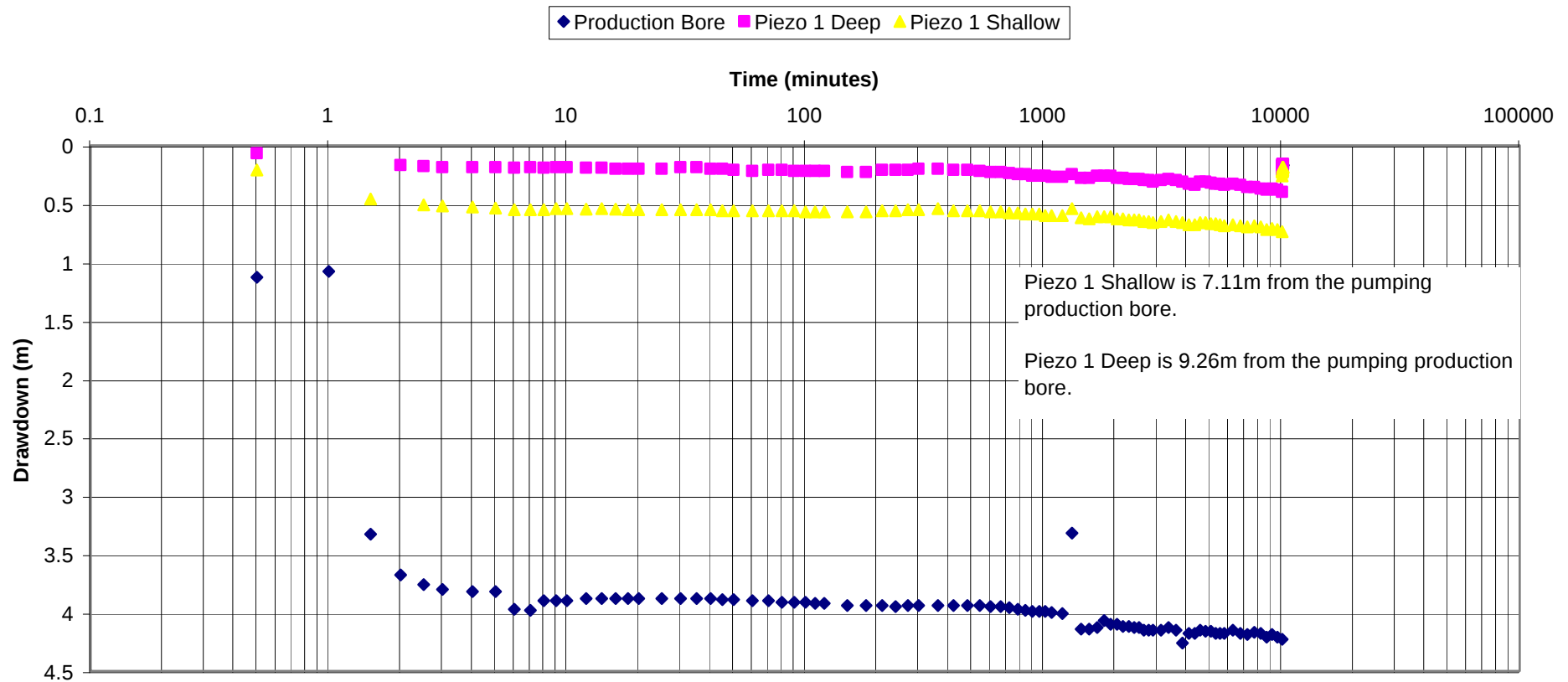


MARILLANA IRON ORE PROJECT - CONSTANT RATE TEST
PRODUCTION BORE PUMPING AT 32.5L/sec from 18th to 26th JUNE 2008.
(Time Drawdown- Plot)



Source Reliable Output Calculations

Bore No:

Potable Bore

Notes:

Calculates SRO and expected pumping water levels for newly constructed bores

Pumping Test Analysis must have been undertaken first

Pumping water levels calculated from assumed average conditions - as seen during drilling

Assumes transient radial flow conditions prevail (eg Theis Equation)

Data Input

Rest Water Level = **38.02** mbgl

Top of Aquifer/Max PWL = **45** mbgl

Step Test Data

Enter parameters of step test equation $s=BQ+CQ^2$

B = **3.77E-05**

C = **3.39E-06**

valid time **100** mins

Constant Rate Test Data

Enter parameters from constant rate analysis

T = **110** m²/d (transmissivity)

s = **8.00E-03** (storativity)

r = **0.07** m (radius of bore)

Enter Operational Data

Assumed period between recharge events

t2 = **1825** days

Range of discharges to be considered

Are there interference effects (Y/N)

N

Q1 **259.2** m³/d

Q2 **432** m³/d

Q3 **691** m³/d

Q4 **734** m³/d

Dist to first bore

m

pumping rate

m³/d

Dist to second bore

m

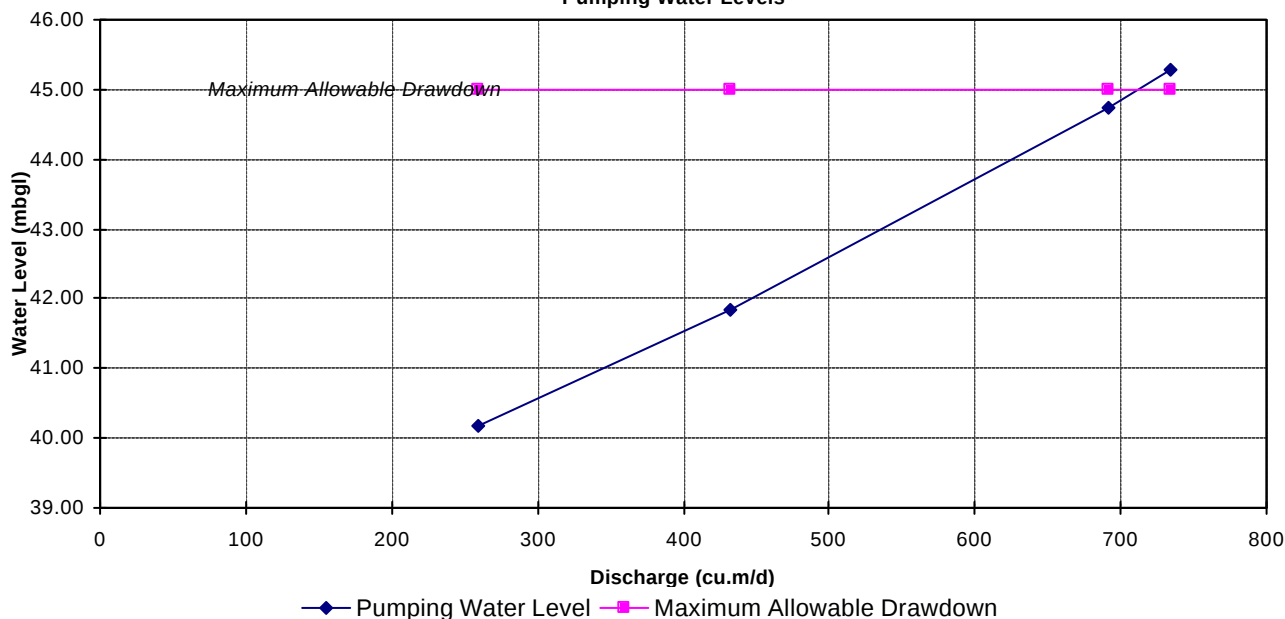
pumping rate

m³/d

Calculations of Drawdown

Discharge		Short Term	Long Term	Interference	Total	Pumping
kL/d	L/s	Drawdown	Drawdown	Effects	Drawdown	Water Level
259.2	3.0	0.2	1.91	0.00	2.14	40.16
432	5.0	0.6	3.18	0.00	3.83	41.85
691	8.0	1.6	5.08	0.00	6.73	44.75
734	8.5	1.9	5.40	0.00	7.25	45.27

Source Reliable Output Pumping Water Levels



F:\Jobs\832C\C4 - Reporting\Hydrogeological Report\Figures\Figure 8 SRO Potable Bore 8L T110 recharge 1 in 5 years.xls\Transient Radial Flow

Source Reliable Output Calculations

Bore No:

Production Bore

Notes:

Calculates SRO and expected pumping water levels for newly constructed bores

Pumping Test Analysis must have been undertaken first

Pumping water levels calculated from assumed average conditions - as seen during drilling

Assumes transient radial flow conditions prevail (eg Theis Equation)

Data Input

Rest Water Level = **33.7** mbgl

Top of Aquifer/Max PWL = **46** mbgl

Step Test Data

Enter parameters of step test equation $s=BQ+CQ^2$

B = **6.50E-04**

C = **2.60E-07**

valid time **100** mins

Constant Rate Test Data

Enter parameters from constant rate analysis

T = **270** m²/d (transmissivity)

s = **8.00E-03** (storativity)

r = **0.125** m (radius of bore)

Enter Operational Data

Assumed period between recharge events

Range of discharges to be considered

Q1 **1295** m³/d

Q2 **1730** m³/d

Q3 **2160** m³/d

Q4 **2592** m³/d

t2 = **1825** days

Are there interference effects (Y/N) **N**

Dist to first bore m

pumping rate m³/d

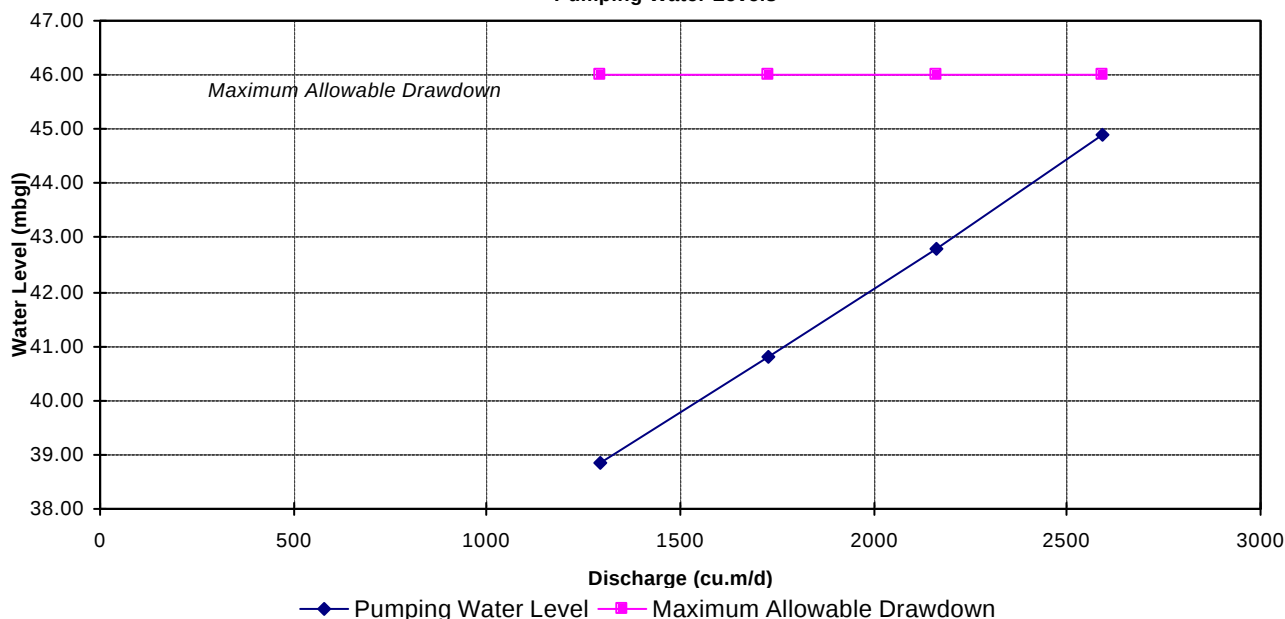
Dist to second bore m

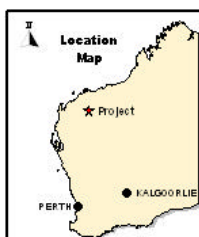
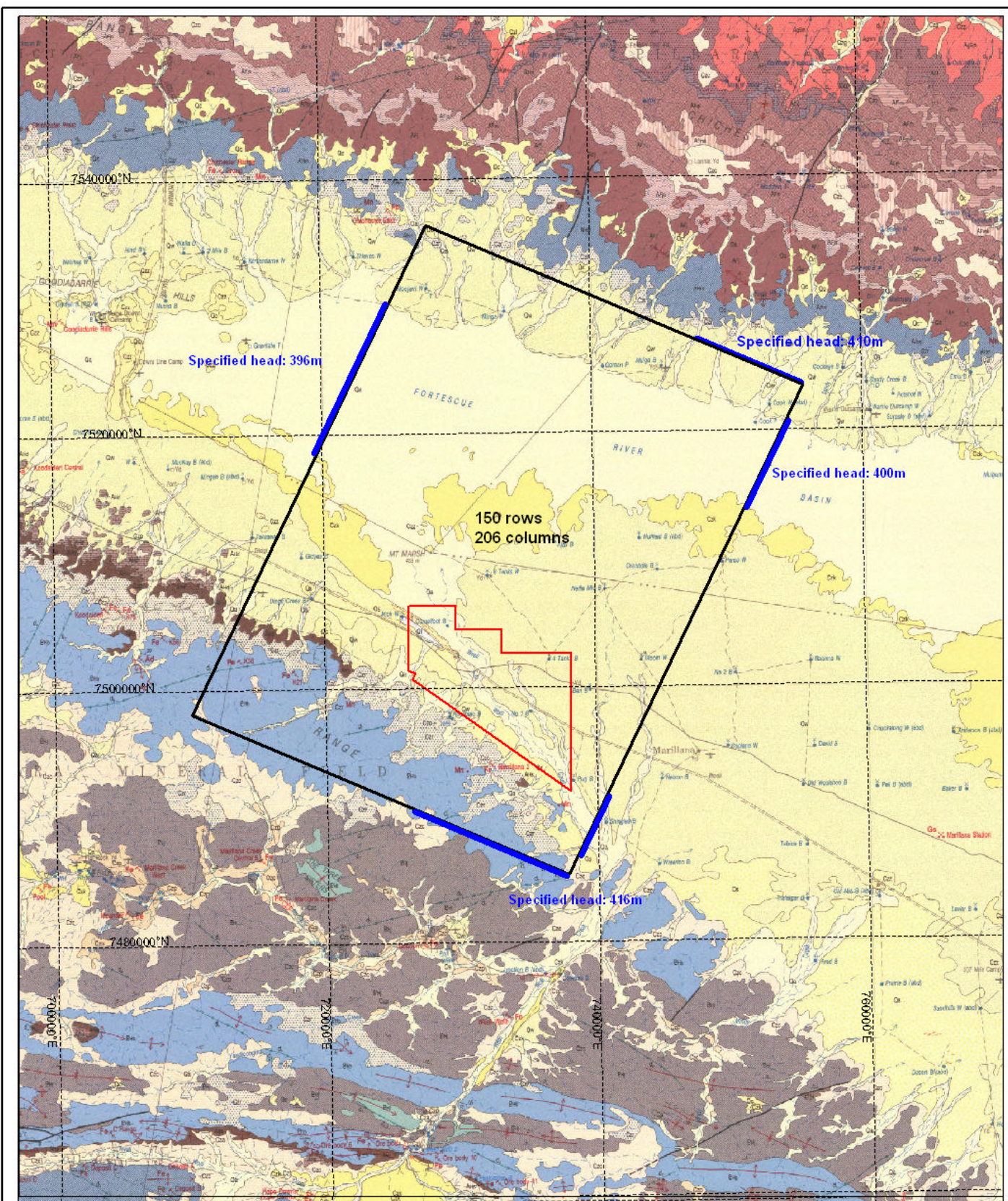
pumping rate m³/d

Calculations of Drawdown

Discharge		Short Term	Long Term	Interference	Total	Pumping
kL/d	L/s	Drawdown	Drawdown	Effects	Drawdown	Water Level
1295	15.0	1.3	3.88	0.00	5.16	38.86
1730	20.0	1.9	5.18	0.00	7.09	40.79
2160	25.0	2.6	6.47	0.00	9.09	42.79
2592	30.0	3.4	7.77	0.00	11.20	44.90

Source Reliable Output Pumping Water Levels





LEGEND

Model Domain

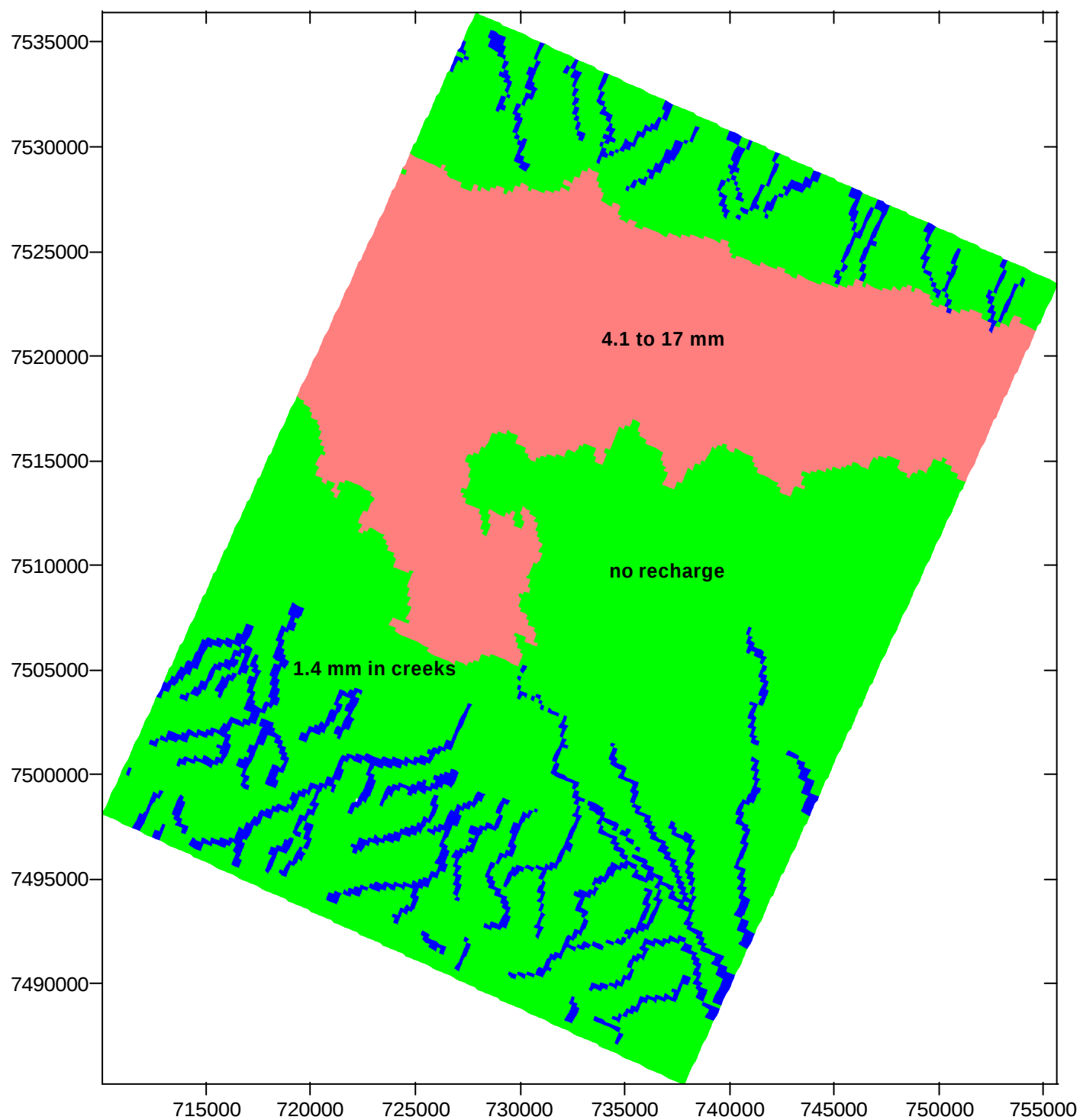
Specified head

E47_1408 Tenement Area

0 5 10
Kilometers

Figure 10: Extent and boundary conditions of the groundwater model

Author: AG	Date: 3 October 2008
Drawn: AH	Revised:
Job No: 8320	Report No:
Projection: GDA94 250	Scale: 1:275,000



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