

PH01-09

0-6.20m **OVERBURDEN**

6.20-17.10m **FELSIC VOLCANIC** - Qtz-rich, siliceous with layers of sph, po, py throughout (sulfides occur along the darker layers); irregular "clots" or zones of quartz, qtz veins throughout; foliations are more variable around these qtz rich zones; overall sulfides ~ 5% but localized areas have greater than and less than this amount.; Foliation 80CA @ 6.30m; Sph occur along these foliations with po, py or by itself as elongated blebs strung out parallel to foliation; sph ~5% max from 6.20-7.80m and decreasing downhole; all sulfides wrap around

7.85m tightly folded qtz with 2mm wide folded sph layer

7.80-8.40m Sillimanite (wispy white mineral), locally enriched

8.40m 1-2cm wide band of pseudonet po-py and sph (po and sph outer edge, py center) 60-90CA

9.70m - thin ~1mm diss py-cpy-sph along foliation ~5%, 50CA

9.80-10.20m Garnet-rich qtz veins with sph, po, py wrapping around grains, sillimanite rich; 30 CA; green alteration

Sph increasing to ~10% as thin 1mm wide layers to ~1cm wide folded layers (especially from 10.90 to 11.80m)

11.80m 3 cm wide qtz vein with coarse-grained sph (overall 15% in qtz vein); sph in and around qtz vein (~90CA); minor py

Sulfides decreasing downhole to 3% (or less locally)

~13.90-14.40m - mottled fine-grained dark felsic volcanic with lighter material around it; 1-2% locally (po-py) in darker material

17.10-28.40m **RHYOLITE** - Purple-grey, fine-grained groundmass with Kfsp porphyry (≤ 0.5 cm; ~15%); unfoliated, unaltered; top contact ~30CA; bottom contact 30CA and white fsp (albite) and qtz; ~3%; ~1mm amp, trace <1% diss py (albite <Kfsp)

28.40-34.70m **FELSIC VOLCANIC** - Grey, qtz-rich, siliceous, blue-grey qtz eyes; 1-3% diss py

28.40-29.90m Qtz vein; top contact with rhy above; rusty along fractures, <1% sph, py in felsic volcanic and qtz, altered zones; garnet

29.60-32.2-m Qtz vein - top contact 50-60CA, bottom contact 35CA; chl alteration (grey)felsic volcanic with <1% diss py

Felsic volcanic continues: grey, siliceous with eyes and diss py throughout; local qtz veins and zones; minor garnet in qtz veins; chl and sericite alteration especially near qtz veins; sph local blebs (individual grains with py along qtz vein 0.5 cm wide (65CA) at 30.90m)

~30.00-32.00m rusty along fractures

Layered net-pseudo-net py-po-trace cpy-minor sph 80CA @ 32.22m, po-py also in cracks in qtz layers perpendicular to foliation

33.82-34.00m Qtz vein/zone with py and lesser po, lesser cpy along contacts; top contact ~50-60CA, bottom contact is indistinguishable; po-py in and around qtz vein and as blebs; altered felsic volcanic with; fsp (more py at the top contact); in inclusion weathered pink-beige with py-po py in other siliceous/Qtz rich zones near diabase contact below

34.70-36.30m **DIABASE DYKE** - Fine-grained (aphanitic) with ~1-2 mm obscure below wispy

irregular patches ~2cm py-cpy within @ 35.95m; Sharp upper contact 10CA; sharp lower contact ~5CA; possibly very small weathered olivine

36.30-88.22m **FELSIC VOLCANIC** - grey-dark grey with qtz eyes, siliceous; po-py-cpy rich (trace sph?); along contact of diabase above and downhole ; dominantly po locally; cpy greatest at diabase contact; overall sulfides range from 7-40%, sulfides wrapping around qtz grains and diss sulfides as well; sulfides layers 40-50CA @ ~37.30m; layers ~1-2 mm to 10cm; blue qtz eyes; sulfide-rich zone continues to 38.50m

From 38.10m - po-rich layers decrease; locally sillimanite-rich felsic volcanic with qtz eyes and pseudonet diss po±py, minor cpy continues downhole (overall sulfides still 5-7% and fine-grained) and occur along foliations; foliation 80CA @ 39.04cm

Few qtz veins/blebs ± po-py in and around qtz

41.80-42.10m - Qtz vein; top contact ~10CA but overall is irregular

42.80-43.80 Qtz vein - contacts are indisquishable; broken core

44.00-45.10m Qtz rich area with qtz veins/zones with minor garnet; irregular contacts 30-40CA; broken core; rusty in places; overall sulfides <1%

Felsic volcanics - greyish color, siliceous with minor diss py-po, trace sph along foliations throughout

46.18-46.38m Qtz vein/zone, contacts indistinguishable

~47.00m and downhole - increasing sulfides slightly, diss po-py±sph along foliations; at ~48.70m are irregular sulfide grains wrapping around a subrounded grey siliceous felsic volcanic "clast"; layers of sulfides are irregular and folded; overall sulfides 5-7% max; sulfide layers 1-2mm 40-50CA ~48.10m

50.65-51.12m Sillimanite-rich (white wispy mineral) vein? ~5CA bottom; minor sulfides near both contacts especially near lower contact

Irregular clots/discontinuous layers in light green grey felsic volcanics continue; chl alteration of mafic material locally present; qtz eyes; sulfides present especially between 51.12-54.60m

52.00-52.23m having ~5% po, py, cpy and few sph rich layers (1-2 mm wide) with foliation of 40CA

56.10-56.73m - qtz vein with irregular, chlorite altered fragments; <1% po-py, cpy along microfractures and clots; sph in felsic volcanic at upper contact (~90CA); lower contact ~11CA; both contacts are irregular and blebby?; lower contact felsic volcanic has pink-brown alteration minerals (possibly phlog) and minor sph

Continuation of greenish grey brown felsic volcanic with qtz eyes; local irregular qtz blebs/zones and boudinaged and folded qtz veins have resulted in variable and folded foliation plane; sph seen as rusty brown-whitish color is locally found wrapped around rounded qtz belbs/veins; diss po[py is also found locally along folded foliations/layers; minor garnets (locally) in and around qtz veins 60.30m - 8cm wide qtz vein ~20CA (30cm along core) with minor garnets <1mm; phlog; <1% diss py, 0.5 cm wide layer of sph with diss py which lie in felsic volcanic and wraps around the folded qtz vein; other thinner layers exist

Gradual decrease of sulfide occurrences and qtz veins/zones felsic volcanic purplish grey with qtz-rich layers and small ~3mm rounded blue qtz eyes; foliation 62.72 60CA; few local po-py±sph rich layers

70.23-70.88m Interval of qtz veins 12cm (30CA) to ~1cm wide (50-70CA) with minor green alteration within and only minor sulfides

71.24m 20cm wide zone of unfoliated felsic volcanic with phlog and lesser sph (2-3%) wrapping

around qtz grains ~1% pu

71.60m 1-6cm wide qtz vein 40-50CA, <1%py

73.65m 0.5cm wide sph rich layer 60CA with elongated qtz grains ~1% diss po

73.70m 2cm wide qtz veins 40CA with pink-beige altered (and possibly trace sph) and green alteration along contact; qtz veins continue- local with <1% py±po±sph, minor pink-green alteration (chlorite, phlog, minor garnet)

Qtz veins 69.97m 4cm wide

70.47m 3cm wide, irregular

78.10m 3cm wide 50CA, irregular

79.10m 80CA 3.5cm wide

79.40m 60CA, 1 cm wide cut by 1 cm wide diss sul (py) 40CA (opposite dip direction)

83.15m 50CA 5cm wide

83.55m 30CA 4cm wide

85.52m 50CA 4 cm wide

85.72m 50CA 2-3cm wide, pinched, irregular

Foliations 65CA@78.85m, 55CA @ 87.16m

Foliations with felsic volcanic defined by aligned sillimanite (locally); layers of diss py-po±sph; or layers of qtz rich and darker layers with foliation

Felsic volcanics continues to EOH as purple-grey color with qtz veins (above) and irregular mottled qtz blebs or zones (often very light green color (seen as alteration of fsp) qtz eyes throughout); sulfides occur as fine-grained diss of py±po or as thin layers of diss-pseudonet py±po±sph±cpy (local occurrence) eg 76.46m 50CA and 60CA two <1cm wide layers of po, py, cpy and sph and with diss sulfides around in felsic volcanic towards end of hole; sulfides 2-5%, fine-grained diss (dominantly py) along layers; sillimanite and sericite rich

88.22m EOH