ASX MEDIA RELEASE

Havilah Resources
A New Mining Force in South Australia

25 June 2018

Exceptional Cobalt Results from Mutooroo Cobalt District

Highlights

- **Up to 5,950 ppm (0.60%) cobalt in reconnaissance surface samples defines several promising new prospects in the Mutooroo Cobalt District that have never been drilled.**
- **Five new copper-cobalt prospects confirmed to date, with follow up sampling underway to define drill targets and identify additional targets.**
- **Potential southern extension to the Mutooroo copper-cobalt-gold deposit identified.**
- **Highlights the potential for new copper-cobalt discoveries within Havilah's 720 km^2 Mutooroo Cobalt District tenement holdings.**
- **Havilah is conducting the first ever cobalt targeted exploration campaign in this highly endowed South Australian copper-cobalt district.**
- **Plans being developed to expand the Mutooroo Cobalt District exploration program and accelerate the Mutooroo project scope of work.**

Havilah Resources Limited (**Havilah**) reports the results of regional reconnaissance surface sampling conducted within its 100% owned tenements in the Mutooroo Cobalt District, covering 720 km^2 of copper-cobalt prospective terrain, systematically targeting cobalt prospects, in north-eastern South Australia.

Ongoing compilation and analysis of previous exploration conducted over the last 50 years, sourced from open file reports, highlighted at least 14 areas with strongly anomalous cobalt results that were not previously followed up due to limited interest in cobalt at the time. Historical exploration included a program of ironstone sampling for copper-lead-zinc Broken Hill style deposits, completed in the 1990's, which returned some remarkably high cobalt results up to 5,900 ppm (0.59%) cobalt. Havilah has recently conducted first pass reconnaissance surface sampling of these prospects and in the majority of cases has successfully validated these high cobalt and associated copper results.
A total of 99 samples were collected by Havilah geologists at the 14 prospects along with some opportunistic sampling of ironstone where encountered. In summary, the results include:

- 48 samples of greater than 250 ppm cobalt (moderately anomalous).
- 37 samples of greater than 500 ppm cobalt.
- 23 samples of greater than 1,000 ppm (0.10%) cobalt.
- 4 samples of greater than 2,500 ppm (0.25%) cobalt
- The highest individual assay of 5,950 ppm (0.60%) cobalt at the Taipan Prospect.

(Note these high cobalt results are sometimes associated with similarly anomalous copper values.)

Sample types collected included selective ironstone/lag samples and some conventional outcrop rock chip samples. Selective ironstone or iron lag samples were collected, as the copper and cobalt are generally associated with iron sulphides (chalcopyrite, pyrite and pyrrhotite) in fresh rock, which is expressed as iron oxide or ironstone gossan equivalent in the weathered/near surface zone. This is a more time consuming process than conventional soil sampling, for example, but results in a more relevant sample for copper-cobalt exploration, as evidenced by the results to date. The sampling methodology was also validated by the local occurrence of certain ironstone textures that are frequently indicative of having formed from sulphide minerals along with sporadic subcrop and outcrop indicating minimal cover at most localities. No samples were collected from any drainage areas to avoid transported material.

Five new targets, and a potential extension to the Mutooroo copper-cobalt-gold deposit, have been identified to date for further sampling and follow up. A summary of these targets with multiple confirmed high cobalt and copper results are tabled below and are shown in the following Figures 1 to 5. A table of all sample locations and assays is included at the end of this announcement.

Prospect	Indicated Strike Length	Maximum Cobalt ppm	Maximum Copper ppm	Description
Sidewinder (Priority 1)	7.0 km	2,430 (0.24%)	1,439 (0.14%)	Prospect composed of four separate anomalies on two lines 2.5 to 4.0 kms apart, associated with subtle NNE linear magnetic responses from structure/stratigraphy. Located 3.5 kms west of, and parallel to, the Scorpion Prospect structure. Iron rich material includes some pseudomorphs after magnetite, minor float of amphibolite and gneiss indicating **close proximity to source. Open to NE.**
Mutooroo South (Priority 1)	0.5 km	3,260 (0.33%)	3,080 (0.31%)	Located SSW along Mutooroo Shear trend. A 1,640 ppm cobalt value is sited 0.3 km SSW of workings and the nearest drillhole, peak values sited near old workings, **iron type and size of fragments indicates close proximity to source. Potential extension to the Mutooroo Lode system. Open to SSW.**
Taipan (Priority 1)	2.6 km x 2 km	5,950 (0.60%)	430 (0.04%)	Extends SW from the SA/NSW border, subtle magnetic stratigraphy association, common iron pseudomorphs after coarse pyrite, shallow cover, minor subcrop of amphibolite and gneiss. **Close to source, open to S.**
Viper (Priority 1)	0.5 km	1,005 (0.10%)	2,540 (0.25%)	Outcropping gossan and associated ironstone float traced for 0.5 km with northerly trend. No obvious magnetic response. **Source identified - outcropping. Open to N and S.**
Tiger (Priority 2)	5.5 km	760 (0.08%)	702 (0.07%)	Single line of samples across NNE trending subtle magnetic feature, minor gneiss float and minor magnetite pseudomorphs, **close to source. Open to N and S, may link to Taipan Prospect.**
Mulga (Priority 2)	0.8 km	702 (0.07%)	140 (0.01%)	Mostly finer iron lag to 20 mm, **possibly locally transported from source, subtle magnetic response located 0.3 km to N.**

The results from this initial regional reconnaissance sampling have highlighted several significant surface cobalt-copper anomalies with potentially the highest surface cobalt values ever recorded in the Mutooroo Cobalt District. This reinforces Havilah's long-held belief in the prospectivity for major copper-cobalt discoveries within its extensive landholding in northeastern South Australia.

Havilah is systematically building its geological knowledge base for the Mutooroo Cobalt District in order to understand the geological controls and nature of the copper-cobalt sulphide mineralisation to assist future exploration target identification. At this stage, the primary control on the Mutooroo lode style mineralisation is considered to be faults and fractures in a particular rock sequence package. It is fortunate that over much of the area surficial transported cover is thin to non-existent, which means that cost-efficient and non-ground disturbing geochemical lag and soil sampling are very effective reconnaissance exploration tools. The deeper sulphide mineralisation is also likely to be detected by magnetic and electromagnetic (EM) geophysical survey techniques.

As a consequence of the highly encouraging results, Havilah is now implementing more detailed surface sampling programs in order to determine the nature and extent of the cobalt-copper anomalism. This includes infill sampling of the newly defined high priority targets (Sidewinder, Taipan, Viper and Mutooroo South) and reconnaissance sampling of as yet untested targets (Scorpion Trend and Cobra) in order to advance the targets to drill testing status. Three sampling teams are presently in the field under the supervision of an experienced Havilah geologist, who has a distinguished track record of exploration success.

The previously reported encouraging historic copper drilling intersections at Scorpion (refer to ASX announcement 26 April 2018) and also King Brown and Trinity, all within 5 km of Mutooroo, provide further evidence of the prospectivity of this region and are expected to be followed up in drilling campaigns planned for the second half of the year.

Commenting on the high cobalt sampling results, CEO, Mr Walter Richards said: "We are very excited about the developing broader regional copper-cobalt exploration potential of the Mutooroo Cobalt District, as provided by the tangible evidence of these exceptional surface sampling results.
"Early indications are looking positive for additional discoveries, including a potential southern extension of Mutooroo, to add to the already significant existing copper-cobalt-gold resource at Mutooroo.
"The patient accumulation of exploration tenements over the years is now reaping the rewards in revealing many new opportunities to expand our copper-cobalt resource base as the present sampling results show.
"Given these results, Havilah's track record of exploration success, and our in-house exploration expertise, we will continue to focus on this highly prospective area with an expanded exploration program targeting copper-cobalt prospects," he said.

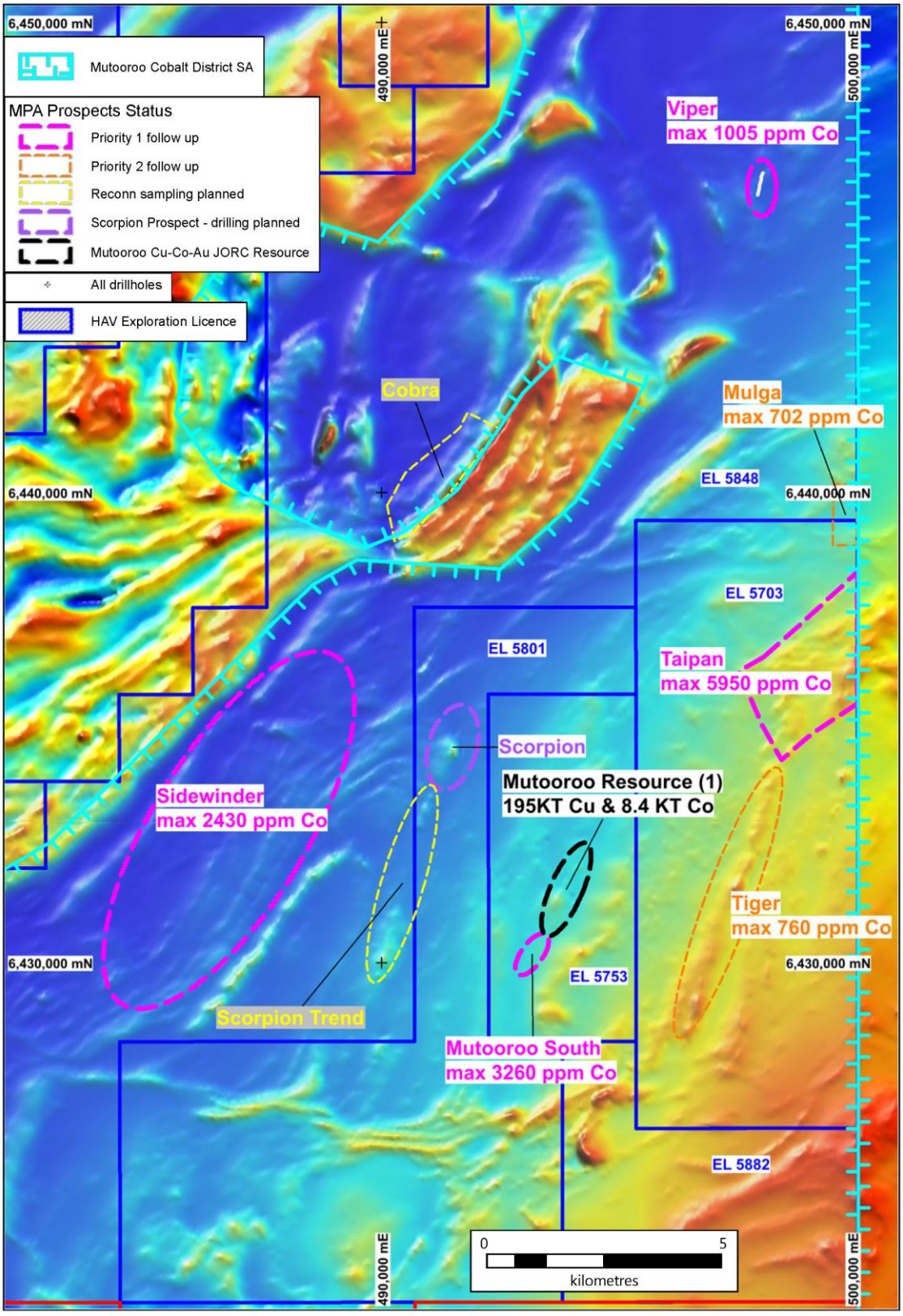

Figure 1 *Overview of Mutooroo Area prospects (on total magnetic intensity aeromagnetic image). (1) Refer to ASX announcement of 18 October 2010.*

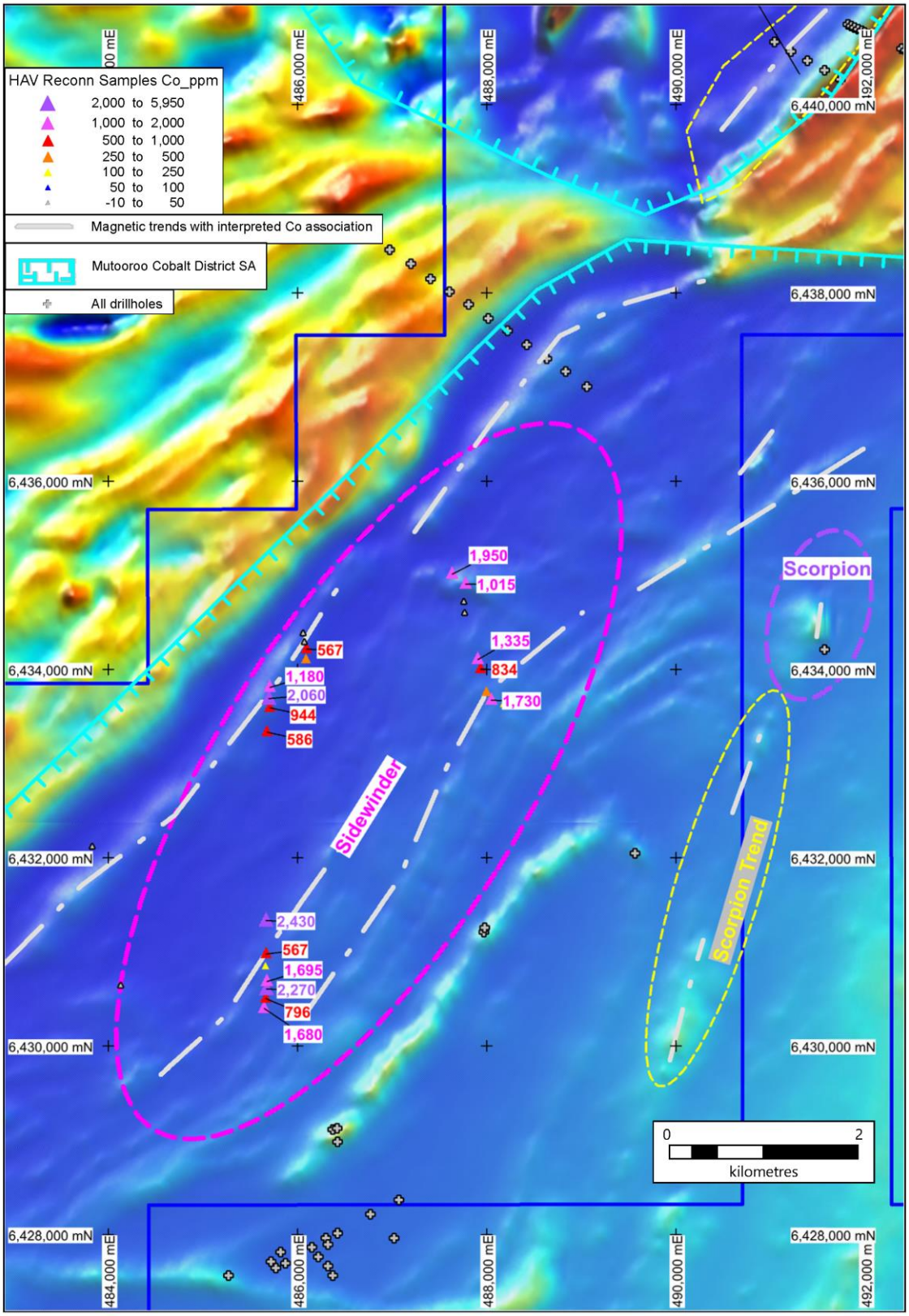

Figure 2 *Detail of new Sidewinder Prospect showing sample locations with cobalt values higher than 500 ppm labelled (on total magnetic intensity aeromagnetic image).*

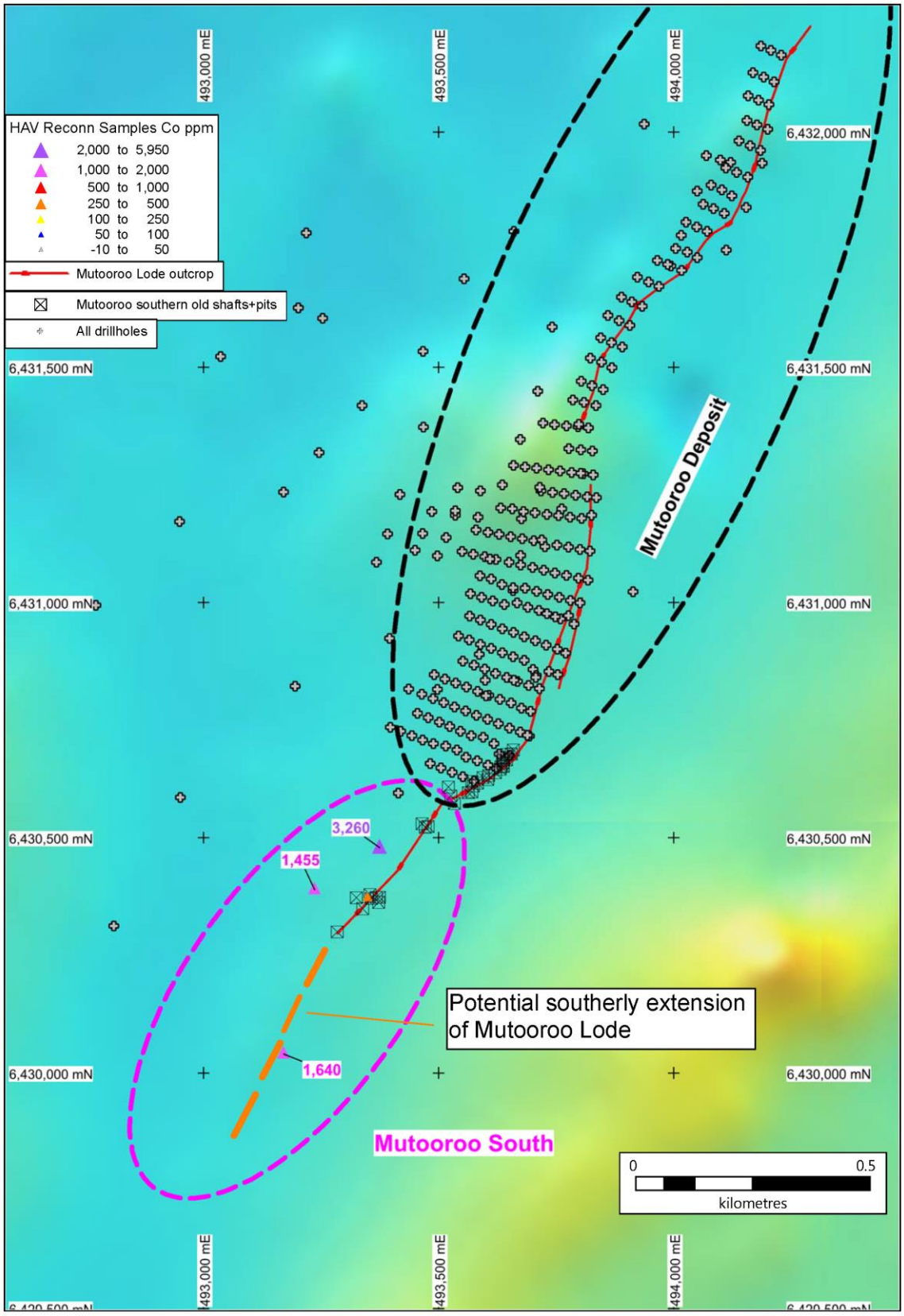

Figure 3 *Detail of Mutooroo South Prospect showing sample locations with cobalt values higher than 500 ppm labelled (on total magnetic intensity aeromagnetic image).*

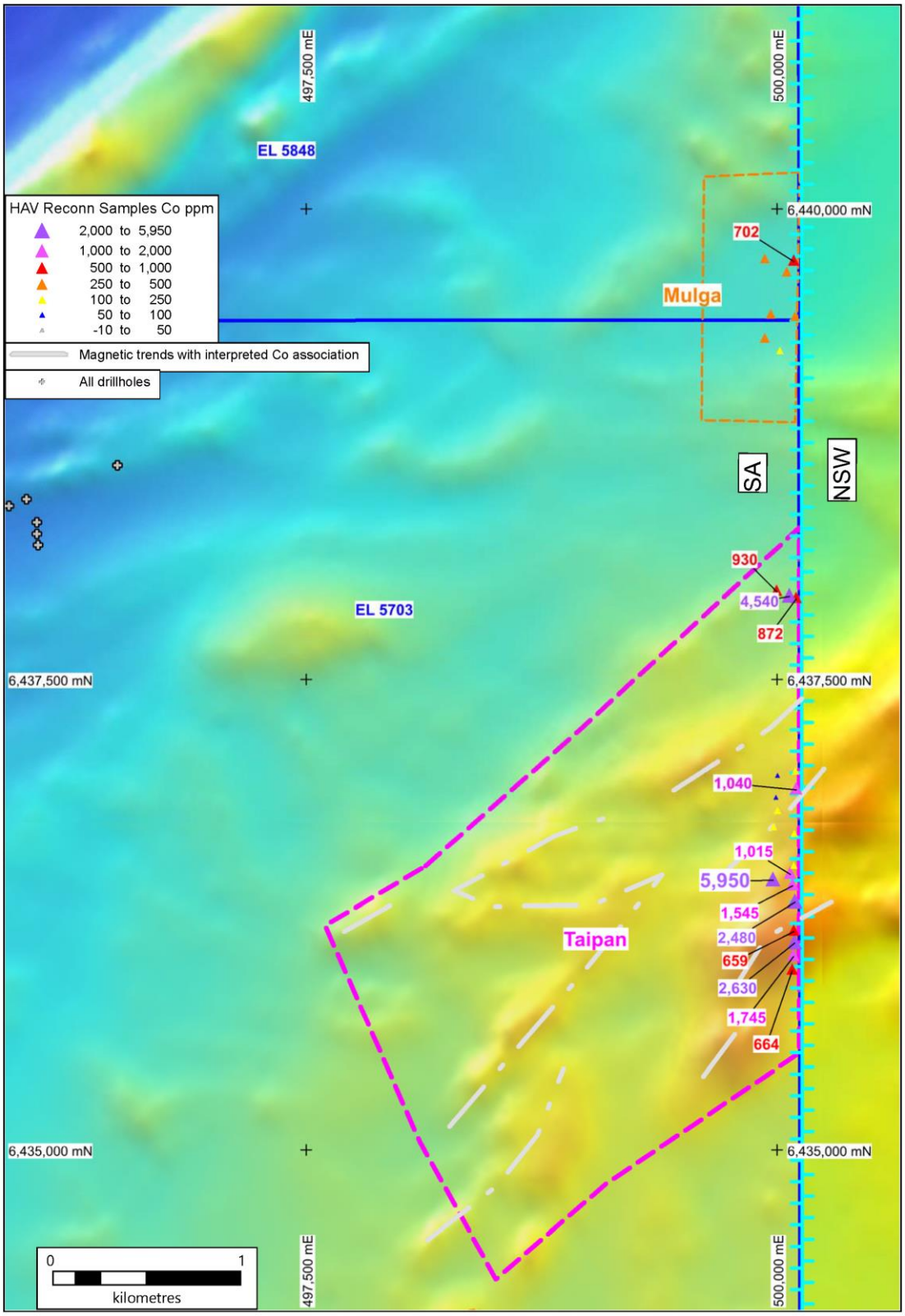

Figure 4 *Detail of Taipan and Mulga Prospects showing sample locations with cobalt values higher than 500 ppm labelled (on total magnetic intensity aeromagnetic image).*

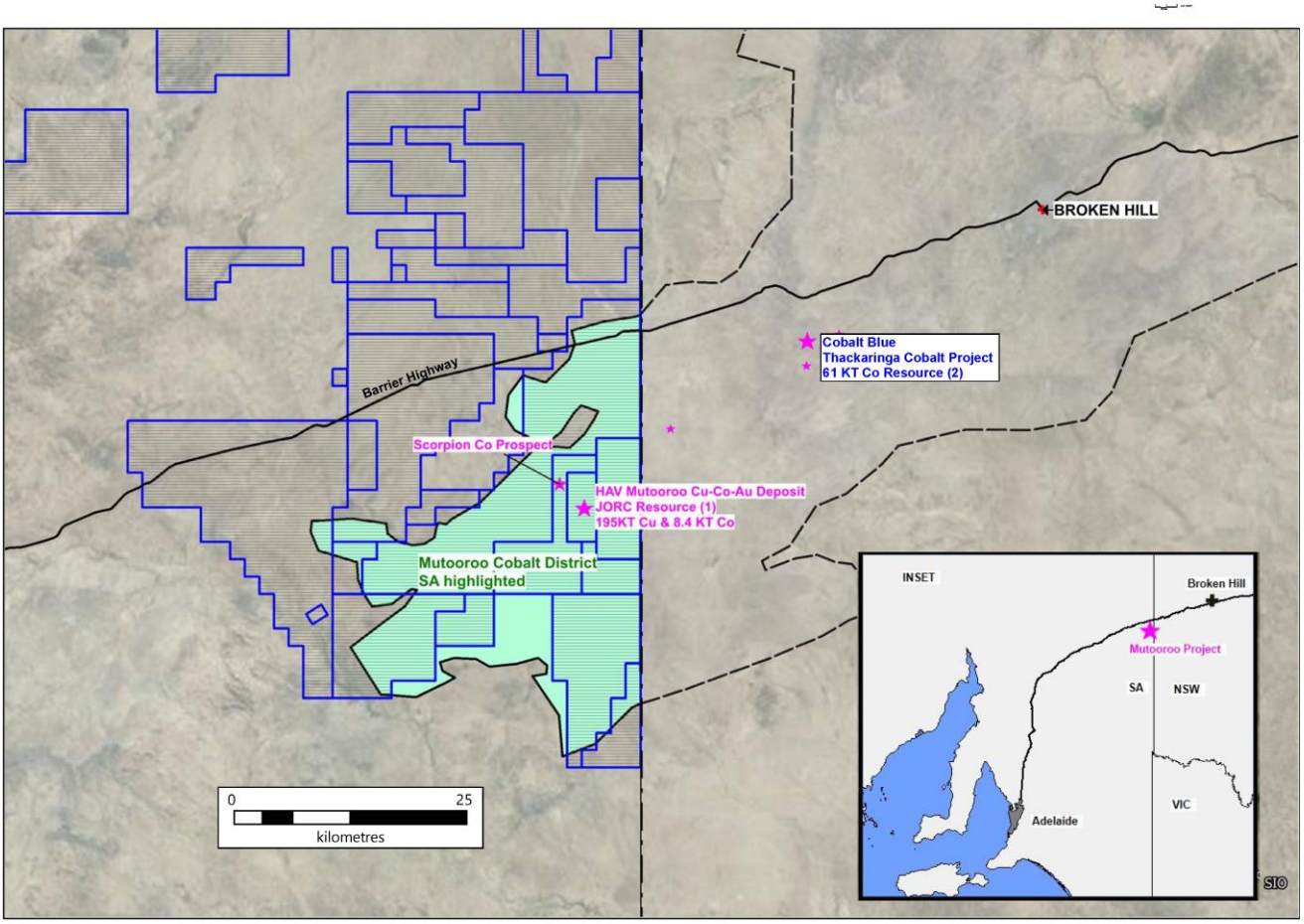

Figure 5 *– Regional view of the Mutooroo Cobalt District highlighting Havilah tenements and cobalt resources.*

(1) Refer to ASX announcement of 18 October 2010.

(2) Refer to COB ASX announcement of 19 March 2018.

Cautionary Statement

This announcement contains certain statements which may constitute "forward-looking statements". Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

Competent Persons Statement

The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on data and information compiled by geologist, Dr Chris Giles, a Competent Person who is a member of The Australian Institute of Geoscientists. Dr. Giles is Technical Director of the Company and is employed by the Company on a consulting contract. Dr. Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr. Giles consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears. This information was prepared in accordance with the JORC Code 2012.

JORC Code, 2012 Edition – "Table 1"

Section 1 Sampling Techniques and Data

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

Criteria	Commentary
Sampling techniques	• Rock chips and selective ironstone/lag samples were collected. • All samples were submitted to ALS Global assay lab in Adelaide.
Drilling techniques	• No drilling is reported on.
Drill sample recovery	• No drilling is reported on.
Logging	• No drilling is reported on.
Sub-sampling techniques and sample preparation	• Sample sizes (average ~1kg and >250gms minimum,) are considered appropriate for the reconnaissance nature of the sampling.
Quality of assay data and laboratory tests	• All samples are prepared at ALS Global laboratory in Adelaide and assayed interstate. The assay methods are industry standard and are considered appropriate at the exploration reporting stage. • All gold was determined by fire assay with AAS finish (method AA26). • Other elements were analysed by multi-element digest methods with ICP finish (method ICP61). • ALS insert their own QC/QA samples into the sample sequence.
Verification of sampling and assaying	• No new drilling is reported on.
Location of data points	• Sample coordinates are collected using a hand held GPS with an x:y accuracy of 3-5m and are quoted in GDA94 datum coordinates.
Data spacing and distribution	• Samples were mostly collected along roads and fencelines and mostly on 100m spacings.
Orientation of data in relation to geological structure	• Unknown at this early stage.
Sample security	• Samples are collected in pre-numbered calico bags. • Several calico bags are placed in each polyweave bag which are then sealed with cable ties. The samples are transported to the assay lab by Havilah personnel at the end of each field stint.

Criteria	Commentary
	• There is minimal opportunity for systematic tampering with the samples as they are not out of the control of Havilah until they are delivered to the assay lab. • This is considered to be a secure and reasonable procedure and no known instances of tampering with samples has occurred.
Audits or reviews	• A review of ALS internal QC/QA samples did not reveal any issues with standards and duplicates returning values within acceptable limits.

Section 2 Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and land tenure status	• Exploration is taking place on Havilah Resources 100% owned Exploration Licences including EL 5848, EL5703 and EL5753. • Security via current valid exploration licences granted to Havilah.
Exploration done by other parties	• Exploration has been conducted by several companies over the last 50 years with most work conducted for base metal mineralisation.
Geology and mineralisation model	• Mutooroo style, shear hosted, massive sulphide Cu-Co-Au mineralisation and Thackaringa style disseminated sulphide Co mineralisation hosted within high grade metamorphic rocks of the Willyama Supergroup of the Curnamona Craton.
Drill hole Information	• No new drilling is reported on.
Data aggregation methods	• No new drilling is reported on.
Relationship between mineralisation widths and intercept lengths	• No new drilling is reported on.
Diagrams	• Scaled maps are included in this report
Balanced reporting	• All samples were analysed. • Reporting is considered to be balanced.
Other substantive exploration data	• Relevant geological observations are reported in this announcement.
Further work	• Further exploration will include additional surface sampling with the aim of defining targets for drill testing.

Sample_ID	GDA_E	GDA_N	Au_ppm	Ag_ppm	Al_%	As_ppm	Ba_ppm	Be_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Nb_ppm
MPA0001	497150	6446949	-0.01	0.6	2.66	211	2170	0.6	4	0.1	-0.5	-1	395	92	49.2	10	0.21	10	0.06	386	3	0.05	-5
MPA0002	497088	6446835	-0.01	-0.5	2.49	84	1260	0.6	-2	0.1	-0.5	4	346	14	28.4	60	0.38	20	0.05	485	4	0.07	-5
MPA0003	496975	6446914	-0.01	-0.5	6.16	12	1080	1.3	-2	0.12	-0.5	3	370	12	25.7	20	1.17	20	0.09	397	2	0.18	-5
MPA0004	496857	6447097	-0.01	-0.5	5.75	24	1810	1.2	-2	0.25	-0.5	3	281	19	22.1	20	0.84	20	0.12	295	1	0.07	-5
MPA0005	496966	6447195	-0.01	-0.5	5.34	40	2580	0.8	-2	0.14	-0.5	5	183	65	36.3	30	0.27	20	0.08	334	11	0.06	-5
MPA0006	497995	6446340	0.75	1	0.92	25	1350	3.9	29	0.16	-0.5	889	17	2170	50	-10	0.03	30	0.05	82	48	0.02	-5
MPA0007	498018	6446416	0.14	0.7	1.53	9	460	2.3	43	0.16	-0.5	514	22	2540	49	-10	0.04	40	0.07	106	58	0.02	-5
MPA0008	498026	6446419	0.07	1	1.78	16	630	1.5	68	0.25	-0.5	110	14	2590	45.9	-10	0.05	40	0.09	72	69	0.04	-5
MPA0009	498031	6446518	0.04	1.2	0.78	73	2430	1.1	12	0.4	-0.5	1005	26	2010	50	-10	0.03	20	0.07	117	63	0.03	-5
MPA0010	498059	6446725	0.18	0.5	1.66	20	1340	1.6	-2	0.23	-0.5	14	52	409	30.9	40	0.18	50	0.15	349	37	0.04	5
MPA0011	498125	6446781	0.05	-0.5	1.18	26	2780	18.1	-2	0.15	-0.5	40	28	276	31.8	-10	0.12	20	0.06	207	10	0.01	-5
MPA0012	500054	6439663	-0.01	0.5	1.28	14	4050	2.7	-2	0.09	-0.5	466	141	134	49.8	20	0.08	370	0.05	365	12	0.01	7
MPA0013	500089	6439720	-0.01	0.7	1.24	19	5310	4	6	0.12	-0.5	702	189	74	50	20	0.05	140	0.06	500	18	-0.01	28
MPA0014	499938	6439733	-0.01	0.8	1.52	16	2420	3.1	-2	0.1	-0.5	400	186	140	47.6	20	0.06	470	0.05	591	18	0.03	8
MPA0015	500098	6439427	-0.01	0.6	1.15	-5	2120	2.5	2	0.08	-0.5	310	166	64	50	20	0.07	330	0.05	428	21	0.02	40
MPA0016	500018	6439242	-0.01	0.5	1.17	13	4370	1.1	-2	0.11	-0.5	207	179	81	50	20	0.05	280	0.04	421	11	-0.01	12
MPA0017	499938	6439313	0.15	0.6	0.96	24	5540	2.4	3	0.13	-0.5	252	147	86	50	20	0.05	460	0.05	307	23	-0.01	7
MPA0018	499969	6439440	-0.01	0.6	1.15	11	4380	2.1	5	0.07	-0.5	345	255	58	50	20	0.05	420	0.05	674	13	0.01	16
MPA0019	500101	6437929	-0.01	-0.5	0.64	12	960	3.9	-2	0.07	-0.5	872	52	35	44.2	10	0.1	170	0.06	299	20	0.04	-5
MPA0020	500065	6437941	0.01	-0.5	0.36	20	760	7.4	-2	0.15	-0.5	4540	54	75	47.1	10	0.03	60	0.1	429	41	0.02	-5
MPA0021	499998	6437966	-0.01	-0.5	1.4	18	1360	3.3	-2	0.11	-0.5	930	207	66	50	20	0.17	160	0.07	448	20	0.05	6
MPA0022	500101	6437009	-0.01	-0.5	0.74	-5	760	1.5	-2	0.09	-0.5	112	93	38	50	30	0.06	150	0.04	345	7	0.02	-5
MPA0023	500102	6436914	-0.01	0.8	1.91	36	640	4.7	-2	0.58	-0.5	1040	65	169	47.9	10	0.22	480	0.3	767	74	0.25	-5
MPA0024	500093	6436676	-0.01	0.7	0.75	8	490	3	7	0.08	-0.5	179	51	18	38.4	20	0.07	1700	0.04	176	9	0.34	44
MPA0025	499983	6436712	0.03	0.5	1.68	27	840	2.3	2	0.25	-0.5	239	22	202	41.4	30	0.91	90	0.07	470	13	0.32	5
MPA0026	500005	6436799	-0.01	0.6	0.5	-5	300	1.4	-2	0.17	-0.5	169	18	92	50	30	0.08	1130	0.06	369	14	0.02	-5
MPA0027	499996	6436871	-0.01	0.6	0.71	7	360	1.9	-2	0.07	-0.5	80	48	49	49.4	20	0.11	610	0.06	461	15	0.05	16
MPA0028	500004	6436988	0.01	0.5	1.65	-5	550	1.4	-2	0.09	-0.5	60	25	64	49.9	40	0.3	120	0.06	231	7	0.65	-5
MPA0029	500095	6436316	-0.01	-0.5	0.43	11	110	4	-2	0.12	-0.5	2480	15	207	50	20	0.07	480	0.14	212	484	0.02	-5
MPA0030	500083	6436404	-0.01	0.8	0.71	19	700	4.7	-2	0.21	-0.5	1545	17	200	50	-10	0.17	180	0.1	498	64	0.1	5
MPA0031	500070	6436465	-0.01	-0.5	1.86	8	590	4.5	-2	0.25	-0.5	1015	35	360	44.2	10	0.25	60	0.53	420	88	0.63	-5
MPA0032	500091	6436506	-0.01	-0.5	1.11	-5	160	0.6	4	0.21	-0.5	106	404	67	50	50	0.21	90	0.22	920	14	0.03	-5
MPA0033	499979	6436433	-0.01	-0.5	1.01	47	300	16.6	-2	0.44	-0.5	5950	27	96	50	10	0.32	60	0.16	560	50	0.03	-5
MPA0034	500093	6436101	-0.01	-0.5	0.8	35	320	6.6	7	0.57	-0.5	2630	46	363	49.2	10	0.09	190	0.32	1100	60	0.1	15
MPA0035	500089	6436161	-0.01	1.1	0.46	12	320	1.6	-2	0.42	-0.5	659	32	242	50	30	0.05	940	0.09	154	162	0.08	-5
MPA0036	500088	6436028	-0.01	-0.5	1.62	14	240	12.8	-2	0.32	1	1745	36	280	39.5	20	0.67	470	0.35	584	54	0.07	-5
MPA0037	500080	6435954	0.02	-0.5	1.93	13	380	2.7	-2	0.68	0.8	664	38	430	47.4	30	0.24	160	0.8	807	21	0.27	-5
MPA0038	496147	6446415	-0.01	-0.5	5.05	77	880	1	-2	0.18	0.8	30	211	54	32.5	30	0.31	60	0.07	728	10	0.06	-5
MPA0039	479470	6427476	-0.01	-0.5	1.56	8	730	30.5	-2	0.12	-0.5	37	13	175	45.3	-10	0.18	30	0.06	166	8	0.05	-5
MPA0040	477002	6424560	-0.01	-0.5	3.64	8	390	2	-2	0.39	0.5	17	18	601	42.5	-10	0.36	30	0.13	52	3	0.1	-5
MPA0041	477015	6424562	-0.01	-0.5	2.2	116	480	5.7	-2	0.41	-0.5	54	40	369	48.9	-10	0.21	10	0.09	178	7	0.07	-5
MPA0042	476468	6424531	-0.01	-0.5	2.09	64	990	5.3	5	0.09	-0.5	167	154	136	46.9	20	0.18	730	0.06	520	9	0.05	-5
MPA0043	476575	6424531	0.01	-0.5	1.24	38	920	2.4	-2	0.42	0.5	265	78	271	44.5	20	0.08	90	0.12	1415	6	0.04	-5
MPA0044	476685	6424514	0.07	-0.5	2.23	266	300	7.1	-2	0.12	0.8	1285	97	523	39.3	10	0.21	80	0.08	329	7	0.05	-5
MPA0045	476789	6424503	0.12	-0.5	3.04	16	600	17.4	2	0.19	-0.5	48	165	188	46.8	20	0.29	50	0.07	346	11	0.04	-5
MPA0046	476753	6424498	-0.01	-0.5	0.68	129	650	2.3	2	0.17	-0.5	14	117	219	12.1	-10	0.13	10	0.06	139	3	0.03	-5
MPA0047	476464	6423709	-0.01	-0.5	2.84	16	320	4.4	-2	0.34	-0.5	24	39	352	45.4	10	0.22	20	0.11	159	5	0.06	-5
MPA0048	480098	6422075	1.07	-0.5	1.66	184	590	2.1	58	0.68	0.5	10	56	1155	39	10	0.08	30	0.1	170	35	0.04	-5
MPA0049	480204	6422056	0.09	-0.5	1.04	84	2110	3.8	72	0.17	0.7	27	70	892	38.8	10	0.05	50	0.05	321	19	0.02	-5
MPA0050	480037	6422083	1.07	-0.5	1.8	98	420	3.2	-2	0.26	0.8	17	124	1105	44.2	-10	0.04	30	0.09	202	15	0.03	-5

Sample_ID	GDA_E	GDA_N	Au_ppm	Ag_ppm	Al_%	As_ppm	Ba_ppm	Be_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cr_ppm	Cu_ppm	Fe_%	Ga_ppm	K_%	La_ppm	Mg_%	Mn_ppm	Mo_ppm	Na_%	Nb_ppm
MPA0051	479886	6422180	0.01	-0.5	2.54	12	1920	0.5	-2	0.34	0.8	2	88	111	44.5	20	0.07	10	0.14	618	1	0.03	-5
MPA0052	485631	6426326	-0.01	-0.5	3.26	23	3990	1.5	2	0.15	-0.5	55	324	224	49.5	30	0.11	40	0.11	664	6	0.04	-5
MPA0053	485605	6426188	0.02	-0.5	2.94	22	3830	1.6	-2	0.12	-0.5	21	371	180	47.3	30	0.17	50	0.07	784	4	0.02	-5
MPA0054	485603	6425879	-0.01	-0.5	3.25	18	3620	1.4	-2	0.14	0.6	37	399	122	42	20	0.17	30	0.07	845	3	0.03	-5
MPA0055	485549	6425758	0.01	-0.5	2.86	17	2460	2.3	-2	0.13	-0.5	26	260	111	38.3	20	0.36	50	0.09	863	2	0.05	-5
MPA0056	485424	6426156	-0.01	-0.5	1.38	-5	850	3.4	-2	0.15	-0.5	81	69	592	49.5	10	0.02	10	0.07	1080	3	0.02	-5
MPA0057	482397	6427967	-0.01	-0.5	4.03	96	2250	1.9	9	0.28	-0.5	5	260	42	32.7	30	0.58	20	0.13	904	6	0.1	8
MPA0058	483830	6432132	-0.01	-0.5	4.5	13	1330	2	-2	0.15	-0.5	8	199	57	29.2	30	0.88	20	0.08	601	4	0.13	-5
MPA0059	480428	6442988	-0.01	-0.5	0.64	-5	480	-0.5	43	0.04	2.9	16	558	16	47	30	0.12	10	0.07	579	3	0.02	99
MPA0060	480387	6443105	-0.01	-0.5	1.51	5	2180	0.7	23	0.09	1.9	304	470	239	44.1	20	0.17	40	0.07	945	5	0.03	69
MPA0061	500077	6427457	0.03	-0.5	3.24	32	360	10	-2	0.36	-0.5	155	55	325	36.4	10	0.16	110	0.39	524	11	0.15	-5
MPA0062	498210	6429833	-0.01	-0.5	1.4	-5	40	-0.5	-2	0.31	-0.5	4	19	31	2.13	-10	0.13	-10	0.09	151	-1	0.73	5
MPA0063	498198	6429837	0.13	0.6	1.13	2370	240	1	6	0.17	0.7	110	21	3340	42.1	-10	2.65	10	0.11	100	8	0.11	-5
MPA0064	497003	6429923	0.01	-0.5	1.14	35	970	3	-2	0.11	-0.5	369	40	144	39.4	-10	0.37	30	0.07	198	53	0.05	-5
MPA0065	497110	6429899	0.06	0.5	0.74	305	1490	4.5	-2	0.23	-0.5	760	59	702	50	-10	0.15	40	0.07	210	9	0.04	-5
MPA0066	496903	6429956	-0.01	-0.5	0.87	27	280	17.2	-2	0.08	-0.5	73	21	33	48.3	10	0.32	50	0.08	348	2	0.04	7
MPA0067	496612	6429993	-0.01	-0.5	2.29	20	450	2.7	3	0.11	-0.5	100	90	193	37.9	10	0.13	30	0.3	266	3	0.13	-5
MPA0068	493236	6430389	0.02	-0.5	0.5	33	730	9.1	5	0.16	0.5	1455	164	981	49.9	-10	0.03	10	0.08	143	13	0.04	-5
MPA0069	493374	6430479	0.01	-0.5	0.43	53	1290	9.1	-2	0.16	-0.5	3260	99	170	50	-10	0.03	30	0.1	306	7	0.05	-5
MPA0070	493349	6430374	0.02	-0.5	0.57	6	290	3.7	-2	0.07	-0.5	312	104	3080	50	10	0.28	10	0.07	188	15	0.08	-5
MPA0071	493170	6430040	-0.01	-0.5	0.58	37	390	6.2	4	0.1	-0.5	1640	128	366	50	20	0.04	20	0.11	661	6	0.04	-5
MPA0072	488183	6433629	-0.01	-0.5	2	27	5420	1.4	4	0.09	-0.5	243	427	122	48.9	30	0.12	60	0.05	5200	6	0.03	22
MPA0073	488052	6433673	-0.01	-0.5	0.49	35	4060	1.9	-2	0.14	-0.5	1730	287	731	50	10	0.03	10	0.06	128	6	0.03	-5
MPA0074	488001	6433764	-0.01	-0.5	1.26	35	4270	1.8	2	0.17	-0.5	458	329	201	47.9	20	0.07	30	0.05	534	7	0.04	6
MPA0075	487938	6434006	-0.01	-0.5	2.45	23	3250	1.1	-2	0.12	-0.5	834	1005	155	46.9	20	0.09	20	0.06	727	5	0.06	-5
MPA0076	487907	6434107	-0.01	-0.5	2.37	30	3310	2	6	0.13	-0.5	1335	1020	165	47.6	20	0.1	30	0.08	781	6	0.05	-5
MPA0077	487767	6434614	-0.01	-0.5	3.33	33	>10000	0.8	-2	0.19	-0.5	25	183	182	42.7	10	0.03	10	0.07	578	4	0.04	-5
MPA0078	487758	6434736	-0.01	-0.5	1.83	14	4130	1.3	3	0.13	-0.5	45	258	256	40.8	20	0.05	10	0.05	461	3	0.04	-5
MPA0079	487780	6434910	-0.01	-0.5	1	73	1710	2.9	2	0.16	-0.5	1015	542	818	48.2	10	0.14	60	0.07	402	6	0.03	-5
MPA0080	487637	6435016	0.01	-0.5	1.56	46	2340	3.5	22	0.15	-0.5	1950	658	263	48.3	20	0.15	30	0.09	502	12	0.05	-5
MPA0081	485680	6433336	-0.01	-0.5	2.76	17	5920	1.5	2	0.11	-0.5	586	575	136	46.3	10	0.23	10	0.07	328	6	0.1	-5
MPA0082	485706	6433596	0.49	-0.5	1.65	54	4860	6.6	10	0.09	-0.5	944	266	382	46.2	10	0.13	30	0.05	309	5	0.03	-5
MPA0083	485701	6433691	-0.01	-0.5	1.26	87	3160	1.8	7	0.26	-0.5	2060	186	322	50	20	0.13	20	0.15	226	5	0.06	-5
MPA0084	485710	6433813	-0.01	-0.5	1.08	31	4260	1.5	6	0.08	-0.5	1180	219	151	35	10	0.15	10	0.04	306	3	0.03	57
MPA0085	486092	6434113	-0.01	-0.5	1.21	17	3440	3.7	3	0.09	-0.5	367	243	205	27.8	10	0.15	20	0.05	257	4	0.03	-5
MPA0086	486096	6434216	0.02	-0.5	2.88	59	2020	1.7	-2	0.12	-0.5	567	321	206	40.8	20	0.39	30	0.07	340	7	0.07	-5
MPA0087	486073	6434307	-0.01	-0.5	5.47	-5	2880	1.5	-2	0.1	-0.5	20	247	29	27.3	20	1.33	30	0.1	313	2	0.14	-5
MPA0088	486060	6434401	0.02	-0.5	5.74	20	1320	1.2	-2	0.09	-0.5	40	408	77	26.7	30	1	10	0.08	201	1	0.11	-5
MPA0089	484131	6430659	-0.01	-0.5	2.18	80	2850	1	-2	0.14	-0.5	13	389	179	49.9	10	0.06	10	0.1	77	6	0.04	-5
MPA0090	485650	6430400	-0.01	-0.5	1.91	90	2630	2.2	5	0.11	-0.5	1680	757	480	48.5	10	0.13	30	0.07	685	5	0.03	-5
MPA0091	485667	6430506	-0.01	-0.5	2.66	45	2820	2	9	0.2	-0.5	796	328	231	46	20	0.16	30	0.09	1110	6	0.04	-5
MPA0092	485675	6430607	-0.01	-0.5	1.7	54	2820	3.1	5	0.15	-0.5	2270	280	158	47.6	10	0.18	60	0.08	652	7	0.03	-5
MPA0093	485677	6430687	0.01	-0.5	1.47	206	4620	2.7	5	0.22	-0.5	1695	431	1435	50	10	0.05	20	0.08	519	8	0.02	-5
MPA0094	485667	6430846	-0.01	-0.5	2.66	33	3990	2.1	6	0.14	-0.5	207	307	150	47.3	20	0.14	30	0.07	991	4	0.02	-5
MPA0095	485668	6430982	-0.01	-0.5	1.74	68	6070	4.1	2	0.15	-0.5	567	356	156	50	10	0.07	30	0.08	602	6	0.01	-5
MPA0096	485670	6431337	-0.01	-0.5	0.77	40	3270	2.2	4	0.16	-0.5	2430	614	275	50	10	0.04	10	0.1	180	6	0.03	-5
MPA0097	476299	6427987	-0.01	-0.5	0.51	5	1370	-0.5	-2	0.5	-0.5	10	51	17	50	10	0.01	10	0.13	147	2	0.02	7
MPA0098	479123	6446220	-0.01	-0.5	7.77	-5	180	0.5	-2	0.26	-0.5	9	208	3	28.1	30	0.27	50	0.06	60	1	0.11	-5
MPA0099	479077	6446230	-0.01	-0.5	4.86	8	1560	0.5	-2	0.15	-0.5	50	193	27	33.7	20	0.38	10	0.06	139	2	0.04	-5

Sample_ID	Ni_ppm	P_ppm	Pb_ppm	S_%	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Ta_ppm	Te_ppm	Th_ppm	Ti_%	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
MPA0001	7	780	140	0.11	-5	6	10	112	10	-10	170	0.16	-10	-10	3890	-10	19
MPA0002	6	640	75	0.06	-5	6	30	67	-10	-10	120	0.38	-10	-10	1090	-10	32
MPA0003	13	580	38	0.04	-5	9	10	66	-10	-10	90	0.27	-10	-10	741	-10	16
MPA0004	8	590	21	0.07	-5	8	10	106	-10	-10	50	0.29	-10	-10	624	-10	15
MPA0005	13	760	47	0.09	-5	7	20	101	-10	-10	60	0.33	-10	10	876	-10	23
MPA0006	57	1350	13	0.1	-5	6	30	86	30	-10	-20	0.03	-10	-10	110	-10	43
MPA0007	36	1160	16	0.11	-5	11	30	55	20	10	-20	0.04	-10	-10	133	-10	40
MPA0008	15	1130	18	0.14	-5	16	40	66	20	-10	-20	0.03	-10	-10	79	-10	16
MPA0009	43	690	17	0.15	-5	6	40	164	30	-10	-20	0.05	-10	-10	145	-10	21
MPA0010	7	1180	26	0.11	-5	11	20	96	-10	-10	30	0.22	-10	-10	403	-10	17
MPA0011	77	2370	33	0.1	-5	15	10	158	10	-10	-20	0.04	10	-10	193	-10	113
MPA0012	89	970	36	0.12	-5	14	10	205	30	-10	30	0.2	10	-10	883	10	38
MPA0013	123	860	49	0.16	-5	11	10	297	30	-10	30	0.39	-10	20	875	10	56
MPA0014	80	1330	38	0.08	-5	20	10	115	20	-10	40	0.4	-10	-10	1120	-10	62
MPA0015	83	940	38	0.07	-5	13	-10	105	40	-10	20	0.32	-10	-10	795	10	41
MPA0016	102	650	28	0.12	-5	14	10	202	30	-10	30	0.3	-10	-10	1000	-10	39
MPA0017	90	1000	35	0.16	-5	12	10	314	30	-10	20	0.39	-10	-10	835	10	25
MPA0018	92	840	50	0.13	-5	17	-10	218	40	-10	30	0.77	-10	-10	1010	-10	59
MPA0019	70	780	24	0.04	-5	7	20	61	20	-10	-20	0.09	-10	10	345	10	11
MPA0020	268	1430	8	0.07	-5	6	10	245	10	-10	-20	0.03	-10	30	520	-10	6
MPA0021	89	690	45	0.07	-5	10	20	89	30	-10	20	0.37	-10	-10	673	10	24
MPA0022	100	560	21	0.03	-5	13	20	41	40	-10	-20	0.36	10	-10	881	-10	23
MPA0023	149	1110	36	0.05	-5	10	20	112	20	-10	20	0.17	-10	-10	752	-10	55
MPA0024	127	1730	18	0.05	-5	4	-10	64	20	-10	40	0.07	10	-10	754	-10	11
MPA0025	102	1020	19	0.62	-5	7	-10	128	20	-10	-20	0.16	10	-10	318	-10	31
MPA0026	180	1430	30	0.03	-5	5	-10	54	40	-10	30	0.07	-10	-10	789	-10	8
MPA0027	107	820	19	0.02	-5	8	-10	42	20	-10	20	0.48	-10	-10	748	10	25
MPA0028	154	350	6	0.03	-5	6	-10	62	30	-10	-20	0.1	10	-10	464	-10	11
MPA0029	195	2380	16	0.03	-5	3	20	33	30	-10	-20	0.11	10	-10	555	-10	6
MPA0030	157	1190	23	0.08	-5	7	20	123	40	-10	-20	0.1	-10	10	317	-10	80
MPA0031	127	1220	18	0.08	-5	9	10	157	20	-10	-20	0.12	-10	-10	286	-10	40
MPA0032	59	280	6	-0.01	-5	9	10	69	40	-10	-20	1.02	-10	-10	3080	-10	143
MPA0033	185	1030	17	0.03	-5	6	20	47	30	-10	-20	0.07	-10	40	461	-10	35
MPA0034	198	1380	22	0.03	-5	24	20	74	20	-10	-20	1.24	-10	10	1030	-10	47
MPA0035	127	980	23	0.08	-5	10	10	54	50	-10	20	0.09	-10	-10	859	-10	21
MPA0036	128	1140	9	0.02	-5	29	10	52	10	-10	-20	0.19	-10	-10	720	-10	56
MPA0037	158	630	9	0.03	6	15	10	85	20	10	-20	0.71	-10	10	985	-10	47
MPA0038	23	890	88	0.06	-5	9	-10	85	-10	-10	50	0.21	-10	-10	520	-10	50
MPA0039	59	4250	37	0.05	-5	18	-10	49	20	-10	-20	0.03	-10	20	77	-10	192
MPA0040	22	2450	56	0.12	7	43	10	91	20	-10	-20	0.07	-10	20	31	-10	75
MPA0041	17	3460	51	0.1	8	18	30	75	20	-10	-20	0.04	-10	10	164	-10	111
MPA0042	101	1590	78	0.05	-5	17	10	74	50	-10	40	0.21	10	-10	1235	-10	57
MPA0043	192	1130	39	0.05	-5	25	10	121	20	-10	-20	0.25	-10	10	605	-10	55
MPA0044	138	3790	44	0.02	-5	59	-10	53	20	-10	-20	0.11	-10	-10	288	-10	174
MPA0045	94	3740	34	0.04	-5	12	20	56	30	-10	40	0.15	-10	10	263	-10	372
MPA0046	36	620	12	0.03	-5	2	10	38	-10	-10	-20	0.03	-10	-10	91	-10	125
MPA0047	27	3140	45	0.11	7	18	10	60	20	-10	20	0.06	-10	10	73	-10	83
MPA0048	23	9020	67	0.08	-5	24	-10	197	10	-10	20	0.08	-10	10	155	-10	195
MPA0049	72	3390	76	0.08	-5	11	-10	120	10	10	20	0.1	10	-10	222	-10	339
MPA0050	51	3560	39	0.06	-5	21	10	55	20	10	30	0.08	-10	10	252	-10	365

Sample_ID	Ni_ppm	P_ppm	Pb_ppm	S_%	Sb_ppm	Sc_ppm	Se_ppm	Sr_ppm	Ta_ppm	Te_ppm	Th_ppm	Ti_%	Tl_ppm	U_ppm	V_ppm	W_ppm	Zn_ppm
MPA0051	16	800	42	0.12	5	20	10	117	10	-10	20	0.77	-10	10	605	-10	67
MPA0052	43	810	99	0.13	-5	37	10	168	20	-10	70	0.69	-10	10	2350	-10	59
MPA0053	46	820	91	0.13	-5	21	10	164	10	-10	90	0.74	10	-10	1940	-10	62
MPA0054	54	800	81	0.12	6	24	10	172	10	-10	50	0.67	-10	-10	1725	-10	85
MPA0055	59	800	67	0.08	-5	21	-10	114	20	-10	50	0.46	-10	-10	1010	-10	91
MPA0056	176	390	20	0.09	10	25	10	76	30	-10	-20	0.09	10	10	382	-10	412
MPA0057	18	1140	75	0.09	-5	9	10	130	10	10	50	0.45	-10	10	409	-10	266
MPA0058	36	790	65	0.06	-5	12	-10	92	-10	-10	90	0.31	-10	-10	590	-10	165
MPA0059	30	170	24	0.01	10	105	-10	25	40	-10	-20	8.8	-10	10	1275	-10	48
MPA0060	47	830	70	0.1	8	82	-10	109	20	-10	-20	5.53	10	10	1210	-10	55
MPA0061	129	2010	42	0.02	-5	25	10	59	10	10	-20	0.41	-10	10	617	-10	162
MPA0062	5	100	4	0.03	-5	4	-10	38	-10	-10	-20	0.18	-10	-10	39	-10	15
MPA0063	430	3200	6	3.86	-5	9	40	252	30	10	-20	0.08	-10	30	302	-10	24
MPA0064	177	640	15	0.06	-5	6	20	74	20	-10	-20	0.09	-10	10	118	-10	32
MPA0065	544	1140	24	0.06	-5	6	30	105	20	-10	-20	0.12	-10	10	213	-10	64
MPA0066	61	1800	21	0.13	-5	5	10	67	20	-10	-20	0.29	-10	10	180	30	44
MPA0067	81	600	14	0.02	5	6	-10	47	10	-10	-20	0.5	-10	-10	720	-10	73
MPA0068	277	1990	17	0.07	-5	7	20	58	20	-10	-20	0.03	-10	20	520	-10	29
MPA0069	367	1560	51	0.06	6	5	20	93	40	-10	-20	0.04	-10	10	768	-10	23
MPA0070	295	1650	26	0.53	-5	11	30	116	30	10	-20	0.07	-10	20	242	-10	69
MPA0071	288	880	34	0.05	-5	8	10	38	30	-10	-20	0.8	-10	10	1760	-10	50
MPA0072	92	620	97	0.13	-5	20	-10	204	20	-10	60	1.64	-10	-10	1900	-10	55
MPA0073	335	810	66	0.15	-5	14	30	221	30	-10	-20	0.06	-10	10	1155	-10	42
MPA0074	144	750	75	0.13	-5	20	20	211	30	-10	40	0.79	-10	-10	1055	-10	35
MPA0075	127	900	86	0.12	-5	29	10	189	20	-10	50	0.3	-10	10	3020	-10	52
MPA0076	219	1130	86	0.12	-5	40	10	182	20	-10	60	0.22	-10	-10	1450	-10	52
MPA0077	19	620	55	0.33	-5	28	-10	694	10	-10	50	0.58	-10	-10	1505	-10	29
MPA0078	69	1580	83	0.14	-5	71	-10	199	20	-10	30	0.4	-10	-10	2380	-10	35
MPA0079	823	1300	55	0.08	-5	20	30	86	20	-10	20	0.24	-10	-10	856	-10	30
MPA0080	279	1210	78	0.1	-5	30	20	132	20	-10	20	0.75	-10	10	1060	10	47
MPA0081	125	670	122	0.19	-5	36	20	304	20	-10	140	0.21	-10	-10	2370	-10	38
MPA0082	159	1140	66	0.15	-5	11	20	265	10	-10	50	0.25	-10	-10	1145	-10	53
MPA0083	193	790	49	0.12	-5	12	10	184	20	-10	30	0.31	-10	-10	944	-10	75
MPA0084	226	710	56	0.13	-5	11	20	217	10	-10	40	1.01	-10	10	549	-10	41
MPA0085	556	1040	48	0.11	-5	22	20	188	10	-10	20	0.25	-10	-10	763	-10	47
MPA0086	40	1080	62	0.1	-5	20	10	118	10	-10	110	0.15	-10	-10	1185	-10	63
MPA0087	12	540	54	0.09	-5	12	30	142	-10	-10	80	0.26	10	-10	626	-10	25
MPA0088	38	550	23	0.06	-5	10	20	62	-10	-10	80	0.21	-10	-10	662	-10	17
MPA0089	14	350	34	0.14	-5	9	20	104	10	-10	80	0.13	-10	10	1275	-10	16
MPA0090	182	1140	100	0.1	-5	39	30	134	20	-10	50	0.29	-10	-10	1615	-10	78
MPA0091	113	1050	99	0.1	-5	25	20	137	20	-10	60	1.23	-10	-10	1675	-10	153
MPA0092	200	1200	112	0.1	-5	31	30	131	-10	-10	70	0.33	-10	-10	1140	-10	73
MPA0093	174	1700	120	0.15	-5	51	40	256	20	-10	40	0.27	-10	20	1995	-10	66
MPA0094	69	1270	126	0.13	-5	32	20	185	10	-10	50	0.8	-10	-10	2670	-10	134
MPA0095	116	1760	131	0.19	-5	23	20	329	20	-10	60	0.25	-10	-10	4080	-10	90
MPA0096	229	1430	60	0.13	-5	34	10	187	20	-10	80	0.05	-10	10	1130	-10	41
MPA0097	9	840	25	0.06	-5	4	20	77	30	-10	-20	0.47	10	10	320	-10	6
MPA0098	18	230	29	0.21	-5	8	10	76	-10	-10	40	0.24	-10	-10	333	-10	12
MPA0099	23	360	21	0.08	-5	10	-10	98	-10	-10	50	0.3	-10	-10	497	-10	11