Appendix F. Piezometer Form A's

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

1

Driller's Licence No: 1854
Class of Licence: CLASS 2
Driller's Name: ALEX BELL
Assistant Driller's Name: BOBBIE BLAIR
Contractor: E.A. SYSTEMS PTY LTD.
New bore ☒ Replacement Bore ☐
Deepened ☐ Enlarged ☐
Reconditioned ☐ Other (specify)
Final Depth 2-35 m

2

Work Licence No: 90BL 252919
Name of Licensee: E.A. SYSTEMS
Intended Use: MONITORING BORE
Completion Date: 12/10/2005

3 DRILLING DETAILS

From (m)	To (m)	Hole Diameter (mm)	Drilling Method Code
0	2-35	100	2

4 WATER BEARING ZONES

From (m)	To (m)	Thickness (m)	S W L (m)	Estimated Yield (L/s) Individual Aquifer	Estimated Yield (L/s) Cumulative	Test method Code	D D L at end of test (m)	Duration Hrs	Duration min	Salinity (Conductivity or TDS) Cond. (µS/cm)	Salinity (Conductivity or TDS) TDS (mg/L)
	DRY										

5 CASING / LINER DETAILS

Material Code	O D (mm)	Wall Thickness (mm)	From (m)	To (m)	Method of Fixing Code
8	60	5	0-4	0-35	SCREW
Casing Protector					

Casing Support Method Code 2
Type of casing bottom Code 2
Centralisers installed: No ☒ Yes ☐ (Indicate on Sketch)
Sump installed No ☐ Yes ☒ From 1-85 m To 2-35 m
Pressure cemented No ☒ Yes ☐ From m To m
Casing Protector cemented in place No ☒ Yes ☐

6 WATER ENTRY DESIGN

General Material Code	General OD (mm)	General Wall thickness (mm)	General From (m)	General To (m)	General Opening type Code	General Fixing Code	Screen Aperture (mm)	Slot Details Length (mm)	Slot Details Width (mm)	Slot Details Alignment Code
8	60	5	0-35	1-85	5	SCREW	0-4	35	4	H

7 GRAVEL PACK

Type	Grade	Grain size (mm) From	Grain size (mm) To	Depth (m) From	Depth (m) To	Quantity Litres	Quantity or m³
Rounded ☒	Graded ☒	2	3	0-35	2-35	10-5	
Crushed ☐	Ungraded ☐						
Bentonite/Grout seal No ☐ Yes ☒				0-25	0-35	3/4	
Method of placement of Gravel Pack Code 4							

8 BORE DEVELOPMENT

Chemical used for breaking down drilling mud No ☒ Yes ☐ Name:

Method	Bailing/ Surging ☐	Jetting ☐	Airlifting ☐	Backwashing ☐	Pumping ☐	Other:
Duration	hrs	hrs	hrs	hrs	hrs	hrs

9 DISINFECTION ON COMPLETION

Chemical/s used	Quantity applied (litres)	Method of application
NIL		

10 PUMPING TESTS ON COMPLETION

Test type		Date	Pump intake depth (m)	Initial Water Level (S W L) (m)	Pumping rate (L/s)	Water Level at end of pumping (DDL) (m)	Duration of Test (hrs)	Recovery Water level (m)	Recovery Time taken (hrs)	Recovery Time taken (min)
Multi stage (stepped drawdown)	Stage 1									
	Stage 2									
	Stage 3									
Single stage (constant rate)										

Height of measuring point above ground level: m Test Method Code See Code Table 4

For DIPNR use only: G W

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

Work Licence No: 90BL

WORK PARTLY BACKFILLED OR ABANDONED — 11

Original depth of work : ..... metres . Is work partly backfilled : No ☐ Yes ☐

Is work abandoned : No ☐ Yes ☐ Method of abandonment: Backfilled ☐ Plugged ☐ Capped ☐

Has any casing been left in the work No ☐ Yes ☐ From ..... (m) To ..... (m)

Sealing / fill type Code	From depth (m)	To depth (m)	Sealing / fill type Code	From depth (m)	To depth (m)

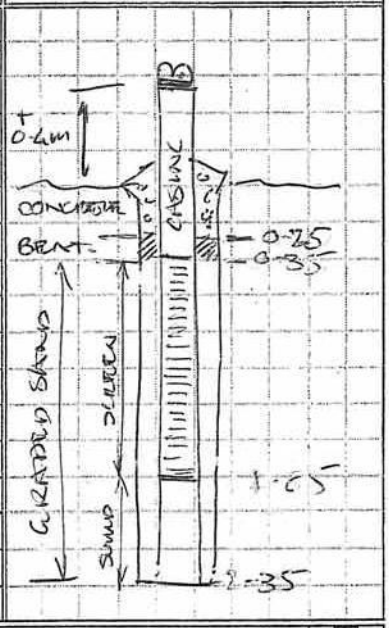
12

Site chosen by: Hydrogeologist ☐ Geologist ☐ Driller ☑ Diviner ☐ Client ☐ other ☑ Engineer

DRILLER'S ROCK/STRATA DESCRIPTION (LITHOLOGY) — 13

Depth From (m)	Depth To (m)	Description
~~0-0~~	0-3	TOPSOIL — COARSE TO FINE LOAMY GRAVEL
0-3	0-5	LOAMY GRAVEL MEDIUM
0-5	1-0	ORANGEY CLAY WITH GRAINS OF FINE SAND
1-0	1-5	YELLOW CLAY WITH SOME DECOMPOSED ROCK
1-5	2-0	YELLOW CLAY
2-0	2-35	BED ROCK WHITE CLAY WITH FINE SANDY PARTICLES / GRAINS

WORK CONSTRUCTION SKETCH



WORK NOT CONSTRUCTED BY DRILLING RIG — 14

Method of Excavation : Hand dug ☐ Back hoe ☐ Dragline ☐ Dozer ☐ Bailing ☐ Other :

Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining material	Dimensions of liner (m)	From Depth (m)	To Depth (m)

PLEASE ATTACH COPIES OF THE FOLLOWING IF AVAILABLE — 15

Geologist log	No ☒ Yes ☐	Laboratory analysis of water Sample	No ☒ Yes ☐	Pumping test(s)	No ☒ Yes ☐
Geophysical log	No ☒ Yes ☐	Sieve analysis of aquifer material	No ☒ Yes ☐	Installed Pump details	No ☒ Yes ☐

LOCATION OF BORE — 16

Lot No 2 DP No 253346 "Sherraloy" Piezo #1.

Work Location Coordinates Easting 0353861-98 Northing 6618683-401 Zone 56

GPS : No ☐ Yes ☐ >> AMG/AGD ☐ or MGA/GDA ☒ (See explanation)

Please mark the work site with "X" on the DIPNR CLID map or supply a sketch map of the location Attach the map to this Form A package.

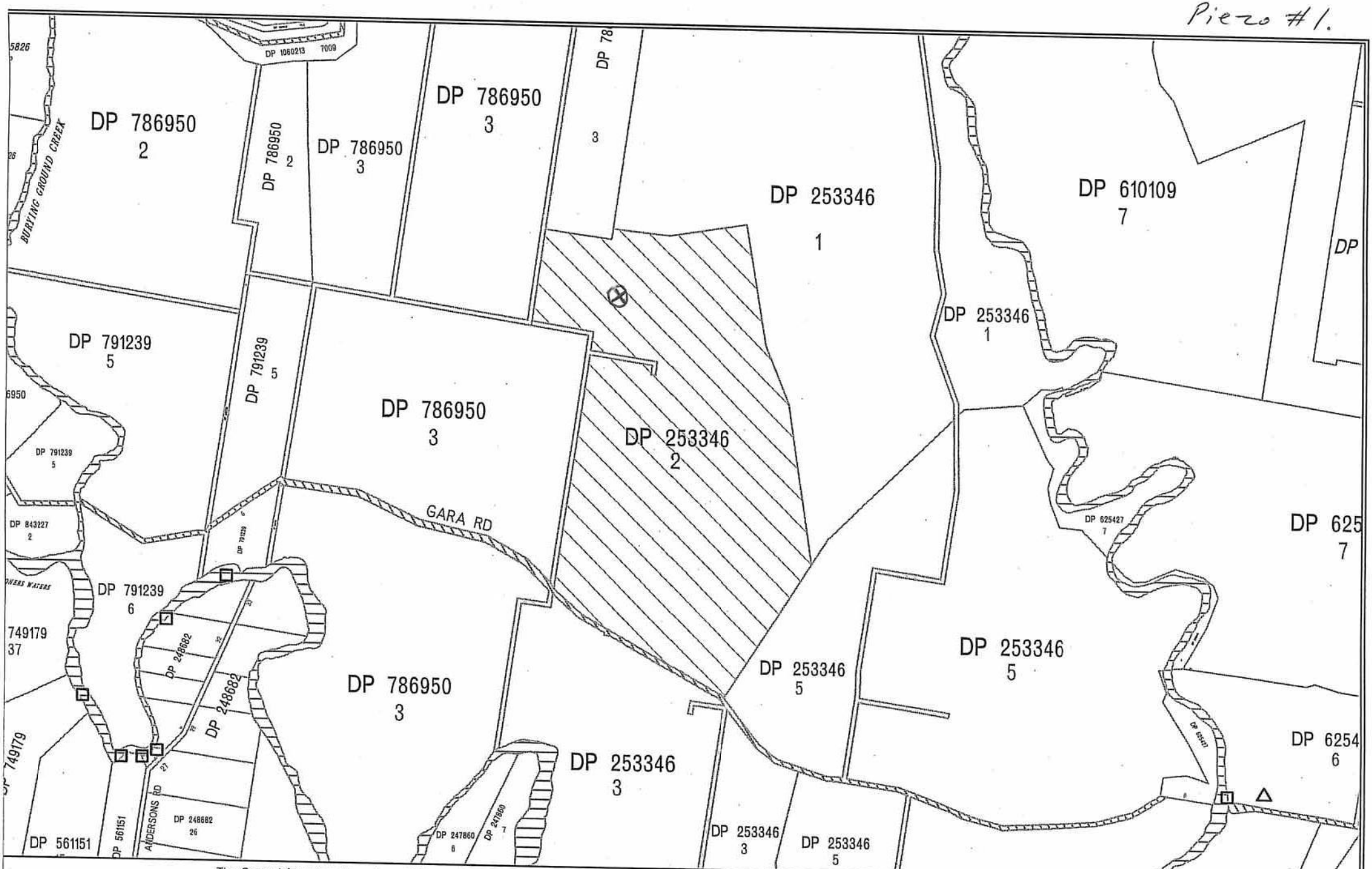
SIGNATURES — 17

Driller Signature: Date: 11-9-06

Licensee Signature: M. Dillon Date: 11-9-06

NOTE: If not enough space is provided use a separate piece of paper. Provide details of works location, Drillers License Number and Work License Number.

Piezo #1.



The Crown information shown has not been validated and may contain errors and omissions. Verification of Crown information should be made through the Departmental office shown below. This is a diagrammatic representation only.

0 150 300 450 600
Metres

Printed by: Dawn Jones
Date printed: 25/10/2005

Department of Lands

Departmental Office: Armidale Telephone: (02) 6772 2308

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

1

Driller's Licence No: 1886
Class of Licence: CLASS 2
Driller's Name: ALEX BELL
Assistant Driller's Name ROBBIE BLACK
Contractor:
New bore ☒ Replacement Bore ☐
Deepened ☐ Enlarged ☐
Reconditioned ☐ Other (specify)
Final Depth 2-5 m

2

Work Licence No: 90BL 252919
Name of Licensee: EA. SYSTEMS PTY LIMITED
Intended Use: MONITORING BORE
Completion Date: 12/10/05

DRILLING DETAILS 3

From (m)	To (m)	Hole Diameter (mm)	Drilling Method Code
0	2-5	100	2

WATER BEARING ZONES 4

From (m)	To (m)	Thickness (m)	S W L (m)	Estimated Yield (L/s) Individual Aquifer	Estimated Yield (L/s) Cumulative	Test method Code	D D L at end of test (m)	Duration Hrs	Duration min	Salinity (Conductivity or TDS) Cond. (µS/cm)	Salinity (Conductivity or TDS) TDS (mg/L)
	DRY										

CASING / LINER DETAILS 5

Material Code	O D (mm)	Wall Thickness (mm)	From (m)	To (m)	Method of Fixing Code
8	60	5	+0.3	0.5	SCREW
Casing Protector					

Casing Support Method Code 2
Type of casing bottom Code 2
Centralisers installed: No ☒ Yes ☐ (Indicate on Sketch)
Sump installed No ☐ Yes ☒ From 2.0 m To 2.5 m
Pressure cemented No ☒ Yes ☐ From m To m
Casing Protector cemented in place No ☒ Yes ☐

WATER ENTRY DESIGN 6

General Material Code	General OD (mm)	General Wall thickness (mm)	General From (m)	General To (m)	General Opening type Code	General Fixing Code	Screen Aperture (mm)	Slot Details Length (mm)	Slot Details Width (mm)	Slot Details Alignment Code
8	60	5	0.5	2.0	5	SCREW	0.4	35	4	H

GRAVEL PACK 7

Type	Grade	Grain size (mm) From	Grain size (mm) To	Depth (m) From	Depth (m) To	Quantity Litres	Quantity or m³
Rounded ☑	Graded ☑	2	3	0.5	2.5	10	
Crushed ☐	Ungraded ☐						
Bentonite/Grout seal No ☐ Yes ☑				0.3	0.5	1.5	
Method of placement of Gravel Pack Code 1							

BORE DEVELOPMENT 8

Chemical used for breaking down drilling mud No ☑ Yes ☐ Name :

Method	Bailing/ Surging ☐	Jetting ☐	Airlifting ☐	Backwashing ☐	Pumping ☐	Other:
Duration	hrs	hrs	hrs	hrs	hrs	hrs

DISINFECTION ON COMPLETION 9

Chemical/s used	Quantity applied (litres)	Method of application
N/A		

PUMPING TESTS ON COMPLETION 10

Test type		Date	Pump intake depth (m)	Initial Water Level (S W L) (m)	Pumping rate (L/s)	Water Level at end of pumping (DDL) (m)	Duration of Test (hrs)	Recovery Water level (m)	Recovery Time taken (hrs)	Recovery Time taken (min)
Multi stage (stepped drawdown)	Stage 1									
	Stage 2									
	Stage 3									
Single stage (constant rate)										

Height of measuring point above ground level: m Test Method Code See Code Table 4

For DIPNR use only: G W

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

Work Licence No: 90 BL 252919

WORK PARTLY BACKFILLED OR ABANDONED — 11

Original depth of work : ..... metres . Is work partly backfilled : No ☐ Yes ☐

Is work abandoned : No ☐ Yes ☐ Method of abandonment: Backfilled ☐ Plugged ☐ Capped ☐

Has any casing been left in the work No ☐ Yes ☐ From ..... (m) To ..... (m)

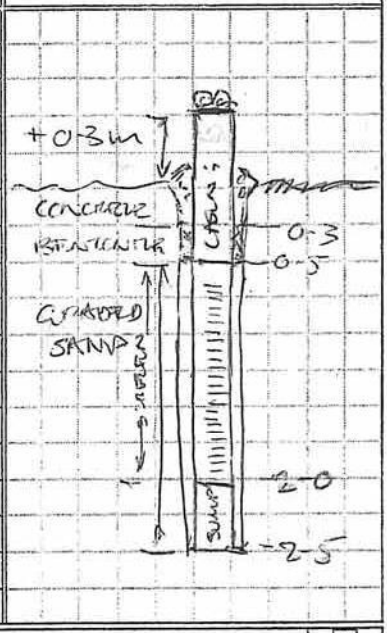
Sealing / fill type Code	From depth (m)	To depth (m)	Sealing / fill type Code	From depth (m)	To depth (m)

Site chosen by: Hydrogeologist ☐ Geologist ☐ Driller ☑ Diviner ☐ Client ☐ other ☐ Engineer — 12

DRILLER'S ROCK/STRATA DESCRIPTION (LITHOLOGY) — 13

Depth From (m)	Depth To (m)	Description
0	0-1	SANDY LOAM – TOPSOIL
0-1	0-3	LOAMY GRAVEL – TOPSOIL
0-3	0-5	BAND OF SANDY FIRM CLAY
		LIGHT MOISTURE SO-COMBAND OF
		IRONSTONE FINE GRAVELLY CLAY
0-5	1-5	BROWNY ORANGE FINE SILTY CLAY
1-5	2-0	YELLOW BROWN, FINE SILTY CLAY
		OVERLAYS VERY FINE SAND, SILTY CLAY
2-0	2-5	SILTY CLAY, FINE GRANULAR.

WORK CONSTRUCTION SKETCH



WORK NOT CONSTRUCTED BY DRILLING RIG — 14

Method of Excavation : Hand dug ☐ Back hoe ☐ Dragline ☐ Dozer ☐ Bailing ☐ Other :

Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining material	Dimensions of liner (m)	From Depth (m)	To Depth (m)

PLEASE ATTACH COPIES OF THE FOLLOWING IF AVAILABLE — 15

Geologist log	No ☑ Yes ☐	Laboratory analysis of water Sample	No ☑ Yes ☐	Pumping test(s)	No ☑ Yes ☐
Geophysical log	No ☑ Yes ☐	Sieve analysis of aquifer material	No ☑ Yes ☐	Installed Pump details	No ☑ Yes ☐

LOCATION OF BORE — 16

Lot No 1 DP No 253346 "Edington" Pie-20 #2.

Work Location Coordinates Easting 0353440-08 Northing 6619462-43 Zone 56

GPS : No ☐ Yes ☒ >> AMG/AGD ☐ or MGA/GDA ☒ (See explanation)

Please mark the work site with "X" on the DIPNR CLID map or supply a sketch map of the location Attach the map to this Form A package.

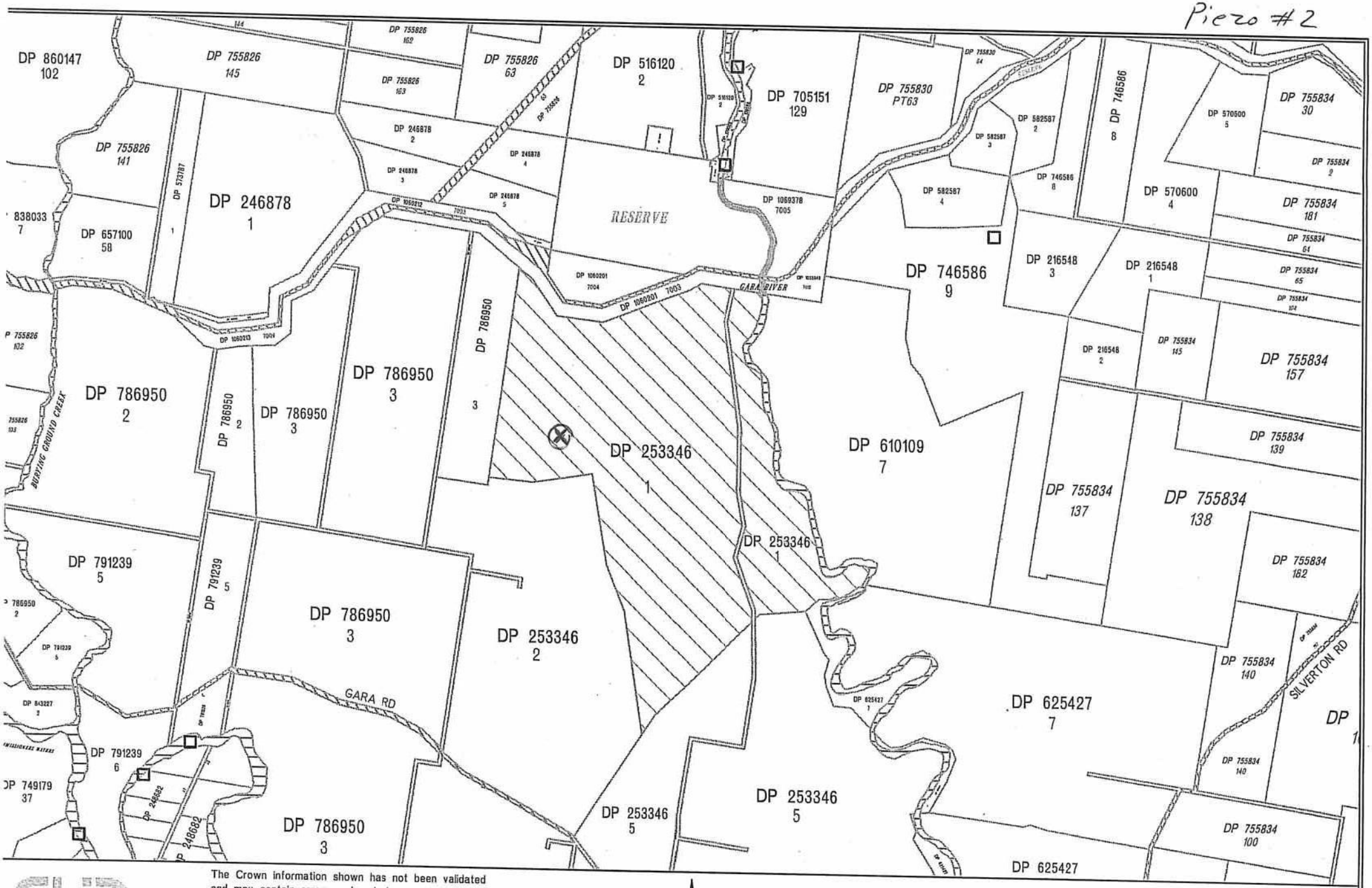
SIGNATURES — 17

Driller Signature: [signature] Licensee Signature: [signature]

Date: 11-8-96 Date: 11-9-96

NOTE: If not enough space is provided use a separate piece of paper. Provide details of works location, Drillers License Number and Work License Number.

Piezo #2



The Crown information shown has not been validated and may contain errors and omissions. Verification of Crown information should be made through the Departmental office shown below. This is a diagrammatic representation only.

0 250 500 750 1000
Metres

Printed by: Dawn Jones
Date printed: 25/10/2005

Department of Lands

Departmental Office: Armidale Tel: (02) 6770 3100

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

1

Driller's Licence No: 1854
Class of Licence: 2
Driller's Name: ALEX BELL
Assistant Driller's Name ROBBIE BLACK
Contractor: EA SYSTEMS P/L
New bore ☒ Replacement Bore ☐
Deepened ☐ Enlarged ☐
Reconditioned ☐ Other (specify)
Final Depth 2-45 m

2

Work Licence No: 90 BL 252919
Name of Licensee: E.A. SYSTEMS P/L
Intended Use: MONITORING BORE
Completion Date: 12/10/2005

DRILLING DETAILS 3

From (m)	To (m)	Hole Diameter (mm)	Drilling Method Code
0	2-45	100	2

WATER BEARING ZONES 4

From (m)	To (m)	Thickness (m)	S W L (m)	Estimated Yield (L/s) Individual Aquifer	Estimated Yield (L/s) Cumulative	Test method Code	D D L at end of test (m)	Duration Hrs	Duration min	Salinity (Conductivity or TDS) Cond (µS/cm)	Salinity (Conductivity or TDS) TDS (mg/L)
		DRY									

CASING / LINER DETAILS 5

Material Code	O D (mm)	Wall Thickness (mm)	From (m)	To (m)	Method of Fixing Code
8	60	5	+0-9	0-45	SCREW
Casing Protector					

Casing Support Method Code 2
Type of casing bottom Code 2
Centralisers installed: No ☒ Yes ☐ (Indicate on Sketch)
Sump installed No ☐ Yes ☒ From 1-95 m To 2-45 m
Pressure cemented No ☐ Yes ☐ From m To m
Casing Protector cemented in place No ☒ Yes ☐

WATER ENTRY DESIGN 6

General Material Code	General OD (mm)	General Wall thickness (mm)	General From (m)	General To (m)	General Opening type Code	General Fixing Code	Screen Aperture (mm)	Slot Details Length (mm)	Slot Details Width (mm)	Slot Details Alignment Code
8	60	5	0-45	1-95	5	SCREW	0-4	35	4	H

GRAVEL PACK 7

Type	Grade	Grain size (mm) From	Grain size (mm) To	Depth (m) From	Depth (m) To	Quantity Litres	Quantity or m³
Rounded ☒	Graded ☒	2	3	0-45	2-45	10-5	
Crushed ☐	Ungraded ☐			0-3	0-45	3/4	
Bentonite/Grout seal No ☐ Yes ☒							
Method of placement of Gravel Pack	Code 1						

BORE DEVELOPMENT 8

Chemical used for breaking down drilling mud No ☒ Yes ☐ Name:

Method	Bailing/ Surging ☐	Jetting ☐	Airlifting ☐	Backwashing ☐	Pumping ☐	Other:
Duration	hrs	hrs	hrs	hrs	hrs	hrs

DISINFECTION ON COMPLETION 9

Chemical/s used	Quantity applied (litres)	Method of application
NIL		

PUMPING TESTS ON COMPLETION 10

Test type		Date	Pump intake depth (m)	Initial Water Level (S W L) (m)	Pumping rate (L/s)	Water Level at end of pumping (DDL) (m)	Duration of Test (hrs)	Recovery Water level (m)	Recovery Time taken (hrs)	Recovery Time taken (min)
Multi stage (stepped drawdown)	Stage 1									
	Stage 2									
	Stage 3									
Single stage (constant rate)										

Height of measuring point above ground level: m Test Method Code See Code Table 4

For DIPNR use only: G W

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

Work Licence No: 90BL 252919

WORK PARTLY BACKFILLED OR ABANDONED (11)

Original depth of work : ..... metres . Is work partly backfilled : No ☐ Yes ☐

Is work abandoned : No ☐ Yes ☐ Method of abandonment: Backfilled ☐ Plugged ☐ Capped ☐

Has any casing been left in the work No ☐ Yes ☐ From ..... (m) To ..... (m)

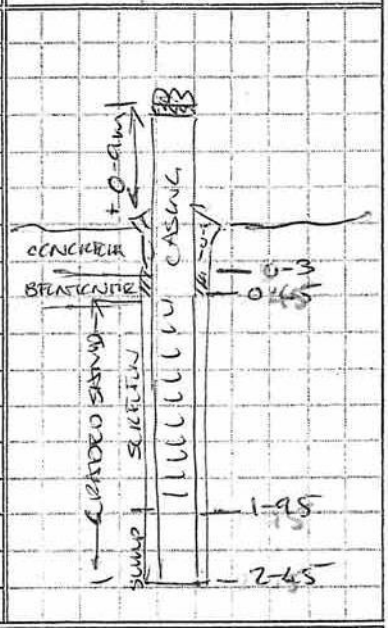
Sealing / fill type Code	From depth (m)	To depth (m)	Sealing / fill type Code	From depth (m)	To depth (m)

Site chosen by: Hydrogeologist ☐ Geologist ☐ Driller ☑ Diviner ☐ Client ☐ other ☑ Engineer (12)

DRILLER'S ROCK/STRATA DESCRIPTION (LITHOLOGY) (13)

Depth From (m)	Depth To (m)	Description
0-0	0-3	TOP SOIL – GREY SANDY LOAM
0-3	0-4	SILTY, LIGHT CLAY MEDIUM, MOIST
		TO TOUCH, GREY BROWN
0-4	1-0	MEDIUM GRAVEL, YELLOW GREY
		SLIGHTLY SILTY
1-0	1-5	GRAVELLY MEDIUM CLAY,
		YELLOW GREY SLIGHTLY SILTY.
1-5	2-0	GRAVELLY MEDIUM CLAY, SLIGHTLY
		SILTY
2-0	2-45	GRAVELLY MEDIUM CLAY
		SLIGHTLY SILTY YELLOW BROWN.

WORK CONSTRUCTION SKETCH



WORK NOT CONSTRUCTED BY DRILLING RIG (14)

Method of Excavation : Hand dug ☐ Back hoe ☐ Dragline ☐ Dozer ☐ Bailing ☐ Other :

Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining material	Dimensions of liner (m)	From Depth (m)	To Depth (m)

PLEASE ATTACH COPIES OF THE FOLLOWING IF AVAILABLE (15)

Geologist log	No ☒ Yes ☐	Laboratory analysis of water Sample	No ☒ Yes ☐	Pumping test(s)	No ☒ Yes ☐
Geophysical log	No ☒ Yes ☐	Sieve analysis of aquifer material	No ☒ Yes ☐	Installed Pump details	No ☒ Yes ☐

LOCATION OF BORE (16)

Lot No 1 DP No 253846 "Edington" Piezo # 3.

Work Location Coordinates Easting 033412 Northing 6619735 Zone 56

GPS : No ☐ Yes ☐ >> AMG/AGD ☐ or MGA/GDA ☒ (See explanation)

Please mark the work site with "X" on the DIPNR CLID map or supply a sketch map of the location Attach the map to this Form A package.

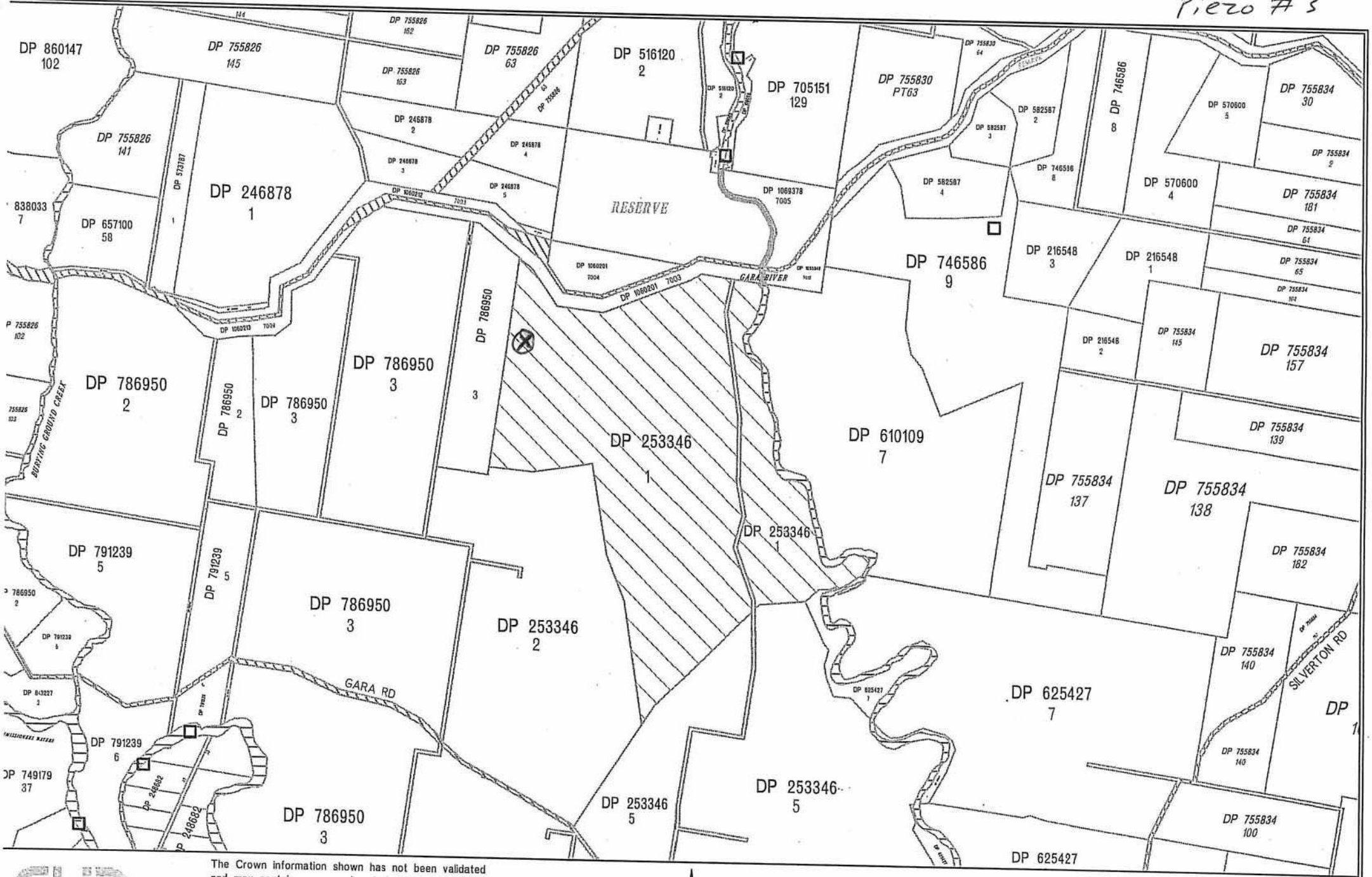
SIGNATURES (17)

Driller Signature: Date: 11-9-06

Licensee Signature: Date: 9.11.06

NOTE: If not enough space is provided use a separate piece of paper. Provide details of works location, Drillers License Number and Work License Number.

Piezo #3



The Crown information shown has not been validated and may contain errors and omissions. Verification of Crown information should be made through the Departmental office shown below. This is a diagrammatic representation only.

0 250 500 750 1000
Metres

Printed by: Dawn Jones
Date printed: 25/10/2005

Department of Lands

Departmental Office: Armidale

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

1

Driller's Licence No: 1584
Class of Licence: CLASS 2
Driller's Name: ALEX BELL
Assistant Driller's Name ROBBIE BLACK
Contractor: E.A. SYSTEMS PTY LTD.
New bore ☑ Replacement Bore ☐
Deepened ☐ Enlarged ☐
Reconditioned ☐ Other (specify)
Final Depth 3-1 m

2

Work Licence No: 90 BL 252919
Name of Licensee: E.A. SYSTEMS
Intended Use: MONITORING BORE
Completion Date: 12TH OCTOBER 2005

DRILLING DETAILS 3

From (m)	To (m)	Hole Diameter (mm)	Drilling Method Code
0	3-1	100	2

WATER BEARING ZONES 4

From (m)	To (m)	Thickness (m)	S W L (m)	Estimated Yield (L/s) Individual Aquifer	Estimated Yield (L/s) Cumulative	Test method Code	D D L at end of test (m)	Duration Hrs	Duration min	Salinity (Conductivity or TDS) Cond. (µS/cm)	Salinity (Conductivity or TDS) TDS (mg/L)
	DRY										

CASING / LINER DETAILS 5

Material Code	O D (mm)	Wall Thickness (mm)	From (m)	To (m)	Method of Fixing Code
8	60	5	+0-4	1-1	SCREW
Casing Protector					

Casing Support Method Code 2
Type of casing bottom Code 2
Centralisers installed: No ☒ Yes ☐ (Indicate on Sketch)
Sump installed No ☐ Yes ☒ From 2-6 m To 3-1 m
Pressure cemented No ☒ Yes ☐ From m To m
Casing Protector cemented in place No ☒ Yes ☐

WATER ENTRY DESIGN 6

General Material Code	General OD (mm)	General Wall thickness (mm)	General From (m)	General To (m)	General Opening type Code	General Fixing Code	Screen Aperture (mm)	Slot Details Length (mm)	Slot Details Width (mm)	Slot Details Alignment Code
8	60	5	1-1	2-6	5	SCREW	0-4	35	4	H

GRAVEL PACK 7

Type	Grade	Grain size (mm) From	Grain size (mm) To	Depth (m) From	Depth (m) To	Quantity Litres	Quantity or m³
Rounded ☑	Graded ☑	2	3	~~0~~ 1-0	3-1 ~~+0~~	11	
Crushed ☐	Ungraded ☐						
Bentonite/Grout seal No ☐ Yes ☑				0-4	1-0	3	
Method of placement of Gravel Pack Code 1							

BORE DEVELOPMENT 8

Chemical used for breaking down drilling mud No ☒ Yes ☐ Name:

Method	Bailing/ Surging ☐	Jetting ☐	Airlifting ☐	Backwashing ☐	Pumping ☐	Other:
Duration	hrs	hrs	hrs	hrs	hrs	hrs

DISINFECTION ON COMPLETION 9

Chemical/s used	Quantity applied (litres)	Method of application
	NOT APPLICABLE	

PUMPING TESTS ON COMPLETION 10

Test type		Date	Pump intake depth (m)	Initial Water Level (S W L) (m)	Pumping rate (L/s)	Water Level at end of pumping (DDL) (m)	Duration of Test (hrs)	Recovery Water level (m)	Recovery Time taken (hrs)	Recovery Time taken (min)
Multi stage (stepped drawdown)	Stage 1									
	Stage 2									
	Stage 3									
Single stage (constant rate)										

Height of measuring point above ground level: m Test Method Code See Code Table 4

For DIPNR use only:	G	W							

NSW Department of Infrastructure, Planning and Natural Resources

FORM A PARTICULARS OF COMPLETED BORE

VERSION 2004

Work Licence No: 90 BL 252919

WORK PARTLY BACKFILLED OR ABANDONED [11]

Original depth of work : ..... metres . Is work partly backfilled : No ☐ Yes ☐

Is work abandoned : No ☐ Yes ☐ Method of abandonment: Backfilled ☐ Plugged ☐ Capped ☐

Has any casing been left in the work No ☐ Yes ☐ From ..... (m) To ..... (m)

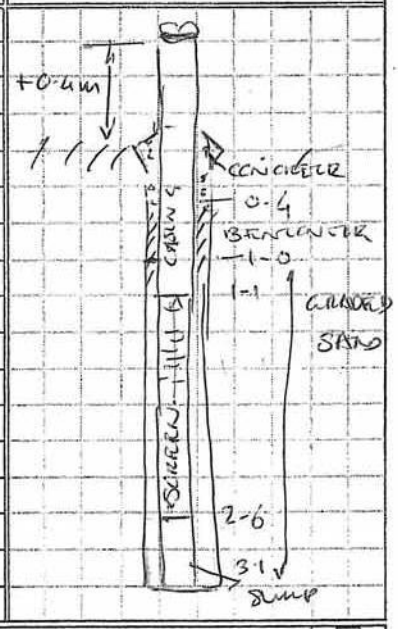
Sealing / fill type Code	From depth (m)	To depth (m)	Sealing / fill type Code	From depth (m)	To depth (m)

Site chosen by: Hydrogeologist ☐ Geologist ☐ Driller ☑ Diviner ☐ Client ☑ other ☐ ..... [12]

DRILLER'S ROCK/STRATA DESCRIPTION (LITHOLOGY) [13]

Depth From (m)	Depth To (m)	Description
0	0·3	FINE LOAM, GREY BLACK,
		MED LOAMY CLAY
0·3	1-0	SILTY LOAMY ~~VERY~~ MEDIUM CLAY
		VERY FINE GRANULAR GREY BLACK
1-0	2-0	MEDIUM SILT, DARK GREY
2-0	3·1	GRRY BROWN, MED SILTY CLAY

WORK CONSTRUCTION SKETCH



WORK NOT CONSTRUCTED BY DRILLING RIG [14]

Method of Excavation : Hand dug ☐ Back hoe ☐ Dragline ☐ Dozer ☐ Bailing ☐ Other :

Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining material	Dimensions of liner (m)	From Depth (m)	To Depth (m)

PLEASE ATTACH COPIES OF THE FOLLOWING IF AVAILABLE [15]

Geologist log	No ☑ Yes ☐	Laboratory analysis of water Sample	No ☑ Yes ☐	Pumping test(s)	No ☑ Yes ☐
Geophysical log	No ☑ Yes ☐	Sieve analysis of aquifer material	No ☑ Yes ☐	Installed Pump details	No ☑ Yes ☐

LOCATION OF BORE [16]

Lot No 1 DP No 253946 "Edington" Piezo #4.

Work Location Coordinates Easting 0384608·59 Northing 6619877·84 Zone 56

GPS : No ☐ Yes ☑ >> AMG/AGD ☐ or MGA/GDA ☑ (See explanation)

Please mark the work site with "X" on the DIPNR CLID map or supply a sketch map of the location Attach the map to this Form A package.

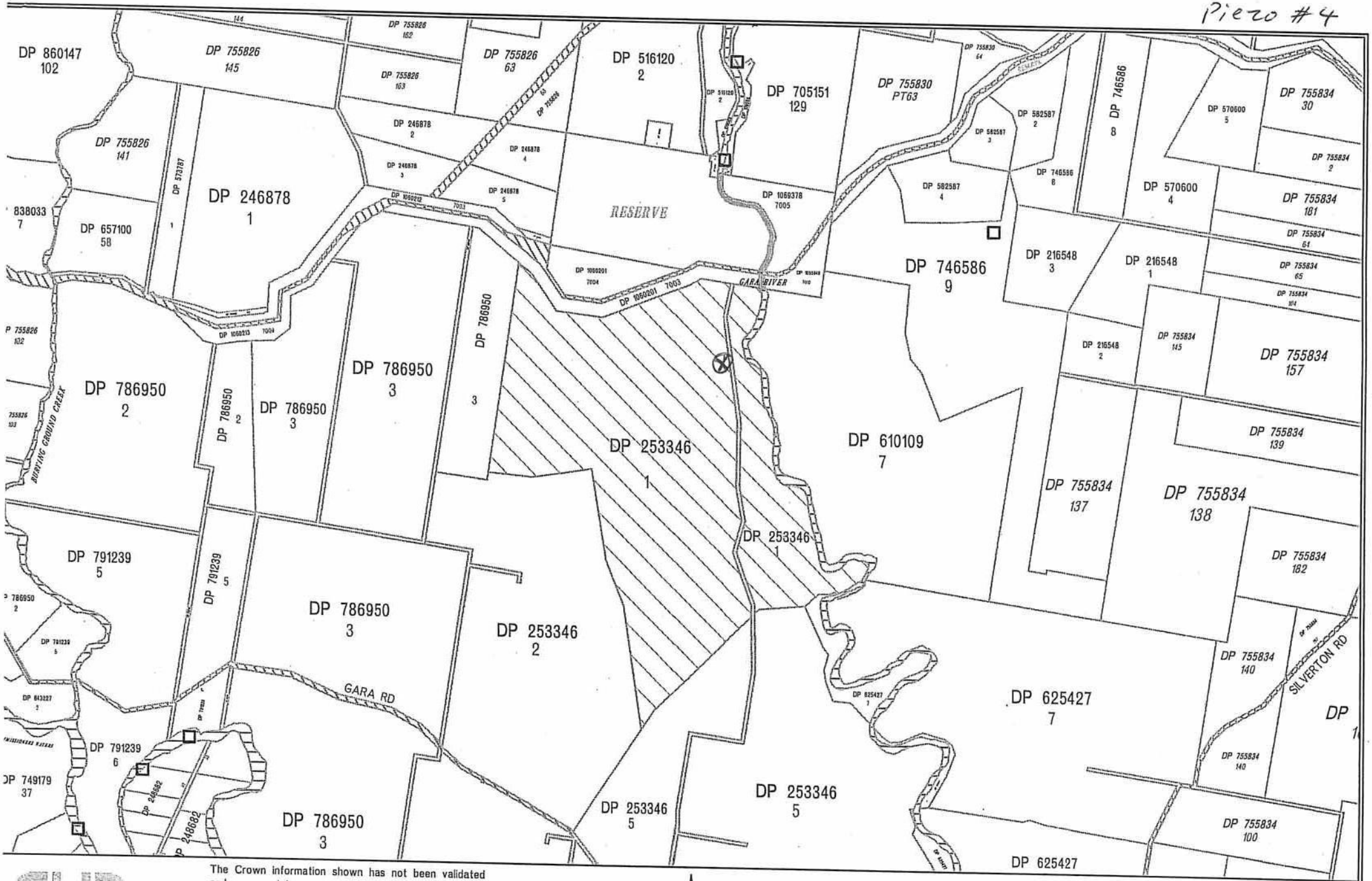
SIGNATURES [17]

Driller Signature: ..... Licensee Signature: M. Dillon

Date: 11-9-06 Date: 11-9-06

NOTE: If not enough space is provided use a separate piece of paper. Provide details of works location, Drillers License Number and Work License Number.

Piezo #4



The Crown information shown has not been validated and may contain errors and omissions. Verification of Crown information should be made through the Departmental office shown below. This is a diagrammatic representation only.

0 250 500 750 1000
Metres

Printed by: Dawn Jones
Date printed: 25/10/2005

Department of Lands

Departmental Office: Armidale Tel: (02) 6770 3100

NSW DEPARTMENT OF LAND AND WATER CONSERVATION
Natural Resource Products

FORM A 05762
PARTICULARS OF COMPLETED WORK

1

Driller's Licence No: 1877
Class of Licence: 2
Driller's Name: ALAN LITTLE.
Assistant Driller's Name: JARED LITTLE
Contractor: REDLANDS DRILLING

New bore ☑ Replacement Bore ☐
Deepened ☐ Enlarged ☐
Reconditioned ☐ Other (specify) PIEZOMETER

Final Depth 26.0 m

2

Work Licence No 90 BL 252919
Name of Licensee: EA SYSTEMS.
Intended Use: PIEZOMETER MONITORING BORE.
Completion Date: 17-11-05

3 DRILLING DETAILS

From (m)	To (m)	Hole Diameter (mm)	Drilling Method Code
0	2.5	100	2
2.5	5.0	76	7
5.0	26.0	76	13

4 WATER BEARING ZONES

From (m)	To (m)	Thickness (m)	S W L (m)	Estimated Yield (L/s) Individual Aquifer	Estimated Yield (L/s) Cumulative	Test method Code	D D L at end of test (m)	Duration Hrs	Duration min	Salinity (Conductivity or TDS) Cond. (µS/cm)	Salinity (Conductivity or TDS) TDS (mg/L)

5 CASING / LINER DETAILS

Material Code	O D (mm)	Wall Thickness (mm)	From (m)	To (m)	Method of Fixing Code
8	60	5	+0.9	10.1	
Casing Protector					

Casing Support Method Code: 3
Type of casing bottom Code: 2
Centralisers installed: No ☑ Yes ☐ (Indicate on Sketch)
Sump installed No ☐ Yes ☑ From 9.6 m To 10.1 m
Pressure cemented No ☑ Yes ☐ From m To m
Casing Protector cemented in place No ☐ Yes ☐

6 WATER ENTRY DESIGN

General Material Code	General OD (mm)	General Wall thickness (mm)	General From (m)	General To (m)	General Opening type Code	General Fixing Code	Screen Aperture (mm)	Slot Details Length (mm)	Slot Details Width (mm)	Slot Details Alignment Code
8	60	5	5.1	9.6		5	0.5			H

7 GRAVEL PACK

Type	Grade	Grain size (mm) From	Grain size (mm) To	Depth (m) From	Depth (m) To	Quantity Litres	Quantity or m³
Rounded ☑	Graded ☑		2.5	1.4	10.1		
Crushed ☐	Ungraded ☐						
Bentonite/Grout seal No ☐ Yes ☑							
Method of placement of Gravel Pack Code							

For DLWC use only: G | W

NSW DEPARTMENT OF LAND AND WATER CONSERVATION
Natural Resource Products

FORM A 05762
PARTICULARS OF COMPLETED WORK

Work Licence No: 90 BL252919

BORE DEVELOPMENT 8

Chemical used for breaking down drilling mud No ☑ Yes ☐ Name :

Method	Bailing/ Surging ☐	Jetting ☐	Airlifting ☐	Backwashing ☐	Pumping ☐	Other: NIL
Duration	hrs	hrs	hrs	hrs	hrs	hrs

DISINFECTION ON COMPLETION 9

Chemical/s used	Quantity applied (litres)	Method of application
NIL	—	—

PUMPING TESTS ON COMPLETION 10

Test type		Date	Pump intake depth (m)	Initial Water Level (S W L) (m)	Pumping rate (L/s)	Water Level at end of pumping (DDL) (m)	Duration of Test (hrs)	Recovery: Water level (m)	Recovery: Time taken (hrs)	Recovery: Time taken (min)
Multi stage (stepped drawdown)	Stage 1									
	Stage 2									
	Stage 3									
	Stage 4									
Single stage (constant rate)										

Height of measuring point above ground level: 0.9 m Test Method Code [ ] See Code Table 4

WORK PARTLY BACKFILLED OR ABANDONED 11

Original depth of work : 26.0 metres . Is work partly backfilled : No ☐ Yes ☑

Is work abandoned : No ☑ Yes ☐ Method of abandonment: Backfilled ☐ Plugged ☐ Capped ☐

Has any casing been left in the work No ☐ Yes ☑ From +0.9 (m) To 10.1 (m)

Sealing / fill type Code	From depth (m)	To depth (m)	Sealing / fill type Code	From depth (m)	To depth (m)
3	10.1	11.0	3	~~0~~ 0.9	1.4

Site chosen by: Hydrogeologist ☐ Geologist ☐ Driller ☐ Diviner ☐ Client ☑ other ☐ 12

Lot No 1 DP No 253346 13

Work Location Coordinates Easting 383484 Northing 6619090 Zone 56

GPS: No ☐ Yes ☐ >> AMG/AGD ☐ or MGA/GDA ☑ (See explanation)

Please mark the work site with "X" on the DLWC CLID map.
Indicate also the distances in metres from two (2) adjacent boundaries, and attach the map to this Form A package.

Signatures:

Driller: Alan Bott Date: 21/11/05

Licensee: M. Allen Date: 23/11/05

NSW DEPARTMENT OF LAND AND WATER CONSERVATION
Natural Resource Products

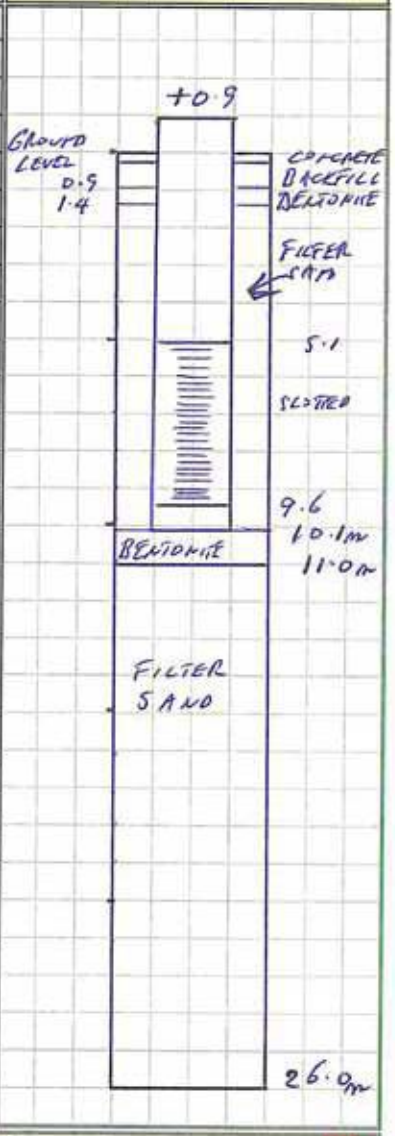
FORM A 05762
PARTICULARS OF COMPLETED WORK

Work Licence No: 90 BL 252919

DRILLER'S ROCK/STRATA DESCRIPTION (LITHOLOGY)

Depth From (m)	Depth To (m)	Description
0	3.0	CLAY PALE BROWN.
3.0	4.0	ROCK XW-HW. PALE BROWN.
4.0	12.0	ROCK HW-MW. PALE BROWN.
		WITH PARTIAL WATER LOSS
12.0	21.0	ROCK M.W. PALE GREY-BROWN.
		SLIGHTLY HIGHER WATER LOSS
21.0	26.0	BASALT S.W. GREY
		COMPLE WATER LOSS FROM
		≈ 24.0 m.

15 WORK CONSTRUCTION SKETCH



WORK NOT CONSTRUCTED BY DRILLING RIG

16

Method of Excavation : Hand dug ☐ Back hoe ☐ Dragline ☐ Dozer ☐ Other :

Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining material	Dimensions of liner (m)	From Depth (m)	To Depth (m)

Please attach copies of the following if available

17

Geologist log No ☐ Yes ☐	Laboratory analysis of water Sample No ☐ Yes ☐	Pumping test(s) No ☐ Yes ☐
Geophysical log No ☐ Yes ☐	Sieve analysis of aquifer material No ☐ Yes ☐	Installed Pump details No ☐ Yes ☐

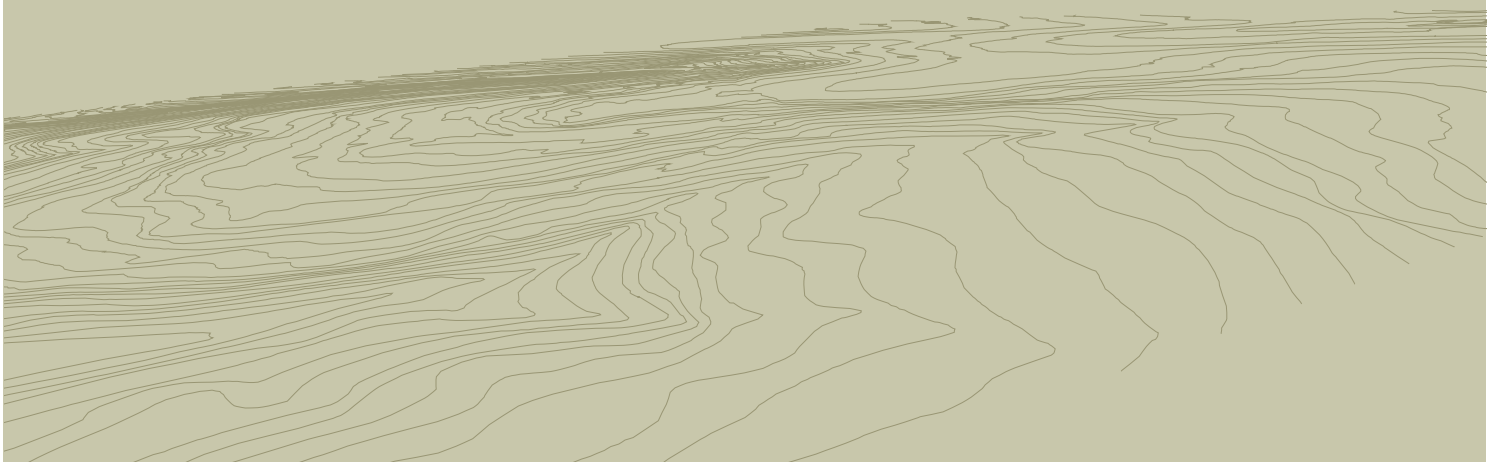
“This page has been left blank intentionally”

AECOM

MORE SPECIALISTS,
PARTNERING MORE POWERFULLY
THINKING MORE INNOVATIVELY,
DESIGNING MORE INTELLIGENTLY,
DELIVERING MORE RELIABLY.

ARMIDALE REGIONAL LANDFILL

Environmental Assessment



ARMIDALE REGIONAL LANDFILL

Environmental Assessment Publications

Volume 1

Main Document

Volume 2

Appendix A Director-General's Requirements, 2005 and 2008; and Government Consultation
Appendix B AECOM, 2006: Armidale Regional Landfill Environmental Management Plan (Draft)
Appendix C Maunsell AECOM, 2004: Regional Landfill Siting Study Final Report
Appendix D EA Systems, 2006: Hydrogeological Study

Volume 3

Appendix E EA Systems, 2009: Flora and Fauna Assessment
Appendix F RCA Australia, 2007: Hydrogeological Investigation
Appendix G AECOM, 2010: Landfill Concept Design Drawings
Appendix H EA Systems, 2009: Biodiversity Offset Management Plan

Volume 4

Appendix I AECOM, 2010: Landfill Liner Literature Review and Hydrogeological (Leachate) Assessment
Appendix J NSW Department of Public Works and Services, 2002: Landfill Siting Study, Aerial Photographic Survey
Appendix K EA Systems, 2006: Preliminary Contaminated Site Investigations
Appendix L EA Systems, 2006: Salinity Assessment
Appendix M PM Ashley, 2006: Geological Report on proposed Armidale Dumaresq Council landfill site, with emphasis on investigation of a possible geological fault
Appendix N PM Ashley, 2005: Report on Geological Logging of Diamond Drill Core from the Proposed Armidale Landfill Site
Appendix O Holmes Air Sciences, 2009: Air Quality Assessment Report
Appendix P AECOM, 2010: Greenhouse Gas Inventory
Appendix Q AECOM, 2010: Armidale Regional Landfill Noise Impact Assessment
Appendix R Archaeological Surveys & Reports Pty Ltd, 2009: The Archaeological Investigation For Sites Of Indigenous Cultural Significance For Part 3A Approval
New England Regional Landfill Waterfall Way, East of Armidale, Northern Tablelands NSW