

For  
Appendix 9c  
Lithology Data – Scanned Paper logs

(See Digital File EL20\_2003\_200605\_13\_Appendix9c.pdf)

| Survey Depth | Azimuth | Dip  | Hole Co-ordinates |         |
|--------------|---------|------|-------------------|---------|
| 0            | 72      | -65  | Easting_AMG       | 379899  |
| 27           | 74      | 66.5 | Northing_AMG      | 5324310 |
|              |         |      | Elevation (m)     | 275     |
|              |         |      | Azimuth_Mag       | 72°     |
|              |         |      | Dip               | -65°    |

|                             |
|-----------------------------|
| PROJECT: TASMANIA EL20 2003 |
| PROSPECT: GARFIELD          |
| DATE: 6.4.2006              |
| LOGGED BY: NF               |

| HOLE DEPTH | CORE RECOVERY | ROD | SAMPLE NO | SULPHIDES |    |   |   |   | PICTORIAL LOG |     | GRAPHIC LOG | GEOLOGY NOTES | SUMMARY LOG |  |  |
|------------|---------------|-----|-----------|-----------|----|---|---|---|---------------|-----|-------------|---------------|-------------|--|--|
|            |               |     |           | %         |    |   |   |   | STRUCT        | ALT |             |               |             |  |  |
|            |               |     |           | .1        | .3 | 1 | 3 | 5 |               |     |             |               |             |  |  |
| 2          |               |     |           |           |    |   |   |   |               |     |             |               |             |  |  |
| 4          |               |     |           |           |    |   |   |   |               |     |             |               |             |  |  |
| 6          |               |     |           |           |    |   |   |   |               |     |             |               |             |  |  |
| 8          |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 10         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 12         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 14         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 16         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 18         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 20         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 22         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 24         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |
| 26         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |
| 28         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |
| 30         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 32         |               |     |           |           |    |   |   |   |               | ↑ ↑ |             |               |             |  |  |
| 34         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |
| 36         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |
| 38         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |
| 40         |               |     |           |           |    |   |   |   |               | ↑   |             |               |             |  |  |

NO RECOVERY

~5.5m start of core recovery

6-7m very weathered

Green patchy weak chlorite altered feld-phyrlic massive andesitic lava. Phenos upto: 3x2mm - medium size

selective chl alt<sup>2</sup> of ferromagnesian minerals (biotite, amphibole, pyroxene ??) highly abundant

10-17m texturally destructive oxidation / weathering Fe-oxide weathering along fractures, especially well developed from 13-14m. → after sulphides?

Rare qtz phenos.

No mineralisation.

20m base of oxidised zone

Irregular to semi parallel veinlets now composed of Ser ± cb. Not common.

30-33m increase in number ± size of phenos.

Mafic xenolith, fine grained, contains single pyrite grain.

Gradational contact over ~20cm - change in pheno size & abundance.

Green patchy weak chl-Ser altered med. sized mod abundant feld-phyrlic massive andesitic lava.

less porphyritic than the above unit - more equigranular & slightly smaller pheno size ~ 2x1m.

No mineralisation.

REMARKS

| Survey Depth | Azimuth | Dip  | Hole Co-ordinates |  |
|--------------|---------|------|-------------------|--|
| 62           | 71      | 66.5 | Easting_AMG       |  |
|              |         |      | Northing_AMG      |  |
|              |         |      | Elevation (m)     |  |
|              |         |      | Azimuth_Mag       |  |
|              |         |      | Dip               |  |

|                             |
|-----------------------------|
| PROJECT: TASMANIA EL20/2003 |
| PROSPECT: GARFIELD          |
| DATE: 1.4.2006              |
| LOGGED BY: NF               |

| HOLE DEPTH  | CORE RECOVERY | RQD | SAMPLE NO<br>PREFIX | SULPHIDES |   |   |   |   | PICTORIAL LOG |        | GRAPHIC LOG | GEOLOGY NOTES   | SUMMARY LOG |
|---|---------------|-----|---------------------|-----------|---|---|---|---|---------------|--------|-------------|---|-------------|
|   |               |     |                     | %         | 1 | 3 | 1 | 3 | 5             | STRUCT |             |   |             |
| 42  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | lithology, alteration & mineralisation as above.  |             |
| 44  |               |     |                     |           |   |   |   |   |               |        | ^^          | Green patchy weak chl <sup>ser</sup> altered med. sized (3x2mm) mod. abundant feld-phyric massive andesite lava.                              |             |
| 46  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | (same as from 0-33m).<br>No mineralisation, except trace amounts of Mt x very rare Py.  |             |
| 48  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | large >10x10cm clasts of overlying/underlying andesite lava. Weakly sericitised margins   |             |
| 50  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Green patchy weak chl <sup>ser</sup> altered fine sized ~1mm mod. abundant feld-phyric massive andesite lava                                  |             |
| 52  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Very rare disseminated py (1 grain).  |             |
| 54  |               |     |                     |           |   |   |   |   |               |        | ^ ^         |   |             |
| 56  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Green-red patchy weak Kspar-lt x lesser chl <sup>ser</sup> altered med sized (3x2mm) highly abundant feld-phyric massive andesite lava.       |             |
| 58  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Selective chl-ser alteration of feld. phenos and pervasive Kspar-lt alteration of groundmass, to 59m then patchy to 62m                       |             |
| 60  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Trace disseminated py nb: py very cubic<br>∴ may reflect precip. conditions - slow cooling?   |             |
| 62  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Rare irregular Kspar-lt veinlettes.   |             |
| 64  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Green patchy weak chl-ser altered fine sized ~1mm poorly abundant feld-phyric massive andesite lava.  |             |
| 66  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | Pervasive chl-ser alteration = weak - mod<br>Trace disseminated py  |             |
| 68  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | very fine grained lithic clasts   |             |
| 70  |               |     |                     |           |   |   |   |   |               |        | ^ ^         |   |             |
| 72  |               |     |                     |           |   |   |   |   |               |        | ^ ^         | gradational change from above into light green patchy weak chl-ser altered fine sized ~1mm mod. abundant qz-feld-phyric massive dacitic lava. |             |
| 74  |               |     |                     |           |   |   |   |   |               |        | < ^         | Common subhedral qz phenos.   |             |
| 76  |               |     |                     |           |   |   |   |   |               |        | < ^         | Trace disseminated, qz vein + fracture/vug fill py. set of parallel fractures - possible cleavage.  |             |
| 78  |               |     |                     |           |   |   |   |   |               |        | < ^         |   |             |
| 80  |               |     |                     |           |   |   |   |   |               |        | < ^         |   |             |
| REMARKS Increase in visible sulphide compared with 0-40m. |               |     |                     |           |   |   |   |   |               |        |             |   |             |









| Survey Depth | Azimuth | Dip | Hole Co-ordinates |  |
|--------------|---------|-----|-------------------|--|
| 250          | 70      | 58  | Easting_AMG       |  |
|              |         |     | Northing_AMG      |  |
|              |         |     | Elevation (m)     |  |
|              |         |     | Azimuth_Mag       |  |
|              |         |     | Dip               |  |

|                              |
|------------------------------|
| PROJECT: TASMANIA EL 20/2003 |
| PROSPECT: GARFIELD           |
| DATE: 21-4-2006              |
| LOGGED BY: NF                |

| HOLE DEPTH  | CORE RECOVERY | RQD | SAMPLE NO | SULPHIDES |           |   |   |   | PICTORIAL LOG         |            | GRAPHIC LOG |     |   |   |    | GEOLOGY NOTES | SUMMARY LOG |  |   |
|---|---------------|-----|-----------|-----------|-----------|---|---|---|-----------------------|------------|-------------|-----|---|---|----|---------------|-------------|--|---|
|   |               |     |           | %         |           |   |   |   | STRUCT                | ALT        | mm          |     |   |   |    |               |             |  |   |
|   |               |     | PREFIX    | 1         | 3         | 1 | 3 | 5 |                       |            | 0.06        | 0.5 | 2 | 8 | 32 | 64            |             |  |   |
| 242   |               |     |           | Diss      | py        |   |   |   |                       |            |             |     |   |   |    |               |             |  | lithology, alteration & mineralisation as above   |
| 244   |               |     |           | "         |           |   |   |   | vn                    |            |             |     |   |   |    |               |             |  | 243-243.2m milky qtz-cb-chl vein.   |
| 246   |               |     |           | "         |           |   |   |   | cb<br>vn<br>fragments |            |             |     |   |   |    |               |             |  | common cb ± qtz fragments: ? vein fragments   |
| 248   |               |     |           | Diss + vn | py        |   |   |   |                       |            |             |     |   |   |    |               |             |  | subtle ? increase in clast size & abundance especially qtz clasts: moving toward palaeo base of unit?   |
| 250   |               |     |           | "         |           |   |   |   |                       |            |             |     |   |   |    |               |             |  | Sharp increase in visible py - diss. & veins @ 248m.  |
| 252   |               |     |           | "         |           |   |   |   | vn15 x12<br>vn5 x8    |            |             |     |   |   |    |               |             |  | 250m → qtz-cb-chl ± py veins: parallel & disrupted / folded   |
| 254   |               |     |           | Diss      | py        |   |   |   |                       | Ser        |             |     |   |   |    |               |             |  |   |
| 256   |               |     |           | "         |           |   |   |   |                       | Ser        |             |     |   |   |    |               |             |  | Common subhedral ~2mm qtz clasts, ? grains.   |
| 258   |               |     |           | "         |           |   |   |   |                       | Ser        |             |     |   |   |    |               |             |  |   |
| 260   |               |     |           | Diss + vn | py        |   |   |   |                       | Ser-chl    |             |     |   |   |    |               |             |  | 259 - sharp increase in Si-Ser alteration.  |
| 262   |               |     |           | "         |           |   |   |   |                       |            |             |     |   |   |    |               |             |  | 259-263m Mod-strong Ser-chl alteration: Ser commonly in bands associated with py & chl is pervasive. No change in lithology.  |
| 264   |               |     |           | Diss + vn | py + gal  |   |   |   |                       | Si & Ser   |             |     |   |   |    |               |             |  | 263-266m strong texturally destructive Si & lesser Ser alteration. suspect VC sandstone due to existence either side.   |
| 266   |               |     |           | "         |           |   |   |   |                       |            |             |     |   |   |    |               |             |  | Trace to % amounts of disseminated + vn py  |
| 268   |               |     |           | "         |           |   |   |   |                       | Ser-Si-chl |             |     |   |   |    |               |             |  | 266-269m mod-strong Ser-Si-chl altered massive to very thickly bedded clast supported mod. sorted coarse crystal rich volcanoclastic sandstone / granule conglomerate |
| 270   |               |     |           | "         |           |   |   |   |                       |            |             |     |   |   |    |               |             |  | Trace disseminated & vein hosted pyrite.  |
| 272   |               |     |           | "         |           |   |   |   |                       | Ser-Si     |             |     |   |   |    |               |             |  | 271-272m pumice bearing volcanoclastic sandstone.   |
| 274   |               |     |           | Diss + cb | qtz vn py |   |   |   | uns                   | Si-Ser-chl |             |     |   |   |    |               |             |  | ~272-276 very common qtz clasts / phenos 2mm-4mm, upto 10mm in Si-Ser altered matrix qtz's - alteration?? phenos vs clasts?   |
| 276   |               |     |           | "         |           |   |   |   |                       |            |             |     |   |   |    |               |             |  |   |
| 278   |               |     |           | Diss + vn | py        |   |   |   |                       |            |             |     |   |   |    |               |             |  | Dark grey-green mod chl-ser altered massive to very thickly bedded crystal rich pumiceous volcanoclastic sandstone.   |
| 280   |               |     |           | "         |           |   |   |   |                       |            |             |     |   |   |    |               |             |  | Trace disseminated & lesser vn hosted py  |
| REMARKS Significant increase from wk-mod chl ± Ser alt <sup>n</sup> to mod-str-intense Si-Ser-chl alteration @ 259m, coupled with a noticeable increase in visible sulphide - py- |               |     |           |           |           |   |   |   |                       |            |             |     |   |   |    |               |             |  |   |

| Survey Depth | Azimuth | Dip | Hole Co-ordinates |  |
|--------------|---------|-----|-------------------|--|
| 300          | 70.5    | 56  | Easting_AMG       |  |
|              |         |     | Northing_AMG      |  |
|              |         |     | Elevation (m)     |  |
|              |         |     | Azimuth_Mag       |  |
|              |         |     | Dip               |  |

|                                  |
|----------------------------------|
| PROJECT: TASMANIA <u>E20/003</u> |
| PROSPECT: GARFIELD               |
| DATE: 22.4.2006                  |
| LOGGED BY: NF                    |

| HOLE DEPTH | CORE RECOVERY | RQD | SAMPLE NO | PREFIX | SULPHIDES |    |     |    | PICTORIAL LOG   |        | GRAPHIC LOG | GEOLOGY NOTES  | SUMMARY LOG |
|------------|---------------|-----|-----------|--------|-----------|----|-----|----|-----------------|--------|-------------|--|-------------|
|            |               |     |           |        | %         | 1  | 3   | 5  | STRUCT          | ALT    |             |  |             |
| 282        |               |     |           |        | Dis       | py |     |    | vn              | Si-Ser |             | <p>Dark grey-green <sup>-sfr</sup> mod. selective chl-ser <sup>±Si</sup> altered massive to very thickly bedded matrix supported polymict coarse qtz crystal rich pumiceous volcaniclastic sandstone to granule conglomerate with subangular clasts. Predominantly qtz clasts ≤ 2mm-4mm in size. Pumice subtle and rare. Trace disseminated py. Common ? clasts up 10cm of sericitised material (see sketch) containing abundant qtz clasts/phenos. 282-286 common irregular &amp; disrupted cb vns &amp; vn fragments.</p> <p><i>Sketch:</i> qtz (pheno or clast) } clasts or alteration zones? sericite(alteration)</p> <p>288m First visible sphalerite.</p> <p>294 Increase in veining predominantly cb ± qtz ± py ≤ 1cm thick irregular &amp; disrupted.</p> <p>297m Trace amounts of Cpy + gal in qtz clast <i>Sketch:</i> qtz sulphide.</p> <p>301.8m 10cm clast of intensely Si altered material i.e. similar to that seen around 264m. (?henky style)</p> <p>303-304 changes in grain size, occurrence of dz's of 10cm intervals - possible bedding ∴ thinly bedded?</p> <p>307m Qtz-cb-chl veins x 2, around 10cm thick &amp; unmineralised.</p> <p>310.5 ~ 1cm thick massive Py rein.</p> <p>312m massive py clot / ?clast 6x3cm</p> <p>Common cb ± qtz ± py veins &amp; vein fragments</p> <p>increase in qtz clast size &amp; abundance (?bedding) almost a qtz porphyry.</p> |             |
| 284        |               |     |           |        | Dis       | py | cb  | vn | vns             | Ser    |             |  |             |
| 286        |               |     |           |        | Dis       | py |     |    |                 | Ser    |             |  |             |
| 288        |               |     |           |        | Dis       | py | tsp | ph | Qtz-cb vns      |        |             |  |             |
| 290        |               |     |           |        | Dis       | py |     |    | mod. clean qtz  |        |             |  |             |
| 292        |               |     |           |        | Dis       | py | cb  | vn |                 |        |             |  |             |
| 294        |               |     |           |        | Dis       | py |     |    |                 |        |             |  |             |
| 296        |               |     |           |        | Dis       | py | cb  | vn | vns             |        |             |  |             |
| 298        |               |     |           |        | Dis       | py | cb  | vn | py + sph        | Ser    |             |  |             |
| 300        |               |     |           |        | Dis       | py |     |    | gal             |        |             |  |             |
| 302        |               |     |           |        | Dis       | py |     |    | vns             | Si     |             |  |             |
| 304        |               |     |           |        | Dis       | py |     |    | vns             |        |             |  |             |
| 306        |               |     |           |        | Dis       | py |     |    | vns             |        |             |  |             |
| 308        |               |     |           |        | Dis       | py | vn  | py |                 | chl    |             |  |             |
| 310        |               |     |           |        | Dis       | py | vn  | py |                 |        |             |  |             |
| 312        |               |     |           |        | Dis       | py |     |    | py clot / clast |        |             |  |             |
| 314        |               |     |           |        | Dis       | py | vn  | py | cb vns          |        |             |  |             |
| 316        |               |     |           |        | Dis       | py | cb  | vn | py              |        |             |  |             |
| 318        |               |     |           |        | Dis       | py | cb  | vn | py              |        |             |  |             |

REMARKS



|              |         |      |                   |  |
|--------------|---------|------|-------------------|--|
| Survey Depth | Azimuth | Dip  | Hole Co-ordinates |  |
| 400          | 70.5    | 51.5 | Easting_AMG       |  |
|              |         |      | Northing_AMG      |  |
|              |         |      | Elevation (m)     |  |
|              |         |      | Azimuth_Mag       |  |
|              |         |      | Dip               |  |

|                                    |
|------------------------------------|
| <b>PROJECT:</b> TASMANIA EL20/2003 |
| <b>PROSPECT:</b> GARFIELD          |
| <b>DATE:</b> 23-4-2006             |
| <b>LOGGED BY:</b> NF               |

| HOLE DEPTH | CORE RECOVERY | RQD | SAMPLE NO | SULPHIDES         |   |   |   |   | PICTORIAL LOG |     | GRAPHIC LOG | GEOLOGY NOTES   | SUMMARY LOG  |
|------------|---------------|-----|-----------|-------------------|---|---|---|---|---------------|-----|-------------|---|--|
|            |               |     |           | %                 |   |   |   |   | STRUCT        | ALT |             |   |  |
|            |               |     |           | 1                 | 3 | 1 | 3 | 5 |               |     |             |   |  |
| 362        |               |     |           | Diss py           |   |   |   |   | Cb<br>vn      | Si  |             | Pale green mod selective Ser-cb altered massive to very thickly bedded matrix supported polymictic well sorted qtz crystal rich amiceous volcanoclastic sandstone.  |  |
| 364        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   | NB: Change in alteration assemblage from above unit. Trace to % disseminated & lesser vein hosted py. mod. cleavage<br>less qtz-phyric than previously observed however qtz still present in variable amounts. |
| 366        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             | 369-371m Abundant qtz-cb-rock flour ± py ± cpv ± sph composing >50% of rock, <1m thick averaging ~10cm thick. No change in alteration style or intensity to host rocks? may represent structural break in rock, major zone of movement? Single vein has ~0.5% sphalerite over 1m. |  |
| 368        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   | 370-376m Qz vein containing ~0.5-1% sphalerite & lesser chalcopyrite.  |
| 370        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             | qtz-phyric volcanoclastic sandstone as above  |  |
| 372        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   | 386- subtle pumice fragments observed  |
| 374        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             | 386-388m Rock slightly more cleaved + slightly more intense ser + fe cb alt   |  |
| 376        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   | 386-400m stronger cleavage/foliation coupled with more obvious Ser + FeCb alteration.  |
| 378        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             | Still qtz-phyric VCS.   |  |
| 380        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 382        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 384        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 386        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 388        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 390        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 392        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 394        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 396        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 398        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |
| 400        |               |     |           | Diss sph vn<br>py |   |   |   |   | Cb<br>vn      |     |             |   |  |

REMARKS



| Survey Depth | Azimuth | Dip | Hole Co-ordinates |  |
|--------------|---------|-----|-------------------|--|
|              |         |     | Easting_AMG       |  |
|              |         |     | Northing_AMG      |  |
|              |         |     | Elevation (m)     |  |
|              |         |     | Azimuth_Mag       |  |
|              |         |     | Dip               |  |

**SHEET** 12 **OF** 18

|                                     |
|-------------------------------------|
| <b>PROJECT:</b> TASMANIA EL 20/2003 |
| <b>PROSPECT:</b> GARFIELD           |
| <b>DATE:</b> 26.4.2006              |
| <b>LOGGED BY:</b> NF                |

| HOLE DEPTH | CORE RECOVERY | ROD | SAMPLE NO<br>PREFIX | SULPHIDES |   |   |   |        | PICTORIAL LOG |                                | GRAPHIC LOG |   |   |    |    | GEOLOGY NOTES | SUMMARY LOG   |  |
|------------|---------------|-----|---------------------|-----------|---|---|---|--------|---------------|--------------------------------|-------------|---|---|----|----|---------------|---|--|
|            |               |     |                     | %         | 1 | 3 | 5 | STRUCT | ALT           | 0.06                           | 0.5         | 2 | 8 | 32 | 64 |               |   |  |
| 442        |               |     |                     |           |   |   |   |        | mod. cleavage | Si-Ser                         |             |   |   |    |    |               | lithology, alteration & mineralisation as above.<br>Mod-strong Si-Ser alteration continuation to 442m |  |
| 444        |               |     |                     |           |   |   |   |        |               | FeCb<br>?Alb                   |             |   |   |    |    |               |   |  |
| 446        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 448        |               |     |                     |           |   |   |   |        |               | Cb<br>vns                      |             |   |   |    |    |               |   |  |
| 450        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 452        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 454        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 456        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 458        |               |     |                     |           |   |   |   |        |               | 30<br>cm<br>thick<br>vns       | Ser<br>Si   |   |   |    |    |               |   |  |
| 460        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 462        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 464        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 466        |               |     |                     |           |   |   |   |        |               | Qz<br>Cb<br>chl<br>vns         | Ser<br>Si   |   |   |    |    |               |   |  |
| 468        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 470        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 472        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 474        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 476        |               |     |                     |           |   |   |   |        |               | Qz<br>cb<br>feCb<br>chl<br>vns | Ser<br>Si   |   |   |    |    |               |   |  |
| 478        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |
| 480        |               |     |                     |           |   |   |   |        |               |                                |             |   |   |    |    |               |   |  |

REMARKS \* Petrology sample from 453m

| Survey Depth | Azimuth | Dip | Hole Co-ordinates |  |
|--------------|---------|-----|-------------------|--|
| 500          | 84      | 44  | Easting_AMG       |  |
|              |         |     | Northing_AMG      |  |
|              |         |     | Elevation (m)     |  |
|              |         |     | Azimuth_Mag       |  |
|              |         |     | Dip               |  |

SHEET 13 OF 18

|                                     |
|-------------------------------------|
| PROJECT: <u>TASMANIA EL 20/2003</u> |
| PROSPECT: <u>GARFIELD</u>           |
| DATE: <u>27.4.2006</u>              |
| LOGGED BY: <u>NF</u>                |

| HOLE DEPTH | CORE RECOVERY | RQD | SAMPLE NO<br>PREFIX | SULPHIDES |      |    |    |        | PICTORIAL LOG |               | GRAPHIC LOG    | GEOLOGY NOTES | SUMMARY LOG   |  |
|------------|---------------|-----|---------------------|-----------|------|----|----|--------|---------------|---------------|----------------|---------------|---|--|
|            |               |     |                     | %         | 1    | 3  | 5  | STRUCT | ALT           |               |                |               |   |  |
| 482        |               |     |                     | Disst     | m    | py |    |        |               | /// F         | XXXX Ser-Si    |               | lithology, alteration & mineralisation as above.<br>481.5m fault pug zone ~2cm wide   |  |
| 484        |               |     |                     | "         |      |    |    |        |               | /// vn        |                |               | 483m 2cm Qz-cb-chl vn with trace py<br>Minor cb veins/veinlets & vein/veinlet fragments.  |  |
| 486        |               |     |                     | "         |      |    |    |        |               | Weak cleavage |                |               |   |  |
| 488        |               |     |                     | "         |      |    |    |        |               | cleavage      |                |               | 488-491m Si-ser altered - mod to strong   |  |
| 490        |               |     |                     | "         |      |    |    |        |               |               | XXXX Si-Ser    |               | 490-491 sharp decrease in grain size & no qtz phenos.   |  |
| 492        |               |     |                     | Disst     | vn   | py |    |        |               | /// vns       |                |               | 491.7m Qz-cb-Chl vein hosted contact.   |  |
| 494        |               |     |                     | "         |      |    |    |        |               |               |                |               | Dark green-black wk-mod. perv. chl-cb+ser altered aphanitic massive andesite lava.  |  |
| 496        |               |     |                     | Disst     | cb   | vn | py |        |               |               |                |               | Trace to ≤1% disseminated and lesser vn±cb hosted py mineralisation.  |  |
| 498        |               |     |                     | "         |      |    |    |        |               |               |                |               | Common cb veins+veinlettes & fragments  |  |
| 500        |               |     |                     | Disst     | down | py |    |        |               |               |                |               | subtle granular appearance, hard to distinguish from volcaniclastic sandstone. Distinguishing factors include: massive appearance, lack of sedimentary structures, no larger clasts, however, subtle gradational contacts questionable. |  |
| 502        |               |     |                     | Disst     |      | py |    |        |               |               |                |               |   |  |
| 504        |               |     |                     | Disst     | vn   | py |    |        |               |               | XXXX Kspar-He. |               | 502.3-502.65m mod. intensity Kspar-He alteration with >1% disseminated & vein hosted py.  |  |
| 506        |               |     |                     | "         |      |    |    |        |               |               |                |               |   |  |
| 508        |               |     |                     | Disst     | py   |    |    |        |               | /// vn        |                |               | 507.1-507.7m Qtz-cb-chl-cpy-py vein cpy in large ~2x2cm patchy in ?post min. Devonian vn.   |  |
| 510        |               |     |                     | Disst     | vn   | py |    |        |               | /// vn        | XXXX Si-Ser    |               | 509.65-509.85m cb-qtz-rf-py vein weakly brecciated  |  |
| 512        |               |     |                     | "         |      |    |    |        |               |               |                |               | sharp contact. @ 510.5m   |  |
| 514        |               |     |                     | Disst     | py   |    |    |        |               |               |                |               | Dark green-black mod perv. chl and patchy ser altered massive matrix supported well sorted monomict coarse qtz crystal rich volcaniclastic sandstone.   |  |
| 516        |               |     |                     | "         | vn   | py |    |        |               | /// vn        |                |               | qtz-phyric  |  |
| 518        |               |     |                     | "         |      |    |    |        |               |               | XXXX Si-Ser    |               | 515.95-516.05m 1cm thick dark grey pyritic ?andesite vein/dyke.   |  |
| 520        |               |     |                     | "         |      |    |    |        |               |               |                |               | Not qtz phyric - ?decrease down hde.  |  |
| REMARKS    |               |     |                     |           |      |    |    |        |               |               |                |               |   |  |

| Survey Depth | Azimuth | Dip  | Hole Co-ordinates |  |
|--------------|---------|------|-------------------|--|
| SSO          | 65      | 41.5 | Easting_AMG       |  |
|              |         |      | Northing_AMG      |  |
|              |         |      | Elevation (m)     |  |
|              |         |      | Azimuth_Mag       |  |
|              |         |      | Dip               |  |

|                                     |
|-------------------------------------|
| PROJECT: <u>TASMANIA EL 20/2003</u> |
| PROSPECT: <u>GARFIELD</u>           |
| DATE: <u>1.5.2006</u>               |
| LOGGED BY: <u>NF</u>                |

| HOLE DEPTH | CORE RECOVERY | RQD | SAMPLE NO | PREFIX | SULPHIDES |   |   |   |        | PICTORIAL LOG |  | GRAPHIC LOG | GEOLOGY NOTES | SUMMARY LOG |  |
|------------|---------------|-----|-----------|--------|-----------|---|---|---|--------|---------------|--|-------------|---------------|-------------|--|
|            |               |     |           |        | %         | 1 | 3 | 5 | STRUCT | ALT           |  |             |               |             |  |
| 522        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 524        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 526        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 528        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 530        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 532        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 534        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 536        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 538        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 540        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 542        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 544        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 546        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 548        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 550        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 552        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 554        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 556        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 558        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |
| 560        |               |     |           |        |           |   |   |   |        |               |  |             |               |             |  |

REMARKS ~ 8m of Andesite associated with elevated (upto ~1%) disseminated & cb vein hosted sulphide (namely py + v. rare cpy in cb vein).

| Survey Depth | Azimuth | Dip  | Hole Co-ordinates |  |
|--------------|---------|------|-------------------|--|
| 600          | 65      | 38.5 | Easting_AMG       |  |
|              |         |      | Northing_AMG      |  |
|              |         |      | Elevation (m)     |  |
|              |         |      | Azimuth_Mag       |  |
|              |         |      | Dip               |  |

|                                     |
|-------------------------------------|
| PROJECT: <u>TASMANIA EL 20/2003</u> |
| PROSPECT: <u>GARFIELD</u>           |
| DATE: <u>1-5-2006</u>               |
| LOGGED BY: <u>NF</u>                |

| HOLE DEPTH                                       | CORE RECOVERY | RQD | SAMPLE NO | PREFIX | SULPHIDES |   |   |   |   | PICTORIAL LOG |        | GRAPHIC LOG | GEOLOGY NOTES   | SUMMARY LOG |
|--|---------------|-----|-----------|--------|-----------|---|---|---|---|---------------|--------|-------------|---|-------------|
|  |               |     |           |        | %         | 1 | 3 | 1 | 3 | 5             | STRUCT |             |   |             |
| 562  |               |     |           |        |           |   |   |   |   |               |        |             | lithology, alteration & mineralisation as above.  |             |
| 564  |               |     |           |        |           |   |   |   |   |               |        |             | 560.5 - 562.5 (2m) of ~90% Qtz-cb-chl <sup>±</sup> py veining. Decreasing visible sulphide (py) downhole.   |             |
| 566  |               |     |           |        |           |   |   |   |   |               |        |             | silicic clasts ~ 1x1cm in size, typically bx by cb veining  |             |
| 568  |               |     |           |        |           |   |   |   |   |               |        |             | 569.65m sharp alteration & grainsize hosted contact.  |             |
| 570  |               |     |           |        |           |   |   |   |   |               |        |             | Green mod. pervasive chlorite altered massive to very thickly bedded? reverse graded subangular clast supported monomict lithic-rich f.g. volcanoclastic sandstone. |             |
| 572  |               |     |           |        |           |   |   |   |   |               |        |             | Trace to no disseminate & rare in hosted py. Trace disseminated Mt.   |             |
| 574  |               |     |           |        |           |   |   |   |   |               |        |             | 576.5m cb vein hosted fault. fault pug.   |             |
| 576  |               |     |           |        |           |   |   |   |   |               |        |             | 577.4-577.6 Qtz-cb-chl veining  |             |
| 578  |               |     |           |        |           |   |   |   |   |               |        |             | 578-582m Qtz phytic ie. common subrounded qtz crystals clasts.  |             |
| 580  |               |     |           |        |           |   |   |   |   |               |        |             | 578-581m - Mt in veins & disseminated - expect sharp peak in mag. susc.   |             |
| 582  |               |     |           |        |           |   |   |   |   |               |        |             | ~585m possible pumice clasts  |             |
| 584  |               |     |           |        |           |   |   |   |   |               |        |             | ↳ characteristic wispy tails  |             |
| 586  |               |     |           |        |           |   |   |   |   |               |        |             | Patchy weak selective Kspar-Hc alt <sup>n</sup> of clasts & ?ser alt <sup>n</sup> of matrix   |             |
| 588  |               |     |           |        |           |   |   |   |   |               |        |             | 591.1 - 591.3m: cb-qtz-chl veining - irregular & disrupted.   |             |
| 590  |               |     |           |        |           |   |   |   |   |               |        |             | 593.25 - 593.5m: fault zone & bx rock & qtz-cb vn.  |             |
| 592  |               |     |           |        |           |   |   |   |   |               |        |             | 594-600m common cb-qtz <sup>±</sup> chl veins ~1cm wide, upto 5cm wide.   |             |
| 594  |               |     |           |        |           |   |   |   |   |               |        |             |   |             |
| 596  |               |     |           |        |           |   |   |   |   |               |        |             |   |             |
| 598  |               |     |           |        |           |   |   |   |   |               |        |             |   |             |
| 600  |               |     |           |        |           |   |   |   |   |               |        |             |   |             |
| REMARKS From ~ 570m predominantly unmineralised. |               |     |           |        |           |   |   |   |   |               |        |             |   |             |

| Survey Depth | Azimuth | Dip | Hole Co-ordinates |  |
|--------------|---------|-----|-------------------|--|
|              |         |     | Easting_AMG       |  |
|              |         |     | Northing_AMG      |  |
|              |         |     | Elevation (m)     |  |
|              |         |     | Azimuth_Mag       |  |
|              |         |     | Dip               |  |

|                                     |
|-------------------------------------|
| PROJECT: <u>TASMANIA EL 20/2003</u> |
| PROSPECT: <u>GARFIELD</u>           |
| DATE: <u>1-5-2006</u>               |
| LOGGED BY: <u>NF</u>                |

| HOLE DEPTH | CORE RECOVERY | RQD | SAMPLE NO | SULPHIDES |    |    |   |   | PICTORIAL LOG |        | GRAPHIC LOG | GEOLOGY NOTES | SUMMARY LOG |  |  |
|------------|---------------|-----|-----------|-----------|----|----|---|---|---------------|--------|-------------|---------------|-------------|--|--|
|            |               |     |           | %         |    |    |   |   | STRUCT        | ALT    |             |               |             |  |  |
|            |               |     |           | .1        | .3 | 1  | 3 | 5 |               |        |             |               |             |  |  |
| 602        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 604        |               |     |           | Diss      | py |    |   |   | F             | Si-Ser |             |               |             |  |  |
| 606        |               |     |           |           |    |    |   |   | F             | Ser    |             |               |             |  |  |
| 608        |               |     |           | Diss      | py |    |   |   | F             | Ser    |             |               |             |  |  |
| 610        |               |     |           |           |    |    |   |   | F             |        |             |               |             |  |  |
| 612        |               |     |           |           |    |    |   |   |               | Qv     |             |               |             |  |  |
| 614        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 616        |               |     |           | Qz-cb     | vn | py |   |   |               |        |             |               |             |  |  |
| 618        |               |     |           | Diss      | py |    |   |   |               |        |             |               |             |  |  |
| 620        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 622        |               |     |           | Diss      | py |    |   |   |               |        |             |               |             |  |  |
| 624        |               |     |           | Qz-cb     | vn | py |   |   |               |        |             |               |             |  |  |
| 626        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 628        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 630        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 632        |               |     |           | Diss      | py |    |   |   |               |        |             |               |             |  |  |
| 634        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 636        |               |     |           | Diss      | vn | py |   |   |               | Qv     |             |               |             |  |  |
| 638        |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |
| 640        |               |     |           |           |    |    |   |   |               | Qv     |             |               |             |  |  |
| REMARKS    |               |     |           |           |    |    |   |   |               |        |             |               |             |  |  |

lithology, alteration & mineralisation as above.

Sharp lithological (+ alteration & mineralisation) contact @ 602m

Faulted contact at 603m

Faulted contact at 604.4m

Pale to dark green mod. pervasive chl & patchy ser altered massive (to very thickly bedded?)

subrounded clast supported well sorted coarse qtz crystal rich (qtz-phyrnic) volcaniclastic sandstone.

Trace to  $\leq 1\%$  disseminated & lesser vn hosted py

Fault bounded ser-si alteration, and grain size variation ser+si alt<sup>n</sup> commonly associated with coarser qtz phyrnic vcs.

Vein hosted contact 611.3-613.6m Qz-cb-rf-chl-cpy-sph veins.

Cream-green mod-wk pervasive chl-ser altered massive subrounded clast supported well sorted coarse qtz crystal rich (qtz-phyrnic) monomict volcaniclastic sandstone.

Trace disseminated & lesser vn ( $\pm$ qtz $\pm$ cb) hosted py - however predominantly unmineralised.

! Massive

Not a qtz porphyry as qtz's are variable in shape from rounded to angular & to a lesser extent in size  $< 1m$  to  $\leq 2m$  predominantly.

635-635.3m qtz-cb veining

639-640m Qz-Cb veining

| Survey Depth | Azimuth | Dip  | Hole Co-ordinates |
|--------------|---------|------|-------------------|
| 650          | 67.5    | 35.5 | Easting_AMG       |
|              |         |      | Northing_AMG      |
|              |         |      | Elevation (m)     |
|              |         |      | Azimuth_Mag       |
|              |         |      | Dip               |

|                                     |
|-------------------------------------|
| <b>PROJECT:</b> TASMANIA EL 20/2003 |
| <b>PROSPECT:</b> GARFIELD           |
| <b>DATE:</b> 2.5.2006               |
| <b>LOGGED BY:</b> NF                |

| HOLE DEPTH | CORE RECOVERY | ROD | SAMPLE NO<br>PREFIX | SULPHIDES |        |              |        |        | PICTORIAL LOG |                 | GRAPHIC LOG | GEOLOGY NOTES | SUMMARY LOG |  |   |
|------------|---------------|-----|---------------------|-----------|--------|--------------|--------|--------|---------------|-----------------|-------------|---------------|-------------|--|---|
|            |               |     |                     | %<br>1    | %<br>3 | %<br>1       | %<br>3 | %<br>5 | STRUCT        | ALT             |             |               |             |  |   |
| 642        |               |     |                     |           |        | m py         |        |        |               | Qv              |             |               |             |  |   |
| 644        |               |     |                     |           |        | Diss py      |        |        |               |                 |             |               |             |  |   |
| 646        |               |     |                     |           |        | vn py        |        |        |               | Qv              |             |               |             |  |   |
| 648        |               |     |                     |           |        | Diss + vn py |        |        |               | Qv              |             |               |             |  |   |
| 650        |               |     |                     |           |        | vn py        |        |        |               | Qv              |             |               |             |  |   |
| 652        |               |     |                     |           |        | "            |        |        |               | ↑ Ser           |             |               |             |  |   |
| 654        |               |     |                     |           |        | "            |        |        |               | ↑ weak cleavage |             |               |             |  |   |
| 656        |               |     |                     |           |        | Diss py      |        |        |               |                 |             |               |             |  |   |
| 658        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 660        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 662        |               |     |                     |           |        | m py         |        |        |               | Qv              |             |               |             |  | 661.3m<br>milky Qtz-Cb-rf-py veins - lithological contact.  |
| 664        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 666        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  | 665m<br>Pale to dark green mod. pervasive & patchy Ser ±<br>cb ± Alb altered massive ? normal graded<br>subrounded clast supported, coarse Qtz crystal<br>rich (Qtz-phyric) pumiceous volcanoclastic<br>pebble conglomerate to sandstone. |
| 668        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 670        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 672        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  | ~ pumice.<br>672-672.4m >75% of rock composed of<br>Qtz-cb-rf veins from ≤1cm to >1m in<br>apparent thickness, semi-parallel in<br>places, others appear as cutting.<br>more vein than rock over this interval.                           |
| 674        |               |     |                     |           |        | vn py        |        |        |               | Qv              |             |               |             |  |   |
| 676        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 678        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |
| 680        |               |     |                     |           |        |              |        |        |               |                 |             |               |             |  |   |

REMARKS Relative to upper parts of hole, lower part unmineralised becoming less altered & mineralised with depth

| Survey Depth | Azimuth | Dip | Hole Co-ordinates |  |
|--------------|---------|-----|-------------------|--|
| 701          | 67      | 32  | Easting_AMG       |  |
|              |         |     | Northing_AMG      |  |
|              |         |     | Elevation (m)     |  |
|              |         |     | Azimuth_Mag       |  |
|              |         |     | Dip               |  |

|                              |
|------------------------------|
| PROJECT: TASMANIA EL 20/2003 |
| PROSPECT: GARFIELD           |
| DATE: 2.5.2006               |
| LOGGED BY: NF                |

| HOLE DEPTH | CORE RECOVERY | ROD | SAMPLE NO | SULPHIDES |   |   |          |    | PICTORIAL LOG |     | GRAPHIC LOG  | GEOLOGY NOTES | SUMMARY LOG |
|------------|---------------|-----|-----------|-----------|---|---|----------|----|---------------|-----|--|---------------|-------------|
|            |               |     |           | %         |   |   |          |    | STRUCT        | ALT |  |               |             |
|            |               |     |           | 1         | 3 | 1 | 3        | 5  |               |     |  |               |             |
| 682        |               |     |           |           |   |   |          | Qv | Weak          |     | lithology, alteration & mineralisation as above<br>Minor cb±qtz veins, relicts & fragments common to EOH.                                    |               |             |
| 684        |               |     |           |           |   |   |          | Qv | ↓             |     |  |               |             |
| 686        |               |     |           |           |   |   | cb vn py |    |               |     |  |               |             |
| 688        |               |     |           |           |   |   | Diss py  |    |               |     |  |               |             |
| 690        |               |     |           |           |   |   | cb vn py |    |               |     | 690-693m ~ 1cm size pumice dasts, now altered to sericite.   |               |             |
| 692        |               |     |           |           |   |   |          | Qv |               |     |  wispy tails. vesicular                                   |               |             |
| 694        |               |     |           |           |   |   |          | F  |               |     | 694.4m cb-py hosted fault zone.  |               |             |
| 696        |               |     |           |           |   |   | vn py    | Qv |               |     |  |               |             |
| 698        |               |     |           |           |   |   | vn py    |    |               |     |  |               |             |
| 698        |               |     |           |           |   |   | cb vn py |    |               |     | 698 - EOH  |               |             |
| 700        |               |     |           |           |   |   |          |    |               |     | Green mod-wk pervasive ser-cb±chl altered massive subangular dast supported ? monomict lithic-rich volcanoclastic sandstone (NOT ste-phynic) |               |             |
| 702        |               |     |           |           |   |   |          |    |               |     | Trace cb vn hosted py to unmineralised.  |               |             |
|            |               |     |           |           |   |   |          |    |               |     | 701.2m E.O.H   |               |             |
| REMARKS    |               |     |           |           |   |   |          |    |               |     |  |               |             |