

**LEGEND:**

- MAPPED ALLUVIUM SUBCROP EXPOSURE (REFERENCE: GUNNEDAH NORTH COALFIELDS.dwg)
- - - - - MODEL PREDICTED ALLUVIAL AQUIFER GROUNDWATER LEVEL (REGIONAL) \*
- INFERRED DEPTH TO BEDROCK CONTOURS \*

\* REFERENCE: NSW DEPARTMENT OF NATURAL RESOURCES, UPPER NAMOI GROUNDWATER FLOW MODEL

**NOTES:**

1. LOW PERMEABILITY BARRIER TO COINCIDE WITH FLOOD LEVEL.
2. MAXIMUM DEPTH OF 40m INFERRED BASE ON AVAILABLE DATA SOURCES.
3. 25m DEPTH BASED ON ALLUVIUM INTERSECTION IN BORE TAWB15.

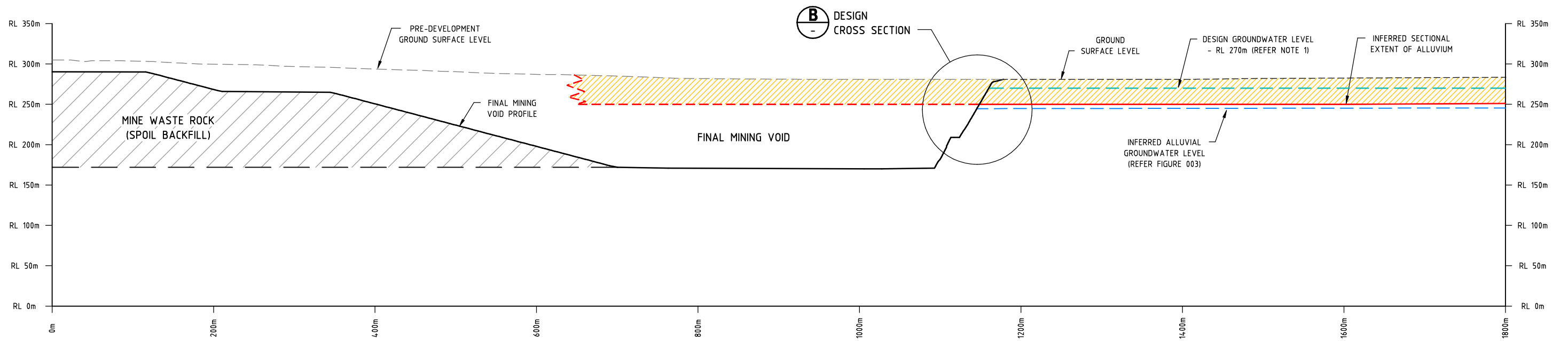
| REV | DESCRIPTION | DATE     | APPROVED |
|-----|-------------|----------|----------|
| A   | FOR REVIEW  | 16-09-11 | ASW      |

**AW** **ALLAN WATSON ASSOCIATES**  
 Waste and Water Management Consultants  
 ABN 24 081 272 406  
 PO Box 43  
 Alderley QLD 4051  
 PH (07) 3352 7222  
 FAX (07) 3856 3557

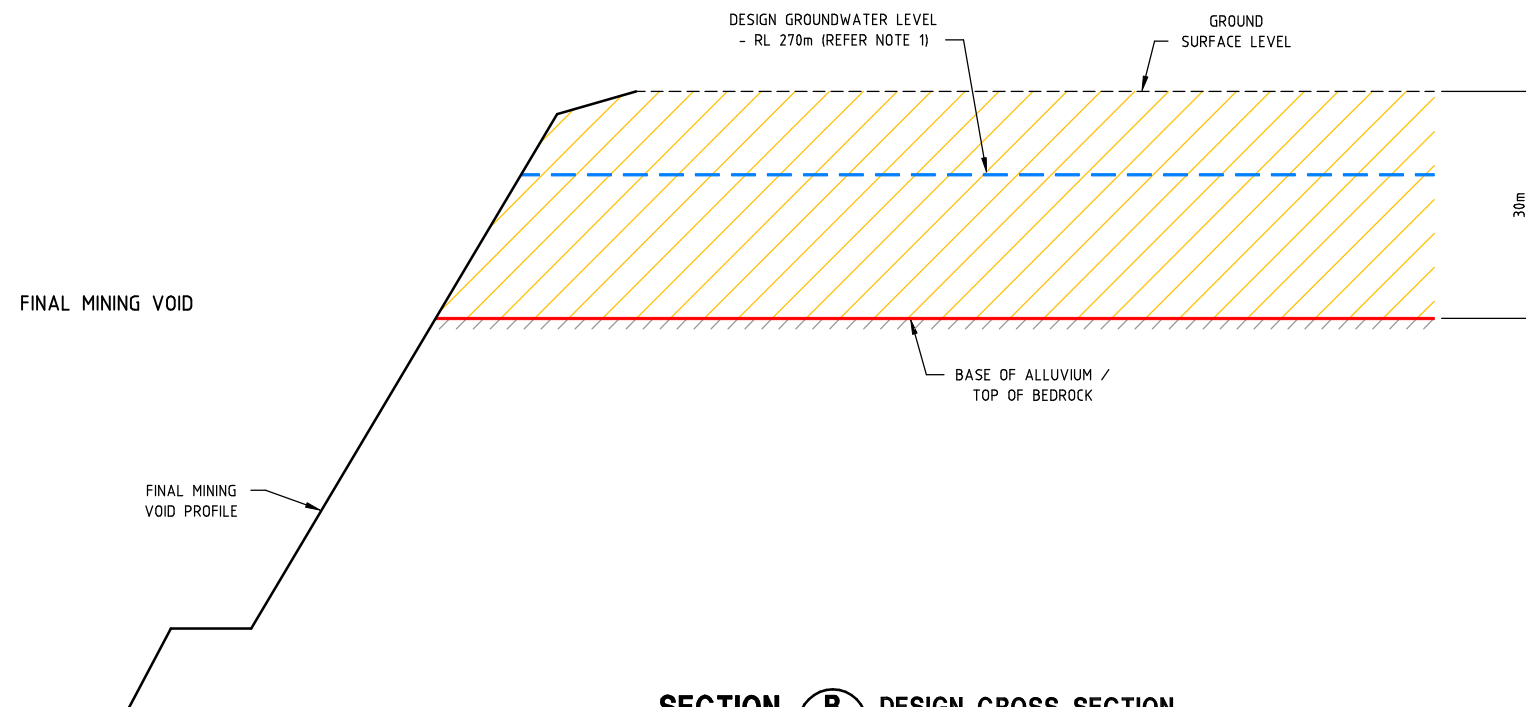
|          |             |         |
|----------|-------------|---------|
| DESIGNED | SCALE       | CLIENT  |
| DRAWN    | LEVEL DATUM | PROJECT |
| CHECKED  | SHEET SIZE  | TITLE   |
| APPROVED | CAD FILE    | ISSUE   |
| DATE     | ISSUE       | REVIEW  |

**TARRAWONGA COAL PTY LTD**  
**TARRAWONGA COAL PROJECT**  
**CONCEPT DESIGN FOR LOW PERMEABILITY BARRIER**  
**SITE LAYOUT PLAN SHOWING**  
**INFERRED GEOLOGICAL / HYDROGEOLOGICAL CONDITIONS**

|            |              |
|------------|--------------|
| JOB NUMBER | 0353-RST-003 |
| DRAWING    | <b>003</b>   |
| REV        | <b>A</b>     |



**SECTION A** TYPICAL SECTION THROUGH FINAL MINING VOID  
SCALE 1:5000



**SECTION B** DESIGN CROSS SECTION (SEEPAGE MODEL EXTENT)  
SCALE 1:1000

**NOTES:**

- DESIGN GROUNDWATER LEVEL OF RL 270m REPRESENTS HEIGHT PREDICTABLE GROUNDWATER LEVEL.

| REV | DESCRIPTION | DATE     | APPROVED |
|-----|-------------|----------|----------|
| A   | FOR REVIEW  | 13-09-11 | ASW      |

**AW**  
**ALLAN WATSON ASSOCIATES**  
 Waste and Water Management Consultants  
 ABN 24 081 272 406  
 PO Box 43  
 Alderley QLD 4051  
 PH (07) 3352 7222  
 FAX (07) 3856 3557

|                 |                            |   |
|-----------------|----------------------------|---|
| DESIGNED        | SCALE AS SHOWN             | CLIENT                                      |
| DRAWN RJS       | LEVEL DATUM                | TARRAWONGA COAL PTY LTD                     |
| CHECKED ASW     | SHEET SIZE A3              | PROJECT                                     |
| APPROVED        | CAD FILE 0353-RST-003-006A | TARRAWONGA COAL PROJECT                     |
| DATE SEPT. 2011 | ISSUE REVIEW               | CONCEPT DESIGN FOR LOW PERMEABILITY BARRIER |

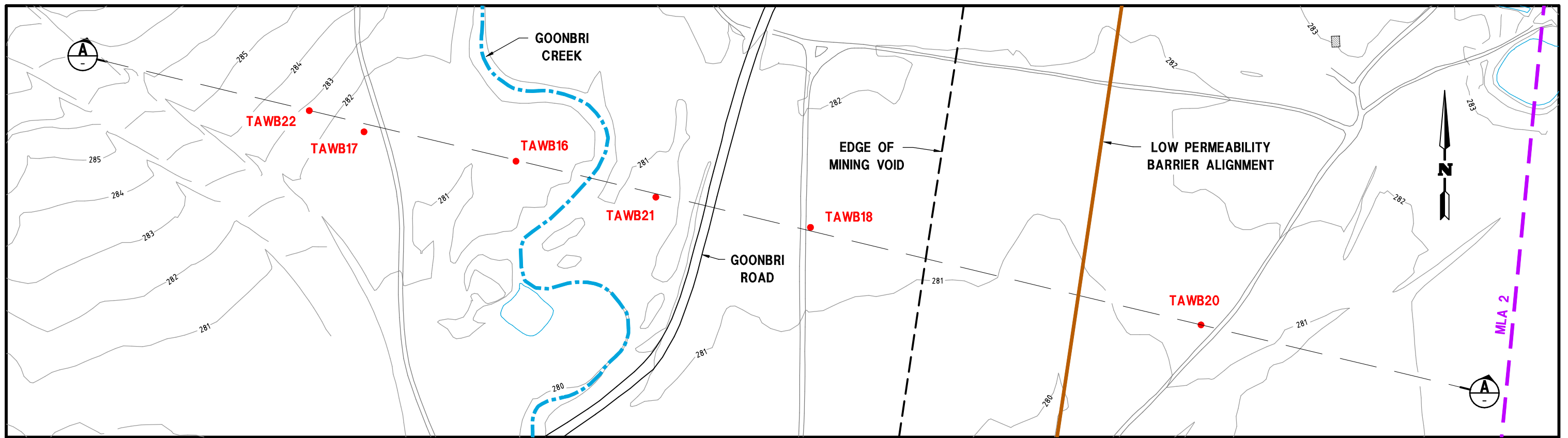
|       |   |
|-------|---|
| TITLE | TYPICAL SECTION THROUGH FINAL MINING VOID |
|-------|---|

|            |              |
|------------|--------------|
| JOB NUMBER | 0353-RST-003 |
| DRAWING    | <b>004</b>   |
| REV        | <b>A</b>     |

## APPENDICES

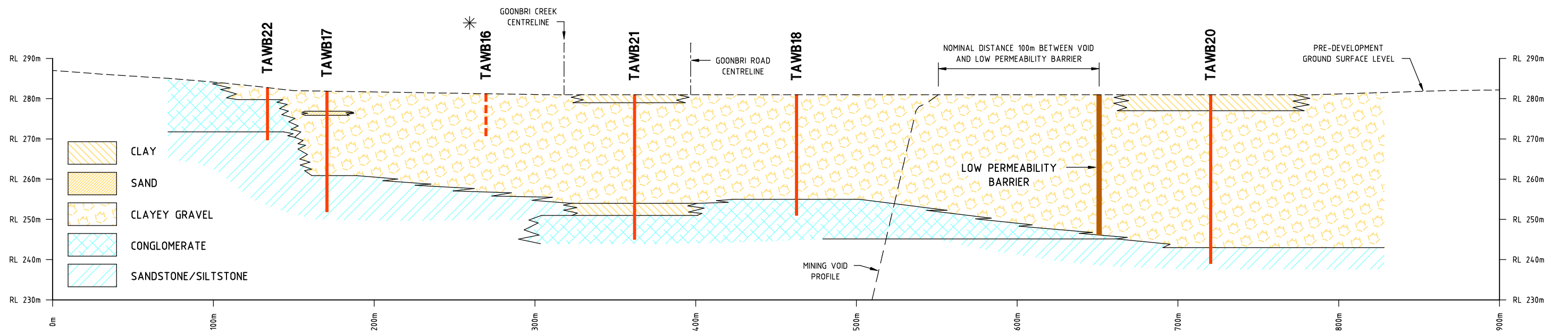
**APPENDIX A**  
**DATA REFERENCES**

**APPENDIX A1**  
**IDEALISED GEOLOGICAL SECTION**



**PLAN SHOWING GEOLOGICAL SECTION LOCATION**

SCALE 1:2500



\* NO BORELOG FOR TAWB16 AVAILABLE.

**SECTION A - IDEALISED GEOLOGICAL SECTION**  
 SCALE HORIZ 1:2500  
 VERT 1:1000

| REV | DESCRIPTION | DATE     | APPROVED |
|-----|-------------|----------|----------|
| C   | FOR REVIEW  | 05-10-11 | ASW      |
| B   | FOR REVIEW  | 20-09-11 | ASW      |
| A   | FOR REVIEW  | 16-09-11 | ASW      |



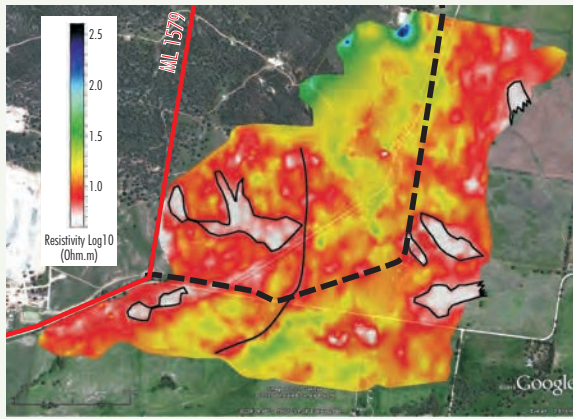
**ALLAN WATSON ASSOCIATES**  
 Waste and Water Management Consultants  
 ABN 24 081 272 406  
 PO Box 43  
 Alderley QLD 4051  
 PH (07) 3352 7222  
 FAX (07) 3856 3557

|                |                            |   |
|----------------|----------------------------|---|
| DESIGNED       | SCALE AS SHOWN             | CLIENT                                      |
| DRAWN RJS      | LEVEL DATUM                | TARRAWONGA COAL PTY LTD                     |
| CHECKED ASW    | SHEET SIZE A3              | PROJECT                                     |
| APPROVED       | CAD FILE 0353-RST-003-007C | TARRAWONGA COAL PROJECT                     |
| DATE OCT. 2011 | ISSUE REVIEW               | CONCEPT DESIGN FOR LOW PERMEABILITY BARRIER |

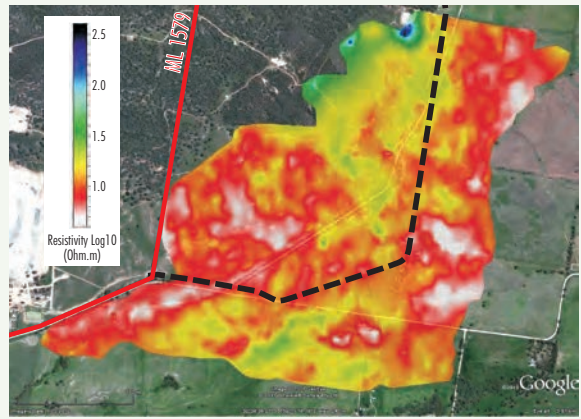
|       |                              |
|-------|------------------------------|
| TITLE | IDEALISED GEOLOGICAL SECTION |
|-------|------------------------------|

|            |              |
|------------|--------------|
| JOB NUMBER | 0353-RST-003 |
| DRAWING    | <b>A1</b>    |
| REV        | <b>C</b>     |

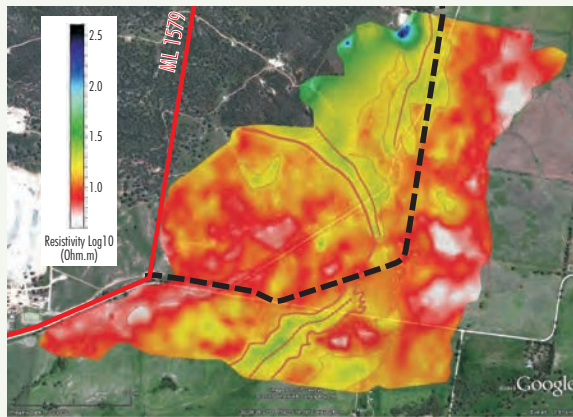
**APPENDIX A2**  
**TEM SURVEY RESULTS**



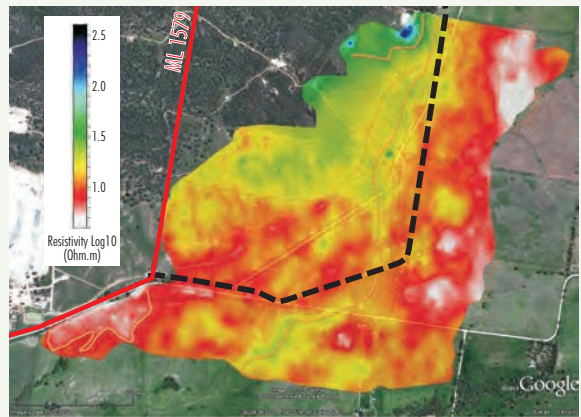
@1m Depth



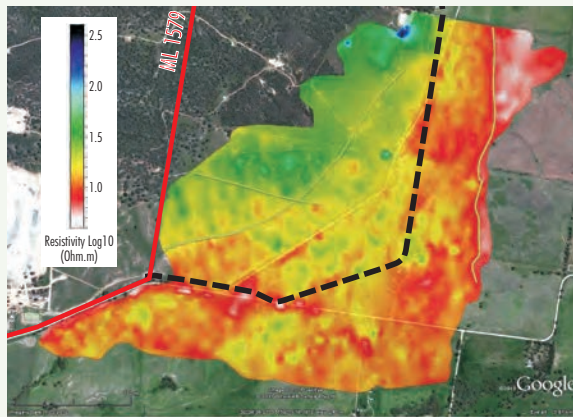
@3m Depth



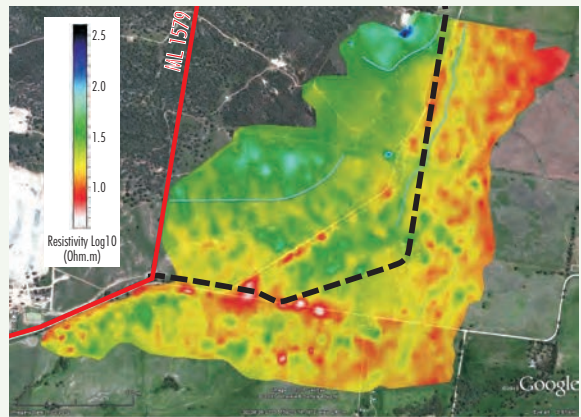
@7m Depth



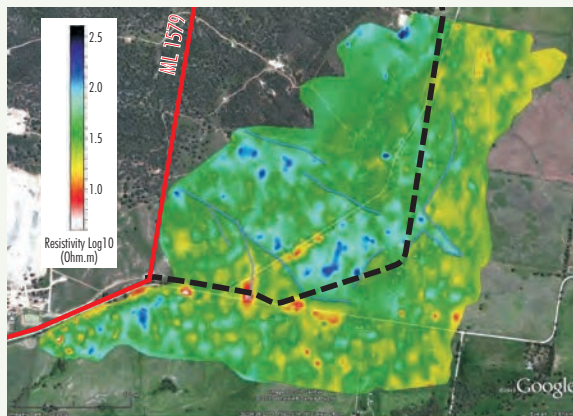
@12m Depth



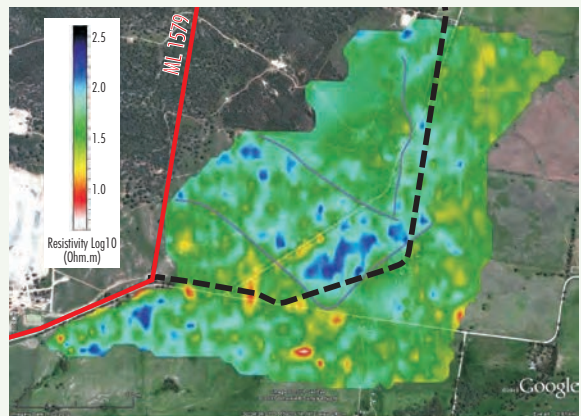
@20m Depth



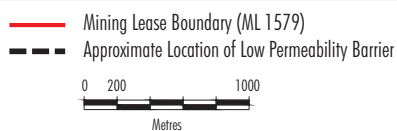
@28m Depth



@45m Depth



@58m Depth



Source: Groundwater Imaging (2011)

**TARRAWONGA COAL PROJECT**

**APPENDIX A2**  
TEM Survey Results

