

**GRANGES EXPLORATION LTD.**  
**DIAMOND DRILL LOG**

ANOMALY:

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Property UNUK R. Project No. 134 Depth 75.90 metres Date Began Sept 18/89  
 Hole No. AP1 Co ord 1450 N Horizontal Length Date Completed Sept 20/89  
 Claim No. UNUK 14 1010 E Core Size NA Drilled By Van Alphen Drilling  
 Grid No. AP Angle & Grid Direction -45°/Grid W. Elevation Logged By B. Gaboury

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
0 - 8.23	casing								
8.23 - 14.00	Debris Flow  matrix supported clastic rock composed of up to 30% angular, dominantly dacitic volcanic fragments in a fine grained argillitic matrix. Fragments range from sand sized to several cm in diameter. The rock is generally moderately well foliated and contains minor bleached intervals with py stringers & blebs comprising 3-5%. Overall, however, the rock contains $\leq 1\%$ py.  13.40 - 14.00 : shear zone (clayey gouge with 10-20% py occurs between 13.40 - 13.55)								
14.00 - 42.50	Dacite ash-lapilli Tuff  mottled grey to greenish grey (light colored) volcanoclastic containing variable degrees of sericitization but without development of a definite foliation. Some of the darker colored mottling is produced by spotty preferential silica bleaching. Generally the rock is brecciated & contains numerous dark stringers up to several cm long which may contain fine peripheral sulfides.  14.00 - 16.00 : light green colored, brecciated, sericitized, abundant py stringers, qtz vnlts var thin dark (tourmaline?) - sulfide vnlts or healed fractures at all orientations; overall contains 5-10% py, tr gal, tr tet, tr aspy; best mineralization occurs between 15.00 - 16.00.  16.00 - 20.90 : similar to 14.00 - 16.00 but darker colored & less altered. Py decreases from ~10% near top of interval to ~5% by 20.90. No other sulfides were visible.								





















GRANGES EXPLORATION LTD.

## DIAMOND DRILL LOG

ANOMALY:

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Property UNUK R.

Project No. 134

Depth 115.52 m

Date Began Sept 21/89

Hole No. AP 2

Co ord 1300 N

Horizontal Length

Date Completed Sept 24/89

Claim No. UNUK 14

1043 E

Core Size NQ

Drilled By VAN ALPHEN DRILL

Grid No. AP

Angle &amp; Grid Direction Grid W/-45°

Elevation

Logged By B. GABOURY

INTERVAL FEET / METRES	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
0 - 1.22	casing								
1.22 - 18.75	Dacite Ash Lapilli Tuff (silicified andesite?) green grey to dark grey, moderately silicic volcanoclastic with angular to subrounded light grey-green dacitic fragments up to several cm dia. Contains darker section with elongate fragments which appear to be due to brecciation followed by infilling of fractures by a dark silicic matrix [there is a visible gradation between less brecciated lighter colored material to the fragments with elongate light colored fragments]. The elongate fragments produce a fabric which is parallel to the core axis. Contains 3-5% disseminated py overall. 2.32-4.64 : unsilicified, fragments are darker & more chloritic; look's like debris flow; some fragments have been converted to py. Overall contains 5% py. 2.32-3.14 : fracture zone, rubbly limonitized core 3.14 : 1cm wide shear w py, CA=50° 3.64-4.04 : fracture zone, rubbly limonitized core at all possible core angles. 4.04-4.64 : transition back to silicified tuff 4.64-18.75 : moderately well silicified, variably brecciated, contains occasional darker colored lithic fragments, sericitized but unfoliated. Lighter colored intervals demonstrated rounded & embayed fragments with halos of bleached material (fragments have been consumed during alteration). Rock also contains up to 20% white subhedral to euhedral teluspar lathes & masses → this is probably a variety of albitization.								

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
5.04-5.24	shear ; fine limonitic rubble								
5.64-6.04	foliated interval with core angles of ~50° to core axis; contains dark colored lenses up to 1cm wide & several cm long oriented parallel to foliation.								
7.00-7.36	limonitized fracture zone with ~10% py, flanked by brecciated & silicified sections. fractures demonstrate all possible orientations.								
16.40-16.50	small shear with gouge ; gravelly								
16.50-17.00	dark colored, less silicified, 5-10% py								
18.50-18.75	brecciated, bleached contact zone.								
18.75-26.50	Diabase  black, very fine grained intrusive with abundant fracturing; contains thin qtz veins, mildly brecciated intervals, no visible sulfides.  26.00-26.50 : brecciated bottom contact.								
26.50-55.84	Coarse Andesite Fragmental Volcanic (Agglomerate?)  A greenish grey to green chloritic fragment supported volcanoclastic rock containing andesitic fragments up to several cm in dia.; generally pervasively silicified & chloritized, variably fractured & brecciated with occasional infilling of fractures by fine dirty colored py or more commonly dark chloritic material; contains occasional lithic fragments and lighter colored more felsic ones; overall contains 3-5% py as disseminations & occasional stringers. Brecciation becomes more apparent below 30.00m.								





INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
55.84 - 72.20	<b>FAULT ZONE</b>  hosted by a light grey, very well silicified, albitized volcaniclastic rock with pervasive thin arborescent black tourmaline-sulfide vnts plus pyrite as disseminations, blebs, irregular wisps of dirty brass-colored material plus stringers up to 3mm wide oriented at all possible orientations with respect to core axis.								
	55.84-56.90 : rubble, limonitized; contains 2-4% py plus appreciable traces of sphalerite & galena/tetrahedrite (fracture density > 100/m, all possible orientations)								
	56.90 - 57.20 : 2-4% py in a highly fractured sericitized & somewhat kaolinized interval. (fracture density ~ 10/m, haphazard but a majority trend 60-65° to core axis)								
	57.20 - 57.73 : rubble, limonitized core similar to 55.84-56.90 (> 100 fractures/m)								
	57.73 - 58.53 : section similar to 56.90-57.20, contains 2-4% py plus appreciable traces of sphal, gal & tet. fracturing again is haphazard with many at 60-80° to core axis (~ 20 fractures/m)								
*	58.53 - 60.05 : overall 5% py plus appreciable traces of tetrahed/gal & sphal, similar to 57.73-58.53. Broken & rubble between 59.55-60.05 (overall > 100 fractures/m, no preferred orient.)								
	60.05 - 61.30 : 3-5% py plus traces of tet/gal. 60.40-60.90 : ankerite vein with py + tet/gal oriented ~ 20° to core axis. (overall ≥ 100 fractures/m)								
*	61.30 - 63.40 : fractured, rubble interval w up to 10% py plus appreciable tr tet./gal; ~ 50% core recovery.								





















**GRANGES EXPLORATION LTD.**  
**DIAMOND DRILL LOG**

ANOMALY:

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Property UNUK R Project No. 134 Depth 115.52 Date Begun Sept 25/89  
 Hole No. AP 3 Co ord. 1175N Horizontal Length Date Completed Sept 27/89  
 Claim No. UNUK 14 988 E Core Size NQ Drilled By Van Alphen Drilling  
 Grid No. AP Angle & Grid Direction -45° Grid W Elevation Logged By B. Gaboury

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
0 - 1.524	Casing.								
1.524 - 10.15	Debris Flow  a relatively coarse clastic rock composed of ~40-50% felsic volcanic clasts, ~20% andesitic volcanic clasts & 5-10% dark lithic clasts in a dark grey fine grained matrix. Clasts are subrounded to angular and generally vary up to 5 cm diameter although occasional boulder sized fragments (in excess of 30 cm) are encountered. Overall contains 1-2% disseminated py. The rock has a very crude fabric by virtue of alignment of some elongate clasts.  8.84 - 9.25 : Fault ; crushed and rubbly, bleached, sericitized fragmental rock plus a 1cm wide section of gouge. Contains 1-3% fine disseminated py overall (>= 100 fractures/m, no preferred orientation).  9.25 - 10.15 : bleached, silicified, brecciated ; contains up to 10% py as disseminations, stringers & irregular masses up to 1cm across near bottom contact.								
10.15 - 17.98	Andesite flow breccia  A dark to khaki green chloritic fine grained intermediate volcanic with occasional amygdaloidal sections (carb-sil-py filled). The rock is auto-brecciated and contains (generally near the upper contact) short, irregular intercalations of tuffaceous material or debris flow up to ~50 cm wide. Occasional hydrothermally altered bleached lighter green intervals [embayed breccia frags w/ haloes].  16.50 - 17.98 : debris flow intercalation.								













# GRANGES EXPLORATION LTD. DIAMOND DRILL RECORD

Hole No. **AP 3**      Co ord.      Horizontal Length      Date Completed  
 Claim No.      Core Size      Drilled By  
 Page 2 of 2      Grid No.      Angle & Direction      Elevation      Logged By

INTERVAL FEET / METRES	NUMBER	WIDTH	Au. g/t	Ag. g/t	ppm Cu.	ppm Zn.	ppm Pb.	WIDTH X ASSAY					AVERAGES							
								WIDTH	Au.	Ag.	Cu.	Zn.	WIDTH	Au.	Ag.	Cu.	Zn.			
61.45 - 61.80	AP7	.35	.01																	
61.80 - 62.30	AP8	.50	.03																	
62.30 - 62.75	AP9	.45	.04																	
62.75 - 63.13	AP10	.38	.07																	
63.13 - 63.63	AP11	.50	.04																	
63.63 - 64.20	AP12	.57	.02																	
64.20 - 73.93	waste	9.73	—																	
73.93 - 74.43	AP13	.50	.28																	
74.43 - 75.03	AP14	.60																		
75.03 - 75.60	AP15	.57	.09																	
75.60 - 76.30	AP16	.70	.08																	
76.30 - 82.25	waste	5.95	—																	
82.25 - 82.75	AP17	.50	.02																	
82.75 - 83.10	AP18	.35	1.28																	
83.10 - 83.55	201 G	.45	.01																	
83.55 - 84.00	210 G	.45	.15																	
84.00 - 85.04	202 G	1.04	.03																	
85.04 - 85.75	203 G	.71	.01																	
85.75 - 86.25	204 G	.50	.02																	
86.25 - 86.85	205 G	.60	.03																	
86.85 - 87.48	206 G	.63	.06																	
87.48 - 88.09	207 G	.61	.04																	
88.09 - 88.59	208 G	.50	.13																	
88.59 - 89.19	209 G	.61	.05																	
89.19 - 101.96	waste	12.77	—																	
101.96 - 102.46	211 G	.50	.03																	
102.46 - 102.96	212 G	.50	.04																	
102.96 - 103.46	213 G	.50	.03																	
103.46 - 103.96	214 G	.50	.21																	
103.96 - 104.46	215 G	.50	.11																	
104.46 - 104.86	216 G	.40	.08	1.5	14	1022	13													
104.86 - 105.24	217 G	.38	.04	3.6	21	2161	30													
105.24 - 105.74	218 G	.50	.86																	
105.74 - 106.38	219 G	.64	.31																	
106.38 - 106.88	220 G	.50	.41																	
106.88 - 107.38	221 G	.50	.05																	
107.38 - 115.52	waste	8.14	—																	
115.52	EOH																			

**GRANGES EXPLORATION LTD.**  
**DIAMOND DRILL LOG**

ANOMALY:

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Property: UNUK R Project No: 134 Depth: 121.62 m Date Began: Sept 28/89  
 Hole No: AP 4 Coord: 1450 N Horizontal Length: Date Completed: Oct 2/89  
 Claim No: UNUK 14 1054 E Core Size: NQ Drilled By: Van Alphen Drilling  
 Grid No: AP Angle & Grid Direction: -45°/Grid W Elevation: 1430 m Logged By: B. Gaboury

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
0 - .91	Casing								
.91 - 17.98	Lithic Dacite Tuff ("Lenticular Tuff")  a light grey moderately silicic volcaniclastic consisting largely of lapilli-sized felsic volcanic fragments in a very fine grained grey groundmass. Contains up to 20% khaki green colored stretched sericitized fragments which, by virtue of their alignment, give the rock a fabric. Also contains abundant cross-cutting fine black tourmaline-sulfide veinlets, 2-4% py + aspy as silvery euhedral crystals or as dirty steel colored masses often with fine tendrils or as wispy stringers up to 2mm wide.  .91 - 3.05 ; blocky, broken & weathered, ~40% recovery  3.05 - 6.10 ; ~2% py + 1-2% aspy, minor limonitized fractures.  6.10 - 6.30 ; fracture zone ; 5-10% py.  9.30 - 9.59 ; 3-5% py ± aspy, tr gal/tet ; fractured & crushed core w 1cm wide pyritic, silicified shear w gal/tet ; numerous unhealed fractures but core is relatively intact.  9.59 - 10.55 ; 3-5% py, tr aspy.  10.55 - 12.60 ; 1-3% py, tr aspy ; gradational increase in frequency of occurrence of black tourm-sulfide vnlts.  12.60 - 14.01 ; 2-4% py, 1-2% aspy, moderately intense tourm-sulfide vnlts. 13.78-14.01 : mild shearing at ~55° to core axis.  * 14.01 - 14.50 ; 10% py + aspy, intense tourm-sulfide vnlts, 3cm wide clay-sand gouge seam at 14.30  C.A. 14.30 m : 50° shearing.  14.50 - 15.74 ; 5-10% py + aspy mainly in thin wispy stringers.								
























































**GRANGES EXPLORATION LTD.  
DIAMOND DRILL LOG**
**ANOMALY:**

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Property **UNUK R.** Project No **134** Depth **121.92 m** Date Began **OCT 9/89**  
 Hole No. **R-1** Coord **181 N** Horizontal Length \_\_\_\_\_ Date Completed **OCT 11/89**  
 Claim No **COUL 1** **650 W** Core Size **BGM** Drilled By **VAN ALPHEN DRILLING**  
 Grid No. **"R"** Angle & Grid Direction **Grid S45E/-45°** Elevation \_\_\_\_\_ Logged By **B. GABOURY**

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
0 - 3.35	Casing.								
3.35 - 30.08	Debris Flow								
	~40% felsic volcanic fragments plus occasional andesitic & lithic fragments (subrounded to angular, up to 3cm dia.) matrix supported by black argillaceous material; overall ~1% fine disseminated py.								
	17.68 - 19.18 : Fault Zone ; blocky broken core plus clayey somewhat graphitic gouge & minor thin haphazardly oriented tensional str vnlts (no visible slickens in str vnlts).								
	CA. 21.60 m : 40° weak fabric.								
	26.20 - 27.20 : boxed interval with 7-10% thin haphazardly oriented str-by vnlts with no visible slickens ; rubblely & broken core 26.60-27.20								
30.08 - 33.95	Brecciated interbedded Black Argillite & grey laminated siltstone								
	dominantly black argillite fragments up to several cm dia plus ~10-20% laminated grey siltstone fragments in a fine dark argillitic matrix. There are also occasional bands & fragments of arenaceous to gritty greywacke and felsic tuffaceous bands up to 1.04 m wide. Contains occasional haphazardly oriented thin barren str vnlts and overall 3% py as disseminations, very fine grained impregnations (often confined to specific laminae) and qs blebs up to ~1cm dia.								
33.95 - 39.28	Debris Flow (as before)								
	33.95 - 34.15 : silicified, boxed upper contact ; 1-2% fine py								



ANOMALY:

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Property: **UNUK R.** Project No: **134** Depth: \_\_\_\_\_ Date Began: \_\_\_\_\_  
 Hole No: **R-1** Coord: \_\_\_\_\_ Horizontal Length: \_\_\_\_\_ Date Completed: \_\_\_\_\_  
 Claim No: \_\_\_\_\_ Core Size: \_\_\_\_\_ Drilled By: \_\_\_\_\_  
 Grid No: \_\_\_\_\_ Angle & Grid Direction: \_\_\_\_\_ Elevation: \_\_\_\_\_ Logged By: \_\_\_\_\_

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
39.28 - 67.38	Brecciated interbedded Black Argillite & Grey Laminated Siltstone (as before)								
39.28 - 39.85	: blocky broken core								
39.85 - 40.45	: greyish green fine grained, moderately silicic tuff w tr-1% fine py.								
40.45 - 41.20	: blocky broken core								
41.44 - 41.60	: very silicified fine tuff with ~5% fine py.								
CA. 41.60 m	: 80°-90° contact // shearing.								
41.60 - 42.26	: coarse dacitic ash tuff (chloritic) with 3% py.								
43.20 - 43.54	: coarse greywacke gritstone.								
CA 43.20 m	: 55° contact								
CA 43.54 m	: 85° contact // bedding.								
46.30 - 46.62	: sheared, brecciated felsic tuff w 5-7% fine py.								
CA. 46.40 m	: 55° shearing.								
46.77 - 47.30	: coarse greywacke gritstone.								
CA 47.00 m	: 45° foliation.								
47.97 - 49.60	: light grey-green coarse dacite ash tuff; mildly silicified & sericitized, contains cross cutting almost barren qtz vnltts up to 2cm dia, 1-3% dissemin py plus occasional reddish sph blebs in qtz vnltts.								
CA 48.25 m	: 0° shearing								
CA 48.97 m	: 10° shearing slickenside w 45° rake								



**GRANGES EXPLORATION LTD.**  
**DIAMOND DRILL LOG**

ANOMALY:

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Property **UNUK R** Project No **134** Depth ..... Date Began .....  
 Hole No **R-1** Coord ..... Horizontal Length ..... Date Completed .....  
 Claim No ..... Core Size ..... Drilled By .....  
 Grid No ..... Angle & Grid Direction ..... Elevation ..... Logged By .....

INTERVAL FEET / METRES	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
	CA. 61.57 m : 30° sheared bottom contact CA. 64.78 m : 90° small shear.								
	63.70 - 63.85 : bsd, sheared & sericitized band of debris flow at ~90° to core axis; contains 3-5% py.								
	64.78 - 67.38 : bsd interbedded greywacke gritstone & fine dacite ash tuff; generally greyish colored, contains 1-2% py.								
67.38 - 80.25	Brecciated Debris Flow ~40% sand-sized to cm sized comminuted & embayed felsic volcanic fragments in a dark grey mildly silicic groundmass, contains 1-3% py as fine disseminations and as occasional rounded blebs up to 1cm dia, occasional thin grey clayey gouge seam.								
80.25 - 93.68	Black Argillite mildly bsd, contains occasional felsic volcanic fragments near top of interval & occasional fine light grey laminae or bands up to ~20cm wide of siltstone; minor tensional qtz vnlts (barren) at all orientations, overall ~1% fine dissem py. 89.83 - 92.20 : mildly sheared bsd & contorted interval with 1-3% py CA 91.00 m : qtz py vnlts w slickensides 60°/20° rake								

















GRANGES EXPLORATION LTD.  
DIAMOND DRILL LOG

ANOMALY:

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Property  
Hole No  
Claim No  
Grid No

UNUK R.  
R-2  
Coul 1  
"R"

Project No  
Co ord  
747 W  
Angle & Grid Direction

134  
178 N  
-45°  
Grid S45E

Depth  
Horizontal Length  
Core Size  
Elevation

120.40 m  
BGM

Date Began  
Date Completed  
Drilled By  
Logged By

OCT 12/89  
OCT 14/89  
VAN ALPHEN DRILLIN  
B. GABOURY

INTERVAL FEET (METRES)	DESCRIPTION	SAMPLE RECORD				Au G/T	Ag G/T	Cu %	Zn %
		FROM	TO	SAMPLE	WIDTH				
0 - 3.66	Casing								
3.66 - 14.15	Laminated siltstone with minor black argillite intercalations mildly brecciated, dark to light grey, well-laminated siltstone with minor thin ( $\leq 2$ mm wide) tensional qtz vnlts often at core angles of $45^\circ - 75^\circ$ . 7-10% py as very fine pervasive impregnation (more intense however along fractures $\rightarrow$ produces massive py vnlts up to 2 mm wide with much wider enveloping haloes of less py-impregnated host). Entire interval is well silicified:  3.66 - 9.60 : ~ 10% py overall. 9.60 - 14.15 : 5-7% py 9.60 - 10.80 : fault ; rubbly core plus clayey gouge. CA 11.00 m : $55^\circ$ shearing // bedding. 12.30 - 12.49 : sericitized felsic volcanics (similar to 14.20 - 15.45)								
14.20 - 15.45	Altered Debris Flow smoky grey to greenish mottled sericitized & extremely silicified coarse fragmental with 1-3% py & possible fr aspy. Rock is brecciated & fractures are infilled with sericitic material  CA : 14.20 m : $55^\circ$ upper contact. CA : 15.45 m : $50^\circ$ lower contact (sharp.)								
15.45 - 50.75	Brecciated interbedded Black Argillite & Grey laminated Siltstone. Dominantly black argillite with 20-30% grey laminated siltstone intercalations up to 1.0 m wide. Overall contains 1-3% fine py; generally unsilicified but well brecciated:								



























