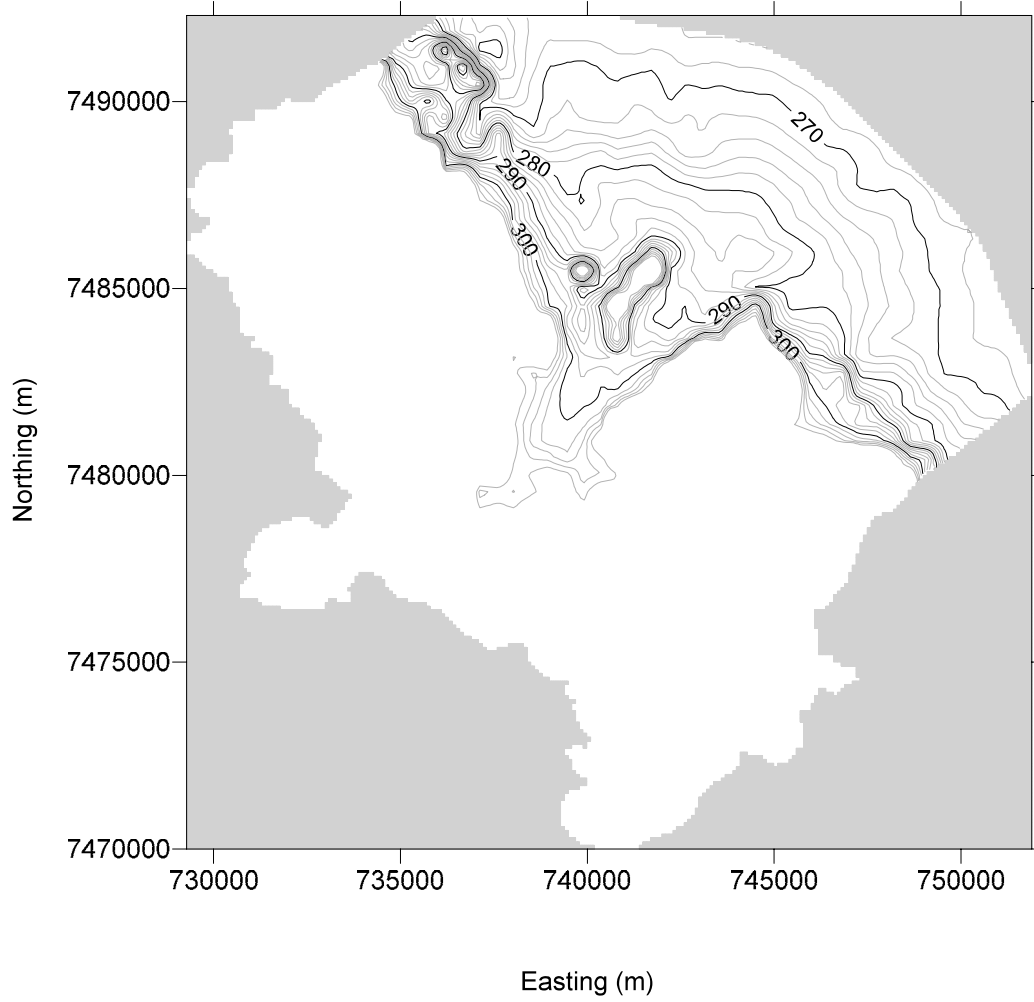
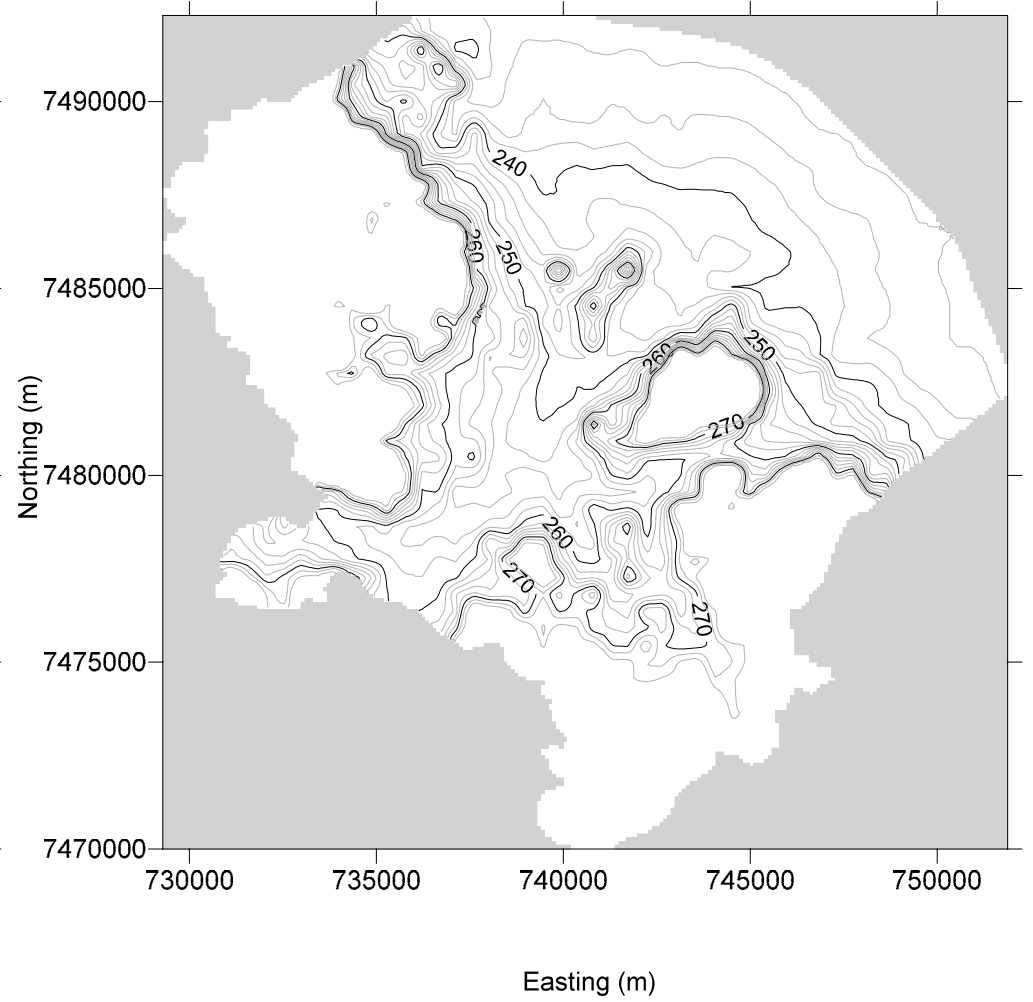


Base of Layer 4



Base of Layer 5



LOCATION MAP



LEGEND

- Minor Elevation Contour (mAHd), shown at 2m interval
- Major Elevation Contour (mAHd)m shown at 10m interval

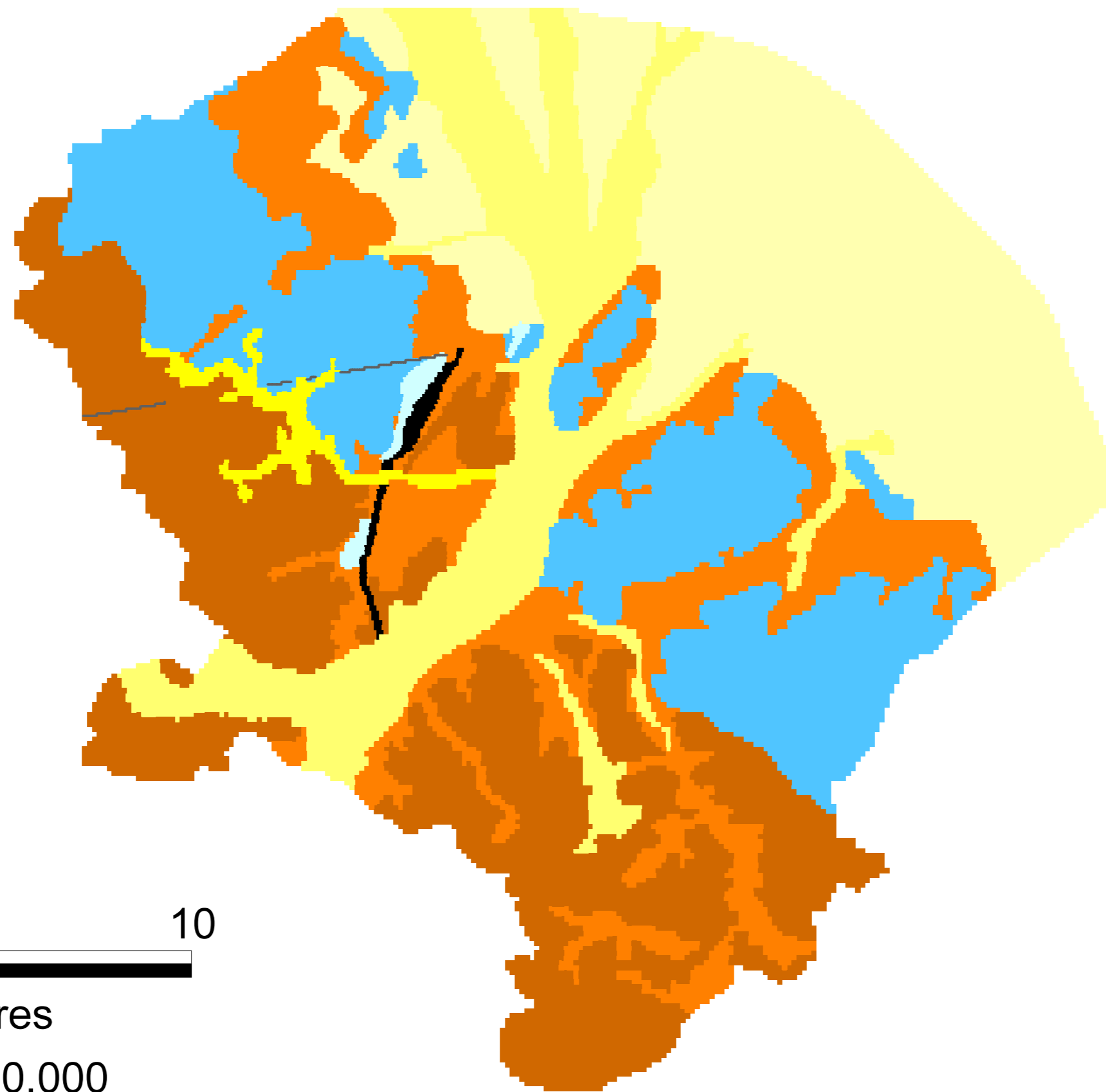
AUTHOR: KR
 DRAWN: KR
 DATE: 3 Nov 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:200,000 (at A4)



FIGURE 4.4
**CONTOURS OF
 BASE ELEVATION
 LAYER 4 AND LAYER 5**



kilometres

Scale: 1:100,000

LOCATION MAP



Aquifer Property Zones

- Weeli Wolli Creek Alluvium (Tributary)
- Weeli Wolli Creek Alluvium (Main Channel)
- Weeli Wolli Creek Outwash
- Scree
- Brockman Iron Formation
- Mineralised Brockman Iron and Weeli Wolli Formations
- Permeable Fault (Adjacent to Orebody)
- Weeli Wolli Formation

— Horizontal Flow Barrier (Dyke)

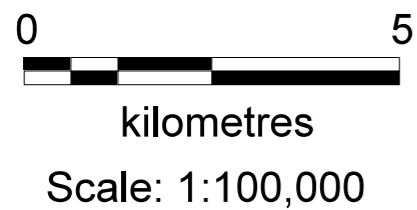
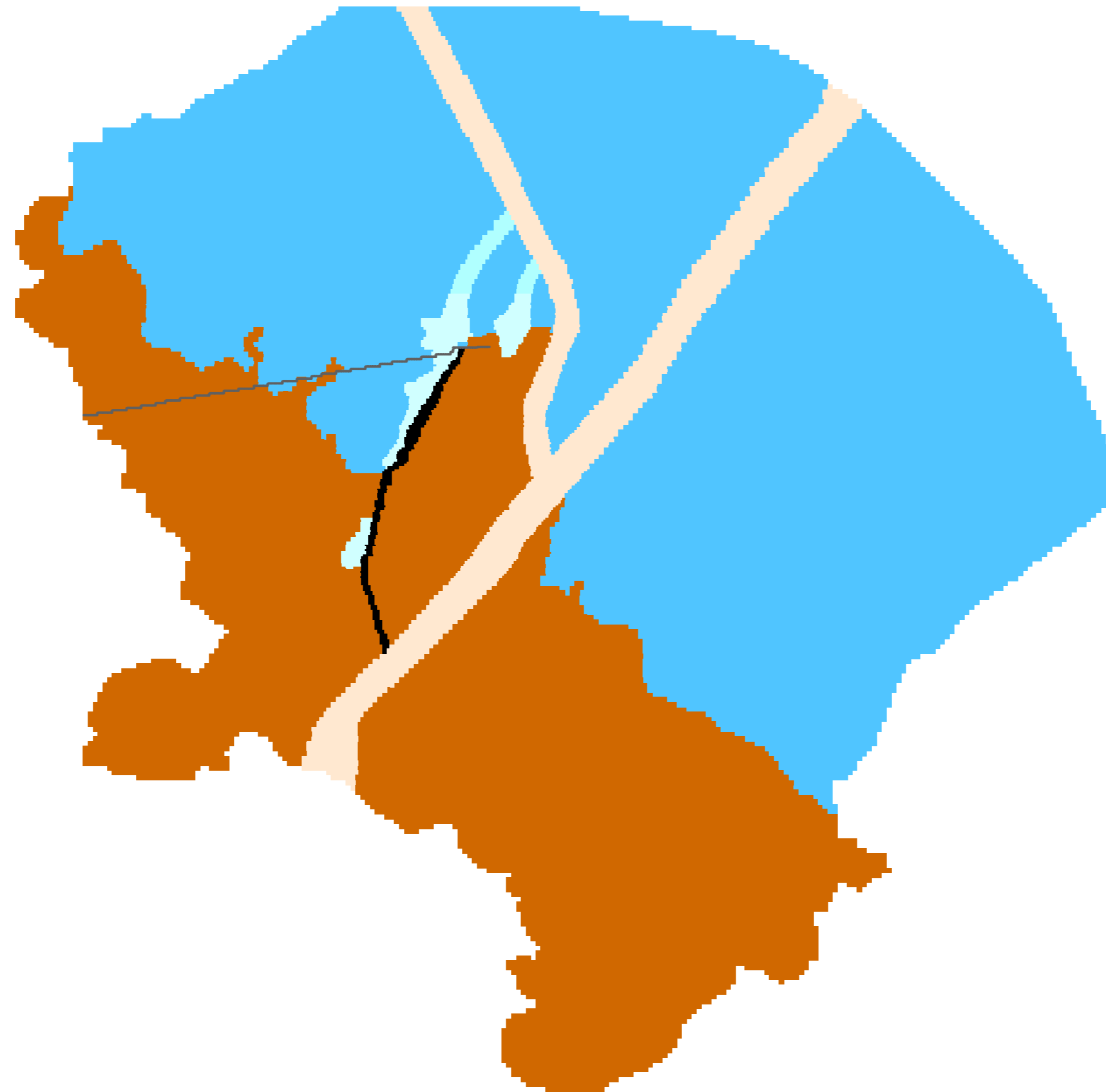
AUTHOR: KLR
 DRAWN: KLR
 DATE: 7/11/15

REPORT NO: 062
 REVISION: A
 JOB NO: 013B

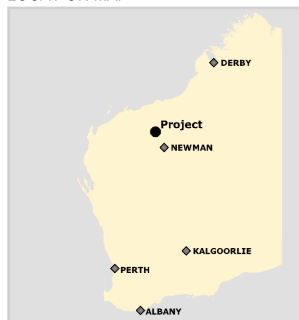
NOTES & DATA SOURCES:
 Data based on AQ2 model grid
 Data on aquifer properties extracted from AQ2 groundwater flow model
 NOT FOR CONSTRUCTION



FIGURE 4.5
AQUIFER PROPERTY
ZONES LAYER 1



LOCATION MAP



Aquifer Parameter Zones

- Channel Iron Deposit
- Brockman Iron Formation
- Submineralised Brockman Iron and Weeli Wolli Formations
- Permeable Fault (Adjacent to Orebody)
- Weeli Wolli Formation
- Mineralised Brockman Iron and Weeli Wolli Formation

— Horizontal Flow Barrier (Dyke)

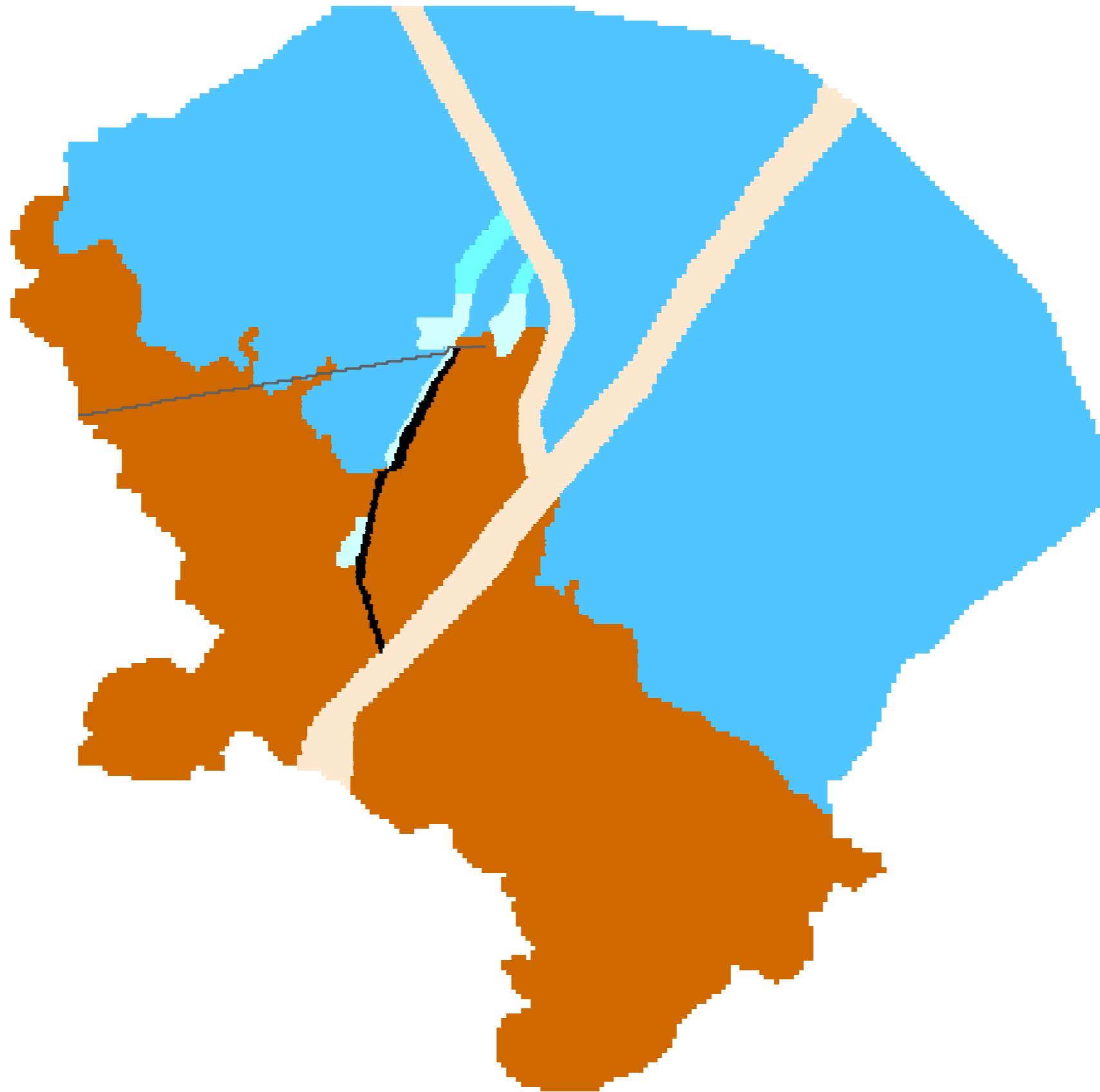
AUTHOR: KLR
 DRAWN: KLR
 DATE: 7/11/15

REPORT NO: 062
 REVISION: A
 JOB NO: 013B

NOTES & DATA SOURCES:
 Data based on AQ2 model grid
 Data on aquifer properties extracted from AQ2 groundwater flow model
 NOT FOR CONSTRUCTION



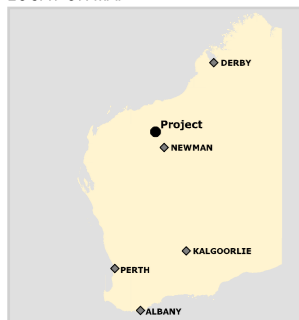
FIGURE 4.6
AQUIFER PROPERTY
ZONES LAYER 2



kilometres

Scale: 1:100,000

LOCATION MAP



Aquifer Parameter Zones

- Channel Iron Deposit
- Brockman Iron Formation
- Submineralised Brockman Iron and Weeli Wolli Formation
- Permeable Fault (Adjacent to Orebody)
- Weeli Wolli Formation
- Mineralised Brockman Iron and Weeli Wolli Formation

— Horizontal Flow Barrier (Dyke)

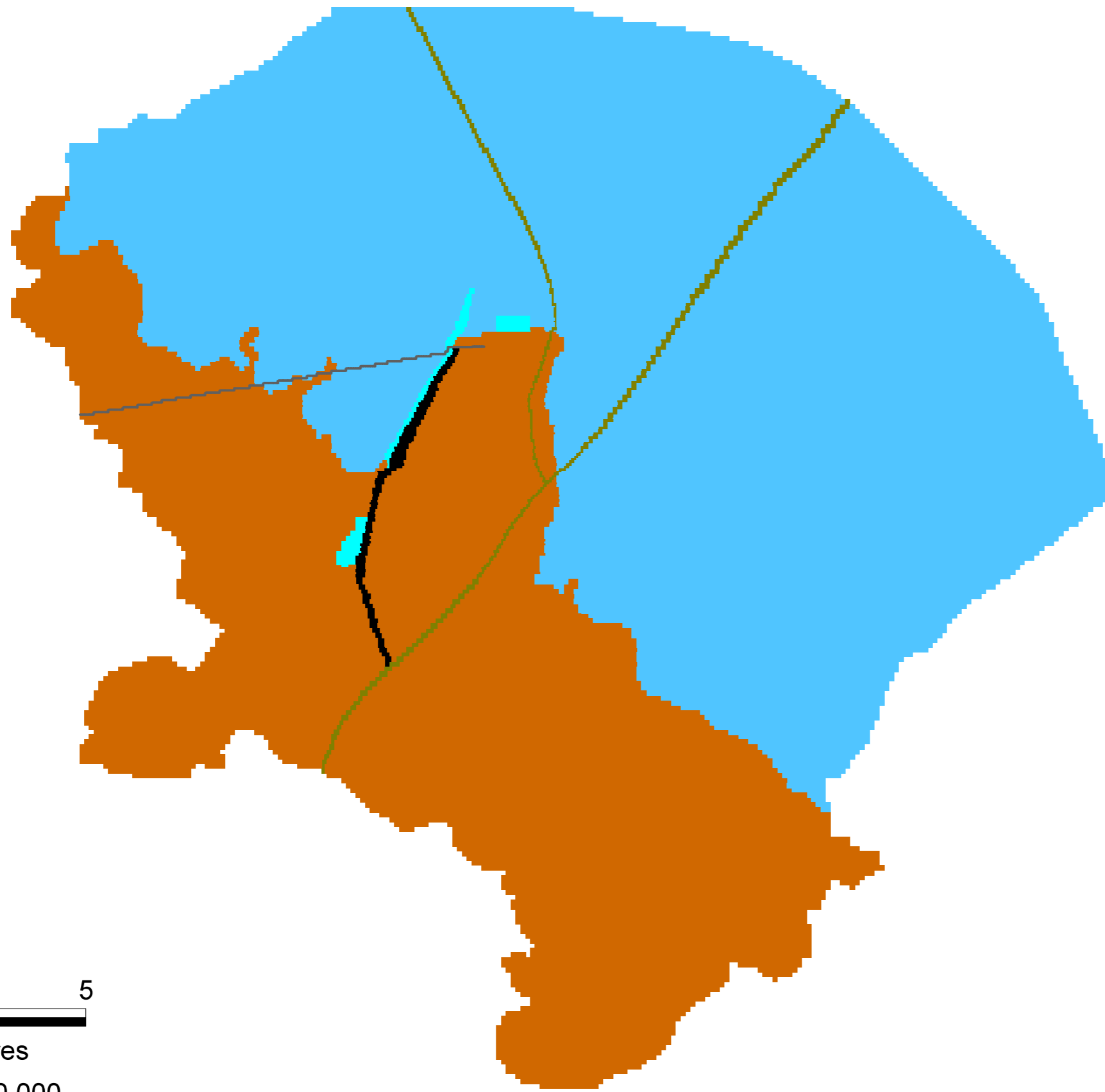


AUTHOR: KLR
 DRAWN: KLR
 DATE: 7/11/15

REPORT NO: 062
 REVISION: A
 JOB NO: 013B

NOTES & DATA SOURCES:
 Data based on AQ2 model grid
 Data on aquifer properties extracted from AQ2 groundwater flow model
 NOT FOR CONSTRUCTION

FIGURE 4.7
AQUIFER PROPERTY
ZONES LAYER 3



kilometres
Scale: 1:100,000

LOCATION MAP



LEGEND

- Fault Under Weeli Wolli Creek
- Brockman Iron Formation
- Mineralised Brockman and Weeli Wolli
- Fault (Adjacent to Orebody)
- Weeli Wolli Formation

— Horizontal Flow Barrier (Dyke)

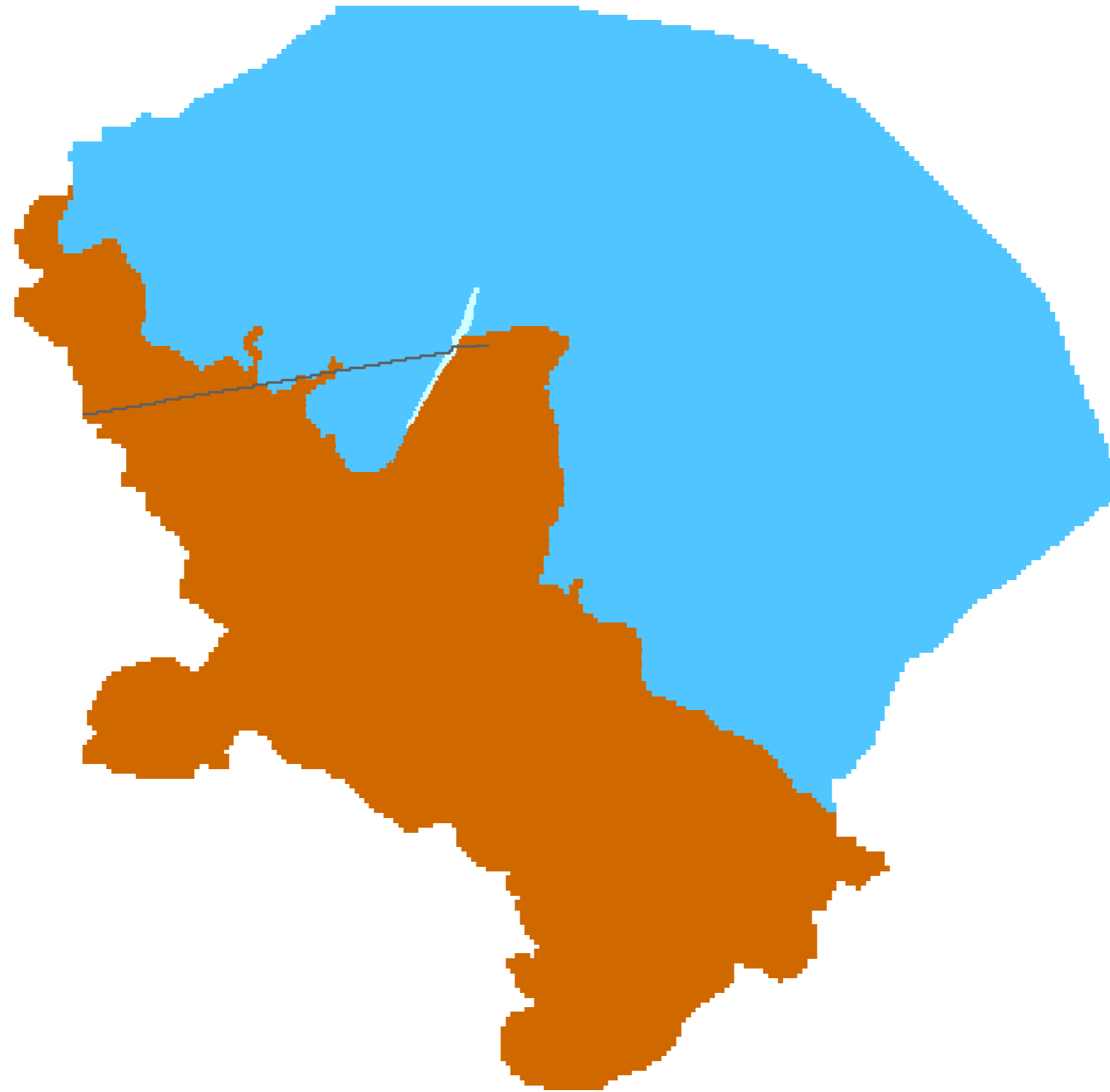
AUTHOR: KLR
DRAWN: KLR
DATE: 27/11/15

REPORT NO: 062
REVISION: A
JOB NO: 013B

NOTES & DATA SOURCES:
Data based on AQ2 model grid
Data on aquifer properties extracted from AQ2 groundwater flow model
NOT FOR CONSTRUCTION



FIGURE 4.8
AQUIFER PROPERTY
ZONES LAYER 4



kilometres
Scale: 1:100,000

LOCATION MAP



Aquifer Parameter Zones

- Brockman Iron Formation
- Mineralised Brockman Iron and Weeli Wolli Formation
- Weeli Wolli Formation

— Horizontal Flow Barrier (Dyke)

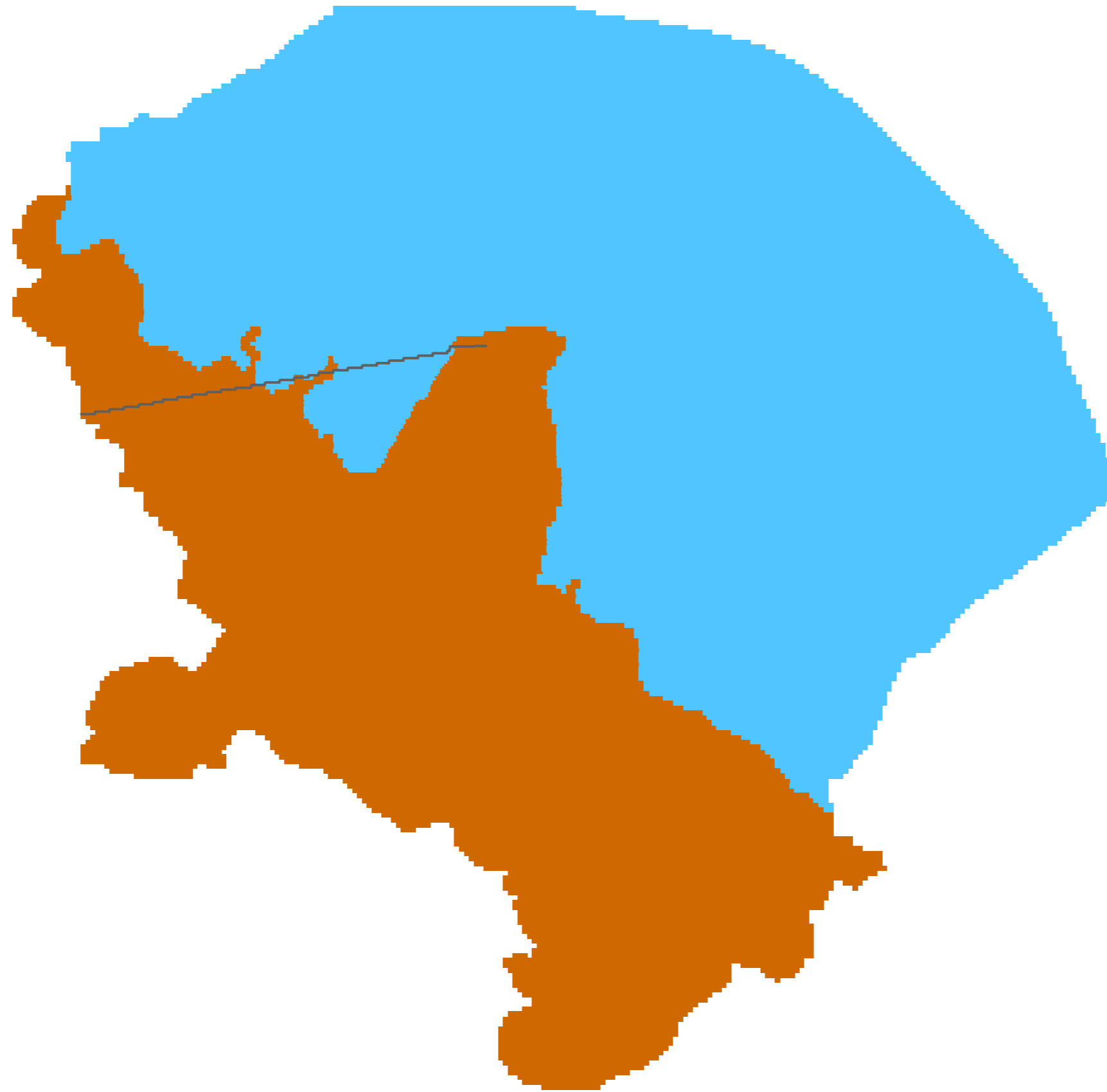
AUTHOR: KLR
DRAWN: KLR
DATE: 7/11/15

REPORT NO: 062
REVISION: A
JOB NO: 013B

NOTES & DATA SOURCES:
Data based on AQ2 model grid
Data on aquifer properties extracted from AQ2 groundwater flow model
NOT FOR CONSTRUCTION



FIGURE 4.9
AQUIFER PROPERTY
ZONES LAYER 5



kilometres

Scale: 1:100,000

LOCATION MAP



Aquifer Parameter Zones

- Brockman Iron Formation
- Weeli Wollli Formation

— Horizontal Flow Barrier (Dyke)

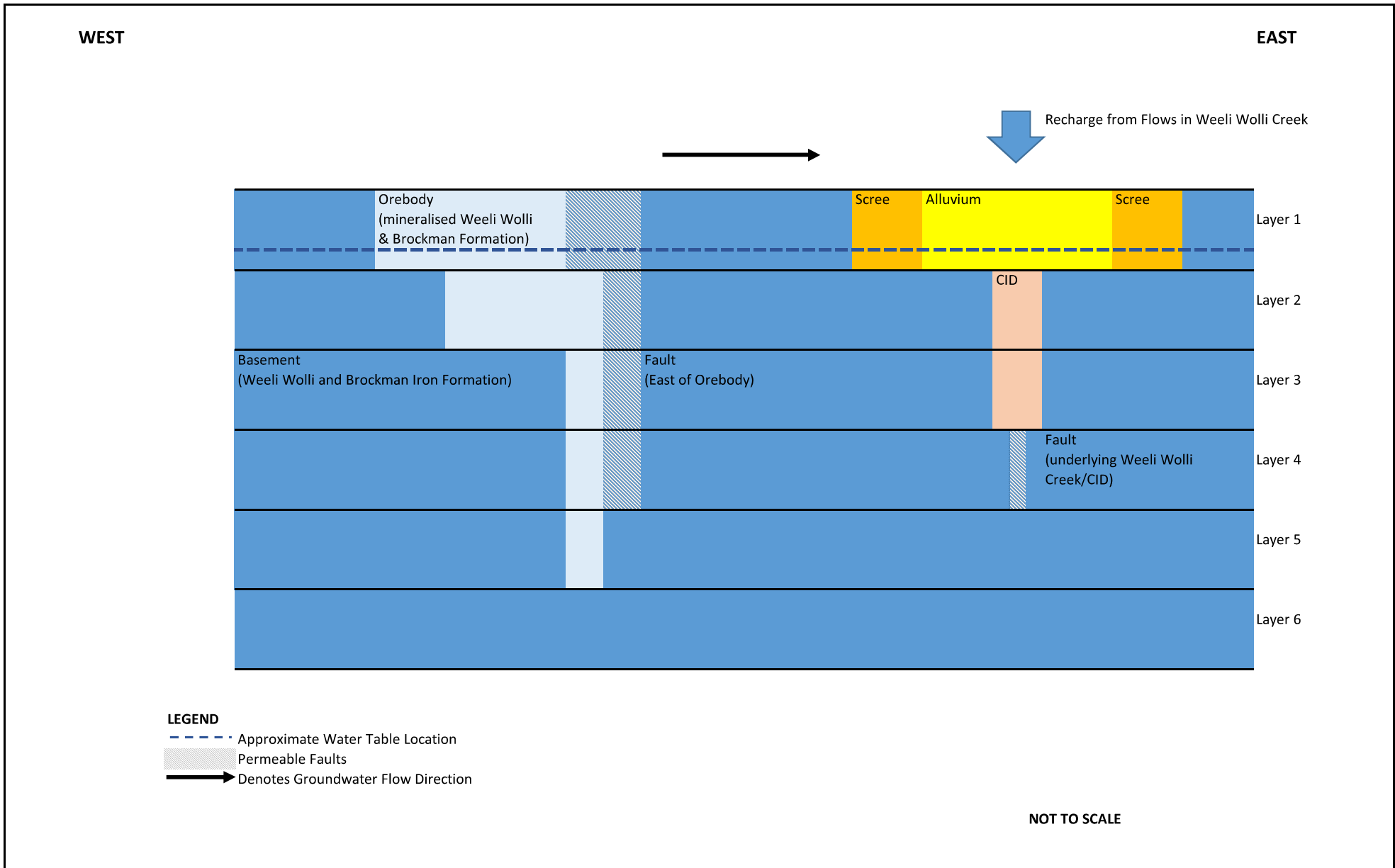
AUTHOR: KLR
 DRAWN: KLR
 DATE: 7/11/15

REPORT NO: 062
 REVISION: A
 JOB NO: 013B

NOTES & DATA SOURCES:
 Data based on AQ2 model grid
 Data on aquifer properties extracted from AQ2 groundwater flow model
 NOT FOR CONSTRUCTION

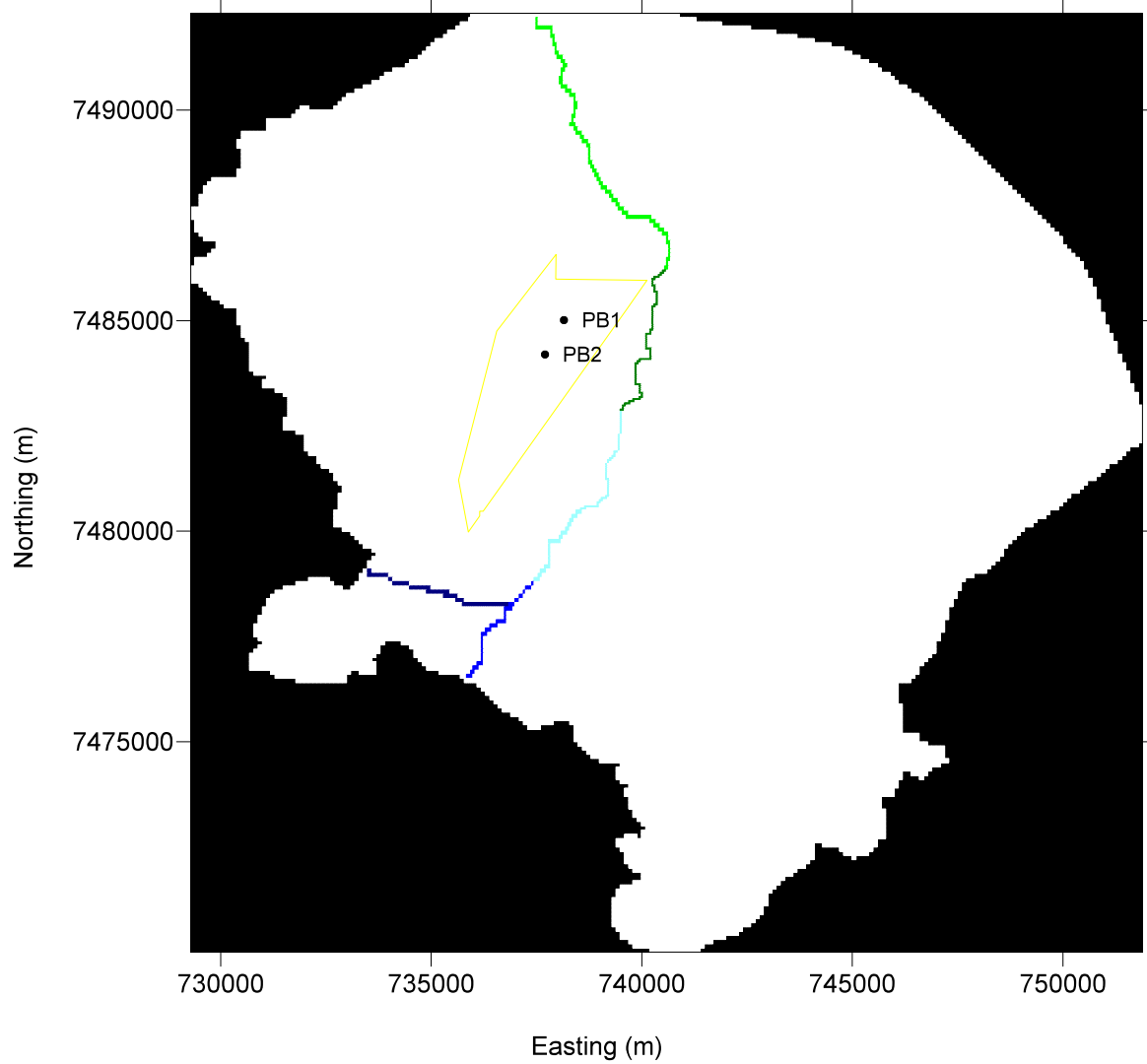


FIGURE 4.10
AQUIFER PROPERTY
ZONES LAYER 6



CONCEPTUAL MODEL SECTION FIGURE 4.11





LOCATION MAP



LEGEND

- Project Area Boundary
- Pumping Bore Used for Transient Calibration

Maximum Assigned Recharge Rates

- Recharge = $3.568 \times 10^{-3} \text{m/d}$
- Recharge = $3.615 \times 10^{-3} \text{m/d}$
- Recharge = $2.0225 \times 10^{-2} \text{m/d}$
- Recharge = $1.4177 \times 10^{-2} \text{m/d}$
- Recharge = $5.436 \times 10^{-3} \text{m/d}$

AUTHOR: KR
 DRAWN: KR
 DATE: 3 Nov 2015

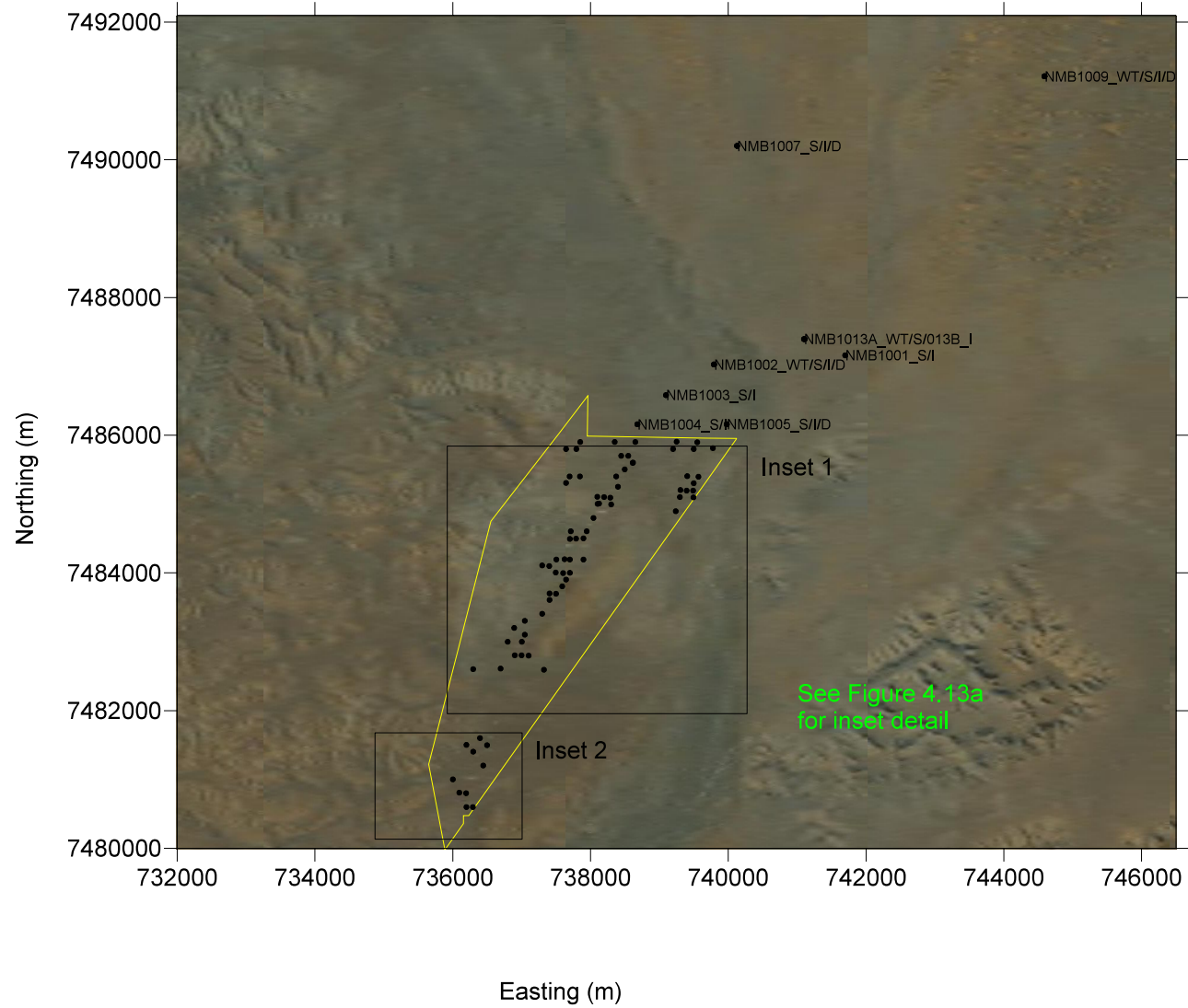
REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)

f:/013b/GIS/Modelling Figures/Figures/062a Figure 4.12.srf



**FIGURE 4.12
 MODELLED RECHARGE
 DISTRIBUTION AND
 PUMPING LOCATIONS**



LOCATION MAP



LEGEND

- Project Area Boundary
- Location Use for Steady State Calibration

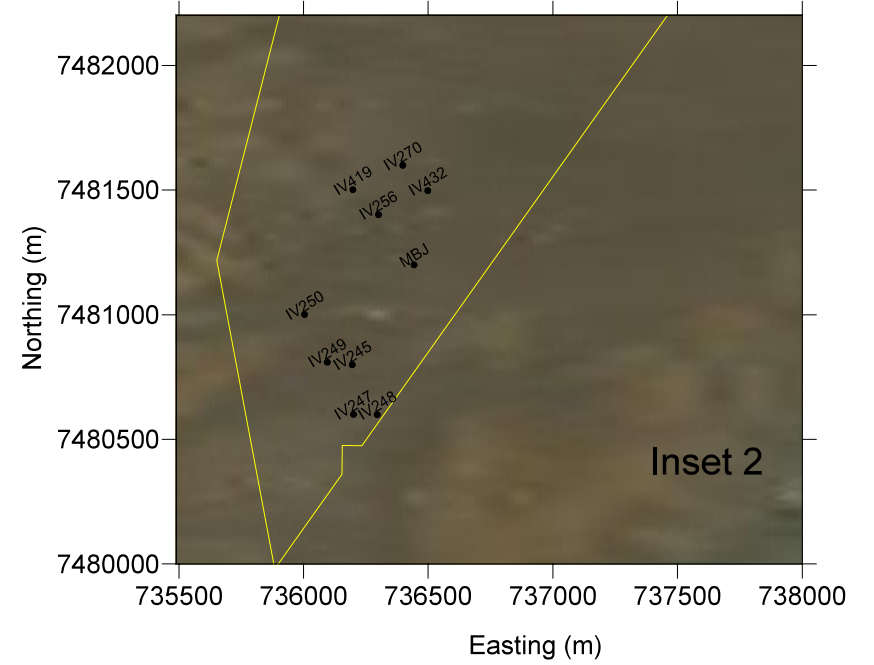
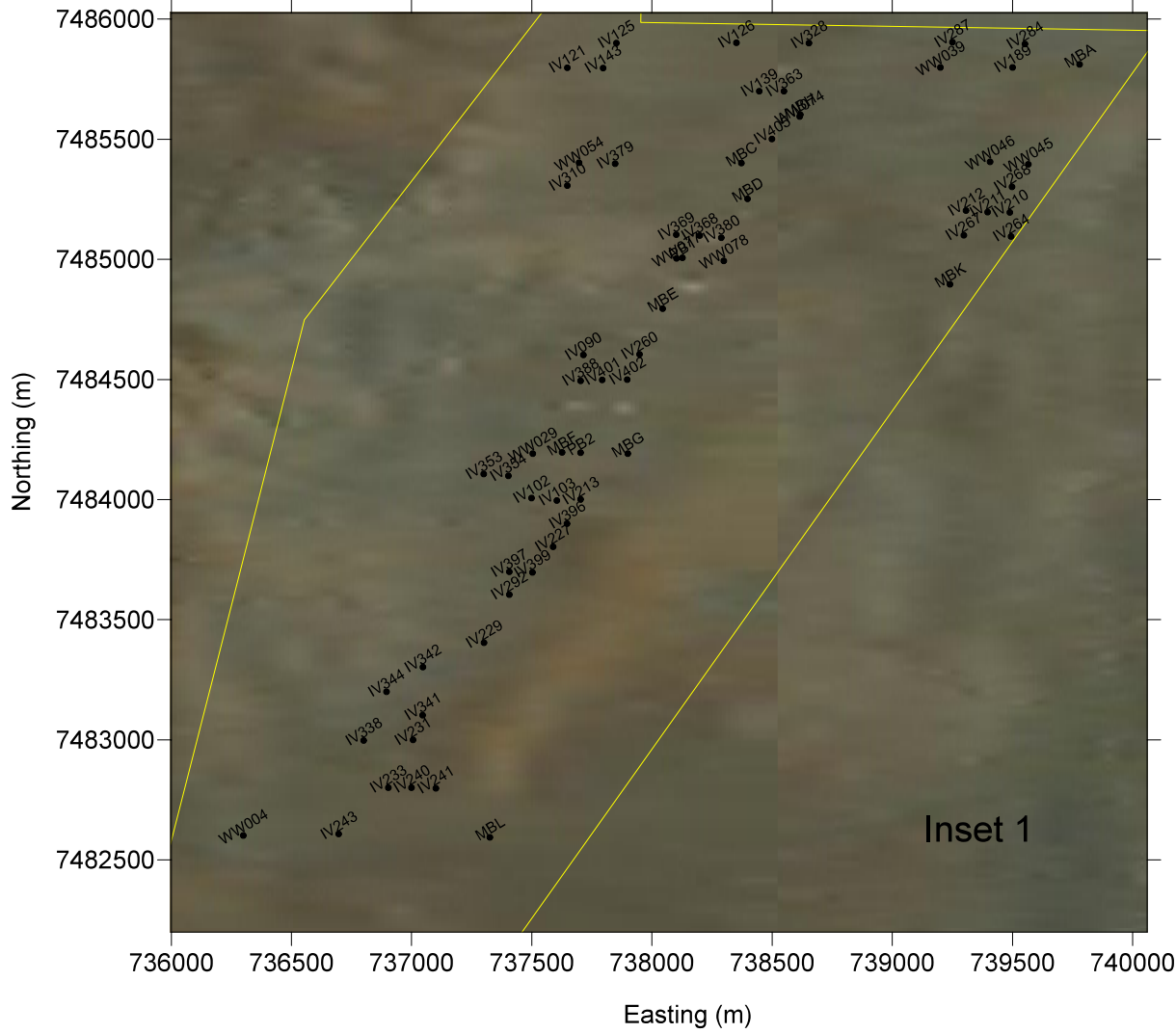
AUTHOR: KR
 DRAWN: KR
 DATE: 3 Nov 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:100,000 (at A4)



**FIGURE 4.13
 LOCATIONS USED FOR
 STEADY STATE MODEL
 CALIBRATION**



LOCATION MAP



LEGEND

- Project Area Boundary
- Location Use for Steady State Calibration

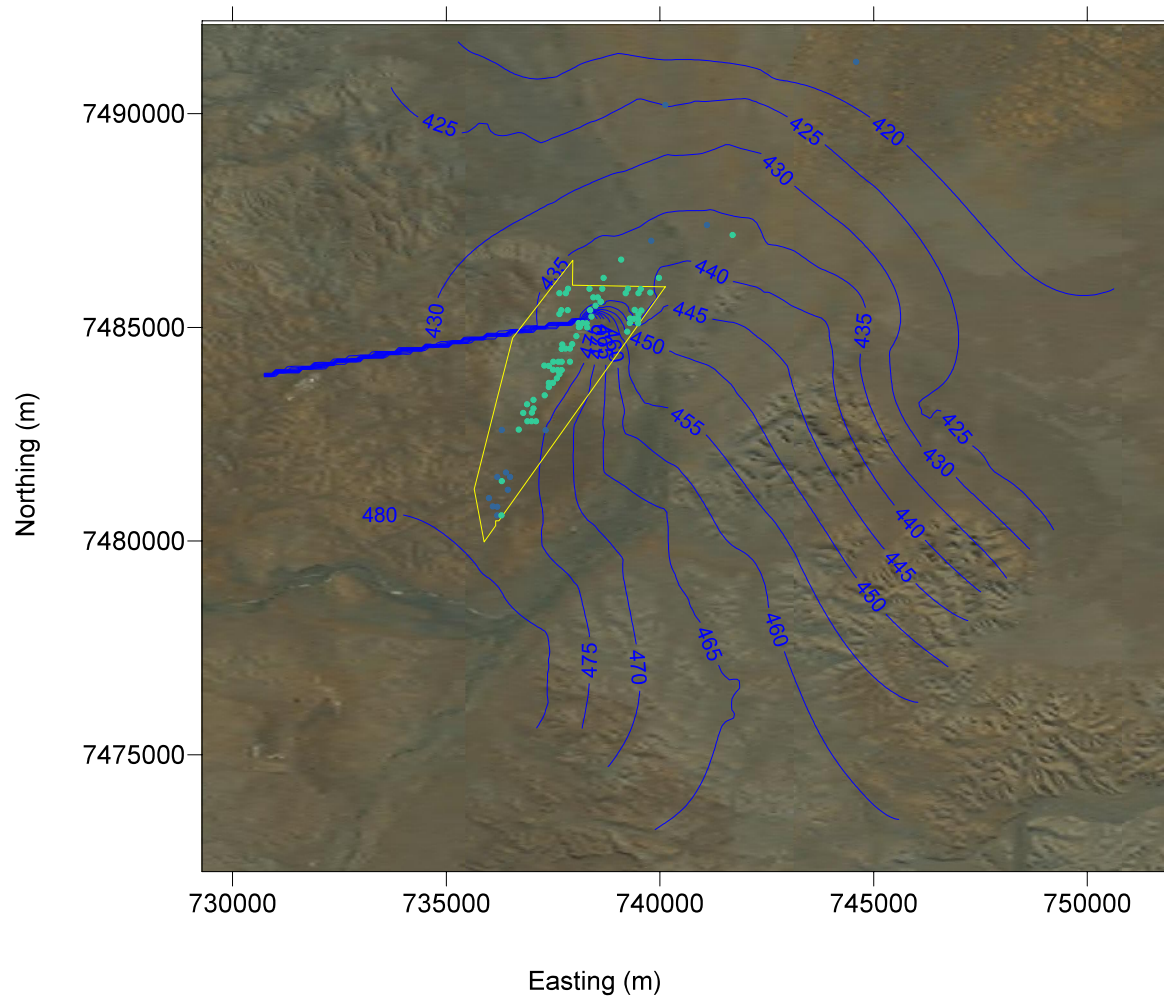


AUTHOR: KR
DRAWN: KR
DATE: 3 Nov 2015

REPORT NO: 062a
REVISION: A
JOB NO: 013B

GDA94 Zone 50
SCALE: 1:30,000 (at A4)

**FIGURE 4.13A
LOCATIONS USED FOR
STEADY STATE MODEL
CALIBRATION (INSETS)**



LOCATION MAP



LEGEND

- Measured Water Level Over Predicted (Predicted Water Level > Measured Water Level)
- Measured Water Level Under Predicted (Predicted Water Level < Measured Water Level)

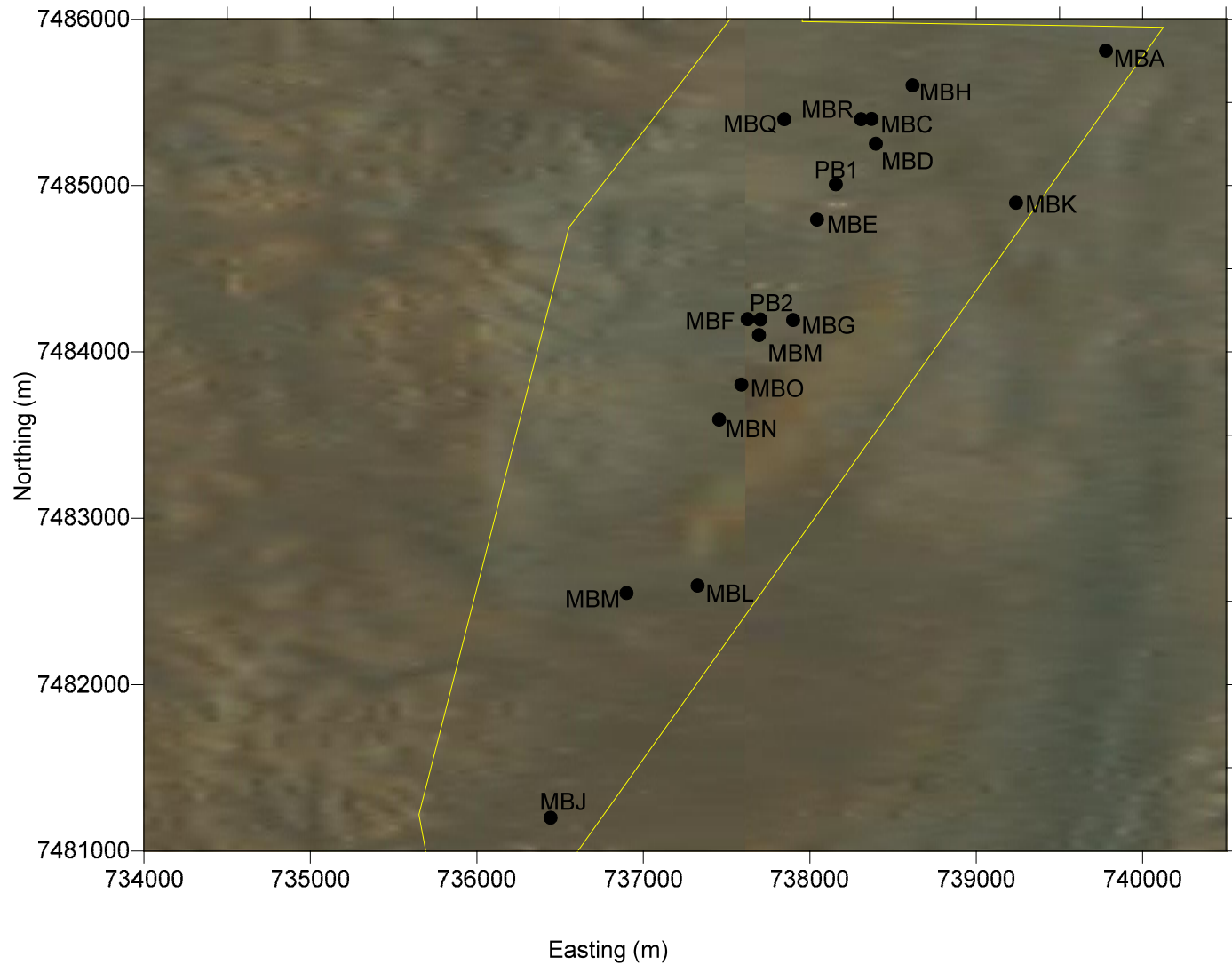


AUTHOR: KR
 DRAWN: KR
 DATE: 6 Jan 2016

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)

**FIGURE 4.14
 CONTOURS OF
 PREDICTED STEADY
 STATE WATER LEVELS**



LOCATION MAP



LEGEND

- Project Area Boundary
- Locations Used for Transient Calibration

AUTHOR: KR
 DRAWN: KR
 DATE: 3 Nov 2015

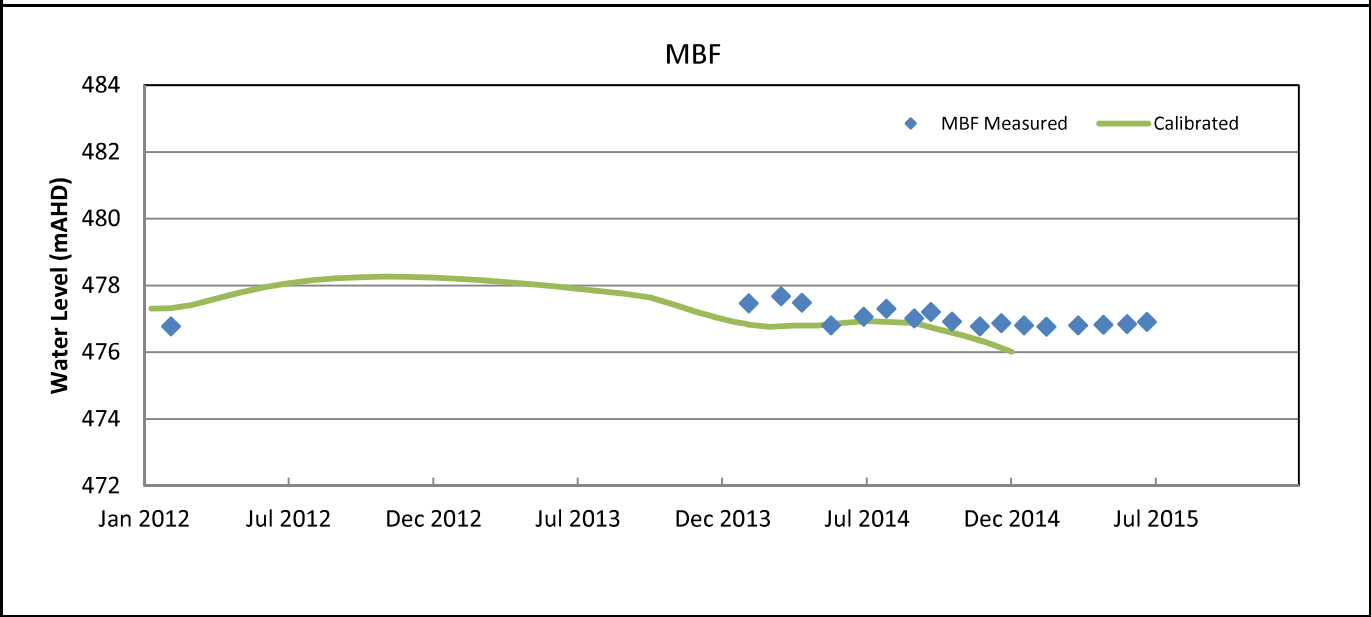
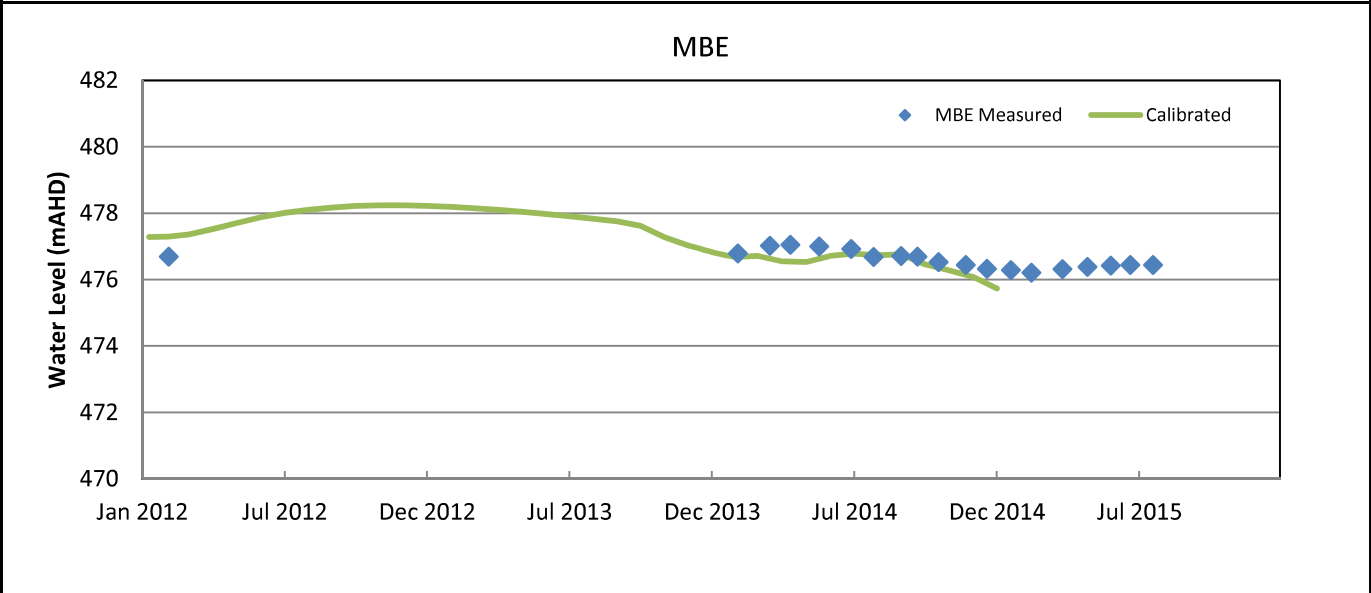
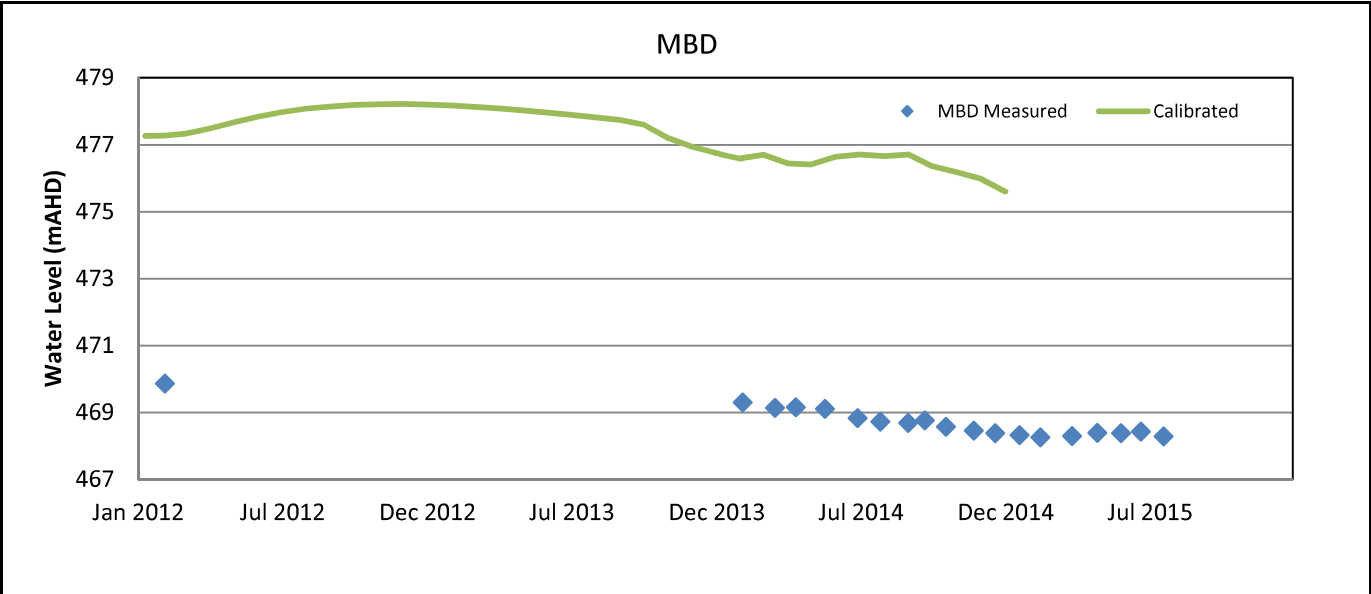
REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:40,000 (at A4)

f:/013b/GIS/Modelling Figures/Figures/062a Figure 4.15revb.srf

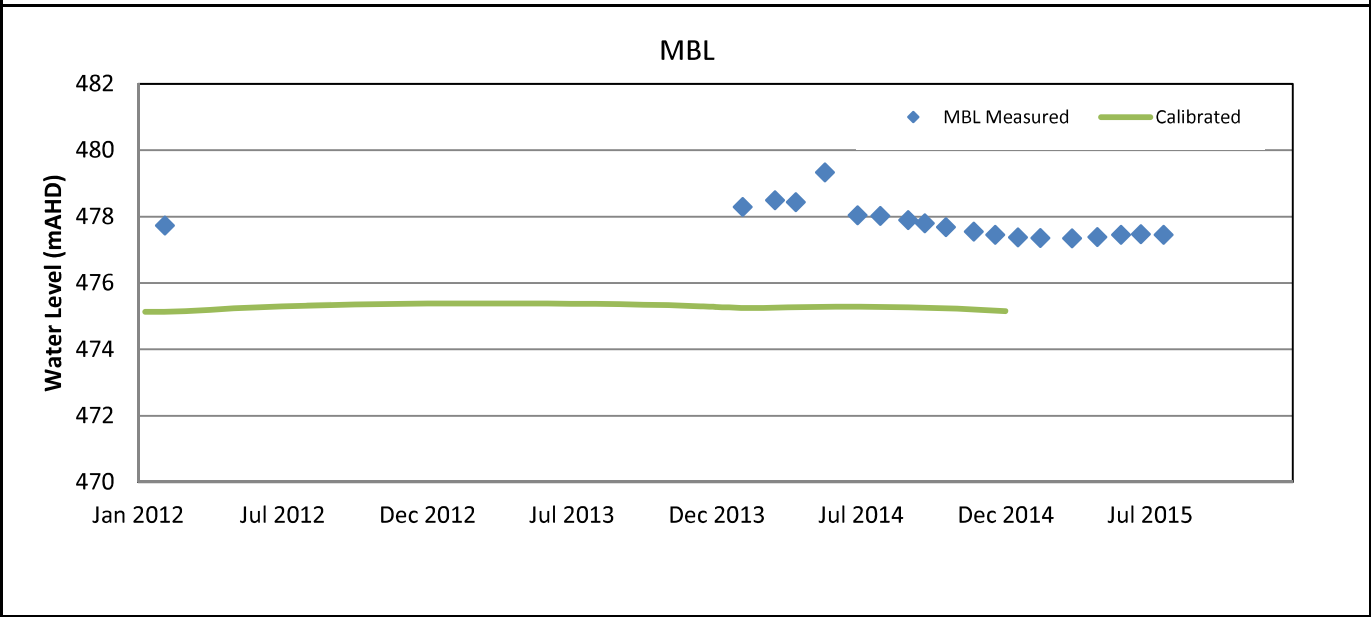
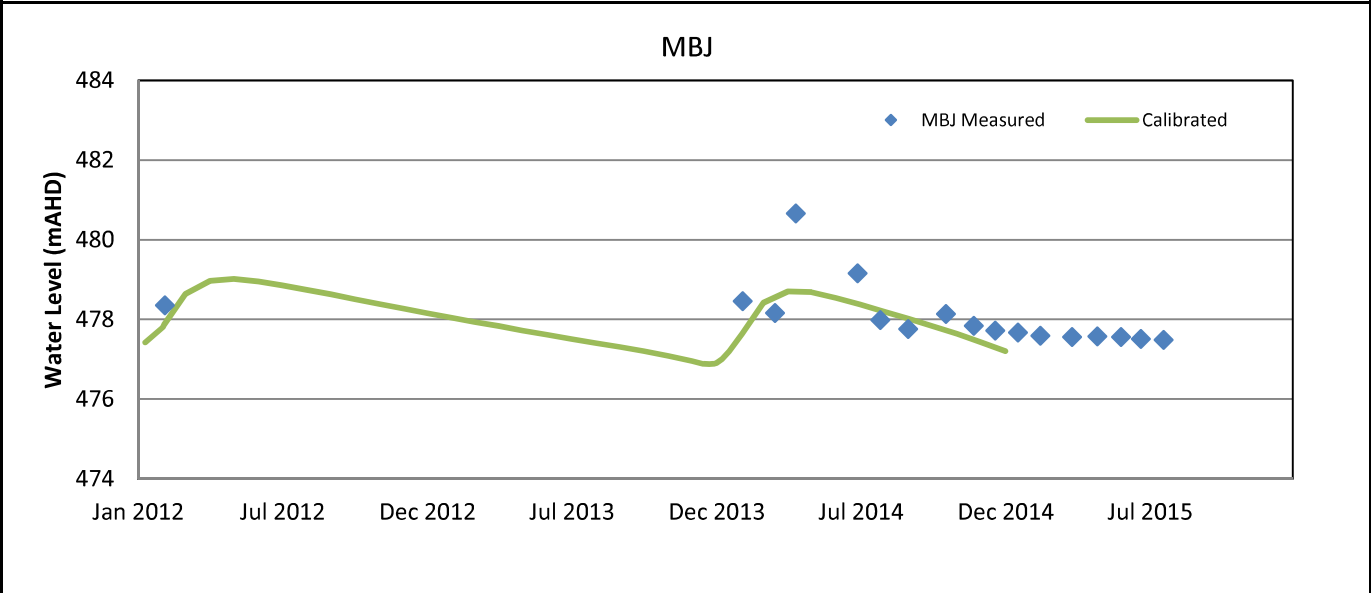
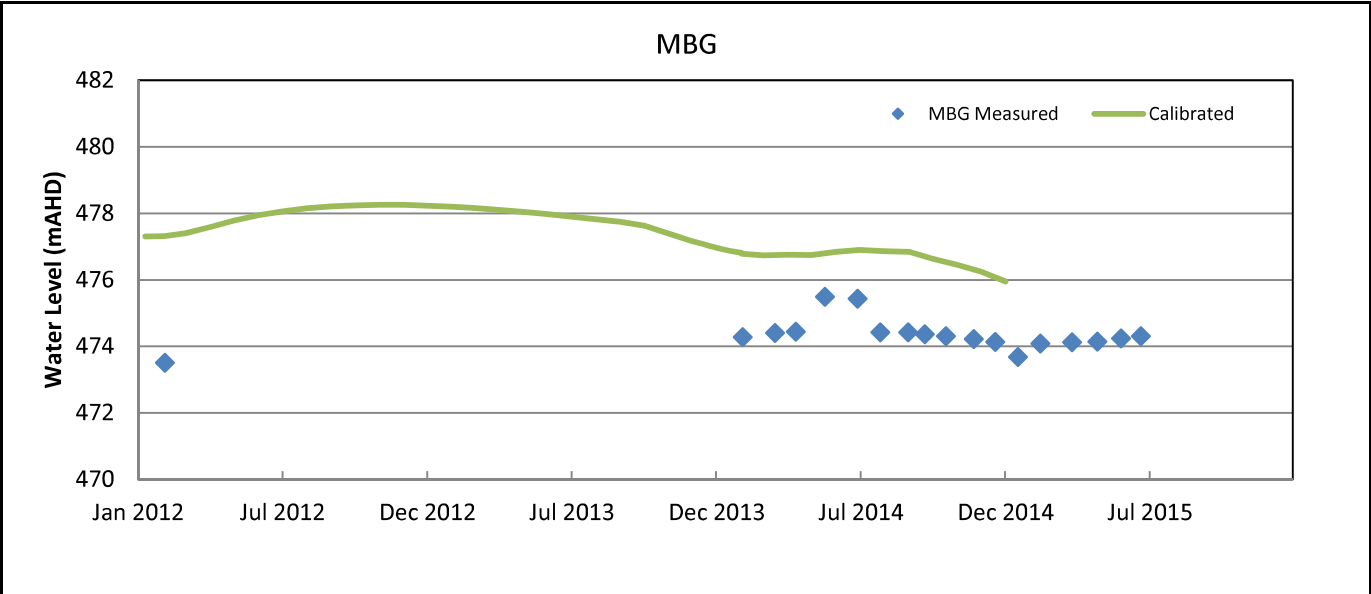


**FIGURE 4.15
 BORES USED FOR
 TRANSIENT MODEL
 CALIBRATION**



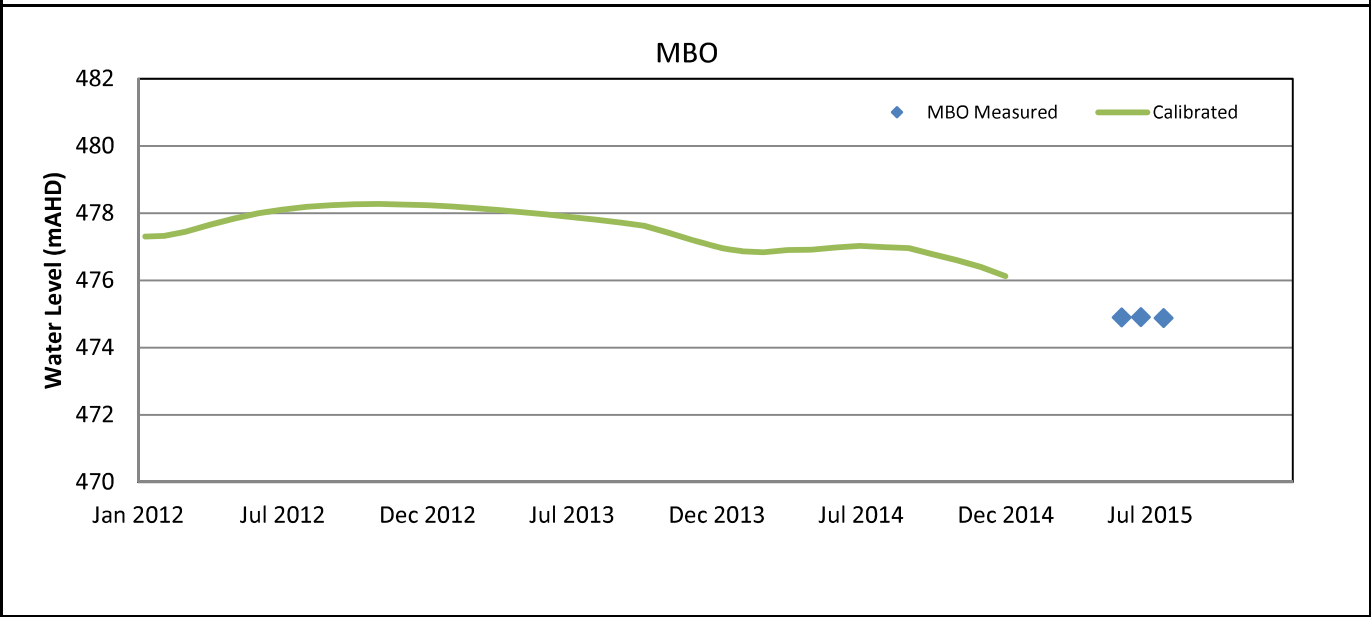
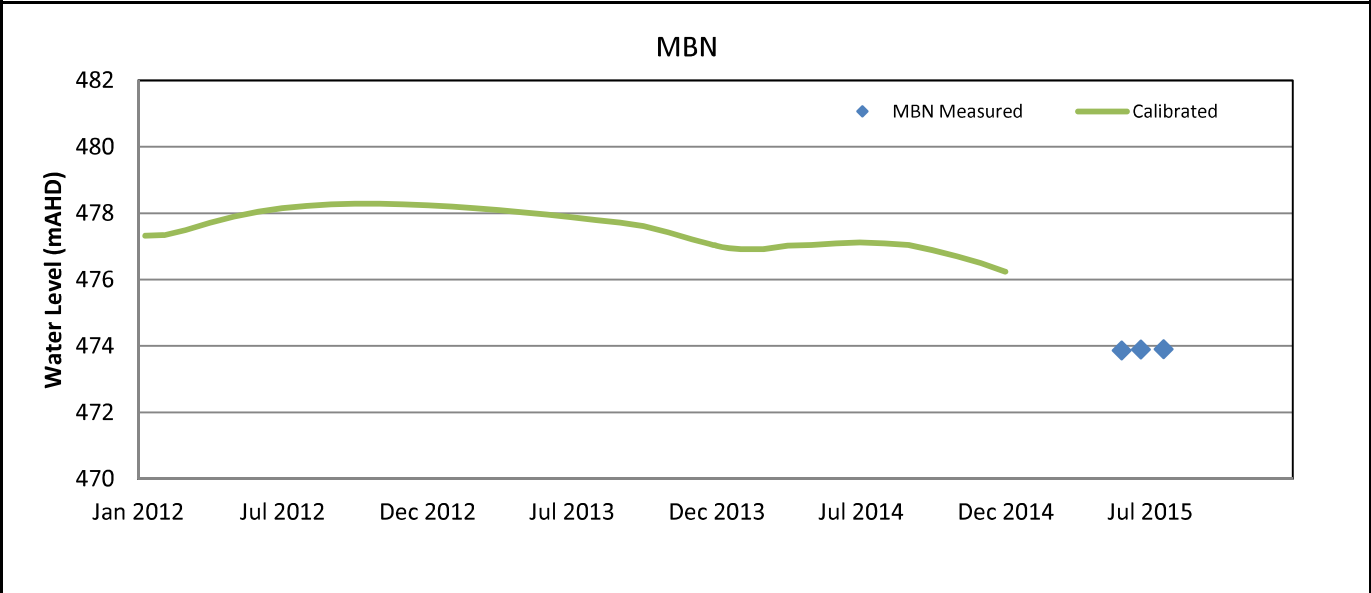
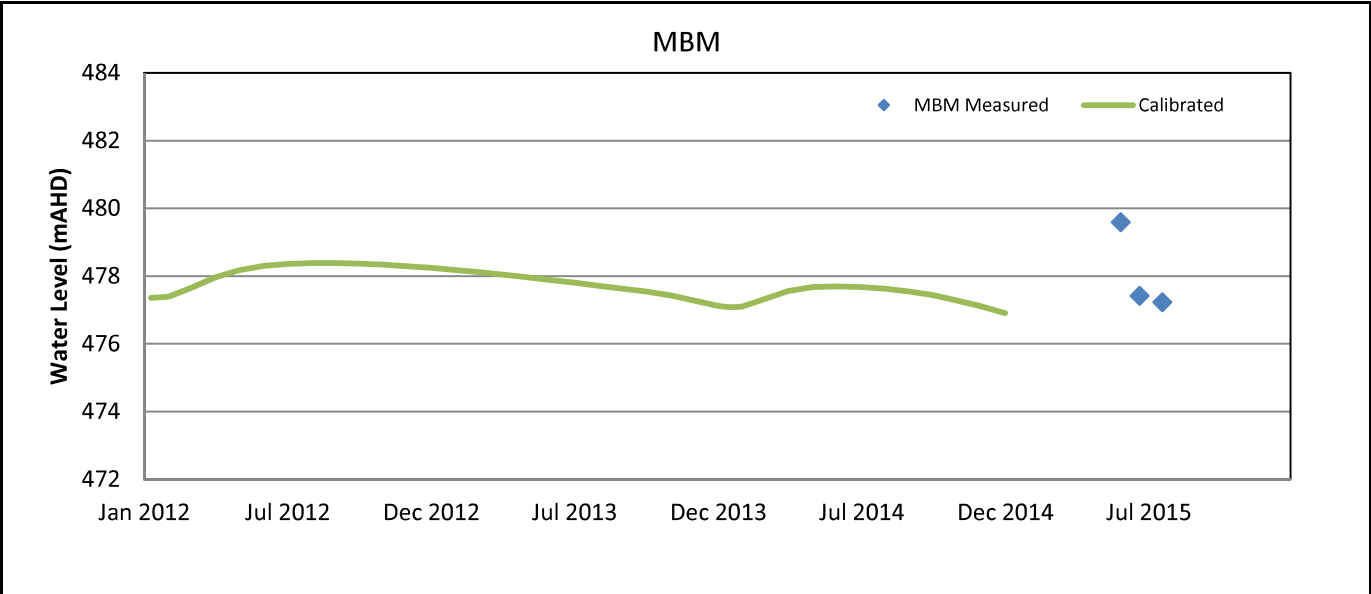
CALIBRATION HYDROGRAPHS FIGURE 4.16

F:\013B\2 TECH\Modelling\AQ2 Model\Calibration\groundwater levels TR11AIV revE report.xlsx|Figure 4.16



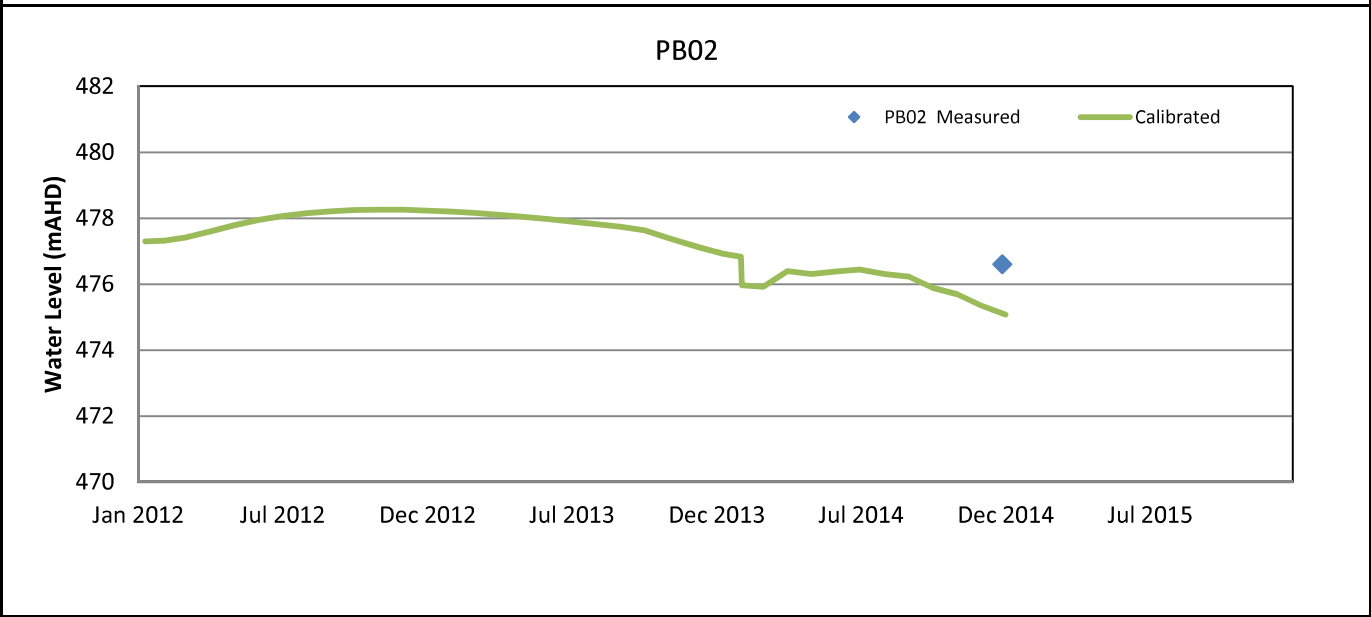
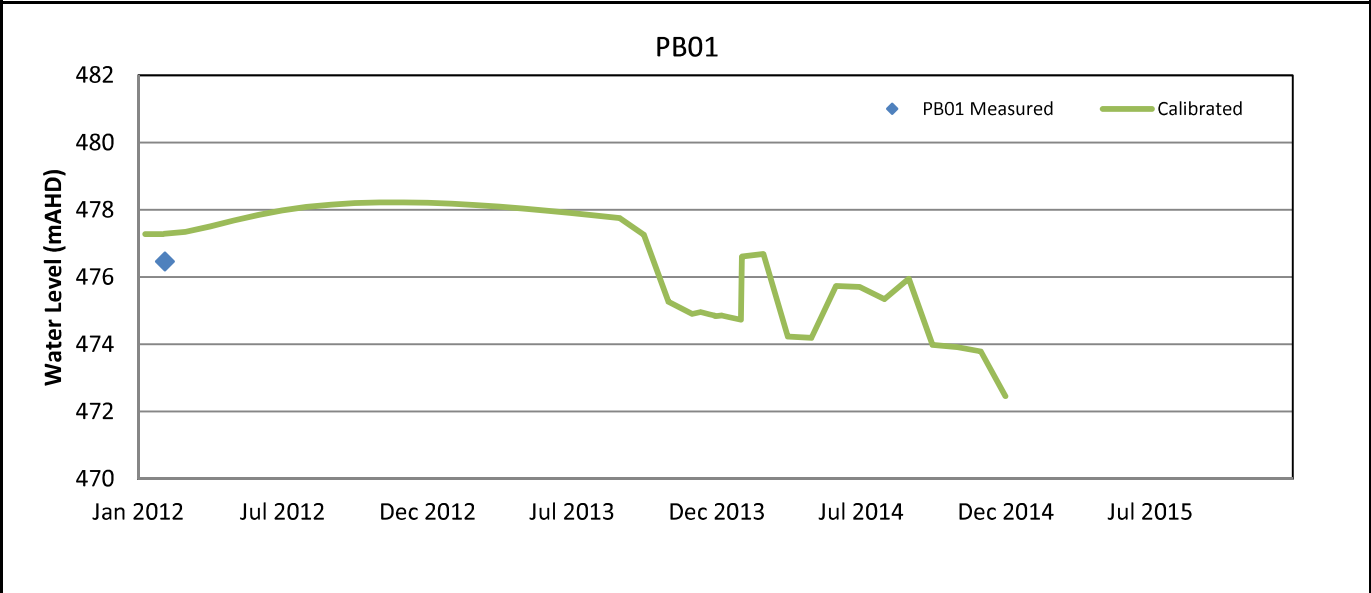
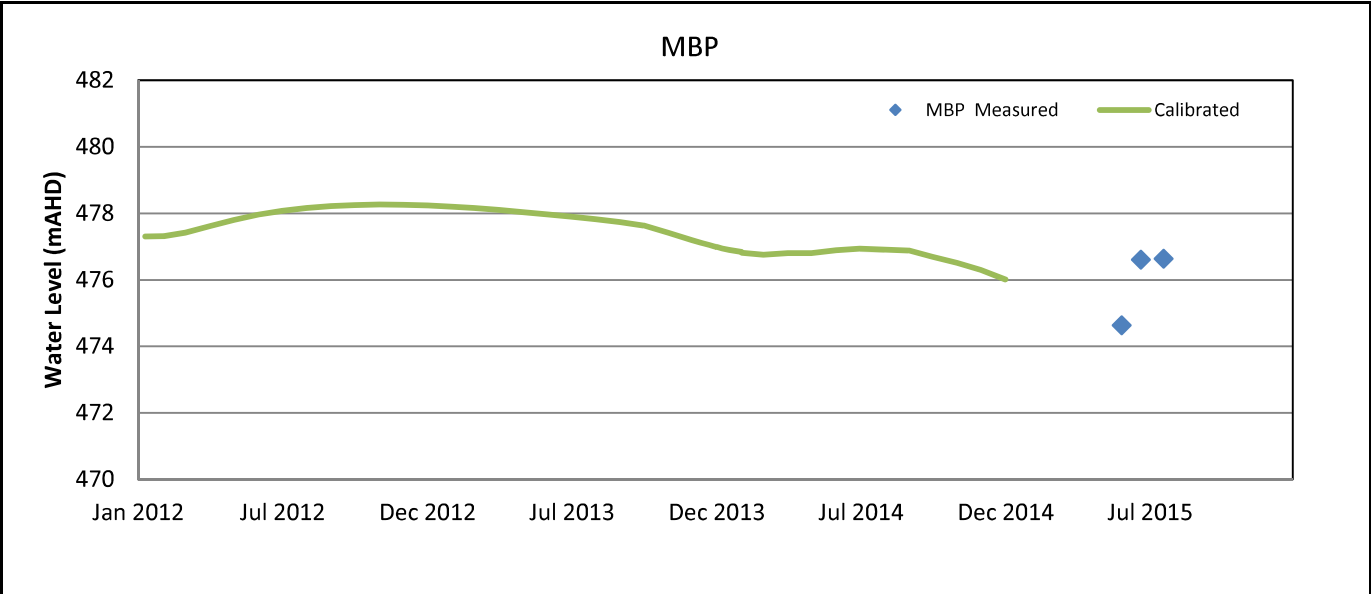
CALIBRATION HYDROGRAPHS FIGURE 4.17

F:\013B\2 TECH\Modelling\AQ2 Model\Calibration\groundwater levels TR11AIV revE report.xlsx|Figure 4.17



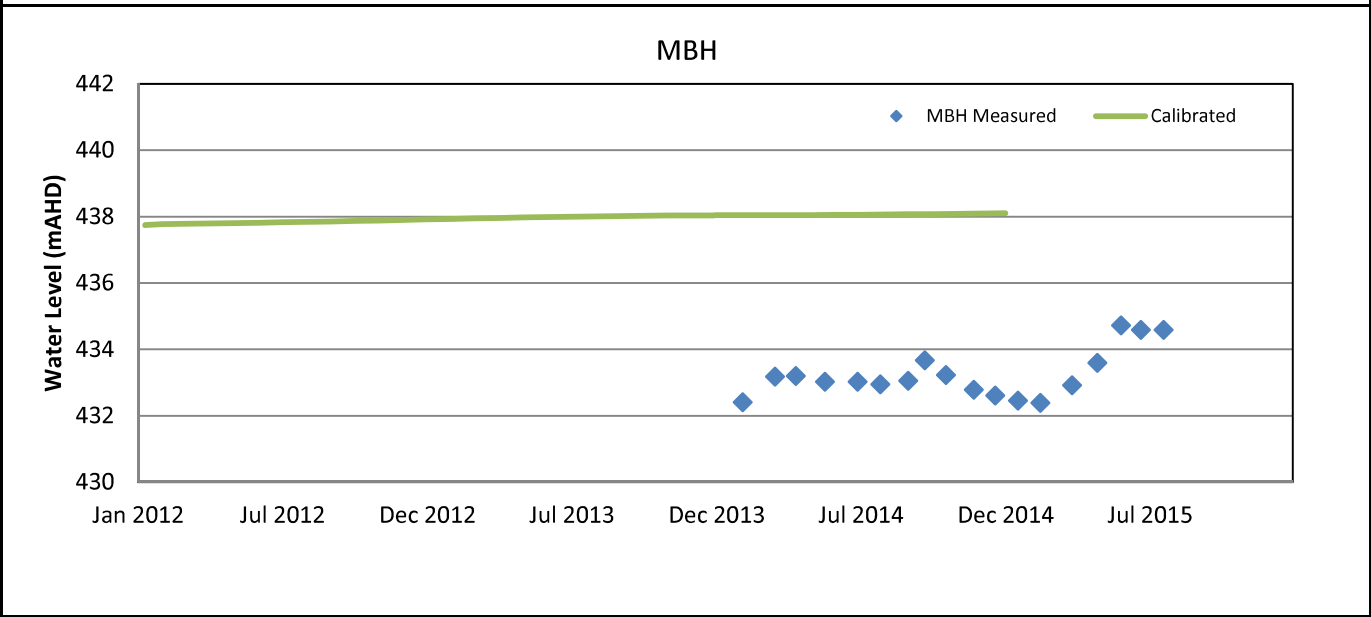
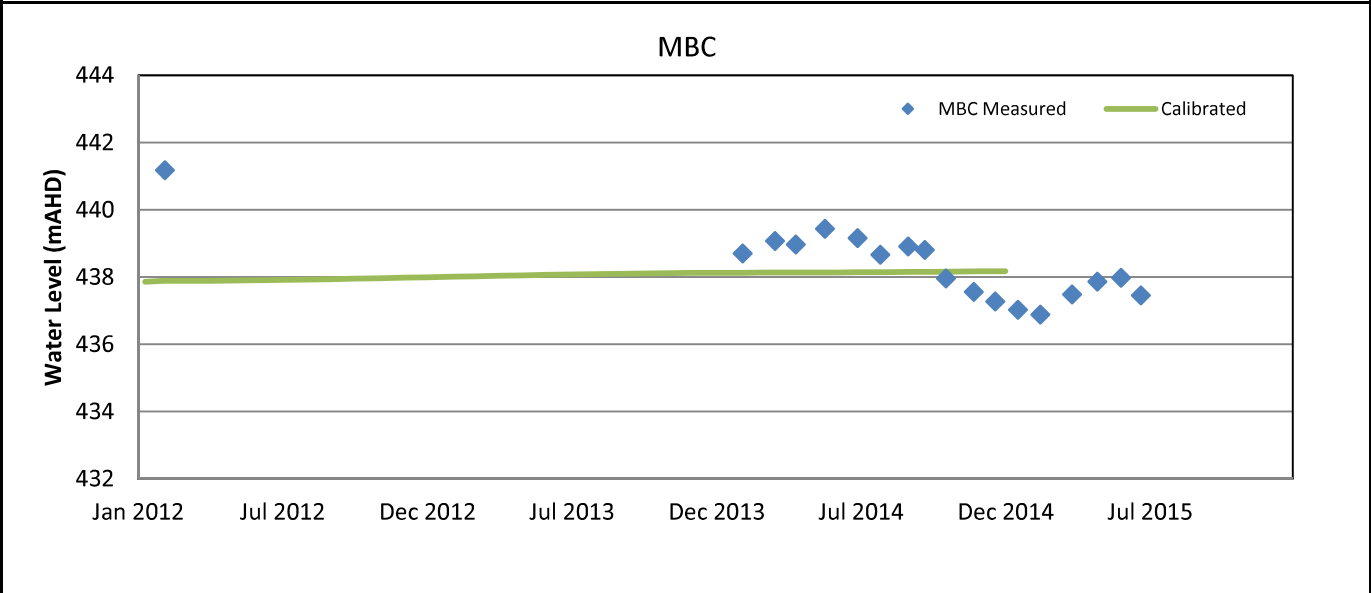
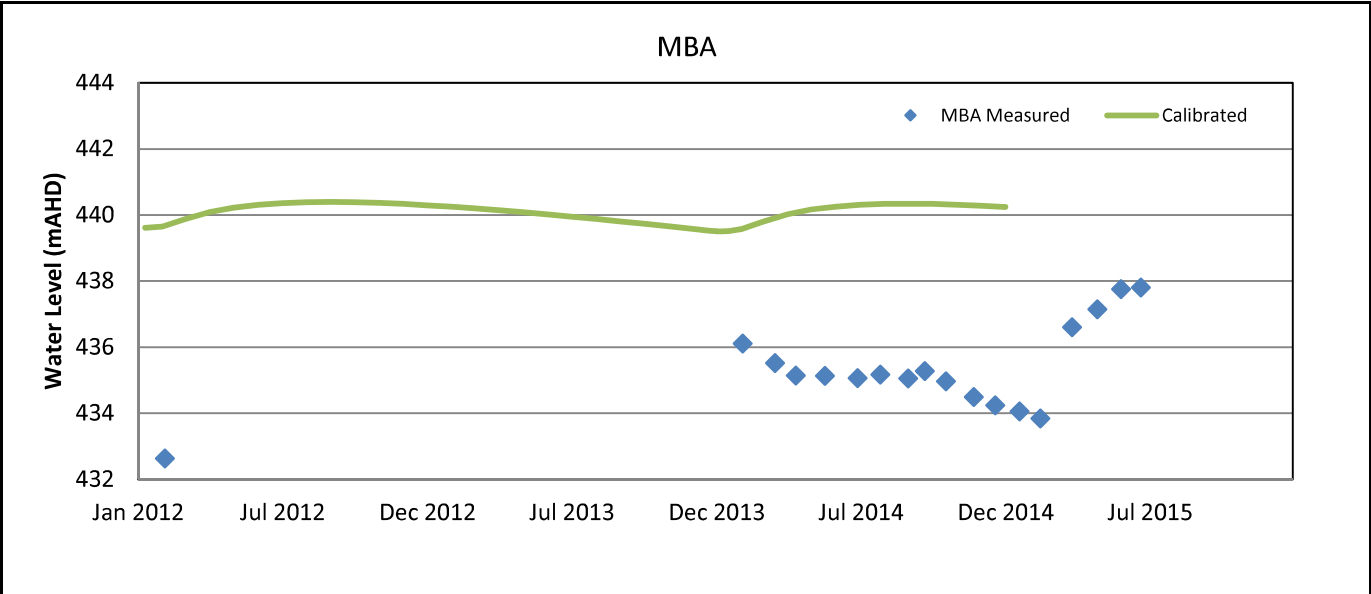
CALIBRATION HYDROGRAPHS FIGURE 4.18

F:\013B\2 TECH\Modelling\AQ2 Model\Calibration\groundwater levels TR11AIV revE report.xlsx|Figure 4.18



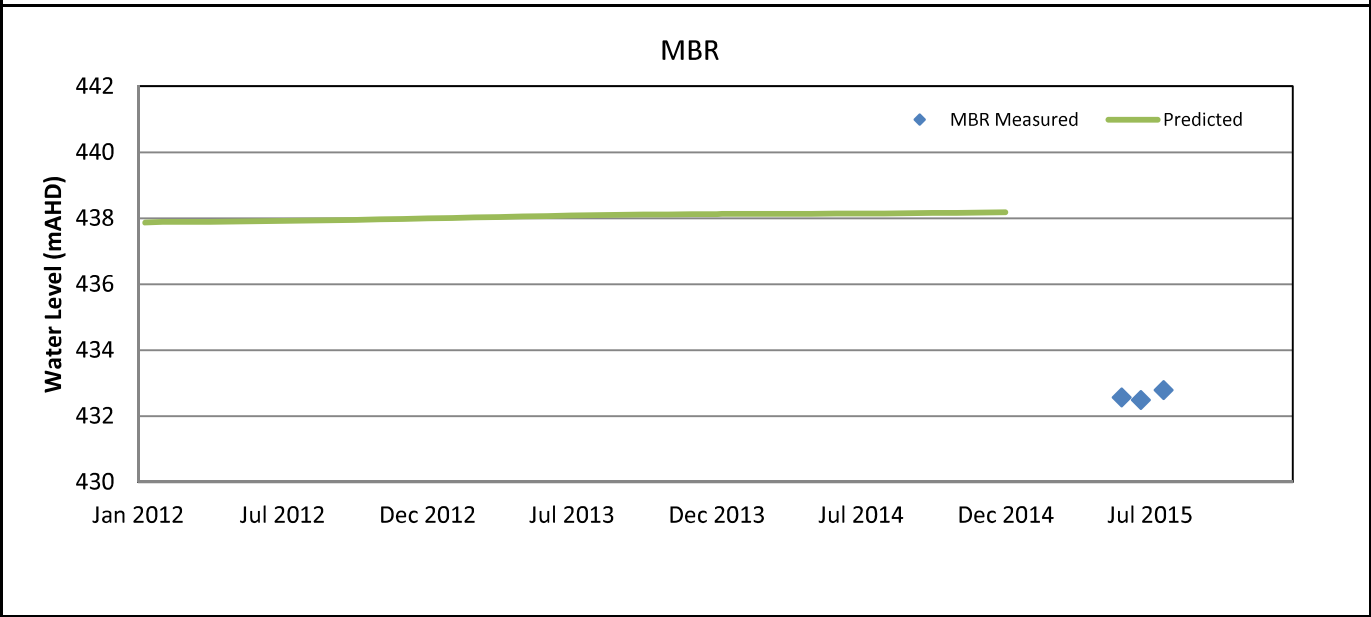
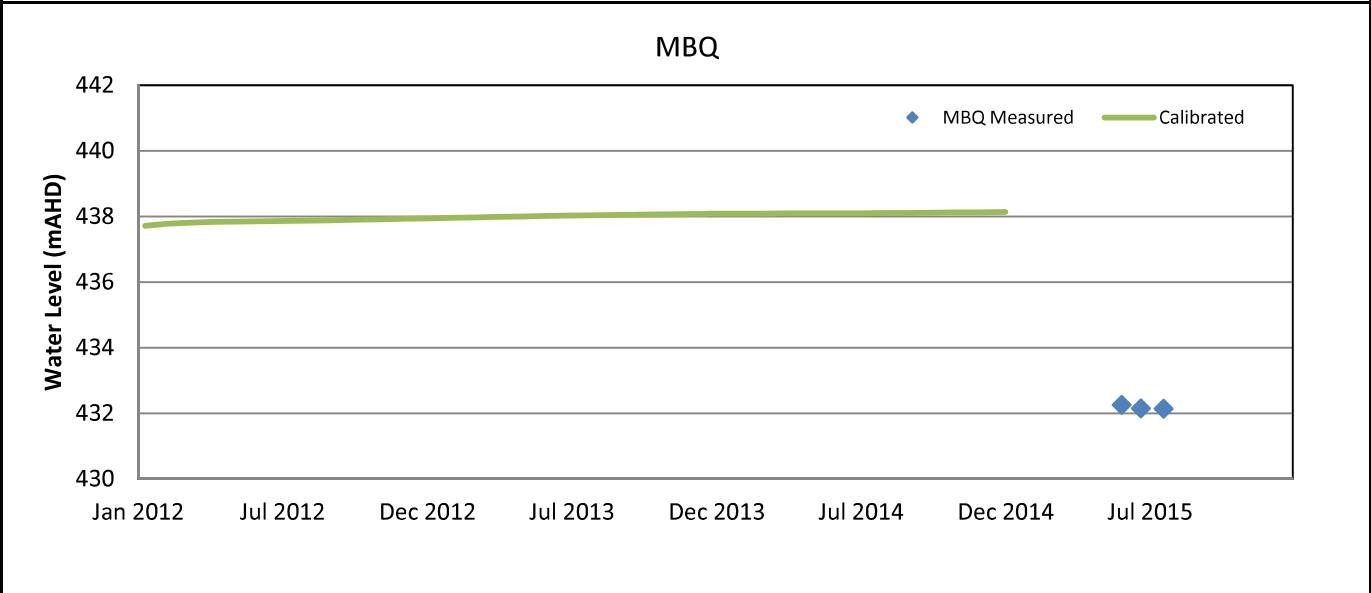
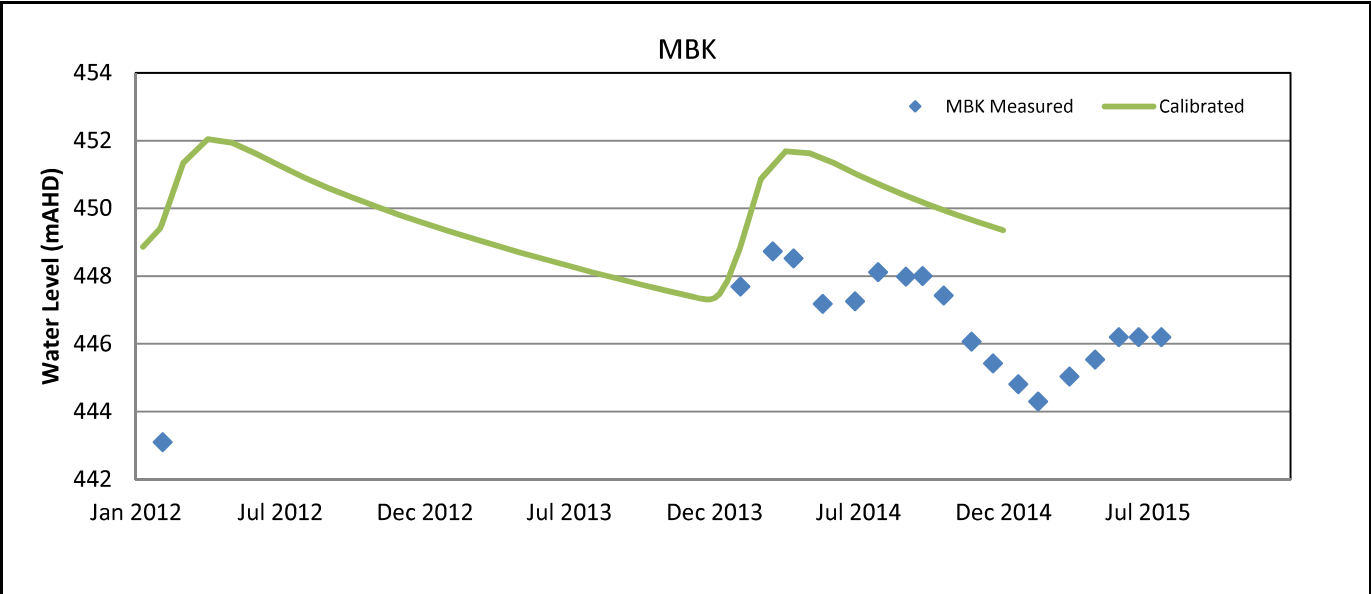
CALIBRATION HYDROGRAPHS FIGURE 4.19

F:\013B\2 TECH\Modelling\AQ2 Model\Calibration\groundwater levels TR11A\IV revE report.xlsx|Figure 4.19



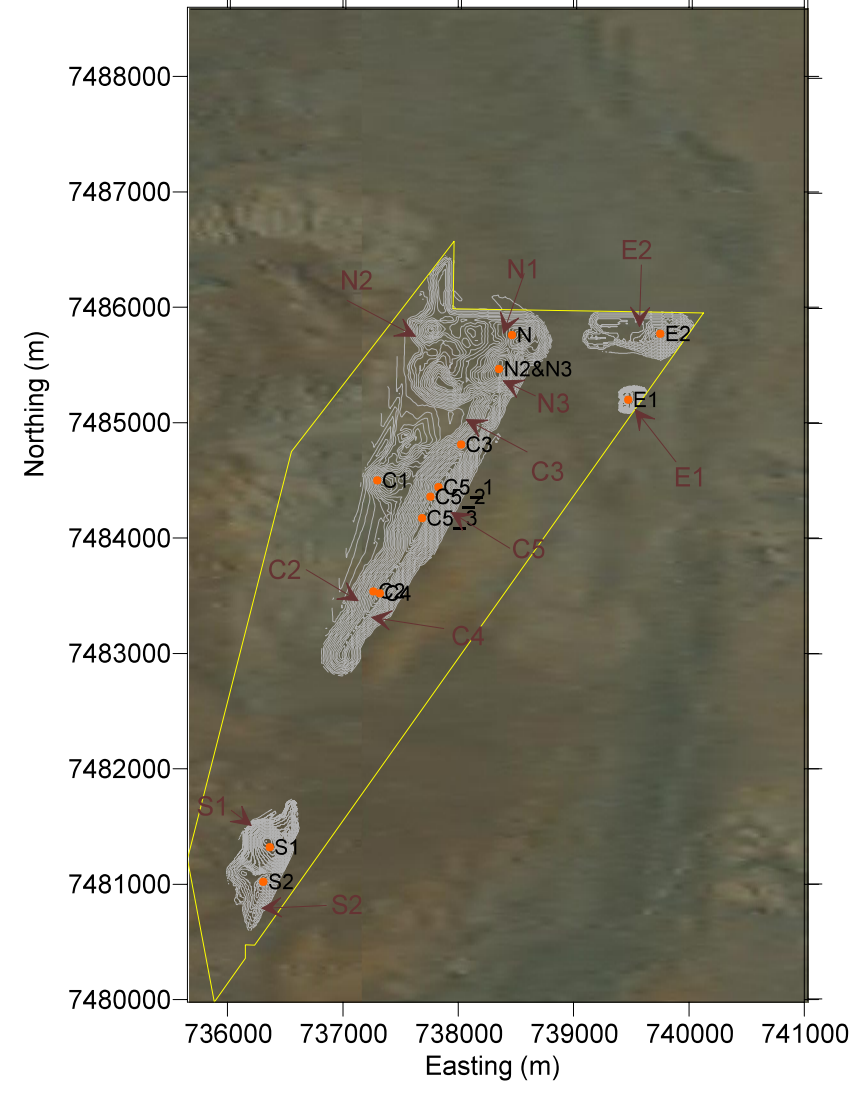
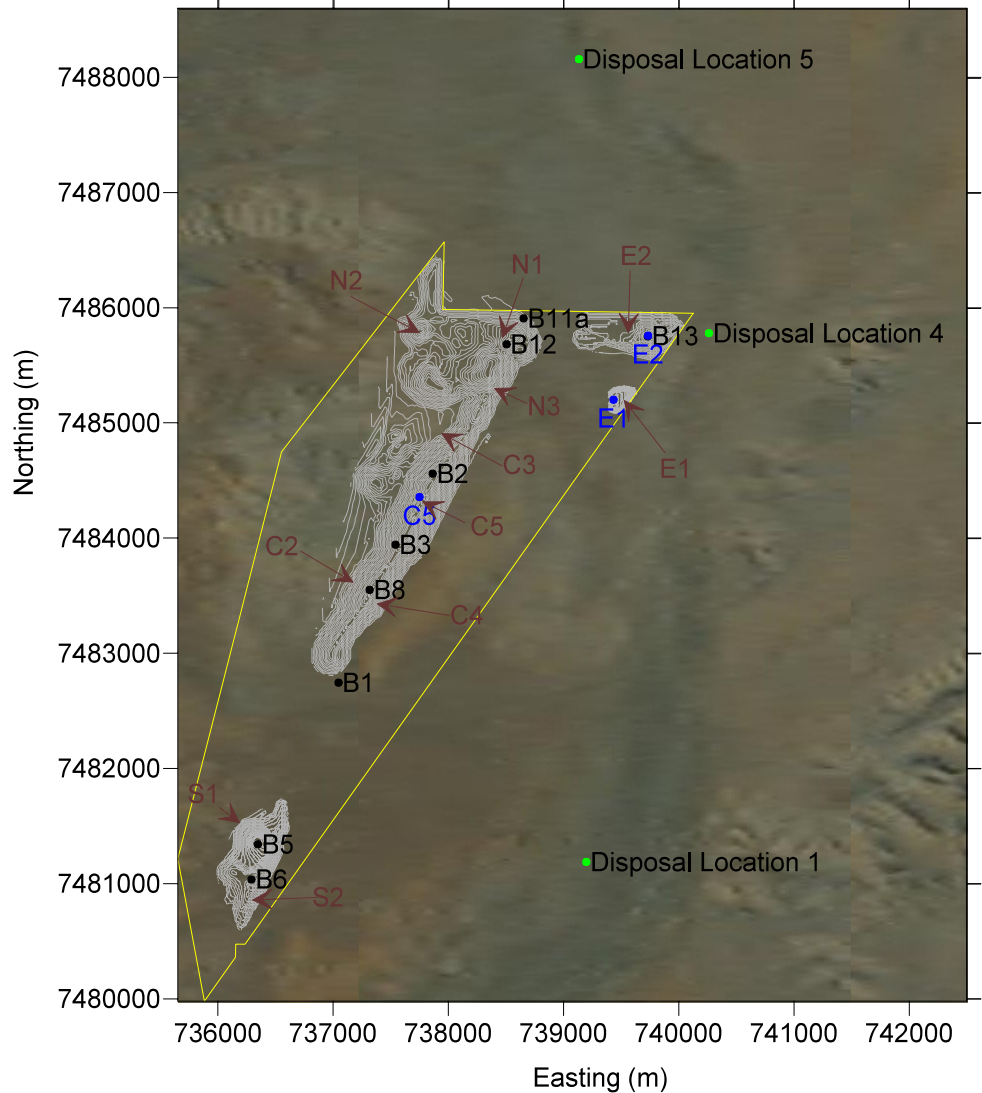
CALIBRATION HYDROGRAPHS FIGURE 4.20

F:\013B\2 TECH\Modelling\AQ2 Model\Calibration\groundwater levels TR11AIV revE report.xlsx|Figure 4.20



CALIBRATION HYDROGRAPHS FIGURE 4.21

F:\013B\2 TECH\Modelling\AQ2 Model\Calibration\groundwater levels TR11A\IV revE report.xlsx\Figure 4.21



LOCATION MAP



LEGEND

- Project Area Boundary
- Proposed Pumping Bore
- Proposed Sump
- Disposal Location
- Observation Location Used In Predictions

S1 Mine Area

AUTHOR: KR
DRAWN: KR
DATE: 6 Jan 2016

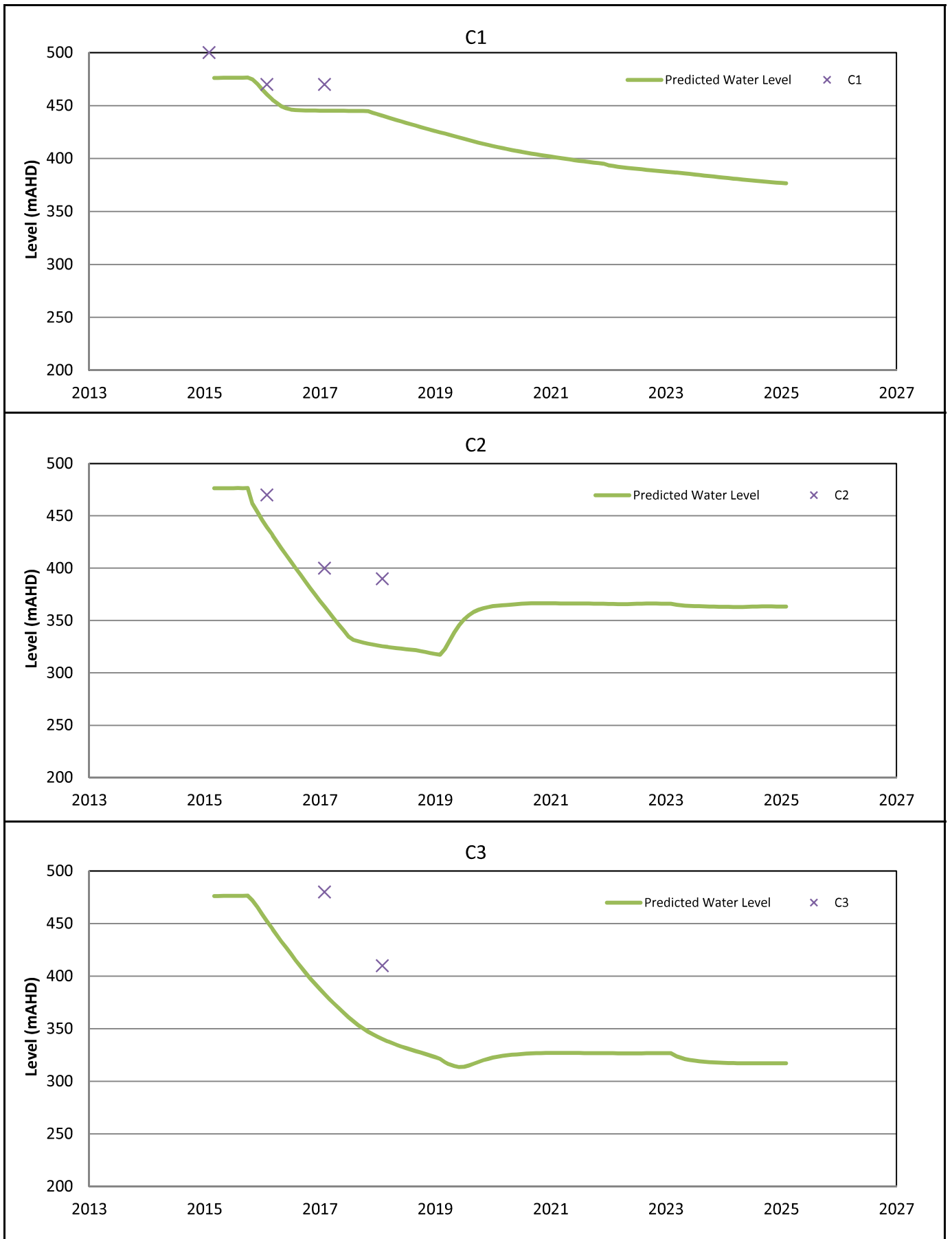
REPORT NO: 062a
REVISION: A
JOB NO: 013B

GDA94 Zone 50
SCALE: 1:62,500 (at A4)

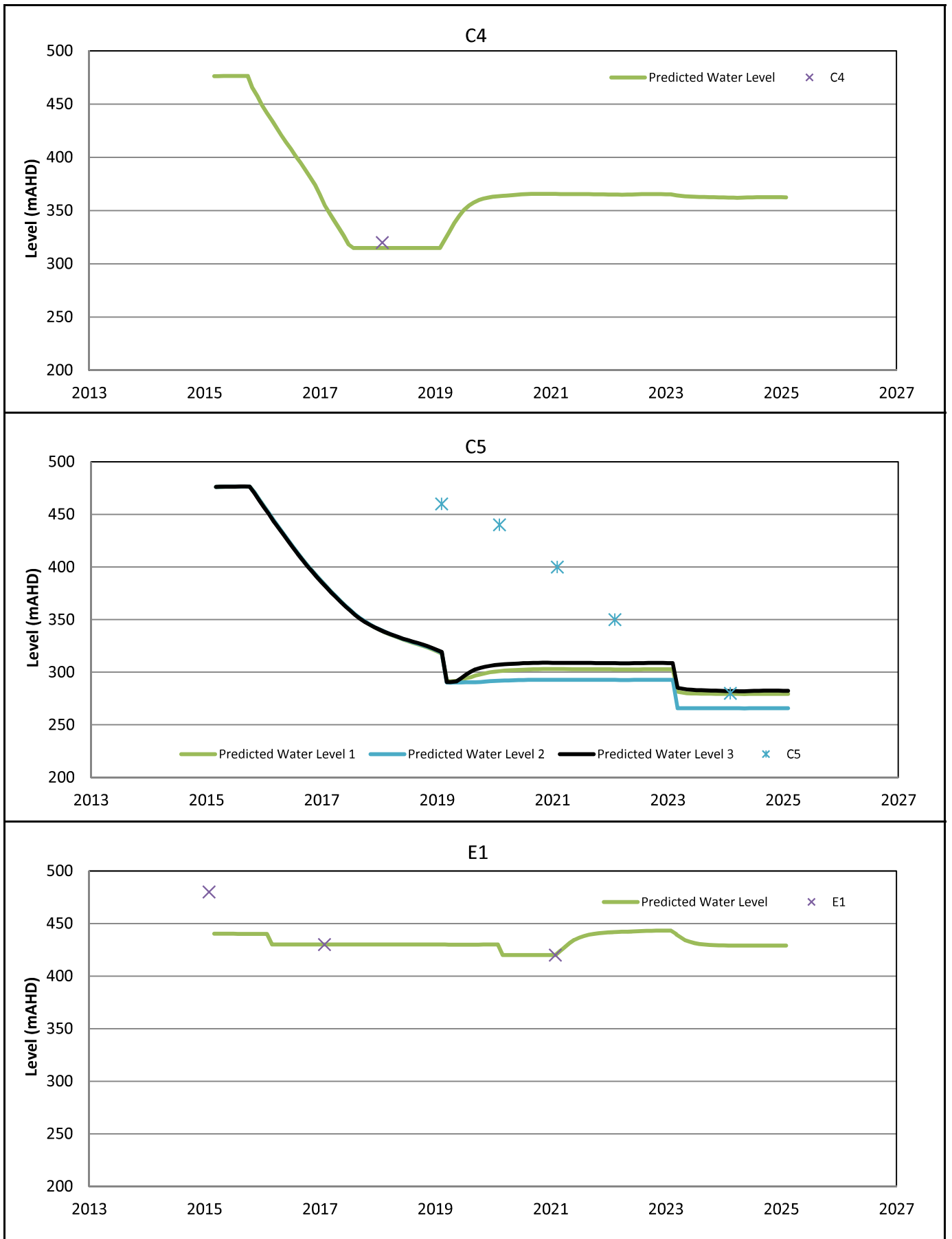
f:/013b/GIS/Modelling Figures/Figures/062a Figure 4.22 revb.srf



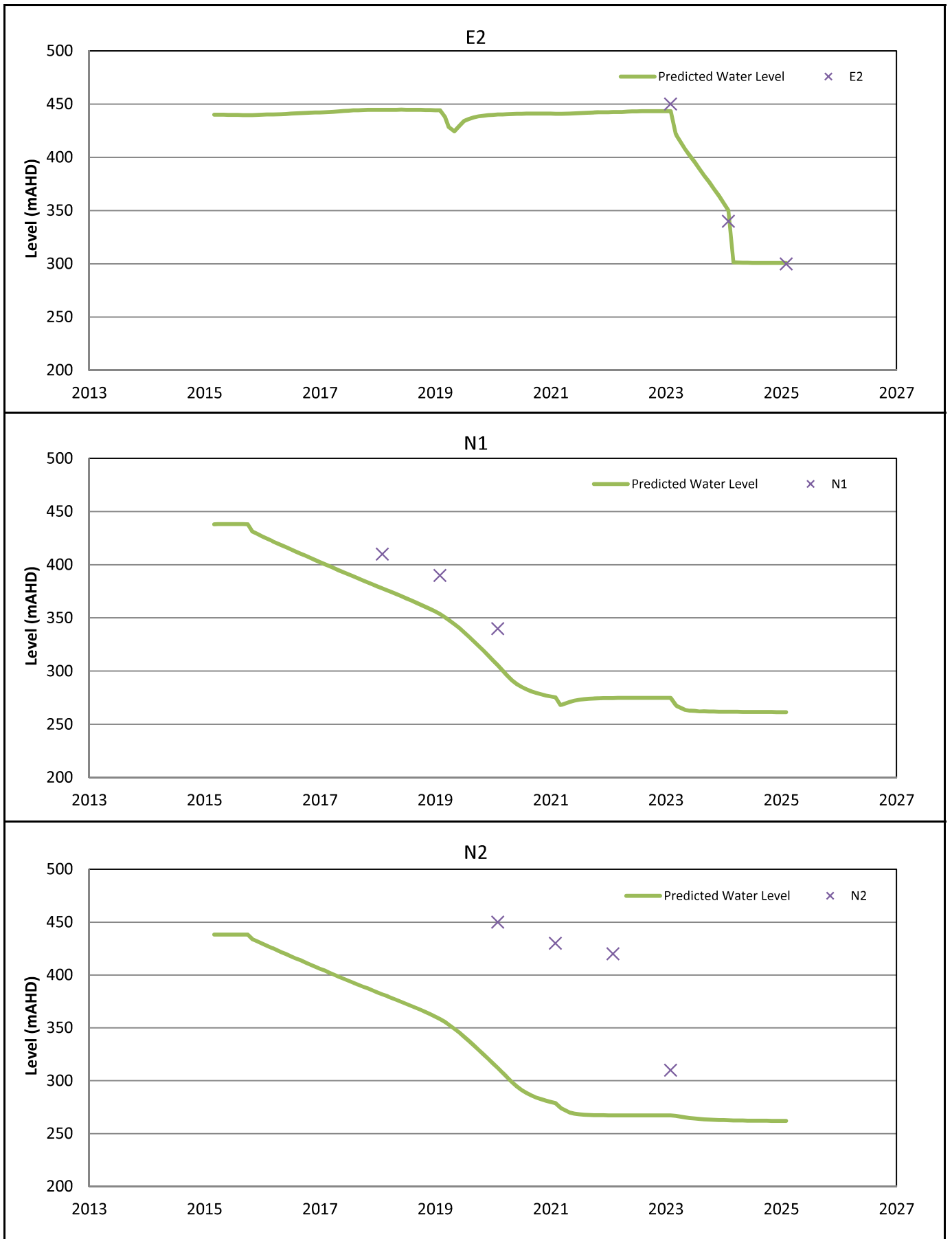
**FIGURE 4.22
MINE AREA, PUMPING,
OBSERVATION
AND DISPOSAL
LOCATIONS**



MINE RL AND PREDICTED WATER LEVELS FIGURE 4.23

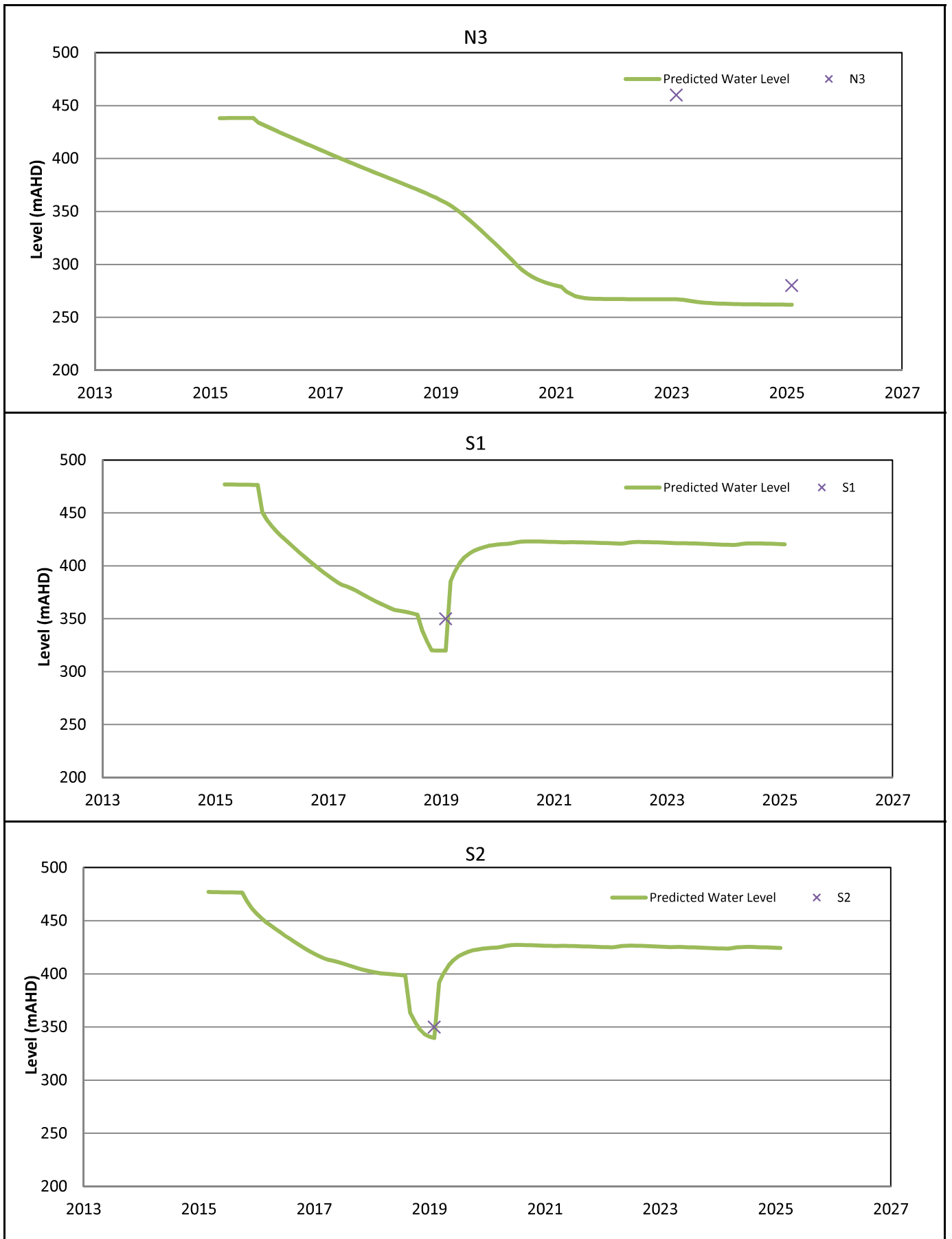


MINE RL AND PREDICTED WATER LEVELS FIGURE 4.24

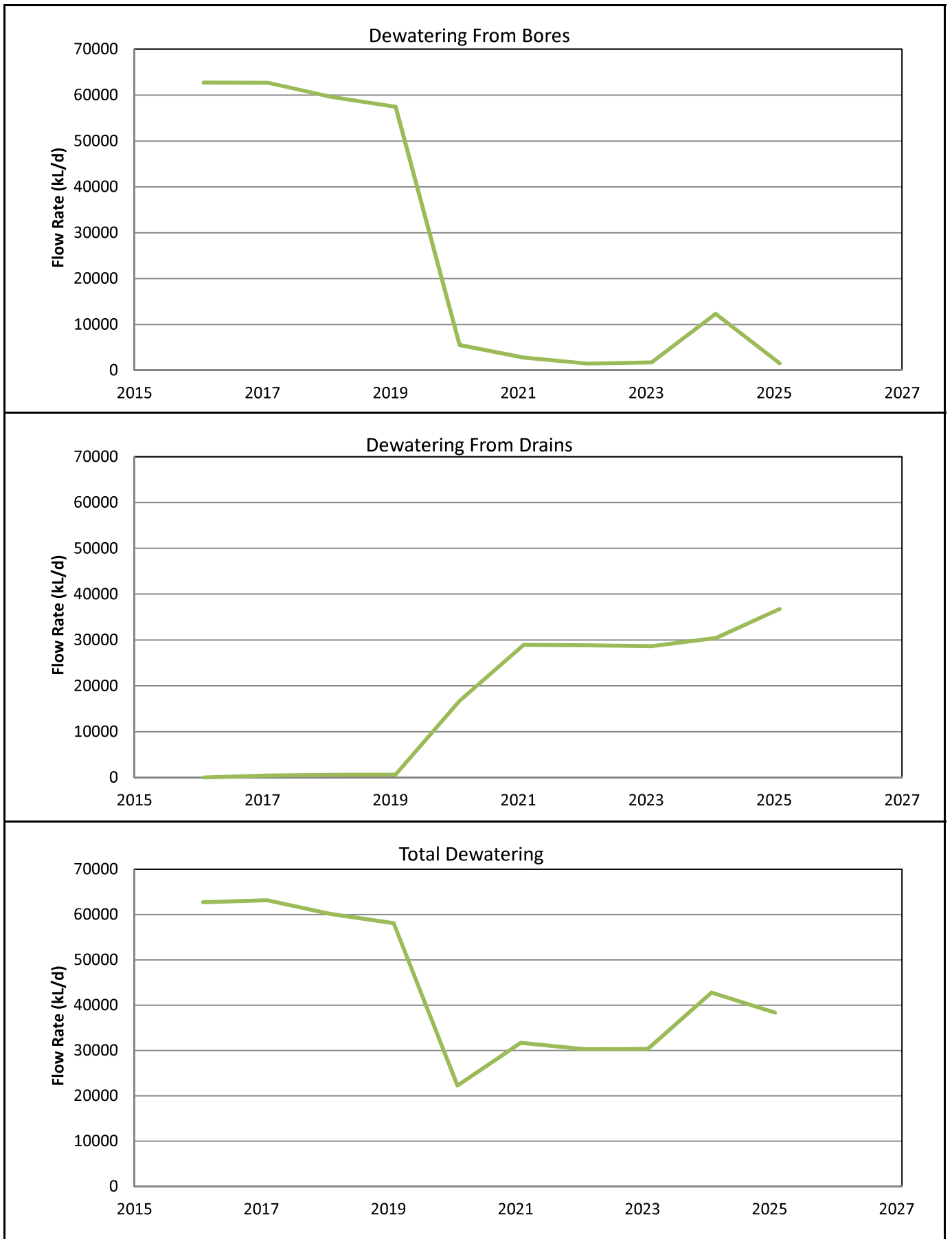


MINE RL AND PREDICTED WATER LEVELS FIGURE 4.25

F:\013B\2 TECH\Modelling\AQ2 Model\Prediction\[Copy of IV Deepest RL mined each year PR06AK revised timing figures.xlsx]Figure 4.25

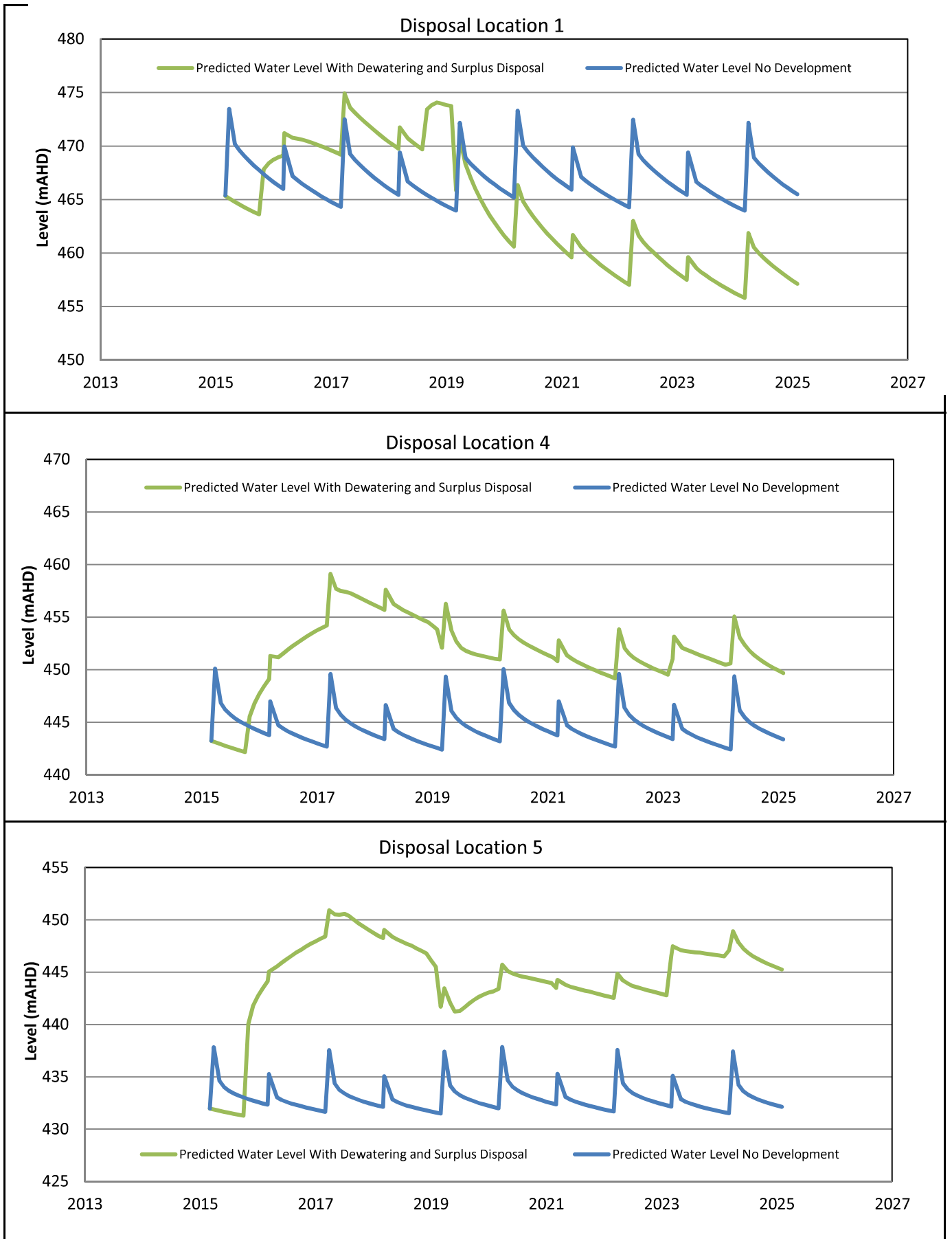


MINE RL AND PREDICTED WATER LEVELS FIGURE 4.26

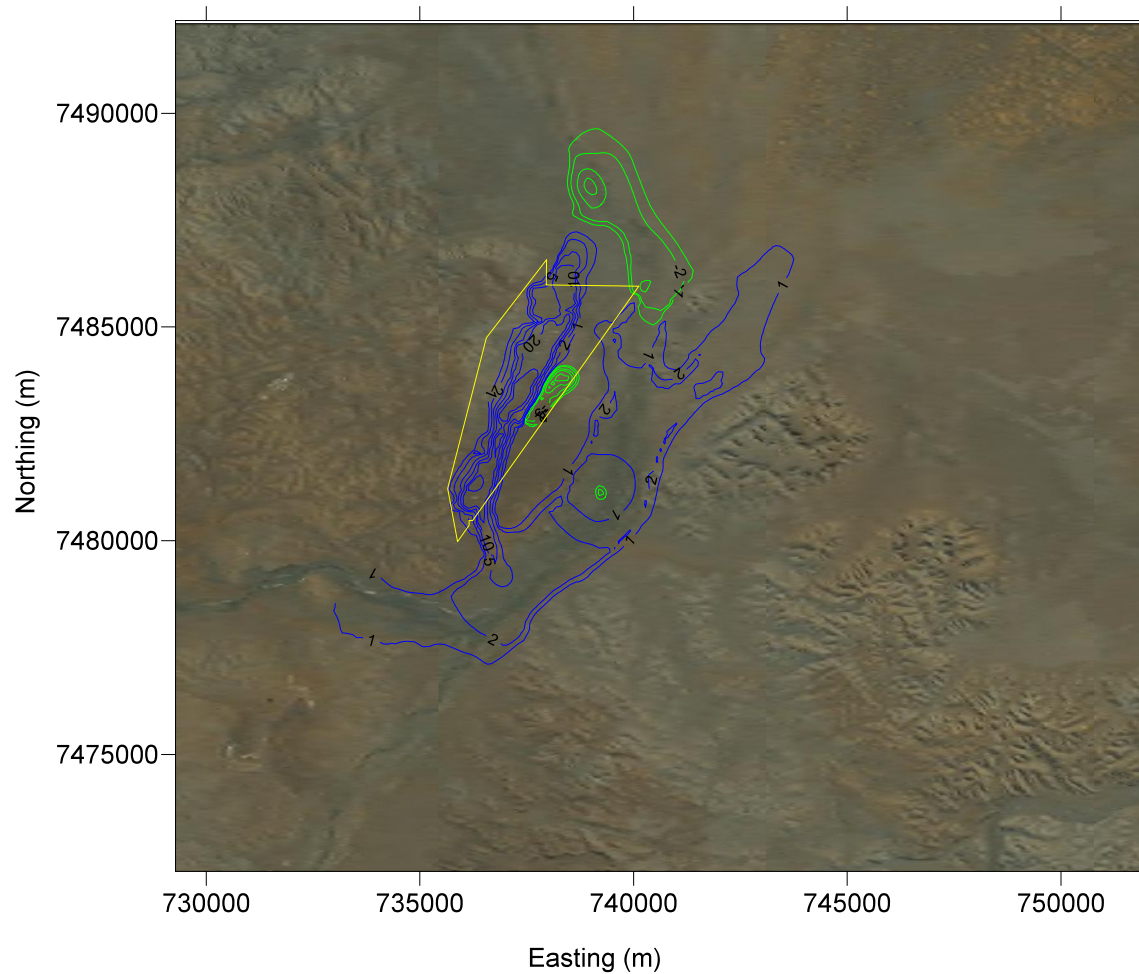


ANNUAL AVERAGE PREDICTED DEWATERING (BASE CASE) FIGURE 4.27

F:\013B\2 TECH\Modelling\AQ2 Model\Prediction\[Copy of IV Deepest RL mined each year PR06AK revised timing figures.xlsx]Figure 4.27



PREDICTED WATER LEVELS AT DISPOSAL LOCATIONS FIGURE 4.28



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase. contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m and 30m.

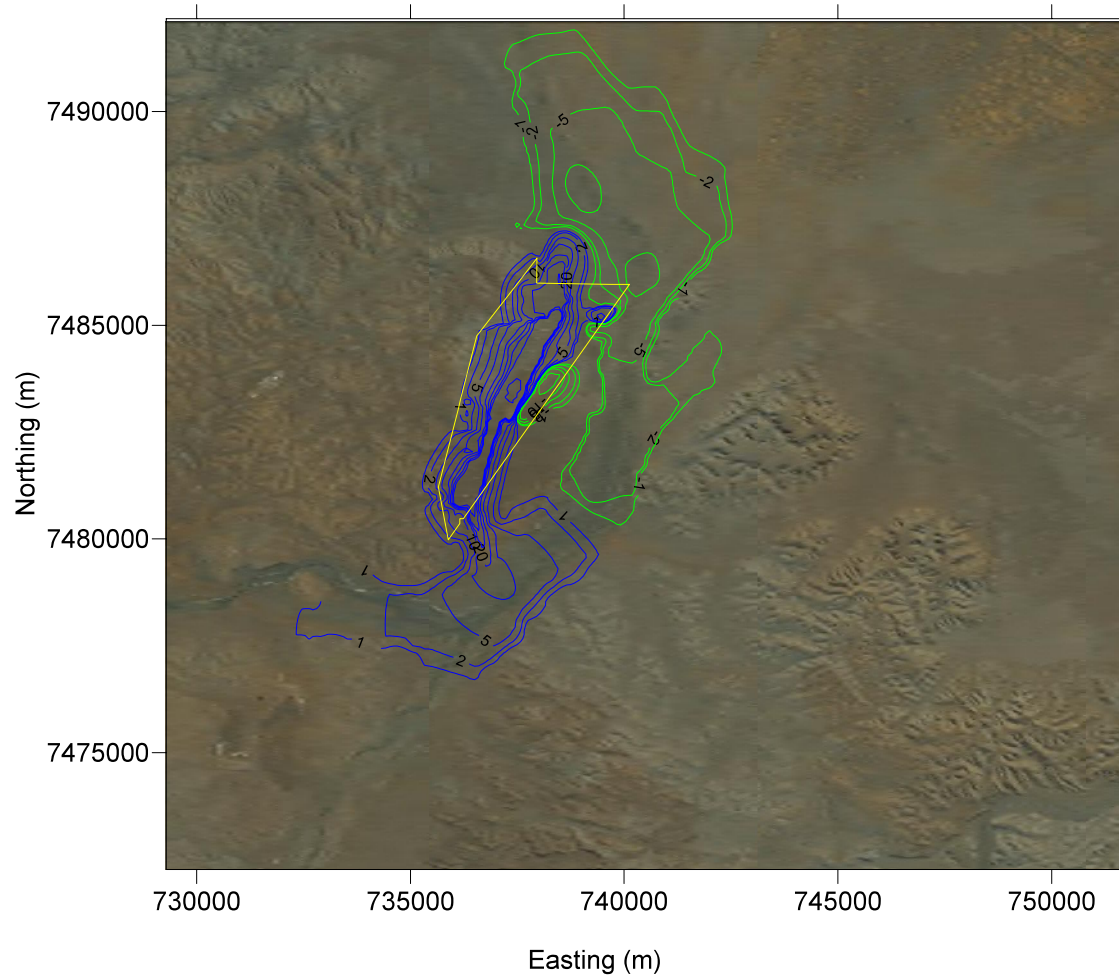
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.29
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2016**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m and 100m.

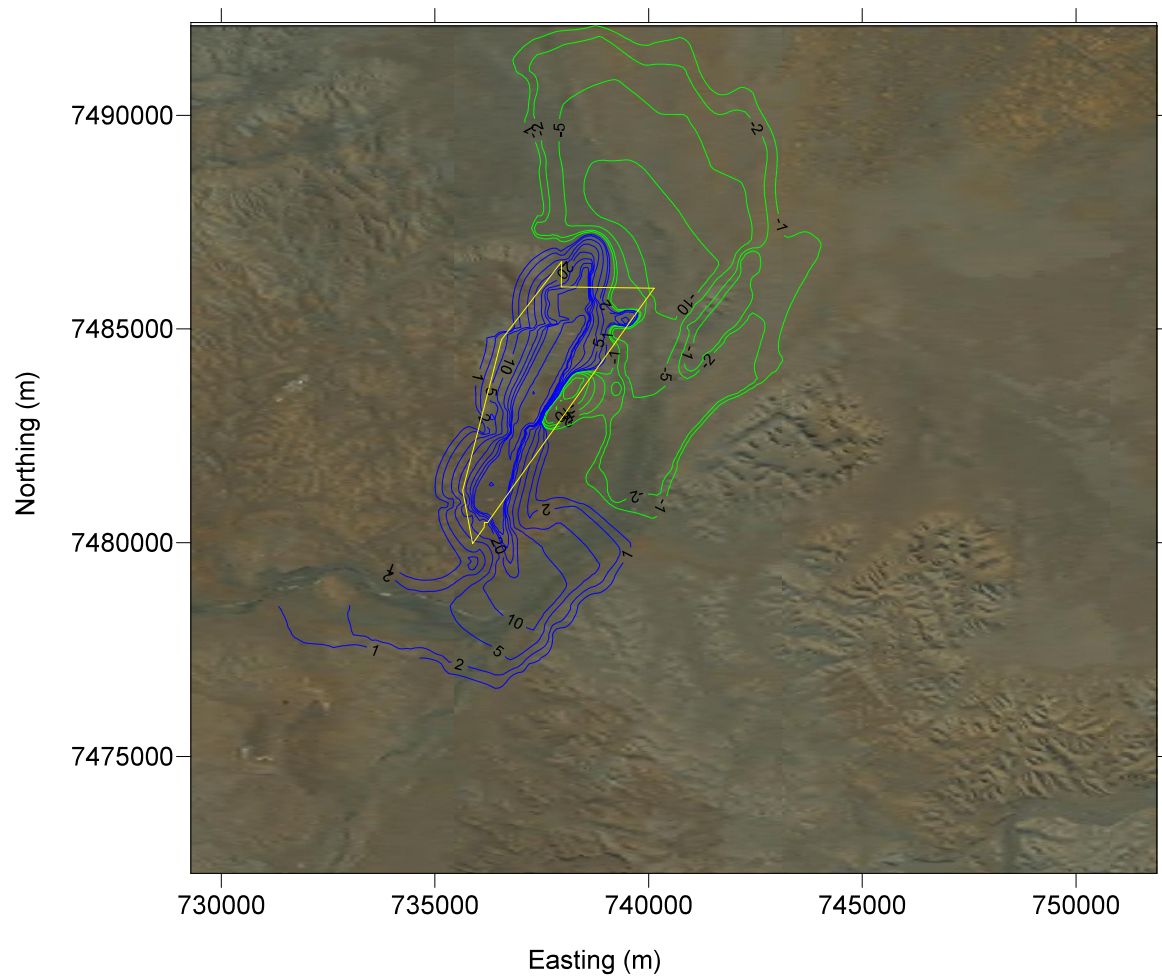
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.30
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2017**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m and 150m.

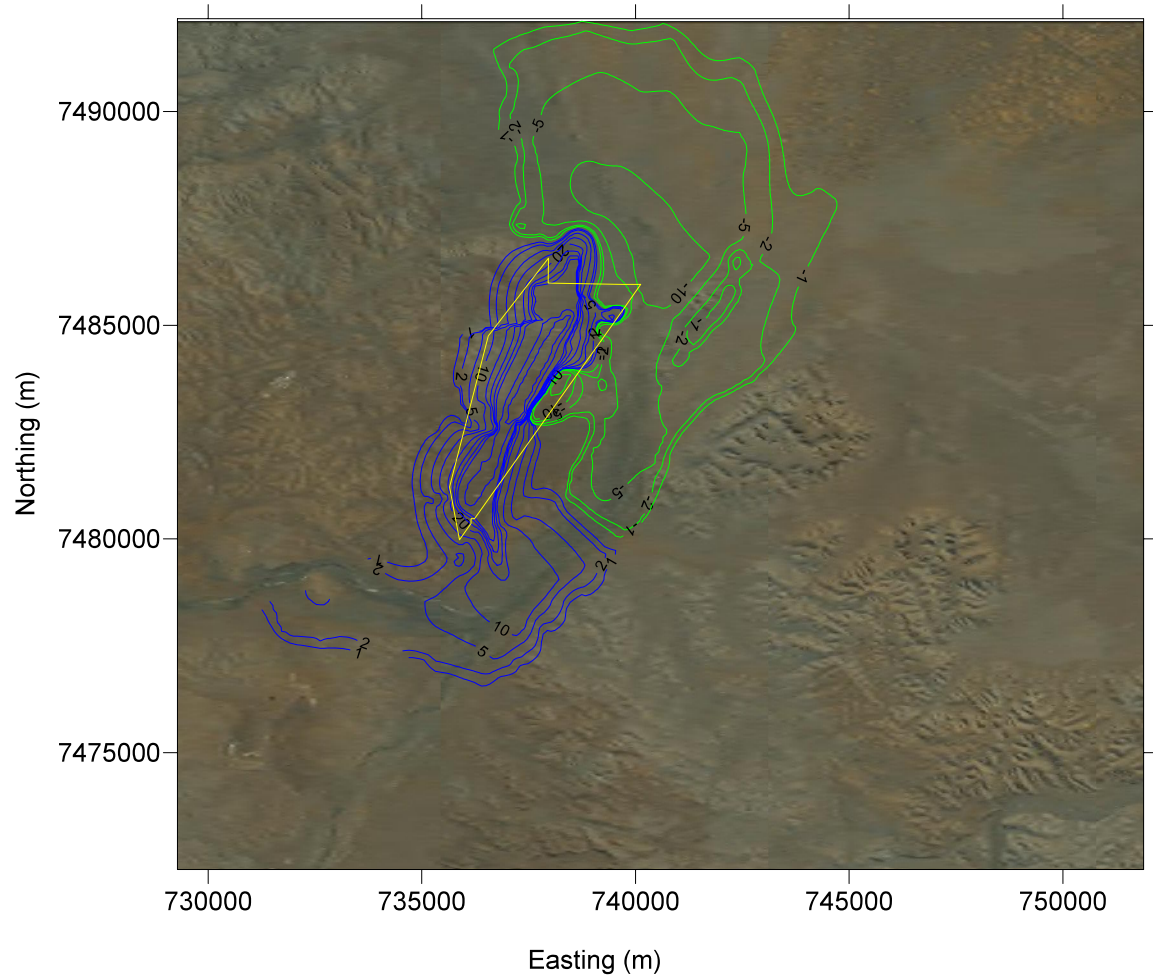
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.31
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2018**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m and 150m.

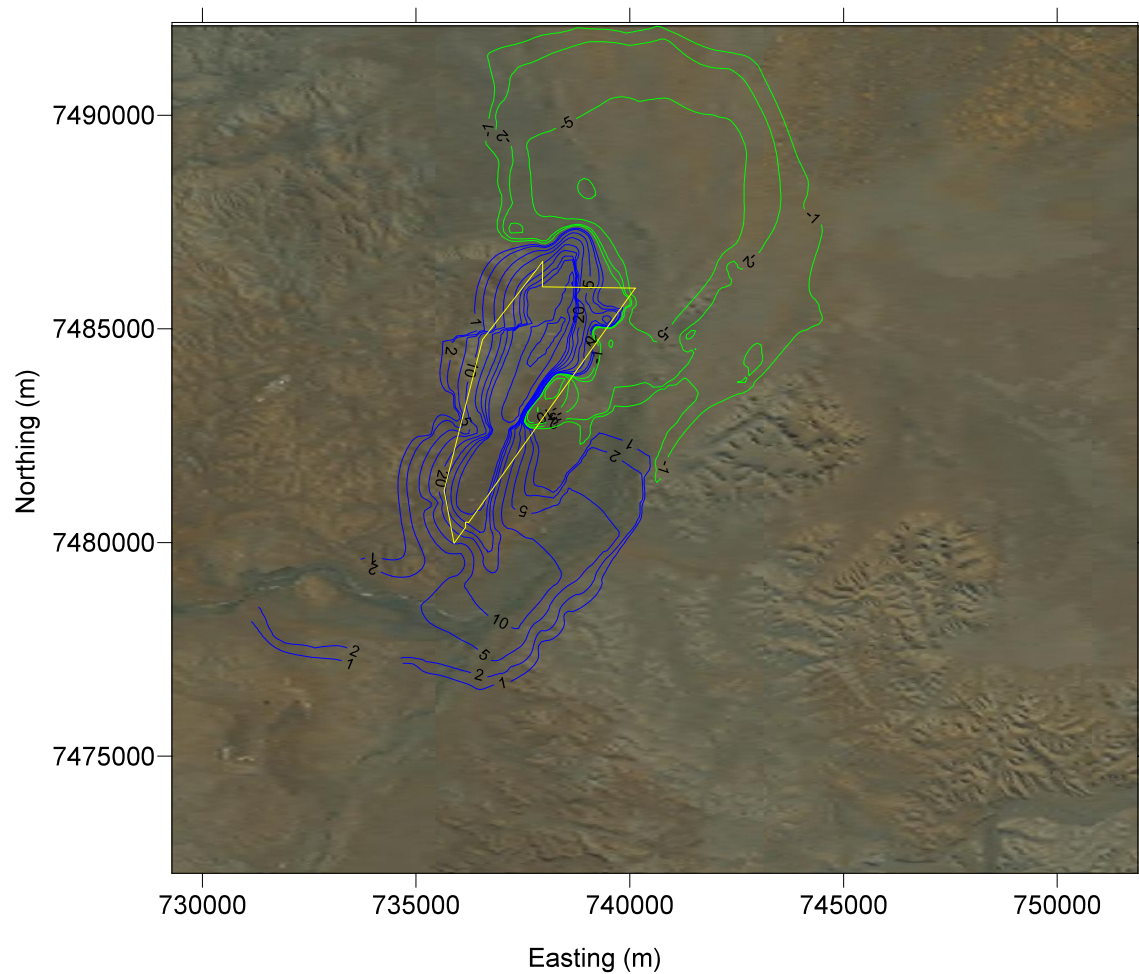
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.32
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2019**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase. Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m and 150m.

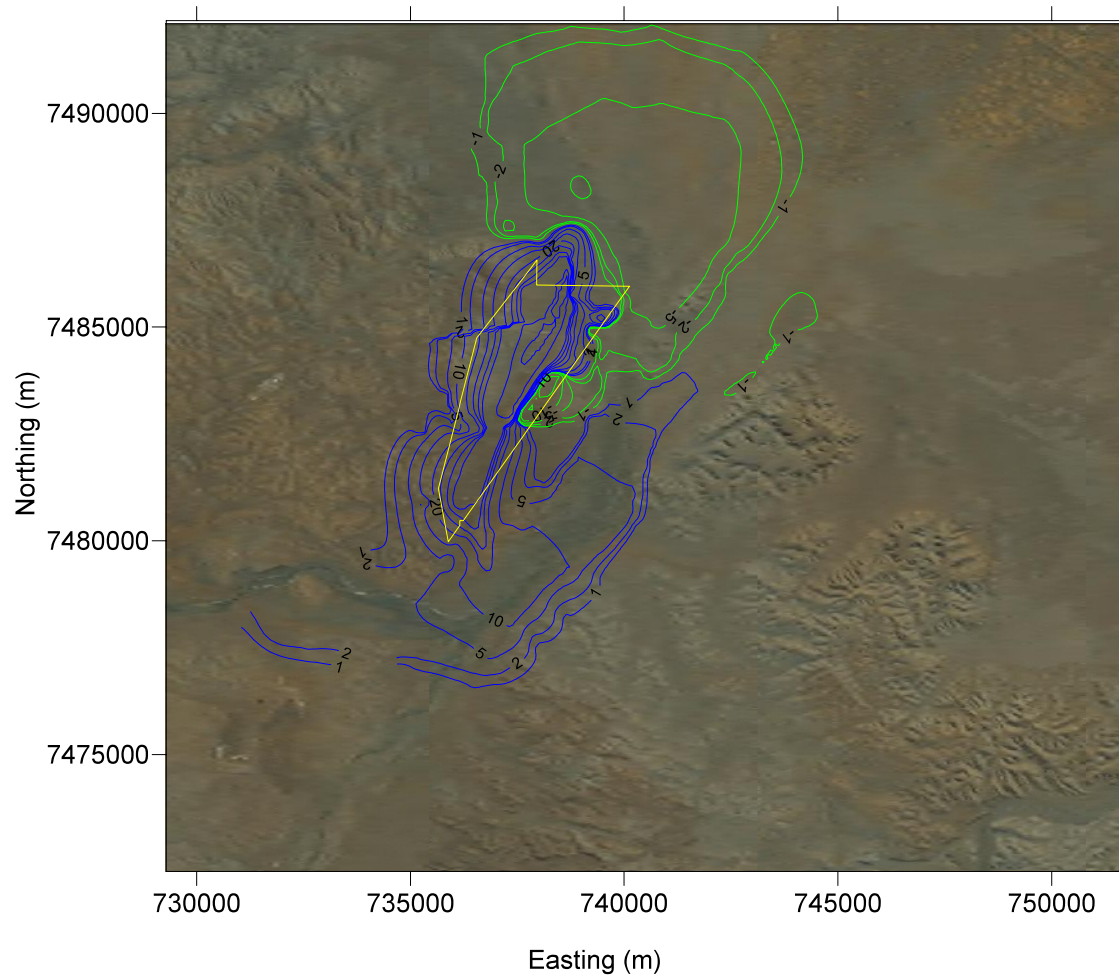
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.33
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2020**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
 - Predicted Water Level Increase (m)
 - Project Area
- Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m and 150m.

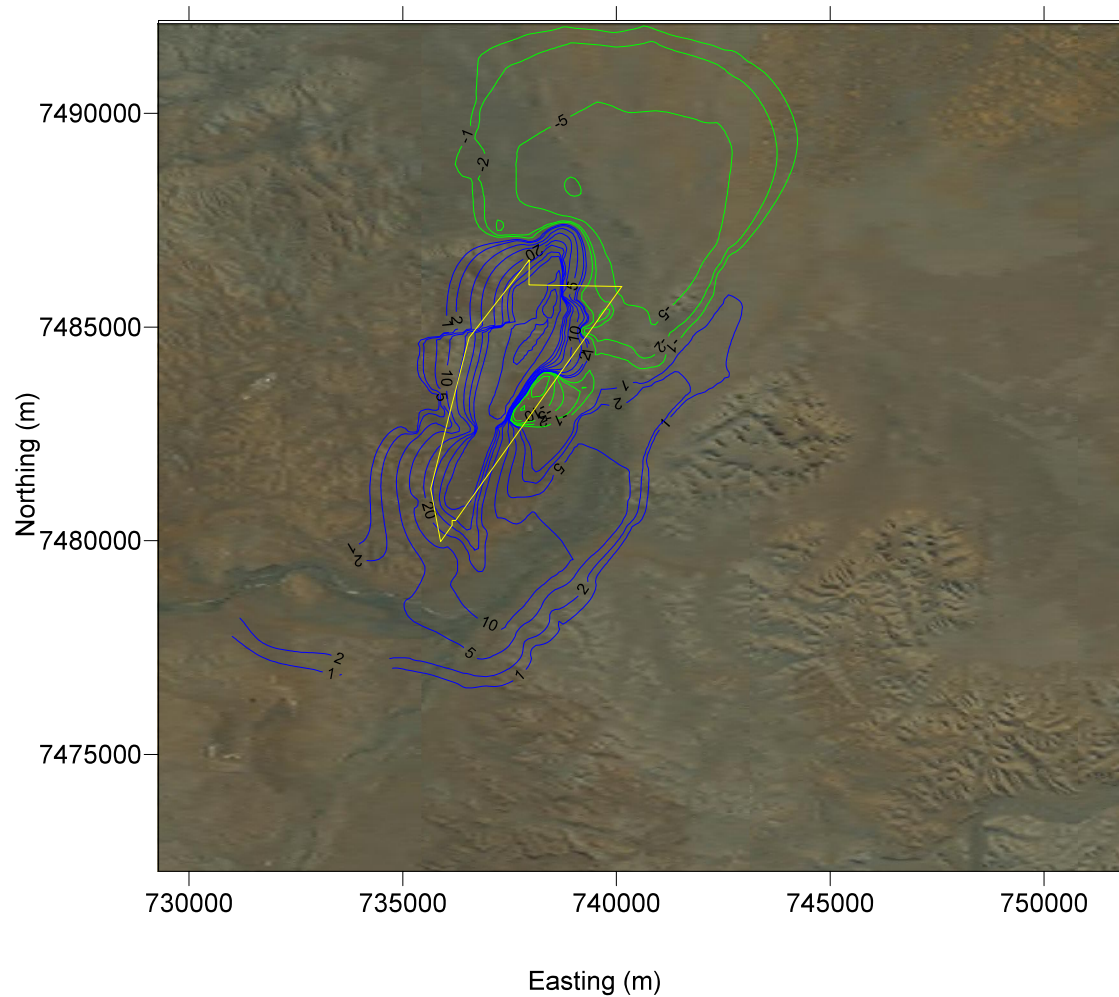
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.34
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2021**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m and 150m.

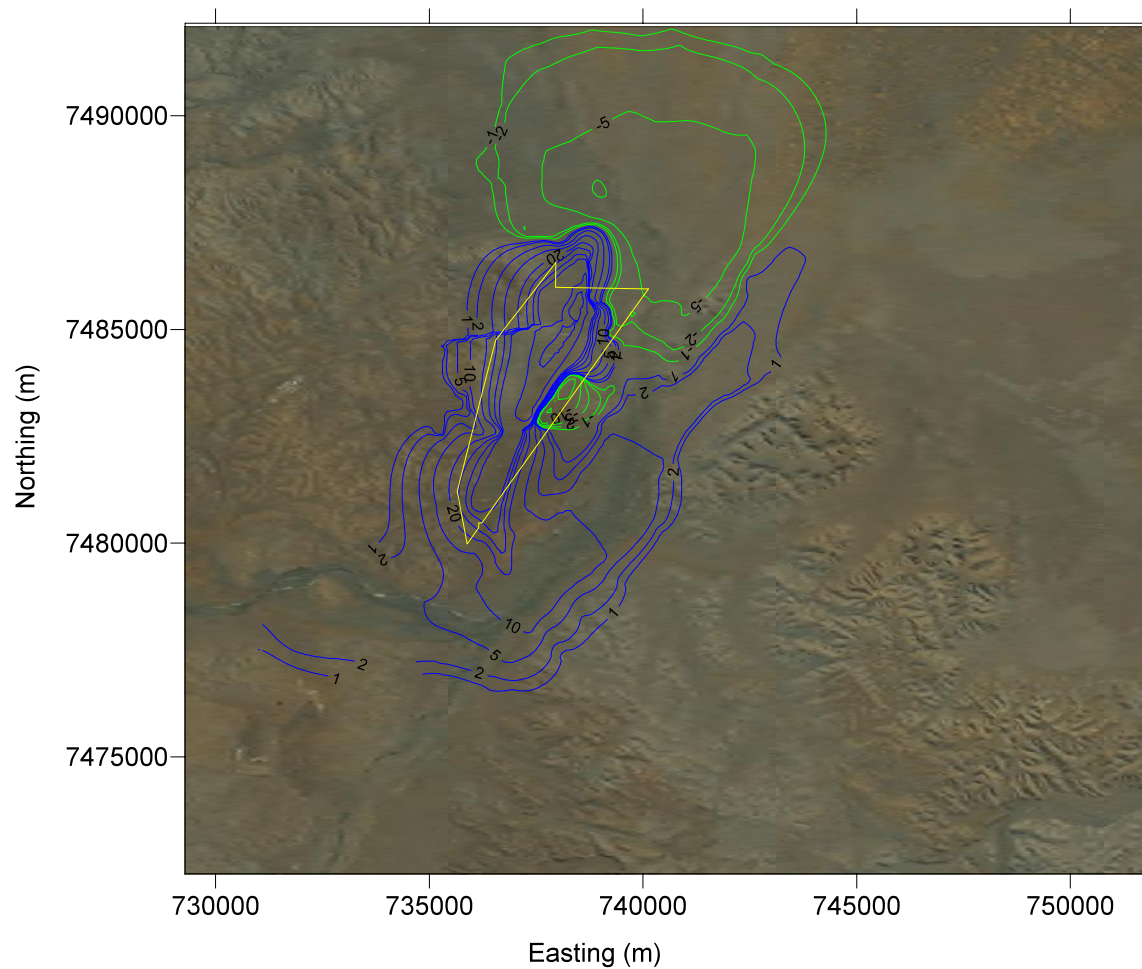
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.35
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2022**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m and 150m.

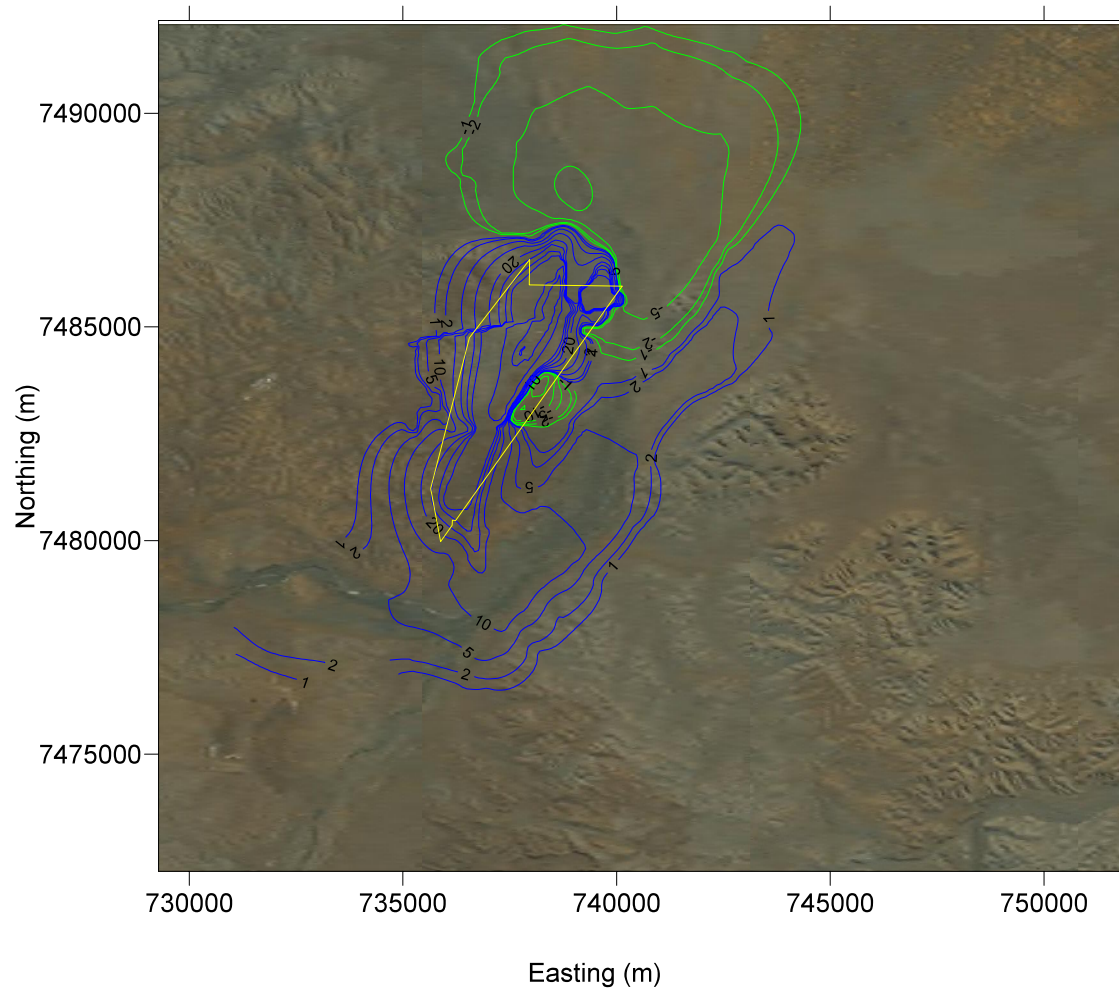
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.36
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2023**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m, 150m and 200m.

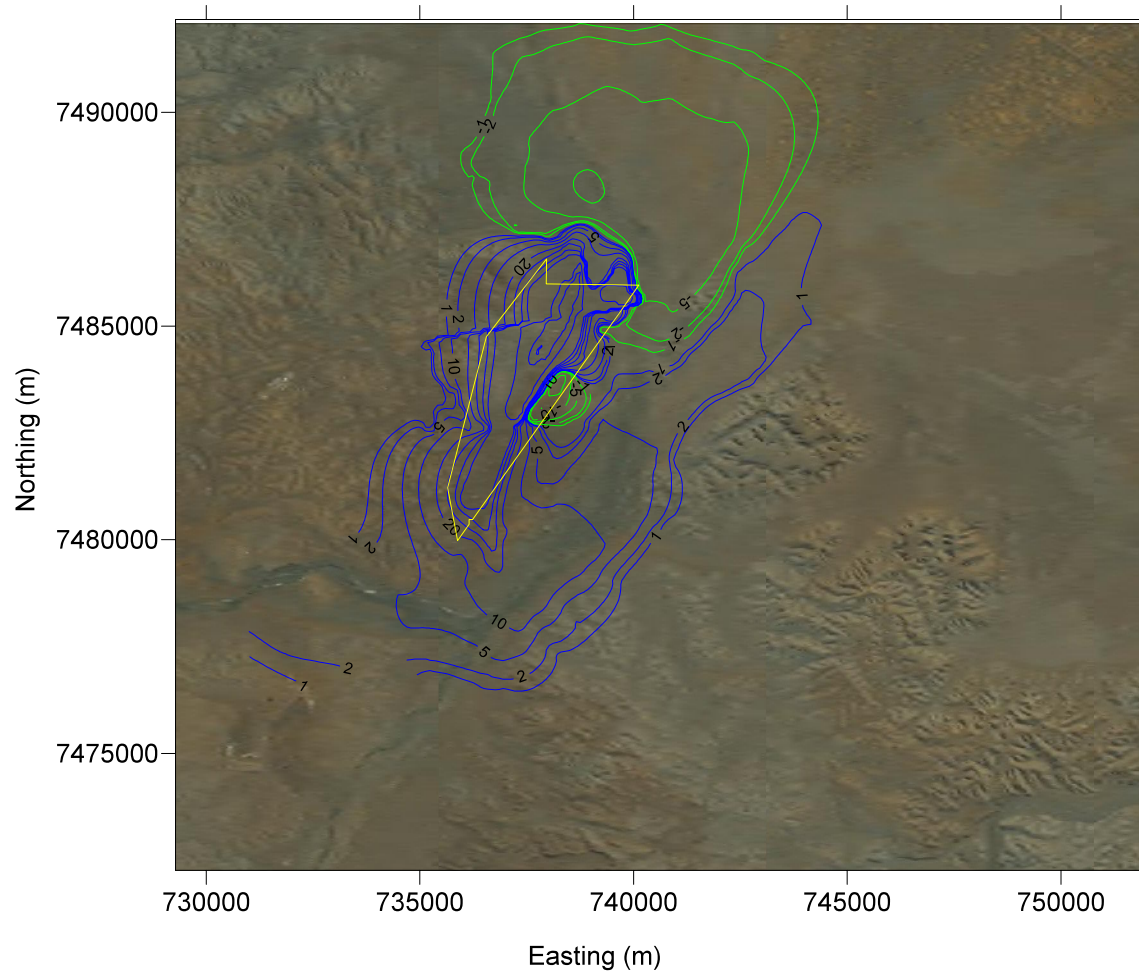
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)



**FIGURE 4.37
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2024**



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m, 150m and 200m.

AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)

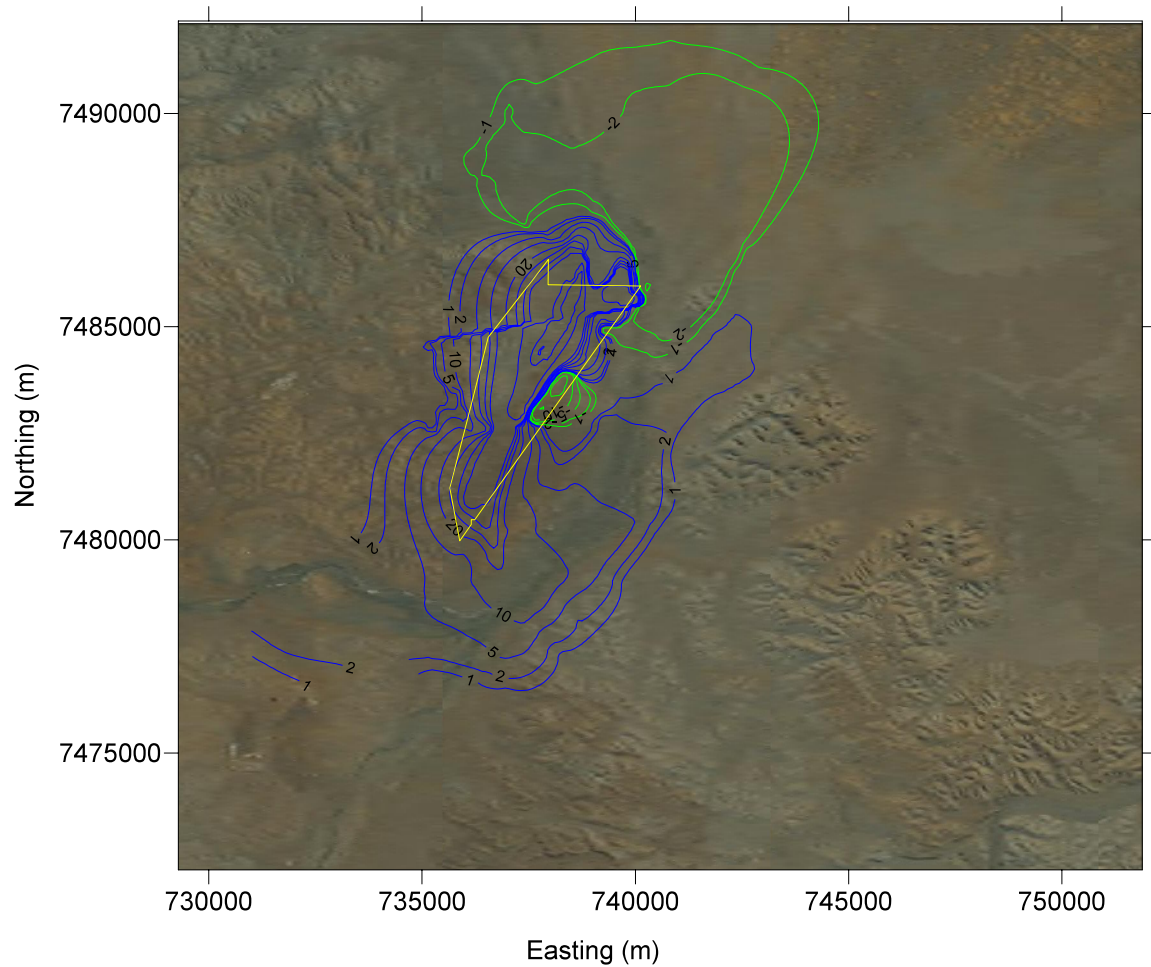


**FIGURE 4.38
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2025**



PREDICTED DEWATERING BASE & EXTENDED EXPIT PUMPING CASES FIGURE 4.39

F:\013B\2 TECH\Modelling\AQ2 Model\Prediction\IV Deepest RL mined each year PR06AL.xlsx\Figure 4.39



LOCATION MAP



LEGEND

- Predicted Water Level Decrease (m)
- Predicted Water Level Increase (m)
- Project Area

Positive drawdown represents a water level decrease while a negative drawdown represents a water level increase.
 Contours shown at -20m, -10m, -5m, -2m, -1m, 1m, 2m, 5m, 10m, 20m, 30m, 40m, 50m, 100m, 150m and 200m.

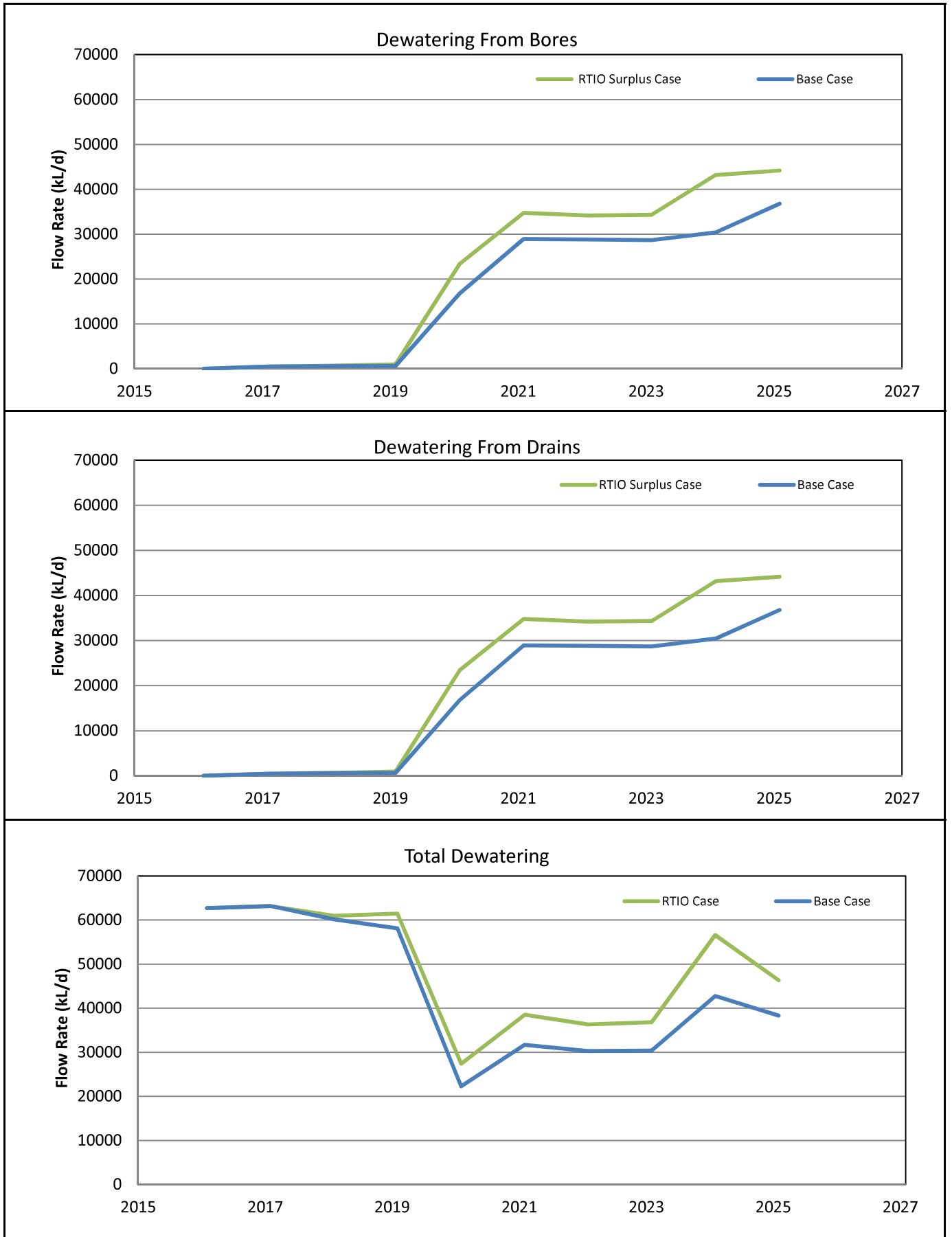
AUTHOR: KR
 DRAWN: KR
 DATE: 5 Jan 2015

REPORT NO: 062a
 REVISION: A
 JOB NO: 013B

GDA94 Zone 50
 SCALE: 1:175,000 (at A4)

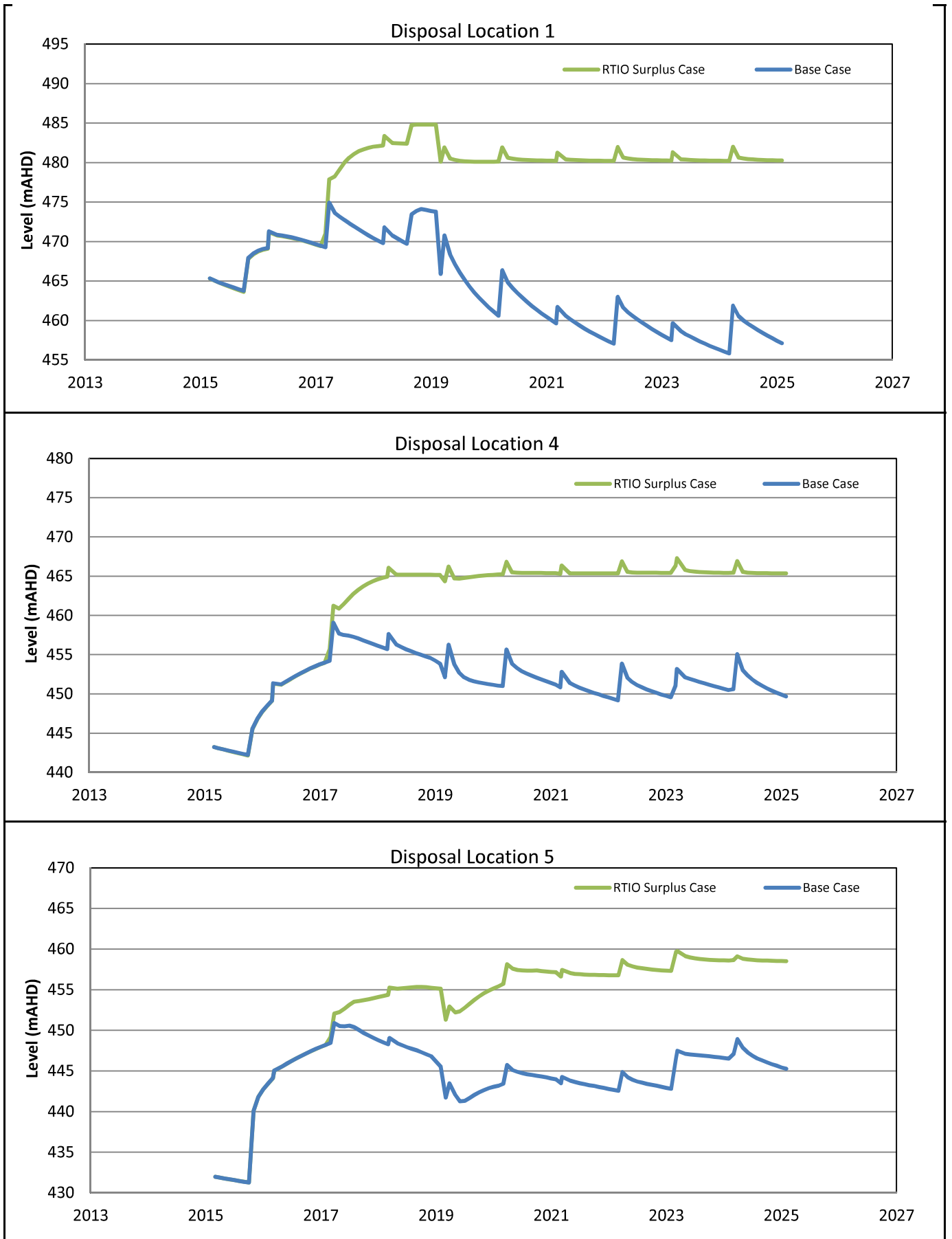


**FIGURE 4.40
 CONTOURS OF
 PREDICTED DRAWDOWN
 END OF 2025 DISPOSAL
 TO LOCATION 1**



PREDICTED DEWATERING RATES BASE & RTIO DISPOSAL CASES FIGURE 4.41

F:\013B\2 TECH\Modelling\AQ2 Model\Prediction\IV Deepest RL mined each year PR06AN.xlsx|Figure 4.41



PREDICTED WATER LEVELS RTIO SURPLUS AND BASE CASES FIGURE 4.42

F:\013B\2 TECH\Modelling\AQ2 Model\Prediction\IV Deepest RL mined each year PR06AN.xlsx\Figure 4.42