GEOLOGY LOG

HOLE **NIK-10-01**

INTERVAL			SUB-INTERVAL			LITHOLOGY			ALTERATION						STRUCTURE				MINERALS							Photo	DETAILED DESCRIPTION
													Other										Other		Other			
From (m)	To (m)	Interval (m)	From (m)	To (m)	Interval (m)	Unit	Modifier	Texture	Chlorite	Epidote	Potassic	Oxidation	Type	Intensity	Type	Attitude (tca)	Attitude (tfa)	Density (frequency/m)	Pyrite	Magnetite	Chalcopyrite	Type	Intensity	Type	Intensity		
0.00	6.50	6.50				OVB																					No recovery.
6.50	21.00	14.50				DIO	Lt Gee & rusty F-M G DI-IN		M-S	M		I			FX				M			Mg	F				Diorite (DIO). Highly fractured and oxidized section. Cl crystals are anhedral and commonly occur alongside Ep crystals. Ep alteration intensifies to strong from 19.2 to 21.0m. Moderate to strong Cb infilling along fractures. Dark yellowish, subrounded mineral present, limonite? Sparse sections of granular gouge. Mottled dark pink blotches become more pronounced towards the end of the section.
21.00	22.00	1.00				DIO	DK GY to rusty					I			FLT							He	T				Quartz Diorite. Poor recovery, rubbly. Section is highly oxidized. Rare 1-2mm He veinlets are observed on altered surfaces.
22.00	37.30	15.30				GRD	LT-GY LT-PK M-C G DI-IN	PO	M-S	S	M								W			He Mg	W W				Porphyritic Granodiorite (GRD). Light grey-pinkish to white matrix. Pl crystals are 1-3mm, Qz 0.5 to 2mm, and Hb crystals are 1-2mm. Ep crystals are EU to subhedral (1-3mm). Few random potassic-rich veinlets (1-2mm). Py is DI and IN (1mm).
			22.20	22.75	0.55		DK GN F-M G		55%	S												He	W				Chlorite vein with calcite filled amygdules (1-10cm) and subhedral He crystals (1-3mm). Weak to moderate He staining.
			28.85	30.35	1.50	GRD	DK GN F-M G		65%	S					VT FX							He	T				Intense Cl altered Granodiorite with potassic and carbonate infilled veinlets (1-2mm wide). Trace He staining. Moderate silicification. Moderately fractured.
			31.00	31.99	0.99	GRD	LT GY		W				cly	60													Clay altered Granodiorite. Matrix has been completely altered to clay mush.
			31.99	34.15	2.16	GRD	LT GY DI - whisp		W				cly	30					W								Clay altered Granodiorite. Matrix has been altered to clay mush, core is still somewhat competent but very soft.

n = none, tr = <1%, w = 1-3%, f = 3-5%, m = 5-7%, ms = 7-10%, s = 10-15%, t = 15-20%, (write % for >20%)

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			34.15	37.30	3.15	GRD	DK GN		70			M										He	W				Intensely chloritized Granodiorite. Kf rich vein (4cm) directly at beginning of section. Patchy chloritized 'mush' sections. From 34.3 to 37.3m DK GN/BN granular gangue, Cb and Qz fracture infilling resembles weak stockwork. Interval is moderately oxidized with few He veinlets.
37.30	119.48	82.18				DIO	GY DK-GN M-C G DI-IN	PO	M-W	F	F	T	Cly	W					M-S			Mg	W-F				Porphyritic Diorite. Grey greenish matrix with sparse pink potassic altered areas. Pl and Kf (<10%) phenocrysts are euhedral to subhedral and 1-4mm, Qz phenocrysts are1-2mm, and Hb phenocrysts are subhedral, 1-5mm. Few Qz veins (1-2cm) and pink Kf-rich veinlets (1-4cm). Weak stockwork throughout the unit, fractures have all been infilled with a carbonate mineral. Potassic bleaching is scattered throughout the section, Kp veins and veinlets are common. Weak to moderate clay alteration from 54.3-54.75m.
			64.00	66.00	2.00	DIO	GY DK-GN M-C G DI-IN	PO	W		F	T				VN			M			Cp	W				Same unit. First visible sign of Cp. Cp occurs interstitially and as disseminations alongside of Py crystals (2-9mm). Occasionally Cp occurs in mm size veinlets.
			74.00	92.45	18.45																	He	W				Potassic alteration increases. Kp stringers and veinlets are 1-15mm wide, and increase in concentration with depth. Slight increase in stockwork. Sparse He veinlets and staining.
			81.20	82.00	0.80		DI												M		W	He	W				Chlorite vein. Highly fractured with Cb infilled stockwork. DI Py and Cp (1-2mm). Few He veinlets.
			92.45	119.48	27.03	GRD	DI			I									M-S		W						Same unit but with intense epidote alteration. Ep crystals are 1-5 mm and often occur beside Py and Cp mineralized disseminations. Mafics (Hb) increase in size (2-10mm) and concentration.
119.48	119.64	0.16				XN	Pale GN	AN																			Xenolith (XN). Pale GN, soft and aphanitic with 5-7% mafics (1-2mm).
119.60	120.13	0.53																									Clay altered sheared zone with gouge.

n = none, t= <1%, w = 1-3%, f = 3-5%, m = 5-7%, ms = 7-10%, s = 10-15% I = 15-20%, (write % for >20%)

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120.13	202.65	82.52				DIO	Pale GY-GN M-C G DI-IN		S	M-I		T	car	T-W					W-S			He	W			Diorite with varying degrees of chlorite and epidote alteration. Cl crystals are 1-12mm, Ep crystals are 1-3mm. Epidote alteration is 'blotchy' and appears as clumps of large subhedral to anhedral crystals (15-30mm). Py commonly occurs adjacent to Ep crystals and is mainly DI and IN. Py is blebby (1cm) in zones with higher Ep alteration. He staining occurs on fractured surfaces. Gypsum veins (1-3cm) are sparse, crystals (1-3mm) mainly occur near shear zones or in highly fractured areas.
			128.85	129.85	1.00								Clay	s	GO												Four small shear zones (5-20cm) with gouge. Clay altered Epidote and chlorite alteration increases, blotches are 15-30mm. Py is euhedral (cubic) to subhedral, DI and IN (1-2mm), and mainly occurs alongside of Ep blotches. Cb infilling on most fractured surfaces. Mafics (Hb) are F-M G and increase in concentration giving the rock a darker colour.
			129.10	135.80	6.70		DK GY to DK GN DI-IN		S	I			car	W-M					M								
			133.75	134.50	0.75		DI-IN			I			car	T-W					W								Moderately fractured section. Py is DI and IN (1-2mm).
			135.80	136.50	0.70	DIO	DK GY FG mtx DI	PO	M	M									M-S	W-S	T						Porphyritic Diorite. Pl and Mafic (Hb) crystals are euhedral to subhedral (1-2mm). Pl phenocrysts are lathe to angular shaped. Py is DI (1-2mm). Cp is DI (0.5mm). Varying degrees of magnetism, weak to strong.
			136.50	141.90	5.40	DIO	Pale GN FG mtx	PO		40		T															Intensely Ep altered porphyritic diorite. Pl phenocrysts are lathe to angular shaped, and pale green (from white in the previous interval). Quartz crystals are subrounded, some resemble quartz-eyes (1-2mm). Sulphides are absent
			141.90	142.50	0.60	DIO	DK GY FG mtx DI-IN	PO	M	M						FX			M-S	W-S	T						Porphyritic Diorite. Pl and Mafic (Hb) crystals are euhedral to subhedral (1-2mm). Pl phenocrysts are lathe to angular shaped. Py is DI (1-2mm). Cp is DI (0.5mm). Varying degrees of magnetism, weak to strong. Moderately fractured section.

n = none, tr= <1%, w = 1-3%, f = 3-5%, m = 5-7%, ms = 7-10%, s = 10-15% I = 15-20%, (write % for >20%)

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			145.40	148.45	3.05	DIO	Pale GN FG mtx	PO		40		T												He	W		Intensely Ep altered porphyritic diorite. Pl phenocrysts are lathe to angular shaped, and pale green (from white in the previous interval). Quartz crystals are subrounded, some resemble quartz-eyes (1-2mm). Sulphides are absent. End of unit is highly fractured. He staining occurs along fractures.
			148.45	148.94	0.49		DK GN FG		M-S			W	car	M-S										He	S		Patchy He stringers and staining on fractures. Moderately fractured. Cb infilled fractures (1-2mm).
			148.94	151.28	2.34		GN to DK GN DI		S				cly	I					W-M					He	M		Intensely clay altered, fractured and rubbly section. Amygdules are subrounded (1-4mm) and filled with calcite. Py is DI and concentrates along fractures with strong Cl alteration and He staining. Competent section from 149.55 to 150.40m has abundant mafics (1mm).
			151.28	184.90	33.62		DK GY to DK GN DI-IN		S	I		T	car	W-M					M-S	W							Epidote and chlorite alteration increases, blotches are 15-30mm. Py is euhedral (cubic) to subhedral, DI and IN (1-2mm), blebby, and mainly occurs alongside of Ep blotches. Cb infilling occurs on most fractured surfaces. Mafics (Hb) are F-M G and increase in concentration in some areas giving the rock a darker colour. Beige, soft minerals, occurs throughout the mtx gypsum? From 152-152.3m: Gouge, intensely clay altered, fractured, and rubbly. From 153.65 to 159.3m: section is highly fractured and rubbly (pieces are 1-5cm).
			161.28	161.50	0.22				S				cly	I					W								Gouge
			163.80	165.10	1.30		DK GY			M									F								Epidote alteration decreases. Few potassic stringers (1-2mm).
			177.00	177.20	0.20								cly	S													Sheared zone with 3 cm beige gypsum vein.
			184.90	185.38	0.48		GY	AN					sil	S					W								Grey, aphanitic, silicified vein with disseminated pyrite.
			185.38	185.60	0.22																						Cave with few pyrite coated pebbles.
			185.60	199.30	13.70	DIO	LT GY		S	S	T-W	T							F-S								Diorite with sparse subrounded chlorite crystals ranging in size between 2.5 to 5 cm. Few gypsum-rich veins. At 197.1 m, quart vein 3 mm wide with euhedral pyrite crystals ranging in size between 1 to 2 mm.
			199.30	199.92	0.62	GAB	DY			M									W	S							Gabbroic dyke with minor disseminated pyrite.

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							DK GN- BL F-M G																				
202.65	204.15	1.50				GAB	DY DK GN- BL F-M G					car	M														Gabbroic dyke with carbonate infilled 1-2 mm size, lathe shaped amygdules(?).
			200.40	201.65	1.25										SH												Shear zone. Brittle with few patchy gypsum veins (3-4 cm), and pyrite veinlets (1 cm). [Switch of core loggers]