3	2.6	0.5	2.3	0.3	1.7	0.3	5.0	0.5	1.1	40.0	48.7		1.55
SMMB 002	0.0	23.9	21.4	43.3	5.4	17.3	4.4	1.1	3.3	0.8	5.0	0.9	3.0	0.3	2.8	0.3	7.0	0.9	1.5	55.2	75.2	0.3	

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm³*
SMMB 002	0.0	25.9	9.8	19.6	2.3	6.9	1.7	0.8	2.0	0.6	3.6	0.8	3.1	0.3	3.2	0.3	2.9	0.7	0.9	35.4	31.0		
SMMB 002																							
SMMB 002	0.0	8.6	15.8	31.3	4.7	12.7	2.3	0.9	1.7	0.3	1.6	0.3	1.3	0.3	0.7	0.3	5.1	0.5	1.3	40.7	50.8		1.62
SMMB 002	0.0	13.7	7.9	14.9	1.8	5.8	1.5	1.0	1.5	0.3	2.1	0.5	1.8	0.3	1.5	0.3	2.3	0.6	0.7	25.3	22.2		
SMMB 002	0.0	22.6	14.8	30.7	3.4	12.7	3.6	1.0	3.0	0.6	3.2	0.8	2.5	0.3	2.2	0.3	5.1	0.9	1.2	32.0	26.5	0.2	
SMMB 002	0.0	24.2	12.1	23.9	2.8	10.4	2.4	1.0	2.6	0.7	3.4	1.0	2.7	0.3	2.3	0.3	3.9	0.9	1.1	47.0	46.5		1.5
SMMB 002	0.0	18.6	14.9	29.1	3.5	11.6	3.1	1.0	2.7	0.6	2.8	0.7	2.1	0.3	1.9	0.3	4.5	0.8	0.9	34.9	50.8		
SMMB 002	0.0	13.4	27.2	56.7	6.6	23.1	4.9	1.1	3.7	0.3	2.4	0.3	1.1	0.3	0.9	0.3	9.4	0.8	2.9	89.8	54.3		
SMMB 002	0.1	13.1	25.2	53.1	6.3	18.5	5.4	1.0	3.4	0.3	2.4	0.3	1.2	0.3	0.9	0.3	8.7	0.8	2.4	96.7	104.0	0.2	1.59
SMMB 002	0.0	14.4	17.7	36.6	3.9	15.0	3.6	1.0	2.8	0.3	2.3	0.3	1.1	0.3	0.8	0.3	5.4	0.7	1.7	42.1	27.2		
SMMB 002	0.0	9.1	14.4	30.7	3.4	11.6	3.3	1.1	2.2	0.3	1.7	0.3	0.6	0.3	0.3	0.3	5.0	0.7	1.2	46.9	29.5		
SMMB 002	0.0	19.3	15.5	31.9	3.5	12.7	3.1	0.9	3.0	0.3	2.4	0.7	1.4	0.3	1.2	0.3	5.2	0.8	1.4	55.5	45.2		1.59
SMMB 002	0.0	15.5	15.6	33.0	3.9	12.7	3.2	1.1	3.0	0.3	2.7	0.3	1.4	0.3	1.3	0.3	5.2	0.8	1.3	46.9	23.9		
SMMB 002	0.0	14.5	12.7	26.1	3.1	11.6	2.5	0.9	2.6	0.3	2.4	0.3	1.4	0.3	1.9	0.3	4.0	0.7	0.8	31.1	19.6		1.5
SMMB 002	0.0	15.1	11.9	24.5	3.3	9.2	3.0	1.0	2.0	0.3	2.4	0.3	1.2	0.3	1.8	0.3	4.0	0.6	1.1	31.3	19.9		
SMMB 002	0.0	21.2	13.2	26.9	3.6	10.4	2.9	1.0	2.3	0.3	3.0	0.7	2.1	0.3	3.2	0.3	4.4	0.9	1.8	54.6	19.9	0.1	
SMMB 002	0.0	17.4	14.8	29.9	4.1	11.6	3.4	0.8	2.8	0.3	2.7	0.5	1.5	0.3	2.0	0.3	5.1	0.7	0.7	27.4	22.2		
SMMB 002	0.0	23.8	13.4	28.9	3.7	12.7	3.0	1.0	2.7	0.6	3.6	0.9	2.1	0.3	2.9	0.3	4.8	0.9	2.7	40.7	28.8		
SMMB 002	0.0	26.1	10.6	20.0	2.7	6.9	2.6	1.0	2.0	0.3	3.7	0.9	2.6	0.3	3.2	0.3	3.2	1.0	0.9	28.0	6.6		
SMMB 002	0.0	36.0	14.8	30.7	4.0	11.6	2.9	1.1	2.7	0.7	4.9	1.0	2.8	0.5	4.4	0.6	5.0	0.9	1.2	45.0	24.3	0.4	1.61
SMMB 002	0.0	15.2	15.4	31.9	4.2	11.6	3.3	1.1	2.6	0.3	2.3	0.3	1.2	0.3	1.3	0.3	5.1	0.8	1.1	33.8	35.4		
SMMB 002	0.0	20.7	15.1	31.1	4.3	12.7	3.6	1.1	3.3	0.3	3.1	0.7	2.1	0.3	2.7	0.3	5.1	0.8	1.7	67.4	31.0		
SMMB 002	0.0	17.0	14.3	28.9	3.9	11.6	2.6	0.9	2.8	0.3	2.6	0.3	1.3	0.3	1.4	0.3	5.0	0.6	1.3	56.2	48.7		1.41
SMDH 00303	0.1	44.1	89.2	177.9	20.1	70.5	11.5	1.7	8.4	1.1	7.2	1.8	4.1	0.7	5.4	0.7	31.5	2.0	10.0	439.8	765.4		
SMDH 00303	0.1	28.3	62.4	128.2	14.0	49.7	8.2	1.7	5.1	0.8	4.9	1.0	3.0	0.3	2.9	0.5	20.7	1.4	7.2	322.6	695.2		
SMDH 00304	0.1	40.9	104.0	220.9	24.9	87.8	15.2	1.5	9.6	1.3	8.0	1.5	4.1	0.6	4.5	0.6	44.3	2.2	14.4	632.7	608.5	2.3	1.23
SMDH 00304	0.1	32.4	89.9	188.9	21.2	76.3	11.8	1.5	8.3	1.1	6.0	1.3	2.8	0.3	2.5	0.3	35.2	2.1	10.3	443.1	573.5		
SMDH 00295	0.1	34.6	129.0	276.4	30.0	110.9	17.0	1.0	12.3	1.5	6.8	1.3	3.1	0.3	3.1	0.6	54.5	2.8	14.6	680.9	477.4		
SMDH 00295	0.1	17.0	91.5	194.1	21.3	74.0	11.2	1.5	8.2	0.8	4.0	0.7	1.5	0.3	1.1	0.3	37.3	1.2	7.7	323.5	437.7		1.32
SMDH 00295	0.1	16.2	64.6	139.5	15.3	52.0	7.9	1.7	5.2	0.6	2.9	0.5	1.4	0.3	2.0	0.3	27.3	0.7	8.4	348.4	678.7	1.2	
SMDH 00305	0.1	48.2	207.5	450.7	50.0	178.0	29.5	1.8	20.9	2.3	10.1	2.0	4.1	0.6	3.8	0.6	96.3	3.0	20.5	942.6	1125.8		
SMDH 00305	0.1	14.1	69.4	143.0	16.3	54.3	9.8	1.7	5.9	0.7	3.4	0.3	1.3	0.3	1.0	0.3	28.6	0.9	8.8	375.7	731.7		1.45
SMDH 00305	0.1	26.2	108.9	227.0	26.0	85.5	14.8	1.8	10.1	1.3	6.3	1.0	2.2	0.3	1.7	0.3	45.8	1.4	9.7	437.3	758.1		
SMDH 00305	0.1	23.1	116.9	240.8	28.2	94.8	16.7	1.8	11.1	1.1	6.2	0.7	1.8	0.3	2.0	0.3	47.6	1.5	9.6	414.4	746.1	0.6	
SMDH 00306	0.1	20.1	47.9	97.6	11.4	38.1	6.3	1.5	4.4	0.6	3.8	0.8	1.7	0.3	1.5	0.3	18.9	1.4	12.7	590.4	703.1		1.28
SMDH 00306	0.1	9.9	39.2	73.0	8.8	30.0	4.5	1.6	2.8	0.3	1.9	0.3	0.9	0.3	1.2	0.3	11.4	0.3	9.2	495.2	634.1		
SMDH 00306	0.1	34.3	97.3	200.6	23.6	79.7	12.2	1.1	8.4	1.1	6.1	1.2	3.2	0.6	3.3	0.5	40.5	1.0	8.8	387.4	631.7		
SMDH 00307	0.1	27.0	84.3	170.6	19.4	68.2	11.4	1.0	7.3	0.8	5.3	0.9	2.3	0.3	2.5	0.3	33.1	2.2	8.7	374.4	750.8	2.3	1.28
SMDH 00307	0.1	22.0	79.1	158.6	18.2	63.6	10.1	0.7	7.1	0.9	4.5	0.8	1.8	0.3	2.2	0.3	30.1	2.7	8.6	380.1	691.3		
SMDH 00307	0.1	26.7	116.7	209.3	25.7	82.0	12.8	1.2	8.2	0.9	5.3	0.9	2.6	0.3	2.8	0.3	31.7	2.1	11.9	507.5	934.4		
SMDH 00307	0.1	11.7	57.1	117.4	13.0	42.8	7.5	0.8	4.8	0.6	2.6	0.3	1.0	0.3	1.2	0.3	19.6	1.9	12.0	516.3	782.0		1.35
SMDH 00308	0.2	42.1	62.5	128.6	14.9	49.7	10.2	1.2	6.4	1.0	6.3	1.4	3.8	0.6	4.0	0.6	24.0	2.2	19.2	798.7	754.5		
SMDH 00308	0.2	28.8	45.9	95.4	11.0	38.1	6.7	1.1	5.0	0.8	4.7	1.0	2.5	0.3	2.7	0.3	17.5	1.5	10.6	452.9	685.3		1.29
SMDH 00308	0.1	17.4	43.3	90.5	10.2	35.8	6.4	0.7	4.2	0.6	3.3	0.7	1.6	0.3	1.7	0.3	17.6	1.0	6.3	273.9	309.4		
SMDH 00308	0.2	37.0	110.8	231.1	25.7	93.6	16.6	1.3	10.6	1.3	7.1	1.3	3.5	0.6	3.8	0.5	46.9	2.5	23.1	1002.2	872.2		
SMDH 00291	0.1	43.2	187.3	403.0	50.1	169.9	29.5	1.6	19.2	2.1	9.5	1.5	5.0	0.5	3.6	0.6	92.7	3.5	18.3	925.3	713.0	1.3	
SMDH 00291	0.1	19.9	84.2	171.3	21.6	78.6	12.8	1.1	8.2	0.9	4.5	0.8	2.1	0.3	1.5	0.3	38.6	1.4	9.4	471.2	672.5		1.42
SMDH 00291	0.1	20.7	85.5	180.1	21.9	75.1	13.1	1.2	8.3	0.9	4.3	0.7	2.5	0.3	1.5	0.3	43.3	1.2	4.6	219.4	507.1		
SMDH 00291	0.1	11.0	77.8	164.4	20.1	68.2	11.4	1.2	7.0	0.7	3.0	0.3	1.1	0.3	0.6	0.3	36.8	0.9	5.3	254.0	461.8		
SMDH 00309	0.1	35.5	123.4	250.9	29.8	107.5	18.2	0.9	11.8	1.3	6.5	1.2	4.5	0.5	3.7	0.6	54.6	2.8	19.7	936.0	1034.4	2.1	
SMDH 00309	0.1	24.3	65.2	136.0	16.9	58.9	10.8	0.7	7.5	0.9	4.4	0.9	3.1	0.3	2.3	0.3	29.2	1.7	7.4	360.4	752.0		
SMDH 00309	0.1	29.7	83.8	175.1	22.0	74.0	12.2	1.1	8.1	1.0	5.4	1.1	3.8	0.3	3.1	0.3	37.3	1.7	7.0	325.4	610.0		
SMDH 00311	0.1	32.9	122.1	243.1	29.3	107.5	16.4	1.3	11.0	1.1	6.7	1.1	3.8	0.3	2.8	0.3	50.7	2.1	15.7	817.6	853.4		1.52
SMDH 00311	0.1	31.7	100.6	204.5	24.7	85.5	13.0	1.5	8.5	1.0	5.8	1.1	3.6	0.3	3.1	0.3	40.3	1.2	7.7	382.1	672.5	1.3	
SMDH 00311	0.1	18.1	48.7	99.0	11.7	39.3	6.8	1.8	4.1	0.3	3.4	0.5	2.2	0.3	2.1	0.3	17.2	0.6	10.4	428.9	494.9		
SMDH 00310	0.1	27.4	74.6	151.4	18.2	62.4	11.0	1.0	7.3	0.9	5.7	1.0	2.9	0.3	2.7	0.3	28.9	2.2	11.0	445.6	512.3		1.63
SMDH 00310	0.1	37.8	99.6	167.8	23.9	91.3	13.2	1.1	10.0	1.0	6.8	1.2	4.4	0.5	4.2	0.5	37.7	1.8	16.0	634.7	569.5		

BHID	Sc_2O_3	Y_2O_3	La_2O_3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	ThO2	U3O8	HfO2	ZrO2	TiO2	Moist	BD
units:	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*ppm*	*%*	*g/cm³*
SMDH 00310	0.1	54.3	108.3	230.8	27.1	97.1	15.3	1.2	11.9	1.4	9.7	1.9	6.4	1.0	5.6	0.8	44.8	2.3	20.8	883.0	653.6	1.9	
SMDH 00312	0.1	49.8	116.4	246.8	26.7	95.9	16.4	2.1	12.5	1.8	8.5	1.5	4.6	0.8	4.5	0.7	48.1	2.5	13.9	675.7	1058.9		1.4
SMDH 00312	0.1	44.2	85.1	187.7	20.0	70.5	12.1	1.7	10.9	1.6	7.3	1.5	4.4	0.8	4.9	0.7	36.4	2.0	9.8	466.0	955.5		
SMDH 00312	0.1	44.2	173.1	389.5	41.6	147.9	25.5	1.5	20.7	2.6	8.8	1.4	3.8	0.6	3.6	0.6	85.2	4.2	17.8	878.3	921.9	1.6	1.48
SMDH 00312	0.1	22.8	38.4	83.5	8.8	31.2	5.5	0.8	5.4	0.8	3.7	0.8	1.8	0.3	1.8	0.3	17.0	1.1	7.5	361.5	650.6		
SMDH 00312	0.1	23.6	20.1	44.8	4.7	17.3	3.3	0.9	3.5	0.7	3.8	0.8	2.3	0.3	2.4	0.3	9.2	1.2	13.9	642.8	965.3		
SMDH 00313	0.1	32.6	62.8	134.2	13.9	50.8	8.2	1.3	7.6	1.1	5.1	1.1	3.2	0.5	3.3	0.6	24.1	1.5	8.3	403.5	742.0		1.46
SMDH 00313	0.1	45.7	80.8	179.4	18.7	68.2	12.5	1.9	11.5	1.6	7.2	1.5	4.4	1.0	4.3	0.7	31.6	2.0	7.2	363.0	905.1	1.7	
SMDH 00313	0.1	34.0	49.7	103.2	11.1	40.4	6.6	1.8	5.7	0.8	5.1	1.1	3.3	0.6	3.7	0.5	18.2	1.0	8.4	380.0	729.8		
SMDH 00325	0.2	20.6	118.1	244.6	26.1	92.4	14.8	1.5	8.9	0.9	4.3	0.8	1.8	0.3	1.8	0.3	45.2	2.1	12.9	542.1	732.4		
SMDH 00325	0.2	18.1	36.8	99.6	8.8	31.2	5.3	1.0	4.1	0.6	3.1	0.5	1.8	0.3	2.0	0.3	13.9	1.6	10.1	409.0	713.0	1.6	
SMDH 00325	0.1	9.1	30.2	63.6	6.9	24.3	4.5	1.2	2.7	0.3	2.1	0.3	0.8	0.3	0.9	0.3	9.2	0.8	9.3	390.2	548.3		1.25
SMDH 00325	0.2	20.4	26.7	52.0	6.0	22.0	4.0	1.1	3.3	0.3	4.0	0.7	1.8	0.3	2.1	0.3	6.2	0.7	8.1	323.5	557.0		
SMDH 00324	0.1	21.3	64.2	137.2	15.5	53.2	9.7	1.1	6.7	0.8	5.0	0.8	1.9	0.3	2.0	0.3	19.4	1.7	7.0	306.1	485.4		
SMDH 00324	0.1	19.3	38.5	80.9	8.8	31.2	5.9	1.3	4.0	0.6	3.6	0.8	1.9	0.3	2.3	0.3	11.2	1.2	6.8	286.2	512.8	1.7	1.41
SMDH 00324	0.1	26.0	28.5	63.6	7.1	24.3	4.6	1.0	3.6	0.7	4.1	0.9	2.4	0.3	3.0	0.3	7.7	1.5	5.9	265.8	393.5		
SMDH 00299	0.1	31.9	70.4	145.3	16.3	57.8	10.6	1.2	6.8	1.0	5.5	1.2	3.1	0.3	3.5	0.3	26.3	1.9	16.3	715.5	901.8		
SMDH 00299	0.1	33.4	57.2	124.2	13.3	46.2	8.9	1.3	5.6	0.8	5.0	1.1	3.3	0.3	3.4	0.5	21.6	2.0	12.4	552.5	899.4		1.37
SMDH 00298	0.2	18.5	29.0	66.2	7.8	25.4	5.6	0.8	4.1	0.6	3.4	0.7	1.7	0.3	1.7	0.3	11.9	1.5	5.7	232.1	510.4		
SMDH 00298	0.2	8.9	5.4	13.0	1.8	6.9	1.6	0.3	1.1	0.3	1.3	0.3	0.8	0.3	0.8	0.3	1.9	0.7	1.8	70.6	345.5		1.25
SMDH 00298	0.2	10.8	6.5	16.6	2.2	8.1	2.2	0.3	2.0	0.3	1.8	0.3	0.9	0.3	0.8	0.3	1.6	0.7	2.5	101.6	361.6		
SMDH 00302	0.1	35.2	85.2	169.3	20.1	72.8	11.7	1.2	7.6	1.1	7.0	1.2	4.0	0.6	3.5	0.6	33.9	1.9	16.3	646.2	713.5		1.3
SMDH 00302	0.1	25.9	90.4	186.5	22.0	80.9	12.8	1.0	7.6	1.0	5.8	1.1	2.7	0.3	2.3	0.3	40.8	1.7	7.8	330.7	485.4		
SMDH 00302	0.1	35.8	91.3	191.2	23.3	79.7	13.2	1.5	7.7	1.1	7.4	1.2	3.8	0.6	3.5	0.5	45.3	1.4	7.0	283.7	626.2	22.3	
SMDH 00302	0.1	38.8	100.6	215.5	24.1	86.7	13.0	1.6	8.7	1.0	6.7	1.4	3.7	0.6	3.7	0.5	44.2	1.8	8.1	343.5	676.4		1.41
SMDH 00297	0.1	45.8	109.2	236.1	27.6	89.0	16.9	1.6	11.5	1.4	7.3	1.6	4.3	0.7	4.8	0.7	45.3	3.3	26.4	1158.6	993.2	1.4	
SMDH 00297	0.1	50.1	140.7	302.8	34.2	114.4	21.7	1.5	13.1	1.5	8.8	1.8	5.1	0.8	5.1	0.9	58.5	3.9	37.3	1685.1	945.1		1.29
SMDH 00297	0.2	56.1	168.1	358.5	39.6	135.2	24.8	1.7	15.9	2.1	9.8	2.0	5.0	1.0	5.4	0.8	71.1	4.8	48.1	2101.4	1155.6		
SMDH 00296	0.1	58.4	194.6	415.7	47.8	162.9	27.7	1.7	18.4	2.2	11.1	2.0	5.2	0.8	5.1	0.6	81.7	5.4	44.8	1932.0	979.5		
SMDH 00296	0.0	3.0	10.5	18.9	2.0	6.9	1.3	1.6	0.8	0.3	0.6	0.3	0.3	0.3	0.3	0.3	2.0	0.3	4.1	208.3	281.5	1.6	1.38
SMDH 00296	0.0	1.8	7.7	14.0	1.6	5.8	1.0	1.7	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.2	0.3	2.8	130.1	254.8		
SMDH 00300	0.0	23.8	100.4	210.8	24.3	85.5	13.2	0.9	9.5	1.0	5.9	0.9	2.4	0.3	2.0	0.3	41.6	2.4	15.8	598.3	640.7		
SMDH 00300	0.1	83.8	177.3	346.5	43.0	156.0	24.9	2.0	16.2	2.4	14.6	2.8	9.2	1.5	8.5	1.3	74.6	3.4	13.7	509.3	968.4		1.41
SMDH 00301	0.1	31.9	61.5	118.7	14.0	54.3	7.6	0.9	5.4	0.9	6.3	1.2	3.8	0.5	3.2	0.3	20.4	1.5	16.2	639.2	665.0	1.4	
SMDH 00301	0.1	34.8	69.7	136.7	16.3	55.5	8.3	1.1	6.0	1.0	6.3	1.2	4.2	0.6	3.5	0.5	23.6	1.6	13.2	526.4	635.9		