



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **02/05/2023**
Date Photographed: **03/05/2023**



Box 07 – Depth 8.15 to 11.33m



Box 08 – Depth 8.15 to 11.33m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **02/05/2023**
Date Photographed: **03/05/2023**



Box 09 – Depth 8.15 to 11.33m



Box 10 – Depth 8.15 to 11.33m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **03/05/2023**
Date Photographed: **04/05/2023**



Box 11 – Depth 8.15 to 11.33m



Box 12 – Depth 8.15 to 11.33m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **03/05/2023**
Date Photographed: **04/05/2023**



Box 13 – Depth 8.15 to 11.33m



Box 14 – Depth 8.15 to 11.33m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **03/05/2023**
Date Photographed: **04/05/2023**



Box 15 – Depth 8.15 to 11.33m



Box 16 – Depth 8.15 to 11.33m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **03/05/2023**
Date Photographed: **04/05/2023**



Box 17 – Depth 8.15 to 11.33m



Box 18 – Depth 8.15 to 11.33m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1210**
Photographed By: **BW/RC**

Date Drilled: **04/05/2023**
Date Photographed: **05/05/2023**



Box 19 – Depth 8.15 to 11.33m



Box 20 – Depth 8.15 to 11.33m

Auckland Light Rail: Stage 1 GI

Drillhole Reference:
Photographed By:

BH1212
BW/RC

Date Drilled:
Date Photographed:

19/04/2023
20/04/2023



Box 01 – Depth 0 to 4.4 m



Box 02 – Depth 4.4 to 8.15m

Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1212**
Photographed By: **BW/RC**

Date Drilled: **19/04/2023**
Date Photographed: **20/04/2023**



Box 03 – Depth 8.15 to 11.33m



Box 04 – Depth 11.33 to 14.85m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1212**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 05 – Depth 14.85 to 18.22m



Box 06 – Depth 18.22 to 21.36m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1212**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 07 – Depth 21.36 to 24.39m



Box 08 – Depth 24.23 to 27.23m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1212**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 09 – Depth 27.23 to 30.00m



Box 10 – Depth 30.0 to 33.56m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1212**
Photographed By: **BW/RC**

Date Drilled: **21/04/2023**
Date Photographed: **22/04/2023**



Box 11 – Depth 33.56 to 36.46m



Box 12 – Depth 36.46 to 39.46m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1212**
Photographed By: **BW/RC**

Date Drilled: **21/04/2023**
Date Photographed: **22/04/2023**



Box 13 – Depth 39.46 to 40.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **12/04/2023**
Date Photographed: **13/04/2023**



Box 01 – Depth 0.0 to 3.0m



Box 02 – Depth 3.0 to 5.14m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **12/04/2023**
Date Photographed: **13/04/2023**



Box 03 – Depth 5.14 to 7.5m



Box 04 – Depth 7.5 to 9.48m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **13/04/2023**
Date Photographed: **14/04/2023**



Box 05 – Depth 9.48 to 11.57m



Box 06 – Depth 0.0 to 13.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **13/04/2023**
Date Photographed: **14/04/2023**



Box 07 – Depth 13.3 to 15.0m



Box 08 – Depth 15.0 to 17.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **14/04/2023**
Date Photographed: **17/04/2023**



Box 09 – Depth 17.0 to 19.05m



Box 10 – Depth 19.05 to 21.1m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **14/04/2023**
Date Photographed: **17/04/2023**



Box 11 – Depth 21.1 to 23.2m



Box 12 – Depth 23.2 to 27.05m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1214**
Photographed By: **BW/RC**

Date Drilled: **14/04/2023**
Date Photographed: **17/04/2023**



Box 13 – Depth 25.5 to 27.05m



Box 14 – Depth 27 to 30.45m

Date Drilled: 17/04/2023
Date Photographed: 18/04/2023





Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 01 – Depth 0.0 to 3.8m



Box 02 – Depth 3.8 to 6.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 03 – Depth 6.0 to 7.9m



Box 04 – Depth 7.9 to 10.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 05 – Depth 10.0 to 12.0m



Box 06 – Depth 12.0 to 14.05m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 07 – Depth 14.05 to 16.2m



Box 08 – Depth 16.2 to 18.4m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 09 – Depth 18.4 to 20.75m



Box 10 – Depth 20.75 to 22.95m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 11 – Depth 22.95 to 25.5m



Box 12 – Depth 25.5 to 27.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 13 – Depth 27.0 to 29.85m



Box 14 – Depth 29.85 to 33.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 15 – Depth 33.0 to 35.0m



Box 16 – Depth 35.0 to 36.9m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 17 – Depth 36.9 to 39.0m



Box 18 – Depth 39.0 to 41.15m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 19 – Depth 41.15 to 43.95m



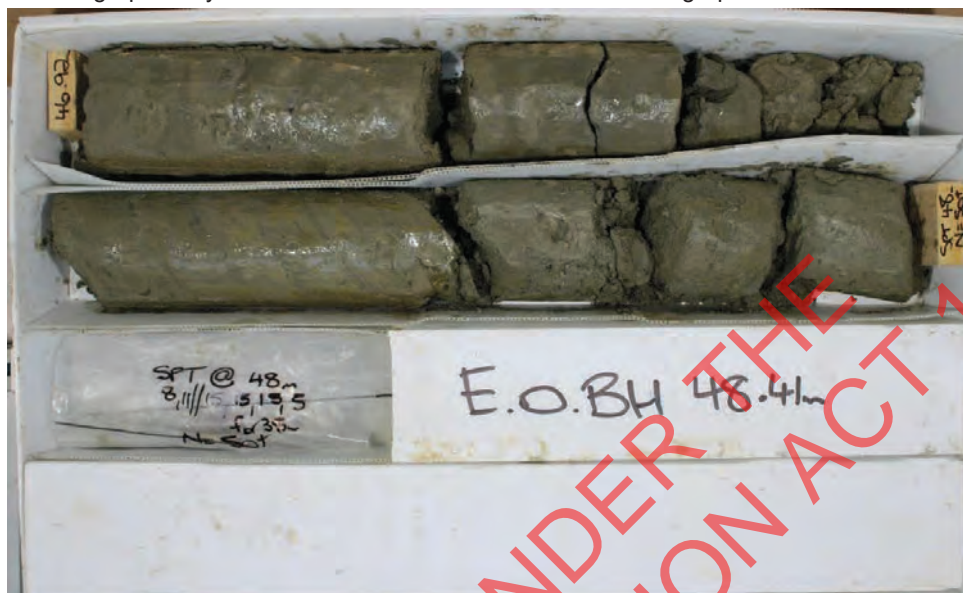
Box 20 – Depth 43.95 to 46.92m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1301**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 21 – Depth 46.92 to 48.4m

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Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **27/03/2023**
Date Photographed: **28/03/2023**



Box 01 – Depth 0.0 to 4.5m



Box 02 – Depth 4.5 to 9.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **28/03/2023**
Date Photographed: **29/03/2023**



Box 03 – Depth 9.0 to 12.0m



Box 04 – Depth 12.0 to 14.73m



Auckland Light Rail: Stage 1 GI

Drillhole Reference:
Photographed By:

BH1302
BW/RC

Date Drilled:
Date Photographed:

28/03/2023
29/03/2023



Box 05 – Depth 14.73 to 18.45m



Box 06 – Depth 18.45 to 21.44m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **31/03/2023**
Date Photographed: **03/04/2023**



Box 07 – Depth 21.44 to 24.56m



Box 08 – Depth 24.56 to 27.2m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **31/03/2023**
Date Photographed: **03/04/2023**



Box 09 – Depth 27.2 to 29.44m



Box 10 – Depth 29.44 to 31.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **03/04/2023**
Date Photographed: **04/04/2023**



Box 11 – Depth 31.5 to 33.6m



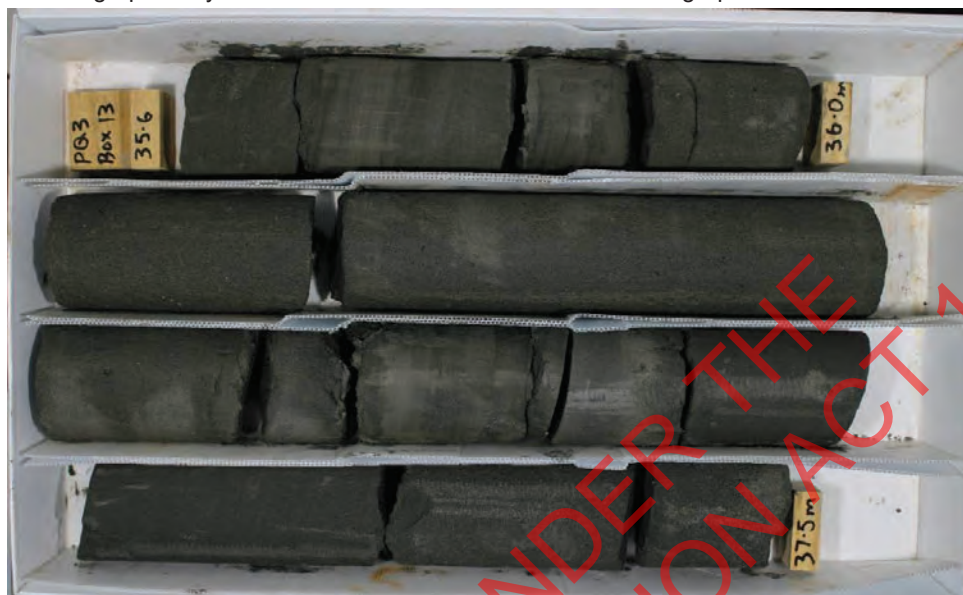
Box 12 – Depth 33.6 to 35.6m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **04/04/2023**
Date Photographed: **05/04/2023**



Box 13 – Depth 35.6 to 37.5m



Box 14 – Depth 37.5 to 39.7m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **04/04/2023**
Date Photographed: **05/04/2023**



Box 15 – Depth 39.7 to 41.85m



Box 16 – Depth 41.85 to 44.1m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **04/04/2023**
Date Photographed: **05/04/2023**



Box 17 – Depth 44.1 to 46.5m



Box 18 – Depth 46.5 to 48.8m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1302**
Photographed By: **BW/RC**

Date Drilled: **04/04/2023**
Date Photographed: **05/04/2023**



Box 19 – Depth 48.8 to 50.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **16/03/2023**
Date Photographed: **17/03/2023**



Box 01 – Depth 0.0 to 3.5m



Box 02 – Depth 3.5 to 5.15m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **16/03/2023**
Date Photographed: **17/03/2023**



Box 03 – Depth 5.15 to 7.5m



Box 04 – Depth 7.5 to 9.75m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 05 – Depth 9.75 to 11.8m



Box 06 – Depth 11.8 to 14.25m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 07 – Depth 14.25 to 16.3m



Box 08 – Depth 16.3 to 18.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 09 – Depth 18.0 to 20.4m



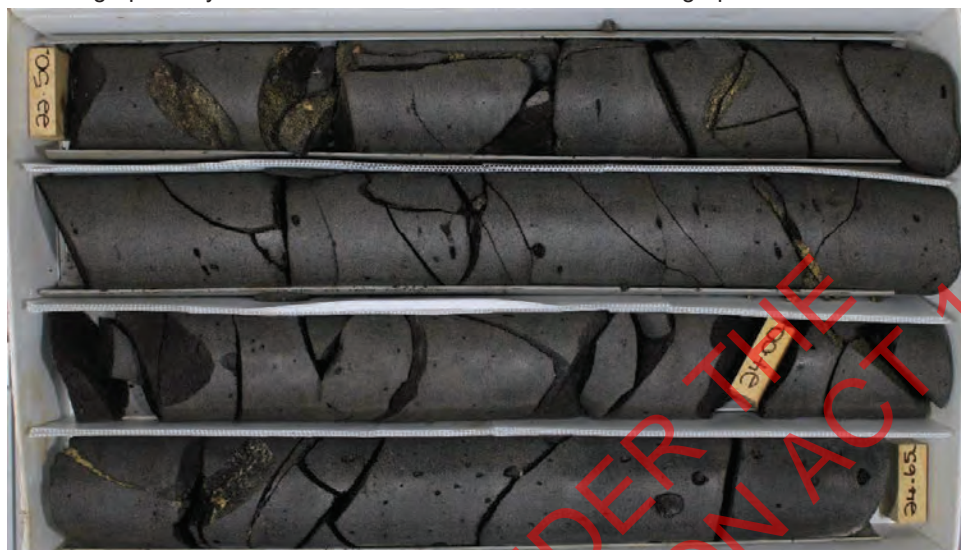
Box 10 – Depth 20.4 to 22.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 11 – Depth 22.5 to 24.65m



Box 12 – Depth 24.65 to 27.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **17/03/2023**
Date Photographed: **20/03/2023**



Box 13 – Depth 27.0 to 30.55m



Box 14 – Depth 30.55 to 33.0m

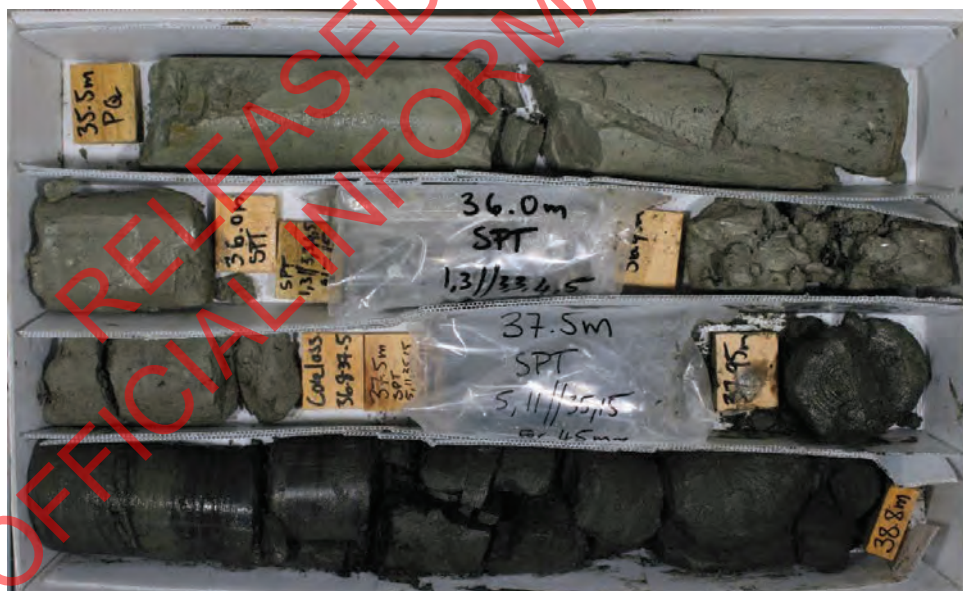
Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **20/03/2023**
Date Photographed: **21/03/2023**



Box 15 – Depth 33.0 to 35.5m



Box 16 – Depth 35.5 to 38.8m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **21/03/2023**
Date Photographed: **22/03/2023**



Box 17 – Depth 38.8 to 41.55m



Box 18 – Depth 41.55 to 43.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **21/03/2023**
Date Photographed: **22/03/2023**



Box 19 – Depth 43.5 to 46.5m



Box 20 – Depth 46.5 to 49.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1303**
Photographed By: **BW/RC**

Date Drilled: **21/03/2023**
Date Photographed: **22/03/2023**



Box 21 – Depth 49.5 to 50.5m

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Auckland Light Rail: Stage 1 GI

Drillhole Reference:
Photographed By:

BH1404
BW/RC

Date Drilled:
Date Photographed:

04/04/2023
05/04/2023



Box 01 – Depth 0.0 to 5.3m



Box 02 – Depth 5.3 to 8.55m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **04/04/2023**
Date Photographed: **05/04/2023**



Box 03 – Depth 8.55 to 11.05m



Box 04 – Depth 11.05 to 13.62m



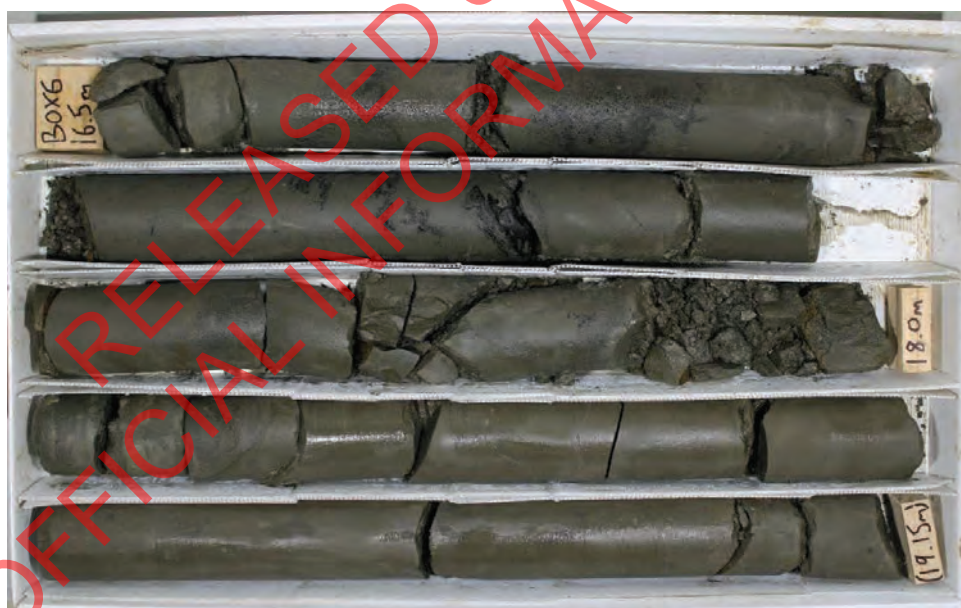
Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/04/2023**
Date Photographed: **06/04/2023**



Box 05 – Depth 13.62 to 16.5m



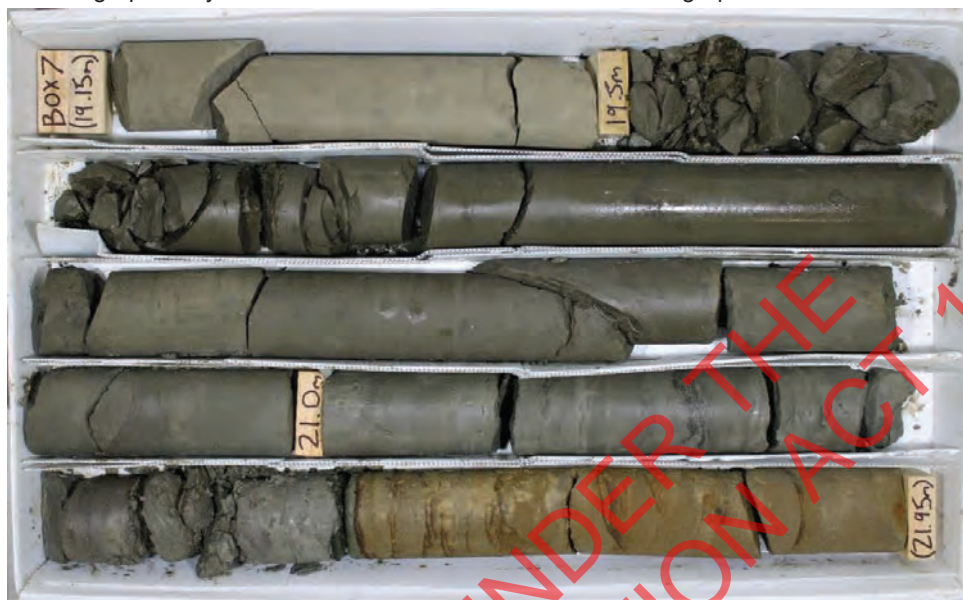
Box 06 – Depth 16.5 to 19.15m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 07 – Depth 19.15 to 21.95m



Box 08 – Depth 21.95 to 24.7m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 09 – Depth 24.7 to 27.6m



Box 10 – Depth 27.6 to 30.7m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 11 – Depth 30.7 to 33.6m



Box 12 – Depth 33.6 to 36.6m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 13 – Depth 36.6 to 39.3m



Box 14 – Depth 39.3 to 42.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 15 – Depth 42.0 to 44.8m



Box 16 – Depth 44.8 to 47.65m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1404**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 17 – Depth 47.65 to 50.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 01 – Depth 0.0 to 3.0m



Box 02 – Depth 3.0 to 5.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **05/05/2023**
Date Photographed: **08/05/2023**



Box 03 – Depth 5.3 to 7.5m



Box 04 – Depth 7.5 to 9.4m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **08/05/2023**
Date Photographed: **09/05/2023**



Box 05 – Depth 9.7 to 11.8m



Box 06 – Depth 11.8 to 13.8m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **08/05/2023**
Date Photographed: **09/05/2023**



Box 07 – Depth 13.8 to 15.6m



Box 08 – Depth 15.6 to 18.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **08/05/2023**
Date Photographed: **09/05/2023**



Box 09 – Depth 18.0 to 20.6m



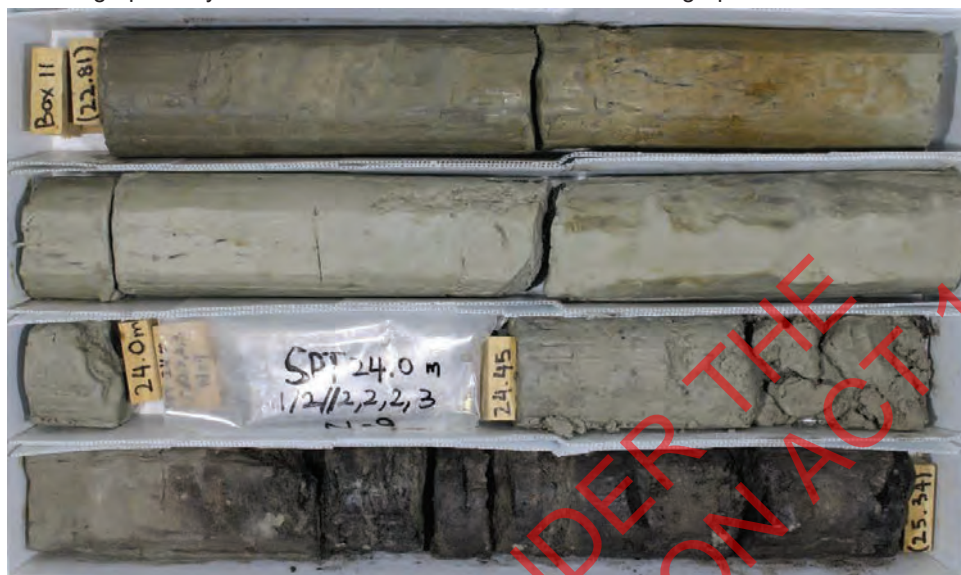
Box 10 – Depth 20.6 to 22.81m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **09/05/2023**
Date Photographed: **10/05/2023**



Box 11 – Depth 22.81 to 25.34m



Box 12 – Depth 25.34 to 27.72m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **10/05/2023**
Date Photographed: **11/05/2023**



Box 13 – Depth 27.72 to 30.61m



Box 14 – Depth 30.61 to 32.9m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **10/05/2023**
Date Photographed: **11/05/2023**



Box 15 – Depth 32.9 to 35.23m



Box 16 – Depth 35.23 to 37.7m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1406**
Photographed By: **BW/RC**

Date Drilled: **10/05/2023**
Date Photographed: **11/05/2023**



Box 17 – Depth 37.7 to 40.0m

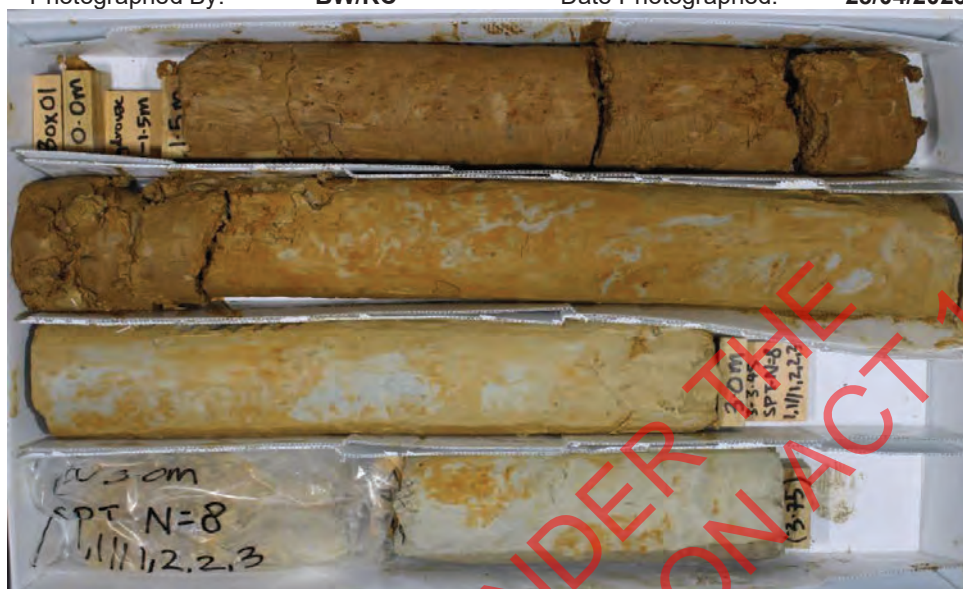
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Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1410**
Photographed By: **BW/RC**

Date Drilled: **27/04/2023**
Date Photographed: **28/04/2023**



Box 01 – Depth 0.0 to 3.75m



Box 02 – Depth 3.75 to 6.75m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1410**
Photographed By: **BW/RC**

Date Drilled: **27/04/2023**
Date Photographed: **28/04/2023**

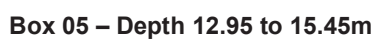


Box 03 – Depth 6.5 to 9.5m



Box 04 – Depth 9.5 to 12.95m

Date Drilled: 28/04/2023
Date Photographed: 01/05/2023





Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1410**
Photographed By: **BW/RC**

Date Drilled: **01/05/2023**
Date Photographed: **02/05/2023**



Box 07 – Depth 18.7 to 21.0m



Box 08 – Depth 21.0 to 24.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1410**
Photographed By: **BW/RC**

Date Drilled: **01/05/2023**
Date Photographed: **02/05/2023**



Box 09 – Depth 24.0 to 27.0m



Box 10 – Depth 27.0 to 30.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1410**
Photographed By: **BW/RC**

Date Drilled: **03/05/2023**
Date Photographed: **04/05/2023**



Box 11 – Depth 30.3 to 34.82m



Box 12 – Depth 34.82 to 36.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference:
Photographed By:

BH1411
BW/RC

Date Drilled:
Date Photographed:

17/04/2023
18/04/2023



Box 01 – Depth 0.0 to 5.55m



Box 02 – Depth 5.55 to 8.8m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1411**
Photographed By: **BW/RC**

Date Drilled: **18/04/2023**
Date Photographed: **19/04/2023**



Box 03 – Depth 8.8 to 12.0m



Box 04 – Depth 12.0 to 15.45m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1411**
Photographed By: **BW/RC**

Date Drilled: **18/04/2023**
Date Photographed: **19/04/2023**



Box 05 – Depth 15.45 to 18.9m



Box 06 – Depth 18.9 to 23.3m

Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1411**
Photographed By: **BW/RC**

Date Drilled: **19/04/2023**
Date Photographed: **20/04/2023**



Box 07 – Depth 23.3 to 26.5m



Box 08 – Depth 26.5 to 29.8m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1411**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 09 – Depth 29.8 to 33.8m



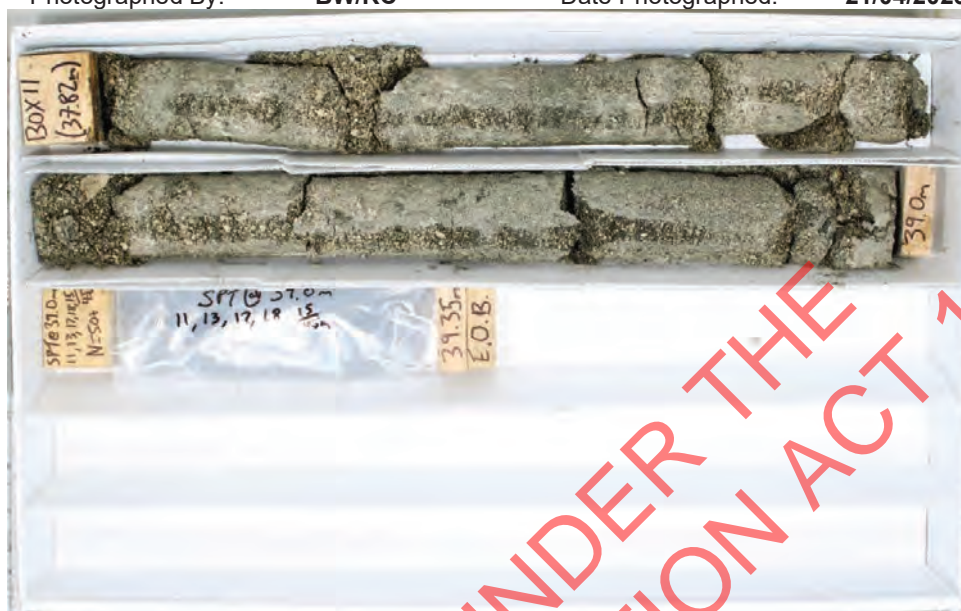
Box 10 – Depth 33.8 to 37.82m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1411**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 11 – Depth 37.82 to 39.35m

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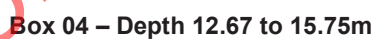
Date Drilled: 20/04/2023
Date Photographed: 21/04/2023



Date Drilled: 20/04/2023
Date Photographed: 21/04/2023



Date Drilled: 20/04/2023
Date Photographed: 21/04/2023

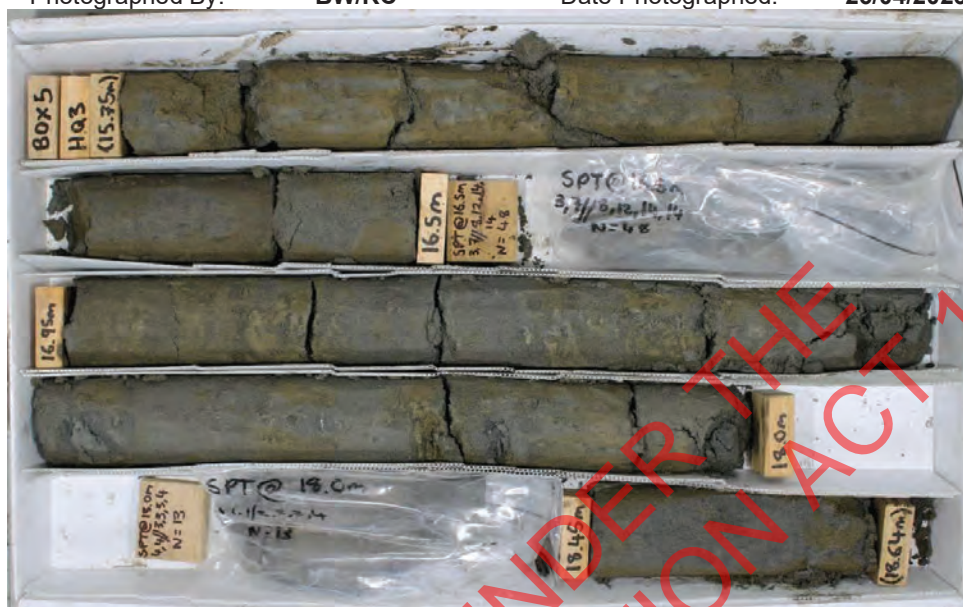




Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1501**
Photographed By: **BW/RC**

Date Drilled: **21/04/2023**
Date Photographed: **26/04/2023**



Box 05 – Depth 15.75 to 18.64m



Box 06 – Depth 18.64 to 21.89m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1501**
Photographed By: **BW/RC**

Date Drilled: **26/04/2023**
Date Photographed: **27/04/2023**



Box 07 – Depth 21.84 to 24.9m



Box 08 – Depth 24.9 to 27.97m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1501**
Photographed By: **BW/RC**

Date Drilled: **26/04/2023**
Date Photographed: **27/04/2023**



Box 09 – Depth 27.97 to 31.5m



Box 10 – Depth 31.5 to 34.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1501**
Photographed By: **BW/RC**

Date Drilled: **27/04/2023**
Date Photographed: **28/04/2023**



Box 11 – Depth 34.3 to 34.82m

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Auckland Light Rail: Stage 1 GI

Drillhole Reference:
Photographed By:

BH1503
BW/RC

Date Drilled:
Date Photographed:

08/02/2023
09/02/2023



Box 01 – Depth: 0.0 to 6.0m



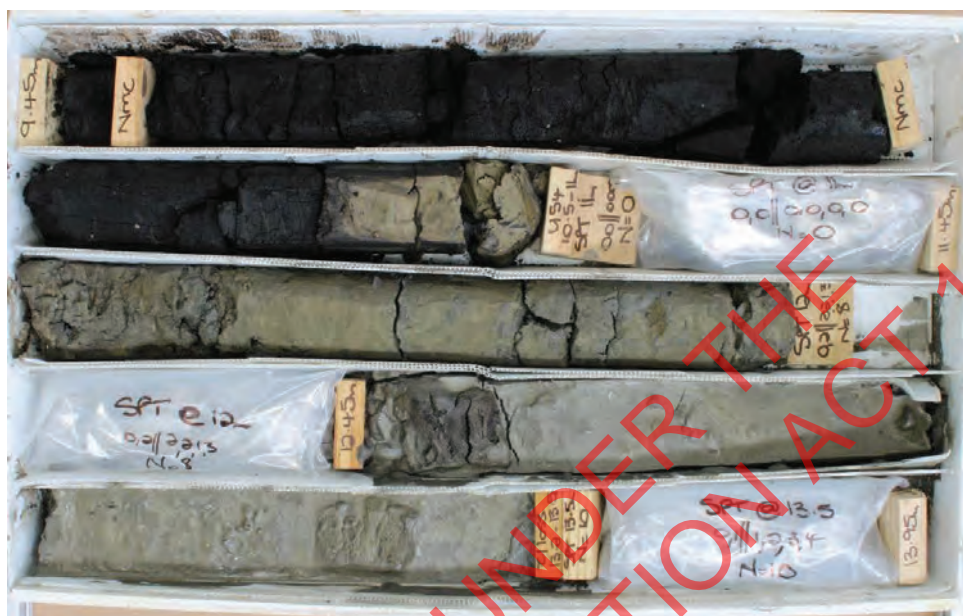
Box 02 – Depth: 6.0 to 9.45m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1503**
Photographed By: **BW/RC**

Date Drilled: **08/02/2023**
Date Photographed: **09/02/2023**



Box 03 – Depth: 9.45 to 13.95 m



Box 04 – Depth: 13.95 to 18.45m



Date Drilled: 15/02/2023
Date Photographed: 16/02/2023





Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1503**
Photographed By: **BW/RC**

Date Drilled: **16/02/2023**
Date Photographed: **17/02/2023**



Box 07 – Depth: 28.15 to 33.75m



Box 15 – Depth: 33.75 to 36.9m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH1503**
Photographed By: **BW/RC**

Date Drilled: **17/02/2023**
Date Photographed: **18/02/2023**



Box 15 – Depth: 36.9 to 40.0m



Box 15 – Depth: 40.0 to 42.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 01 – Depth 0.0 to 3.65m



Box 02 – Depth 3.65 to 5.6m



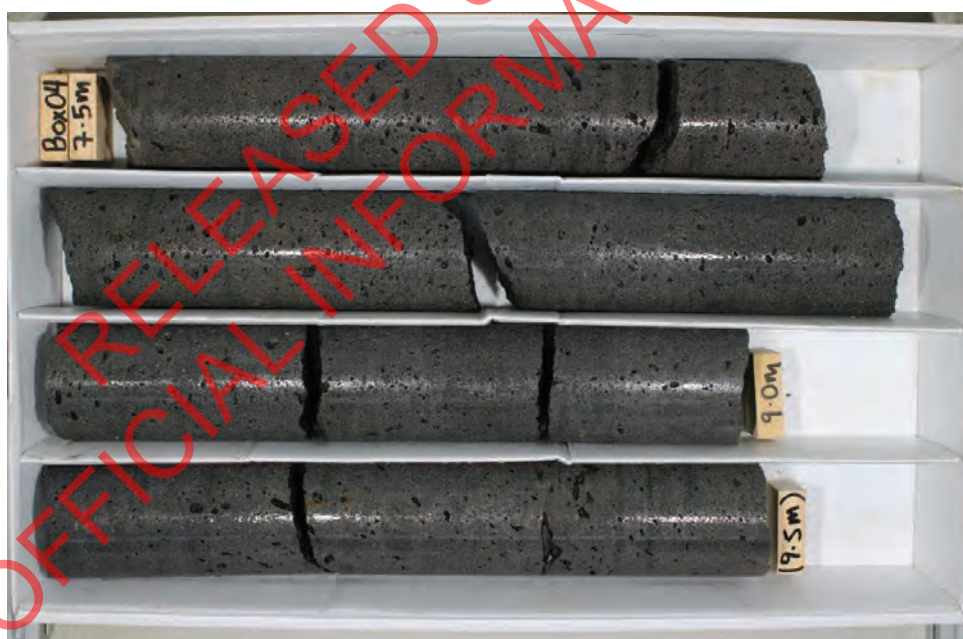
Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **20/04/2023**
Date Photographed: **21/04/2023**



Box 03 – Depth 5.6 to 7.5m



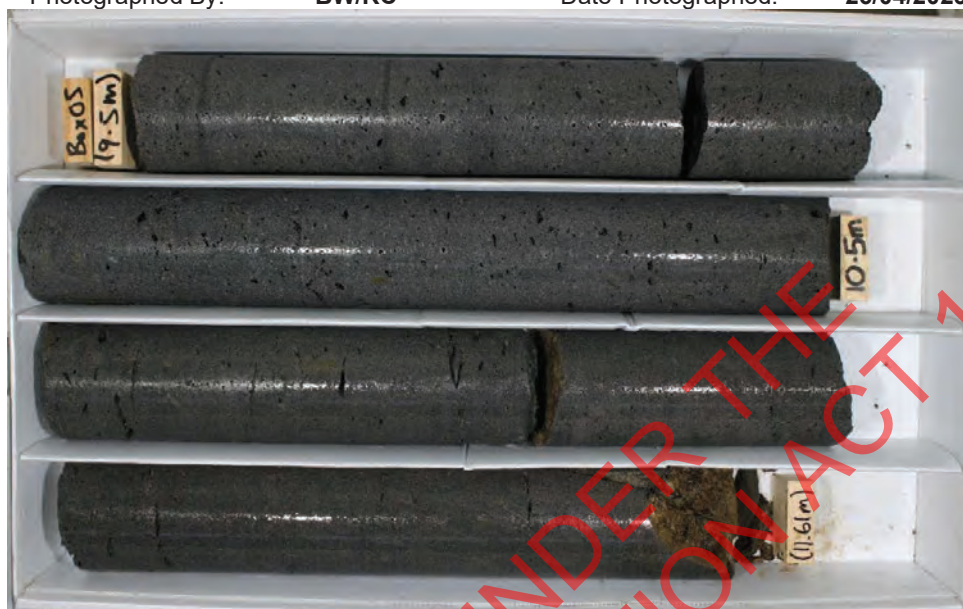
Box 04 – Depth 7.5 to 9.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **21/04/2023**
Date Photographed: **26/04/2023**



Box 05 – Depth 9.5 to 11.61m



Box 06 – Depth 11.61 to 13.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **21/04/2023**
Date Photographed: **26/04/2023**



Box 07 – Depth 13.5 to 15.6m



Box 08 – Depth 15.6 to 17.45m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **21/04/2023**
Date Photographed: **26/04/2023**



Box 09 – Depth 17.45 to 19.5m



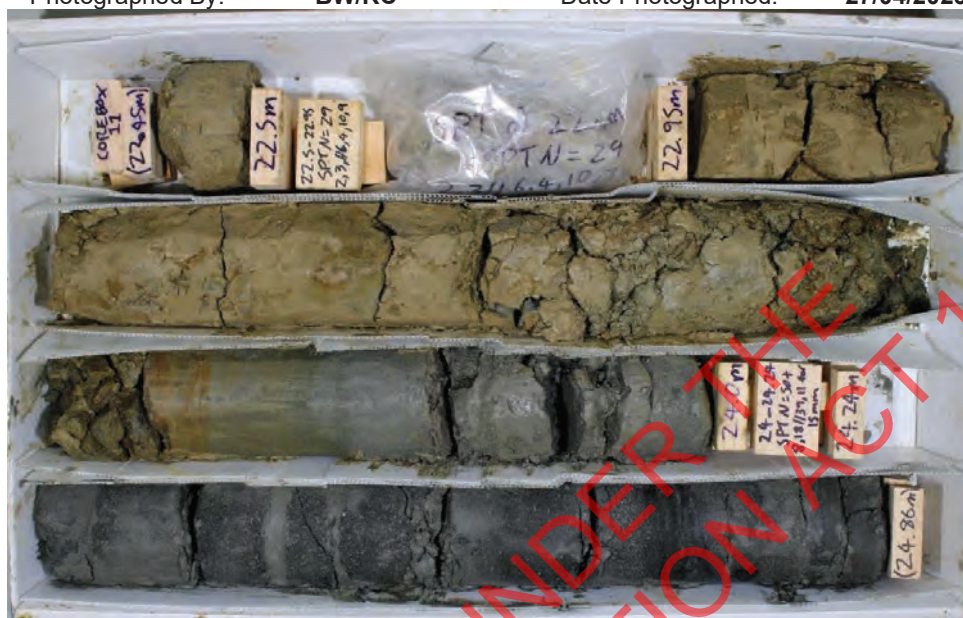
Box 10 – Depth 19.5 to 22.45m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **26/04/2023**
Date Photographed: **27/04/2023**



Box 11 – Depth 22.45 to 24.86m



Box 12 – Depth 24.86 to 27.35m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **26/04/2023**
Date Photographed: **27/04/2023**



Box 13 – Depth 27.35 to 29.46m



Box 14 – Depth 29.46 to 32.2m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **27/04/2023**
Date Photographed: **28/04/2023**



Box 15 – Depth 32.2 to 33.83m



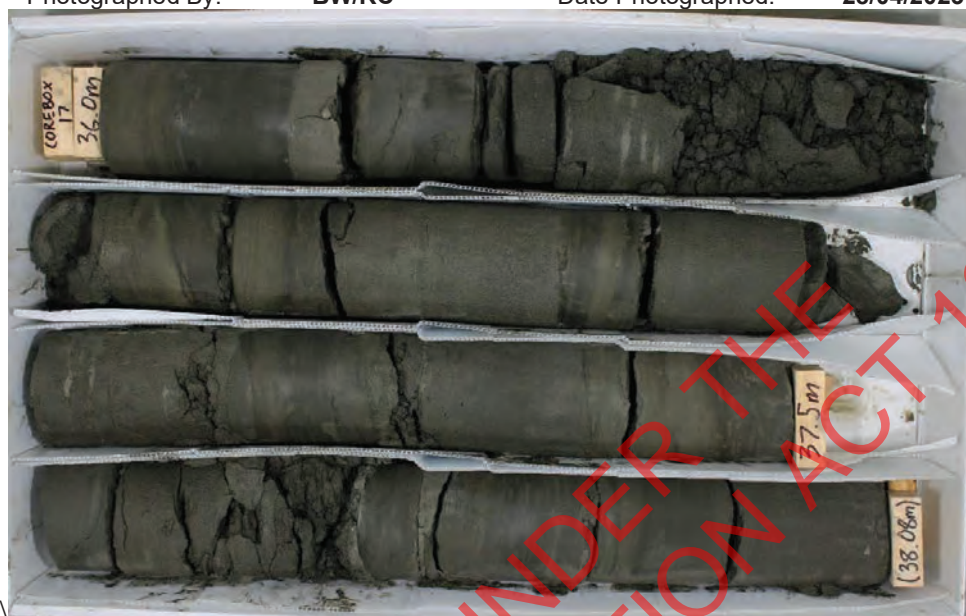
Box 16 – Depth 33.83 to 36.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **27/04/2023**
Date Photographed: **28/04/2023**



Box 17 – Depth 36.0 to 38.06m



Box 18 – Depth 38.06 to 40.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **27/04/2023**
Date Photographed: **28/04/2023**



Box 19 – Depth 40.5 to 42.88m



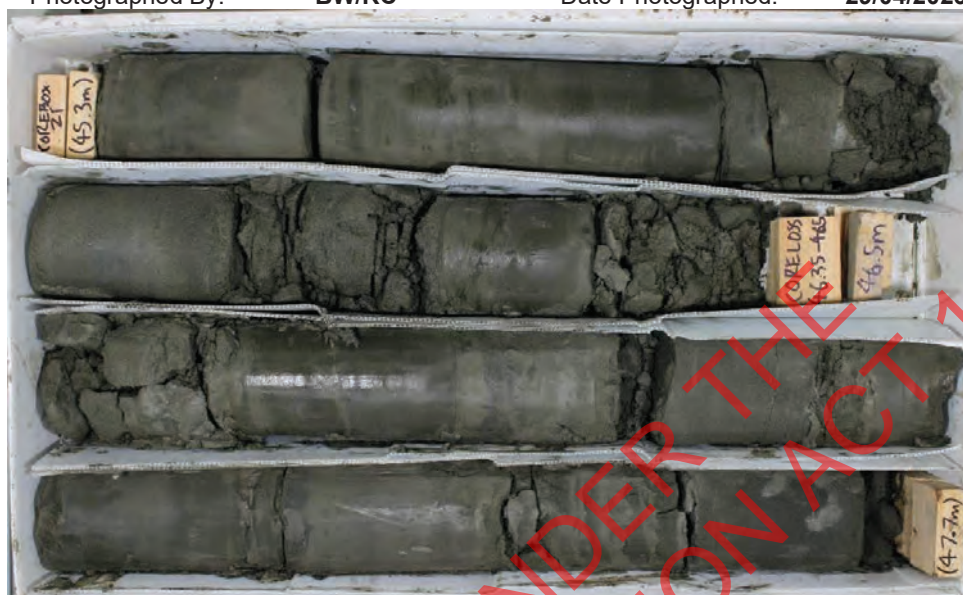
Box 20 – Depth 42.88 to 45.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **28/04/2023**
Date Photographed: **29/04/2023**



Box 21 – Depth 45.3 to 47.7m



Box 22 – Depth 47.4 to 49.85m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2202**
Photographed By: **BW/RC**

Date Drilled: **28/04/2023**
Date Photographed: **29/04/2023**



Box 23 – Depth 49.85 to 50.0m

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Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **16/05/2023**
Date Photographed: **17/05/2023**



Box 01 – Depth 0.0 to 3.36m



Box 02 – Depth 3.36 to 5.46m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **17/05/2023**
Date Photographed: **18/05/2023**



Box 03 – Depth 5.46 to 7.5m



Box 04 – Depth 7.5 to 9.63m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **17/05/2023**
Date Photographed: **18/05/2023**



Box 05 – Depth 9.63 to 11.45m



Box 06 – Depth 11.45 to 13.5m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **17/05/2023**
Date Photographed: **18/05/2023**



Box 07 – Depth 13.5 to 15.48m



Box 08 – Depth 15.48 to 16.91m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **17/05/2023**
Date Photographed: **18/05/2023**



Box 09 – Depth 16.91 to 18.58m



Box 10 – Depth 18.58 to 20.48m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **17/05/2023**
Date Photographed: **18/05/2023**



Box 11 – Depth 20.48 to 22.5m



Box 12 – Depth 22.5 to 24.28m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **17/05/2023**
Date Photographed: **18/05/2023**



Box 13 – Depth 24.28 to 26.19m



Box 12 – Depth 26.19 to 28.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **18/05/2023**
Date Photographed: **19/05/2023**



Box 15 – Depth 28.03 to 30.0m



Box 16 – Depth 30.0 to 32.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **18/05/2023**
Date Photographed: **19/05/2023**



Box 17 – Depth 32.0 to 33.88m



Box 18 – Depth 33.88 to 35.9m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **18/05/2023**
Date Photographed: **19/05/2023**



Box 19 – Depth 35.9 to 38.45m



Box 20 – Depth 38.45 to 41.3m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **19/05/2023**
Date Photographed: **20/05/2023**



Box 21 – Depth 41.3 to 43.5m



Box 22 – Depth 43.5 to 45.84m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2209**
Photographed By: **BW/RC**

Date Drilled: **20/05/2023**
Date Photographed: **21/05/2023**



Box 23 – Depth 45.84 to 48.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **22/06/2023**
Date Photographed: **23/06/2023**



Box 01 – Depth 0.0 to 6.45m



Box 02 – Depth 6.45 to 8.55m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **23/06/2023**
Date Photographed: **24/06/2023**



Box 03 – Depth 8.55 to 10.5m



Box 04 – Depth 10.5 to 15.3



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **23/06/2023**
Date Photographed: **24/06/2023**



Box 05 – Depth 13.5 to 15.15m



Box 01 – Depth 15.15 to 17.05m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **26/06/2023**
Date Photographed: **27/06/2023**



Box 07 – Depth 17.05 to 19.2m



Box 08 – Depth 19.2 to 21.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **26/06/2023**
Date Photographed: **27/06/2023**



Box 09 – Depth 21.0 to 24.0m



Box 10 – Depth 24.0 to 26.2



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **27/06/2023**
Date Photographed: **28/06/2023**



Box 11 – Depth 26.2 to 28.1m



Box 12 – Depth: 28.1 to 32.0m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **27/06/2023**
Date Photographed: **28/06/2023**



Box 13 – Depth 32.0 to 34.3m



Box 14 – Depth 26.2 to 28.1m

Date Drilled: 28/06/2023
Date Photographed: 29/06/2023





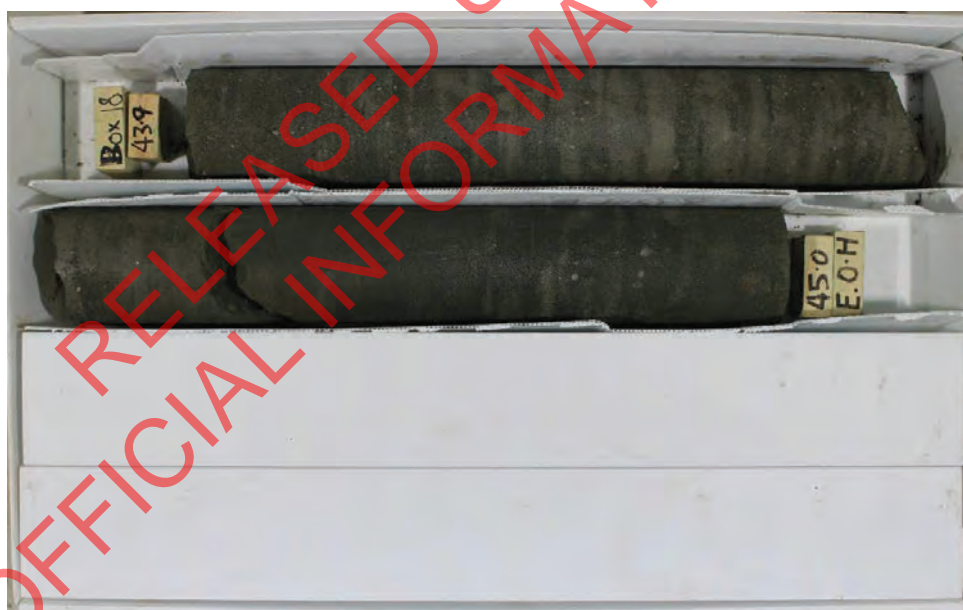
Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2211**
Photographed By: **BW/RC**

Date Drilled: **28/06/2023**
Date Photographed: **29/06/2023**



Box 17 – Depth 41.7 to 43.9m



Box 18 – Depth 43.9 to 45.0m

Date Drilled: 28/06/2023
Date Photographed: 29/06/2023

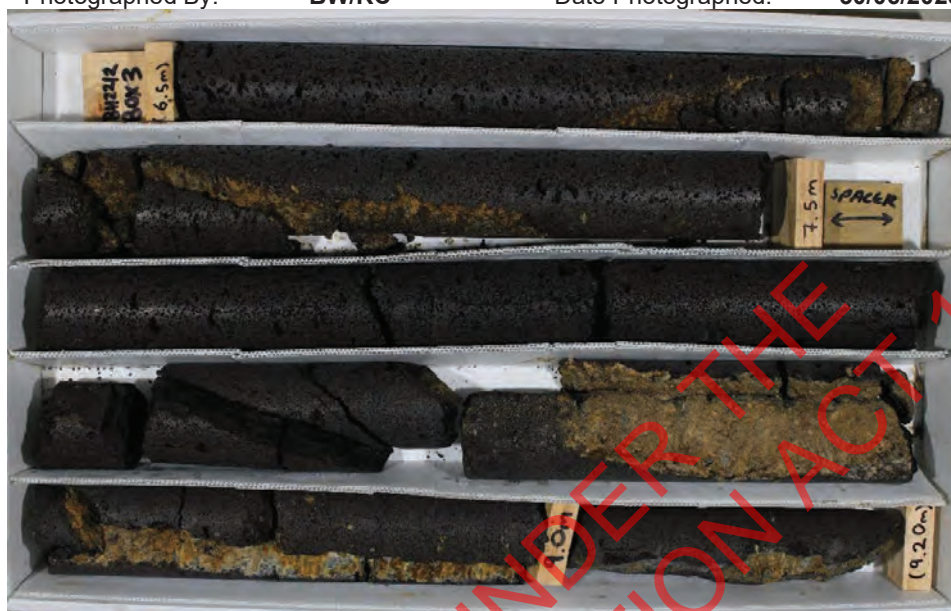




Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2212**
Photographed By: **BW/RC**

Date Drilled: **29/06/2023**
Date Photographed: **30/06/2023**



Box 03 – Depth: 6.5 to 9.2m



Box 04 – Depth: 9.2 to 12.6m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2212**
Photographed By: **BW/RC**

Date Drilled: **29/06/2023**
Date Photographed: **30/06/2023**



Box 05 – Depth: 12.6 to 15.45m



Box 06 – Depth: 15.45 to 18.1m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2212**
Photographed By: **BW/RC**

Date Drilled: **29/06/2023**
Date Photographed: **30/06/2023**



Box 07 – Depth: 18.1 to 20.75m



Box 08 – Depth: 20.75 to 24.65m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2212**
Photographed By: **BW/RC**

Date Drilled: **30/06/2023**
Date Photographed: **03/07/2023**



Box 09 – Depth: 24.65 to 27.95m



Box 10 – Depth: 27.95 to 31.05m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2212**
Photographed By: **BW/RC**

Date Drilled: **30/06/2023**
Date Photographed: **03/07/2023**



Box 11 – Depth: 31.05 to 34.1m



Box 12 – Depth: 34.1 to 36.9m



Auckland Light Rail: Stage 1 GI

Drillhole Reference: **BH2212**
Photographed By: **BW/RC**

Date Drilled: **03/07/2023**
Date Photographed: **04/07/2023**



Box 13 – Depth: 36.9 to 40.2m



Box 14 – Depth: 40.2 to 43.35m



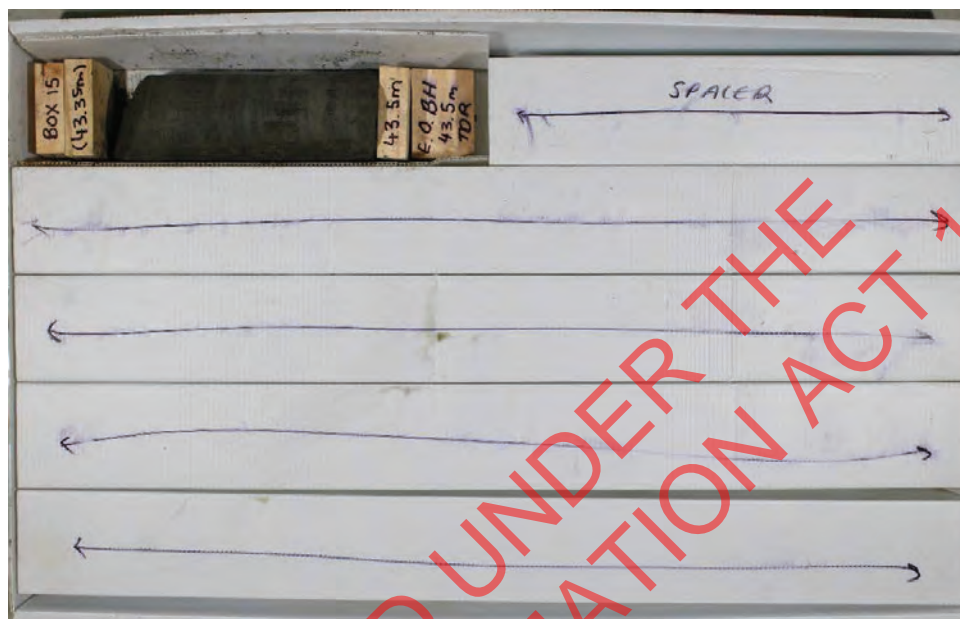
Auckland Light Rail: Stage 1 GI

Drillhole Reference:
Photographed By:

BH2212
BW/RC

Date Drilled:
Date Photographed:

03/07/2023
04/07/2023



Box 15 – Depth: 43.35 to 43.5m

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Appendix B-4 – Downhole Geophysics

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Level 1
182 Main Road
Tawa 5028, Wellington
New Zealand

Ph: +64 6 8771652
Fax: +64 6 8775015
Email: info@rdcl.co.nz

Log Notes:

The elastic moduli and engineering parameters were calculated from Full Wave Form Sonic Tool Vp and Vs measurements and CCS tool density measurements. As such the logs should be considered in-situ, small strain and bulk measurements. These measurements may differ from laboratory testing for these reasons.

Log Calculations:

SI unit calculations:
Shear Modulus (G) = dV_s^2
Bulk Modulus (K) = $1/3 \cdot (E/(1-2 \cdot PR))$
Young's Modulus (E) = $2G(1+PR)$
Poisson's Ratio (PR) = $2 \cdot (V_p/V_s)^2 / (2 \cdot (V_p/V_s)^2 - 1)$

Where:
Vp = P-wave seismic velocity
Vs = S-wave seismic velocity
d = Density

Log Nomenclature:

Velocity Analysis = Output of semblance processing
S_Slowness = Shear wave slowness from semblance
Vp = P-wave velocity
Vs = Shear wave velocity from S-Slowness
DEN(CDL) = Compensated Density
Shear Modulus = Shear Modulus (G0)
Bulk Modulus = Bulk Modulus (K)
Young's Modulus = Young's Modulus (E)
Poisson's Ratio = Poisson's Ratio (PR)
Vp/Vs = P-wave S-wave ratio
RX#-1A = Wiggle window of sensor #
RX#-1A - dt = Picked first arrival time for sensor #

Basic Information:

Well Name: BH1107
Company: McMillans Drilling (NI) Ltd
Run No: 05,06 & 07
Tool Type(s): QL40-FWSS Full Wave Form Sonic Geovista P&S Logger
Service Company: RDCL
Operator: H Soma
Witness: Nil
Date Logged: 27/03/2023
Field: Auckland Light Rail
State / Province: Auckland
Country: New Zealand

Drillhole Information:

Bit Size: HQ
Log interval from: 0.61 Log interval to: 59.97
Depth Driller: 60 m Depth Logger: 60.02 m (Optical)
Fluid Type: Water Fluid Level: 19.57 (Acoustic)
Northing: 1757424.435 Easting: 5919868.890
Elevation: TBC Projection: NZTM
Hole Azimuth: Vertical Hole Inclination: >=88.5°
Magnetic Declination: +20° 8' East Magnetic Inclination: 62° 49'
Casing Size: HWT Casing Depth: 2.84

Printing Information:

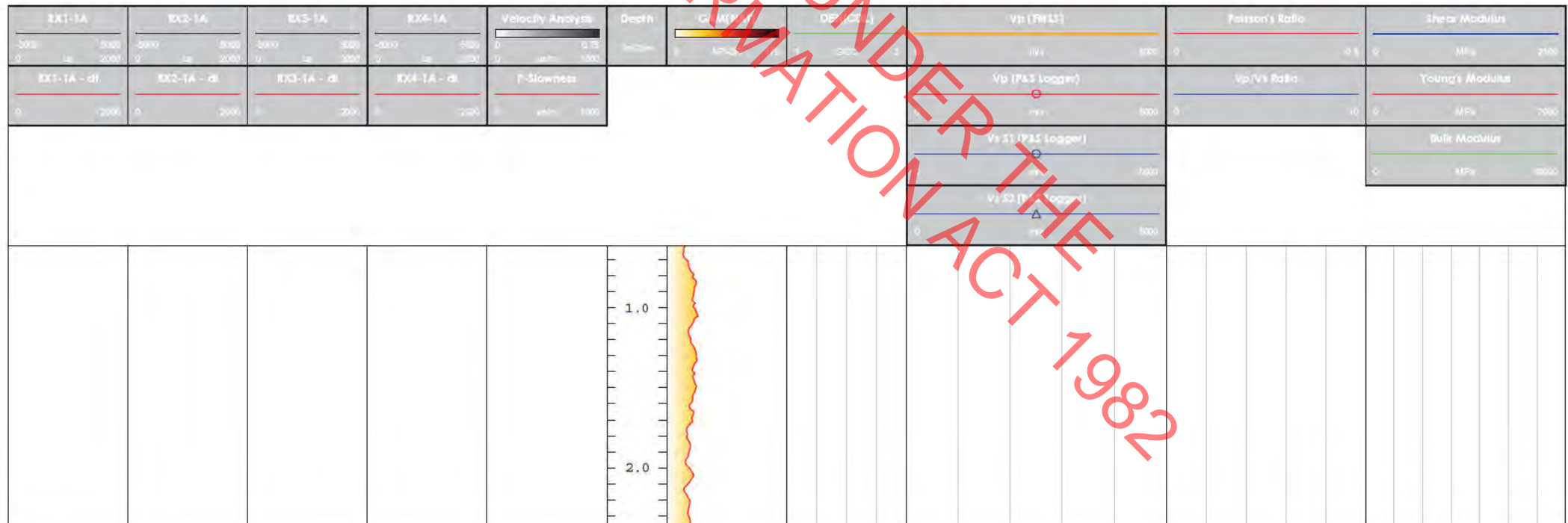
Print Type: Paginated Log Version: Final
Depth Unit: Metres Scale Ratio: 1:25

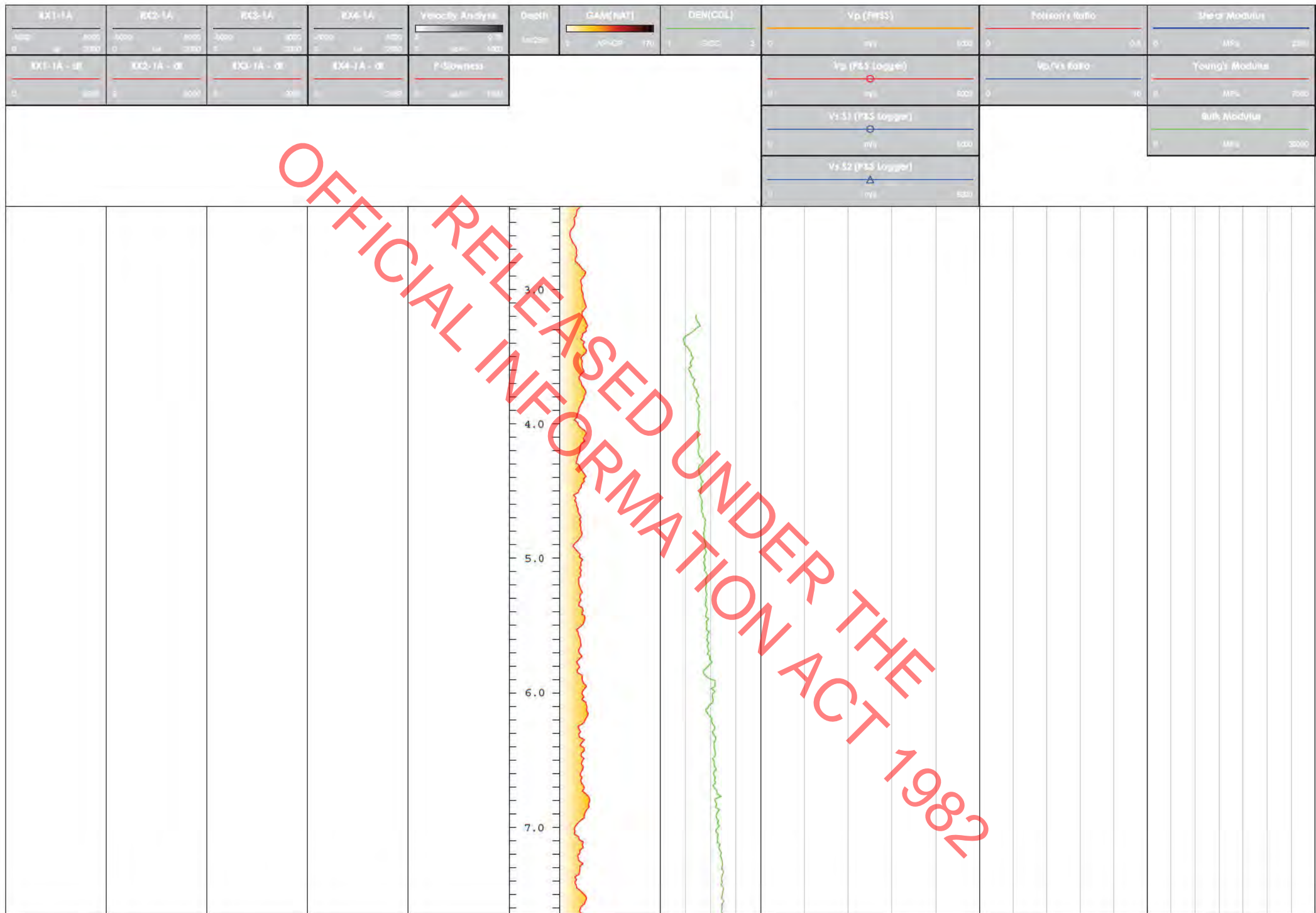
Location Description:

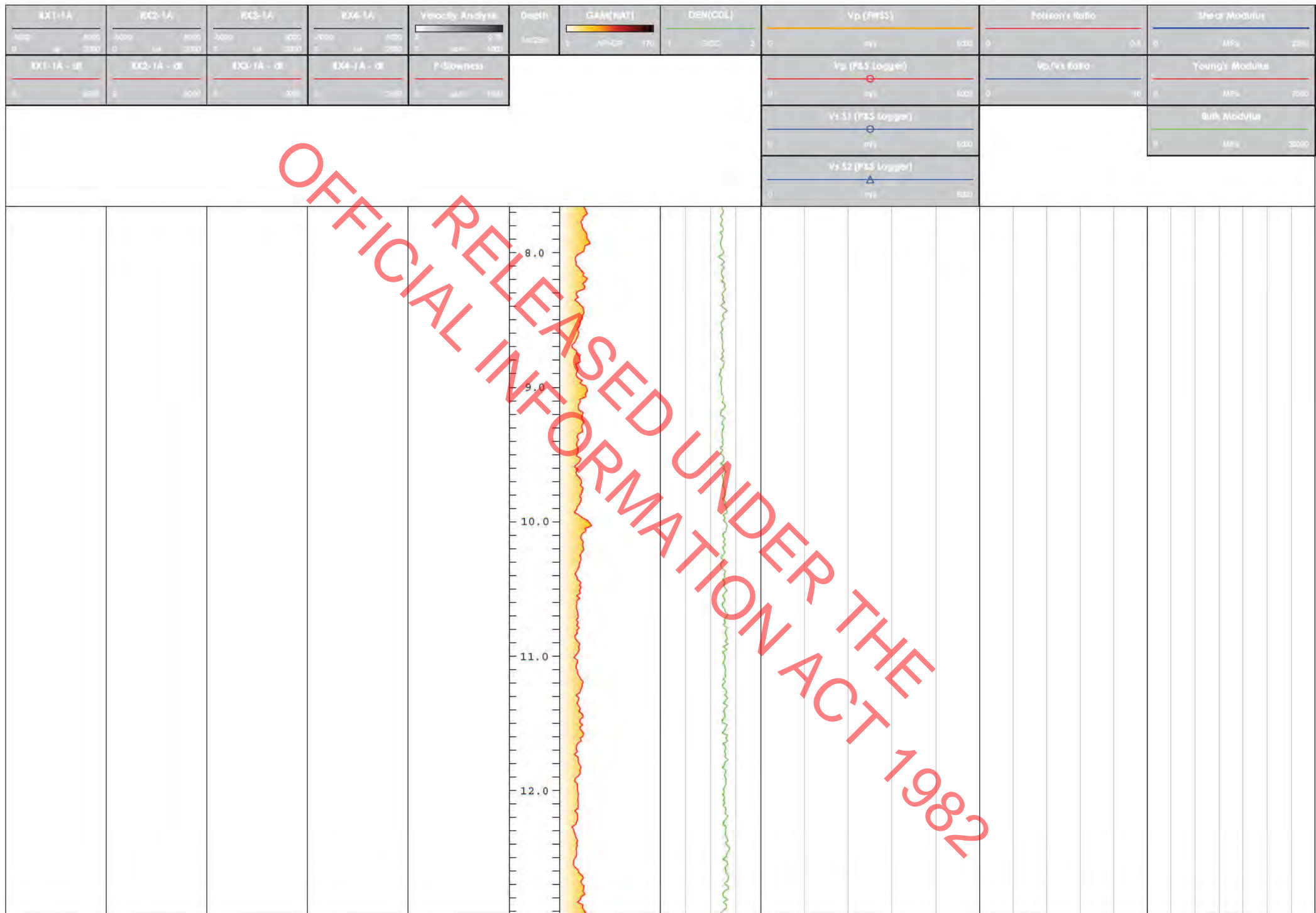
87 Wakefield Street

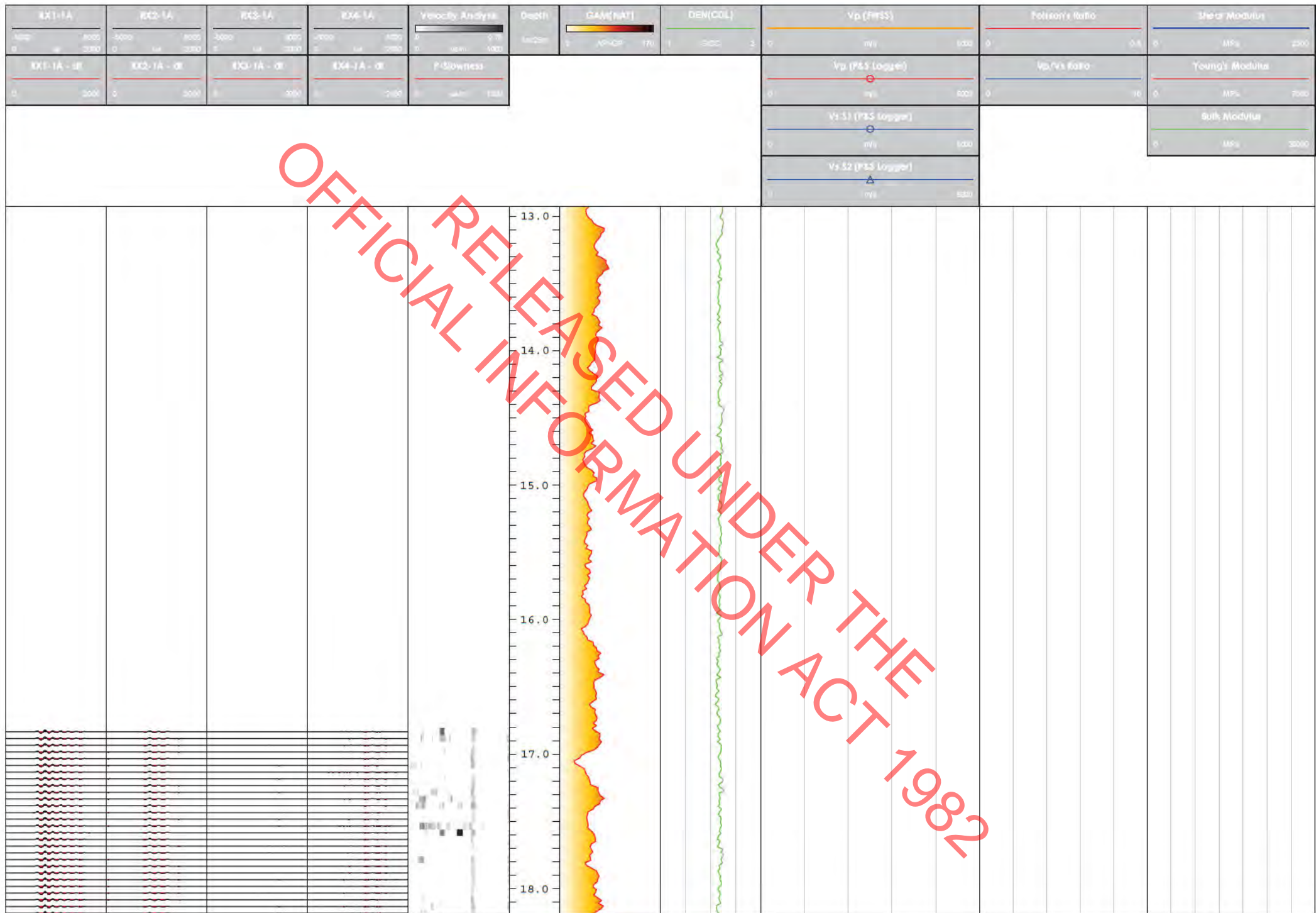
Comments:

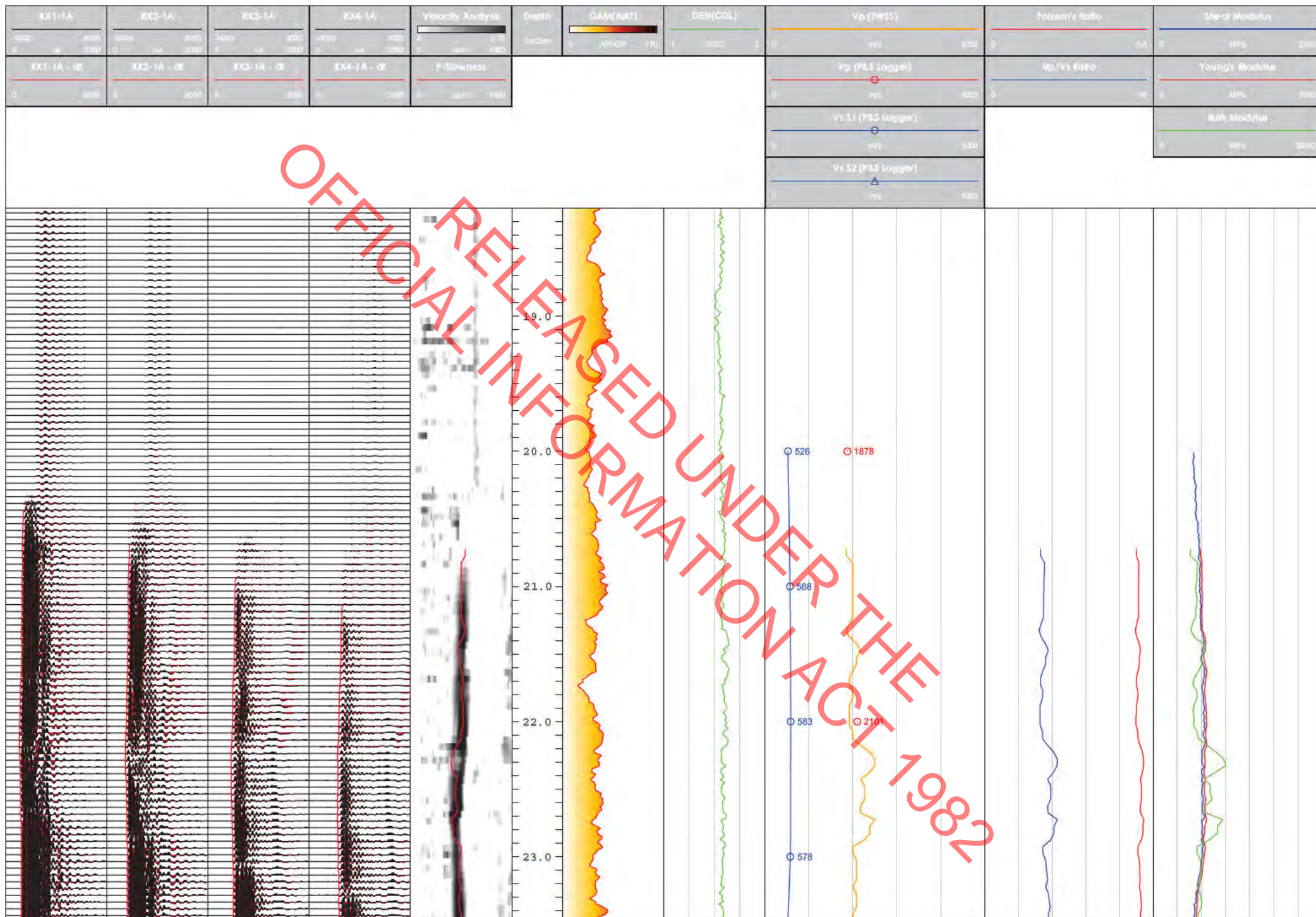
- Gaps left in P&S Logger Vs picks where data is noisy.
- Coordinates taken from Google Earth and are approximate.

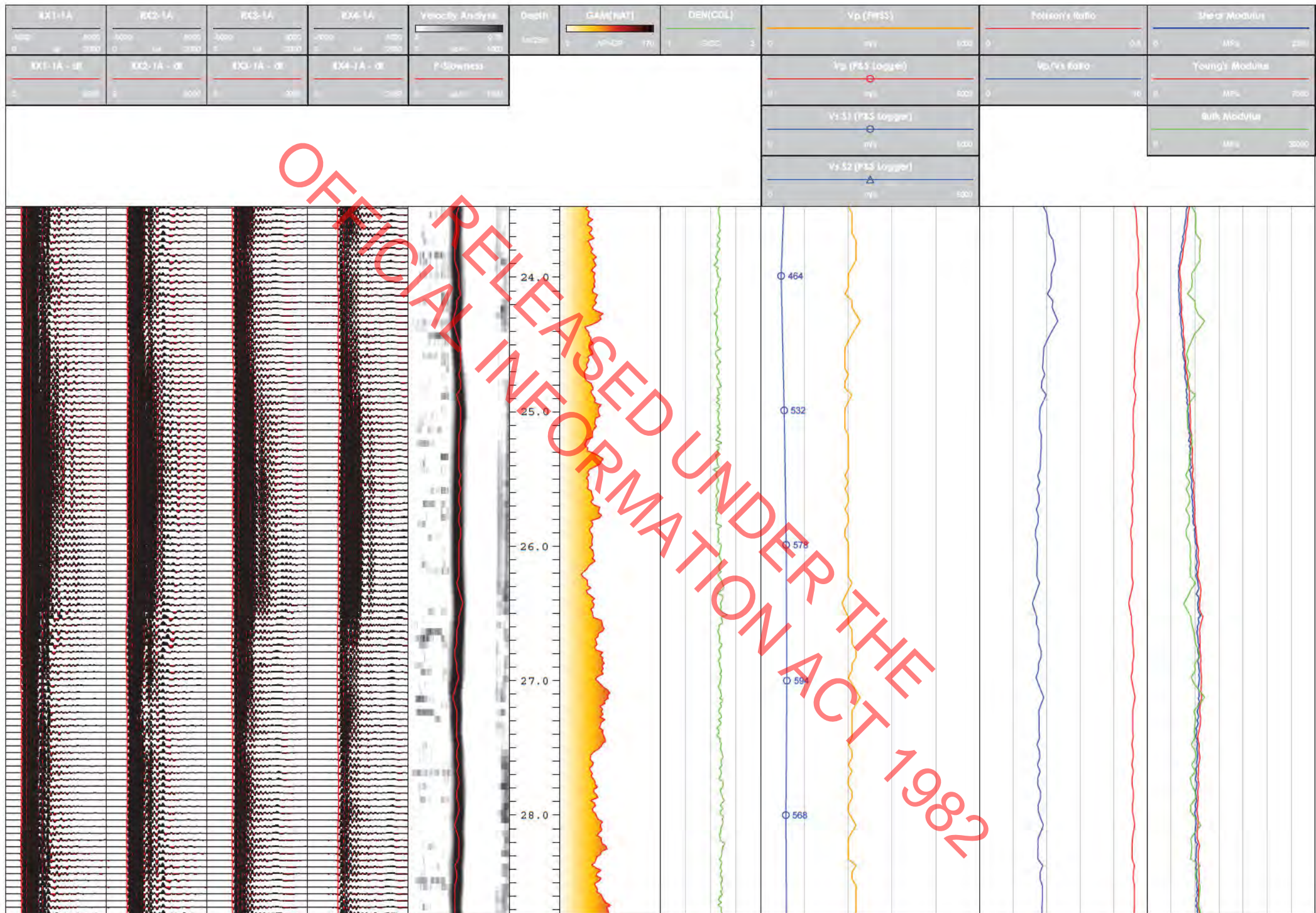












<div> <div>EX1-1A</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>EX2-1A</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>EX3-1A</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>EX4-1A</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>Velocity Analysis</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>Depth</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>GAM(NAT)</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>DEN(COL)</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>Vp (FMS)</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>Poisson's Ratio</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>Shear Modulus</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>
<div> <div>EX1-1A - SE</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>EX2-1A - SE</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>EX3-1A - SE</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>EX4-1A - SE</div> <div> <div>0 8000</div> <div>0 2000</div> </div> </div>	<div> <div>P-Slopes</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>				<div> <div>Vp (FMS Logger)</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>Vp/Vs Ratio</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>	<div> <div>Young's Modulus</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>
								<div> <div>Vs 51 (FMS Logger)</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>		<div> <div>Bulk Modulus</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>
								<div> <div>Vs 52 (FMS Logger)</div> <div> <div>0 1000</div> <div>0 1000</div> </div> </div>		

