REGOLITH CHARACTERISATION AND GEOCHEMISTRY AS AN AID TO MINERAL EXPLORATION IN THE HARRIS GREENSTONE BELT, CENTRAL GAWLER CRATON, SOUTH AUSTRALIA.

Volume 2

M.J. Sheard and I.D.M. Robertson

CRC LEME OPEN FILE REPORT 155

May 2004

(PIRSA-Minerals and Energy Resources Group, South Australia, Report Book, 2003/10
CSIRO Exploration and Mining, Report 1165F)

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CRC LEME is an unincorporated joint venture between CSIRO-Exploration & Mining, and Land & Water, The Australian National University, Curtin University of Technology, University of Adelaide, Geoscience Australia, Primary Industries and Resources SA, NSW Department of Mineral Resources and Minerals Council of Australia.

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APPENDIX 1
DRILLHOLE LOGS, CHIP SAMPLES AND CORE PHOTOS

A1.0 Background Explanations

A1.1 Drillhole location data, geological logs and associated assay data (Refer also to Appendix 7 CD-ROM).

A1.2 Regolith logs to 55 aircore drillholes, Lake Harris, Hopeful Hill & Mullina Well.

A1.3 Chiptray photos, 55 aircore drillholes, Lake Harris, Hopeful Hill & Mullina Well.

A1.4 Regolith logs to 3 cored drillholes, KLHRDD-1 (Lake Harris), THHRDD-1 (Hopeful Hill), and TMWRDD-1 (Mullina Well)

A1.5 Core tray photos for drillholes: KLHRDD-1, THHRDD-1, & TMWRDD-1

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A1.0 Background Explanations

A1.1: Drillhole location data, geological logs & assay data (refer, Appendix 7 CD).

File: "Harris GsB drillhole locations 2001.xls" is an Excel spreadsheet containing the basic drilling and sampling details for each hole drilled as part of the PIRSA sponsored & TEiSA funded Harris Greenstone Belt investigations for 2001. This file contains all relevant data on holes drilled for that program but only some of those were included in the associated regolith study. Bottom hole lithology is included. Details are available in: Davies, M.B., 2002a. Harris Greenstone Domain Bedrock Drilling, May–August 2001. *South Australia. Department of Primary Industries and Resources. Report Book*, 2002/11. A single page example is printed herein.

File: "Harris GsB drillhole locations 2002.xls" is an Excel spreadsheet containing the basic drilling and sampling details for each hole drilled as part of the PIRSA sponsored & TEiSA funded Harris Greenstone Belt drilling for 2002. This file contains all relevant data on holes drilled for that program but only some of those were included in the associated regolith study. Bottom hole lithology is included. Details are available in: Davies, M.B., 2002b. Harris Greenstone Domain bedrock drilling Phase 2: June–August 2002. *South Australia. Department of Primary Industries and Resources. Report Book*, 2002/29. A single page example is printed herein.

File: "Harris GsB drillhole logs, geology.xls" is an Excel spreadsheet containing the geology logs and assay results for each drillhole sample, drilled as part of the PIRSA sponsored & TEiSA funded Harris Greenstone Belt drilling programs for 2001 & 2002. This file contains all relevant data on the 130 holes drilled for those programs but only 55 of those were included in the associated regolith study. Details are available in: Davies, M.B., 2002a, b (cited above). A single page example is printed herein.

A1.2: Regolith logs to 55 aircore drillholes, Lake Harris, Hopeful Hill & Mullina Well.

There is a regolith log for each of the 55 selected drillholes taken from the PIRSA sponsored & TEiSA funded Harris Greenstone Belt drilling programs for 2001 & 2002. These have been constructed in Excel spreadsheets containing regolith zonation logs on four descriptive levels. Each log has a coloured graphic column plus assay sample intervals marked with black & grey bars. Only a representative trio from each of the three study areas are printed in hard copy herein but the Appendix 7 CD-ROM file: "HGB selected aircore holes, regolith logs.xls" has drill line areas on separate sheets, at the top and right side of which appears a pseudo cross-section compiled from all the coloured graphic logs (the pseudo-section is not spatially or topographically scaled).

A1.3: Chiptray photos, 55 aircore drillholes, Lake Harris, Hopeful Hill & Mullina Well.

Chiptray photos of chip samples from the 2001 aircore drilling are provided in banks of ~6 trays per photo with explanations on interleaved pages. These photos only display the first 40 m of sample or less, but many drillholes actually penetrated much further. The photos are numbered A1P1-A1P10, with drillhole numbering for trays going left to right. These also appear in the Appendix 7 CD-ROM Folder: "Chiptray photos" which contains jpeg format image files.

A1.4: Regolith logs to 3 cored drillholes, KLHRDD-1 (Lake Harris), THHRDD-1 (Hopeful Hill), and TMWRDD-1 (Mullina Well)

Regolith logs to the three cored drillholes appear as Tables A1.1-A1.3 covering 11 pages. These include drillhole location data, regolith descriptions, a coloured graphic log, comments regarding drilling conditions, indicators to the depth spans of core photos and geologists involved. These logs have been designed for printing out from the Appendix 7 CD-ROM file: "HGB regolith core, 3 holes, logs.doc", allowing for hard copy assembly into one long sheet if desired. A consistent graphic log colour scheme was adopted to allow for inter drillhole comparisons, (Note: logs are not truly vertically scaled).

A1.5: Core tray photos for drillholes: KLHRDD-1, THHRDD-1, & TMWRDD-1

Photos of core tray samples from the 2002 regolith core drilling are numbered A1P11-A1P35, followed by location name, drillhole attitude and number plus core tray depicted. They are provided in three location specific sets with interleaved description pages. A Folder and MS Word file containing the same photos with explanations in a tabular form on the CD-ROM, Appendix 7.

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A1.1: Drillhole location data.

A1.11 An example page from the CD-ROM File: “Harris GsB drillhole locations 2001.xls” is displayed overleaf.

D/hole No.	Zone	Easting	Northing	Error	Altitude (m)	Total Depth (m)	bottom hole lithology	depth to basement (m)	start date	finish date	logged by	Drilling Co.	aircore HQ	open hole percussion	diamond NQ2
KIN 37	53J	511995	6570321			24	ironstone	>24	23-May	24-May	M B Davies	Budd	0-24		
KIN 38	53J	511999	6570425			26	silcrete/granite	24	24-May	24-May	M B Davies	Budd	0-26		
KIN 39	53J	512027	6570659			33	basalt	22	24-May	24-May	M B Davies	Budd	0-33		
KIN 40	53J	512044	6570995			25	basalt	20	24-May	24-May	M B Davies	Budd	0-25		
KIN 41	53J	512044	6571280			26	silcrete/granite	22	24-May	24-May	M B Davies	Budd	0-26		
KIN 42	53J	512045	6571414			30	basalt	22	24-May	24-May	M B Davies	Budd	0-30		
KIN 43	53J	511900	6572250			28	gneiss	24	25-May	25-May	M B Davies	Budd	0-28		
KIN 44	53J	511940	6579294			29.4			02-Jun	02-Jun	S Daly	Budd			
KIN 45	53J	511909	6577456			46			03-Jun	03-Jun	S Daly	Budd			
KOK 1	53J	511656	6565404			24	felsite	16	23-May	23-May	S Daly	Budd	0-24		
KOK 2	53J	511710	6565649			39.5	altered u/m	20	23-May	24-May	S Daly	Budd	8-12, 34-39.5	0-8, 12-34	
KOK 3	53J	511745	6565801			34	gneiss	33	24-May	24-May	S Daly	Budd	13-34	0-13	
KOKDD 4	53J	511798	6566021			36.2	altered u/m	12	24-May	27-May	S Daly/ M B Davies	Budd	0-31.4		31.4-36.2
KOK 5	53J	511817	6566171			71	mafic	12	24-May	25-May	S Daly	Budd	Dec-1971	0-12	
KOK 6	53J	511858	6566418			50	altered u/m	14	25-May	25-May	S Daly	Budd	Oct-1950	0-10	
KOKDD 7	53J	511864	6566453			45.6	altered u/m	11	25-May	29-May	S Daly/ M B Davies	Budd	10-41.4	0-10	41.4-45.6
KOK 8	53J	511876	6566618			34.7	altered u/m	10	25-May	25-May	S Daly	Budd	12-34.7	0-12	
KOK 9	53J	511912	6566839			40.7	altered u/m	10	26-May	26-May	S Daly	Budd	10-40.7	0-10	
KOK 10	53J	511844	6566989			32.8	ultramafic	10	26-May	26-May	S Daly	Budd	0-32.8		
KOK 11	53J	511775	6567128			23.6	altered u/m	14	26-May	26-May	S Daly	Budd	0-23.6		
KOK 12	53J	511754	6567285			36	ultramafic	18	26-May	26-May	S Daly	Budd	0-16, 18-36	16-18	
KOKDD 13	53J	511779	6567440			69.9	altered u/m	20	26-May	31-May	M B Davies	Budd	0-15, 24-65.3	15-24	65.3-69.9

A1.1: Drillhole location data.

A1.12 An example page from the CD-ROM File: "Harris GsB drillhole locations 2002.xls" is displayed overleaf.

D/hole No.	Zone	Easting (GDA94)	Northing (GDA94)	Total Depth (m)	depth to basement (m)	azimuth (true nth)	inclination	bottom hole lithology	comments
KIN 37	53J	511995	6570321	24	>24	0	90	ironstone	
KIN 38	53J	511999	6570425	26	24	0	90	silcrete/granite	High tungsten, 1945ppm, probable contamination from drill bit. Altered basalt, GRV?
KIN 39	53J	512027	6570659	33	22	0	90	basalt	vesicular basalt, GRV
KIN 40	53J	512044	6570995	25	20	0	90	basalt	probable andesite, GRV
KIN 41	53J	512044	6571280	26	22	0	90	quartz-feldspar rock	brecciated, altered volcanic, probable GRV
KIN 42	53J	512045	6571414	30	22	0	90	basalt	altered fragmented andesite, GRV?
KIN 43	53J	511900	6572250	28	24	0	90	gneiss	altered olivine basalt, GRV
KIN 44	53J	511940	6579294	29.4	>29.4	0	90	silcrete	silcrete
KIN 45	53J	511909	6577456	46	>46	0	90	sand	high water flow in free flowing sands
KOK 1	53J	511656	6565404	24	16	0	90	felsite	GRV, altered basalt or andesite
KOK 2	53J	511710	6565649	39.5	20	0	90	altered u/m	Clay-rich, possible volcanic sediment, GRV?
KOK 3	53J	511745	6565801	34	33	0	90	.	volcanic, fine to medium-grained sandstone, GRV
KOKDD 4	53J	511798	6566021	36.2	12	0	90	altered mafic rock	weakly foliated, plagioclase-rich amphibolite, metamorphosed volcanic sandstone
KOK 5	53J	511817	6566171	71	12	0	90	mafic	talc-rich metakomatiite
KOK 6	53J	511858	6566418	50	14	0	90	altered u/m	mafic or ultramafic cumulate
KOKDD 7	53J	511864	6566453	45.6	11	0	90	altered u/m	low-mg komatiite, feather quench textures
KOK 8	53J	511876	6566618	34.7	10	0	90	altered u/m	metasomatic band in metakomatiite
KOK 9	53J	511912	6566839	40.7	10	0	90	altered u/m	metakomatiite with spinifex texture
KOK 10	53J	511844	6566989	32.8	10	0	90	altered u/m	andesite dyke
KOK 11	53J	511775	6567128	23.6	14	0	90	altered u/m	metakomatiite with spinifex texture
KOK 12	53J	511754	6567285	36	18	0	90	ultramafic	equant olivine zone in metakomatiite
KOKDD 13	53J	511779	6567440	69.9	20	0	90	altered u/m	metakomatiite with spinifex texture
KOK 14	53J	511797	6567928	50	14	0	90	altered u/m	opalised olivine adcumulate, possible harrisitic texture @ 26-28m.
KOKDD 15	53J	511814	6567812	37.6	16	0	90	felsic rock	
KOK 16	53J	511827	6568334	33	14	0	90	basalt	weathered aphyric basalt, GRV
KOK 17	53J	511854	6568757	51	34	0	90	basalt	weathered porphyritic, vesicular basalt, GRV
KOKDD 18	53J	511905	6569590	66.1	42	0	90	rhyolite	aphyric, vesicular basalt, GRV
KOK 19	53J	511945	6569953	40	36	0	90	basalt	altered vesicular basalt, GRV
KOKDD 20	53J	511741	6567203	45.8	16	0	90	altered u/m	metakomatiite with spinifex texture
KOK 21	53J	511775	6565911	58.8	23	0	90	ultramafic?	mislog? Foliated amphibolite, metabasalt?
KOK 22	53J	511839	6566297	43	13	0	90	altered u/m	metakomatiite
KOK 23	53J	511901	6566746	34	11	0	90	altered u/m	low-mg komatiite

A1.1: Drillhole geological logs & assay data.

A1.13 An example page from the CD-ROM File: "Harris GsB drillhole logs, geology.xls" is displayed overleaf.

HOLE #	FROM	TO	LITHOLOGY	COMMENTS	MAG SUSC (SI X10-5)	ASSAY INTERVAL (m)		
						from	to	R #
TAR7	0	2	SAND, red-brown, silty to granules & pebbles of vein-quartz & CALCRETE					
	2	4	SANDSTONE, red-brown, indurated, poorly sorted, quartzose, fine-grained to gritty, sub-rounded, partially silicified & ferruginised					
	4	6	SANDSTONE, AA & GRIT to PEBLES					
	6	8	AA					
	8	10	SANDSTONE, cream to red-brown, silicified, clayey, poorly sorted, fine-grained to gritty, subrounded					
	10	12	AA					
	12	14	AA					
	14	16	CLAY, sandy & MAFIC ROCK, pale green, weathered with vitreous lustre	basement @ 15m				
	16	18	FRAGMENTAL ROCK, pale grey, 2-5mm fragment size, some elongate (altered feldspar?)					
	18	20	AA			18	20	473463
	20	22	AA			20	22	473464
TAR8	0	2	SAND, red-brown, silty to gritty & CALCRETE					
	2	4	SANDSTONE, red-brown, indurated, poorly sorted, quartzose, fine-grained to gritty, sub-rounded, silicified & ferruginised					
	4	6	AA					
	6	8	AA, trace MAFIC ROCK					
	8	10	MAFIC ROCK, dark red-brown, fine-grained, very weathered	top basement		8	14	473466
	10	12	AA, bright green to dark red-brown					
	12	14	AA					
	14	16	AA, pale blue-green, foliated			14	20	473467
	16	18	AA, grey-green					
	18	20	AA, grey green to dark brown					
	20	22	AA, pale green					
	22	24	AA					
	24	26	AA					
	26	28	CLAY, pale green					
	28	30	CLAY, pale brown					
	30	32	MAFIC ROCK, grey, fine-grained					
	32	34	AA			32	34	473468
	34	36	AA			34	36	473469
TAR9	0	2	SAND, red-brown, silty to granules & pebbles of milky quartz & LAG of ironstone					
	2	4	SANDSTONE, AA, abundant grit size, minor LAG of ironstone					
	4	6	MAFIC ROCK, red-brown to cream, deeply weathered, fine-grained	top basement				
	6	8	AA					

A1.2 Regolith logs to 55 aircore drillholes, Lake Harris, Hopeful Hill & Mullina Well.

A1.21 Regolith logs: 3 examples from the 22 aircore drillholes, Lake Harris.
All are available from the CD-ROM, file –
"HGB selected aircore holes, regolith logs.xls".

Drillhole	Sample depth	Provenance T = transported, I = *in-situ*	Basic Colour(s)	Regolith Zone	Assay	Graphic Log	**Sample Description** (ar = number): calcrete acid reaction where 2 = strong, 1 = moderate, 0 = none
KOK 3						KOK 3	
	00-02	T	red-brown	sediment cover + calcrete			fluvial sand + soil with calcrete, clayey sand, angular-rounded clasts - colluvium, (ar = 2).
	02-04	T/I	red-brown	sediment + pedolith, silcreted			AA, silcreted + quartz-rich grit, clay poor plasmic zone, in part weakly ferruginous (ar = 2).
	04-06	I	red-brown	pedolith: arenose zone, silcreted			quartz-rich grit, clay poor plasmic zone, in part weakly ferruginous (ar = 0).
	06-08	I	red-brown	pedolith: arenose zone, silcreted			AA
	08-10	I	red-brown - cream	pedolith: arenose zone, silcreted			AA
	10-12	I	cream - pallid	pedolith, silicified			clay-rich zone with angular quartz grains (igneous) + black flecks (graphite or FeOx) partly silicified
	12-14	I	cream - pallid	pedolith, silcreted			clay-rich zone with angular quartz grains (igneous) + black flecks (graphite or FeOx) silcreted to partly silicified
	14-16	I	pinkish & cream + greenish	pedolith-clay saprolite			clay-rich zone, moderately coloured to pallid-tinted, little to no visible quartz.
	16-18	I	cream + green tint	clay saprolite			clay-rich zone, pallid-tinted, little to no visible quartz.
	18-20	I	cream + green tint	clay saprolite			AA
	20-22	I	cream + green tint	clay saprolite			AA
	22-24	I	cream + green tint	clay saprolite			AA
	24-26	I	cream + yellowish overprint	lower saprolite		Fe	AA with strong yellow-orange FeOH staining.
	26-28	I	cream + yellowish overprint	lower saprolite			AA with relict foliation or textural banding - similar to that seen in EOH samples.
	28-30	I	cream + yellowish overprint	lower saprolite			AA
	30-32	I	cream + yellowish overprint	lower saprolite			AA
	32-34	I	brownish - greyish	saprock-protolith			felsic fine-grained rock, undeformed, partially to non weathered.
	EOH					EOH	
KOK DD7						KOK DD7	
	00-02	T	red-brown	sediment cover + calcrete			soil, sandy + calcrete (ar = 2)
	02-04	T/I	browns	sediment + pedolith, silcreted			colluvium, multi-lithic clasts, rounded to angular + pedolith + vein quartz, silicified (ar = 2).
	04-06	I	browns	pedolith; arenose zone, silcreted		Fe, Mn	quartz grit-rich, Mn & Fe stained, silcreted (ar = 1).
	06-08	I	grey & cream	pedolith, silcreted			clay + quartz grit, pallid, chalcedony & quartz veins, silicified (ar = 0).
	08-10	I	grey & cream	pedolith, silcreted			AA
	10-12	I	dark red-brown & greenish	pedolith, ferruginous		Fe, Fe	friable clay-rich material with dark hued Fe & Mn rich clay seams+ black FeOx granular segragations.
	12-14	I	greenish to off-white + grey	clay saprolite			AA with darker greenish + yellow-brown to khaki flecking
	14-16	I	pale greenish	clay saprolite			AA
	16-18	I	pale greenish	saprolite		Ni	friable Ni green stained clay-rich material with relict foliation.
	18-20	I	pale greenish	saprolite		Ni	AA
	20-22	I	pale greenish	saprolite		Ni	AA
	22-24	I	pale greenish	saprolite		Ni	AA
	24-26	I	pale greenish	saprolite		Ni	AA
	26-28	I	greenish - medium grey	lower saprolite			AA but more coherent
	28-30	I	greenish - medium grey	lower saprolite			AA
	30-32	I	greenish - medium grey	lower saprolite			AA
	32-34	I	greenish - medium grey	lower saprolite			AA
	34-36	I	greenish - medium grey	lower saprolite			AA
	36-38	I	grey - greenish & yellow-brn	lower saprolite - saprock			coherent partially weathered ultramafic rock becoming less weathered with depth.
	38-40	I	grey - greenish & yellow-brn	lower saprolite - saprock			AA
	40-42	I	grey - greenish & yellow-brn	lower saprolite - saprock			AA
	42-44	I	pale green	saprock - protolith			partially weathered ultramafic rock, fine-grained, chloritic, thin clay coatings on fractures, protolith by 45 m.
	44-45.6	I	pale green	saprock - protolith			AA, serpentinite + minor clays
	NQ2 ↓					NQ2 ↓	

Example work sheet from the regolith logs (Excel file): Lake Harris, aircore drillhole KOK03, into a weathered granite profile and KOK DD7 into a weathered ultramafic profile.

Drillhole	Sample depth	Provenance T = transported, I = *in-situ*	Basic Colour(s)	Regolith Zone	Assay	Graphic Log	**Sample Description** (ar = number): calcrete acid reaction where 2 = strong, 1 = moderate, 0 = none
KOK 17						KOK 17	
	00-02	T	red-brown	sediment cover + calcrete			clay with abundant sand + calcrete (ar = 2).
	02-04	T	cream - very pale brown	sediment cover			clay-rich pallid material (ar = 0).
	04-06	T	pale brown	sediment cover			clay-rich, weakly coloured puggy material
	06-08	T	pale brown	sediment cover			AA
	08-10	T	pale brown	sediment cover, part silicified			clay & rounded quartz sand - gravel, medium- course-grained & encapsulated in silcrete, rest variably silicified.
	10-12	T	pale brown	sediment cover, part silicified			AA
	12-14	I	pale grey + yellow-browns	pedolith; mottled zone		Fe	clay-rich + quartz grit, mottled or strongly colour banded-stained.
	14-16	I	off-white, grey & brownish	pedolith			clay-rich + quartz grit
	16-18	I	medium grey + grey-brown	pedolith; mottled zone			clay-rich + quartz grit, mottled or strongly colour banded-stained.
	18-20	I	dk-med. grey, lt brown, white	pedolith; mottled zone			AA
	20-22	I	dk-med. grey, lt brown, white	pedolith; mottled zone			AA
	22-24	I	white - cream	clay saprolite			clay-rich massive material, weakly coloured
	24-26	I	pale yellow-brown + off-white	clay saprolite			clay-rich massive material, weak - moderately coloured
	26-28	I	pale yellow-brown + off-white	clay saprolite			clay-rich massive material, weakly coloured
	28-30	I	pale yellow-brown + off-white	clay saprolite			AA
	30-32	I	pale yellow-brown + off-white	clay saprolite			AA
	32-34	I	cream, pale brown, off-white	upper saprolite			clay-rich massive material, weak - moderately coloured
	34-36	I	cream, pale brown, off-white	upper saprolite			AA
	36-38	I	yellow-brown, cream, greys	lower saprolite			clay-rich massive material, moderately coloured
	38-40	I	yellow-brown, cream, greys	lower saprolite			AA
	40-42	I	yellow-brown, cream, greys	lower saprolite			AA
	42-44	I	yellow-brown, cream, greys	lower saprolite			AA
	44-46	I	brownish + greys	lower saprolite - saprock		Fe	AA with relict lithic core-stones of fine-grained weathered basic igneous rock + clays & FeOx staining
	46-48	I	brownish + greys	lower saprolite - saprock		Fe	AA
	48-50	I	dark greys + browns	saprock		Fe	weathered basic igneous rock + clays, fine-grained relict texture + FeOH staining.
	50-52	I	dark greys + yellow-browns	saprock - protolith			partly weathered basalt, fine-grained, fracture staining
	EOH					EOH	

Example work sheet from the regolith logs (Excel file): Lake Harris aircore drillhole KOK 17 into a weathered basaltic greenstone profile.

A1.22 Regolith logs: 3 examples from the 12 aircore drillholes, Hopeful Hill.
All are available from the CD-ROM, file –
"HGB selected aircore holes, regolith logs.xls".

Drillhole	Sample depth	Provenance T = transported, I = *in-situ*	Basic Colour(s)	Regolith Zone	Assay	Graphic Log	**Sample Description** (ar = number): calcrete acid reaction where 2 = strong, 1 = moderate, 0 = none
TAR 16						**TAR 16**	
	00-02	T	pale red-brown	sedimentary cover + calcrete			sand + silt + clay, calcrete (ar = 2).
	02-04	T	red-brown	sedimentary cover + calcrete			AA
	04-06	T	red-brown	sediment			AA, less calcareous (ar <1).
	06-08	T	dark red-brown	sediment		Fe	AA + ferruginous sandstone & ferricrete fragments + calcrete (ar = 1).
	08-10	I	dark red-brown, yellow-brown	ferricrete duricrust		Fe Fe Fe	sandy & silty, goethitic ferricrete + calcrete (ar = 1).
	10-12	I	AA + black	ferricrete duricrust		Fe Fe Fe	AA but more indurated and blacker.
	12-14	I	cream & tan	pedolith & silcrete			clay + fine- to medium-grained grit, weakly coloured, thin silcrete bands.
	14-16	I	cream - pale greyish	pedolith & silcrete			AA but neutral hued.
	16-18	I	AA + brown	pedolith; mottled zone		Fe	clay + fine- to medium-grained grit, strongly colour mottled.
	18-20	I	pale gray	upper saprolite			sticky clay + quartz grit, pallid.
	20-22	I	pale gray	upper saprolite			AA
	22-24	I	pale yellow-green - grey	upper saprolite			AA, weakly coloured.
	24-26	I	pale yellow-green - grey	upper saprolite			AA
	26-28	I	pale grey & cream	lower saprolite			AA, darker neutral hues.
	28-30	I	dark grey - dark brown, black	saprock/protolith			felsic igneous rock, aphanitic with some feldspar phenocrysts + pale clay minerals as fracture infill. >5%
	EOH					EOH	
TAR 15						**TAR 15**	
	00-02	T	pale brown	sedimentary cover + calcrete			clays, sandy, fine- to medium-grained, calcrete (ar = 2).
	02-04	T	pale brown	sediment			AA with abundant massive calcrete (ar = 2)
	04-06	T/I	AA + brown	sediment + upper saprolite			AA + weathered basic-mafic rock, fine- to medium-grained, chalcedony veins + nodular calcrete (ar =2).
	06-08	I	dark green, red-brown, black	saprock			partly weathered meta-mafic rock
	08-10	I	dark green, red-brown, black	saprock			AA
	10-12	I	dark green, red-brown, black	saprock			AA
	12-14	I	near black, green, dk purple	protolith			fresh meta-ultramafic rock with trace chalcedonic veining
	14-16	I	near black, green, dk purple	protolith			AA, serpentinitic
	16-18	I	near black, green, dk purple	protolith			AA
	18-20	I	near black, green, dk purple	protolith			AA
	20-22	I	near black, green, dk purple	protolith			AA
	EOH					EOH	
TAR 11						**TAR 11**	
	00-02	T	red-brown	sedimentary cover + calcrete		Fe	sand, silty + gravel lag including ferruginous nodules, calcrete (ar ~2).
	02-04	T/I	dark red-brown	sediment + pedolith		Fe	AA with silcrete pebbles + transition to ferruginous clay + grit residuum (ar = 0).
	04-06	I	dark brown + dark red-brown	pedolith; Fe-duricrust		Fe Fe Fe	ferruginous duricrust, quartz grit + some clay with a goethitic cement
	06-08	I	brown + cream + yellowish	pedolith; mottled-clay zone		Fe	clay-rich residuum, variably FeOx-FeOH mottled-stained
	08-10	I	pale grey-brown, cream, tan	upper saprolite			clay-rich residuum, weakly coloured to pallid
	10-12	I	pale grey-brown, cream, tan	upper saprolite			AA
	12-14	I	pale grey-brown, cream, tan	upper saprolite			AA
	14-16	I	grey, gr-yell-brn, yellow-brown	lower saprolite			clay + quartz grit, medium-grained, weakly-moderately coloured, obvious relict foliation-texture
	16-18	I	grey, gr-yell-brn, yellow-brown	lower saprolite			AA
	18-20	I	grey, gr-yell-brn, yellow-brown	lower saprolite			AA
	20-22	I	grey, gr-yell-brn, yellow-brown	lower saprolite			AA
	22-24	I	grey, brown, dark pink	lower saprolite-saprock			AA + relict gneissic rock, partially weathered, transition to below
	24-26	I	greys + cream	saprock			partially weathered gneissic rock with <20% weatherable minerals altered.
	26-28	I	greys + cream	saprock			AA
	28-30	I	greys + cream	saprock			AA
	30-32	I	dark-light greys, dark reds	protolith		gneiss	incipiently weathered to fresh gneiss, assemblage of quartz-feldspar-biotite, medium- to course-grained.
	32-34	I	dark-light greys, dark reds	protolith			AA
	34-36	I	dark-light greys, dark reds	protolith		intermedia	AA
	36-38	I	dark-light greys, dark reds	protolith		basic	AA
	38-39	I	dark-light greys, dark reds	protolith		gneiss	AA
	EOH					EOH	

Example work sheet, regolith logs (Excel file): Hopeful Hill, aircore drillholes into: weathered felsic basement, weathered greenstone and weathered gneiss profiles

A1.23 Regolith logs: 3 examples from the 21 aircore drillholes, Mullina Well. All are available from the CD-ROM, file – "HGB selected aircore holes, regolith logs.xls".

Drillhole	Sample depth	Provenance T = transported, I = *in-situ*	Basic Colour(s)	Regolith Zone	Assay	Graphic Log	Sample Description (ar = number): calcrete acid reaction where 2 = strong, 1 = moderate, 0 = none
TAR 46						TAR 46	
	00-02	T	orange & pale pink	sediment + cement			aeolian sand, fine- to medium-grained + massive calcrete, (ar = 2).
	02-04	T/I	red-brown	sediment + cement + Fe-pedolith		Fe	colluvial sandstone-gritstone to arenaceous collapse interval, FeOH stained, polymict ang. qtz grains (ar = 2).
	04-06	I	red-brown	pedolith			clay + silty-gritty quartz, friable, weakly to moderately coloured (ar = 1)
	06-08	I	red-brown	pedolith			AA (ar = <1).
	08-10	I	tan - pale brown	pedolith			AA (ar = 0).
	10-12	I	tan - pale brown	pedolith			AA
	12-14	I	white - off-white, pale grey	upper saprolite			clay-rich material, some relict foliation, thin silicified bands common..
	14-16	I	white - off-white, pale grey	upper saprolite			AA
	16-18	I	white - off-white, pale grey	upper saprolite			AA
	18-20	I	khaki - tan & brownish	lower saprolite			clay-rich material, relict foliation & pale bluish-white vein quartz.
	20-22	I	khaki - tan & red-brown	lower saprolite		Fe	AA with FeOH staining or ?mottling
	22-24	I	khaki - tan & red-brown	lower saprolite		Fe	AA
	24-26	I	red-brown - greyish brown	saprock		Fe	weathered mylonitic felsic rock, FeOH staining.
	26-28	I	grey & pale brown	protolith			incipiently weathered mylonitic granite with ultramylonite & schistose interbands, fine- to medium-grained.
	28-30	I	grey & pale brown	protolith			AA
	30-32	I	grey & pale brown	protolith			AA
	32-34	I	grey & pale brown	protolith			AA
	34-36	I	grey & pale brown	protolith			AA
	EOH					EOH	
TAR 43						TAR 43	
	00-02	T	orange & pale brown	sediment + cement			aeolian sand, fine- to medium-grained, weakly clayey + sheet calcrete (ar = 2).
	02-04	T	browns	sediment + cement			calcrete enclosing polymict lithic fragments, + sandstone, poorly sorted & immature, m- coarse-grained (ar = 2).
	04-06	T	browns	sediment + cement			AA, variably indurated, fine- to coarse-grained, polymict clasts + lithics, variably rounded (ar = 1).
	06-08	T	browns	sediment + cement			AA (ar = 0).
	08-10	T	browns	sediment + cement			AA
	10-12	T	browns	sediment + cement			AA
	12-14	I	cream & brown	pedolith + cement			clay-rich + quartz grit, silcreted, encloses fine-grained black mineral,
	14-16	I	cream & brown	pedolith; mottled + cement		Fe, Fe	AA, strongly mottled & stained by FeOH, variably silicified.
	16-18	I	pale green-grey, red-brown	pedolith; mottled		Fe	clay-rich, weakly coloured but strongly mottled by FeOH.
	18-20	I	pale green-grey + reddish	pedolith; mottled		Fe	AA, plastic clay.
	20-22	I	dk red, cream, yellow-brown	pedolith; ferruginous		Fe, Fe	clay-rich, strongly coloured by FeOH & Fe Ox.
	22-24	I	pale-med. grey + yell-brown	upper saprolite		Fe	clay-rich, slightly indurated, moderate FeOH staining
	24-26	I	pale-med. grey + yell-brown	upper saprolite		Fe	AA
	26-28	I	AA + white + greenish	upper saprolite			AA but weakly Fe stained
	28-30	I	AA	lower saprolite			AA but more competent, stronger colours, FeOH staining.
	30-32	I	AA	lower saprolite			AA
	32-34	I	AA + black & greens	saprock-protolith			variably weathered meta-basic igneous rock, amphibolite (meta-basalt/dolerite) fine- to med. grained, altered on
	EOH					EOH	fractures.

Example work sheet, regolith logs (Excel file): Mullina Well, aircore drillholes into: weathered granite and weathered basaltic greenstone profiles.

Drillhole	Sample depth	Provenance T = transported, I = *in-situ*	Basic Colour(s)	Regolith Zone	Assay	Graphic Log	**Sample Description** (ar = number): calcrete acid reaction where 2 = strong, 1 = moderate, 0 = none
TAR 56						TAR 56	
	00-02	T	red-brown	sediment + cement			aeolian sand, silty to clayey + calcrete (ar = 2).
	02-04	T	red-brown	sediment + cement			sand AA + colluvial sand-grit, partly indurated + calcrete (ar = 2).
	04-06	T	dark red-brown	sediment, ferruginous		Fe, Fe	AA + FeOH cements (ar = 2).
	06-08	?T	orange	?sediment + ?cement		Fe, Fe	claystone, strongly coloured, hard, porous, ferruginous (ar = 0).
	08-10	?T/I	orange - pale red-brown	?sediment + duricrust			silcrete, moderately coloured, silica cemented clay & grit of ?mixed provenance.
	10-12	I	multicoloured	pedolith; mottled		Fe	clay-rich, weakly coloured with strongly developed FeOx + FeOH mottles
	12-14	I	maroon & pale grey	pedolith; ferruginous		Fe, Fe	AA but mottles & staining all FeOx and more strongly developed.
	14-16	I	grey & yellow-orange	pedolith			clay-rich, moderately to weakly coloured.
	16-18	I	dk brown, dk red, grey, wht	pedolith; ferruginous		Fe, Fe, Fe	incipient ironstone, strongly coloured, variably clayey, Fe-rich
	18-20	I	dk brown, dk red, grey, wht	pedolith; ferruginous		Fe, Fe, Fe	AA
	20-22	I	dk brown, dk red, grey, wht	pedolith; ferruginous		Fe, Fe, Fe	AA
	22-24	I	AA + pale greys & greens	pedolith; ferruginous - saprolite			transitional interval, AA grading to Fe-poor material, variably moderately to weakly coloured & stained.
	24-26	I	AA + pale greys & greens	pedolith; ferruginous - saprolite			AA
	26-28	I	y-orange, y-brown, y-grey	upper saprolite		Fe	clay-rich, ?mottled or variably stained, relict foliation.
	28-30	I	yell-green, pl greens, white	upper saprolite			clay-rich, weakly coloured with pallid clay in fractures & as micro veins.
	30-32	I	yellow-brown	upper saprolite			clay-rich, moderately coloured.
	32-34	I	pale mid-green	upper saprolite			clay-rich, massive, pastel hues
	34-36	I	yellow-brown, greenish	lower saprolite			clay-rich, prominent relict schistose foliation, highly weathered rock.
	36-38	I	dk grey , greens, browns & yellows	lower saprolite-saprock		mafic	transition interval, aphanitic meta-ultramafic rock, moderately to partially weathered, serpentinitic.
	EOH					EOH	

Example work sheet, regolith logs (Excel file): Mullina Well, aircore drillhole into a weathered ultramafic greenstone profile.

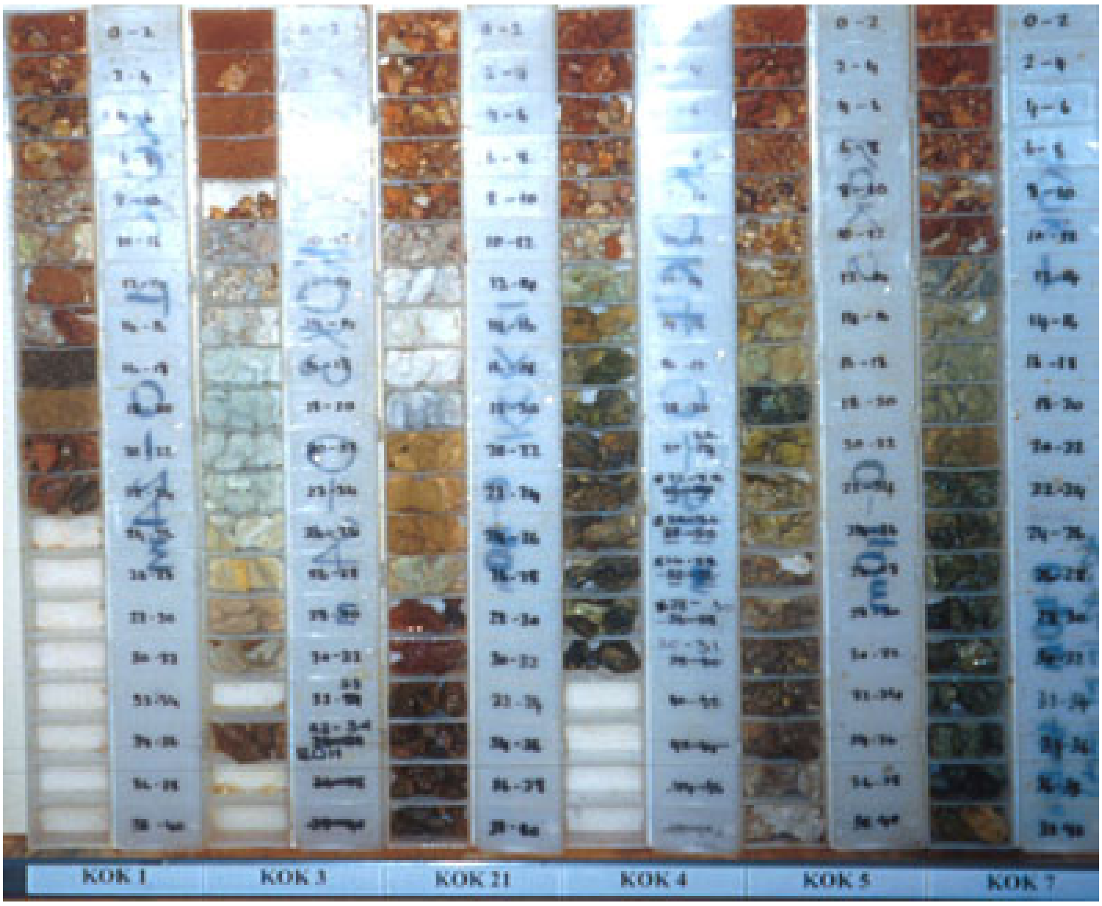
A1.3: Chiptray photos to 55 aircore drillholes,

Lake Harris, Hopeful Hill & Mullina Well.

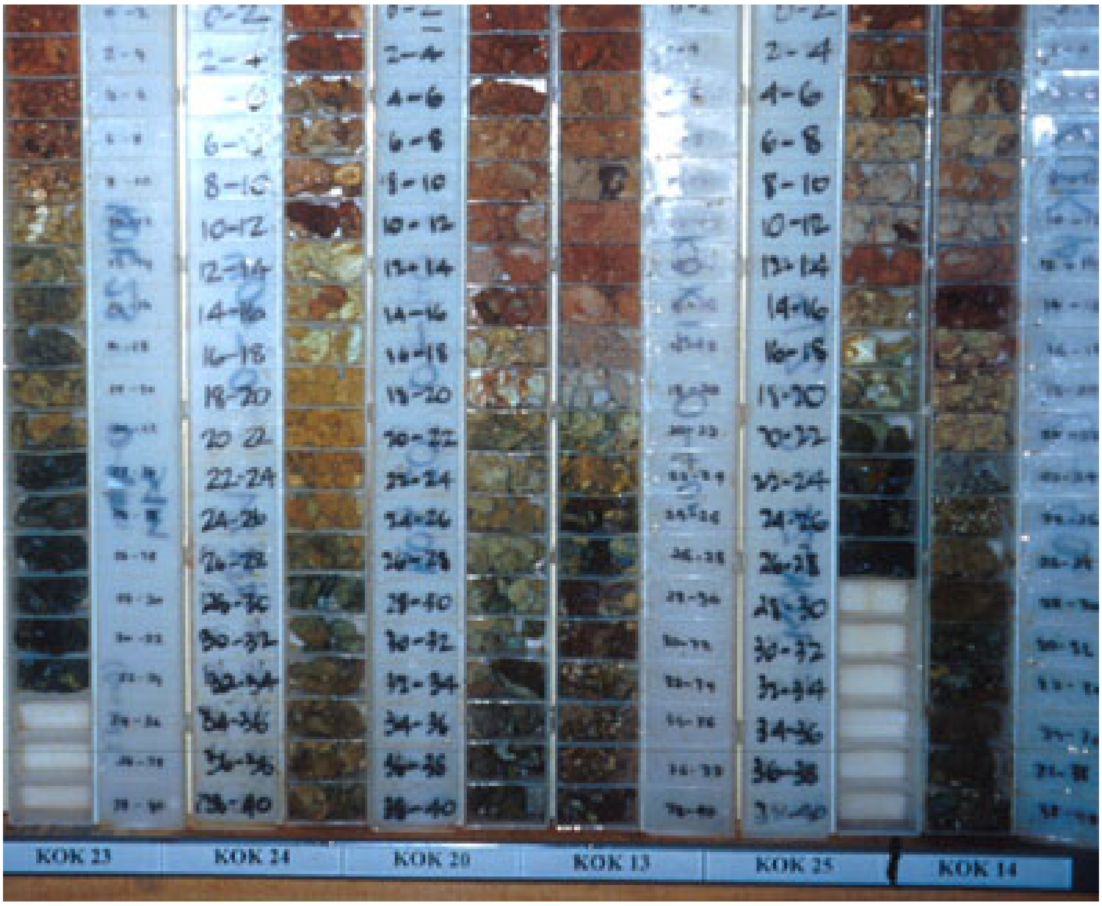
Lake Harris chiptray profiles, only first 40 m or less displayed. Weathered greenstones occur in drillholes KOK 4-7, 13, 14, 20-25.

A1P1	Drillholes KOK 1, 3, 21, 4, 5, 7 (south – north) chips are moist, cells represent 2m intervals.
A1P2	Drillholes KOK 23, 24, 20, 13, 25, 14 (south – north) chips are moist, cells represent 2m intervals.

Continued on next pages.


KOK 1
KOK 3
KOK 21
KOK 4
KOK 5
KOK 7

A1P1


KOK 23
KOK 24
KOK 20
KOK 13
KOK 25
KOK 14

A1P2

Lake Harris chiptray profiles, only first 40 m or less displayed. Weathered serpentinised high Mg-basalts occur in drillholes KOK 15 – 19.

A1P3	Drillholes KOK 15 – 19 and KIN 37 (south – north) chips are moist, cells represent 2m intervals.
A1P4	Drillholes KIN 39, 40, 42 and 43 (south – north) chips are moist, cells represent 2m intervals.


KOK 15
KOK 16
KOK 17
KOK 18
KOK 19
KIN 37

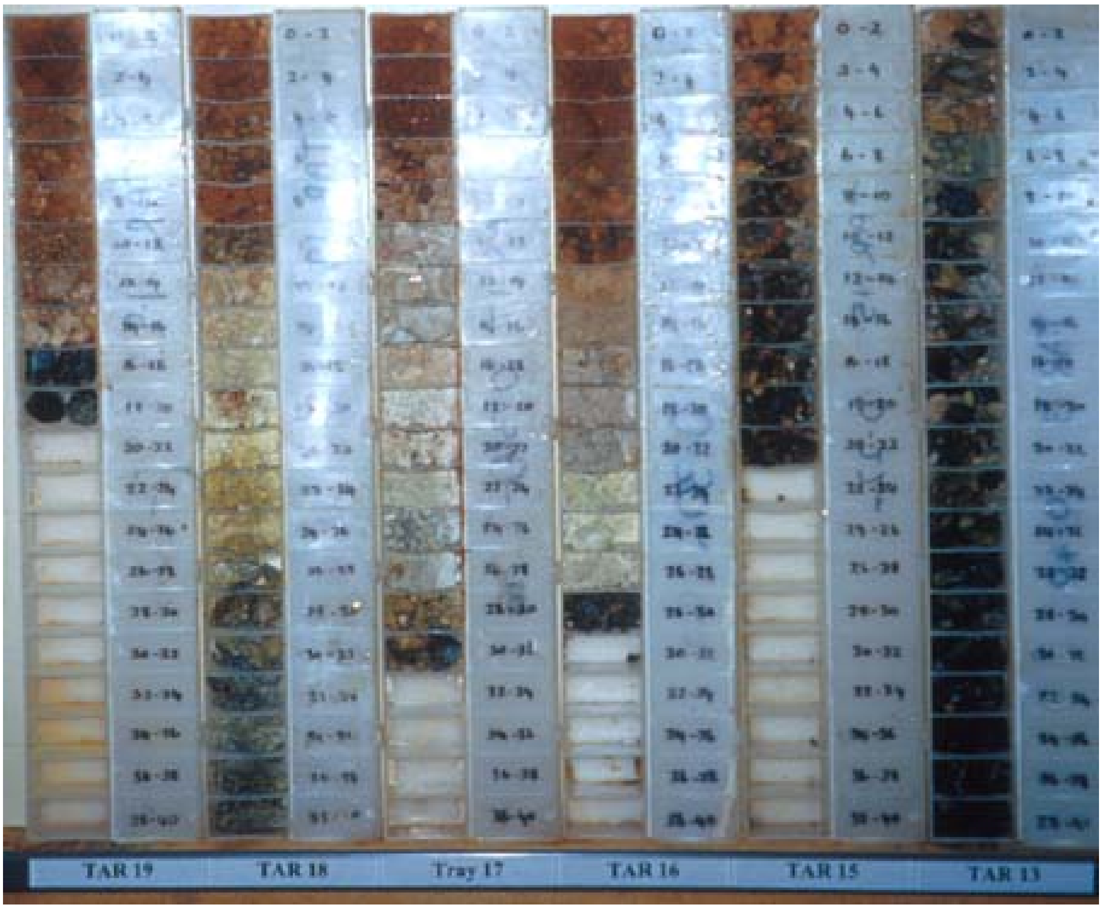
A1P3


KIN 39
KIN 40
KIN 42
KIN 43

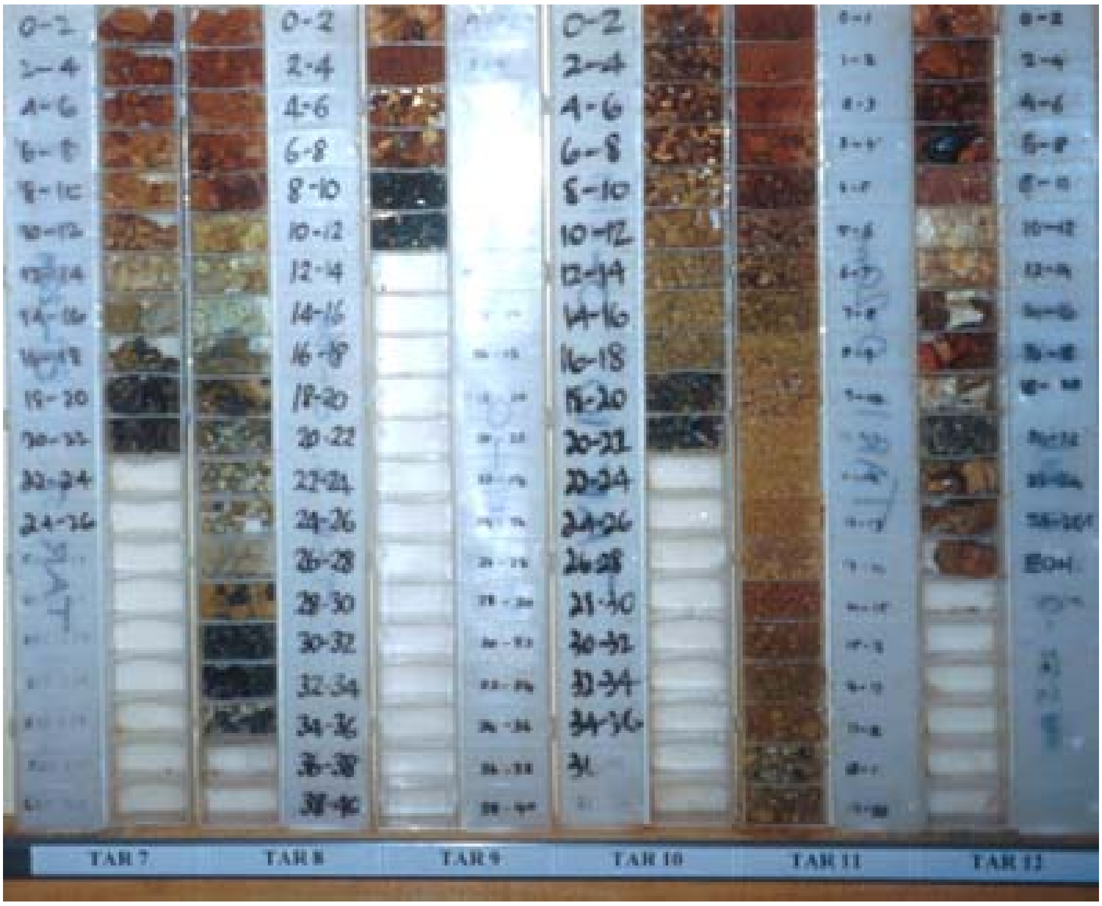
A1P4

Hopeful Hill chiptray profiles, only first 40 m or less displayed. Weathered greenstones occur in drillholes TAR 7-10, 13 and 15.

A1P5	Drillholes TAR 19, 18, 17, 16, 15, 13 (south – north) chips are moist, cells represent 2m intervals.
A1P6	Drillholes TAR 7 – 12 (south – north) chips are moist, cells represent 2m intervals except for TAR 11 where cells represent 1 m intervals.


TAR 19
TAR 18
Tray 17
TAR 16
TAR 15
TAR 13

A1P5

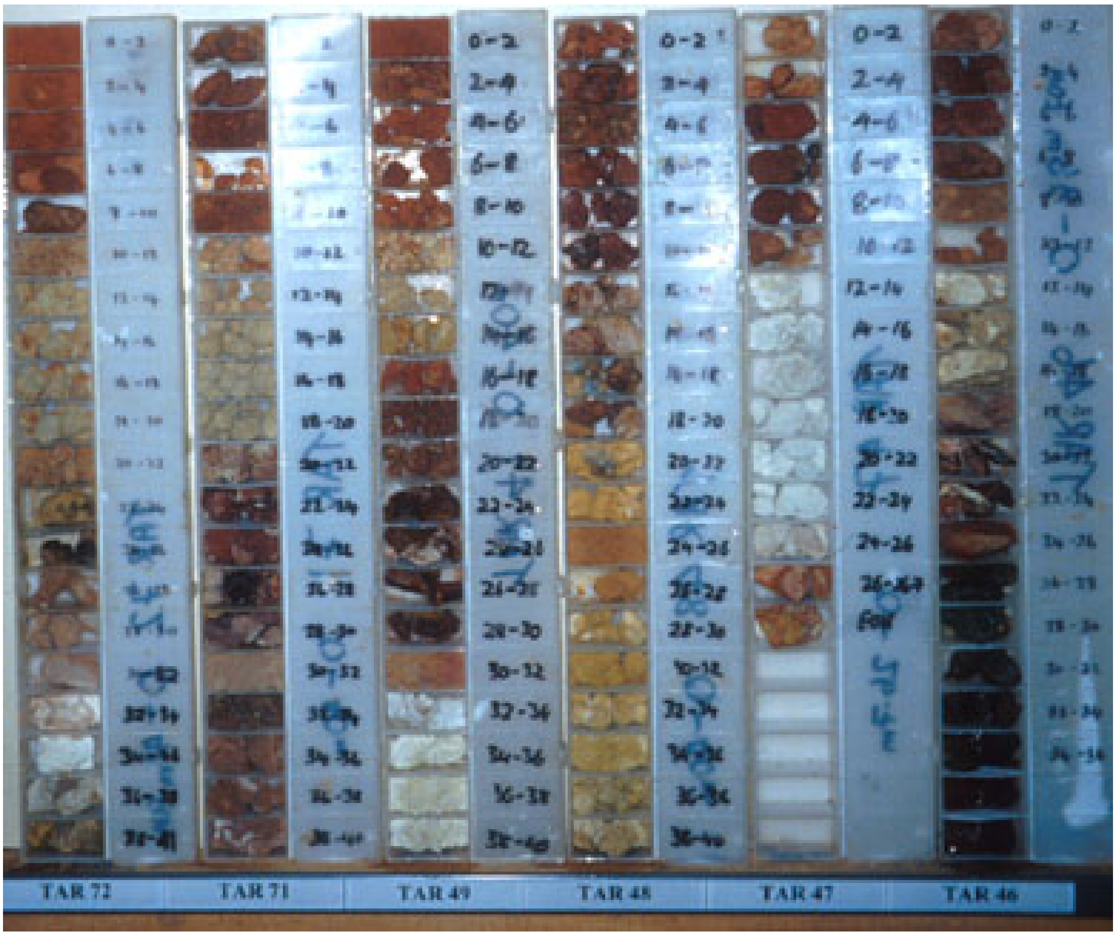

TAR 7
TAR 8
TAR 9
TAR 10
TAR 11
TAR 12

A1P6

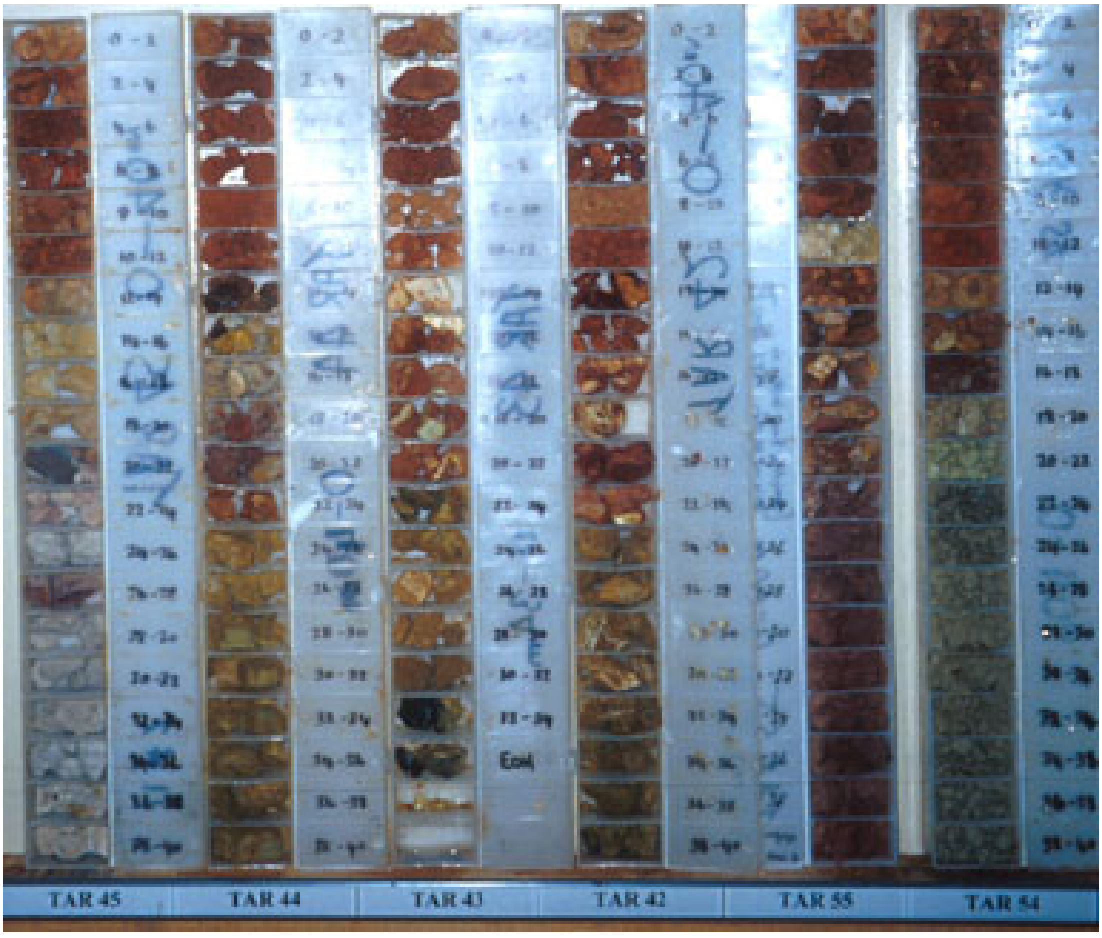
Mullina Well chiptray profiles, only first 40 m or less displayed. Weathered serpentinised high Mg-basalts occur in drillholes TAR 44 – 42, and weathered greenstones occur in drillholes TAR 55 and 54.

A1P7	Drillholes TAR 72, 71, 49 – 46 (south – north) chips are moist, cells represent 2m intervals.
A1P8	Drillholes TAR 45 – 42, 55 and 54 (south – north) chips are moist, cells represent 2m intervals.

Continued on next pages.


TAR 72
TAR 71
TAR 49
TAR 48
TAR 47
TAR 46

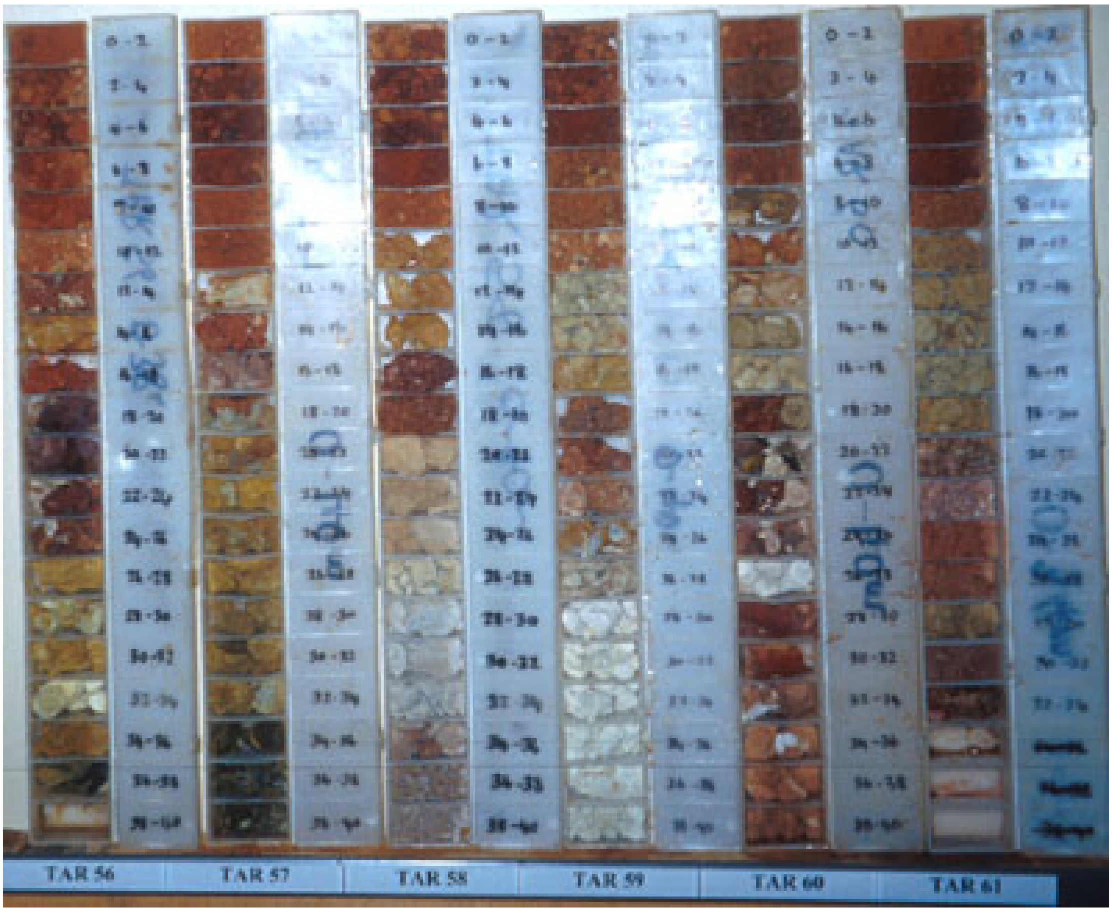
A1P7


TAR 45
TAR 44
TAR 43
TAR 42
TAR 55
TAR 54

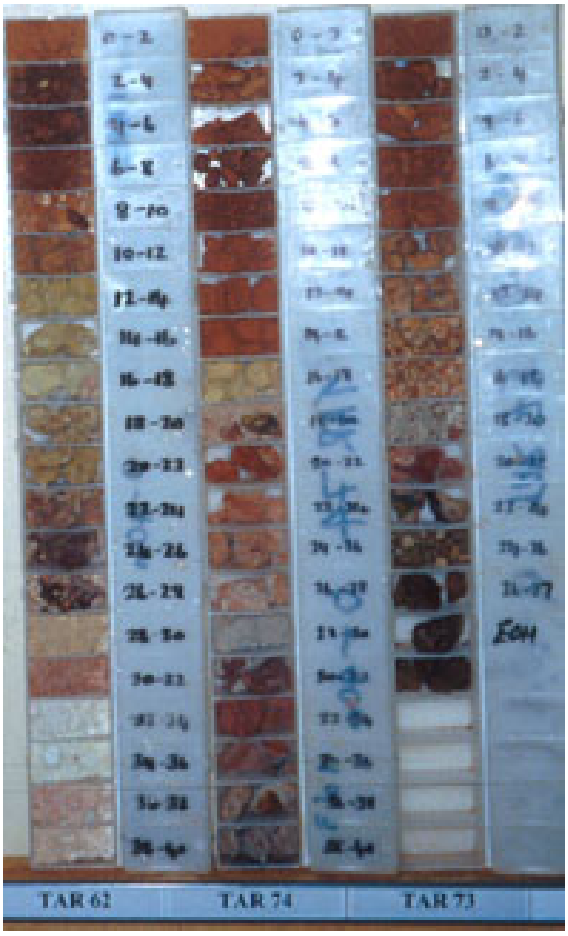
A1P8

Mullina Well chiptray profiles, only first 40 m or less displayed. Weathered greenstones occur in drillholes TAR 56 & 57.

A1P9	Drillholes TAR 56 – 61 (south – north) chips are moist, cells represent 2m intervals.
A1P10	Drillholes TAR 62, 74 and 73 (south – north) chips are moist, cells represent 2m intervals.



A1P9



A1P10

A1.4: Regolith logs to 3 cored drillholes, KLHRDD-1 (Lake Harris), THHRDD-1 (Hopeful Hill), and TMWRDD-1 (Mullina Well)

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Harris Greenstone Belt Regolith Profile Drillcore Regolith Log

Table A1.1: Lake Harris, Drillhole #: KLHRDD-1

Coords: Zone 53J, 0511863mE, 6566452mN. **Attitude:** vertical & fully cored, **Type:** HQ diamond & tungsten bits,
Total Depth: 51.25m, **Start Date:** 17/06/2002, **Finish Date:** 22/06/2002, **On-site Geologist:** M.J. Sheard, Geol Surv. Br., MRG.
Core Photos: A1P11 – A1P20. **Site description:** flat, sandy with gravel lag, bare with some grass cover + sparse low shrubs.

Depth Interval m		Recovery good, poor, lost [Tray #]	Regolith Zone	Colour Log	Description	Comments	Photos
From	To						
0.00	0.20	lost [1]	soil, transported		red-brown aeolian sand, fine- to medium grained.		
0.20	0.70	moderate [1]	soil + calcrete, transported		red-brown sand to sandy clay, friable with rubbly to earthy sheet calcrete, white to pale yellow (mostly not recovered).	?compressed & ?top missing	
0.70	0.80	lost [1]	sediment		loose sands.		
0.80	0.95	good [1]	sediment		red-brown clayey sands.		
0.95	1.40	lost [1]	sediment		sands on silicified alluvium.		A1P11
1.40	1.80	moderate [1]	sediment		red-brown alluvium, coarse-grained sand + gravel, silty to clayey.	difficult to core	
1.80	2.05	lost [1]	sediment		?		
2.05	2.40	good [1]	sediment		red-brown alluvium, sand + silt + gravel + some clay, weakly bound ?cemented.		
2.40	2.80	lost [1]	sediment		sands & gravels.		
2.80	5.10	good, some loss 3.95-4.3 [1]	sediment		red-brown alluvium, sand + gravel + pebbles (to 50 mm), clasts well rounded to semi angular & quartz-rich + some clay & silt matrix, Loose to weakly bound, becomes paler with depth where it is weakly cemented.		
5.10	6.90	good [2]	Ped. duricrust in sediment		pale brown & cream-brown alluvium, gravel + sand + clay + rare pebbles (angular, to 15 mm), well cemented by 6.50 m.	May be a much older unit.	
6.90	7.40	lost [2]	sediment		? loose sands/gravels		A1P12

Cont. overleaf.

7.40	10.50	good **[2]**	transported, alluvial sediment with duricrust		grey – grey-brown alluvium, angular to rounded cobbles & pebbles in sandy to clayey matrix. Some clay & silt in rhythmic cycles of 300-500 mm thick, some very angular clasts >50 mm, variably weakly to moderately cemented (silicified).		**A1P12**
10.50	13.65	good **[3]**	short transport distance alluvium colluvium-		reworked weathered basement as colluvium + some alluvium, rounded to angular clasts, gleyed, highly mega-mottled clay-rich material, Fe-pisolith fragments with partial cutans, red-brown mottles, bright yellow staining, black flecking/spotting, bright lime-green staining at 12 m.		**A1P13**
13.65	14.52	good **[3]**	colluvium		colluvium, pale greenish grey smectitic & clay-rich. Yellowish & yellow-brown megamottles + irregular fracture staining above 14.3 m. Conspicuous black MnOx dendrites in greenish grey clay 14.2-14.3 m. From 14.4-14.52 m there are occasional angular to subrounded 'rip-up' clasts of clay, slightly darker than matrix, these clasts float in the matrix, they resemble pedolith clay in unit below. Paler grey matrix clay with many sub-mm sized quartz grains and grit (granitic sourced). Locally sourced colluvium, basal angular unconformity (‿) at 45^{o} to core.		
14.52	14.75	good **[3]**	**unconformity** on Pedolith (plasmic zone) *in situ*		angular unconformity on relict basal pedolith (plasmic) zone. As per interval below but is brecciated & retains jig-saw-fit of smectitic clay blocks, fracture infill clay is a paler grey-green & is less smectitic. Material is *in situ* but has been broken up by surficial weathering & pedogenesis. Unconformity only discernible from dry core, not seen on moist core.		
14.75	14.85	good **[3]**	upper Saprolite		semi-brecciated smectitic clay-rich, pale green to pale bluish but near its top is paler than interval below, no mottling, breccia only shows on dry core, *in situ* material		
14.85.	15.0	good **[3]**	upper Saprolite		semi-brecciated smectitic clay-rich, pale green to pale bluish, yellow-brown Fe-mottling, relict texture as lizardite colour patternation, *in situ* material.		
15.0	16.5	good **[4]**	upper Saprolite		stiff bluish – turquoise clay, slicken-sided fractures at ~60^{o} to core axis, relict white chalcedony veins. Bright yellow-orange streaks & mottle-like staining, some black ?MnOx flecks & markings. weathered *in situ* basement		**A1P14**

Cont. overleaf.

16.50	19.20	good [4]	clay Saprolite	# # #	light green smectitic clays, plastic to friable, variable yellow staining & streaking, slicken-sided fractures at ~60° to core axis. Gley colours common + some turquoise, blue and light greens. 17.6-18.9 m core has more blocky yellow staining.	Core very friable & crumbly between 17.6-18.9 m.	**A1P14**
19.20	21.00	good [5]	Saprolite		AA but more competent, yellow-brown staining on some fractures, relict structure obvious, chalcedonic veining, strong yellow-brown staining at 21.9-22.3 m, slicken-sided fractures at ~30° to core axis. Multi coloured bright yellow-green in green & with orange.	Core recovery good but has friable-crumbly intervals	**A1P15**
21.00	23.40	lost ~1m [5]	Saprolite		AA but very soft, some core missing due to being washed out by drilling process & watery mud.		
23.40	25.90	good [5]	Saprolite		clay-rich interval, smectitic, green to gley colours + bright pistachio green & turquoise to blue patches, yellow-brown staining, black MnOx dendrites on fracture surfaces, friable in last metre.	very friable & difficult core recovery	**25.5 m**
25.90	26.90	good [6]	Saprolite		dark green to bluish grey, more competent interval, smectitic, well fractured & more so with depth,		
26.90	27.15	some loss [6]	Saprolite		AA		
27.15	27.50	good [6]	Saprolite		dark green relict serpentinite, smectitic, well fractured with slicken-sided fractures at ~60° to core axis. Some brown staining, firm-stiff and soft intervals.	core both firm & soft, bit no longer cutting in slippery ground, changed to a face-set d-Bit	**A1P16**
27.50	30.20	some loss [6]	lower Saprolite – Saprock		dark green weathered serpentinite, very broken ground, smectitic + ?talc-rich, competent, yellow FeOH staining & fracture linings, patches of bright green + orange colours.	recovery highly variable with each short run	
30.20	30.30	good [6]	Saprolite		AA but more weathered.		
30.30	31.60	good [7]	Saprolite		weathered serpentinite, pistachio green, antigorite-smectite-talc rock with reptile skin-like patternations, very greasy feel, yellow – orange – brown FeOH staining. Sea green + dark green + bright strong yellow also present. Conjugate pairs of slicken-sided fractures common at ~45° - ~60° to core axis.	Change to toothed tungsten carbide bit.	**A1P17**
31.60	32.10	some loss [7]	Saprolite		AA but softer & more friable		**35.9 m**
32.10	36.40	good [7]	Saprolite		as per 30.3-31.6 m.		
36.40	37.45	some loss [8]	lower Saprolite		as per 27.5-30.2 m but highly fractured	difficult core to recover	**A!P18**
37.45	37.80	good [8]	Fe-Saprolite		dark brown interval, variably hard & soft, FeOH + MnOx rich		

37.80	39.40	good **[8]**	clay Saprolite	# # #	green clays with yellow & brown mottling, very sticky & plastic smectite-rich clay, FeOH & MnOx rich interval 38.5-38.8 m		**A1P18**
39.40	39.55	lost **[8]**	clay Saprolite		?AA but very soft.	washed out by drilling process	
39.55	41.60	good **[8]**	Saprolite	# # # # # # # # #	green – dark green & bright green weathered serpentinite, antigorite-smectite-talc, greasy feel, variably fractured, softer clay seams common, yellow & brown FeOH mottle-like blotches or as streaks. Conjugate pairs of slicken-sided fractures common at ~45^{o} - ~60^{o} to core axis.		
41.60	42.60	good **[9]**	lower Saprolite		blue-green-grey weathered serpentinite, antigorite-smectite-talc, more competent than interval above, has weaker clay seams. Has FeOH stained slicken-sided fractures at ~45^{o}, ~60^{o} & ~80^{o} to core axis.		
42.60	44.00	good **[9]**	lower Saprolite-Saprock		dark green to dark grey partially weathered serpentinite, yellow & brown staining on fractures, some clay seams & patches.		**A1P19**
44.00	46.50	good **[9]**	Saprolite		AA but more variably weathered than interval above.		
46.50	47.20	good **[10]**	Saprolite-Saprock		AA with cyclic intervals of less weathered rock. Many clay seams & highly fractured ground.		
47.20	48.20	good **[10]**	Saprolite		green, yellow & brown, more weathered serpentinite than above, some seams of less weathered remain.	Diamond bit no longer cutting.	
48.20	49.15	good **[10]**	lower Saprolite		bluish grey serpentinite, highly fractured, less weathered than interval above, pistachio green clay lined fractures.		**A1P20**
49.15	51.25	good **[10]**	Saprock - ?Protolith		dark green-grey partly weathered ultramafic serpentinite, some green clay linings to fractures, progressively more competent with depth but while still containing more saprolitic clots/patches. Close to weathering front.	Drilling terminated due to depth limit being exceeded.	
51.25	**EOH**	**Σ lost ~4.4m or ~9%**		**EOH**			

Regolith Logs to Hopeful Hill and Mullina Well cores follow on the next pages.

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Harris Greenstone Belt Regolith Profile Drillcore Regolith Log

Table A1.2: Hopeful Hill, Drillhole #: THHRDD-1

Coords: Zone 53J, 0492082mE, 6575794mN. **Attitude:** vertical & fully cored, **Type:** HQ diamond & tungsten bits,
Total Depth: 39.25m, **Start Date:** 23/06/2002, **Finish Date:** 25/06/2002, **On-site Geologist:** M.J. Sheard, Geol Surv. Br., MRG.
Core Photos: A1P21 – A1P28. **Site description:** flat, sandy with some gravel lag, some grass + low shrubs + sparse *Casuarina* sp. trees (to ~8 m tall).

Depth Interval m From	*To*	Recovery good, poor, lost [Tray #]	Regolith Zone	Colour Log	Description	Comments	Photos
0.00	0.20	most lost [1]	soil, aeolian sand, transported		red-brown aeolian sand with some surficial exotic lag (milky quartz, silcrete + calcrete).	poor recovery from this interval	
0.20	0.50	some loss [1]	sand + calcrete transported		white calcrete, massive to laminated & variably rubbly, hard to moderately soft. Grab samples for assay collected from mud-pit mullock.	poor core recovery of calcrete	
0.50	0.80	good [1]	sediment, transported		red-brown clayey colluvium-alluvium, angular to subangular clasts 20-30 mm, very compact & hard.	difficult drilling	**A1P21**
0.80	1.10	good [1]	sediment, transported		AA but dark red-brown, resembles a red-brown hardpan with white calcrete wisps & blotches, compact to indurated.	hard drilling	
1.10	5.15	some loss [1]	sediment		AA with variable silicification, very gritty & abrasive.	hard drilling	
5.15	6.15	good [2]	sediment		AA with well rounded quartz clasts to 10 mm.		
6.15	6.25	lost [2]	sediment		alluvium AA, loose.	core retention poor	
6.25	6.65	good [2]	Ped. duricrust in sediment		red-brown alluvium, gravelly, variably cemented.		
6.65	7.75	good [2]	Ped. duricrust in sediment		red-brown alluvium AA but more consistently cemented by silcrete.		**A1P22**
7.75	8.45	some loss [2]	Ped. duricrust in sediment		AA but more ferruginous in places, variably silicified to silcrete.	broken ground, recovery variable	

Cont. overleaf.

8.45	9.05	good **[2]**	short transport distance colluvium-alluvium	# #	reworked weathered ultramafic basement as colluvium + some alluvium, pale gleys + reds & browns, mega-mottled by FeOx + FeOH, smectitic, stiff & plastic clays, blocky fragmenting + cementing. FeOH staining on joints & fractures. Black Mn and Fe pisolith fragments. Unconformity at base of unit.	excellent recovery of unconformity transition	
9.05	9.65	good **[2]**	**Unconformity** & Pedolith (plasmic zone, *in situ*	# # # # ## # ##	relict pedolith, jig-saw-fit breccia, pale greenish to bright green clay-rich fragments + brownish to grey-brown clay fracture infill illuviated from above, erosional top, strong brown-red mottles & stains, *in situ* weathered mafic, no relict foliation, gritty & smectitic with incipient silicification.		**A1P22**
9.65	12.25	good **[2 & 3]**	clay Saprolite		as above interval, bright pistachio green clays at 9.95-10.4 m, brecciation extends to 12.25 m but sediment & clay infill of fractures ceases by 11.8 m. Complex MnOx within FeOx mottles at 11.35 to 11.75 m, fractured in conjugate sets at ~45^{o} & ~60^{o} to core axis below 12 m.		9.85 m **A1P23**
12.25	15.20	good **[3 & 4]**	upper Saprolite	Mn Mn # # #	gleys + various strong green colours, no mottling, some dark green relict fragments of serpentinite, smectitic clays + talc, greasy feel, core is fragile to moderately competent, very gritty, commonly fractured in conjugate slicken-sided sets at ~45^{o} & ~60^{o} to core axis. MnOx flecks & staining 13.15-13.55 m, FeOx staining & blotches near base.		14.85 m
15.20	15.95	good **[4]**	Fe-rich Saprolith		Fe-clay-rich interval, dark brown, cemented, has many bright turquoise coloured chalcedony veinlets, very striking interval,	matrix diamond bit changed to face-set diamond at 15.75 m	**A1P24**
15.95	18.75	good **[4]**	upper Saprolite		greens, white & brown with bright pistachio green ?gaspeite from 16.5 m, + reddish & brown blotches and stains. Complex fracture alteration-colour patterns.	friable core	
18.75	19.35	good **[4]**	Saprolite		weathered serpentinite, dark grey-green & dark brown, highly fractured, smectitic & talc-rich, greasy feel.		
19.35	23.00	some loss **[4 & 5]**	Saprolite		smectitic clays, moderately soft, plastic & sticky, highly fractured, greens & browns, chalcedony veins, bright pistachio green bands, black MnOx staining, crumbly below 21.5 m.	Bit changed to W-carbide toothed bit at 21.75 m	20.35 m
23.00	24.15	good **[5]**	lower Saprolite		partially weathered serpentinite, dark grey to black to dark green, fractures at ~60^{o} to core axis. semi friable. White chalcedony veins.		**A1P25**

Cont. overleaf.

24.15	25.00	good **[5]**	lower Saprolite-?Saprock		variably weathered interval with enclaves of less weathered altered serpentinite, dark grey to black, + sticky plastic smectite clays in green-grey, highly fissile. Yellow & brown alteration.	hard to drill through broken ground	**A1P25**
25.00	26.50	good **[5 & 6]**	Saprolite		more weathered interval, clay-rich, smectitic, pistachio green + pale & dark green, some FeOH staining.		25.25
26.50	27.95	good **[6]**	lower Saprolite		less weathered interval, serpentinite, dark green to dark grey, very fissile and fragile core but hard drilling, variably weathered with more and less altered enclaves – much of the core looks like gravel, FeOH staining & coatings.		**A1P26**
27.95	30.55	good **[6 & 7]**	lower Saprolite-Saprock		clay-rich matrix with relict less altered serpentinite core stones, bright to dark greens & greys, very sticky & friable. More gleyed below 29.0 m. Slicken-sided fractures at 45°–60° to core axis. More competent below 30 m.	core difficult to extract from splits	30.09 m
30.55	34.50	some loss **[7]**	clay Saprolite & Saprock		intergrades of weathered to less weathered serpentinite, very fissile interval, fractures at 75-80° to core axis. Relict chalcedony veining at 32.5 m,	core difficult to recover.	**A1P27**
34.50	37.45	some loss **[7 & 8]**	Saprock - ?Protolith		AA but more competent, dark green-grey, alteration decreases with depth to something approaching protolith. Fractured serpentinite with some weathering along fractures (at ~60° to subvertical to core axis). Some smectite + other alteration minerals.	moderately hard	34.93 m **A1P28**
37.45	39.25	good **[8]**	Saprolite-Saprock		cyclic saprock-saprolite to less altered fragments, near weathering front, dark green-grey + paler greens & some browns. Protolith enclaves throughout interval	variably hard	
39.25	**EOH**	**Σ lost ~3.3m or ~9%**		**EOH**			

Regolith Log to Mullina Well cores follow on the next pages.

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Harris Greenstone Belt Regolith Profile Drillcore Regolith Log

Table A1.3: Mullina Well, Drillhole #: TMWRDD-1

Coords: Zone 53J, 0461096mE, 6592412mN. **Attitude:** vertical & fully cored, **Type:** HQ diamond & tungsten bits, **Total Depth:** 40.00m, **Start Date:** 18/07/2002, **Finish Date:** 19/07/2002, **Logging Geologist:** M.J. Sheard, Geol Surv. Br., MRG, **Site Geologist:** M. Davies, GSB-MRG. **Core photos**; A1P29 – A1P35 **Site description:** flat & sandy, some grass + low shrubs + sparse mixed species trees (to ~5 m tall).

Depth Interval m		Recovery good, poor, lost [Tray #]	Regolith Zone	Colour Log	Description	Comments	Photos
From	*To*						
0.00	0.30	most lost [1]	soil, aeolian sand transported		red-brown to dark red-brown loose aeolian sand.	mostly washed out at spud-in.	
0.30	0.80	some loss [1]	sand + calcrete, transported		as above but slightly silty, calcrete as dispersed earthy form, strong acid reaction.		
0.80	2.00	some loss [1]	Sediment		red-brown clayey sand with wispy earthy calcrete, strong acid reaction, friable but relatively compact.	some core loss & some compression.	
2.00	6.30	some loss [1]	Sediment		red-brown clayey alluvium, gritty to sandy and calcareous throughout, strong acid reaction. Possibly a red-brown hardpan, is variably cemented with carbonate & hyaline silica, very gravelly between 4.60-4.80 m. No carbonate below 6.00 m.	core recovery between ~50-80%.	**A1P29**
6.30	6.60	good [1]	Sediment		dark red-brown clays & clayey sands, alluvial-colluvial.		
6.60	7.15	good + some loss [1]	Sediment		dark red-brown to red-brown alluvium-colluvium, clayey sands to grits, gravelly in places (mostly subangular) & clasts are polymict to quartz dominated.	Tray 1 core loss = ~2.15 m.	
7.15	7.50	lost [2]	Sediment		presumed to be as above.		
7.50	7.90	good [2]	Sediment		dark red-brown to red-brown alluvium-colluvium, clayey sands to grits, gravelly in places (mostly subangular) & clasts are polymict to quartz dominated.		
7.90	8.20	good [2]	Duricrust in sediment		dark red-brown clayey sand to clayey gravel, polymict subrounded clasts to ~5 mm, variably cemented by ?silica + carbonate, moderate acid reaction, mostly colluvium, matrix to clast supported interval. Silica cement		**A1P30**

Cont. overleaf.

8.20	9.90	good [2]	alluvium-colluvium	| | | |	red-brown clay-rich interval with silty sub-intervals + some grit, ferruginous, possibly derived from intensely weathered fine-grained rock, unit has strong colluvial character, ?palaeosol,.		
9.90	10.47	good [2]	Colluvium	# #	as above but well lithified—cemented by silica, non calcareous, grades to a vaguely mottled equivalent & has FeOH + MnOx staining on fractures & relict clay block surfaces (?peds), has relict clay corestones, clay very sticky & plastic (smectitic &/or illitic).		
10.47	11.47	good [2]	Colluvium & sediment		pale brown silcrete containing brown silicified mottles (3-5 mm) mostly a fine-grained rock. Interval is variably cemented from quite hard to crumbly &/or moderately competent. Unit resembles a crude colluvium in places (small subangular blocks floating within a silica cement.		A1P30 cont.
11.47	11.80	lost [2]	Sediment		? ?		
11.80	12.42	good [2]	Sediment	# # # # # #	brown to reddish clay-rich interval, fine-grained silt & sand grains, quite ferruginous with dark reds to maroon staining + black MnOx staining on fractures.		
12.42	12.60	good [2]	Sediment	# # # # # # # #	gley coloured and pallid clay-rich + quartz grit interval with mega mottles of yellow and red FeOx or FeOH.		
12.60	17.35	fair-good [3]	Sediment	# # # Fe + Mn # # # Fe + Mn # # # Fe + Mn # # #	clays to claystones, mostly structureless unbedded interval, pale grey to pale grey-green (gley colours) variably red & yellow mega-mottled, smectitic, stiff & plastic when moulded but core is mostly crumbly around the mottles, these contain near black Fe-pisoliths (2-3 mm), some MnOx staining observed. Becomes redder with depth as yellow colours diminish. Unit derived mostly from same terrain as debris flow below.		A1P31
17.35	22.70	good, but 18.9-19.2 m some loss [3 & 4]	Debris flow colluvium		Debris flow colluvium (landslide or avalanche deposit). Very mixed up interval. Unsorted jumble of clay-rich saprolitic blocks & fragments (<10 to >500 mm, similar to materials in interval 23-25 m), angular to subrounded and either clast or matrix supported. Matrix is a structureless colluvial clay with polymict rip-up clasts, quartz sand & other lithics. All clasts show some degree of transportation rounding. Interval equates to a mass-wasting avalanche, deposited as a debris flow. Overall clast texture and fabric is consistent with a lahar but here it is not volcanically sourced.	18.9-19.2 m contains polymer mud-jelly chunks.	17.5 m A1P32

Cont. overleaf.

22.70	22.90	good **[4]**	**Unconformity** & Pedolith (Plasmic zone) *in situ*	# Fe # # Fe # # Fe # # Fe #	remnant pedolith, red-brown, competent FeOH cemented, contains pedogenic structures: irregular parallel banding + incipient Fe-nodule development + brecciation with re-cementation. Clear-cut eroded top surface at ~15° to core axis.		**A1P32** cont.
22.90	23.30	good **[4]**	Pedolith (Plasmic zone) *in situ*	# # #	pedogenic breccia of jig-saw-fit clay-rich blocks to 100 mm, pale yellow + pale yellow-grey + very pale browns, fracture infill is amorphous grey clay but there are no obvious qtz grit or sand clasts.		
23.30	25.20	good **[4 & 5]**	upper Saprolite	# # # # # #	near white to pale grey smectitic clay, moderately stiff, plastic, relict chalcedony veins below 23.0 m, occasional FeOx megamottles in red & red-brown to 60 mm & near base are ~150 mm. Interval has a subtle mottle-like patternation in a darker grey (possible lizardite texture ghosts). Contains clay with greasy feel (talc). No obvious quartz or sedimentary clastic infill to fractures.		23.5 m
25.20	25.35	good **[5]**	upper Saprolite	# # #	clay-rich, smectitic greenish yellow to brown, sticky & plastic, strongly Fe-stained brown & reddish, relict lizardite patternation.		**A1P33**
25.35	27.85	lost **[5]**	Saprolith & ? fracture cavity		no recovery, very low strength interval, or possibly an open fracture cavity partially infilled with wet smectitic clays at or near their liquid limit (*i.e.* >130% moisture content).	drill rods dropped through this 2.5 m interval under their own weight, nothing retained in core barrel.	
27.85	28.05	good **[5]**	upper Saprolite	Fe Fe Fe	greens to browns & yellow-browns, smectitic, sticky & plastic, stiff, has lizardite patternation, highly fractured, ferruginous.		
28.05	28.18	good **[5]**	Saprolite		pallid smectite, blotchy grey & white with some yellow mega-mottles.		
28.28	28.95	good **[5]**	Saprolite	Fe Fe # # # Fe Fe # # #	reddish + browns + pale green + lime green + pistachio green, smectite & relict serpentinite, fractured interval, highly ferruginised, FeOx + FeOH mega-mottles & along fractures & some have complex small scale oxide box-work structures.	Original errors in depths from **28.95** to **33.65** m (trays & markers) corrected,	
28.95	30.12	good **[5]**	Saprolite	| | | | | | | | | | | | | | | | | | | |	pale bluish green to grey to cream with bright yellow & brown staining & fracture alteration, smectitic relict serpentinite, more competent than above, firm to stiff, complexly fractured + regularly spaced conjugate slicken-sided sets at steep angles to the core axis.		.
30.12	33.65	good **[5 & 6]**	Saprolite	| | | | | Fe Fe | | |	pale green + pale pistachio green to mid-green + yellow & yellow-brown, relict serpentinite + smectites, soft & plastic to firm & moderately hard, fracture staining & blotches in yellow & brown.		30.92 m **A1P34**

33.65	34.10	good [6]	Saprolite		as above, moderately firm to soft, soapy-greasy appearance, brightly coloured.		
34.10	35.90	good [6]	Saprolite	Fe Fe Mn Mn Mn Mn	pale green smectitic clay with some yellow FeOH staining & blotching at 34.25 m, conspicuous black ?MnOx staining & fracture coatings between 34.5-34.8 + 35.1-35.3 m, conjugate sets of slicken-sided fractures at ~45°-~60° to core axis.		
35.90	36.05	most lost [6]	Saprolite		green smectitic relict serpentinite.	small blocks in fine cuttings & polymud	
36.05	36.15	good [6]	Saprolite	Fe Fe	mid-green relict serpentinite, crumbly to moderately hard, has brown to yellow-brown fracture staining & infill + mega-mottles & blotches.		**A1P34**
36.15	36.35	good [6]	Saprolite	Fe # # Fe	dark brown + dark yellow-brown to near black FeOH + FeOx + ?MnOx enriched interval with small oxide box-work structures, clayey.		
36.35	36.70	good [7]	vein	quartz	white to translucent milky quartz vein, massive to vuggy with bright yellow-orange FeOH staining along fractures & partial cavity infill.		
37.70	36.80	good [7]	Saprolite	# Fe	brown to dark brown Fe-stained clay interval.		
36.80	37.75	good [7]	Saprolite		pale green smecte + relict serpentinite, white chalcedony veining + relict lizard skin patternation, relict foliation, some lime to pistachio green colours, soapy-greasy appearance, abundant fractures – these are weakly FeOH stained.		
37.75	37.90	fair-poor [7]	Saprolite	# Fe # Fe	dark yellow-brown clay-rich interval, FeOH stained & enriched, highly fractured.	not well cored.	
37.90	38.50	good [7]	lower Saprolite		dark + mid + pale greens + yellow & brown, weathered serpentinite with various clays, micro- to meso-fractured & many are FeOH stained, more competent interval – firmer to stiffer than above. Transition zone to fresher rock below.		**A1P35**
38.50	39.12	good [7]	Saprock		dark green to mid greyish green + brown & orange, partially weathered serpentinite, hard & brittle, fractured with associated FeOH staining, contains enclaves of more weathered material, Base of interval is the Weathering Front, sharp change to fresh rock below.		
39.12	40.00	good [7]	Protolith		dark green to dark grey-green serpentinite cross cut by white quartz & chalcedony veins, regular fractures at 45° to ~60° to core axis, foliation at ~75° to core axis.		
40.00	**EOH**	**Σ lost ~5.6m or ~14%**		**EOH**			

A1.5: Core tray photos for cored drillholes: KLHRDD-1, THHRDD-1, & TMWRDD-1

Lake Harris HQ drill core, trays 1 to 4 of 10.

A1P11	Tray 1: 0.2-5.1 m, transported cover; orange aeolian sand on red-brown alluvium to colluvium, clays, sands and gravels to 5.0 m.
A1P12	Tray 2: 5.1-10.5m, transported cover; red-brown fluvial sands, gravels and cobbles. Note the large colour zoned subrounded silcrete clasts between 7.5-10.5 m.
A1P13	Tray 3: 10.5-15.0m. Transported cover to 14.52 m (unconformity). Fluvial-colluvial material, pale grey to yellow and variably Fe-mottled. Contains reworked brown Fe-pisoliths (2-5 mm) with granite-derived quartz grains and highly plastic clays derived from weathered greenstones. Colluvium 13.65-14.52 m, reworked weathered greenstone + granitic detritus, yellow-grey to pale greenish grey, rip-up clasts of pedolith near base. 14.52-14.75 m is Pedolith (plasmic zone) *in situ* weathered greenstone, clay rich, pale colours, variably Fe-stained, top missing, pedogenic brecciation. Upper saprolite below 14.75 m, clay-rich and generally pallid greens and bluish greys, relict lizardite patternation.
A1P14	Tray 4: 15.0-19.2m, *in situ* weathered greenstone, upper saprolite, clay-rich, pallid to a variety of green colours, Fe- and Mn-stained, distinct greasy texture where talc-like minerals abound, relict lizardite patternation.

Continued on next pages.

A1P11

A1P12

A1P13

A1P14

Lake Harris HQ drill core, trays 5 to 8 of 10.

A1P15	Tray 5: 19.2-25.9 m: *in situ* weathered greenstone, saprolite, clay-rich, a variety of greens with reddish mega-mottling, Fe- and Mn-stained, distinct greasy texture where talc-like minerals abound.
A1P16	Tray 6: 25.9-30.2 m: *in situ* weathered greenstone, upper saprolite, clay-rich, greens to bluish and grey, yellow-brown Fe-staining and black Mn-staining, distinct greasy texture where talc-like minerals abound.
A1P17	Tray 7: 30.2-35.9 m: *in situ* weathered greenstone, upper saprolite, clay-rich with relict serpentinite, bluish and grey with minor greens, brown Fe-staining, obvious white chalcedony veining 35.0-35.9 m.
A1P18	Tray 8: 35.9-41.6 m: *in situ* weathered greenstone, upper saprolite, clay-rich with relict serpentinite, greens to bluish and grey, yellow and brown Fe-staining, highly fractured and variably altered.

Continued on next pages.

A1P15

A1P16

A1P17

A1P18

A1P19

A1P20

Lake Harris drill core, trays 9 and 10 of 10.

A1P19	Tray 9: 41.6-46.5 m, *in situ* weathered greenstone, lower saprolite, clays with relict serpentinite, bluish and grey, brown Fe-staining, highly fractured and variably altered.
A1P20	Tray 10: 46.5-51.25 m, *in situ* partly weathered greenstone, lower saprolite continued as above, to 49.15 m. Grades to bluish grey serpentinite with brown Fe-staining below 49.15 m, well fractured and has brown to bright yellow-green clays within fractures.

Hopeful Hill HQ drill core, trays 1 to 4 of 8.

A1P21	Tray 1: 0.0-5.15 m: transported cover, orange aeolian sand on red-brown alluvial to colluvial clay and sand or mixtures of these with some gravel, fluvial sediments below 5 m.
A1P22	Tray 2: 5.15-9.85m: transported cover, red-brown fluvial sediments to 8.45 m; dark red-brown colluvial materials to 9.05 (unconformity) and below is a more variably coloured *in situ* pedolith plasmic zone in highly weathered greenstone, displays pedogenic brecciation and eroded top.
A1P23	Tray 3: 9.85-14.85m: *in situ* red mega-mottled greenish highly weathered greenstone plasmic zone to 9.65 m clay rich minerals. Upper saprolite, green to bluish and variably Fe-mega-mottled, displays differential weathering pseudo brecciation fabric in 2 or more greens. Dominantly clay-rich with relict bluish green serpentinite intervals.
A1P24	Tray 4: 14.85-20.35m: *in situ* weathered greenstone, variably mottled, green and bluish upper saprolite displaying weathering differential pseudo brecciation and bright yellow-green clay colours.

Continued on next pages.

A1P21

A1P22

A1P23

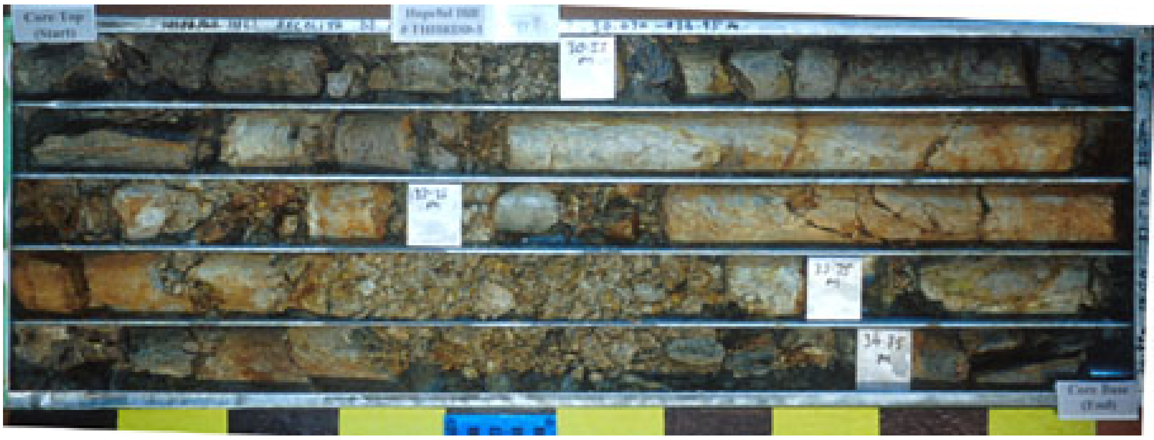
A1P24

Hopeful Hill HQ drill core, trays 5 to 8 of 8.

A1P25	Tray 5: 20.35-25.25 m: *in situ* weathered greenstone, variably mottled, green and bluish upper saprolite to 23 m displaying differential weathering with a pallid clay interval between 21.3-21.5 m. Lower saprolite below 23 m, multi coloured with yellow-brown Fe staining.
A1P26	Tray 6: 25.25-30.07 m: *in situ* weathered greenstone, lower saprolite, clay-rich with relict serpentinite, multi coloured with yellow-brown to brown Fe-staining and variable weathering development.
A1P27	Tray 7: 30.07-34.93 m: *in situ* weathered greenstone, lower saprolite, clay-rich with relict serpentinite, multi coloured with yellow-brown to brown Fe-staining and variable weathering development to 34.5 m. Saprock below, greyish green, more competent, dark brown Fe-stained fractures, partially weathered serpentinite + clay.
A1P28	Tray 8: 34.93-39.25 m: *in situ* partly weathered greenstone, saprock to protolith, greenish grey to medium or dark grey serpentinite with clayey weathering products in fractures and altered intervals, variably competent.

A1P25

A1P26



A1P27

A1P28

Mullina Well HQ drill core, trays 1 to 4 of 7.

Note: all core runs from right to left (reverse of standard layout).

A1P29	Tray 1: 0.0-7.15 m: transported cover, red-brown aeolian sand on red-brown clays, sands and minor gravel.
A1P30	Tray 2: 7.15-12.6m: transported cover, red-brown fluvial clay and sandy clay to 11.47 m, plus brown colluvial to fluvial sediment >11.47 m, clayey sand and sandy clay.
A1P31	Tray 3: 12.6-17.5m: transported clays, pale yellow and greenish, clay-rich overbank deposit to 17.35 m, smectitic, structureless & unbedded, red mega mottled. Probably derives mostly from weathered greenstone terrain. >17.35 m debris flow deposit, jumbled mix of saprolitic clasts in clast to matrix supported unit (see description below).
A1P32	Tray 4: 17.5-23.5m. Debris flow deposit to 22.7, jumbled mix of saprolitic clasts (<10->500 mm) in clast to matrix supported unit, inter-clast infill is clayey but less smectitic + grains of granitic quartz, feldspar & lithics, whole unit is bleached & mottled. (Unconformity at 22.7 m). 22.7-23.3 m *in-situ* weathered greenstone, a truncated pedolith plasmic zone, 22.7-22.9 is a remnant Fe-rich pedogenic ?capping, pedogenic brecciation, dark red megamottled and stained pale clay-rich minerals.

Continued on next pages.

A1P29

A1P30

A1P31

A1P32

A1P33

A1P34

A1P35

Mullina Well HQ drill core, trays 5 to 7 of 7.

Note: all core runs from right to left (reverse of standard layout).

A1P33	Tray 5: 23.5-30.92 m: *in situ* weathered greenstone, upper saprolite, continued. Pallid clays and megamottling cease by 29.7 m, below that level are greenish clay-rich minerals with yellowish staining. No core recovery between 25.35 to 27.85 m (?open fissure).
A1P34	Tray 6: 30.92-36.35 m: *in situ* weathered greenstone upper saprolite, continued, dominantly greenish clays with yellowish or pale brownish staining and black Mn flecking to staining or dendritic growths (especially between 33.5-34.8 m)..
A1P35	Tray 7: 36.35-40.0 m: *in situ* weathered greenstone upper saprolite to 37.9 m, lower saprolite 37.9-38.5 m, darker green to greenish grey saprock between 38.5-39.12 m with relict serpentinite evident; and foliated dark grey to near black serpentinitic greenstone protolith from 39.12 to end of hole.

APPENDIX 2
Assay data, down-hole plots & surface geochemistry plots

A2.0 Background Explanations

Table A2.1: **Soil and creek sediments**

Table A2.2: **Geochemistry of drill core materials**

Table A2.3: **Geochemistry and XRD mineralogy of described materials**

Table A2.4: **Geochemistry of aircore drilling**

Table A2.5: **Statistics of soil and stream sediment geochemistry**

Table A2.6: **Silcrete and granitic saprolite geochemistry**

Table A2.7: **Calcretes from Glenloth gold mine**

Table A2.8: **Magnetic granules in lag**

Table A2.9: **Saprock and saprolites from ultramafic rocks**

Table A2.10: **Magnetic & non-magnetic heavy mineral concentrates - R406800**

A2.1 Aircore Drilling Assay Logs

A2.11 Lake Harris

A2.12 Hopeful Hill

A2.13 Mullina Well

A2.2 Diamond Drillcore Assay Logs, Lake Harris, Hopeful Hill & Mullina Well

A2.3 Soil Geochemical Plots, Lake Harris area

A2.4 Geochemical Archive (4 ASCI Dat files, refer to CD-ROM, Appendix 7)

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A2.0 Background Explanations

TABLE A2.1: Soil and Creek sediments (refer also, Appendix 7 CD).

This table shows the geochemistry of soil (three traverses separated by lines on the table) and creek bed samples. Soil samples were taken from both just under the surface and at a slight depth (about 200 mm). Samples were analysed by ICP-OES and ICP-MS by Ultra Trace in Perth. The more readily soluble elements were determined after digestion with $HF/HClO_4/HNO_3/HCl$ and the more refractory elements after fusion with sodium peroxide. Gold, Ag and Cu were determined after cyanide leach. The data are also available in digital form on the CD as Table_A2_1.xls.

TABLE A2.2: Geochemistry of drill core materials.

This table shows the geochemistry of spot samples taken from diamond drilling to investigate the regolith stratigraphy. They represent only about 100 mm of half core each. The drilling was from Lake Harris (KLHRDD1), Hopeful Hill (THHRDD1) and Mullina Well (TMWRDD1). Samples were analysed by XRF fused disc and ICP-MS after digestion with HF/HClO4/HNO3/HCl by Ultra Trace in Perth. The data are also available in digital form on the CD as Table_A2_2.xls.

TABLE A2.3: Geochemistry and XRD mineralogy of described materials.

Surficial materials collected in the field for description were analysed by XRF fused disc and ICP-MS after digestion with HF/HClO4/HNO3/HCl by Ultra Trace in Perth. They were also mineralogically analysed by XRD and the relative mineralogical abundances recorded. The latter are semi-quantitative estimates only as the diffractions are influenced by mass absorption of materials with varied Fe content, by the crystallinity of the materials and by peak overlaps. The data are also available in digital form on the CD as Table_A2_3.xls.

TABLE A2.4: Geochemistry of aircore drilling

The geochemistry of spot samples taken from aircore drilling is presented from Hopeful Hill (Area HH), Lake Harris (Area LH) and Mullina Well (Area MW) over five pages. Samples were analysed by ICP-OES and ICP-MS by Ultra Trace in Perth. The more readily soluble elements were determined after digestion with HF/HClO4/HNO3/HCl and the more refractory elements after fusion with sodium peroxide. Gold, Ag and Cu were determined after cyanide leach. The data are also available in digital form on the CD as Table_A2_4.xls.

TABLE A2.5: Statistics of soil and stream sediment geochemistry

Statistics including Minimum, maximum, mean and the maximum/mean ratio are given for the broad suite of elements given in Table A2.1. Elements that show useful anomalies are given in bold.

TABLE A2.6: Silcrete and granitic saprolite geochemistry

This is an extract from Table A2.3, allowing the geochemistry of silcretes and silcrete lag to be compared with the geochemistry of the regolith materials from which they were derived (granitic saprolites). The data are also available in digital form on the CD as Table_A2_6.xls.

TABLE A2.7: Calcretes from Glenloth gold mine

Two samples collected from calcrete exposed by pit openings at the Glenloth gold mine contain significant Au. They were from outside the mapped area. The data are also available in digital form on the CD as Table_A2_7.xls. This is an extract from Table A2.3.

TABLE A2.8: Magnetic granules in lag

Magnetic granules from a lag, largely of silcrete on thin colluvium within a small area close to an erosional window of ultramafic rocks, show a clear ultramafic signature. The data are also available in digital form on the CD as Table_A2_8.xls.

TABLE A2.9: Saprock and saprolites from ultramafic rocks

This is an extract from Table A2.3 showing saprock and saprolites of ferruginous materials developed on ultramafic rocks. The data are also available in digital form on the CD as Table_A2_9.xls.

TABLE A2.10: Magnetic and non-magnetic heavy mineral concentrates - R406800

A heavy mineral fraction (>SG 2.85) was separated from the 1000-2000 µm size fraction from creek bed sample R406800. This was separated into magnetic and non-magnetic sub-fractions that are geochemically compared. The data are also available in digital form on the CD as Table_A2_10.xls.

A2.1 Aircore drilling logs with geochemistry

This drilling has been presented as simplified graphical logs with the geochemistry of the major and lithologically important elements (Si, Al, Fe, Mg, Ca, Ti, Zr, Ni, Mn, Co, K, Rb, Ba), economically important elements (W, Cu, Zn, Pb, Mo, Au, Ag, Sn), important pathfinder elements (As, Sb, Bi), rare earth elements (La, Dy) and the Ti/Zr ratio. These are available as .pdf files on the CD. Table A2.4 above refers. Three examples from each study area are printed herein.

- A2.11 Lake Harris
- A2.12 Hopeful Hill
- A2.13 Mullina Well

A2.2 Diamond drillcore logs with geochemistry (Lake Harris, Hopeful Hill, Mullina Well).

This drilling has been presented as simplified graphical logs with the geochemistry of spot samples. The major and lithologically important elements (Si, Al, Fe, Mg, Ca, Sr, Na, Ti, Zr, Cr, Ni, Mn, V, P, Cl, Co, K, Rb, Ba), economically important elements (W, Cu, Zn, Mo, Sn), important pathfinder elements (As, S, Sb, Bi, Tl,) and the Ti/Zr ratio. Table A2.2 above refers. These are available as .pdf files on the CD Appendix 7 and as Figures 18-20 in the body of Volume 1.

A2.3 Soil geochemistry plots, Lake Harris

These are dot plots of the geochemistry of the soil and creek bed samples given in Table A2.1 above. The abundances of each of the 16 selected elements has been divided into four ranges by consulting a normal probability plot. Actual abundances are given beside each dot. This plot has been overlain on a basic plan showing major tracks, the playas and major regolith regimes to aid interpretation. Each plot is paired: near surface samples on the left and deeper samples (about 200 mm) on the right. Three examples are provided overleaf and a further 2 comprise Figures 32 & 33 in Volume 1.

A2.4 Geochemical archive (4 ASCII ".dat" files, refer to CD, Appendix 7)

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TABLE A2.1 - SOIL AND CREEK SEDIMENTS

							Digest	Fusion	4-acid	Fusion	Fusion	4-acid	4-acid	Fusion	4-acid	CN	4-acid	CN	4-acid	4-acid	4-acid	Fusion	4-acid	Fusion	4-acid	CN	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	4-acid	4-acid	Fusion	4-acid	4-acid	Fusion	4-acid	4-acid	Fusion	Fusion	Fusion	4-acid	4-acid	Fusion	4-acid	4-acid	4-acid	Fusion	4-acid	Fusion
Sample Numbers			Coordinates				Method	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	ICP-OES	ICP-MS
					Depth	Depth	DetnLimit	0.0	0.01	0.01	0.01	0.01	0.01	0.01	0.5	5	0.5	0.2	1	0.1	0.5	0.5	2	50	1	0.1	0.5	0.5	0.2	2	0.2	0.5	0.2	1	0.1	0.5	2	1	0.2	0.1	0.2	0.5	10	0.2	0.2	0.1	0.2	0.05	2	0.5	0.5	1	10
PIRSA	Random	CSIRO	Easting	Nothing	from	to		Si	Al	Fe	Mg	Ca	K	Ti	Ag	Ag	As	Au	Ba	Bi	Cd	Ce	Co	Cr	Cu	Cu	Dy	Er	Eu	Gd	Ho	La	Lu	Mn	Mo	Nd	Ni	Pb	Pr	Rb	Sb	Sm	Sn	Tb	Te	Tl	Tm	U	V	W	Yb	Zn	Zr
	LabSeqNo	LibNo	m	m	mm	mm	Material	%	%	%	%	%	%	%	ppm	ppb	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
R406713	L08-02545	08-02458	511999	6570425	20	150	soil	41.9	2.70	1.37	0.19	0.09	1.14	0.18	<0.5	<5	2.0	<0.2	402	0.1	<0.5	26.0	2	150	9	1.1	2.0	1.0	0.6	2	0.4	14.5	<0.2	149	0.6	16.0	16	10	4.4	44.2	<0.2	3.0	<10	0.4	<0.2	0.3	<0.2	0.55	28	<0.5	1.0	29	200
R406714	L08-02544	08-02459	511945	6569953	20	150	soil	40.1	3.67	1.90	0.24	0.14	1.31	0.24	<0.5	5	2.5	<0.2	412	0.2	<0.5	39.0	4	50	11	2.0	2.5	1.5	0.8	4	0.6	20.0	0.2	319	0.2	19.5	12	12	5.4	53.4	0.2	4.0	<10	0.4	<0.2	0.3	0.2	0.70	38	1.0	1.5	49	230
R406715	L08-02473	08-02460	511905	6569590	20	150	soil	37.3	3.95	2.01	0.36	0.27	1.29	0.21	<0.5	<5	2.5	0.4	414	0.1	<0.5	32.5	8	200	17	2.8	2.5	1.5	0.8	2	0.4	17.0	0.2	203	0.8	16.5	48	13	4.8	53.3	0.2	3.0	<10	0.4	<0.2	0.3	<0.2	0.65	36	1.0	1.5	39	220
R406716	L08-02496	08-02461	511875	6569156	20	150	soil	42.1	2.56	1.11	0.13	0.11	1.11	0.15	<0.5	<5	0.5	0.2	450	<0.1	<0.5	23.0	4	50	6	1.1	1.5	1.0	0.4	2	0.4	13.0	<0.2	132	0.2	14.0	8	11	3.6	44.4	<0.2	2.5	<10	0.4	<0.2	0.3	<0.2	0.50	24	<0.5	1.0	27	150
R406717	L08-02531	08-02462	511854	6568757	20	150	soil	42.5	2.38	1.17	0.13	0.08	1.07	0.16	<0.5	<5	1.0	<0.2	452	<0.1	<0.5	29.0	4	50	6	<0.1	2.0	1.0	0.6	2	0.4	15.5	<0.2	130	0.2	17.5	6	9	4.6	40.4	<0.2	2.5	<10	0.4	<0.2	0.3	<0.2	0.60	22	2.5	1.0	20	220
R406718	L08-02478	08-02463	511854	6568757	200	250	Bca horizon	38.8	4.20	2.02	0.38	0.10	1.38	0.27	<0.5	<5	2.5	0.6	402	0.2	<0.5	40.5	6	50	13	2.6	2.5	1.5	0.8	4	0.6	20.5	0.4	247	0.4	19.5	22	13	5.4	54.6	0.2	3.5	<10	0.4	<0.2	0.3	0.2	1.05	44	1.0	1.5	42	200
R406719	L08-02532	08-02464	511827	6568334	20	150	soil	43.0	2.17	1.12	0.12	0.07	0.96	0.18	<0.5	<5	1.0	<0.2	375	0.1	<0.5	27.5	2	50	5	<0.1	2.0	1.0	0.6	2	0.4	15.0	<0.2	119	0.2	16.0	6	10	4.4	36.6	<0.2	2.5	<10	0.4	<0.2	0.2	<0.2	0.50	22	<0.5	1.0	28	270
R406720	L08-02520	08-02465	511827	6568334	200	250	Bca horizon	39.8	3.23	1.72	0.21	0.10	1.11	0.24	<0.5	5	1.5	<0.2	363	0.1	<0.5	34.5	4	200	12	2.8	2.5	1.5	0.8	4	0.4	18.0	0.4	154	0.8	19.0	12	12	5.2	44.8	0.2	3.5	<10	0.4	<0.2	0.3	0.2	0.70	38	0.5	1.5	31	280
R406721	L08-02466	08-02466	511815	6568000	20	150	soil	39.5	4.31	2.10	0.51	0.59	1.33	0.23	<0.5	<5	2.0	0.2	597	0.2	<0.5	30.0	6	50	11	1.8	2.5	1.5	0.8	2	0.4	17.0	0.2	192	0.6	16.0	30	15	4.4	50.6	0.2	3.0	<10	0.4	<0.2	0.3	0.2	0.70	40	1.0	1.5	36	190
R406722	L08-02513	08-02467	511815	6568000	250	300	calcrete	18.3	3.69	1.54	1.68	16.80	0.92	0.15	<0.5	<5	5.0	2.6	1610	<0.1	<0.5	25.0	4	50	13	2.4	4.0	2.0	1.2	6	0.8	22.0	0.4	78	0.4	26.0	14	10	6.2	35.4	<0.2	5.5	<10	0.8	<0.2	0.2	0.2	5.35	38	<0.5	1.5	43	100
R406723	L08-02470	08-02468	511797	6567728	20	150	soil	36.5	4.00	1.76	0.60	1.46	1.28	0.20	<0.5	10	1.0	0.4	436	0.1	<0.5	30.5	6	150	15	3.1	2.0	1.5	0.6	2	0.6	16.5	0.2	162	0.6	16.5	38	13	4.6	49.6	0.2	3.0	<10	0.4	<0.2	0.3	0.2	0.50	34	1.0	1.5	34	420
R406724	L08-02554	08-02469	511797	6567728	250	300	Bca horizon	30.1	4.91	2.12	1.25	5.83	1.24	0.23	<0.5	5	2.5	1.0	483	0.2	<0.5	40.0	8	50	16	4.3	2.5	1.5	0.8	2	0.6	20.5	<0.2	145	0.4	18.5	20	14	5.2	51.0	0.2	3.5	<10	0.4	<0.2	0.3	0.2	0.75	52	1.0	1.5	37	200
R406725	L08-02501	08-02470	511779	6567599	20	150	soil	36.3	4.88	2.34	0.72	1.59	1.40	0.27	<0.5	5	2.0	0.4	365	0.2	<0.5	37.5	8	50	14	3.8	3.0	1.5	0.8	4	0.6	20.5	0.2	248	0.4	19.5	18	14	5.2	57.5	0.2	3.5	<10	0.6	<0.2	0.3	0.2	0.65	42	0.5	1.5	49	190
R406726	L08-02468	08-02471	511779	6567599	250	300	Bca horizon	21.5	5.51	2.45	1.94	11.70	1.21	0.26	<0.5	5	3.5	2.4	275	0.2	<0.5	40.5	10	100	40	10.4	3.5	2.0	1.0	4	0.8	22.5	0.2	161	0.8	21.5	66	15	5.8	55.0	0.2	4.5	<10	0.6	<0.2	0.3	0.4	0.85	56	1.0	1.5	46	150
R406727	L08-02494	08-02472	511759	6567202	20	150	soil B	37.3	4.27	1.93	0.37	0.29	1.21	0.24	<0.5	5	2.0	<0.2	346	0.2	<0.5	38.0	8	50	11	1.9	2.5	1.5	0.6	2	0.6	19.5	0.4	225	0.4	19.0	16	14	5.2	50.6	0.2	3.5	<10	0.4	<0.2	0.3	0.2	0.70	42	1.0	1.5	35	220
R406728	L08-02505	08-02473	511885	6566897	20	150	soil	40.5	3.50	1.78	0.29	0.13	1.16	0.27	<0.5	10	1.5	<0.2	376	0.1	<0.5	32.5	4	50	9	1.6	2.5	1.5	0.6	2	0.4	17.5	0.2	257	0.4	17.5	10	12	4.6	45.7	<0.2	3.5	<10	0.4	<0.2	0.3	0.2	0.65	34	0.5	1.5	35	280
R406729	L08-02480	08-02474	511885	6566897	200	250	B horizon	38.3	5.72	2.93	0.61	0.25	1.38	0.35	<0.5	10	4.0	0.4	338	0.2	<0.5	47.0	8	150	18	3.5	3.0	2.0	1.0	4	0.6	23.0	0.4	327	0.8	21.0	20	17	5.8	63.0	0.2	3.5	<10	0.6	<0.2	0.4	0.4	0.80	58	1.0	2.0	46	250
R406730	L08-02546	08-02475	511895	6566744	20	150	soil	41.0	3.07	1.58	0.17	0.10	1.08	0.22	<0.5	<5	1.0	<0.2	344	0.1	<0.5	31.5	4	50	8	1.5	2.0	1.5	0.8	2	0.4	16.5	0.2	196	0.4	17.0	10	12	4.6	43.4	<0.2	3.0	<10	0.4	<0.2	0.3	0.2	0.60	30	0.5	1.5	30	270
R406731	L08-02521	08-02476	511895	6566744	150	185	B horizon	36.6	4.91	2.56	0.32	0.18	1.25	0.27	<0.5	10	2.5	<0.2	360	0.2	<0.5	41.0	10	100	14	3.7	2.5	1.5	0.6	4	0.6	19.0	0.2	351	0.4	18.0	38	17	4.8	57.8	0.2	3.5	<10	0.4	<0.2	0.4	0.2	0.80	54	<0.5	1.5	48	260
R406732	L08-02486	08-02477	511864	6566453	20	150	soil	34.0	5.60	2.34	0.60	0.43	1.53	0.29	<0.5	10	2.5	<0.2	375	0.2	<0.5	44.5	12	100	15	2.4	3.0	1.5	0.8	4	0.6	21.0	0.2	352	0.6	19.5	40	16	5.4	62.4	0.2	3.5	<10	0.4	<0.2	0.4	0.2	0.70	54	1.0	1.5	53	200
R406733	L08-02502	08-02478	511864	6566453	150	185	B horizon	28.1	8.01	4.03	1.32	0.66	1.65	0.37	<0.5	10	4.0	0.6	251	0.3	<0.5	55.0	10	100	19	3.6	3.5	2.0	1.0	4	0.8	27.0	0.4	380	0.6	23.5	28	19	6.6	77.3	0.4	4.5	<10	0.6	<0.2	0.5	0.4	0.85	80	1.5	2.0	81	170
R406734	L08-02497	08-02479	511817	6566171	20	150	soil	38.8	5.36	2.54	0.60	0.33	1.45	0.28	<0.5	5	1.5	0.4	374	0.2	<0.5	41.0	8	50	14	3.3	3.0	1.5	0.8	4	0.6	21.0	0.2	280	0.4	19.0	22	15	5.2	60.4	0.2	3.5	<10	0.6	<0.2	0.4	0.2	0.65	48	0.5	1.5	52	180
R406735	L08-02542	08-02480	511817	6566171	250	300	hardpan	29.6	8.16	4.00	1.56	1.05	1.60	0.37	<0.5	<5	5.5	0.8	1050	0.3	<0.5	57.0	10	200	27	3.8	4.0	2.0	1.0	4	0.8	29.0	0.4	312	1.0	25.0	32	18	6.8	81.0	0.4	5.0	<10	0.8	<0.2	0.5	0.4	1.05	94	1.0	2.5	71	170
R406736	L08-02465	08-02481	511771	6565909	20	150	soil	34.8	5.77	2.67	0.69	0.90	1.56	0.30	<0.5	10	2.5	0.4	365	0.2	<0.5	40.5	8	50	19	3.7	3.0	1.5	0.8	4	0.6	21.0	0.2	299	0.4	19.0	42	16	5.2	66.0	0.2	3.5	<10	0.4	<0.2	0.4	0.2	0.70	52	1.5	1.5	51	200
R406737	L08-02518	08-02482	511771	6565909	300	350	B horizon	32.1	5.56	2.64	0.87	4.24	1.43	0.27	<0.5	10	5.0	1.2	326	0.2	<0.5	40.5	10	50	18	5.5	3.0	2.0	0.8	4	0.6	21.5	0.6	232	0.4	20.5	20	15	5.6	61.6	0.2	4.0	<10	0.6	<0.2	0.4	0.2	0.75	54	0.5	2.0	52	210
R406738	L08-02491	08-02483	511710	6565649	20	150	soil	31.4	7.54	3.40	0.89	0.64	1.78	0.36	<0.5	10	3.5	0.4	321	0.2	<0.5	54.5	12	150	24	5.3	4.0	2.0	1.0	4	0.8	27.5	0.4	384	0.8	24.0	30	20	6.6	78.7	0.4	5.0	<10	0.6	<0.2	0.5	0.4	0.95	74	1.5	2.0	95	190
R406739	L08-02535	08-02484	511710	6565649	200	250	Bca horizon	27.0	6.97	3.30	1.49	4.99	1.68	0.32	<0.5	10	4.0	1.2	333	0.2	<0.5	50.5	10	100	27	2.7	4.0	2.0	1.0	4	0.8	28.0	0.4	293	1.4	26.0	30	17	7.2	72.0	0.4	5.5	<10	0.6	<0.2	0.4	0.4	1.00	70	1.0	2.0	64	190
R406740	L08-02482	08-02485	511656	6565540	20	150	soil	37.0	6.01	2.67	0.68	0.98	1.60	0.30	<0.5	10	3.5	0.6	390	0.2	<0.5	42.5	8	50	17	4.2	3.0	2.0	0.8	4	0.6	23.0	0.2	285	0.6	20.0	24	18	5.8	67.6	0.2	4.0	<10	0.6	<0.2	0.4	0.2	0.75	58	2.0	1.5	47	180
R406741	L08-02500	08-02486	511656	6565540	200	250	Bca horizon	30.6	6.28	3.06	0.94	4.56	1.47	0.30	<0.5	5	5.0	1.4	318	0.2	<0.5	45.5	8	150	21	5.1	3.0	2.0	1.0	4	0.8	24.5	0.4	238	0.6	22.5	26	17	6.2	65.3	0.2	4.5	<10	0.6	<0.2	0.4	0.4	0.80	68	1.0	2.0	54	180
R406742	L08-02551	08-02487	512978	6566590	20	150	soil	34.3	5.65	2.53	0.82	1.65	1.63	0.27	<0.5	5	2.5	0.6	595	0.2	<0.5	50.0	8	100	18	4.0	3.0	2.0	1.0	4	0.6	25.0	0.2	301	0.6	23.0	20	19	6.4	62.9	0.2	4.5	<10	0.6	<0.2	0.5	0.2	0.95	48	1.0	1.5	53	230
R406743	L08-02553	08-02488	512978	6566590	150	200	hardpan-silcrete	30.6	5.16	2.05	0.95	5.50	1.37	0.21	<0.5	10	4.5	3.4	720	0.2	<0.5	37.0	6	50	17	3.6	2.5	1.5	0.6	2	0.6	19.0	0.2	170	0.4	16.0	16	44	4.6	55.2	0.2	3.0	<10	0.4	<0.2	0.3	0.2	2.35	48	0.5	1.5	41	160
R406744	L08-02464	08-02489	512969	6566694	20	150	soil	34.5	5.12	2.17	0.78	2.58	1.47	0.26	<0.5	15	3.5	1.2	587	0.2	<0.5	40.5	8	100	16	2.9	2.5	1.5	0.8	2	0.6	21.5	0.2	217	0.6	19.0	44	18	5.2	58.2	0.2	3.5	<10	0.4	<0.2	0.4	0.2	1.00	44	1.0	1.5	39	210
R406745	L08-02560	08-02490	512969	6566694	150	200	hardpan-silcrete	27.1	5.02	1.80	1.86	8.91	1.33	0.17	<0.5	45	4.0	6.4	642	0.1	<0.5	41.0	6	50	19	4.2	2.0	1.0	0.8	2	0.4	21.0	<0.2	115	0.4	18.0	20	14	5.2	53.1	0.2	3.0	<10	0.4	<0.2	0.4	<0.2	1.95	46	0.5	1.0	32	110
R406746	L08-02477	08-02491	512967	6566741	20	200	soil	35.0	4.53	1.99	1.74	1.15	1.29	0.22	<0.5	15	3.5	1.6	629	0.1	<0.5	39.5	6	100	13	2.8	2.0	1.0	0.8	2	0.4	20.5	0.2	168	0.6	17.0	36	16	5.0	44.3	0.2	3.0	<10	0.4	<0.2	0.3	<0.2	1.15	46	0.5	1.0	36	220
R406747	L08-02483	08-02492	512967	6566741	300	400	soil B	28.6	5.97	2.54	2.00	4.29	1.41	0.26	<0.5	5	9.5	1.6	614	0.2	<0.5	40.0	10	250	20	2.6	2.5	1.5	0.8	2	0.4	20.5	0.2	125	1.0	16.5	74	15	5.0	54.6	0.4	3.5	<10	0.4	<0.2	0.4	<0.2	3.25	112	1.0	1.5	49	170
R406748	L08-02547	08-02493	512962	6566750	30	150	calcrete/saprolith	28.6	7.19	1.17	2.90	3.93	0.71	0.19	<0.5	10	2.5	2.6	419	0.1	<0.5	91.5	4	50	13	3.0	2.5	1.5	1.4	4	0.4	43.5	<0.2	53	0.2	36.5	16	16	10.4	33.5	<0.2	6.0	<10	0.4	<0.2	0.2	<0.2	7.60	54	0.5	1.0	21	120
R406749	L08-02489	08-02494	512955	6566760	900	1000	saprolith, felsic	29.1	11.60	0.71	0.52	0.33	1.15	0.29	<0.5	5	1.0	0.2	385	0.2	<0.5	169.0	2	50	8	0.2	3.0	1.5	2.4	6	0.4	74.5	0.4	41	<0.2	64.0	12	20	18.8	43.6	<0.2	9.5	<10	0.6	<0.2	0.3	<0.2	2.25	56	0.5	1.0	27	140
R406750	L08-02490	08-02495	512957	6566764	1900	2000	saprolith, felsic	30.5	10.50	2.25	0.84	0.38	1.09	0.23	<0.5	5	8.5	0.6	374	0.2	<0.5	167.0	6	50	40	0.5	3.0	1.5	2.4	6	0.6	89.0	0.2	73	0.6	67.5	36	26	19.4	49.8	<0.2	9.5	<10	0.8	<0.2	1	0.2	3.40	150	0.5	1.0	75	120
R406751	L08-02474	08-02496	512970	6566785	0	0	vein quartz	46.1	0.08	0.34	0.04	0.03	0.01	0.01	<0.5	<5	<0.5	1.4	49	<0.1	<0.5	1.0	2	50	3	0.3	<0.5	<0.5	<0.2	<2	<0.2	<0.5	0.6	28	0.4	<0.5	6	2	<0.2	0.3	<0.2	<0.5	<10	<0.2	<0.2	<0.1	<0.2	0.05	2	2.0	<0.5	5	10
R406752	L08-02493	08-02497	512970	6566784	0	0	saprolith, u-mafic	23.8	5.84	8.18	7.62	5.86	0.77	0.38	<0.5	<5	<0.5	0.4	741	<0.1	<0.5	6.0	62	1400	39	1.3	2.5	1.5	0.6	2	0.6	2.0	0.2	950	<0.2	4.0	190	3	0.8	30.2	<0.2	1.5	<10	0.4	0.2	0.2	0.2	0.20	232	<0.5	1.5	31	40
R406753	L08-02498	08-02498	512977	6566787	0	0	pedolith, u-mafic	28.9	2.65	5.61	9.50	3.16	0.07	0.17	<0.5	<5	<0.5	0.6	561	0.3	<0.5	5.0	92	2350	37	0.8	1.0	1.0	0.2	<2	0.2	2.5	<0.2	1580	0.4	2.5	1220	2	0.8	1.4	<0.2	1.0	<10	<0.2	0.4	0.3	<0.2	0.30	90	<0.5	1.0	49	30
R406754	L08-02552	08-02499	512972	6566823	0	0	Fe chalcedony lag	45.6	0.15	0.80	0.13	0.07	0.03	0.01	<0.5	<5	<0.5	<0.2	481	<0.1	<0.5	2.5	6	50	3	0.2	<0.5	<0.5	<0.2	<2	<0.2	1.0	<0.2	516	<0.2	1.0	48	2	0.4	2.2	<0.2	<0.5	<10	<0.2	<0.2	0.3	<0.2	0.25	8	1.5	<0.5	5	20
R406755	L08-02499	08-02500	512972	6566823	0	0	saprolith, u-mafic	22.1	5.05	8.67	9.79	7.32	0.09	0.34	<0.5	<5	1.0	<0.2	91	0.2	<0.5	4.5	74	2200	7	0.2	2.0	1.5	0.8	<2	0.4	3.0	0.2	1420	<0.2	4.0	428	2	1.0	3.2	<0.2	1.5	<10	0.4	0.4	<0.1	<0.2	<0.05	208	<0.5	1.5	57	40
R406756	L08-02515	08-02501	512972	6566823	0	0	saprolith, u-mafic	22.0	3.71	7.40	13.60	4.66	0.07	0.23	<0.5	<5	<0.5	0.6	437	0.2	<0.5	5.5	72	2600	64	1.6	1.5	1.0	0.4	<2	0.4	3.5	<0.2	937	<0.2	4.5	928	4	1.0	1.9	<0.2	1.0	<10	0.2	0.6	<0.1	<0.2	0.10	154	<0.5	1.0	65	30
R406757	L08-02476	08-02502	512972	6566823	20	100	soil/sediment	33.4	3.85	5.01	5.44	2.19	0.93	0.24	<0.5	<5	1.0	<0.2	463	0.1	<0.5	18.5	46	1350	17	1.7	1.5	1.0	0.4	<2	0.4	9.5	0.2	605	0.4	9.0	618	9	2.4	30.5	<0.2	2.0	<10	0.2	<0.2	0.3	<0.2	0.55	90	0.5	1.0	42	120
R406758	L08-02556	08-02503	513012	6566880	0	0	ferricrete	8.0	5.81	44.00	0.14	0.17	0.03	0.15	<0.5	15	7.0	<0.2	663	0.3	<0.5	8.5	202	3400	78	0.4	2.0	1.0	0.4	<2	0.4	3.0	0.2	890	2.4	6.0	3550	15	1.4	0.9	<0.2	1.5	<10	0.2	<0.2	<0.1	0.2	3.15	344	4.5	1.5	102	50
R406759	L08-02514	08-02504	512970	6566854	0	0	ferricrete	10.3	4.88	40.30	0.20	0.16	0.05	0.23	<0.5	15	7.5	0.4	584	0.3	<0.5	6.5	170	7550	60	0.5	1.0	0.5	0.2	<2	0.2	3.0	<0.2	520	2.4	5.0	1930	9	1.0	1.8	<0.2	1.0	<10	<0.2	<0.2	<0.1	<0.2	1.30	304	2.5	0.5	59	40
R406760	L08-02517	08-02505	512970	6566930	20	100	soil	37.8	4.32	2.99	0.67	0.43	1.40	0.21	<0.5	20	2.0	0.4	675	0.1	<0.5	33.5	16	300	12	1.9	2.0	1.0	0.6	2	0.4	17.5	0.6	199	0.4	16.5	146	14	4.6	50.3	<0.2	3.0	<10	0.4	<0.2	0.4	<0.2	0.70	56	0.5	1.5	35	230
R406761	L08-02543	08-02506	512964	6566992	20	150	soil	33.0	3.30	1.61	0.84	5.40	1.11	0.18	<0.5	10	1.5	0.6	461	0.1	<0.5	27.5	6	100	14	3.4	2.0	1.0	0.6	2	0.4	14.0	<0.2	145	0.2	13.5	38	12	3.8	42.1	<0.2	3.0	<10	0.4	<0.2	0.3	<0.2	0.50	28	0.5	1.0	31	200
R406762	L08-02512	08-02507	512964	6566992	150	200	calcrete-silcrete	15.8	3.66	1.86	2.71	16.00	0.74	0.16	<0.5	20	2.5	4.4	2000	0.1	<0.5	26.5	8	100	33	6.7	2.0	1.0	0.6	2	0.4	14.5	0.2	84	0.4	13.0	44	9	3.4	33.7	0.2	2.5	<10	0.4	<0.2	0.2	<0.2	0.90	40	0.5	1.0	36	120
R406763	L08-02559	08-02508	512953	6567104	20	150	soil	38.6	3.11	1.51	0.40	2.38	1.21	0.20	<0.5	10	1.5	0.2	520	0.1	<0.5	25.5	4	50	8	2.0	2.0	1.0	0.6	2	0.4	14.0	<0.2	133	0.2	14.0	14	12	3.6	44.6	<0.2	2.5	<10	0.4	<0.2	0.3	<0.2	0.50	28	<0.5	1.0	22	240
R406764	L08-02509	08-02509	512953	6567104	500	550	calcrete-hardpan	26.3	5.08	2.29	1.05	10.10	1.17	0.29	<0.5	15	5.5	0.6	2450	0.2	<0.5	40.5	8	50	14	2.3	3.5	2.0	1.2	4	0.8	25.5	0.2	154	0.6	24.0	20	16	6.4	49.6	0.2	5.0	<10	0.6	<0.2	0.3	0.4	1.50	78	0.5	1.5	38	200
R406765	L08-02536	08-02510	512950	6567214	20	150	soil	36.0	5.51	2.55	0.55	0.24	1.65	0.27	<0.5	20	1.5	0.4	627	0.2	<0.5	41.5	6	200	14	0.8	2.5	1.5	0.8	2	0.4	21.5	0.4	222	1.0	19.0	26	17	5.2	61.1	0.2	3.5	<10	0.4	<0.2	0.4	0.2	0.85	48	1.0	1.5	41	230
R406766	L08-02487	08-02511	512950	6567214	150	200	calcrete-silcrete-hpan	30.6	6.93	2.61	1.19	1.90	1.71	0.27	<0.5	20	4.0	2.2	844	0.2	<0.5	43.5	6	50	16	2.4	2.0	1.0	0.6	2	0.4	21.5	0.4	136	0.6	15.5	32	19	4.8	67.9	0.2	2.5	<10	0.4	<0.2	0.5	0.2	1.20	68	1.0	1.0	51	150
R406767	L08-02484	08-02512	512932	6567318	20	150	soil	41.0	3.49	1.68	0.20	0.13	1.28	0.27	<0.5	<5	1.5	0.2	584	0.2	<0.5	31.0	4	100	19	1.5	2.0	1.5	0.6	2	0.4	15.5	0.2	158	0.4	15.0	20	13	4.0	45.6	0.2	3.0	<10	0.4	<0.2	0.3	0.2	0.65	34	0.5	1.5	35	320
R406768	L08-02539	08-02513	512932	6567318	150	200	hardpan	31.2	7.06	2.85	2.03	1.90	1.58	0.32	<0.5	20	4.5	3.4	1120	0.2	<0.5	44.5	8	200	27	3.9	2.5	1.5	0.8	2	0.6	24.5	0.2	170	1.0	18.5	24	20	5.4	67.0	0.4	3.0	<10	0.4	<0.2	0.5	0.2	1.25	68	1.0	1.5	45	170
R406769	L08-02481	08-02514	512925	6567420	20	150	soil	34.5	3.70	1.60	0.94	3.25	1.21	0.26	<0.5	5	0.5	0.6	905	0.1	<0.5	31.5	4	50	12	2.1	2.0	1.5	0.6	2	0.4	17.0	0.2	156	0.4	16.5	16	12	4.6	44.9	0.2	3.0	<10	0.4	<0.2	0.3	<0.2	0.70	34	1.5	1.5	32	250
R406770	L08-02548	08-02515	512925	6567420	150	200	calcrete, siliceous	22.3	4.92	2.21	2.20	11.80	0.97	0.21	<0.5	15	6.0	3.6	1890	0.2	<0.5	36.0	6	50	19	3.0	2.5	1.5	0.6	2	0.4	19.0	0.2	107	0.4	16.5	20	13	4.4	44.0	0.2	3.0	<10	0.4	<0.2	0.3	0.2	1.65	54	0.5	1.5	37	130
R406771	L08-02467	08-02516	513469	6566761	350	400	dune sand	40.0	2.97	0.96	0.14	0.15	1.43	0.13	<0.5	<5	1.0	<0.2	715	<0.1	<0.5	18.5	4	150	8	0.6	1.0	1.0	0.4	<2	0.2	10.0	<0.2	126	0.4	9.5	40	16	2.6	42.1	<0.2	2.0	<10	<0.2	<0.2	0.3	<0.2	0.55	22	0.5	1.0	17	160
R406772	L08-02492	08-02517	513469	6566761	20	150	dune sand	42.5	3.04	1.08	0.14	0.15	1.44	0.13	<0.5	<5	1.0	<0.2	709	<0.1	<0.5	19.0	4	100	4	0.6	1.0	0.5	0.4	<2	0.2	10.5	<0.2	152	0.2	9.0	20	13	2.8	42.7	<0.2	2.0	<10	0.2	<0.2	0.3	<0.2	0.60	24	5.5	0.5	22	160
R406773	L08-02558	08-02518	513460	6566853	350	400	dune sand	41.8	2.64	1.07	0.17	0.15	1.28	0.11	<0.5	<5	1.5	<0.2	761	<0.1	<0.5	16.0	4	150	8	0.4	1.0	1.0	0.4	<2	0.2	10.0	<0.2	120	<0.2	9.5	22	13	2.6	39.5	<0.2	1.5	<10	<0.2	<0.2	0.3	<0.2	0.55	20	<0.5	0.5	14	140
R406774	L08-02534	08-02519	513460	6566853	20	150	dune sand	41.5	2.83	1.09	0.19	0.16	1.35	0.12	<0.5	<5	1.0	<0.2	725	<0.1	<0.5	20.0	4	250	7	<0.1	1.5	0.5	0.4	<2	0.2	11.0	<0.2	163	0.6	10.5	30	11	3.0	40.0	<0.2	2.0	<10	0.2	<0.2	0.3	<0.2	0.55	24	<0.5	0.5	14	150
R406775	L08-02508	08-02520	513441	6566952	350	400	aeolian sand	40.1	3.68	1.21	0.35	0.23	1.55	0.12	<0.5	<5	2.0	0.2	874	<0.1	<0.5	20.0	6	150	5	<0.1	1.0	0.5	0.4	<2	0.2	10.5	<0.2	153	0.2	10.0	40	12	2.8	46.0	<0.2	1.5	<10	<0.2	<0.2	0.4	<0.2	0.80	28	0.5	0.5	27	110
R406776	L08-02471	08-02521	513441	6566952	20	150	aeolian sand	38.0	3.76	1.31	0.36	0.28	1.50	0.12	<0.5	<5	3.0	0.4	851	<0.1	<0.5	21.0	8	250	10	0.9	1.0	0.5	0.4	<2	0.2	11.0	<0.2	185	0.6	9.5	48	12	3.0	46.2	<0.2	2.0	<10	<0.2	<0.2	0.4	<0.2	0.75	30	0.5	0.5	17	140
R406777	L08-02562	08-02522	513439	6566990	200	250	pedolith/saprolith	32.0	7.12	3.16	3.84	0.31	1.63	0.17	<0.5	5	11.0	3.0	521	0.6	<0.5	26.0	8	300	9	1.1	1.5	1.0	0.6	<2	0.4	12.5	<0.2	164	0.2	10.5	136	18	3.0	61.8	<0.2	2.0	<10	0.2	<0.2	0.6	<0.2	2.70	102	0.5	1.0	44	170
R406778	L08-02529	08-02523	513439	6566990	150	200	sediment/pedolith	36.3	4.39	2.80	1.86	0.44	1.36	0.21	<0.5	5	8.5	3.0	576	0.2	<0.5	35.5	16	400	12	2.7	2.0	1.0	0.6	2	0.4	17.5	0.2	292	0.4	15.0	174	17	4.4	44.3	<0.2	3.0	<10	0.4	<0.2	0.3	<0.2	1.60	88	0.5	1.0	38	230
R406779	L08-02527	08-02524	513439	6566990	20	100	creek sediment	40.0	3.30	1.22	0.44	0.26	1.42	0.09	<0.5	5	2.0	<0.2	817	<0.1	<0.5	17.5	6	300	10	0.8	1.0	<0.5	0.4	<2	<0.2	9.5	<0.2	167	0.8	8.0	54	11	2.4	37.0	<0.2	1.5	<10	<0.2	<0.2	0.3	<0.2	0.85	30	<0.5	<0.5	18	100
R406780	L08-02530	08-02525	513426	6567047	200	250	pedolith/saprolith	26.5	5.12	12.00	2.34	0.37	0.30	0.24	<0.5	10	11.0	0.4	184	0.9	<0.5	9.5	46	2800	55	1.9	1.0	0.5	0.2	<2	<0.2	4.0	<0.2	215	0.6	4.5	818	11	1.2	6.3	<0.2	1.0	<10	<0.2	<0.2	<0.1	<0.2	1.65	210	<0.5	<0.5	43	70
R406781	L08-02472	08-02526	513426	6567047	50	150	pedolith	31.3	5.49	4.20	1.59	0.38	1.36	0.23	<0.5	5	7.5	1.2	503	0.2	<0.5	43.0	20	600	19	2.3	2.5	1.5	0.8	2	0.4	21.5	0.2	415	0.8	18.5	278	13	5.2	42.0	0.2	3.5	<10	0.4	<0.2	0.3	<0.2	1.75	104	1.0	1.0	47	210
R406782	L08-02524	08-02527	513426	6567047	0	30	sediment	39.4	2.26	1.39	0.38	0.29	1.00	0.08	<0.5	10	2.5	0.2	810	<0.1	<0.5	12.0	6	200	4	0.3	0.5	<0.5	0.2	<2	<0.2	6.5	<0.2	143	0.4	6.5	58	9	1.8	27.1	<0.2	1.0	<10	<0.2	<0.2	0.3	<0.2	0.65	26	1.0	<0.5	9	100
R406783	L08-02479	08-02528	513394	6567051	0	450	silcrete	45.1	0.15	0.58	0.06	0.07	0.03	1.50	<0.5	25	2.5	0.4	1480	0.4	<0.5	7.5	6	350	10	0.8	1.5	1.0	0.4	<2	0.4	2.5	0.4	38	4.2	3.5	16	24	0.8	1.4	0.4	1.0	<10	0.2	<0.2	0.1	0.2	5.00	56	4.0	1.5	9	410
R406784	L08-02533	08-02529	513394	6567051	500	550	saprolite	26.9	12.40	1.63	1.13	0.11	0.41	0.16	<0.5	10	3.0	0.4	148	0.1	<0.5	7.5	8	1000	5	0.6	<0.5	<0.5	<0.2	<2	<0.2	4.0	<0.2	61	0.6	2.5	178	6	0.8	13.3	<0.2	0.5	<10	<0.2	<0.2	<0.1	<0.2	1.45	92	0.5	<0.5	40	80
R406785	L08-02507	08-02530	513406	6567140	150	200	upper clay	32.1	6.06	4.29	2.44	0.39	1.84	0.32	<0.5	<5	9.5	1.2	729	0.2	<0.5	41.0	14	450	20	3.3	2.5	1.5	0.8	4	0.6	20.0	0.6	638	1.0	18.5	92	18	5.2	58.8	0.2	3.5	<10	0.4	<0.2	0.4	0.2	1.80	148	1.0	1.5	56	230
R406786	L08-02525	08-02531	513406	6567140	200	300	lower clay	24.8	5.58	5.01	3.82	3.72	1.57	0.27	<0.5	45	37.0	2.2	1160	0.2	<0.5	49.0	26	550	24	3.0	2.5	1.5	0.8	4	0.6	20.5	1.8	1320	1.2	17.5	114	19	4.8	49.0	0.4	3.5	<10	0.4	0.2	0.4	0.2	3.40	372	1.5	1.5	64	140
R406787	L08-02522	08-02532	513409	6567200	0	350	silcrete	44.3	0.36	1.31	0.16	0.10	0.04	1.60	<0.5	25	1.5	0.8	1320	0.2	<0.5	10.0	10	700	7	0.6	2.0	1.5	0.4	<2	0.4	4.0	0.4	85	3.0	5.0	38	21	1.4	1.3	0.2	1.0	<10	0.2	<0.2	0.1	0.2	2.95	90	3.5	2.0	45	470
R406788	L08-02519	08-02533	513409	6567200	380	450	calcrete + saprolite	21.4	4.74	3.38	2.33	12.00	0.82	0.40	<0.5	5	3.0	5.0	607	0.3	<0.5	25.0	10	600	24	5.4	2.0	1.0	0.4	<2	0.4	13.5	1.2	215	1.2	11.0	126	15	3.2	29.9	0.2	2.5	<10	0.4	<0.2	0.2	<0.2	2.20	84	1.5	1.5	40	160
R406789	L08-02526	08-02534	513409	6567200	450	500	saprolite + calcrete	23.6	10.40	1.59	1.30	6.94	0.45	0.18	<0.5	<5	2.0	2.2	106	0.2	<0.5	23.5	12	950	11	1.8	1.5	0.5	0.4	<2	0.4	7.5	<0.2	197	0.8	8.0	212	6	2.0	12.9	<0.2	1.5	<10	0.2	<0.2	0.1	<0.2	1.70	40	1.0	0.5	29	70
R406790	L08-02503	08-02535	513377	6567230	20	150	soil	38.0	4.31	5.33	0.39	0.17	1.45	0.35	0.5	5	4.0	0.2	849	0.3	<0.5	37.5	8	900	10	1.5	2.5	1.5	0.8	2	0.6	18.5	0.2	212	0.6	16.5	100	17	4.8	50.1	0.2	3.5	<10	0.4	<0.2	0.4	0.2	1.15	102	1.0	2.0	37	380
R406791	L08-02541	08-02536	513377	6567230	200	250	hardpan	36.5	5.16	3.35	0.47	0.19	1.89	0.21	<0.5	5	4.0	0.4	1580	0.2	<0.5	34.5	4	450	8	1.1	2.0	1.0	0.8	2	0.4	19.0	<0.2	142	0.4	15.5	44	21	4.6	59.8	0.2	3.0	<10	0.4	<0.2	0.5	<0.2	1.00	70	0.5	1.0	28	170
R406793	L08-02523	08-02537	513319	6567324	50	150	soil	38.5	4.18	2.56	0.52	0.24	1.59	0.27	<0.5	5	2.0	0.2	673	0.2	<0.5	33.0	6	200	9	1.7	2.0	1.5	0.6	2	0.4	17.0	0.4	235	0.4	16.0	30	15	4.4	54.9	0.2	3.0	<10	0.4	<0.2	0.4	0.2	0.90	56	0.5	1.5	41	350
R406794	L08-02461	08-02538	513319	6567324	300	400	sub-soil	35.6	5.36	2.79	1.01	0.40	1.66	0.28	<0.5	10	3.5	0.8	607	0.2	<0.5	35.5	8	250	20	4.3	2.5	1.5	0.6	2	0.4	18.0	0.2	286	1.2	16.0	32	17	4.2	60.0	0.4	3.0	<10	0.4	<0.2	0.4	<0.2	1.15	58	1.0	1.5	41	210
R406795	L08-02550	08-02539	513224	6567375	50	150	soil	34.0	5.95	6.20	0.64	0.13	1.63	0.40	<0.5	5	4.5	0.4	755	0.4	<0.5	45.5	10	800	15	2.7	3.0	2.0	0.8	4	0.6	23.0	0.4	311	1.0	19.5	82	19	5.6	60.2	0.4	4.0	<10	0.6	<0.2	0.4	0.4	1.50	126	1.0	2.0	50	350
R406796	L08-02540	08-02540	513224	6567375	250	300	hardpan	29.5	7.67	4.73	1.90	0.12	1.91	0.33	<0.5	5	4.5	1.4	405	0.3	<0.5	61.5	16	350	24	5.3	3.5	2.0	1.2	4	0.8	27.0	0.4	333	0.6	25.5	62	24	6.8	72.4	0.4	5.0	<10	0.6	<0.2	0.5	0.4	1.70	106	1.0	2.0	64	160
R406797	L08-02555	08-02541	513224	6567375	0	0	Fe lag	3.3	3.88	56.90	0.07	0.19	0.03	0.69	<0.5	<5	10.0	<0.2	4670	1.4	<0.5	58.0	12	8250	17	0.9	2.5	1.5	0.6	2	0.4	9.5	0.2	335	2.2	12.0	532	39	3.2	1.4	0.6	2.5	<10	0.4	0.6	<0.1	0.2	2.35	1220	1.0	1.5	33	130
R406798	L08-02458	08-02542	513158	6567457	50	150	aeolian sand	42.0	2.43	1.80	0.09	0.09	1.28	0.14	<0.5	5	2.0	<0.2	745	0.2	<0.5	17.0	4	200	6	0.7	1.5	0.5	0.4	<2	0.2	10.0	<0.2	130	0.6	9.5	22	13	2.6	41.5	0.2	1.5	<10	0.2	<0.2	0.3	<0.2	0.50	34	1.0	1.0	9	130
R406799	L08-02488	08-02543	513158	6567457	400	450	aeolian sand	41.8	2.25	1.40	0.10	0.09	1.25	0.13	<0.5	5	0.5	<0.2	789	<0.1	<0.5	16.0	4	200	5	0.4	1.0	0.5	0.4	<2	0.2	9.5	0.2	88	0.4	9.5	28	12	2.6	37.1	<0.2	1.5	<10	<0.2	<0.2	0.3	<0.2	0.50	32	1.0	0.5	26	160
R406800	L08-02557	08-02544	513102	6567516	0	50	sediment	41.0	2.11	2.48	0.09	0.07	1.16	0.13	<0.5	15	2.5	6.0	955	0.2	<0.5	12.5	4	400	4	0.1	1.0	<0.5	0.4	<2	<0.2	7.0	<0.2	87	0.6	6.5	56	17	2.0	32.7	<0.2	1.5	<10	<0.2	<0.2	0.3	<0.2	0.65	52	<0.5	0.5	13	110
R406801	L08-02510	08-02545	513102	6567516	200	250	saprolith	37.0	4.33	2.61	0.70	0.39	1.21	0.18	<0.5	5	7.5	2.0	537	0.2	<0.5	15.5	4	200	5	0.9	0.5	0.5	0.2	<2	<0.2	10.0	<0.2	73	0.6	5.0	38	16	1.6	40.5	0.2	1.0	<10	<0.2	<0.2	0.4	<0.2	0.90	90	0.5	0.5	20	100
R406802	L08-02463	08-02546	513049	6567559	50	200	soil	38.0	5.24	2.61	0.79	0.24	1.64	0.33	<0.5	10	3.5	0.6	722	0.2	<0.5	38.5	8	200	20	2.2	2.5	1.5	0.6	2	0.6	19.5	0.2	227	1.2	16.5	48	17	4.6	59.1	0.4	3.0	<10	0.4	<0.2	0.4	0.2	0.85	60	1.0	1.5	49	250
R406803	L08-02504	08-02547	513049	6567559	300	350	hardpan	35.4	5.86	2.49	1.12	1.27	1.61	0.28	<0.5	10	3.5	1.0	2160	0.2	<0.5	29.0	4	50	12	2.5	1.5	1.0	0.4	2	0.4	16.0	0.2	116	0.6	12.5	14	19	3.6	56.4	0.2	2.5	<10	0.2	<0.2	0.5	<0.2	0.95	68	1.0	1.0	33	150
R406804	L08-02528	08-02548	512048	6568196	5	100	creek sediment	21.6	4.97	2.31	2.23	13.30	1.17	0.23	<0.5	<5	4.0	1.4	824	0.2	<0.5	41.0	8	100	30	8.0	3.5	2.0	1.0	4	0.8	24.5	0.2	162	0.4	23.5	24	28	6.0	49.6	0.2	4.5	<10	0.6	<0.2	0.3	0.4	0.95	54	0.5	2.0	39	140
R406805	L08-02460	08-02549	512032	6568207	5	100	creek sediment	38.9	2.89	1.21	0.30	1.44	1.17	0.13	<0.5	5	1.5	0.2	544	<0.1	<0.5	20.5	6	250	12	1.4	1.5	1.0	0.6	2	0.4	13.0	<0.2	101	1.0	12.0	14	13	3.4	40.3	<0.2	2.5	<10	0.2	<0.2	0.3	<0.2	0.60	24	0.5	0.5	16	70
R406806	L08-02549	08-02550	511508	6567500	5	100	creek sediment	36.1	4.55	2.16	0.59	2.69	1.22	0.23	<0.5	5	2.5	0.4	600	0.1	<0.5	36.5	6	50	11	2.6	2.5	1.5	0.8	4	0.6	20.0	0.2	208	0.6	19.0	14	15	5.0	49.8	0.2	3.5	<10	0.4	<0.2	0.3	0.2	0.90	40	0.5	1.5	37	170
R406807	L08-02469	08-02551	511558	6567503	5	100	creek sediment	37.0	2.62	0.92	0.24	3.63	1.09	0.11	<0.5	<5	1.5	0.4	517	<0.1	<0.5	18.0	2	50	6	1.1	1.5	1.0	0.4	<2	0.4	11.5	0.6	75	0.2	11.5	16	13	3.2	35.9	<0.2	2.0	<10	0.2	<0.2	0.3	<0.2	0.65	20	0.5	0.5	15	80
R406808	L08-02506	08-02552	511430	6566145	5	70	creek sediment	42.5	2.70	1.02	0.16	0.47	1.15	0.14	<0.5	<5	0.5	<0.2	450	<0.1	<0.5	19.0	2	150	9	1.3	1.5	1.0	0.4	<2	0.2	12.0	<0.2	103	0.8	11.0	10	14	3.0	38.2	<0.2	2.0	<10	0.2	<0.2	0.3	<0.2	0.45	22	0.5	1.0	20	110
R406809	L08-02462	08-02553	511182	6564636	5	30	creek sediment	41.5	3.27	1.49	0.18	0.13	1.05	0.18	<0.5	<5	1.5	0.2	364	0.1	<0.5	24.0	6	50	12	2.1	1.5	1.0	0.6	<2	0.4	13.5	<0.2	166	0.4	12.5	6	14	3.6	40.5	0.2	2.5	<10	0.2	<0.2	0.3	<0.2	0.50	30	1.0	1.0	22	160
STD 006	L08-02459	08-02559	-	-	-	-	In-house reference	34.0	10.30	0.34	0.20	0.02	3.20	0.27	<0.5	10	2.5	83.2	358	0.3	<0.5	36.0	6	200	8	0.1	1.0	1.0	0.6	<2	0.2	19.0	<0.2	10	0.6	12.0	42	13	3.4	107.0	7.8	2.0	<10	0.2	0.2	0.6	<0.2	1.10	94	3.5	1.0	10	90
STD 006	L08-02485	08-02560	-	-	-	-	In-house reference	34.0	10.30	0.34	0.20	0.03	3.40	0.29	<0.5	10	2.5	90.8	365	0.2	<0.5	37.5	2	150	8	0.1	1.5	1.0	0.6	<2	0.4	19.5	0.4	8	0.6	12.5	14	13	3.6	106.0	8.0	2.0	<10	0.2	<0.2	0.6	<0.2	1.15	96	3.5	1.0	32	110
STD 006	L08-02511	08-02561	-	-	-	-	In-house reference	34.5	10.20	0.32	0.20	0.03	3.37	0.28	<0.5	5	1.5	75.8	351	0.3	<0.5	37.5	2	150	5	0.1	1.0	1.0	0.6	<2	0.2	18.5	0.2	7	0.6	12.5	14	14	3.6	103.0	7.6	2.0	<10	0.2	<0.2	0.6	<0.2	1.15	96	2.5	1.0	24	110
STD 006	L08-02537	08-02562	-	-	-	-	In-house reference	34.5	10.40	0.31	0.19	0.03	3.38	0.26	<0.5	<5	1.5	81.6	360	0.3	<0.5	36.5	1	150	5	<0.1	1.5	1.0	0.6	<2	0.2	19.0	0.4	7	0.6	12.0	8	14	3.4	103.0	7.2	2.0	<10	0.2	<0.2	0.6	<0.2	1.15	94	2.5	1.0	9	110
Mean								34.3	10.30	0.33	0.20	0.03	3.34	0.28	<0.5	8	2.0	82.9	358.5	0.275	<0.5	36.9	2.75	162.5	6.5	0.1	1.3	1.0	0.6	<2	0.3	19.0	0.3	8	0.6	12.3	19.5	13.5	3.5	104.8	7.7	2.0	<10	0.2	0.2	0.6	<0.2	1.14	95	3.0	1.0	18.75	105
AccVal							Accepted value	33.8	9.65	0.29	0.21	0.02	2.94	0.22	0.45	0.45	2.0	86.0	330	0.3	<0.05	31.0	0.7	120	6	6.0	-	-	0.5	-	-	21.6	0.1	8	3.0	-	9	10	-	109.0	12.8	2.3	0.75	-	-	-	-	1.00	102	6.0	0.8	5	120
STD 009	L08-02563	08-02563	-	-	-	-	In-house reference	6.5	4.18	49.60	0.11	0.09	0.17	0.33	1	10	470.0	81.2	319	1.3	0.5	21.5	20	500	149	1.3	2.5	1.5	0.6	2	0.4	10.0	0.2	1870	5.0	12.0	56	50	3.0	6.3	0.8	2.5	<10	0.4	0.6	0.1	0.2	2.60	716	14.0	1.5	341	110
Acc Val			-	-	-	-	Accepted value	6.4	3.99	45.50	0.09	0.09	0.17	0.42	0.83	0.83	438.0	87.0	354	1.32	0.48	18.0	18.5	471	141	141.0	-	-	0.8	-	-	11.7	0.1	1543	5.0	-	30	53	-	6.0	0.6	2.8	1.12	-	-	-	-	1.00	932	9.0	1.3	295	88

TABLE A2.2

GEOCHEMISTRY OF DRILL CORE MATERIALS

Drillhole No	Sample No	Depth (m)	Description	XRF SiO2 %	XRF Al2O3 %	XRF Fe2O3 %	XRF Na2O %	XRF K2O %	XRF MgO %	XRF CaO %	XRF P2O5 %	XRF TiO2 %	XRF MnO %	XRF S ppm	XRF Ba ppm	XRF Pb ppm	XRF Y ppm	XRF Nb ppm	ICP-MS Ag ppm	ICP-MS As ppm	ICP-MS Bi ppm	ICP-MS Cd ppm	XRF Ce ppm	XRF Cl ppm	XRF Co ppm	XRF Cr ppm	XRF Cu ppm	XRF Ga ppm	XRF La ppm	ICP-MS Mo ppm	XRF Ni ppm	XRF Rb ppm	ICP-MS Sb ppm	ICP-MS Sn ppm	XRF Sr ppm	ICP-MS Te ppm	ICP-MS Tl ppm	XRF V ppm	ICP-MS W ppm	XRF Zn ppm	XRF Zr ppm
KLHRDD1	R 619670	0.85-0.95	Red-brown clayey sediment + earthy calcrete	57.2	7.83	2.73	0.29	1.05	1.43	13.60	0.044	0.347	0.01	529	717	<10	10	<10	2.5	4.5	0.1	<0.5	<10	890	20	<10	20	<10	<10	0.8	10	50	0.2	1	160	<0.2	0.3	60	21.5	50	190
KLHRDD1	R 619671	1.40-1.55	Pale brown indurated sediment	49.7	10.50	3.36	0.42	1.06	1.56	15.00	0.053	0.369	0.01	1085	2060	<10	20	<10	<0.5	5.5	0.2	<0.5	<10	750	20	<10	20	<10	<10	0.4	10	60	0.4	2	310	<0.2	0.3	80	1.5	40	140
KLHRDD1	R 619672	2.80-2.90	Red-brown hardpan, indurated gravel & clay sediment	71.3	11.20	3.21	1.14	1.89	0.74	3.34	0.033	0.376	0.03	272	627	<10	20	<10	<0.5	4.5	0.2	<0.5	10	300	30	<10	20	10	<10	1.0	10	70	0.4	2	160	<0.2	0.5	60	3.5	210	210
KLHRDD1	R 619673	4.20-4.25	Red-brown clay-rich sediment	75.9	12.00	3.63	0.89	1.62	0.70	0.29	0.023	0.461	0.01	160	627	<10	<10	<10	0.5	3.5	0.3	<0.5	<10	270	30	<10	20	10	<10	0.8	10	60	0.4	2	90	<0.2	0.4	60	5.5	370	260
KLHRDD1	R 619674	4.95-5.10	Pale brown weakly indurated sediment	80.5	9.76	2.78	0.82	1.45	0.66	0.22	0.015	0.348	0.02	168	627	20	10	10	0.5	3.5	0.2	<0.5	10	800	30	<10	20	10	<10	1.0	20	50	0.4	2	80	<0.2	0.4	60	5.0	520	120
KLHRDD1	R 619675	6.67-6.73	Pale brown indurated gravelly sediment	71.8	13.40	5.29	0.85	1.19	0.98	0.30	0.020	0.482	0.01	172	537	<10	<10	<10	<0.5	8.0	0.2	<0.5	<10	260	20	10	20	20	<10	1.2	<10	50	0.6	2	80	<0.2	0.3	100	1.5	860	150
KLHRDD1	R 619676	9.38-9.45	Brown alluvium	81.4	8.51	3.46	1.17	0.99	0.57	0.13	0.010	0.343	<0.01	136	358	<10	<10	<10	<0.5	6.0	0.1	<0.5	<10	2960	20	<10	20	10	<10	1.0	10	50	0.6	2	60	<0.2	0.3	70	2.5	2200	140
KLHRDD1	R 619677	10.50-10.55	Pale greyish clay-rich sediment	77.3	10.10	4.34	1.01	0.50	1.37	0.17	0.007	0.469	<0.01	188	90	<10	<10	<10	<0.5	9.0	0.2	<0.5	<10	3270	30	160	<10	10	<10	1.0	50	30	0.4	2	40	<0.2	0.2	80	2.5	490	190
KLHRDD1	R 619678	11.25-11.33	Multicoloured colluvium with abraded Fe-pisoliths + mottles	41.6	10.80	36.00	0.52	0.17	0.67	0.12	0.021	0.659	0.03	284	90	40	30	<10	<0.5	52.0	1.6	<0.5	<10	2260	90	3680	20	<10	<10	8.4	450	30	0.8	2	30	<0.2	<0.1	770	3.0	130	220
KLHRDD1	R 619679	13.05-13.13	Multicoloured colluvium with abraded Fe-pisoliths + mottles	72.7	10.70	7.24	0.77	0.10	1.06	0.10	0.017	0.802	0.05	401	448	<10	20	<10	<0.5	7.0	1.1	<0.5	<10	5780	100	650	20	10	<10	2.2	500	<10	0.4	2	20	<0.2	<0.1	150	4.0	350	190
KLHRDD1	R 619680	13.85-13.95	Pale greyish clay-rich plasmic zone, yellow mottles	56.0	22.20	3.99	1.77	0.11	2.49	0.16	0.005	1.100	<0.01	581	90	<10	10	10	<0.5	3.0	0.4	<0.5	40	13600	30	1670	10	30	<10	1.8	520	<10	0.2	2	30	<0.2	<0.1	60	3.0	670	180
KLHRDD1	R 619681	18.80-18.85	Green smectitic clay-talc, saprolite	43.2	11.60	11.60	2.52	0.06	16.80	0.88	0.012	0.613	0.09	633	<89.57	<10	<10	<10	<0.5	1.5	<0.1	<0.5	20	15300	390	6510	170	<10	<10	<0.2	3940	<10	<0.2	<1	30	0.2	<0.1	380	2.0	340	60
KLHRDD1	R 619682	25.40-25.50	Green & yellow-brown clay-rich ferruginous saprolite	43.6	9.31	17.80	2.39	0.08	14.30	0.20	0.017	0.459	0.06	521	<89.57	<10	<10	<10	<0.5	2.0	0.4	<0.5	<10	12100	290	4730	120	<10	<10	0.8	3550	<10	<0.2	<1	20	<0.2	<0.1	270	7.5	1540	70
KLHRDD1	R 619683	36.55-36.65	Brown & grey Fe-stained clayey lower saprolite	8.1	1.35	20.20	0.66	0.03	15.60	18.10	0.039	0.094	1.41	288	806	<10	90	<10	<0.5	8.5	0.2	3.5	<10	6250	280	610	160	<10	<10	4.6	1740	<10	<0.2	<1	120	<0.2	4.0	160	14.5	680	50
KLHRDD1	R 619684	50.55-51.15	Med-grey serpentinite + some green clay, saprock-protolith	46.9	6.15	7.47	1.01	0.03	23.60	6.90	0.025	0.322	0.14	332	<89.57	60	<10	<10	<0.5	1.0	0.6	<0.5	<10	7900	30	2290	<10	<10	<10	<0.2	570	<10	<0.2	<1	70	0.6	<0.1	60	1.0	310	<10
THHRDD1	R 619685	0.30-0.35	Pinkish-white calcrete (sample from mud pit wall near hole)	31.7	3.05	1.58	0.18	0.47	1.14	32.40	0.033	0.187	<0.01	629	269	<10	<10	<10	<0.5	4.0	<0.1	<0.5	10	1000	30	<10	20	<10	<10	0.4	10	50	<0.2	<1	370	<0.2	0.2	50	<0.5	10	160
THHRDD1	R 619686	1.00-1.10	Red-brown harpan, sediment, sandy-gravelly	58.8	9.22	3.51	0.64	1.21	1.66	10.80	0.033	0.404	0.02	669	627	<10	20	10	1.0	7.0	0.2	<0.5	50	3850	30	<10	20	<10	<10	0.8	20	<10	0.4	2	200	<0.2	0.4	100	10.5	560	210
THHRDD1	R 619687	2.45-2.55	Red-brown sediment, sandy-gravelly + MnOx coatings & flecks	69.9	14.20	5.45	0.67	1.54	1.09	0.19	0.037	0.510	0.03	264	358	<10	30	10	<0.5	7.0	0.2	<0.5	20	900	<10	<10	<10	20	<10	1.0	<10	100	0.4	3	90	<0.2	0.5	60	3.0	700	100
THHRDD1	R 619688	5.00-5.08	Red-brown sediment, sandy-gravelly	62.3	16.90	8.96	0.66	1.29	1.11	0.14	0.038	0.613	0.02	541	179	<10	10	10	0.5	8.5	0.5	<0.5	<10	3430	20	210	30	10	<10	1.6	40	80	0.6	4	70	<0.2	0.4	160	8.0	1340	210
THHRDD1	R 619689	7.07-7.15	Red-brown sediment, sandy-gravelly, + colluvium, pt silicified	59.2	16.50	12.20	0.71	1.28	1.23	0.13	0.038	0.717	0.02	441	269	<10	<10	<10	<0.5	9.5	0.6	<0.5	<10	1680	<10	140	<10	10	<10	1.4	<10	70	1.0	4	60	<0.2	0.4	160	1.5	650	160
THHRDD1	R 619690	8.63-8.75	Yellow-brown colluvium, silt-sand, part indurated	66.4	12.20	4.84	1.01	0.91	1.53	2.65	0.019	0.658	0.01	777	269	<10	20	<10	<0.5	4.0	0.3	<0.5	<10	5850	20	170	30	20	<10	1.2	60	50	0.8	5	80	<0.2	0.2	80	1.5	840	140
THHRDD1	R 619691	9.45-9.60	Maroon plasmic zone, clay-rich, FeOx stained	78.3	3.68	8.68	1.09	0.22	0.84	0.29	0.018	0.308	<0.01	1914	1344	<10	<10	<10	<0.5	16.0	1.8	<0.5	<10	6250	40	1070	60	<10	<10	2.2	150	20	0.6	<1	260	<0.2	0.2	360	1.0	1160	80
THHRDD1	R 619692	12.15-12.21	Green saprolite, smectite clay-rich	50.2	14.70	7.81	1.09	0.39	1.92	8.23	0.012	0.264	<0.01	833	896	<10	<10	<10	<0.5	2.0	0.1	<0.5	<10	3070	80	1700	70	<10	<10	0.6	600	30	0.4	1	120	<0.2	<0.1	100	1.0	720	70
THHRDD1	R 619693	15.38-15.49	Dark brown Fe-rich clay, indurated & chalcedony veined	52.1	9.73	20.00	1.44	0.27	4.73	1.62	0.008	0.294	0.04	409	<89.57	<10	<10	<10	<0.5	15.0	0.2	<0.5	<10	2200	100	2950	60	<10	<10	3.0	1310	20	0.8	<1	80	<0.2	<0.1	170	3.5	2800	60
THHRDD1	R 619694	16.23-16.32	Green saprolite, smectite clay-rich, hard, some Fe stains	54.5	22.40	6.57	1.04	0.25	2.38	0.33	0.002	0.240	0.02	264	<89.57	<10	<10	<10	<0.5	2.0	<0.1	<0.5	<10	1470	70	4130	30	<10	<10	0.6	1110	<10	<0.2	<1	60	<0.2	<0.1	100	1.5	980	30
THHRDD1	R 619695	23.65-23.75	Dark green lower saprolite, clay-talc-serpentine	47.6	8.16	10.10	0.86	0.06	19.80	6.91	0.009	0.401	0.13	244	<89.57	60	<10	<10	<0.5	<0.5	<0.1	<0.5	<10	430	110	2390	40	<10	<10	<0.2	990	30	<0.2	<1	30	<0.2	<0.1	160	1.0	700	60
THHRDD1	R 619696	36.45-36.50	Dark grey saprock + green & yellow clays	43.9	8.32	15.30	1.66	0.10	18.10	3.09	0.023	0.431	0.20	573	<89.57	20	<10	<10	<0.5	5.0	0.2	<0.5	<10	3000	190	4540	30	<10	<10	0.4	1990	<10	0.4	1	50	<0.2	<0.1	180	1.0	1250	60
TMWRDD1	R 619697	0.60-0.80	Orange dune sand with earthy to nodular calcrete	83.4	3.63	1.99	0.15	0.71	0.39	4.29	0.017	0.232	0.01	180	179	<10	10	<10	<0.5	1.5	<0.1	<0.5	<10	1000	20	<10	10	<10	<10	0.8	10	50	0.2	<1	80	<0.2	0.2	40	1.0	40	250
TMWRDD1	R 619698	1.80-2.00	Red-brown snad-clay sediment + earthy calcrete	41.7	5.58	2.32	0.24	0.77	1.22	24.40	0.028	0.281	<0.01	1049	806	<10	<10	<10	<0.5	5.0	0.1	<0.5	<10	2520	20	<10	10	<10	<10	0.8	10	50	0.2	1	410	<0.2	0.2	60	0.5	790	170
TMWRDD1	R 619699	3.80-3.90	Red-brown hardpan, sediment	67.4	11.10	4.81	0.50	1.51	1.11	4.46	0.036	0.475	0.03	481	537	<10	10	<10	<0.5	5.0	0.3	<0.5	30	1260	30	<10	30	<10	<10	1.0	20	60	0.4	2	170	<0.2	0.3	80	1.0	400	200
TMWRDD1	R 619700	5.00-5.10	Red-brown sediment	53.7	9.98	5.29	0.55	1.19	1.21	12.40	0.030	0.489	0.02	773	537	<10	20	<10	<0.5	7.5	0.3	<0.5	<10	1270	20	10	20	<10	<10	1.2	10	60	0.4	2	260	<0.2	0.3	110	1.5	370	190
TMWRDD1	R 619701	6.80-7.10	Reddish sediment-colluvium	59.1	14.70	5.78	0.67	1.18	1.08	5.18	0.043	0.713	0.02	2087	448	<10	30	10	<0.5	9.0	0.3	<0.5	<10	2690	30	30	20	20	<10	2.4	30	70	0.4	3	130	<0.2	0.3	130	3.5	210	250
TMWRDD1	R 619702	7.90-8.00	Dark reddish sediment + duricrust	62.0	15.40	5.89	0.65	1.20	0.98	3.51	0.044	0.725	0.03	593	358	<10	10	<10	<0.5	8.5	0.3	<0.5	40	1980	30	30	20	20	<10	1.8	20	70	0.6	3	100	<0.2	0.3	140	2.0	50	250
TMWRDD1	R 619703	8.30-8.40	Dark reddish sediment with ?palaeosol overprint	62.5	18.00	6.75	0.66	1.51	1.38	0.15	0.036	0.770	0.02	553	179	<10	10	<10	<0.5	10.0	0.4	<0.5	<10	2170	30	60	30	20	<10	2.2	40	70	0.4	3	50	<0.2	0.3	200	3.5	540	240
TMWRDD1	R 619704	10.00-10.10	Dark reddish clayey sand-gravel, variably silicified	73.0	12.90	5.16	0.40	0.99	0.63	0.10	0.035	0.697	0.01	609	269	<10	<10	<10	<0.5	10.0	0.3	<0.5	<10	1000	20	30	20	20	<10	1.8	10	60	0.4	3	350	<0.2	0.3	110	3.0	890	320
TMWRDD1	R 619705	11.20-11.30	Dark red-brown clay-rich ?plasmic zone material	76.5	10.50	4.47	0.50	0.94	0.61	0.09	0.024	0.650	0.01	709	179	<10	<10	<10	<0.5	6.0	0.2	<0.5	<10	2130	20	<10	20	10	<10	2.2	10	50	0.4	3	30	<0.2	0.3	90	1.5	340	310
TMWRDD1	R 619706	12.20-12.30	Red mottled pale brown plasmic zone	74.4	9.58	7.27	0.54	1.03	0.88	0.08	0.025	0.719	0.03	1033	90	<10	10	10	<0.5	42.0	0.4	<0.5	<10	3460	30	40	20	10	<10	2.6	20	60	0.6	3	30	<0.2	0.3	220	4.0	1620	370
TMWRDD1	R 619707	12.70-12.90	Red mottled gleyed plasmic zone	68.3	11.70	9.20	0.56	1.24	1.26	0.10	0.020	0.718	0.02	1193	179	<10	<10	<10	<0.5	58.0	0.5	<0.5	<10	3150	20	60	20	10	<10	2.4	30	70	0.6	3	30	<0.2	0.2	320	3.0	300	330
TMWRDD1	R 619708	16.95-17.05.	Maroon-dark red-grey mega mottle FeOx rich	36.4	11.90	40.10	0.26	0.04	0.27	0.05	0.033	0.947	0.02	2067	<89.57	30	<10	<10	<0.5	93.0	0.8	<0.5	<10	1390	30	730	20	<10	<10	5.2	50	30	1.0	3	<10	<0.2	<0.1	870	8.0	1080	260
TMWRDD1	R 619709	19.45-19.55	Gleyed clay with maroon mega mottles, upper saprolite	44.5	17.10	25.20	0.36	0.08	0.40	0.05	0.020	0.705	0.02	1402	179	<10	<10	<10	<0.5	32.0	<0.1	<0.5	<10	1800	20	750	80	<10	<10	1.6	40	20	0.2	2	20	<0.2	<0.1	390	3.0	780	140
TMWRDD1	R 619710	23.60-23.70	Pale bluish grey saprolite, smectite + talc + chalcedony veins	48.8	31.40	3.87	0.42	0.06	0.53	0.07	0.002	1.430	0.04	929	<89.57	<10	<10	<10	<0.5	<0.5	<0.1	<0.5	<10	3530	20	500	60	30	<10	<0.2	50	<10	<0.2	<1	20	<0.2	<0.1	110	<0.5	980	80
TMWRDD1	R 619711	29.00-29.15	Greenish clay-rich serpentine saprolite + yellow & red Fe staining	42.7	18.50	23.10	0.85	0.10	1.60	0.18	0.014	0.725	0.03	1286	<89.57	<10	<10	<10	<0.5	1.5	<0.1	<0.5	<10	3780	70	660	160	<10	<10	2.0	250	20	<0.2	2	30	<0.2	<0.1	200	<0.5	1140	70
TMWRDD1	R 619712	34.78-34.90	Pale green clay + black MnOx veins & streaks	51.1	18.20	14.20	1.46	0.30	2.63	0.34	0.011	0.779	0.14	853	<89.57	<10	50	<10	<0.5	2.0	<0.1	<0.5	40	4280	110	530	140	<10	<10	<0.2	320	<10	<0.2	<1	70	<0.2	<0.1	160	<0.5	820	70
TMWRDD1	R 619713	36.35-36.70	Translucent-white vein quartz with yellow FeOH coatings (?Au)	83.9	3.63	8.57	0.17	0.08	0.24	0.06	0.053	0.208	0.22	280	269	<10	20	<10	<0.5	3.5	<0.1	<0.5	80	1190	70	140	100	<10	<10	0.8	80	20	0.2	<1	<10	<0.2	0.3	120	1.5	290	50
TMWRDD1	R 619714	38.03-38.13	Greenish clay-serpentine lower saprolite + brown Fe staining	51.8	19.10	12.60	2.36	0.33	2.85	1.31	0.044	0.818	0.06	821	<89.57	<10	150	<10	<0.5	2.5	<0.1	<0.5	100	3260	90	570	120	10	<10	<0.2	310	20	<0.2	<1	120	<0.2	<0.1	310	<0.5	780	70
TMWRDD1	R 619715	39.63-39.70	Dark grey & green-gray serpentinite protolith, partially weathered	51.7	14.10	13.20	2.36	0.12	8.73	4.47	0.044	0.655	0.13	140	<89.57	60	10	<10	<0.5	2.5	<0.1	<0.5	<10	340	130	540	100	<10	<10	<0.2	480	40	<0.2	1	70	<0.2	<0.1	260	<0.5	330	80
STD 007	R 619748			42.0	17.40	28.30	0.08	0.15	0.23	0.20	0.027	1.350	0.04	204	<89.57	30	<10	<10	<0.5	63.0	2.2	<0.5	<10	60	20	370	60	10	<10	2.6	40	40	1.2	2	<10	<0.2	<0.1	720	13.5	20	230
AccVal				42.8	16.72	28.07	0.03	0.14	0.24	0.21	0.010	1.480	0.02	290	49	23	5	6	1.5	66.0	2.5	0.4	9	-	10	407	50	33	5	6.0	40	12	1.1	3	11	-	-	851	11.0	20	183

Analytical Methods

The samples marked XRF have been cast using a 12:22 flux to form a glass bead which has been analysed by XRF.

The samples marked ICP-MS have been digested with a mixture of hydrofluoric, nitric, hydrochloric and perchloric acids and, after evaporation, taken up in HCl. They were then determined by Inductively Coupled Plasma (ICP) Mass Spectrometry.

TABLE A2.3

GEOCHEMISTRY AND XRD MINERALOGY OF DESCRIBED MATERIALS

FieldNo	LabSeqNo	LibNo	Coordinates x	Coordinates y	R Number	Description	XRF SiO2	XRF Al2O3	XRF Fe2O3	XRF MnO	XRF MgO	XRF CaO	XRF Na2O	XRF K2O	XRF TiO2	XRF P2O5
			m	m			%	%	%	%	%	%	%	%	%	%
H 0001	L08-02438	08-02433	513413	6567185	622560	Silcrete with chalcedony fragments	91.87	0.39	1.61	0.024	0.16	0.19	0.08	0.02	3.13	0.007
H 0002	L08-02435	08-02434	514681	6566206	622561	Granite saprolite	50.36	23.13	1.10	0.005	0.67	0.11	2.51	0.29	0.11	0.001
H 0002A	L08-02441	08-02435	514681	6566206	622562	Granite saprolite silcreted and calcreted	91.80	2.65	1.94	0.008	0.23	0.19	0.02	0.03	0.32	0.023
H 0002B	L08-02447	08-02436	514681	6566206	622563	Silcrete	95.16	0.12	0.88	0.008	0.03	0.05	0.24	0.02	2.33	0.006
H 0003	L08-02439	08-02437	514624	6566515	622564	Dune sand	93.27	2.87	1.13	0.010	0.09	0.07	0.33	0.89	0.15	0.014
H 0004	L08-02455	08-02438	511520	6566767	622565	Calcrete	37.60	8.46	2.82	0.018	1.72	19.06	0.18	0.87	0.29	0.060
H 0005	L08-02443	08-02439	510885	6669728	622566	Lag of GRV	68.63	13.72	4.15	0.095	0.70	0.45	3.71	5.04	0.64	0.130
H 0006	L08-02448	08-02440	509836	6566876	622567	Silcrete	96.12	0.19	0.63	0.008	0.02	0.05	0.00	0.02	2.38	0.026
H 0008	L08-02446	08-02441	519586	6568066	622568	Gypsum dune	47.74	1.22	0.43	0.005	0.24	14.35	0.14	0.43	0.05	0.006
H 0009	L08-02452	08-02442	519770	6567534	622569	Yellow dune	93.30	2.54	0.81	0.008	0.09	0.13	0.36	0.90	0.09	0.010
H 0010	L08-02450	08-02443	512961	6566754	622570	Granitic detritus	79.19	9.22	2.36	0.012	0.47	0.38	1.15	1.90	0.30	0.018
H 0011	L08-02437	08-02444	512961	6566754	622571	Carbonated granite saprolite	48.72	12.49	1.10	0.012	2.15	12.77	0.56	1.14	0.27	0.024
H 0012	L08-02445	08-02445	512961	6566754	622572	Granite saprolite	62.06	17.16	1.48	0.007	0.76	0.30	1.50	0.59	0.34	0.017
H 0013	L08-02449	08-02446	512977	6566783	622573	Amphibolite	51.30	11.09	11.27	0.125	11.04	8.23	3.19	0.56	0.61	0.007
H 0014	L08-02444	08-02447	513012	6566880	622574	Ferruginous saprolite lag of ultramafic	13.46	9.32	60.39	0.172	0.20	0.20	0.04	0.02	0.20	0.036
H 0015A	L08-02451	08-02448	512932	6567318	622575	Lag of silcrete and Fe silcrete	92.92	0.47	2.86	0.013	0.05	0.09	0.01	0.02	2.12	0.011
H 0015B	L08-02454	08-02449	512932	6567318	622576		86.60	1.05	8.40	0.019	0.04	0.05	0.01	0.02	2.40	0.026
H 0019	L08-02433	08-02450	513082	6566983	622578	Hardpan	63.22	8.86	9.96	0.049	4.51	2.28	0.56	0.97	0.39	0.027
H 0020	L08-02442	08-02451	513307	6567147	622579	Mag lag	4.23	8.57	77.99	0.043	0.13	0.16	0.01	0.02	0.83	0.040
H 0021	L08-02456	08-02452	513264	6567033	622580	Mag lag	3.73	9.13	78.09	0.034	0.10	0.08	0.08	0.02	0.76	0.039
H 0022A	L08-02436	08-02453	513154	6566977	622581	Ferruginous saprolite of ultramafic	9.08	1.37	70.37	0.304	0.85	0.28	0.10	0.07	0.08	0.027
H 0022B	L08-02440	08-02454	513154	6566977	622582	Ferruginous saprolite of ultramafic	39.03	1.23	45.98	0.332	0.72	0.18	0.39	0.05	0.05	0.028
H 0023	L08-02453	08-02455	511520	6566767	622583	Calcrete from stream	29.27	3.08	1.16	0.007	1.72	32.47	0.11	0.58	0.19	0.074
STD 0001(	L08-02434	08-02456	-	-			29.65	12.25	10.43	0.046	0.68	19.15	0.12	0.20	1.21	0.015
		AccVal					30.08	12.54	10.94	0.045	0.68	20.03	0.15	0.20	1.46	0.030
STD 0000(	L08-02457	08-02457	-	-			71.51	18.08	0.38	0.003	0.30	0.02	0.38	3.64	0.41	0.006
		AccVal					72.21	18.23	0.42	0.001	0.34	0.03	0.40	3.54	0.37	0.030

FieldNo	XRF Cl	XRF Ba	XRF Sr	XRF Rb	XRF Ce	XRF La	XRF Y	XRF Ga	XRF Cr	XRF Ni	XRF Co	XRF V	XRF Cu	XRF Pb	XRF Zn	ICP-MS As	ICP-MS Sb	ICP-MS Bi	XRF S	ICP-MS Te	CP-MS W	ICP-MS Mo	ICP-MS Sn	ICP-MS Tl	XRF Nb	XRF Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
H 0001	630	427	37	1	10	7	9	25	2222	35	10	115	6	35	157	3	0.6	0.2	950	<0.2	10	5.4	3	0.1	26	417
H 0002	36900	16	14	7	14	2	2	99	26	<2	2	28	<7	18	3	3	<0.2	<0.1	330	<0.2	0.5	1.4	2	0.1	<1	51
H 0002A	30	97	17	<5	12	<1	4	9	18	17	3	61	5	17	1	8	0.2	<0.1	240	<0.2	0.5	1.8	2	<0.1	5	266
H 0002B	1890	302	28	<2	9	1	13	<1	15	<5	3	56	4	30	<1	3.5	0.4	<0.1	320	<0.2	2	5.6	3	<0.1	44	506
H 0003	<40	377	37	24	11	2	8	5	24	2	4	20	4	19	7	1.5	<0.2	<0.1	160	<0.2	0.5	0.8	<1	0.2	0	142
H 0004	630	1732	313	33	22	12	10	12	27	30	7	51	12	16	38	8	0.4	0.1	970	<0.2	1	0.4	2	0.3	3	78
H 0005	450	2187	242	159	104	72	41	15	8	10	1	17	7	22	85	6	0.8	<0.1	260	<0.2	2	0.8	3	0.9	17	310
H 0006	10	115	8	<2	12	<6	18	3	12	<5	5	30	2	25	2	1	0.4	<0.1	230	<0.2	2	5.6	5	<0.1	91	683
H 0008	50	193	98	10	10	1	2	1	6	<7	3	6	<7	10	2	2.5	<0.2	<0.1	63140	<0.2	<0.5	0.4	3	0.1	<2	61
H 0009	<40	417	42	24	13	2	4	3	18	17	1	14	3	16	6	0.5	<0.2	<0.1	210	<0.2	<0.5	0.6	2	0.2	3	119
H 0010	<30	717	119	57	31	24	9	12	36	8	0	52	8	30	19	4.5	0.2	0.1	210	<0.2	1	1.2	2	0.5	2	195
H 0011	3020	297	131	37	38	18	7	17	35	11	4	39	1	22	32	3	<0.2	<0.1	590	<0.2	0.5	0.2	<1	0.3	<2	93
H 0012	20580	180	26	15	105	66	14	20	21	17	4	60	16	33	31	4	<0.2	0.1	120	<0.2	1	0.6	1	0.1	2	106
H 0013	20	338	216	16	<1	0	15	13	1290	128	50	228	53	18	29	1.5	<0.2	0.1	110	0.2	<0.5	<0.2	<1	0.2	4	40
H 0014	1450	466	50	<5	9	<18	5	13	4278	3477	252	318	69	17	140	7.5	0.2	0.2	1090	<0.2	5	1.8	<1	0.1	8	25
H 0015A	40	1805	56	<2	1	0	13	5	25	0	3	93	6	25	3	3.5	0.6	0.1	710	<0.2	3	2.6	4	<0.1	35	607
H 0015B	20	927	32	<4	19	7	22	11	54	6	<4	186	13	40	4	7.5	0.8	0.5	380	<0.2	6	4.4	8	<0.1	43	1395
H 0019	0	511	84	29	28	10	13	13	1782	630	38	111	17	24	38	4	0.2	0.2	260	0.2	1	1.2	1	0.3	1	146
H 0020	800	1683	72	0	<24	<7	10	45	16211	549	32	789	8	54	15	19	1	1.2	660	0.2	1.5	4.6	3	0.2	16	163
H 0021	850	1285	49	<1	<16	<7	10	39	17230	636	39	721	<1	49	21	19	1.4	0.9	520	0.4	1.5	4.6	2	0.1	19	151
H 0022A	1280	3333	141	3	16	8	14	<2	719	2841	277	97	9	7	95	4.5	0.2	0.1	1980	<0.2	<0.5	0.6	3	<0.1	10	14
H 0022B	3090	473	65	6	18	15	23	7	1011	2678	260	170	16	3	85	6	<0.2	<0.1	430	<0.2	0.5	0.6	1	0.3	5	1
H 0023	120	209	364	17	17	<1	14	3	17	<8	8	26	12	4	15	3.5	<0.2	<0.1	530	<0.2	<0.5	0.2	<1	0.2	4	150
STD 0001(	410	319	138	3	13	4	7	16	125	115	8	264	23	19	13	23	0.4	0.3	920	0.4	2	1.8	2	<0.1	9	191
AccVal	<	337	146	6	4	3	5	17	122	135	15	306	31	4	12	20	0.4	0.31	1440	<	3	3	1.32	<	10	205
STD 0000(	2090	283	61	98	37	13	9	23	119	1	3	87	1	21	2	3	7.4	0.2	180	<0.2	3.5	0.8	<1	0.6	<1	94
AccVal	<	330	68	109	31	22	7	23	120	9	1	102	6	10	5	2	12.8	0.3	160	<	6	3	0.75	<	4	120

Cd and Ag all <0.5 ppm by ICP

FieldNo	LabSeqNo	LibNo	Coordinates x (m)	y (m)	R Number	Description	Qtz	Kao	Smectite	Clino-chlore	Tremol-ite	Ferro-gedrite	Halite	Musc ov-ite	Goeth-ite	Hemat-ite	Maghe m-ite	Albite	Micro-cline	Ortho-clase	Calcite	Jaros-ite	Anat-ase	Opal silica	Rutile	Gyp-sum	Schwer tmannit e
H 0001	L08-02438	08-02433	513413	6567185	622560	Silcrete with chalcedony fragments	xxxx						x										xx		x	x	
H 0002	L08-02435	08-02434	514681	6566206	622561	Granite saprolite	xx	xxx					xx	x													
H 0002A	L08-02441	08-02435	514681	6566206	622562	Granite saprolite silcreted and calcreted	xxxx	x								x							x				
H 0002B	L08-02447	08-02436	514681	6566206	622563	Silcrete	xxxx						x										xx				
H 0004	L08-02455	08-02438	511520	6566767	622565	Calcrete	xx	xx								xx		x	x		xxx						
H 0005	L08-02443	08-02439	510885	6669728	622566	Lag of GRV	xx		x	xx						xx		xxx	xx	xx							
H 0009	L08-02452	08-02442	519770	6567534	622569	Yellow dune	xxxx											xx	xx								
H 0010	L08-02450	08-02443	512961	6566754	622570	Granitic detritus	xxx	x						x		x		xx	xx								xx
H 0011	L08-02437	08-02444	512961	6566754	622571	Carbonated granite saprolite	xx	xx						x													
H 0012	L08-02445	08-02445	512961	6566754	622572	Granite saprolite	xx	xxxx					xx	x													
H 0013	L08-02449	08-02446	512977	6566783	622573	Amphibolite			x		xxxx	xx						xxx						x			
H 0014	L08-02444	08-02447	513012	6566880	622574	Ferruginous saprolite lag of ultramafic		x							xxx												
H 0019	L08-02433	08-02450	513082	6566983	622578	Hardpan	xxx	x	xx		xx	x						xx	xx								
H 0020	L08-02442	08-02451	513307	6567147	622579	Mag lag	x									xxx	xxxx										
H 0021	L08-02456	08-02452	513264	6567033	622580	Mag lag	x									xxx	xxxx										
H 0022A	L08-02436	08-02453	513154	6566977	622581	Ferruginous saprolite of ultramafic									xxxx							x					
H 0022B	L08-02440	08-02454	513154	6566977	622582	Ferruginous saprolite of ultramafic									xxx	x								xx			
H 0023	L08-02453	08-02455	511520	6566767	622583	Calcrete from stream	xx	x										x	x		xxxx						

x: trace
xx: moderate
xxx: abundant
xxxx: dominant

TABLE A2.4
GEOCHEMISTRY OF AIRCORE DRILLING

Dissolution					4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	CN	CN	CN
Determination					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
Detection		Depth			1	2	0.01	1	1	2	0.5	0.2	0.5	1	0.2	2	0.1	0.05	0.1	0.02	10	0.2	0.01	0.01	0.01	0.01	0.01	0.01	10	1	50	0.5	0.5	0.2	0.5	0.5	0.2	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.2	5	0.1
Unit	-	m	m	-	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppm
FieldNo	DH Name	From	To	Area	Mn	V	Ca	Cu	Zn	Co	As	Sb	W	Pb	Mo	Ni	Bi	U	Tl	Rb	Sn	Te	Si	Al	Fe	Ti	Mg	K	Zr	Ba	Cr	Ce	La	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Au	Ag	Cu
R406330	TAR07	0	2	HH	102	82	0.08	9	18	6	5.5	0.4	2	17	0.8	14	0.1	1.60	0.3	51.80	5	0.1	41.1	2.89	2.39	0.22	0.35	0.86	180	553	50	33.5	14.5	4.4	16	3.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.4	30	0.7
R406331	TAR07	2	6	HH	89	104	0.09	16	26	6	7	0.6	3.5	14	2.4	28	0.3	1.80	0.3	46.80	5	0.1	37	4.57	3.69	0.27	0.33	0.76	190	525	300	18.5	11	2	6.5	1	0.2	1	0.1	1	0.2	0.5	0.1	1	0.1	0.1	55	1.9
R406332	TAR07	6	10	HH	175	84	2.3	18	32	10	9.5	0.4	4	16	1.6	56	0.3	2.70	0.3	54.90	5	0.1	33.6	5.67	3.59	0.3	0.65	0.86	190	454	300	48	24.5	6.4	24.5	4.5	0.8	4	0.6	3.5	0.6	2	0.2	2	0.2	3.2	85	1.6
R406333	TAR07	10	12	HH	756	80	0.29	14	33	20	4	0.4	3.5	19	1	78	0.3	2.20	0.4	53.50	5	0.1	36	5.03	3.64	0.33	1.02	0.89	250	259	200	71	18.5	4.4	14.5	2.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	1	420	1.6
R406334	TAR07	12	14	HH	94	148	1.62	13	14	8	11	0.6	2.5	15	2.4	58	0.3	1.95	0.2	37.50	5	0.1	37.2	3.15	4.65	0.22	0.55	0.6	130	2010	500	10	6	1.2	4.5	1	0.1	1	0.1	1	0.1	0.5	0.1	0.5	0.1	0.2	295	0.6
R406335	TAR07	14	16	HH	132	150	1.85	17	42	14	11	0.6	2	15	1	48	0.3	1.95	0.2	39.50	5	0.1	31.6	5.36	5.61	0.35	1.48	0.84	150	439	400	73	37	10	36	6	1.4	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.2	510	0.4
R406336	TAR07	16	18	HH	535	184	2.01	45	90	26	13	0.6	1	17	1	46	0.05	2.65	0.4	55.60	5	0.1	27.3	7.58	5.99	0.48	1.71	1.21	210	1050	100	88.5	41	10.2	38.5	7	1.8	6	0.8	3.5	0.6	2	0.4	2	0.2	0.4	275	1.1
R406337	TAR07	18	22	HH	2140	132	4.34	43	70	30	12	0.8	1	24	1.6	44	0.1	2.75	0.4	63.20	5	0.1	26.8	7.02	4.99	0.43	1.37	1.84	160	1470	150	88.5	44	10.2	40	7	2	6	0.8	4	1	2.5	0.4	2	0.4	0.6	30	2
R406338	TAR08	0	4	HH	270	98	6.3	22	42	8	8	0.4	1.5	16	2.6	42	0.2	2.05	0.4	69.40	5	0.1	28.8	5.63	3.62	0.3	0.9	1.18	260	402	250	52.5	26	6.8	24	4.5	1	4	0.8	4	0.8	2.5	0.4	2.5	0.4	0.8	30	2.4
R406339	TAR08	4	6	HH	166	212	0.12	30	50	10	11	1	2	20	1.6	68	0.8	2.25	0.4	63.00	5	0.1	30.5	7.35	9.72	0.41	0.68	1.03	170	692	450	32.5	19.5	3.8	12.5	2	0.4	1	0.4	2	0.4	1.5	0.2	1.5	0.2	0.6	40	3.5
R406340	TAR08	6	8	HH	144	276	0.13	37	45	12	11	1.2	2	18	2	62	0.9	2.65	0.3	50.20	5	0.1	27	6.22	10.1	0.49	0.75	0.84	220	351	450	29	17.5	3.6	12.5	2.5	0.6	2	0.4	2	0.4	1.5	0.2	1.5	0.2	0.6	50	4.1
R406341	TAR08	8	10	HH	100	224	0.25	39	62	26	9.5	0.8	1.5	8	2	272	0.4	3.15	0.05	18.20	5	0.1	34.3	4.06	6.91	0.35	1.05	0.4	90	278	1150	22.5	9.5	2.6	9	2	0.6	1	0.2	2	0.4	1	0.1	1	0.1	1.8	65	3.3
R406342	TAR08	10	16	HH	150	204	2.7	52	101	54	12	0.4	2	3	2.4	670	0.3	1.75	0.05	6.10	5	0.1	25.9	6.3	7.79	0.2	1.35	0.21	90	149	2200	6.5	3.5	0.8	3.5	0.5	0.1	1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	15	0.3
R406343	TAR08	16	18	HH	1220	168	3.13	24	131	174	9	0.2	1	4	0.8	1400	0.1	1.90	0.4	2.52	5	0.2	23.6	4.14	7.28	0.23	11.1	0.08	30	116	2250	62	24	7.8	34	8	2.2	10	1.6	9	2	5	0.8	4.5	0.6	0.4	70	0.3
R406344	TAR08	18	20	HH	3300	248	1.78	54	100	204	35	0.8	2.5	3	2.8	1900	0.2	2.10	1.2	4.90	5	0.1	25.1	2.24	15.8	0.14	6.16	0.1	90	298	2050	68	24	7.2	29	6	1.8	6	1.2	7.5	1.6	4.5	0.6	4	0.6	0.2	75	0.7
R406345	TAR08	20	28	HH	1660	362	1.96	63	93	166	31	0.8	2	3	1.8	1750	0.2	1.85	0.2	3.26	5	0.1	22.6	2.81	12.8	0.19	7.94	0.1	80	144	2750	58	19	5.6	22	4.5	1.2	4	0.8	4	0.8	2.5	0.4	2	0.2	1	2	1.8
R406346	TAR08	28	30	HH	1590	282	3.19	68	98	172	83	0.8	1.5	3	1.6	1740	0.2	1.35	0.05	1.78	5	0.1	24.9	2.72	11.8	0.2	10.1	0.08	110	103	2850	23	8	2.6	10	2.5	0.8	2	0.4	3	0.6	1.5	0.2	1.5	0.2	1.6	2	1.1
R406347	TAR08	30	36	HH	1200	206	5.4	26	78	76	25	0.4	0.5	1	0.6	824	0.2	0.55	0.05	2.70	20	0.1	21.1	4.51	8.65	0.29	10.1	0.09	80	30	1500	8	3.5	1	4.5	1.5	0.6	2	0.4	2.5	0.6	1.5	0.2	1.5	0.2	2.8	5	0.4
R406348	TAR09	0	2	HH	301	108	5.91	18	32	12	6.5	0.6	1.5	14	1.2	82	0.4	1.60	0.4	66.50	5	0.1	30	4.06	4.99	0.24	0.86	0.85	130	666	300	35.5	17.5	4.6	17	3.5	0.8	4	0.4	3	0.6	2	0.2	2	0.2	1.2	30	2.6
R406349	TAR09	2	4	HH	394	190	0.95	33	65	14	9	0.8	1.5	20	1.4	60	0.5	1.95	0.4	71.90	20	0.1	28.6	7.93	7.1	0.43	1.3	1.3	200	662	300	65	32	7.6	28.5	5.5	1.2	6	0.8	4.5	0.8	3	0.4	2.5	0.4	1	10	2.7
R406350	TAR09	4	6	HH	165	252	0.72	61	40	12	5.5	0.8	2	10	1	44	0.3	1.90	0.3	41.30	10	0.1	28	7.28	7.63	0.47	0.8	0.64	110	821	300	24.5	12	2.8	10.5	2	0.6	2	0.4	2	0.4	1	0.1	1	0.2	1.2	5	4.3
R406351	TAR09	6	8	HH	149	342	1.52	86	19	10	6.5	0.8	0.5	4	0.4	40	0.3	1.40	0.2	18.80	5	0.1	28.1	6.81	9.25	0.54	0.78	0.3	190	91	350	5.5	2.5	0.6	2.5	0.5	0.2	1	0.1	1	0.1	0.2	0.1	0.5	0.1	1.8	2	2
R406352	TAR09	8	12	HH	1550	296	8.43	83	73	40	4	0.8	1	6	0.8	134	0.2	0.50	0.2	17.40	5	0.1	25.6	7	8.06	0.5	3.74	0.28	110	88	300	15.5	7.5	2.2	8.5	2.5	0.8	4	0.6	4.5	1	2.5	0.4	2.5	0.4	2.8	10	4.8
R406353	TAR10	0	2	HH	151	492	9.4	49	23	8	24	2.4	1.5	23	1.2	36	2.2	1.10	0.2	25.80	20	0.1	20.3	5.34	10.6	0.35	0.63	0.46	140	1360	300	17	10	2.6	9.5	2	0.4	2	0.2	1.5	0.4	1	0.1	1	0.1	2.8	15	3.4
R406354	TAR10	2	4	HH	216	948	0.23	82	24	6	39	4.4	3	29	1	32	2.1	0.40	0.1	13.60	30	0.1	20.6	9.58	16.5	0.65	0.22	0.16	70	144	500	2.5	1	0.2	1	0.2	0.1	1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.4	10	0.1
R406355	TAR10	4	10	HH	210	490	0.23	73	54	8	22	3.4	3.5	16	0.4	38	2	0.60	0.1	15.00	30	0.1	22.6	9.56	13.8	0.62	0.48	0.18	100	57	350	2	1	0.4	1.5	0.2	0.1	1	0.1	0.5	0.1	0.2	0.1	0.5	0.1	1	2	0.2
R406356	TAR10	10	12	HH	606	262	0.7	230	553	22	15	2.4	3.5	79	0.4	112	5	1.10	0.2	33.20	120	0.1	23.1	10.3	9.71	0.55	1.56	0.29	60	48	250	9.5	2	0.6	2.5	0.2	0.2	1	0.1	1.5	0.2	1	0.1	1	0.1	0.2	2	0.1
R406357	TAR10	12	18	HH	3620	324	1.52	187	417	114	15	3.2	10.5	496	0.6	164	5.8	2.25	2.4	119.00	70	0.1	23.6	8.61	10.2	0.6	1.66	0.9	70	574	350	131	52	16	71	20	7.6	32	6	38	8.6	26	3.8	22.5	3.4	9.6	10	1.3
R406358	TAR10	18	20	HH	1660	244	4.91	82	179	42	10	2.4	3.5	43	0.6	162	1	0.80	1	111.00	50	0.1	23.4	7.09	8.65	0.56	2.54	0.88	60	250	350	14	12	3.4	15.5	4.5	1.6	8	1.2	8	1.8	5.5	0.8	4.5	0.8	38	45	1.6
R406359	TAR10	20	21	HH	2080	248	7.7	86	165	42	15	12	2.5	41	0.8	158	0.8	0.70	1.4	137.00	50	0.1	23.1	7.21	10.1	0.5	2.36	1.09	70	299	350	66	12.5	3.6	17	4.5	1.6	6	1	7	1.4	4.5	0.6	3.5	0.6	72.6	40	2
R406506	TAR11	0	2	HH	186	224	3.19	22	30	6	11	1.4	1.5	16	1.8	24	1	1.05	0.3	41.00	5	0.1	32.9	3	8.79	0.31	0.44	0.64	190	572	400	19.5	11	3	11	2.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.8	15	2
R406507	TAR11	2	4	HH	132	294	1.17	37	38	10	18	2	2	21	1.6	38	1.1	2.25	0.4	50.10	5	0.1	24.1	7.55	11	0.37	0.77	0.82	160	645	250	28	15	3	11	2	0.6	1	0.4	2	0.4	1	0.1	1.5	0.2	1.6	2	5.4
R406508	TAR11	4	6	HH	63	660	0.37	16	16	10	35	4.4	2.5	33	3.2	44	2	3.00	0.1	10.10	5	0.2	18.3	10.2	21	0.31	0.44	0.17	190	437	750	16	5.5	1.4	6	1.5	0.4	1	0.2	1.5	0.2	1	0.1	1	0.1	1.4	5	0.9
R406509	TAR11	6	8	HH	116	442	0.22	11	31	8	24	2.6	3.5	20	2.6	22	1.3	2.70	0.1	10.60	5	0.1	22.5	7.63	17.3	0.45	0.29	0.15	180	472	300	7.5	3	0.8	3.5	0.5	0.2	1	0.1	1	0.1	0.2	0.1	0.5	0.1	4.6	2	0.7
R406510	TAR11	8	14	HH	142	48	0.21	12	27	4	6	0.8	4	16	2.2	10	0.2	2.10	1.9	157.00	5	0.1	32.7	8.49	2.86	0.38	0.35	2.12	120	577	100	111	42	11.6	39	5.5	1.2	2	0.4	1.5	0.2	0.5	0.1	0.2	0.1	1.8	5	0.3
R406511	TAR11	14	22	HH	127	44	0.4	12	35	6	6	0.8	5.5	34	1	10	0.1	2.65	2.1	219.00	5	0.1	33.6	7.72	1.89	0.21	0.33	3.86	120	770	20	240	117	25.8	90	13.5	3.6	8	0.8	4	0.6	1.5	0.2	1	0.2	5.6	20	0.3
R406512	TAR11	22	24	HH	226	68	0.77	15	42	12	7	1.4	2.5	20	1.2	44	0.2	1.90	0.8	138.00	5	0.1	34.1	7.06	3.1	0.37	0.62	1.81	240	847	150	162	85	17	59	8	2.2	6	0.6	3.5	0.6	1.5	0.2	1.5	0.2	3.8	20	0.2
R406513	TAR11	24	30	HH	366	94	1.25	5	39	18	8	1.2	3	8	0.6	40	0.2	1.35	0.5	91.90	5	0.1	31.5	6.27	4.31	0.65	1.17	0.88	310	128	50	126	58.5	14	51.5	7.5	1.8	4	0.6	2.5	0.4	1.5	0.1	1	0.1	9.8	15	0.1
R406514	TAR11	30	39	HH	537	102	1.32	10	47	24	9	1	2	8	0.8	104	0.1	1.00	0.4	60.20	5	0.1	29.6	7.61	5.75	0.84	1.95	0.7	260	117	150	156	74.5	17.2	61.5	9	2.6	6	0.8	4	0.6	1.5	0.2	1.5	0.2	5.2	15	0.5
R406515	TAR12	0	2	HH	158	56	18	17	26	6	7	0.2	1	9	0.6	16	0.2	1.80	0.2	35.10	5	0.1	18.2	3.21	2.01	0.17	0.65	0.62	130	368	20	24.5	14.5	3.8	14	2.5	0.6	2	0.4	2	0.4	1.5	0.1	1	0.1	2.8	5	3
R406516	TAR12	2	4	HH	284	234	5.15	30	48	10	14	1	1.5	19	1.4	28	1	2.30	0.4	58.10	20	0.1	26.9	6.22	7.56	0.38	0.89	1.15	230	579	250	50	25	6.2	24	4.5	1	4	0.6	3.5	0.8	2	0.4	2	0.2	1.6	5	2.4
R406517	TAR12	4	6	HH	192	792	0.8	42	38	10	49	5	3.5	42	2.4	38	6.6	2.75	0.3	31.70	30	0.6	17	6.12	30	0.62	0.61	0.52	220	348	950	30	17	4.4	16.5	3	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	1	5	1.6
R406518	TAR12	6	8	HH	125	456	6.24	32	29	6	34	3.2	3	25	2.2	26	4.4	2.75	0.2	33.80	20	0.2	17.9	6.05	16.6	0.49	0.64	0.56	210	332	500	22	13.5	3.2	11	2	0.6	1	0.4	2	0.4	1	0.1	1	0.2	1.8	5	2.7
R406519	TAR12	8	10	HH	46	160	0.39	15	12	6	12	1.4	4.5	10	3.6	20	1	3.50	0.2	18.30	10	0.1	30.8	7.81	6.55	0.7	0.55	0.29	310	289	150	17	8.5	1.8	6.5	1	0.2	1	0.2	1.5	0.2	1	0.1	1.5	0.2	2.6	5	3.2
R406520	TAR12	10	12	HH	44	80	0.31	14	13	4	6.5	1	4	14	2.4	10	0.3	2.85	0.2	23.10	5	0.1	37	6.63	2.4	0.49	0.65	0.55	160	186	100	15	10	1.8	7.5	1.5	0.2	1	0.1	1	0.2	1	0.1	1	0.1	2.8	5	2.6
R406521	TAR12	12	16	HH	140	228	0.55	24	27	14	22	1	2.5	9	3.6	18	0.3	2.15	0.5	66.40	5	0.1	30.4	6.56	9.59	0.6	0.94	0.66	140	119	50	11	5.5	1.2	4.5	1	0.2	1	0.1	1.5	0.2	1	0.1	1	0.1	1.4	40	1.1
R406522	TAR12	16	20	HH	150	156	0.37	21	35	12	17	0.8	2	19	2.8	16	0.2	2.95	0.7	112.00	5	0.1	28	7.26	6.76	0.5	1	1.37	100	108	20	72.5	37	7.4	23.5	3.5	0.6	2	0.4	2	0.4	1	0.1	0.5	0.1	0.6	40	1.1
R406523	TAR12	20	24	HH	214	166	0.48	35	68	36	16	1	29	14	2.2	44	0.1	6.25	1.2	191.00	5	0.1	28.8	6.66	6.29	0.51	1.29	2.21	120	143	100	103	45.5	11.8	44	8	1.6	8	1.2	6.5	1	3	0.4	3	0.4	0.6	90	1.6
R406524	TAR12	24	25.5	HH	104	72	0.61	23	38	10	10	0.6	6.5	12	1.6	24	0.1	5.75	0.8	110.00	5	0.1	34.1	6.3	3.12	0.21	0.53	1.7	110	179	100	101	46.5	12.2	45	8.5	1.4	8	1	6	1	3	0.4	2.5	0.4	1.2	155	5.8
R406323	TAR13	0	2	HH	189	96	14.7	28	23	30	15	0.6	1	7	0.8	382	0.05	3.60	0.05	10.60	5	0.1	20.1	1.67	2.97	0.11	3.3	0.25	70	344	900	13.5	6.5	1.8	6.5	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	8	90	4.8
R406324	TAR13	2	4	HH	635	286	2.48	12	34	60	34	1.4	1	17	1.2	572	0.2	1.75	0.05	7.20	5	0.1	28.3	4.12	7.83	0.32	5.07	0.15	80	109	1300	27.5	16	3.8	14.5	3	1	4	0.6	3.5	0.8	2	0.4	2	0.2	1.6	40	1.6
R406325	TAR13	4	6	HH	73	10	0.42	12	5	4	3.5	0.4	0.5	9	0.8	28	0.05	1.75	0.4	9.32	5	0.1	36.8	6.07	0.71	0.05	0.11	0.14	60	72	250	21.5	17	3.8	13	3	0.6	2	0.4	2.5	0.6	2	0.2	1.5	0.2	0.6	25	0.3
R406326	TAR13	6	8	HH	1030	220	3.59	9	84	76	11	1.2	0.5	9	0.2	650	0.2	1.05	0.2	19.60	5	0.2	23.8	5.08	9.55	0.35	8.05	0.29	30	92	1400	4	5.5	1.4	6.5	2	0.6	2	0.6	3.5	0.8	3	0.4	2	0.4	1.8	2	0.8
R406327	TAR13	8	10	HH	708	194	4.55	10	49	56	16	1	0.5	14	1.6	420	0.2	1.45	0.2	8.52	5	0.1	26.1	4.69	6.59	0.23	5.96	0.16	60	111	1000	13	14	3.2	13	2.5	1	4	0.8	4.5	1	3	0.4	2.5	0.4	3.8	20	1.8
R406328	TAR13	10	24	HH	1160	132	3.42	34	69	88	12	1.4	0.5	7	0.4	1340	0.2	0.50	0.2	10.20	5	0.1	22.9	3.6	7.82	0.2	11.4	0.21	40	72	2550	5.5	4.5	1.2	5	1	0.4	2	0.4	2.5	0.6	1.5	0.2	1	0.2	7.4	40	2.4
R406329	TAR13	24	32	HH	1100	208	5.82	43	58	44	9.5	0.8	1	9	0.6	322	0.2	0.50	0.7	32.60	20	0.1	25	5.38	7.46	0.41	6.8	0.53	110	179	750	18	8	2.2	9.5	2	0.8	2	0.4	3	0.6	2	0.4	2	0.2	11.2	235	1.4
R406319	TAR15	0	4	HH	203	180	10.3	61	36	14	15	1	2	12	2	206	0.3	2.20	0.2	33.70	5	0.1	23.9	4.21	6.82	0.33	0.64	0.52	160	255	1100	20	12.5	3.2	11.5	3	0.6	1	0.4	2	0.4	1	0.2	1	0.2	2.4	5	3
R406320	TAR15	4	6	HH	255	580	4.91	187	79	26	41	3	1.5	23	1	558	0.5	1.45	0.05	4.50	5	0.4	15.3	7.02	21.3	0.43	0.63	0.14	60	172	4250	9.5	8.5	2.4	9	2	0.6	1	0.4	2	0.4	1.5	0.1	1	0.1	1	2	0.8
R406321	TAR15	6	12	HH	985	478	3.96	154	80	68	31	2.2	1.5	17	1.4	1210	0.4	2.00	0.1	3.76	5	0.1	18.1	5.38	18.3	0.33	3.46	0.12	60	160	3900	10	8.5	2.4	9.5	2	0.6	2	0.4	2	0.4	1.5	0.1	1.5	0.1	0.4	2	1.1
R406322	TAR15	12	22	HH	2490	376	4.02	104	81	84	22	1.6	2	12	2	1500	0.3	1.85	0.3	2.94	5	0.1	21.1	4.4	14.8	0.29	6.61	0.12	50	142	3600	6	7	1.8	7.5	1.5	0.4	2	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.6	2	1.7
R406476	TAR16	0	2	HH	134	44	10.5	13	22	6	3.5	0.2	3	8	0.6	26	0.1	0.80	0.3	49.60	5	0.1	29.3	2.43	1.7	0.16	0.61	0.79	190	317	50	19	10.5	2.8	10	2	0.4	1	0.4	2	0.4	1	0.1	1	0.1	2	5	3.7
R406477	TAR16	2	8	HH	166	234	2.59	44	39	16	18	1.4	2.5	16	2.2	138	0.5	2.30	0.4	69.50	5	0.1	27.8	6.26	11.9	0.36	0.55	0.91	230	324	1250	27	15	3.6	14	3	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	1	2	2.4
R406478	TAR16	8	12	HH	267	528	3.79	96	60	50	23	3	2.5	19	2.6	500	0.9	2.65	0.2	25.50	5	0.1	14.3	5.26	29.8	0.43	0.39	0.39	140	267	3550	19.5	10	2.6	10	2	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	5	50	1.2
R406479	TAR16	12	18	HH	32	22	0.08	12	16	4	2.5	0.4	3.5	6	2.6	58	0.1	1.45	0.05	2.08	5	0.1	40.6	1.99	0.8	0.26	0.09	0.03	330	87	350	4.5	3.5	0.6	2	0.2	0.1	1	0.1	1	0.1	0.5	0.1	1	0.1	0.6	685	1.9
R406480	TAR16	18	26	HH	58	80	0.14	26	28	6	1.5	0.8	11	25	1.6	80	0.3	4.15	0.5	49.60	5	0.1	36.1	7.67	1.11	0.5	0.25	1.52	260	855	150	56	30	6.2	20.5	3	0.8	2	0.2	1.5	0.4	1	0.1	1	0.1	0.6	1090	1.8
R406481	TAR16	26	28	HH	55	86	0.39	39	35	4	3	0.6	7	35	1.6	44	0.3	4.50	0.7	71.20	5	0.1	32.7	8.67	1.13	0.44	0.29	2.7	220	1530	250	103	49	10.6	36	6	1.4	4	0.4	2	0.4	1	0.1	1	0.1	0.8	960	3.1
R406482	TAR16	28	30	HH	514	56	2.11	20	61	10	2.5	0.6	7	22	0.6	42	0.3	3.70	1	96.60	5	0.1	31.2	7.3	2.5	0.29	0.96	2.6	100	1160	50	59.5	33	6.2	22.5	3.5	1	2	0.2	1	0.1	0.5	0.1	0.2	0.1	1	125	1
R406483	TAR17	0	2	HH	215	102	5.46	18	45	8	8	0.4	2	14	1.4	30	0.3	2.00	0.5	97.30	5	0.1	28.6	6.17	3.61	0.29	1.41	1.35	220	1320	150	42.5	24.5	5.8	24	4.5	1	4	0.6	3.5	0.8	2	0.4	2	0.4	0.6	50	3.6
R406484	TAR17	2	6	HH	242	146	0.42	24	41	8	11	0.8	8	19	2	36	0.5	2.15	0.7	121.00	5	0.1	33.8	6.31	5.53	0.31	0.55	1.44	190	498	200	38.5	19	4.6	18	3.5	0.8	4	0.6	3	0.6	2	0.2	2	0.4	0.4	110	3.8
R406485	TAR17	6	8	HH	59	520	1.15	21	5	8	19	2	2.5	25	2.8	62	0.9	1.65	0.05	6.92	5	0.1	28.4	2.84	18.1	0.65	0.28	0.17	290	1450	1150	9	7	1.8	8	1.5	0.4	1	0.4	2	0.4	1	0.2	1.5	0.2	0.6	10	1.4
R406486	TAR17	8	10	HH	76	304	0.38	16	4	10	14	1	3.5	9	1.4	86	0.7	1.20	0.05	4.66	5	0.1	33.8	5.44	9.1	0.73	0.46	0.14	310	110	550	4.5	3	0.8	3	0.5	0.1	1	0.1	1	0.1	1	0.1	1	0.1	0.2	15	1.3
R406487	TAR17	10	16	HH	36	24	0.42	10	41	6	1	0.4	4	8	2.4	58	0.2	1.25	0.05	3.74	5	0.1	36.9	3.35	0.7	0.36	0.28	0.1	410	123	300	4.5	2.5	0.6	2	0.5	0.1	1	0.1	1	0.1	0.5	0.1	1	0.1	0.4	15	0.5
R406488	TAR17	16	24	HH	84	82	0.28	14	37	8	2	0.6	8	26	1.4	28	0.6	3.30	0.7	73.20	5	0.1	31.2	9.58	1.11	0.46	0.48	2.02	220	949	150	94	53	9.6	33	4.5	1.2	4	0.6	2.5	0.4	1.5	0.1	1	0.1	0.6	135	0.9
R406489	TAR17	24	30	HH	142	48	0.67	26	73	10	2	0.6	3	28	1.2	22	0.3	4.10	1.1	101.00	5	0.1	32.7	8.11	0.96	0.3	0.26	2.79	150	1440	150	154	80	16	55.5	8	2.2	6	0.8	3.5	0.6	2	0.2	1.5	0.1	0.8	100	1.5
R406490	TAR17	30	31	HH	155	42	1.35	21	55	6	2.5	0.4	1.5	21	1	20	0.4	4.20	1.3	116.00	5	0.1	32.5	7.28	1.51	0.27	0.27	3.08	130	1380	150	86	40.5	9.8	35.5	6	1.6	4	0.6	2.5	0.4	1	0.1	1	0.1	4.2	80	1.4
R406491	TAR18	0	2	HH	109	44	16.5	14	20	4	4	0.1	2	11	1.2	14	0.2	1.40	0.4	54.90	5	0.1	22.2	2.98	1.5	0.18	0.63	0.89	140	681	50	38	22	5.6	20.5	4	0.8	4	0.4	2.5	0.4	1.5	0.1	1.5	0.1	1	35	4
R406492	TAR18	2	10	HH	99	106	0.46	16	26	6	6.5	0.6	8	17	2.2	36	0.3	1.95	0.4	59.20	5	0.1	37.2	4.76	3.76	0.26	0.46	0.87	170	548	250	28	14.5	3.4	12.5	2.5	0.4	1	0.4	2	0.4	1	0.2	1.5	0.1	1	20	1.6
R406493	TAR18	10	12	HH	105	376	0.14	11	18	10	21	1.6	13.5	29	4.2	166	1	3.20	0.3	44.20	5	0.1	32.3	3.58	15	0.4	0.34	0.57	220	303	1750	18.5	10.5	2.6	9	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1.5	0.2	1.4	15	0.6
R406494	TAR18	12	14	HH	203	88	0.17	9	48	8	4	1	3	5	1.4	70	0.3	1.75	1.2	105.00	5	0.1	33.3	5.92	2.53	0.2	1.17	2.01	140	308	250	15	8	1.6	6	1	0.2	1	0.1	0.5	0.1	0.2	0.1	0.5	0.1	0.8	25	0.8
R406495	TAR18	14	22	HH	149	78	0.15	10	20	6	5.5	1.6	5	7	0.8	46	0.2	2.90	2.1	158.00	5	0.1	33.5	8.46	2.31	0.23	0.82	2.67	150	435	50	135	64	14.2	48.5	7.5	1.6	4	0.6	3.5	0.6	1.5	0.2	1	0.1	0.4	105	1.1
R406496	TAR18	22	28	HH	183	70	0.1	15	34	8	5.5	1.4	4	5	1	48	0.05	2.55	2.2	169.00	5	0.1	33.6	6.9	2.89	0.22	0.51	3.45	140	524	150	159	73	16.2	54.5	8.5	1.8	6	0.6	3	0.4	1	0.1	1	0.1	2.8	60	0.6
R406497	TAR18	28	30	HH	304	54	0.12	7	73	10	3	1.2	3.5	6	0.4	68	0.05	2.35	2.9	253.00	5	0.1	34.7	7.43	2.24	0.23	0.78	3.98	160	504	50	127	60	14.4	54.5	9	2.2	6	0.6	3	0.6	1.5	0.2	1.5	0.1	0.2	20	0.2
R406498	TAR18	30	34	HH	362	62	0.32	13	100	20	4	1.4	1.5	13	0.6	88	0.05	2.35	2.4	179.00	5	0.1	33.4	6.66	2.78	0.18	1.17	3.16	140	653	150	95.5	47.5	11	39	6.5	1.6	4	0.6	2.5	0.4	1	0.1	1	0.1	0.6	30	0.5
R406499	TAR18	34	40	HH	464	42	0.77	8	46	10	3	1.2	4	8	0.4	58	0.05	1.80	2.5	203.00	5	0.1	33.9	7.25	2.05	0.2	1.15	3.29	160	391	20	66	34.5	7.2	24	3.5	1	2	0.2	1.5	0.2	0.5	0.1	0.5	0.1	0.6	55	0.5
R406500	TAR19	0	2	HH	272	72	6.02	18	38	8	3.5	0.4	2	14	1.2	32	0.2	1.55	0.6	84.40	5	0.1	30.1	5.35	2.88	0.31	0.8	1.4	200	487	150	44.5	23.5	5.8	22.5	4	1	4	0.6	3.5	0.6	2	0.2	2	0.2	1	15	2.4
R406501	TAR19	2	6	HH	148	84	1.37	12	30	8	6	0.4	9	15	1.6	32	0.2	1.70	0.5	68.50	5	0.1	37.4	4.79	3.17	0.26	0.5	1.03	190	459	100	26.5	14.5	3.2	12	2	0.4	1	0.2	2	0.4	1	0.1	1.5	0.1	0.6	25	1.6
R406502	TAR19	6	12	HH	137	96	2.94	16	38	8	6	0.4	2.5	17	1.6	68	0.2	1.95	0.4	58.00	5	0.1	33.5	4.76	3.65	0.3	0.67	1.02	200	258	350	41	29	7.2	26.5	4.5	1	4	0.6	3.5	0.8	2	0.2	2	0.4	0.8	10	1.8
R406503	TAR19	12	14	HH	82	100	1.79	9	22	6	5	0.4	4	10	1.4	76	0.3	1.75	0.3	36.60	5	0.1	35.2	3.76	3.61	0.3	0.65	0.62	200	133	300	11.5	7.5	1.4	4.5	1	0.2	1	0.1	1	0.2	0.5	0.1	1	0.1	0.4	30	1.4
R406504	TAR19	14	16	HH	134	116	0.33	13	23	8	7	1	2	13	1.2	62	0.5	2.60	0.2	45.20	40	0.1	34.3	5.46	5.19	0.45	1.79	1.1	280	411	350	14.5	8	1.4	5.5	1	0.2	1	0.1	1.5	0.4	1	0.1	1.5	0.2	0.2	60	2.5
R406505	TAR19	16	20	HH	966	160	5.06	31	90	30	6	0.6	7	23	0.6	110	0.05	1.65	0.4	73.00	5	0.1	26.6	7.28	5.99	0.53	2.77	1.55	200	1020	200	101	46.5	11.8	45	8.5	1.8	6	0.8	4.5	0.8	2.5	0.4	2.5	0.4	0.8	10	2.2

Dissolution					4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	CN	CN	CN
Determination					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
Detection		Depth			1	2	0.01	1	1	2	0.5	0.2	0.5	1	0.2	2	0.1	0.05	0.1	0.02	10	0.2	0.01	0.01	0.01	0.01	0.01	0.01	10	1	50	0.5	0.5	0.2	0.5	0.5	0.2	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.2	5	0.1
Unit	-	m	m	-	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppm
FieldNo	DH Name	From	To	Area	Mn	V	Ca	Cu	Zn	Co	As	Sb	W	Pb	Mo	Ni	Bi	U	Tl	Rb	Sn	Te	Si	Al	Fe	Ti	Mg	K	Zr	Ba	Cr	Ce	La	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Au	Ag	Cu
R406437	KIN37	0	2	LH	166	138	8.22	18	93	8	15	0.2	14.5	14	1	24	0.2	1.55	0.4	53.70	5	0.1	28.2	4.49	2.76	0.25	0.99	1.38	170	1570	50	35.5	18.5	4.8	19	4	0.8	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.8	2	3.5
R406438	KIN37	2	6	LH	144	54	13.7	13	30	8	4.5	0.2	1	11	1.4	18	0.1	4.05	0.2	37.80	5	0.1	19.7	3.32	1.95	0.18	0.43	1.02	90	226	150	39	15	4.8	20.5	4	0.8	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.4	2	2.3
R406439	KIN37	6	16	LH	891	62	0.22	24	33	16	4.5	0.4	1.5	18	3	30	0.2	4.00	0.4	47.60	5	0.1	39.4	3.76	2.49	0.26	0.5	1.23	190	597	350	71	20.5	7	28	6.5	1.4	6	0.8	5	0.8	2.5	0.4	2.5	0.4	0.4	5	5.7
R406440	KIN37	16	18	LH	1840	60	0.13	12	27	20	3.5	0.4	34	34	1.8	36	0.2	1.85	0.3	42.40	5	0.1	37.1	3.66	2.85	0.29	0.51	1.06	200	630	100	35	16	4.2	16.5	3	0.8	2	0.4	3	0.6	1.5	0.2	1.5	0.2	0.2	2	1.7
R406441	KIN37	18	22	LH	2330	52	0.14	24	33	26	2	0.4	1.5	32	2.2	50	0.2	2.55	0.4	78.90	5	0.1	33.3	6.76	3.3	0.43	1	1.61	280	488	200	64	30.5	8.2	30.5	6.5	1.2	6	0.8	5	1	2.5	0.4	2.5	0.4	0.2	5	6.8
R406442	KIN37	22	24	LH	940	96	0.54	18	82	22	5.5	0.8	2	23	2.2	36	0.2	2.90	0.6	126.00	5	0.1	31	5.04	5.71	0.69	1.02	2.34	240	1500	200	102	59	13	51.5	9.5	2.4	8	1	6	1.2	3	0.4	3	0.4	0.2	15	3.5
R406443	KIN39	0	2	LH	132	78	7.33	15	35	8	5.5	0.2	9.5	11	0.6	18	0.1	1.75	0.4	48.90	5	0.1	29.1	3.84	2.52	0.22	1.03	1.4	170	384	50	33	16.5	4.2	16	3	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.1	0.8	5	3.2
R406444	KIN39	2	12	LH	333	84	0.13	17	40	6	8	0.4	1.5	19	2.4	20	0.2	3.80	0.4	63.00	5	0.1	36.7	5.34	2.68	0.31	0.49	1.49	240	574	200	38	20.5	4	13.5	2.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.4	10	2.1
R406445	KIN39	12	20	LH	1520	60	0.11	20	52	18	3.5	0.4	1.5	36	2.6	38	0.2	2.30	0.4	56.20	30	0.1	35.9	4.49	3.14	0.29	0.69	1.32	210	758	300	51	21	5.8	23	4	1	4	0.6	3.5	0.6	2	0.2	2	0.2	0.4	5	4.1
R406446	KIN39	20	24	LH	236	78	0.1	11	20	8	4.5	0.6	8	14	0.8	18	0.1	2.20	0.2	30.90	5	0.1	34.5	6.36	2.62	0.93	0.47	0.71	270	857	50	80	42.5	10.8	43.5	8	2.2	6	1	5.5	1.2	3	0.4	3	0.4	0.1	10	1.5
R406447	KIN39	24	28	LH	126	132	0.14	7	38	8	2.5	1	2.5	20	1	16	0.05	2.25	0.05	13.80	5	0.1	26.5	11.1	2.24	1.66	0.36	0.27	320	1130	50	212	93.5	28	119	22.5	5.8	18	2.2	11	2	5	0.6	4	0.6	0.1	10	0.6
R406448	KIN39	28	32	LH	233	172	0.12	9	355	20	3.5	0.8	2	19	1.4	12	0.05	2.15	1	185.00	5	0.1	26.6	7.96	8.34	1.53	0.53	1.8	280	1270	20	110	53	14.6	62.5	13.5	4	12	1.6	9.5	1.8	5	0.8	5	0.6	0.2	10	0.3
R406449	KIN39	32	33	LH	483	100	0.38	8	221	26	4.5	0.4	9.5	13	1	14	0.1	2.15	0.5	119.00	5	0.1	33.2	4.4	6.75	0.77	0.6	1.22	160	918	20	82.5	34	10.6	46.5	11	3.4	12	1.6	8.5	1.6	5	0.6	4	0.6	0.8	5	0.2
R406450	KIN40	0	2	LH	85	64	9.93	14	26	6	7	0.2	1	8	1	12	0.05	1.15	0.3	37.80	5	0.1	28.3	2.66	1.58	0.17	0.73	0.99	150	397	150	21	11.5	3	11	2	0.6	1	0.2	1.5	0.2	1	0.1	1	0.1	3.8	10	3.1
R406451	KIN40	2	4	LH	113	112	0.92	12	40	6	9	0.2	4.5	12	1.4	20	0.2	4.25	0.4	59.60	5	0.1	34.5	5.27	2.99	0.3	0.69	1.53	210	558	100	27.5	17	3.2	11.5	2	0.4	1	0.2	1.5	0.2	1	0.1	1	0.1	1.6	5	2.2
R406452	KIN40	4	8	LH	95	110	0.63	14	39	4	9	0.4	2	14	3.4	18	0.2	1.90	0.3	55.20	5	0.1	36.5	4.67	3.06	0.3	0.52	1.29	190	505	150	27.5	17	3	10.5	1.5	0.4	1	0.2	1.5	0.2	1	0.1	1	0.1	0.6	5	2.7
R406453	KIN40	8	14	LH	487	84	0.18	18	46	8	5.5	0.4	5	22	2	22	0.2	3.35	0.5	66.80	5	0.1	34.3	6.24	3.06	0.34	0.56	1.47	200	490	20	49	23.5	5	17	3	0.6	2	0.4	3	0.6	1.5	0.2	1.5	0.2	0.6	10	1.7
R406454	KIN40	14	20	LH	745	68	0.12	17	45	8	4.5	0.4	1.5	19	1.8	38	0.2	2.65	0.3	60.30	5	0.1	34.8	5.57	3.22	0.33	0.77	1.45	200	710	200	45	23.5	5.8	23	4	1	4	0.6	3	0.6	2	0.2	2	0.2	0.8	2	3
R406455	KIN40	20	22	LH	166	56	0.11	11	30	6	3	0.4	4.5	16	2.6	28	0.2	2.65	0.3	68.80	5	0.1	32.5	7.04	3.16	0.47	0.76	1.51	270	569	100	35	14.5	3.2	12	2.5	0.6	2	0.4	3	0.6	2	0.2	2	0.4	0.6	5	2.6
R406456	KIN40	22	24	LH	145	60	0.1	9	36	6	3	0.4	3.5	46	2.8	14	0.2	4.60	0.8	116.00	5	0.1	31.5	7.21	3.26	0.72	0.41	3.4	280	1490	100	95	51.5	10.2	39	7.5	2.2	6	1	5.5	1.2	3	0.4	3.5	0.6	0.2	10	1.5
R406457	KIN40	24	26	LH	211	74	0.11	13	44	6	3.5	0.4	2	64	2	8	0.2	5.90	0.7	125.00	5	0.1	30.7	7.05	6.06	0.89	0.31	2.94	310	1140	50	214	102	22.6	80.5	13.5	3.4	10	1.2	6.5	1.2	3.5	0.4	3.5	0.4	0.4	10	1.8
R406458	KIN42	0	2	LH	115	92	9.31	12	24	8	8.5	0.2	15.5	11	0.8	14	0.1	1.85	0.3	44.30	5	0.1	26.6	3.58	2.01	0.21	0.99	1.13	170	1080	20	27.5	14	3.4	12.5	2.5	0.6	2	0.4	2	0.4	1	0.1	1	0.1	0.8	2	2.6
R406459	KIN42	2	4	LH	104	204	3.08	14	33	6	17	0.4	1.5	15	3.8	30	0.2	2.70	0.4	60.60	5	0.1	31.6	5.31	3.23	0.33	0.63	1.25	190	519	150	33.5	20	4	14	2.5	0.6	2	0.4	2	0.4	1	0.1	1	0.1	0.6	5	2.9
R406460	KIN42	4	6	LH	138	106	0.34	15	50	6	5.5	0.4	4.5	20	3	20	0.2	3.05	0.5	76.20	5	0.1	33	7.7	3.81	0.41	0.82	1.77	210	430	20	42.5	28.5	4.8	17.5	3	0.6	2	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.2	5	1.6
R406461	KIN42	6	12	LH	776	86	0.41	23	51	14	5	0.4	1.5	26	3.4	26	0.2	3.95	0.4	68.30	5	0.1	32.3	6.73	3.45	0.38	0.81	1.66	200	414	200	66	32	7.6	28.5	6	1.2	4	0.6	4	0.8	2.5	0.4	2	0.4	0.4	5	2.6
R406462	KIN42	12	16	LH	978	88	0.19	12	54	8	6	0.2	5	16	1.8	24	0.2	3.10	0.3	46.90	5	0.1	36.9	4.71	3.3	0.26	0.61	1.03	150	511	50	33	17	4	15	2.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.4	5	1.6
R406463	KIN42	16	20	LH	1750	68	0.08	20	27	10	5.5	0.4	1.5	29	1.8	26	0.3	3.10	0.3	54.40	5	4.2	35.2	4.84	2.82	0.3	0.76	1.13	200	578	200	48	21	5.2	21	4	0.8	4	0.6	3	0.6	2	0.2	2	0.2	0.2	5	3
R406464	KIN42	20	24	LH	173	62	0.07	11	22	8	3	0.4	5	36	1.2	30	0.1	2.80	0.2	42.40	5	0.1	36.2	5.68	3	0.44	0.54	0.99	220	834	100	26.5	20	3	10.5	2	0.6	1	0.4	2	0.4	1.5	0.1	1.5	0.2	0.4	5	1.9
R406465	KIN42	24	26	LH	696	182	0.12	65	84	42	5	0.2	1	37	1.4	126	0.1	4.70	0.6	84.90	5	0.1	27.3	6.6	9.64	0.51	0.95	1.65	150	669	550	131	50	14.4	59.5	11	2.8	10	1.4	8	1.6	4.5	0.6	4	0.6	0.6	5	0.8
R406466	KIN42	26	30	LH	487	132	0.66	60	103	24	3	0.2	2	18	0.8	74	0.2	2.70	0.9	140.00	5	0.1	28.4	7.59	6.61	0.85	1	2.87	240	968	250	107	43.5	13.2	55.5	12	3	10	1.4	8	1.6	4.5	0.6	3.5	0.6	0.4	10	1.2
R406467	KIN43	0	2	LH	99	52	5.27	16	58	6	4	0.2	1.5	9	1	14	0.1	1.10	0.3	38.60	5	0.1	34.7	2.64	1.65	0.17	0.58	1.01	180	375	200	22.5	11.5	3	11.5	2	0.4	1	0.4	1.5	0.4	1	0.1	1	0.1	1	325	3.1
R406468	KIN43	2	4	LH	136	106	2.66	12	40	8	9	0.2	11.5	13	1.2	14	0.2	2.75	0.3	58.90	5	0.1	35.2	4.68	2.69	0.27	0.8	1.39	180	535	20	28.5	16.5	3.6	14	2.5	0.6	2	0.4	2	0.4	1	0.1	1	0.1	0.6	450	2.2
R406469	KIN43	4	6	LH	116	102	0.25	17	44	8	8	0.4	2	18	1.6	28	0.2	5.20	0.4	67.30	5	0.1	32.9	6.91	3.47	0.32	1.15	1.79	130	462	200	76.5	27.5	7.4	27	5.5	1.2	4	0.6	4	0.8	2	0.4	2	0.2	1.6	185	2.1
R406470	KIN43	6	8	LH	161	78	0.14	16	71	8	4.5	0.4	5	15	0.8	20	0.2	4.25	0.4	65.80	5	0.1	33.5	6.23	3.2	0.32	0.77	1.6	150	534	50	45.5	22.5	5	19.5	3.5	0.8	4	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.6	635	1.9
R406471	KIN43	8	10	LH	156	84	0.17	17	43	8	4.5	0.4	2	15	1.2	24	0.2	4.65	0.4	63.50	5	0.1	32.7	6.44	3.42	0.34	1.05	1.67	160	4130	200	55.5	28	6.2	22	4.5	1	4	0.6	3	0.6	2	0.2	2	0.2	0.4	550	2.3
R406472	KIN43	10	22	LH	155	68	0.17	11	56	6	6	0.4	4	12	0.6	24	0.2	2.75	0.3	56.90	5	0.1	34.5	5.15	2.89	0.31	0.82	1.37	230	588	50	35	19	4.6	17	3.5	0.6	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	1.4	380	1.7
R406473	KIN43	22	24	LH	523	98	0.45	26	70	20	2	0.1	1	27	0.6	66	0.05	2.05	0.4	72.50	5	0.1	30.7	6.85	4.46	0.26	1.76	2.19	120	748	450	68.5	38.5	7.4	25	4	1	4	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.8	1530	1.1
R406474	KIN43	24	26	LH	580	88	0.42	28	68	24	1	0.2	2	16	0.6	134	0.05	1.25	0.4	79.00	5	0.1	30.9	7.03	4.36	0.28	2.76	2.03	130	684	350	43.5	20.5	4.6	17.5	3	0.8	2	0.4	2	0.4	1	0.1	1	0.1	0.1	1250	0.7
R406475	KIN43	26	28	LH	438	82	0.44	22	64	22	1.5	0.2	1	13	0.8	112	0.05	1.15	0.4	84.70	5	0.1	32.6	5.35	3.66	0.23	2.25	2.39	110	883	450	33	16.5	3.8	14.5	2.5	0.8	2	0.4	2	0.4	1	0.1	1	0.1	1.2	760	0.8
R406284	KOK 14	0	2	LH	266	104	1.74	20	73	10	7	0.4	1.5	22	1.2	36	0.3	1.75	0.5	75.80	5	0.1	28.9	7.39	4	0.28	1.31	1.56	200	495	100	56	29.5	7	24.5	5	1.2	4	0.6	3.5	0.8	2	0.4	2	0.4	0.8	5	2.5
R406285	KOK 14	2	4	LH	90	60	0.94	12	33	4	4	0.4	1	18	1.2	20	0.2	3.90	0.5	54.90	5	0.1	35	5.74	2.27	0.21	0.72	1.5	120	632	100	32	17.5	4.2	14.5	2.5	0.6	2	0.4	2	0.4	1	0.1	1	0.1	1.6	5	1.3
R406286	KOK 14	4	10	LH	150	84	2.27	9	47	6	6.5	0.4	1.5	15	0.6	28	0.2	1.90	0.3	43.90	5	0.1	34.6	5.56	2.54	0.27	0.66	1.05	180	718	100	23	12.5	2.4	7.5	1.5	0.4	1	0.2	1.5	0.2	1	0.1	1	0.1	0.2	5	1.1
R406287	KOK 14	10	18	LH	73	308	0.13	5	17	12	11	0.4	2	10	3.2	242	0.4	2.00	0.05	15.10	5	0.1	35.3	3.73	9.5	0.28	0.53	0.31	190	309	1100	7.5	5	1	3	0.5	0.1	1	0.1	1	0.1	0.5	0.1	1	0.1	0.8	5	1.3
R406288	KOK 14	18	24	LH	891	122	0.16	9	48	96	1.5	0.1	2.5	7	1.6	1460	0.2	1.95	0.1	1.52	5	0.1	27.5	6.79	5.75	0.26	1.79	0.14	80	70	3300	47	18.5	5.4	19	3.5	1	4	0.4	2	0.4	1	0.1	1	0.1	0.1	15	1.4
R406289	KOK 14	24	36	LH	969	142	2.73	38	75	96	2.5	0.1	3	7	0.8	1500	0.05	4.00	0.05	1.28	5	0.1	21.6	3.51	8.84	0.23	11.6	0.07	30	24	2750	12	5	1.6	6.5	1.5	0.6	1	0.2	2	0.4	1.5	0.2	1	0.2	3	10	2.9
R406290	KOK 14	36	40	LH	1010	110	5.65	23	72	82	0.2	0.1	1	3	0.2	1560	0.05	0.20	0.05	1.20	5	0.2	18.3	2.59	6.5	0.17	13.4	0.06	20	8	2450	3	1	0.4	2	0.5	0.2	1	0.2	1	0.1	1	0.1	0.5	0.1	2	0.8
R406291	KOK 14	40	46	LH	1070	126	4.46	18	66	92	0.5	0.1	1	4	0.1	1190	0.05	0.10	0.05	1.10	5	0.4	21.1	3.09	7.34	0.21	14.4	0.04	30	9	2300	2.5	1	0.4	2	0.5	0.2	1	0.1	1	0.1	1	0.1	0.5	0.1	10	0.4
R406292	KOK 14	46	50	LH	1100	102	4.39	22	55	76	1	0.1	1	3	0.4	1140	0.05	0.10	0.05	0.92	5	0.1	22	2.47	6.65	0.17	14.7	0.05	30	12	2850	3	1	0.4	2.5	0.5	0.2	1	0.1	1	0.2	1	0.1	0.5	0.1	2.2	15	0.8
R406277	KOK 15	0	4	LH	117	68	1.58	13	41	4	4.5	0.4	1.5	19	1	18	0.2	2.00	0.5	60.30	5	0.1	33.2	6.02	2.67	0.26	0.87	1.54	150	780	50	36	21	5.2	18	3.5	0.8	2	0.4	2.5	0.4	1.5	0.1	1.5	0.2	0.6	10	1.7
R406278	KOK 15	4	8	LH	71	98	2.05	6	19	2	7	0.4	2	21	0.8	16	0.2	1.70	0.3	36.20	5	0.1	37	4.59	2.8	0.33	0.65	0.96	190	510	50	18	11.5	2	6.5	1	0.4	1	0.1	1	0.2	0.5	0.1	1	0.1	0.4	170	1
R406279	KOK 15	8	12	LH	64	100	0.19	6	30	4	8	0.4	2	11	1	40	0.2	1.25	0.2	23.70	50	0.1	39.2	4.05	3.09	0.23	0.49	0.52	140	446	200	11.5	6.5	1.2	4	0.5	0.2	1	0.1	1	0.1	0.2	0.1	0.5	0.1	0.4	550	1.5
R406280	KOK 15	12	20	LH	30	40	0.09	5	15	6	1	0.1	1.5	22	0.4	174	0.2	3.50	0.2	35.40	90	0.1	34.6	6.35	1	0.3	0.88	0.52	250	181	450	18.5	6.5	1.8	7	2.5	0.8	4	0.6	3.5	0.8	2.5	0.4	2.5	0.4	0.2	35	0.6
R406281	KOK 15	20	22	LH	641	198	0.11	58	199	166	13	0.4	4	52	2	2360	0.2	3.50	0.05	3.08	5	0.1	26.3	7.02	12.1	0.22	1.04	0.1	90	129	3450	73.5	24.5	7.8	26	4.5	1	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.2	40	1.8
R406282	KOK 15	22	30	LH	947	132	0.57	16	80	120	7.5	0.1	3	11	2.4	3060	0.1	2.20	0.05	6.34	5	0.1	32	2.23	8.01	0.1	2.9	0.16	50	197	1800	34	35.5	9.6	34	4.5	1	4	0.4	2.5	0.4	1.5	0.2	1	0.1	0.4	10	0.5
R406283	KOK 15	30	33	LH	335	70	0.29	16	35	68	4	0.1	2	11	0.8	1300	0.1	1.50	0.1	12.90	5	0.1	31.3	1.86	5.2	0.09	4.1	0.36	50	286	1200	9.5	5	1.2	4.5	1	0.2	1	0.1	0.5	0.2	0.5	0.1	0.5	0.1	0.2	10	1.1
R406293	KOK 16	0	4	LH	279	90	1.26	18	57	8	6.5	0.2	1	21	0.8	36	0.2	2.70	0.4	71.00	5	0.1	31	7.43	3.5	0.32	1.59	1.72	160	358	50	45.5	24.5	6	21.5	4	1	4	0.6	3	0.6	2	0.2	1.5	0.2	1.2	10	2.6
R406294	KOK 16	4	6	LH	79	84	0.14	6	33	4	6.5	0.2	1.5	15	0.4	28	0.2	1.90	0.4	54.00	5	0.1	35.9	5.19	2.46	0.21	0.97	1.42	150	561	50	23	14	2.6	8	1.5	0.4	1	0.2	1	0.2	1	0.1	1	0.1	0.1	10	0.8
R406295	KOK 16	6	8	LH	118	92	0.11	10	39	8	9	0.4	1.5	19	1	30	0.2	2.20	0.4	54.50	5	0.1	33.7	6.36	2.71	0.26	0.69	1.3	170	762	100	55.5	17	4.2	14.5	3	0.8	2	0.4	2.5	0.6	1.5	0.2	1.5	0.2	7.2	10	1.2
R406296	KOK 16	8	14	LH	103	94	0.1	6	26	6	8	0.4	1.5	14	1	46	0.2	2.20	0.3	40.40	5	0.1	38	5.39	3.25	0.27	0.6	0.88	190	753	100	16	10.5	1.6	5.5	1	0.4	1	0.2	1	0.2	1	0.1	1	0.1	0.4	35	0.8
R406297	KOK 16	14	18	LH	718	60	0.1	6	26	14	3	0.4	1.5	75	1.2	96	0.2	2.30	0.3	39.00	5	0.1	33	6	2.54	0.34	1.13	0.71	220	1480	200	60.5	9.5	1.8	6	1	0.6	1	0.2	1.5	0.4	1	0.1	1	0.2	0.4	10	0.8
R406298	KOK 16	18	28	LH	388	150	0.17	3	36	12	7	0.4	1	21	1.2	92	0.05	3.05	0.05	13.00	5	0.1	24.9	9.18	9.28	1.21	0.95	0.28	240	1830	20	128	54.5	16	60.5	12	3.8	10	1.6	8.5	1.6	4.5	0.6	4	0.6	0.1	20	0.3
R406299	KOK 16	28	32	LH	903	164	0.38	8	124	36	7	0.6	1.5	20	1.6	60	0.05	3.40	0.6	70.30	5	0.1	25	8.87	7.82	1.42	0.85	1.27	250	1880	20	124	52.5	15.4	60	12	4.4	12	2	10.5	2.4	7	1	6.5	1.2	0.2	20	0.1
R406300	KOK 16	32	33	LH	1260	144	1.13	3	184	52	5	0.4	1	21	1.4	142	0.05	3.15	0.8	103.00	5	0.1	26.2	7.51	8.69	1.25	1.47	2.16	230	1880	20	120	52	14.6	55.5	11.5	3.8	12	1.6	9	1.8	5	0.8	4	0.6	0.1	10	0.1
R406301	KOK 17	0	8	LH	135	138	2.55	13	45	6	13	0.4	1	17	1.8	22	0.2	3.35	0.4	62.10	5	0.1	30	6.8	2.95	0.27	0.82	1.57	130	443	100	37	19.5	4.6	15.5	3.5	0.8	2	0.4	2.5	0.6	1.5	0.2	1.5	0.4	0.4	20	1.5
R406302	KOK 17	8	12	LH	128	98	0.15	8	29	6	8	0.4	1.5	21	2	46	0.2	2.25	0.5	51.60	5	0.1	36.8	4.88	2.78	0.27	0.5	1.3	170	686	100	34	17.5	4.4	16	3.5	0.8	2	0.4	2	0.4	1	0.1	1	0.2	0.4	55	0.7
R406303	KOK 17	12	14	LH	159	98	0.1	8	29	6	6.5	0.4	1.5	18	1.6	48	0.2	2.35	0.3	41.10	5	0.1	35.9	5.11	3.08	0.31	0.6	0.85	180	368	100	46.5	20.5	5.4	19	3.5	0.8	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.4	40	0.9
R406304	KOK 17	14	22	LH	928	60	0.1	3	21	12	4	0.2	1.5	16	1	84	0.1	1.45	0.1	22.30	5	0.1	36.3	5.25	2.2	0.38	0.85	0.54	180	466	150	32.5	16.5	4	15	3	0.8	2	0.4	2	0.4	1.5	0.2	1.5	0.2	0.4	70	0.6
R406305	KOK 17	22	36	LH	385	148	1.16	3	42	10	2.5	0.1	1.5	58	1	28	0.1	3.90	0.1	11.30	5	0.1	24.9	10.5	2.96	1.71	1.96	0.19	310	3080	50	190	95.5	21.8	81	16.5	5.4	16	2.2	11.5	2.2	5.5	0.8	4.5	0.6	0.4	10	0.2
R406306	KOK 17	36	44	LH	585	232	0.32	2	123	20	2.5	0.1	1	61	2.2	28	0.05	5.45	1.3	32.30	5	0.1	23.5	7.97	7.86	1.62	0.63	1.36	280	1470	20	204	82.5	25.8	96	16	4.8	14	2	10.5	2.2	6.5	1	6.5	1.2	0.1	30	0.3
R406307	KOK 17	44	48	LH	784	160	0.59	2	165	22	2	0.1	0.5	75	1.8	6	0.05	4.15	0.6	79.70	5	0.1	24.5	7.43	7.52	1.55	0.66	2.62	270	1300	20	144	60.5	17.4	66.5	12.5	4.4	12	1.6	9	1.8	5.5	0.8	5	0.8	0.1	20	0.1
R406308	KOK 17	48	50	LH	747	144	1.19	2	188	22	2	0.2	1	86	1.6	18	0.05	4.60	1.1	89.00	5	0.1	27.4	7.17	4.94	1.54	0.69	2.89	270	1760	100	148	64	18.2	71.5	13.5	4.4	14	2	10.5	2.2	6	0.8	5.5	0.8	0.4	30	2
R406309	KOK 17	50	52	LH	3090	128	1.83	3	372	72	4.5	0.2	0.5	69	1.4	22	0.05	3.35	0.7	81.80	5	0.1	28.2	7.31	6.44	1.35	1.25	2.29	240	1940	20	130	56.5	15.8	62	12	4	12	1.6	8.5	1.8	5	0.8	4.5	0.8	0.2	30	0.2
R406255	KOK 20	0	4	LH	199	100	1.79	15	62	8	6.5	0.4	1.5	20	1.2	26	0.2	1.80	0.4	63.40	5	0.1	31.5	6.82	3.03	0.36	0.88	1.43	210	952	50	48	24.5	6	20.5	3.5	1	4	0.6	3	0.6	1.5	0.2	2	0.4	0.6	5	1.9
R406256	KOK 20	4	8	LH	84	70	2.48	9	25	4	5	0.4	1	17	0.6	22	0.2	1.40	0.4	45.00	5	0.1	34	5.26	2.47	0.26	0.6	1.1	190	664	100	21	14	2.8	9	1.5	0.4	1	0.2	1	0.2	1	0.1	1	0.1	0.6	5	1.3
R406257	KOK 20	8	14	LH	95	108	0.15	8	30	6	6.5	0.4	1.5	12	1	56	0.2	1.40	0.2	31.40	5	0.1	37	4.88	3.87	0.29	0.53	0.65	190	342	400	14	7.5	1.4	4.5	1	0.2	1	0.1	1	0.2	0.5	0.1	1	0.1	0.4	5	2
R406258	KOK 20	14	26	LH	483	242	0.3	36	55	106	4	0.2	2	5	1.2	1540	0.05	1.25	0.05	4.02	5	0.1	23.6	5.22	12.2	0.26	4.18	0.13	70	92	3150	12.5	3.5	1.2	5	1.5	0.6	2	0.4	3	0.8	2.5	0.4	2.5	0.4	0.2	10	1.6
R406259	KOK 20	26	32	LH	1990	170	1.89	39	61	120	1.5	0.1	1	2	0.4	1510	0.05	0.20	0.1	1.60	5	0.1	24.4	3.18	7.65	0.19	9.54	0.05	40	277	2950	19.5	8	2.4	10	2.5	0.8	4	0.6	3.5	0.8	2.5	0.4	2	0.4	0.1	5	0.6
R406260	KOK 20	32	45	LH	919	122	3.68	34	56	68	0.2	0.1	0.2	1	0.1	1190	0.05	0.15	0.05	0.72	5	0.1	23.2	2.78	5.68	0.16	13	0.04	30	58	2450	3	1.5	0.6	2	1	0.1	1	0.1	1	0.2	0.5	0.1	0.5	0.1	0.4	10	1.5
R406210	KOK 21	0	2	LH	174	46	3.18	10	40	6	4	0.2	1	16	0.6	16	0.2	0.85	0.4	59.40	5	0.1	34.6	4.72	2.3	0.26	0.61	1.62	210	654	50	36.5	20.5	5.2	18.5	3.5	0.8	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.6	2	2.5
R406211	KOK 21	2	12	LH	80	88	0.7	10	33	4	6	0.6	1.5	25	2.2	16	0.2	1.75	0.4	39.40	5	0.1	35	4.4	2.67	0.52	0.39	1.04	250	812	100	21.5	11.5	2.6	8.5	1.5	0.6	1	0.2	1.5	0.4	1	0.1	1	0.2	0.8	5	1.1
R406212	KOK 21	12	20	LH	521	40	0.09	5	12	4	1	0.2	0.5	12	0.4	16	0.2	0.75	0.05	8.56	5	0.1	39	4.27	0.45	0.19	0.18	0.21	110	224	150	31	17	3	9	1.5	0.4	1	0.1	1	0.1	0.2	0.1	0.2	0.1	1	10	0.9
R406213	KOK 21	20	28	LH	282	132	0.33	60	106	28	6	0.8	2	14	1.2	184	0.8	4.65	0.8	134.00	5	0.1	30.9	8.3	4.15	0.37	0.94	2.39	130	792	550	150	70	16.2	54.5	8.5	2	6	0.8	4	0.8	2	0.2	1.5	0.2	1.4	25	1.4
R406214	KOK 21	30	42	LH	691	160	1.69	7	148	30	7.5	0.6	2.5	9	2.2	76	0.05	9.20	1	160.00	5	0.1	25.9	7.8	7.41	1.33	1.19	3.29	240	1880	100	116	50	15	59	11.5	3.8	10	1.6	8.5	1.8	4.5	0.6	4	0.6	0.8	25	0.1
R406215	KOK 21	42	58	LH	677	142	1.88	23	112	42	3.5	0.4	2.5	10	1	232	0.8	5.50	0.7	78.40	5	0.1	26.6	6.41	7.22	0.62	3.15	1.59	130	868	400	81	37.5	10.6	40	8	2.6	8	1	5.5	1.2	3	0.4	2.5	0.4	1.8	25	0.6
R406216	KOK 21	58	58.8	LH	1120	244	4.28	52	60	52	0.5	0.1	0.5	9	0.1	130	0.7	0.25	0.2	5.84	20	0.1	25.6	6.88	8.8	0.48	5.05	0.17	50	25	450	6	2.5	1	4.5	1.5	0.4	2	0.4	3	0.6	2	0.2	1.5	0.2	0.2	2	1.3
R406240	KOK 23	0	2	LH	222	56	2.18	12	44	8	3.5	0.2	1	16	0.6	22	0.2	1.00	0.3	53.80	5	0.1	34.9	4.83	2.36	0.24	0.73	1.24	210	471	50	38	20	5.4	19	3.5	1	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.4	5	3.1
R406241	KOK 23	2	10	LH	141	72	1.6	9	37	6	5	0.4	2	19	1	22	0.2	1.30	0.4	49.10	5	0.1	34	5.74	2.83	0.32	0.61	1.19	200	510	100	30	17	3.4	11.5	2	0.6	1	0.4	1.5	0.4	1	0.1	1	0.2	0.8	5	0.7
R406242	KOK 23	10	12	LH	123	176	0.65	10	25	14	10	0.4	1.5	15	1.2	158	0.3	1.45	0.2	27.40	5	0.1	34.9	6.03	5.74	0.36	0.85	0.63	170	524	1050	11	7.5	1.6	5	1	0.4	1	0.1	1	0.2	0.5	0.1	0.5	0.1	0.8	10	1.2
R406243	KOK 23	12	22	LH	1920	142	3.86	53	122	126	1	0.1	2.5	4	0.4	1130	0.1	0.35	0.1	2.00	5	0.1	23.7	3.96	8.56	0.23	9.7	0.07	20	68	2900	8	2	0.8	3.5	1.5	0.6	1	0.4	2.5	0.6	1.5	0.2	1.5	0.4	0.1	2	0.3
R406244	KOK 23	22	26	LH	1810	148	4.6	69	218	90	0.2	0.1	0.5	4	0.2	1120	0.1	0.15	0.05	0.90	5	0.2	22.5	3.49	8.48	0.21	12.3	0.04	20	19	2950	2.5	1	0.6	2.5	1	0.4	1	0.2	2	0.4	1	0.1	1	0.1	0.4	2	0.7
R406245	KOK 23	26	32	LH	1400	162	4.42	42	125	86	0.2	0.1	0.2	3	0.1	1020	0.1	0.10	0.05	0.56	5	0.2	22.2	3.77	8.85	0.24	13.6	0.03	30	4	3150	2.5	1	0.4	2.5	1	0.2	1	0.2	1.5	0.4	1	0.1	1	0.1	0.8	2	0.3
R406246	KOK 23	32	34	LH	1280	142	4.67	31	66	82	0.2	0.1	0.2	3	0.1	1130	0.05	0.10	0.05	1.04	5	0.1	20.9	3.56	7.5	0.23	13.6	0.04	20	6	2900	2.5	1	0.4	2.5	1	0.4	1	0.2	1.5	0.4	1	0.1	1	0.2	0.4	2	0.4
R406269	KOK 25	0	2	LH	247	90	1.22	15	57	10	5	0.4	3.5	19	1	30	0.2	1.60	0.4	62.40	5	0.1	33	6.4	3.39	0.32	0.93	1.43	170	578	100	46.5	24.5	5.6	19	3.5	0.8	4	0.4	3	0.6	1.5	0.2	1.5	0.4	2	15	2.8
R406270	KOK 25	2	4	LH	99	80	0.26	9	30	4	5	0.2	1.5	18	0.8	20	0.2	1.65	0.4	50.20	5	0.1	34.9	5.35	2.4	0.26	0.53	1.36	150	702	50	27	14.5	3.2	10.5	2	0.6	1	0.2	1.5	0.4	1	0.1	1	0.2	0.2	2	1.9
R406271	KOK 25	4	6	LH	119	76	1.27	7	24	6	6	0.4	1	17	0.6	16	0.2	1.55	0.4	45.20	5	0.1	34.3	4.85	2.26	0.22	0.45	1.24	130	518	50	22	12.5	2.6	8	1.5	0.4	1	0.1	1.5	0.2	1	0.1	1	0.1	0.6	10	1.3
R406272	KOK 25	6	14	LH	71	90	0.84	6	23	6	6	0.4	1.5	12	0.8	40	0.2	1.45	0.2	29.80	5	0.1	37.6	4.36	3.13	0.27	0.55	0.61	180	393	200	12.5	8.5	1.6	5	1	0.2	1	0.1	1	0.2	0.5	0.1	1	0.1	0.8	10	1.4
R406273	KOK 25	14	16	LH	152	146	0.19	7	16	22	4.5	0.2	1	7	1.4	342	0.1	1.25	0.05	8.02	5	0.1	36.5	3.37	5.58	0.29	0.92	0.2	110	153	1600	3.5	2	0.4	1	0.2	0.1	1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.8	15	1.2
R406274	KOK 25	16	20	LH	459	128	1.62	18	29	54	2	0.1	0.5	5	0.8	780	0.2	1.90	0.05	5.70	5	0.1	25.1	7.76	7.94	0.24	3.27	0.17	60	111	2500	4	2	0.6	2	0.2	0.1	1	0.1	0.5	0.1	0.2	0.1	0.2	0.1	0.4	10	0.8
R406275	KOK 25	20	22	LH	868	124	3.26	25	99	84	1	0.1	1	9	0.4	1130	0.2	2.35	0.05	2.32	5	0.1	24.3	3.7	8.08	0.22	10.1	0.1	30	29	2800	13.5	6.5	2	7.5	1.5	0.4	1	0.2	1.5	0.2	0.5	0.1	0.5	0.1	0.2	2	0.5
R406276	KOK 25	22	28	LH	1120	124	3.44	18	68	92	0.2	0.1	0.2	5	0.2	1250	0.1	0.25	0.05	1.50	5	0.1	21.5	3.2	7.18	0.2	15.3	0.05	30	23	2450	7.5	3	1	4	1	0.4	1	0.2	1	0.2	0.5	0.1	0.5	0.1	0.2	2	0.3
R406223	KOK 5	0	2	LH	197	66	7.21	15	45	8	6	0.2	1	16	0.8	24	0.2	1.40	0.4	60.00	5	0.1	27.6	6.03	2.64	0.27	0.92	1.34	180	1100	50	44.5	25	6.4	22	4.5	1.2	4	0.6	3.5	0.6	2	0.2	2	0.4	0.8	2	3
R406224	KOK 5	2	4	LH	127	62	1.82	12	37	4	4.5	0.4	2	30	1.4	16	0.2	1.35	0.5	59.00	5	0.1	33.2	5.4	2.33	0.3	0.43	1.65	200	792	100	40.5	22	5.4	18.5	3.5	0.8	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.6	5	1.5
R406225	KOK 5	4	12	LH	95	128	1.13	13	35	12	7	0.6	2	22	1.8	146	0.4	1.75	0.3	40.80	5	0.1	33.5	5.4	5.02	0.31	0.41	0.96	200	616	250	21.5	12.5	2.4	8	1.5	0.4	1	0.2	1.5	0.2	1	0.1	1	0.1	0.8	5	1.3
R406226	KOK 5	12	14	LH	284	170	0.48	58	115	72	10	0.2	11	7	1.2	1670	1.9	0.85	0.05	6.22	5	0.1	32	2.82	10.4	0.2	1.1	0.13	70	800	1850	11	4	1.2	4	1	0.4	1	0.1	1	0.2	0.5	0.1	0.5	0.1	1	10	1.6
R406227	KOK 5	14	26	LH	549	90	0.84	25	114	86	1.5	0.1	3	3	0.4	1460	0.5	0.70	0.05	1.94	5	0.1	30.6	3.47	6.4	0.21	5.29	0.07	40	153	1950	11	7	2	7.5	1.5	0.4	1	0.2	1.5	0.2	1	0.1	0.5	0.1	0.1	2	0.9
R406228	KOK 5	26	46	LH	1150	88	4.31	30	79	102	0.5	0.1	2.5	3	0.4	2350	0.7	0.45	0.1	1.82	5	0.2	19.5	2.58	8.68	0.17	10.4	0.08	30	50	2700	4	1.5	0.6	2.5	0.5	0.2	1	0.1	1	0.2	1	0.1	1	0.1	0.1	20	1.6
R406229	KOK 5	46	68	LH	1050	80	6.96	21	62	68	1.5	0.1	3	5	0.2	1290	0.6	0.15	0.05	2.00	5	0.2	19.7	1.93	5.63	0.12	11.7	0.05	20	18	1950	2	1	0.2	1.5	0.2	0.2	1	0.1	0.5	0.1	0.2	0.1	0.2	0.1	0.2	20	1.3
R406230	KOK 5	68	71	LH	812	174	2.62	29	113	102	1.5	0.1	2	5	0.4	1350	0.6	0.20	0.3	14.70	5	0.1	19.6	4.4	8.53	0.36	13.5	0.2	40	79	1600	9	3.5	1.2	5.5	2	0.4	2	0.4	2	0.6	1	0.2	1	0.2	2	20	6.3
R406217	KOK DD 4	0	2	LH	165	68	3.05	12	41	8	4.5	0.2	1	18	1	20	0.2	1.15	0.4	61.70	5	0.1	31	5.56	2.44	0.33	0.89	1.53	220	830	50	42.5	22.5	5.6	20	3.5	1	4	0.6	3	0.6	1.5	0.2	1.5	0.4	0.6	5	2
R406218	KOK DD 4	2	4	LH	168	64	2.13	13	43	6	4.5	0.4	1.5	18	1	20	0.2	1.25	0.5	64.60	5	0.1	33	6.13	2.58	0.27	0.66	1.58	190	869	50	43	22.5	5.4	17.5	3	1	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.8	10	1.8
R406219	KOK DD 4	4	12	LH	84	92	0.33	8	29	6	5.5	0.4	2.5	21	1.8	32	0.3	1.40	0.3	36.30	10	0.1	35.6	5.49	2.88	0.42	0.43	0.89	230	2780	150	23	11.5	2.2	7	1.5	0.8	1	0.2	1.5	0.2	1	0.1	1	0.2	0.8	10	1.3
R406220	KOK DD 4	12	20	LH	1980	220	1.72	64	149	128	4.5	0.1	4.5	6	1.4	1280	3.2	0.85	0.05	4.22	5	0.2	28.7	5.3	6.45	0.27	5.75	0.11	50	95	4300	45.5	31.5	7.4	25	4.5	1.2	4	0.6	3	0.6	1.5	0.1	1	0.1	1.2	10	1.3
R406221	KOK DD 4	20	30	LH	17300	164	2.95	60	96	246	3	0.1	9	3	3.4	1760	2.7	0.55	1.9	1.62	5	0.4	21.8	2.71	11	0.18	9.66	0.17	50	720	2450	17.5	10	2.2	9	2	0.8	2	0.4	3	0.6	1.5	0.2	1.5	0.2	0.4	2	1
R406222	KOK DD 4	30	36.2	LH	1110	86	2.94	29	126	28	1.5	0.1	1.5	19	0.6	536	0.9	1.70	0.7	70.80	5	0.1	27	8.97	3.33	0.41	1.95	1.25	190	576	100	103	52	11.8	37.5	6.5	1.6	6	0.8	4.5	0.8	2.5	0.4	2	0.4	3.6	40	0.5
R406231	KOK DD 7	0	2	LH	210	58	5.05	20	47	8	4	0.4	1	16	1.2	30	0.2	1.00	0.3	54.80	5	0.1	33	4.99	2.39	0.26	0.78	1.22	210	589	250	39	21.5	5.4	20	3.5	1	4	0.4	3	0.6	1.5	0.2	1.5	0.2	0.8	5	3.5
R406232	KOK DD 7	2	4	LH	150	62	1.66	13	41	6	3.5	0.2	1	18	0.8	18	0.2	1.25	0.5	69.20	5	0.1	31.9	6.29	2.48	0.26	0.64	1.68	190	658	100	40	21.5	5	16.5	3	0.8	2	0.4	2	0.4	1.5	0.2	1.5	0.2	1	10	1.6
R406233	KOK DD 7	4	10	LH	95	90	0.64	8	25	4	6	0.4	2	19	1	28	0.2	1.30	0.3	42.10	5	0.1	36	4.32	2.9	0.33	0.4	1.08	180	644	50	20	11.5	2.2	7.5	1.5	0.4	1	0.2	1	0.2	1	0.1	1	0.1	1.4	10	1.2
R406234	KOK DD 7	10	12	LH	85	308	0.1	7	20	20	10	0.4	2.5	22	3.4	250	0.9	2.35	0.05	8.88	5	0.1	31.1	4.87	11.4	0.36	0.38	0.18	150	588	1550	9	6.5	1.6	6	1	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	0.2	10	1.1
R406235	KOK DD 7	12	16	LH	529	118	0.16	13	39	154	4.5	0.2	3	24	1.4	678	0.8	1.05	0.05	4.22	30	0.1	28.6	9.9	4.68	0.42	3.01	0.1	130	245	2050	128	119	20	62.5	9	2.2	8	1	4.5	0.8	2	0.2	1.5	0.2	0.2	5	0.9
R406236	KOK DD 7	16	26	LH	999	138	3	44	72	166	1.5	0.1	1	4	0.6	1870	0.3	0.30	0.05	1.32	5	0.4	21.7	4.49	7.69	0.26	12	0.05	40	34	2950	18	7.5	2	7.5	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	0.1	2	1
R406237	KOK DD 7	26	36	LH	1030	170	3.6	31	76	96	1	0.1	2.5	2	0.2	1360	0.3	0.45	0.05	0.84	5	0.2	23.8	3.57	6.84	0.22	13	0.04	40	13	2650	5	2	0.8	3	1	0.4	1	0.1	1	0.1	1	0.1	1	0.1	0.1	15	1
R406238	KOK DD 7	36	42	LH	1330	164	3.54	63	68	82	5	0.1	4	2	0.6	1250	0.6	0.25	0.05	0.88	5	0.4	23	3.14	8.26	0.18	13.8	0.03	40	21	2700	5	2	0.6	3.5	1	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	0.8	10	1.1
R406239	KOK DD 7	42	45.6	LH	1330	198	3.61	13	196	100	0.5	0.1	1.5	1	0.2	988	0.2	0.10	0.05	0.68	5	0.4	19.1	4.77	9	0.3	15	0.02	30	7	3250	3	1	0.6	2.5	1	0.4	1	0.1	1.5	0.4	1	0.1	1	0.1	0.2	5	0.3

Dissolution					4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	Fusion	4-acid
Determination					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
Detection		Depth			1	2	0.01	1	1	2	0.5	0.2	0.5	1	0.2	2	0.1	0.05	0.1	0.02	10	0.2
Unit	-	m	m	-	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
FieldNo	DH Name	From	To	Area	Mn	V	Ca	Cu	Zn	Co	As	Sb	W	Pb	Mo	Ni	Bi	U	Tl	Rb	Sn	Te
R406261	KOK DD13	0	4	LH	150	70	4.64	19	43	8	5.5	0.4	1	16	1.2	24	0.2	1.55	0.4	55.70	5	0.1
R406262	KOK DD13	4	8	LH	73	78	0.15	8	26	4	5	0.2	1	16	0.6	18	0.2	1.25	0.4	49.30	5	0.1
R406263	KOK DD13	8	18	LH	76	62	0.1	11	18	4	4	0.4	2.5	11	1.6	44	0.2	1.20	0.1	14.00	5	0.1
R406264	KOK DD13	18	24	LH	249	92	0.19	15	88	112	2.5	0.1	2	12	1	1640	0.1	1.40	0.05	2.14	40	0.1
R406265	KOK DD13	24	38	LH	817	64	1.49	11	42	108	0.5	0.1	1	3	0.6	2610	0.05	0.75	0.05	0.82	5	0.1
R406266	KOK DD13	38	48	LH	603	60	6.1	6	37	86	1	0.1	1	3	0.2	1910	0.05	0.20	0.05	0.82	5	0.1
R406267	KOK DD13	48	62	LH	899	74	9.15	4	27	60	0.2	0.1	0.2	1	0.1	1020	0.05	0.25	0.05	1.86	5	0.1
R406268	KOK DD13	62	65	LH	713	128	5.35	4	52	86	0.2	0.1	0.2	3	0.1	1020	0.05	0.15	0.05	0.86	5	0.1
R406310	KOK DD18	2	4	LH	152	48	9.89	15	27	6	4	0.2	1	9	1	20	0.05	2.35	0.2	41.10	5	0.1
R406311	KOK DD18	4	6	LH	163	110	11.8	21	50	6	11	0.4	1	14	0.8	26	0.2	4.80	0.3	56.70	5	0.1
R406312	KOK DD18	6	10	LH	1180	120	1.26	14	39	14	11	0.4	1	21	2.8	24	0.2	2.70	0.5	60.90	5	0.1
R406313	KOK DD18	10	22	LH	515	56	0.15	18	28	10	6	0.4	1	22	2.6	44	0.1	1.85	0.3	41.00	5	0.1
R406314	KOK DD18	22	26	LH	129	78	0.16	14	13	6	4.5	0.6	1	20	2.2	26	0.1	2.35	0.05	14.10	5	0.1
R406315	KOK DD18	26	42	LH	92	34	0.12	4	24	4	1	0.2	1.5	13	0.8	8	0.05	1.85	0.05	2.18	5	0.1
R406316	KOK DD18	42	56	LH	395	128	0.2	10	143	22	6.5	0.8	1.5	26	2	22	0.05	3.70	0.4	82.90	5	0.1
R406317	KOK DD18	56	60	LH	668	156	0.33	8	144	30	3	0.4	2	19	2	8	0.05	3.20	0.8	149.00	10	0.1
R406318	KOK DD18	60	65	LH	1690	124	2.42	5	341	32	3	0.8	1	14	0.8	6	0.05	2.75	0.5	84.50	5	0.1
R406247	KOK DD24	0	4	LH	174	66	4.01	13	44	8	4.5	0.2	1.5	16	0.6	44	0.2	1.05	0.4	58.70	5	0.1
R406248	KOK DD24	4	8	LH	87	116	0.42	8	20	4	8	0.6	2.5	23	1.2	24	0.2	1.35	0.3	37.10	5	0.1
R406249	KOK DD24	8	12	LH	113	230	0.3	13	19	66	16	0.8	2	18	3.4	294	0.3	2.50	0.3	25.20	5	0.1
R406250	KOK DD24	12	24	LH	671	124	0.81	44	49	128	1.5	0.1	1	11	1	1090	0.05	1.40	0.05	3.26	5	0.1
R406251	KOK DD24	24	36	LH	1510	178	2.07	31	96	148	1	0.1	1	4	0.4	1510	0.1	0.35	0.05	1.82	5	0.2
R406252	KOK DD24	36	48	LH	936	124	3.31	56	80	92	0.2	0.1	1.5	4	0.2	1730	0.1	0.10	0.05	0.68	5	0.1
R406253	KOK DD24	48	54	LH	1370	92	6.52	25	66	88	1	0.1	1.5	5	0.4	1200	0.1	0.10	0.05	0.56	5	0.2
R406254	KOK DD24	54	62	LH	1150	102	4.1	31	80	76	0.5	0.1	2	4	0.2	1200	0.1	0.10	0.05	0.66	5	0.2
R406413	KOK1	0	2	LH	131	46	1.39	15	38	6	3	0.4	1.5	17	1.4	28	0.1	0.75	0.5	55.90	5	0.1
R406414	KOK1	2	4	LH	127	64	1.33	16	84	6	5	0.4	10	19	1.8	18	0.2	1.15	0.6	60.30	5	0.1
R406415	KOK1	4	8	LH	163	124	0.46	51	55	2160	8.5	0.4	4520	17	2.8	22	0.2	1.05	0.1	31.80	5	0.1
R406416	KOK1	8	12	LH	57	162	0.4	24	54	8	6	0.6	6.5	16	1.8	52	0.2	1.70	0.4	37.60	5	0.1
R406417	KOK1	12	16	LH	171	204	0.42	54	46	16	13	0.4	1.5	26	1.2	108	0.3	2.30	0.7	80.90	5	0.1
R406418	KOK1	16	20	LH	989	138	0.55	63	82	34	6	0.6	16	19	2.2	124	0.2	3.80	0.6	80.50	5	0.1
R406419	KOK1	20	24	LH	1540	138	0.51	62	138	38	4	0.8	3	105	2.2	176	0.2	3.45	0.4	55.30	5	0.1
R406428	KOK19	0	2	LH	287	72	2.62	20	70	10	4.5	0.2	21	15	0.6	20	0.2	1.25	0.4	63.00	5	0.1
R406429	KOK19	2	8	LH	377	110	9.28	23	56	10	20	0.4	2	19	2.2	26	0.2	2.70	0.4	63.90	5	0.1
R406430	KOK19	8	14	LH	449	62	1.24	18	33	8	5	0.4	1.5	23	2.2	22	0.2	2.40	0.4	49.70	5	0.1
R406431	KOK19	14	16	LH	441	60	0.16	12	44	10	3.5	0.2	19	25	1.4	32	0.2	2.00	0.3	48.30	5	0.1
R406432	KOK19	16	22	LH	288	126	0.14	16	36	10	8.5	0.8	6	29	4.6	40	0.3	2.60	0.3	56.00	5	0.2
R406433	KOK19	22	30	LH	147	34	0.11	12	7	4	2.5	0.4	4.5	20	2.4	12	0.1	2.55	0.1	7.72	5	0.1
R406434	KOK19	30	34	LH	80	20	0.08	7	11	6	2	0.2	25	21	0.8	6	0.1	1.65	0.05	3.78	5	0.1
R406435	KOK19	34	38	LH	55	64	0.11	13	16	4	2.5	0.4	3.5	11	1.2	6	0.05	2.05	0.5	24.20	5	0.1
R406436	KOK19	38	40	LH	446	116	1	37	181	36	5.5	0.8	3.5	9	1.2	28	0.05	4.70	1.4	114.00	5	0.1
R406420	KOK3	0	2	LH	248	76	2.2	22	58	8	6	0.4	1.5	18	1.4	28	0.2	1.15	0.5	75.60	5	0.1
R406421	KOK3	2	4	LH	198	64	2.1	14	36	16	4	0.4	72	18	1	18	0.2	1.25	0.5	61.80	5	0.1
R406422	KOK3	4	10	LH	101	86	0.69	17	35	6	7	0.6	2.5	16	2.2	24	0.2	1.25	0.3	42.80	5	0.1
R406423	KOK3	10	14	LH	36	58	0.29	11	11	4	4	0.6	2.5	13	2.4	28	0.1	1.45	0.1	14.00	5	0.1
R406424	KOK3	14	16	LH	55	94	0.28	9	30	6	3.5	1.2	5	24	7.2	10	0.4	3.10	0.3	49.30	5	0.1
R406425	KOK3	16	24	LH	115	76	0.31	14	52	6	3	1	13	26	0.8	6	0.4	4.95	0.8	174.00	5	0.1
R406426	KOK3	24	32	LH	129	26	0.19	22	43	2	2	0.6	2	33	0.6	8	0.4	5.40	1.4	209.00	5	0.1
R406427	KOK3	32	34	LH	283	74	0.46	57	137	20	4.5	1	3.5	14	1.6	64	0.3	6.80	1.1	185.00	20	0.1

Dissolution	Fusion	4-acid	Fusion	Fusion	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	CN	CN	CN
Determination	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
Detection	0.01	0.01	0.01	0.01	0.01	0.01	10	1	50	0.5	0.5	0.2	0.5	0.5	0.2	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.2	5	0.1
Unit	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppm
FieldNo	Si	Al	Fe	Ti	Mg	K	Zr	Ba	Cr	Ce	La	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Au	Ag	Cu
R406261	29	5.98	2.69	0.24	0.94	1.22	150	719	200	38.5	22.5	5.6	20	3.5	1	4	0.6	3	0.6	1.5	0.2	1.5	0.2	1	2	1.9
R406262	36	5.63	2.34	0.22	0.44	1.31	160	667	50	18	12	3	6.5	1	0.4	1	0.1	1	0.1	0.5	0.1	0.5	0.1	0.4	5	1.6
R406263	41	3.18	1.9	0.34	0.36	0.29	190	262	400	8	5	1	3.5	0.5	0.1	1	0.1	1	0.1	0.5	0.1	0.5	0.1	0.4	5	3.6
R406264	32.1	5.8	4.57	0.33	2.41	0.08	90	79	1650	22	10	2.4	8.5	2	0.4	1	0.2	1	0.2	0.5	0.1	0.5	0.1	0.1	2	1.9
R406265	29.5	1.99	7.98	0.12	6.36	0.07	20	87	2400	5	3	0.6	2.5	0.5	0.1	1	0.1	0.5	0.1	0.2	0.1	0.2	0.1	0.2	2	0.9
R406266	21	1.51	5.74	0.1	8.99	0.07	20	21	1900	3.5	1.5	0.6	2.5	1	0.2	1	0.1	1	0.2	1	0.1	1	0.1	1	15	0.3
R406267	16.9	1.96	4.35	0.13	12	0.07	20	43	1750	4.5	2	0.6	3	0.5	0.2	1	0.1	1	0.2	0.5	0.1	0.5	0.1	0.1	5	0.8
R406268	19.9	3.41	6.6	0.23	15.6	0.04	30	4	2750	2	0.5	0.4	2	0.5	0.1	1	0.1	1	0.2	1	0.1	0.5	0.1	0.1	2	0.7
R406310	24	2.73	1.71	0.17	0.54	1.05	130	289	200	28	14	3.6	14	2.5	0.6	2	0.2	2	0.4	1	0.1	1	0.1	0.6	135	2.4
R406311	18.6	5.02	2.54	0.23	0.95	1.43	100	371	150	41.5	20.5	4.8	18.5	3	0.8	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	2.6	45	2.4
R406312	35	4.27	2.8	0.23	0.58	1.53	170	691	50	63	20.5	5.2	18.5	3	0.8	4	0.4	2.5	0.4	1.5	0.1	1.5	0.1	0.4	150	1.1
R406313	37.5	3.63	2.32	0.23	0.47	0.96	150	563	300	33.5	15.5	3.8	14	2.5	0.6	2	0.4	2	0.4	1	0.1	1.5	0.2	0.4	200	2.5
R406314	37.8	4.21	3.12	1	0.4	0.26	330	673	250	11.5	5	1.2	5	1.5	0.6	1	0.4	2.5	0.6	1.5	0.4	2	0.4	0.4	225	2.2
R406315	39.8	2.43	1.3	0.64	0.29	0.06	380	328	50	74.5	52.5	6.8	21.5	3.5	1.2	4	0.6	3.5	0.6	2	0.2	2	0.4	0.8	145	0.3
R406316	26	8.62	5.42	1.46	0.56	1.18	290	1120	100	200	90	24.2	98.5	18.5	5.4	18	2.4	13	2.2	6.5	0.8	5	0.8	1	40	1.1
R406317	26.8	7.59	6.93	1.59	0.74	2.19	320	1930	50	150	66	18	71.5	14	4.6	14	2	10	2	5	0.8	4.5	0.6	0.6	25	0.7
R406318	25.3	6.57	8.82	1.32	2.07	1.76	220	1020	20	158	74	18.4	69	12.5	4	12	1.6	9	1.6	4.5	0.6	4	0.6	0.4	5	0.05
R406247	31.6	5.78	2.8	0.24	0.97	1.36	160	983	100	37	20.5	5	17	3.5	0.8	4	0.4	2.5	0.6	1.5	0.2	1.5	0.2	1	5	3
R406248	35.4	4.22	3.33	0.37	0.33	1.17	260	868	100	13.5	8.5	1.6	5	1	0.4	1	0.1	1	0.1	0.5	0.1	1	0.1	0.4	10	1.4
R406249	29.5	3.29	15	0.59	0.62	0.73	260	822	950	12	7	2	7	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1	0.2	1.2	10	2.9
R406250	26.8	6.88	10.1	0.38	2.54	0.1	110	103	1700	24	4.5	1.4	5	1.5	0.6	1	0.4	2	0.4	1.5	0.2	2	0.4	0.2	5	1.6
R406251	20.6	5.03	11.2	0.33	10.6	0.07	50	142	3550	8.5	3.5	1.2	5	1.5	0.6	1	0.4	2	0.4	1.5	0.2	1.5	0.2	3.8	2	0.6
R406252	22.1	3.36	8.5	0.21	12.6	0.05	30	36	2950	3	1	0.4	2	1	0.4	1	0.2	1.5	0.2	1	0.1	1	0.2	0.1	5	2
R406253	17.2	2.14	6.48	0.14	13.7	0.03	20	14	2000	2.5	1	0.4	1.5	0.5	0.2	1	0.1	1	0.2	0.5	0.1	0.5	0.1	0.1	15	4
R406254	18.4	2.42	6.8	0.16	15.2	0.03	20	5	2150	2.5	1	0.4	1.5	0.5	0.2	1	0.1	1	0.2	0.5	0.1	0.5	0.1	0.2	10	10.9
R406413	38.1	4.19	2.06	0.21	0.53	1.8	140	650	300	32	18.5	4.4	17	3	0.8	2	0.4	2	0.4	1	0.1	1	0.1	0.6	10	2.1
R406414	35.2	4.99	2.47	0.28	0.41	1.98	180	1110	250	33.5	18	4	14.5	2.5	0.6	1	0.4	1.5	0.4	1	0.1	1	0.1	1	20	2.5
R406415	37.3	4.39	4.52	0.32	0.25	1.08	210	852	20	13.5	9	1.4	5.5	1	0.2	1	0.1	1	0.1	0.2	0.1	0.5	0.1	0.6	30	34.3
R406416	33.1	6.02	4.23	0.49	0.59	1.14	180	720	400	12.5	7	1.2	4.5	1	0.4	1	0.1	1.5	0.2	1	0.1	1	0.1	0.6	20	3
R406417	29.7	6.23	7.89	0.49	0.41	2.73	190	1520	450	25.5	13	2.6	9	2	0.6	1	0.2	2	0.4	1	0.1	1.5	0.1	6.4	5	2.2
R406418	30.8	6.74	6.18	0.49	0.55	2.8	190	1950	400	63	30	6.6	25.5	4.5	1.2	4	0.6	3	0.6	2	0.2	2	0.4	1	10	2.6
R406419	30.5	6.73	5.94	0.48	1.01	1.31	170	733	400	72.5	30.5	9	35.5	8	1.6	6	0.8	4.5	0.8	2.5	0.4	2	0.4	1.8	10	2.2
R406428	32.7	5.09	3.11	0.3	1.11	1.66	210	395	50	47.5	23	5.6	22	4	0.8	4	0.6	3.5	0.6	2	0.2	2	0.2	0.6	335	4.2
R406429	24.1	5.76	3.03	0.31	0.75	1.66	140	397	150	44.5	21	4.8	18.5	3.5	0.8	4	0.4	3	0.6	1.5	0.2	1.5	0.2	1	90	2.7
R406430	35.8	4.04	2.58	0.25	0.53	1.33	150	501	250	42.5	19	4.8	18	3.5	0.8	2	0.4	2.5	0.4	1.5	0.1	1.5	0.2	1	100	2.4
R406431	36.1	4.18	2.82	0.28	0.65	1.3	180	469	50	41	20	5.2	20	4	0.8	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.4	70	1.3
R406432	34.1	4.87	5.57	0.4	0.69	1.27	250	959	200	41	19.5	5	19	4	1	4	0.6	3.5	0.6	2	0.2	2	0.4	0.4	115	2.6
R406433	38.7	2.49	1.24	1.11	0.28	0.2	390	571	300	35.5	21	4	16.5	3.5	1.2	4	0.6	4	0.8	2.5	0.4	2.5	0.4	0.6	225	1.6
R406434	38.4	3.36	0.79	0.58	0.18	0.07	240	359	20	60.5	42	5.6	20.5	4	1.2	4	0.6	4	0.8	2.5	0.4	2	0.2	1.2	285	0.8
R406435	29.8	8.16	1.33	1.1	0.35	0.75	230	911	150	124	59	14.4	56	11.5	3.4	10	1.4	8	1.4	3.5	0.6	3.5	0.4	0.6	190	1.7
R406436	26.7	7.58	5.57	1.25	1.16	2.35	230	1310	50	118	52.5	14.4	60.5	12.5	3.8	12	1.8	10.5	2	5.5	0.8	5	0.6	1	25	1.6
R406420	33.2	6.11	3.16	0.32	0.93	1.58	200	491	150	47.5	24	5.6	21.5	4	1	4	0.6	3	0.6	1.5	0.2	1.5	0.2	1.2	30	4.9
R406421	32.9	5.35	2.99	0.28	0.66	1.56	180	743	50	48	24.5	5.6	21	4	0.8	4	0.4	2.5	0.4	1.5	0.2	1.5	0.2	1.4	10	2.8
R406422	33.5	5.34	3.39	0.34	0.52	0.99	200	522	300	21	13.5	2.4	8	1.5	0.2	1	0.2	1.5	0.2	1	0.1	1	0.1	1.4	5	2.1
R406423	36.6	6.71	1.94	0.53	0.56	0.25	240	304	250	9	4.5	0.8	3.5	1	0.2	1	0.1	1.5	0.2	1	0.1	1	0.1	0.8	2	1.3
R406424	32.5	5.38	1.32	1.45	0.49	0.74	350	761	200	13	5.5	1.2	5.5	2	0.8	2	0.4	3	0.6	2.5	0.4	2.5	0.4	8.4	10	1.5
R406425	30.1	11	1.92	0.8	0.77	2.67	320	1100	20	165	77.5	18.4	67	11.5	3.2	10	1.4	7	1.4	4	0.6	3.5	0.4	1	5	0.6
R406426	33.5	7.94	1.79	0.35	0.49	4.02	330	1450	50	188	86	21.4	79.5	15	3.6	12	1.8	10	1.8	5.5	0.8	5	0.8	3.2	10	0.9
R406427	31.4	6.77	3.48	0.47	0.83	3.1	230	921	150	191	87.5	22	86.5	16.5	3.8	14	1.8	9.5	1.8	4.5	0.6	4	0.6	1.8	15	2.8

Dissolution					4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	CN	CN	CN
Determination					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
Detection		Depth			1	2	0.01	1	1	2	0.5	0.2	0.5	1	0.2	2	0.1	0.05	0.1	0.02	10	0.2	0.01	0.01	0.01	0.01	0.01	0.01	10	1	50	0.5	0.5	0.2	0.5	0.5	0.2	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.2	5	0.1
Unit	-	m	m	-	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppm
FieldNo	DH Name	From	To	Area	Mn	V	Ca	Cu	Zn	Co	As	Sb	W	Pb	Mo	Ni	Bi	U	Tl	Rb	Sn	Te	Si	Al	Fe	Ti	Mg	K	Zr	Ba	Cr	Ce	La	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Au	Ag	Cu
R406368	TAR42	0	4	MW	125	58	17.1	17	24	6	6	0.2	2	8	1.8	24	0.1	2.00	0.2	36.10	5	0.1	19.4	2.99	2.02	0.18	0.75	0.74	160	585	100	26	14.5	3.6	13	2.5	0.6	2	0.4	1.5	0.4	1.5	0.1	1	0.1	1	35	2.3
R406369	TAR42	4	12	MW	183	132	2.03	19	44	10	11	0.4	5	16	2.2	28	0.4	2.30	0.3	65.00	5	0.1	30.1	6.21	4.36	0.41	0.77	1.18	220	342	100	38.5	21.5	4.6	16	3	0.6	2	0.4	3	0.6	1.5	0.2	2	0.2	0.8	40	3
R406370	TAR42	12	14	MW	88	582	0.13	49	24	8	370	0.8	62.5	15	3	14	1.4	5.95	0.2	18.00	10	0.1	29.1	2.65	18.3	0.47	0.39	0.32	140	311	150	6.5	4	0.8	2.5	1	0.1	1	0.1	1	0.1	0.5	0.1	1	0.1	0.6	70	3.9
R406371	TAR42	14	20	MW	74	466	0.22	79	44	12	250	0.8	33	11	1	28	0.6	1.20	0.05	10.60	5	0.1	27.8	4.33	15.7	0.56	1.04	0.17	80	42	150	2	1	0.2	1.5	0.5	0.1	1	0.1	1	0.1	0.5	0.1	1	0.1	0.1	15	0.4
R406372	TAR42	20	24	MW	155	326	0.18	87	73	6	250	0.6	30.5	12	1.4	18	0.4	1.05	0.05	16.50	5	0.1	24	8.4	13.8	0.46	1.08	0.18	40	23	100	2	1.5	0.4	2	0.5	0.1	1	0.1	1	0.2	0.5	0.1	1	0.1	0.1	20	1.3
R406373	TAR42	24	34	MW	1840	260	3.68	171	204	90	120	0.6	31.5	20	1.8	82	0.5	1.70	0.2	22.70	10	0.1	22.1	5.61	9.74	0.45	3.54	0.31	50	52	100	11	3.5	1.2	5.5	2.5	1	4	1	7.5	1.8	6	0.8	5.5	0.8	0.1	10	0.1
R406374	TAR42	34	38	MW	2270	266	1.6	107	177	66	170	0.6	36.5	27	0.6	82	0.7	0.60	0.6	79.00	5	0.1	24.3	7.03	10.1	0.47	2.43	0.65	100	124	100	3	1	0.4	2.5	1	0.6	1	0.4	2.5	0.6	2	0.4	2	0.2	1	70	1.1
R406375	TAR42	38	44	MW	1450	284	4.61	106	170	46	72	0.4	7.5	13	0.6	70	0.4	0.35	0.1	27.10	5	0.1	22.4	5.69	10.1	0.47	3.64	0.29	50	32	100	2.5	1	0.4	3	1.5	0.6	2	0.6	4	1	3	0.4	3	0.6	0.2	10	0.2
R406376	TAR42	44	46	MW	1440	222	6.02	103	130	34	66	0.6	6	20	0.8	70	0.5	0.20	0.3	76.90	5	0.1	22.6	7.11	8.81	0.38	3.68	0.61	40	76	100	3	1	0.6	3.5	1.5	0.6	2	0.6	4	1	3	0.4	3	0.4	1	70	2
R406360	TAR43	0	4	MW	173	84	15.5	20	32	6	10	0.2	1.5	11	1.2	24	0.3	1.60	0.2	39.10	5	0.1	20.9	3.65	3.09	0.22	0.85	0.86	140	580	100	34.5	20.5	5.2	19.5	4	0.8	4	0.6	3	0.6	2	0.2	1.5	0.2	1	250	2.6
R406361	TAR43	4	12	MW	307	124	1.22	23	38	10	9.5	0.4	2.5	18	2	32	0.5	2.60	0.3	71.80	5	0.1	30.3	6.86	4.55	0.43	0.86	1.21	240	484	150	52.5	23	5.2	19.5	4	0.6	4	0.4	3	0.6	2	0.2	2	0.2	0.6	200	2.5
R406362	TAR43	12	14	MW	173	292	0.17	75	58	14	28	1	2.5	14	1.6	24	0.5	4.55	0.05	20.70	5	0.1	29.9	6.89	9.85	0.43	0.89	0.48	130	106	150	6.5	3.5	1	3	0.5	0.1	1	0.1	1	0.2	0.5	0.1	1	0.1	0.4	460	3.3
R406363	TAR43	14	16	MW	78	280	0.25	140	77	18	24	0.4	3.5	10	1.4	34	0.5	2.60	0.05	6.84	10	0.1	25.3	7.28	10.9	0.49	0.7	0.15	70	58	100	4	1.5	0.4	2	0.5	0.1	1	0.1	1	0.1	0.2	0.1	0.5	0.1	0.1	350	3
R406364	TAR43	16	22	MW	155	362	0.49	137	84	24	11	0.4	1.5	10	1.2	64	0.5	1.90	0.05	10.60	5	0.1	26.5	6.88	11.3	0.5	1.23	0.19	50	68	100	2.5	2	0.6	2.5	1	0.2	1	0.1	1.5	0.2	1	0.1	1	0.1	0.1	40	0.3
R406365	TAR43	22	28	MW	2430	266	3.59	164	164	178	8.5	0.2	1	7	0.6	122	0.4	4.65	0.1	8.02	5	0.1	22.3	6.01	10.6	0.47	2.76	0.23	40	98	100	27	7	1.8	9.5	3.5	1.4	6	1.4	9	2	6.5	1	6.5	1	0.4	35	0.5
R406366	TAR43	28	32	MW	1560	268	4.49	110	134	42	10	0.2	2.5	7	0.6	62	0.3	1.30	0.05	10.90	20	0.1	21.5	4.89	10.3	0.48	3.51	0.26	60	59	100	3	1.5	0.6	3	1.5	0.6	2	0.6	4	1	3	0.4	3	0.4	0.6	130	1.1
R406367	TAR43	32	34	MW	1770	272	5.88	183	159	52	10	0.1	0.5	11	0.2	86	0.5	0.85	0.05	12.90	5	0.1	23.5	6.47	11.3	0.53	4.07	0.28	50	54	100	3.5	1.5	0.6	3.5	1.5	0.6	4	0.6	4.5	1	3.5	0.6	3	0.6	1.6	215	3.3
R406525	TAR44	0	2	MW	236	68	15.5	30	33	8	4.5	0.2	1	6	0.8	20	0.1	2.20	0.2	28.10	5	0.1	21.9	3.05	2.41	0.19	0.93	0.68	150	483	100	22.5	13	3.2	11.5	2	0.6	2	0.4	2	0.4	1	0.2	1.5	0.2	1.8	170	2.4
R406526	TAR44	2	8	MW	291	148	2.93	33	48	16	9.5	0.4	3	17	2	32	0.4	2.65	0.3	56.80	5	0.1	31.2	6.08	5.12	0.36	0.88	1.1	190	459	100	40.5	23	5.6	22	4	0.8	4	0.6	3	0.6	2	0.2	2	0.4	2.4	110	2.4
R406527	TAR44	8	12	MW	211	456	0.09	24	35	10	29	0.8	3.5	22	3.2	32	0.8	3.30	0.3	49.90	5	0.1	28.8	6.96	14.4	0.63	0.58	0.82	310	297	200	22	13	2.6	9	2	0.4	1	0.2	2	0.4	1	0.1	1.5	0.2	1	125	3.9
R406528	TAR44	12	14	MW	563	966	0.03	92	89	32	31	0.6	2.5	20	4	34	0.8	5.15	0.05	8.24	5	0.1	14.4	6.26	32.6	0.86	0.25	0.14	210	83	100	7	3	0.8	3.5	1	0.4	1	0.1	1.5	0.2	1	0.1	1	0.1	0.4	170	1.6
R406529	TAR44	14	16	MW	856	274	0.31	32	67	16	5.5	0.1	3.5	5	1.4	18	1	1.15	0.05	4.42	5	0.1	29.4	7.41	9.35	1.7	0.24	0.11	210	260	50	2.5	1	0.4	1.5	0.2	0.1	1	0.1	0.5	0.1	0.2	0.1	0.5	0.1	0.4	60	1.2
R406530	TAR44	16	24	MW	870	302	0.54	51	121	20	5.5	0.1	2	5	2.4	22	1.1	2.90	0.1	9.98	5	0.1	26.7	6.81	10.5	1.79	0.58	0.18	230	73	20	11.5	10	1	4	1	0.2	1	0.1	1	0.1	0.5	0.1	0.5	0.1	2.8	55	2.5
R406531	TAR44	24	38	MW	2200	314	0.8	98	236	96	9	0.1	2.5	10	5	52	1.1	8.55	0.2	21.80	5	0.1	25.6	7.4	11.2	1.8	1.03	0.5	220	624	20	195	109	20.2	76	17.5	5	18	2.4	14.5	2.8	8	1	6.5	0.8	0.4	110	2
R406532	TAR44	38	42	MW	1470	382	1	86	207	56	4.5	0.2	3	4	1.4	54	0.5	3.15	0.05	9.36	5	0.1	25.5	6.84	11.4	1.69	1.32	0.32	210	81	50	42	16.5	6	29	8	2.4	8	1	6.5	1.2	3	0.4	3	0.4	1	40	0.5
R406533	TAR44	42	44	MW	2440	338	1.05	120	195	72	3	0.2	2.5	3	1.6	54	0.5	1.70	0.3	14.80	5	0.1	24	6.89	12.3	1.9	1.83	0.24	220	112	20	36	10.5	4.8	22.5	7	2.4	8	1.2	8	1.4	4	0.6	4	0.4	0.1	30	1
R406534	TAR44	44	46	MW	1800	342	3.34	118	153	56	4.5	0.2	2.5	4	1.2	42	0.5	1.55	0.05	9.86	5	0.1	23.6	7.21	11.1	1.68	2.05	0.27	200	66	50	34	12	4.8	24.5	7.5	2.6	8	1.2	8	1.4	4	0.6	3.5	0.6	1	40	1.1
R406535	TAR44	46	52.3	MW	1640	344	4.23	113	156	52	3.5	0.1	2	5	0.8	44	0.4	1.60	0.1	11.30	5	0.1	23	6.79	10.6	1.79	2.56	0.3	210	88	20	39	14	5.6	27.5	7.5	2.6	8	1.2	8	1.4	4	0.6	4	0.6	0.2	75	9.1
R406536	TAR45	0	2	MW	97	36	24.5	17	12	4	6	0.1	0.5	4	0.4	12	0.05	1.20	0.2	19.90	5	0.1	13.6	1.66	1.03	0.13	0.66	0.43	140	187	20	17.5	9	2.4	9	1.5	0.4	1	0.2	1.5	0.2	1	0.1	1	0.1	2.4	10	3.3
R406537	TAR45	2	4	MW	228	96	7.82	18	37	8	7	0.4	2	14	1	24	0.2	1.90	0.4	66.00	5	0.1	27	6.44	3.28	0.32	1.09	1.29	210	388	50	48.5	28	6.2	24	4	1	4	0.6	3.5	0.6	2	0.2	2	0.4	0.6	25	1.5
R406538	TAR45	4	8	MW	235	142	0.37	28	49	12	19	0.6	3	22	1.8	38	0.4	2.65	0.4	78.90	5	0.1	28.9	9.29	4.65	0.44	0.75	1.32	230	1230	150	59	32	7	24	4.5	1	4	0.6	3.5	0.8	2	0.4	2	0.4	2.6	40	1.9
R406539	TAR45	8	12	MW	122	100	0.08	20	48	8	9.5	0.4	3	18	2	28	0.3	3.45	0.3	73.20	5	0.1	33.6	7.56	3.87	0.47	0.88	1.26	280	335	100	48.5	18	3.4	11	2.5	0.4	1	0.4	2.5	0.6	1.5	0.2	2	0.2	0.6	40	2.7
R406540	TAR45	12	26	MW	200	108	0.07	10	22	6	7.5	0.8	3	14	2.2	16	0.4	6.10	0.2	43.50	5	0.1	35.8	6.87	3.25	0.41	0.76	0.88	290	163	150	12.5	8.5	1.6	6	1.5	0.2	1	0.2	1.5	0.4	1	0.1	1.5	0.2	0.6	140	1.8
R406541	TAR45	26	28	MW	44	52	0.04	4	10	4	7	0.8	4.5	7	2.4	12	0.3	3.45	0.05	6.02	5	0.1	35.7	8.28	3.01	0.48	0.25	0.1	340	28	50	13	9	1.6	5.5	1	0.1	1	0.1	1	0.2	0.5	0.1	1	0.1	1.8	355	0.3
R406542	TAR45	28	46	MW	44	40	0.04	10	12	4	2.5	0.6	3	14	2	20	0.3	4.45	0.2	8.68	5	0.1	38.5	5.91	0.63	0.52	0.17	0.13	430	89	200	15	15	2.2	7	1.5	0.4	1	0.4	2	0.4	1.5	0.2	1.5	0.2	0.8	175	1.4
R406543	TAR45	46	64	MW	62	24	0.08	8	42	2	2	0.6	3.5	50	0.6	8	0.1	10.70	0.8	112.00	5	0.1	34.5	6.98	0.68	0.18	0.13	1.93	230	284	20	79.5	54	12.4	41.5	7.5	1	6	0.8	4	0.8	2.5	0.4	2.5	0.4	0.6	310	0.6
R406544	TAR45	64	70	MW	111	40	0.22	7	40	6	22	1.4	3	24	1.6	22	0.1	8.65	1.4	182.00	5	0.1	34	8.37	0.87	0.24	0.14	3.61	170	502	100	111	52.5	12.2	41.5	8	1	6	0.8	4	0.8	2.5	0.4	2	0.4	0.8	115	0.5
R406545	TAR45	70	73	MW	113	30	0.29	3	29	4	9	0.6	6.5	21	1.2	12	0.05	6.60	1.2	155.00	5	0.1	33.6	7.71	0.85	0.21	0.13	3	160	391	20	118	56.5	12.4	43.5	8	1	6	1	5.5	1	2.5	0.4	2.5	0.4	0.1	85	0.1
R406546	TAR46	0	2	MW	102	42	13	16	31	6	6.5	0.2	3	13	2.6	16	0.1	4.20	0.4	55.20	5	0.1	23.2	3.64	1.42	0.16	0.76	1.06	170	484	100	34.5	20	4.6	17	3	0.6	2	0.4	2	0.4	1.5	0.1	1.5	0.2	1.2	70	1.8
R406547	TAR46	2	4	MW	182	90	4.66	15	39	6	6.5	0.4	5	17	2	18	0.2	2.80	0.5	73.30	5	0.1	29.9	5.49	2.91	0.28	0.57	1.44	200	384	50	49	25	5.6	20.5	3.5	0.8	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.4	65	1.4
R406548	TAR46	4	12	MW	184	112	1.6	19	43	8	12	0.4	3.5	23	2	26	0.3	4.30	0.6	99.40	5	0.1	32.1	7.51	3.21	0.38	0.69	1.85	220	337	150	73.5	37.5	8.4	29.5	5.5	0.8	4	0.6	3.5	0.8	2	0.4	2	0.4	0.4	110	2
R406549	TAR46	12	18	MW	990	50	5.58	10	31	8	7	0.4	4	18	2	12	0.2	6.70	0.6	98.60	5	0.1	23.4	5.99	2.12	0.23	4.51	1.86	160	262	20	67.5	33	8	28	6	0.8	4	0.6	3.5	0.6	2	0.2	2	0.4	2.8	120	1.1
R406550	TAR46	18	24	MW	205	242	0.12	5	25	12	3.5	0.4	2	8	1	20	0.1	7.20	0.3	85.70	5	0.1	28.3	6.88	8.79	1.27	1.24	1.05	240	107	50	62	37	8.2	31.5	6.5	1.2	6	1	7	1.4	4	0.6	4	0.6	1.2	55	0.6
R406551	TAR46	24	26	MW	980	322	0.52	2	44	24	3	0.2	2.5	2	0.6	54	0.05	10.80	0.1	41.60	5	0.1	23	7.42	11.3	1.74	4.03	0.36	260	39	50	154	64.5	17.4	72.5	16	3.4	14	2.2	13.5	2.6	7.5	1	6.5	1	1.2	15	0.05
R406552	TAR46	26	36	MW	563	298	0.54	2	36	14	3	0.2	7.5	2	0.6	36	0.05	7.95	0.05	13.50	5	0.1	26.6	7.53	9.66	1.55	3.62	0.19	230	27	100	67	30.5	8.4	32.5	7	1.4	6	1	7.5	1.4	4	0.6	4	0.6	1.2	60	0.05
R406553	TAR47	0	2	MW	159	44	10.7	10	20	4	2.5	0.1	1	7	1	12	0.1	1.40	0.2	27.70	5	0.1	28.5	2.24	1.78	0.16	0.55	0.56	190	226	50	21.5	11.5	3	10.5	2	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	1.4	20	2
R406554	TAR47	2	4	MW	196	98	8.23	17	33	8	8	0.4	1.5	13	1.2	20	0.2	1.90	0.3	55.40	5	0.1	25.8	5.45	3.52	0.28	1.01	1.2	190	905	150	45	27	6.8	25.5	4.5	1	4	0.6	3	0.6	2	0.2	2	0.2	1.4	15	1.5
R406555	TAR47	4	6	MW	145	134	0.24	22	40	6	10	0.4	3	20	1.6	32	0.3	2.55	0.4	69.00	5	0.1	32.5	7.89	4.3	0.43	0.56	1.23	270	436	100	62.5	32.5	8	29	5.5	1.2	4	0.8	4	0.8	2.5	0.4	2	0.4	1	25	2.3
R406556	TAR47	6	12	MW	341	92	0.14	21	57	8	8	0.4	2	15	1.6	24	0.3	2.60	0.3	65.30	5	0.1	35.7	6.09	3.3	0.36	0.72	1.17	260	281	150	42	18	3.8	13.5	2.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	1	55	2.7
R406557	TAR47	12	26	MW	36	24	0.05	5	10	2	8.5	0.8	3	11	0.2	16	0.1	7.20	0.2	35.00	5	0.1	35.1	8.21	0.68	0.11	0.32	0.54	330	90	20	32	13.5	2.8	10	3	0.2	4	0.8	7	1.2	4	0.6	4	0.6	0.8	105	0.3
R406558	TAR47	26	26.7	MW	40	38	0.08	10	31	2	29	2.4	3	158	1.4	14	0.3	12.80	1.7	215.00	5	0.1	35.6	6.85	1.56	0.07	0.21	4.67	240	246	50	823	249	71.2	236	38	2.8	20	2.8	12.5	2	6	0.8	5.5	0.8	0.6	190	0.3
R406559	TAR48	0	2	MW	146	102	15.6	20	15	6	5	0.2	1.5	8	0.6	12	0.2	2.25	0.2	23.00	5	0.1	22.5	2.29	3.47	0.19	0.69	0.48	200	448	50	20.5	10.5	2.8	10	2	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	1.8	30	3
R406560	TAR48	2	6	MW	126	980	1.71	58	16	10	34	2.4	4	42	4.6	32	1.1	2.25	0.05	4.48	5	0.1	13	5.77	32.6	0.84	0.22	0.12	170	47	400	12	4.5	1.4	6	1	0.4	1	0.1	1	0.2	0.5	0.1	1	0.1	0.6	15	2.1
R406561	TAR48	6	8	MW	144	744	0.19	61	14	10	24	1.6	3.5	22	2.4	26	0.8	0.90	0.05	1.76	5	0.1	16.1	9.02	26.5	1	0.13	0.05	150	58	300	2.5	1	0.4	1.5	0.2	0.1	1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.4	15	2.2
R406562	TAR48	8	12	MW	114	750	0.06	54	9	12	24	1.4	3	19	3.2	30	0.6	0.90	0.05	1.28	5	0.1	13.6	9.23	28.3	1.18	0.09	0.04	190	32	250	2	1	0.2	1	0.2	0.1	1	0.1	0.2	0.1	0.2	0.1	0.5	0.1	0.1	10	1.6
R406563	TAR48	12	20	MW	182	572	0.09	104	31	12	25	1.4	4	17	3.6	46	0.6	1.20	0.05	5.36	5	0.1	15.9	11.6	21	1.42	0.13	0.08	200	165	250	3	2	0.4	1.5	0.2	0.1	1	0.1	0.2	0.1	0.2	0.1	0.5	0.1	0.4	10	1.4
R406564	TAR48	20	34	MW	309	142	0.04	92	77	10	4	0.6	3	50	3.6	26	0.2	4.80	0.2	49.30	5	0.1	26.5	11.8	6.89	0.63	0.16	0.44	290	133	150	81.5	59.5	12.4	43	8.5	1.2	6	1	6.5	1.2	3	0.4	3	0.4	0.1	30	2.1
R406565	TAR48	34	48	MW	148	56	0.17	37	91	12	2.5	0.2	3.5	35	1.2	22	0.1	5.65	1.5	223.00	5	0.1	32.2	8.64	2.19	0.22	0.23	3.3	130	399	20	107	47.5	12.6	45.5	10	1.2	10	1.6	11.5	2	6	1	6.5	1	0.1	105	1.5
R406566	TAR48	48	50	MW	417	90	1.51	32	125	20	3.5	0.2	4.5	17	4.2	46	0.1	2.00	1.1	183.00	5	0.1	32.6	7.08	3.71	0.34	0.72	1.93	150	466	150	72.5	34	8	28.5	5.5	1	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.8	55	0.6
R406567	TAR48	50	52	MW	246	68	1.23	33	110	18	2.5	0.4	5.5	21	3.6	28	0.05	2.05	1.1	177.00	5	0.1	32	7	3.33	0.31	0.54	2.53	110	443	20	140	60	15.6	55.5	10	0.8	6	0.8	3	0.6	1.5	0.1	1	0.2	0.6	45	0.6
R406568	TAR49	0	2	MW	108	20	0.33	11	13	2	3	0.1	1	4	1	14	0.05	0.30	0.1	17.30	5	0.1	39.3	1.22	1.06	0.13	0.12	0.38	240	128	350	9.5	5.5	1	4	0.5	0.1	1	0.1	0.5	0.1	0.2	0.1	0.2	0.1	0.4	35	0.7
R406569	TAR49	2	8	MW	210	90	6.7	20	41	8	6.5	0.2	2	16	1	20	0.2	2.35	0.4	60.60	5	0.1	29.8	5.27	3	0.28	0.8	1.24	200	490	50	44	24	6	23	4	1	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.8	15	2.2
R406570	TAR49	8	10	MW	131	148	0.09	24	43	8	11	0.4	2.5	20	1.8	20	0.4	2.90	0.4	65.50	5	0.1	35.6	5.69	4.89	0.36	0.71	1.4	210	1170	200	29	17	3.4	12	2.5	0.6	2	0.4	2	0.4	1.5	0.1	1.5	0.2	1	50	3
R406571	TAR49	10	12	MW	123	106	0.1	16	33	14	5.5	0.4	3	16	1	18	0.3	6.00	0.3	68.50	5	0.1	33.8	6.64	3.25	0.3	1.1	1.37	220	381	50	21.5	12.5	2.4	7.5	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1.5	0.2	1	10	2.6
R406572	TAR49	12	16	MW	165	190	0.11	22	36	10	18	0.6	4	17	1.8	24	0.6	4.20	0.4	86.80	5	0.2	31.7	7.61	4.91	0.5	1.04	1.55	370	300	100	18	13	1.8	7	1.5	0.2	1	0.2	2	0.4	1.5	0.2	1.5	0.2	0.8	20	2.6
R406573	TAR49	16	18	MW	198	372	0.11	30	24	10	17	1.2	5	33	6	24	1.2	2.50	0.2	29.10	5	0.1	28.2	7.85	12.7	0.81	0.89	0.57	420	142	250	13	5.5	1.4	5.5	1	0.2	1	0.2	2	0.4	1.5	0.2	1.5	0.4	1	10	7
R406574	TAR49	18	26	MW	150	832	0.04	99	19	10	27	2	7	44	27.8	36	1.7	2.60	0.05	4.24	5	0.1	17.2	8.39	26.1	1.01	0.23	0.11	240	44	400	7	2.5	0.8	3.5	1	0.2	1	0.1	1	0.2	1	0.1	1	0.1	11.8	30	4.6
R406575	TAR49	26	30	MW	46	172	0.08	51	10	6	12	0.4	4	11	9	18	0.4	1.80	0.05	3.02	5	0.1	36.4	4.56	5.96	0.61	0.23	0.09	490	135	50	7.5	3	0.8	3	0.5	0.1	1	0.1	1.5	0.2	1	0.1	1.5	0.2	0.6	30	2.5
R406576	TAR49	30	32	MW	59	58	0.03	22	7	4	3.5	0.4	1.5	10	3.8	8	0.2	2.50	0.05	5.00	5	0.1	38.1	1.78	1.33	0.68	0.2	0.12	750	104	150	19.5	10.5	2.2	7.5	2	0.4	1	0.4	2.5	0.6	2	0.4	2.5	0.4	0.6	20	2.3
R406577	TAR49	32	46	MW	48	124	0.04	22	28	4	3.5	1	4	71	2	22	0.4	4.50	0.4	76.60	5	0.1	28.8	13.4	1.1	0.6	0.13	2.31	300	931	50	174	87	17.8	62.5	10.5	2.6	8	1	5.5	1	3	0.4	2.5	0.4	1.4	25	0.6
R406578	TAR49	46	48	MW	45	80	0.22	24	34	6	2	0.6	1.5	45	1	12	0.1	3.90	1.1	150.00	5	0.1	31.6	8.97	0.74	0.36	0.15	4.35	220	1590	50	175	74	17.4	59	9	1.8	6	0.8	4.5	0.8	2	0.4	2	0.4	3.4	90	2
R406579	TAR49	48	49.9	MW	165	112	0.65	55	100	12	7	0.8	6.5	59	3.8	24	0.4	11.80	0.8	131.00	5	0.1	30.5	8	2.53	0.39	0.3	3.81	230	1500	50	145	69	16	61.5	11	2.6	10	1.4	8	1.4	4.5	0.6	3.5	0.6	17.6	105	2.6
R406387	TAR54	0	6	MW	168	82	10.2	17	34	6	6.5	0.2	1.5	13	1.6	24	0.2	1.70	0.2	44.30	5	0.1	29.3	3.72	3.14	0.26	0.7	0.85	230	583	50	30.5	17	4	14.5	2.5	0.6	2	0.4	2	0.4	1.5	0.2	1.5	0.1	0.8	15	2
R406388	TAR54	6	8	MW	174	166	0.06	22	46	8	11	0.6	2.5	21	3.4	36	0.5	2.10	0.4	68.40	5	0.1	30.6	8.82	5.48	0.54	0.41	0.96	320	199	150	33.5	25	3.6	12	2	0.6	1	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.2	20	3.5
R406389	TAR54	8	12	MW	145	130	0.04	21	39	8	10	0.6	4	17	2	32	0.5	2.35	0.4	63.10	5	0.1	31.9	6.72	5.34	0.49	0.5	1	330	261	200	27	17.5	2.6	8	1.5	0.4	1	0.4	2	0.4	1.5	0.2	1.5	0.2	0.6	20	4.1
R406390	TAR54	12	18	MW	161	262	0.06	15	21	8	40	0.8	18	14	2	48	0.7	1.95	0.2	46.70	5	0.1	31.8	7.05	9.87	0.66	0.84	0.72	390	291	250	17	10.5	1.8	6	1	0.2	1	0.2	2	0.4	1.5	0.2	1.5	0.2	0.1	2	0.8
R406391	TAR54	18	28	MW	2090	102	1.12	41	65	102	5.5	0.8	1	3	0.4	1610	0.05	1.05	0.05	2.08	5	0.1	25	4.26	7.94	0.27	8.95	0.12	40	44	2400	11.5	7	1.6	6	1.5	0.4	1	0.2	2	0.4	1.5	0.1	1	0.1	0.2	5	1.5
R406392	TAR54	28	44	MW	1230	98	5.6	33	59	70	6	0.8	0.2	2	0.6	1130	0.05	0.30	0.05	1.32	5	0.1	19.3	2.82	6.65	0.19	12.6	0.08	40	13	1850	4	2.5	0.6	3.5	1	0.2	1	0.2	1.5	0.4	1	0.1	1	0.1	1.8	5	0.4
R406393	TAR54	44	50	MW	1340	120	5.52	34	58	74	5.5	0.8	0.5	3	0.1	1130	0.05	0.25	0.05	2.12	5	0.4	18.1	2.73	6.45	0.17	12.2	0.07	30	6	1750	5.5	2.5	0.8	3	1	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	3	2	0.2
R406394	TAR54	50	62	MW	1430	124	5.73	46	55	70	6	0.8	0.2	2	0.1	1080	0.05	0.35	0.05	3.60	5	0.2	18.4	2.82	6.83	0.19	13	0.1	40	12	1750	3	1.5	0.4	2.5	0.5	0.2	1	0.2	1.5	0.2	1	0.1	1	0.1	3.8	10	21.5
R406377	TAR55	0	4	MW	159	84	14.6	24	29	8	8.5	0.2	1	13	1.2	28	0.4	1.90	0.2	48.60	5	0.1	20.9	4.2	3.34	0.24	0.95	0.86	140	528	150	37	22	5.6	21.5	4	0.8	4	0.6	3	0.6	2	0.2	1.5	0.2	1.4	5	2.1
R406378	TAR55	4	8	MW	257	130	0.24	26	50	10	12	0.4	2.5	22	1.4	40	0.4	2.20	0.4	76.40	5	0.1	28.8	8.93	5.2	0.51	0.83	1.26	250	160	100	62	30	6.6	22.5	4.5	1	4	0.6	3.5	0.8	2	0.4	2	0.4	1.8	10	1.8
R406379	TAR55	8	10	MW	332	90	3.3	27	27	10	7	0.4	2	15	1.4	34	0.3	1.90	0.2	51.20	5	0.1	31	5.8	3.35	0.38	0.77	0.99	240	701	200	45.5	27.5	7	25	4.5	1	4	0.6	4	0.8	2	0.4	2	0.4	4.2	25	1.9
R406380	TAR55	10	12	MW	1850	212	1.05	18	30	18	38	0.4	5.5	22	1.2	40	0.5	3.10	0.3	64.40	5	0.1	30	5.3	5.49	0.4	2.54	1.36	260	228	150	57	16	3.4	12	2	0.4	2	0.4	2	0.6	1.5	0.2	1.5	0.2	0.1	2	0.5
R406381	TAR55	12	22	MW	919	752	0.19	70	16	14	130	1.2	28	27	1.8	44	1.2	1.95	0.05	2.46	5	0.1	19.4	6.77	28.5	0.58	0.33	0.08	100	84	600	7.5	3	1	3.5	0.5	0.1	1	0.1	1	0.1	0.5	0.1	1	0.1	0.2	10	0.9
R406382	TAR55	22	34	MW	3690	270	0.13	130	40	106	7	0.8	1.5	8	0.8	142	0.2	0.95	0.1	1.44	5	0.1	24.9	9.91	10.3	0.67	0.26	0.06	60	1280	400	15	4.5	1.4	5.5	2	0.6	2	0.4	3.5	0.8	2.5	0.4	2.5	0.4	0.8	100	3.3
R406383	TAR55	34	46	MW	5310	258	0.98	184	86	56	2.5	0.6	0.5	5	0.8	146	0.2	0.55	0.3	3.68	5	0.1	22.5	9.76	12.1	0.68	0.95	0.12	100	134	400	8.5	1.5	0.6	3.5	1.5	0.6	1	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.1	35	2
R406384	TAR55	46	60	MW	1290	190	0.23	357	213	68	1	0.4	1	5	0.2	256	0.1	0.35	0.3	24.70	5	0.1	29.6	6.87	9.04	0.42	2.46	0.65	40	122	200	6.5	5	2.2	12	4	1.6	6	1.2	7	1.6	5	0.8	4.5	0.6	0.1	20	4.2
R406385	TAR55	60	68	MW	1240	240	0.6	143	99	58	1.5	0.2	0.2	4	0.4	352	0.05	0.15	0.05	6.66	5	0.1	28.5	6.44	7.86	0.43	5.71	0.17	50	59	700	6.5	3	1	4.5	1.5	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	35.6	15	1.4
R406386	TAR55	68	78	MW	3100	204	5.41	49	73	44	2	0.2	0.2	4	0.4	314	0.05	0.15	0.05	4.20	5	0.1	20.8	5.52	6.61	0.38	8.13	0.11	60	37	600	7	2.5	1.2	5	2	0.6	2	0.6	3.5	0.6	2	0.4	2	0.2	4	10	0.1
R406395	TAR56	0	4	MW	174	64	4.4	19	27	6	4.5	0.4	1	12	1.4	24	0.2	1.45	0.3	49.10	5	0.1	35.5	3.5	2.67	0.23	0.56	1.02	230	321	250	32.5	17	4.2	15.5	2.5	0.8	2	0.4	2.5	0.6	1.5	0.2	1.5	0.1	0.6	10	1.8
R406396	TAR56	4	8	MW	218	118	5.12	24	38	10	8.5	0.4	2	19	1.4	48	0.4	2.55	0.3	60.60	5	0.1	27	7.53	4.38	0.48	0.7	1.07	230	247	200	45	29.5	6.4	22.5	4	1	4	0.6	3.5	0.6	2	0.4	2	0.4	0.6	5	2.8
R406397	TAR56	8	10	MW	137	104	0.1	16	26	6	11	0.4	2	14	1.8	22	0.3	2.70	0.3	55.60	20	0.1	34	5.27	3.56	0.43	0.44	0.88	350	378	100	35	14.5	2.6	8.5	1.5	0.4	1	0.2	2	0.4	1.5	0.2	1.5	0.2	0.2	10	2.9
R406398	TAR56	10	14	MW	171	346	0.14	15	26	10	56	1	6	16	3	36	0.7	2.75	0.2	56.30	5	0.1	31.6	6.29	8.99	0.55	0.82	0.98	330	245	250	23.5	11	2.2	7.5	2	0.4	1	0.4	2.5	0.4	1.5	0.2	2	0.2	0.2	10	2
R406399	TAR56	14	16	MW	102	196	0.18	22	14	8	23	0.6	8.5	9	2.2	52	0.5	1.50	0.05	9.86	20	0.1	29.3	7.15	6.87	0.7	1.19	0.18	360	215	350	8.5	3	0.8	3	0.5	0.1	1	0.1	1.5	0.4	1	0.1	1.5	0.2	0.2	2	6.3
R406400	TAR56	16	22	MW	163	510	0.05	37	16	8	42	0.2	3.5	9	2	62	0.2	1.10	0.05	1.64	5	0.1	22.1	7.4	18.9	0.44	0.18	0.06	80	21	900	2	1	0.2	1.5	0.2	0.1	1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	2	1.3
R406401	TAR56	22	26	MW	374	256	0.55	153	89	36	8.5	0.1	1.5	4	0.8	158	0.05	1.20	0.05	1.72	5	0.1	18.1	8.21	22	0.51	0.51	0.07	100	10	750	6.5	2.5	0.8	3.5	1	0.4	1	0.2	2	0.4	1.5	0.2	1.5	0.2	0.1	2	1.5
R406402	TAR56	26	34	MW	273	174	0.16	104	99	44	1.5	0.1	0.5	2	0.4	236	0.05	1.45	0.05	2.76	5	0.1	23.9	8.16	11	0.5	1.01	0.12	70	36	700	6.5	1.5	0.6	2	0.5	0.1	1	0.1	1	0.1	0.5	0.1	0.5	0.1	0.1	15	2.1
R406403	TAR56	34	36	MW	534	226	1.15	167	132	80	2.5	0.1	0.2	3	0.2	318	0.05	2.35	0.05	6.50	5	0.1	24	6.54	10.6	0.48	1.1	0.21	60	29	550	48.5	28	8.2	36	9	2.6	10	1.6	10.5	2.4	7	1	5.5	0.8	0.1	10	5.1
R406404	TAR56	36	38	MW	393	204	0.77	108	140	80	3	0.1	0.2	2	0.2	324	0.05	0.70	0.05	6.08	5	0.1	25.4	7.14	9.61	0.43	1.6	0.22	50	24	500	86.5	22.5	7.6	33	9.5	3.6	14	2.8	19	4	12	1.8	11	1.6	0.6	10	5.1
R406405	TAR57	0	4	MW	126	60	17.9	18	21	6	4.5	0.2	1	10	1	28	0.2	1.05	0.2	37.40	5	0.1	20	2.97	2.43	0.18	0.62	0.77	140	309	200	32.5	24	6	23	4.5	1	4	0.6	3.5	0.6	2	0.2	1.5	0.2	0.6	2	1.6
R406406	TAR57	4	8	MW	381	132	2.67	26	51	16	8.5	0.4	2	21	1.4	42	0.4	2.00	0.4	71.40	5	0.1	28.8	7.51	4.64	0.53	0.7	1.22	270	234	100	71	36	9	31.5	6.5	1.4	6	1	5	1	2.5	0.4	3	0.4	0.6	10	2.3
R406407	TAR57	8	14	MW	159	130	0.39	20	30	12	12	0.4	3.5	14	1.4	46	0.4	2.75	0.2	50.80	5	0.1	32.9	6.7	4.66	0.57	0.95	1.04	320	408	250	25.5	15	3	11.5	2	0.4	2	0.4	3	0.4	1.5	0.2	2	0.2	0.4	2	2.7
R406408	TAR57	14	18	MW	114	210	0.16	19	9	8	24	0.6	8.5	11	2.2	46	0.5	1.90	0.05	3.32	5	0.1	35.5	5.21	6.68	0.86	0.84	0.1	360	423	350	8	3	0.8	3	0.5	0.2	1	0.1	1.5	0.4	1	0.1	1.5	0.2	0.1	10	2.6
R406409	TAR57	18	22	MW	288	310	0.09	67	52	28	18	0.6	4.5	5	1	306	0.2	2.25	0.05	1.68	5	0.1	31.1	7.11	8.86	0.67	0.62	0.08	190	31	4900	9.5	5	2	7.5	2	0.4	1	0.4	2	0.4	1	0.1	1	0.1	0.4	15	3
R406410	TAR57	22	28	MW	1070	396	0.18	231	153	204	13	0.4	1.5	9	1	1480	0.05	1.05	0.05	2.12	5	0.4	19.4	8.15	20.4	0.32	1.59	0.15	40	5	6600	25.5	8.5	2.2	9	2.5	0.6	4	0.6	3.5	0.8	2	0.4	2	0.4	0.1	5	1.6
R406411	TAR57	28	36	MW	875	194	0.41	109	149	166	2.5	0.2		1	0.4	1920	0.05	0.20	0.05	1.90	30	0.1	22.7	3.99	10.3	0.22	11.9	0.13	40	6	5900	8.5	5.5	1.2	6.5	2	0.6	2	0.4	3.5	0.8	2.5	0.4	2	0.4	0.8	5	0.9
R406412	TAR57	36	50	MW	950	112	1.59	39	212	94	6	0.4	0.5	1	0.2	1390	0.05	0.15	0.05	0.78	5	0.2	21.7	2.53	7.91	0.14	14.6	0.05	10	4	4300	2	1	0.4	1.5	0.2	0.1	1	0.1	1	0.1	0.5	0.1	0.5	0.1	2	2	0.7
R406599	TAR58	0	2	MW	121	58	11.3	15	25	6	3	0.1	1	12	0.6	20	0.2	1.70	0.2	40.30	5	0.1	26	3.65	2	0.21	0.8	0.85	220	1090	50	30.5	17.5	4.4	17.5	3	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.4	0.8	5	1.8
R406600	TAR58	2	6	MW	233	126	2.8	23	48	10	9	0.4	2	16	1.6	32	0.3	2.45	0.4	67.60	5	0.1	31.8	6.57	4.2	0.37	0.79	1.37	250	623	200	52.5	26.5	6.2	24	4.5	0.8	4	0.6	3.5	0.6	2	0.2	2	0.4	0.4	25	1.6
R406601	TAR58	6	10	MW	147	150	0.08	21	45	10	14	0.6	4	18	2	40	0.5	2.10	0.4	70.40	5	0.1	31.4	8.07	5.24	0.55	0.83	1.2	260	179	150	30.5	19.5	3.4	12	2	0.4	1	0.4	2	0.4	1.5	0.2	1.5	0.2	0.4	10	2.5
R406602	TAR58	10	16	MW	177	200	0.12	17	35	12	22	0.6	4	15	1.6	58	0.5	3.10	0.3	78.30	5	0.1	30.3	8.76	5.74	0.57	1.01	1.5	340	255	200	25	17	3	10	2	0.4	1	0.4	2	0.4	1.5	0.2	2	0.4	0.1	2	0.3
R406603	TAR58	16	22	MW	133	292	0.13	22	15	14	38	0.8	13.5	16	3.2	86	0.7	2.05	0.05	10.10	5	0.1	27.6	8.35	8.15	0.92	0.95	0.23	410	110	350	14	4	1.2	6	1	0.2	1	0.2	1.5	0.4	1.5	0.2	1.5	0.4	0.4	10	4.9
R406604	TAR58	22	34	MW	90	60	0.03	11	9	4	5.5	0.6	9.5	8	2.8	22	0.6	3.15	0.05	4.98	5	0.1	38.6	4.43	1.24	0.97	0.07	0.09	440	56	250	11.5	6.5	1	3.5	1	0.2	1	0.2	2	0.4	1.5	0.2	2	0.2	0.4	100	0.7
R406605	TAR58	34	48	MW	145	74	0.04	14	18	6	5.5	5.4	7.5	27	0.8	30	0.2	4.75	0.5	58.00	5	0.1	37	5.66	1.03	0.37	0.21	1.45	220	166	100	165	298	95	342	60.5	13	34	3.8	17	2.2	6	0.6	4	0.6	2.6	150	0.4
R406606	TAR58	48	58	MW	301	132	0.07	46	102	38	13	7.6	4.5	69	1.6	130	0.3	11.40	0.9	116.00	5	0.1	34.5	7.06	3.56	0.22	0.42	2.28	260	221	150	167	135	33.6	126	23	4.2	16	2.2	12	2	6	0.8	5.5	0.8	0.4	175	1.1
R406607	TAR58	58	62	MW	887	190	0.13	108	84	28	13	8	6.5	69	1.4	82	0.05	6.70	1	137.00	5	0.1	31.2	8.61	5.84	0.47	0.54	2.77	220	757	50	142	74.5	18.8	71.5	12.5	3	10	1	6	1	2.5	0.4	2	0.4	0.2	215	2.3
R406608	TAR58	62	71	MW	256	148	0.12	47	85	20	16	9.4	6	19	1.2	80	0.05	4.70	1.4	186.00	5	0.1	31.1	8.47	4.72	0.5	0.67	4.06	200	1450	100	156	80.5	20.2	76	13	3.4	10	1.2	7.5	1.2	3.5	0.4	3	0.4	0.4	35	0.6
R406609	TAR59	0	2	MW	129	84	15.3	18	30	6	9	0.2	1.5	10	0.6	20	0.2	1.90	0.3	40.60	5	0.1	19.8	3.94	2.17	0.21	1.11	0.84	160	782	20	30	16.5	3.8	15	2.5	0.6	2	0.4	2	0.4	1.5	0.2	1.5	0.2	2.6	5	2
R406610	TAR59	2	6	MW	242	164	1.09	24	54	12	10	0.6	3.5	20	1.8	41	0.5	2.10	0.4	71.50	5	0.1	30.7	7.78	5.46	0.5	0.73	1.32	240	338	100	56	29.5	6.6	22	4	0.8	4	0.6	3.5	0.8	2	0.4	2	0.4	0.2	2	2.4
R406611	TAR59	6	10	MW	477	126	0.14	30	53	20	9.5	0.8	4	22	1.2	57	0.6	2.90	0.4	77.90	5	0.1	30.2	7.98	5.34	0.56	1.24	1.58	240	1290	150	116	30.5	8	27.5	6	1.4	6	0.8	5	1	3	0.4	3	0.4	0.1	5	2.5
R406612	TAR59	10	18	MW	529	132	3.41	14	25	10	12	0.4	1.5	20	1	34	0.4	2.80	0.3	74.30	5	0.1	28.1	5.78	3.65	0.4	2.94	1.67	270	218	200	54	30	8	28.5	5.5	1.2	4	0.8	4	0.8	2.5	0.4	2	0.4	1.4	5	1.1
R406613	TAR59	18	26	MW	377	270	0.2	7	12	8	14	0.8	5	14	2.4	70	0.4	2.20	0.05	9.92	5	0.1	27.3	8.83	8.89	0.74	0.64	0.55	390	102	300	13	8	2	6.5	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1	0.2	0.4	10	0.7

Dissolution					4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	4-acid	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	4-acid	Fusion	4-acid	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	Fusion	CN	CN	CN
Determination					ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-MS	ICP-OES	ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS
Detection		Depth			1	2	0.01	1	1	2	0.5	0.2	0.5	1	0.2	2	0.1	0.05	0.1	0.02	10	0.2	0.01	0.01	0.01	0.01	0.01	0.01	10	1	50	0.5	0.5	0.2	0.5	0.5	0.2	2	0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.2	5	0.1
Unit	-	m	m	-	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppm
FieldNo	DH Name	From	To	Area	Mn	V	Ca	Cu	Zn	Co	As	Sb	W	Pb	Mo	Ni	Bi	U	Tl	Rb	Sn	Te	Si	Al	Fe	Ti	Mg	K	Zr	Ba	Cr	Ce	La	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Au	Ag	Cu
R406614	TAR59	26	40	MW	148	84	0.06	7	20	2	2	1.8	2	15	1	34	0.05	2.85	0.2	25.50	5	0.1	30.4	11.1	1.41	0.53	0.2	0.52	350	119	250	226	35	7.8	25.5	4	0.8	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.1	35	0.3
R406615	TAR59	40	52	MW	319	144	0.07	46	109	12	2.5	0.6	2	33	1.2	42	0.1	4.10	2	183.00	5	0.1	29.1	9.3	3.29	0.7	0.87	3.14	260	869	100	336	255	59.2	195	30.5	6.4	26	3.4	16	3	7.5	1	5	0.8	0.1	25	0.5
R406616	TAR59	52	62	MW	266	70	0.68	26	117	22	3	0.8	3	27	0.6	36	0.05	3.35	0.9	138.00	5	0.1	31.6	7.91	3.42	0.39	0.67	3.87	280	1450	20	183	95	18.8	57.5	8.5	1.8	8	1	5	1	3	0.4	2.5	0.4	0.1	60	0.6
R406617	TAR59	62	64	MW	226	46	1.7	16	61	10	3.5	0.8	2.5	25	0.6	19	0.05	4.25	0.5	75.10	5	0.1	32.2	7.27	2.58	0.23	0.58	1.85	170	903	20	112	60.5	11.6	35	5	1.6	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.1	35	0.3
R406618	TAR59	64	67	MW	775	120	1.71	23	133	42	6	0.1	2	20	1.2	55	0.05	2.70	1.1	157.00	5	0.1	24.5	7.27	7	0.44	1.75	3.08	150	943	150	109	53.5	11.4	38	6.5	2	6	0.8	3.5	0.8	2	0.2	1.5	0.2	3.4	45	0.4
R406619	TAR60	0	2	MW	148	54	6.11	9	21	4	4	0.1	2	9	0.4	14	0.1	0.85	0.3	38.20	5	0.1	34.5	2.21	1.9	0.16	0.44	0.84	220	246	20	24.5	12	3	10	2	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	0.6	35	1.6
R406620	TAR60	2	8	MW	208	132	3.63	19	51	10	7	2.6	3	21	1.6	31	0.4	2.20	0.4	68.10	5	0.1	30	5.78	4.88	0.4	0.78	1.32	220	531	100	51	27.5	6.2	20.5	3.5	1	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.6	70	2.5
R406621	TAR60	8	18	MW	161	128	3.97	15	40	8	9	0.6	3.5	15	1.2	36	0.4	1.85	0.4	77.60	5	0.1	27	5.95	4.52	0.52	0.89	1.58	240	364	100	35	24.5	5.2	16.5	3	0.6	2	0.4	2.5	0.6	1.5	0.2	1.5	0.2	0.6	40	1.2
R406622	TAR60	18	22	MW	413	450	0.11	11	23	10	14	4.2	2	27	3.6	29	0.3	4.35	0.2	30.10	5	0.1	19.8	8.61	19.9	0.5	0.47	0.63	240	307	100	47	29.5	6.4	21	4	1	4	0.6	3	0.6	1.5	0.2	1.5	0.1	0.1	70	0.9
R406623	TAR60	22	26	MW	189	372	0.04	12	14	2	5.5	1.6	1.5	10	2.4	14	0.1	1.90	0.05	6.02	5	0.1	21.8	8.15	18.5	0.6	0.17	0.16	180	357	50	12	46	10	32.5	6	1.6	6	0.8	4	0.8	1.5	0.2	1	0.1	0.4	20	0.5
R406624	TAR60	26	32	MW	208	146	0.09	23	27	4	2.5	0.6	2.5	13	0.8	24	0.05	1.45	0.1	15.30	5	0.1	26.2	11.9	7.3	0.77	0.21	0.36	190	367	100	22.5	57.5	11.6	37.5	6.5	2	6	0.6	3.5	0.6	1.5	0.1	1	0.1	0.2	30	0.3
R406625	TAR60	32	40	MW	281	118	0.05	32	47	2	1.5	0.6	2	25	0.4	35	0.05	1.35	0.2	21.30	5	0.1	28.3	10.8	6.14	0.49	0.17	0.61	220	377	20	21	70.5	10.4	30	4.5	1.4	4	0.6	2	0.4	1	0.1	0.5	0.1	0.1	115	0.3
R406626	TAR60	40	52	MW	202	66	0.07	38	76	10	2.5	1.4	2	25	0.6	36	0.05	1.20	0.6	81.60	5	0.1	31.4	7.64	5.04	0.4	0.38	1.94	200	1100	100	80.5	133	29.4	94	14.5	4.4	12	1.4	6.5	1.2	3.5	0.6	3	0.4	0.1	320	0.7
R406627	TAR60	52	62	MW	204	140	0.26	48	256	44	5	1.4	1.5	42	0.4	100	0.05	1.85	1.1	187.00	5	0.1	27.6	8.76	7.65	0.62	1.37	2.53	190	743	100	523	571	135	454	70	19.8	52	6.4	29.5	5.8	15.5	2	12	1.8	0.1	40	1.1
R406628	TAR60	62	72	MW	92	56	0.35	23	96	20	3	1.8	2.5	32	0.6	38	0.05	1.25	0.8	108.00	5	0.1	30.1	7.81	3	0.24	0.58	3.48	160	1690	150	124	58.5	11.6	38	5.5	1.8	4	0.6	3.5	0.8	2.5	0.4	2	0.4	0.1	20	0.4
R406629	TAR60	72	80	MW	234	98	0.68	27	102	38	2.5	0.8	1	13	0.4	50	0.05	0.95	0.7	98.40	5	0.1	31.3	7.54	5.21	0.34	1.05	3.02	140	1180	20	70.5	36.5	8	27.5	4.5	1.4	4	0.6	2.5	0.6	1.5	0.1	1	0.1	0.4	15	0.6
R406630	TAR61	0	4	MW	160	80	9.21	16	29	6	17	0.4	2.5	15	1	25	0.2	2.25	0.3	51.40	5	0.1	25.1	4.26	2.85	0.26	0.78	1.11	210	580	50	40.5	22.5	5.6	19.5	4	0.8	4	0.6	3	0.6	2	0.2	1.5	0.2	0.8	5	2.3
R406631	TAR61	4	6	MW	289	108	4.45	28	44	12	5	0.8	2.5	20	1.8	46	0.4	2.70	0.4	66.00	5	0.1	28.4	7.12	3.98	0.47	0.73	1.24	260	224	200	58	36.5	9.2	32	6	1.4	6	0.8	4.5	1	2.5	0.4	2.5	0.4	0.4	2	1.9
R406632	TAR61	6	8	MW	156	146	0.12	23	50	12	7	0.6	3.5	36	1.4	42	0.4	3.70	0.6	88.50	5	0.1	29.7	8.37	4.69	0.53	1.27	1.78	240	217	100	45	23.5	5	15.5	3	0.8	2	0.4	3	0.6	2	0.2	2	0.4	0.1	5	2.3
R406633	TAR61	8	12	MW	142	186	0.17	14	42	8	13	0.6	3	16	2	34	0.4	2.35	0.4	87.90	5	0.1	30.5	7.79	4.9	0.55	1.14	1.78	300	279	100	30	21	3.8	12	2.5	0.6	2	0.4	2.5	0.6	1.5	0.2	2	0.4	0.1	10	1.4
R406634	TAR61	12	20	MW	820	128	1.15	12	45	28	8.5	0.6	2.5	28	2	43	0.3	3.10	0.5	84.00	5	0.1	28.4	8.89	4.29	0.48	1.14	1.85	300	252	50	115	47	12.4	42	8	1.8	6	1	5.5	1	3	0.4	2.5	0.4	0.1	5	1.1
R406635	TAR61	20	22	MW	1420	86	0.52	16	28	22	4	0.4	8.5	24	3.2	24	0.05	1.75	0.5	32.30	5	0.1	34.1	6.58	3.75	0.5	0.52	0.69	230	383	250	67	43.5	9.4	30.5	5	1.4	4	0.6	3	0.6	1.5	0.2	1.5	0.2	0.4	70	2.1
R406636	TAR61	22	28	MW	334	82	0.05	23	38	4	3	1	5	15	1.6	14	0.05	1.30	0.5	62.60	5	0.1	31.1	8.07	4.99	0.55	0.27	1.61	290	854	200	76	39.5	8	25	3.5	1	2	0.4	1.5	0.4	1	0.1	0.5	0.1	0.1	65	0.6
R406637	TAR61	28	30	MW	250	52	0.05	23	63	6	2	0.4	2	18	0.6	19	0.05	0.90	0.9	99.40	5	0.1	31.7	7.74	3.29	0.26	0.36	2.58	200	1730	20	96	74.5	17.8	56	7.5	2.4	4	0.6	2.5	0.4	1	0.1	1	0.1	0.1	115	0.3
R406638	TAR61	30	32	MW	132	42	1.17	19	41	4	1	0.2	2	24	1	16	0.05	0.70	0.7	89.00	5	0.1	32	6.73	1.76	0.23	0.31	1.82	150	1270	250	98	45	9.4	31	4.5	1.6	2	0.4	2	0.4	1	0.1	1	0.1	0.1	35	0.3
R406639	TAR61	32	34	MW	129	54	1.4	18	48	4	2	1	1	32	1	15	0.05	1.05	0.4	49.70	5	0.1	35.6	6.22	3.61	0.22	0.22	1.34	170	1450	150	95.5	52	11.6	37.5	5.5	1.8	4	0.6	2.5	0.4	1	0.1	1	0.1	0.1	5	0.1
R406640	TAR62	0	4	MW	178	74	8.66	14	26	6	3.5	0.4	1.5	12	0.8	23	0.2	1.50	0.3	49.20	5	0.1	30	3.86	2.76	0.24	0.61	1.05	190	425	50	31	17.5	4.4	15	3	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.8	10	2
R406641	TAR62	4	8	MW	336	122	1.23	28	51	10	7.5	0.8	2.5	25	2.2	42	0.4	2.85	0.5	96.50	5	0.1	28	8.7	4.33	0.49	0.96	1.72	270	1570	150	76	39	8.8	29.5	5.5	1.2	6	0.8	5	1	3	0.4	3	0.4	0.4	5	2.5
R406642	TAR62	8	12	MW	394	158	1.67	19	43	10	14	0.6	3	21	2	31	0.4	2.40	0.5	88.50	5	0.1	28.2	7.74	4.12	0.5	1.26	1.79	250	335	100	71.5	36	9.2	30	6	1.4	6	0.8	4.5	1	2.5	0.4	2.5	0.4	0.4	10	2.8
R406643	TAR62	12	22	MW	329	120	0.41	14	37	10	9	0.8	4.5	28	1.6	38	0.4	2.45	0.5	107.00	5	0.1	27.8	9.72	4.49	0.52	1.13	2.24	300	283	100	77	38.5	9.6	32.5	6	1.2	4	0.8	4.5	1	2.5	0.4	2.5	0.4	0.2	5	1.3
R406644	TAR62	22	26	MW	3760	326	0.12	12	21	54	16	0.8	3	25	7.4	37	0.5	2.75	0.5	43.90	5	0.1	24.5	8.19	15	0.42	0.68	0.85	280	496	100	27	16	3.6	12	2.5	0.6	2	0.4	2	0.6	1.5	0.2	1.5	0.2	1	10	1.8
R406645	TAR62	26	28	MW	136	88	0.12	10	26	2	5.5	0.6	2	8	2.2	27	0.05	1.45	0.05	11.30	5	0.1	26	11.2	7.82	0.44	0.21	0.22	220	62	100	11.5	33.5	4.4	12.5	2	0.4	1	0.2	1	0.2	0.5	0.1	0.2	0.1	2.8	55	0.8
R406646	TAR62	28	40	MW	165	106	0.05	10	27	2	2.5	0.1	1.5	46	1	23	0.05	2.40	0.1	18.60	5	0.1	28.5	12.2	3.35	0.85	0.11	0.32	230	160	50	67.5	70	12.2	35	5	1.2	4	0.4	1.5	0.2	1	0.1	0.5	0.1	2	40	0.5
R406647	TAR62	40	50	MW	67	44	0.04	9	23	2	1.5	0.4	1.5	70	0.4	24	0.05	3.40	0.2	25.30	5	0.1	33.8	9.97	0.91	0.3	0.09	0.66	240	364	20	169	46	8.6	27.5	4	1.2	4	0.4	2	0.4	1	0.2	1	0.1	0.1	150	0.3
R406648	TAR62	50	60	MW	134	108	0.08	24	84	8	2	0.4	2	29	0.6	21	0.05	2.75	2	249.00	5	0.1	34.7	7.23	2.47	0.29	0.44	3.4	170	1220	100	257	157	41.6	145	23	6.4	18	2.6	12	2.4	7	1	5.5	0.8	0.1	135	0.6
R406649	TAR62	60	66	MW	139	56	0.13	15	91	10	1.5	0.1	2	33	1	21	0.05	2.20	1.5	166.00	5	0.1	31.6	7.75	2.19	0.24	0.34	3.56	180	1130	50	121	67.5	15.8	51.5	8.5	2.4	6	1	5	1	3	0.4	2.5	0.4	0.2	60	0.7
R406580	TAR71	0	2	MW	291	50	17.2	18	31	6	6	0.2	11	12	1.4	16	0.1	1.60	0.2	37.10	5	0.1	19.7	3.24	1.52	0.2	0.89	0.85	140	420	100	38	21.5	5.6	22	4	0.8	4	0.6	3	0.6	1.5	0.2	1.5	0.2	1.8	85	3.5
R406581	TAR71	2	6	MW	338	98	3.17	21	46	8	7.5	0.4	3.5	17	1.6	22	0.3	2.20	0.4	75.20	5	0.1	30.4	6.11	3.23	0.31	1	1.6	190	686	50	55	30	7.8	29.5	6	1.2	6	0.8	4	0.8	2	0.4	2	0.4	1	45	2.2
R406582	TAR71	6	8	MW	178	158	0.11	26	57	12	16	0.4	2.5	21	1.4	26	0.3	2.80	0.5	84.90	5	0.1	33.3	7.57	4.13	0.36	1.02	1.76	180	577	150	48	28.5	6.2	24	4.5	0.8	4	0.6	3	0.6	2	0.2	2	0.4	0.6	25	3.3
R406583	TAR71	8	10	MW	124	104	0.07	17	63	8	8	0.4	3	17	2	18	0.3	2.65	0.4	73.60	5	0.1	36.5	5.89	3.61	0.34	0.64	1.43	200	500	50	27.5	20.5	3.8	13	2	0.6	1	0.4	2	0.4	1.5	0.1	1.5	0.2	0.4	15	2.4
R406584	TAR71	10	14	MW	159	116	0.07	22	36	10	8.5	0.4	2.5	17	2	26	0.4	4.75	0.3	76.10	5	0.1	34	6.6	3.5	0.35	0.92	1.47	220	322	200	23.5	18.5	2.8	9	1.5	0.4	1	0.2	1.5	0.4	1	0.1	1.5	0.2	0.6	15	3.2
R406585	TAR71	14	20	MW	122	60	0.07	26	30	10	5	0.4	3.5	13	1.2	20	0.4	5.95	0.3	75.40	5	0.1	32.2	7	3.4	0.41	0.89	1.43	270	209	50	28	21.5	3.2	10.5	2	0.4	1	0.4	2	0.4	1.5	0.1	1.5	0.2	0.6	20	3.3
R406586	TAR71	20	26	MW	90	300	0.04	30	15	6	14	0.8	3	39	5.6	18	0.6	2.65	0.2	25.50	5	0.1	32.9	5.75	7.69	0.53	0.47	0.47	370	268	150	14.5	7.5	1.4	6.5	1	0.2	1	0.2	1.5	0.4	1	0.1	1	0.2	0.2	15	3.7
R406587	TAR71	26	30	MW	49	160	0.05	24	46	8	5.5	0.6	6.5	14	5.2	18	0.7	2.55	0.05	6.58	5	0.1	36.2	6.1	3.94	1.31	0.37	0.16	660	114	50	12.5	4.5	1.2	4.5	1	0.2	1	0.2	2	0.4	1.5	0.2	2	0.4	0.4	25	2.8
R406588	TAR71	30	44	MW	49	58	0.03	17	12	2	2.5	0.4	4	14	3.6	14	0.4	2.70	0.05	8.20	5	0.1	37.5	4.49	1.06	0.44	0.1	0.15	470	134	200	29	22	3.8	12.5	2	0.4	1	0.4	2	0.4	1	0.2	1.5	0.2	0.6	65	1.9
R406589	TAR71	44	54	MW	138	148	0.06	45	40	10	4.5	0.6	8.5	46	3	22	1.7	6.95	0.2	28.90	5	0.1	32.5	10.4	2.66	1	0.22	0.44	720	275	50	155	89.5	20	72	12	2.8	10	1.4	7.5	1.2	4	0.6	3.5	0.6	0.8	50	3
R406590	TAR71	54	59.5	MW	522	190	1.41	66	128	40	5	0.4	3.5	23	4.4	48	0.3	4.65	0.8	119.00	5	0.1	25.9	8.23	9.92	0.52	0.63	2.53	240	1050	100	109	52	12.6	48.5	8.5	2.2	6	1	5.5	1	3	0.4	2.5	0.4	4.6	120	8.8
R406591	TAR72	0	2	MW	74	18	1.64	5	8	2	1.5	0.1	1	4	0.2	6	0.05	0.25	0.05	13.70	5	0.1	42.6	0.98	0.9	0.11	0.11	0.28	290	123	20	8	3.5	1	3.5	0.5	0.1	1	0.1	0.5	0.1	0.2	0.1	0.2	0.1	0.6	25	0.8
R406592	TAR72	2	8	MW	165	58	1.77	15	33	8	5	0.2	2	12	1	16	0.2	1.20	0.3	48.90	5	0.1	36.2	4.41	2.25	0.23	0.56	0.98	230	617	150	39	20	4.8	18.5	3	0.6	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.4	15	2
R406593	TAR72	8	10	MW	156	108	0.07	20	44	8	10	0.4	3	23	1.8	20	0.3	2.45	0.5	78.80	5	0.1	35	6.38	4.76	0.28	0.48	1.51	190	452	50	33.5	21	3.8	13.5	2.5	0.6	2	0.4	2	0.4	1.5	0.1	1.5	0.2	0.4	10	2.5
R406594	TAR72	10	22	MW	154	90	0.13	27	43	10	10	0.4	3.5	41	1.4	28	0.4	5.20	0.4	88.50	5	0.1	32.4	8.31	4.03	0.41	0.88	1.6	240	213	150	46.5	30.5	4	12.5	2	0.6	1	0.4	2	0.4	1.5	0.2	1.5	0.2	0.1	25	2.7
R406595	TAR72	22	26	MW	102	116	0.28	20	26	6	13	0.6	3	12	2.2	26	0.2	1.85	0.1	26.20	5	0.1	38.9	4.08	3.39	0.47	0.35	0.45	320	308	100	12.5	6.5	1.2	4.5	1	0.1	1	0.1	1.5	0.2	1	0.1	1	0.2	0.6	20	2.3
R406596	TAR72	26	32	MW	26	74	0.03	16	12	4	4.5	0.6	2.5	10	2.6	14	0.4	2.40	0.05	7.40	5	0.1	39.7	3.69	1.29	0.92	0.31	0.14	620	178	150	17	11	1.8	7	1.5	0.4	1	0.4	2.5	0.6	2	0.2	2.5	0.4	0.8	75	2.7
R406597	TAR72	32	38	MW	32	74	0.08	15	19	4	3	0.6	3.5	38	1.2	12	0.2	2.70	0.2	42.50	5	0.1	31.2	10.7	1.03	0.47	0.2	1.1	310	427	50	171	54	9	30	4.5	1.2	2	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.4	25	0.7
R406598	TAR72	38	40	MW	32	52	0.37	14	13	2	3.5	0.4	1.5	40	0.8	10	0.1	1.90	0.6	103.00	5	0.1	32.7	9.45	0.42	0.26	0.16	3.21	140	1220	50	113	66.5	8.6	23	3	0.6	1	0.2	1.5	0.2	0.5	0.1	1	0.1	0.2	45	0.9
R406650	TAR73	0	2	MW	94	48	6.51	9	16	2	4.5	0.2	1	9	0.4	13	0.1	0.80	0.2	36.40	5	0.1	35.8	2.11	1.56	0.17	0.43	0.76	250	248	20	25	12	3	9.5	2	0.4	1	0.2	1.5	0.4	1	0.1	1	0.1	0.6	5	2.1
R406651	TAR73	2	6	MW	159	122	5.87	19	27	6	9.5	0.4	2	17	2.2	23	0.2	2.95	0.4	64.20	5	0.1	30.9	4.36	3.37	0.29	0.8	1.34	200	684	250	49.5	26	6.2	21.5	4	0.8	4	0.6	3	0.6	2	0.2	1.5	0.2	0.6	105	2
R406652	TAR73	6	10	MW	118	108	0.1	12	28	4	17	1	3	18	1.4	20	0.4	2.85	0.6	104.00	5	0.1	35.4	6.73	2.92	0.43	0.59	1.76	340	440	50	42.5	24	4.4	14	2.5	0.6	2	0.4	3	0.6	2	0.4	2.5	0.4	0.1	30	2
R406653	TAR73	10	14	MW	127	114	0.19	11	27	2	18	0.6	2.5	18	1.4	20	0.4	2.60	0.5	106.00	5	0.1	34.1	7.89	3.22	0.5	0.66	1.67	380	423	100	31	20.5	3.6	11	2	0.4	2	0.4	3	0.6	2	0.4	2	0.4	0.1	15	1.6
R406654	TAR73	14	18	MW	68	60	0.02	15	13	2	29	2.2	4	36	2.2	13	0.6	2.95	0.7	132.00	5	0.1	38.3	5.32	2.06	0.35	0.27	2.36	250	715	200	59.5	33	6.4	20	4	0.8	4	0.6	4	0.8	2.5	0.4	2.5	0.4	0.1	10	2.3
R406655	TAR73	18	20	MW	61	30	0.01	6	7	1	9	0.6	3	10	0.6	7	0.3	1.20	0.3	54.50	5	0.1	42	2.69	1.5	0.26	0.19	0.63	360	371	20	23.5	11	2.6	8	1.5	0.4	1	0.4	2	0.4	1.5	0.2	1.5	0.2	0.2	10	1.6
R406656	TAR73	20	24	MW	82	60	0.07	6	9	2	21	1.4	5.5	13	1.2	11	0.3	1.50	0.4	77.00	5	0.1	40.1	3.75	2.49	0.31	0.26	0.81	350	800	50	25.5	12.5	2.8	9	2	0.4	1	0.4	2.5	0.4	1.5	0.2	1.5	0.2	0.1	25	1.3
R406657	TAR73	24	26	MW	294	20	0.7	7	30	2	2.5	0.2	2	41	2	8	0.05	1.00	0.7	117.00	5	0.1	28.5	7.02	2.51	0.35	0.12	5.5	940	1570	100	16.5	10	1.2	4.5	1	1.8	1	0.1	1	0.2	1	0.1	1.5	0.2	0.1	35	1.2
R406658	TAR73	26	27	MW	359	24	0.89	15	51	4	1	0.8	2	32	2.6	9	0.05	1.10	0.6	112.00	5	0.1	29	7.54	4.71	0.49	0.12	5.51	1350	1500	100	26	13	2	7	1.5	1.8	1	0.2	1.5	0.4	1.5	0.2	2	0.2	0.1	50	0.8
R406659	TAR74	0	2	MW	108	56	7.43	10	15	4	4	0.2	2	9	0.6	11	0.1	1.30	0.2	37.90	5	0.1	31.5	2.03	1.61	0.16	0.48	0.8	190	286	20	26	12.5	3.4	11.5	2	0.6	1	0.4	1.5	0.4	1	0.1	1	0.1	0.6	15	2
R406660	TAR74	2	6	MW	221	70	5.84	17	37	6	5.5	0.6	2	15	1.4	22	0.2	2.30	0.4	69.30	5	0.1	28.8	4.87	2.86	0.27	0.85	1.49	220	671	50	58.5	31.5	8	27	4.5	1.2	4	0.8	3.5	0.8	2	0.4	2	0.4	0.4	30	2
R406661	TAR74	6	10	MW	150	110	0.85	21	43	10	12	0.8	2.5	29	2.2	29	0.4	4.00	0.6	105.00	5	0.1	32.5	6.63	3.3	0.39	0.76	1.87	260	665	200	108	43.5	12	42	8	1.8	8	1.2	6.5	1.2	3.5	0.6	3.5	0.6	0.4	15	2.8
R406662	TAR74	10	18	MW	141	96	0.14	12	34	6	15	0.8	3	19	2.6	22	0.4	2.75	0.5	113.00	5	0.1	31.8	7.39	3.04	0.46	0.75	1.82	240	421	50	35	21	4	12.5	2.5	0.6	2	0.4	3	0.6	2	0.4	2	0.4	0.1	10	1.9
R406663	TAR74	18	22	MW	86	76	0.03	8	16	2	31	1.8	4.5	28	1.6	10	0.7	3.25	0.8	143.00	5	0.1	34.5	6.36	2.3	0.4	0.5	2.35	300	795	50	69	39	7.6	24.5	5	0.8	4	0.8	4.5	1	3	0.4	3.5	0.6	0.1	15	1
R406664	TAR74	22	28	MW	77	76	0.08	7	14	2	28	1.6	4.5	23	1.8	9	0.6	2.55	0.6	115.00	5	0.1	37.2	5.48	2.69	0.47	0.61	1.43	380	695	20	45.5	24	4.8	16	3.5	0.8	4	0.6	4	0.8	2.5	0.4	3	0.4	0.2	10	2
R406665	TAR74	28	30	MW	38	22	0.02	11	4	1	3.5	0.8	2	9	1.6	13	0.2	1.60	0.3	51.20	5	0.1	41.3	3.3	0.81	0.54	0.14	0.61	460	369	250	20	9	2	7	1.5	0.4	1	0.4	2.5	0.6	2	0.4	2	0.4	0.1	15	2.1
R406666	TAR74	30	40	MW	122	74	0.11	5	11	10	7	1.2	5.5	20	3.4	46	0.3	2.50	0.2	32.90	10	0.1	27.8	12.2	2.1	0.97	0.2	0.34	860	179	100	34	11	2.6	8.5	2	0.4	2	0.4	3	0.8	2.5	0.4	2.5	0.4	0.1	10	0.7
R406667	TAR74	40	42	MW	48	164	0.05	15	25	10	12	1	2.5	22	3.6	41	0.4	3.35	0.4	16.80	5	0.1	25.6	14.1	2.34	0.97	0.12	0.21	780	191	150	36	26.5	4.2	13	2.5	0.6	2	0.4	2.5	0.6	1.5	0.2	2	0.4	0.2	10	0.6
R406668	TAR74	42	54	MW	116	72	0.03	8	14	4	4	1.4	3	18	2	15	0.2	3.15	0.1	10.80	5	0.1	39.2	5.14	0.9	1.06	0.07	0.18	690	219	50	110	64.5	11	33	5	1.2	4	0.8	4.5	1	2.5	0.4	2.5	0.4	0.1	25	0.3
R406669	TAR74	54	66	MW	146	76	0.07	14	33	4	2.5	0.4	1.5	27	0.8	19	0.1	3.30	0.2	18.70	5	0.1	40.1	4.56	1.21	0.46	0.09	0.27	370	142	50	192	68	13.8	42.5	6.5	1.4	6	0.8	3.5	0.8	2	0.2	1.5	0.2	0.1	35	0.5
R406670	TAR74	66	74	MW	193	160	0.14	51	205	32	6	1	1.5	22	2	63	0.05	4.95	1.5	134.00	5	0.1	27.5	9.81	6.7	0.72	0.48	1.85	310	595	50	162	119	38.6	143	27	6.8	26	3.8	19.5	4.2	12	1.8	10.5	1.6	0.2	35	0.3
R406671	TAR74	74	80	MW	178	74	0.69	19	123	36	1.5	0.1	1.5	22	0.6	50	0.05	2.60	1.4	161.00	5	0.1	27.8	7.86	4.25	0.4	0.51	3.47	200	1230	50	100	50.5	10.8	35.5	6	1.4	6	0.8	4	0.8	2.5	0.4	2	0.4	0.1	100	0.3
R406672	TAR74	80	82	MW	279	106	1.25	23	188	62	3	0.1	2	14	1	65	0.05	2.75	1.6	130.00	5	0.1	29.3	7.91	5.72	0.55	0.74	1.9	250	706	50	82.5	39.5	9.6	33.5	6.5	1.6	6	1	5	1	3	0.4	2.5	0.4	0.1	100	0.5

All Cd and Ag <0.5 ppm

Areas: HH = Hopeful Hill; LH = Lake Harris; MW = Mullina Well

TABLE A2.5
STATISTICS OF SOIL AND STREAM SEDIMENT GEOCHEMISTRY

Element	Min	Mean	Max	Max/Mean	Element	Min	Mean	Max	Max/Mean	Element	Min	Mean	Max	Max/Mean
Si	3.3	33	46	1.3	**Cr**	50	510	8250	16.2	**Pb**	2	14.7	44	3
Al	0.08	4.7	12.4	2.6	**Cu**	2	16.5	78	4.7	Pr	<0.2	4.4	19.4	4.4
Fe	0.34	3.9	56	14.3	Cu	<0.1	2.2	10	4.5	Rb	0.3	44	81	1.8
Mg	0.04	1.3	13.6	10.4	Dy	<0.5	2.1	4	1.9	Sb	<0.2	0.19	0.6	3.2
Ca	0.03	2.3	16.8	7.3	Er	<0.5	1.2	2	1.6	Sm	<0.5	3	9.5	3.1
K	0.01	1.1	1.9	1.7	Eu	<0.2	0.7	2.4	3.4	Tb	<0.2	0.37	0.8	0.3
Ti	0.01	0.25	1.6	6.4	Gd	<2	2.3	6	2.6	Tl	<0.1	0.3	1	3.3
Ag	2	7.6	45	5.9	Ho	<0.2	0.44	0.8	1.8	Tm	<0.2	0.17	0.4	2.35
As	<0.5	3.5	37	10.5	La	<0.5	17.3	89	5.1	**U**	<0.05	1.2	7.6	6.3
Au	<0.2	0.9	6.4	7.1	Lu	<0.2	0.25	1.8	7.2	**V**	2	81	1220	15
Ba	49	691	4670	6.7	**Mn**	28	265	1580	5.9	**W**	<0.5	0.9	5.5	6.1
Bi	<0.1	0.18	1.4	7.7	Mo	<0.2	0.66	4.2	6.4	Yb	<0.5	1.2	2.5	2
Ce	1	33	169	5.1	Nd	<0.5	16	67	4.2	**Zn**	5	38	102	2.6
Co	2	14.6	204	13.9	**Ni**	6	145	3550	24.4	Zr	10	176	470	2.6

Units are as given in Table A2.1.

TABLE A2.6
SILCRETE and GRANITIC SAPROLITE CHEMISTRY

R No	SampleNo	x	y	Site	Field No	Description	Bedrock	SiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Ba
R622561	08-02434	514681	6566206	3	H02	Granite saprolite	Granite	50.36	23.13	1.10	0.005	0.67	0.11	2.51	0.29	0.11	0.001	16
R622572	08-02445	512961	6566754	18	H12	Granite saprolite	Granite	62.06	17.16	1.48	0.007	0.76	0.30	1.50	0.59	0.34	0.017	180
R622571	08-02444	512961	6566754	18	H11	Granite saprolite - carbonated	Granite	48.72	12.49	1.10	0.012	2.15	12.77	0.56	1.14	0.27	0.024	297
R622562	08-02435	514681	6566206	3	H02A	Granite saprolite silicified and carbonated	Granite	91.80	2.65	1.94	0.008	0.23	0.19	0.02	0.03	0.32	0.023	97
R622563	08-02436	514681	6566206	3	H02B	Silcrete	Granite	95.16	0.12	0.88	0.008	0.03	0.05	0.24	0.02	2.33	0.006	302
R622567	08-02440	509836	6566876	13	H06	Silcrete	Granite	96.12	0.19	0.63	0.008	0.02	0.05	0.00	0.02	2.38	0.026	115
R622575	08-02448	512932	6567318	21	H15A	Silcrete lag	?	92.92	0.47	2.86	0.013	0.05	0.09	0.01	0.02	2.12	0.011	1805
R622576	08-02449	512932	6567318	21	H15B	Silcrete lag	?	86.60	1.05	8.40	0.019	0.04	0.05	0.01	0.02	2.40	0.026	927
R622560	08-02433	513413	6567185	1	H01	Silcrete with chalcedony fragments	UMafic	91.87	0.39	1.61	0.024	0.16	0.19	0.08	0.02	3.13	0.007	427

SampleNo	Ce	Cl	Cr	Co	Cu	Ga	La	Ni	Nb	Pb	Rb	S	Sr	V	Y	Zn	Zr	Ag
08-02434	14	36900	26	2	<7	99	2	<2	<1	18	7	330	14	28	2	3	51	<0.5
08-02445	105	20580	21	4	16	20	66	17	2	33	15	120	26	60	14	31	106	<0.5
08-02444	38	3020	35	4	1	17	18	11	<2	22	37	590	131	39	7	32	93	<0.5
08-02435	12	30	18	3	5	9	<1	17	5	17	<5	240	17	61	4	1	266	<0.5
08-02436	9	1890	15	3	4	<1	1	<5	44	30	<2	320	28	56	13	<1	506	<0.5
08-02440	12	10	12	5	2	3	<6	<5	91	25	<2	230	8	30	18	2	683	<0.5
08-02448	1	40	25	3	6	5	0	0	35	25	<2	710	56	93	13	3	607	<0.5
08-02449	19	20	54	<4	13	11	7	6	43	40	<4	380	32	186	22	4	1395	<0.5
08-02433	10	630	2222	10	6	25	7	35	26	35	1	950	37	115	9	157	417	<0.5

SampleNo	As	Sb	W	Mo	Cd	Bi	Tl	Sn	Te	Ti/Zr
08-02434	3	<0.2	0.5	1.4	<0.5	<0.1	0.1	2	<0.2	13
08-02445	4	<0.2	1	0.6	<0.5	0.1	0.1	1	<0.2	19
08-02444	3	<0.2	0.5	0.2	<0.5	<0.1	0.3	<1	<0.2	17
08-02435	8	0.2	0.5	1.8	<0.5	<0.1	<0.1	2	<0.2	7
08-02436	3.5	0.4	2	5.6	<0.5	<0.1	<0.1	3	<0.2	28
08-02440	1	0.4	2	5.6	<0.5	<0.1	<0.1	5	<0.2	21
08-02448	3.5	0.6	3	2.6	<0.5	0.1	<0.1	4	<0.2	21
08-02449	7.5	0.8	6	4.4	<0.5	0.5	<0.1	8	<0.2	10
08-02433	3	0.6	10	5.4	<0.5	0.2	0.1	3	<0.2	45

TABLE A2.7
CALCRETES FROM GLENLOTH GOLD MINE

R No	FieldNo	LabSeqNo	LibNo	Si %	Al %	Fe %	Ca %	Mg %	K %	Ti %	Ag ppm	AG_CN ppb	As ppm	Au ppb	Ba ppm	Bi ppm	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	CU_CN ppm	Dy ppm
R622584	H33	L08-02516	08-02555	20.1	3.17	1.63	15.6	2.4	1.02	0.18	4	915	18	308	1480	<0.1	<0.5	41.5	6	150	36	8.2	2
R622585	H34	L08-02561	08-02556	20.8	2.98	1.59	16.1	3.14	0.91	0.17	3.5	685	20	239	1760	<0.1	<0.5	35	6	50	28	6	2

FieldNo	Er ppm	Eu ppm	Gd ppm	Ho ppm	La ppm	Lu ppm	Mn ppm	Mo ppm	Nd ppm	Ni ppm	Pb ppm	Pr ppm	Rb ppm	Sb ppm	Sm ppm	Sn ppm	Tb ppm	Te ppm	Tl ppm	Tm ppm	U ppm	V ppm	W ppm	Yb ppm	Zn ppm	Zr ppm	Ti/Zr
H33	1	0.6	2	0.4	22	0.2	102	0.6	18	18	36	5.2	34	1.4	3	<10	0.4	<0.2	0.3	<0.2	4.6	58	<0.5	1	49	130	14
H34	1	0.6	2	0.4	19	<0.2	104	0.4	16	12	33	4.4	31	1.6	3	<10	0.4	0.2	0.3	<0.2	4.3	60	<0.5	1	40	120	14

TABLE A2.8
MAGNETIC GRANULES IN LAG

R No	FieldNo	LabSeqNo	LibNo	Coordinates x	y	Description	XRF SiO2 %	XRF Al2O3 %	XRF Fe2O3 %	XRF MnO %	XRF MgO %	XRF CaO %	XRF Na2O %	XRF K2O %	XRF TiO2 %	XRF P2O5 %	XRF Ba ppm	XRF Ce ppm	XRF Cl ppm	XRF Cr ppm	XRF Co ppm	XRF Cu ppm	XRF Ga ppm
R622579	H 0020	L08-02442	08-02451	513307	6567147	Mag lag	4.23	8.567	77.99	0.043	0.13	0.16	0.01	0.02	0.828	0.04	1683	<24	800	16211	32	8	45
R622580	H 0021	L08-02456	08-02452	513264	6567033	Mag lag	3.73	9.133	78.09	0.034	0.1	0.08	0.08	0.021	0.762	0.039	1285	<16	850	17230	39	<1	39
R406797	R406797	L08-02555	08-02541	513224	6567375	Mag lag	7.12	7.33	81.35	0.043	0.12	0.27	-	0.036	1.151	-	4670	58	-	8250	12	17	-

FieldNo	XRF La ppm	XRF Ni ppm	XRF Nb ppm	XRF Pb ppm	XRF Rb ppm	XRF S ppm	XRF Sr ppm	XRF V ppm	XRF Y ppm	XRF Zn ppm	XRF Zr ppm	ICP-MS(1) Ag ppm	ICP-MS(1) As ppm	ICP-MS(1) Sb ppm	ICP-MS(1) W ppm	ICP-MS(1) Mo ppm	ICP-MS(1) Cd ppm	ICP-MS(1) Bi ppm	ICP-MS(1) Tl ppm	ICP-MS(1) Sn ppm	ICP-MS(1) Te ppm
H 0020	<7	549	16	54	0	660	72	789	10	15	163	<0.5	19	1	1.5	4.6	<0.5	1.2	0.2	3	0.2
H 0021	<7	636	19	49	<1	520	49	721	10	21	151	<0.5	19	1.4	1.5	4.6	<0.5	0.9	0.1	2	0.4
R-406797	9.5	532	-	39	1.4	-	-	1200	-	33	130	<0.5	10	0.6	1	2.2	<0.5	1.4	<0.1	<10	0.6

TABLE A2.9

SAPROCK AND SAPROLITES FROM ULTRAMAFIC ROCKS

R No	FieldNo	LabSeqNo	LibNo	Coordinates x	Coordinates y	Description	XRF SiO2 %	XRF Al2O3 %	XRF Fe2O3 %	XRF MnO %	XRF MgO %	XRF CaO %	XRF Na2O %	XRF K2O %	XRF TiO2 %	XRF P2O5 %	XRF Ba ppm	XRF Ce ppm	XRF Cl ppm	XRF Cr ppm	XRF Co ppm	XRF Cu ppm
R622573	H 0013	L08-02449	08-02446	512977	6566783	Amphibolite saprock	51.30	11.09	11.27	0.125	11.04	8.23	3.19	0.56	0.61	0.007	338	<1	20	1290	50	53
R622581	H 0022A	L08-02436	08-02453	513154	6566977	Ferruginous saprolite of ultramafic	9.08	1.37	70.37	0.304	0.85	0.28	0.10	0.07	0.08	0.027	3333	16	1280	719	277	9
R622582	H 0022B	L08-02440	08-02454	513154	6566977	Ferruginous saprolite of ultramafic	39.03	1.23	45.98	0.332	0.72	0.18	0.39	0.05	0.05	0.028	473	18	3090	1011	260	16

FieldNo	XRF Ga ppm	XRF La ppm	XRF Ni ppm	XRF Nb ppm	XRF Pb ppm	XRF Rb ppm	XRF S ppm	XRF Sr ppm	XRF V ppm	XRF Y ppm	XRF Zn ppm	XRF Zr ppm	Ti/Zr	ICP-MS(1) Ag ppm	ICP-MS(1) As ppm	ICP-MS(1) Sb ppm	ICP-MS(1) W ppm	ICP-MS(1) Mo ppm	ICP-MS(1) Cd ppm	ICP-MS(1) Bi ppm	ICP-MS(1) Tl ppm	ICP-MS(1) Sn ppm	ICP-MS(1) Te ppm
H 0013	13	0	128	4	18	16	110	216	228	15	29	40	92	<0.5	1.5	<0.2	<0.5	<0.2	<0.5	0.1	0.2	<1	0.2
H 0022A	<2	8	2841	10	7	3	1980	141	97	14	95	14	36	<0.5	4.5	0.2	<0.5	0.6	<0.5	0.1	<0.1	3	<0.2
H 0022B	7	15	2678	5	3	6	430	65	170	23	85	1	324	<0.5	6	<0.2	0.5	0.6	<0.5	<0.1	0.3	1	<0.2

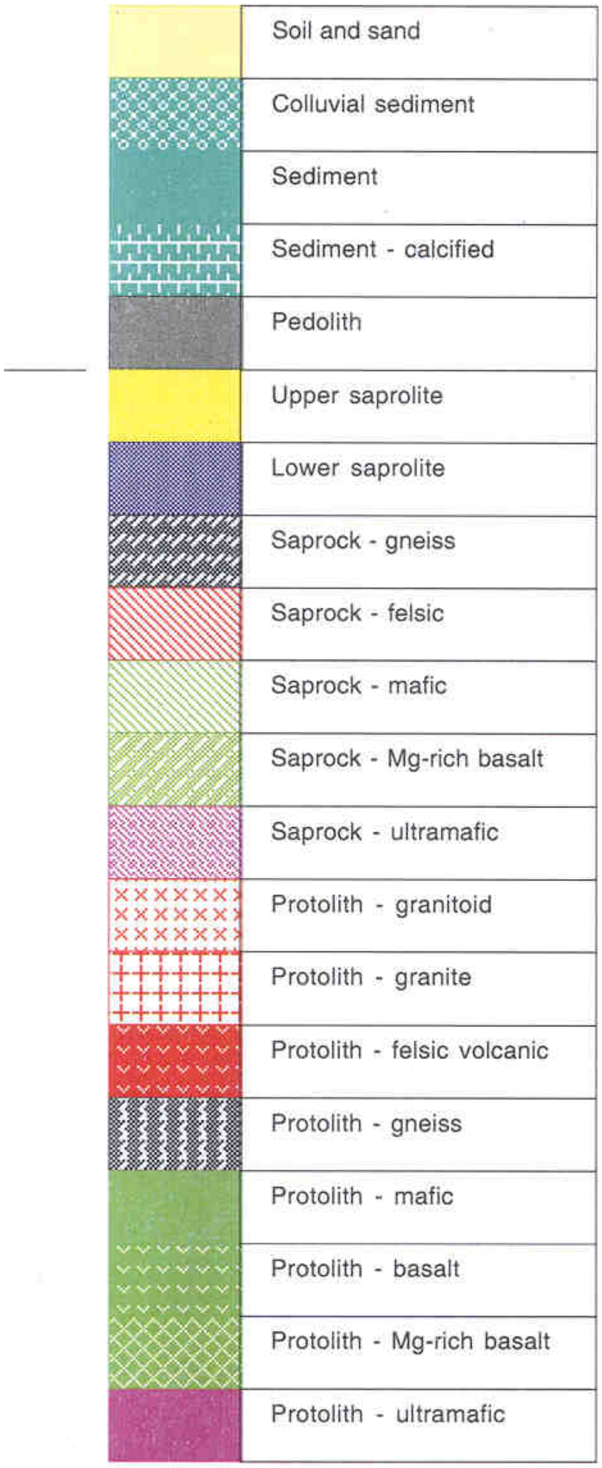
TABLE A2.10

MAGNETIC AND NON-MAGNETIC HEAVY MINERAL CONCENTRATES - SPECIMEN R406800

Ident	SiO2 %	Al2O3 %	Fe2O3 %	MnO %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	Ba ppm	Ce ppm	Cl ppm	Cr ppm	Co ppm	Cu ppm	Ga ppm	La ppm	Ni ppm	Nb ppm	Pb ppm	Rb ppm	S ppm	Sr ppm	V ppm	Y ppm	Zn ppm	Zr ppm
R406800 magnetic	6.53	10.32	73.18	0.089	0.29	0.11	0.07	0.03	0.96	0.076	1751	<21	1770	13827	45	21	49	6	633	15	65	<1	750	90	920	7	33	211
R406800 nonmagnetic	17.37	15.69	49.83	0.065	0.38	0.14	0.12	0.04	0.73	0.079	5722	<26	2460	8291	66	65	37	0	1232	11	32	<2	2060	211	777	17	54	135

A2.1 Aircore Drilling Assay Logs: Lake Harris, Hopeful Hill & Mullina Well

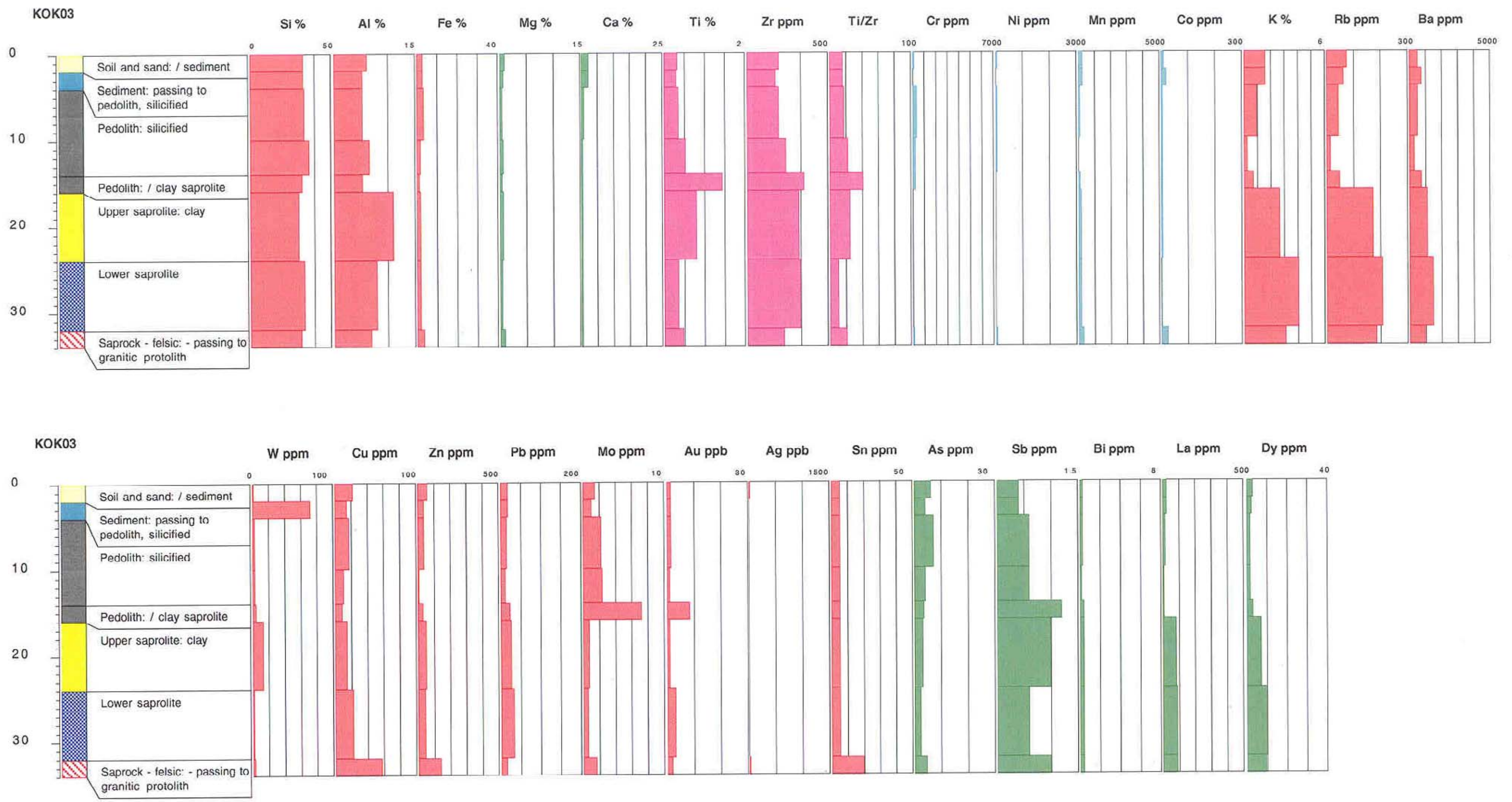
EXPLANATION



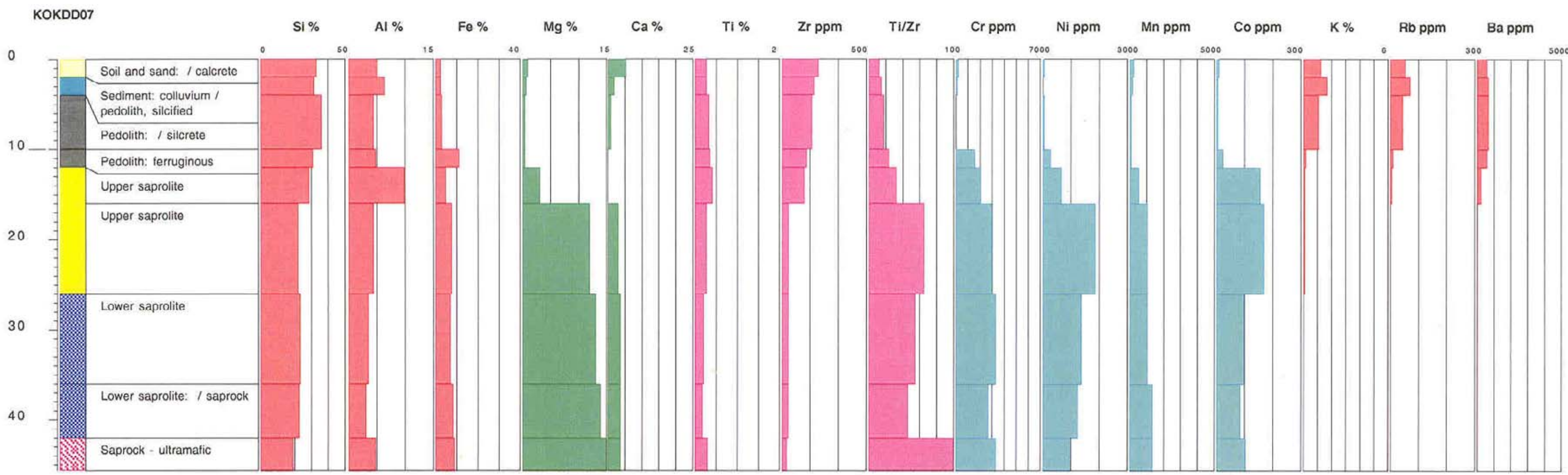
The horizontal black line on the left of the column indicates the position of the unconformity as interpreted from the geochemistry, where different from the logging.

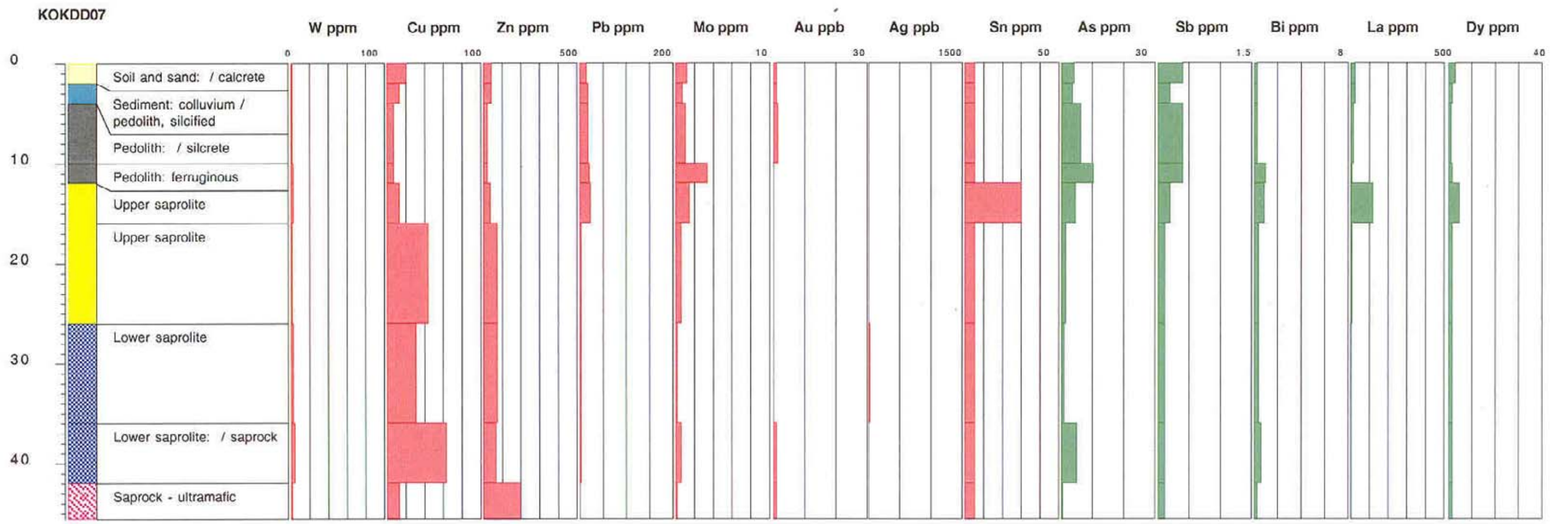
Common symbol reference key to the following down drillhole assay plots.

A2.11 Assay Logs for Lake Harris: 3 examples from the 21 aircore drillholes. All are available as paired pdf files from the CD-ROM, Appendix 2 in Folder – "Lake Harris PDF's".

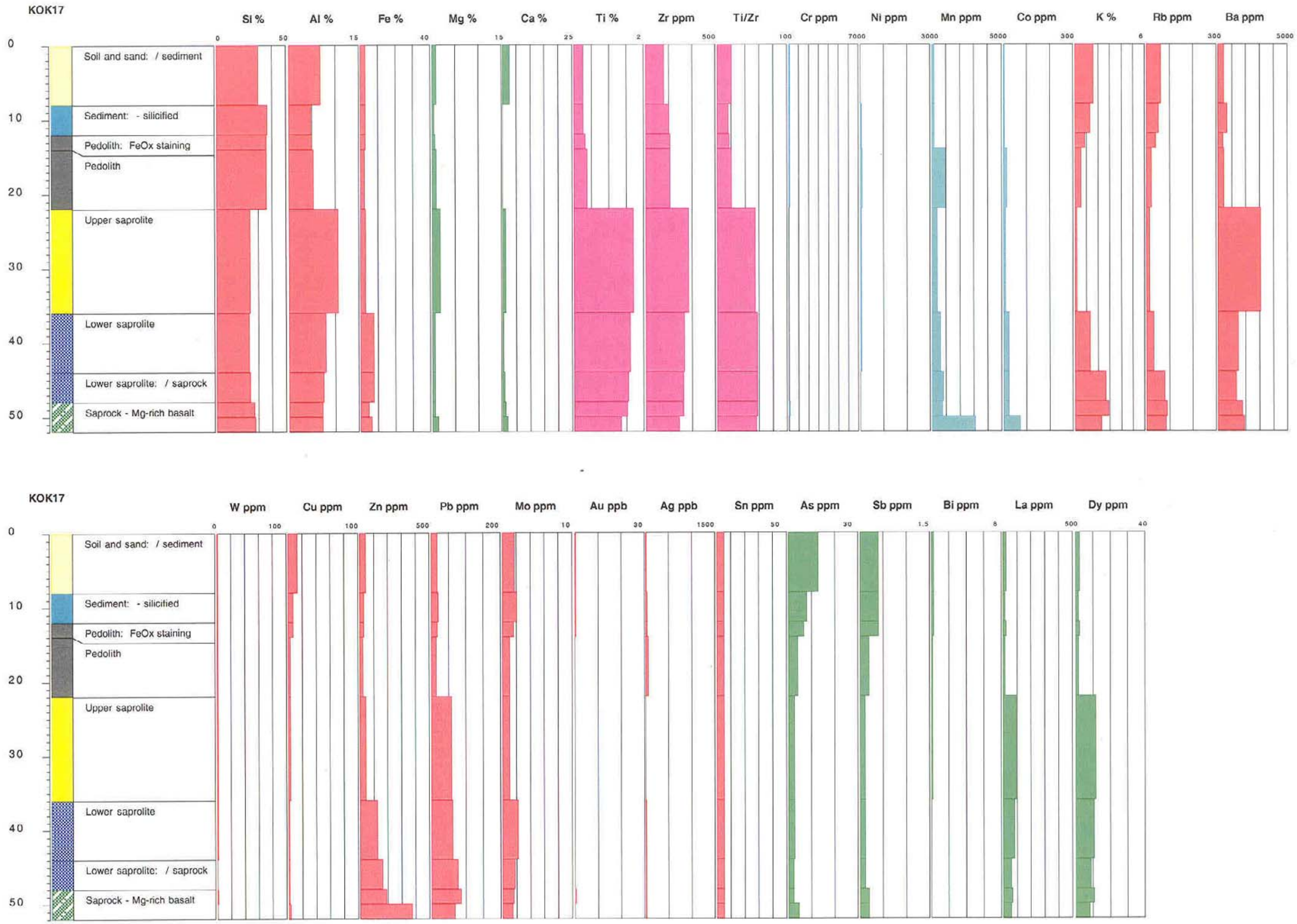


Lake Harris: down drillhole assay profile – thin transported cover on weathered Glenloth Granite.



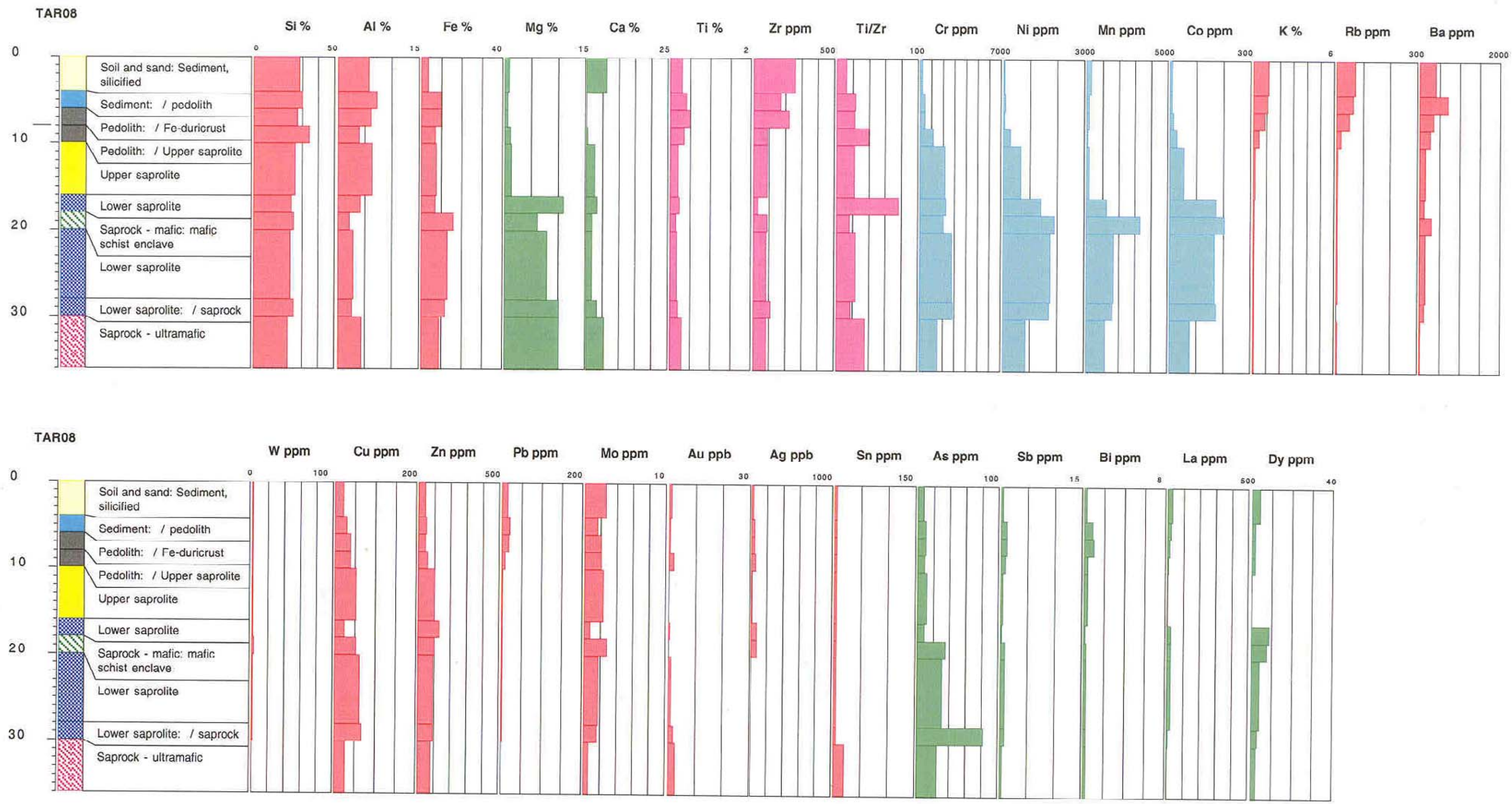


Lake Harris: down drillhole assay profile – thin transported cover on weathered ultramafic greenstone. Compare with cored drillhole KLHRDD-1.

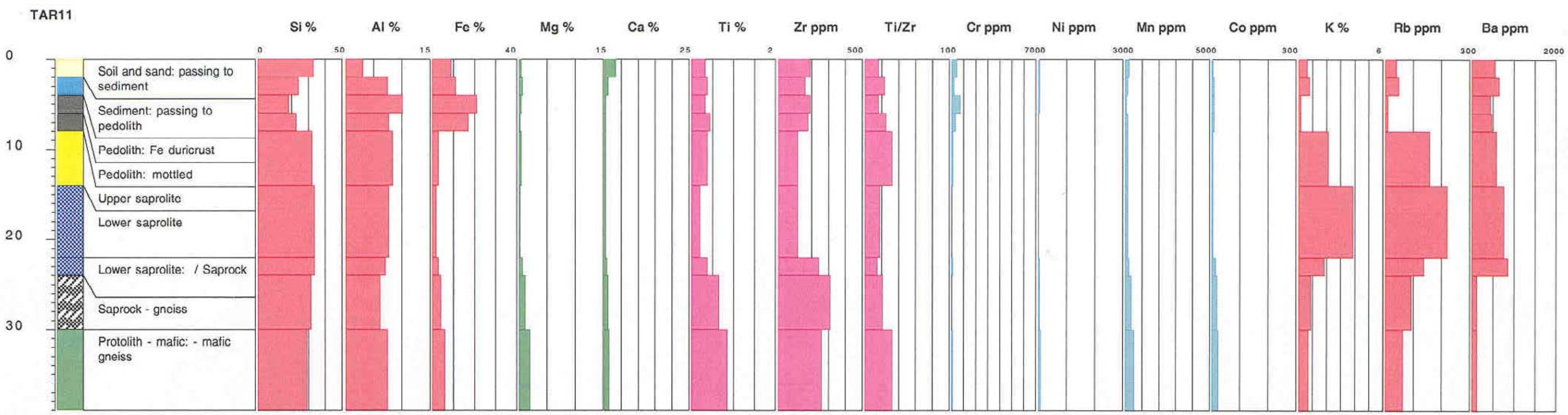


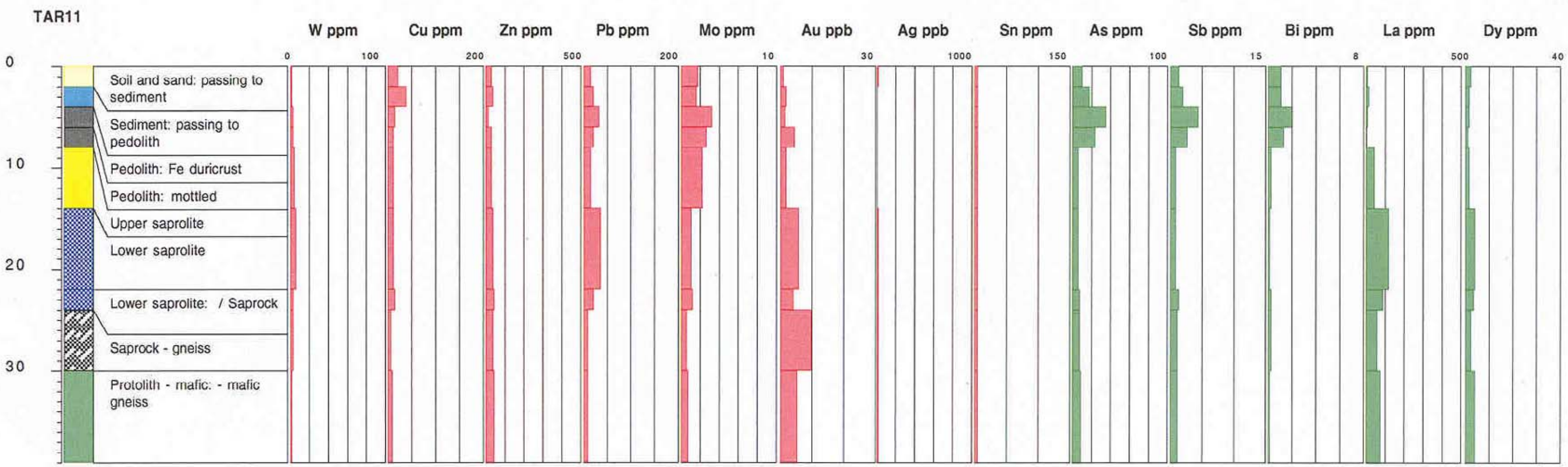
Lake Harris: down drillhole assay profile – transported cover on weathered basaltic greenstone.

A2.12 Assay Logs for Hopeful Hill: 3 examples from the 12 aircore drillholes. All are available as paired pdf files from the CD-ROM, Appendix 2 in Folder – "Hopeful Hill PDF's".

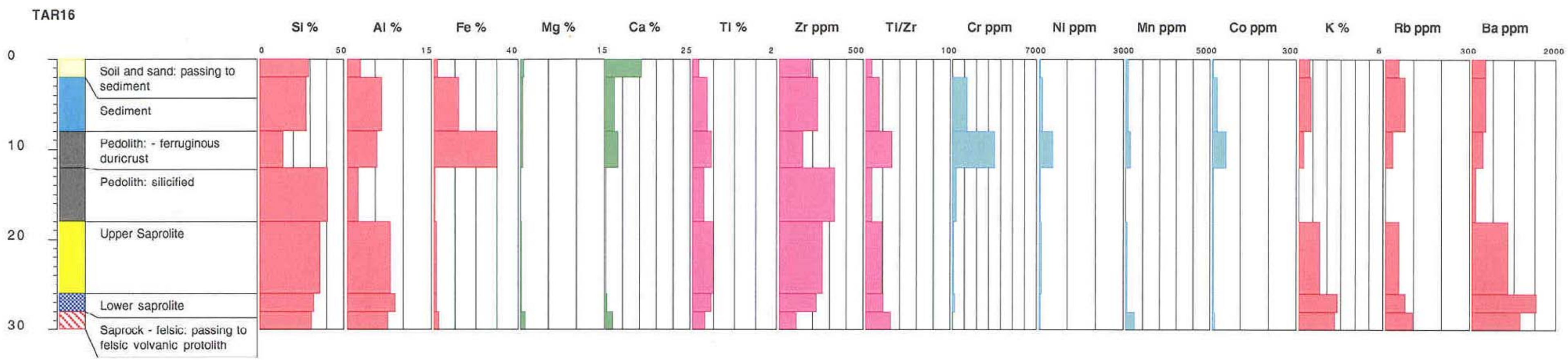


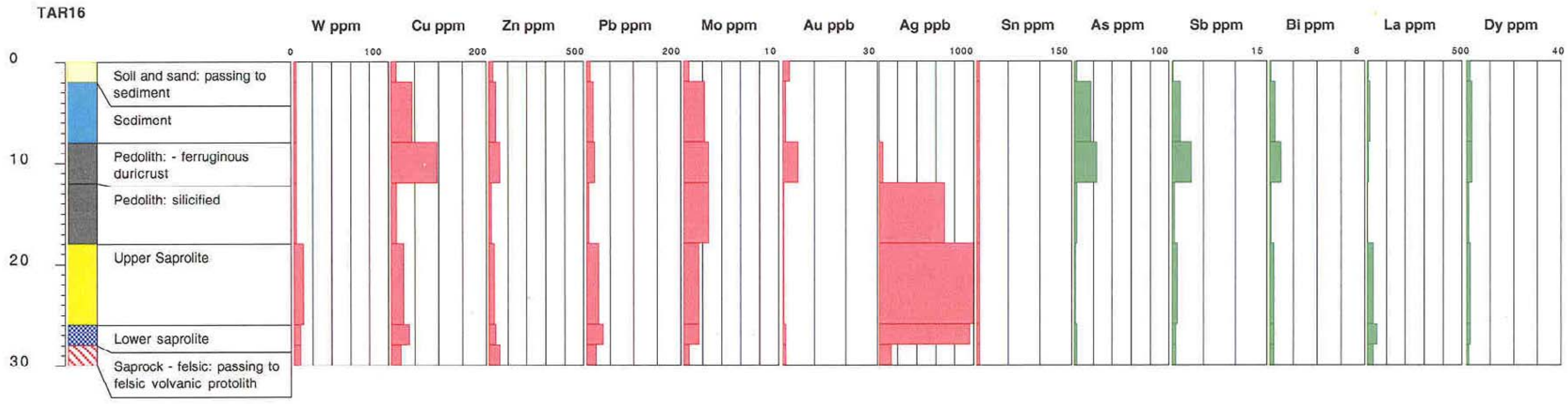
Hopeful Hill: down drillhole assay profile – thin transported cover on weathered ultramafic greenstone. Compare with cored drillhole THHRDD-1.





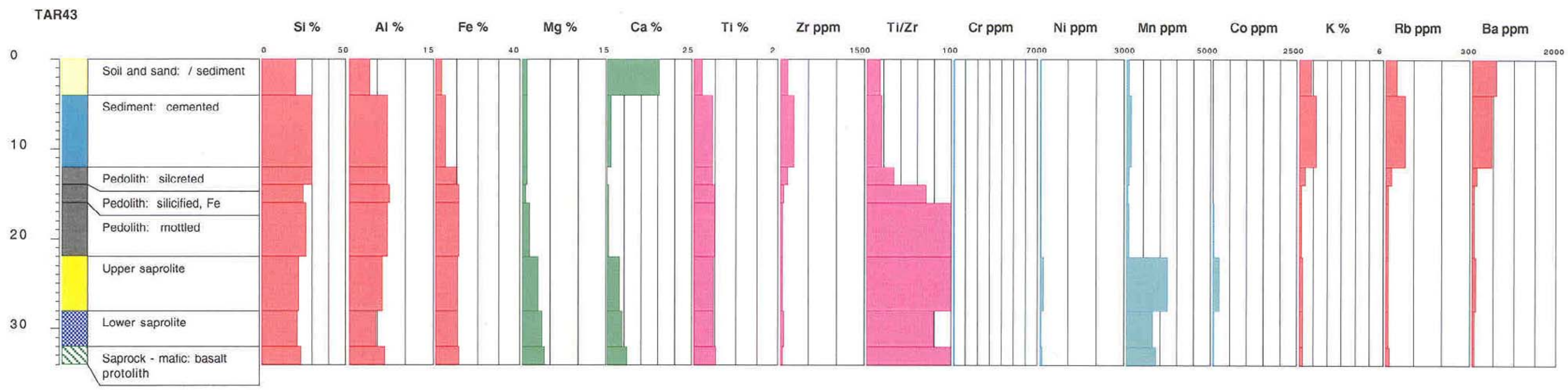
Hopeful Hill: down drillhole assay profile – thin transported cover on weathered mafic gneiss.

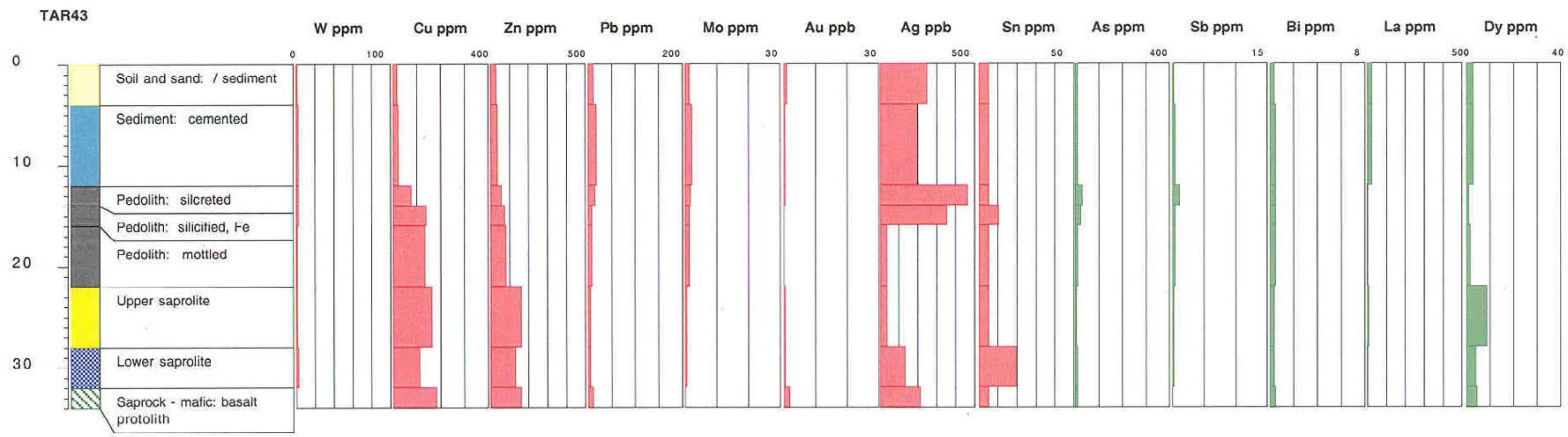




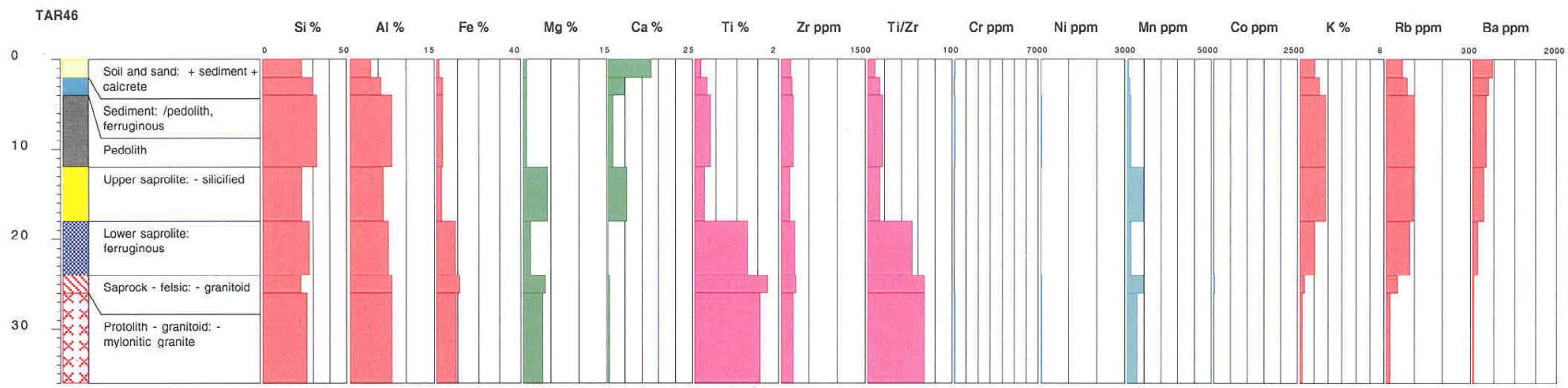
Hopeful Hill: down drillhole assay profile – transported cover on weathered felsic basement.

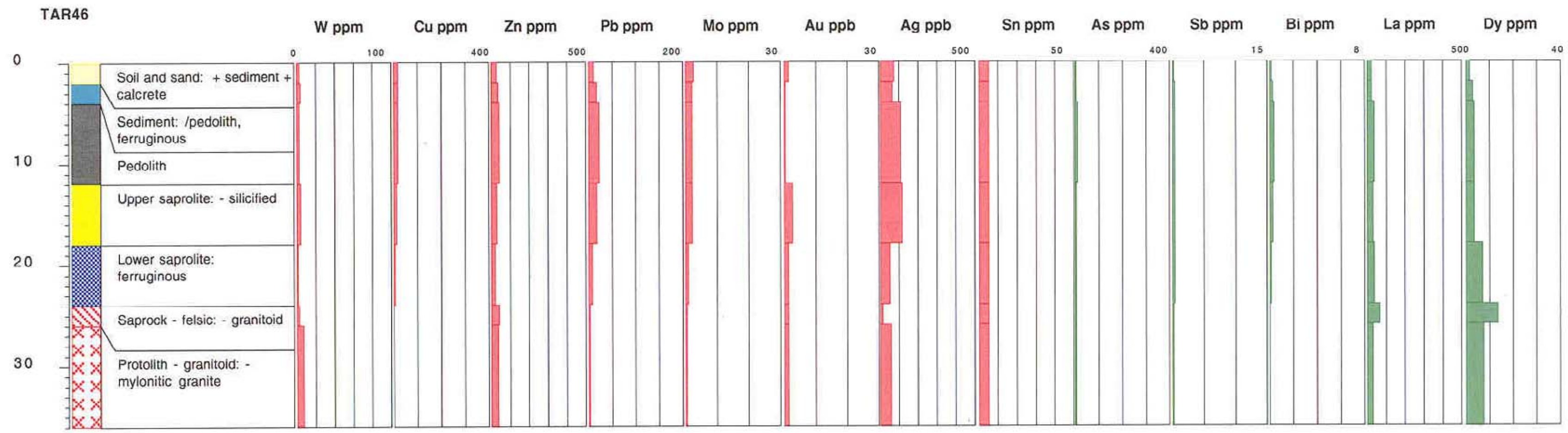
A2.13 Assay Logs for Mullina Well: 3 examples from the 22 aircore drillholes. All are available as paired pdf files from the CD-ROM, Appendix 2 in Folder – "Mullina Well PDF's".



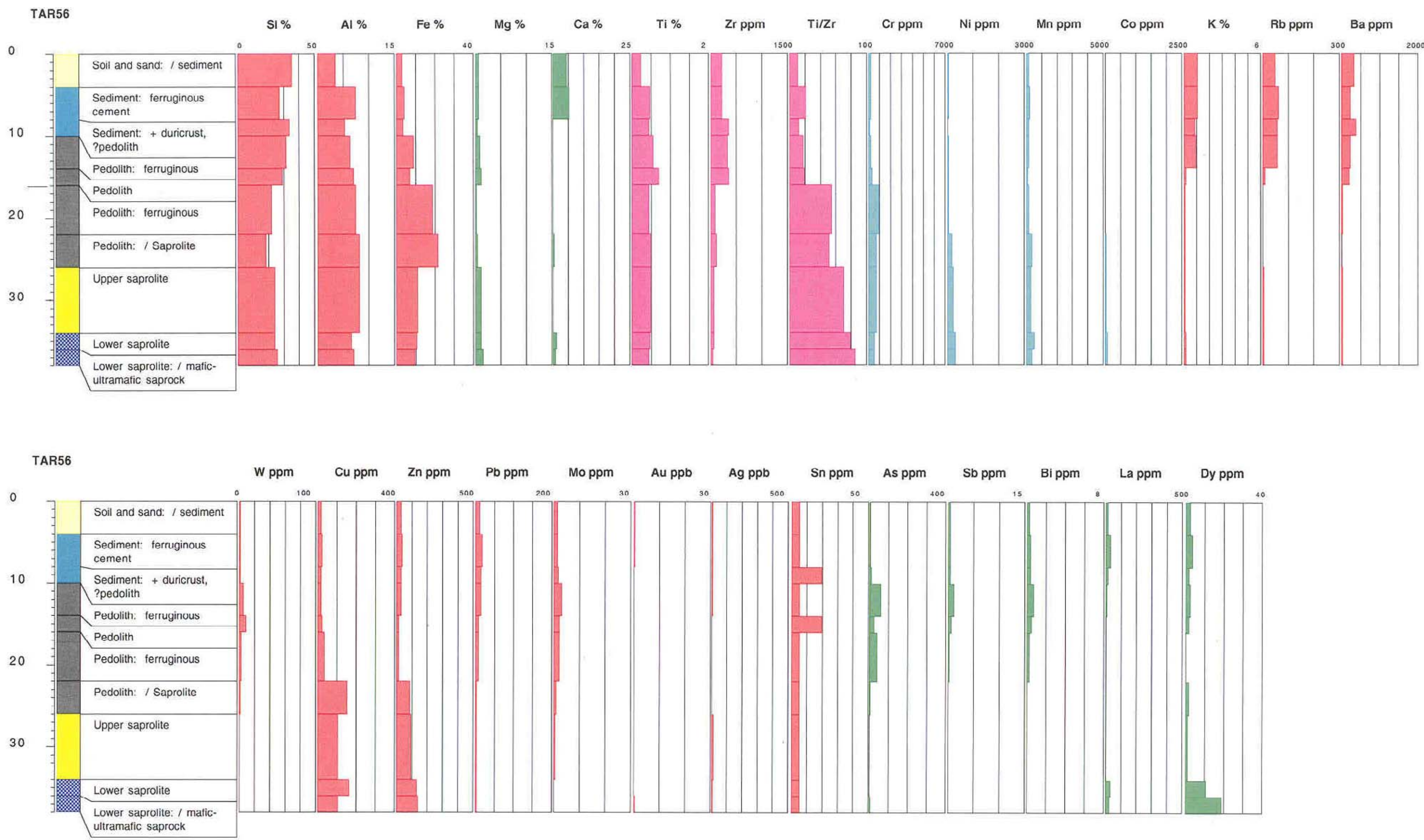


Mullina Well: down drillhole assay profile – transported cover on weathered basaltic greenstone.





Mullina Well: down drillhole assay profile – thin transported cover on weathered granitic basement.



Mullina Well: down drillhole assay profile – transported cover on weathered ultramafic greenstone. Compare with cored drillhole TMWRDD-1.

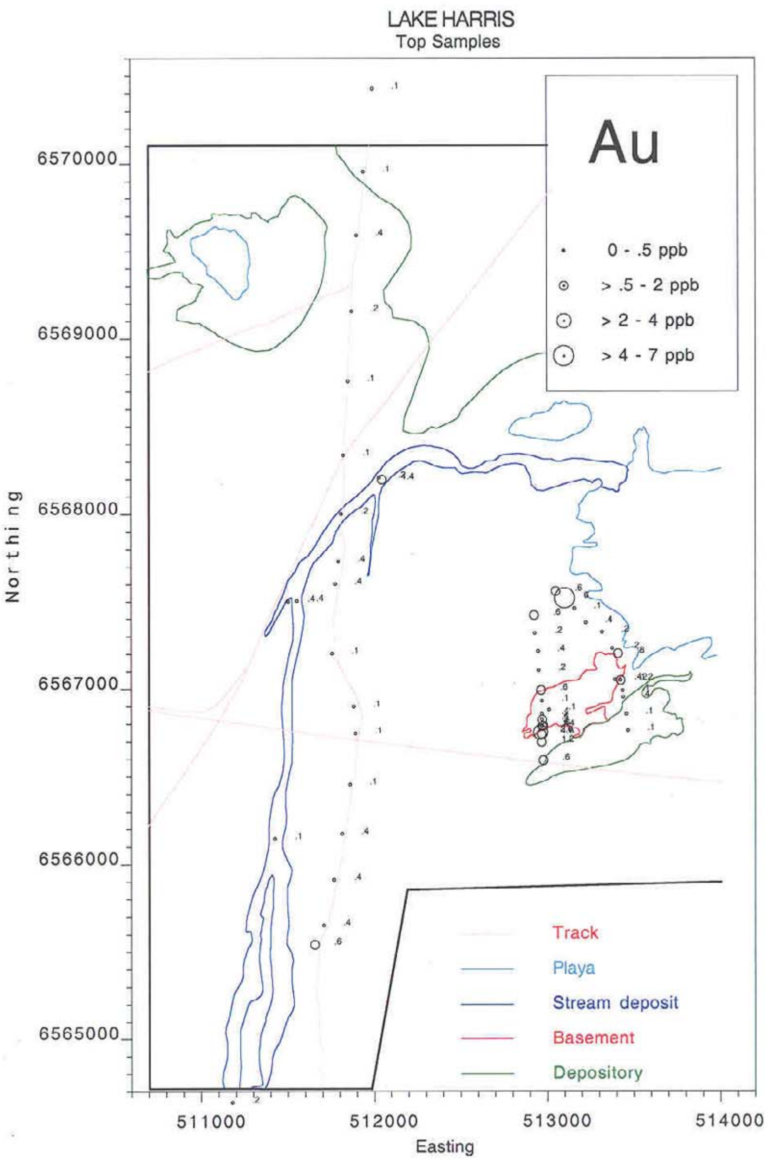
A2.2 Diamond Drillcore Assay Logs, Lake Harris, Hopeful Hill & Mullina Well

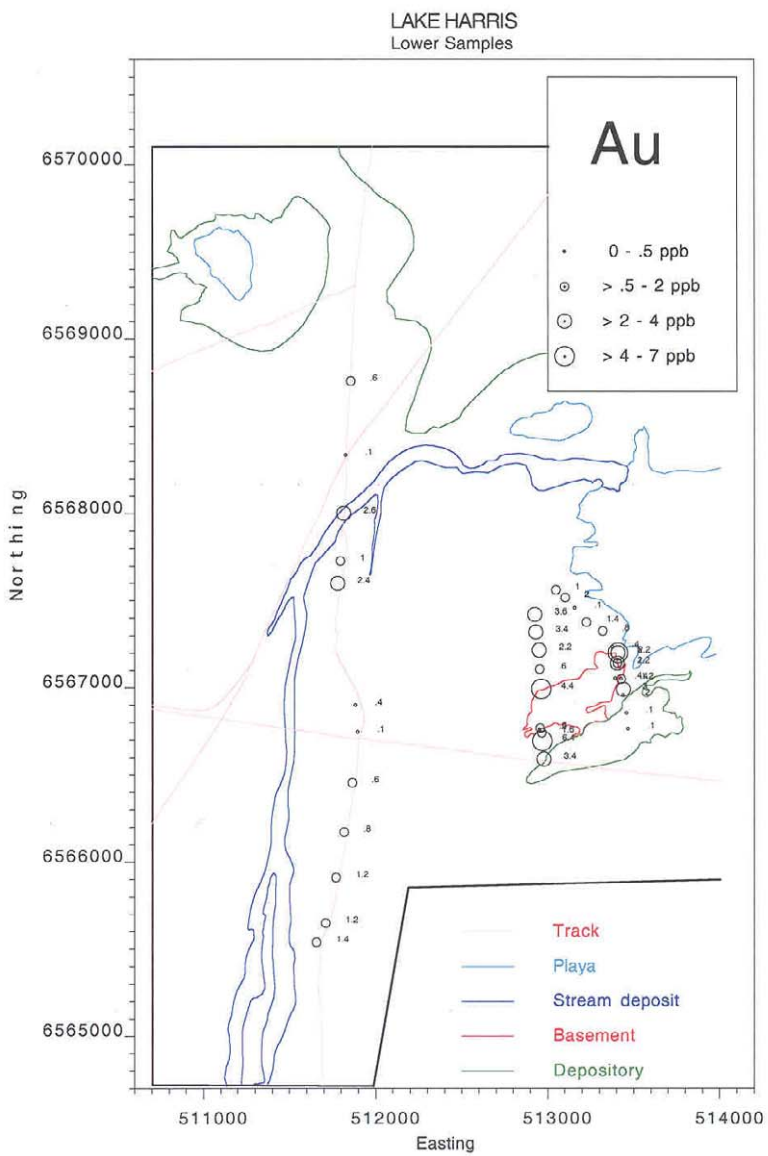
(Refer to CD Appendix 7 for pdf files or to Figs 18-20 in Volume 1)

A2.3 Soil Geochemical Plots, Lake Harris area. 3 examples from the 16 surface geochemical plots are provided overleaf. A further 2 are provided in Volume 1 as Figures 32 & 33.

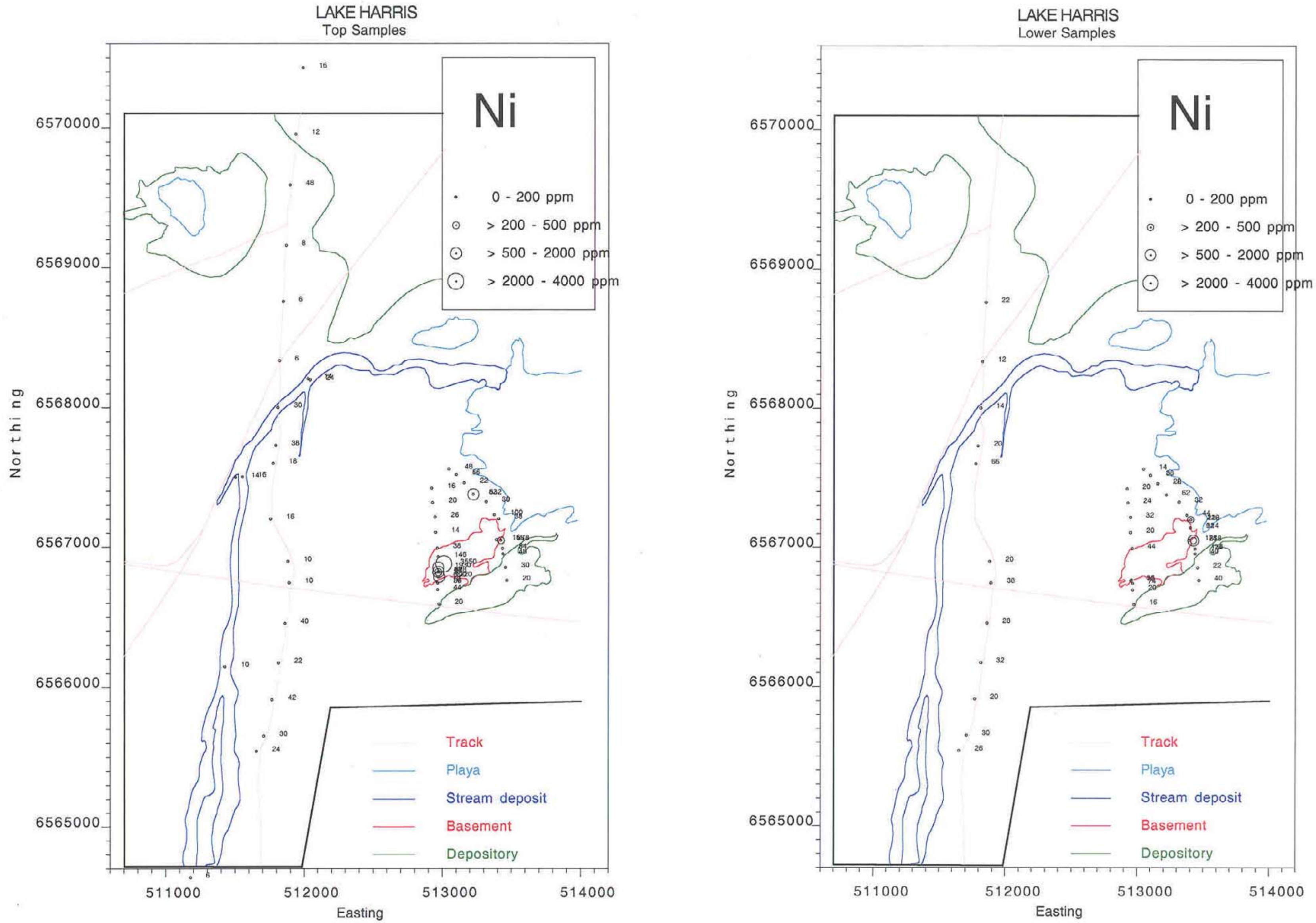
All are available as pdf files from the CD-ROM, Appendix 2 in Folder –

"Lake Harris PDF's / SurfaceGeochemPlots".

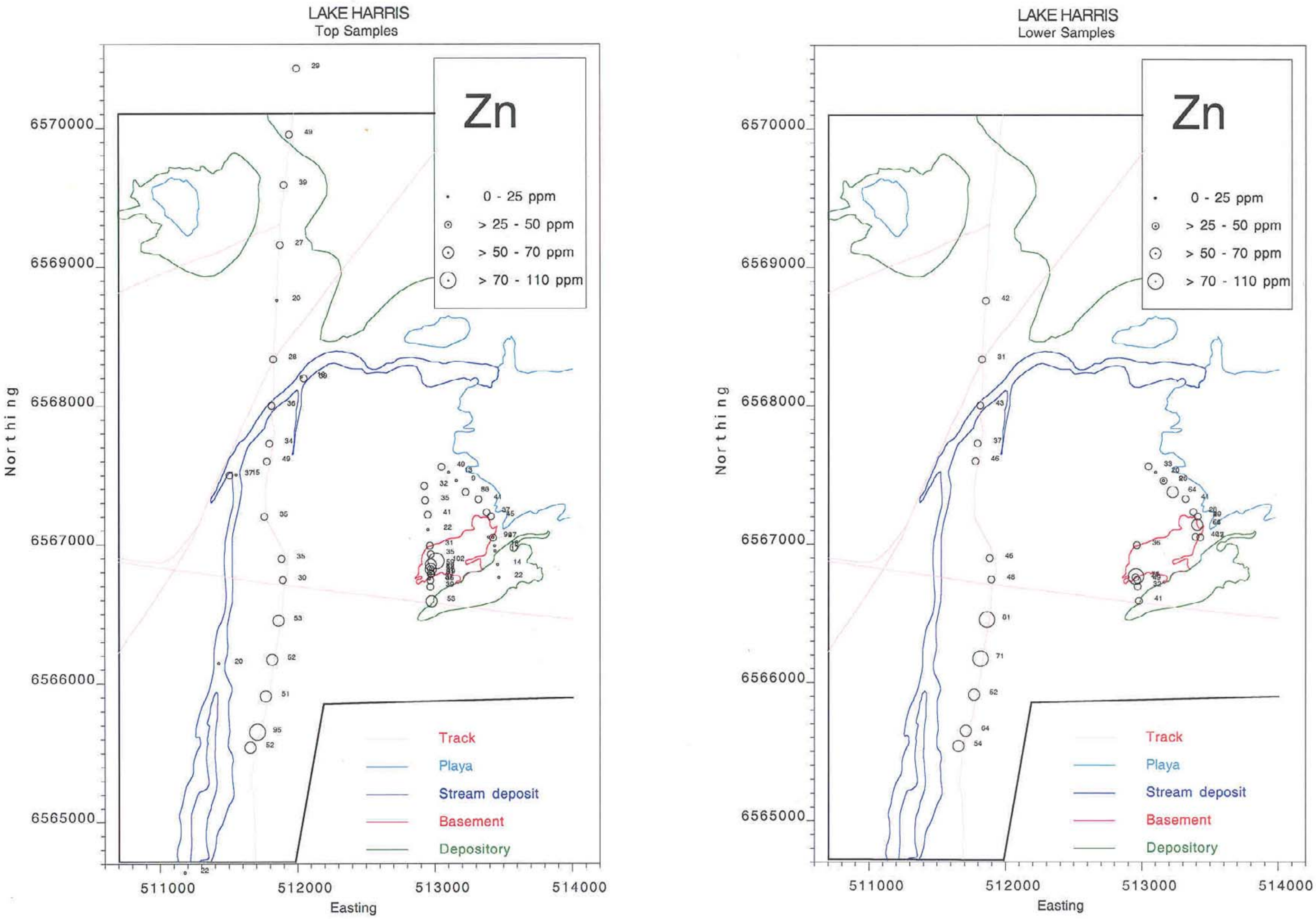




Gold content of soil samples at Lake Harris showing both upper (20-150 mm) and lower (200-250 mm) media in relation to major geomorphic units.



Nickel content of soil samples at Lake Harris showing both upper (20-150 mm) and lower (200-250 mm) media in relation to major geomorphic units.



Zinc content of soil samples at Lake Harris showing both upper (20-150 mm) and lower (200-250 mm) media in relation to major geomorphic units.

APPENDIX 3
X-RAY DIFFRACTION ANALYSIS

A3.0 Background Explanation

Table A3.1 XRD mineralogy of drill core materials

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A3.0 Background Explanations

TABLE A3.1: XRD Mineralogy of drill core materials (refer also, Appendix 7 CD).

This table shows the XRD mineralogy of small spot specimens of materials (each briefly described) taken from the three diamond-cored drilling that investigated the regolith at Lake Harris (KLHRDD-1), Hopeful Hill (THHRDD-1) and Mullina Well (TMWRDD-1). The relative mineralogical abundances are semi-quantitative estimates only as the diffractions are influenced by mass absorption of materials with varied Fe content, by the crystallinity of the materials and by peak overlaps. The data are also available in digital form on the CD as Table_A3_1.xls.

TABLE A3.1
XRD MINERALOGY OF DRILL CORE MATERIALS

Hole & Zone #	Easting	Northing	R number	Depth (m)	Sample description	Quartz	Kaolinite	Palygorskite	Smectite	Smectite-Chlorite	Clinochlore	Tremolite	Ferro-gedrite	K-Halite	Halite	Muscovite	Rutile	Goethite and/or hematite	Maghemite and/or chromite
KLHRDD1																			
Zone **53J**	511863	6566452	619716	11.90	Very pale grey clay-rich colluvium - 1.70 m above unconformity	XX	XX		XX										
	511863	6566452	619717	14.14	Pale grey clay-rich plasmic zone - 0.55 m below unconformity	X	XXX	XX	XXX										
	511863	6566452	619718	16.50	Bright blue-green clay mineral in a clot	X	X	XX	XX	XXX		X							
	511863	6566452	619719	17.14	Pistachio-green clay saprolite			X	X	XXX	X								
	511863	6566452	619720	26.04	Pale, greenish clay as a fracture infill in saprolite				XX	XXX									
	511863	6566452	619721	28.05	Bright Ni-green clay mineral infilling a fracture in saprock enclave					XXX	XXX	XX		XX					
	511863	6566452	619722	29.05	Mid-grey saprock - weathered serpentinite						XXX	XXX	X		X				
	511863	6566452	619723	31.05	Bright pistachio green clay infill to conjugate fractures in saprolite-saprock				XXX						X				
	511863	6566452	619724	39.65	Pallid clay saprolite						XXX	XXX							
	511863	6566452	619725	42.90	Pallid clay saprolite enclave within saprock						XXX	XXX	X						
	511863	6566452	619726	51.00	Dark green-grey serpentinite saprock-protolith						XXX	XX	X						
THHRDD1																			
Zone **53J**	492082	6575794	619727	7.45	Red-brown clay-silt from clay-gravel sediment - 1.55 m above unconformity	XX	XX									X	X	X	
	492082	6575794	619728	9.75	Pale-brown clay-rich material of plasmic zone - 0.70 m below unconformity	X	X		XX									X	
	492082	6575794	619729	12.00	Pistachio-green clay saprolite - uniformly coloured interval				XX		X								
	492082	6575794	619730	16.20	Pale turquoise mineral veining a pistachio-green clay saprolite		X	XX	XX	XX	X								
	492082	6575794	619731	19.00	Dark olive-green clay in bi-colour clay saprolite breccia or pseudobreccia				XX		X								X
	492082	6575794	619732	19.00	Pistachio-green clay in bi-colour clay saprolite breccia or pseudobreccia				XXX										
	492082	6575794	619733	18.80	Dark green clay in a wispy bi-colour clay saprolite				XXX										X
	492082	6575794	619734	25.00	Grey clay saprolite					XXX		XX	X						
	492082	6575794	619735	28.65	Dark blue-green lower saprolite - altered serpentinite					XXX		XX	XX						
	492082	6575794	619736	35.65	Dark grey protolith - serpentinite					XX		XX	X						
TMWRDD1																			
Zone **53J**	461096	6592412	619737	0.97	Red-brown clay-rich colluvium - contains quartz grit	XX	X									X	X	XX	
	461096	6592412	619738	11.00	Dark red-brown clay-rich material - weakly mottled plasmic zone	XX	X				X					X	X	XX	
	461096	6592412	619739	12.30	Red and pale pink fragmentory plasmic zone	XX	X				X						X	XX	
	461096	6592412	619740	17.05	Gley silty clay from megamottled plasmic zone	XX	XX				X						X		
	461096	6592412	619741	17.00	Dark red mega-mottle from Fe oxidex-rich plasmic zone	X	X											XXX	
	461096	6592412	619742	23.07	Almost white clay, in gley part of mega-mottled clay saprolite	X	XXX												
	461096	6592412	619743	23.80	Bluish grey clay saprolite	X	XXX												
	461096	6592412	619744	29.28	Pale green, highly plastic clay saprolite - zone has much yellow Fe staining		XX		XX										
	461096	6592412	619745	35.10	Pale pistachio-green, highly plastic clay saprolite		X		XX										
	461096	6592412	619746	38.80	Greenish saprolite-saprock with brown and yellow Fe oxide staining		X		XX										
	461096	6592412	619747	39.70	Green-grey saprock-protolith - serpentinite						X	XXX							

Notes:

- XXX Abundant
- XX Moderately abundant
- X Minor

1) === Unconformity
2) Smectite is largely montmorillonite
3) Chlorite and kaolinite are difficult to distinguish in the presence of smectite
4) Maghemite and chromite are difficult to distinguish
5) Smectite-chlorite - interlayered clay
6) Goethite and hematite are difficult to distinguish in presence of kaolinite

APPENDIX 4
PIMA

A4.0 Background Explanations

A4.1 PIMA (Portable Infrared Mineral Analyser).

A4.2 Spectral files (Refer to CD-ROM)

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A4.0 Background Explanations

A4.1 PIMA (Portable Infrared Mineral Analyser)

PIMA provides a means for identifying mineral species in drilled samples. The method relies on infrared energy from a calibrated source and a sample's absorption and reflection of that energy, then comparing that against a standard emission curve. PIMA works best on minerals containing the chemical species: OH, H_2O, CO_3, SO_4, OCl, PO_4, FeO, FeOH, etc; where those bonds respond to infrared exposure and absorb at specific wavelengths diagnostic of particular compounds. This system therefore works well for clays, micas, amphiboles, iron sesquioxides, carbonates, evaporitic minerals, zeolites and weathering or alteration zone minerals such as: micas, clays, carbonates, sulphates, phosphates, iron sesquioxides, etc . It cannot detect minerals such as: quartz, feldspar, pyroxene, garnet and nonferrous spinels. Spectral data are examined and compared using the proprietary software "The Spectral Geologist" or TSG. Spectra can be stacked to reflect down hole sampling and thereby reveal subtle and strong mineral changes or variability through a profile. This methodology is an adjunct to visual logging but can be a valuable laboratory and in-field tool in the weathered rock environment – especially in quickly appraising drill samples.

A4.2 Spectral files (Refer to CD-ROM, Appendix 7)

Spectral data for the Lake Harris greenstone outcrop and local environs are provided in the CD-ROM Folders and files, as specified below. Those hundreds of spectra have not been printed out herein to save on paper and colour printing.

Folders: "KIN 37-43 + KOK 1-25" contain the PIMA infrared spectral absorption files, as generated by the PIMA device, for the 2001 drilling at Lake Harris. The files "LH 14-28" contain the PIMA infrared spectral absorption files generated for earlier MESA sponsored drilled samples at the Lake Harris outcrop area. All these files can be opened or accessed with the proprietary software "The Spectral Geologist". Each folder contains spectral data collected from aircore cuttings, fines + chips and for some core, at the specified drillhole and depths.

Files: "LH greenstone, KX index_1.xls and LH greenstone, KX index_2.xls" are Excel spreadsheet files containing the first and second major mineral species, their confidence value, and their error value, as automatically identified by the proprietary software "The Spectral Analyst" or TSA (a part of The Spectral Geologist package). These spreadsheets also contain the derived KX_Index or 'kaolinite Crystallinity Index', as measured automatically using the dimensional ratios of kaolinite's distinctive deep spectral absorption feature (*c.f.* Pontual *et al*., 1997, pp 45-55). Those KX indices proved to be far too noisy for use as a major unconformity locator when within the weathered ultramafic rock units, possibly primarily due to low kaolinite content. Some agreement however, was possible though for the weathered felsic terrain derived samples. Alternative crystallinity indices using smectite or hydromuscovite may prove to be more useful in weathered greenstone terranes. The raw spectral data provided in the included Folders will allow others to experiment further with those indices.

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APPENDIX 5
PETROGRAPHY and AIRBORNE ELECTRO-MAGNETIC PROFILING

A5.0 Background Explanations.

A5.1 Petrography & sample descriptions, Tables A5.1 to A5.4.

A5.2 Lake Harris Drill Section AEM derived conductivity profile.

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A5.0 Background Explanations

A5.1 Petrography & sample descriptions

Two summary tables contain the petrographic descriptions for samples examined in thin- or polished sections, polished blocks, sawn slabs, loose grains, grain separates or as an untreated field specimen. Table A5.1 has sample descriptions and petrographic summaries for surface regolith materials. Tables A5.2 to A5.4 contain petrographic summaries for the regolith drill core materials from KLHRDD-1, THHRDD-1, & TMWRDD-1, as observed in thin-section and sawn slabs. Most of those drill core materials were epoxy resin impregnated before thin-sectioning so as to preserve delicate weathering features, retain clays and other fragile alteration products, and provide the best undisturbed sections as was possible.

All drill core, cuttings, chiptrays, surface samples and sub-samples are retained for reference and further study, at the PIRSA Core Store Facility, 23 Conyngham St, Glenside, South Australia. Core, cuttings and sample inspections can be arranged through the PIRSA Core Store Facility Manager [ph: (08) 8279 9574, or Fax (08) 8338 1925]. All thin sections and polished blocks or mounts can be accessed for further study by reference to their PIRSA sample 'R number' at the same Facility.

A5.2 Lake Harris Drill Section AEM derived conductivity profile

In 2001 two survey strips (each 7.5 x 22 km) for airborne electro-magnetic characteristics (AEM) were flown for PIRSA over the Lake Harris and Hopeful Hill drilled areas by Fugro Airborne Surveys. The TEMPEST AEM system was used for this work. Geoscience Australia provided data processing, analysis and interpretation (Lane, 2001a). A conductivity data slice from the Lake Harris survey, matching the Lake Harris drill line between holes KOK 01 to KIN 43 is included for reference. The primary and derived or beneficiated data from these two AEM strips is available from both PIRSA Minerals Group or Geoscience Australia. However, some additional strips flown during the same AEM survey but outside of the Harris Greenstone Domain, remain Closed File Records and access would need to be negotiated through Geoscience Australia.

TABLE A5.1: Lake Harris NW corner, greenstone outcrop and surrounding environs. Surface sample descriptions and petrography of regolith materials from direct observation and by using: thin- or polished section or polished block evaluation with a microscope. [Note: all thin-sections & blocks are referred to by the PIRSA 'R number' reference.].

Petrologist: I.D.M. Robertson, CSIRO Exploration & Mining / CRC LEME, Perth, W. Aust.

Field #	PIRSA #	East	North	Field Description	Petrographic Description
H1	R622560	513413	6567185	Silcrete with chalcedony fragments: the silcrete appears to overlie the saprolite of an ultramafic and is overlain in part by a calcrete-cemented colluvium with silcrete fragments. The whole is capped by a lag. Nearby is small colluvial fan or higher river terrace.	This consists of clasts of slabby chalcedony in a matrix of angular, strained metamorphic quartz grains, cemented by quartz and anatase. The chalcedony consists of layers of comb-textured, unstrained quartz lining voids, which are now largely filled with fine-grained quartz and anatase. The quartz of the matrix is very fine grained and the quartz-anatase ratio is variable.
H2	R622561	514681	6566206	Granite saprolite: an amphitheatre floored by granitic saprolite and edged by a silcrete with a carbonate veined silcrete breccia between. The carbonate clearly post-dates the silcrete. The upper part of the lag is brecciated with carbonate and this shows on the surface among the fragments of silcrete lag.	Parts consist of fibrous to flaky kaolinite, probably after K-feldspar, partly stained by aluminosilicate that forms delicate bands in voids. Set in this are strained angular to subangular grains of strained quartz. Other parts consist of finer, flaky kaolinite with a few flakes of hydromuscovite, probably after Na plagioclase, also set with strained metamorphic quartz. This has also been slightly stained by a brown, probably titaniferous material. The XRD indicates significant halite, probably lost in sectioning.
H2A	R622562	514681	6566206	Granitic silcrete. Site: an amphitheatre floored by granitic saprolite and edged by a silcrete with a carbonate veined silcrete breccia between. The carbonate clearly post-dates the silcrete. The upper part of the lag is brecciated with carbonate and this shows on the surface among the fragments of silcrete lag.	This consists largely of strained metamorphic quartz set in brown aluminosilicate cement and a probably older granular QAZ cement. Some subangular quartz grains are compound; others are more shardy and consist of single strained crystals. The cement is probably now kaolinite stained with Ti and Fe oxides.
H2B	R622563	514681	6566206	Silcrete. Site: an amphitheatre floored by granitic saprolite and edged by a silcrete with a carbonate veined silcrete breccia between. The carbonate clearly post-dates the silcrete. The upper part of the lag is brecciated with carbonate and this shows on the surface among the fragments of silcrete lag.	Angular and shardy strained metamorphic quartz set in a granular, fine-grained QAZ cement. The XRD indicates minor halite, probably lost in sectioning.

Cont. overleaf.

H3	R622564	514624	6566515	Dune sand: a red-brown sand dune, very lightly cemented in the higher part and loose, with a few coarse grains concentrated in the swale. This laps onto the basement that is covered by a thin, orange-brown soil covered by a quartz-rich lag, through which vein quartz rubble protrudes.	Consists of subangular to angular grains, largely of strained quartz with lesser amounts of microcline and sericitised plagioclase. The smaller grains are angular to shardy. A few grains are of Fe-stained saprolite and some are Fe oxides. There is a trace of tourmaline and epidote. Each grain has a very thin hematite-stained rim.
H4	R622564	511520	6566767	Calcrete: small stream with calcrete exposed in the floor but no indication of the substrate.	This calcrete consists of a substrate of ferruginous kaolinite set with subrounded to subangular quartz and minor microcline, that has been invaded by many veinlets of fine-grained carbonate. The substrate may have been either a mafic saprolite and/or some form of recent sediment of mixed provenance (most likely).
H5	R622566	510885	6669728	Lag of Gawler Range Volcanics: an almost monomictic very coarse lag of angular partly weathered volcanic fragments with smaller, minor fragments of quartz and silcrete on a yellow earth. West side of playa.	Lava with phenocrysts of partly sericitised euhedral plagioclase and crystals of clino-pyroxene or amphibole, now completely altered to chlorite, in a fine-grained matrix of hematite-stained chlorite, quartz and feldspar (plagioclase and microcline). There are two chlorites here, lizardite and clinochlore.
H6	R622567	509836	6566876	Silcrete - massive: high point near main access road. *In situ* quartz veins preserved as linear structures of coarse angular vein-quartz fragments.	A breccia of very angular and shardy quartz grains set in a QAZ cement. A few meandering veinlets indicate localised removal of the cement and replacement by a light-brown aluminosilicate cement.
H8	R622568	519586	6568066	Gypcreted dune developed beneath a pale yellow dune sand – favoured by rabbits. Exposed by a combination of aeolian deflation and gypsum heave.	A possibly porous mass or angular to shardy strained quartz grains with minor microcline in a ? anatase and carbonate cement. Field info?? Look at diffraction chart.
H9	R622569	519770	6567534	Yellow dune with a lag of coarse quartz on surface.	Consists of angular to shardy strained quartz with lesser amounts of fresh microcline and sericitised Na plagioclase. A few of the larger grains are round. Traces of black Fe oxides, chert grains and very small grains of tourmaline. Most grains have an extremely thin coating of hematite or goethite. Material needs size fractionation

Cont. overleaf.

H10	R622570	512961	6566754	Granitic detritus: developed on a calcrete infused granitic saprolite. The detritus is slightly hardpanised and consists of angular silcrete, ferruginised silcrete, quartz and granite saprolite fragments in an orange-brown gritty-sandy matrix. The upper part is infused with calcrete and the lower part has a pebbly lag of silcrete and quartz.	A grain-supported mass of granitic detritus consisting of strained quartz, fresh microcline, sericitised plagioclase and granitic clasts cemented by Fe-stained kaolinite.
H11	R622571	512961	6566754	Carbonated granite saprolite: greenish-grey granitic saprolite cut by linear to meandering light-brown carbonate veinlets.	Consists of patches and sinuous lenses of fresh, strained quartz with a sutured to granoblastic polygonal structure. These are set in a mass of flaky kaolinite and hydromuscovite after Na plagioclase and worm-like kaolinite probably after microcline. The boundaries between the types of kaolinite are blurred, suggesting some recrystallisation of clays. The whole has peen partly infused and veined with granular carbonate.
H12	R622572	512961	6566754	Granite saprolite. greenish-grey granitic saprolite cut by linear to meandering light-brown carbonate veinlets.	Similar fabric to the previous but the two types of kaolinite are very distinct. The XRD indicates a significant halite component, probably lost in sectioning. Probable seepage of saline groundwaters has deposited halite by evaporation.
H13	R622573	512977	6566783	Amphibolite schist saprock: pods of black hornblende amphibolite and schistose green tremolitic amphibolite are intruded by granite and grey quartz. These form very low outcrops onto which an orange sandy earth laps.	Consists of a schistose fabric of flaky magnesian hornblende and finer magnesian anthophyllite with patches of albite. This is cut by fractures along which weathering has penetrated, altering the ferromagnesians to smectite (nontronite).
H14	R622574	513012	6566880	Ferruginous saprolite lag: a coarse, angular, monomictic lag of brown to purple lithic clasts probably covers ultramafic schist subcrop.	Consists mostly of kaolinite, permeated with goethite. There are some ragged crystals of hematite, possibly after magnetite altered to goethite (martite).
H15A	R622575	512932	6567318	Silcrete lag fragment: a lag of silcrete, quartz and ferruginous silcrete on an orange-brown soil.	Consists of large clasts of compound metamorphic quartz grains with a sutured to polygonal fabric and smaller clasts of angular to shardy strained quartz set in a granular QAZ cement. Parts of the cement are slightly stained with Fe-oxides.
H15B	R622576	512932	6567318	Ferruginous silcrete lag fragment: a lag of silcrete, quartz and ferruginous silcrete on an orange-brown soil.	Similar to the above but the QAZ cement has been largely replaced by hematite??

Cont. overleaf.

H17	R622577	513224	6567375	Black component of lag: black component selectively sampled. A lag of silcrete, quartz and ferruginous silcrete on an orange-brown soil.	Porous, massive haematitic goethite, in places with a fingerprint fabric after a mafic/ultramafic saprolite. This has been extensively ferruginised with some fabric loss. Some voids are rimmed by weakly banded goethite.
H19	R622578	513082	6566983	Hardpan: a lag of silcrete, quartz and ferruginous silcrete on an orange-brown soil.	A polymictic, clast-supported sediment of compound clasts of strained, sutured quartz, microcline, sericitised plagioclase, fresh granite, Fe-oxide granules and weathered magnesian schist (hornblende, anthophyllite and plagioclase slightly stained with goethite) set in a matrix of Fe-stained kaolinite and montmorillonite. Input to this sediment has been from various lithologies and from various parts of the weathered profile, from fresh to deeply weathered.
H20	R622579	513307	6567147	Mag lag: a coarse lag of silcrete, quartz, chalcedony slabs and ferruginous silcrete with a few small black ferruginous granules on a yellow-brown, sandy soil.	Massive maghemite and hematite. A few granules show weakly differentiated but thick cutans. A few contain quartz clasts.
H21	R622580	513264	6567033	Mag lag: a coarse lag of silcrete, quartz, chalcedony slabs and ferruginous silcrete with a few small black ferruginous granules on a yellow-brown, sandy soil.	Massive maghemite and hematite. A few granules show weakly differentiated but thick cutans. A few contain quartz clasts.
H22A	R622581	513154	6566977	Ferruginous saprolite of ultramafic: a coarse, angular lag of this partly mantles outcrop. Some is flinty, other spongy.	It consists largely of goethite, which has permeated and largely replaced magnesian amphiboles and chlorite, which now remain as a few relics.
H22B	R622582	513154	6566977	Ferruginous saprolite of ultramafic	Similar to the above but silicate relics are far less apparent. Some voids are filled with microcrystalline opaline silica and some carbonate.
H23	R622583	511520	6566767	Calcrete from modern stream	A matrix-supported mass of slightly corroded clasts of quartz, microcline, sericitised plagioclase and chert embedded in several generations of calcite which varies from dark brown and fine grained to pale, slightly coarser grained and slightly banded. One clast is very fresh quartz-plagioclase porphyry. Linear and sinuous veins of coarse carbonate cut the whole.

Cont. overleaf.

Lake Harris NW corner, greenstone outcrop area. Surface sample description and petrography of regolith duricrust using direct observation and from a polished block, inspected with a microscope. Petrologist: M.J. Sheard, PIRSA Geological Survey Branch / CRC LEME, Adelaide, S. Aust.					
Field #	**PIRSA #**	**East**	**North**	**Field Description**	**Petrographic Description & Key geochemical indicators**
CA24	R367509	513395	6567151	Rounded silcrete boulder, 0.3 m diameter, pale brownish grey. Float collected in 1997 near main silcrete outcrop overlying weathered greenstone along the lake shore where it forms low stony rises and a blocky capping on weathered greenstone to ~1 m thick. The Harris Greenstone—Glenloth Granite sheared contact lies only ~30 m from where this sample was collected.	Silcrete (polished slab). Angular laths of a translucent-grey-brown to greenish grey chalcedony 5-50 mm long & 1-5 mm thick enclosed in pale yellow-grey silcrete cementing a colluvial sand derived from both granitic and ultramafic source rocks. Bulk assay of a portion from this specimen revealed: Cr 63 ppm, Ni 6 ppm, Ti 1.83%, V 39 ppm and Y 11 ppm.

TABLE A5.2: Petrography of Lake Harris regolith drillhole KLHRDD-1 core samples.

Lake Harris, cored hole #: KLHRDD-1: Coords: Zone 53J, 0511863mE, 6566452mN. **Attitude:** vertical, **Total Depth:** 51.25 m. Regolith materials, epoxy-resin impregnated, and 50x75 mm thin-sections. **Petrologist:** I.D.M. Robertson, CSIRO Exploration & Mining / CRC LEME, Perth, W. Aust.			
PIRSA R No.	**Thin-Sect^{n} No.**	**Depth (m)**	**Petrography Description**
406673	R406673	2.80-2.87	**Hardpanized Colluvium**. Closely packed subangular to sub-round quartz grains, probably from a dismembered granite (relatively fresh), are set in an Fe-stained aluminosilicate cement. The grains consist of sutured quartz, fresh microcline, sericitized plagioclase and compound grains of these three component minerals. There is also a trace of epidote and chert grains. The dark red cement is banded in part and probably infilled voids in a sedimentary grain mesh. A small amount of the matrix consists of red-stained phyllosilicates.
406674	R406674	4.95-5.02	**Colluvial Sediment**. Closely packed subangular to subrounded grains of quartz, chert, vein quartz and lesser sericitized plagioclase, fresh microcline and ferricrete clasts, set in an aluminosilicate/phyllosilicate cement which is less Fe-stained than that higher in the profile. There is less microcline and feldspar and more quartz than in the sediments at a shallower depth. The feldspars are more weathered and Fe-stained (prior to sedimentation). The ferricrete contains both angular, shardy quartz grains and highly rounded grains (water worn).
406675	R406675	6.50-6.58	**Colluvial Sediment**. The clasts are small, angular to sub-round and are largely of quartz, vein quartz (with some comb fabrics) and lesser sericitized feldspar and minor fresh microcline. With these are a few larger clasts (10-30 mm) of ferricrete, silcrete, chert and weathered granite. These are closely packed in an Fe-mottled phyllosilicate matrix with some banded aluminosilicate cement.
406676	R406676	9.33-9.40	**Colluvial Sediment**. Smaller (0.5 mm) subangular grains of quartz and sericitized plagioclase and larger grains (1-1.5 mm) of subrounded quartz, sericitized feldspar and ferruginous silcrete are loosely packed into a matrix of flaky clay and banded aluminosilicate. There is more matrix than in those at a shallower depth.

Cont. overleaf.

406677	R406677	10.65-10.75	**Colluvial Sediment**. The sediment consists of fine-grained, angular quartz (1-2 mm), coarser (5 mm) sub-round strained quartz, minor sericitized plagioclase, a trace of fresh microcline and chert, loosely packed into a flaky phyllosilicate (kaolinite-smectite-hydromuscovite) matrix. A few larger fragments (10 mm) are of gneiss (highly strained quartz and sericitized plagioclase). Parts of the matrix are brown and mottled with goethite.
406678	R406678	12.15-12.20	**Colluvial Sediment**. Round, large grains (3 mm) and smaller angular grains (0.5 mm) are loosely packed in a kaolinite-smectite-hydromuscovite matrix that has been mottled by Fe-oxides. Some quartz clasts are a strained compound mosaic of sutured to granoblastic grains.
406679	R406679	13.47-13.55	**Colluvial Sediment**. Clasts of quartz are dispersed in a clay-hydromuscovite matrix. This section varies from loosely packed at the base to closely packed at the top. Feldspars are absent. Mottling by goethite and some hematite has variably stained the matrix throughout. Sinusoidal veins of cryptocrystalline silica meander throughout the matrix and are probably related to hardpanization.
406680	R406680	13.75-13.80	**Colluvial Sediment**. Sub-round to subangular grains, mainly of quartz with minor chert, sericitized plagioclase, clay pellets and goethite-quartz nodules, are loosely packed into a matrix of kaolinite, smectite and hydromuscovite. This has been mottled to yellow and brown by goethite that has variably stained the matrix. Some voids have been infilled by banded aluminosilicate.
406681	R406681	17.00-17.07	**Lower Saprolite of Ultramafic with Spinifex Fabric**. The saprolite consists of a very fine mesh of hydromuscovite, smectite and chlorite, in which there are remnant needles of unaltered tremolite. However, this fine mesh still preserves the distinctive bladed pyroxene spinifex structure in which illitic clay has replaced the pyroxene and the very fine, dusty iron ores have picked out the interstices of the spinifex structure. Some of the pyroxene pseudomorphs are cored with a concentration of Fe-oxides. Weathering has lightly stained the rock.
406682	R406682	28.75-28.85	**Fe-Stained Saprock of Ultramafic**. The fabric and mineralogy of this saprock is similar to the bedrock below but large, diffuse patches have been stained by goethite developed along grain margins. Cracks in the fabric are infilled with clays and the material around the cracks appears bleached of iron staining, suggesting a cycling water table which placed this saprock alternately in an oxidising and then in a reducing environment. The iron ores show a slight parallel alignment, suggesting some palimpsest olivine spinifex structures as in the rocks below.
406683	R406683	49.70-49.77	**Ultramafic Bedrock**. Pale, acicular tremolite, probably after pyroxene, forms a mesh of randomly oriented needles in which lie patches of chlorite and tremolite, after olivine. Grains of anhedral iron ore, chromite or magnetite, occur mainly in the chlorite or between chlorite and tremolite and some form parallel bands, probably outlining an original olivine spinifex structure. Weathering is very minor and occurs along cracks that are partly filled with goethite and some goethite has lightly stained the amphiboles adjacent to the cracks.

Cont. overleaf.

Comments

- It seems likely that the sediments were deposited on soft, easily eroded ultramafic rocks that occupied low parts of the topography.
- The smectitic clay of the matrix was probably largely from erosion of mafic-ultramafic rocks and the kaolinite and hydromuscovite from weathered granitic materials. The upper part of the sediment is cemented to a hardpan by banded aluminosilicate. The matrix of the sediments below the hardpan consists of phyllosilicate and becomes more abundant with depth. Where it is less stained, it is a flaky mixture of phyllosilicates (XRD indicates kaolinite, smectite and hydromuscovite) and varies in birefringence from grey to first order yellow.
- The quartz clasts appear to have been derived locally from deeply weathered granites (characterized by small shardy grains), however some larger grains are more rounded, probably also granitic and have been transported further. Vein quartz was another source.
- Predominance of quartz clasts in the lower part of the sediments and the appearance of microcline and sericitized feldspar towards the top imply the progressive erosion of and provenance from a deeply weathered granitic/gneissic profile that progressively exposed less weathered materials with time.
- The bedrock intersections are relatively undeformed, allowing some of the original igneous fabrics to persist into the saprolite. It seems likely that different parts of the ultramafic flows have been intersected to show both olivine and pyroxene spinifex structures.

TABLE A5.3: Petrography of Hopeful Hill regolith drillhole THHRDD-1 core samples.

Hopeful Hill, cored hole #: THHRDD-1: Coords: Zone 53J, 0492082mE, 6575794mN. **Attitude:** vertical, **Total Depth:** 39.25 m. Regolith materials, epoxy-resin impregnated, and 50x75 mm thin-sections.
Petrologist: I.D.M. Robertson, CSIRO Exploration & Mining / CRC LEME, Perth, W. Aust.

PIRSA R No.	Thin-Sect^n No.	Depth (m)	Petrography Description
406684	R406684	4.52-4.58	**Hardpanized Colluvium-Alluvium**. Larger grains (2 mm) of rounded quartz and smaller grains (0.5 mm) of angular to shardy quartz with minor microcline and granules of Fe-oxides are loosely packed into a brown-stained phyllosilicate (kaolinitic) matrix which contains numerous voids lined and some filled with a finely banded, brown aluminosilicate cement. Among the larger rounded grains are a few rounded clasts of ferricrete containing angular quartz. There is evidence of erosion and redeposition of this material as some clasts have the same quartz clasts and stained phyllosilicate matrix as the main part and are coated with banded aluminosilicate that also forms veins in the matrix.
406685	R406685	8.08-8.15	**Claystone-Quartz Arenite**. A highly complex sediment consisting mainly of large clasts (5-20 mm) largely of a dark claystone which itself contains smaller clasts of claystone and subangular to sub-round quartz grains. Other less abundant clasts are of Fe-oxide granules and ferricrete. These are set in a matrix of fine angular quartz and deep brown-stained kaolinite. Parts of the matrix have been broken and re-cemented and coated by brown, banded aluminosilicate that also lines voids. Some of the aluminosilicate has also been broken and re-cemented.
406686	R406686	8.28-8.34	**Claystone-Quartz Arenite**. A polymictic sediment of poorly sorted, rounded fragments of claystone, quartz and Fe-oxide nodules tightly packed into a clay matrix that has been brecciated and partly dissolved and the voids filled with several generations of banded aluminosilicate. The claystone fragments contain quartz clasts but are not as complex as those from higher in the profile.

Cont. overleaf.

406687	R406687	8.65-8.73	**Claystone-Quartz Arenite**. A highly complex sediment consisting mainly of large clasts (5-20 mm) largely of a dark claystone, some of which itself contain smaller clasts of claystone and subangular to sub-round quartz grains. Other, less abundant, clasts are Fe-oxide granules. These are set in a matrix of fine-grained angular quartz and dark-brown stained kaolinite. Parts of the matrix have been broken and re-cemented and coated by brown, banded aluminosilicate that also lines voids. Some of the aluminosilicate has also been broken and re-cemented. Some of the larger claystone clasts show evidence of infilled burrows, which might explain the bimodal nature of the materials in this claystone by bioturbation and mixing of originally separate, stratified and sorted materials.
406688	R406688	9.78-9.85	**Porous Saprolite**. The saprolite consists of a fine-grained flaky mat of smectite and kaolinite with some remnant talc and chlorite, all dusted with Fe-oxides. This has been veined by early gypsum or brucite and later brecciated by near-surface weathering. Voids are now filled with sediment from above, containing a polymict assemblage of saprolite, Fe-oxide granules and small quartz grains in a clay matrix. A few voids and cracks in this porous material are filled with banded, light brown aluminosilicate cement.
406689	R406689	13.35-13.45	**Saprock of Ultramafic**. Patches of largely opaque material, heavily dusted with Fe-oxides, pseudomorph olivine grains cut by serpentine/antigorite veinlets in what was probably an adcumulate. This is surrounded by chlorite and talc. The whole is cut by meandering veinlets of cryptocrystalline silica and fibrous brucite. Weathering along specific bands has altered the fabric to stained clay (smectite and kaolinite) obliterating the original fabric.
406690	R406690	16.13-16.22	**Saprock of Ultramafic**. Large islands, consisting of a mat of chlorite and talc, contain acicular pseudomorphs after either metamorphic tremolite of after pyroxene spinifex structures. These are surrounded by broad, meandering veins of coarse, flaky kaolinite in which lie small, unconsumed remnants of the talc-chlorite mat. Fragments of pale, delicately banded aluminosilicate cement has filled voids and been later brecciated.
406691	R406691	38.60-38.70	**Highly deformed fresh Ultramafic bedrock**. A highly schistose fine-grained mat of acicular tremolite and flakes of chlorite in which chlorite and a dusting of iron ore picks out at least two acutely intersecting, closely spaced cleavages. Coarser granules of iron ore are scattered throughout. Coarser tremolite and chlorite occur in a few small lenses and boudins. There has been only slight staining along some cleavage planes.

Comments

- The ultramafic bedrocks show significant but variable deformation and metamorphism that have largely obscured their character, although some hints of cumulate fabrics remain. The top of the saprolite contains cavities filled with sedimentary materials.
- The majority of the overlying sediments consist of fragments of claystone that imply a pre-existing claystone, consisting of clays and quartz, that have been mixed by bioturbation, before being broken up and redeposited on the ultramafic saprolites.
- Only the top of the sediments are different and probably had a granitic provenance.
- The aluminosilicate cementing material had a complex history, showing evidence of several cycles of cementation, break-up and re-cementation.

Tables cont.

TABLE A5.4: Petrography of Mullina Well regolith drillhole TMWRDD-1 core samples.

Mullina Well, cored hole #: TMWRDD-1: Coords: Zone 53J, 0461096mE, 6592412mN. **Attitude:** vertical, **Total Depth:** 40.00 m. Regolith materials, epoxy-resin impregnated, and 50x75 mm thin-sections. **Petrologist:** I.D.M. Robertson, CSIRO Exploration & Mining / CRC LEME, Perth, W. Aust.

PIRSA R No.	Thin-Sect[n] No.	Depth (m)	Petrography Description
406692	R406692	8.05-8.10	**Calcrete Cemented Claystone**. This section consists of two samples each of two different materials. i) The first material is a complex sediment of clasts of clay-rich material and both angular and round quartz set in a clay and fine quartz matrix. The clays of both the matrix and the clasts are stained brown by goethite. Numerous cracks and voids within the matrix have been lined with a delicately banded aluminosilicate cement that also forms papules. This fragment has a partial cutan of brown aluminosilicate. The other fragment is similar but has been more intensely stained a deep red-brown. ii) The second material consists of clasts of a broad range of sizes of the first material, ferruginised to varying degrees, set in a very fine-grained carbonate matrix (calcrete) with clasts of angular to sub-round quartz and minor rounded very fine-grained granular carbonate.
406693	R406693	9.15-9.25	**Gravelly Sediment**. Polymictic gravel containing rounded clasts of ferricrete, claystone and saprolite set in a matrix of clay scattered with quartz and ferruginous nodules.
406694	R406694	10.90-10.95	**Mottled Gritty Sediment**. Large rounded to sub-round and small angular to shardy quartz grains are densely packed into a matrix of ferruginous clay which has been partly replaced by a deep brown aluminosilicate cement.
406695	R406695	12.45-12.50	**Gritty Sediment of Claystone Fragments**. Mottling of the matrix of this matrix-supported grit has accentuated its fabric. It consists of clasts of quartz-bearing claystone, talc-chlorite-clay saprolite with a variety of fabrics and weathering states and quartz. These are set in a matrix of Fe-stained clay.
406696	R406696	12.92-12.97	**Mottled Claystone**. This is similar to the sediment below but minor microcline occurs among the sand-sized quartz clasts and these are more unevenly distributed throughout. Goethite mottling has stained some clays and minor goethite has been deposited along cracks.
406697	R406697	15.80-15.90	**Mottled Claystone**. A mottled claystone with numerous sub-round to subangular quartz clasts (0.1-0.5 mm) and a few ferruginous granules (2 mm). Coarse mottling has stained the clays brown in diffuse zones. There is faint evidence for curved burrows about 5 mm diameter and 15 mm deep.
406698	R406698	18.80-18.87	**Mottled Gritty Sediment of Saprolite Fragments**. A complex matrix-supported polymictic gritty sediment. It contains large subangular clasts, mainly of the underlying saprolite (characterized by patches and 'blasts' of fine-grained clay, disaggregated quartz crystals and relics of the metamorphic fabric) and lesser quantities of clasts of claystone with quartz inclusions. This is set in a matrix of rounded similar materials but with claystone and quartz dominating, all in a clay matrix. Part of the specimen, probably representing a large mottle, is intensely ferruginised to goethite, obscuring much of the fabric.

Cont. overleaf.

406699	R406699	23.70-23.78	**Saprolite of presumed Ultramafic**. The ultramafic has been altered pervasively, leaving only minute remnants of the talc fabric in a mass of circular patches of very fine-grained, flaky clay and vermiform clay stacks between, dusted with opaque Fe-oxides and rutile. Clays have penetrated between the grains of the veins and patches of metamorphic quartz, producing a loose jig-saw structure or patches of disaggregated grains. Iron staining is confined to cracks and these and voids are filled with brown, banded aluminosilicate.
406700	R406700	30.08-30.18	.**Saprolite of Ultramafic**. A mat of talc and chlorite with veinlets and patches of granular metamorphic quartz has been intensely altered to very fine-grained clay (smectite and kaolinite) in numerous diffuse patches that contain unconsumed or partly consumed remnants of the metamorphic assemblage. Iron staining, which has largely penetrated from fractures, cleavages and along quartz vein margins has spread into the metamorphic fabric to a limited extent.
406701	R406701	34.45-34.52	**Saprock of Ultramafic**. A mat of talc and chlorite, dusted with fine-grained Fe-oxides contains some acicular structures pseudomorphed by the talc. Small diffuse patches and veinlets within the metamorphic fabric have altered to very fine-grained flaky clay (smectite and kaolinite) that has lost the acicular structure. The clays are very faintly stained and the metamorphic fabric is unstained.
406702	R406702	39.15-39.21	**Relatively Fresh Mafic Bedrock**. Fine-grained acicular tremolite and fibrous chlorite forms a mesh with interstitial plagioclase and minor quartz. The whole is dusted with granular Fe-oxides and brown rutile. The proportions of mafic and felsic minerals varies. Some parts are schistose, with a cleavage of aligned mafic minerals and small lenses of granular quartz. Cracks have developed, some along the cleavage, and these are lined with clay and goethite. Goethite has spread from these to a limited extent, to stain the mafic minerals.

Comments

- The mafic-ultramafic bedrocks show significant deformation, which have largely obscured their character, although some hints of cumulate fabrics remain. The top of the saprolite contains cavities filled with sedimentary materials.
- Although the base of the sediments is a breccia of saprolite fragments, succeeding layers are of a claystone, similar to that of the palaeochannel sediments on the Yilgarn Craton, consisting of a bimodal mixture of clays and quartz. These have been broken up and redeposited higher in the succession.
- Logging of even diamond core of regolith, and locating the unconformity between transported and *in situ* materials are very difficult in places. The core can have different appearances when wet and dry and can show different features in these two states. Thus, it is inevitable that the core needs revisiting and initial logs need revision, particularly when additional chemical, mineralogical and petrographic evidence becomes available.

A5.2 Lake Harris Drill Section AEM derived conductivity profile

Compiled by Richard Lane, Geoscience Australia, Dec. 2001.

Conductivity values have been extracted from a gridded volume (50 by 50 by 2 m voxels) along the drill traverse near the western edge of Lake Harris.

The attribute table associated with the drillhole location Arcview theme indicates all holes are vertical.

The conductivity values are given at 50 m intervals along the drill traverse, linearly interpolating between each pair of holes and extrapolating 1 km beyond the end of the drill traverse. The position of the holes can be cross-referenced with the conductivity values through the "distance" value in both the drillhole spreadsheet and conductivity data.

The intention is to compare the conductivity section with the regolith logging carried out by M.J. Sheard.

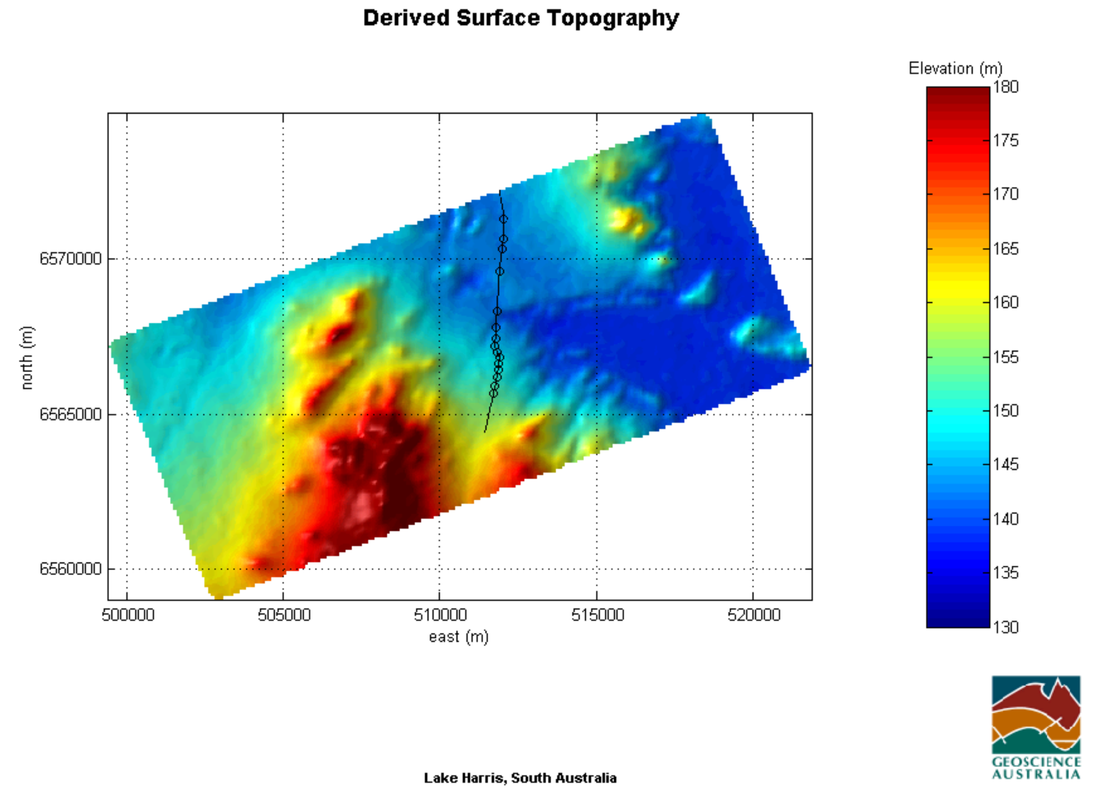

Figure 1. Drillholes (circles) and section trace (line) plotted on surface topography derived from data acquired during the AEM survey.

Comment by M.J. Sheard, 2002. The section on the next page displays a conductive zone that is coincidental with the weathering zone, and in particular with the combined saprock-pedolith zones. However, it does not indicate the transported versus *in situ* materials boundary over the greenstones and barely does so over the felsic hosts at the section's southern end but not at the northern end. The conductive zone is also coincidental with a lens of highly saline groundwater that intrudes from nearby Lake Harris and along the palaeochannel between 4500 and 6500 m. Compare with cross-section Figure 6 in Volume 1 and that of the Regolith Landform Map (Rear pocket of this Volume).

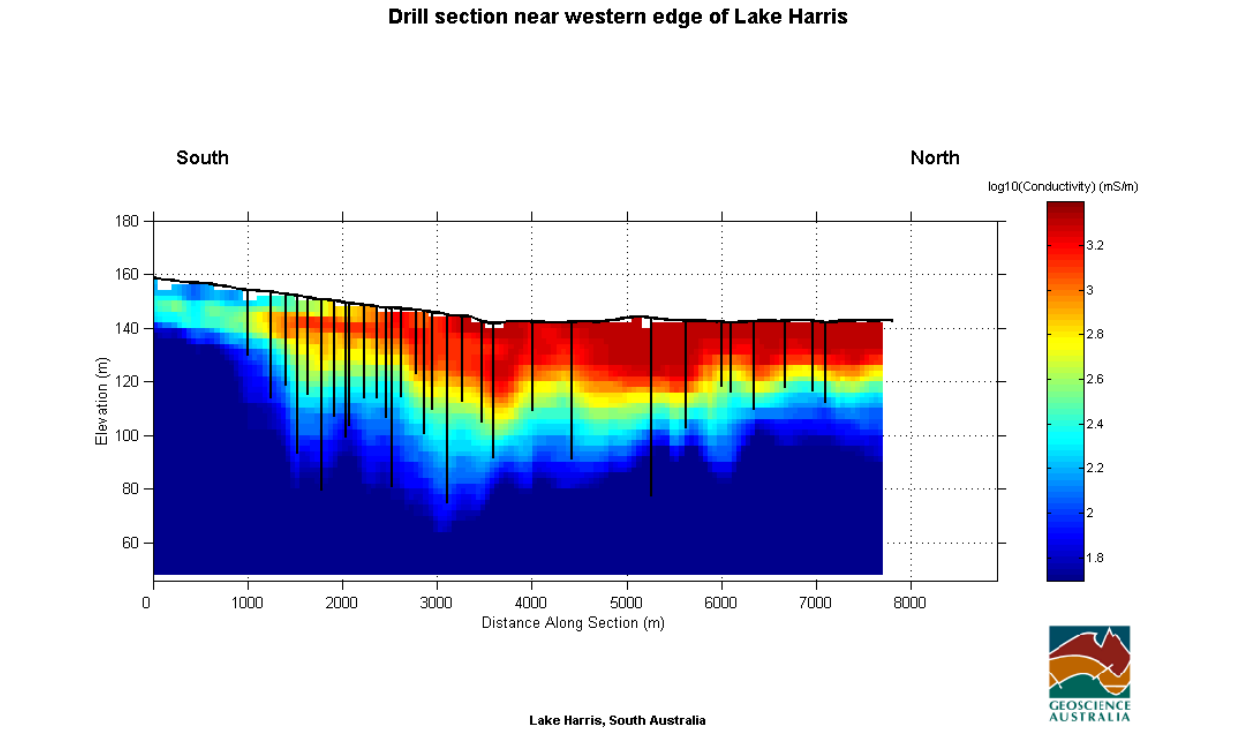

Figure 2. Conductivity section for drill traverse. Conductivity has been log10 scaled between 50 and 2500 mS/m.

Appendix 6

Lake Harris Regolith Landform Map

A hard copy printout of the Lake Harris Regolith Landform Map in the plastic pocket over leaf.

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Appendix 7

The CD-ROM containing all relevant Data files, the Report Volumes 1 and 2 as pdf files, the Lake Harris Regolith Landform Map pdf and its active ArcReader equivalent (with drivers) is located on the rear cover of this Volume.

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