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SURVEY

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MINERAL RECONNAISSANCE PROGRAMME

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Investigation into the distribution of the platinum group elements, South Harris, Isle of Lewis, Scotland

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INVESTIGATIONS INTO THE DISTRIBUTION OF PLATINUM GROUP ELEMENTS, SOUTH HARRIS.

A programme of field sampling was carried out in May 1991 to investigate the distribution of the platinum group elements (PGE) over the South Harris Complex. The Complex is situated at the southern end of the Isle of Lewis, and lies some 60 km off the north-west coast of Scotland.

The project area covers approximately 70 km², rising from sea level to 460 m. Much of the ground below 100 m is covered by blanket peat and its associated wet and dry-heath vegetation, with occasional ice-smoothed outcrops. The higher ground affords locally excellent exposure. Drainage samples were collected from 65 stream locations and rock samples from 93 sites.

The range of lithologies sampled include those of the intrusive complex and its marginal metamorphic belts (Figure 1). The locations of rock and drainage sample sites are shown in Figure 2.

Rock samples were collected from surface exposures, with several points on each outcrop sampled to produce a representative sample. Drainage sampling was carried out in order to establish the distribution of the prospective elements over poorly exposed ground. This involved the collection of two size fractions in the field by wet screening. A coarse fraction (-2 mm) was processed by panning from an initial volume of 4 litres to produce a 150 ml concentrate. The stream sediments were screened at 150 microns then bagged with minimal water loss in order to retain the colloidal fraction.

XRF analysis on pressed powder pellets was carried out by the Analytical Chemistry Unit of the BGS. The suites of elements determined are as listed in their respective tables.

Table 1 - Rocks: Ca, Ti, V, Cr, Fe, Co, Ni, Cu, Zn, As, Zr, Mo, Ag, Sb, Ba, Pb, Bi.

Table 2 - Stream Sediments: Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Rb, Sr, Zr, Ag, Sb, Ba, La, Ce, Pb, Bi.

Table 3 - Panned Concentrates: Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Zn, As, Rb, Sr, Zr, Ag, Sb, Ba, La, Ce, Pb, Bi.

Determinations for the Pt, Pd, Rh and Au were conducted on all sample types by ACME Analytical of Vancouver, employing a lead fire assay on 30 g powder splits followed by a GFAAS finish. These results are also shown in the above tables.

Precious metal concentrations in panned drainage samples are generally low, with background levels close to the analytical detection limits at most sites. Concentrations in stream sediments are generally higher, with background levels of about 3 - 4 ppb for Pt and Pd. Enhanced palladium levels occur sporadically over the marginal shear belt up to 14 ppb. The main intrusive complex yields only low PGE levels in drainage samples, but does show sporadic minor enrichment in Au up to a maximum of 28 ppb.

Very few rock samples contained significant (>100 ppb) PGE enrichment and the main intrusive bodies of gabbro, diorite and anorthosite contained only trace quantities of sulphide. The precious metal levels in these rocks were generally less than 15 ppb platinum or palladium. Sulphide mineralisation was found to be widespread in the marginal shear zones, especially in semi-pelitic and psammitic gneisses of the Leverburgh Belt, on the south-western side of the Complex. Several rock samples show minor enrichment in palladium (15 - 30 ppb), with a maximum of 120 ppb from a pyrite-rich vein within deformed metasediment. No attendant enrichment in platinum or gold was found in this Belt. In the Langavat Belt, on the north-east side of the Complex, three samples from a tectonised and altered ultramafic pod (PHR 5179, 5180 and 5181) yielded values greater than 100 ppb palladium, with a maximum of 210 ppb. The samples were also enriched in platinum (15 - 36 ppb). The highest platinum level in rocks (52 ppb) was obtained from a similar ultramafic body within the same belt.

This data release comprises the following:

TABLES

- 1 Trace element and precious metal determinations on 93 rocks
- 2 Trace element and precious metal determinations on 65 stream sediments
- 3 Trace element and precious metal determinations on 65 panned concentrates
- 4 Rock sample descriptions

FIGURES

- 1 Geology of the South-West part of South Harris
- 2 Location of rock and drainage sample sites in the South Harris project area

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Rock Data

Table 1 Trace element and precious metal determinations on 93 rocks

Sample Referenc	Easting	Northing	Major rock type	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
PHR5101	104058	0884768	2C00	48300	2030	73	144	35900	16	37	19	30	1.0
PHR5102	104310	0885400	1EA0	69400	5330	507	57	114600	42	21	382	68	0.0
PHR5103	104315	0885400	1EA0	78900	4450	439	146	91000	40	19	95	67	0.0
PHR5104	103428	0885180	2K00	27000	3660	165	242	49200	28	61	45	19	0.0
PHR5105	103430	0885180	2V00	8900	1830	81	109	91300	46	106	3	47	2.0
PHR5106	103764	0884950	2GB4	12300	6040	412	811	67300	39	168	234	84	0.0
PHR5107	103764	0884955	2GB4	33200	1370	57	190	42700	28	150	163	45	0.0
PHR5108	103759	0884969	2GB4	16400	2520	98	589	45900	21	124	146	97	0.0
PHR5109	103751	0884970	2GB4	21100	4500	302	992	65800	10	54	196	195	1.0
PHR5110	103732	0884979	2GB4	14700	3280	211	506	54200	29	130	213	63	1.0
PHR5111	103758	0884969	2GB4	4200	1150	64	274	212300	311	764	239	32	0.0
PHR5112	105692	0883642	1EA0	73900	5800	274	315	97400	50	85	79	119	0.0
PHR5113	105689	0883642	1FE0	65300	970	41	93	19700	8	19	28	22	1.0
PHR5114	105842	0883730	1FE0	90800	470	9	45	10300	6	19	11	10	2.0
PHR5115	105230	0883282	1EA0	71700	9450	274	150	73000	48	141	322	134	0.0
PHR5116	105250	0883338	1EA0	36200	2840	204	785	78200	43	263	170	214	0.0
PHR5117	105248	0883336	1EA0	28400	2530	328	854	121200	44	181	169	173	0.0
PHR5118	104310	0887255	1EA0	77500	4640	269	76	82100	38	44	90	84	0.0
PHR5119	104455	0886795	2VA0	84800	2760	216	332	76700	53	118	96	76	0.0
PHR5120	104453	0886795	1AC0	44400	230	15	26	22000	38	52	267	5	0.0
PHR5121	104465	0886796	1EA0	86200	2920	222	90	83900	53	85	206	97	0.0
PHR5122	106027	0887748	1FFA	7600	180	49	6766	79800	126	1410	28	49	0.0
PHR5123	106027	0887749	1FFA	71900	180	49	3507	28900	47	640	23	20	0.0
PHR5124	106046	0887738	1FFA	42100	250	57	4430	51800	87	1112	30	31	0.0
PHR5125	106056	0887750	1FFA	7300	1760	475	66728	114300	118	1556	6	295	0.0
PHR5126	106060	0887750	1FFA	100	180	46	6377	72900	133	1658	2	40	0.0
PHR5127	105680	0888278	1FFA	0	220	62	6568	83100	131	1690	2	40	0.0
PHR5128	105682	0888277	1FFA	26700	240	58	5856	67200	103	1454	2	43	0.0
PHR5129	105684	0888275	1FFA	3500	1880	142	1037	91500	139	492	69	36	0.0
PHR5130	105590	0888510	1FFA	46400	660	87	2091	57500	58	374	31	29	0.0
PHR5131	105580	0888507	1FFA	6000	140	52	5493	69200	91	838	3	38	1.0
PHR5132	105290	0883540	1EA0	48200	3800	149	1149	79500	41	233	120	152	0.0
PHR5133	105215	0883150	1EA0	54400	11040	258	466	68200	59	232	236	192	1.0
PHR5134	105215	0883152	1EA0	36700	7860	261	577	213600	8	93	263	130	6.0
PHR5135	105200	0883132	1EA0	14400	2990	114	375	80800	22	68	290	101	0.0
PHR5136	105185	0883040	1EA0	29200	5370	321	556	91000	56	165	714	137	0.0
PHR5137	105135	0882985	1EA0	24000	7040	363	383	107600	40	144	211	239	0.0
PHR5138	105096	0883010	2800	99400	400	54	118	30400	14	39	89	55	0.0
PHR5139	102650	0886825	2800	15200	3240	105	301	49200	24	61	93	51	2.0
PHR5140	102673	0886822	1EC0	72900	4080	178	231	63000	42	88	127	52	0.0
PHR5141	103148	0887380	2V00	90900	2640	433	237	75600	41	40	97	60	0.0
PHR5142	102893	0887890	1EA0	74400	5510	285	70	98000	41	41	208	109	0.0
PHR5143	106020	0885570	1AC0	2900	320	1	192	5600	0	3	2	14	2.0
PHR5144	105930	0885520	1AC0	6600	310	3	163	6000	1	2	2	12	0.0
PHR5145	105990	0885440	2V00	59800	5940	294	180	110400	58	91	358	482	0.0
PHR5146	104230	0893280	2C00	46200	7950	308	153	94300	31	49	186	215	0.0
PHR5147	103370	0893940	1FFA	2400	190	43	5164	71000	134	1564	6	35	0.0

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Rock Data

Sample Referenc	Eastings	Northings	Major rock type	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
PHR5148	97822	0891705	1FB0	67700	690	144	2706	53400	49	63	42	52	1.0
PHR5149	97850	0891665	1FB0	73500	840	200	1494	60500	49	44	46	51	0.0
PHR5150	97840	0891630	1FB0	66500	690	141	2677	55800	54	76	68	43	0.0
PHR5151	97610	0891160	1FB0	74100	1570	196	1203	64500	59	111	85	67	0.0
PHR5152	97510	0891240	2G00	37000	7970	259	221	73600	70	193	237	98	1.0
PHR5153	96845	0891570	1EA0	44500	3170	126	466	54700	29	85	41	83	0.0
PHR5154	96870	0891500	1EA0	46500	2520	120	601	57400	32	127	13	81	0.0
PHR5155	103400	0884730	1EA0	32200	2070	81	145	46700	10	3	14	79	0.0
PHR5156	103410	0884730	1EA0	59700	2520	238	94	77700	27	15	36	132	0.0
PHR5157	106585	0885690	1EA0	64600	217	217	25	73300	25	4	33	98	0.0
PHR5158	106595	0885670	1EA0	110700	4310	211	98	72800	27	43	30	49	0.0
PHR5159	103492	0883150	1EAK	35700	1260	45	49	17200	9	6	25	29	1.0
PHR5160	103499	0883190	1EA0	42800	3780	125	184	50400	21	26	9	81	1.0
PHR5161	103073	0883778	1FB0	78100	3490	230	713	88000	47	232	233	130	3.0
PHR5162	102941	0883925	1FB0	64500	3460	154	1433	43800	54	555	85	43	0.0
PHR5163	102953	0883930	1FB0	69900	4070	212	962	78800	47	212	59	103	0.0
PHR5164	106810	0885420	1EA0	70900	6060	271	176	88000	43	81	126	126	0.0
PHR5165	106810	0885410	1EA0	63100	5080	194	92	78400	34	44	72	101	1.0
PHR5166	107960	0886320	2V00	40700	3930	130	257	56800	30	104	63	87	4.0
PHR5167	107850	0886490	2V00	71400	4530	247	182	91500	93	126	158	129	1.0
PHR5168	107842	0886500	2V00	7900	5210	372	210	161300	21	88	165	138	35.0
PHR5169	107840	0886505	2V00	4600	6790	428	252	127700	14	75	154	90	0.0
PHR5170	102420	0891720	1EA0	19100	15730	363	373	171500	34	58	273	94	0.0
PHR5171	103105	0891430	2V00	39400	6570	169	265	80000	31	88	43	126	0.0
PHR5172	103170	0891410	1EA0	70900	6610	249	88	82900	38	46	107	86	0.0
PHR5173	103833	0891870	1AD0	36800	3620	109	77	50300	14	8	29	88	0.0
PHR5174	104476	0892010	1FFA	3100	230	65	7906	69400	113	1208	9	35	0.0
PHR5175	104382	0892200	1FFA	3200	420	62	5074	83200	103	1181	38	55	0.0
PHR5176	104378	0892208	1FFA	56100	600	108	3133	60700	59	470	4	42	0.0
PHR5177	102568	0894654	1FFA	38200	150	33	1359	54700	86	1288	16	24	0.0
PHR5178	102569	0894666	1FFA	13100	120	20	1857	59300	94	1121	11	35	0.0
PHR5179	102572	0894653	1FFA	42800	750	126	1321	42500	62	793	53	17	0.0
PHR5180	102570	0894656	1FFA	49500	1350	191	881	54300	52	843	2	31	0.0
PHR5181	102572	0894655	1FFA	32200	890	79	1500	42100	63	899	22	20	0.0
PHR5182	102500	0894850	1FAA	5900	190	55	7141	69500	116	988	0	52	0.0
PHR5183	98370	0892420	1AC0	1700	30	1	49	2300	0	4	4	8	0.0
PHR5184	98340	0892430	1AC0	2900	20	1	138	2900	1	1	1	17	1.0
PHR5185	98580	0892780	1AD0	43800	3530	119	77	48600	16	7	16	69	1.0
PHR5186	98579	0892620	1EA0	61700	4170	148	118	66000	23	13	7	83	0.0
PHR5187	106242	0884703	1EA0	52400	9370	120	31	95200	32	26	146	110	0.0
PHR5188	106078	0884698	1FE0	72400	360	8	61	7000	2	5	41	7	0.0
PHR5189	106350	0884772	1FED	71000	870	22	68	30300	24	141	31	31	2.0
PHR5190	105845	0884960	1FE0	81300	660	12	41	7800	2	7	6	8	0.0
PHR5191	102585	0885981	2600	51300	2500	89	126	40800	13	71	81	202	0.0
PHR5192	102590	0885885	4H50	39800	2850	108	140	89300	2	21	93	108	2.0
PHR5193	103555	0888830	2EE0	76300	5960	232	151	70700	35	47	51	88	0.0

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Rock Data

Sample Referenc	Eastings	Northings	Major rock type	Zr (ppm)	Mo (ppm)	Ag (ppm)	Sb (ppm)	Ba (ppm)	Pb (ppm)	Bi (ppm)	RH (ppb)	PD (ppb)	PT (ppb)	AU (ppb)
PHR5101	104058	0884768	2C00	110	1.0	3.0	0.0	553	8	0.0	1	3	4	1
PHR5102	104310	0885400	1EA0	9	2.0	5.0	0.0	96	0	0.0	1	6	1	18
PHR5103	104315	0885400	1EA0	10	5.0	4.0	0.0	152	1	1.0	2	9	7	4
PHR5104	103428	0885180	2K00	208	5.0	2.0	0.0	347	5	0.0	1	23	4	19
PHR5105	103430	0885180	2V00	74	21.0	2.0	2.0	46	6	0.0	2	3	2	2
PHR5106	103764	0884950	2GB4	119	31.0	4.0	0.0	259	16	0.0	4	12	7	4
PHR5107	103764	0884955	2GB4	172	2.0	2.0	0.0	517	8	0.0	2	14	7	8
PHR5108	103759	0884969	2GB4	237	9.0	1.0	2.0	706	26	0.0	1	9	5	12
PHR5109	103751	0884970	2GB4	143	10.0	4.0	0.0	277	14	1.0	2	14	11	14
PHR5110	103732	0884979	2GB4	60	33.0	3.0	0.0	378	6	0.0	1	11	7	14
PHR5111	103758	0884969	2GB4	66	32.0	12.0	1.0	155	2	1.0	2	2	2	14
PHR5112	105692	0883642	1EA0	46	3.0	5.0	0.0	30	6	0.0	1	28	20	5
PHR5113	105689	0883642	1FE0	48	0.0	1.0	3.0	97	0	0.0	1	9	3	1
PHR5114	105842	0883730	1FE0	10	4.0	0.0	0.0	40	6	1.0	1	1	1	1
PHR5115	105230	0883282	1EA0	102	4.0	2.0	0.0	248	2	0.0	2	4	4	3
PHR5116	105250	0883338	1EA0	39	10.0	4.0	1.0	155	0	0.0	1	24	5	3
PHR5117	105248	0883336	1EA0	36	21.0	4.0	0.0	185	0	0.0	2	29	7	14
PHR5118	104310	0887255	1EA0	38	2.0	5.0	3.0	65	2	0.0	1	1	1	1
PHR5119	104455	0886795	2VA0	14	8.0	6.0	0.0	33	0	0.0	1	19	21	7
PHR5120	104453	0886795	1AC0	95	1.0	0.0	1.0	91	9	1.0	2	12	8	4
PHR5121	104465	0886796	1EA0	18	0.0	4.0	2.0	33	0	0.0	1	2	3	9
PHR5122	106027	0887748	1FFA	1	0.0	3.0	0.0	11	3	1.0	2	7	20	2
PHR5123	106027	0887749	1FFA	1	0.0	0.0	0.0	15	0	2.0	1	4	3	1
PHR5124	106046	0887738	1FFA	1	0.0	2.0	0.0	14	0	0.0	2	3	8	1
PHR5125	106056	0887750	1FFA	0	4.0	7.0	0.0	27	7	0.0	1	1	8	1
PHR5126	106060	0887750	1FFA	0	1.0	2.0	0.0	22	0	0.0	3	3	7	1
PHR5127	105680	0888278	1FFA	0	0.0	0.0	0.0	12	7	1.0	1	1	1	1
PHR5128	105682	0888277	1FFA	0	0.0	1.0	0.0	12	0	0.0	1	3	7	1
PHR5129	105684	0888275	1FFA	3	3.0	1.0	0.0	14	0	0.0	1	65	52	12
PHR5130	105590	0888510	1FFA	5	4.0	1.0	0.0	13	0	0.0	1	22	17	4
PHR5131	105580	0888507	1FFA	0	0.0	2.0	0.0	12	0	0.0	1	4	8	5
PHR5132	105290	0883540	1EA0	31	5.0	4.0	0.0	171	1	0.0	1	5	10	4
PHR5133	105215	0883150	1EA0	166	12.0	5.0	0.0	187	7	0.0	1	11	7	10
PHR5134	105215	0883152	1EA0	98	13.0	6.0	0.0	141	4	0.0	1	6	9	8
PHR5135	105200	0883132	1EA0	139	7.0	4.0	0.0	228	8	0.0	1	6	10	7
PHR5136	105185	0883040	1EA0	37	7.0	5.0	0.0	290	2	0.0	1	8	14	11
PHR5137	105135	0882985	1EA0	217	11.0	4.0	0.0	1196	6	0.0	1	11	7	13
PHR5138	105096	0883010	2800	64	0.0	1.0	2.0	534	6	0.0	1	3	1	5
PHR5139	102650	0886825	2800	134	5.0	0.0	0.0	246	0	0.0	1	7	1	4
PHR5140	102673	0886822	1EC0	42	6.0	5.0	0.0	52	0	0.0	1	12	8	8
PHR5141	103148	0887380	2V00	6	0.0	2.0	0.0	42	0	0.0	1	13	4	7
PHR5142	102893	0887890	1EA0	43	6.0	4.0	0.0	88	0	0.0	1	3	2	5
PHR5143	106020	0885570	1AC0	5	1.0	0.0	0.0	114	50	0.0	1	5	2	1
PHR5144	105930	0885520	1AC0	43	3.0	0.0	1.0	66	43	0.0	1	4	1	1
PHR5145	105990	0885440	2V00	66	4.0	4.0	2.0	166	0	0.0	1	7	1	16
PHR5146	104230	0893280	2C00	97	2.0	2.0	0.0	252	9	2.0	1	8	5	2
PHR5147	103370	08933940	1FFA	4	1.0	0.0	1.0	19	0	0.0	1	5	2	2

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

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Sample Referenc	Eastings	Northing	Major rock type	Zr (ppm)	Mo (ppm)	Ag (ppm)	Sb (ppm)	Ba (ppm)	Pb (ppm)	Bi (ppm)	RH (ppb)	PD (ppb)	PT (ppb)	AU (ppb)
PHR5148	97822	0891705	1FB0	4	4.0	3.0	0.0	12	2	0.0	1	4	1	3
PHR5149	97850	0891665	1FB0	5	0.0	3.0	0.0	30	6	0.0	1	4	5	1
PHR5150	97840	0891630	1FB0	3	0.0	2.0	0.0	25	0	0.0	1	5	5	1
PHR5151	97610	0891160	1FB0	14	0.0	3.0	0.0	37	2	0.0	1	3	1	4
PHR5152	97510	0891240	2G00	81	8.0	4.0	0.0	316	13	0.0	1	9	1	20
PHR5153	96845	0891570	1EAO	23	0.0	0.0	0.0	1145	7	0.0	1	5	1	1
PHR5154	96870	0891500	1EAO	18	4.0	3.0	0.0	875	11	0.0	1	5	1	1
PHR5155	103400	0884730	1EAO	23	3.0	1.0	0.0	323	3	0.0	1	4	1	1
PHR5156	103410	0884730	1EAO	19	4.0	2.0	0.0	250	7	0.0	1	5	1	1
PHR5157	106585	0885690	1EAO	76	0.0	2.0	0.0	245	3	1.0	1	4	1	1
PHR5158	106595	0885670	1EAO	49	4.0	3.0	0.0	31	4	0.0	1	2	1	1
PHR5159	103492	0883150	1EAK	4	2.0	0.0	0.0	472	7	0.0	1	3	1	1
PHR5160	103499	0883190	1EAO	29	3.0	2.0	0.0	1130	9	2.0	1	3	1	1
PHR5161	103073	0883778	1FB0	56	6.0	3.0	0.0	99	2	0.0	1	4	6	8
PHR5162	102941	0883925	1FB0	11	3.0	3.0	0.0	1150	3	1.0	1	14	15	1
PHR5163	102953	0883930	1FB0	41	2.0	6.0	0.0	361	1	1.0	1	3	8	3
PHR5164	106810	0885420	1EAO	44	1.0	6.0	0.0	84	8	0.0	1	5	13	2
PHR5165	106810	0885410	1EAO	79	1.0	4.0	0.0	182	0	0.0	1	5	1	5
PHR5166	107960	0886320	2V00	110	0.0	1.0	0.0	406	1	0.0	1	4	4	2
PHR5167	107850	0886490	2V00	44	11.0	5.0	2.0	188	4	0.0	1	8	9	6
PHR5168	107842	0886500	2V00	85	22.0	5.0	0.0	272	18	0.0	1	6	6	7
PHR5169	107840	0886505	2V00	106	14.0	6.0	0.0	335	25	0.0	1	4	9	3
PHR5170	102420	0891720	1EAO	276	11.0	4.0	0.0	80	0	0.0	1	10	19	2
PHR5171	103105	0891430	2V00	140	4.0	2.0	0.0	572	10	0.0	1	9	4	1
PHR5172	103170	0891410	1EAO	38	1.0	3.0	0.0	144	0	0.0	1	17	10	2
PHR5173	103833	0891870	1ADO	160	6.0	1.0	0.0	802	5	0.0	1	1	2	5
PHR5174	104476	0892010	1FFA	0	0.0	0.0	0.0	24	5	0.0	1	2	1	3
PHR5175	104382	0892200	1FFA	1	0.0	2.0	0.0	12	0	1.0	3	4	7	1
PHR5176	104378	0892208	1FFA	5	2.0	2.0	1.0	12	0	0.0	3	8	9	2
PHR5177	102568	0894654	1FFA	0	0.0	1.0	0.0	18	0	3.0	1	1	1	3
PHR5178	102569	0894666	1FFA	1	0.0	1.0	0.0	13	0	1.0	1	1	1	5
PHR5179	102572	0894653	1FFA	13	0.0	0.0	1.0	14	0	0.0	1	210	15	2
PHR5180	102570	0894656	1FFA	16	2.0	5.0	0.0	17	0	1.0	1	128	36	3
PHR5181	102572	0894655	1FFA	10	0.0	0.0	1.0	9	0	0.0	1	208	18	2
PHR5182	102500	0894850	1FAA	0	0.0	2.0	0.0	16	0	1.0	1	1	1	1
PHR5183	98370	0892420	1ACO	0	2.0	1.0	2.0	58	50	0.0	1	1	1	1
PHR5184	98340	0892430	1ACO	4	1.0	0.0	1.0	5	23	0.0	1	1	1	1
PHR5185	98580	0892780	1ADO	62	3.0	1.0	0.0	554	11	0.0	2	1	1	3
PHR5186	98579	0892620	1EAO	43	3.0	5.0	0.0	185	0	1.0	1	1	1	1
PHR5187	106242	0884703	1EAO	322	2.0	4.0	0.0	46	2	0.0	1	1	1	2
PHR5188	106078	0884698	1FE0	1	0.0	1.0	2.0	51	0	0.0	2	4	1	1
PHR5189	106350	0884772	1FE0	6	3.0	2.0	0.0	53	0	1.0	1	1	1	1
PHR5190	105845	0884960	1FE0	4	4.0	3.0	1.0	69	0	0.0	1	1	1	1
PHR5191	102585	0885981	2600	92	0.0	6.0	0.0	648	9	0.0	1	4	1	4
PHR5192	102590	0885885	4H50	82	15.0	3.0	0.0	641	11	0.0	2	10	1	11
PHR5193	103555	0888830	2EE0	120	6.0	6.0	0.0	77	1	0.0	2	1	1	4

Key to Rock Codes

1AC0	Granitic pegmatite
1AD0	Diorite
1EA0	Gabbro, undifferentiated
1EAK	Gabbro pegmatite
1FAA	Dunite
1FB0	Pyroxenite, undifferentiated
1FE0	Anorthosite
1FED	Gabbroic anorthosite
1FFA	Peridotite serpentinite
2600	Paragneiss
2800	Mylonite
2C00	Psammitic gneiss
2EE0	Semi-pelite
2K00	Pelitic gneiss
2V00	Amphibolite
2GB4	Garnet-biotite gneiss
2G00	Semi-pelitic gneiss
4H50	Gossan

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Stream Sediment Data

Sample Reference	Eastings	Northing	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
PHC5001	104120	0884478	23800	4910	178	253	2680	98300	48	104	49	159	7
PHC5002	104259	0885339	31700	3510	116	111	1420	78800	27	45	51	127	23
PHC5003	105338	0884018	35400	5450	177	224	3620	86800	52	87	64	165	1
PHC5004	105836	0885038	40800	2170	52	41	1130	34200	29	40	84	106	29
PHC5005	103662	0885060	32600	5310	197	300	2970	101000	58	181	158	151	7
PHC5006	104980	0887783	41900	5870	150	32	3960	69600	32	12	16	334	6
PHC5007	104521	0886823	49900	8070	240	165	3500	99800	84	63	48	161	4
PHC5008	104980	0886500	38500	2140	62	42	930	39000	29	54	78	120	30
PHC5009	105039	0886551	45800	6280	227	135	6130	95100	110	59	65	277	12
PHC5010	104038	0888526	32600	5460	170	83	15370	114900	49	23	14	266	8
PHC5011	103569	0888407	38500	7040	202	40	3240	99900	44	16	20	130	7
PHC5012	103271	0889461	33800	11150	241	73	6210	139100	48	33	41	230	1
PHC5013	101561	0889609	47000	6890	196	88	7650	99000	51	33	48	204	0
PHC5014	101219	0889057	34700	6460	166	51	1050	68600	40	21	60	85	0
PHC5015	101019	0887744	31700	5450	121	46	11040	155400	35	27	15	107	0
PHC5016	102542	0887838	34500	5260	189	136	3020	101200	37	48	70	171	0
PHC5017	102459	0887600	39600	6910	166	117	1880	80100	31	34	29	146	3
PHC5018	102747	0886852	41000	5530	168	107	6770	92300	46	45	47	214	6
PHC5019	102829	0886560	36400	5610	173	219	3120	82900	62	67	47	228	10
PHC5020	103042	0886419	36200	5710	175	156	3270	82900	57	57	82	160	7
PHC5021	103341	0886724	35300	2860	69	58	890	39000	26	43	56	75	17
PHC5022	105142	0883052	34800	6260	253	290	2790	142400	48	72	65	155	13
PHC5023	105614	0883818	36100	4850	197	229	2290	106100	51	119	127	168	7
PHC5024	104532	0883739	28100	8050	266	300	1940	111100	43	96	72	203	8
PHC5025	104400	0883772	33800	6890	173	401	1720	65200	33	74	30	132	4
PHC5026	103202	0885362	16800	6040	197	236	4630	97400	69	125	41	192	8
PHC5027	103289	089120	24300	3980	111	166	2260	52400	28	46	50	88	1
PHC5028	103992	0892056	26700	4130	143	234	5240	83400	61	70	46	85	13
PHC5029	104252	0891892	34900	5530	152	591	9390	97000	54	162	39	204	6
PHC5030	104441	0891752	35300	5960	131	215	5050	59800	31	82	43	174	4
PHC5031	104002	0892473	34700	7020	153	172	8000	90900	45	63	33	179	8
PHC5032	107105	0886881	49600	5800	248	164	2000	92900	65	136	160	131	4
PHC5033	105419	0883061	38600	6040	175	288	1470	70000	35	82	65	96	2
PHC5034	105420	0883059	35200	5240	155	225	1160	62400	34	105	117	94	2
PHC5035	103709	0883741	34300	5840	161	241	1410	79700	33	78	30	146	4
PHC5036	102567	0884749	36700	7250	188	199	4400	108300	76	69	41	181	13
PHC5037	103603	0893819	29000	7600	192	336	1240	108300	30	79	76	94	0
PHC5038	104299	0893579	38400	6300	240	88	3970	130000	37	41	62	162	7
PHC5039	104360	0893652	31200	3660	151	160	9010	73300	52	72	71	282	15
PHC5040	104378	0894112	19900	3360	76	181	2040	34000	19	55	25	65	2
PHC5041	98161	0891824	31700	6130	195	230	1770	96300	36	122	73	149	5
PHC5042	98301	0892575	34300	5470	148	264	3000	79100	40	110	114	104	3
PHC5043	98300	0893439	38900	5670	145	101	3270	75100	40	39	28	165	1
PHC5044	103719	0894061	31700	5610	149	66	25240	161300	106	34	16	324	2
PHC5045	100860	0887920	37100	5890	138	217	1920	64500	36	84	29	106	3
PHC5046	101460	0888180	36300	6660	172	84	5050	85000	40	28	21	216	5
PHC5047	102870	0894133	31100	6050	144	212	3270	74100	55	68	42	263	12
PHC5048	102801	0893980	33300	5020	139	222	1080	57100	26	62	50	82	3

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Stream Sediment Data

Sample Reference	Easting	Northing	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)
PHC5049	102719	0893862	31200	5790	150	191	1830	77700	23	60	32	107	3
PHC5050	102488	0893674	25800	5380	123	171	1100	49100	24	48	43	81	1
PHC5051	102255	0893599	34500	5770	137	205	4960	94800	44	59	30	158	4
PHC5052	101843	0893413	31200	8040	158	74	1330	63200	25	27	13	120	0
PHC5053	101473	0893141	33400	7820	187	114	4150	106300	42	39	26	316	6
PHC5054	103507	0890486	36100	13050	263	132	2790	99600	44	48	76	177	0
PHC5055	101853	0890701	32600	8690	212	74	11150	132600	83	43	44	245	7
PHC5056	101409	0890481	35100	7150	199	70	12870	133600	50	32	24	349	3
PHC5057	100872	0890052	33800	6370	187	60	9190	173100	40	18	23	230	9
PHC5058	96706	0891772	38800	4850	134	336	1670	64000	32	59	26	97	5
PHC5059	97900	0891519	35800	4760	193	610	1230	89900	43	58	67	131	10
PHC5060	100838	0887509	33700	7850	154	197	1350	61300	26	51	28	155	5
PHC5061	99798	0891360	36300	7260	178	100	1370	91400	24	23	15	163	5
PHC5062	101129	0892968	34900	7550	196	123	4740	88500	30	31	26	290	5
PHC5063	100747	0892469	36900	6630	180	163	3570	101600	36	52	280	967	22
PHC5064	99561	0889671	36200	6050	158	205	1450	70200	27	59	92	390	4
PHC5065	103280	0886830	38900	5820	216	146	9340	116300	64	56	61	213	3

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Stream Sediment Data

Sample Reference	Eastings	Northing	Rb (ppm)	Sr (ppm)	Zr (ppm)	Ag (ppm)	Sb (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pb (ppm)	Bi (ppm)
PHC5001	104120	0884478	20	164	218	3.0	6.0	403	42	65	100	0.0
PHC5002	104259	0885339	17	194	115	0.0	4.0	291	20	34	38	0.0
PHC5003	105338	0884018	21	212	316	4.0	2.0	471	27	46	15	0.0
PHC5004	105836	0885038	16	190	66	0.0	1.0	105	14	23	26	1.0
PHC5005	103662	0885060	23	185	248	2.0	0.0	365	36	65	22	1.0
PHC5006	104980	0887783	22	395	185	1.0	1.0	519	38	95	30	0.0
PHC5007	104521	0886823	13	172	304	2.0	0.0	184	17	24	19	0.0
PHC5008	104980	0886500	16	151	50	2.0	3.0	106	9	22	29	0.0
PHC5009	105039	0886551	27	160	113	1.0	0.0	192	4	16	41	1.0
PHC5010	104038	0888526	17	276	207	3.0	0.0	484	30	62	10	0.0
PHC5011	103569	0888407	17	297	306	2.0	3.0	378	24	43	17	1.0
PHC5012	103271	0889461	18	253	204	3.0	0.0	542	33	50	22	0.0
PHC5013	101561	0889609	10	313	131	5.0	1.0	462	26	45	20	0.0
PHC5014	101219	0889057	15	351	355	2.0	0.0	370	35	68	5	0.0
PHC5015	101019	0888744	17	325	222	5.0	0.0	641	12	27	10	0.0
PHC5016	102542	0887838	29	229	392	3.0	2.0	532	32	59	5	0.0
PHC5017	102459	0887600	27	333	218	5.0	0.0	471	22	43	17	0.0
PHC5018	102747	0886852	13	204	316	1.0	0.0	278	18	31	25	0.0
PHC5019	102829	0886560	22	302	293	1.0	0.0	546	28	59	40	0.0
PHC5020	103042	0886419	19	266	257	3.0	0.0	424	16	39	19	0.0
PHC5021	103341	0886724	11	133	101	0.0	2.0	116	7	19	27	0.0
PHC5022	105142	0883052	10	203	291	2.0	1.0	302	28	44	29	0.0
PHC5023	105614	0883818	17	202	231	6.0	1.0	340	29	44	17	0.0
PHC5024	104532	0883739	17	150	367	1.0	0.0	380	31	70	46	0.0
PHC5025	104400	0883772	18	268	412	1.0	0.0	533	26	51	12	0.0
PHC5026	103202	0885362	38	134	238	2.0	3.0	614	69	121	95	0.0
PHC5027	103289	0893120	61	273	249	1.0	0.0	490	36	61	15	0.0
PHC5028	103992	0892056	36	218	306	4.0	1.0	323	34	58	31	1.0
PHC5029	104252	0891892	41	238	306	3.0	0.0	443	30	68	16	0.0
PHC5030	104441	0891752	34	426	575	0.0	0.0	490	51	111	9	1.0
PHC5031	104002	0892473	24	337	485	2.0	0.0	477	35	75	16	0.0
PHC5032	107105	0886881	6	113	59	1.0	0.0	130	11	28	15	0.0
PHC5033	105419	0883061	20	278	246	0.0	0.0	434	25	52	12	0.0
PHC5034	105420	0883059	25	310	192	1.0	0.0	492	35	55	6	0.0
PHC5035	103709	0883741	17	298	364	2.0	0.0	458	23	45	10	0.0
PHC5036	102567	0884749	19	264	407	3.0	0.0	569	31	52	16	0.0
PHC5037	103603	0893819	47	275	337	3.0	0.0	475	50	88	10	0.0
PHC5038	104299	0893579	53	169	194	4.0	0.0	323	34	56	22	1.0
PHC5039	104360	0893652	38	130	90	2.0	0.0	228	30	69	48	0.0
PHC5040	104378	0894112	126	219	417	2.0	1.0	413	89	86	35	0.0
PHC5041	98161	0891824	44	295	447	3.0	0.0	588	47	88	22	0.0
PHC5042	98301	0892575	47	328	365	5.0	1.0	694	49	75	6	0.0
PHC5043	98300	0893439	20	453	462	3.0	0.0	525	24	50	17	0.0
PHC5044	97319	0894061	15	280	358	3.0	1.0	1321	24	50	19	0.0
PHC5045	100860	0887920	20	294	481	1.0	0.0	491	26	42	11	0.0
PHC5046	101460	0888180	23	377	208	5.0	2.0	526	31	44	23	0.0
PHC5047	102870	0894133	34	306	588	2.0	0.0	511	55	94	23	2.0
PHC5048	102801	0893980	46	288	297	1.0	0.0	396	48	75	13	0.0

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Stream Sediment Data

Sample Reference	Easting	Northing	Rb (ppm)	Sr (ppm)	Zr (ppm)	Ag (ppm)	Sb (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pb (ppm)	Bi (ppm)
PHC5049	102719	0893862	69	240	472	3.0	0.0	390	120	182	17	0.0
PHC5050	102488	0893674	70	259	437	2.0	1.0	461	39	66	17	0.0
PHC5051	102255	0893599	33	330	360	3.0	0.0	474	29	60	11	0.0
PHC5052	101843	0893413	36	323	270	1.0	0.0	635	31	63	10	0.0
PHC5053	101473	0893141	32	275	310	1.0	0.0	518	32	73	15	0.0
PHC5054	103507	0890486	18	256	283	3.0	0.0	494	31	57	21	0.0
PHC5055	101853	0890701	21	284	174	4.0	0.0	566	32	60	18	0.0
PHC5056	101409	0890481	14	328	125	5.0	0.0	607	45	72	22	0.0
PHC5057	100872	0890052	19	236	114	6.0	2.0	521	31	65	14	0.0
PHC5058	96706	0891772	23	486	272	0.0	0.0	584	29	59	15	0.0
PHC5059	97900	0891519	16	263	317	1.0	2.0	323	33	59	14	1.0
PHC5060	100838	0887509	16	325	675	1.0	0.0	361	29	49	155	0.0
PHC5061	99798	0891360	13	346	217	2.0	0.0	454	23	46	13	0.0
PHC5062	101129	0892968	20	319	274	4.0	2.0	559	31	62	21	0.0
PHC5063	100747	0892469	18	285	219	5.0	0.0	439	27	52	336	0.0
PHC5064	99561	0889671	35	323	371	2.0	0.0	680	25	55	33	0.0
PHC5065	103280	0886830	17	182	300	3.0	0.0	383	21	31	22	0.0

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Stream Sediment Data

Sample Reference	Eastings	Northings	Rh (ppb)	Pd (ppb)	Pt (ppb)	Au (ppb)
PHC5001	104120	0884478	2	8	5	12
PHC5002	104259	0885339	2	4	1	2
PHC5003	105338	0884018	2	7	4	3
PHC5004	105836	0885038	2	13	7	3
PHC5005	103662	0885060	2	10	3	5
PHC5006	104980	0887783	2	2	1	1
PHC5007	104521	0886823	2	2	1	3
PHC5008	104980	0886500	2	9	4	2
PHC5009	105039	0886551	2	3	2	2
PHC5010	104038	0888526	2	2	1	2
PHC5011	103569	0888407	2	2	1	1
PHC5012	103271	0889461	2	4	3	3
PHC5013	101561	0889609	2	4	2	2
PHC5014	101219	0889057	2	2	1	2
PHC5015	101019	0888744	2	2	2	1
PHC5016	102542	0887838	2	4	2	2
PHC5017	102459	0887600	2	4	2	1
PHC5018	102747	0886852	2	3	2	2
PHC5019	102829	0886560	2	3	2	3
PHC5020	103042	0886419	2	5	4	4
PHC5021	103341	0886724	2	5	4	3
PHC5022	105142	0883052	2	4	2	4
PHC5023	105614	0883818	2	10	6	7
PHC5024	104532	0883739	2	10	6	8
PHC5025	104400	0883772	2	4	3	6
PHC5026	103202	0885362	2	6	3	3
PHC5027	103289	0893120	2	3	2	2
PHC5028	103992	0892056	2	5	3	2
PHC5029	104252	0891892	2	4	3	1
PHC5030	104441	0891752	2	2	1	1
PHC5031	104002	0892473	2	2	2	1
PHC5032	107105	0886881	2	14	1	5
PHC5033	105419	0883061	2	6	1	8
PHC5034	105420	0883059	2	7	3	9
PHC5035	103709	0883741	2	3	3	1
PHC5036	102567	0884749	2	5	3	5
PHC5037	103603	0893819	2	3	4	1
PHC5038	104299	0893579	2	3	4	2
PHC5039	104360	0893652	2	6	4	2
PHC5040	104378	0894112	2	2	1	1
PHC5041	98161	0891824	2	5	2	3
PHC5042	98301	0892575	2	13	4	3
PHC5043	98300	0893439	2	4	1	1
PHC5044	97319	0894061	2	2	1	1
PHC5045	100860	0887920	2	3	1	2
PHC5046	101460	0888180	2	2	1	1
PHC5047	102870	0894133	2	2	1	1
PHC5048	102801	0893980	2	2	1	11

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Stream Sediment Data

Sample Reference	Easting	Northing	Rh (ppb)	Pd (ppb)	Pt (ppb)	Au (ppb)
PHC5049	102719	0893862	2	4	3	2
PHC5050	102488	0893674	2	3	3	1
PHC5051	102255	0893599	2	3	2	1
PHC5052	101843	0893413	2	2	1	2
PHC5053	101473	0893141	2	3	2	3
PHC5054	103507	0890486	2	3	3	3
PHC5055	101853	0890701	2	2	1	1
PHC5056	101409	0890481	2	2	1	1
PHC5057	100872	0890052	2	2	1	1
PHC5058	96706	0891772	2	2	1	2
PHC5059	97900	0891519	2	3	2	7
PHC5060	100838	0887509	2	2	1	8
PHC5061	99798	0891360	2	2	1	1
PHC5062	101129	0892968	2	2	1	2
PHC5063	100747	0892469	2	2	1	19
PHC5064	99561	0889671	2	3	4	3
PHC5065	103280	0886830	2	5	4	28

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Panned Concentrate Data

Sample Reference	N	Easting	Northing	La (ppm)	Ce (ppm)	Pb (ppm)	Bi (ppm)	Rh (ppb)	Pd (ppb)	Pt (ppb)	Au (ppb)
PHP5001	104120	0884478	14	16	22	0.0	2	8	4	5	
PHP5002	104259	0885339	15	34	0	0.0	2	3	3	2	
PHP5003	105338	0884018	22	25	4	0.0	2	3	3	2	
PHP5004	105836	0885038	8	15	3	1.0	2	14	9	2	
PHP5005	103662	0885060	18	34	6	0.0	2	3	2	2	
PHP5006	104980	0887783	31	68	6	0.0	2	2	2	1	
PHP5007	104521	0886823	8	6	2	0.0	2	2	2	1	
PHP5008	104980	0885500	5	7	4	0.0	2	7	4	1	
PHP5009	105039	0886551	10	0	3	0.0	2	2	2	1	
PHP5010	104038	0888526	13	21	0	0.0	2	2	1	1	
PHP5011	103569	0888407	17	23	9	0.0	2	2	2	3	
PHP5012	103271	0889461	15	0	0	0.0	2	3	6	5	
PHP5013	101561	0889609	19	37	3	0.0	2	2	2	1	
PHP5015	101019	0888744	19	39	13	0.0	2	2	1	1	
PHP5016	102542	0887838	19	30	4	0.0	2	3	3	1	
PHP5017	102459	0887600	13	34	2	0.0	2	2	1	2	
PHP5018	102747	0886852	10	10	5	0.0	2	3	4	1	
PHP5019	102829	0886560	14	25	1	0.0	2	3	4	1	
PHP5020	103042	0886419	14	33	4	0.0	2	3	3	1	
PHP5021	103341	0886724	11	16	1	0.0	2	3	3	1	
PHP5022	105142	0883052	10	9	16	0.0	2	3	3	1	
PHP5023	105614	0883818	17	28	2	0.0	2	3	4	1	
PHP5024	104532	0883739	19	0	14	0.0	2	2	3	1	
PHP5025	104400	0883772	21	39	12	0.0	2	2	3	1	
PHP5026	103202	0885362	21	20	141	0.0	2	2	3	1	
PHP5027	103289	0893120	16	31	7	0.0	2	2	1	1	
PHP5028	103992	0892056	13	29	7	0.0	2	3	4	1	
PHP5029	104252	0891892	22	33	10	0.0	2	2	4	1	
PHP5030	104441	0891752	17	52	9	0.0	2	2	2	1	
PHP5031	104002	0892473	32	61	11	0.0	2	2	2	1	
PHP5032	107105	0886681	1	6	4	0.0	2	5	5	1	
PHP5033	105419	0883061	14	20	174	0.0	2	5	8	3	
PHP5034	105420	0883059	14	37	1	0.0	2	4	4	12	
PHP5035	103709	0883741	17	35	8	0.0	2	2	2	1	
PHP5036	102567	0884749	15	47	0	0.0	2	3	3	2	
PHP5037	103603	0893819	25	64	8	0.0	2	2	2	1	
PHP5038	104299	0893579	14	26	21	0.0	2	3	4	1	
PHP5039	104360	0893652	14	32	11	1.0	2	4	4	1	
PHP5040	104378	0894112	10	24	16	0.0	2	2	2	1	
PHP5041	981161	0891824	41	114	8	0.0	2	2	2	2	
PHP5042	98301	0892575	17	37	5	0.0	2	2	2	1	
PHP5043	98300	0893439	22	50	0	0.0	2	2	3	3	
PHP5044	97319	0894061	33	70	43	0.0	2	2	2	1	
PHP5045	100860	0887920	25	49	8	0.0	2	5	5	1	
PHP5046	101460	0888180	22	49	8	0.0	2	2	2	1	
PHP5047	102870	0894133	78	160	9	0.0	2	3	3	1	
PHP5048	102801	0893980	13	34	10	0.0	2	2	2	1	
PHP5049	102719	0893862	12	23	14	0.0	2	3	3	1	

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

Table 3 Trace element and precious metal determinations on 65 panned concentrates

South Harris Panned Concentrate Data

Sample Reference	N	Eastings	Northings	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
PHP5001	104120	0884478	35600	22230	598	509	1630	168900	28	91	
PHP5002	104259	0885339	57600	6520	185	179	2320	101500	34	64	
PHP5003	105338	0884018	38000	7260	210	340	2850	135300	38	41	
PHP5004	105836	0885038	74100	3240	70	63	790	44200	21	54	
PHP5005	103662	0885060	55900	5860	167	258	1960	78500	24	69	
PHP5006	104980	0887783	47600	4610	140	47	1270	59300	19	12	
PHP5007	104521	0886823	58000	10260	240	190	2950	119300	37	52	
PHP5008	104980	0886500	66800	3630	85	70	1490	80400	40	87	
PHP5009	105039	0886551	61000	7070	237	184	2350	100200	38	53	
PHP5010	104038	0888526	49300	5190	153	125	1920	71000	22	25	
PHP5011	103569	0888407	48900	8310	176	65	2780	107300	29	15	
PHP5012	103271	0889461	31200	29110	413	226	2680	184800	17	7	
PHP5013	101561	0889609	54600	5260	178	122	2200	74300	25	24	
PHP5015	101019	0888744	32400	2830	58	31	1510	33000	11	9	
PHP5016	102542	0887838	45500	5150	237	179	2530	115800	31	37	
PHP5017	102459	0887600	48100	5120	159	168	1950	83800	25	29	
PHP5018	102747	0886852	52900	6380	194	136	2690	99200	32	40	
PHP5019	102829	0886560	46600	7900	260	347	1790	101400	34	52	
PHP5020	103042	0886419	49200	6710	237	205	1650	78400	30	50	
PHP5021	103341	0886724	65400	5510	115	109	1990	99600	41	73	
PHP5022	105142	0883052	53000	14160	282	426	2730	119600	21	49	
PHP5023	105614	0883818	45300	5830	169	263	2360	97200	31	58	
PHP5024	104532	0883739	6500	62400	1863	1221	640	434800	0	40	
PHP5025	104400	0883772	40000	11340	214	413	3480	136300	23	50	
PHP5026	103202	0885362	14800	27510	823	792	1520	266400	20	69	
PHP5027	103289	0893120	39700	5330	151	187	1580	71800	19	34	
PHP5028	103992	0892056	46400	2770	117	248	1200	51300	26	68	
PHP5029	104252	0891892	42000	4060	138	1216	1310	58700	31	137	
PHP5030	104441	0891752	38000	3270	100	390	1050	42400	19	68	
PHP5031	104002	0892473	40800	7750	178	424	1820	77100	21	71	
PHP5032	107105	0886881	95400	6420	354	486	1600	70200	41	80	
PHP5033	105419	0883061	46200	5010	148	375	1920	85300	46	98	
PHP5034	105420	0883059	45600	7310	175	373	2290	99600	49	94	
PHP5035	103709	0883741	50200	5390	192	345	2060	89200	25	67	
PHP5036	102567	0884749	42300	7690	213	267	3120	125000	24	38	
PHP5037	103603	0893819	43200	9000	165	173	1340	65400	21	46	
PHP5038	104299	0893579	41900	4340	208	76	2300	77100	19	26	
PHP5039	104360	0893652	41800	3320	154	236	1190	50500	27	68	
PHP5040	104378	0894112	26200	2190	61	257	760	29400	15	66	
PHP5041	98161	0891824	35300	6280	159	255	1580	77600	16	43	
PHP5042	98301	0892575	33800	3290	132	392	3180	119100	47	128	
PHP5043	98300	0893439	39500	6510	145	159	2640	80000	20	20	
PHP5044	97319	0894061	45000	7800	159	147	2110	74300	22	32	
PHP5045	100860	0887920	41300	4980	122	285	1450	55500	20	70	
PHP5046	101460	0888180	41700	6290	155	97	1980	72800	22	20	
PHP5047	102870	0894133	48700	6560	160	389	1720	71900	24	69	
PHP5048	102801	0893980	45500	5520	143	370	1470	62200	23	71	
PHP5049	102719	0893862	37900	4420	119	208	1130	49900	22	47	

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Panned Concentrate Data

Sample Reference	N	Eastings	Northings	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
PHP5050		102488	0893674	30800	4240	91	135	900	39900	14	33
PHP5051		102255	0893599	44000	5710	139	302	1480	66100	23	57
PHP5052		101843	0893413	38600	4870	96	112	1050	40400	14	23
PHP5053		101473	0893141	40700	5130	129	233	1490	54700	19	40
PHP5054		103507	0890486	37600	24810	311	191	2370	134600	18	21
PHP5055		101853	0890701	41400	9810	197	132	2150	93400	23	22
PHP5056		101409	0890481	46200	6400	144	76	1870	68300	20	18
PHP5057		100872	0890052	45100	5000	131	77	1600	61400	19	17
PHP5058		96706	0891772	50200	5050	169	480	1640	80300	27	62
PHP5059		97900	0891519	33400	2980	173	494	2630	114800	22	28
PHP5060		100838	0887509	39900	11430	236	288	2310	100900	20	42
PHP5061		99798	0891360	44400	5610	134	100	1330	56600	19	20
PHP5062		101129	0892968	37300	4440	125	136	1360	56200	17	27
PHP5063		100747	0892469	45300	6230	173	199	2580	95100	22	33
PHP5064		99561	0889671	49400	7310	172	280	2010	78400	27	53
PHP5065		103280	0886830	51600	9230	237	174	3640	122700	33	35

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Panned Concentrate Data

Sample Reference	N	Eastings	Northing	Zn (ppm)	As (ppm)	Rb (ppm)	Sr (ppm)	Zr (ppm)	Ag (ppm)	Sb (ppm)	Ba (ppm)
PHP5001	104120	0884478	94	0.0	7	95	308	8.0	1.0	182	
PHP5002	104259	0885339	112	0.0	5	143	212	6.0	0.0	151	
PHP5003	105338	0884018	83	1.0	7	81	354	3.0	0.0	167	
PHP5004	105836	0885038	54	0.0	4	271	146	3.0	0.0	102	
PHP5005	103662	0885060	101	0.0	8	210	487	3.0	0.0	197	
PHP5006	104980	0887783	141	0.0	10	464	1426	2.0	0.0	449	
PHP5007	104521	0886823	99	0.0	5	88	266	5.0	1.0	84	
PHP5008	104980	0886500	63	0.0	4	140	121	4.0	0.0	60	
PHP5009	105039	0886551	111	0.0	16	118	119	4.0	0.0	91	
PHP5010	104038	0885226	102	0.0	8	326	954	4.0	1.0	239	
PHP5011	103569	0888407	91	2.0	6	226	1006	4.0	2.0	168	
PHP5012	103271	0889461	128	0.0	2	67	572	7.0	0.0	95	
PHP5013	101561	0889609	102	0.0	7	395	542	4.0	0.0	250	
PHP5015	101019	0888744	37	0.0	19	631	213	2.0	0.0	252	
PHP5016	102542	0887838	121	0.0	10	151	560	5.0	1.0	253	
PHP5017	102459	0887600	104	0.0	11	317	422	3.0	2.0	247	
PHP5018	102747	0886852	104	0.0	8	244	249	3.0	0.0	185	
PHP5019	102829	0886560	108	0.0	12	244	240	4.0	0.0	233	
PHP5020	103042	0886419	103	0.0	14	259	227	2.0	0.0	240	
PHP5021	103341	0886724	78	0.0	1	105	140	4.0	0.0	70	
PHP5022	105142	0883052	118	0.0	5	133	569	4.0	0.0	156	
PHP5023	105614	0883818	85	0.0	5	150	208	1.0	0.0	201	
PHP5024	104532	0883739	27	0.0	4	9	396	15.0	2.0	48	
PHP5025	104400	0883772	109	0.0	5	100	532	4.0	0.0	153	
PHP5026	103202	0885362	54	0.0	6	58	270	9.0	0.0	143	
PHP5027	103289	0893120	80	0.0	23	388	522	3.0	0.0	331	
PHP5028	103992	0892056	56	0.0	15	254	248	0.0	0.0	283	
PHP5029	104252	0891892	78	1.0	32	277	331	4.0	1.0	285	
PHP5030	104441	0891752	68	0.0	22	443	642	3.0	0.0	409	
PHP5031	104002	0892473	83	0.0	16	317	682	3.0	0.0	399	
PHP5032	107105	0886881	72	0.0	4	65	53	6.0	0.0	72	
PHP5033	105419	0883061	91	0.0	8	214	231	4.0	1.0	229	
PHP5034	105420	0883059	98	0.0	8	187	390	4.0	2.0	217	
PHP5035	103709	0883741	94	0.0	9	193	267	3.0	0.0	199	
PHP5036	102567	0884749	98	0.0	7	158	446	4.0	0.0	181	
PHP5037	103603	0893819	81	0.0	24	349	315	2.0	0.0	347	
PHP5038	104299	0893579	105	0.0	42	233	197	0.0	0.0	394	
PHP5039	104360	0893652	90	1.0	38	147	91	3.0	0.0	177	
PHP5040	104378	0894112	42	0.0	90	208	390	2.0	1.0	369	
PHP5041	98161	0891824	80	0.0	18	238	515	2.0	0.0	444	
PHP5042	98301	0892575	101	0.0	3	89	616	5.0	0.0	110	
PHP5043	98300	0893439	89	5.0	19	343	873	6.0	0.0	316	
PHP5044	97319	0894061	90	0.0	13	404	682	4.0	0.0	282	
PHP5045	100860	0887920	66	0.0	20	376	452	3.0	1.0	363	
PHP5046	101460	0888180	102	2.0	16	412	532	3.0	0.0	317	
PHP5047	102870	0894133	87	0.0	15	260	1750	2.0	0.0	187	
PHP5048	102801	0893980	75	0.0	20	299	428	0.0	0.0	213	
PHP5049	102719	0893862	61	1.0	34	269	320	2.0	0.0	281	

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Panned Concentrate Data

Sample Reference	N	East	North	La (ppm)	Ce (ppm)	Pb (ppm)	Bi (ppm)	Rh (ppb)	Pd (ppb)	Pt (ppb)	Au (ppb)
PHP5050	102488	0893674	18	25	6	0.0	2	2	2	2	1
PHP5051	102255	0893599	19	44	9	0.0	2	2	2	3	1
PHP5052	101843	0893413	16	32	10	0.0	2	2	2	1	1
PHP5053	101473	0893141	17	35	12	0.0	2	2	2	1	1
PHP5054	103507	0890486	19	11	1	1.0	2	3	3	3	1
PHP5055	101853	0890701	20	44	7	1.0	2	2	3	2	1
PHP5056	101409	0890481	22	46	1	0.0	3	6	2	2	1
PHP5057	100872	0890052	21	46	9	0.0	2	2	2	1	1
PHP5058	96706	0891772	37	63	5	0.0	2	3	2	2	1
PHP5059	97900	0891519	22	42	2	0.0	2	2	6	5	6
PHP5060	100838	0887509	29	49	83	1.0	2	2	2	1	1
PHP5061	99798	0891360	20	40	5	0.0	2	2	2	1	1
PHP5062	101129	0892968	14	28	8	0.0	2	2	2	2	2
PHP5063	100747	0892469	21	40	420	0.0	2	2	2	1	3
PHP5064	99561	0899671	22	40	5	0.0	2	2	4	2	2
PHP5065	103280	0896830	29	68	3	1.0	2	2	2	2	1

BRITISH GEOLOGICAL SURVEY
Mineral Reconnaissance Programme

South Harris Panned Concentrate Data

Sample Reference	N	Easting	Northing	Zn (ppm)	As (ppm)	Rb (ppm)	Sr (ppm)	Zr (ppm)	Ag (ppm)	Sb (ppm)	Ba (ppm)
PHP5050	102488	0893674	57	0.0	48	368	777	0.0	0.0	0.0	450
PHP5051	102255	0893599	80	0.0	20	414	647	2.0	1.0	1.0	298
PHP5052	101843	0893413	59	0.0	23	445	1127	3.0	1.0	1.0	378
PHP5053	101473	0893141	87	1.0	22	379	591	2.0	1.0	1.0	329
PHP5054	103507	0890486	115	0.0	7	200	618	4.0	0.0	0.0	301
PHP5055	101853	0890701	111	0.0	11	351	639	4.0	0.0	0.0	259
PHP5056	101409	0890481	115	0.0	10	571	571	1.0	0.0	0.0	450
PHP5057	100872	0890052	93	2.0	11	512	528	3.0	0.0	0.0	327
PHP5058	96706	0891772	98	1.0	14	345	209	3.0	0.0	0.0	321
PHP5059	97900	0891519	108	0.0	6	116	324	4.0	0.0	0.0	128
PHP5060	100838	0887509	90	1.0	9	264	952	3.0	0.0	0.0	243
PHP5061	99798	0891360	86	0.0	11	493	509	2.0	0.0	0.0	381
PHP5062	101129	0892968	97	3.0	13	397	605	0.0	0.0	0.0	384
PHP5063	100747	0892469	473	2.0	9	239	517	3.0	4.0	4.0	216
PHP5064	99561	0889671	114	3.0	13	297	1056	4.0	0.0	0.0	357
PHP5065	103280	0886830	96	0.0	8	106	770	5.0	0.0	0.0	157

TABLE 4. SOUTH HARRIS ROCK SAMPLE DESCRIPTIONS

S.No	Easting	Northing	Comments
5101	104058	884768	BIOTITE-GNEISS/ AMPHIB-GNEISS. SAMPLE FROM 0.5M THICK DISCORD. PEG.
5102	104310	885400	GNT ULTRAMAFITE. WITH FELSIC PATCHES. UP TO 5% PYRITE
5103	104315	885400	GNT-HBL ULTRAMAFIC. OCC. DISCORDANT PLAG. MINOR WIDESPREAD PYRITE
5104	103428	885180	PELITIC GNEISS
5105	103430	885180	AMPHIBOLITE GOUGE IN SHEAR ZONE
5106	103764	884950	SULPHIDE RICH GNT-BIOTITE GNEISS
5107	103764	884955	BI-QTZ-GNT GNEISS
5108	103759	884969	BI-GNT GNEISS. LOCALLY QTZ RICH
5109	103751	884970	HIGHLY ALTERED. PALE YELLOW. SOFT. FRIABLE
5110	103732	884979	FINE QTZ-GNT-BI-GNEISS, WITH RICH DISSEM PYRITE
5111	103758	884969	CSE PYRITE SEGREGATION VEINS UP TO 3 CM WIDE
5112	105692	883642	GNT METAGABBRO FROM WITHIN ANORTHOSITE
5113	105689	883642	ANORTHOSITE, RARE GNT. MNR PYROXENE. OCC RUSTY STREAKS PYRITE
5114	105842	883730	ANORTHOSITE WITH HACKLY TEXTURE FROM IMMEDIATELY E OF THRUST PLANE
5115	105230	883282	MASSIVE GREY GABBRO. 2 - 3% PYRITE
5116	105250	883338	FINE-MED GNT GABBRO. ABUN GEN FINE DISSEMINATED PYRITE
5117	105248	883336	HIGHLY ALTERED, FRIABLE GOSSANOUS GABBRO. LOCALLY HIGH ?GRAPHITE
5118	104310	887255	PLAG-PYX AMPHIBOLITE. TRACE PYRITE
5119	104455	886795	HORNBLENDITE. MINOR PLAG CONTENT. MNR FINE DISSEM PYRITE
5120	104453	886795	PEGMATITE, SMALL ?FERRUGINOUS KNOB WITHIN PEG. - 20 X 30 CM.
5121	104465	886796	GNT METAGABBRO, HETEROGENEOUS
5122	106027	887748	DK GRN SERP., WITH IRREGULAR DISTRIB OF OFTEN CSE TREMOLITE
5123	106027	887749	TREM./ACTINOLITE ROCK. NO SERP REMAINING. EQUANT CHROMITE C.1MM
5124	106046	887738	SERPENTINISED PERID., 50-60CM WIDE PYX RICH LAYER
5125	106056	887750	MAGMATIC SEGREGATION LENSES IN PYROXENE-SERPENTINITE
5126	106060	887750	PYROXENE POOR PYROXENE-SERPENTINITE
5127	105680	888278	PYROXENE POOR SERPENTINITE
5128	105682	888277	CSE OR-BR PYX-RICH SERPENTINITE IN WELL LAYERED ZONE
5129	105684	888275	MASSIVE PYROXENE-SERPENTINITE
5130	105590	888510	SCHISTOSE PYROXENE-SERPENTINITE
5131	105580	888507	ANTHOPHYLLITE-RICH ALTERED MARGIN OF MASSIVE PYX-SERPENTINITE
5132	105290	883540	LOCALLY BIOTITE RICH GABBRO. C2-3% PYRITE. LOCALLY RUSTY
5133	105215	883150	GARNET METAGABBRO, GENERALLY GRAPHITIC
5134	105215	883152	AMPHIBOLISED METAGABBRO WITH LOCALISED FERRUGINOUS CRUST
5135	105200	883132	GOSSANOUS GARNET METAGABBRO, LOCALLY VERY GRAPHITIC
5136	105185	883040	GARNET METAGABBRO. SOME GRAPHITE
5137	105135	882985	COARSE BIOTITE-AMPHIB METAGABBRO
5138	105096	883010	C.40 CM WIDE ZONE OF SILICEOUS BRECCIA. SHEAR PLANAR MARGINS
5139	102650	886825	1.5 M WIDE SHEARED QTZ MYLONITE, LOCALLY BRECCIATED
5140	102673	886822	DYKE OF QTZOSE PORPHYRY, C.15 M THICK
5141	103148	887380	AMPHIBOLITE
5142	102893	887890	MAFIC METAGABBRO. LITTLE OR NO GNT.'S' MAY BE RELATED TO NEARBY PEG
5143	106020	885570	K-SPAR RICH ACID PEGMATITE
5144	105930	885520	PLAG-QTZ VARIETIES WITH LITTLE K-SPAR
5145	105990	885440	FOLIATED MAFIC AMPHIBOLITE. PYRITE IN 1-2 MM VEINS
5146	104230	893280	QTZ BIOTITE GNEISS. COMPOSITE OVER 50 M. LOCALLY 1-2CM SULPH BANDS
5147	103370	893940	PYROXENE POOR ULTRAMAFITE
5148	97822	891705	MASSIVE PYROXENE ULTRAMAFITE. SPORADIC BIOTITE
5149	97850	891665	PYROXENITE. MASSIVE MEDIUM GRAINED. FINE DISSEM PY/ PYRRHOTITE.
5150	97840	891630	PYROXENITE. MED-COARSE. PATCHY DISTRIBUTION OF SULPHIDES
5151	97610	891160	PYROXENITE DYKE. LOCALLY BIOTITE BEARING
5152	97510	891240	20-40CM WIDE FE-STAINED ZONE IN PELITIC/SEMI-PELITIC GNEISS

5153 96845 891570 META-NORITE. FOLIATED. AMPHIBOLITISED. NO VISIBLE SULPHIDE
5154 96870 891500 NON-AMPHIBOLITISED GABBRONORITE. NO VISIBLE SULPHIDE
5155 103400 884730 FOLIATED LEUCOGABBRO. WITH 2-4% GNT.
5156 103410 884730 MELAGABBRO. 10-30% GNT. <20% FSP.
5157 106585 885690 SHEARED METAGABBRO. WITH SPORADIC PYRITE
5158 106595 885670 LENS OF EPIDOTE RICH METAGABBRO.
5159 103492 883150 20-45 CM WIDE IRREGULAR BAND HBLDE-PLAG PEG IN AMPHIB MELANORITE
5160 103499 883190 META-NORITE. FRESH. MED-GRAINED.
5161 103073 883778 PYROXENITE, 15 X 7 M LENSOID BODY
5162 102941 883925 BIOTITE-PYROXENITE OR ?MELANORITE
5163 102953 883930 PYROXENITE - COMPETENT. MASSIVE. OCC BIOTITE AND GARNET
5164 106810 885420 HETERO. GABBROIC ASSEMBLAGE. LOCALLY GNT BEARING OR MELAGABBROIC
5165 106810 885410 GABBRO. HIGHLY SHEARED/ FOLIATED 1M WIDE ZONE
5166 107960 886320 AMPHIBOLITE GNEISS WITH STRONG, PLANAR FOLIATION
5167 107850 886490 HETERO., FINELY BANDED AMPHIBOLITE. GOSSANOUS WEATHERED SURFACE
5168 107842 886500 MYLONITISED AMPHIBOLITE. 1M WIDE PYRITE RICH ZONE
5169 107840 886505 AMPHIBOLITE. STRONGLY SHEARED. LOOSE BLOCKS
5170 102420 891720 GABBRO. GNT RICH VARIANT NR W CONTACT WITH DIORITE
5171 103105 891430 SCHISTOSE AMPHIBOLITE WITH PHLOG. SHEAR COATS. OCC QTZOSE SEGS
5172 103170 891410 PORPH. GARNET META-GABBRO, GNTS 0.5 - 1MM.
5173 103833 891870 FOLIATED METADIORITE. 10M DISPLACED FROM MAJOR FAULT.
5174 104476 892010 ALTERED COARSE PERIDOTITE
5175 104382 892200 VERY CSE ULTRAMAFIC - ANTHOPHYLLITE + ACTINOLITE
5176 104378 892208 SCHISTOSE ULTRAMAFIC. ACTINOLITE ON SHEAR SURFACES
5177 102568 894654 PERIDOTITE SERPENTINITE. HETEROGENEOUS
5178 102569 894666 SERPENTINITE. ANTHOPHYLLITE/ TREMOLITE VARIETY
5179 102572 894653 SERPENTINITE. FOLIATED. CONSPICUOUS RUSTY SPOTTED SURFACE
5180 102570 894656 HORNBLLENDE/ ACTINOLITE SERP.SL SCHISTOSE. RUSTY SURFACE SPOTS
5181 102572 894655 ANTH/ TREM.SERPENTINITE. OCC RUSTY SPOTS. PATCHY PYRRHOTITE
5182 102500 894850 DUNITIC SERPENTINITE. GEN FAIRLY MASSIVE
5183 98370 892420 K-SPAR-QTZ-GNT PEGMATITE. PINK VARIANT. GNT LOCALLY 2%
5184 98340 892430 K-SPAR-QTZ GNT PEGMATITE. WHITE VARIANT. GNT 5%.
5185 98580 892780 DIORITE. MASSIVE. 5-8 MM AMPH. RICH SPOTS
5186 98579 892620 GARNET METAGABBRO. SOMEWHAT HETEROGENEOUS
5187 106242 884703 FINE META-GABBRO FROM BANDED ZONE OF ANORTHOSITE
5188 106078 884698 MASSIVE PURE WHITE ANORTHOSITE
5189 106350 884772 STREAKY GABBRO-ANORTHOSITE. GABBROIC STREAKS GEN 3-10 MM WIDE
5190 105845 884960 PINK ANORTHOSITE
5191 102585 885981 QTZITIC PARAGNEISS. RUSTY GOSSANOUS SURFACE
5192 102590 885885 GOSSANOUS. INTENSELY ALTERED.
5193 103555 888830 HETEROGENEOUS MAFIC GNT METAGABBRO. GENERALLY WELL FOLIATED

ABBREVIATIONS:

AMPH	AMPHIBOLE	ANTH	ANTHOPHYLLITE
BI	BIOTITE	BR	BROWN
CSE	COARSE	DK	DARK
GNT	GARNET	GRN	GREEN
HETERO	HETEROGENEOUS	HBLDE	HORNBLLENDE
KSPAR	K-FELDSPAR	MNR	MINOR
OCC	OCCASIONAL	PEG	PEGMATITE
PERID	PERIDOTITE	PLAG	PLAGIOCLASE
PY	PYRITE	PYX	PYROXENE
QTZ	QUARTZ	SERP	SERPENTINITE
SULPH	SULPHIDE	TREM	TREMOLITE

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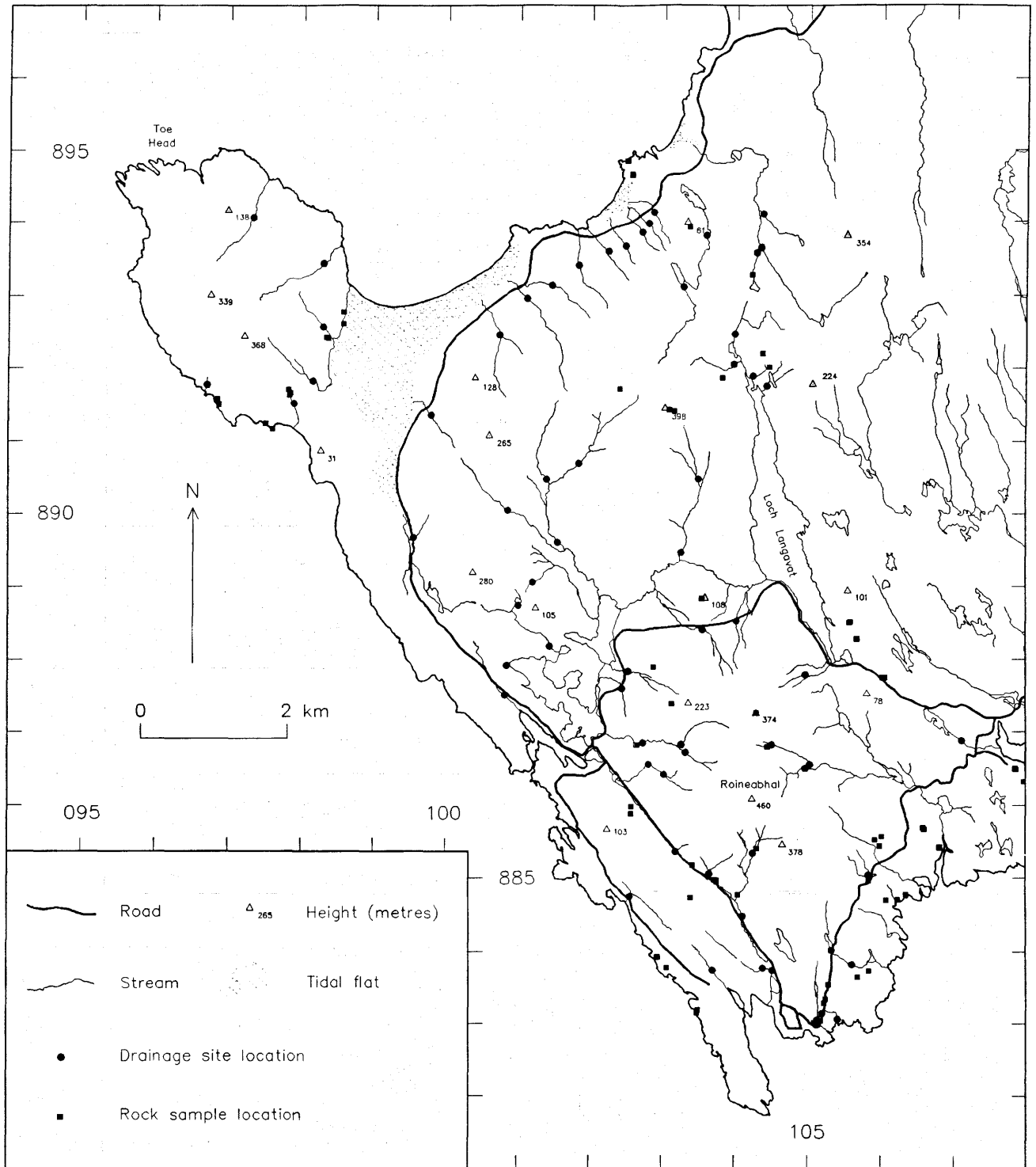


Figure 2 Location of rock and drainage sites in the South Harris project area