

ABNER RANGE  
SEL 9779

Appendix 2.2

Diamond Drill Holes - Logsheets

Easting: 0595282

Northing: 8145638

Datum: WQS 84

Zone: 531c

Geologist: ERM.

Start date: 31/10/04

Finish date:	31/10/04
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Total depth: 55 m

Inclination: VERT.

Azimuth: —

Driller: DRILL TORQUE (2LD)

Drilling type: RC

FALCON ANOMALY "FBN 021"

Depth(m)		Oxidation	Description	Comments
from	to			
0	1		Grey silty "ball dirt" overlying ferruginous sand, (5-m. grained) with abundant ferruginous aggregates. Moderate clay content.	
1	2		F.-m. grained ferruginous (red-brown) sand & fine ferrug. aggregates & moderate clay content.	
2	4		Pale yellow brown clays (ranging from pale grey to pale brown) w/ f.g. qu. sand grains in part.	
4	5		Brown to yellow-brown clays.	
5	6		Highly ferruginous horizon - little texture visible but suggestive of possible volcanic component (?).	
6	15		Grey/grey-brown/yellow-brown clays (? also volcanic textures 10-11 m?)	Swelling clays causing drilling problems: slow drilling.
15	18		F.-M. grained hard (floppy?) sandstone (& to claystone) in clays as above. Some rounded, broken sandstone pebbles suggesting conglomeratic horizons.	
18	22		F.-M. grained silicified sandstones - occasionally coarse grained: high clay content suggests shale/claystone interbeds (generally dark brown, occasionally pale grey). Approx. 50/50 SST/clay.	
22	25		SST/clay a/a but higher prop. clay & SST, friable. Minor pale grey siltstone.	
25	34		F.-M. grained hard SST (as above) & brown clay & minor pale grey siltstone. Sub-rounded, broken SST clasts at 28-29m & 31-32m suggest pebbly beds.	
34	40		F.-M. grained red-brown silicified SST a/a with grey siltstone interbeds & (possibly) brown shales - inferred from clay content.	
40	52		SST, SILTSTONE a/a Siltstone in dark grey & laminated & occur in varying proportions (predominant 40-43m, elsewhere ~ 50/50 & SST).	SAMPLE N° SAMPLE INTERVAL.
52	55		Dark grey siltstone.	
				166245 0-4m
				166246 4-8m
				166247 8-12m
				166248 12-16m
				166249 16-20m
				166250 20-24m
				166251 24-28m
				166252 28-32m
				166253 32-36m
				166254 36-40m
				166255 40-44m
				166256 44-48m
				166257 48-52m
				166258 52-55m
			Summary: 0-2m Ferruginous sand & clay.	
			2-15m Clay / claystone (? volcanic interbed 5-6m?)	
			* 15-34m Sandstone & clays (minor siltstone)	
			34-52m Sandstone / siltstone sequence (& clay interbeds!)	
			52-55m Dark grey siltstone.	
			* 15-34m - clayey sandstone gravel?	

Phillips Range RC Drilling			Hole No: ARC 002		Page 1 of 1
Easting: 0595355		Northing: 8145712		Datum: WGS 84	Zone: 53K
Start date: 31/10/04		Finish date: 31/10/04		Total depth: 43m	Inclination: VERT.
Driller: DRILL TORQUE (RLD)		Drilling type: RC		Geologist: ERM.	
				Azimuth: —	
				FALCON ANOMALY "ABN 021"	
Depth(m)		Oxidation	Description	Comments	
from	to				
0	1		Red-brown ferruginous sandy clay with Fe aggregates (grey silty soils at surface)		
1	2		Ferruginous brown clay and pale grey mudstone (soft)		
2	4		Yellow-brown clay with minor Fe aggregates & siltstone/mudstone frags.		
4	33		Mudstone. Mainly brown but occasionally pale green, pale grey or purple-red		
33	43m		Dark grey laminated siltstone. (Tr. sp.)		
	E.O.H.				
			Summary:		
			0-4 Cover sand & clay		
			4-33 Mudstone		
			33-43 Siltstone		
			SAMPLE NO	SAMPLE INTERVAL	
			166259	0-4m	
			166260	4-8m	
			166261	8-12m	
			166262	12-16m	
			166263	16-20m	
			166264	20-24m	
			166265	24-28m	
			166266	28-32m	
			166267	32-36m	
			166268	36-40m	
			166269	40-43m	

## Phillips Range RC Drilling

Page / of /

Geologist: ERM

Azimuth: —

FALCON ANOMALY "ABN 021"

SAMPLE NO	SAMPLE INTERVAL
166270	0-4m
166271	4-8m
166272	8-12m
166273	12-16m
166274	16-20m
166275	20-24m
166276	24-28m

ABNER

Phillips Range RC Drilling		Hole No.		ARC 004		Page 1 of 1	
Easting:	0595258	Northing:	8145689	Datum:	<del>BGM</del> WGS 84	Zone:	53 K
Start date:	01/11/04	Finish date:	01/11/04	Total depth:	37m	Inclination:	VERT
Driller:	DRILL TORQUE (RLD)		Drilling type:		RC	FALCON ANOMALY "ABN 021"	
Depth(m)		Oxidation	Description	Comments			
from	to						
0	1		Grey silty soil underlain by red-brown sandy clays - occasional small Fe aggregates.				
1	7		Brown clays with minor calcite (40% calcite 6-7m)				
7	8		Pale grey to red-brown laminated shales & white carbonate.				
8	9		Grey to brown siltstone with minor white carbonate.				
9	20		Red-brown shales (grey-green 11-12) with silty intervals.				
20	24		Red-brown siltstone.				
24	28		Brown siltstone.				
28	37		Dark grey siltstone with minor dark grey shales.				
		E.O.H.					
			Summary:	0 - 7 m	Lower sands & clays.		
				7 - 20 m	Shale		
				20 - 37 m	Siltstone		
			SAMPLE NO	SAMPLE INTERVAL.			
			166277	0-4m			
			166278	4-8m			
			166279	8-12m			
			166280	12-16m			
			166281	16-20m			
			166282	20-24m			
			166283	24-28m			
			166284	28-32m			
			166285	32-37m			

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Phillips Range RC Drilling			Hole No: ARC 007		Page 1 of 1																								
Easting: 0597062E		Northing: 8144797		Datum: WGS 84	Geologist: ERM.																								
Start date: 02/11/04		Finish date: 02/11/04		Total depth: 43m	Azimuth: —																								
Driller: DRILL TORQUE (RLD)		Drilling type: RC		FALCON ANOMALY "ABN 014"																									
Depth(m)		Oxidation	Description	Comments																									
from	to																												
0	2		Grey sandy / silty soil at surface — laterite below																										
2	3		Red-brown siltstone with pale grey to pale brown interlayers + broken quartz pebbles / rounded																										
3	5		Pale grey fine grained sandstone.																										
5	7		Red-brown to pale grey shaly clays with minor fine grained sandstone.																										
7	9		Pale grey f.g. sst + minor clays																										
9	10		Red-brown to pale grey clay (shale)																										
10	11		Predominantly red-brown sandstone, with some clays.																										
11	16		Pale grey to red-brown claystone with minor thin laminations of siltstone.																										
16	25		Claystone: purple red to brown to pale grey-green to pale grey with minor interbeds of f.g. sst (m.g. sst interbed between 22 & 23m)																										
25	28		Pale brown to buff coloured f. to m.g. sandstone.																										
28	32		Claystone as above (minor sst 28-29m — f.g. & ferruginous)																										
32	43		Dark grey siltstone — (+ minor shales).																										
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166307	36-40																												
166308	40-43																												



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Easting: 0597149		Northing: 8144823		Datum: WGS 84																											
Start date: 02/11/04		Finish date: 02/11/04		Total depth: 49m																											
Driller:		Drilling type: RC		Zone: 53K																											
				Inclination: VERT.																											
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Easting:	0597149		Northing:	8144823		Datum:	WGS 84		Zone:	53K	Geologist:	ERM-
Start date:	02/11/04		Finish date:	02/11/04		Total depth:	49m		Inclination:	VERT.	Azimuth:	-
Driller:						Drilling type:	RC					
<u>Depth(m)</u>		<u>Oxidation</u>	<u>Description</u>					<u>Comments</u>				
from	to											
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1	2		Latentite & quartz grit = broken rounded quartz pebble.									
2	3		latentite & pale grey to pale red-brown claystone.									
3	7		Claystone : pale gray / pale grey - brown / red - brown .									
7	10		Pale gray , fine to medium grained sandstone .									
10	40		Claystone : purple - brown / red - brown / brown / pale grey .									
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			166315	24 - 28								
			166316	28 - 32								
			166317	32 - 36								
			166318	36 - 40								
			166319	40 - 44								
			166320	44 - 49 m								

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<u>Depth(m)</u>		<u>Oxidation</u>	<u>Description</u>	<u>Comments</u>		
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Phillips Range RC Drilling		Hole No: ARC 008		Page 1 of 1																											
Easting: 0597149		Northing: 8144823		Datum: WGS 84																											
Start date: 02/11/04		Finish date: 02/11/04		Total depth: 49m																											
Driller:		Drilling type: RC		Zone: 53K																											
				Geologist: ERM																											
				Inclination: VERT.																											
				Azimuth: —																											
Depth(m)		Oxidation	Description	Comments																											
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Start date: 02/11/04		Finish date: 02/11/04		Total depth: 49m																											
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Phillips Range RC Drilling		Hole No: ARC 008		Page 1 of 1																											
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Start date: 02/11/04		Finish date: 02/11/04		Total depth: 49m																											
Driller:		Drilling type: RC		Zone: 53K																											
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Phillips Range RC Drilling	Hole No: ARC009
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Hole No: ARC009

Page 1 of 1

Easting: 597256	Northing: 8144834
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Northing: 8144.834

Datum: WGS 84

Zone: 53

Geologist: Geoff Galt

Start date: 2/11/04	Finish date: 2/11/04
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Finish date: 2/11/04

Total depth: 49

Inclination: 90

Azimuth:                     

Driller: DRILL TORQUE (QLD)

Drilling type: RC

[illegible]





RC Drilling			Hole No: ARC 012		Page 1 of 1
Easting:	Northing:	Datum: WGS 84	Zone: 53	Geologist: IM	
Start date: 14/06	Finish date: 14/06	Total depth 102 m	Inclination: VERT	Azimuth: - VERT	
Driller: UDO	UDR 650	Drilling type: 5 1/2" well RC (900/350 Compressor)			
Depth(m)		Oxidation	Description	Comments	
from	to				
0	2	Pisolitic	Red Br pisolitic gravels		
2	4	Fe Sst.	<del>Red Br</del> Red Br lit. Red clay/sst with base of duricrust		
			@ 3m. Becoming slightly depleted looking at 3-4		
			limonitic clays		
4	9.4	Clays/sst	White-Pale Brown to Orange Brown fine grained sandstone with minor pale clays. Some coarse grained sst and qtz. Becoming very clay rich 8-9.4		
9.4	12	Clay	Felsic to grey dark green clays with common coarse rounded clasts of sst and shales to 5cm		
12	21	Kimberlite clay	Br-Or Br pygmy clays with angular - rounded clasts to 5cm. Increasing shale clast wt sst from 15m.	H <sub>2</sub> O Injection - 14-21m, H <sub>2</sub> O @ 14m.	
21	31	Kimberlite	Weathered Br-Gm kimberlite with 20-40% clasts to 3-5 cm. Clasts in sst/shale.	Poor return 14-21m (<3-5 kg/m)	
31	40	Kimberlite	Gm kimberlitic clays with 30% clasts. Increase of sst clasts w/ shale. Base of Br sst clasts from 35-40m with occasional granite gneiss clast. Minor phlogopite?		
40	48	Kimberlite	Pale Gm kim clay. Clasts to 30-40% and up to 6cm of shale and sst. Shale/sst ratio 50:50.		
48	54	Kimberlite	Dark Green mud fresh kimberlite with 20-50% clasts of sst (50%), shale (40%), or Br sst/clast (10%)	Sample very damp.	
54	59	Kimberlite Breccia	As 48-54 but with 50% clasts, >80% of which are sst, rare shale.		
59	67	Kimberlite Breccia	Or Br - Gm kimberlite clay but with 50% clasts		
67	81	Kimberlite Breccia	Or-Pl Br breccia. Matrix clay becoming sandy 50-60%. Clasts of sst (60%), shale (30%), or Br sst 10% with minor eg bluish volcanics - basalt? and granite?	Wet samples from 72m	
81	85	Kimberlite	Green kimberlite semi-weathered. Some autoliths and possible? lapilli? Matrix 60% of total. Rare sst xenoliths.	Poor return 72-74 (±6 kg), 74-75 (7 kg), 76-78 (2 kg)	
85	94	Kimberlite	Dark green kimberlitic clays with occ. fresh kimberlite clasp. Xenoliths to 40% with varying proportions of shale/sst and mafic volcs. Occ. garnet + w/d olivine xenos.	Poor return in wet samples, 82-83 (2 kg), 84-85 (2 kg)	
94	102	Kimberlite	As for 85-94 with layers of more sst rich xenoliths and more shaley xenoliths to 40-50% of total. Some brown clayey clasts det. eclogite? Still very sticky clay matrix with rare identifiable kimberlitic clasp. Both in sticky kimberlitic clays.	Intense H <sub>2</sub> O flow + out interval	
				Poor Return 95-97m (4 kg), 97-100m (15 kg), 100-101m (7 kg), 101-102 (4 kg)	

Depth(m)		Oxidation	Description	Comments
from	to			
0	4	Pisolithic/Gravel + CLAY	Typical RdBr pisolithic gravel and RdBr-Pale Br clays. Weakly magnetic.	
4	9	SST	Fractile gte sst with some PB clays. No pisolites (becoming properly lithified and mbr with depth). Mar clayey material.	
9	10	CLAY	Pale Br clay with sst clasts. Clasts well rounded. Possibly basal conglomerate. Mbr calcite.	
10	14	CLAY/KIMBERLITE	Similar to 9-10 but very dark Br clays with rounded sst xenos and shales to 4cm. Still base of cret.	
14	18	KIMBERLITE	Fine gr Br clays with 40% xenos (50% sst). Still dominant sst xenos throughout. Still transitional with volcs?	H <sub>2</sub> O from 15-18 (P) Poor Recovery < 40%
18	29	KIMBERLITE	As for 14-18 but with 40-60% kim clay matrix. Some very poor sample return + lost in sticky clay.	Very Wet 18-29 m. Poor return 20-22 (8 kg), 22-28 m (17 kg), H <sub>2</sub> O inject 20-29.
29	35	KIMBERLITE BRECCIA	As for 18-29, but with 70% xenoliths. Still very wet with depleted kim clay matrix.	Very Wet 29-35 m. Poor Return 29-31 - (5 kg) 32-34 (14 kg)
35	41	KIMBERLITE BRECCIA?	Possible breccia but sig green clays significantly washed out. Mostly sst xenoliths < 50% but maybe < 30%.	35-38 (30 kg), 38-39 (4 kg), 40-41 (6 kg)
41	42	SST	Almost entirely sst - xenolith < 10% kimberlite clay.	
42	47	KIMBERLITE / SST XENOS	Very poor return in wet clays, only minor sst xenoliths. Mar shales and other volc xenos. No sample return 46-47 EOH in high water flows.	42-46 km (6 kg)

595414 : RC Drilling		Hole No: ARC 014		Page 1 of 1	
Easting: [REDACTED]	Northing: 8145556	Datum: WGS 84	Zone: S3	Geologist: IWM	
Start date: 15/06	Finish date: 15/06	Total depth: 90 m	Inclination: VERT	Azimuth: - VERT	
Driller: WDD	WDR 650	Drilling type: 5 1/2" RC (900/350 Compressor)			
Depth(m)		Oxidation	Description	Comments	
from	to				
0	2	Asm'tic	Sticky Clays and Fe pisolithes		
2	4	SST	YbBr coarse grain friable sst's and rare qtz pebbles Grain 3-4 mm. Quite rounded		
4	6	SST	As 2-4 mm but with rare fine clays 4-6 mm and Dark brown sands - still oolitic?		
6	12	CLAY	Dark brown stiff clays with rare s.g sst and qtz fragments. Possible xenoliths (or conglomerate clasts) 8-10 mm. Possible kimberlite or basal cover. DrBr clays 11-12.	Very Puggy 7-10m	
12	15	SST/KIMB BRECCIA	Grn/grn sst with limited kimberlite matrix 10-30% some mm orbr sst chips		
15	19	KIMBERLITE CLAY	Br-grn clays with occ. rounded xenolith to 3 cm. Matrix clays > 90% throughout	H <sub>2</sub> O @ 18m. Poor return 17-18m (8kg) No return. 18-19 m. H <sub>2</sub> O inject 18-32 m.	
19	36	KIMBERLITE /CLAY	Grn-yellow clays and disaggregated sandy matrix. Intermittent mar sst with pale H <sub>2</sub> O water flows. Some suspension of clay matrix in drilling foam. Xenoliths 15-30% of total volume throughout, dominantly SST (70%).	Poor return 19-20 (2kg), 22-23 (3kg) 25-30 (20kg), 30-35 (1.5kg), 35-36 (1kg)	
36	43	KIMBERLITE /CLAY	Sst BrGr clays occ. quite coarse grained clays. Mar xenoliths < 30%, mostly sst 36-40 and shale 40-43	Very Wet 41-43 m. Poor return 41-43 = 10 kg.	
43	50	KIMBERLITE	Fine grained YbGr clays in wet samples. Xenoliths 20-30% mostly shales but with mar sst.	Poor return 48-50 m = 15 kg.	
50	59	KIMBERLITE	As 43-50 with 20-30% xenoliths of which shales make up to 30%. Mar qtz vesicular 51-54. Mar both shaped fine grain chips 53-59 - possibly volcanic derived		
59	60	SST	Sandy interval - possibly disaggregated sst		
60	65	KIMBERLITE/ SST	As 50-59 but with 20% large coarse grained sst xenoliths to 6 mm. Very wet throughout		
65	71	CLAY	Fine grained clays with rare large xenoliths and occ. pale white clays, sst and pale br clay 68-71 m.		
71	72	CLAY	Sst RbBr Fe rich clays. < 20% Xenoliths of sst and shale		
72	78	CLAY	Sst green clays after shale? Possibly not kimberlite. Very rare chips in bags. Some f.g. mafic? laths (< 1mm). Mar qtz sst xenoliths to 25% 76-78	76-78 m = 2 kg. Strong H <sub>2</sub> O = 76-78 m	
78	89	CLAY/SST/ SHALE	RbBr clay matrix with qtz grains from disaggregated sst. Mar sst + f.g. shale chips. Occ 0.8-1.2 mm purple garnets? Matrix sandy + out. Very f.g. YbBr clay 87-88 with rare large sst xeno's	No return 85-86, Very wet +/out interval.	
89	90	CLAY	As 78-89. Sticky sst and wet clays. No penetration FOH		

Eastling: 595 373

Northing: 8145595

Datum: 16.6.84

Zone: 53

Geologist: ILM

Start date: 15/06

Finish date: 15/06

Total depth	25 m
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Inclination: VERT

Azimuth: 262.5

Driller: 400

UDR 650

Drilling type: 5 1/2" RC - 900/350 COMPRESSOR)

Depth(m)		Oxidation	Description	Comments
from	to			
0	3	Asaetic Gravel	Typical RdBr pisolitic gravel and sandy soil. Some mar clays 2-3. Weakly magnetic 1-3 m.	
3	4	SST	Order friable sst.	
4	7	SST	WhBr friable sst with occ. silica rich sst clwp. Mar mudstone chips 6-7m.	
7	10	TRANSITIONAL CLAY / KIMB.	Transitional zone from 6.3 m to silty + sst clasts with a clay matrix. Still occ friable sst clast. Becoming quite DKB Brown with laths and clasts in matrix 8-10	Kran from 6.3m.
10	12	KIMBERLITE (LA)	RdBr kimberlite clays. Very f.g. with predominantly sst clasts 30-40% of total volume.	Sticky + damp.
12	16	KIMBERLITE	As 10-12 but becoming Pale Grn + Grn Br with 40-50% broken + rounded xenoliths. Xenolith content 70% Qtz sst (1% Fe), 10% shale, 5% f.g. sst, 5% Qtz	
16	25		As 12-16 but to 30% xenolith content and becoming f.g. br very muddy matrix. Xenos to 3cm and strong increase in proportion of shale clasts 22-25	Poor s/c 18-20 = (4kg) (20-22) = (3kg) 22-23 = (6 kg), 24-25 = (2kg)
			Hole Blocked + ABANDONED @ 25m DUE TO SWELLING NAG-7. CLAY FORMED BY STRONG H <sub>2</sub> O FLOW.	



Geologist: IWM

Azimuth:  $\rightarrow$  Ver 1-

Drilling type: RC - 512 / 900 / 350

Depth(m)		Oxidation	Description	Comments
from	to			
0	1	SOIL	Redd soil with rare pisoliths	
1	10	SST	White/br sst (very friable) + clays after sst. Some more medium grain br-pale pink br sst clays with depth.	Weak H <sub>2</sub> O @ 6m
10	14	SST	Pale br sst, up to 30% Or-br sst and with mnr <10% wh clay	
14	22	<del>Br</del> SST	White med. sst some pale green sst. Quite gtz rich + only weakly friable	
22	25	SST	Pale br sst + mnr 10% clay	
25	36	SST	White sst, m.g + gtz rich	H <sub>2</sub> O Table @ 36m
36	37	<del>Br</del> SST	Dr-br sst and Pale gy-wh sst.	Very sticky
37	54	WHITE SST	Very wet disintegrate white sands 38-40m in massive white sst.	
			EOH	

RC Drilling		Hole No: ARC 017		Page 1 of 1	
Easting: 590140		Northing: 845209		Datum: WGS 84	
Start date: 16/6		Finish date: 17/6		Zone: 53	
Driller: WDO		UDR 650		Inclination: Vert.	
		Drilling type: 5 1/2" RC		900/350 core	
Geologist: IWM		Azimuth: - Vert.			
Depth(m)		Oxidation	Description	Comments	
from	to				
0	2	SAND/CLAY	Pale br ssst sands and clays. Minor qtz chips.	<del>Continuous</del> Weakly magnetic.	
2	3	CLAY	RdBr clay matrix with rounded Fe rich sst and ssst chips to 2.5 cm.	Weakly magnetic.	
3	4	SST	As 2-3 but very fine grained. Mostly qtz grains but with ool rounded sst "clast" as well.		
4	24	SST	Typical med to c.g pale br-wh ssst. Minor oolbr sst 7-10, and weakly limonitic clays in fractures 10-12m.		
24	28	PALE BR SST	As 4-24 but with slightly more Fe filled fractures and clays.		
28	47	PALE BR SST	As for 4-24 m. Very fine chips.	H <sub>2</sub> O G 42m	
47	56	Pink BR SST	As for 24-28 but with distinct pink and red tinge to ssts and minor clays. Very Fe rich 49-50		
56	58		EOH		

RC Drilling				Hole No: ARC 018		Page of	
Easting:		Northing:		Datum: WGS 84		Zone: 53	
Start date: 17/6		Finish date: 17/6		Total depth 68		Inclination: VERT	
Driller: WDD		WDR 650		Drilling type: 5 1/2 inch RC			
Depth(m)		Oxidation	Description			Comments	
from	to						
0	1	SAND/CLAY	Pale br soft sand and clay. Rare sst chip.				
1	2	ROBR CLAY	Robr clay with abundant rounded, weakly magnetite Fe-sst. Not really pisolite.				
2	3	ORBR <del>SST</del>	OrBr gritty sand. From friable Cretaceous sst?				
3	13	GY SST	Typical pale gy-grn m.g sst. Very rare patch of Fe staining. Seemingly quite massive.				
13	16	OR SST	OrBr gr. sands above sst. Very few chips mostly of the grains and clay.				
16	36	GY SST	As for 3-13, slight Fe rich 24-25 + 29-30 with generally few chips throughout.			Limited H <sub>2</sub> O (g 24 m)	
36	39	Br MOST	Br clayey s.g sst / mudstone interlayer				
39	42	GY SST	As for 3-13				
42	54	Pink-OR SST/CLAY	Mg-cg orbr-pink sst with rare gy silty chip becoming softer and more clayey with depth.				
54	59	ROBR-PK CLAY	Robr - Pink soft clay / mudstone interlayer. Ox sst chip similar to 42-54.				
59	68	ROBR-PK. CLAY/SST	As 42-59 m. Pk-Br s.g clays with rare chips of orbr mg sst. An interbed of white sst? silica rich sst? (g 59-60 m).				
			60H.				

RC Drilling			Hole No: ARC 019		Page of	
Easting: 594005		Northing: 8145317		Datum: WGS 84	Zone: 53	Geologist: J.M.
Start date: 17/06		Finish date:		Total depth: 60m	Inclination: vert.	Azimuth: - Vert
Driller: WDP		WDR 650		Drilling type: 5 1/2" RC 900/350		
Depth(m)		Oxidation	Description	Comments		
from	to					
0	1	RD SOIL	RdBr pisolitic soil			
1	2	RDBR SOIL	Pisolites and minor pale br clays	Weakly magnetic		
2	3	SOIL	As 1-2 but with Qtz pebble layer. Pebbles to 3 cm.	Weakly magnetic!		
3	4	ROBR SST	Typical Fe sst interbedded with white gyps sst. Quite a depleted "mottled" look.			
4	14	WH SST	Hard white mag. sst. Very Qtz rich + w			
14	16	OR SST	As above 4-14 - More Fe ortho sst layer.			
16	21	WH SST	As 4-14.			
21	38	PK-RD BR CLAY + SST	Similar to ARC 018 54-68m. Pink-RdBr fine sst and clays with minor ortho-br sst.	= > Guss Dipping Lithology?		
38	50	PALE BR SST	Pale Br sst sst. Rare ortho Fe clup but no rdbr sst or clays. Rare sulphide pits? 45-50m.			
50	54	PK-RD BR SST	As 21-38m. Quite fine sst + clays with stronger Fe. Very Fe rich almost gossanous 53.8-54m.	H <sub>2</sub> O @ 53.5m Intense H <sub>2</sub> O flow 54-60m.		
54	60	BR SST	Pale Br sst. H <sub>2</sub> O flow caving hole.			
			End			

RC Drilling		Hole No: ARC 020		Page of	
Easting: 594046		Northing: 8145452		Datum: WGS 84	
Start date: 18/6/1		Finish date:		Zone: 53	
Driller: WDD		WDR 650		Inclination: VERT	
		Drilling type: '5/8" RC		900/350	
Geologist: JMJ		Azimuth: -		VERT	
Depth(m)		Oxidation	Description	Comments	
from	to				
0	1	SAND	Rd Br sand with few Fe pisolites. Virtually non-magnetic.		
1	3.5	ORBR SAND	Rd-Or Br sand with many pisolites + magnetite. Qtz pebbles. Layer G 3.5 m - is this a Coet surface.		
3.5	16	Br LWA SST	Typical gy-silt mag sst. Rare Fe clwp		
16	18	P.Br SST	Fresh hard P.Br sst.		
			End. Bit badly damaged.		

RC Drilling			Hole No: ARC 021		Page of
Easting: 595410		Northing: 8145652	Datum: WGS 84	Zone: 55	Geologist: IM
Start date: 18/6		Finish date:	Total depth 42 m.	Inclination: vert	Azimuth: - vert
Driller: UDD		Drilling type:			
Depth(m)		Oxidation	Description	Comments	
from	to				
0	2	P150/SAND	Typical RdBr fine sand and pisolites. Rare sst clmp.		
2	4	PBR CLAY	Pale Br clay soil with minor Prot? sst clmps and shale clmps. Rare qtz pebbles.		
4	7	BR CLAY / KIMB?	Br clays with abundant prot sst clmps. Matrix tends to green Br with "depth - into kimberlite?"		
7	9	BR GRN CLAY.	Totally - fine gr-grn clay. Rare fragments / xenols of rounded sst - very definitely kimberlite		
9	11	ROBR CLAY	As 7-9 but matrix soft clays altered to RdBr 30-40% xenoliths, mostly sst		
11	14	BR-GRN CLAY	Mostly as 9-11, but matrix quite gritty with qtz and calcite grains. 30-40% xenoliths.		
14	17	BR GRN CLAY	Very wet Br gritty/sandy clays with abundant sst frags and xenoliths 70%. More very large sst frags to 6 cm	H <sub>2</sub> O @ 14 m Poor sample return 14-17 m = 13 kg	
17	18	ROBR CLAY	Interbed of RdBr clay with occ pale green clay. Virtually no xenoliths in RdBr clay band.		
18	28	BR-ORBR CLAY/SST	OrBr puggy clays with occ strong xenolith clasts to 40% of total volume - mostly sst. Strong zones of almost entirely 100% sst b/w 22-28 m. Probably very large xenoliths - Matrix still pale Br clay.	Poor return 24-25 = 1 kg, 26-27 = 6 kg	
28	31	BR CLAY/SST	As 18-28, but very wet slurry of unit. 76% xenoliths. Very sandy matrix. Out of kimberlite?	28-31 = 3 kg.	
31	37	BR CLAY/SST	As 28-31 but with increase in clast size to 5 cm and to 70% of total.	Poor sample rate 37-42 m = 20 kg?	
37	42	BR CLAY/SST	As 31-37 with proportion of sandy matrix increase. All clays washed out in intense H <sub>2</sub> O flow.		
			EOH in very broken sst with huge H <sub>2</sub> O flow flowing for 7-6 hrs after hole completion.		

RC Drilling		Hole No: ARC 022		Page of	
Easting: 14/6		Northing:		Datum: WGS 84	
Start date: 14/6		Finish date:		Zone: 53	
Driller: UOP		UOP 680		Inclination: VERT	
		Drilling type: 5 1/2" RC		900/356 COMPAC	
Depth(m)		Oxidation	Description	Comments	
from	to				
0	5	ROBR SOIL	Typical Reddish pisolite soil with underlying clays. Abundant Fe sst chips 4-5m		
5	8	BR CLAY	Pale Br + Or br clays with or-br + gy-wh mg qtz sst.		
		/SST	not rounded, only weakly friable		
8	16	BR-ORBR	As 5-8, with 20% clay often silty + white, red to 40%.		
		CLAY/SST	(e.g. 14-16m). Mod quantity of or-br sst xenoliths		
16	19	ORBR	Or br sst within disaggregated sandy matrix. Rare clays		
		SST.			
19	40	OR BR-GRN	Or Br clays with no sst from 19-20, Pink Br from 20-23.		
		CLAY	Yell Br 23-26 and Grn 26-40m. All sst + s.g. clays often		
			shales. No sst whatsoever. Becoming greener from 32m		
40	64	GREEN	Fresh green s.g. shale / s.g. sst. Less of s.g. sst 44-48		
		SHALE	strong foliation 56-64m		
64	76	GREEN	Slightly more sand 68-76m and with 5% siliceous		
		SHALE	veining 75-76m		
76	80	SST/KIMB	More s.g. sst 76-78 with occ. large sil chunks of kimberlite	Kimberlite Stringer -	
		CLAYS	soft + br-grn clays after kimberlite? 78-80m		
80	85	GREEN	As 64-76m s.g. sst/shale siliceous in patches and		
		SHALE	foliated. Still with distinctive 10% s.g. green clay after kim	- Thin kim str	
85	87	GRN-BR	Very sticky featureless clay no sst xenoliths	KIMBERLITE?	
		CLAY			
87	88	DARK GRN	Very Dark Green sticky greasy clay. Occ very s.g.	Kimberlite	
		CLAY	gemmets + large spinels?		
88	90	GREEN	As 80-85 green shales with occ green clays after kim	- Thin kimberlite stringer	
		SHALE/CLAY	Quite siliceous patches decreasing with depth		
90	105	GREEN	Interbedded green sst/shale sst, becoming more	Minor H <sub>2</sub> O 90-91	
		SHALE/SST	dominantly clayey 102-105	V. Soft clays 102-105	
<del>105</del>	<del>105</del>	<del>GREEN</del>			
105	110	BR SST	Interbedded weakly Fe mg qtz sst and soft br-grn		
			clays after sst, 5-10% or-br sst (limonite 107-116)		
110	113	DARK GREEN	Dark Green soft clays after? kimberlite minor rounded	Kimberlite	
		CLAY	shale clasts to <20%.		
113	117	GREEN SST	Interbedded clays sst/s.g. sst and rare c.g. kimberlite chip	Thin kimberlite str.	
		/SHALE/CLAY	Minor c.g. sst also. Minor dk grn clays with pyrite 115-117		
117	120	SST/SLT	Green 1/6 s.g. sst/clay/sst. Very few obvious xenoliths/		
		CLAY	remnants of kimberlite patches		
			SOIL at end of Rods 120m.		

RC Drilling			Hole No: ARC 023		Page of
Easting: 595345		Northing: 8145649	Datum: WGS 84	Zone: 53	Geologist: JLM
Start date: 19/6		Finish date:	Total depth: 52	Inclination: VERT.	Azimuth: -
Driller: WDD		UDR 650	Drilling type: 5 1/2" RC Drilling		
Depth(m)		Oxidation	Description	Comments	
from	to				
0	3	ASOLITE GRAVEL	Typical. Reddish pisolitic gravel becoming slightly clayey with depth. Moderately magnetic pisolites.		
3	6	SAND	Pale br-w/wh friable ug-eg sand. Very gtz rich. At 5.5m occ rounded gtz sst clasts and gummy gtz grains to 6mm.		Basal Concretionary
6	9	CLAY KIMB.	Dr Grn-br clay with weathered + rounded chips of sst. Matrix clay 50-60% <del>clasts</del> clasts mostly small + shaley.		
9	22	KIMBERLITE / CLAY	Br-Yell clay matrix 60-70% xenoliths 60% ug gtz sst, 30% sil sst, 10% Fe sst. Strongly rounded clast in general but some more lab-like clasts as well.		Very sticky drilling...
22	29	KIMBERLITE / SST	Wet slurry of kim clay and sst xenoliths. Most xenos small and w/d. Some Dr br w/d grains after? or??		H <sub>2</sub> O very strong 22-25 - Poor chip recovery
29	32	KIMBERLITE / SST	As 22-29 but with good chip recovery ± 50% xenoliths. Mn calcite. Some semi-brec. kimberlite chips to 5cm +/out and may require crushing.		
32	34	KIMBERLITE CLAY	Yell clays with minor xenoliths (<20%)		
34	42	KIMBERLITE CLAY/SST	As 32-34 but with 30-40% xenoliths of sst/shale. Still minor lab-like clasts.		
42	49	KIMBERLITE	As 32-42 but with variable xenolith content b/w 30-60%. Could be because of washed out clays.		Hard and wet from 40-43m. Poor return 42-44 = 8kg, 45-48 = 14kg
49	52	<del>KIMBERLITE</del> SST	Very sandy matrix in bag ± 30% total vol and 90% sst xenoliths. Possibly coming from kimberlite? Still minor ye-grn clays.		49-52 = 26kg
			FOH with hammer bogging in H <sub>2</sub> O + sst xenos behind H <sub>2</sub> O.		





RC Drilling			Hole No: ARC 028		Page    of		
Easting: 595393		Northing: 8145618		Datum: WGS 84		Zone: 53	
Start date: 22/06/1		Finish date:		Total depth: 19m		Inclination: VERT.	
Driller: UDD		UDR 050		Drilling type: 5 1/2" RC		900/350.	
Depth(m)		Oxidation	Description			Comments	
from	to						
0	3	PISOLITE	Typical Rdb pisolitic clays, soil, laterite and clay				
		CLAY/GRAN	Mar mgt pisolites 0-2m. Mar grt sst Ssage.				
3	7	SST	White-br clays and grt grains above Coet sst.				
			Ore shaley/mud clst 6-7.				
7	9	TRANSITIONAL	Transitional clay zone. Potentially lim clays with ore				
		lim.	large sst xenoliths. Some cusped embayed cherts.				
			silt < 40% xeno's				
9	12	DKBR	Typical Dkb clays 50-60 km. Very wet Svan 11 m			H <sub>2</sub> O 11 m.	
		CLAYS	with quite poor return.				
12	15	PKBR-RDBR	Wet pinkbr-rdb clays with 50% xenoliths (mostly				
		CLAYS	mg sst.				
15	17	RKBR-RDBR	As 12-15 with < 30% laterite and large sst				
		CLAY	xenoliths.				
17	19	BR CLAYS	Br dryer clays & 50%-60% matrix, with sst xeno's				
		SST	Very wet w/ Svan 18m.				
			CON - RODS STICK AS HAMMER CLOGGING IN				
			SOFT CLAYS AND H <sub>2</sub> O INFECT CANNOT CLEAR				

RC Drilling			Hole No: ARC 029		Page of	
Easting: 593513		Northing: 8147633		Datum: WGS 84		Geologist: J.M.
Start date: 22/06		Finish date:		Total depth: 60m		Azimuth: -
Driller: WDR		WDD 650		Drilling type: 5 1/2" SARK 900/250		
Depth(m)		Oxidation	Description	Comments		
from	to					
0	3	SAND	Yelr sand cover with minor Fe staining and pale br clays 2-3m			
3	11	SST/SCT	Interbedded Br Fe qtz sst (fg-mg), plr clays, and w/d Grn silts. Dominant shale 8-9m			
11	26	SCT/SHALE	Br-PGr shales with rare Sg sst. Occ yellow qtz velv and minor secondary silica.			
26	34	SCT/SHALE	As 11-26m, with occ cg qtz sst 26-29m, and 20% yelr shales 29-34m.			
34	44	SHALE	Fraser Dk Green shales + rare Sg sst.			
44	47	SHALE	As 34-44; but quite strongly weathered to pale green - white shales.			
47	50	SST	Br Sg-mg sst. No shale. Becoming fresher with depth.			
50	58	SST	Pale br + Fe str ssts. Minor foliation? and qtz velv.			
58	60	SST	Interbedded green fresh mg qtz sst and pale green Sg sst/shale			
			EOH			

RC Drilling		Hole No: ARC 030.		Page of	
Easting:	Northing:	Datum: WGS 84	Zone: 53	Geologist: MM	
Start date: 23/06	Finish date:	Total depth 60 m	Inclination: VERT	Azimuth: -	
Driller:		Drilling type:			
Depth(m)		Oxidation	Description	Comments	
from	to				
0	1	SAND	Orbr sand/soil with rare sst frag.		
1	4	SST/CLAY	Friable with sst trending to soft white clays and br clays.		
4	14	CLAY	Pale br soft clays - rare chips of sst shale.		
14	32	CLAY/SHALE	Soft clays - variety of colours with increasing br shales, sg sst and othr shales with depth.		
32	47	SHALE	Fine grained green shales with rare pale green clays. Some foliation 35-39m		
47	50	SST	Br sg-mg Qtz sst interbedded with green shales.		
50	58	SST	As 47-50 but RdBr i colour, minor sg green sst		
58	60	SHALE	Fine grained DKgn fresh cherty shales with rare interbedded sg sst.		

Sandstone & shales.

ARC 34		Sheet 1 of 2		Phillips Range RC Drilling				Sheet 1 of 2		
Date Start: 25/6/05		Date Finish: 25/6/05		Easting: 597293		Northing: 840393		Datum:		
				Zone:		Altitude:		Error:		
Total Depth: 62		Inclination: 90		Azimuth:		Driller: United		Drilling Type: RC		
						Geologist: Jim Finlay, Geoff Garten.				
Depth (m)		Oxidation		Description				Comments		
From 0	To 1					ang. fg. yllw ss., rounded dk brn shl w/ fgs, mnr pisolites				
1	2					yl. wht, pk shl & cly, mnr ang. yllw ss.				no pisolite
2	3					yl. wht, pk cly & shl.				
3	4					pk, yllw, wht cly & shl., occ. dk brn shl/ss.				
4	5					yllw-br fg sandst + minor grey fg sst + minor red siltst				sandst friable
5	6					AA but with abund. qtz grains - shale? (minor), siltst absent				some rounded grains noted (pebbles) chert?
6	8					red yllw, gry sandst, friable + minor clay + subrounded chert				sst f.g.
8	10					AA, red sst dominant (Fe?), rounded qtz + chert grains 8-9m.				rounded chips (drill?)
10	12					creamy wh med-gr. sandstone, reg. competent, minor red, yl				w brn friable sst 11-12m
12	14					12-13m white sandst min. chips / 13-14 yellow sand no chips.				some minor Fe-stain sandst.
14	15					Yllw sand, mnr chips wht crumbly fg. ss., mnr dk brn fg. ss.				
15	16					" " " " " "				
16	17					dk yllw sand, mnr yllw ss., v. mnr pale yllw shale				- shale someays to clay
17	18					pale yllw sand, clay & shale.				
18	20					pale yllw sand, mnr wht clay, mnr wht shl, mnr dk brn Fe shale, mnr med. gr. ss. (v. friable)				
20	21					Yllw sand, yellow-brn sand, yllw-brn ss.				
21	22					Yllw-brn sand, Yllw-brn s.s., mnr wht cly.				
22	23					cg. dk yllw ss., pk shl, pk cly, dk brn ss.				
23	24					" " " " " "				
24	25					fine grained orange-yellow sand, mnr clay, mnr dk grey grains				Those sands are extremely well sorted!
25	26					" " " " " " No dark grains				
26	28					" " " " " "				N.B. 2 metre logging comment, entry
28	29					Yllw ss., yllw shl, yllw cly, dk brn ss.				excellent brickys sand - barely consolidated
29	30					Yllw ss., yllw cly				
30	31					Yllw sand, yllw cly (paler than above).				sand is rounded, sub ang. sst grns
31	32					Yllw sand, " " " " " "				" " "
32	33					pale yllw sand, small amount of pale yllw clay				" " "
33	34					" " " " " "				" " "
34	35					pale pink sand, some pale yellow sand, mnr clay				sand grains are? more angular
35	36					" " " " " "				
36	37					H brn fg. sand, pale pk sand fine grained				
37	38					pale pk fg. sand, v. minor clay.				
38	39					fg. pk sand, mnr clay				Maybe clay or extremely fine sand
39	40					" " " " " "				
40	41					fg. pk sand, fg. wht sand, minor clays				
41	42					" " " " " "				
42	43					fg. pk sand, 1 chip of ang white? shl (no acid rxn), occasional dk qtz grns (? Fe).				
43	44					fg. pk sand, occ. dk brn sub ang. clasts of ? shale.				

Sheet 2 of 2

## Phillips Range RC Drilling

Target ABN ~~2314~~ 314

**Easting:**

**Easting:**

**Nothing:**

**Datum:**

**Zone:**

**Altitude:**

**Error:**

Total Depth:

**Inclination:**

**Azimuth:**

**Driller:**

**Drilling Type:**

**Geologist:**

Depth (m)		Oxidation	Description	Comments
From	To			
44	45		pale pink sand (fine grained) v. mnv clay	sand grains v. fine, u. well sorted, almost no clay
45	46		" " " " " "	" " " " " "
46	47		" " " " " "	" " " " " "
47	48		pale pink sand, v. mnv clays.	clay only in some hand fulls.
48	49		v. pale pink & white sand.	
49	50		white sand, very fine.	
50	51		white sand, finer than above, mnv clay	sand grains very fine
51	52		" " " "	Some rxn to HCl !!! ←
52	53		brn qtz s.s., dk brn qtz ss,	
53	54		brn, whit, pk qtz ss, grn sh.	} wide variety of brn, pale brn, grn chips (f.g. qtz & sh.) - 98% angular chips
54	55		brn, rd, grn qtz ss, rd sh, dk grn sh	
55	56		" " " "	
56	57		" " " "	
57	58		dk grn-gy s.s., pale gy grn chip <sup>some</sup> rxn w/ acid (? sh).	
58	59		gy-grn qtz s.s.	
59	60		pk grn sh, brn-red qtz ss, whitish ang. chips react w/ acid	crystalline qtz grain w/ purple tinge.
60	61		pk qtz ss, orange sh, pk, grn sh,	
61	62		pk, grn s.s., grn sh,	No acid rxn
62	63			
63	64			
64	65			
65	66			
66	67			
67	68			
68	69			
69	70			
70	71			
71	72			
72	73			
73	74			
74	75			
75	76			
76	77			
77	78			
78	79			
79	80			
80	81			
81	82			
82	83			
83	84			
84	85			
85	86			
86	87			
87	88			
88	89			
89	90			
90	91			
91	92			
92	93			
93	94			
94	95			
95	96			
96	97			
97	98			
98	99			
99	100			

S2 - ~~62~~ ~~mixed~~ mixed sandstone + dark green shale.  
S2 ~~62~~

Sandstone & shale + occasional chert.

Sheet 1 of 2

Target ~~ABN~~ ABN 31A

ARC 35		Phillips Range RC Drilling				Target ABN 31A					
Date Start: 25/6/05		Date Finish: 26/6/05		Easting: 597203	Northing: 8140467	Datum:	Zone:	Altitude:	Error:		
Total Depth: 54		Inclination: 90		Azimuth:		Driller: UN-TEL		Drilling Type: RC		Geologist: Geoff Garton / Jim Finlay	
Depth (m)		Oxidation	Description					Comments			
From	To										
0	1		Yllw-brn clay, yllw brn sh, dk brn sh (mnv), v mnv					isolite			
1	2		Yllw clay, yllw sh								
2	3		Yllw clay, pk-rd clay, yllw, pk sh.					Shale is soft.			
3	4		" " " "					" " "			
4	5		Pk sh, yl. sh, pk & yl clay, mnv dk brn Fe sh								
5	6		Yl sh, dk sh, ang. gtz ss. " " "								
6	7		" " ang. white gtz ss, " " "								
7	8		Mottled white, pk, yl, gy soft ss, mnv gtz, mnv Fe sh								
8	9		As above with rounded gtz grains on ss. chips -					rounded grit within S.S.			
9	10		mottled med grained ss, dk brn Fe sh								
10	11		lt brn med grained ss (softish) with mnv red & yllw					Fe <del>ss</del> S.S. chips			
11	12		As above with dk brn chert (minor) and sh								
12	13		lt brn med grained gtz ss, with minor dk brn					Fe ss.			
13	14		wht, yllw clay & sh, & mnv dk brn Fe ss, mnv lt brn ss.								
14	15		" " mnv lt brn ss.								
15	16		wht-ylw sandstone & sh, mnv yl-brn ss.								
16	17		wht yllw sh & ss. (sand & clay) no chips just sand					- Water table			
17	18		yllw fg. sand, mnv <del>sh</del> yl & wht clay + sh, occ. dk brn Fe sh								
18	19		" " " "					" " "			
19	20		" " " "					" " "			
20	21		yllw fg. sand & clay, mnv wht sh, mnv					dk brn Fe ss.			
21	22		" " " "					" "			
22	23		" " " "					" "			
23	24		" " " "					" "			
24	25		yllw fg. sand & clay, mnv yl. ss, mnv wht sh, mnv dk brn Fe ss.								
25	26		" " " "					" "			
26	27		yllw fg. ss + clay, mnv dk brn ss, mnv wht					sh.			
27	28		" " " "					" "			
28	29		Yllw fg. ss + sh, dk grn ss, wht sh, mnv					sg. red ss.			
29	30		" " " "					" "			
30	31		Grn sh, brn-rd fg ss, yl-brn ss, mnv wht sh.								
31	32		" " " "					" "			
32	33		Yl-brn clay, sh & ss, dk grn sh, brn-rd ss.								
33	34		" " " "					" "			
34	35		Yl-brn clay & sh, dk grn sh, lt brn gtz ss, yl-brn ss.					Similar to ARC 34.			
35	36		" " " "					" "			
36	37		dk grn sh, lt brn gtz ss, wht sh, yl-brn ss.								

ARC 835		Phillips Range RC Drilling							
Date Start: 25/6/05 Date Finish: 26/6/06 Easting:		Northing:		Datum:		Altitude:		Error:	
Total Depth:		Inclination: 90		Azimuth:		Driller:		Drilling Type:	
								Geologist: Geoff Garten / Jim Finlay.	
Depth (m)		Oxidation	Description				Comments		
From	To								
37	38		lt brn qtz ss., dk grn shl, grn qtz ss., wht rd <del>qtz</del> grains				No acid rxn.		
38	39		lt brn qtz ss., dk grn shl, grn qtz ss., wht shl,						
39	40		grn ss. & shl, lt brn qtz ss., yl s.s.						
40	41		lt brn ss., grn shl & s.s., wht shl				V. few chips, mostly pink - lt brn sand (chips are lt brn s.s. & grn shl)		
41	42		" " " "				" "		
42	43		lt brn ss., grn brn clay, dk grn shl, dk grn ss.				" "		
43	44		" " " "				" "		
44	45		" " " "				" "		
45	46		" " " "				" "		
46	47		grn shl & ss., lt brn ss., dk brn ss.						
47	48		lt brn & grn clay, dk grn shl, grn ss., rd-brn c.g. qtz ss.				S.S.		
48	49		dk grn shl, lt brn-pk ss., grn ss., brn & grn clay.						
49	50		" " " "				" "		
50	51		rd-brn qtz ss., dk grn shl, brn clay.						
51	52		" " " "						
52	53		lt brn qtz ss., dk grn shl, yl ss. shl.						
53	54		dk grn fg. ss. & shl, lt brn qtz ss., pk-brn qtz ss.,				(1 chip of crystalline qtz w/ red chert on 1 side)		
							lt brn ss. has minor rxn to HCl.		
							EoH due to consistent sedimentary samples		
							in basement is E or R sed.s.		
							<u>Hole Summary</u>		
			0-4 → 162915				0-4 yellow clay (weathered shales)		
			4-8 → 162916						
			8-12 → 162917						
			12-16 → 162918				4-9 shale (pink, yellow, mottled)		
			16-20 → 162919						
			20-24 → 162920				9-13 sandstone with minor chert.		
			24-28 → 162921						
			28-32 → 162922				13-17 shale + sandstone.		
			32-36 → 162923						
			36-40 → 162924				17-30 yellow fine grained sandstone		
			40-44 → 162925						
			44-48 → 162926				30-37 green shale & yellow brown clay <del>took</del>		
			48-52 → 162927						
			52-54 → 162928				37-54 light brown sandstone + dark green shale.		



U-2 shale  
 .8-24 sandstone  
 24-60 Dark green shale

page lot 2

ARC # 36		Phillips Range RC Drilling				Target ABN # 34	
Date Start: 26/6/05		Date Finish: 26/6/05		Easting: 596702E Northing: 8142682N Datum:		Zone: Altitude: Error:	
Total Depth: 60m		Inclination: 90		Azimuth:		Driller: UNITED Drilling Type: RC	
						Geologist: Jim Finlay / Geoff Garton	
Depth (m)		Oxidation	Description	Comments			
From	To						
	1	High	Red-brn ferruginous shale, minor pisolites				
1	2	med.	Mottled white & red shale, rd-brn sh, rd brn sandstone, mnv qtz.				
2	3	lwr	Red sh, yellow-brown sh, white shale & clay.				
3	4	med	Yl sh, wht sh, red sh.				
4	5	med	Yl sh, lt brn sh, wht sh				
5	6	"	" " " "				
6	7	high	Red-brn Fe shale, minor pisolite (? surface contamination).				
7	8	"	Yl shale, grey shale, rd-brn sh, mnv qtz S.S. (pale brown)				
8	9	"	limonitic Yllw med-grained S.S., mnv grey shale, mnv qtz S.S.				
9	10		Red-brn med gr. S.S., Yl S.S., purple S.S.				
10	11		Red-brn med gr. S.S., 1 pisolite (contam).				
11	12	"	" " " mnv cherty qtz.				
12	13	"	" " " "				
13	14		Very lt brn qtz S.S., cherty lt brn f.g. S.S., mnv red clay.				
14	15	low	lt brn qtz sandstone med grained.				
15	16	"	lt brn & pink med. gr. qtz S.S.				
16	17	"	All fines no chips but fines as above.				
17	18	"	" " " "				
18	19		Nearly all fines (white, pink). A few chips of Yl-brn mgr S.S., white shale.				
19	20		As above but chips are wht & pk sh.				
20	21	high	Wht-pk sh & S.S., mnv dk brn Fe sh.				
21	22	"	Inter-layered wht & dk-rd brn med grained qtz S.S., wht sh				
22	23	"	dk red-brn Fe med grained S.S., wht & rd sh & clay, mnv qtz				
23	24	lwr	dk rd brn Fe med gr. S.S., dk grn sh				
24	25		dk grn sh, Yl-brn f.g. S.S., mnv qtz	(not many chips)			
25	26		" " " red brn S.S.				
26	27		dk grn sh, Yl limonitic sh, Yl-brn S.S., rd-brn S.S.				
27	28		dk grn sh " " "	Some Grease from rig in sample.			
28	29		" " " "				
29	30		dk grn sh, dk grn f.g. S.S., Yl. clay,				
30	31		dk grn sh, dk brn S.S., lt brn qtz S.S.	(few chips)			
31	32						
32	33		dk grn sh, dk grn S.S., brn f.g. S.S.				
33	34		" " " "				
34	35		" " " brn S.S.				
35	36		dk grn sh, lt brn med gr. qtz S.S., dk brn Fe S.S.	(few chips)			
36	37		dk grn sh, " " " wht sh (minor)				
37	38		" " " "				

AR1036

## Phillips Range RC Drilling

page 2 of 2

Date Start:		Date Finish:		Easting:		Northing:		Datum:		Zone:		Altitude:		Error:	
Total Depth:		Inclination:		Azimuth:		Driller:		Drilling Type:		Geologist:					
Depth (m)		Oxidation		Description								Comments			
From 38	To 39			Dk grn shl, dk grn <sup>fg</sup> s.s.											
39	40			" " " " dk brn fe s.s.											
40	41			Dk grn shl, dk brn s.s., rd s.s., yl-brn shl								(few chips).			
41	42			" " " "								"			
42	43			dk grn shl, yl-brn-rd s.s.								"			
43	44			Dk grn shl, lt brn s.s., brn s.s., pink s.s.								"			
44	45			Red-pink sand (no chips).											
45	46			dk grn shl, dk brn-rd s.s., mar wht qtz s.s.											
46	47			brn-rd med gr. qtz s.s., dk gr shl											
47	48			Dk rd-brn mgr qtz s.s., dk grn shl, lt grn shl								Drilling grease <del>is</del> floating			
48	49			" " " "											
49	50			Dk rd-brn mgr. qtz s.s., dk grn shl, yl shl.											
50	51			" " " " dk grn s.s., dk grn shl.											
51	52			dk grn shl, dk rd-brn qtz								F. all chips.			
52	53			dk grn shl, rd-brn qtz s.s., yl-brn s.s.,											
53	54			" " " "											
54	55			" " " "											
55	56			" " " "											
56	57			" " " "											
57	58			Dk grn shl, dk grn fg s.s., brn-rd s.s.								Not many chips			
58	59			Mottled grn-brn mn gr. s.s., dk grn shl.											
59	60			Dk brn & red med-gr. qtz s.s., grn qtz s.s., grn shl, wht chl								End of Hole			
60															
				0-4 m → 162929											
				4-8 m → " 30								Hole summary.			
				8-12 m → " 31											
				12-16 m → " 32											
				16-20 m → " 33								0-8 Shale.			
				20-24 m → " 34											
				24-28 m → " 35								8-26+ Sandstone.			
				28-32 m → " 36											
				32-36 m → " 37								<del>20-22</del>			
				36-40 m → " 38								24-60 Dark green shale			
				40-44 m → " 39											
				44-48 m → " 40											
				48-52 m → " 41											
				52-56 m → " 42											
				56-60 m → 162943											

Hole summary

0-8 Shale.

8-20+ Sandstone.

20-60 Dark green shale

Hole is 60 m S of (Cretaceous) mottled broken sandstone subcrop / float.

Both holes ARC 36-37 are in a gentle topographic depression

ABNER

Page 1 of 1

Summary

0-9 Shale

9-28 Sandstone

18-36

Dark green shale.

ARC 37

Phillips Range RC Drilling

Target ABN 34.

Date Start: 27/6/05		Date Finish:		Easting: 596763 E		Northing: 7142630 N		Datum:		Zone:		Altitude:		Error:	
Total Depth:		Inclination: 90		Azimuth:		Driller: UNITEC		Drilling Type: RC		Geologist: GARTON / FINLAY.					
Depth (m)		Oxidation		Description								Comments			
From 0	To 1	high		Rd-brn-purple Fe shl & sandstone, some w/ pisolitic surface, v. minor round pisolites.											
1	2	high		Yl-Yl brn shl & clay & sandstone, rd-brn Fe shl.											
2	3	low		wht-v.lt gry shl, mnr yl shl, wht clay, mnr rd shl, all soft but mostly shl (not clay)											
3	4	"		yl shl, wht-yl shl, mottled wht & rd shl											
4	5	"		yl, wht, pk shl, mnr yl fg. ss., v. mnr dk grn fine layered shl (? basement high?)											
5	6	"		pk, yl & wht shl											
6	7	"		Mauve shl with occ. qtz grains, lt yl shl											
7	8	"		"											
8	9	"		Gry shl lt yl shl, gry fg. ss. w/ clay matrix.								Gry shl had 1 red lath (Fe ox?)			
9	10	"		Yl med gr. qtz ss. (yl clay matrix), gry fg. ss., v. mnr dk grn shl											
10	11	"		Gry-mauve med grained qtz ss. w/ no vis matrix, acc. red ss. chips.											
11	12	"		Orange, gry & rd "											
12	13	"		"											
13	14	"		red-lt brn-pk med gr. qtz ss., v. mnr dk gry shl.											
14	15	"		red-lt brn ss. as above, mnr sub rounded milky chert, mnr rounded qtz (clear).											
15	16	"		Pk-lt brn interlayered med gr. qtz ss.											
16	17	"		"											
17	18	"		As above with v. mnr dk grn/gry fg. ss. & shl											
18	19	"		"											
19	20	"		"											
20	21	"		Pink-v.lt brn med grained qtz ss.											
21	22	"		"											
22	23	"		Pink-pale red fg. qtz ss.											
23	24	"		"											
24	25	"		Red-lt brn-pk-lt rd ss.								(no chips)			
25	26	"		"											
26	27	"		"											
27	28	"		"											
28	29	"		dk grn shl, lt-pk qtz m gr. ss. inter bedded								(Most of it is fines - i.e. ss.)			
29	30	"		"											
30	31	"		Pk ss., fg. ss., dk grn shl											
31	32	"		"											
32	33	"		dk grn shl, rd fg. cherty ss., yllw ss.								(Few chips)			
33	34	"		"											
34	35	"		wht-yl shl clay, dk grn shl, dk rd fg. ss.								(some grease floating in sample bag)			
35	36	"		dk grn shl, yl med gr. ss., wht shl.								EOH			

EOH at 36 m because there is the same sequence in ARC 36 (90 m WNW). EOH 60 m. As it is 12 noon Monday 27<sup>th</sup> June we have only 3 days of drilling left. => need to test other targets.

Shale  
Sandstone - 1 well layered chip in chip tray showing sandstone bedding  
Shale.

Page 1 of 2

ARC 38		Phillips Range RC Drilling				Target ABN 34 A.	
Date Start: 27/6/05 Date Finish:		Easting: 96746 Northing: 8192186 Datum:		Zone:		Altitude: Error:	
Total Depth:		Inclination: 90 Azimuth:		Driller: United Drilling Type: RC		Geologist: GARTON / FINLAY.	
Depth (m)		Oxidation	Description	Comments			
From 0	To 1						
		High	Brn-rd Fe sh, yl-brn sh, mnr porolite				
1	2	High	Yl-brn sh, brn-rd sh, v. mnr porolite				
2	3	High	Yl " " pk sh, mnr dk brn fg. s.s.				
3	4		As above but more s.s.				
4	5		Yl sh, chl clay/shl, dk brn fg. Fe s.s.				
5	6		As above.				
6	7		Pink + white sh, minor dk br Fe s.s.				
7	8		" "				
8	9		Yl sh, yl fg. s.s., lt brn med. gr. qtz s.s.				
9	10		" "				
10	11		lt brn & yl med. gr. qtz s.s.				
11	12		lt brn & gr " " (mottled with dk laths.) lt br fg. s.s.				
12	13		Gry mottled med gr qtz s.s.				
13	14		Gry-pk " " " " lt brn qtz s.s.				
14	15		" " " "				
15	16		" " " "				
16	17		Pk - v. lt brn med. gr. qtz s.s.				
17	18		" " " " + mnr yl-brn clay.				
18	19		" " " " no clay				
19	20		Pk-whit m. gr. qtz s.s., whit sh.				
20	21		" " " "				
21	22		" " " " (v. mnr dk grn sh)				
22	23		Pk-rd m. gr. qtz s.s. interbedded with brn-rd m. gr ss, mnr whit sh				
23	24		" " " "				
24	25		Yl m. gr qtz s.s., dk brn fg. s.s., pk m. gr ss, mnr dk grn sh.				
25	26		As above with mnr qtz.				
26	27		lt br qtz s.s., mnr brn-whit sh				
27	28		" " " "				
28	29		" " " "				
29	30		" " " "				
30	31		brn, dk brn, rd-brn med. gr. qtz s.s. interlayered	few chips			
31	32		" " " "				
32	33		" " " "				
33	34		" " " "				
34	35		brn-rd qtz s.s., lt brn qtz s.s.				
35	36		lt brn-rd med. gr. qtz s.s., interlayered with	v. dk brn fg. Fe s.s. THE CHIP!			
36	37		lt brn qtz s.s.				
37	38		" " " "				

ADRIER

Sheet 2 of 2.

ARC 038

## Phillips Range RC Drilling

Target ABN 34A

Date Start: 27/6/05 Date Finish: 27/6/05 Easting:

Northing:

Datum:

Zone:

Altitude:

Error:

Total Depth: 48

Inclination: 90

Azimuth:

Driller: UNITED Drilling Type:

Geologist:

FINLAY / GARTON

Depth (m)		Oxidation	Description	Comments																																				
From 38	To 39		Brn-Rd med gr qtz s.s., mnw dk grn shl,																																					
39	40		Purple brown green <del>med</del> gr qtz s.s., dk grn shl, mnw qtz.																																					
40	41		Dk grn shl, lt brn-pk qtz ss.	v few chips																																				
41	42		Dk grn shl, <del>lt grn</del> lt brn qtz ss.	(few chips).																																				
42	43		" "	, Dk brn qtz ss. (v. few chips)																																				
44	45		" "																																					
45	46		Dk grn shl, lt brn qtz med. gr ss.	(few chips) some grease in sample																																				
46	47		dk grn shl, dk grn fig. ss., <del>brn-yl</del> Fe ss,	"																																				
47	48		dk grn shl, brn-yl <del>Fe</del> ss., rd-brn ss.	E of hole due "to <del>factor</del>																																				
<del>48</del>	<del>49</del>			basement looks same as																																				
<del>49</del>	<del>50</del>			ABN 34																																				
90			<div><table><tr><td>0-4</td><td>→</td><td>162953</td></tr><tr><td>4-8</td><td>→</td><td>" 54</td></tr><tr><td>8-12</td><td>→</td><td>55</td></tr><tr><td>12-16</td><td>→</td><td>56</td></tr><tr><td>16-20</td><td>→</td><td>57</td></tr><tr><td>20-24</td><td>→</td><td>58</td></tr><tr><td>24-28</td><td>→</td><td>59</td></tr><tr><td>28-32</td><td>→</td><td>60</td></tr><tr><td>32-36</td><td>→</td><td>61</td></tr><tr><td>36-40</td><td>→</td><td>62</td></tr><tr><td>40-44</td><td>→</td><td>63</td></tr><tr><td>44-48</td><td>→</td><td>162964</td></tr></table></div>	0-4	→	162953	4-8	→	" 54	8-12	→	55	12-16	→	56	16-20	→	57	20-24	→	58	24-28	→	59	28-32	→	60	32-36	→	61	36-40	→	62	40-44	→	63	44-48	→	162964	
0-4	→	162953																																						
4-8	→	" 54																																						
8-12	→	55																																						
12-16	→	56																																						
16-20	→	57																																						
20-24	→	58																																						
24-28	→	59																																						
28-32	→	60																																						
32-36	→	61																																						
36-40	→	62																																						
40-44	→	63																																						
44-48	→	162964																																						
			GEOCHEM	Summary																																				
			COMPOSITE	0-10 Yellow shale.																																				
			SAMPLE N <sup>o</sup> s / INTERVALS.	10-41 <del>tan</del> Pale, mainly pink sandstone.																																				
				41-48 Dark green shale																																				
				*																																				

# Summary

0-8 shale & sandstone.

8-22 Sandstone + shale

22-2032 dark green shale & sandstone & clay

ARC 039

Page 1 of 2

Target ABN 31 A.

25-

## Phillips Range RC Drilling

Date Start: 27/6/05 Date Finish: Easting: 397201 Northing: 8140370 Datum: WGS84 Zone: 53 S Altitude: Error:

Total Depth: Inclination: 90 Azimuth: Driller: UNREP Drilling Type: RC. Geologist: Garton / Finlay

Depth (m)		Oxidation	Description	Comments
From	To			
0	1	Moderate	dk brn - red. fg. sandstone, yl-lt brn fg. s.s.	yl-brn shl (Fe ox)
1	2	"	yl shl, dk brn fg. s.s., yl-brn fg. ss	
2	3		yl shl, pk shl, dk brn fg. ss	
3	4		" "	
4	5		yl med. gr. qtz s.s. with yl fg. matrix, dk brn fg. ss, yl shl, dk gr shl	
5	6		lt brn fg. s.s., qtz, yl med gr. ss, dk <del>gr</del> dk brn fg. ss.	
6	7		Gry shl interlayered with yl fg. ss., mottled wht & red fg. sandstone/shl.	
7	8		" "	" "
8	9		lt brn - pk mottled med grained qtz s.s., lt gry shl	
9	10		Red med. gr. qtz s.s. with white shaley fg. layers within the red sandstone, mnr yl ss.	
10	11		lt brn med gr. qtz s.s., mnr red <sup>qtz</sup> s.s.	
11	12		" "	mnr yl. brn qtz ss.
12	13		lt brn - wht sand (no chips)	
13	14		" "	
14	15		lt brn med gr. qtz ss, wht shl, yl shl	(Few chips)
15	16		" " " "	"
16	17		lt brn med. gr. qtz ss, pk ss., wht shl, yl shl	(Few chips)
17	18		" " " "	" "
18	19		wht shl, yl fg. ss., red-brn ss.	

ABNER

PAGE 2 of 2

ARC 039

## Phillips Range RC Drilling

Date Start: 27/6/05 Date Finish: 28/6/05 Easting:

Northing:

Datum:

Zone:

Altitude:

Error:

Total Depth: 32 Inclination: 90 Azimuth:

Driller: CWITER Drilling Type: RC

Geologist:

GARTON / FINLAY.

Depth (m)		Oxidation	Description	Comments	Geochem.	
From	To				INTERVAL	SAMPLE
19	20		Yl Fg. ss. sh/b clay, wht sh.			
20	21		lt brn med. gr. qtz ss., dk brn Fg. ss., yl-dk-wht sh.		0-4 m	162965
21	22		" " "	"	4-8 m	" 66
22	23		dk grn sh, dk brn qtz ss., yl sh.		8-12 m	" 67
23	24		dk brn-rd qtz sand. stone, dk grn sh, dk grn Fg. ss., & yl sh.		12-16 m	" 68
24	25		" " "	"	16-20 m	" 69
25	26		lt brn ss., wht sh.	(few chips)	20-24 m	" 70
26	27		" "	"	24-28 m	" 71
27	28		red, brown, white clay (?sh), grn sh	(v. few chips)	28-32 m	162972
28	29		NO SAMPLE			
29	30		interlayered lt brn/dk brn fe med. gr. qtz ss.	(few chips)		
30	31		" " "			
31	32		" " " , dk grn sh, wht sh.			E o/H.
<del>32</del>	<del>33</del>					
<del>33</del>	<del>34</del>					
<del>34</del>	<del>35</del>					
<del>35</del>	<del>36</del>					
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<del>90</del>	<del>91</del>					
<del>91</del>	<del>92</del>					
<del>92</del>	<del>93</del>					
<del>93</del>	<del>94</del>					
<del>94</del>	<del>95</del>					
<del>95</del>	<del>96</del>					
<del>96</del>	<del>97</del>					
<del>97</del>	<del>98</del>					
<del>98</del>	<del>99</del>					
<del>99</del>	<del>100</del>					

Hole stopped due to no sample rtn.

Not sure if this is due to drilling equipment or cavity (less likely)

Drillers checked rods, changed hammer, cleared sample bore but still no solution. Time is pressing.

0-5 Yellow shales  
3-43 Sandstones  
43-54 Pale shales

Page 1 of 3

ARC 840		Phillips Range RC Drilling				TARGET
						ABN 31
Date Start: 28/6/05		Date Finish:	Easting: 81457	Northing: 8140400	Datum: WGS 84. Zone:	Altitude: Error:
Total Depth:		Inclination: 90	Azimuth:	Driller: UNITED	Drilling Type: RC	Geologist: GARTON / FINLAY
Depth (m)	Oxidation	Description				Comments
From	To					
0	1	High.	Yellow shale, dk brn f.e. shale, yl-brn shl, v. mnv pisolite			
1	2	Med.	Yl-brn clay/shale, mnv dk gry shl.			
2	3	"	" " dk brn-rd fg. qtz s.s., purple-gray clay (mnv?)			
3	4		dk brn-rd fg qtz ss, pale gry clay, Yl-brn shl.			
4	5		<del>ff med gr. qtz ss</del> , dk gry cherty s.s., yl-brn shl.			
5	6		Yl med gr. <del>qtz</del> s.s.			
6	7		Yl med gr. <del>qtz</del> s.s., v. dk gry/brn mottled Fe fg. s.s.			
7	8		Purple-gray med. gr. qtz ss, yl med gr. ss.			
8	9		" " " " 1 sub round chert chip.			
9	10		Pale red, pink & grey mottled med gr. qtz s.s.			
10	11		" " " "			
11	12		Pink med-gr. qtz s.s.			
12	13		" " " "			
13	14	Moderate	lt brn & pk med. gr. qtz sandstone			
14	15	"	lt <del>brn</del> <sup>red mottled.</sup> gry med. gr qtz s.s. with clay matrix, yl-brn med gr. qtz ss.			
15	16	"	lt gry-lt brn-pk med gr qtz ss.			
16	17		" " " "			v. few chips
17	18		" " " "			"



ARC #40

## Phillips Range RC Drilling

Page 2 of 3

Date Start: 28/6/05 Date Finish:

Easting:

Northing:

Datum:

Zone:

Altitude:

Error:

Total Depth:

Inclination:

Azimuth:

Driller:

Drilling Type: RC

Geologist:

Depth (m)		Oxidation	Description	Comments
From	To			
18	19	low	Pink-grey qtz sand stone	No chips, all fines.
19	20		" " "	" "
20	21		" " "	" "
21	22		" " "	" "
22	23		" " "	" "
23	24		Dark pink shl, pink-grey qtz S.S.	v. few chips.
24	25		Pl pk ss., wht shl, pk shl, v. min qtz	(grains 1-2 mm round, clear) very few chips
25	26		" " "	
26	27		Pl pk shl, pl pk ss	
27	28		" " , xl-brn clay & shl.	
28	29		"	
29	30		"	
30	31		"	
31	32		"	
32	33		"	
33	34		"	
34	35		Pl pk shl & qtz sandstone, minor dk brn shl, min rd ss	ss
35	36		" " "	" "
36	37		" " "	" "

ARC 640										Phillips Range RC Drilling					
Date Start: 28/6/05		Date Finish: 28/6		Easting:		Northing:		Datum:		Zone:		Altitude:		Error:	
Total Depth: 54		Inclination:		Azimuth:		Driller:		Drilling Type:		Geologist: GARTON/FINLAY					
Depth (m)		Oxidation	Description								Comments				
From 37	To 38	low	late pink sandstone & shl, mnr dk brn-grn shl, mnr rounded gty (v. few chips)												
38	39		" "								" "				
39	40		" "								INT SAMPLE NO INT SAMPLE				
40	41		late pink & fg sand stone & shl (clay).								0-4 162973 44-48 " 84				
41	42		" "								4-8 " 74 48-52 " 85				
42	43		As above, also mnr yl shl.								8-12 " 75 52-54 162986.				
43	44		late pink shl & fg sand stone.								12-16 " 76				
44	45		" "								16-20 " 77				
45	46		" "								20-24 " 78				
46	47		" "								24-28 " 79				
47	48		" "								28-32 " 80				
48	49		" "								32-36 " 81				
49	50		" "								36-40 " 82				
50	51		" "								40-44 " 83				
51	52		" "												
52	53		late pink shl, wht shl (clay), pale pk fg. sandstone												
53	54		Pl pk shl, mnr wht clay or shl, <del>late</del>								pale pk fg. ss. F.O.H. due to				
											Rig jack leg sinking making rig unstable.				
											Rather than spend time try to check				
											up the rig, we elected to go to				
											the next hole - time is short.				

ARC 41

## Phillips Range RC Drilling

Target ABN 31

Date Start: Date Finish: Easting: 596760 E Northing: 814042 N Datum: WGS 84 Zone: Altitude: Error:

Total Depth: Inclination: 90 Azimuth: Driller: UNITED Drilling Type: RC Geologist: FINLAY/GARTON

Depth (m)		Oxidation	Description	Comments
From	To			
0	1	Med-high	Yl f.g. ss. with mnr visible qtz., dk brn-yl	Fe ox shl.
1	2	"	"	"
2	3	Med.	Pale pink shl, yl shl, yl f.g. ss.	"
3	4	"	"	"
4	5	"	Yl shl, yl f.g. ss., <del>med gr. gtz. ss.</del> , grey-green	med gr. gtz. ss.
5	6	"	Yl med gr. gtz. ss., gy gtz. ss., dk brn f.g. ss. (cherty).	"
6	7	"	"	"
7	8	"	Interlayered yl & gr med gr. gtz. ss.	"
8	9	"	Yl-brn med gr. gtz. ss., mottled wht & pk med gr. gtz. ss., mnr chert.	"
9	10	"	Mottled red & wht med gr. gtz. ss.	"
10	11	"	Gy, wht & pink shl, brn chert, rd med gr. gtz. ss.	"
11	12	"	rd-brn & wht med gr. gtz. ss.	"
12	13	"	rd-brn & lt brn " " "	"
13	14	"	"	"
14	15	"	"	"
15	16	"	"	"
16	17	low	Pink, wht, pale brn med gr. gtz. ss.	"
17	18	"	"	"
18	19	"	"	"
19	20	"	"	"
20	21	"	lt brn, wht shl, mnr dk brn f.g. ss.	"
21	22	"	lt brn, yl, wht shl, " " "	"
22	23	"	"	"
23	24	"	"	"
24	25	"	"	"
25	26	"	"	"
26	27	"	"	"
27	28	"	"	"
28	29	"	"	"
29	30	"	"	"
30	31	"	"	"
31	32	"	"	"
32	33	"	"	"
33	34	"	"	"
34	35	"	"	"
35	36	"	"	"
36	37	"	"	"
37	38	"	"	"
38	39	"	"	"
39	40	"	"	"
40	41	"	"	"
41	42	"	"	"
42	43	"	"	"
43	44	"	"	"
44	45	"	"	"
45	46	"	"	"
46	47	"	"	"
47	48	"	"	"
48	49	"	"	"
49	50	"	"	"
50	51	"	"	"
51	52	"	"	"
52	53	"	"	"
53	54	"	"	"
54	55	"	"	"
55	56	"	"	"
56	57	"	"	"
57	58	"	"	"
58	59	"	"	"
59	60	"	"	"
60	61	"	"	"
61	62	"	"	"
62	63	"	"	"
63	64	"	"	"
64	65	"	"	"
65	66	"	"	"
66	67	"	"	"
67	68	"	"	"
68	69	"	"	"
69	70	"	"	"
70	71	"	"	"
71	72	"	"	"
72	73	"	"	"
73	74	"	"	"
74	75	"	"	"
75	76	"	"	"
76	77	"	"	"
77	78	"	"	"
78	79	"	"	"
79	80	"	"	"
80	81	"	"	"
81	82	"	"	"
82	83	"	"	"
83	84	"	"	"
84	85	"	"	"
85	86	"	"	"
86	87	"	"	"
87	88	"	"	"
88	89	"	"	"
89	90	"	"	"
90	91	"	"	"
91	92	"	"	"
92	93	"	"	"
93	94	"	"	"
94	95	"	"	"
95	96	"	"	"
96	97	"	"	"
97	98	"	"	"
98	99	"	"	"
99	100	"	"	"

INTERVAL	SAMPLE N°
0-4	162987
4-8	162988
8-12	162989
12-16	162990
16-20	162991
20-22	162992

GEOCHEM COMPOSITES

F.O.H. Rig bogged down, out of water. Out 16:20

## HOLE SUMMARY

- 0-2 Yellow fine grained sandstone with ferruginous shale.
- 2-5 Shale with f-med. grained sandstone.
- 5-20 Med grained gtz sandstone with occasional chert.
- 20-22 Pale shale with minor fine grained sandstone

Chips indicate the usual sandstone & shale sequence.

We are out of time & need to get to the Kimberlite pipe hole

⇒ Stopped the hole

hole terminated by G.L.

ABNER

Page 1 of 2

ARC #42

# Phillips Range RC Drilling

Sth side of Pipe.

Date Start: 29<sup>th</sup>/4/05 Date Finish: 29/2/12 Easting: 245727 Northing: Datum: Zone: Altitude: Error:

Total Depth: Inclination: 90 Azimuth: Driller: UNITED Drilling Type: RC Geologist: FINLAY/CARTON

Depth (m)		Oxidation	Description	Comments
From	To	Mod.		
1	2		Yl - brn med. grained gtz? sandstone with yl matrix & occ. mafic laths (blocky), pale yl fg. ss. & sh.	
2	3		Yl - brn mottled red-brn gtz? ss. w/ pale matrix, occ. " " & gtz clast subangular.	
3	4		Yl - brn mottled red-brn gtz ss. with fg. dk mineral on some chip faces, yl & wht sh/clay.	
4	5		lt brn - yl - dk brn mottled med. gr. gtz ss., rounded chert chips, wht - mottled sh & fg. ss.	
5	6		mottled red-yl brn med. gr. gtz ss., pale gray fg. sandstone, wht sh.	
6	7		lt brn mottled red & yl brn med. gr. gtz ss., with rounded gtz grains (larger), minor chert.	
7	8		lt brn - wht fg. ss. with clay matrix (soft), mottled red-yl med. gr. ss., acc. mafic fg. more rare	
8	9		wht - lt brn clay, soft med. gr. ss.	
9	10		lt gray - lt brn - pale red med. gr. gtz ss. with clay matrix, rounded gtz grit + chert.	
10	11	chips are hard	Pale red clay sandstone with rounded gtz grains, pale gray med. gr. gtz ss. " "	
11	12	High ex	Gray - lt brn gtz? sandstone with fine to med. grains + minor rounded large gtz grains, pk clay.	
12	13		Gray gtz? ss. (hard) with fine to med. gtz (grain boundaries difficult to see - ? hornfels?), limonitic clay.	
13	14		dk red-brown fg. ss. with limonitic clay, gtz? ss. (hard) - " "	
14	15		Gray gtz? sandstone gtz? (hornfels sandstone), red-brown clay, dark brn fg. ss.	
15	16		Gray - lt brn fg. gtz with angular chert clast? Breccia? Some ss. chips have pale, coarse textured coating.	
16	17		gtz ss, chert & sandstone breccia (conc. clasts of wht chert) with irreg. fg. wht gtz on chip faces.	
17	18		As above. Most chips are gtz sandstone but breccia = 10-20% of chips. No RXN to HCl	
18	19		" " "breccia fg. gtz coating is "vuggy"	
19	20		As above with ~15% breccia. ss. is very variable in grain size.	
20	21		As above less breccia (5-10%) but more wht gtz vuggy coating. No RXN HCl	
21	22			
22	23			
23	24			
24	25			
25	26			
26	27	Mod.	Rd brn fg. gtz ss., dk brn-blue vuggy breccia, yl limonitic clay	
27	28		" " " " " " " " " " " "	
28	29		" " " " " " " " " " " "	
29	30		" " " " " " " " " " " "	
30	31		Rd brn fg. gtzite? sandstone (hard), lt brn layered fg. sandstone, yl brn clay (no rxn to hcl)	
31	32		" " " " " " " " " " " "	
32	33		" " " " " " " " " " " "	
33	34		" " " " " " " " " " " "	
34	35		Rd brn fg. gtz ss. with acc. yl Fe clays, dk brn-gr med. gr. ss., minor well layered fg. red ss.	
35	36		Rd brn fg. - med. gtz ss., grn fg. well layered ss., grn med. gr. ss., grn chert.	
36	37		Green well layered fg. gtz ss., occasional rd-brn med. gr. ss.	

# to HCl

ARC 042		Phillips Range RC Drilling													
Date Start: 29/6/05		Date Finish:		Easting:		Northing:		Datum:		Zone:		Altitude:		Error:	
Total Depth:		Inclination: 90		Azimuth:		Driller:		Drilling Type:		Geologist:					
Depth (m)		Oxidation	Description					Comments							
From 37	To 38	low	Well layered green fgy. qtz sandstone with dk grn laths, occasional rd med gr. qtz ss.												
38	39	"	" " " "					"							
39	40	"	Well layered green fgy-m.gr. qtz ss. <del>with</del> with red-brn fgy. zones within the grn ss.												
40	41	"	Green fgy-m.gr qtz ss with minor red brn fgy. mafic layers.												
41	42	low-med	Green fine-med gr. qtz ss (or qtzite) with dk grn laths, <sup>interlayered with</sup> red brn fgy. qtz ss (or qtzite).												
42	43	"	" " " "					" , rd-brg fgy qtz ss, 1 rounded ss. <sup>chip</sup> <del>ss</del>							
43	44		Red-brn f-m.gr. qtz sandstone, green fgy well layered ss. 1 rounded brn ss. chip ? <del>brn</del> breccia												
44	45		" " " "					" " "							
45	46		" interlayered with grn fgy					"well layered ss. (Not many chips)							
46	47		Mottled & interlayered fgy. green & brn qtz ss. - <del>Brn tapest</del> <del>med gr. fgy. ss.</del> lt brn med gr. qtz ss												
47	48														
			INT (m)	SAMPLE N°	INT (m)	SAMPLE N°									
			0-4	162998	28-32	162505									
			4-8	162999	32-36	163506									
			8-12	163000	36-40	163507									
			12-16	163501	40-44	163508									
			16-20	163502	44-48	163509									
			20-24	163503											
			24-28	163504											

ABNER

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ARC 43

## Phillips Range RC Drilling

ANOMALY ABNO21

Date Start: 29/6/05 Date Finish: 29/6/05 Easting: 59547E Northing: 8145603 Datum: WGS 84 Zone: Altitude: Error:

Total Depth: 30m Inclination: 90 Azimuth: Driller: UNITED Drilling Type: RC Geologist: GARTON / PINLAY

Depth (m)	Oxidation	Description	Comments
0	1	Med-high Brn-red fg. shl & sandstone, rounded qtz, subang. qtz, mnv y/-wht clay.	
From 1 To 2	2	As above also lt brn clay & shl.	
2	3	Med lt brn fg. qtz sandstone, mnv chert, mnv wht shl.	
3	4	Med. " " " "	
4	5	" " " "	
5	6	Sand stone as above - 1 rounded chip of chert on per breccia	
6	7	Mottled wht - gry - brown sandstone & chert.	
7	8	Subang. Rounded qtz grit < 8 mm diam, brn-red fg. qtz ss., dk brn-red v. fg. mafic chips (? volcanic) or igneous at last.	
8	9	" " " "	
9	10	lt brn qtz sandstone, chert with mnv qtz accretions on chip faces	
10	11	Sandstone & chert as above	
11	12	" " " "	
12	13	As above + breccia with mafic (? amphib & hornblende)	
13	14	" " " "	
14	15	" " " "	
15	16	" " " "	
16	17	" " " "	
17	18	brn, red, grn mottled ss., green fg. breccia w/ black clasts, fg. green layered ss.	
18	19	" " brn, grn breccia " "	
19	20	" " " "	
20	21	brn/red layered & mottled med gr qtz ss. (occasional blk fg. mafic lath),	INT. (m) SAMPLE#
21	22	" " " "	0-4 163510
22	23	lt brn, red med grained qtz ss. (chips hard.)	4-8 163511
23	24	" " " "	8-12 163512
24	25	" " " "	12-16 163513
25	26	" " " " , lt grn fg. ss. (minor)	16-20 163514
26	27	" " " " (small dk blocky laths in green ss)	20-24 163515
27	28	brn, grn med grained qtz ss., grn fg. layered ss., grn clay.	24-28 163516
28	29	" " " "	28-30 163517
29	30	lt brn, red, grn med grained qtz ss. with blk blocky laths, layered ss. with fine x cutting veins, fg. grn ss. ECH.	
30			
HOLE SUMMARY			
0-7		Sandstone, chert & shale	ECH 30m due to hole failure in at the 20-30m zone, drillers not keen to continue deeper.
7-13		Sandstone & chert with mafic inclusions	
13-19		Sandstone + breccia	
19-30		Sandstone with kimberlitic indications - such as green clay, mafics, occasional curved chip faces	

GEOCHEM  
INFO.

Page 1 of 1

## ~~Phillips~~ Range RC Drilling

ON ABN21

Date Start: 29/6/05 Date Finish: 29/6/05 Easting: Northing: Datum: Zone: Altitude: Error:

**Total Depth:**      **Inclination:** 90      **Azimuth:**      **Driller:** UNITED.      **Drilling Type:** RC      **Geologist:** FINLAY / GARTON.

[illegible]