ASX RELEASE **19 January 2022**

APPLICATIONS OVER AREAS IDENTIFIED WITH RARE EARTHS POTENTIAL IN NW QLD

- Two Project areas are under application – both are in localities known for high value rare earths as reported by previous explorers from surface exploration.
- Known rare earths association with copper nickel cobalt lead zinc anomalism.
- Implied strike lengths of greater than 10 km.
- The source of the surface anomalies and REE mineralisation appears to be of a very young age, possibly representing a new REE mineral province.

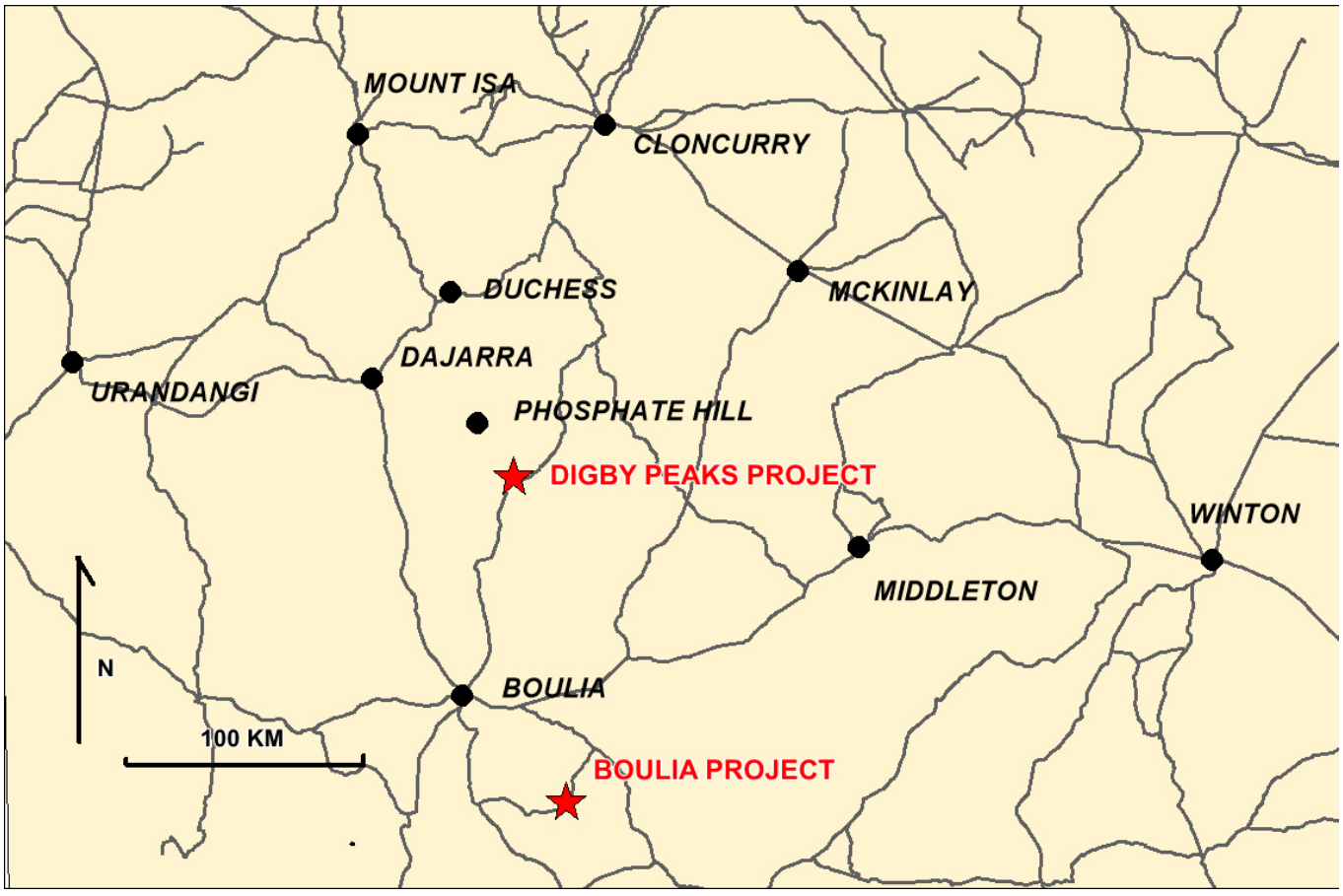

Fig.1 Location of Chase Rare Earths Projects

The Company has applied for three uncontested 100 sub block Exploration Permits (EPMAs) in grazing country in the Boulia – Duchess area of northwest Queensland. Native Title and Heritage agreements are required prior to grant, so timing is unknown. Two of the adjoining EPM applications comprise the Boulia Project and the other the Digby Peaks Project (Figure 1).

Boulia Project

The Boulia project area is comprised of two EPM applications – Canary (EPMA 28251) and Prickly Bush (EPMA 28253). Previous exploration by Jacaranda Minerals Ltd (EPMs 15234, 15235, and 15236, and in CRs 67692, 67931, and 67700) was mainly for uranium. Later, Hartz Rare Earths Pty Ltd (EPMs 25158, 25159, 25160 and 25295 and in CRs 090037,090038, 090039, and 090040) conducted wide spaced stream sediment sampling that identified catchments strongly anomalous in rare earths and less so for copper nickel cobalt lead and zinc (see appendix 2 and 3 for results).

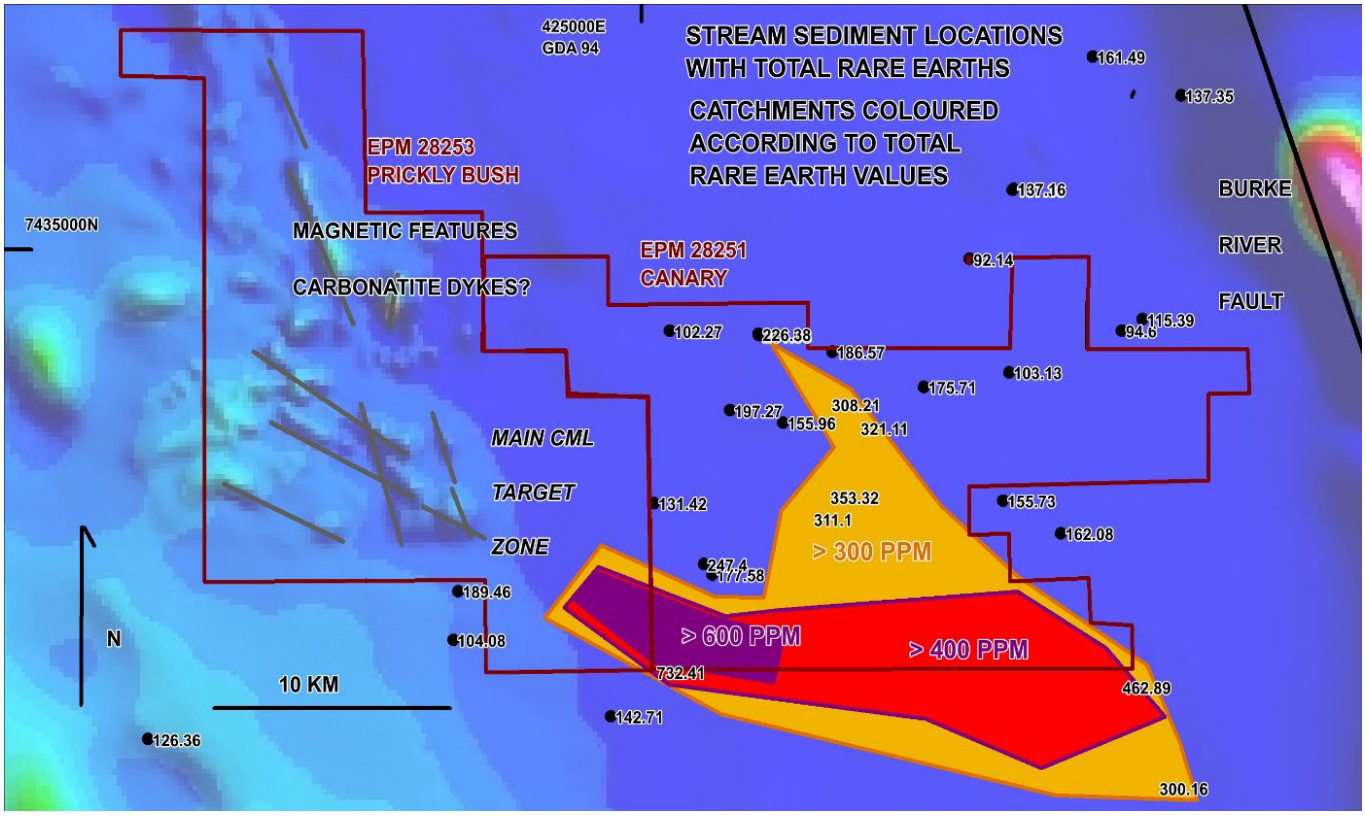

Fig.2 Boulia Project Summary of Previous Work and Chase Concept

The anomalous catchments when contoured according to metal contents, reveal a distribution along northwest striking shear structures in the Cretaceous age sediments of the Toolebuc and Allaru formations.

The maximum anomalism (732 ppm Total Rare Earths, including 190 ppm Neodymium) is from a large catchment within the CML applications. This anomalism has not been closed off to the northwest, where there are magnetic structures of the same orientation, which are possibly carbonatite dykes and the source of the surface concentrations of rare earth mineralisation.

As the host sediments are Cretaceous in age, the shear zones, alteration, and mineralisation are very young, most likely Tertiary, and appears to be controlled by dilation faults splaying from the Burke River fault zone. If correct this represents a new age and style of rare earths deposition in Australia.

Digby Peaks Project

The Digby Peaks project is comprised of a single 100 sub block EPM application (EPMA 28256).

CML selected the project area on the basis of the known but poorly defined rare earths in the general locality outside the application, but more particularly because of the similar geochemistry and geology to the new Boulia Project area further south along the Burke River fault zone as described above.

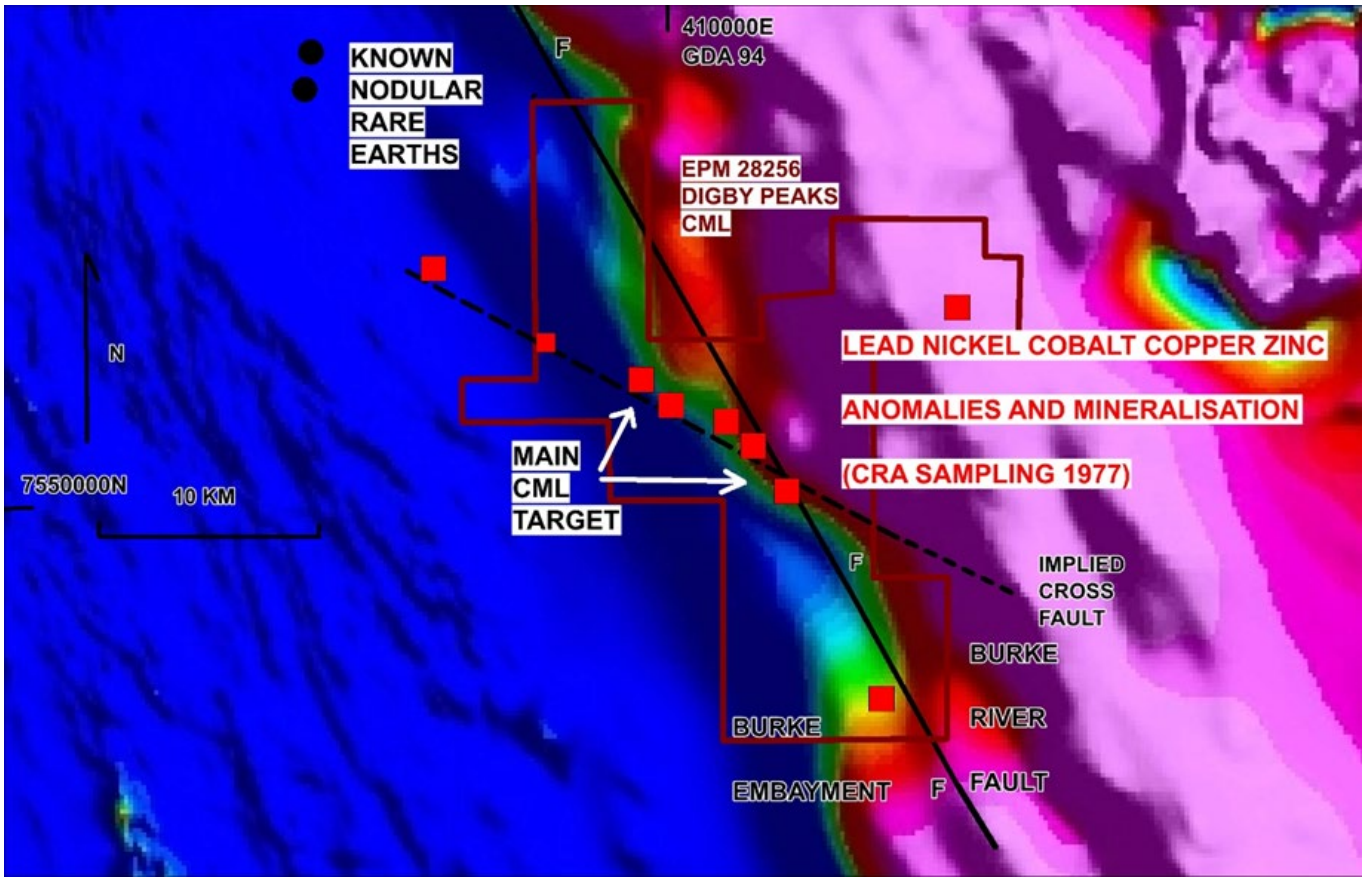

Fig.3 Digby Peaks Previous results and the CML target area

The Digby Peaks mineral occurrence (see Figure 3) was sparsely sampled by CRA in 1977 under EPM 1605 and reported in CR6056. According to the Qld Government geochemical database, CRA located drainages and rocks anomalous in nickel copper cobalt lead and zinc. Rock samples from sheared brecciated carbonate sediments assayed up to 0.48% nickel. This unusual geochemical signature is similar to the Boulia Project's.

Digby Peaks lies along the western margin of the Tertiary age Burke River fault, as does the Boulia Project.

The CML concept is that the Digby Peaks base metal occurrence, like the Boulia Project, is also a focus for shear hosted rare earths mineralisation.

CML Proposed Exploration Programme

Subject to the applications being granted, the proposed work programme will initially comprise of stream sediment, soil and rock sampling designed to define the rare earth – base metal structures prior to trenching and drilling.

Authorisation

This announcement has been authorised for release to the ASX by the CML Board of Directors.

Dr Leon Pretorius
Chairman and CEO
19 January 2022

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COMPETENT PERSON STATEMENT

The information in this release that relates to exploration results is based on information compiled by Mr Neil Wilkins M.Sc. Exploration and Mining Geology, who is a Member of The Australian Institute of Geoscientists. Mr Wilkins is employed by Ascry Pty Ltd, which provided certain consultancy services to Hartz Rare Earths Pty Ltd. Mr Wilkins has visited the area and prospects and has more than five years' experience which is relevant to the style of mineralisation and type of deposit being reported and to the activity, which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves' (the JORC Code). This public report is issued with the prior written consent of the Competent Person as to the form and context in which it appears. Mr Wilkins holds shares in Chase Mining Corporation Limited.

Appendix 1: JORC Code, 2012 Edition – Table 1 report template

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 information.*	Boulia Project • Stream sediment sampling by Hartz (2014) involved -6mm sieving of active sediment sites located by GPS. All analyses were done by ALS laboratories. See appendix 2 and 3 for results. Digby Peaks Project • The 1977 Digby Peaks sampling by CRA was comprised of stream sediments sieved to – 80 mesh and analysed for lead and zinc, as well as rock sampling which was analysed for copper lead zinc nickel and cobalt.
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).*	• No drilling
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.*	• No drilling
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical*	• No drilling

Criteria	JORC Code explanation	Commentary
	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.*	
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.*	• No sampling
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.*	Boulia Project • The Hartz samples were crushed split and pulverised at ALS Laboratories in Brisbane and analysed by Mass Spectroscopy and XRF after full acid digests. Digby Peaks Project • The CRA report is not specific regarding the assaying procedure, but in 1977, analyses were mainly done by AAS.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No drilling samples.

Criteria	JORC Code explanation	Commentary
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.*	Boulia Project • Handheld GPS with accuracies of 5m or greater, for Hartz. Digby Peaks Project • CRA not specific, but data points are reported on base maps.
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.*	• Not applicable
Orientation of data in relation to geological structure	• *Whether the orientation of sampling 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.*	• Not applicable
Sample security	• *The measures taken to ensure sample security.*	• Not applicable
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Not applicable

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.*	• The results are from Chase Mining EPM applications 28251, 28253 and 28256. These applications have not been granted and will require native title agreements • The EPM are 100% Chase, and there are no known access restrictions.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Boulia Project • There has been shallow aircore drilling, minor assaying, and downhole radiometrics conducted by Jacaranda Minerals, but no rare earths exploration. The results are tabulated in the Annual reports to August 2011 for EPMs 15234, 15235, and 15236. CR numbers are 67692,67700, and 67931. • Hartz Rare Earths Pty Ltd (EPMs 25158, 25159, 25160, and 25295) conducted a wide spaced stream sediment survey with multi element analyses. No follow up was conducted. The results are tabulated within the Final Reports dated 15/12/2014. CR numbers 090037,090038, 090039, 030040. Digby Peaks Project • CRA conducted reconnaissance exploration over the Digby Peaks area in 1977 and reported the results to the Qld Government in CR6056. The information is publicly available in the Qld Government Geochemical database.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Shear hosted rare earths mineralisation in sediments, with a lead zinc nickel cobalt copper association. Possible carbonatite dykes and plugs under shallow cover.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*	Boulia Project

Criteria	JORC Code explanation	Commentary
	○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *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.*	• No rare earths drilling. Jacaranda drilling was for uranium exploration, only. The uranium is hosted by a particular formation and has a different distribution to the rare earths. Digby Peaks Project • No drilling
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 drilling
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').*	• No drilling and no sections reported
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.*	• Not applicable
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not applicable

Criteria	JORC Code explanation	Commentary
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.*	• Not applicable
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.*	• The company plans to conduct geochemical surveys and drilling after grant.

Appendix 2

Hartz Rare Earths Stream Sediment Sampling- Rare Earths

Sample No	easting	northing	Y	Ce	Ga	Ge	Hf	La	Dy	Er	Eu	Gd
9301	444037	7442449	26.2	44.7	6.78	0.1	0.21	20.8	4.64	2.08	1.8	7.2
9302	440637	7437107	20.3	52.9	7.19	0.11	0.19	21.9	4.23	1.91	1.5	6
9303	440666	7437149	17.5	46.6	7.91	0.09	0.19	19.9	3.3	1.58	1.2	4.7
9304	438804	7434334	13	27.4	5.81	0.06	0.15	12.8	2.63	1.3	0.9	3.6
9305	440492	7429798	14.55	31.6	5.95	0.05	0.16	14.2	2.86	1.42	1	3.9
9306	440238	7424660	22.5	44.5	6.85	0.07	0.18	20.6	4.48	2	1.7	6.9
9307	442685	7423349	24.5	45.2	6.65	0.09	0.19	19.6	4.97	2.22	1.9	7.6
9308	445133	7417191	72.1	114	6.76	0.27	0.21	58.6	14.8	6.52	6.6	25
9309	446707	7413134	52.7	66.4	6.53	0.16	0.25	41.8	9.99	4.66	4	14
9310	448098	7409410	41.9	75.9	6.99	0.17	0.22	33.7	8.65	3.86	3.7	14
9311	454657	7408470	46.1	86.4	6.85	0.18	0.24	46.3	9.74	4.1	4.4	16
9312	458390	7408633	45.8	61.2	6.39	0.16	0.23	38.8	8.64	3.87	3.5	14
9313	448068	7408873	48.6	108	7.4	0.2	0.23	53.8	10.3	4.21	4.6	18
9314	447331	7409140	39.6	76.6	7.58	0.16	0.21	33.1	7.79	3.46	3.3	12
9315	445020	7410104	44.3	84.6	8.61	0.24	0.21	34.5	9.92	4.52	4.2	16
9316	444184	7410302	47.1	73.9	5.79	0.16	0.21	31	8.78	3.9	3.6	13
9317	441574	7411212	27.1	49.8	10.4	0.29	0.15	21.7	6.97	3.15	2.9	10
9318	460456	7409265	33.4	60.9	9.24	0.2	0.26	26.2	7.48	3.31	3.3	12
9319	459870	7410880	29.1	45.1	8.04	0.14	0.26	21.8	5.8	2.59	2.4	9.1
9320	458592	7417140	31.2	50.8	9.52	0.26	0.24	23.8	7.34	3.35	3	11
9321	447796	7440896	20.5	40.2	9.06	0.09	0.24	17	3.96	1.88	1.4	5.6
9322	434010	7427560	53.2	76.8	8.07	0.19	0.23	42.1	10.5	5	4.3	17
9323	432782	7428511	50	74.9	7.72	0.21	0.25	42.1	10.1	4.77	4	16
9324	426070	7431461	13.7	31.5	7.71	0.05	0.27	13.9	2.76	1.31	0.9	3.8
9325	429853	7431270	44.6	63.1	6.33	0.18	0.19	34.7	8.91	4.24	3.4	14
9326	429844	7431333	40.4	56.5	5.44	0.24	0.23	30.5	7.84	3.89	2.9	12
9327	432976	7430623	30.4	52.1	5.14	0.17	0.16	26.3	6.08	3	2.1	8.5
9328	436863	7429213	26.5	52.5	8.27	0.08	0.16	24.3	5.15	2.45	1.9	7.4
9329	445273	7431471	15.75	28.4	5.28	<0.05	0.07	12.9	2.66	1.35	0.9	3.5
9330	446156	7431917	19.75	33.4	6.64	0.06	0.1	16.1	3.41	1.76	1.1	4.4
9331	400799	7411304	17.45	26.5	5.14	<0.05	0.21	9.6	3.09	1.54	0.9	4
9332	401311	7410824	23	34.3	6.75	0.05	0.21	11.4	4	2.07	1.2	5.1
9333	401430	7410688	21.9	31.3	6.83	<0.05	0.22	11.9	3.94	2	1.2	5.1
9334	416624	7395616	18.55	32.4	6.34	0.07	0.27	14.2	3.56	1.61	1.5	5.8
9335	418980	7394951	43	55	7.85	0.12	0.19	21.5	7.59	3.64	2.8	11
9336	420376	7394097	46	36.4	5.52	0.08	0.23	13.9	8.58	4.34	3	13
9337	406577	7405297	22.5	27.8	6.48	<0.05	0.21	10.4	4.32	2.2	1.3	5.9
9338	408954	7409018	16.55	35.4	6.91	<0.05	0.18	13.1	3.35	1.67	1.1	4.6
9339	403904	7415093	24.6	34.7	6.92	<0.05	0.23	12.6	4.62	2.38	1.4	6
9340	417081	7421034	34.2	44.7	8.59	0.1	0.18	26	6.15	3.09	2.1	8.9
9341	416870	7419071	16.2	29.2	5.37	<0.05	0.12	13.9	3.08	1.58	1.1	4.3

Sample No	easting	northing	Y	Ce	Ga	Ge	Hf	La	Dy	Er	Eu	Gd
9342	421008	7411795	34.8	40.6	7.74	0.07	0.23	17	6.61	3.25	2.1	9.5
9343	426900	7408905	28.6	56.6	6.44	0.19	0.22	22.5	7.38	3.36	3	11
9344	426845	7408761	22.1	38.8	7.98	0.16	0.27	15.1	5.39	2.49	2.2	8.1
9345	429168	7409673	23.7	54.8	6.13	0.11	0.22	23.9	5.37	2.4	2.4	8.9
9346	423576	7416018	28.5	34.7	5.23	0.06	0.19	13.7	5.2	2.57	1.8	7.4
9347	425341	7417785	103	144.5	7.55	0.39	0.24	105	22	9.28	10	41
9348	427873	7421692	41	39.1	6.29	0.06	0.23	14.4	8.06	4.12	2.3	10
9349	427512	7422106	41.7	54.8	8.15	0.13	0.22	27.9	8.97	4.32	3.3	13
9350	425403	7424554	20.1	37.5	6.84	0.05	0.16	18.4	3.84	1.88	1.3	5.5
9351	432015	7423926	66.1	62.6	6.63	0.16	0.26	23.6	12.8	6.31	4.6	20
9352	432727	7424807	49.7	72.2	6.49	0.22	0.23	39.8	11.1	4.79	5.5	21
9353	446570	7389067	21.8	40.8	4.87	0.07	0.16	19.6	4.52	2.02	1.9	7.4
9354	446374	7390071	31	54	6.78	0.11	0.2	28.2	6.27	2.75	2.7	10
9355	446231	7391381	28.9	43.7	6.85	0.12	0.2	18.5	5.84	2.81	2.2	8.7
9356	445906	7392974	47.8	76.6	7.2	0.19	0.22	38.8	10.1	4.47	4.3	17
9357	445394	7396479	106	162.5	7.86	0.36	0.24	105	22.4	9.34	10	40
9358	445091	7398428	42.2	62.3	7.23	0.12	0.22	33.1	7.96	3.64	3	13
9359	445071	7399035	27.3	40.7	7.02	0.07	0.2	20.2	5.09	2.55	1.9	7.7
9360	445206	7407151	50.7	88.5	7.65	0.23	0.22	44	10.8	4.65	4.9	19
9361	448495	7408367	60.5	106.5	8.02	0.26	0.24	58.5	13.7	5.81	6.2	23
9362	449235	7406397	55.1	113.5	7.47	0.21	0.24	52.4	11.7	4.99	5.3	19
9363	449608	7405386	21.3	40.4	6.89	0.07	0.21	16.8	4.37	2.08	1.6	6.4
9364	450330	7403453	34.6	74.1	6.31	0.12	0.19	34.9	7.2	3.02	3.3	12
9365	451371	7400594	73.9	143.5	7.75	0.27	0.23	60.7	15.6	6.44	7.2	27
9366	451932	7399110	56.6	94.6	8.99	0.27	0.25	48.1	13.1	5.66	6	23
9367	452479	7396005	34.2	54.9	7.81	0.1	0.2	25.9	6.5	3.06	2.4	9.8
9368	445037	7386895	27.5	39	8.24	0.15	0.23	15.7	5.78	2.85	2.1	8.1
9369	429178	7391191	2.33	9.33	3.34	0.04	0.33	4.4	0.58	0.26	0.2	0.9
9370	429891	7391269	5.14	13.95	6.27	0.11	0.32	5.5	1.25	0.57	0.5	1.9
9371	431600	7391463	4.44	8.78	6.34	0.09	0.36	3.4	1.01	0.51	0.4	1.3
9372	431702	7391473	1.92	6.21	4.19	0.05	0.33	3	0.45	0.21	0.2	0.7
9373	433041	7391626	6.78	16.9	7.32	0.13	0.4	6.2	1.83	0.84	0.8	2.8
9374	433321	7391651	5.94	11	6.09	0.1	0.32	4.5	1.44	0.72	0.5	1.9
9375	434405	7396441	11.7	16.15	8.48	0.2	0.24	6.2	2.73	1.39	1	3.5
9376	434193	7398117	6.96	15.9	6.87	0.1	0.27	6.4	1.53	0.76	0.6	2.1
9377	434065	7399139	3.61	6.39	5.82	0.11	0.36	2.7	0.81	0.4	0.3	1.1
9378	433408	7404429	15.25	29	8.57	0.11	0.28	10.4	3.4	1.65	1.3	4.8
9379	433201	7406129	21.3	39	9.35	0.14	0.28	15.9	4.7	2.26	1.9	6.8
9380	433117	7406765	21.6	29.8	9.12	0.17	0.28	11.8	5.13	2.54	1.9	6.7
9381	433120	7406832	29.3	57.5	8.39	0.24	0.26	26.1	7.67	3.5	3.4	11
9382	432904	7408487	26.5	60.4	9.43	0.23	0.24	24.2	6.21	2.86	2.9	9.5
9383	432198	7399040	7.41	14.3	6.63	0.1	0.27	5.4	1.6	0.81	0.6	2.2
9384	432236	7399278	4.45	8.45	6.76	0.13	0.23	3.6	0.99	0.48	0.4	1.3
9385	430884	7427777	34.3	36.1	7.49	0.09	0.19	15.1	6.34	3.28	2	8.4

Sample No	easting	northing	Y	Ce	Ga	Ge	Hf	La	Dy	Er	Eu	Gd
9386	428623	7428271	32.2	53.1	7.73	0.11	0.2	30.1	5.97	2.95	2.1	8.4

Sample No	easting	northing	Ho	Lu	Nd	Pr	Sm	Tb	Tm	Yb	Total
9301	444037	7442449	0.9	0.3	29.4	6.9	6.78	0.9	0.3	1.6	46.99
9302	440637	7437107	0.8	0.2	25.4	6.3	5.79	0.8	0.3	1.5	41.12
9303	440666	7437149	0.6	0.2	21.1	5.4	4.76	0.6	0.2	1.3	34.19
9304	438804	7434334	0.5	0.2	14.8	3.7	3.48	0.5	0.2	1.2	24.52
9305	440492	7429798	0.6	0.2	16.7	4.2	3.77	0.5	0.2	1.3	27.4
9306	440238	7424660	0.8	0.2	28.8	6.8	6.59	0.9	0.3	1.6	45.97
9307	442685	7423349	0.9	0.3	30.6	7.2	7.23	0.9	0.3	1.8	49.22
9308	445133	7417191	2.8	0.7	99.2	23	24.5	3	0.9	4.9	158.43
9309	446707	7413134	1.9	0.6	62	14	14.6	1.8	0.6	3.8	99.25
9310	448098	7409410	1.6	0.5	57.3	13	13.8	1.7	0.5	3.2	91.6
9311	454657	7408470	1.7	0.5	73.3	17	16.5	1.9	0.5	3.1	114.54
9312	458390	7408633	1.6	0.5	57	13	13	1.7	0.5	3	90.35
9313	448068	7408873	1.8	0.5	79.9	19	17.7	2.1	0.6	3.2	124.61
9314	447331	7409140	1.4	0.4	53.9	12	12.6	1.5	0.5	2.8	85.56
9315	445020	7410104	1.8	0.6	64.4	14	15.7	1.9	0.6	3.8	103.16
9316	444184	7410302	1.6	0.5	54.8	12	13.3	1.7	0.5	3.1	87.69
9317	441574	7411212	1.3	0.4	43.1	9.6	11	1.3	0.5	2.8	69.97
9318	460456	7409265	1.4	0.4	55.8	12	12.5	1.5	0.5	2.7	87.15
9319	459870	7410880	1.1	0.3	41.2	9.3	9.27	1.1	0.4	2.2	64.78
9320	458592	7417140	1.4	0.4	49	11	11.4	1.4	0.5	2.8	77.68
9321	447796	7440896	0.8	0.2	22.9	5.5	5.44	0.7	0.3	1.6	37.41
9322	434010	7427560	2	0.6	64.1	15	15.8	2.1	0.7	4.1	103.81
9323	432782	7428511	1.9	0.6	61	14	15	1.9	0.7	3.8	98.47
9324	426070	7431461	0.5	0.2	16	4	3.77	0.5	0.2	1.1	26.3
9325	429853	7431270	1.7	0.6	50.6	11	12.5	1.7	0.6	3.7	82.56
9326	429844	7431333	1.5	0.5	40.2	9	10.3	1.5	0.6	3.4	66.99
9327	432976	7430623	1.2	0.4	31.7	7.4	7.65	1.1	0.4	2.7	52.57
9328	436863	7429213	1	0.3	28.6	6.8	6.92	1	0.4	2.1	47.05
9329	445273	7431471	0.5	0.2	14.3	3.6	3.33	0.5	0.2	1.2	23.76
9330	446156	7431917	0.7	0.2	17.1	4.2	4	0.6	0.3	1.6	28.68
9331	400799	7411304	0.6	0.2	13.4	3.1	3.54	0.6	0.2	1.4	23.09
9332	401311	7410824	0.8	0.3	16.2	3.7	4.4	0.7	0.3	1.8	28.24
9333	401430	7410688	0.8	0.3	17	3.9	4.45	0.7	0.3	1.8	29.16
9334	416624	7395616	0.7	0.2	25.1	5.6	5.89	0.7	0.2	1.3	39.74
9335	418980	7394951	1.5	0.5	41.4	8.7	10.6	1.4	0.5	3.1	67.57
9336	420376	7394097	1.7	0.6	34.9	6.9	9.91	1.7	0.6	3.5	59.68
9337	406577	7405297	0.9	0.3	17.9	4.1	4.38	0.8	0.3	1.8	30.45
9338	408954	7409018	0.6	0.2	18.8	4.7	4.07	0.6	0.2	1.4	30.65
9339	403904	7415093	0.9	0.3	19.3	4.5	4.71	0.8	0.3	2	32.94
9340	417081	7421034	1.2	0.4	34.2	8.3	7.4	1.2	0.4	2.5	55.47

Sample No	easting	northing	Ho	Lu	Nd	Pr	Sm	Tb	Tm	Yb	Total
9341	416870	7419071	0.6	0.2	18	4.5	3.8	0.6	0.2	1.4	29.22
9342	421008	7411795	1.3	0.4	33	7.4	7.62	1.2	0.4	2.6	54.01
9343	426900	7408905	1.3	0.4	51.4	12	11	1.4	0.5	2.9	81.02
9344	426845	7408761	1	0.3	36.6	8.5	7.74	1	0.3	2.1	57.59
9345	429168	7409673	1	0.3	45.3	11	9.03	1.1	0.3	2	69.94
9346	423576	7416018	1	0.3	26.5	5.9	6.16	1	0.4	2.2	43.42
9347	425341	7417785	3.9	1	190	45	37.5	4.6	1.2	6.4	289.55
9348	427873	7421692	1.6	0.6	30	6.4	7.53	1.4	0.6	3.6	51.68
9349	427512	7422106	1.7	0.5	52.8	12	11.8	1.7	0.6	3.5	84.53
9350	425403	7424554	0.7	0.2	22.1	5.5	4.67	0.7	0.3	1.6	35.82
9351	432015	7423926	2.4	0.8	67	14	15.9	2.5	0.9	5.1	108.62
9352	432727	7424807	2	0.6	92.3	21	20.4	2.3	0.6	3.6	142.39
9353	446570	7389067	0.8	0.2	32.5	7.7	6.74	0.9	0.3	1.6	50.79
9354	446374	7390071	1.1	0.3	46.9	11	9.44	1.2	0.4	2.1	72.62
9355	446231	7391381	1.1	0.4	36.1	8.1	7.77	1.1	0.4	2.4	57.32
9356	445906	7392974	1.9	0.5	72.6	17	15.1	2	0.6	3.5	113.04
9357	445394	7396479	4	0.9	182	44	36.3	4.6	1.2	6.4	278.92
9358	445091	7398428	1.5	0.4	50.7	12	10.5	1.5	0.5	2.8	80
9359	445071	7399035	1	0.3	29.5	7	6.4	1	0.3	2	47.53
9360	445206	7407151	1.9	0.6	83.8	19	17.4	2.2	0.6	3.6	129.43
9361	448495	7408367	2.4	0.7	108	26	22.1	2.8	0.8	4.4	167.01
9362	449235	7406397	2.1	0.6	89	22	18.5	2.4	0.7	3.7	138.64
9363	449608	7405386	0.8	0.3	26.3	6.2	5.69	0.8	0.3	1.7	42.08
9364	450330	7403453	1.3	0.3	57.6	14	11.9	1.5	0.4	2.2	88.75
9365	451371	7400594	2.7	0.7	119	27	25.2	3.2	0.8	4.7	183.69
9366	451932	7399110	2.4	0.7	106	24	21.6	2.6	0.7	4.3	161.53
9367	452479	7396005	1.2	0.4	38.1	8.9	8.15	1.2	0.4	2.3	60.72
9368	445037	7386895	1.1	0.4	31.8	7.3	7.11	1.1	0.4	2.4	51.6
9369	429178	7391191	0.1	0	4.4	1.2	0.83	0.1	0	0.2	6.96
9370	429891	7391269	0.2	0.1	8.4	2.1	1.82	0.2	0.1	0.5	13.38
9371	431600	7391463	0.2	0.1	5.3	1.3	1.33	0.2	0.1	0.4	8.86
9372	431702	7391473	0.1	0	3	0.8	0.65	0.1	0	0.2	4.84
9373	433041	7391626	0.3	0.1	11.6	2.7	2.97	0.4	0.1	0.7	18.83
9374	433321	7391651	0.3	0.1	7.5	1.8	1.92	0.3	0.1	0.7	12.6
9375	434405	7396441	0.5	0.2	12.9	3	3.36	0.5	0.2	1.2	21.84
9376	434193	7398117	0.3	0.1	8.5	2.1	2.07	0.3	0.1	0.6	14.09
9377	434065	7399139	0.2	0.1	3.8	0.9	0.99	0.1	0.1	0.3	6.42
9378	433408	7404429	0.6	0.2	19.6	4.8	4.85	0.6	0.2	1.3	32.24
9379	433201	7406129	0.9	0.3	30.2	7.3	7.24	0.9	0.3	1.8	48.86
9380	433117	7406765	1	0.3	26.3	6.2	6.77	0.9	0.4	2.1	43.98
9381	433120	7406832	1.4	0.4	55.9	14	13.3	1.5	0.5	2.8	89.32
9382	432904	7408487	1.1	0.4	48.4	12	11.1	1.2	0.4	2.3	76.56
9383	432198	7399040	0.3	0.1	8.5	2	2.15	0.3	0.1	0.7	14.14
9384	432236	7399278	0.2	0.1	5	1.2	1.26	0.2	0.1	0.4	8.39

Sample No	easting	northing	Ho	Lu	Nd	Pr	Sm	Tb	Tm	Yb	Total
9385	430884	7427777	1.3	0.4	24.4	5.5	6.97	1.1	0.4	2.7	42.75
9386	428623	7428271	1.1	0.4	33.2	8.1	7.86	1.1	0.4	2.3	54.41

Appendix 3 Hartz Stream Sediments Non Rare Earth Analyses

sample	easting	northing	As	Co	Cu	Ni	Pb	Sb	Te	U	Zn
9301	444037	7442449	19.1	15.9	24.4	23.6	20.4	0.34	0.07	1.86	73
9302	440637	7437107	32	31.5	36.4	60.9	43.1	0.88	0.08	3.98	197
9303	440666	7437149	19.4	26.5	33.1	47.6	31.1	0.6	0.06	2.86	156
9304	438804	7434334	14.6	12.4	28.6	43.6	13.9	0.85	0.05	5.68	145
9305	440492	7429798	13.4	12.8	39.3	37.3	14.9	1.47	0.06	5.33	141
9306	440238	7424660	7.2	26	29.1	37.6	14.4	0.26	0.03	1.45	95
9307	442685	7423349	10.1	40	31.7	45.6	22	0.17	0.04	0.94	133
9308	445133	7417191	42.9	79.2	63	93.1	49.3	0.71	0.12	2.28	284
9309	446707	7413134	58.8	34	40.4	51.2	38.6	0.89	0.06	1.37	126
9310	448098	7409410	37.8	35.9	43.8	46.9	36.4	0.36	0.09	1.59	124
9311	454657	7408470	31.6	31.3	39.1	41.7	37.4	0.37	0.09	1.55	100
9312	458390	7408633	32.2	29.1	33.9	37.1	30.1	0.47	0.05	1.37	82
9313	448068	7408873	40.8	35	36.8	47.9	54.6	0.53	0.07	1.25	107
9314	447331	7409140	32.5	35	41.7	45.9	30.6	0.32	0.09	1.45	109
9315	445020	7410104	58	59.5	78.6	78.3	44.1	0.55	0.18	2.91	194
9316	444184	7410302	24.2	62	40.4	56.1	35.5	0.29	0.05	1.28	126
9317	441574	7411212	58	23.7	139	45.1	32.8	0.51	0.15	4.4	105
9318	460456	7409265	38.8	25.5	41.9	42	23.3	0.47	0.16	2.58	98
9319	459870	7410880	22.1	22.4	28.7	30.2	14	0.26	0.09	1.79	75
9320	458592	7417140	41.5	37.5	56.2	59.8	33	0.51	0.16	3.62	146
9321	447796	7440896	14.2	14.7	25.9	28.4	15.7	0.36	0.06	2.26	93
9322	434010	7427560	27.5	73.5	75.7	90.5	64.4	0.95	0.15	5.18	226
9323	432782	7428511	32.4	61.8	88	88	73.4	1.78	0.17	6.76	226
9324	426070	7431461	9.1	14.3	21.7	29.2	15.2	0.24	0.04	2.45	102
9325	429853	7431270	35.3	54.7	80.6	96	60.2	2.68	0.18	11.1	254
9326	429844	7431333	41.2	57.3	97.2	119	77.8	5.11	0.17	13.35	300
9327	432976	7430623	38.7	49.2	80	98.2	72.1	4.24	0.17	13.95	257
9328	436863	7429213	16.6	34	48.7	54.8	38.6	1.1	0.08	4.43	152
9329	445273	7431471	17.7	14.2	50	48.4	11.3	2.38	0.06	4.12	204
9330	446156	7431917	19.9	15.2	45.6	65.3	11.7	2.17	0.05	6.06	203
9331	400799	7411304	3.7	11	20.4	13.3	7.7	0.16	0.02	1.09	39
9332	401311	7410824	4.1	15.2	21.5	18.3	9.9	0.16	0.02	1.28	48
9333	401430	7410688	4.1	12.5	21	16.9	8.5	0.16	0.02	1.23	48
9334	416624	7395616	9.5	22.6	31.5	20.8	9	0.12	0.04	0.86	57
9335	418980	7394951	22	60.3	39.8	67.5	16.8	0.2	0.05	1.22	227
9336	420376	7394097	14.9	15.4	45.5	23.5	11.8	0.13	0.06	1.17	73
9337	406577	7405297	7.8	17.7	21.5	16.4	9.1	0.11	0.03	0.87	53
9338	408954	7409018	4.6	16.7	20	16.2	10.2	0.12	0.03	1.09	51
9339	403904	7415093	3.9	17.5	22.7	17.1	10.2	0.15	0.03	1.27	52
9340	417081	7421034	35.7	33.6	58.7	57.1	40.3	1.98	0.16	5.13	152
9341	416870	7419071	9.3	18.3	33.4	29.9	14.9	0.86	0.05	2.05	108
9342	421008	7411795	11.5	15	23.9	17.1	10.6	0.16	0.05	1.15	51

sample	easting	northing	As	Co	Cu	Ni	Pb	Sb	Te	U	Zn
9343	426900	7408905	49.7	34.3	76.2	47.8	20.9	0.6	0.19	4.18	110
9344	426845	7408761	39.3	23.4	40.6	29.8	17.3	0.42	0.18	1.85	71
9345	429168	7409673	17.6	21	39.2	24	11	0.21	0.06	1.83	66
9346	423576	7416018	8.6	18.8	25.7	19.1	11.4	0.18	0.04	1.29	58
9347	425341	7417785	40.4	85.5	101.5	73	94.7	1.68	0.26	9.34	150
9348	427873	7421692	10	14.1	28.1	15.2	9.9	0.18	0.04	1.17	51
9349	427512	7422106	30.7	27	58.5	37.5	25.1	0.64	0.13	2.9	114
9350	425403	7424554	14.6	19.8	37.5	31.8	22.6	1.01	0.08	3.36	109
9351	432015	7423926	28.2	44.4	57	60.9	15.5	0.34	0.11	2.33	220
9352	432727	7424807	22.4	142	59.6	150	21.1	0.6	0.08	3.46	461
9353	446570	7389067	14.1	25.1	23.8	24.5	14	0.16	0.05	0.96	64
9354	446374	7390071	22.8	29.2	33.4	33.1	20.5	0.23	0.07	1.34	87
9355	446231	7391381	33.5	31.2	46.4	40.2	18	0.28	0.09	1.69	102
9356	445906	7392974	45	53.8	50.9	59.4	31.7	0.39	0.14	2.08	142
9357	445394	7396479	52.9	75.8	59.1	74.9	80.4	0.64	0.16	2.61	164
9358	445091	7398428	27	38.6	38.7	40.3	30.1	0.27	0.07	1.3	102
9359	445071	7399035	16.3	28.5	28.6	29.7	19.2	0.18	0.05	0.87	80
9360	445206	7407151	54.9	54.9	66.9	68.1	46.1	0.44	0.16	2.48	146
9361	448495	7408367	50.5	50.6	68	64.3	47.3	0.56	0.18	2.53	151
9362	449235	7406397	40.9	122.5	54	77	78.6	0.48	0.13	1.58	138
9363	449608	7405386	9.9	28.6	26.8	29.7	13.3	0.11	0.04	0.92	80
9364	450330	7403453	10.3	53.9	26.2	41.9	25	0.12	0.05	0.87	109
9365	451371	7400594	35.6	134	50.7	93	76.9	0.29	0.13	1.89	244
9366	451932	7399110	45.8	64.9	67	72.4	38.4	0.45	0.22	2.69	159
9367	452479	7396005	19.2	40.7	37	39.8	24	0.19	0.06	1.15	99
9368	445037	7386895	36.8	36.9	50.5	45.3	18.7	0.29	0.15	2.33	115
9369	429178	7391191	7	3.9	8.3	4.6	6.4	0.05	0.04	0.31	10
9370	429891	7391269	18.5	8.3	12.8	9.3	8.6	0.11	0.07	0.48	25
9371	431600	7391463	20.3	8.7	14.7	12.2	7	0.12	0.09	0.5	39
9372	431702	7391473	8	2.9	7.6	3.7	4.8	0.06	0.04	0.2	11
9373	433041	7391626	23.8	9	17.9	12.3	9.8	0.18	0.1	0.63	38
9374	433321	7391651	23.4	12.9	18.3	20.9	9.4	0.2	0.08	0.7	52
9375	434405	7396441	36.5	21.8	26.6	28.6	17.5	0.4	0.12	1.09	68
9376	434193	7398117	20.5	8.7	15.8	10.7	8.6	0.15	0.09	0.5	35
9377	434065	7399139	17.9	4.7	10.1	5.6	6.5	0.1	0.07	0.26	16
9378	433408	7404429	33.4	25	29.2	28.4	15.4	0.3	0.14	1.28	70
9379	433201	7406129	35.8	23.1	40.9	27.4	15.6	0.3	0.13	1.59	72
9380	433117	7406765	51	34.3	52.8	43.6	18.9	0.51	0.19	2.38	95
9381	433120	7406832	51.7	38.7	71.9	54	21.7	0.65	0.18	3.3	109
9382	432904	7408487	41.9	29.5	75.1	41.8	16	0.46	0.18	2.6	93
9383	432198	7399040	18.5	12.2	15	13.5	8	0.12	0.08	0.55	37
9384	432236	7399278	24.3	9.3	13.1	12.1	7	0.13	0.09	0.46	39
9385	430884	7427777	13.8	36.1	48.3	50.1	14.9	0.78	0.05	2.74	163
9386	428623	7428271	40.1	43.9	63	68.9	52.8	1.8	0.23	10.55	177