671360

NBC SYNDICATE
DRILL LOG

DDH J-1 JEAN GROUP 52W 03N 206°/-47°

Comment ~~[redacted]~~ Overall Recovery >98%.

note: no core 0-10' (overburden)

1/1 10'-29' rock is slightly saussuritized(?) diorite (?) [monzo-diorite] (no visible qtz., calcic plag. over K-spar) with sphene as ~~[redacted]~~ accessory mineral (in this section is amber to brown and waxy on fresh split surface). magnetite (altered to hematite) is also an accessory. hornblende (altered to chlorite) as major maffic. C 30-40 rock contains well disseminated sulphides of Cu (CPY) Fe (FeS2) and minor Mo with limonite and malachite plus appreciable ~~[redacted]~~ hematite (after magnetite)
qtz. vein 22° to core and mineralized fracture ≈20° epidote, chlorite (?) and serpentine on some fractures @ 50°

3/1 29'-33'10" diorite (altered) with notable increase in amount of pink feldspar (both veinlets and ~~that after~~ alteration of rock f'spars); overall, rock is is green-pink (saussurite + pink f'spar)
qtz veins with sulphides of Fe, Cu, Mo [FeS2, CuFeS2, MoS2]; angles to core 20°, 40°

1/2 33'10"-34'6" qtz veins with PY, MoS2, CPY @ 20° to core

2/2 34'6"-35'11" grey feldspar porphyry dyke which is in part pink-f'spar-altered and cut by mineralized fractures 20-30° to core

3/2 35'11"-54' beginning of distinct rock type called diorite but could be called monzo-diorite (non-magnetic) with occasional sulphide bearing fracture at 50°, 20° no qtz 30% white plag (calcite?) anhedral 30% pink feldspar anhedral - epidote on some fractures - chlorite 30-40% hornblende (altered) = anhedral with and hematite 1% 52'-53' increase in Cu Fe Mo sulphides in fractures // to core (<10%)

4/2 54'-55' less pink feldspar (more white 1/1) with minor disseminated Cu Fe Mo sulphides ⇆ increase in hornblende

5/2 55'-56' chara ized by zone of wherein plagioclase anhedral altered to jade green soft "mineral" fractured at 20°

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with pyrite and grey (B

6/2 56'-57'+ as for 4/2 sulphides bearing fractures @ 25°

* whole of rock - Box 2 33'10" - 57'+ is non-magnetic

1/3 57'+ 59' mildly saussuritized diorite with green cream plagioclase euhedral, lesser pink feldspar (<20%) and obvious magnetite (<u>magnetic</u>) copper pyrite, pyrite-bearing fractures @ 25° and >10° which intersect and occur in location of qtz pink feldspar vein

* All rock this box <u>magnetic</u>

2/3 59'-80'6" Rock gradually loses pink feldspar but grey glassy Potassium-feldspar in place of pink gradual increase in biotite content of rock

cl 35+

Biotite : Hornblende 1:3 or 1:4
(biotite sometimes ⇒ chlorite)

occasional andesitic or andesite porphyry
on self inclusion

occasional pyrite, copper pyrite, ~~mo~~ hematite, quartz, pink feldspar bearing fracture vein at about 25° to core one with 50°

1/4 80'6" - 96'2" whole of this box is relatively fresh rock with grey med. grained <u>monzonite</u> :- occasional visible qtz, biotite present in appreciable amounts (biotite : hornblende 1:2, 1:3) and chloride 30 or 35. Calcic plagioclase : Sodium ~~plagioclase~~ plagioclase, not known.
Occasional copper pyrite - pyrite and/or MoS_2-bearing fracture usually intimate with quartz, pink feldspar veins ~~cted~~ at low angle to core / epidote on some fractures also.

2/4 96'2" large (2" wide) quartz-potassium spar vein 96'2"
~~serpentinized-kaolinized~~ some fractures also

3/4 106'6" 108' serpentinized-kaolinized section @ 106'6"
followed by 3 copper pyrite bearing fractures
@ 20°, 25° to core
* crapf vein altered rock box contains magnetic rock
⇒ magnetite

1/5 108'-112'8" moderately fresh with obvious biotite
chloride 35-40

2/5 112'8" 115' section of to tapering alteration. rock
generally light green and non-magnetic, slightly
serpentinized and shows hematite after magnetite
very poorly preserved euhedra

~~1/6~~ 1/6 ~~132'9"~~ 132'9"- 156' generally very fresh to mildly altered monzonite
(visible quartz, fair % of biotite
small amounts copper pyrite and pyrite, occasionally
with pink feldspar and epidote alteration on veins
fractures

3/5 115' moderately fresh to fresh magnetic monzonite
with occasional pyrite, copper pyrite, in
fractures: < 20° to core (2) 50° to core (3)

1/7 156'-171' fresh to altered at margin. (dyke following)
monzonite
with few copper pyrite, pyrite fractures

2/7 171-176'9" grey feldspar porphyry dyke with
pink-green diorite (?)
sulphide bearing copper pyrite and pyrite fractures
@ 20-30° and disseminated pyrite-copper pyrite
very shattered (relatively)

1/8 177'-200'9" pink-green to pink diorite (?) which varies locally
and pink-feldspar alteration in some sections

✓

and this seems to be associated with copper pyrite, pyrite, MoS_2
(relative increase in quartz veins)
where pervasively pink feldspar, altered rock is non-magnetic (magnetite to hematite

2/8 189 also suggestion of hydrothermal biotite (?)
198'6" – 200'9" occurrence of chalcocite in veins → 10°

1/9 209'9" 214'6" generally fresh magnetic monzonite (?) or monzo-diorite and is locally less fresh (211'6"-10")
20% qtz-py-cpy-MoS_2 fracture-veins

2/9 214'6" 22[5]' generally more pink-feldspar-altered & sausseritized of the above with local fresh (biotite evident) patches
5 or 6 qtz-pink-feldspar-biotite (hydrothermal) · py-cpy-MoS_2 veins
@ 20°, 30°, 40°, 80°, 80° to core
as well as minor grains cpy + py

1/10 225 – 247' characterized by spectacular pink-feldspar alteration with numerous qtz-pink fspar-dolomite-biotite (hydrothermal)-py-cpy-MoS_2 veins at low angles to core (20° ±)
only few biotite-fresh spots

229 – 232 very altered section (buff-pink)

~1/10 247 – 247'6" grey feldspar porphyry dyke (with white phenocrysts) which becomes progressively altered (g'mass pinker, phenocrysts greener) to 252' where pink w. green ° and minor disseminated py
weakly magnetic when grey – non-magnetic when pink

1/11 247'6 – 270'6 box contains mostly pink with pink-grey fspar porphyry dyke

1/12 270'6" – 295'10" variably altered feldspar-hornblende porphyry dyke with occasional grains of pyrite (cubic)

~~1/12 (contd)~~

1/13	295'10"-306'11"	pink-grey of above dyke
2/13	306'11"-320'6"	kaolinized (argillic alteration) & serpentinized of the above occasional grain of pyrite
1/14	320'6"-322'6"	as above with slightly chilled margin
2/14	322'6"-325'	monzonite (argillic alteration as above) → imposed <u>after</u> dyke intrusion
3/14	325-327	fresh (w. biotite) magnetic
4/14	327-328	saussuritized of above
5/14	328-330'9"	aplite dyke cut by Py-bearing fracture
6/14	330'9-343'0	rel. fresh (w. biotite) generally but with some altered (non-magnetic) sections
1/15	343-351	fresh monzo-diorite
2/15	351-352	moderately altered section with fractures with py + calcite + gouge(?) + [muscovite(?) alteration]
3/15	352-355+	as for 1/15
4/15	355'4"-357'3"	aplite dyke of red-pink f'spar, qtz (cuts @ 15°)
5/15	357'3"-358'	as for 1/15
6/15	358-361	altered to intensely altered of 1/15 with disseminated py < 2%
7/15	361-365	grey feldspar porphyry dyke with disseminated py < 2%

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8/15 365-369'6" aplite dyke with qtz-stringers PY-CPY-Epidote

1/16 369'6"-377' " " " " [" " (minor)]

2/16 377'-391' altered (argillic alteration & serpentinization) monzo-diorite — occasional qtz-pink-fspar-CPY--PY-MoS_2 fracture (+ pink dolomite (?))

1/17 (>) 391'-393' as for 2/16 "

2/17 393'-395 severe brecciation with qtz-CPY-MoS_2-PY-calcite or dolomite + black carbonaceous(?) material

3/17 395'-396' intensely serpentinized monzodiorite

4/17 396'-397' lesser serpentinization of "

5/17 397-398 lesser " grades into 1/15 with CPY-PY-MoS_2 on fractures (2 or 3) with some dissemination

6/17 408 fresher 1/15 " " " " "

@ 408' hole stopped and abandoned; hole in good condition; casing recovered

overall recovery > 98%

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J-3 Overall Recovery > 95% ✓

DDH J-3 JEAN GROUP 36W, 03N 205°/-45°

1/1 0'-14½ No core - overburden

1/1 14½'-37'8" C1 35-40 Biotite : Hornblende = 1:3, Quartz < 10%
zoned white feldspar (euhedral) 35%, about 20%
K-feldspar (zoned)? sphene and magnetite
relatively fresh
hornblende at least partially altered (chloritized) as
well as local chloritization of biotite

rock magnetic. - epidote, hematite, calcite, limonite ≈ 20°
to core (fractures) commonly have striae ~~and~~
~~sometimes striated~~.

1/2 37'8" - 55'0 as for 1/1 with increasing amounts of K-feldspar
alteration (local - veinous). When fresh is grey, hypidiomorphic to panidiomorphic granular monzonite - diorite

Biotite ≈ 10%

2/2 47'-~~62¼~~ 62'4" saussuritized and serpentinized section
55' both saussuritization and pink feldspar alteration in rock of 1/1
development of foliation @ 60° to core
~~alteration~~
calcite and hematite on fractures
increase in frequency of fracturing

1/3 62'4" - 63'4" fairly altered 1/1
63'4" - 64' aplite dyke
64' - 67'10" altered (saussuritized) generally with local fresh (magnetic sections) plus K-spar altered
generally non-magnetic, 20° to core PY-calcite + gouge(?)
striae @ 55° to long axis elipse
also 50° ~~...~~ of above assemblage in 4 mm width vein

67'0 - 71'8" ~~core lost~~ (?) no core
71'8" feldspar porphyry dyke - green, saussuritized feldspar
phenocrysts with pink (altered) ground-mass
73'0" grey feldspar porphyry dyke
with disseminated sulphide (PY) 2%
PY replaces mafics

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78'0 - 82'0" rock (feldspar porphyry) is pink feldspar altered and is generally pale-pink buff.

82' - 84' andesitic (?) grey feldspar porphyry dyke

84' - 87' " " " "

87 - 91'9" grey feldspar porphyry with disseminated sulphides still shearing on fractures surface [obvious striae) @ 30° 10° to long axis]

73'0" to 91'9" - all with disseminated sulphide (PY) 2%

1/4 91'9" - 95' grey feldspar porphyry (andesite (?))
no disseminated sulphides

2/4 95' - 104' slightly altered 1/1 weakly to non-magnetic

104 rock gets fresher and more obviously magnetic

3/4 (biotite obvious)

108 very fresh

4/4 112 grey, pink feldspar vein (½" wide)

~~+3~~

5/4 113 - 117 less fresh 1/1
fractures with calcite, hematite, chlorite, epidote
some exhibit striae (at varying angles to major axes of fracture ^plane elipse. pyrite and hematite in striae.

1/5 117 medium grained hypid. - panid.
~~mon~~ monzonite (?) cl 35
10 - 15% biotite, 20 - 30% hornblende (often altered)
fresh for 70% of this box, for most part of this box white ploy. euhedra
some fractures ⊥ to core and which exhibit K-spar alteration and argillic(?) alteration at margin
~~occasional pink feldspar~~
~~sulphides~~

2/5 142' - 144' occasional pink feldspar vein (commonly with sulphides)

142' 6" andesite (?) dyke with epidote, hematite fracture @ 60° to core

3/5 130' + 130' 10" minor sulphides in fractures
generally magnetic rock - this box (box 5)

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~~5~~ ~~144' (end of box)~~

1/6 144 - 166'8" generally fresh massive 1/1
occasional pink feldspar vein with CPY - PY - MoS_2 @ 20°
otherwise range of epidotised fracture angles (with chlorite and magnetite)

166'8" rock slightly more pink feldspar altered towards end of box

1/7 166'8" - 170 rel. fresh rock

2/7 170' - 179' alteration more evident but locally variable
fracture w. PY - CAL - EPIDOTE + QTZ.
progressively more altered (both saussuritized and pink feldspar altered) but rock remains fairly magnetic.

3/7 179 - 180 vein ("/4") black mineral (with quartz (MoS_2) + chalcocite (?) + CPY + PY ∠ 10° to core
in fairly saussuritized rock

4/7 180' 6" 190' rel. massive, rel. fresh
hematite, epidote, calcite in fracture ∠ 5°

5/7 190 - 191 very blocky ⇒ less fresh
w. striae @ 50° to long axis

6/7 191 - 192 rock relatively altered but rock still magnetic (despite biotite gone to chlorite)
euhedra mostly evident throughout box.

1/8 192+ - ~~207~~ 197 moderately altered monzo - diorite with slight loss in plag. form and rock exhibits argillic alteration (kaolinized feldspars) [sl. magnetic]

2/8 197 - 202 massive, fresher, magnetic

3/8 202 - 203 loss of distinct euhedral form in plag.

4/8 203 - 216 as for 2/8 sometimes vein altered @ 10° 15° 20° with (fractures) chlorite, epidote, serpentine, calcite, hematite

1/9 216+ 60% of this box contains fractured kaolinized rock with serpentine, chlorite, epidote

223' MoS_2 in qtz.
occasional shear - fracture with MoS_2

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most fractures 10 - 40°
other 40% rock is massive with fresh biotite

241' 8" - 242' 8" pink feldspar altered rock
with disseminated sulphides (Py with minor MoS_2)

1/10 244½ - 254 slightly kaolinized, sometimes stained and pink feldspar altered, hypid.- panid. granular diorite
often fractured and fractures bear epidote

2/10 254' - 254' 6" pink feldspar vein (aplite(?)) - dyke ? serpentine
3/10 254 - 261 (distinct plag. euhedra)
4/10 261 - 262 saussuritized with loss in clarity of euhedra
5/10 262 - 266 as for 1/10, becoming more like 4/10
6/10 266 - 270½ (269'+) kaolinization more pronounced and evidence of shearing at ~60° to core, MoS_2 in fractures
7/10 270½ - 271½ serpentinized (jade-green plag.) section
8/10 271½ - 273½ moderately altered diorite with texture of 1/10
most rock this box is magnetic - considerably greater fracturing in this box.

1/11 273½ - 274 mod. fresh, magnetic, grey
2/11 274 - 280 sm sl. kaolinized, becoming more kaolinized by 280
3/11 280 - 292 generally massive, grey, and grey-pink hypid.- panid. granular diorite which is cut by epidote bearing fractures and sometimes by (hem.- calcite-py-cpy assemblage with marked alteration envelopes)
4/11 292 - 293 increase in kaolinization
5/11 293 - 294 as for 3/11
6/11 294 - 295 kaolinized section with (sulphides [sheared] on low angle [25°] fractures and epidote + 5°, 60°)
7/11 295 - 299 as for 3/11 but more pink feldspar.
1/12 299 - 300' 6" pink feldspar altered and saussuritized hypid.- granular diorite (epidote on fractures)
2/12 300' 6" - 309' 6" generally grey, grey-pink hypid.- panidiomorphic granular diorite with occasional fracture with alteration envelope and occasional fracture with hem - calcite - py assemblage (sheared with obvious striae)
3/12 309½ - 310½ mod. kaolinized of the al.

END OF HOLE (pump breakdown)

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