97.4m to 100.7 m section: generally solid and intact core sample of hematite encrustated argillized and silicified rock; rock texture ranges from dense to spongy with numerous microfractures and microveinlets in local portions; hematite encrustations appear more prominent in the argillized portions possibly due to the more permeable character of these portions to the fluid that brought in the iron oxides.

100.7 to 103.7m section: shift to NQ size core; continous with porevious section; highly oxidized. argillized and silicified rock; generally solid core up section becoming more fragmented at lower levels; colloform-like colour patterns are again noted wherein bands of purples and ochre form subparallel,swirling streaks in an essentilly cream to buff groundmass; the lowest meter is distincly rusted, almost gossanous.

103.7m to 108.2 section: Fragmentd core becoming more intact and solid down section; very poor core recovery of less than 20% probably due to the inherent incompetence of the rock mass; hematite/limonite impregnation of varibly argillized and silicified andesite still very distinct; the unit contains portion that are brittle and crumbly and also sections that are almost entirely material.

108.2m to 111.45 section: Essentially a continous section of relatively solid and intact core sample; the rock mass is still rusted, with short sections that are almost wholly limonite/hematite which tend to occupy only microfractures and vugs; pockmarked and pitted portions may indicate former pyrite-rich sections that were later oxidized and leached.

111.45 to 114.4m section: Continuous with previous section; variably argillized and silicified rock; oxidized and hematite/limonite impregnated; texture of rock mass varies from spongy to pock marked; argillized portions tend to be more rusted than silicified intervals; ochre, red and purple colours form swirlimg bands or streaks all across a generally buff to cream coloured groundmass.

114.4m to 116.9m section: Oxidized rock passes on to a relatively fresh argillized and silicified andesite and then goes back to a highly oxidized section; the unoxidized portion (114.6m to 115.2m) is generally gray to dark gray in colour and fine grained; much of the feldspars are altered to clay and the mafic minerals into pyrite; texturally the rock mass is made up of interlocking grains of quartz, clay and pyrite; corrosion of the pyrite grains is noted in the slightly oxidized portions; little semblance of surviving pyrite grains are noted in the more highly oxidized sections.

116.9m to 119.1m section: Essentaillly fresh, variably argillized and silicified andesite with a 0.5m long interval of oxidized material in the middle of the section; the unoxidized portions are gray to dark gray in colour and characteristically fine grained; clay after feldspars, quartz and pyrite are the most prominent minerals; pyrite is about 10 to 15% of the rock mass; it appears as fine to very fine crystals dispersed throughout the groundmass and as clusters roughly 1 cm in diameter; pockmarks and vugs observed in the highly oxidized portions may be former sites of pyrite clusters prior to oxidaton and leaching.

119.1m to 123.7m section: Essentially continuous with previous section; relatively unoxidized andesite passing on to oxidized materials down section; breccia-like structures with fragments of silicified andesite surrounded by milky quartz are noted in some portions; milky quartz are fissure fillings possibly incorporating fragments of the host rock during intrusion; pyrite is ubiquitous in both the silicified host and the milky quartz; numerous microveinlets almost entirely of pyrite are found throughout the silicified rock; mafic minerals of the silicified host are completely altered to pyrite.

123.7m to 125.7m section:continous with previous section; highly oxidized silicified and argillized andesite; hematite/limonite stained; moderately fragmented especially within the middle part of the section; rock texture commonly pitted; tends to be

fragile and crumbly.

125.7m to 128.7m section: Partly oxidized; silicified andesite; gray to dark gray colour with distinct patches of red, ochre and purple; rock appears dense although pitted or vuggy/vesicular portions are locally present; quartz and pyrite dominate the rock mass; quartz is gray to white or clear, pyrite is extremely fine grained; dark patches observed in the rock may represent areas wherein pyrite inclusions are so fine that they make quartz look gray to dark gray; no other sulphides except pyrite were noted in this section.

128.7m to 132.7m section: continous with previous section; mainly silicified andesite with locally argillized and oxidized portions; rock is gray to light gray with patches of red brown and purple representing hematite impregnations; the andesite is typically fine grained and dense although vecicular portions were also noted; the core sample is generally solid and intact with only slight fragmentation possibly coincident with the fractured or sheard section of the rock; again, the dark colour of the rock may be due to the very fine pyrite inclusions in the groundmass; on the average, pyrite maybe about 15 to 20 % of the rock mass.

132.7m to 136.7m section: Generally continous with previous section in terms of rock type and character; gray, fine grained, silicified andesite with local oxidized portions; red and purple hematite stains and impregnations still very prominent; milky quartz veinlets/ microveinlets; becoming distinctive; these tend to vary both in size and orientation; pyrite is around 10% and mainly found as disseminations or interstitial fillings in the groundmass; pyrite dominated veinlets/ microveinlets rarely noted.

140.0m to 142.9m section: Essentially gray to light gray, silicified andesite; locally vesicular or porphyritic in texture; hematite stains inconspicous; veinlets of milky quartz are prominent varying both in size 1 to 7mm wide, and in orientation; pyrite content is anywhere between 5 to 10% and the occurrence is patchy, fragmentation of the core is slight and tends to

follow local fractures or veinlets

142.9m to 146.25m section: Continous with previous section but is more solid and intact; oxidized portions show distinct red and purple hematite stains; porphyritic texture locally prominent with phenocrysts of plagioclase and milky quartz in a matrix of fine grained pyrite and quartz; milky quartz veinlets permeate the entire section; they tend to pinch and swell along their trend and sometimes just flood the groundmass incorporating sections or fragments of the host rock; pyrite is found mainly in the groundmass and as clusters contiguous to quartz veinlets.

146.25m to 148.75m section: Gray coloured, silicified andesite; locally oxidized and iron oxide stained (hematite/limonite); texture is generally fine grained, granular with only local portions showing porphyritic character; milky quartz veinlets still very pervasive and prominent; pyrite occurrence is patchy and irregular and the content is around 5 to 10%.

148.75m to 151.8m section: Silicified andesite; fine grained, gray to dark gray colour; milky quartz vein/veinlets are very prominent in this section; a five centimeter wide quartz vein was noted at level 150.8m forming a 45^0 angle with respect to the core axis; the vein includes subparallel dark bands that are conspicuously pyrite rich; it coloured, irregular bands at about 151.4m to 151.8m were also noted; epidote is distinctive in these bands; milky quartz veinlets found adjacent to these and milky quartz fragments within the bands would indicate that the latter features arose from the intrusion of the milky quartz; pyrite occurrence is patchy and irregular; it is around 5 to 10% of the rock mass.

151.8m to 154.8m section: silicified andesite, lower section almost wholly vein material; milky quartz appears to permeate the silicified rock, often incorporating irregular fragments of the host thus giving rise to a breccia-like structure; pyrite is ubiquitous but is generally less than 10% and found

mainly in the silicified groundmass.

154.8m to 157.8m section: Continuous with previous section; milky quartz vein/veinlets still very prominent and pervasive; boundaries or contacts between veinlets and country rock are poorly defined, often coalescing; milky quartz appears to just flood the groundmass resulting in its subsequent silification; breccia-like features still noted locally; pyrite is around 5%, mainly disseminations of fine crystals in the groundmass; core sample is relatively solid and intact.

157.8m to 160.17m section: Essentially the same material in terms of rock type and texture as the previous section; silicified andesite cut by numerous milky quartz veins/veinlets; breccia-like structure very prominent along interval 159.25 to 159.60m; rare subangular to angular fragments of silicified rock are immersed in an essentially milky quartz matrix; in other portions the milky quartz and host rock contacts appear to merge; pyrite is limited to the silicified rock and is generally less than 5% average.

160.17m to 162.88m section: Continuous with previous section; gray to light gray silicified andesite; veinlets of milky quartz still abundant, tend to permeate the silicified host rock; a 10cm wide vein of essentially quartz materila was noted at 160.25m, within the vein subparallel veinlets of pyrite and gray quartz were observed; the vein material itself is vuggy with most of the vugs lined by drusy quartz; pyrite is found throughout the section and is around 7% average.

162.88m to 165.2m section: Highly fragmented section of variably argillized and silicified andesite; oxidized with some hematite stains; rock texture appears chalk-like and powdery; silicified portions tend be brittle and dense; pyrite was not noted in this section; core recovery is only around 40% probably due to the poor quality of the rock unit.

165.2m to 168.1m section: From the previous section, the rock posses on to the more typical silicified andesite; gray to light gray colour, fine-grained; milky

quartz veins/veinlets again prominent especially in the upper section becoming less distinct at the lower level; milky quartz appears to impregnate the whole rock mass often incorporating discreet fragments of the host within essentially vein material; pyrite is locally abundant particularly in the silicified groundmass and more rarely vug and fracture filling; it is around 10% average.

168.1m to 171.65m section; continous w/ previous section; locally fragmented portions where slight argillization is noted; milky quarz veins/veinlets still prevalent; the section 170.5m downwards is almost totally vein materials; bleaching of silicified portions has resulted in a generally light gray to buff colour of the unit; epidote is locally abundant; dark gray to brown bands or islands w/ in the rock mass are dominantly pyrite rich portion; pyrite lined microveinlets or fractures forming dendritic patterns were also observed locally; pyrite content is anywhere between 5 to 10% for the whole section.

171.65m to 174.5 m section; silicified andesite; gray colour, fine grained, milky quartz veinlets still prominent but not as pervasive as in the previous section; numerous vugs are noted especially along the veinlet trends; these are sometimes pyrite impregnated or rusted (oxidized pyrite); core sample is generally solid and intact except for a 40cm interval in the upper section that is moderately fractured and fragmented; average pyrite content for the whole section is less than 5%

174.5m to 176.0m section: continous w/ previous section; silicified andesite; gray colour; fine grained; milky quartz veinlets relatively rare; pyrite impregnations mainly along veinlet and fracture surfaces; fine disseminations in the groundmass after mafic minerals are also noted; pyrite content is around 15% ; core sample is exceptionally solid and intact
176.0m to 179.0m section: silicified andesite; gray colour; fine grained' intergranular texture; pyrite impregnated' w/ practically all mafic constituents replaced by finely crystalline pyrite; milky quartz

veinlets occur irregularly throughout the section; microveinlets form swarms and networks in the silicified mass; microbreccia structures also noted; narrow fractures and vugs follow the trend of the veinlets and are generally lined by fine crystals of pyrite
179.0m to 182.0m section: continous w/ previous section but generally more fragmented core sample; silicified, fine grained andesite; quartz veinlets still prominent but indistinct; they cross cut one onother forming mesh like networks in some sections; pyrite is ubiquitous as fine disseminations and clusters in the rock mass; average content is about 15%

182.1m to 186.0m section; silicified andesite; oxidized in some portions resulting in red brown to purple hematite stains; milky quartz veins/ veinlets locally prominent; a 10cm wide veinlet dominated section along level 182.3m shows oxidized rock criss crossed by swarms of quartz microveinlets; pyrite is still abundant, averaging around 15 to 20% across the whole section; fragmentation of the rock mass is particularly intense along the more oxidized portions

186.0m to 189.0m section: Oxidized rock continues to the upper half meter part of the section and then abruptly passes on to a fresher, relatively unoxidized andesite, it is silicified to varying degrees and is texturally fine grained; slight to moderate argillization noted predominantly at the lower section where bleaching of the rock is evident; pyrite is still about 15% of the rock mass occurring primarily as mafic mineral replacements; disseminations of pyrite within the milky quartz veinlet was also observed although this is a rather uncommon feature.

189.0m to 192.0m section: Variably silicified and argillized andesite; gray to light gray colour, fine-grained, almost homogeneous texture through out the section; milky quartz impregnation is pervasive, appearing as irregularly shaped veins, bands and patches in a silicified mass; vugs and voids in the milky quartz veinlets are commonly filled with sulphur, pyrite is abundant in the silicified rock, averaging about 10 to 15%; a short oxidized interval was noted at level 192.5m

192.0m to 195.0 m section: Silicified and argillized andesite; oxidized at the lower 1.5 m portion; milky quartz veinlets still distinct; rock mass appears highly pitted almost sponge like in some portions; it is generally porous and permeable; oxidized portion characteristically hematite stained with prominent red to purple bands or streaks contrasting sharply with the buff to cream ground mass; pyrite content is still around 15%; fragmentation of the core sample is moderate.

195.0 m to 198.0 m section: Relatively unoxidized rock with very minor oxidized portions; variably silicified and argillized in portion; porphyritic texture noted, the interval 195.2 m to 195.6m shows mainly light gray, fine grained, bleached rock; the groundmass is dominantly quartz and clay (probably after feldspar) with around 10% pyrite occurring as very fine disseminations; pyrite content of the rest of the section is 15 to 20%; highly pitted or vesicular portions are typically argillized, numerous microveinlets of quartz are noted with these portions; moderate to intense fragmentation characterize the core sample.

198.0m to 201.0 m section: Silicified andesite; fine grained to porphyritic texture; locally oxidized and fragmented; milky quartz veins/ veinlets are prominent; the structures or patterns shown by the quartz veinlets is suggestive of its intrusion into a rather permeable mass where it simply permeated the whole rock, silicifying in it and taking in fragments within itself; that space is available is suggested by the numerous vugs and cavities lined with drusy quartz or pyrite found in veins/veinlets; the ill defined contacts or boundaries between the vienlets and the intruded rock also supports the contentionn that the vein material easily penetrated the intergranular spaces and pores of the rock mass, flooding it with silica.

201.0m to 205.2m section: Essentially continous with the previous section; displaying much of the same features and character of the overlying sequence;

porphyritic texture is still distinctive; milky quartz veinlets equally prominent especially in the upper portions; they tend to form irregular bands and patches inthe rock commonly containing angular fragments of host and giving rise to a breccia-like structure; vugs within the vienlets are sometimes filled up with sulphur; pyrite is mainly found in the groundmass and is estimated to be about 17% core sample is generally solid and intact with minimal fragmentation.

205.2m to 208.3m section: Silicified andesite with local argillized portions; generally fine grained to porphyritic in texture; the interval 205.4 to 205.6m shows fish-scale features with wavy dark streaks contrasting sharply with the white groundmass; veinlets of milky quartz still evident with the lowest 60cm portion of the section almost totally quartz vein material; pyrite is patchy in distribution, limited mainly to the groundmass and as veinlets/vugs filling; it is on the average around 10% of the rock mass; the core sample is relatively fragmented down section.

208.3m to 211.2m section: Continuous with the previous section; partially oxidized and hematite stained portions locally observed; milky quartz veins/veinlets still pervasive though irregular in distribution; microbreccia structure in some of the veinlets also observed; vugs and voids following the trend of the veinlets and with in the veinlets themselves are commonly filled up with sulphur or otherwise lined by ultrafine crystals of pyrite content is about 10% in the groundmass.

211.2m to 211.2m section: Generally solid and intact core sample except for the interval 211.9m to 212.4m which is highly fragmented; variably silicified andesite impregnated in portions by milky quartz; veinlets are still irregular in shape and variable in orientation; the portion along 212.65 m to 213.25m showsthe rock mass and quartz vein both highly pitted and sponge like in texture; pyrite dominated microveinlets appear as dark lines cutting across on essentially cream to buff quartz groundmass; sulphur stains and vug fillings are common in this portion; pyrite distribution is rather irregular

but on the average is less than 10%; the core sample is relatively solid and intact all along this section.

215.4m to 218.4m section: Continuous with the overlying sequence; highly silicified andesite with very pervasive milky quartz impregnations; the lower 2m portion is particularly striking because of its almost continuous section of milky quartz dominated rock mass; the prominence of pyrite microveinlets cutting across both the quartz veins and the silicified host rock was also noted; they appear as irregular and wavy dark lines all thoughout the sction; on the average, pyrite is about 15-20%; the core sample is exceptionally solid and intact.

218.4 to 221.76 m section: Milky quartz dominated rock mass continues to this section; slight oxidation with hematite stains was noted very locally; breccia-like features showing angular fragments of the intruded rock surrounded by or incorporated into the quartz vein material were again encountered ; in other portions, the milky quartz appear to permeate the silicified rock mass making it difficult to discern the contact between the vein and the intruded host; vugs and fissures within the vein material and the silicified rock are sometimes filled in by pyrite; its average content is around 12% for the entire length of the section.

221.76m to 224.4m section: Essentially contiuous with previous section in terms of both lithology and geologic character; pitted or sponge-like texture locally noted; pattern encountered in the more highly quartz impregnated portions are generally irregularly patchy to concrete-like, with multi-shaped fragments of both silicified rock and vein material mixed together in a siliceous matrix; pyrite occurs both in the groundmass and in the included fragments; minor microveinlets of pyrite also locally observed.

224.7 m to 227.4m section: Silicified, quartz impregnated unit continues on this section; the pattern shown by the milky quartz intruded portions is a hodgepodge of variably shaped fragments of silicified rock and pyrite rich clusters and vein material in

matrix of milky quartz; various shades of grey, cream and yellow make up the variegated colour of this portion; numerous vugs and interfragment voids were noted to be lined by pyrite crystals or filled in by sulphur; pyrite, though pervasive, is less than 10% average.

227.4m to 230.4m section: Continuous with previous section; fine-grained to porphyritic, silicified andesite intruded in portions by milky quartz veins/ veinlets; breccia-like features common in the veins / veinlets; sulphur deposition within vugs and voids of the vein material still distinctive and conspicuous; quartz veinlets apppear to be less numerous down section; pitted and porous portions sporadically noted along short intervals; pyrite still present at around 10% of the rock mass; the core recovery and quality is generally good with minimal fragmentation noted.

230.4m to 233.4m section: Variably silicified andesite; gray to light gray colour; generally fine grained; pitted or vesicular portions locally present; these tend to be porous and highly permeable; quartz veinlets are sparse in the upper section but becomes very prominent in the last half meter portion; sulphur deposition notable in the milky quartz vugs and micro fissures; pyrite still occurs as replacement of the mafic minerals in the silicified host and as minor fillings of microfissures in the veinlets; it averages around 15% for the entire section.

233.4m to 237.2m section: Essentially continous with the previous section; variably silicified andesite; fine grained to porphyritic texture, locally pitted or vesicular; microveinlets/veinlets of milky quartz also present but not as pervasive as in the two sections prior to the previous one; vugs and voids form traces roughly following the trend of the veinlets; these are locally lined by fine crystals of pyrite; fine disseminations of pyrite are also common especially in portions contiguous to quartz veinlets; the average content is 10 to 12 %; the core sample is slightly fragmented.

237.2m to 240.95m section: Variably silicified and argillized andesite; gray to light gray colour with patches of cream along milky quartz intruded portions; argillized portions tend to be crumbly, powder-like in texture, porous and highly water absorbent; fragmentation of the core is relatively intense in these portions; milky quartz displays essentially similar intrusive features as in previous section with the quartz forming anastomozing veinlets or permeating the host rock; pyrite is ubiquitous in the silicified rock and comprises about 10-15% of the rock mass.

240.95m to 244.65 m section: A continuing sequence from the previous section; variably silicified and argillized andesite, although the latter is considerably subdued compared to the preceeding section; gray to light gray colour; generally fine grained; pitted and vesicular locally; milky quartz intrusions still pronounced although irregularly distributed; veinlets tend to pinch and swell along their trend and oftentimes simply coalesce with the surrounding silicified mass; distinct sulphur stains are noted along micro-fissures and vugs in the veinlets; pyrite constitutes roughly 15-17% of the rock mass, occurring primarily as replacement of original mafic constituents and veinlet material.

244.65 to 247.75m section: variably silicified andesite; generally fine-grained, locally highly pitted or vesicular, almost sponge-like making it porous and permeable; quartz veinlets form irregular networks in the intruded mass, locally forming breccia-like features; boundaries or contacts between the rock and veinlets appear to fuse as the vein material simply permeate the surrounding mass; pyrite content is about 12% in this section, again appearing mainly as disseminations or clusters of fine crystals in the silicified rock.

247.75 to 250.4m section: continuous with previous section in terms of rock type and character; veinlets of milky quartz still prominent although becoming less distinct down section; rock mass silicified, fine grained andesite; sulphur impregnations in some of the

vugs and fissures in the veinlets are locally noted; breccia-like structures again observed along vein projections; core sample is generally solid in the upper portion becoming more fragmented down section; pyrite is still 15% of the rock mass; microveinlets/stringers of pyrite are also noted in the silicified rock.

250.4 to 253.9m section: The upper meter portion is characteristically fragmented, silicified rock passing on to an intensely fragmented portion becoming clayey at the deepest end; while the top portion is clearly silicified andesite, the bottom part is mainly hematite stained, clay materials, probably representing an oxidized and argillized rock mass; core recovery is generally poor especially in the last 1.5 m portion; pyrite content of the silicified portion is around 10%-12%; in the argillized but unoxidized middle portion of the section, it is about 7-10% average.

253.9 to 257.5m section: Essentially a continuous section of highly argillized material, almost totally clayey; buff to dirty cream colour; powdery and chalk-like when dry and plastic when wet; fine disseminations of pyrite averaging around 5% are noted within the clay matrix; oxidation in some portions has resulted in the red to brown discolouration; core recovery is only moderately good because of the incompetent character of the rock mass.

257.5 to 260.3m section: Continuous with previous section; argillized rock, almost totally clay material.

260.3 to 267.2m section: Continuous with previous section; argillized zone; pyrite bearing around 5 to 7%; slightly oxidized; core recovery generally poor.

267.2 m to 271.3m section: Continuous with previous section; highly argillized rock mass; buff to cream colour; powdery and crumbly when dry and plastic and moldable when wet; fine pyrite crystals are disseminated throughout the section and constitute around 5% of the material; core recovery is still poor in this section.

271.3m to 277.2m section: Continous with previous section; highly argillized rock mass; pyrite bearing at about 7%; core recovery is poor at around 60% to 70%.

277.2m to 283.0m section: Highly argillized rock mass continues to this section; the rock mass is mainly clay plus remnant quartz and pyrite with the latter occurring as very fine disseminated crystals in the ground mass; it is around 10% average; core recovery is about 60% for the whole section.

283.0m to 287.5m Continuous with previous section; highly argillized, almost totallly clayey material; buff to cream colour; powdery and chalk-like texture when dry and plastic when wet; pyrite disseminations still at around 3 to 5% of rock mass; core recovery is about 65%.

287.5m to 292.0m section: Argillized zone continues to this section but intensity of the alteration appers to lessen down hole; from almost totally clayey material up section to fragmented argillized rock mass at depth; fragments of chloritized and pyritized andesite (?) noted at the bottom portion; overall pyrite content is < than 5%; core recovery still poor at around 50 to 60%.

292.0m to 295.5 m section: Fragmented, argillized rock of previous section passes on to a generally intact; relatively unargillized material; dark gray to greenish-black in colour, fine grained, with numerous veinlets and microveinlets of milky quartz and anhydrite; chlorite alteration is quite distinct; magnetite is pervasive in this section possibly making up to 15 to 20% of the rock mass; the middle portion of the section is highly fragmented and core recovery is generally poor; pyrite content is around 5 to 10% of rock mass.

295.5m to 300.1m section: Essentially continuous with previous section; dark gray to greenish black, fine grained andesite; anhydrite veinlets still prominent but are of variable trends and sizes; magnetite remains pervasive constituting anywhere from 15 to 20% of the rock mass; pyrite remains distinct at around 5% of the rock mass; usually occurring as fine disseminations in the rock mass; core recovery is about 75 to 80%.

APX. 13 Detailed Geologic Log, MJPP-2

DRILLHOLE: MJPP-2
LOCATION: Bgy. Capinang, San Dionisio
(UPAO Drill Site)

0 - 3.60m section: Hematite-Limonite stained section. Reddish brown to brown color, with hematite coatings showing purplish brown. Highly oxidized pyrite occurs as microveinlets and impregnations. Pyrite occur as very fine grains commonly occuring as coatings. High degree of oxidation resulted in the deep brown to reddish brown color.

3.60 - 4.90m section: Light gray with buff white horizons. Generally weathered and leached. Generally argillized with some portions appearing like gougy material.

5.15 - 6.20m section: Patchy colored zone, brown-white purple brown. Presence of quartz material within a moderately oxidized zone giving an almost breccia like structute.

6.20 - 8.61m section: Highly oxidized section. Reddish brown to purple brown with some buff white patches. Presence of hematite is pervasive occuring as coating, microveinlets, veinlets and along vugs and fracture fillings. Original mafic minerals no longer visible and totally altered. Pyrite occurs as impregnation, veinlets and surface coatings.

8.61 - 10.70m section: Patchy colored section, reddish brown to brown with buff white patches. Hematite is pervasive throughout the section with moderate amount of limonite stains. Multidirectional pyrite microveinlets criss-cross the whole section.

10.70 - 11.50m section: Color banded section, pyrite veinlets and microveinlets in parallel directions giving a banded structures. Pyrite generally oxidized giving purple brown to black bands. Generally dense core.

13.55 - 14.60m section: Reddish brown to purplish brown highly oxidized zone, generally porous. Hematite is pervasive occuring as surface coatings, fracture

fillings and present along vugs and open spaces. Locally pitted section could also be observed.

14.60 - 18.30m section: Reddish brown to brown with purple brown patches. Highly oxidized zones could be observed with some sections exhibiting color banded structures. Vuggy structures could also be observed. Pyrite occurs as fine disseminations and microveinlets; oxidized pyrite gives a black color tint.

18.30 - 20.68m section: Moderate-highly crushed core, reddish brown to purple brown. Generally pitted giving a porous structure. Hematite stains is pervasive with some local limonite stains. Oxidized pyrite occurs as disseminations and microveinlets.

20.68 -23.70m section: Generally continuous with the previous section with some portion more competent but becoming highly crushed going down the section. Hematite and limonite stains highly notable with some portions exhibiting porous structures.

23.70 - 27.80m section: Moderately argiliized zone. Moderately to highly crushed cores. Patchy colored zones could be observed on the more competent cores. The 26.40 to 27.80m section is highly crushed, strongly argillized with some stains of limonite and hematite. Color varies from buff white to redddish brown to light purple brown.

27.80 - 30.60m section: Reddish brown to brown with patches of purple brown and buff-white color. More competent cores exhibiting sponge-like texture locally. Presence of quartz veinlet noted at 28.15m. Buff white quartz around 0.20cm with some oxidized pyrite grains along edges of the veinlet.

30.60 - 33.80m section: Reddish brown to purple brown, moderately fragmented with hematite and limonite stains. Limonite stains are highly visible at 31.70m level. Silicification is higher than the previous section. Pyrite occurs as minute veinlets and disseminations.

33.80 - 35.90m section: Generally continuous with the

previous section, but silicification increases as it goes down. Patchy colored zones, reddish-brown to purple brown with some buff white patches. Moderately argillized, with hematite stains and isolated limonite patches.

At 36.10m section: Quartz vein material was noted occuring as veinlets and small quartz pockets and patches. Highly oxidized pyrite crystals could be observed occuring as criss-crossing micro-veinlets and disseminations. Very fine fresh pyrite crystals could also be observed and occuring as impregnations.

36.45 - 41.80m section: Reddish brown to purple brown with hematite and limonite stain. Some sections exhibits sponge-like structure, and highly porous. Moderately argillized and silicified. Quartz vein material and patches of quartz could be observed locally. Pyrite generally occurs as disseminations and micro-veinlets. Cores are generally more competent.

41.80 - 44.10m section: The same as the previous section, but relatively more fragmented cores with increasing amount of quartz material.

44.10 - 48.65m section: Relatively crushed and broken cores exhibiting reddish brown to purple color. Patchy colored zones and some small color bands could be observed. Highly pitted and spongy-like texture is well observed with quartz veinlets observed as buff-white to milky-white color bands. Quartz veinlets varies in thickness and generally multidirectional.

48.65 - 49.15m section: Quartz vein material was observed, generally a series of quartz veinlets and patches of quartz. Vuggy structure, white to buff white color and is criss crossed by multidirectional pyrite veinlets. Hematite is well observed along the fracture planes and on the surface.

49.15 - 51.20m section: Generally continuous as the previous section exhibiting pitted structures and very porous.

51.20 - 52.60m section: Moderately fragmented core with mottled color which varies from buff white to brown, reddish brown with purple brown tint. Moderately argillized and silicified locally. Slightly porous with hematite stains.

52.60 - 53.60m section: More dense and competent core with some color bands observed. Less porous with moderate hematite stains.

53.60 - 57.60m section: Moderately fragmented and crushed core. Generally continuous as the previous section but becoming more argillized going down the section. Pitted portions could be observed locally.

57.60 - 59.12m section: Highly argillized zone buff white color with reddish brown to purple brown patches. The white portion is generally crumbly and tends to be more plastic when wet.

59.12 - 60.50m section: Reddish brown patchy color, with moderate hematite stains, limonite is present occasionally. Generally pitted with abundant oxidized pyrite veinlets.

60.50 - 61.80m section: Presence of quartz veinlets is highly noted. Quartz veinlets range from 0.10cm to 2.0cm thick, milky white in color and generally vuggy. Quartz material is pervasive within the section occuring as veinlets/microveinlets and patches. Oxidized pyrite is present as microveinlets, disseminations and clusters with the vugs. Milky white, reddish brown and black color bands are well observed.

61.80 - 68.15m section: Reddish brown patchy color with buff white patches and purple brown zones. Generally pitted section showing an almost spongy texture. Moderately argillized slightly silicified section with locally fragmented section. Silicification increases going down the section.

68.15 - 69.60m section: Section is within a quartz vein material zone. Quartz is present as veinlets, microveinlets and patches. Milky white color with vuggy

portions and multidirectional trend. Color bands and colloform-like color patterns are well observed; milky white-reddish brown-purple brown and black bands are very prominent. Highly oxidized pyrite occurs as criss-crossing microveinlets and stockworks and vug-fillings along this section.

69.60 - 73.12m section: Reddish brown patchy colored section, with pitted to sponge-like texture. Moderate amount of argillization and slight-moderate silicification is observed. Hematite and limonite stains are well noted.

73.12 - 75.55m section: Reddish brown to purple brown with white patchy color. Generally same as the previous setion but hematite is more pervasive giving a purple brown tint throughout the section. Silicification increases down the section.

75.55 - 78.85m section: Section is made of highly silicified rock (andesite) with quartz vein materials occuring mostly as patches and veinlets/microveinlets. Breccia like pattern noticeable due to the irregular formation of quartz material and the original rockmass. Color bands are also well observed with abundant pyrite stockworks and microveinlets criss-crossing the whole section. Pyrite (fresh) is discernible as impregnations (1%).

78.85 - 83.09m section: Reddish brown to purple brown patchy color, white patches could also be observed locally. Moderately argillized and silicified. Pitted structures present locally with moderate amount of hematite stains. Bands of hematite stains and highly oxidized veinlets could be observed.

83.09 - 87.15m section: Relative crushed core with isolated competent portions. Generally continuous as the previous section but with lesser degree of silicification and lesser hematite stained surface. Argillization is moderate with powdery and crumbly portions.

87.15 - 90.32m section: Reddish brown to purple brown color with patchy portions. Highly weathered andesite, slightly-moderate silicified and argillized. Hematite stains is pervasive with occasional limonite stains. Pitted zones are recognizable but not so extensive.

90.32 - 94.0m section: Generally same as the previous section but cores are more dense and competent. The degree of silicification increases going down the section. Hematite stains are lesser than the previous section. Color bands are notable with oxidized pyrite microveinlets present as black interlocking bands. Fresh pyrite crystals are present as minute impregnated grains (1-3%).

94.0 - 95.47m section: Continuous as the previous section but is more silicified and small quartz veinlets are present locally.

95.47 - 96.40m section: Made up of quartz vein material. Quartz occurs generally as multidirectional veinlets, patches, microveinlets and isolated pockets. Quartz has a milky white appearance with very limited vuggy portions. Quartz veinlets varies from 0.10cm - 1.20cm thick. Oxidized pyrite microveinlets and disseminations are well noted. Fresh pyrite grains occur as impregnations (=1%).

96.40 - 98.60m section: Patchy colored section which varies from light gray, pinkish white reddish brown and buff white patches. Generally pitted and exhibits a breccia-like texture.

98.60 - 101.32m section: Highly silicified section with patchy color. Quartz material is present as veinlets, patches and replacement of the mafic minerals. Extensive replacement of the original rock mass and the irregular formation of quartz material resulted in the breccia like texture of the rock mass. Original groundmass is still recognizable and exhibits a light gray color. Quartz varies in color, milky white buff white to pinkish white due to hematite stains.

101.32 - 107.57m section: Pinkish-reddish brown patchy color with milky whiteto pinkish white patches. Moderatelyto weakly argillized, moderately silicified with local quartz microveinlets. Breccia like appearance is not so extensive as the previous section. Strong but variable hematite staining. Oxidized pyrite microveinlets crisscross the whole section. Fresh pyrite impregnations (1-3%).

107.57 - 107.78m section: Moderately fresh to moderately altered andesite, light gray with very minimal hematite stain.

107.78 - 109.50m section: Generally same as the previous section, reddish brown patchy color but becoming more silicified going down the section with some microveinlets of quartz material.

109.50 - 110.0m section: Light gray, moderately silicified andesite showing some vuggy portion of the quartz vein material. Fresh pyrite crystal present as impregnations. Contact between the reddish brown and light gray portion is well defined.

110.0 - 110.45m section: Reddish brown patchy color; moderately silicified section.

110.45 -111.23m section: Strongly silicified section with quartz veinlets in irregular and convulated direction.

111.23 - 115.65m section: Reddish brown patchy colored section moderately silicified, pitted in some portions with interlocking oxidized pyrite microveinlets of multidirectional trend.

115.65 - 116.17m section: Strongly silicified section with numerous quartz veinlets ranging from 0.10 - 1.60cm thick, milky quartz showing vuggy portions. Fresh pyrite impregnations present within the vein (1%).

116.17 - 116.48m section: Light gray moderately silicified andesite with well defined contact.

116.48 - 119.0m section: Moderately to strongly silicified section showing intermittent quartz veinlets. Color bands could be observed as milky white, reddish brown and black bands.

119.0 - 119.85m section: Light gray moderately silicified andesite with well defined contact with the reddish brown rock mass. Fresh pyrite = 2-4%.

119.85 - 121.00m section: Reddish brown patchy color section with pitted portions and quartz vein material showing bonded structures.

121.00 - 122.88m section: Light gray with minor reddish brown patches. Moderately silicified with minor quartz veinlets.

122.88 - 125.68m section: Reddish brown to purple brown patchy color, moderately silicified and argillized. Minute quartz veinlets with multidirectional trend noted. Fresh pyrite crystals (=2%) occurs as impregnation. Oxidized pyrite microveinlets crisscrossing the whole section.

125.68 - 128.66m section: Light gray to greenish gray patchy colored section, porphyritic in appearance, slight-moderately silicified with local argillization. Fresh pyrite crystals significantly increases in amount and varies from 5 - 10%.

128.66 -128.88m section: Quartz veinlets present within the section (=0.1 - 0.60cm thick).

128.88 - 131.82m section: Light gray to gray slightly silicified and moderately argillized with gougy portion which tend to be crumbly clayey and sticky when wet. Locally sheared (?) zones could be observed. Fresh pyrite crystals occur as veinlets, disseminations and clusters with variable amount (10-15%).

131.82 - 135.00m section: Generally same as the previous section but with a higher and increasing degree of silicification. Gougy and strongly argillized part is limited only on the lower part of the section.

Irregular quartz veinlet was observed at 133.05m (=0.20cm - 1.00cm thick) with abundant minute fresh pyrite disseminations and veinlets (15%).

135.00 - 136.93m section: Reddish brown to purple brown patchy colored section, moderately silicified with pitted surface texture. Hematite stain is extensive with some portion exhibiting light gray patchy color.

136.93 - 137.70m section: Light gray to gray with very minimal hematite stain. Abundant pyrite crystal disseminations. Oxidized pyrite gives dark gray to black patches (=15%); fresh pyrite occurs as veinlets and disseminations (=10%).

137.70 - 139.71m section: Reddish brown to purple brown with pitted to spongy texture probably due to the oxidation of former pyrite crystals. A quartz veinlet was observed at 137.80m level (=0.50 -1.20cm).

139.71 - 142.50m section: Light gray to greenish gray with white patches. Moderately silicified with intermittent quartz veinlets, some of which exhibits banded structure (milky white and gray to black streaks of oxidized pyrite). Pyrite is extensive and varies from 15-20%.

142.50 - 145.05m section: Reddish brown to purple brown patchy color with greenish gray to light gray portions. Silicification varies from point to point with some portions highly argillized and appears to be gougy. Silicified portion with some quartz veinlets observed at 143.30-144.20m.

145.05 - 147.65m section: Light-dark gray with small whitish portion. Generally argillized and sheared zone exhibiting gouge material which tends to be crumbly and sticky when wet. Moderately broken cores.

147.65 - 150.43m section: Light gray, porphyritic texture and more solid and dense core. Original mafic minerals are replaced either by quartz, pyrite and clay. Moderate to strongly silicified with clayey/gougy portions are confined along fracture planes. Pyrite

content = 8-10%. Minor chrysocola stains and patches was observed at 149.90m level.

150.43 - 154.13m section: Greenish gray to light gray with some portions exhibiting reddish brown to purple brown color. An increase in hematite stain was noted than the previous section. At 153.05 - 154.13m quartz vein material was observed. Milky white to pinkish white exhibiting some vuggy portions with no distinct trend.

154.13 - 154.82m section: Greenish to light gray moderately to strongly silicified section. With quartz microveinlets and veinlets. Pyrite occurs as microveinlets, clusters and disseminations (=15%).

154.82 - 156.80m section: Light gray to reddish brown patchy colored section with moderate hematite stains.

156.80 - 159.10m section: Reddish brown to purple brown with minor light gray portion. Moderately silicified with quartz veinlets and patches.

159.10 - 159.82m section: Light gray colored section, moderately silicified.

159.82 - 161.39m section: Reddish brown with purple brown portion. Moderate to intense hematite coatings. Pitted to almost sponge-like surface is notable, probably the former site of oxidized pyrite crystals.

161.39 - 162.80m section: Light gray patchy colored section with white patches generally porphyritic in texture. Hematite and clay minerals present along fracture planes. Pyrite (=12-15%).

162.80 - 164.20m section: Reddish brown to purple brown with milky white patches. Quartz vein materials occurs as patches and microveinlets. Pyrite =10%.

164.20 - 166.68m section: Light gray patchy colored section with hematite stained portion on the lower section. Moderately silicified with minute quartz microveinlets. Pyrite =12%.

166.68 - 169.09m section: Reddish brown-purple brown patchy colored section. Pitted to sponge like texture is noted on some portions. Generally silicified with patches of quartz vein material and multidirectional quartz microveinlets. Pyrite disseminations =10%.

169.09 - 169.50m section: Light gray porphyritic section. Moderately silicified.

169.50 - 170.25m section: Reddish brown to purple brown at the upper part to light gray going down the section. Generally pitted to sponge like texture.

170.25 - 171.28m section: Light gray to gray colored section, moderately silicified with quartz vein material occuring as patches. Oxidized and moderately fresh pyrite disseminations (=15-20%).

171.28 - 175.23m section: Light gray with isolated reddish brown portion. Porphyritic in texture, moderately silicified with minor gougy portion. Pyrite = 8 - 10%.

175.23 - 175.79m section: Reddish brown with hematite coatings and pitted texture.

175.79 - 178.53m section: Light gray patchy colored section, porphyritic, moderately silicified with minor quartz microveinlets. Pitted surface features and highly argillized/gougy portions noted in some portions but very limited in extent. Pyrite occurs as microveinlets, disseminations and clusters (6-8%).

178.53 - 183.15m section: Light gray, porphyritic texture, moderately silicified, more dense and competent cores. Quartz vein material and veinlets observed at 181.04m. Pyrite occurs as clusters, disseminations and microveinlets (=10-12%).

183.15 - 183.86m section: Buff white to white colored section, powdery and crumbly, generally made up of clay material.

183.86 - 186.40m section: Light gray with small milky white patches, porphyritic in texture. More dense and solid cores. Moderately silicified with intermittent multi-directional quartz microveinlets. Pyrite = 18 to 20%.

186.40 - 186.85m section: Light gray with milky white patches. Quartz vein material occuring mostly as patches and veinlets. Quartz vein material (2.5cm - 4.5cm thick). Pyrite occurs as patches, disseminations, veinlets and clusters (18-22%).

186.85 - 188.65m section: Light gray colored section with reddish brown portion on the lower part. Pitted to sponge like surface is well noted. Pyrite ranges from 10 to 12%.

188.65 - 189.50m section: Light gray colored section with bands and patches. Porphyritic in texture and strongly silicified. Multidirectional quartz veinlets observed as milky white colored bands. Pyrite = 15-20%.

189.50 - 190.25m section: Generally same as the above section but with no quartz vein material.

190.25 - 191.00m section: Light gray with milky white patches. Quartz vein material with quartz occuring as extensive patches on the original rock mass. Pyrite disseminations and clusters exhibits very fine crystal grains. Pyrite = 20%.

191.00 - 194.00m section: Silicified andesite; gray to light gray colour with patches of cream or buff; fine grained; milky quartz veinlets irregularly distributed throughout the section but become particularly dominant in the half meter bottom portion; breccia-like texture noted as milky quartz vein incorporate subangular fragments of the silicified host rock; pyrite is finely crystalline, distributed as disseminations in the groundmass as surface lining of vugs and fractures; core sample is dominantly solid and intact.

194.00 - 197.05m section: Milky quartz impregnated silicified andesite; colloform-like structure noted

within portions enclosed by the quartz vein; angular fragments of the intruded rock still distinctly visible within the milky quartz; pyrite is still prominent as disseminations in the ground mass and is around 5-7% average; oxidation of local portions noted as hematite/limonite stains; vugs and vesicles in the silicified rock are almost always filled up by pyrite; core sample is solid and continuous.

197.05 - 200.05m section: Continuous with previous section; milky quartz vein/veinlets still predominant; silicified andesite is gray to light gray in colour; fine grained, almost cryptocrystalline in the highly silicified portions; variegated textures and structures noted in the quartz impregnated section; swirling bands and breccia-like structures are common; pyrite occurence is patchy although pervasive; rock texture locally vesicular or pitted; pyrite is less than 5% average.

200.05 - 204.32m section: Quartz impregnated silicified andesite continues down section; the interval 201.0m to 201.55m shows distinct colour and textural banding; alternating bands of dark and light coloured material roughly coincide with alternation of vesicular/pitted and solid textured sections; the bands are commonly 1 to 1.5 cm. wide and run fairly parallel with one another; contact between veinlet/veins and the silicified host commonly indistinct; in some portions the boundaries are quite hazy, almost fusing; locally, the veinlets tend to anastomize, sending tentacle-like intrusions into the groundmass; pyrite has replaced practically all the mafic constituent of the silicified rock and constitutes roughly 15 to 20% of the rock mass; pyrite dominated microveinlets are locally prominent.

204.32 - 206.62m section: Continuous with previous section but milky quartz impregnation less pervasive; only narrow (5 to 15mm wide) veinlets were encountered intermittently within the section; rock unit still predominantly silicified and pyritized; pyrite is still around 15 to 20%; core recovery and condition relatively good.

206.62 to 209.70m section: A generally oxidized section

of silicified andesite with very minor portions of relatively fresh (unoxidized) rock; variably argillized at the lower section from 209.2m; red brown to purple hematite/limonite encrustations due to pyrite oxidation very prominent; bright crimson film of jarosite also locally noted; rock mass appears porous and permeable especially down section due to its highly pitted almost sponge-like texture.

209.70 to 212.80m section: Highly oxidized and fragmented rock; variably argillized with the interval 210.6 to 211.6m almost completely clay material; the bright red to purple stains of hematite had been bleached to a light pink to pinkish brown colour; the rock texture is chalk-like to powdery; it tends to be fragile and crumbly; core recovery is around 50% due to the incompetent nature of the rock mass.

212.80 to 217.00m section: Continuous with previous section; highly oxidized and argillized rock; generally fragmented; buff to cream colour with distinct streaks and patches of pink and red; rock mass is chalk-like and powdery when dry and plastic when wet; it tends to disintegrate into a clayey mass when a lot of water is applied; traces of former pyrite dominated microveinlets and veinlets are noted as dendrites of hematite/limonite in a clay groundmass; less argillized portions tend to retain original rock texture and structures; these most likely are the more silicified section of the rock which survived the intense argillization and oxidation that affected the unit.

217.00 - 220.00m section: Oxidized section of variably silicified and argillized andesite; relatively solid and intact core sample; generally cream to buff groundmass with streaks, bands and patches of ochre, red and purple; argillized portions tend to be porous and permeable and highly water absorbent; silicified portions tend to preserve the pre-oxidation textures and structures in the rock; former pyrite veinlets appear as hematite impregnated veinlets in the oxidized rock; they form distinctive red coloured dendrites and cross cutting networks in a generally buff to cream groundmass.

220.00 - 223.00m section: Continuous with previous section; highly oxidized, hematite/limonite impregnated, silicified and argillized rock; slightly fragmented section; variegated colours of buff, red and purple; rock mass appears dense and solid although pitted and vesicular portions were also noted; rock mass retains the original patterns of pyrite distribution prior to oxidation of fine disseminations and veinlet impregnations except pyrite had been replaced by hematite.

223.00 - 226.50m section: Essentially more fragmented than the previous section but retains the same characteristics as the former; argillization appears more prevalent in this section with silicified portions sparsely encountered; rock mass texture is commonly chalk-like; it is porous and highly water absorbent; hematite/limonite impregnations still very distinctive as red and purple streaks and bands in an otherwise buff to cream groundmass; fragmentation of the core sample is most likely due to the crumbly character of the argillized rock.

226.50 - 229.60m section: More or less a continuation of the previous section in terms of rock type and character; the section is highly fragmented in portions; it is still highly oxidized and variably argillized; hematite/limonite encrustations still very prominent especially along fracture and veinlet surfaces; ochre coloured limonite coatings along fractures are particularly striking; rock mass is commonly pitted, almost pumice like in texture; silicified portions tend to be more dense and solid in texture; traces of formerly pyrite rich veinlets still discernible in the groundmass as dendritic or hair-like projections in the groundmass.

229.60 - 233.70m section: Highly fragmented core sample passes on to a more solid and intact sequence down section; core recovery is poor in the entire section and is around 50% - 60%; the rock mass is still variably argillized, becoming more silicified at the last half meter portion; oxidation is still intense with

hematite/limonite encrustation pervasive throughout the section; fragmentation of the core appears more rampant in the highly argillized parts; the texture of the rock mass is typically chalk-like to pumice-like and it is commonly porous and permeable.

233.70 - 236.50m section: Shift to BQ size core; oxidized rock of the previous section passes on to fresh/unoxidized rock; gray to dark gray in colour; generally fine grained; silicified in varying degrees and impregnated by numerous milky quartz veins/veinlets; breccia-like structure noted locally with angular fragments of silicified host rock incorporated into an essentially milky quartz matrix; the rock mass is locally pitted or vesicular with most of the vugs or vesicles lined by cryptocrystalline pyrite; in rare case native sulphur is found within these voids; pyrite constitutes roughly 20% of the rock mass; it is particularly abundant along the traces of quartz veinlets where it forms pseudo veinlets of its own.

236.50 - 240.85m section: Continuous with previous section; veins/veinlets of milky quartz still prominent although the occurence appears to be along intervening zones throughout the section; the andesite is variably silicified, fine grained, gray to light gray in colour; porphyritic and breccia-like texture locally noted; it is also vesicular or pitted in some portions; oxidation of the unit is observed along a half meter interval within the bottom of the section; this shows distinct hematite stains and sponge-like texture of the rock possibly due to pyrite leaching; pyrite content is still around 15-20% overall.

240.85 - 244.40m section: Silicified andesite with abundant milky quartz veins/veinlets more or less evenly distributed throughout the section; the veins/veinlets appear to be multidirectional in orientation and also tend to be variable in size or width; small, angular xenoliths of the silicified rock are relatively common in the milky quartz veinlets; in other portions, the vein material and the intruded rock appear to merge or coalesce to form a light coloured, highly siliceous mass; pyrite is ubiquitous throughout the section

appearing both in the groundmass as a replacement of the mafic minerals and as veinlet/microveinlet material; it is roughly 10-15% of rock component.

244.40 - 248.60m section: The intervals 244.4m to 245.5m and 245.9m to 246.6m are almost entirely milky quartz vein material; it is cream to buff in colour and locally includes xenolithic angular fragments of the intruded host; intervening portions of silicified andesite and lesser veins/veinlets characterize the rest of the section; pyrite occurs as fine disseminations and clusters in the groundmass, locally abundant along quartz microveinlets and fracture fillings; pyrite is 15 to 20% average in the silicified rock but less than 5% within the milky quartz itself; vesicles and voids in quartz veins/veinlets are commonly filled-up by sulphur.

248.6m to 251.85m. Section: Continous with the previous section but the quartz vein/veinlets are not pervasive; variably silicified andesite; gray to light gray colour; fine grained; local oxidized portions show distinct hematite stains; quartz veinlets form irregular networks in the rock; they tend to pinch and swell along poorly defined trends and sometimes form anastomizing projections with the intruded host rock; pyrite is still pervasive in the silicified rock, 10=25%, but is rather rare within the milky quartz veinlets.

251.85m to 254.6m section: Silicified andesite with numerous cross-cutting milky quartz veins/ veinlets; locally argillized and oxidized resulting in the sponge-like texture of the rock, milky quartz veinlets show irregular shapes and trend, they are often vuggy or breccia-like, pyrite in characters sparse in the veinlets but pervasive in the contiguous silicified rock where it averages around 15% in content; porphyritic texture of the rock is noted locally, this relict texture shows phenocrystals of clay minerals (after plagioclase) in a groundmass of quartz and pyrite (after mafic minerals).

254.6m to 258.2m section: Milky quartz impregnations prominent in the upper section but wanes downwards; rock

mass is characteristically porphyritic and variably silicified and argillized; breccia-like structure again noted in the quartz vein transected portion; vugs and voids in the quartz vein are commonly filled up by sulphur; pyrite content is around 10% in this section where it is limited mainly to the silicified rock as disseminations and veinlet material.

258.2m to 261.0m section: Generally fragmented core; silicified argillized in varying degrees; milky quartz veinlets sporadically abundant but is less pervasive than in previous section; porphyritic texture disappears down section passing on to an evenly fine grained andesite; very local oxidized portions noted as narrow hematite impregnated bands; quartz veinlets in this section are characteristically vuggy but barren of any sulphide inclusions; pyrite contents is generally less than 10%.

261.0m to 264.0m section: Fine grained, slightly silicified and argillized; almost homogeneous texture noted throughout the section; milky quartz veinlets noted only at the lowest 30cm section; these consisted of two(2) ten (10) cm wide; hematite stained quartz veinlets cutting through relatively silicified rock; for more noteworthy are the presence of numerous narrow (1-3 mm wide) pyrite veinlets within this section; although locally pervasive, pyrite content is less than 5% average.

264.0m to 267.0m section: This section appears to be a sequence of fine grained and porphyritic textured andesite; the textures seem to grade into one another without any characteristic break or boundary; milky quartz veinlets were not observed to be prominent in this section; the whole section is variably argillized and silicified; microveinlets of quartz dominated by pyrite still notable in some portions, pyrite content is on the average less than 5%.

267.0m to 270.0m section: Gray to light gray, variably silicified and argillized andesite; generally porphyritic texture with appreciable number of milky quartz veinlets noted within the bottom half meter

portion; microveinlets of quartz dominated by pyrite are again prominent throughout the section; they form subparallel; dark streaks across the generally gray groundmass; disseminations of pyrite is rather sparse; fragmentation of the core sample is rather moderate.

270.0m to 273.6m section: Continuous with previous section; variably silicified and argillized andesite; gray to light gray colour; fine grained to porphyritic; pyrite dominated microveinlets still pervasive especially in the upper section becoming less distinct downwards; argillized portions tend to be crumbly and fragmented; the texture is chalk-like to powdery; pyrite content is on the average less than 10%.

273.6m to 277.1m section: The fragmented section passes on to more solid and intact portion; variably silicified and argillized andesite; porphyritic to fine grained texture; gray to dark gray colour; milky quartz veinlets and intrusions again distinctive but also patchy and irregular in both orientation and occurrence; fine grained sections appear to be more silicified and pyrite rich than porphyritic portions; pyrite occurs as very fine disseminations and clusters and averages around 25 to 30% in the more prolific fine grained section.

277.1m to 280.1m section: Silicified andesite; characterized by numerous intrusions of milky quartz veinlets of variable sizes and orientation; breccia-like structures again noted locally wherein xenoliths of the host rock are encompassed within the milky quartz vein; sulphur filled vugs in the veinlets are rather common; pyrite is limited to the silicified host rock and is roughly 10 to 15% average; core sample is relatively solid and intact.

280.1m to 284.0m section: Continuous with previous section; gray to dark gray, silicified andesite; milky quartz veinlets still very distinct but becoming less pervasive down section; the veinlets still occur as irregular bodies with no apparent preferred orientation; rock texture varies from fine grained intergranular to porphyritic; pyrite content is patchy and irregular but would range around 10 to 15%; core sample is slightly

fragmented but recovery is generaly good.

284.0m to287.5m section: Variably silicified and argillized andesite; gray to light gray colour; commonly fine grained; milky quartz veinlets rather sparse becoming rare down section; argillized portions tend to be bleached thus are lighter in colour; they are also more porous and permeable than the silicified portions; pyrite is ubiquitous throughout the section but is more enrich in the silicified portions; on the average, it is around 10 to `15% of the rock mass.

287.5m to291.3m section: Continuous with previous section: gray to dark gray; fine grained andesite; homogenous texture almost throughout the section; silicification is variable in intensity; microveinlets of quartz noted in the lowermost section; pyrite is pervasive especially along fracture surfaces and as disseminations in the groundmass; it is commonly more prevalent in the highly silicified portions and where it averages about 15 to 20%; numerous vugs were noted along the trend of the microveinlets; they are particularly distinct within the half meter bottom section; the core sample is relatively solid and intact with only the lower section found to be fragmented.

291.3m to 294.4m section: Mainly continuous with the overlying sequence but tends to become highly fragmented down section; the upper 1.5m portion is relatively silicified and solid but the subsequent portion is highly argillized and finely fragmented; microveinlets of pyrite are common in the silicified portions, occurring as distinct streaks across the rock mass; vugs that tend to parallel the microveinlets are commonly lined with very fine pyrite crystals; the argillized section is almost totally clay material with remnant pyrite crystals still discernible; pyrite as a whole is around 15% average for the entire section.

294.4m to 298.4m section: Highly fragmented, variably argillized andesite; gray colour; porphyritic texture noted in some portions but texture of more argillized sections tend to be obliterated; very little evidence of milky quartz veinlets found; pyrite appears to be

sparse, almost negligible throughout the section; core recovery and character is generally poor because of the imcompetent nature of the argillized rock mass.

298.4m to 301.0m section: Essentially continuous with previous section but becoming more solid and competent down section; variably argillized, fine grained andesite; microveinlets of pyrite reappears in the more silicified portion down section; veinlets of anhydrite noted for the first time in this section; on the average pyrite is very low in terms of content in the argillized portion and is around 5% in the silicified.

APX. 14 Detailed Geologic Log, MJPP-3

DRILLHOLE NO.: MJPP - 3
LOCATION : BRGY. CAPINANG, SAN DIONISIO

HQ Size Core; 0-2.40m. Generally made up of brown to yellowish brown soil. Highly weathered and argillized rock fragments are present within the section.

2.40m. - 5.30m. Highly fragmented argillized rock. Reddish brown to purple brown with some yellowish tint. Oxidized pyrite occurs as microveinlets, disseminations and clusters with Hematite stains and limonite coatings.

5.30 - 6.62m. Generally more compete and solid section than the previous section with hematite and limonite stains. Oxidize pyrite occurs as microveinlets and disseminations.

6.62m. - 11.55m. Generally the same as the previous section, reddish brown to purple brown patchy color with buff colored groundmass. Multidirectional oxidized pyrite microveinlets with Hematite stains. Vugs and pockmarked portions probably former site of pyrite rick clusters left after oxidation and removal of puyrite crystals.

11.55 - 15.92m. Highly argillized section, almost totally clay material. Buff to brown with light gray tint and reddish brown patches. Oxidized pyrite still observable as microveinlets and clusters.

15.92m - 20.60m. Highly argillized section totally clay material, light gray to buff with reddish brown tint. Crumbly when dry and very sickly when wet with oxidized pyrite and some Hematite stains. Moderately fresh pyrite crystals noted as disseminations (~ 2-4%).

20.60m. - 23.60m. Generally the same as the previous section, buff to light with brown patchy colored section. Highly, argillized, with some portions more competent and not totally transformed into clay material. Minor hematite stains was noted.

23.60m. - 25.92m. Brown to buff color with light gray section and reddish brown tint. Highly argillized

section, but with more competent potions. The more competent cores exhibits a higher degree of hematite stains with oxidized pyrite and shows a lesser degree of argillization than the previous sections.

25.92m. - 27.78m. Buff to light gray to brown going down the section. Higly argillized, almost totally clay material. Fragmented, loose, crumbly to almost gravelly texture. Hematite stains increases going down the section giving a brownish tint.

27.78 - 28.75m. Highly argillized section but more competent cores than the previous sections. Buff to light gray color, with buff white patchy color. Minor oxidized pyrite observed occuring mostly as micro-veinlets. Minimal hematite stains as surface coatings noted.

28.75 - 32.10m. Solid and more competent cores, variegated color of brown, reddish brown, buff to light gray with yellowish tint. Swirling bands of limonite on hematite gives a yellowish, reddish brown to purple brown colored bands. Pockmarked portions is noted, slight silicification with moderately argillized portion to strongly argillize zone going down the section.

32.10 - 33.25m. Buff to light gray color with brown to yellowish brown patches. Hematite stained microfractures noted with oxidized pyrite crystals.

33.25 - 33.85m. Light gray colored section with buff white patches, porphyritic in texture with original mafic minerals no longer discernible. Moderately fresh pyrite crystals present as disseminations fracture fillings and micro-veinlets (pyrite ~ 15 - 20%).

33.85 - 36.10m. More solid and competent cores, generally light gray with variegated colors of light brown, reddish brown to purple brown with buff patches. The rock generaly exhibits porphyritic texture with pockmarked portions. Slightly argillized and silicified with abundant micro-veinlets of oxidized pyrite with hematite stains. Oxidized pyrite exhibits purple brown

to black color. Sample was taken along the whole section.

36.10 - 41.20m. Brown to reddish with light gray patches. Generally solid cores but becoming fragmented going down the section. Hematite stain is moderate with minor limonite stain.

41.20 - 47.00m. Generally solid cores, with variegated colors of light gray, brown, reddish brown to buff patchy color. Hematite lined microfractures are well observed with moderately amount of oxidized pyrite as disseminations and microveinlets. Slight argillization and silicification noted.

47.00 - 50.46m. Less competent cores than the previous section, moderately fragmented. Generally the same as the previous section but becoming more silicified going down the section with an increase of pyrite crystals (12 - 15%).

50.46 - 51.21m. Buff to light gray to pinkish white patchy color. Moderately to strongly silicified with moderate amount of fresh pyrtie crystals occuring mostly as the disseminations. Quartz material shows vuggy portions. Sample was taken in this section.

51.21 - 52.90m. Buff to light gray with brown to reddish brown tint. Moderately silicified and highly fractured cores.

52.90 - 53.60m. Highly argillized section almost totally transformed into clay material. Buff to light gray color.

53.60 - 57.10m. Solid core on top becoming fragmented going down the section. Variegated color of light gray, buff to brown to reddish brown. Moderately argillized, slightly silicified with some portion exhibiting pockmarked surface. Hematite lined fractures well observed.

57.10 - 59.00m. Buff white to light gray with reddish brown patches. Moderately to highly argillized generally crumbly and crushed cores. Hematite stains is well noted.

59.00 - 60.30m. Slightly argillized moderately silicified with variegated colors of light gray, buff, brown to reddish brown patches. Porphyritic in texture with criss-crossing hematite stained, oxidized pyrite microveinlets. Pockmarked surface fractures noted.

60.30 - 64.40m. Generally the same as the previous section, but more fragmented cores with lesser degree of silification and higher degree of argillization.

64.40 - 65.80m. More competent and solid cores, with variegated colors of buff, reddish brown, brown to light gray patchy colors. Multidirectional and criss-crossing microveinlets of oxidized pyrite with hematite stains. Fresh pyrite occurs as specks.

65.80 - 69.10m. Generally the same as the previous section but with highly argillized portion. Argillized portions tends to be crumbly and powdery.

69.10 - 70.35m. Solid cores, with variegated colors of buff white, brown to reddish brown with purple brown patches. Moderately silicified with multidirectional microveinlets of oxidized pyrite with hematite stains is well noted. Pockmarked surface observed at the lower most part of the section. Pyrite ~ 10 - 12% (Sample was taken)

70.35 - 72.85m. Reddish brown to purple brown patchy color with buff to light gray patches. Pockmarked to sponge-like surface feature noted in some portion with hematite coatings and along oxidized pyrite microveinlets.

72.85 - 74.05m. Buff to light gray with brown to reddish brown patchy color. Moderately silicified with some quartz material occuring as patches oxidized kpyrite occurs as microveinlets and disseminations with hematite

stains. Fresh pyrite occurs as specks and disseminations (Pyrite 8 - 10%)

74.05 - 78.15m. Competent and solid cores with variegated colors of bufff, light gray brown to reddish brown patches. Moderately silicified with abundant crisscrossing microveinlets of oxidized pyrite with hematite.

78.15 - 79.15m. Light gray to greenish gray, fine grained and porphyritic in some portions. Moderately silicified with quartz microveinlets and quartz patches. Fresh pyrite crystals occurs as disseminations, veinlets and clusters. Hematite is very limited and confined only along microveinlets and fractures. Pyrite is 15 - 20%.

79.15 - 81.20m Reddish brown to brown with purple brown to sponge-like texture well observed at the middle part of the section. Very minimal fresh pyrite crystals noted.

81.20 - 83.00m. Generally crushed cores the same as the previous section but with a higher degree of argillization

83.00 - 87.85m. Competent and solid cores. Brown to reddish brown with light gray buff colored patches. Slight silicification with moderate amount of argillization. Pockmarked surface fearture is well observed along some point of the section. Oxidized pyrite occurs as dissemination, microveinlets and clusters. Hematite stains with very minor jarosite observed.

87.85 - 90.95m. section : Continous with previous section, red to reddish brown color slightly purplish. Highly pitted to sponge like texture, generally argillized with numerous microveinlets of hematite stained quartz.

90.95 - 93.45m. section : NQ size core. Similar to previous section, but more fragmented core. Sponge like texture still apparent, hematite stain still pervasive

with lower part section highly fragmented. Core recovery is generally poor. Section is variably argillized.

93.45 - 96.65m. Section : Generally fragmented core, red brown to purplish brown color, sponge like texture less apparent. Numerous microveinlets of hematite stained quartz noted. Hematite disseminations after pyrite noted in the groundmass.

96.65 - 99.15m. Section : Variably silicified and argillized rock. Hematite stains very pronouced pitted portions noted in some sections. Argillized section tends to be chalk like in texture. Rock mass tends to be porous and permeable. Core samples, tends to be moderately fractured, recovery is low.

99.95 - 102.75m. Section : Essentially continous with the previous section. Variably argillized and silicified rock mass. Silification is more pronounced in the last one (1) meter section. Argillized portion tends to be massive and dense. Core sample is generally fragmented at upper section becoming more massive at the lower section.

102.75 - 105.95m. Variably silicified and argillized rock. Generally oxidized with patches of portions of relatively fresh rock. Hematite stains tend to be more pronounced at the argillized portions. Unoxoidized portions tends to be silicified and content abundant pyrite (15 - 20%); pyrite appears to replaced all mafic minerals in the groundmass. Fine microveinlets of pyrite also noted. Core samples relatively intact.

105.95 - 108.40m : Continuous with previous section, totally oxidized, hematite and limonite stains very pronouced. Rockmass variably argillized and silicified. Micro breccia like texture noted along the last 2m, section, subangular fragments of quartz material occurs in a hematite stained groundmass. Core quality and recovery generally good.

108.410-111.40m. Section : Variably silicified and argillized rock. Hematite/limonite stained and locally

pitted. Silicified portions tends to be massive and dense. Argillized portions tend to be crumbly and fragmented. Hematite stained microveinlets form dendritic pattern in the silicified groundmass. Core quality and recovery is moderately good.

111.40 - 114.90m. Section : Alternating sequences of argillized and silicified rockmass. Generally hematite stained, but argillized portions tends to be leached. Visicular texture noted in some portions. Bleached portion show minor hematite stain. Core sample is moderately fragmented. Core recovery is around 90%.

114.90 - 116.90m. Oxidized and bleached in the upper portion grading into relatively unoxidized and resh rock down section. Red and purple hematite stains very distinct in the oxidizerd portions. Unoxidized portions showing gray to dark gray, highly sil;icified and pyritized rock. Pyrite content is around 15% occurring as fine crystals replacing the original mafic minerals. Fine microveinlets of pyrite is also noted. Core sample is moderately fractured but relatively intact.

116.90 -120.50m. Section: Relatively unoxidized and fresh rock in the first one(1) meter upper section. Alternating unoxidized and oxidized rock mass is observed at the last 1.20 m. portion. Oxidized portion exhibits red to purple brown color and locally pitted and porous. Unoxidized portion shows gray to dark gray, moderately to highly silicified.

120.50m.-123.45m. section: Oxidized and bleached 1.50m. upper portion grading into relatively fresh and unoxidized rock down section. Red and purple brown hematite stains very distinct in oxidized portion with locally pitted texture. Generally fractured cores with relatively good core recovery.

123.45-127.00m. Section: Generally fractured but intact cores. Generally oxidized rock with minor patches of relatively fresh rock. Hematite stains very pronounced with pitted to sponge like texture well observed throughout the whole section. Generally moderate silicification with slight argillization locally.

127.00-130.50 m. Section: Generally continuous with the previous section with variable amount of silicification and argillization. Oxidized portions exhibits well pronounced hematite stains with quartz patches and microveinlets (pyrite 6-8%). The unoxidized portion exhibits gray color moderately to strongly silicified with abundant pyrite disseminations and microveinlets.(pyrite 8-10%)

130.50 - 134.00m. Section : Generally continous with the previous section, fragmented but intact cores with good recovery rate. Generally oxidized with minor patches of relatively fresh rock mass. Oxidized section exhibits pitted to sponge like texture with well pronouced hematite stains. Variably silicified and argillized with pyrite disseminations and microveinlets. Pyrite 8 - 10%.

134.0-138.20m. Section: Alternating sequence of oxidized and unoxidized rock. Oxidized portion exhibits pitted texture with reddish brown to purple hematite stain. Oxidized and fresh pyrite was noted. Pyrite 8 - 10%, with microveinlets of quartz and patches of quartz. Unoxidized portion is light gray to gray moderately silicified, showing pitted surface with pyrite disseminations (12%).

141.50 - 144.90 m. Section : Upper 0.50m portion, oxidized rock abruptly grading to unoxidized rock mass at 142.00 - 143.00m. portion. Lower portion is generally oxidized rock. Cores are generally fractured but intact. Oxidized portion exhibits pitted texture with pronounce hematite stains. Unoxidized portion is gray, moderately silicified exhibiting prophyritic like texture. Pyrite 8%.

144.90-147.60 m. Section: Generally oxidized rock, variably silicified with highly silicified portion showing quartz veinlets and patches of milky white quartz material. Hematite stain is well pronounced, observed as reddish brown to purple color. Generally pitted to almost sponge-like texture. Moderate amount of pyrite mostly as disseminations and veinlets (8-12%).

147.60 - 151.30m. Section : Generally continous with previous section wirh variable amount of argillization and silicification. Generally fracture cores but intact. Hematite stain is still well pronounced pitted to sponge like texture well observed. Pyrite 8 - 12%.

151.30 - 155.50m. Section : First 1.55m. upper portion is generally oxidized rock, moderately to highly pitted surface feature. Next 0.65m portion is generally unoxidized rock, greenish gray to gray, moderately silicified with pyrite (10%). The last 1.20m. lower portion is oxidized rock highly fragmented and moderately argillized.

155.50 - 159.00m. Section : First 1.20m. upper portion is oxidized rock with minor patches of unoxidized rock. Oxidized portions exhibits moderate amount of hematite stains, highly pitted texture and moderately argillized. The rest down section is generally unoxidized rock, light gray, slight to moderately argillized with pyrite disseminations and microveinlets (Pyrite 6 - 8%).

159.00 - 162.00m. Section: First 0.45m. upper portion is moderately argillized and slightly silicified, generally oxidized with patches of gray to light gray unoxidized rock. The rest down section is oxidized rock moderately to highly silicified with last 1.60m. lower portion is highly silicified with numerous quartz microveinlets/veinlets and patches of milky white colored quartz material. Generally pitted, with well pronounced hematite stains and with moderate amount of limonite. Quartz exhibits vuggy structures, pyrite is generally oxidized with minor fresh pyrite occuring as impregnations (Pyrite 10 - 12%).

162.00 - 166.60m. Section : First 0.65m. upper portion is the same as the previous section highly silicified and pitted. Generally continous as the prevcious section with a lesser degree of silicification. Hematite stain with limonite coatings is well observed. Last 1.20m. lower portion is highly silicified with numerous quartz veinlets and patches of quartz. Generally pitted, with quartz showing vuggy

structure. Pyrite 6 -10%.

166.60 - 171.60m. Section : First one (1) meter upper portion is moderately to highly silicified with quartz veinlets and quartz patches. Quartz exhibits vuggy structure, hematite stained pyrite microveintlets in multidirectional trend is well observed. Hematite is well pronounced with limonite patches. Pyrite is generally oxidized with minor fresh pyrite impregnations. Pyrite 10 - 12%. The rest of the section is generally argillized and variably silicified. Argillized portions exhibits chalk-like texture with off-white patches. Generally pitted with hematite stain in moderate amount. Pyrtie 6 - 8%.

171.60 - 174.55m. Section : Generally oxidized rock with some alternating light gray to gray unoxidized rock. Generally argillized and variably silicified. Argillized portion shows pitted to sponge-like texture. Silicified portion shows microveinlets of quartz with pyrite and line with hematite. Generally hematite is well pronounced thoughout the section. Pyrite varies 6 - 10%.

174.55 - 176.95m. Section : Variably argillized and silicified section. The last 1.40m. down section is moderately to highly silicified rock with quartz patches and microveinlets. Hair-like hematite stained microveinlets of oxidized pyrite is well noted in criss-crossing and multidirectional pattern. Generally hematite is well pronounced throughout the section. Pyrite varies from 6 - 12%.

176.95 - 180.60m Section : Generally argillized with very slight silicification. The last 0.65m. lower portion is moderately to highly silicified, moderately oxidized becoming unoxidized going to the last 35 cm. The oxidized portion is generally argillized with hematite stains and exhibits pitted surface. The unoxidized botttom portion is light gray to gray andesite with an abrupt increase in pyrite disseminations. Pyrite varies 8 - 14%.

180.60 - 184.20m. Generally silicified section,

oxidized portion is well observed with unoxidized portion noted at middle portion of the section alternating with oxidized portion. Oxidized section exhibits light brown to reddish brown with pitted surface texture. Unoxidized portion exhibits light gray to gray, porphyritic and locally pitted. Pyrite is around 8 - 10% . Locally argillized portion is also noted. Core size : BQ

184.20 - 187.80m. Section : Continous with the previous section, oxidized section, moderately to highly silicified with locally argillized portion. Reddish brown to purple brown with patches of yellowish white color. Hematite is well pronounced with quartz veinlets and patches. Hematite stained microveinlets of pyrite is multidirectional and criss-crossing fashion is well observed. Pyrite 8 - 10%. Local pitted texture is also noted.

187.80 - 191.00m Section : Alternating sequence of silicified and moderately argillized rock. The whole section is oxidized, with pitted texture, reddish brown to reddish brown to purple brown. Hematite is pronounced. Quartz veinlets is well observed with patches of quartz material in irregular trend giving a breccia like texture. Pyrite 6 - 8%.

191.00 - 195.30m. Section : Generally silicified section with alternating sequence of moderately argillized portion at the lower part of the section. Generally oxidized with unoxidized portion noted at 192.00 - 192.84m. Unoxidized portion is light gray to gray, highly silicified with patches of milky white colored quartz material. Pyrite 10 - 12% oxidized portion is reddish brown to purple brown, generally pitted with sponge like texture noted locally. Pyrite 6 - 8%.

195.30 - 198.90m. Section : First 1.70m upper portion oxidized rock, variably silicified and argillized. Reddish brown, generally pitted with moderate amount of hematite stain. Unoxidized section is light gray to gray, locally pitted, variably argillized, moderately to strongly silicified and porphyritic. Patches of quartz

material with quartz microveinlets noted. Pyrite occurs mostly as disseminations and microveinlets. Pyrite 10 - 12%.

198.90 - 202.90m. Section : Generally unoxidized rock with minor oxidized portion at the middle portion. Moderately to strongly silicified light gray to gray, locally pitted, porphyritic with patches of quartz and quartz micro veinlets. pyrite occurs as disseminations, clusters and microveinlets. Pyrite 15 - 18%

202.90 - 206.20m. Section : Alternating sequence of oxidized and unoxidized rock. Variably silicified but becoming more silicified at the lower 1.00m section. Unoxidized portion is light gray to gray, slightly to moderately silicified porphyritic andesite. Locally pitted texture noted, pyrite is abundant occuring as dissemination, microveinlets clusters and fracture fillings. Pyrite 15 - 20%. Oxidized portion is reddish brown to purple with some portions noted with yellowish tint. Hematite is pervasive, pitted texture well observed. Pyrite 8 -10%.

206.20 - 209.90m. Section : Alternating sequence of oxidized and unoxidized rock. Oxidized rock exhibits reddish brown to purple brown color, with extensive hematite stains. Pitted texture noted with variable amounts of argillization and silicification. Pyrite present mostly as disseminations and microveinlets (8 - 10%). Unoxidized portion exhibits light gray to gray moderately to highly silicified with quartz veinlets and patches. Abundant pyrite was noted 15 - 20%.

209.90 - 213.40m Section : Alternating sequencce of oxidized and unoxidized rock with last 1.20m. lower section unoxidized. Generally same as the previous section with unoxidized portion highly silicified and oxidized portion is generally argillized with variable amount of argillizatin. Pyrite 12 - 18%.

213.40 - 217.10m. Section : Generally unoxidized section with some alternating oxidized portion. Unoxidized portion is moderately to highly silicified with quartz veinlets and quartz patches. Porphyritic in

texture, with locally pitted texture with original mafic minerals no longer discernible. Pyrite occurs mostly as disseminatins, microveinlets and clusters. Pyrite 10 - 12%. Oxidized portion is generally hematite stained, pitted to sponge-like texture with some pyrite crytals.

217.10 - 212.10m. Section : Generally unoxidized rock with very minor oxidized portion. Slightly to moderately silicified becoming highly silicified in the last 1.20m. down section. Variable amount of argillization noted. Generally same as the previous section. Pyrite 10 -12%.

221.10 - 224.40m. Section : Unoxidized section moderately fragmented in the first 1.0m. upper section becoming dense and intact in the lower section. Light gray to gray, locally pitted, porphyritic in texture, moderately to highly silicified with numerous quartz veinlets and patches of quartz. Pyrite occurs as disseminations, clusters and veinlets. Pyrite 12 - 14%.

224.40 - 228.50m. Section : Generally continous with the previous section, unoxidized, porphyritic andesite. Highly to moderately silicified with patches of milky white quartz and quartz veinlets. Pyrite 10 -12%.

228.50 - 232.20m. Section : Unoxidized section, light gray to gray, moderately to highly silicified with quartz veinlets and microveinlets. Milky white patches of quartz well observed with locally pitted texture. Porphyritic andesite with pyrite disseminations, clusters and microveinlets. Pyrite 8 - 12%

232.20 - 236.00m. Section : Generally continous with the previous section. Solid, dense and intact cores with very highpercent recovery. Highly silicified andesite with numerous patches of quartz material in milky white color. Pyrite occurs as disseminatin, clusters and microveinlets and are generally fresh. Pyrite 10 - 12%.

236.00 - 240.40m. Section : Continous with the previous section. Dense and intact cores with very high percent recovery. Porphyritic andesite, highly silicified with

quartz veinlets and patches of milky white quartz throughout the section. Pyrite is abundant mostly occuring as disseminations, microveinlets, clusters and stringers. pyrite 12 -16%. sulfur crystals is well noted occuring as light yellowish color with well formed crystals.

240.40 - 244.00m. Section : Continous with the previous section. Unoxidized porphyritic andesite, moderately to highly silicified with numerous quartz veinlets and patches of milky white quartz. Locally pitted with abundant pyrite crystal 16 - 20%. Sulfur crystals is also noted.

244.00 - 247.60m. Generally continous with the previous section, moderately silicified with first 1.20m upper portion highly silicified with quartz material exhibiting vuggy structure. The whole section is light gray to gray, porphyritic and locally pitted. Pyrite occurs as disseminations, clusters and microveinlets. Pyrite 8 - 12%.

247.60-251.30 m. Section: generally continous with the previous section. Moderately to highly silicified, porphyritic and locally pitted texture. Solid and dense cores with very high % recovery. Quartz patches and microveinlets well observed, pyrite occurs as disseminations, clusters and microveinlets. Pyrite 8 - 10%. Sulfur crystals are well observed as light yellowish crystals.

251.30m.-254.90 m. Section: Continous with the previous section, moderately silicified porphyritic andesite with middle 1.0m. portion highly silicified with quartz patches. Pyrite is observed in moderate amount 8-12%.

254.90m.-260.40m. Section: First 1.20m. upper portion is light gray, moderately silicified porphyritic andesite with locally pitted texture.Next 2.30m. portion is highly argillized zone, almost totally clay material and gougy in appearance. Light gray with minute quartz grains and minute pyrite disseminations. Pyrite 3-5%. Rest of the section is essentially the same as the first 1.20m. upper portion. The last 30cm. portion is

made up of argillized and clay material.

260.40m.-264.00m. Section: unoxidized section, moderately to highly silicified porphyritic andesite exhibiting pitted texture locally. Highly silicified, portions exhibit quartz patches and quartz microveinlets. Pyrite occurs as disseminations and microveinlets. Pyrite 6-8%.

264.00m.-267.60m. Section: Continous with the previous section. Light gray to gray, moderately - highly silicified, porphyritic in texture with quartz patches and veinlets. Solid and dense cores with very high % recovery. Pyrite occurs as impregnations and disseminations (4-5%).

267.20m.-271.20m. Section: Continous with the previous section. Highly silicified with quartz patches and veinlets. Pyrite occurs as disseminations and microveinlets. Sulfur crystals occurs as disseminations and impregnation 4-5%.

267.00m to 271.20m section: Continuous with the previous section. Highly silicified with quartz patches and veinlets. Pyrite occurs as disseminations and microveinlets. Sulfur crystals occur as light yellowish crystal. Pyrite 6-8%.

271.20m - 276.20m section: First 1.70m upper section is moderately to highly silicified andesite. Light gray to gray color with pyrite disseminations and microveinlets, Pyrite 3-4% . The rest of the section is highly argillized to clay material, light gray to gray color, generally loose and sticky when wet. Pyrite crystal occurs as specks and clusters 3-4%. Core recovery is very low.

276.20m - 279m Section: Generally clay material, highly argillized section to gougey texture. Loose and broken and very sticky when wet. Light gray to gray with pyrite disseminations . Pyrite 2-3%, core discovery is low.

279.20m - 283.0m Section: Continuous with the previous section. Light gray to gray . Highly argillized to

almost totally clay material with gougey appearance, Pyrite 3%.

283.0m - 286.30m Section: Continuous with the previous section. Loose and very sticky when wet. Clay material is gougy with pyrite (3-4%). Core recovery is very low.

286.3m - 289.70m Section: Highly argillized section, almost totally clay material. Light gray to gray, very loose and very sticky when wet. Pyrite 3%

289.70m - 292.50m Section: Continuous with the previous sections, almost totally clay material to gougey texture with pyrite disseminations. Pyrite 3-4%.

292.50m- 295.00m Section: Continuous with the previous section, still highly argillized to clay material, gougy in texture very loose when dry and very sticky to plastic when wet. Pyrite present as specks and impregnations. Pyrite 2-3%.

295.00 - 296.00 m Section: Unoxidized, moderately to highly silicified rock, Porphyritic light gray to gray color with quartz patches and quartz microveinlets. Quartz patches exhibits milky, white color and with vuggy structure locally. Pyrite is present as disseminations clusters and microveinlets. Pyrite 4-7%.

296.60 m-300.15m Section: Highly argillized, gougey to almost totally clay material. Light gray to gray , very loose and very sticky, when wet, Pyrite is present as impregnations. Pyrite is present as impregnations. Pyrite 2-3%. Core recovery is relatively low. .

APX. 15 Detailed Geologic Log, MJPP-4

Drill Hole: MJPP4
Location : Mt. Madarag; Moto, Sn. Dionisio

HQ size core; Light brown soil; crumbly and tends to form irregular blebs when dried; fresh or weathered rock fragments generally absent; from 0.6m to 1.10m soil is more compacted and coherent, tends to follow the shape of the core barrel; soil material passes on ther loose, irregular masses from 2.0m on.

Light brown soil; indistinguishable from overlying material; fragments becoming more common; slight variation in texture and shape of soil noted within the section 3.85m to 7.00m.

Powdery and lighter colored soil noted within 7.9m to 8.9; abundant weathered rock fragments.

Clayey soil. generally sticky when wet; brown colour; minor rock fragments.

Generally clayey soil up to 14.0m depth becoming more crumbly and loose at the lower section; passes on to fragmented and weathered rock after the 14.0m level.

Fragmented rock; gray to bluish gray colour, stained by brown soil; rock appears to be fine grained andesite; slight argillization noted.

Red to purplish-brown andesite (%) up to 17.0m level; silicified with abundant hematite and limonite stains; abundant microfractures noted within the section resulting in the fragmented character of the core; the rock is commonly pitted possibly due to the oxidation of pre-existing sulphides.

17.0m to 18.0m section: Rock passes on to lighter coloured and clay rich andesite; very crumbly and fragmented; gray and purple stains still very distinct; speccularite locally abundant .

18.0m to 20.3m section: Fragmented and argillized

andesite (?) commonly light gray with purplish streaks; microveinlets of hematite still abundant; rock is more competent down section resulting in the less fragmented character of the core sample; core recovery at this section is 80 to 85%.

20.3m to 21.8m section: Cream to buff coloured rock; generally silicified with distinct hematite and possibly jarosite (%) stains especially along fracture surfaces; cut section of core sample display breccia-like texture of rock with islands of sub-angular, highly silicified material surrounded by equally silicified matrix; disrupted veinlets of gray quartz(2mm wide) also noted; mafic minerals appears to be absent altogether.

21,8m to 24.2m section: Cream to buff andesite (?); highly bleached sections with mainly quartz and clay minerals observable; generally fragmented with highly irregular shapes; pervasive hematite staining and veinlet noted; minor specular hematite also observed as isolated patches within the groundmass.

24.2m to 25.35m section: Hematite rich section; red brown to purplish brown stained rock mass; narrow portions especially below the 25.0m level appear to be almost entirely hematite dominated, microveinlets with distinct purple stains still abundant.

25.35m to 28.15m section: Silicified andesite (?); buffto cream up-section becoming more red-brown or purplish at depth where hematite encrustation is more pronounced; rock mass appears to be more competent as longer core sections are recovered; the microbreccia texture is still apparent in the rock with subangular highly silicified fragments embedded in a siliceous mass; the texture is particularly distinct in the hematite impregnated section where the light coloured silica rich portion contrast with the hematite rich portions; specularrite is abundant locally.

28.15m to 32.2m section: Gray to buff coloured rock with local red to red brown stains specially along fracture surfaces; the rock displays a moss-agate like texture with some portions showing speculiarite occupying

irregular voids within silicified ground mass; root-like veinlets of hematite are also noted; where hematite is minimal in amount, the rock generally crumbly and fragmented; hematite content of the rock varies from almost nil to roughly 10% of the rock volume.

32.2m to 35.35m section: Buff coloured rock with patches of gray and purplish brown; microbreccia texture with subangular clayey, cream fragments contrasting with purple-brown, hematite impregnated interstitial materials; microveinlets of hematite form a network of criss-crossing dendrites throughout the rockmass; section before 34.3m rock is highly fragmented and hematite impregnated.

35.35m to 38.0m section: Brown to purplish-red stained rock; relatively fresh portions show grayish blue, fine-grained andesite; fracture surfaces commonly hematite stain; rock mass appear to be mainly silica, clay and specullar hematite; criss-crossing microveinlets of hematite stained quartz are found throughout the section; hematite stains decreases in intensity downhole and grades imperceptibly into gray to buff rock.

38.0m to 40.2m section: Gray to buff andesite (?); moderately argillized and fragmented; whole section generally pyrite bearing which occur as disseminations or patches throughout the rock mass; minute veinlets of pyrite also noted; microveinlets of quartz without pyrite also occur in occasional portions; pyrite content is anywhere from 5 to 10%.

40.2m to 43.45m section: Essentially similar to overlying section; some portions highly fragmented and argillized; argillized portions generallly crumbly or powdery and tend to disaggregate into fine lumps; as in previous section, pyrite content is about 5 to 10% with some local portions having a higher percentage content; pyrite tend to occur as discreet and very fine crystals within the rock mass; crystals of up to 2mm diameter are rarely observed; local shears also smoothened surfaces with occasional directional features; pyrite crystals are locally abundant in these portions.

43.45m to 46.7m section: Gray to dark gray andesite; locally argillized with numerous quartz veinlets; rock is dominantly fine grained and altered; degree of fracturing varies from portion to portion; quartz veinlets generally less than 1.0 mm in thickness and do not appear to have any preferred orientation; exposed veinlets surfaces show abundant pyrite with very minor chalcopyrite.

46.7m to 49.05m section: Gray to greenish-gray andesite; silicified and argillized in portions; argillized parts tend to be crumbly and powdery; pyrite disseminations and microveinlets still pervasive but is less than 5% of rock mass; epidote encrustations common along shear surfaces; core recovery around 80-85%.

49.05m to 52.43m section: Essentially the same as the previous section; rock mass locally fractured and fragmented; argillized portions tend to occur along side sheared sections; pyrite still ubiquitous in this section; fine veinlets of milky quartz also noted; most are irregular and less than 2 mm wide; cut section shows numerous vugs sometimes filled-in by pyrite; patches of highly silicified rock also noted.

52.43m to 54.48m section: Gray to dark gray, fine-grained andesite; locally sheared and argillized resulting in fragmented character of rock mass; pyrite content still around 3 to 5%, occuring mainly as clumps or veinlets in the rock mass; milky quartz veinlets still noticeable in some portions.

54.48m to 58.28m section: Abundant milky quartz veinlets prior to 55.48 level; 2mm to 5mm wide; pyrite aggregates pervasive along both sides of the veinlets; content ranges from 8 to 10% of rock mass; epidotization noted. Highly sheared section; fragmented and crumbly; argillization moderately intense.

58.28m to 60.78m section: Gray andesite; generally competent section; more or less intact core locally sheared and argillized; quartz veinlets and pyrite mineralization still very distinct; silicified portions generally criss-crossed by minute quartz veinlets.

60.78m to 64.38m section: Generally solid and intact core; gray to dark gray andesite; silicified and argillized in portions; minor shears display irregular fracture surfaces; veinlets of quartz less abundant and distinct than in previous section; pyrite mineralization also less in terms of percentage.

64.38m to 67.0m section: Gray andesite; fine grained, silicified with numerous veinlets of gray quartz; these appear to have replaced the milky quartz veinlets in the previous sections; intrusion of quartz possibly episodic as evidenced by cross cutting veinlets; rock mass is very competent resulting in continuous core samples; fracturing results in highly irregular breaks with distinctive slickenside like features.

67.0m to 68.83m section: Essentially continuous with the previous section; pyrite and quartz veinlets still persist to this level; rock mass is very solid and dense.

68.83m to 70.2 m section: Gray andesite; silicified with numerous veinlets of quartz and pyrite; rock appears sugary in texture when wet; pyrite occurrence generally patchy; crystals rarely exceed 2mm diameter; quartz veinlets are without any preferred orientation and commonly 2- 5m wide.

70.2m to 72.0m section: Generally massive although local fractures are noted; pyrite and gray quartz veinlets pervasive; pyrite is less than 5% of rock mass; very minor chalcopyrite is observed.

72.0m to 75.35m section: Essentially continuous with previous section: entire section appears competent and dense with only minor fractures; core recovery is about 100%; minimal change in pyrite content or density of quartz veinlets is observed .

75.35m to 77.3m section: Slightly fractured, gray andesite; fine-grained; fractures surfaces tend to be glossy and smooth; pyrite content less than 5%; quartz veinlets crisscross and are less than 2 mm wide;

silicification and argillization still distinctive.

77.3m to 81.3m section: Essentially continuous with previous section; locally fractured along limited lenght; silicification intensity appear to vary from portion to portion but that is ubiquitous throughout the section; pyrite content is less than 2%; quartz veinlets are also few and far between.

81.3m to 85.7m section: Essentially similar to previous section; slightly fractured andesite; fracture fragments form smooth flake-like pieces locally; pyrite content averages around 4%; the pyrite occur as disseminations or interstitial fillings of voids in the rock mass; minute pyrite veinlets also noted; gray and milky quartz veinlets observed but no orientation is discernable.

85.7m to 87.75m section: Gray to light gray andesite; fine grained; bleaching appears to be more pronounced in this section; rock colour is lighter than in previous section; quartz veinlets and pyrite remains pronounced; microbreccia-like texture of some veinlets noted, this could have arisen through the incorporation of old vein materials into a younger intruding vein/veinlet.

87.75m to 89.1m section: Gray andesite, fine grained; generally massive and dense; microveinlets of quartz and pyrite form sparsely cross cutting network in the rock; pyrite content is around 3%.

89.1m to 93.5m section: Essentially similar to previous section; amount and intensity of quartz veinlets and pyrite is practically the same as in previous section; in some portions microveinlets of pyrite of quartz form dentrite like pattern in the rock; pyrite appears to form pockets along the veinlets where space is available thus the widest portions of the veinlets are the most favored sites.

93.5m to 95.45m section: Gray to light gray andesite; fine grained and massive; texture of rock appears to be porphyritic in some portions; microveinlets of quartz and pyrite still pervasive; locally observed are pockets of pyrite measuring from 5mm to 8mm in diameter; the

rock mass is charactezed by numerous vesicles and pock-marks thus making it loose porous and permeable.

95.45m to 99.4m section: Essentially similar to previous section but is more massive at the lower portion; vesicular texture disappears down section; subparallel veinlets of quartz and pyrite very distinct at 98.5 level; only occassional cross cutting veinlets noted; pyrite occurring as pockets no longer prominent; it is mainly disseminated in the groundmass or is limited in the veinlets; fracturing of the rock is not distinct.

99.4m to 102.1m section: Essentially continuous with the previous section; quartz and pyrite veinlets tend to locally swarm in some portions; they are not evenly distributed throughout the section; pyrite pockets form at the intersection of the veinlets or where vesicles are present; it comprises less than 2% of the rock mass; variable intensity of silicification is also noted throughout the section.

102.1m to 105.2m section: Gray andesite; similar to previous section; distribution of veinlets and microveinlets appear more even all throughout the section; same veinlets are traceable for about 15 to 20cm along the core; numerous veinlets are also observed cutting across the other veinlets; silicification and argillization remain variable throughout the section.

105.2m to 108.35m section: Essentially similar to the previous section; uneven distribution of the veinlets more apparent; pyrite remains ubiquitous in this section; at level 107.0m breccia like texture is observed with subangular fragments of the original andesite groundmass surrounded by silica vein material; disjointed older veinlets are clearly discerned within the matrix of silica; pyrite pockets occur in once empty voids and vugs.

108.35m to 111.4m section: Continuous with previous section; rock mass remains fine grained andesite crisscrossed by quartz and pyrite veinlets; core relatively unfractured and competent; minor chalcopyrite

also noted with pyrite but only locally.

111.4m to 114.45m section: Continuous with previous section; practically the same condition as the overlying section; veinlets of quartz and pyrite form cross cutting setwork in variably silicified and/or argillized andesite; pyrite content is about 2-5% and is particularly prominent along fracture surfaces and veinlets.

114.45m to 117.1m section: Gray andesite; fine grained, locally porphyritic with plagioclase as main phenocryst; rock mass remains massive and dense; veinlets of gray and milky quartz and pyrite still pervasive; veinlets rarely exceed 5mm width.

117.1m to 118.95 m section: Essentially similar to previous section; fine grained andesite; silicified and argillized in portions and in varying degrees; sporadic pockets of pyrite noted but its main occurrence is in form of dissemination and veinlets.

118.95m to 122.0m section: Gray and milky quartz veinlets remain prevalent in this section; 5mm wide veinlet of milky quartz tend to concentrate along veinlets and vugs as infilling; the crystals are usually very fine to fine.

122.0m to 123.0m section: Breccia-like texture dominates this section; fragments of andesite, vein material and pyrite are surrounded by silica; veinlets of gray and milky quartz and pyrite criss-cross one another; these are seldom wider than 5 mm and tend to disrupt earlier form veinlets; pockets of pyrite occur in voids and interstitial space.

123.0m to 125.85m section: Gray andesite; fine grained and dense; highly fragmented portion locally observed possibly due to fracturing; quartz veinlets and pyrite remain prominent in the groundmass; veinlets locally form dendrites patterns within the rock; average pyrite content is less than 5%.

125.85m to 128.65m section: Highly fractured and

fragmented section especially at the lower level; degree of argillization is greater than in previous sections resulting in some clayey portions within this stretch; more silicified parts tend to break up into irregular fragments of varying sizes; pyrite and quartz veinlets remain prominent to this level.

129.95m to 133.15m section: Greenish-gray andesite; characteristically fragmented; argillized portions tend to be crumbly, plastic when wet; silicified portions commonly pyrite impregnated with abundant microveinlets of quartz; pyrite content is less than 5%; core size has been reduced to NQ.

133.15m to 135.15m section: Greenish gray andesite; less fragmented than previous section; chloritization and silicification also more pronounced; veinlets of milky quartz abound but vary in both size and orientation; argillization limited along shear and fracture zones; pyrite content is about 3%; this occur mainly with the quartz veinlets.

135.15m to 139.45m section: Essentially the same rock as the previous section but is more fragmented and argillized especially in the lower sections; veinlets of milky quartz still distinctive with pyrite occuring as irregular patches or stringers; samples of the rock appears porous and crumbly and tend to disintegrate when wet; bleaching has resulted into the lighter colour of the rock mass.

139.45m to 141.0m section: Rock passes into a more massive and silicified unit from the previous section; the andesite is gray to light gray in colour and is magnetite bearing; microveinlets of gray quartz plus magnetite are pervasive throughout this section; the magnetite bearing veinlets appear as dark hair-like dendrites cutting accross the rock mass; disseminations of the same is also noted in some portions; pyrite appears to be less abundant in this section.

141.0m to 146.6m section: Gray to light gray andesite; section down to 142.6m is massive and magnetite bearing; magnetite (mt) occr as fine disseminations in the

groundmass and less commonly as clumps/clusters of fine crystal; milky quartz veinlets are still common; the section from 142.6m to 144.0m is generally sheared ; magnetite is characteristically absent in this section exceptfor a minor portion where faint signs are detected; milky quartz veinlets are common; one veinlet (3 mm) was noted to have chalcopyrite but the mineral is generally rare in the section; below 144.0m, the unit is again massive and mt bearing; milky quartz veinlets still pervasive; pyrite is less than 1%.

146.6m to 149.65m section: Essentially continuous with the previous section; massive unit with very local fractures commonly healed by milky quartz; veinlets are 2 to 5mm wide; portions of the unit appear porphyritic and granular; rare islands of fine grained, mt-rich material are also observed, pyrite like magnetite occurs as disseminations in the groundmass; core recovery is excellent in this section due to the competent nature of the unit.

149.65m to 152.45m section: Similar to previous section; massive; medium grained andesite; fine hair-like veinlets and locally form patches especially in portions with abundant veinlets; magnetite occurs as disseminations in the groundmass but also shows occassional clustering along veinlets; chlorite alteration is still distinct in this section.

152.45m to 155.5m section: Essentially continuous with previous section; fine microveinlets of gray quartz are locally prominent occuring as subparallel strand of hair-like texture in the groundmass; pyrite shows preferrential occurrence along this portions although minor disseminations are also noted; magnetite continues to be prominent in this section; 2 to 3mm wide milky quartz veinlets barren of sulphides occur sporadically.

155.5m to 158.55m section: Continuous with previous section; pyrite less pervasive than in previous section; tends to occur peripheral to quartz microveinlets; magnetite occurrence still notable but is generally very minimal in portions with abundant milky quartz veinlets or fracture zones; core recovery is excellent because of

the massive nature of the rock mass.

158.55m to 161.15m section: Continuous with previous section; relatively unfractured section displaying distinct microveinlets of gray and milky quartz; gray quartz characteristically hair-like in texture and tends to swarm locally; the latter occurs more prominently along fracture or shear sections; pyrite abounds along microveinlets; mt tends to disseminate throughout the groundmass.

161.15m to 163.05m section: Gray to greenish gray andesite; massive, mediun grained; numerous milky quartz veinlets forming criss-crossing network noted; mt still pervasive; pyrite still prominent along veinlets and fracture surfaces but is less than 5% of rock mass.

163.05m to 166.10m section: Continuous with previous section; milky quartz veinlets becoming more prominent, width varies from 2 to 10mm; no visible sulphides within the vein material but pyrite is abundant along the veinlets; mt is still ubiquitous in this section; silicification and chloritization still variably discernible.

166.10m to 168.25m section: Continuous with previous section; milky quartz veinlets still prevalent but becoming less prominent both in terms of size and number; mt and pyrite still persist, patchy in occurrence; rock unit still massive and core recovery is almost 100%.

168.25 m to 171.70m section: Rock passes from massive to more fragmented section; unit is slightly argillized and sheared in portions; the section 168.4 to 169.25m contains minor mt but below 169.25 mt is absent; it appears mt is not presnt in the argillized and sheared section; milky quarts veinlets and pyrite are noted within the entire section.

171.7m to 174.10m section: Essentially similar to previous section but argillization is in portions more pervasive; gray to greenish gray colour passes to light greenish gray to buff colour; original mafic

constituents of the argillized rock appear to have altered to chlorite and magnetite; groundmass is mainly quartz and clay; light coluor of the rock contrast sharply with the dark colours of the intervening rock mass; foliation-like features observed in the rock results from the orientation of the needle-shape mafic mineral along prefered direction prior to alteration.

174.10m to 176.4m section: Continuous with the previous section; dike-like appearance of the argillized portion shows contrast of light and dark colours; milky quartz veinlets, 2 to 5mm wide, locally abundant; pyrite and magnetite still present although patchy; argillized portion of the rock unit appear to be highly chloritized with numerous cross cutting quartz veinlets.

175.4m to 179.3m section: Argillized andesite passes on to chloritized andesite; abundant milky quartz veinlets noted cutting across chloritized andesite; pyrite and magnetite locally abundant although the latter is more evenly disseminated; epidote also locally observed contiguous to a quartz veinlet; pyrite content of the rock is generally less than 2%.

181.0 m to 183.78m section: Greenish gray andesite; chloritized, and argillized in portions; abundant milky quartz veinlets; variable width and orientation; magnetite spotly in occurrence, generally absent in portion with abundant quartz veinlets and highly argillized sections; pyrite is present but generally less than 2% of rock mass; chlorization appears to wane down section.

183,78m to 186,83m section: Gray to light gray andesite; medium to fine grained; variably argillized; numerous milky quartz veinlets; locally crumbly due to intense argillization, chloritization indistinct; magnetite occurrence very spotly, limited only to individual grains within the groundmass; fine veinlets of gray quartz again noted as swarms locally; pyrite persists as disseminations and interstitial fillings.

186.83m to 190.0m section: Essentially continuous with previous section; veinlets of milky quartz is variably

argillized andesite still prevalent; mt is absent in the argillized and veinlet impregnated sections but is present in minor amounts in the less altered section; pyrite is still present but is minimal.

190.0m to 193.68m section: Gray to light gray andesite; variably argillized with some portions almost totally clayey; microveinlets of milky quartz still discernible locally; the section 191.18 to 192.2m is mainly clay with only minor fragments of the original rock discernible; it tends to be powdery when dry and plastic when wet, intervening portions of more competent mass are noted throughout the section; magnetite is again limited to the less altered section of the rock where it occurs as discreet grains within the groundmass; pyrite still persists but is relatively minor.

193.68m to 197.0m section: Essentially a contiuous section of variably argillized andesite similar to the previous section; alternating portions of crumbly and more competent rock mass are noted; highly argillized portions show very little original rock texture and tend to be plastic when wet; the massive portions show numerous milky quartz veinlets of varying width and orientation; as in the previous section; magnetite is absent in the argillized portions; it is locally abundant only in limited portions; pyrite occur as fine disseminations in the groundmass.

197.0m to 199.78m section: Gray to light gray andesite; generally more massive and competent than previous section; slight argillization; magnetite pervasive throughout the section, occuring as discreet grains within the groundmass; pyrite is very minor and limited to fracture surfaces or walls of veinlets; milky quartz veinlets locally prominent.

199.78m to 202.83m section: Essentially continuous with previous section; massive and competent; quartz veinlets tend to be epidote impregnated locally; magnetite still pervasive throughout the section; pyrite is less than 1% in the groundmass; fine veinlets of gray quartz also noted sporadically.

202.83m to 205.23m section: Gray andesite; highly fragmented section; rock mass tends to disaggregate into fine fragments; magnetite pervasive; locally very abundant; fine microveinlets of gray quartz visible in the more competent portions; pyrite occurs as disseminations within the groundmass and is less than 2%.

205.23m to 207.73m section: Essentially continuous with previous section; highly fragmented with only minimal portions with discernible milky quartz veinlets; fine veinlets of gray quartz appear to predominate; magnetite content generally higher than the previous 2 sections, pyrite still minor.

207.73m to 209.93m section: Magnetite bearing portion continues down to 208.10m level then passes on to essentially a magnetite-free section; the latter is characteristically argillized with occassional gray quartz veinlets; pyrite occurs both in the groundmass as isolated grains, along veinlet walls/surfaces; it is however very minor in extent; the lower section appears to be more competent and solid resulting in a generally excellent recovery of core sample.

209.93m to 211.93m section: Continuous with previous section; mt free with occasional milky quartz veinlets; well formed quartz crystals noted along veinlet surfaces; they form prismatic crystal jutting out from the surface; acid testing along this section and in the previous one reveal portions containing carbonates as evidenced by their effervescent reaction to the acid; this is especialy prominent along fractures and veinlets of gray and milky quartz; this could indicate emlpacement of carbonate minerals (possibly calcite) along existing space on fractures within the rock.

211.93m to 214.43m section: Gray to light gray andesite; variably argillized; occasional veinlets of milky and gray quartz and possibly calcite (?); magnetite is absent; pyrite is common as disseminations and veinlet material but is less than 5% average.

214.43m to 217.48m section: Continuous with previous

section; reappearance of magnetite at around 214.20m level of previous section; and continuous to this section; intervening portions (20-30 cm long) that are magnetite-free noted throughout; pyrite and quartz veinlets still prominent; calcite (?) microveinlets or veinlet impregnation still evident.

217.48m to 220.38m section: Gray andesite; similar to previous section in terms of rock texture but is generally barren of magnetite; veinlets of quartz still locally prominent; pyrite is present at around 1-2%; argillization intensity is variable but generally increases towards the lower section; rock mass is by and large competent as evidenced by the solid core samples obtained, although the lowest 1/2m section is highly fragmented due to intense argillization.

220.38m to 222.88m section: Continuous with the previous section; argiliized, becoming less intense down section; magnetite remains absent with in this section; 5-7mm wide quartz veinlets noted locally; pyrite is the only visible sulphide in the veinlets and in the groundmass; it is generally less than 5% average; acid effervescense still observed especially along veinlet trends and fracture surfaces; core recovery and con dition is very good.

222.9m to 225.38m section: Essentially similar to previous section: argillization has waned and magnetite is again present in some portions; quartz veinlets locally form swarms and are particullarly prevalent along section 223.10 to 223.45m; the veinlets are generally narrow and tend to form an intertwining network along a preferred trend;pyrite is abundant along this network and is also found disseminated in the groundmass; magnetite is essentially absent within these portions.

225.38m to 227.50m section: Continuous with previous section; gray to light gray andesite; quartz veinlets locally abundant; pyrite occurrence is patchy ranging from 2 to 5% is some portions; magnetite is also erratically distributed being totally absent in some and present in other portions; argillization intensity

is also varied with the lower part of the section showing more intense alteration; veinlets of calcite sporadically noted.

227.5m to 230.55m section: Continuous with previous section; highly argillized in the upper portion and variably argillized down section; light gray to gray colour with a distinct dark gray portion along 229.2m to 230.0m section; magnetite appears to be absent throughout this section; pyrite is ubiquitous but patchy in occurrence; calcite veinlets occassionally noted, gray quartz microveinlets prominent and tend to form swarms locally.

230.55m to 232.78m section: Gray to light gray andesite; argillized to intensely argillized along distinct intervals; milky quartz veinlets locally abundant, magnetite detected only as minor patches pyrite occurs as disceet, fine crystals in the groundmass and contiguous to quartz veinlets.

232.78m to 235.83m section: Continuous with previous section; generally intact section with intervening fragmented portions; argillization still very defined, highly argillized portions tend to be flaky and crumbly and are generally darker coloured; pyrite is well dispersed as fine crystals in the groundmass; magnetite appears to be absent; calcite veinlets locally noted.

235.83m to 237.33m section: Essentially similar to previous section; highly fragmented upper portion pases on to a more competent and less argillized lower section; chloritization becoming more pronounced down section; pyrite still very prominent as dispered crystals throughout the groundmass; magnetite is practically absent except for very minor indications.

237.33m to 240.33m section: Light gray to gray andesite; variably argillized with occasioanl quartz and calcite veinlets; magnetite impregnated portion noted along 238.45m to 238.85m interval; it occurs as very fine disseminations in the groundmass, pyrite is ubiquitous and tend to cluster along fracture and veinlet surfaces; the core sample is relatively

competent and intact with only short sections showing fragmented or broken up rock mass.

240.33m to 242.83m section: Continuous with previous section; slight argillization; locally abundant milky quartz veinlets; magnetite occurrence patchy but generally this section is more mt-rich than the 2 previous sections; pyrite is about 3 to 5% dispersed in the groundmass and more distinctly along veinlets and fracture surfaces; fracturing of the rock mass appears to be controlled by the veinlet orientation; degree of fragmentation of the core sample is moderate.

242.83m to 244.93m section: Continuous with previous section;moderately to highly fragmental especially down section; magnetite is patchy in occurrence, more rare than in the previous section; pyrite is still very prominent particullarly along veinlets; microveinlets of almost pure pyrite noted locally criss-crossing quartz veinlets; pyrite is about 2 to 4% of rock mass; acid effervescence noted in some veinlets could indicate calcite impregnationb along these veinlets.

244.93m to 247.13m section: Similar to previous section: fine to slightly porphyritic andesite; argillized or chloritized in portions;pyrite and magnetite bearing although the latter is rather erratic in distribution; veinlets of quartz and possibly some of calcite are noted cross-cutting one another in varied directions, pyrite impregnation of veinlet walls is very distinct.

247.13m to 249.23m section: Gray to light gray andesite; argillized in portions; locally sheared and fragmented; milky and gray quartz veinlets noted; pyrite is about 2% found mainly along quartz veinlets; magnetite is generally rare to absent.

249.23m to 251.73m section: Displays essentially the same characteristics as the previous section; intervening sections of varibly argillized andesite; intensely argillized portions tend to be crumbly or flaky to powdery in texture; pyrite content is comparable to the previous section; mt is not observed.

251.73m to 254.6m section: Continuous with previous section; fragmented rock mass especially on the upper portions; highly argillized sections tend to be very brittle to patchy and commonly disaggregates when roughly handled; sheared surfaces show distinct striations; pyrite is ubiquitous and is around 2 to 3%; magnetite is noted only as very minor patches in less argillized rock; milky quartz veinlets run subparallel to shear surfaces but are commonly less than 3mm in width, cross-cutting microveinlets also noted locally.

254.6m to 256.63m section: Gray to light gray andesite; intensely argillized lower section; upper meter section more competent and intact magnetite bearing; sporadic quartz veinlets with abundant pyrite; argillized portion is dark gray in colour, easily disaggregated, and semi-plastic when wet; pyrite tend to be consistent in both argillized and less argillized portions.

256.63m to 259.63m section: Intensely argillized section extends 258.0m level then passes on to less argillized andesite; magnetite is notably rich along a half meter interval from 258.0m to 288.5m and then disappears along the rest of the section; veinlets of quartz and calcite noted but are not very prominent; hairlike microveinlets of both minerals are more widespread locally; pyrite is very minor, generally less than 1%.

259.63m to 261.58m section: Gray to greenish gray andesite; fine-grained; displays varying degrees of argillization and chloritization; moderately to intensely fragmented core arising from highly fractured/ sheared rock mass; veinlets of quartz and microveinlets of calcite plus quartz are diapersed throughout the section; pyrite is still minor; commonly occurring as very fine aggregates in interstitial spaces contiguous to quartz veinlets.

261.58m to 263.18m section: Continuous with previous section; fragmented rock, argillized in varrying degrees; magnetite-bearing portions limited to the less

argillized sections of the rock; magnetite occurs as distinct crystals or aggregates of crystals within the groundmass; it is usually found with pyrite and chlorite(?); pyrite is common throughout the section but is generally less than 2% average.

263.18m to 266.28m section: More of the same sequence; alternation of intensely and slightly argillized rock or competent/solid fragmented rock; argillized portions tend to be semiplastic when wet and powdery when dry; less argillized sections tend to contain magnetite as irregular patches, pyrite and quartz veinlets /microveinlets common throughout the section.

266.28m to 268.03m section: Continuous with previous section; highly sheared portions show flake-like fragments of fine grained andesite within clay matrix giving rise to the schist-like texture of the rock; magnetite is again encountered in the more competent and solid section of the unit and is not found in the intensely argillized or sheared portions; pyrite is still common but minor in amount, the bottom section is almost wholly clay material.

268.03m to 270.43m section: Continuous with previous section; fragmented and section of variably argillized andesite; magnetite bearing portions along the less argillized parts of the unit; pyrite is very fine grained;disseminated throughout the groundmass; microveinlets/veinlets of milky quartz locally prominent.

270.43m to 272.83m section: Slightly argillized andesite; fragmented core sample; pyrite content generally higher than previous sections and is around 5 to 8%; it occurs more or less evenly throughout the groundmass within interstitial spaces; magnetite is present as discreet cluster of crystals irregularly distributed throughout the section.

272.83m to 275.00m section: Essentially continuous with previous section;argillization noted to intensely down section but is locally variable; pyrite content is still around 5% magnetite is rare; hair line fractures or microveinlets lined with pyrite are observed throughout

the section; intense shearing along some portions has given rise to the schistose-like texture of the rock unit; fracture surfaces are commonly striated.

275.00m to 277.0m section: Continuous with previous section: gray to dark gray coloured, fine grained andesite; argillization variable and locally intense; magnetite is not encountered in this section; pyrite occurs dominantly as disseminations, content is less than 5% average. quartz veinlets still observed but is generally sparse; core is relatively fragmented and sheared.

277.0m to 279.0m section: Variably argillized andesite up to level 278.58; gray to dark gray colour with abundant pyrite (5%) and no magnetite; this passes on to very fine grained, chlorized andesite or tuffaceous andesite(?); pyrite is essentially absent in this portion.

279.0m to 281.8m section: Continuous with previous section: fine-grained, chloritized andesite extends to 281.18m; porphyritic texture; phenocryst of mafic minerals in a fine grained, argillic groundmass; pyrite is absent; magnetite also not detected, original mafic minerals transformed to chlorite thus giving the rock a distinctive greenish shade; beyond 281.18m level, the rock returns to the typical argillized, pyrite bearing andesite.

281.8m to 285.6m section: Gray to greenish gray andesite; fine to very fine grained; variably argillized and chloritized; pyrite is minor - less than 1%; magnetite is negligible in occurrence; veinlets of quartz plus calcite are sparsely dispersed; core sample locally fragmented especially along shear zones and argillized portions.

285.6m to 288.6m section: The initial meter lenght of core is almost totally clay material; light greenish gray in colour, it is generally plastic when wet and powdery/crumbly when dry, flaky fragments of rock material commonly found within the clayey mass; rock passes on to a more rigid and competent, less argillized

section beyond 286.5m level, rock is fine grained, possibly tuffaceous andesite with very minor pyrite and no magnetite; this passes on to the more typical granular -texture and andesite showing some argillized portions and abundant pyrite (3%); microveinlets of almost totally pyrite noted to be prominent locally; magnetite still not detected in this portion.

288.6m to 291,5m section: Essentially gray to greenish gray; fine grained andesite; rock mass is generally competent resulting in good core recovery and condition; section from 288.9m to 290.6m is magnetite bearing with local portions having as much as 5% content; pyrite is generally common but is less than 1%; beyond 290.6 level, magnetite dissappears abruptly and is rarely encountered within the rest of the section; quartz veinlets and microveinlets with abundant pyrite becomes very prominent; pyrite is around 5-7% in this portion; veinlets of quartz bordered by pyrite and veinlets almost totally of pyrite are relatively common.

291.5m to 293.6m section: Continuous with previous section; mainly fine grained andesite with abundant quartz veinlets and high pyrite (5%) content; magnetite is generally rare, occurring mainly as isolated islands or clusters of crystals along the lenght of the section; core condition and recovery is still very good.

293.6m to 296.0m section: Essentially continuous with previous section; magnetite is more prominent; the occurrence is rather patchy and erratic; pyrite content is locally variable but is around 3% average; pyrite impregnated quartz veinlets/microveinlets are common especially down section where they appear as dendrite like dark lines cutting accross the groundmass.

296.0m to 298.0m section: Argillized and fragmented andesite; gray to light gray colour; pyrite content generally less than in previous section; quartz veinlets indistinct possibly due to the sheared nature of the rock mass; magnetite is detected only in one portion and is considered rare in this section; core sample is commonly crumbly and tend to disagregate into small angular bits.

298.0 m to 300.0m section: Essentially similar to the previous section; but is less argillized and fragmented, more competent portions show chlorite alteration and abundant quartz microveinlets impregnated by pyrite; dark bands noted in the rock was determined to be closely spaced veinlets of quartz with very fine crystals of pyrite; pyrite content is very variable but may average about 3%; magnetite is not detected in this section.

APX. 16 Detailed Geologic Log, MJPP-5

Drill Hole MJPP5
Location: Bgy. Moto, San Dionisio (Madarag)

0.0m to 5.0m to section: HQ size core: Mainly soil material; red brown to brown colour; sandy to silty upper portion grading into more clayey material down section; organic debris present only on the first 70cm part; sparse fragments of weathered rock material characterize the upper 3 m portion.

5.0m to 10.75m section: Brown to light brown soil; generally clayey with rare weathered rock fragments, occasional plant and root debris noted; soil tends to be powdery and crumbly when dry and semiplastic when wet.

10.75 m to 13.85m section: Alternating sequence of weathered and oxidized rock and soil material; rock mass is generally purplish gray in colour and fragmented with some portions completely disintegrated into very fine silky material, hematite/limonite stains are distinctive especially along fracture surfaces and microveinlets, remmant highly silicified portions are also noted locally.

13.85m to 17,15m section: Oxidized and slightly weathered rock; purplish gray to red brown colour; generally fragmented with individual pieces tending to be crumbly; hematite stains still very distinctive especially along fracture surfaces but generally tends to permeate the entire silicified groundmass.

17.15m to 20.5m section: Continuous with previous section but generally less fragmented; purplish gray in colour with intervening portions of gray and grayish cream; red to red brown hematite stains are prominent along fracture surfaces; rock mass is generally silicified with the less oxidized portions showing a distinctly silicified and pyritized, fine grained rock; pyrite content of the original rock must be around 10% almost all of which had been transformed to hematite/limonite in the highly oxidized sections.

20.5m to 24.0m section: Continuous with previous section but relatively less oxidized; gray to light gray

colour ; locally purplish gray and red brown in the oxidized parts; rock mass is highly, albeit irregularly silicified with islands or patches of less silicified material surrounded by a siliceous mass; pyrite content is also around 10% commonly occurring as clusters or disseminations in the groundmass and as fracture or cavity fillings; core sample is moderately fragmented, typically broken up along natural fracture or shear lines.

24.0m to 27.5m section: Highly oxidized rock; fine-grained texture; variably oxidized; color varies from buff to gray with the more oxidized portions showing purple gray and ochre or rust tinge; numerous vugs and microfractures lined with hematite/limonite stains are also noted especially in the more oxidized parts;. pyrite is around 7% to 10% in the fresh or unoxidized rock; core sample is moderately to highly fragmented.

27.5m to 31.1m section: Continuous with previous section; highly silicified rock mass; generally buff to light gray in color with reddish brown to ochre hematite/limonite stains; numerous hairline fractures criss-cross the rock mass and are commonly hematite/limonite lined; veinlets/microveinlets of quartz are common; their dark gray color is probably due to very fine pyrite inclusions; pyrite contents of the rock is less than 2%, a high proportion of which had been oxidized to hematite or limonite.

31.1m to 34.7m section: Essentially continuous with previous section; oxidized in the upper portion down to 32.85m level; gray to light gray colour; buff or cream with red brown and purple stains when oxidized section also slightly argillized; pyrite content is around 7 to 10%, occurring as fine disseminations in the groundmass and as veinlet infillings.

34.7m to 38.8m section: Variably silicified and argillized rock; generally fine grained; oxidized in portions resulting in the distinctive purplish hematite stains and pitted character of the rock mass especially in the lower part of the section; highly silicified portions tend to be dense and massive with peculiar

marble like appearance, most of the pyrite had been oxidized but in the fresher sections, pyrite is around 7% or less; the core sample is generally solid and intact save for the moderately fragmented 40cm upper part.

38.8m to 41.7% section: Continuous with previous section: silicified and oxidzed, fine grained rock; red brown to purple gray colour due to the pervasive hematite staining; the rock mass is locally vuggy or pitted due to numerous cavities formed after the oxidation and leaching of pre-existing pyrite and ferromagnesian minerals; most of these are surface coated by specular hematite; original pyrite content of the rock is estimated to be around 7 to 10%.

41.7m to 44.35m section: Continuous with previous section but is relatively less oxidized; gray colour with minor patches of red brown and purple; highly silicified and pyritized with pyrite content averaging around 7 to 10%; fine crystals of the mineral tend to cluster or form irregular patches contiguous to quartz veinlets/microveinlets; they are prominent along fracture surfaces and intersections of these veinlets; core sample is slightly fragmented and recovery is around 90%.

44.35 m to 48.0 m section: Silicified rock; gray to light gray colour; fine grained; locally argillized and sheared in some portions; generally pyrite rich with around 10 to 15% average; minute specks of chalcocite (?) associated with the pyrite also noted in some portions; core sample is moderately fragmented commonly along the sheared portions of the rock mass.

48.0m to 51.6m section: Essentially continuous with previous section; gray to light gray; fine grained rock; generally silicified with some local argillized portions; numerous veinlets/ microveinlets of quartz impregnated with pyrite are noted to criss cross the rock mass; pyrite tends to be finely crystalline, occurring principally as small pads or clusters in the silicified groundmass; numerous vugs and cavities are commonly filled in or lined by pyrite; it is around 15%

average for the whole section.

51.6m to 54.6m section: Continuous with previous section; highly silicified and locally argillized; fine grained rock; light gray to gray colour with some limonite/hematite stains along fracture surfaces; a short interval at around 53.75m level shows milky quartz intrusion into a highly silicified rock with fragments of the latter (2 to 3cm diameter) floating in the siliceous mass; pyrite is prominently disseminated in the quartz veinlets; pyrite dominated veinlets are also common; it constitutes around 10% of the rock mass.

54.6m to 60.6m section: Continuous with the previous section; variably silicified, fine grained rock; highly silicified section along 58.7m to 59.1m interval display the marble-like texture and features noted in the earlier section, averaging about 6 to 8% of the rock mass; the core sample is relative solid and intact and the core recovery is 100%.

60.6m to 63.75 m section: Continous with previous section but became more intensely silicified at the bottom 2.0 m portion; gray to light gray colour, generally fine grained; pyrite remains prominent at around 8% commonly conspicuous as irregular clusters along quartz microveinlets and fracture surfaces; silicified portion tends to be very massive and dense in contrast to the more porous or less solid texture of the unsilicified section.

63.75m to 66.8m section: Continuous with previous section; highly silicified, fine grained rock; massive and dense except for the bottom 35cm portion which is pitted and slightly argillized, pyrite content is still around 8 to 10%; vugs and cavities noted in the bottom portion are either filled in or coated by pyrite; most of the other voids however appear to be lined or surface-coated by clay minerals; the core sample is essentially solid and intect.

66.8m to 69.6m section: Continuous with previous section both in terms of rock type and character; highly silicified, fine grained rock, commonly massive and

dense with some local pitted portions; pyrite remains ubiquitous and is about 8% of the rock mass; the marble like texture noted earlier is again very prominent in the highly silicified portion of this section; the core sample is generally solid and intact and the core recovery is 100%.

69.6m to 72.7m section: Light gray, moderately silicified with local argillization; cores are dense but relatively fragmented with some section exhibiting solid cores; moderately fresh pyrite disseminations and minute microveinlets; pyrite varies in amount (10-12%).

72.7m to 76.0m section: Light gray, moderately to strongly silicified with some veinlets of quartz material lined with pyrite crystals; very slight magnetism was noted on black sooty material; pyrite occurs mostly as dissemination and microveinlets ranging from 12-14%.

76.0m to 79.45m section: More solid and dense cores with core recovery at 95%. Moderately to strongly silicified with numerous quartz veinlets. Pyrite disseminations increases down the section occurring mostly as disseminations, clusters and veinlets. Pyrite 15-18%. Specks of purple black to black crystals present (bornite?).

79.45m to 82.85m section: Generally same as the previous section, moderately to strongly silicified with numerous quartz microveinlets and veinlets. Dense and solid cores with high core recovery. Specks of minute chalcopyrite grains noted and at 80.7m portion, specks of bornite was noted occurring as minute clusters. Pyrite occurs mostly as disseminations and microveinlets.

82.85m to 86.65m section: Generally the same as the previous section, strongly silicified rock with numerous quartz veinlets. Dense and solid cores with original mafic minerals no longer discernible. Pyrite occurs as clusters, disseminations and microveinlets and ranges from 15-20%.

86.65m to 89.05m section: Highly silicified rockmass with quartz veinlets and patches of quartz material. Mafic minerals no longer discernible almost totally replaced by pyrite. Pyrite occurs mostly as disseminations, clusters and veinlets. Pyrite crystals are generally fresh and ranges from 15-20% in amount. Vuggy surface feature was observed in highly silicified portions with some pyrite crystals slong the edge of the vugs.

89.05m to 92.65m section: Continuous with the previous section; moderate to strong silicification with numerous quartz veinlets and patches. Original mafic minerals no longer discernible probably totally replaced by pyrite. Pyrite crystals occur as disseminations, clusters and veinlets. At 92.0m, chalcocite specks was observced occurring as bluish patch within moderately pyritized groundmass. Pyrite 20-22%.

92.65m to 95.0m section: Highly argillized section; light gray to off-white color, generally crumbly to gravelly and very sticky when wet. Presence of quartz material also noted with abundant fresh pyrite crystals (8-10%).

95.0m to 97.7m section: Light gray with brownish tint, dense and moderately solid cores to slightly fragmented. Moderately silicified with argillization confined only along fracture planes. Original mafic minerals no longer discernible and almost totally replaced by pyrite. Pyrite (15-18%); minute specks of bornite observed at 95.70m.

97.7m to 100.6m section: Generally continuous with the previous section. Moderately to highly silicified with quartz veinlets / microveinlets and patches of quartz material. Vuggy surrface feature of quartz also noted. Pyrite crystals occur mostly as disseminations and veinlets. Pyrite (10-15%).

100.6m to 103.1m section: NQ size core; continuous with the previous section; morderately silicified but becoming argillized going down the last 0.50m section; numerous veinlets of quartz and pyrite noted; very fine

hair-like veinlets of very fine pyrite crystals observed. Pyrite crystals occurring as patches aand pods in a highly silicified matrix; pyrite (10%).

103.1m to 106.1m section: Continuous with the previous section; moderately to strongly silicified rock; numerous pyrite micro-veinlets, patches and pods noted in a highly groundmass; light gray with pinkish brown patches; solid and dense cores; pyrite (10-15%).

106.1m to 109.1m section: Light gray to dark gray with black patches and light brown to pinkish brown patches; moderately silicified and slightly argillized, lower 1.2m section. Highly silicified with quartz patches occurring as buff white patches. Pyrite generally occurs as disseminations, clusters and veinlets. Numerous quartz microveinlets with pyrite well observed, pyrite varies from 8-12%.

112.20m - 115.70m Section: Light gray to dark gray to black, slightly silicified and slightly argillized becoming more intense at the middle portion of the section. Argillized to almost gougy texture is observed along fracture planes almost indicating a relatively weak sheared zone. Pyrite generally occurs as minute disseminations, clusters and microveinlets.

155.70m to 119.30m Moderately silicified with numerous quartz veinlets and microveinlets with patches of quartz material. The upper 1.20 m is made up of highly silicified core, with patches and veinlets of quartz material. Pyrite occurs as microveinlets and dissemination. At the last 1.20m,, pyrite veinlet up to 1.50 cm thick was noted, made up of minute pyrite crystals with numerous microveinlets showing dendritic pattern.

119.30m - 122.75m. section: Light gray to dark gray with black patches, variably argillized, slightly to moderately silicified. Very fine pyrite crystals occurring as black disseminations is well noted with some micro-veinlets giving dendritic pattern.

122.75m to 125.55m section: Generally continuous with the previous section. Generally dense and solid cores. Variably argillized slightly silicified but becoming more silicified at the last (1) one meter section. Quartz patches and microveinlets are well noted with pyrite occurring mostly as microveinlets and stringers.

125.55m to 129.05m section: Moderately to strongly silicified rock, showing veinlets/microveinlets, and patches of quartz material. Original mafic minerals no longer discernible with pyrite occurring mostly as disseminations and microveinlets. Pyrite occurring as pods and clusters is well observed (10-15%)

129.05 to 132.45m section: First 90 cm portion moderately to strongly silicified rock with patches of quartz material showing minor vuggy structure. Lower section shows variable amount of argillization and slight silicification. Cores are generally solid to moderately fractured.

132.45 to 135.85m section: Slightly to moderately silicified, first one (1m) section is highly silicified with quartz veinlets and quartz patches. Vuggy structures could be observed, pyrite disseminations and veinlets is well observed. Last 70cm. portion is moderately argillized with minor gouge-like material along fracture planes.

135.85m to 138.25m section: Variably silicified and argillized rock. First 55cm. section, moderately silicified rock with remaining portion slightly to moderately argillized and slightly silicified. Silicification becoming more intense in the last one (1) meter section with increasing amount of pyrite occurring as disseminations, clusters and microveinlets. Pyrite 10-15%

138.25m - 141.75m section: Slightly to moderately silicified with variable amount of argillization. At 139.75 m to 140.55m section, moderately to highly silicified rock with quartz veinlets and abundant pyrite disseminations and microveinlets. Oxidized crystals of chalcopyrite/Bornite? showing purple to black color, and

shows pleochroic appearance is observed as minute speaks in the highly silicified rock. Pyrite 15-18%

141.75m to 145.95m section:L Generally dense and solid cores with high recovery rate, slightly to moderately silicified with argillized secton generally confined in fracture planes. Silicification becomes more intense in the last 1 meter portion. Silica grains occurs as very minute crystals in an almost even distribution, indicating original rockmass as porous in general.

145.75m to 148.80m section: Slightly to moderately argillized, slightly silicified become more intensely silicified at the last 1.10m section. Pyrite abruptly increase in the highly silicified section and occurs generally as disseminations and microveinlets. Specks of magnetite could also be observed. Pyrite varies from 10-15%.

148.80m to 152.36m Generally the same as the previous section, with slight to moderate amount of argillization. Moderate to highly silicified portion is noted at 150.60m to 151.60m section . Pyrite occurs mostly as dissemination and veinlets and ranges from 10-12%.

152.36m to 155.60m section: Continous with the previous section. Slight to moderate amount of silicification with variable amount of argillization . First 84cm portion is moderate argillized and slightly silicified. At 153.20 to 154.40m moderately to highly silicified rock with patches of quartz and quartz microveinlets. Lower portion of the section is moderately argillized.

155.80m to 158.50m section: Highly argillized section, crumbly to highly crushed cores. Showing chalk like texture and white to off white color, almost totally clay material. At 157.40m to 158.50cm. Moderately crushed cores with some competent and solid cores; moderately argillized and slightly silicified. Pyrite in highly argillized portion ranges from 2 to 4%.

158.50m to 161.70m section: Highly argillized section, crumbly and highly fragmented almost totally clay

material with very minimal pyrite crystals. Last 1.20m portion is made up of moderately argillized and silicified rock with moderate amount of pyrite; generally solid cores.

161.70m to 165.00m section: Light gray to gray, moderately to highly silicified and slightly argillized. Silicified portions shows patches of quartz material and quartz microveinlets. Pyrite generally occurs as disseminations, clusters and microveinlets and varies from 8 to 12%. Generally solid and dense cores. Last (1) one meter portion becoming more argillized and less silicified.

165.00m to 168.85m section Generally solid cores, slightly to moderately silicified at the upper portion. Highly silicified part is between 166.15m to 167.15m with patches of quartz material and microveinlets of quartz with pyrite. Pyrite 10 to 12%. From 167.15m to 168.8m is a highly argillized section with very minimal pyrite (3-4%).

168.85m to 171.25m section: Highly argillized section, almost totally clay material, crumbly and fragmented to generally loose, showing a chalk-like texture. Pyrite is very minimal (3 to 5%).

171.25m - 174.40m. Generally continuous with the previous section. Highly argillized, generally loose and crumbly with some portions showing an almost gouge-like material. Pyrite content is 3% .

174.40m to 177.30m section: Continuous with the previous section, highly argillized and crumbly but with intermittent solid cores made of moderately argillized and slightly silicified rock. At the last 0.90m portion highly crushed cores of moderately argillized and slightly silicified rock was noted.

177.30m to 180.80m section: Continuous with the previous sections, highly argillized crumbly with chalk like texture. Highly fragmented cores becoming a little bit more solid going down the section. Pyrite mostly occurring as impregnation (2-3%).

180.80m to 183.60m section: Generally the same as the previous sections. Highly argillized almost totally clay material, crumbly and fragmented. Pyrite =2%.

183m to 186m section: Highly argillized section, highly fragmented and crumbly with chalk-like texture. Some portions shows a gray gouge appearance. Pyrite = 2-3%.

186.70m to 189.60m section: Highly argillized section, light gray to gray, crumbly to highly fragmented becoming very sticky when wet, almost totally clay material. Generally gougy in appearance with pyrite impregnations (3-4%).

189.60m to 193.10m: Same as the prevous section. Light gray to gray almost totally clay material with pyrite impregnations (3-4%).

193.10m to 195.70m section: Same and continous with the previous section. Gray material almost totally clay material, crumbly and very sticky when wet, almost appearing like a gouge material. Pyrite = 4%. Minute quartz material observable as granules/

195.70m - 198.70m section: Generally continuous with the previous section. Highly argillized, crumbly and fragmented cores. Very sticky when wet with some granules of quartz material noted. Pyrite occurs mainly as impregnations. Pyrite = 4 to 5%; light gray to gray, slightly magnetic becoming more pronounce at the last 0.50m portion.

198.90m to 201.90m section: Variably argillized and silicified rock, moderately fragmented to intact core. Silicified portion exhibits light gray to greenish gray with milky white patches. Quartz microveinlets lined with pyrite and patches of quartz material observed. Moderately chloritized with original mafic minerals no longer discernible, slightly to moderately magnetic with magnetite occurring mostly as clusters and microveinlets. Magnetite = 2-3%; highly argillized portion generally gray in color and slightly magnetic. Pyrite in the whole section is around 5-8%.

201.90m to 204.30m section: Variably argillized and silicified section, with more intense argillization noted at the first 0.90m upper portion becoming more silicified in the last 1.50m down section. Minor argillized portion mostly confined along fracture planes still notable in the silicified portion. Magnetite becoming more pronounced occurring mostly as clusters and microveinlets. Pyrite dissemination and microveinlets is well noted in the silicified portion. Pyrite = 10-12%, magnetite = 3-4%.

204.30m to 206.60m section: Moderately fractured cores but generally intact and dense. Light gray to greenish gray, moderately to highly silicified and moderately chloritized with original mafic minerals no longer discernible. Numerous milky white coloured quartz veinlets and microoveinlets lined with pyrite was noted. Pyrite = 8 - 12%; moderately magnetic with magnetite occurring mostly as clusters, disseminations and microveinlets. Magnetite = 3 to 5%.

206.6m to 209.6m section: Gray to greenish gray, fine grained andesite; variably chloritized resulting in the greenish tinge in colour, distinct veinlets of milky quartz pinch and swell along the trend of the core axis; pyrite is pervasive as fine disseminations and is around 10% of the rock mass; magnetite also occurs as isolated or clusters of crystals often contiguous with pyrite it is about 5% in content.

209.6m to 212,4m section: Continuous with previous section, chloritization still distinctive; pyrite and magnetite occurrences appears to have diminished in this section; pyrite is around 5%, mainly as disseminations and linings along quartz veinlets/microveinlets; magnetite is irregularly patchy and is less than 5% average.

212.4m to 216.0m section: Light gray to greenish gray fine-grained andesite; generally chloritized and partially argillized especially along the bottom half meter portion; the core is relatively intact and solid