

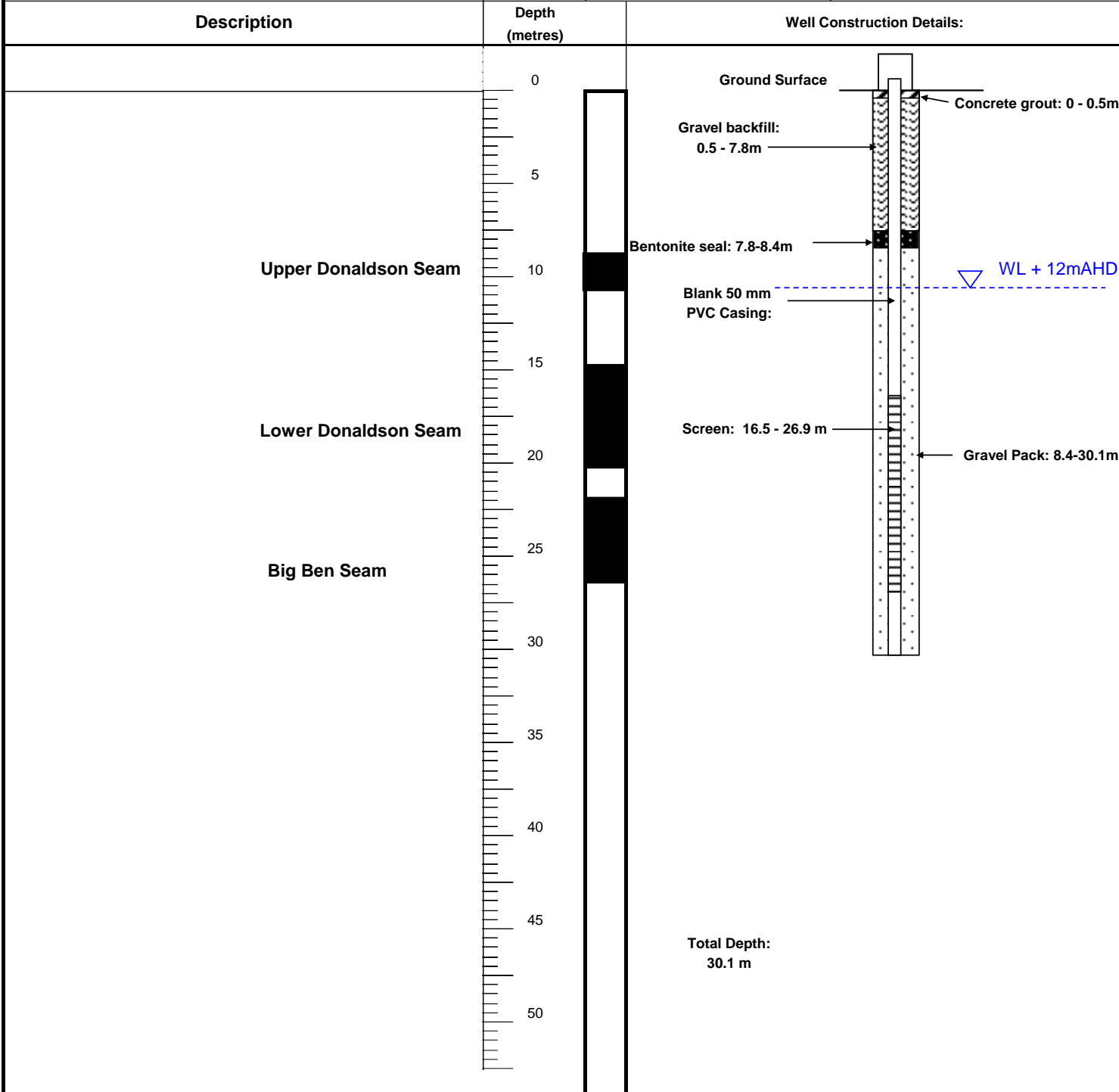
**APPENDIX A:
BORE LOGS**

Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ1

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	23.08mAHD	
	Elevation (TOC):	23.56mAHD	
Location: Abel Coal Project	Stickup:	0.48m	
	Hole Depth:	30.1m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

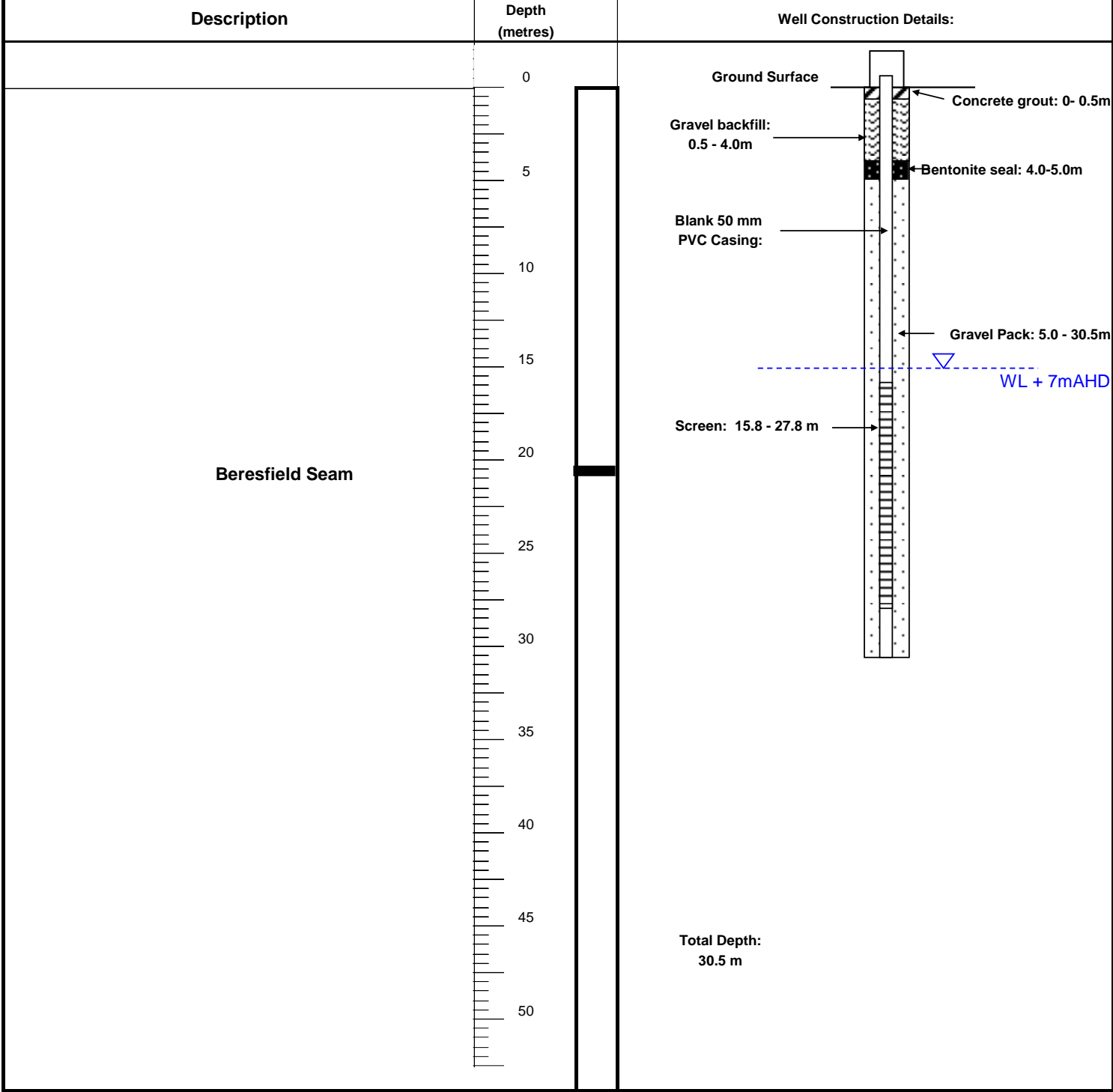


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ2

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	22.3 mAHD	
	Elevation (TOC):	23.37mAHD	
Location: Abel Coal Projecy	Stickup:	1.07m	
	Hole Depth:	30.5m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

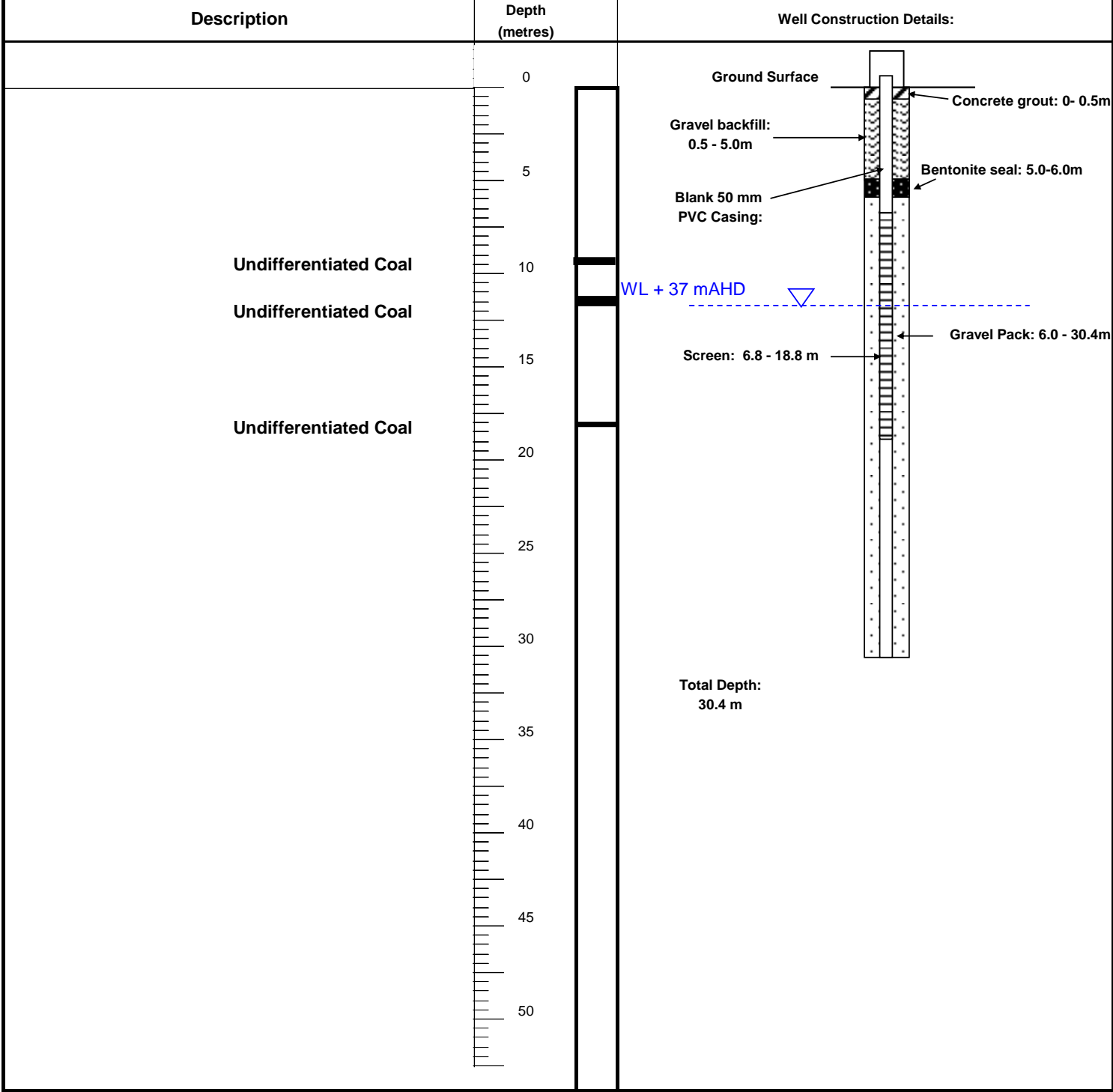


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ3

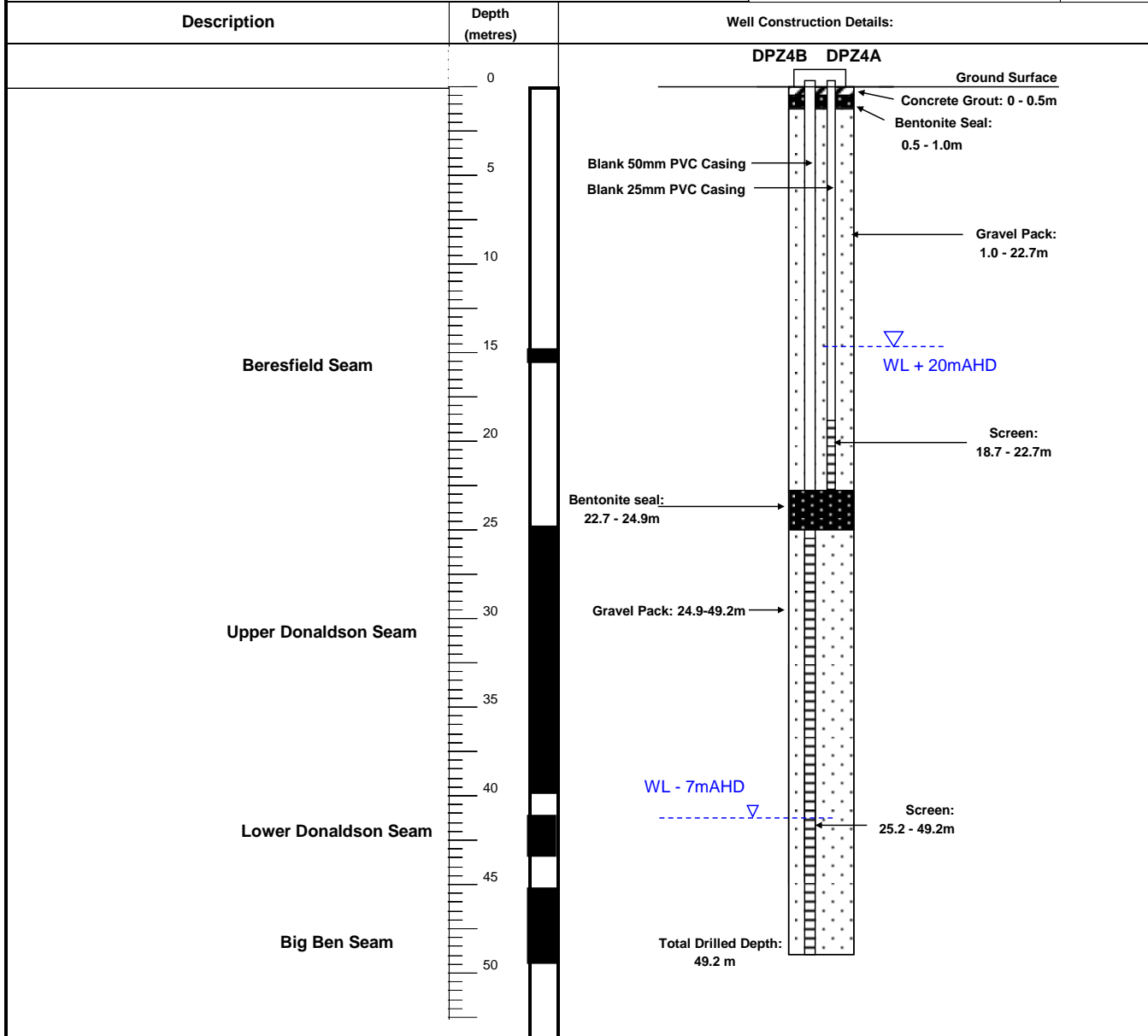
Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL): 49.09mAHD	
	Elevation (TOC): 49.62 mAHD	
Location: Abel Coal Project	Stickup: 0.53m	
	Hole Depth: 30.4m	
Drilling Contractor:	Date Started:	Supervised By:
	Date Completed:	



05-0163

Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Date Finished:
Donaldson Coal Pty Ltd	DPZ4A	35.01mAHD	35.74 mAHD	0.73m	
Location:	DPZ4B	35.01mAHD	35.74 mAHD	0.73m	
Abel Coal Project					
			Hole depths:		
			As shown		



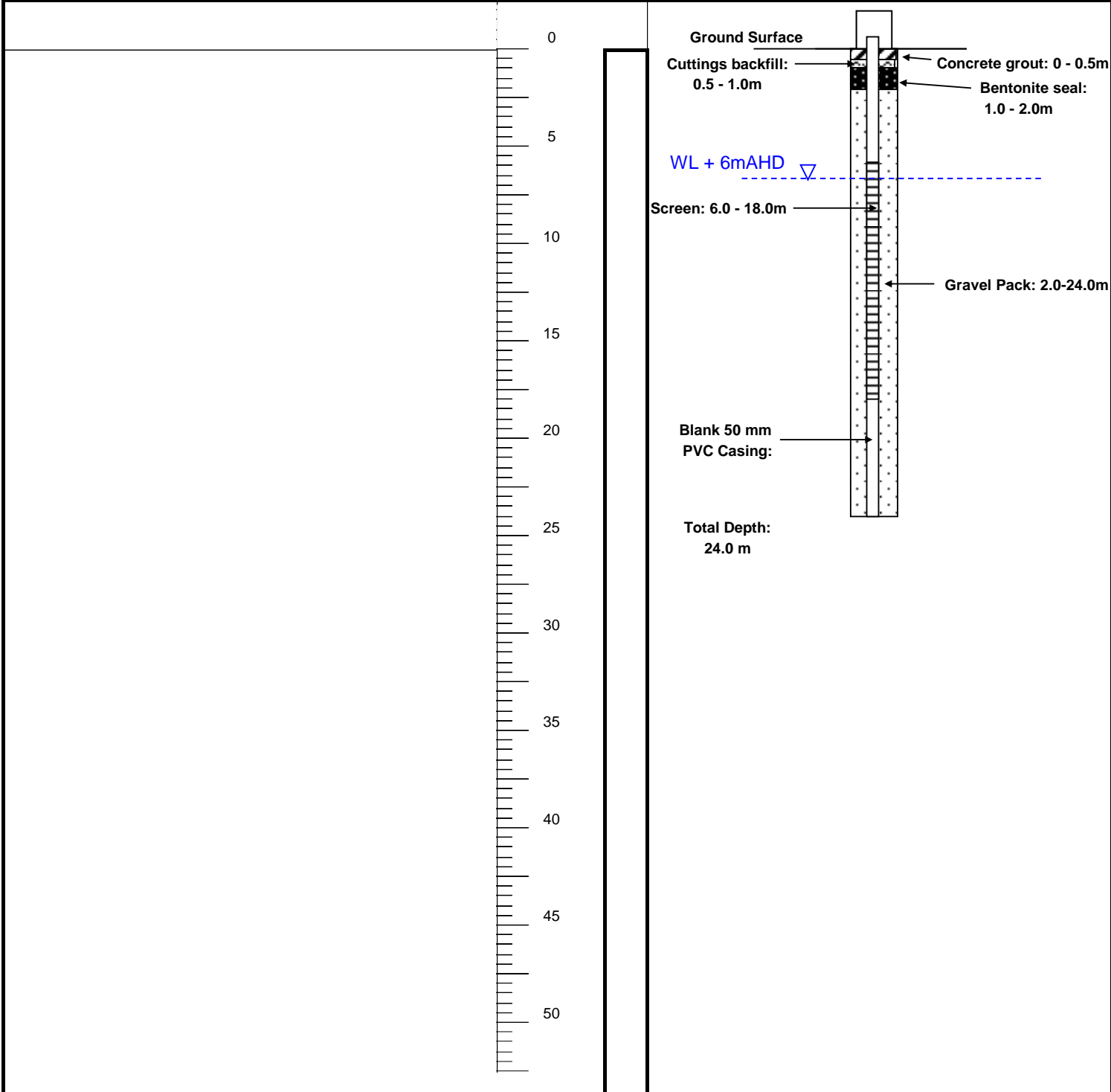
Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ5

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	12.8 mAHD	
	Elevation (TOC):	13.58mAHD	
Location: Abel Coal Project	Stickup:	0.78m	
	Hole Depth:	24.0m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

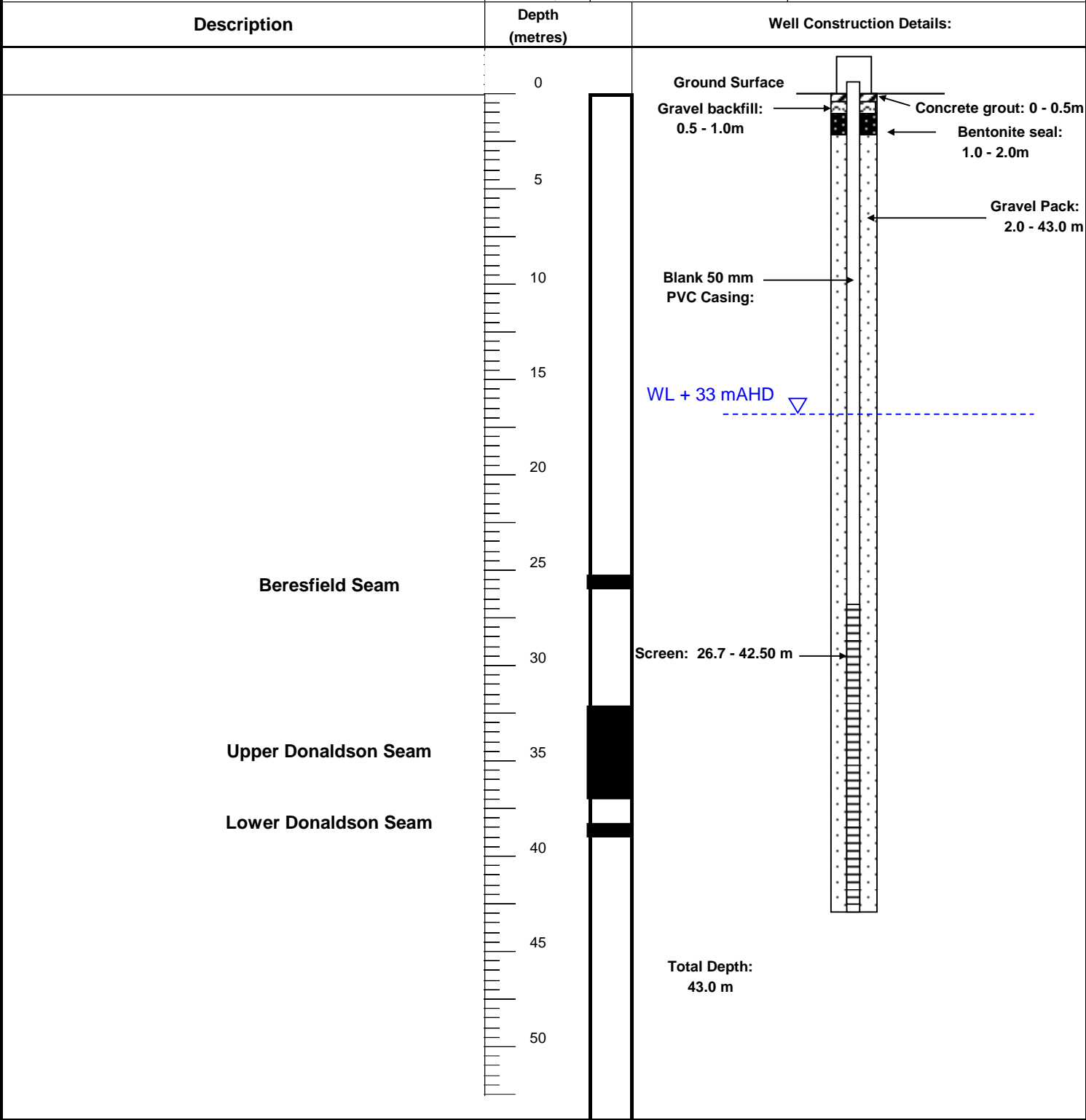
Description	Depth (metres)	Well Construction Details:
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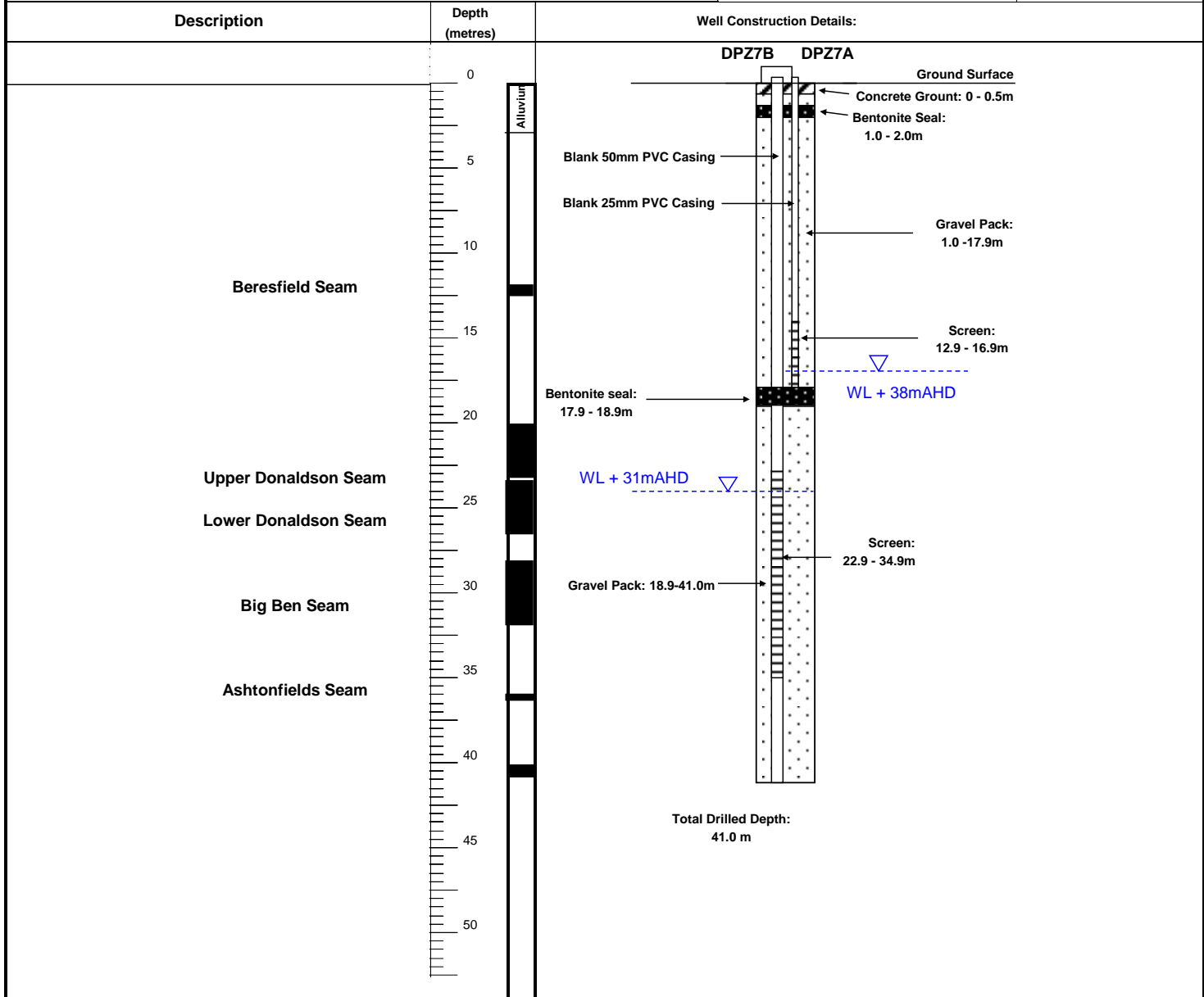
Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ6

Project No:	05-0163
Client:	Donaldson Coal Pty Ltd
Location:	Abel Coal Project
Drilling Contractor:	
Elevation (GL):	57.7 mAHD
Elevation (TOC):	58.3mAHD
Stickup:	0.6m
Hole Depth:	43.0m
Date Started:	
Date Completed:	
Supervised By:	



				Project No:	05-0163	
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Date Started:	Date Finished:
Donaldson Coal Pty Ltd	DPZ7A	428.270 mAHD	428.44 mAHD	0.78m		
Location:	DPZ7B	428.404 mAHD	428.63 mAHD	0.78m		
Abel Coal Project						
				Hole depths:	Supervised By:	
				As shown		

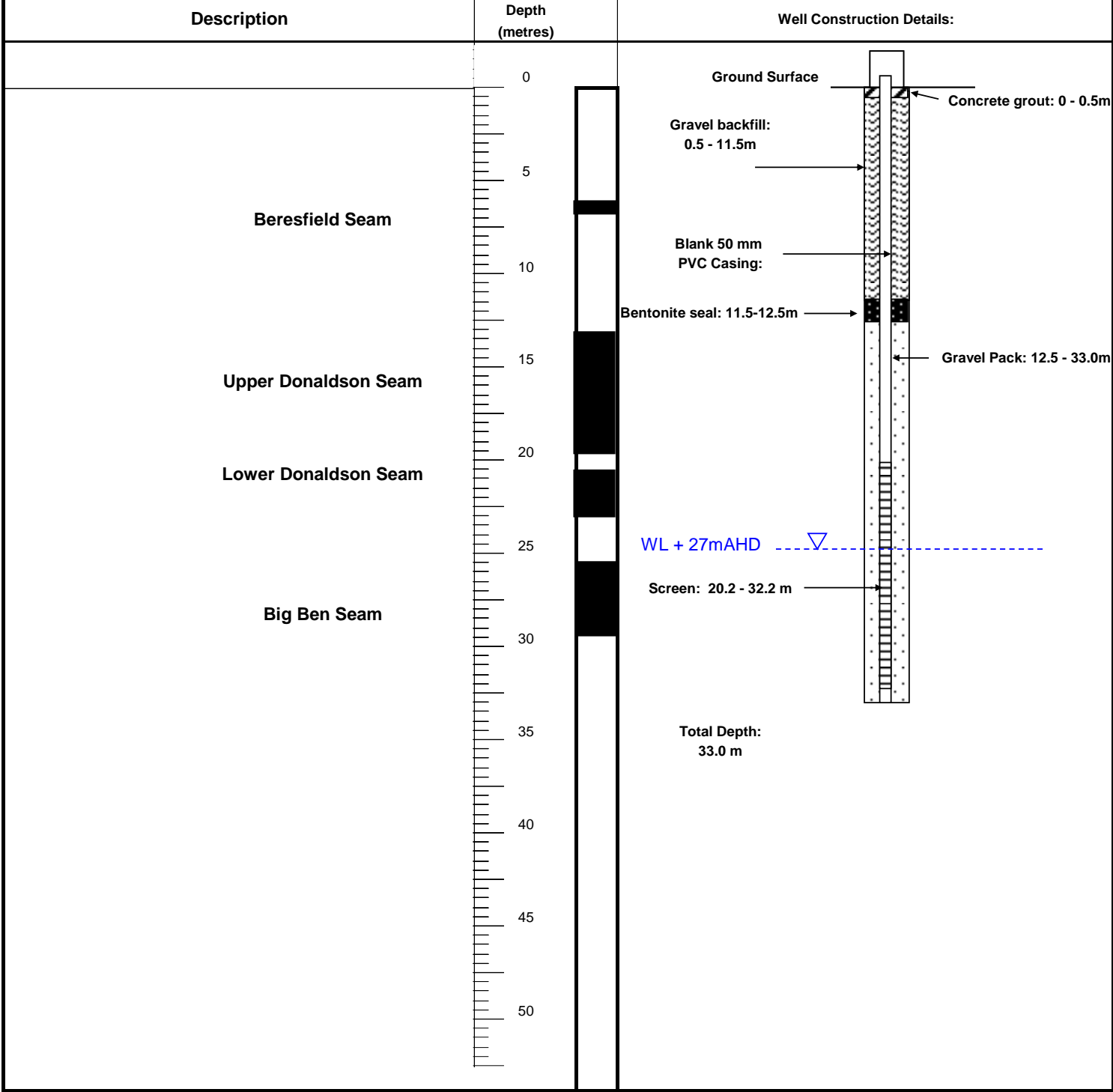


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ8

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	51.8 mAHD	
	Elevation (TOC):	52.43 mAHD	
Location: Abel Coal Project	Stickup:	0.63m	
	Hole Depth:	33.0m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

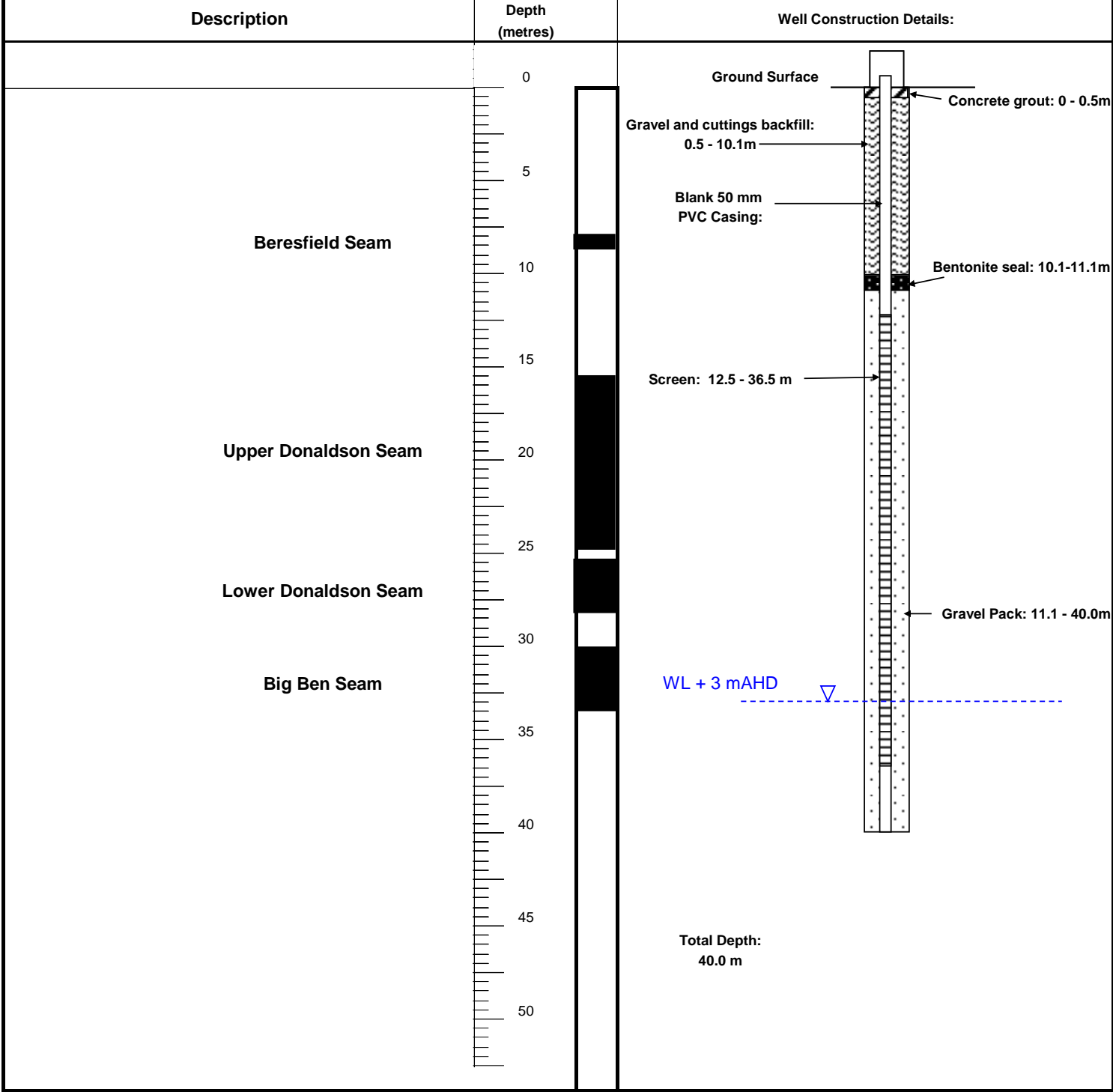


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ9

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	36.36 mAHD	
	Elevation (TOC):	36.85 mAHD	
Location: Abel Coal Project	Stickup:	0.49m	
	Hole Depth:	40.0m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

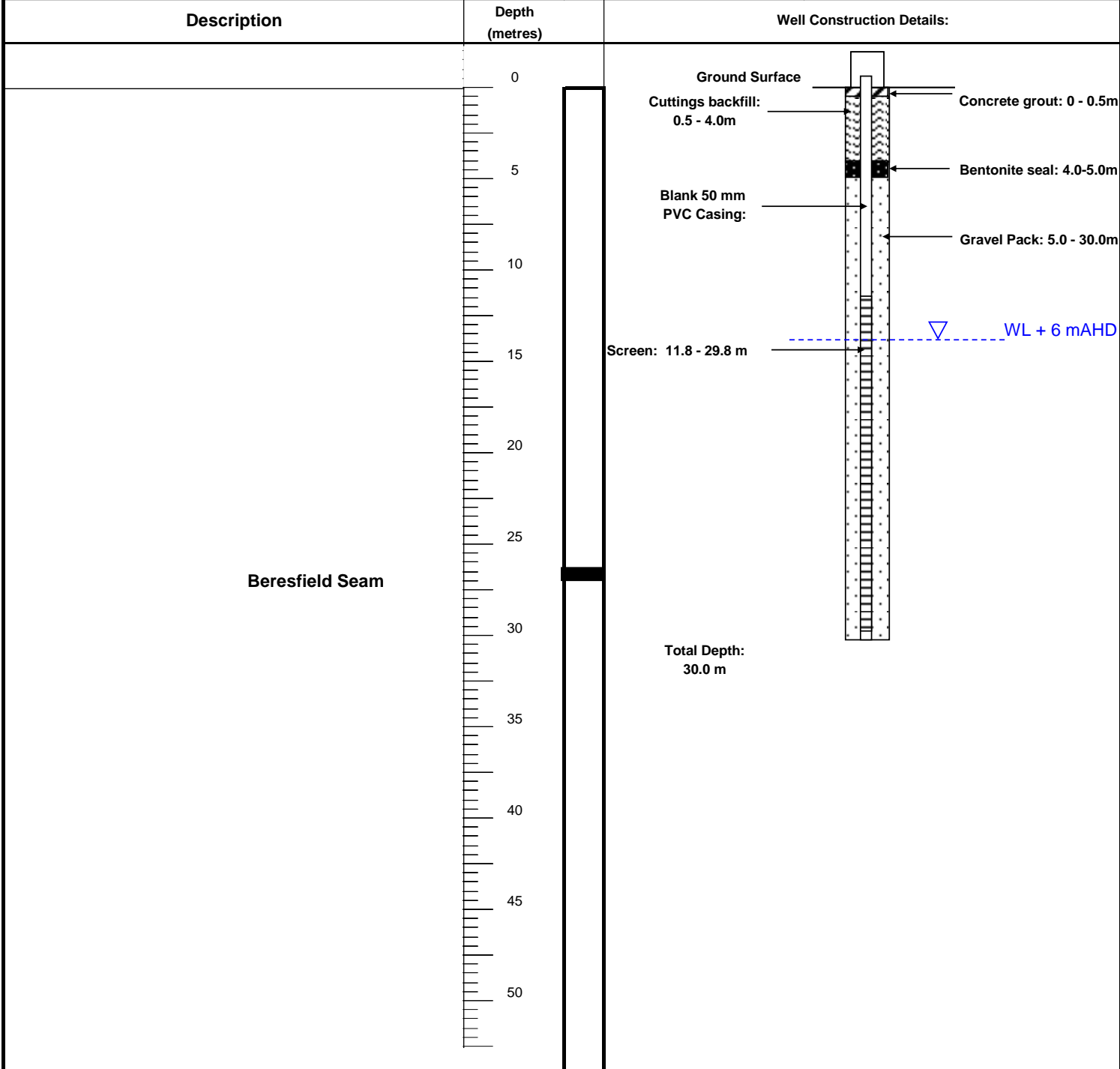


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ10

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	19.81 mAHD	Supervised By:
	Elevation (TOC):	20.1 mAHD	
Location: Abel Coal Project	Stickup:	0.29m	Date Started:
	Hole Depth:	30.0m	
Drilling Contractor:	Date Started:		Date Completed:
	Date Completed:		

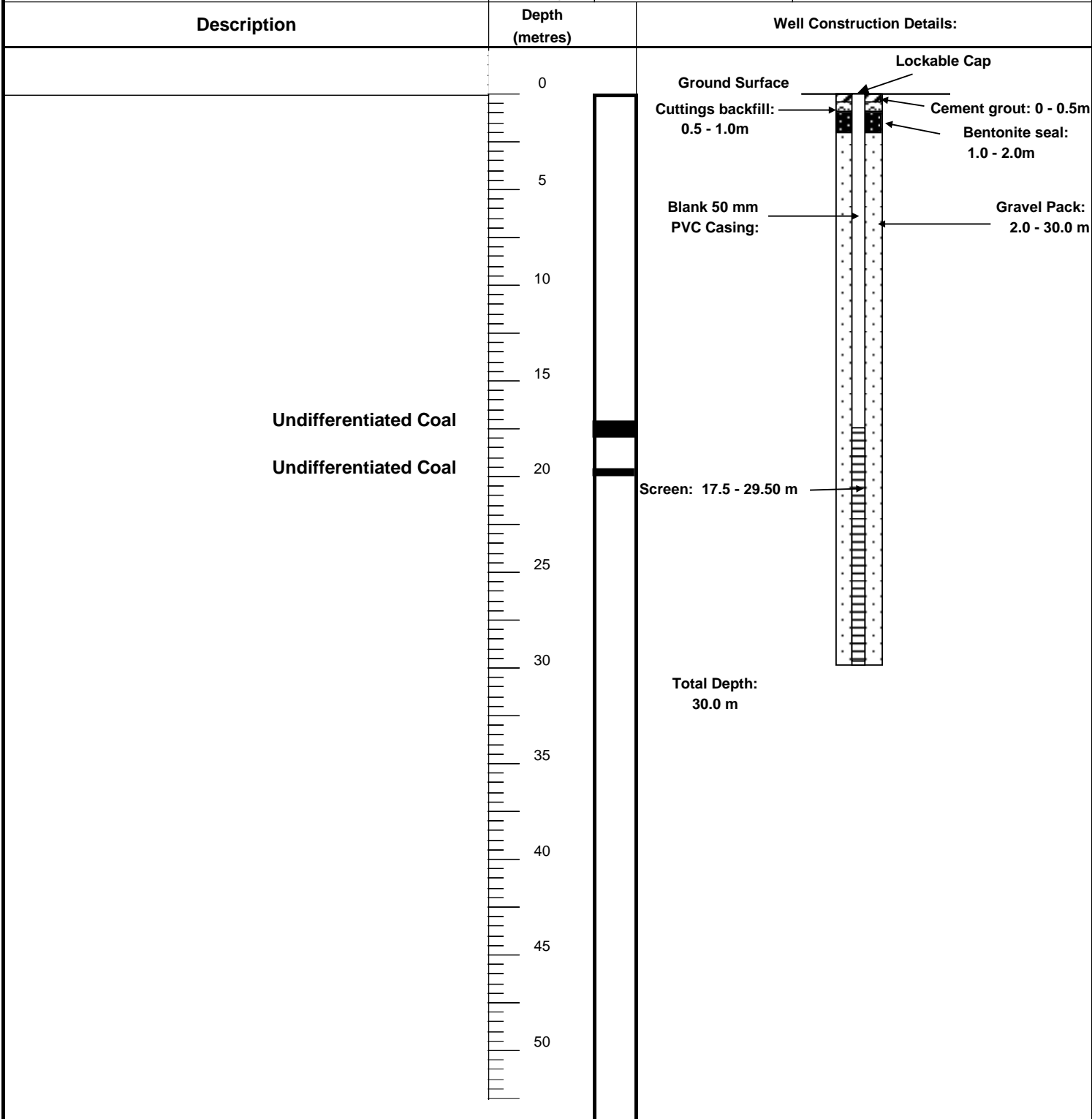


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ11

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	19 mAHD	
	Elevation (TOC):	19 mAHD	
Location: Abel Coal Project	Stickup:	0m	
	Hole Depth:	30.0m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

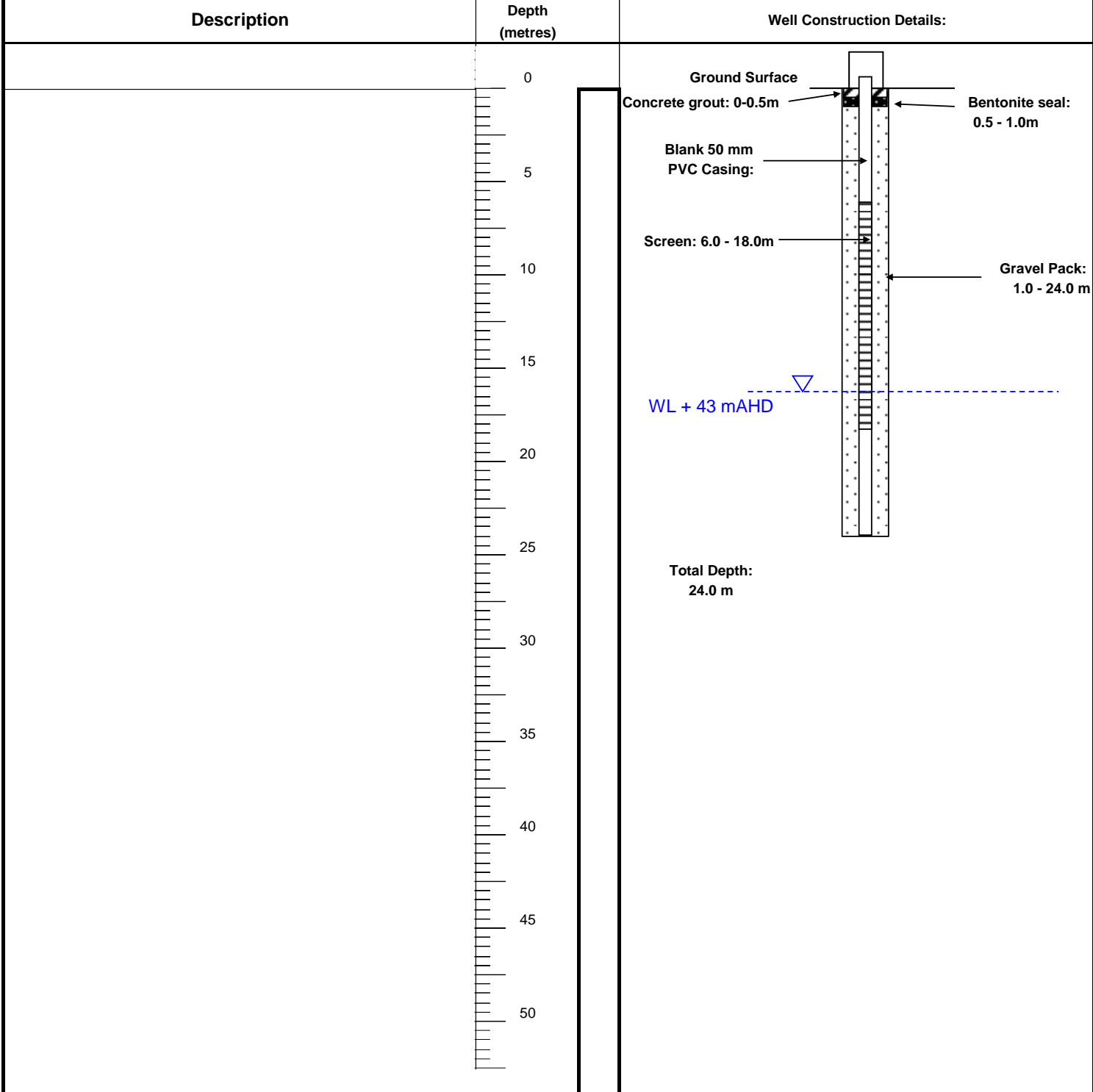


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ12

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL): 59.5mAHD	
	Elevation (TOC): 60 mAHD	
Location: Abel Coal Project	Stickup: 0.5m	
	Hole Depth: 24.0m	
Drilling Contractor:	Date Started:	Supervised By:
	Date Completed:	

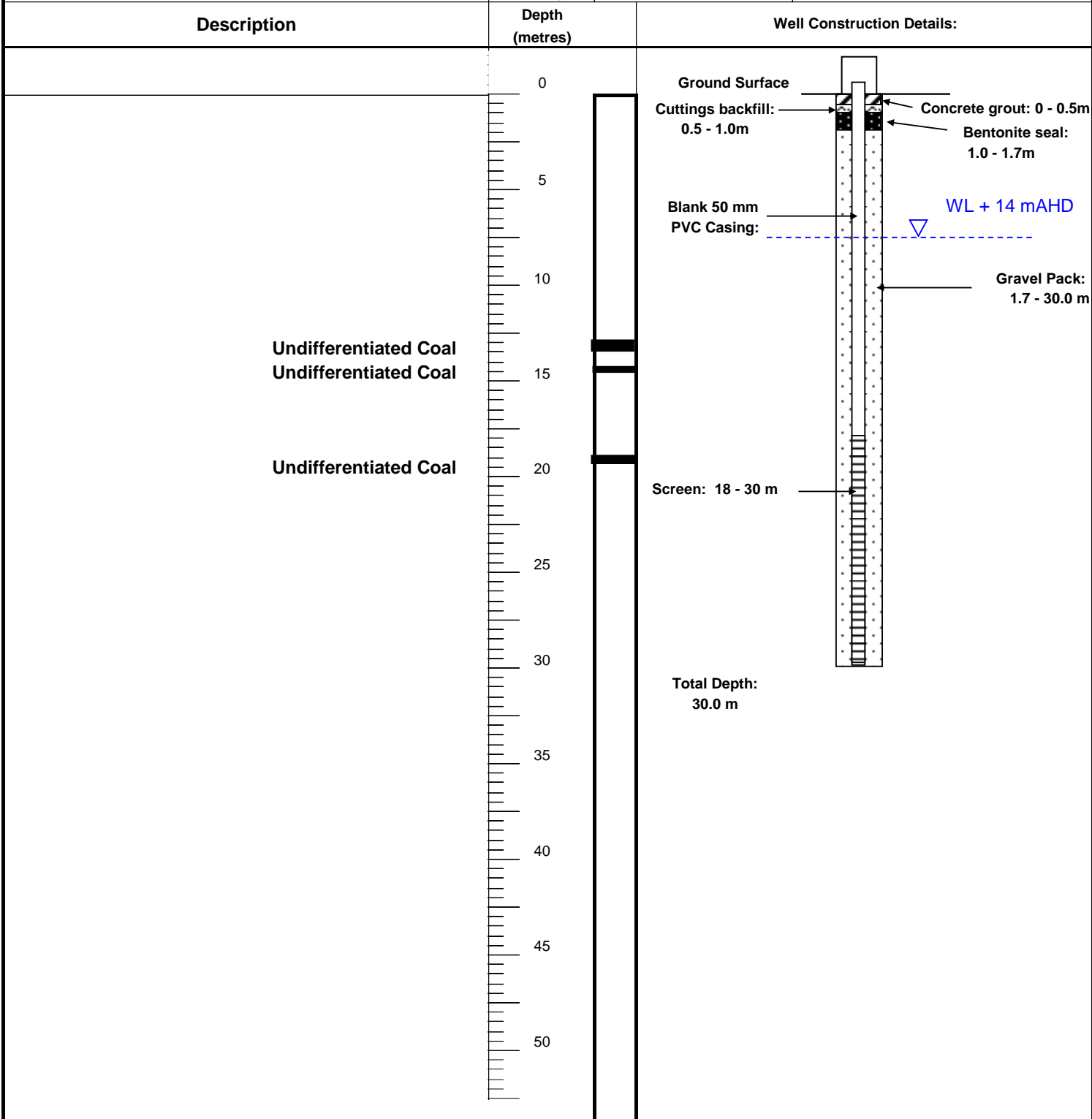


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ13

Project No: **05-0163**

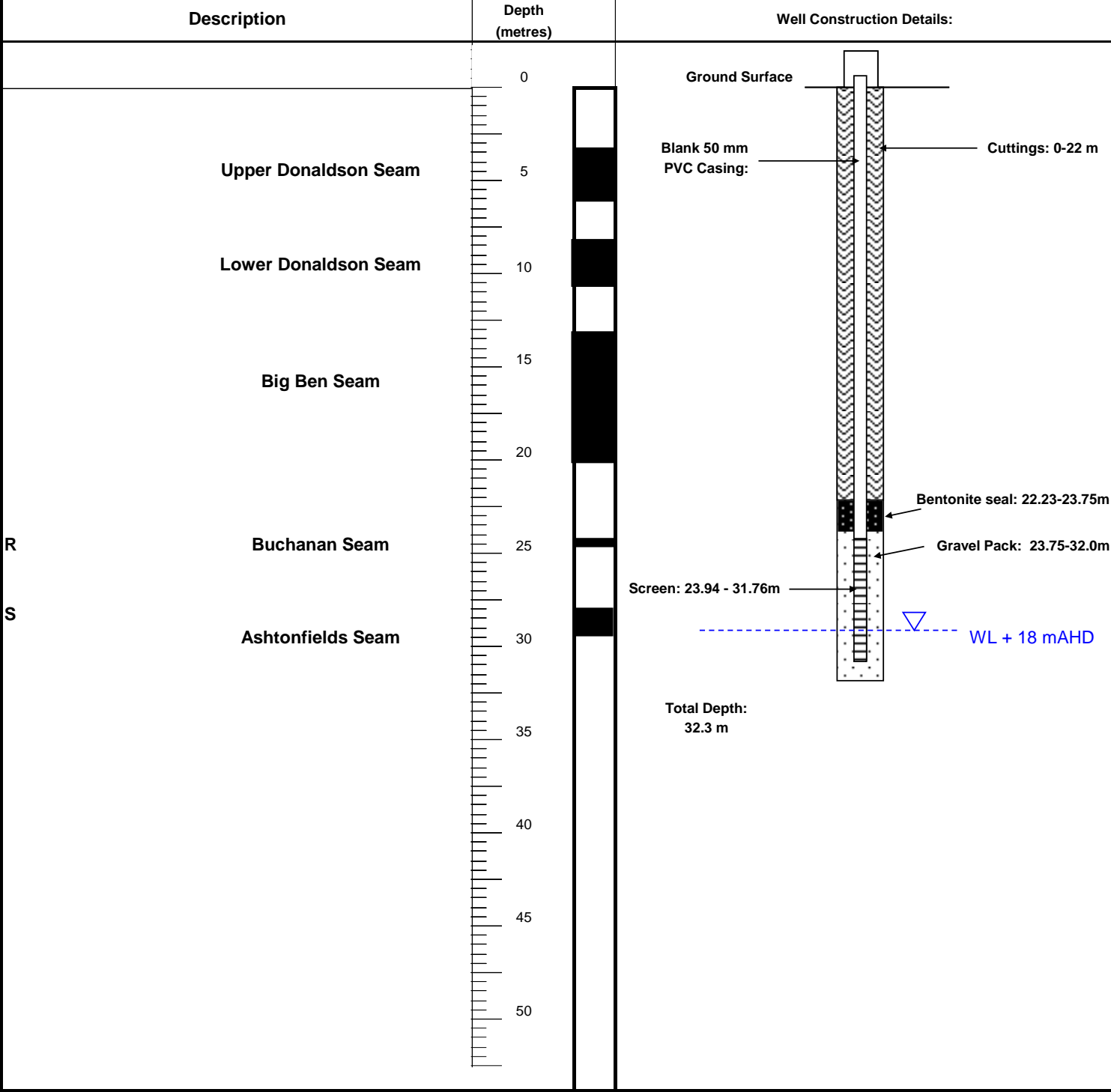
Client: Donaldson Coal Pty Ltd	Elevation (GL): 21.48 mAHD	
Location: Abel Coal Project	Elevation (TOC): 21.97 mAHD	
Drilling Contractor:	Stickup: 0.49m	Supervised By:
	Hole Depth: 30.0m	
	Date Started:	
	Date Completed:	



Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ14

Project No:	05-0163	
Client:	Elevation (GL):	47.44 mAHD
Donaldson Coal Pty Ltd	Elevation (TOC):	47.94 mAHD
Location:	Stickup:	0.5m
Abel Coal Project	Hole Depth:	32.3 m
Drilling Contractor:	Date Started:	Supervised By:
	Date Completed:	

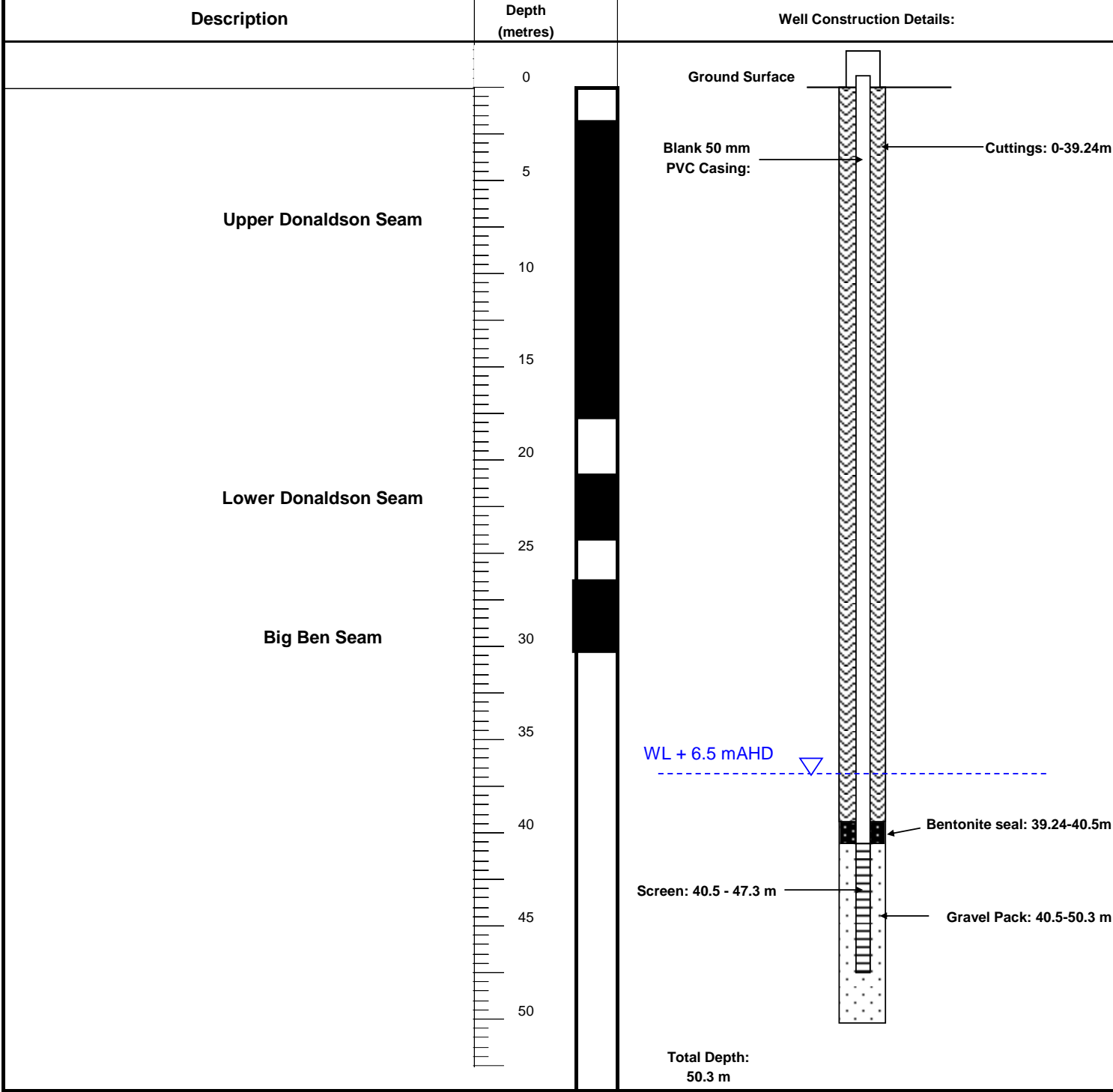


Peter Dundon and Assoc.
Logging Sheet

BORE: DPZ15

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	43.4mAHD	
	Elevation (TOC):	43.9 mAHD	
Location: Abel Coal Project	Stickup:	0.5m	
	Hole Depth:	50.3	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		

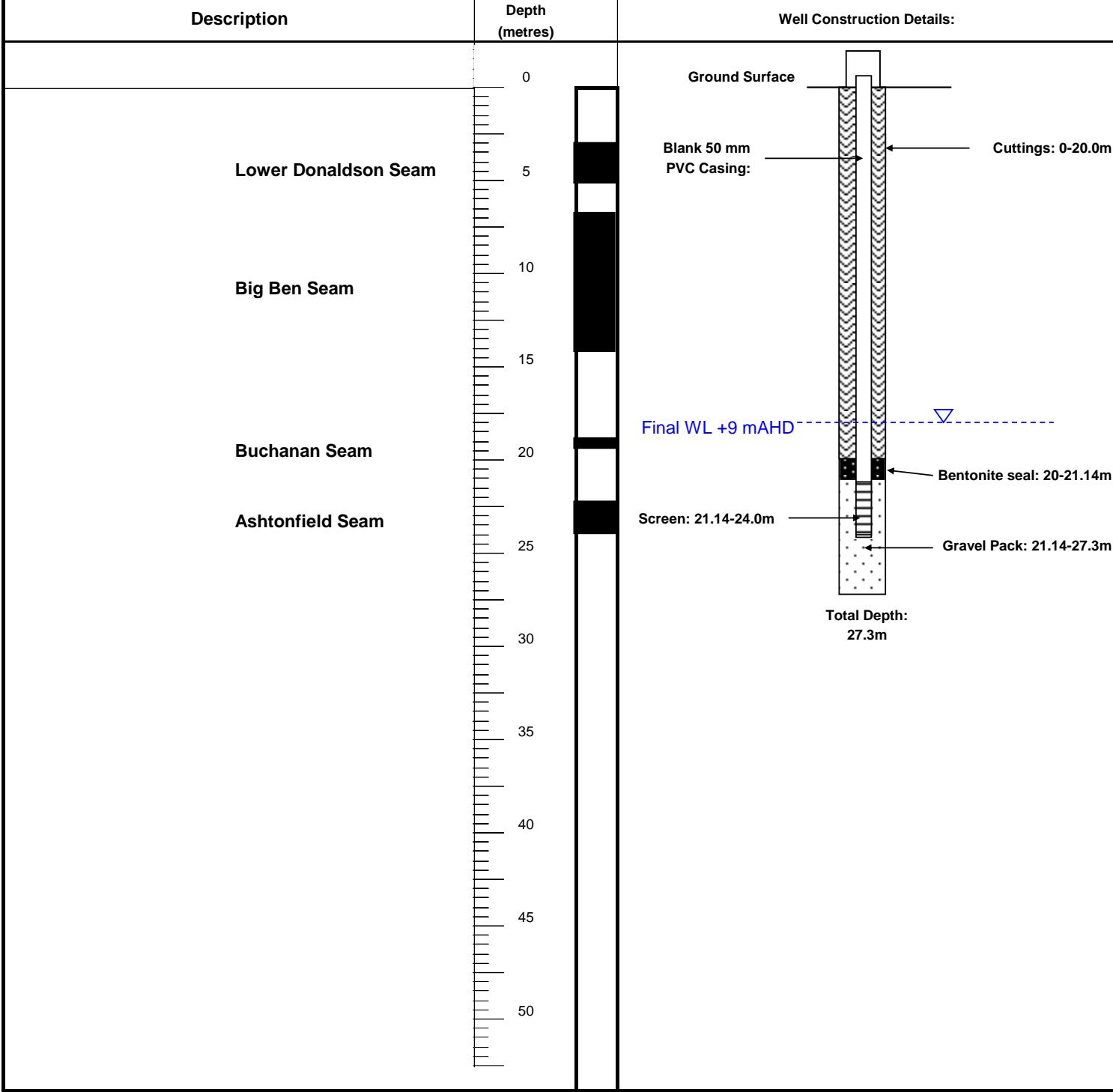


Peter Dundon and Assoc.
Logging Sheet

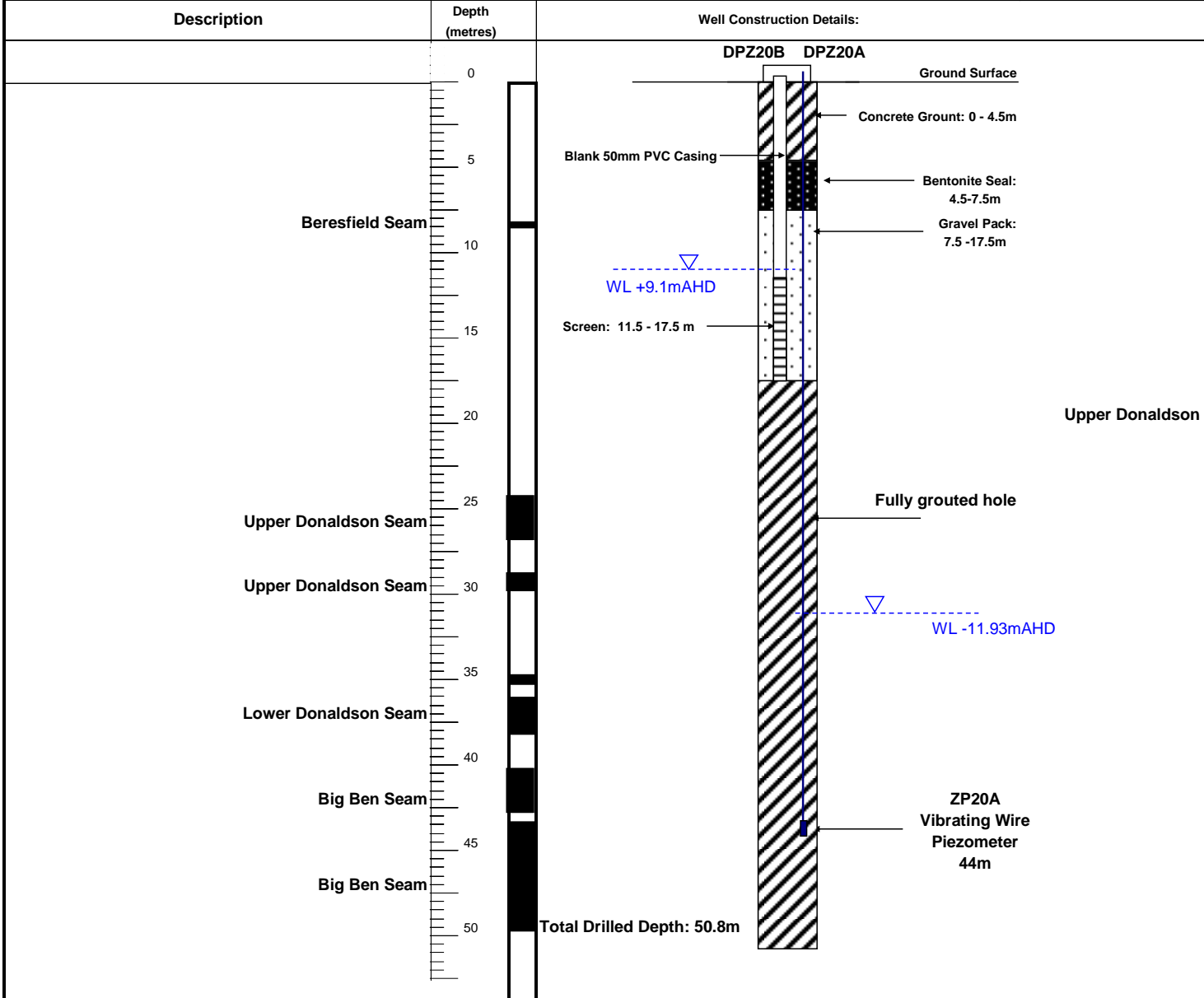
BORE: DPZ16

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	26.83 mAHD	
	Elevation (TOC):	27.33 mAHD	
Location: Donaldson Coal Project	Stickup:	0.5m	
	Hole Depth:	27.3 m	
Drilling Contractor:	Date Started:		Supervised By:
	Date Completed:		



				Project No:	05-0163	
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Date Started:	Date Finished:
Donaldson Coal Pty Ltd	DPZ20A	20.124 mAHDmAHDm		
Location:	DPZ20B	20.124 mAHDmAHDm		
Abel Coal Project						
				Hole depths:	Supervised By:	
				As shown		



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Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

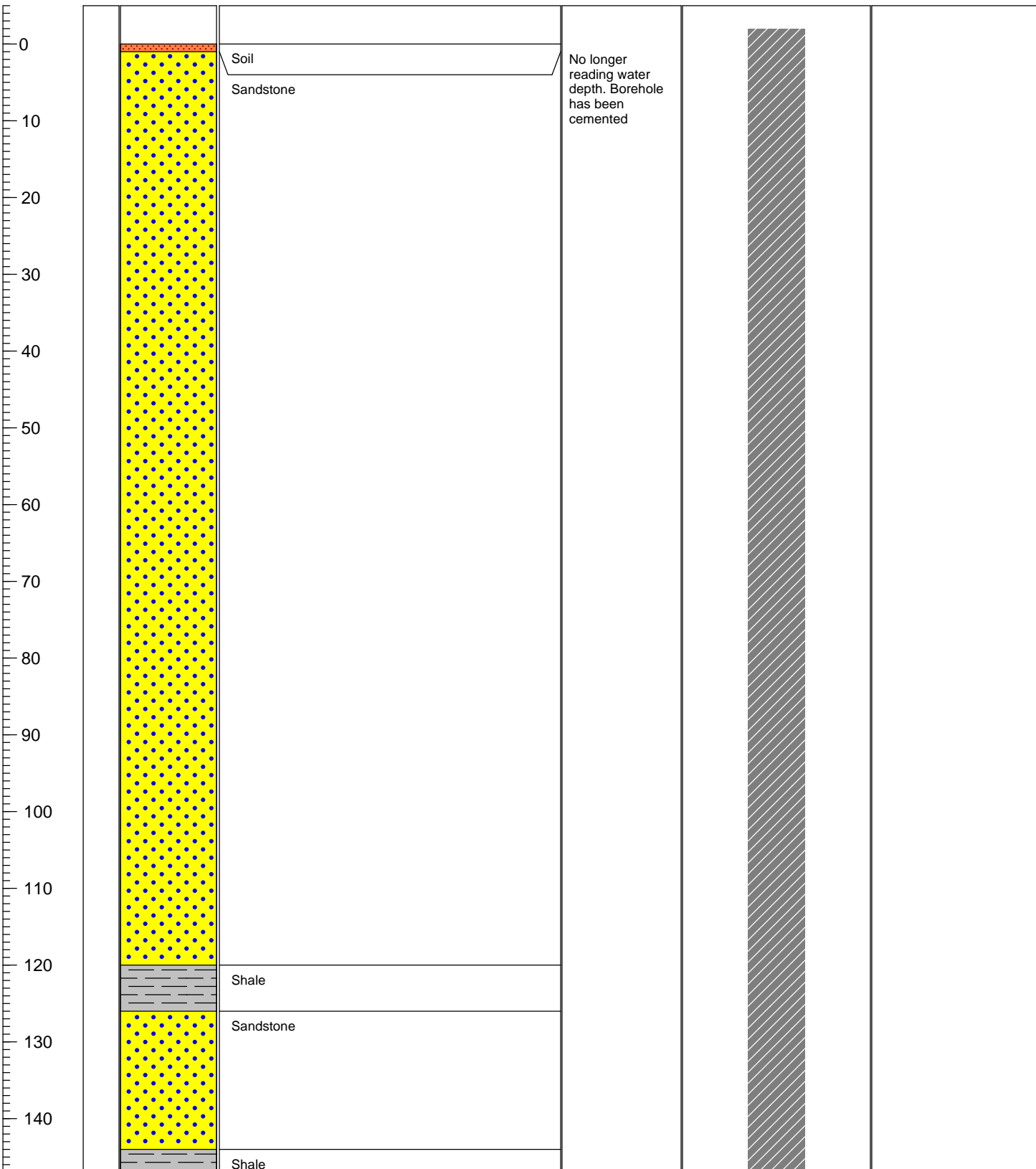
Commenced: 24/12/2005
Completed: 24/12/2005
Drilled:
Logged By:

Method:
Fluid:
Bit Record: (0-240.000)

Area:
East: 360597.000
North: 6357716.000
Collar (RL):380.4

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



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COMPOSITE WELL LOG

Well No: TA23

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 24/12/2005
Completed: 24/12/2005
Drilled:
Logged By:

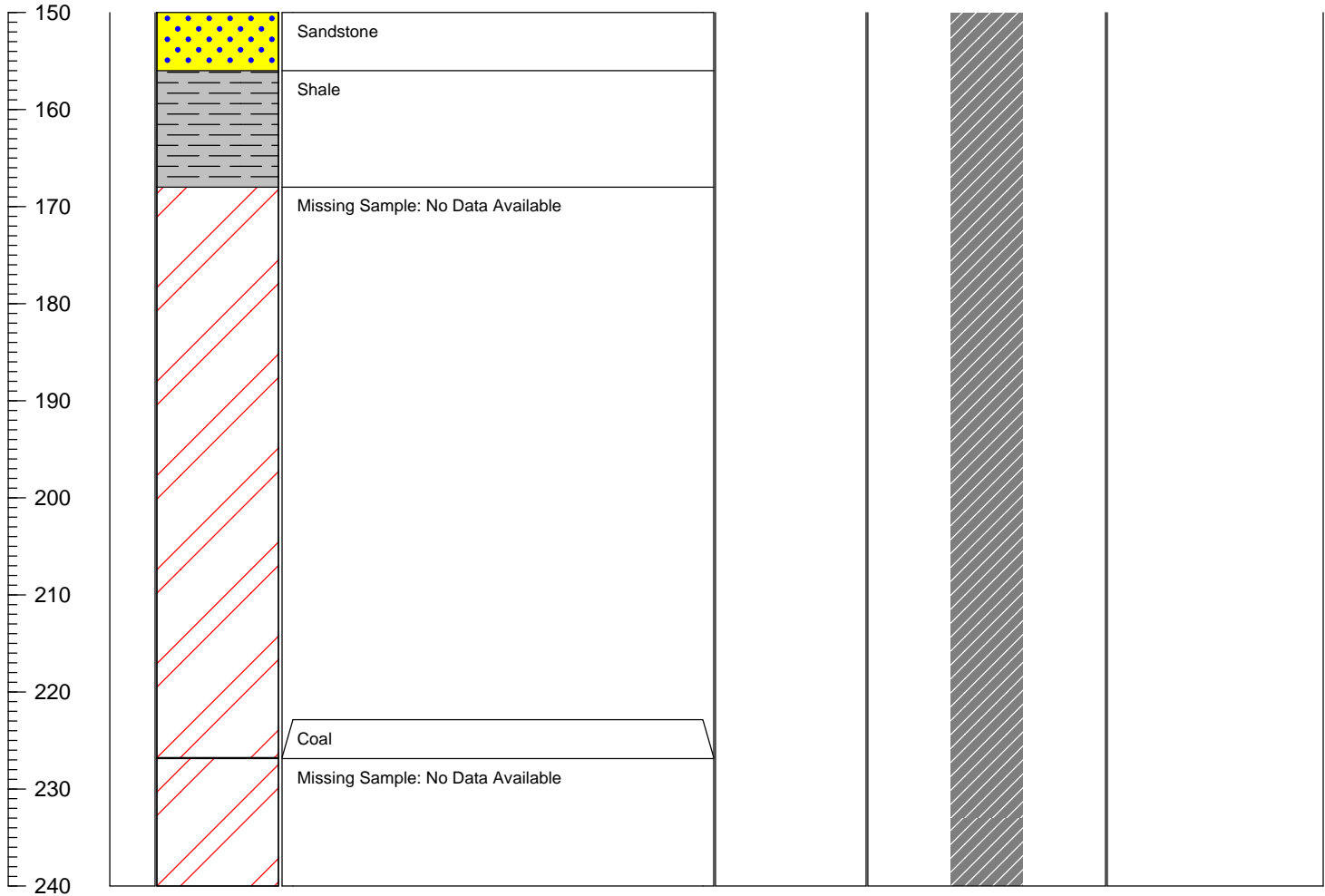
Method:
Fluid:
Bit Record: (0-240.000)

Area:
East: 360597.000
North: 6357716.000
Collar (RL):380.4

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



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COMPOSITE WELL LOG

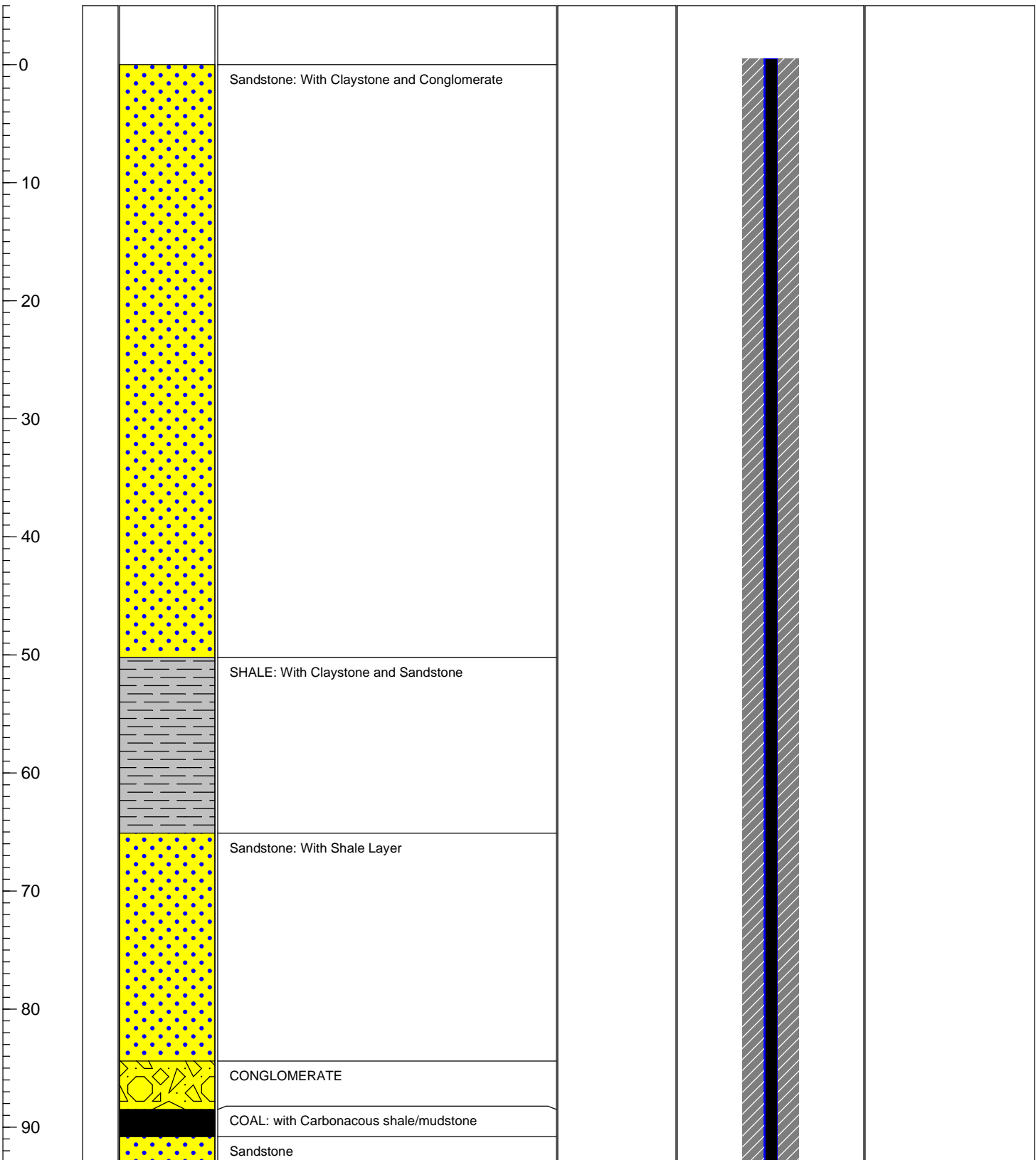
Well No: TA24

Client: Donaldson Coal Operations **Project:** Tasman Extension

Commenced:	Method: Conventional	Area: Tasman Mine Lease
Completed:	Fluid:	East: 364943.699
Drilled: MCD	Bit Record: HQ (0-146.5m)	North: 6359786.431
Logged By: AJM		Collar (RL):

Static Water Level: NA **Date:**

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
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COMPOSITE WELL LOG

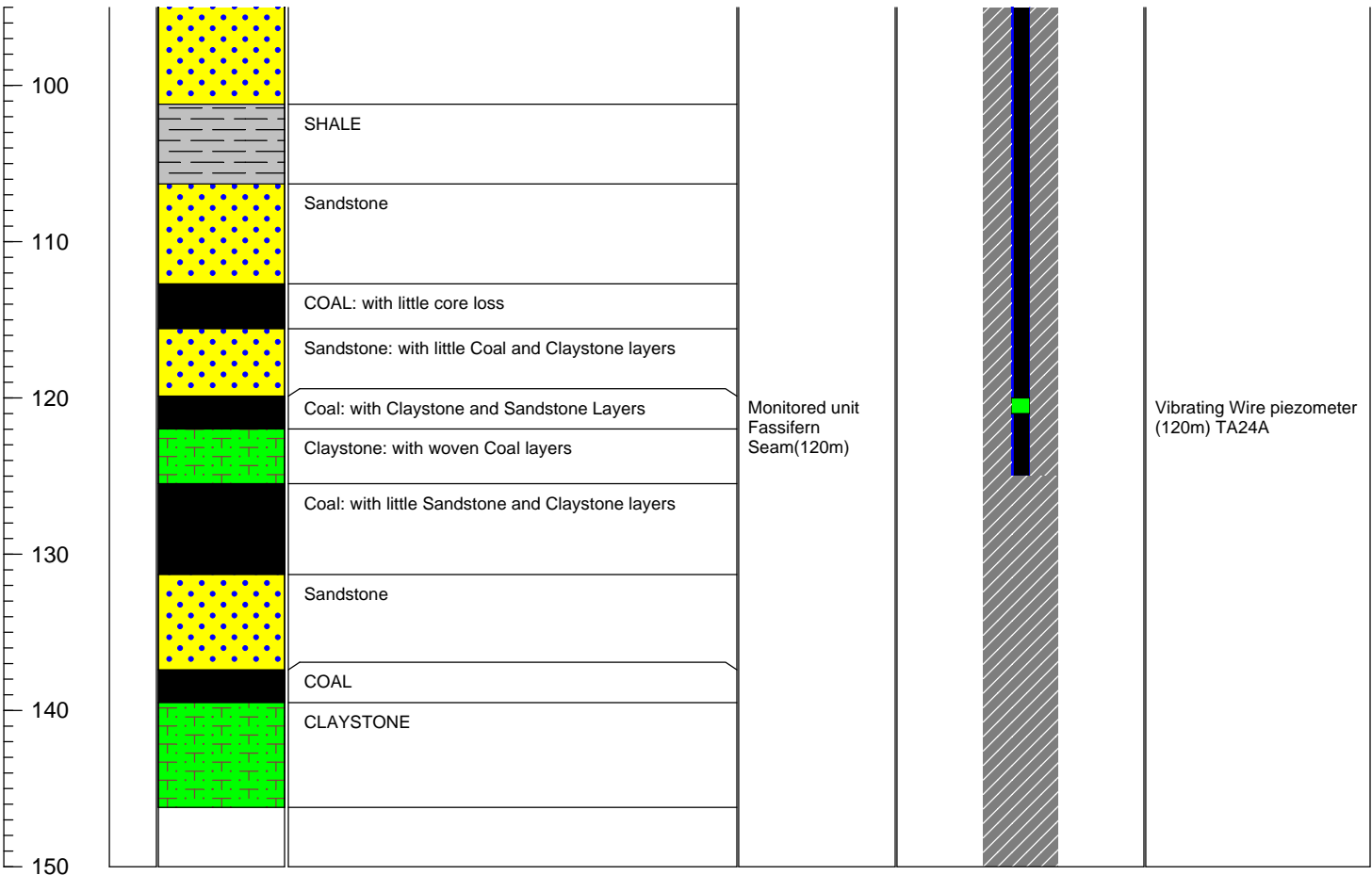
Well No: TA24

Client: Donaldson Coal Operations **Project:** Tasman Extension

Commenced:	Method: Conventional	Area: Tasman Mine Lease
Completed:	Fluid:	East: 364943.699
Drilled: MCD	Bit Record: HQ (0-146.5m)	North: 6359786.431
Logged By: AJM		Collar (RL):

Static Water Level: NA **Date:**

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 7/7/2006
Completed: 7/7/2006
Drilled:
Logged By:

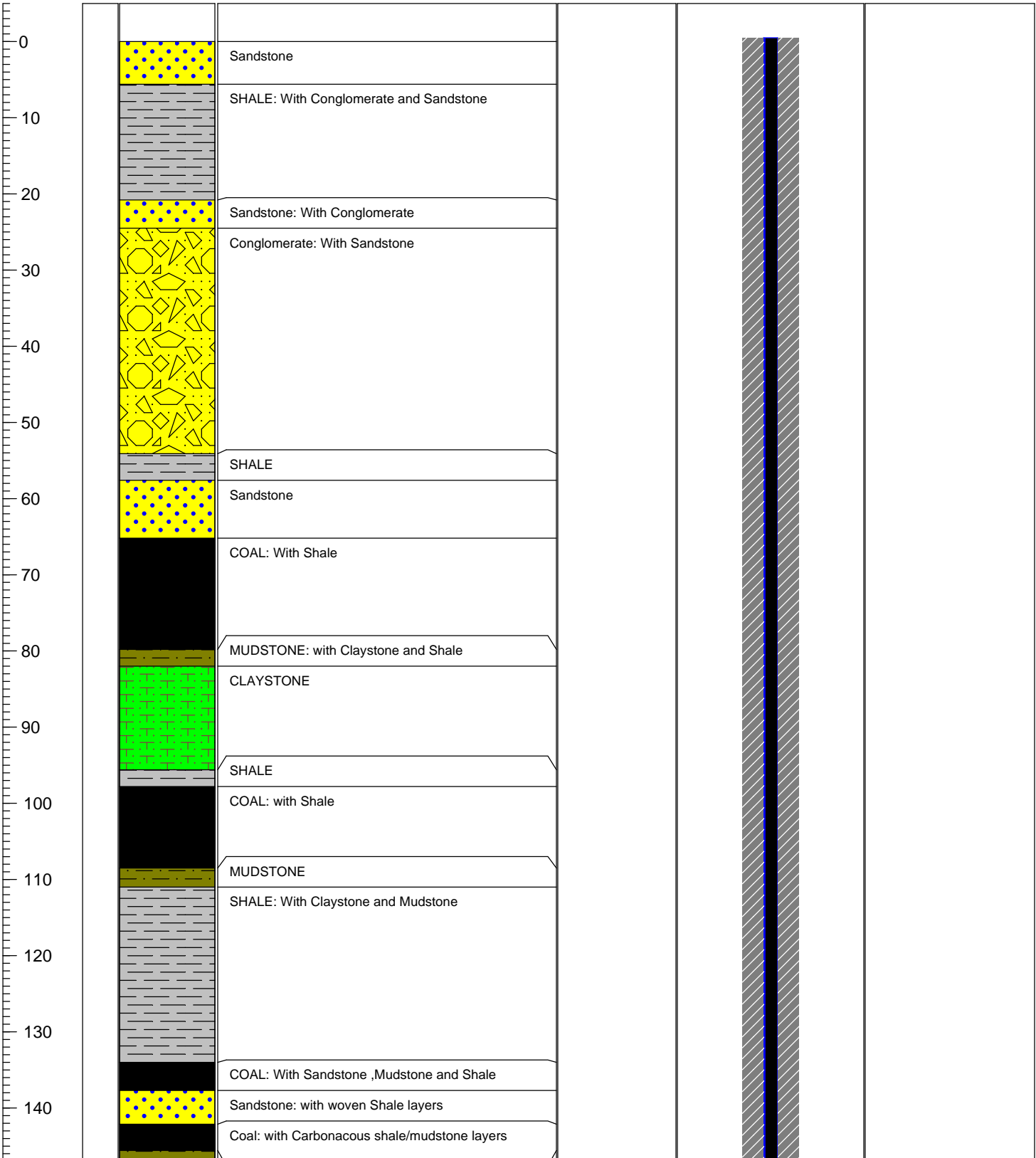
Method:
Fluid:
Bit Record: (0-303.250)

Area:
East: 364167.000
North: 6361241.000
Collar (RL):157.9

Static Water Level:

Date:

Depth (m bgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

Well No: TA28

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 7/7/2006

Method:

Area:

Completed: 7/7/2006

Fluid:

East: 364167.000

Drilled:

Bit Record: (0-303.250)

North: 6361241.000

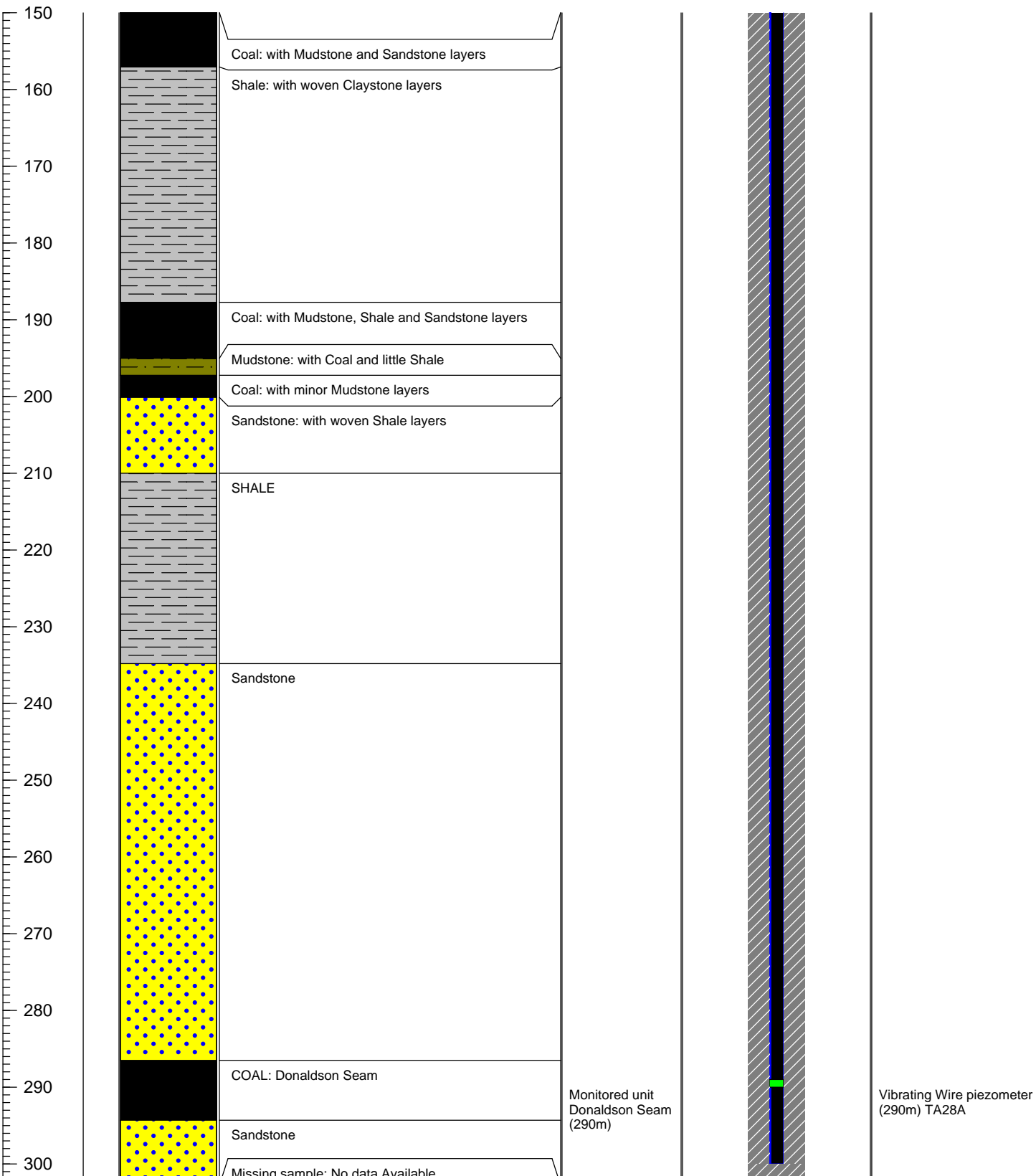
Logged By:

Collar (RL):157.9

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



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 Australia
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 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 26/03/2007
Completed: 26/03/2007
Drilled: MCD2
Logged By: AJM

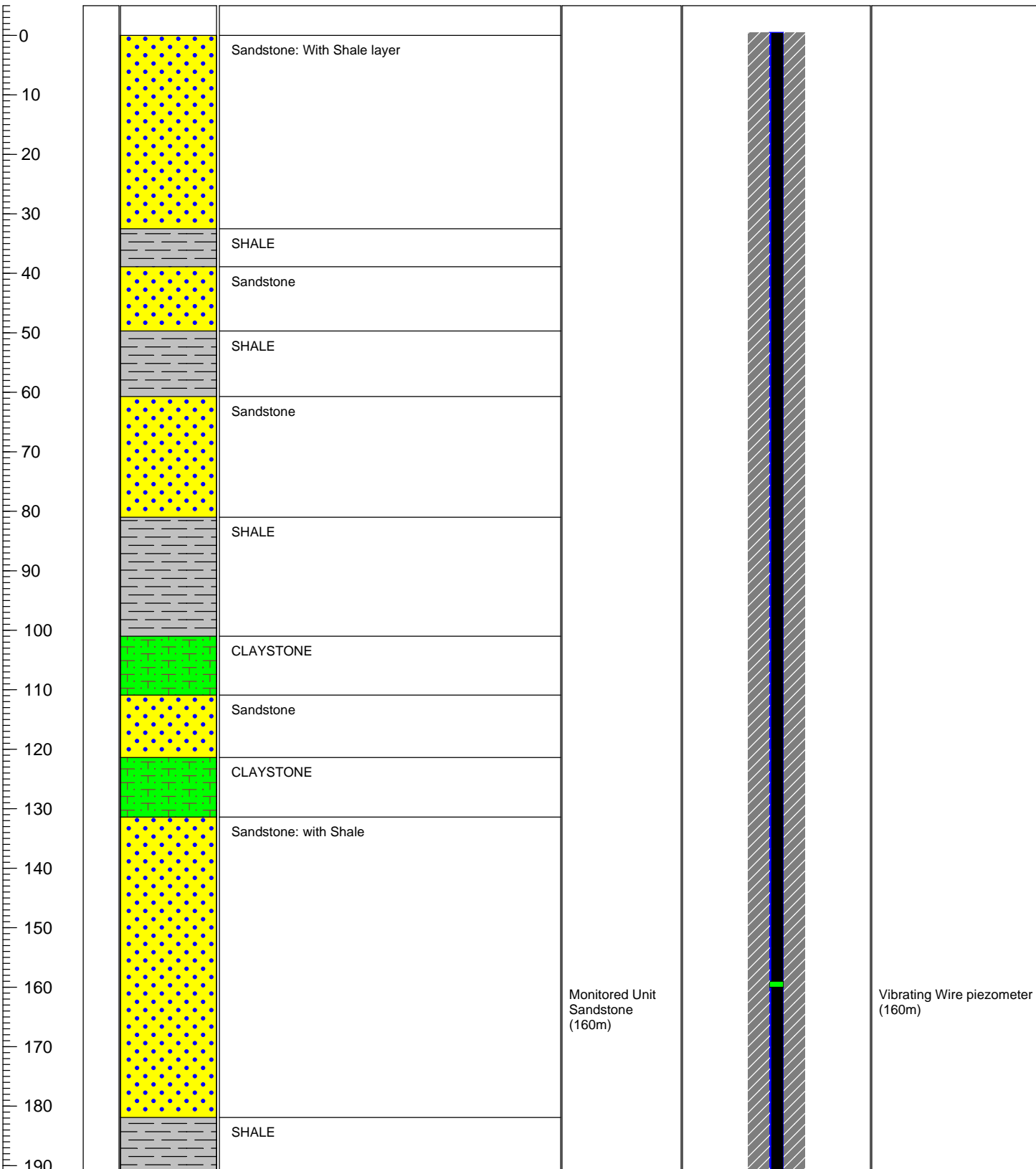
Method: Conventional
Fluid:
Bit Record: HQ (0-420.42)

Area: Tasman Mine Lease
East: 363281.000
North: 6359562.000
Collar (RL): 326

Static Water Level: 185

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 26/03/2007
Completed: 26/03/2007
Drilled: MCD2
Logged By: AJM

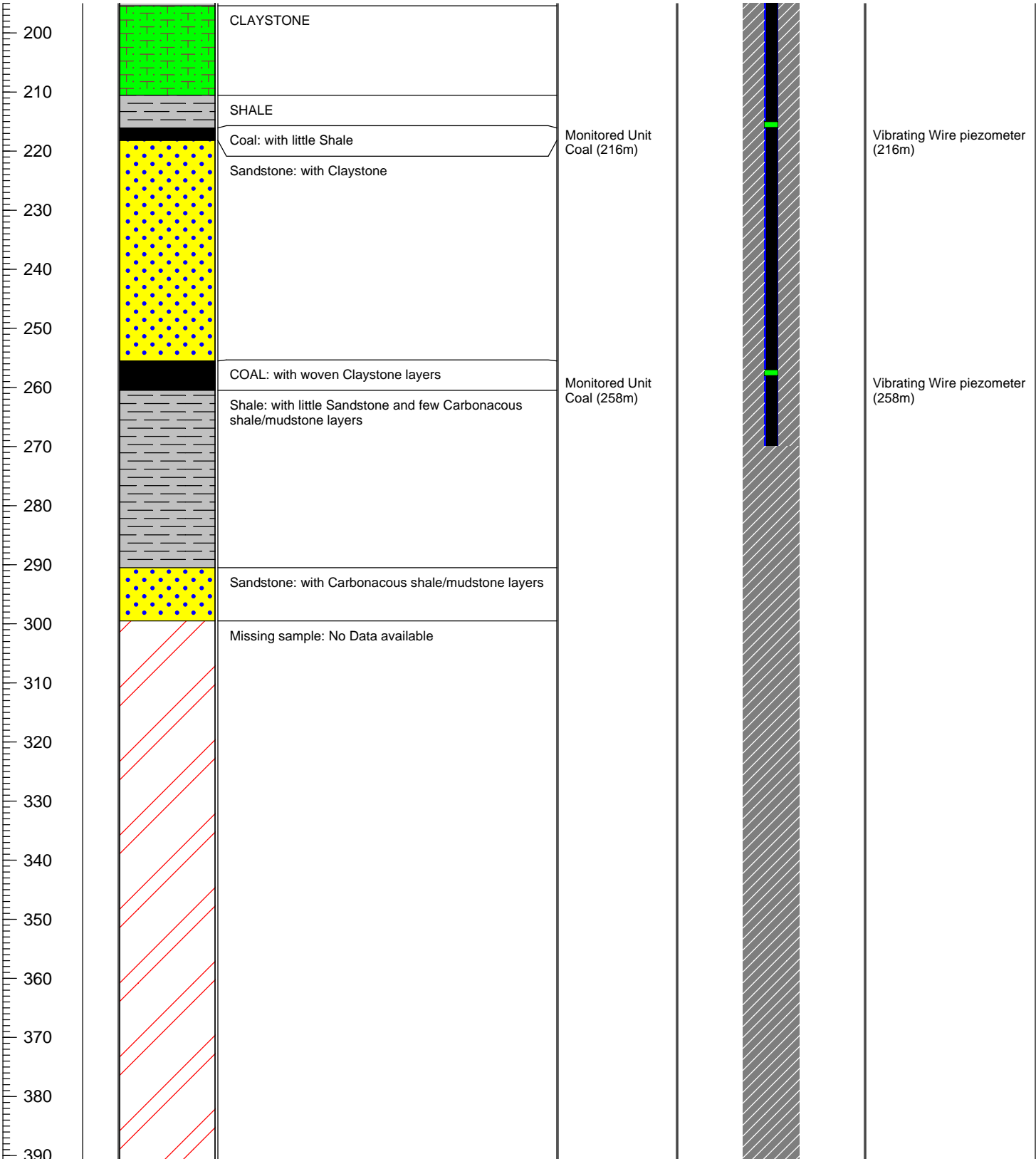
Method: Conventional
Fluid:
Bit Record: HQ (0-420.42)

Area: Tasman Mine Lease
East: 363281.000
North: 6359562.000
Collar (RL):326

Static Water Level: 185

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



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COMPOSITE WELL LOG

Well No: TA32

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 26/03/2007

Method: Conventional

Area: Tasman Mine Lease

Completed: 26/03/2007

Fluid:

East: 363281.000

Drilled: MCD2

Bit Record: HQ (0-420.42)

North: 6359562.000

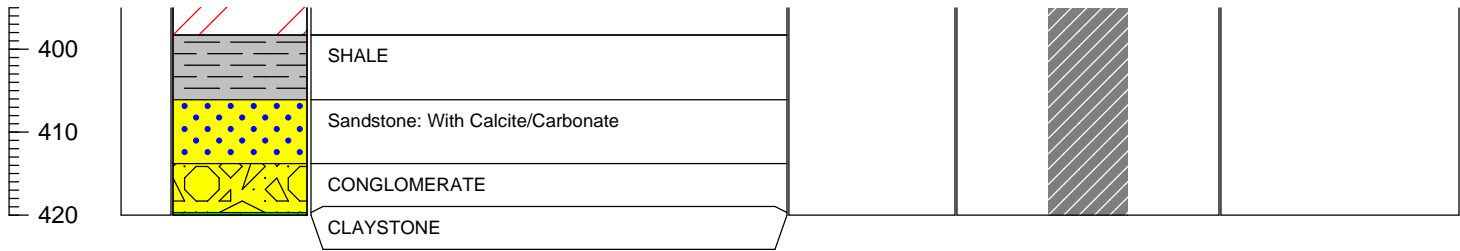
Logged By: AJM

Collar (RL):326

Static Water Level: 185

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 Australia
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Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/04/2009

Method: (0-663.5)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 361231.22

Drilled:

Bit Record:

North: 6354125.71

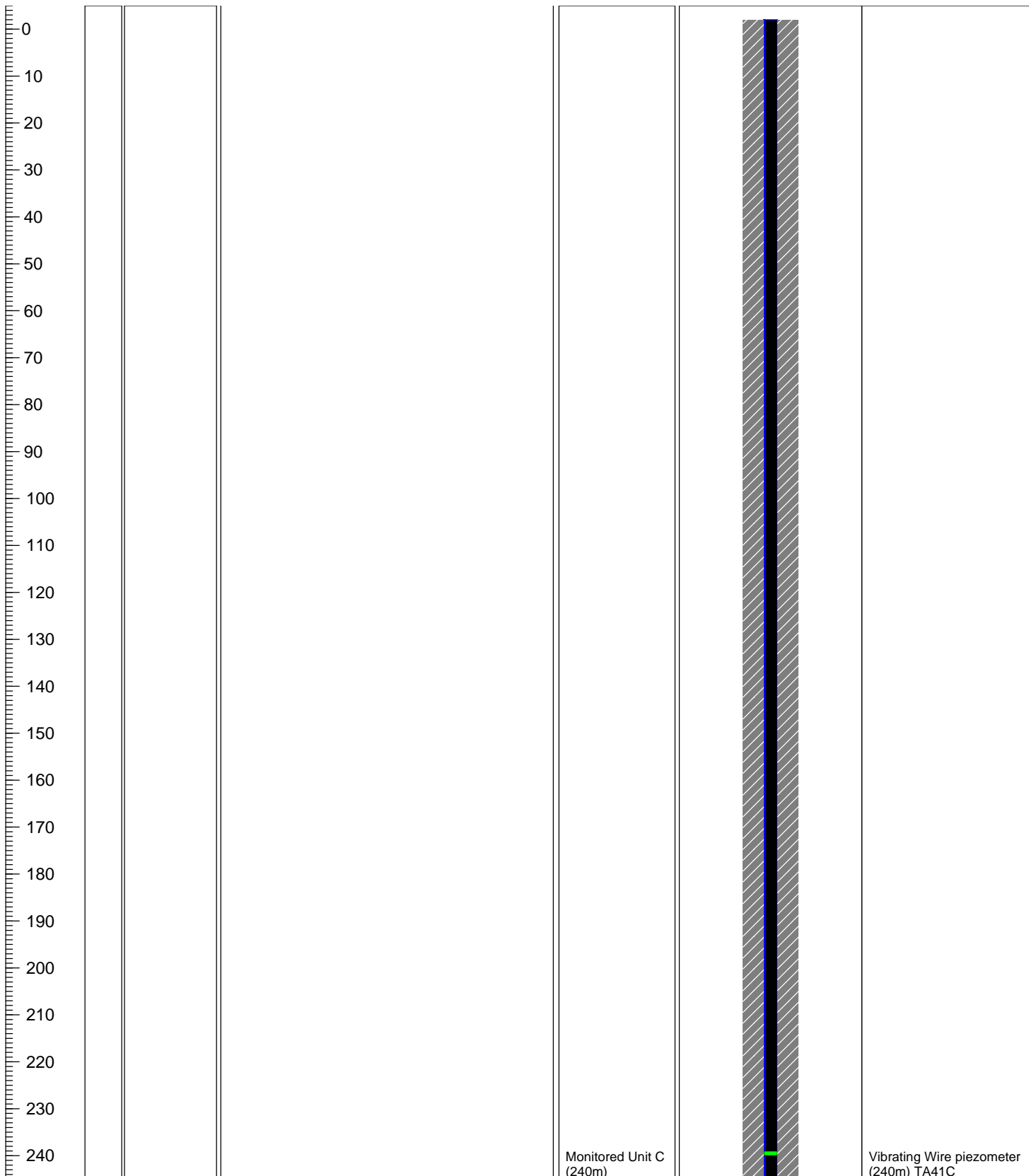
Logged By:

Collar (RL): 315.65

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/04/2009

Method: (0-663.5)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 361231.22

Drilled:

Bit Record:

North: 6354125.71

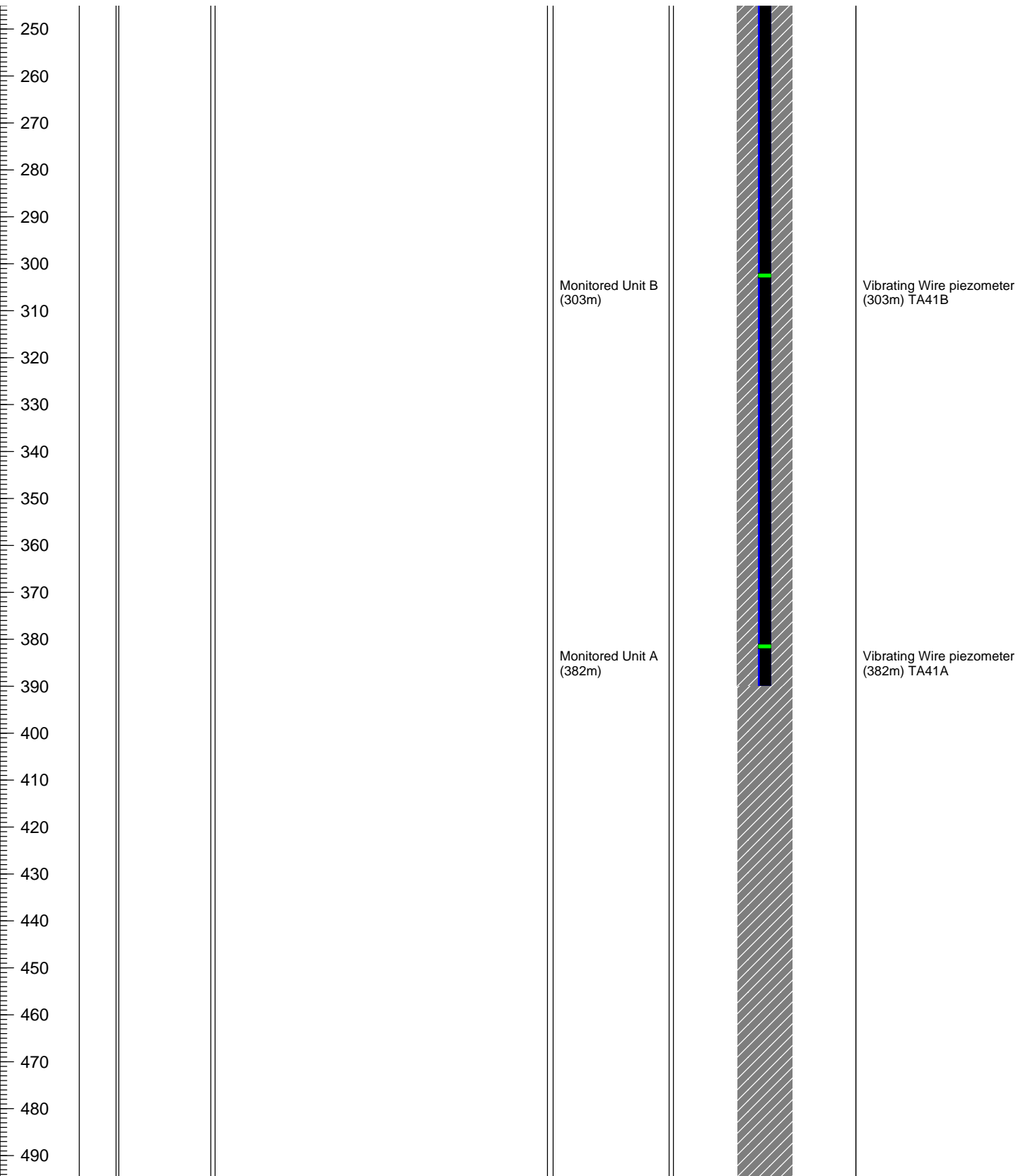
Logged By:

Collar (RL): 315.65

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 Australia
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COMPOSITE WELL LOG

Well No: TA41

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/04/2009

Method: (0-663.5)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 361231.22

Drilled:

Bit Record:

North: 6354125.71

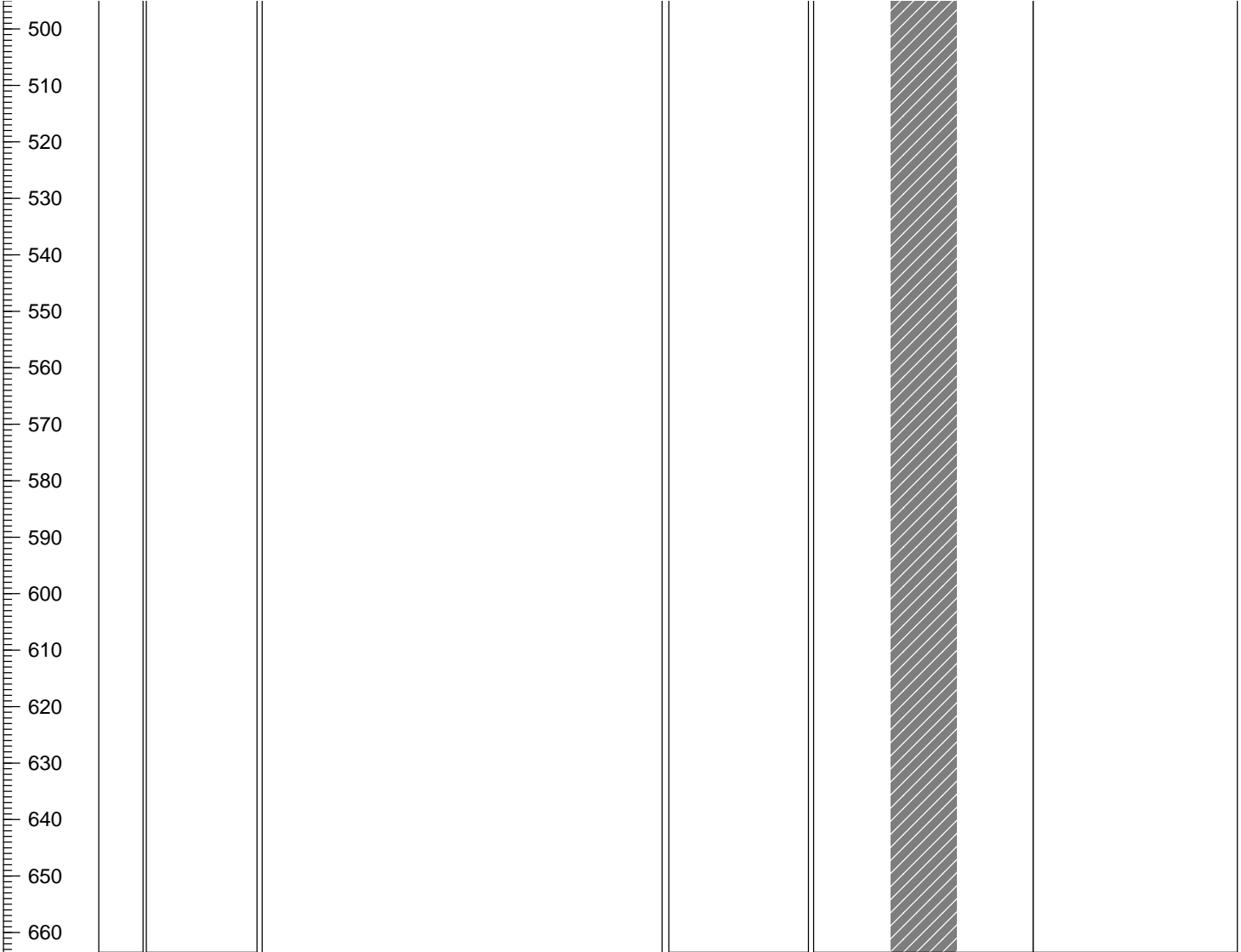
Logged By:

Collar (RL): 315.65

Static Water Level:

Date:

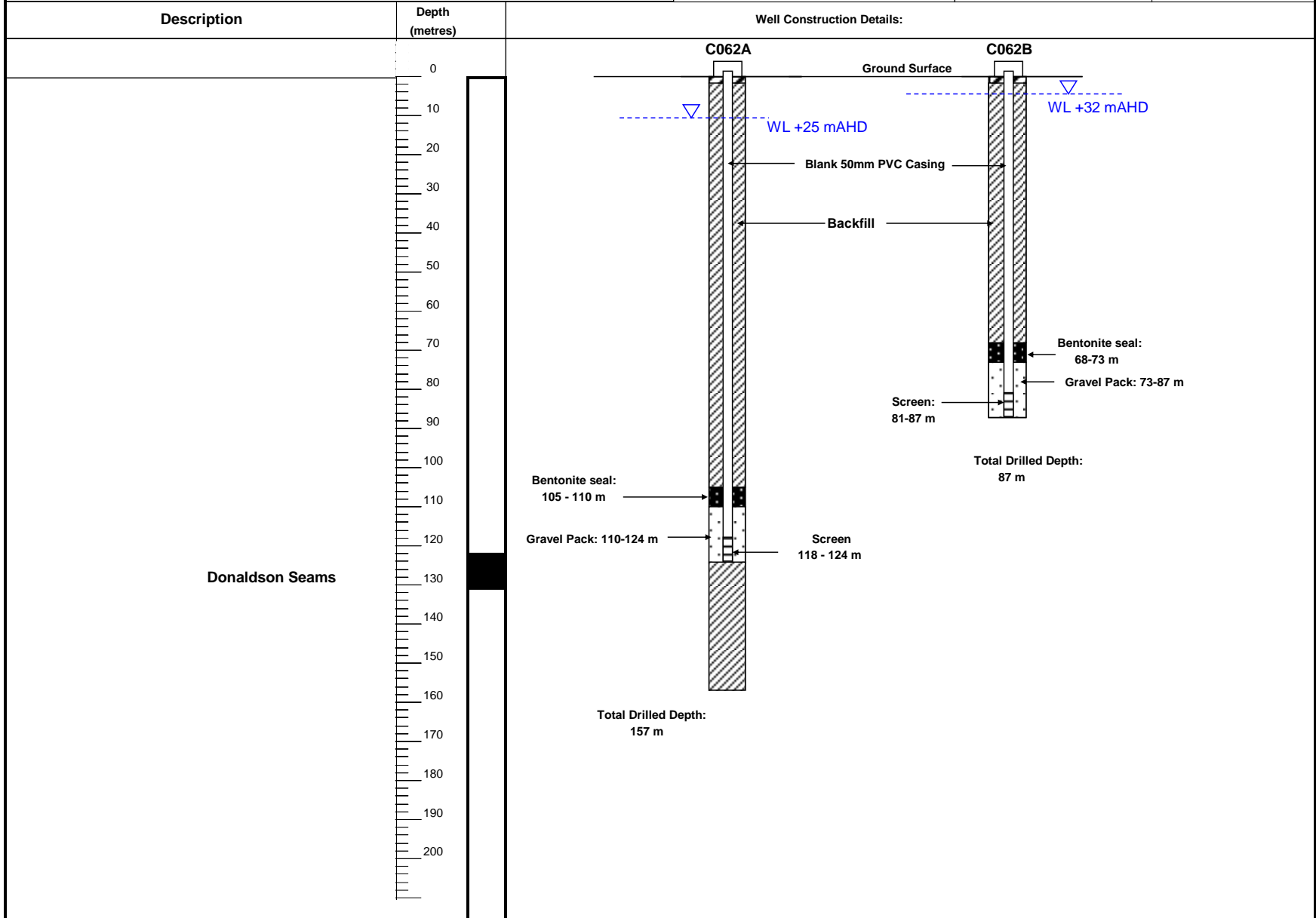
Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Peter Dundon and Assoc.
Logging Sheet

BORES: C062A and C062B

					Project No:	05-0163	
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Donaldson Coal Pty Ltd	C062A	36 mAHD		.. m			
Location:	C062B	36 mAHD		.. m			
Abel Coal Project							
					Hole depths:	Supervised By:	
					As shown		

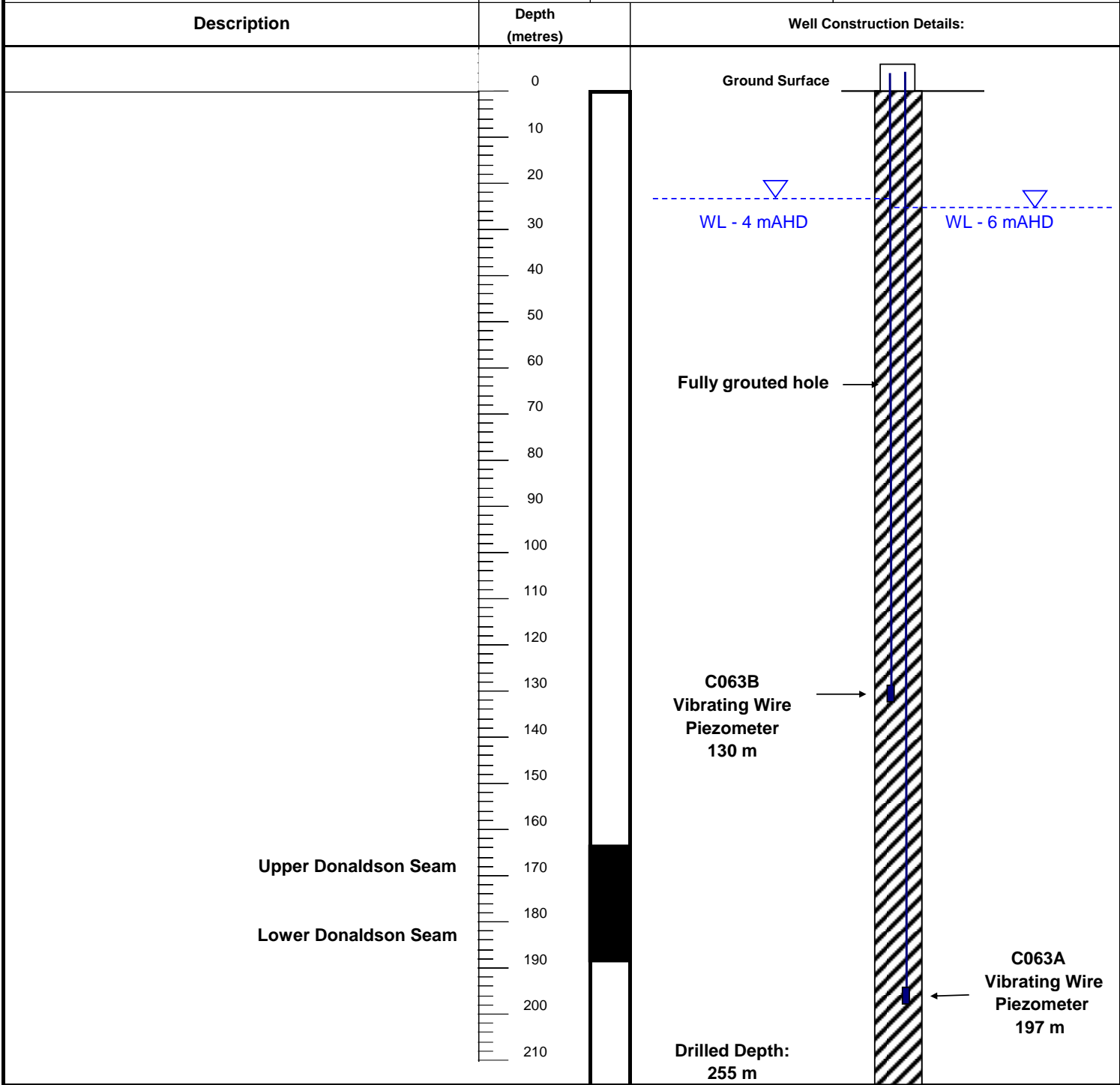


Peter Dundon and Assoc.
Logging Sheet

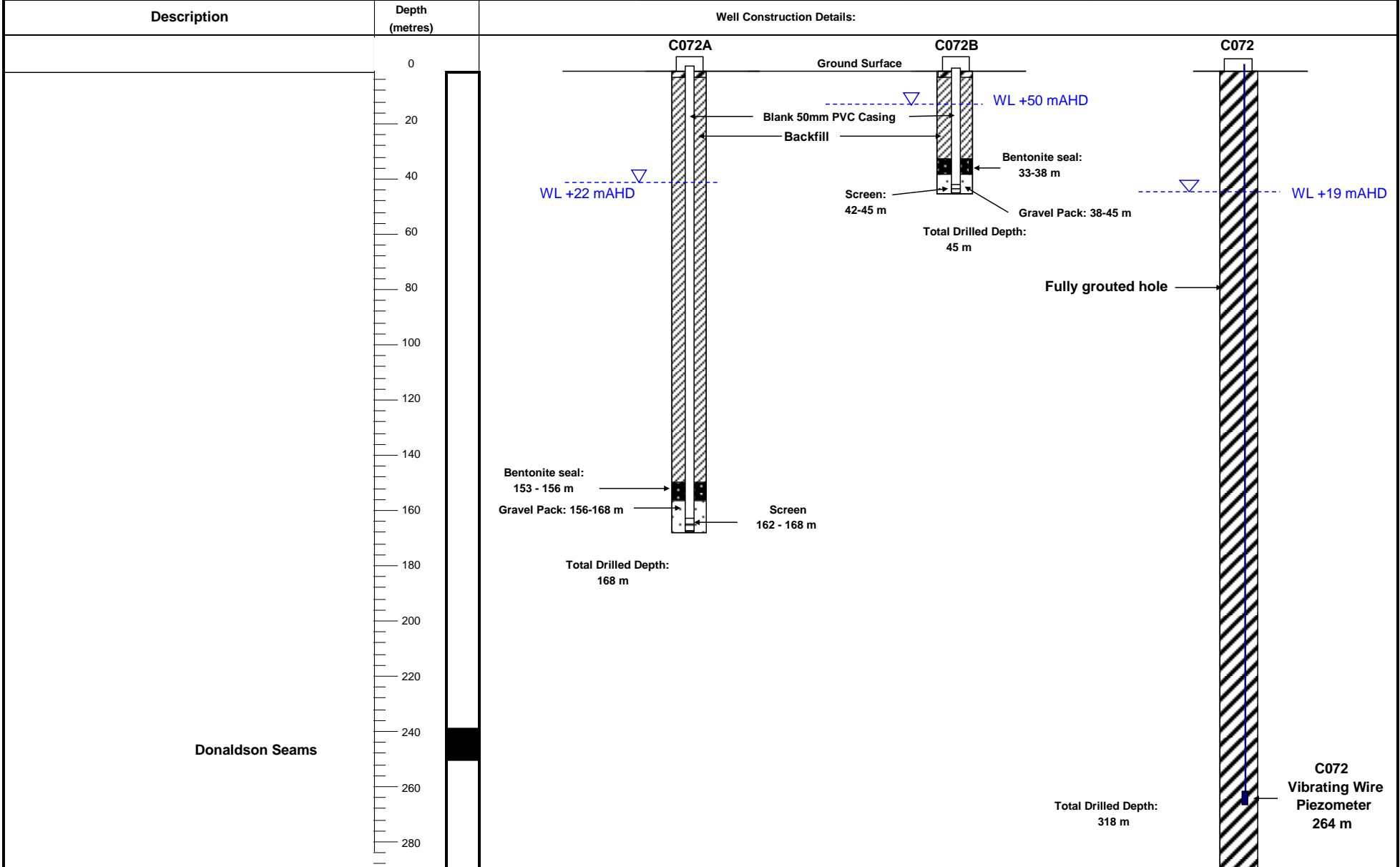
BORE: C063A and C063B

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL):	19.67 mAHD	Supervised By:
	Elevation (TOC):	... mAHD	
Location: Abel Coal Project	Stickup:	... m	Date Started:
	Hole Depth:	255 m	
Drilling Contractor:	Date Completed:		



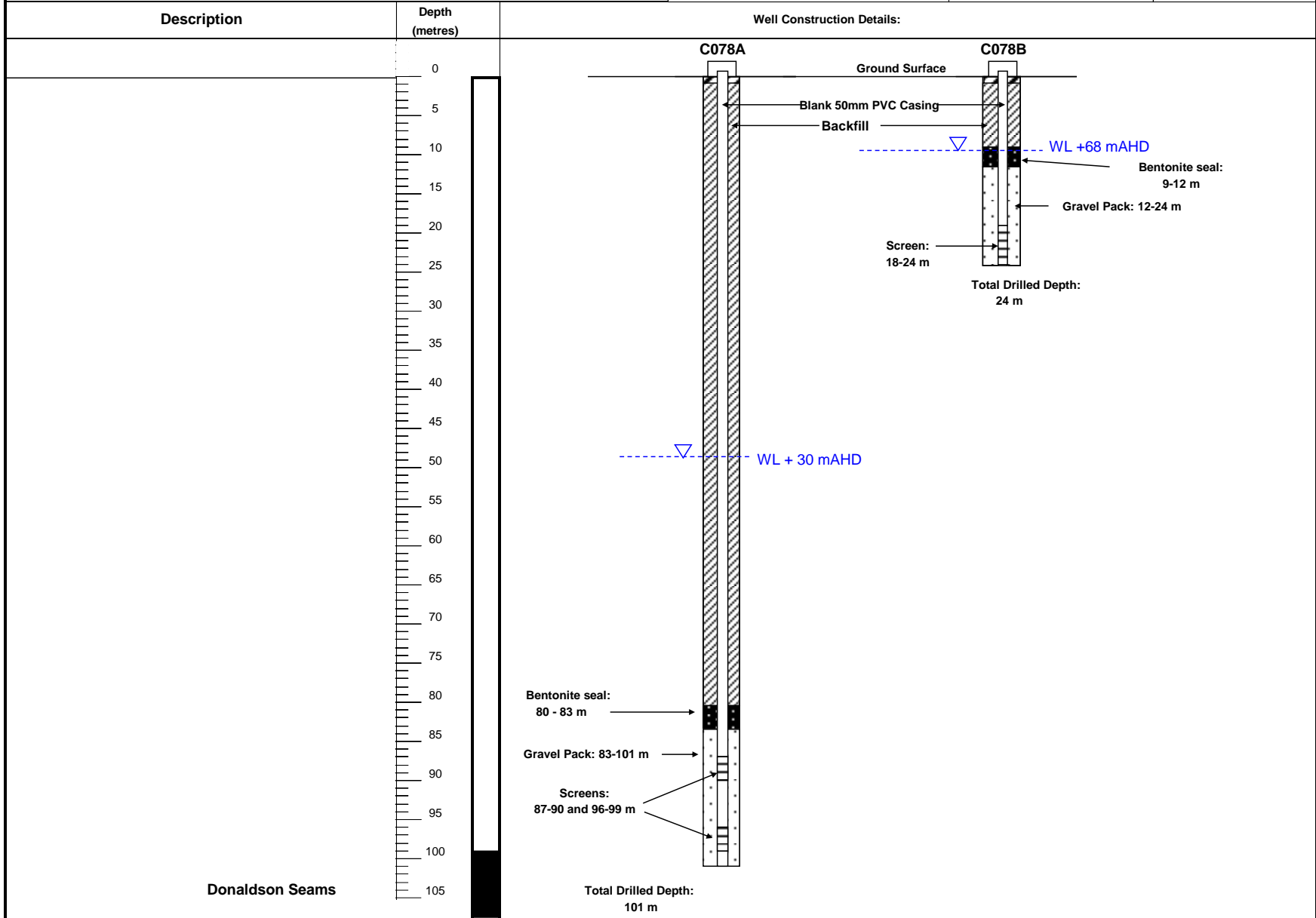
						Project No:	05-0163
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Donaldson Coal Pty Ltd	C072	63 mAHD		.. m			
Location:	C072A	63 mAHD		.. m			
Abel Coal Project	C072B	63 mAHD					
Hole depths: As shown					Supervised By:		



Peter Dundon and Assoc.
Logging Sheet

BORES: C078A and C078B

					Project No:	05-0163	
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Donaldson Coal Pty Ltd	C078A	77 mAHD		.. m			
Location:	C078B	77 mAHD		.. m			
Abel Coal Project					Hole depths:	Supervised By:	
				As shown			

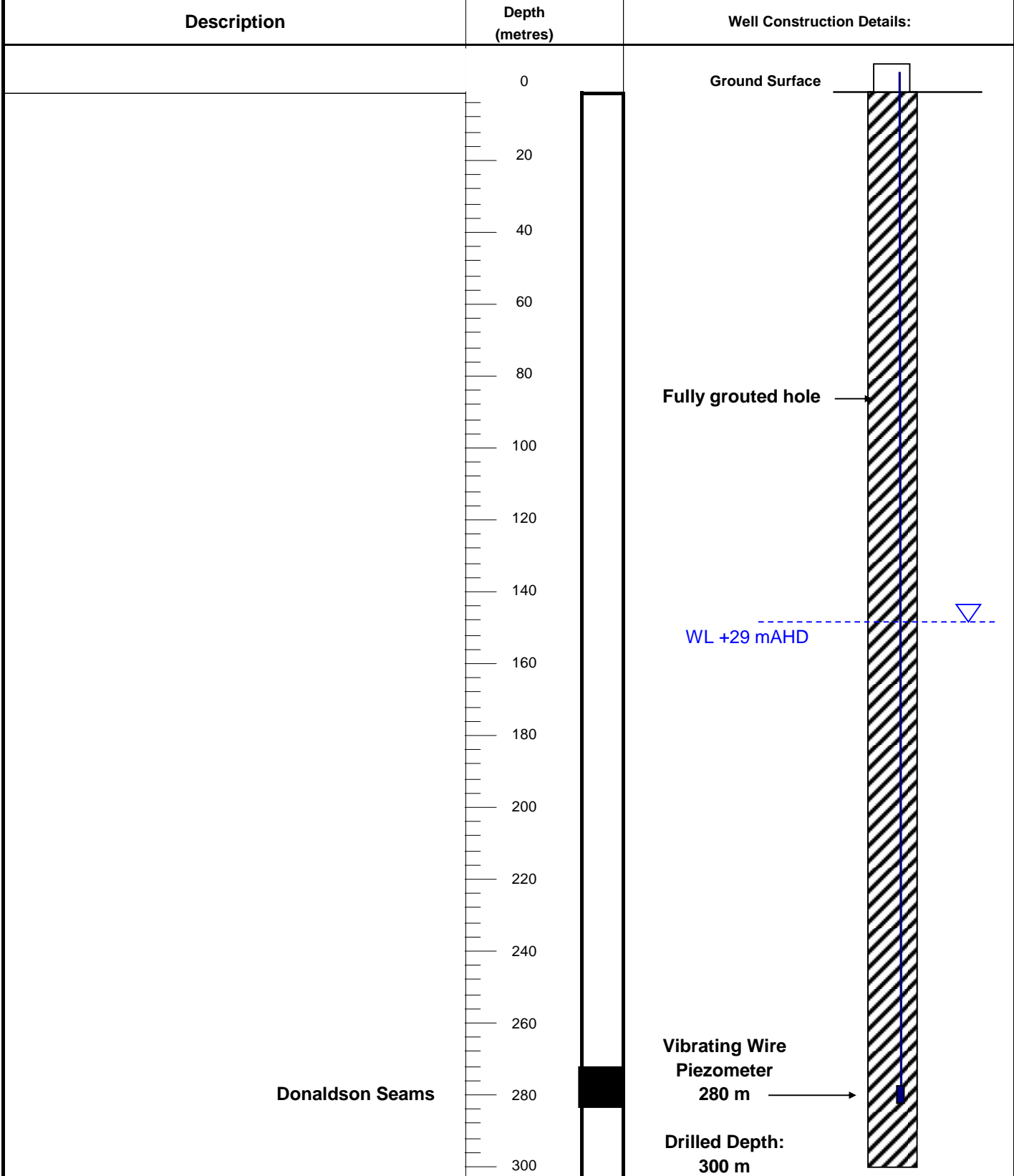


Peter Dundon and Assoc.
Logging Sheet

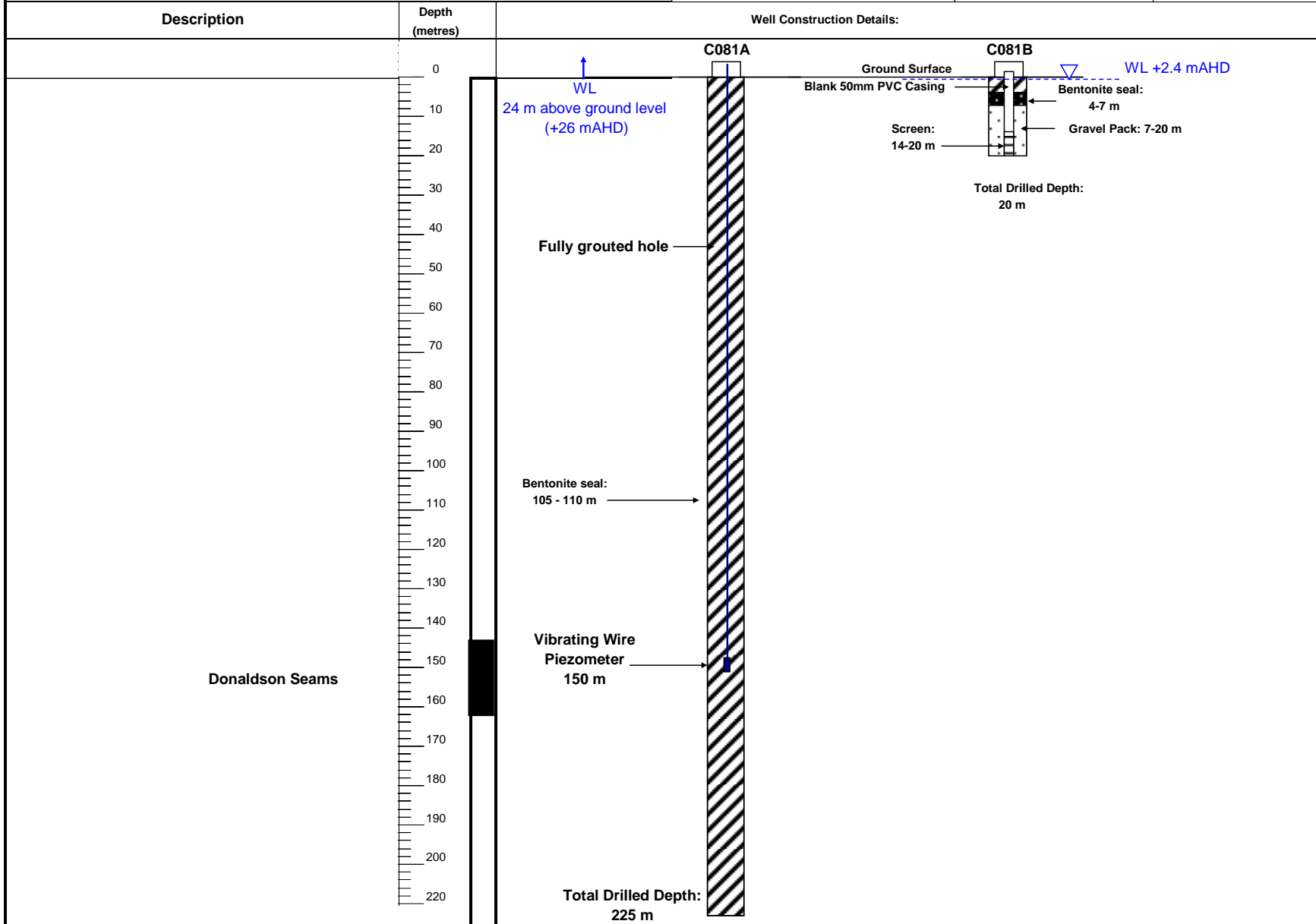
BORE: C080

Project No: **05-0163**

Client: Donaldson Coal Pty Ltd	Elevation (GL): 177 mAHD	
	Elevation (TOC): ... mAHD	
Location: Abel Coal Project	Stickup: ... m	
	Hole Depth: 300 m	
Drilling Contractor:	Date Started:	Supervised By:
	Date Completed:	



						Project No:	05-0163
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Donaldson Coal Pty Ltd	C081A	2.3 mAHD		.. m			
Location:	C081B	2.3 mAHD		.. m			
Abel Coal Project							
Hole depths: As shown					Supervised By:		



Peter Dundon and Assoc.
Logging Sheet

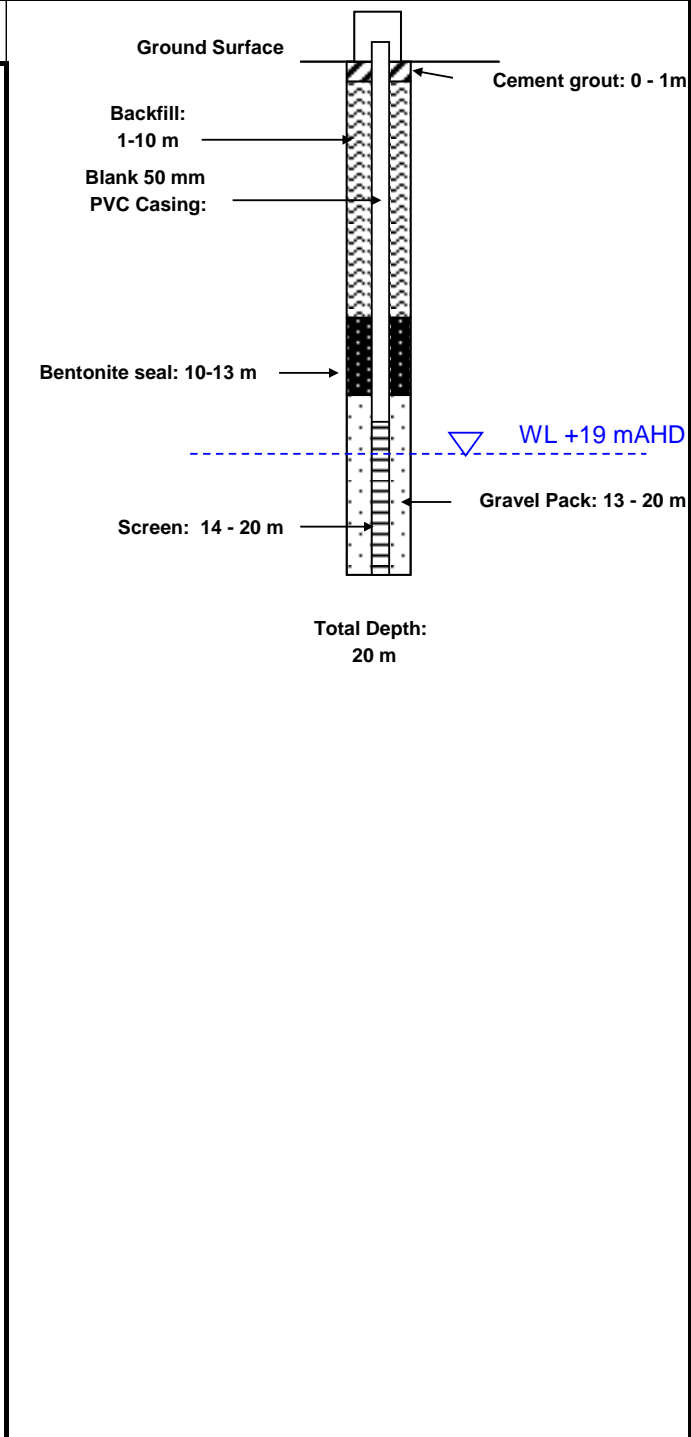
BORE: C082

Project No:	05-0163
Elevation (GL):	34 mAHD
Elevation (TOC):	... mAHD
Stickup:	... m
Hole Depth:	20 m
Date Started:	
Date Completed:	
Supervised By:	

Client:	Donaldson Coal Pty Ltd
Location:	Abel Coal Project
Drilling Contractor:	

Description	Depth (metres)	Well Construction Details:
-------------	----------------	----------------------------

Description	Depth (metres)
	0
	5
	10
	15
	20
	25
	30
	35
	40
	45
	50



Peter Dundon and Assoc.
Logging Sheet

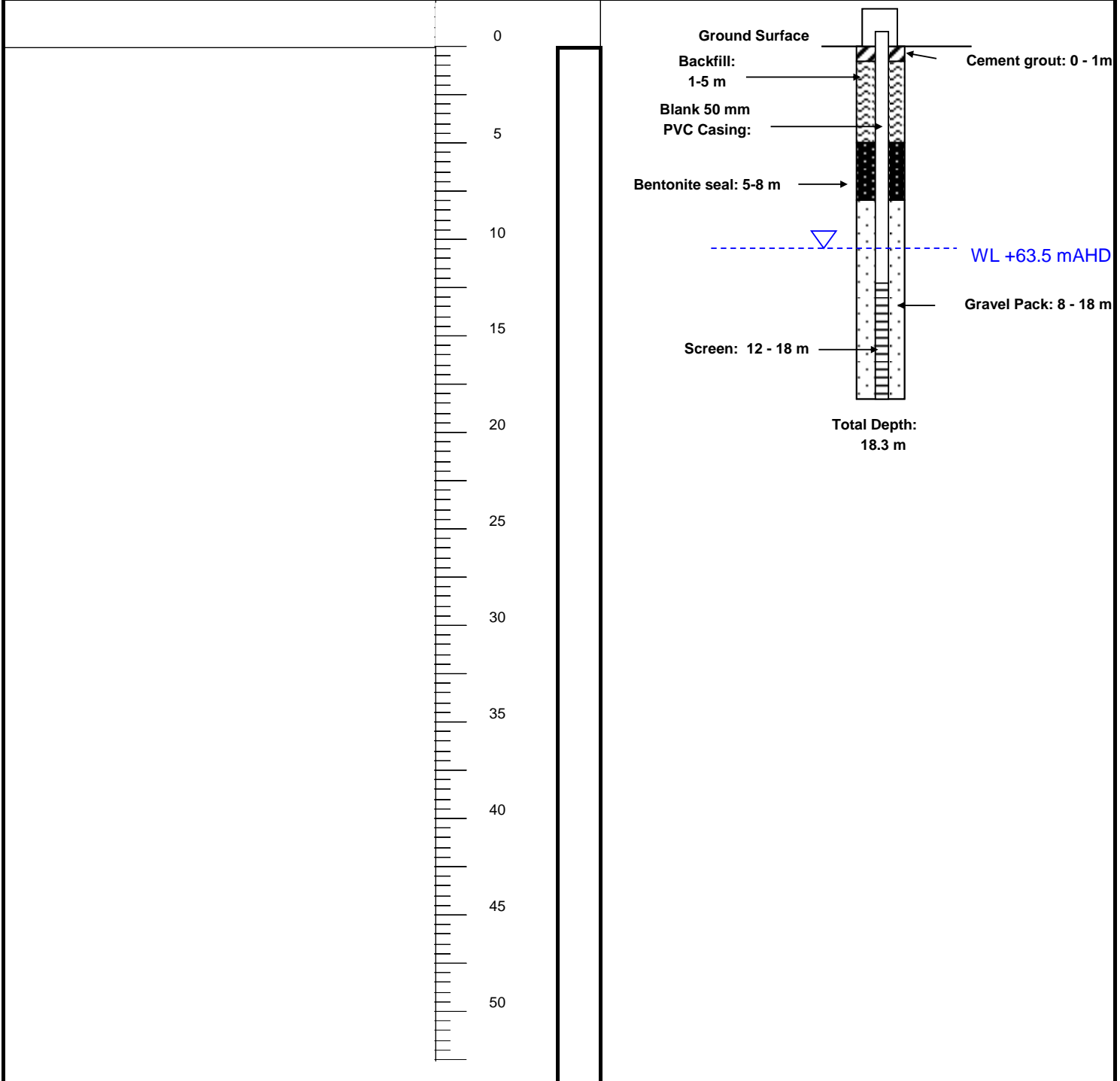
BORE: C087

Project No:

05-0163

Client: Donaldson Coal Pty Ltd	Elevation (GL): 74 mAHD	
	Elevation (TOC): ... mAHD	
Location: Abel Coal Project	Stickup: ... m	
	Hole Depth: 18.3 m	
Drilling Contractor:	Date Started:	Supervised By:
	Date Completed:	

Description	Depth (metres)	Well Construction Details:
-------------	----------------	----------------------------



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
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 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 25/09/2008
Completed: 25/09/2008
Drilled: MCD1
Logged By: AJM

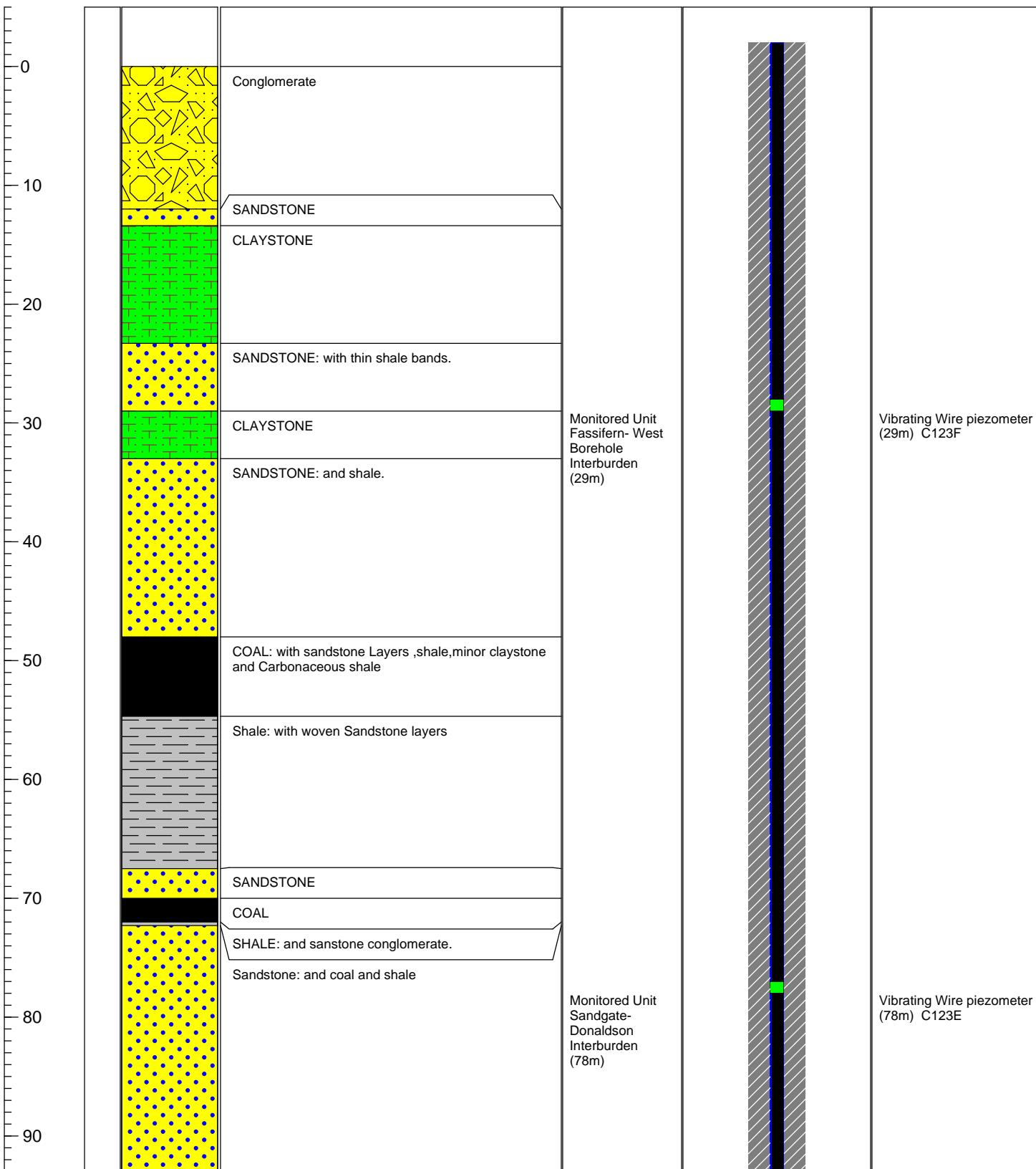
Method: CONVENTIONAL
Fluid:
Bit Record: HQ (0-332.58)

Area: Tasman Mine Lease
East: TBA
North: TBA
Collar (RL):TBA

Static Water Level: 6.0

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
 Australia
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 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 25/09/2008
Completed: 25/09/2008
Drilled: MCD1
Logged By: AJM

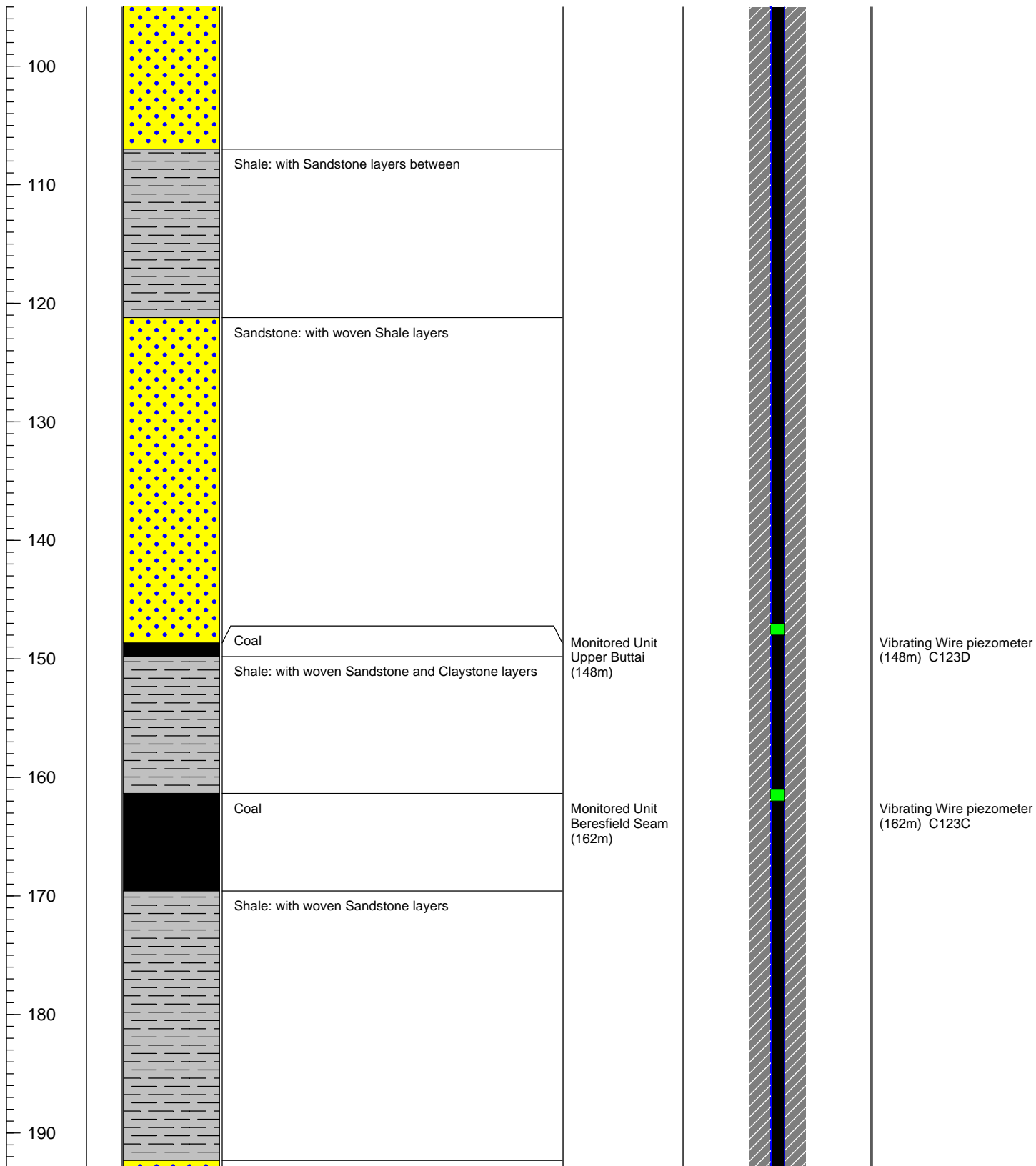
Method: CONVENTIONAL
Fluid:
Bit Record: HQ (0-332.58)

Area: Tasman Mine Lease
East: TBA
North: TBA
Collar (RL):TBA

Static Water Level: 6.0

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



COMPOSITE WELL LOG

Well No: C123

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 25/09/2008
Completed: 25/09/2008
Drilled: MCD1
Logged By: AJM

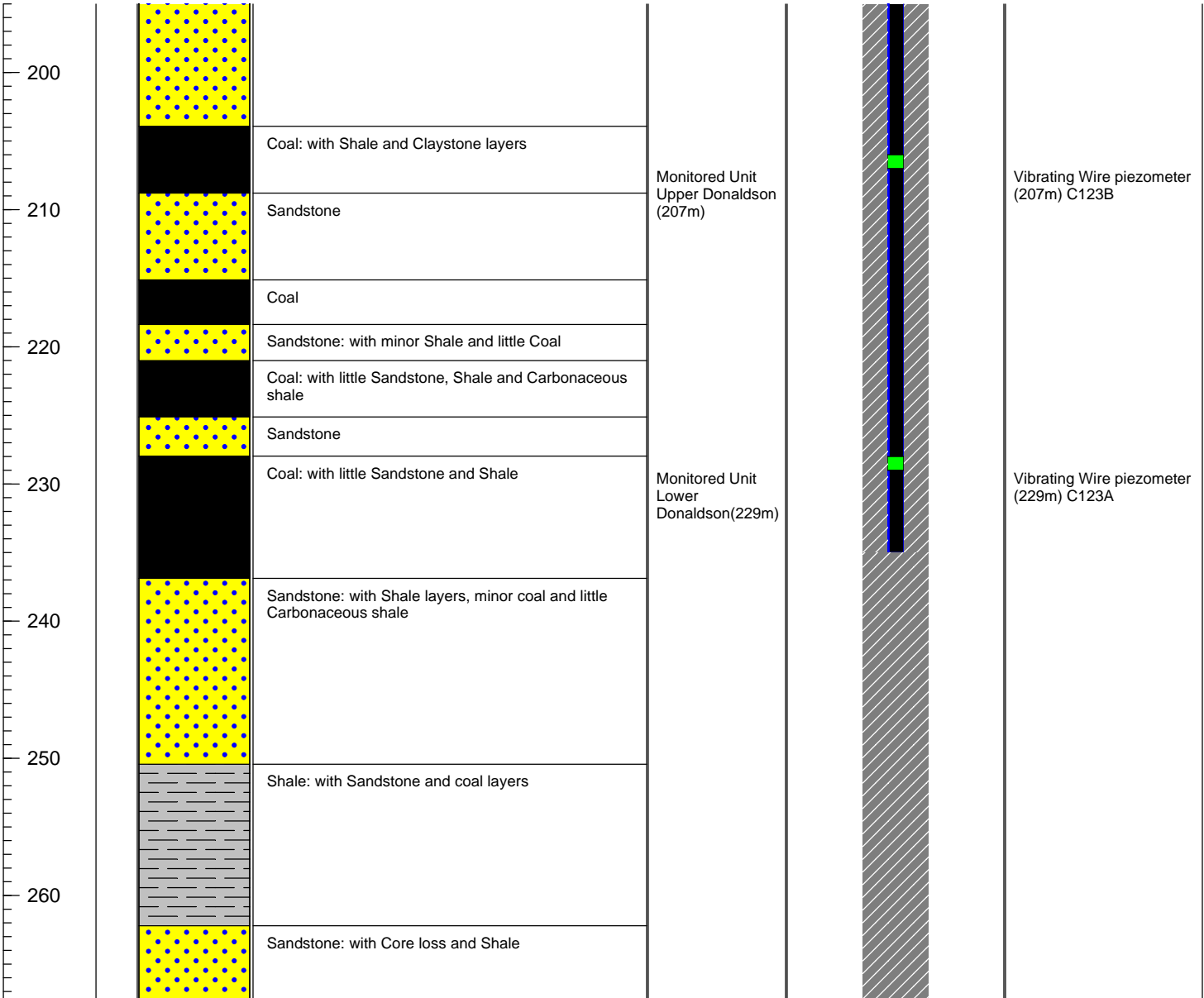
Method: CONVENTIONAL
Fluid:
Bit Record: HQ (0-332.58)

Area: Tasman Mine Lease
East: TBA
North: TBA
Collar (RL):TBA

Static Water Level: 6.0

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



COMPOSITE WELL LOG

Well No: C138

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 25/09/2008
Completed: 25/09/2008
Drilled: MCD1
Logged By: AJM

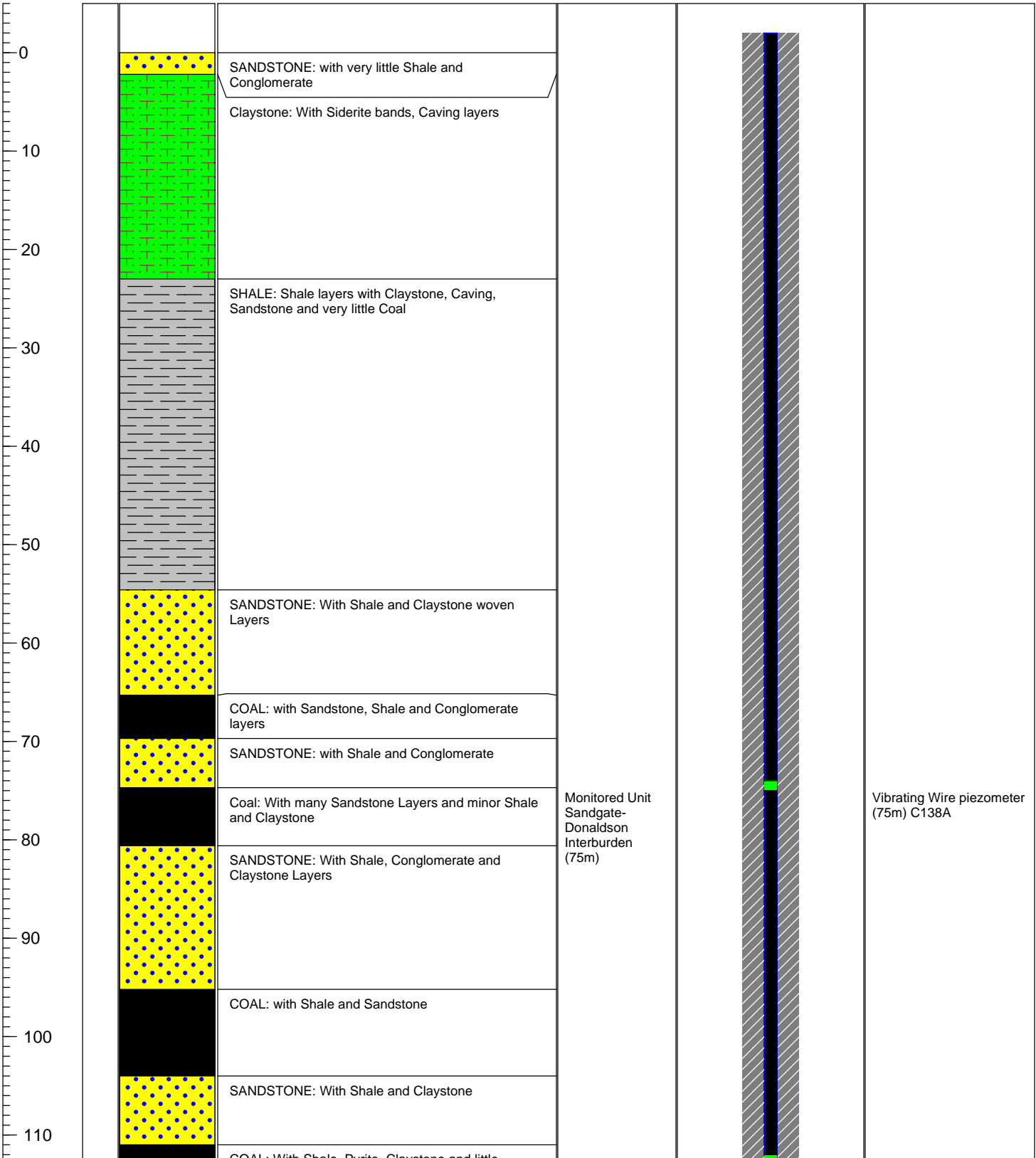
Method: CONVENTIONAL
Fluid:
Bit Record: HQ (0-332.58)

Area: Tasman Mine Lease
East: TBA
North: TBA
Collar (RL):TBA

Static Water Level: 6.0

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



COMPOSITE WELL LOG

Well No: C138

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 25/09/2008

Method: CONVENTIONAL

Area: Tasman Mine Lease

Completed: 25/09/2008

Fluid:

East: TBA

Drilled: MCD1

Bit Record: HQ (0-332.58)

North: TBA

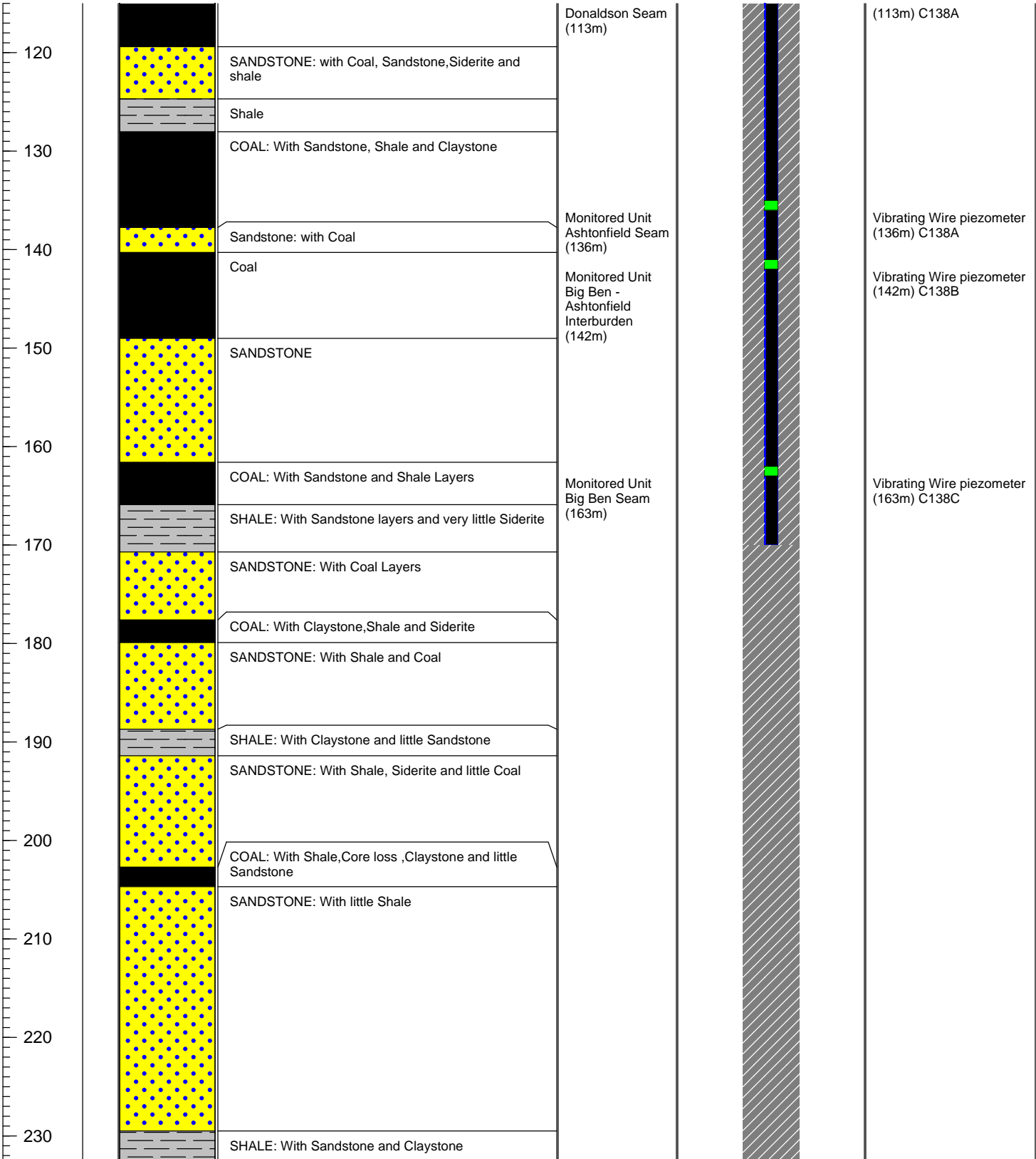
Logged By: AJM

Collar (RL):TBA

Static Water Level: 6.0

Date:

Depth (m bgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



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COMPOSITE WELL LOG

Well No: C138

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 25/09/2008

Method: CONVENTIONAL

Area: Tasman Mine Lease

Completed: 25/09/2008

Fluid:

East: TBA

Drilled: MCD1

Bit Record: HQ (0-332.58)

North: TBA

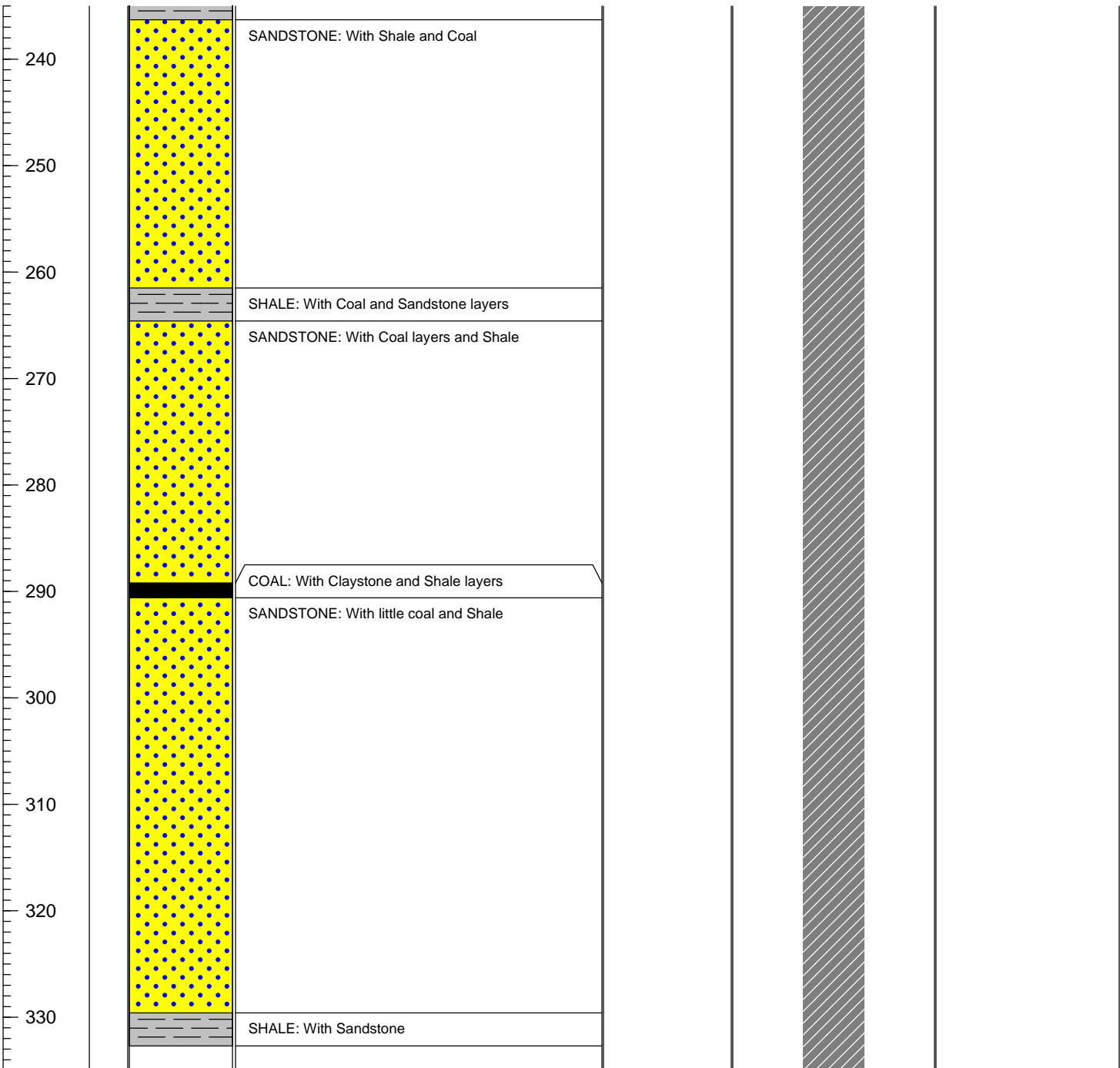
Logged By: AJM

Collar (RL):TBA

Static Water Level: 6.0

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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COMPOSITE WELL LOG

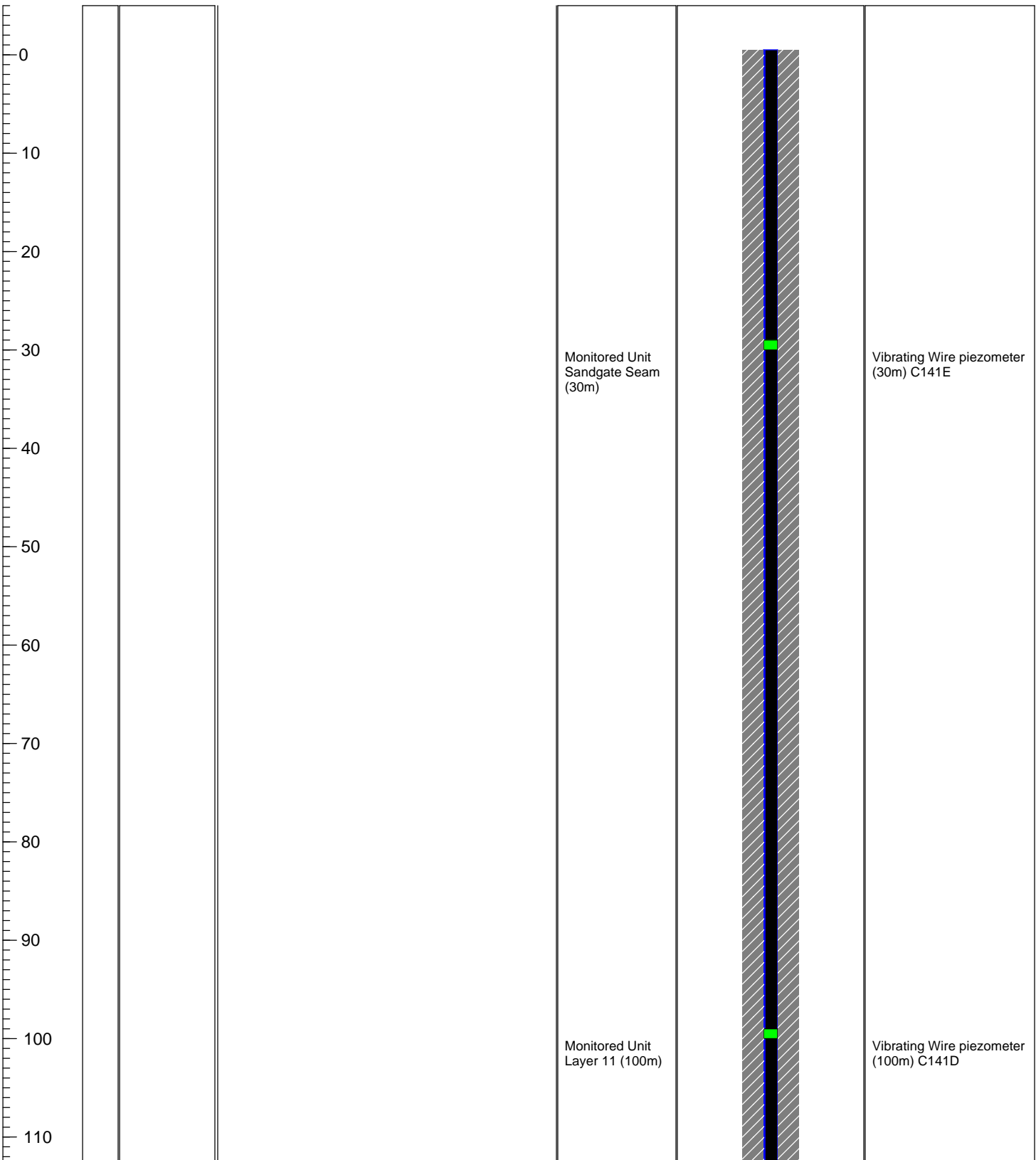
Well No: C141

Client: Donaldson Coal Operations **Project:** Tasman Extension

Commenced: 29/10/2008	Method: (0-303m)	Area: Tasman Mine Lease
Completed:	Fluid:	East: 363872.69
Drilled:	Bit Record:	North: 6364369.65
Logged By:		Collar (RL): 30.25

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

Well No: C141

Client: Donaldson Coal Operations

Project: Tasman Extension

Commenced: 29/10/2008

Method: (0-303m)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 363872.69

Drilled:

Bit Record:

North: 6364369.65

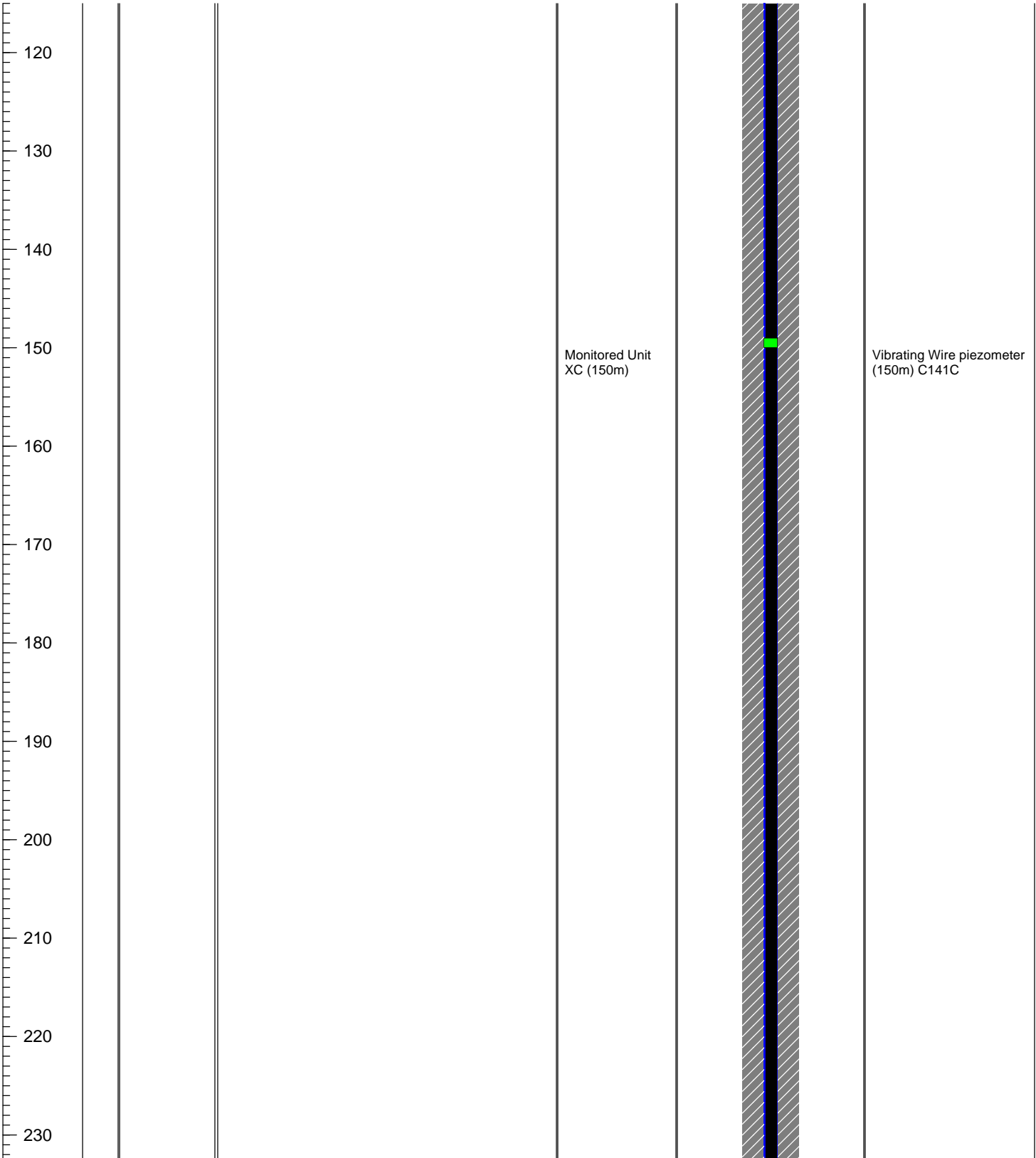
Logged By:

Collar (RL):30.25

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
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 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

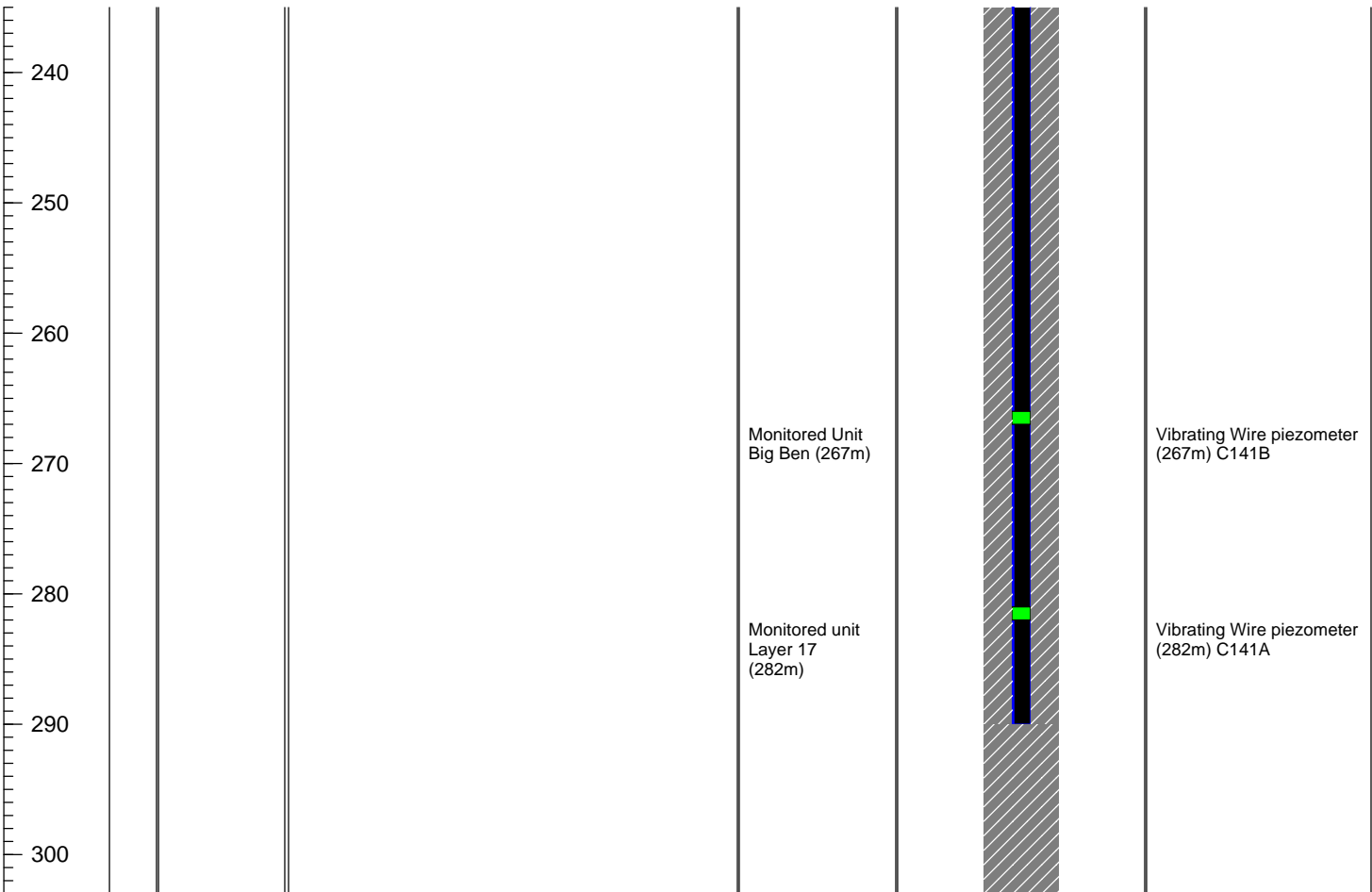
Well No: C141

Client: Donaldson Coal Operations **Project:** Tasman Extension

Commenced: 29/10/2008	Method: (0-303m)	Area: Tasman Mine Lease
Completed:	Fluid:	East: 363872.69
Drilled:	Bit Record:	North: 6364369.65
Logged By:		Collar (RL): 30.25

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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COMPOSITE WELL LOG

Well No: C148

Client: Donaldson Coal Operations

Project: Tasman Extension

Commenced: 25/02/2009

Method: (0-243.3m)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 362443.39

Drilled:

Bit Record:

North: 6364501.02

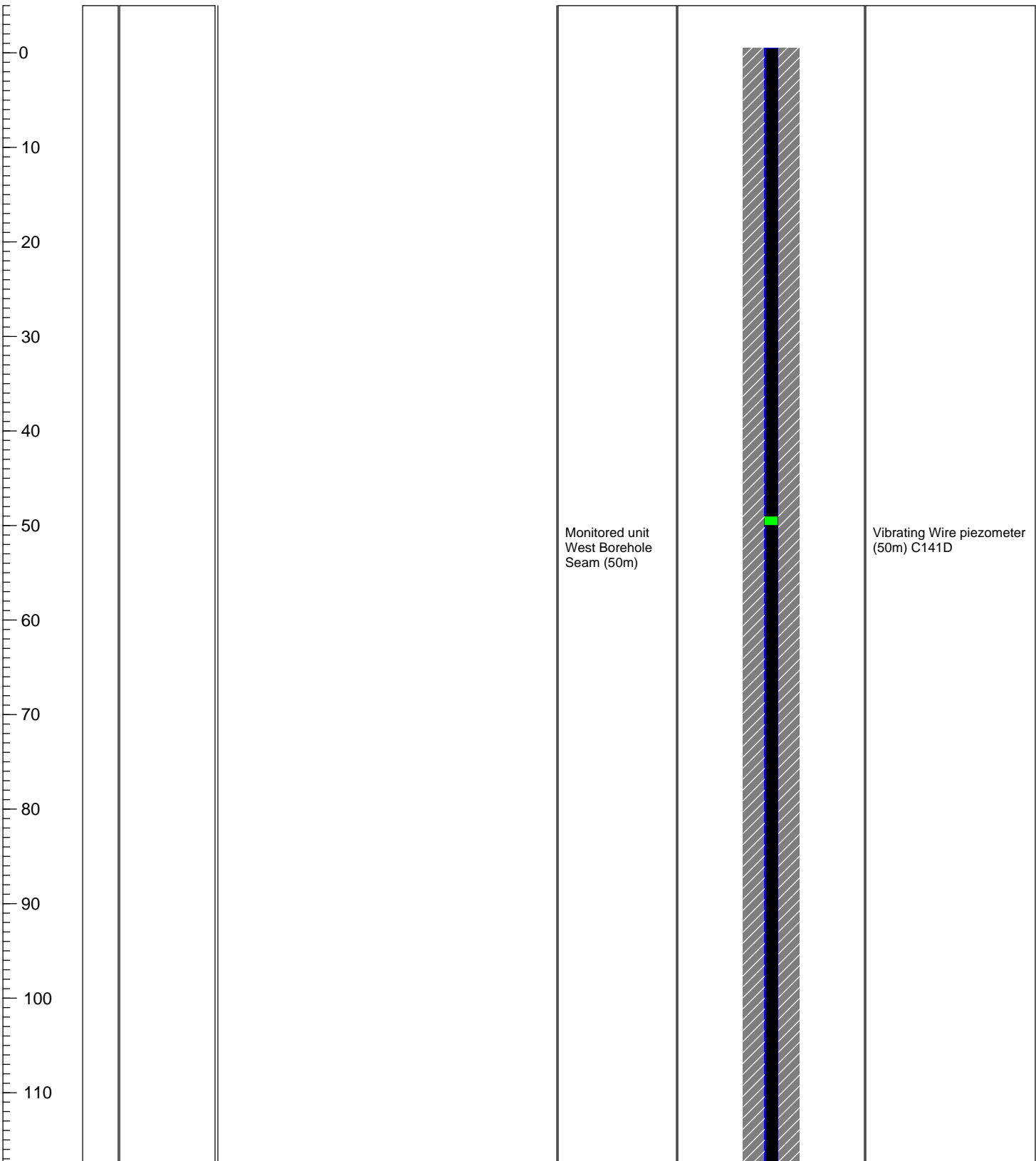
Logged By:

Collar (RL):22.24

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations

Project: Tasman Extension

Commenced: 25/02/2009

Method: (0-243.3m)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 362443.39

Drilled:

Bit Record:

North: 6364501.02

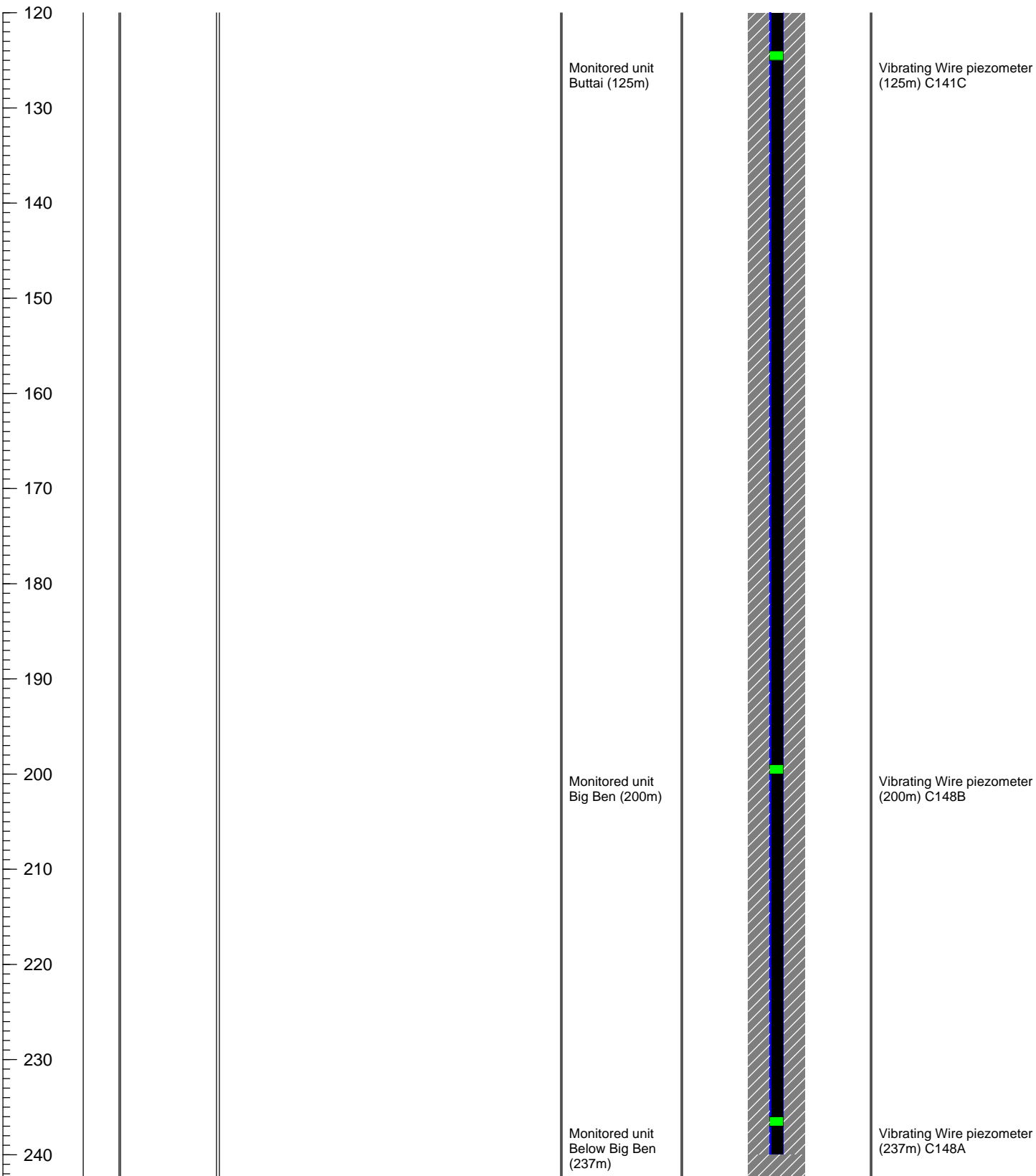
Logged By:

Collar (RL):22.24

Static Water Level:

Date:

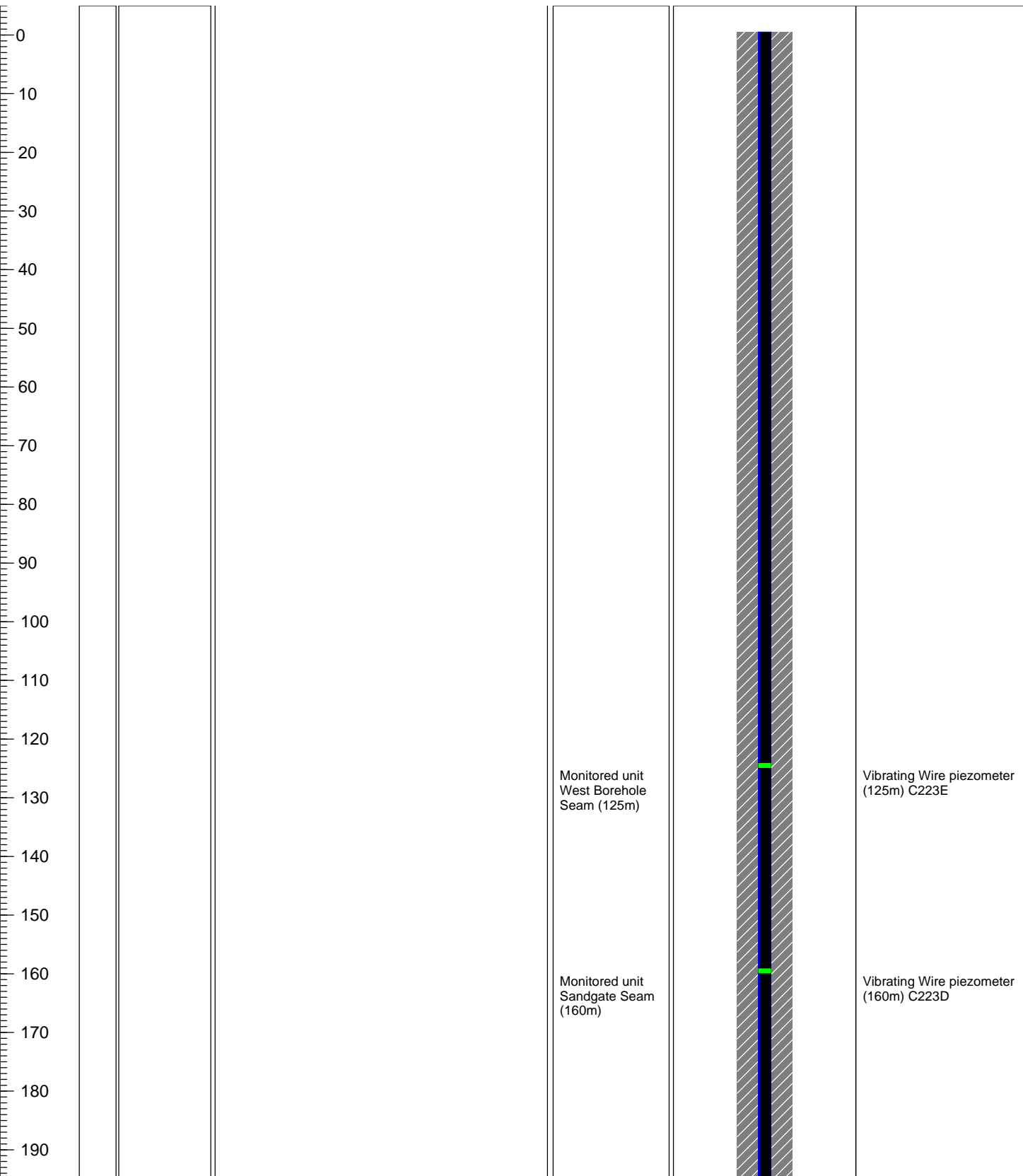
Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
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Client: Donaldson Coal Operations		Project: Tasman Extension	
Commenced: 26/02/2010	Method: (0-394.81m)	Area: Tasman Mine Lease	
Completed:	Fluid:	East: 365529.73	
Drilled:	Bit Record:	North: 6364593.90	
Logged By:		Collar (RL): 164.76	
Static Water Level:		Date:	

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
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 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations

Project: Tasman Extension

Commenced: 26/02/2010

Method: (0-394.81m)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 365529.73

Drilled:

Bit Record:

North: 6364593.90

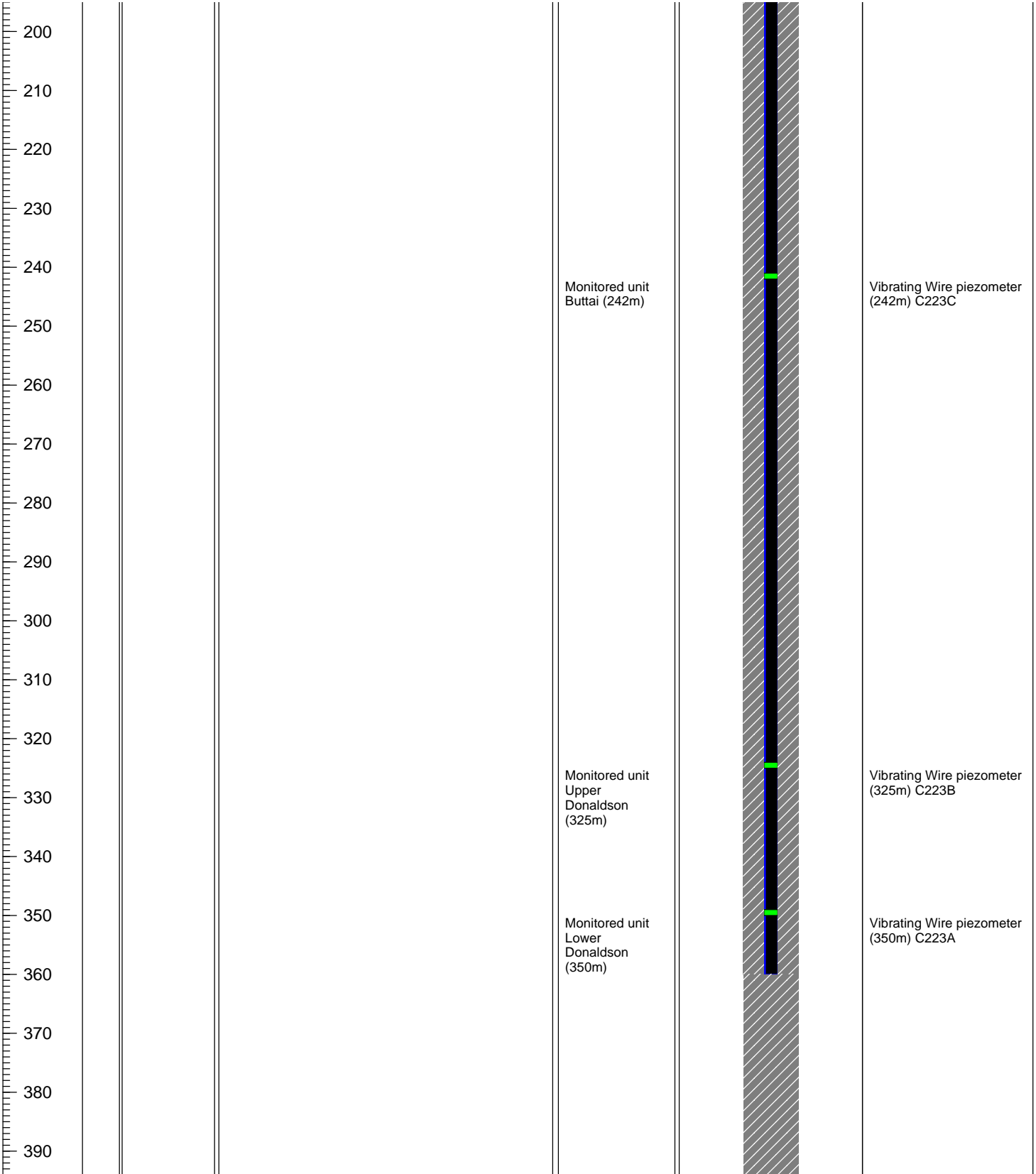
Logged By:

Collar (RL): 164.76

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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COMPOSITE WELL LOG

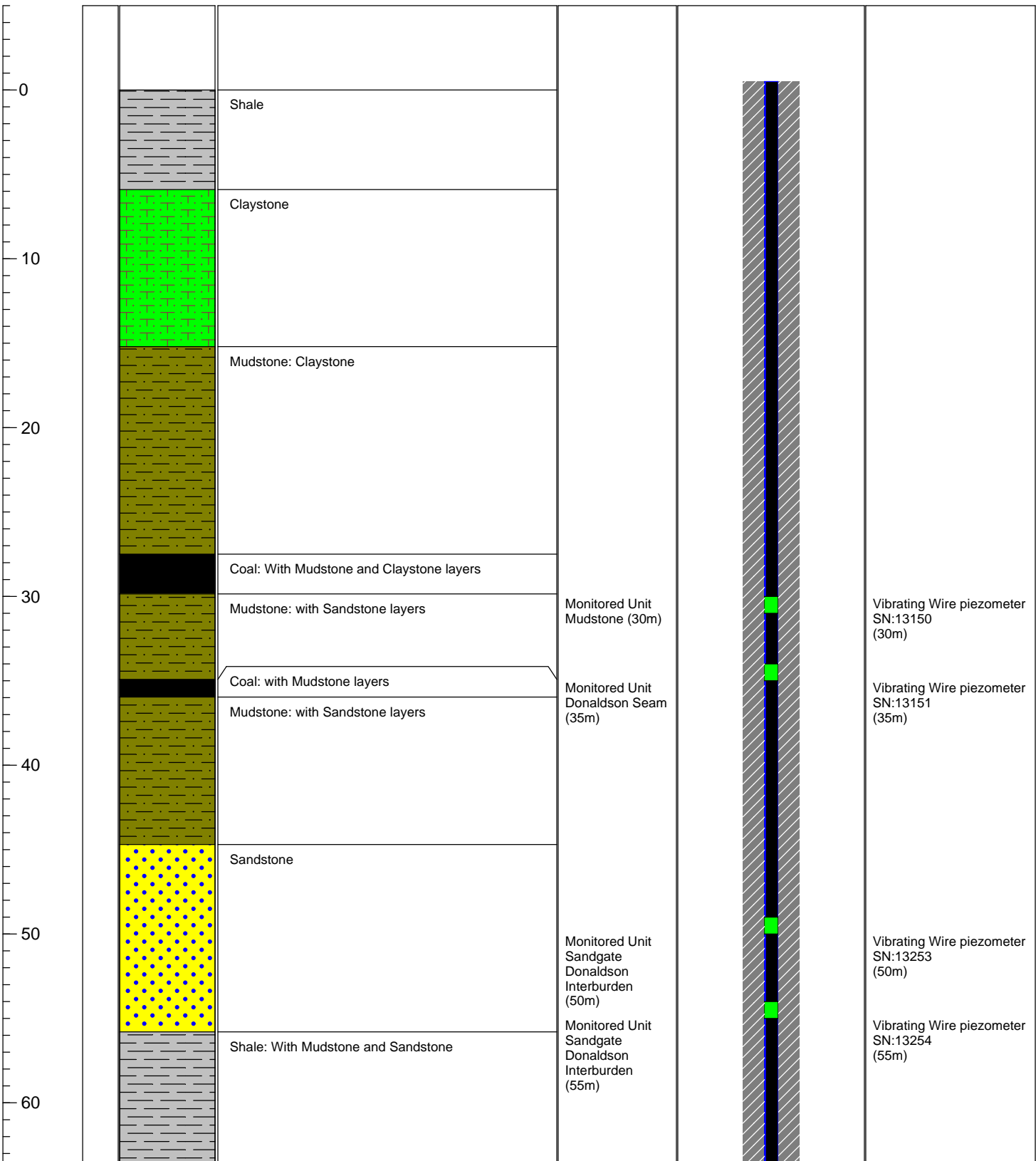
Well No: C257

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced:	Method:	Area: Tasman Mine Lease
Completed:	Fluid:	East: 370029.99
Drilled:	Bit Record:	North: 6366642.01
Logged By:		Collar (RL): 41.59

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

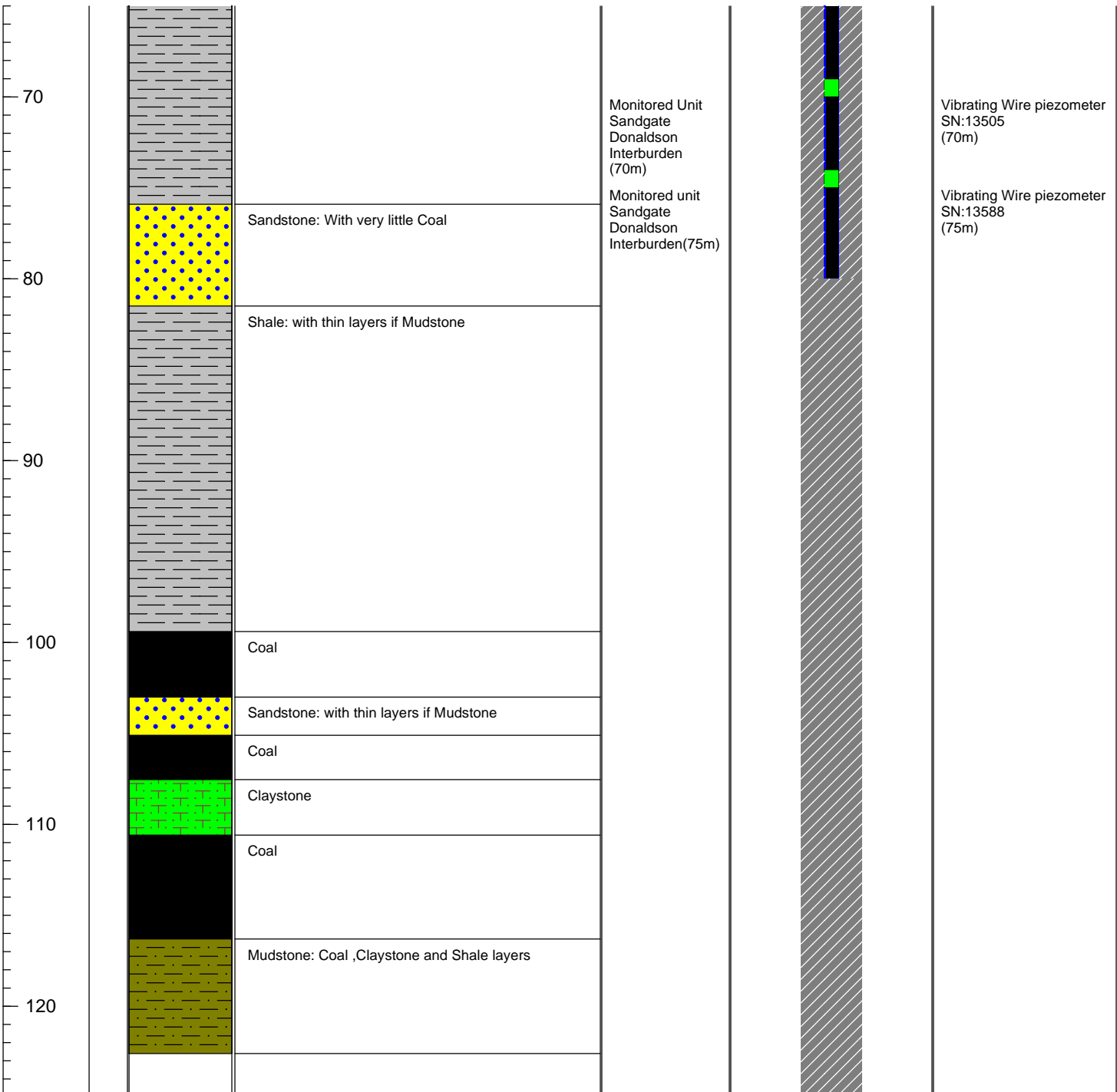
Well No: C257

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced:	Method:	Area: Tasman Mine Lease
Completed:	Fluid:	East: 370029.99
Drilled:	Bit Record:	North: 6366642.01
Logged By:		Collar (RL): 41.59

Static Water Level: _____ **Date:** _____

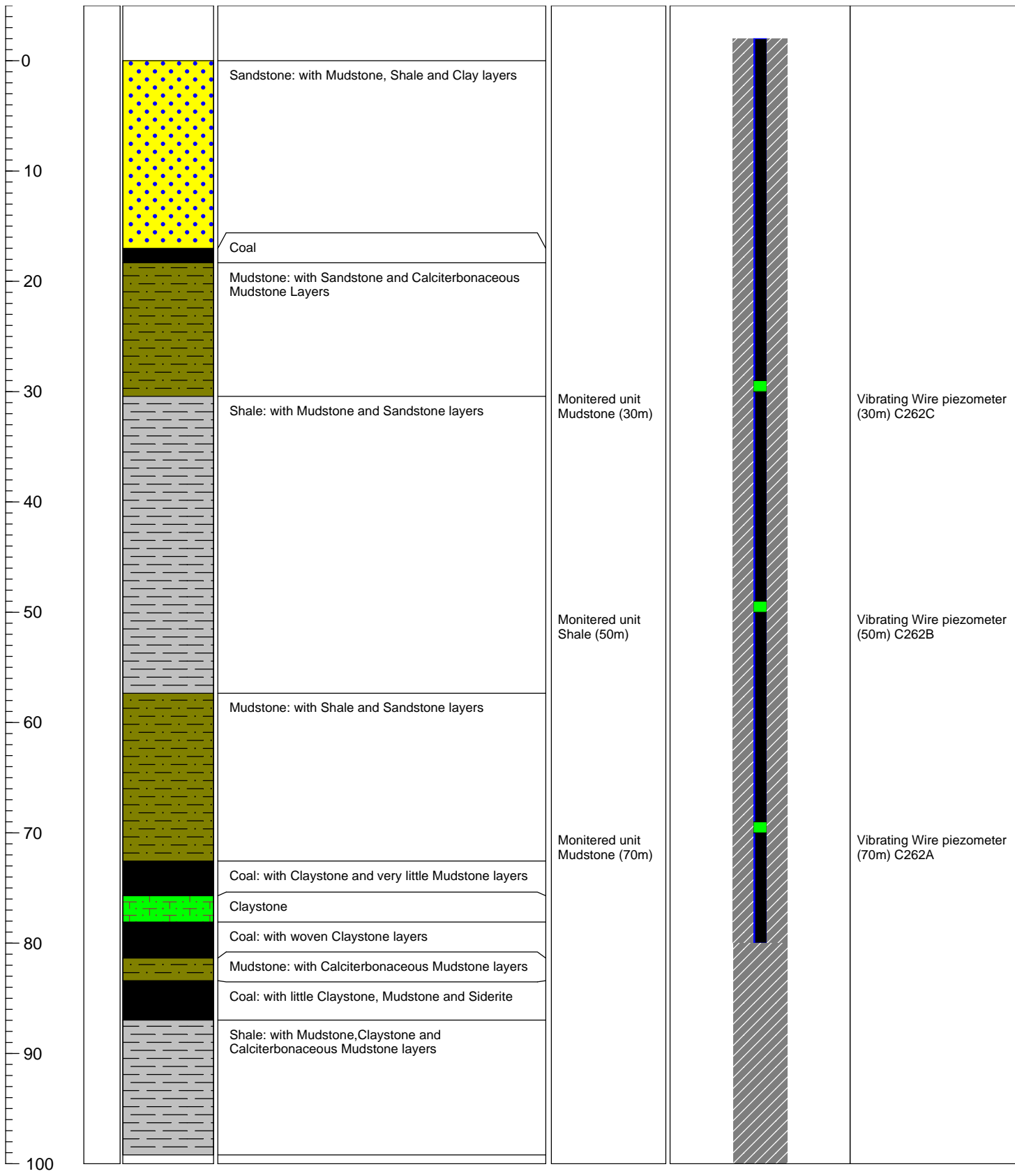
Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
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Client: Donaldson Coal Operations Pty Ltd		Project: Tasman Extension	
Commenced:	Method: (0-100.0)	Area: Tasman Mine Lease	
Completed:	Fluid:	East: 370208.01	
Drilled:	Bit Record:	North: 6367200.88	
Logged By:		Collar (RL): 33.41	
Static Water Level:		Date:	

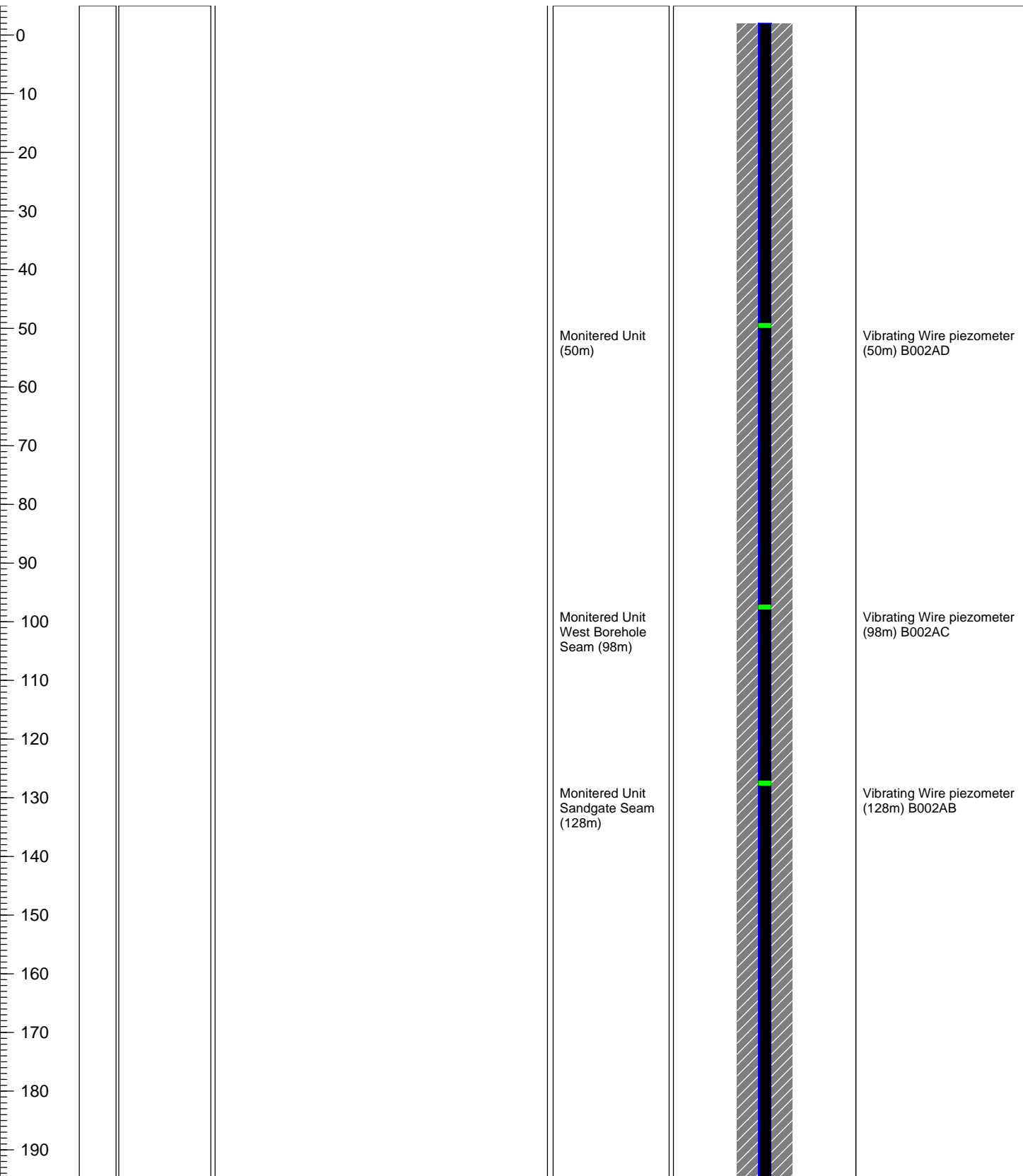
Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd		Project: Tasman Extension	
Commenced: 30/04/2009	Method: (0-383.5)	Area: Tasman Mine Lease	
Completed:	Fluid:	East: 361942.35	
Drilled:	Bit Record:	North: 6360970.96	
Logged By:		Collar (RL): 51.34	
Static Water Level:		Date:	

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



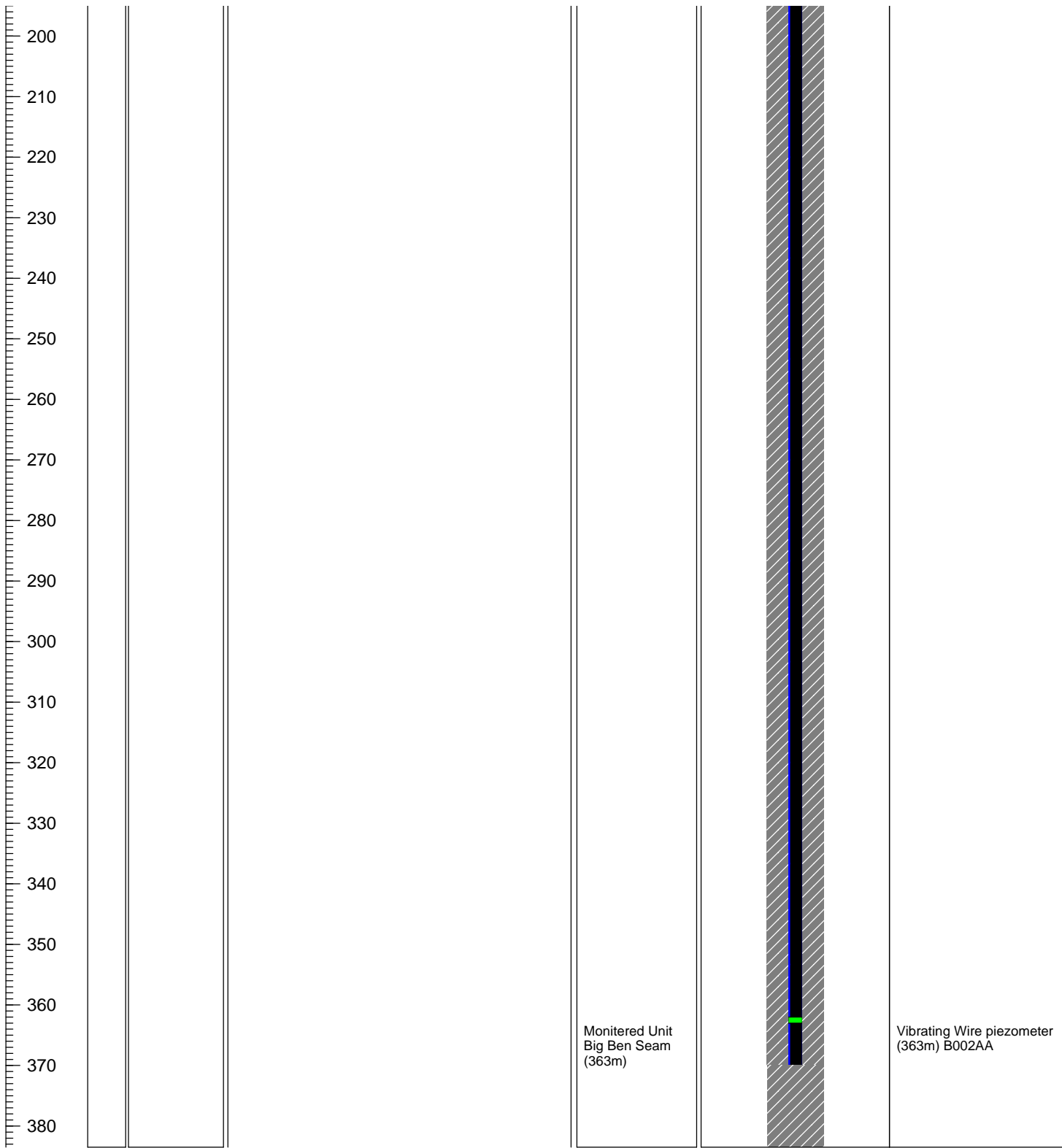
Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/04/2009	Method: (0-383.5)	Area: Tasman Mine Lease
Completed:	Fluid:	East: 361942.35
Drilled:	Bit Record:	North: 6360970.96
Logged By:		Collar (RL): 51.34

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
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 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/08/2006

Method: (0-402.3)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 363,048

Drilled:

Bit Record:

North: 6,362,107

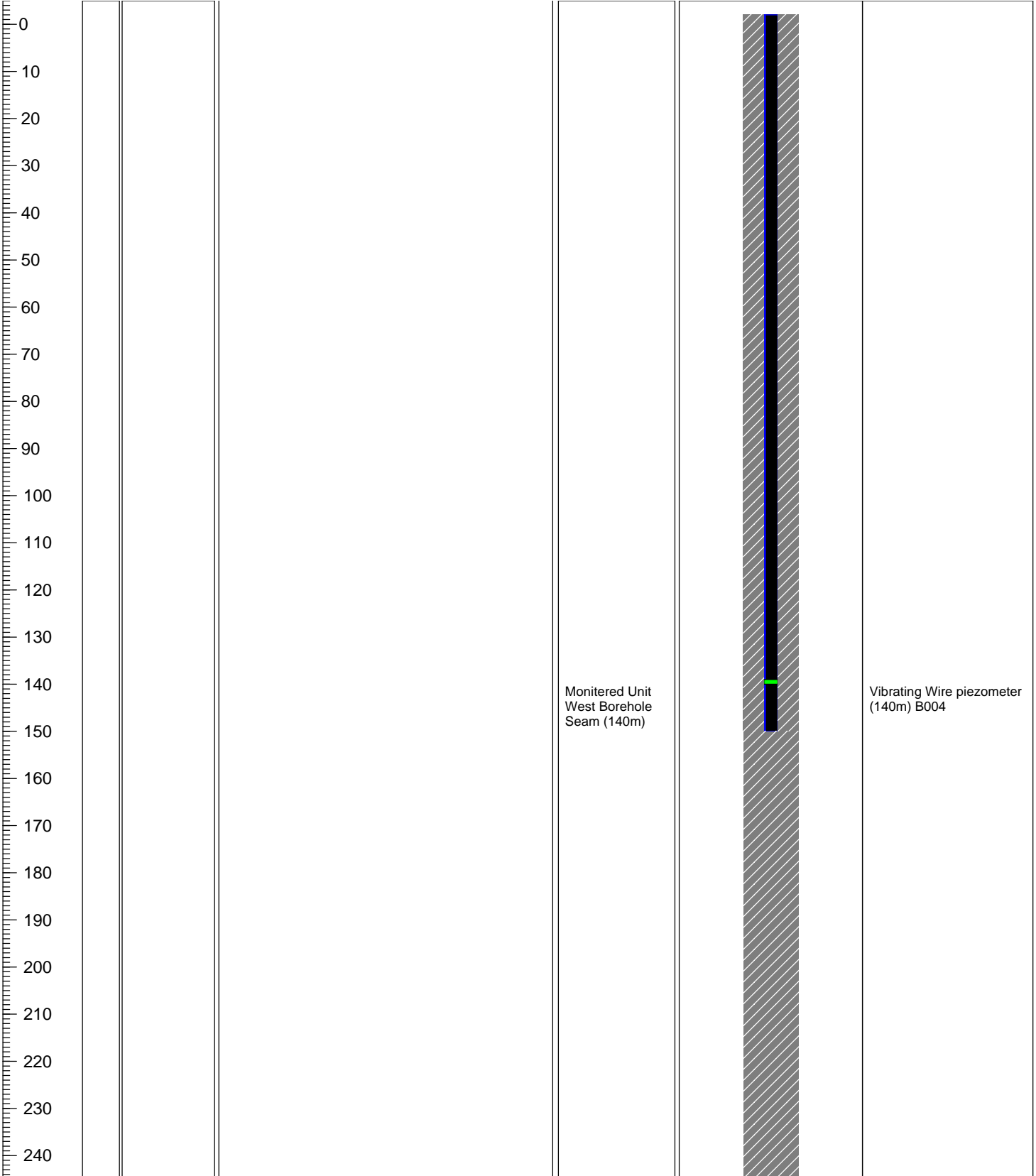
Logged By:

Collar (RL):60.48

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/08/2006

Method: (0-402.3)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 363,048

Drilled:

Bit Record:

North: 6,362,107

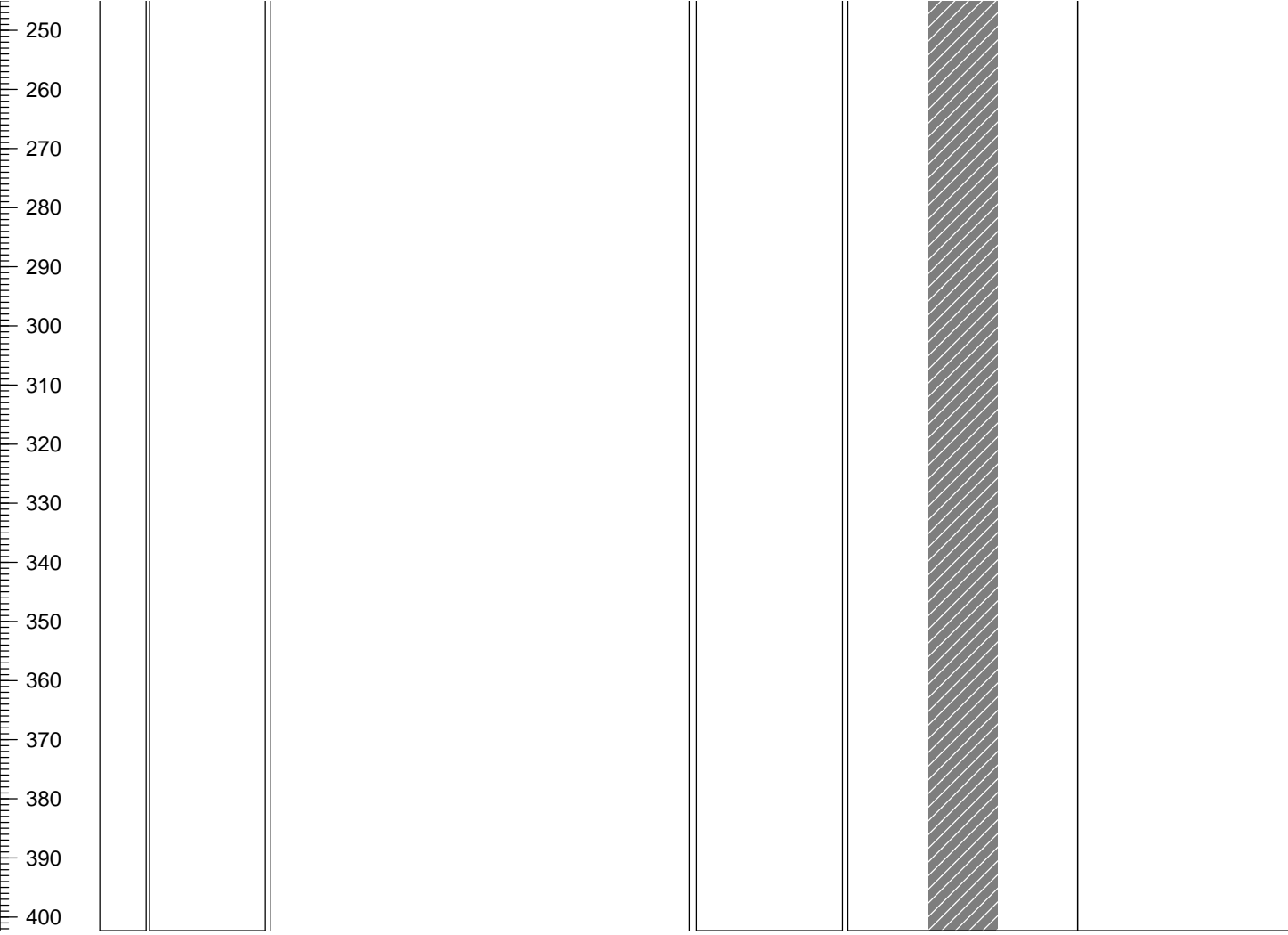
Logged By:

Collar (RL):60.48

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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 NSW, 2067
 Australia
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Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/08/2006

Method: (0-476.1)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 363,760

Drilled:

Bit Record:

North: 6,362,001

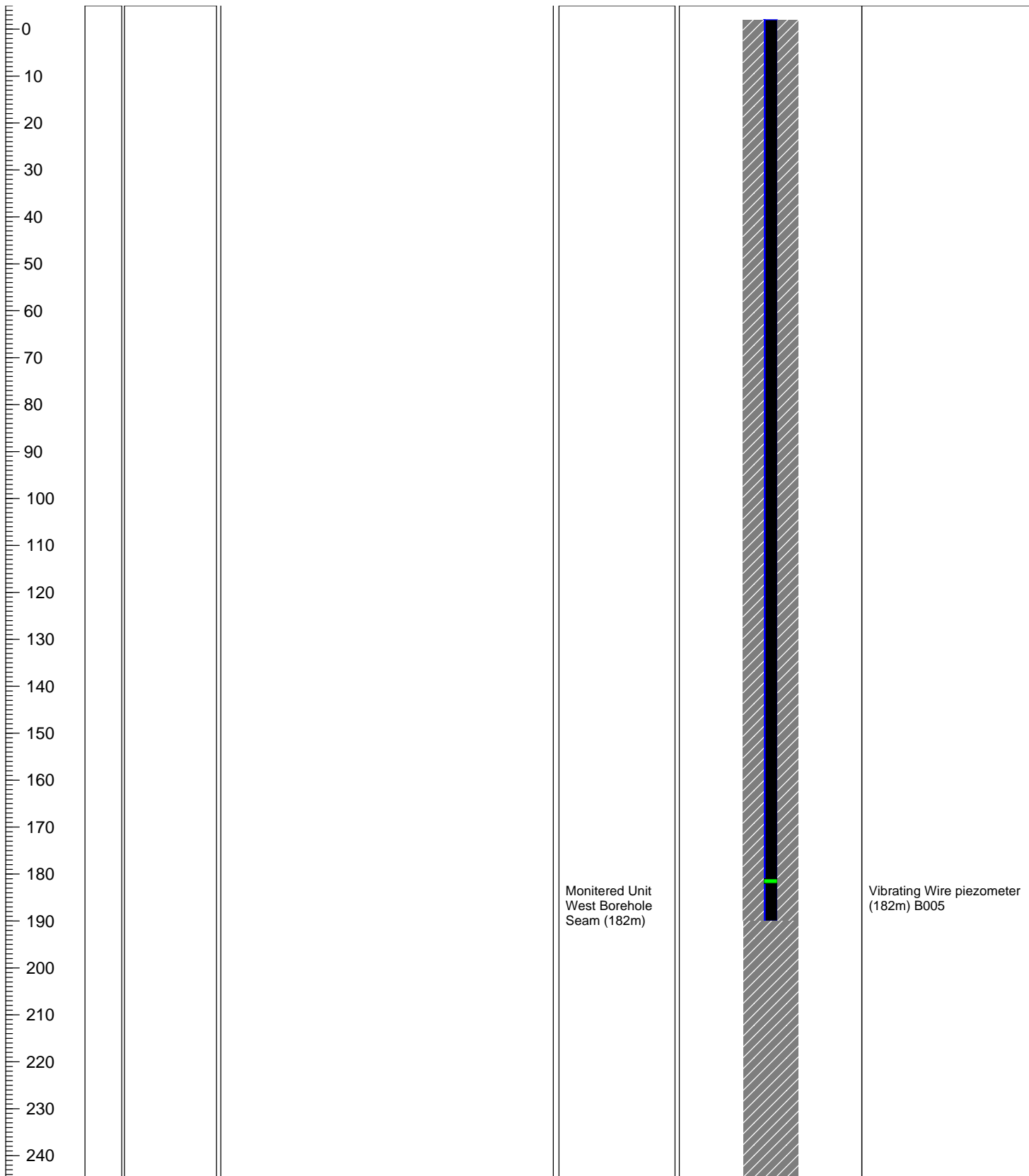
Logged By:

Collar (RL):125.73

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
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 Australia
 Tel: (+61) (02) 9412 4630
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COMPOSITE WELL LOG

Well No: B005

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/08/2006

Method: (0-476.1)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 363,760

Drilled:

Bit Record:

North: 6,362,001

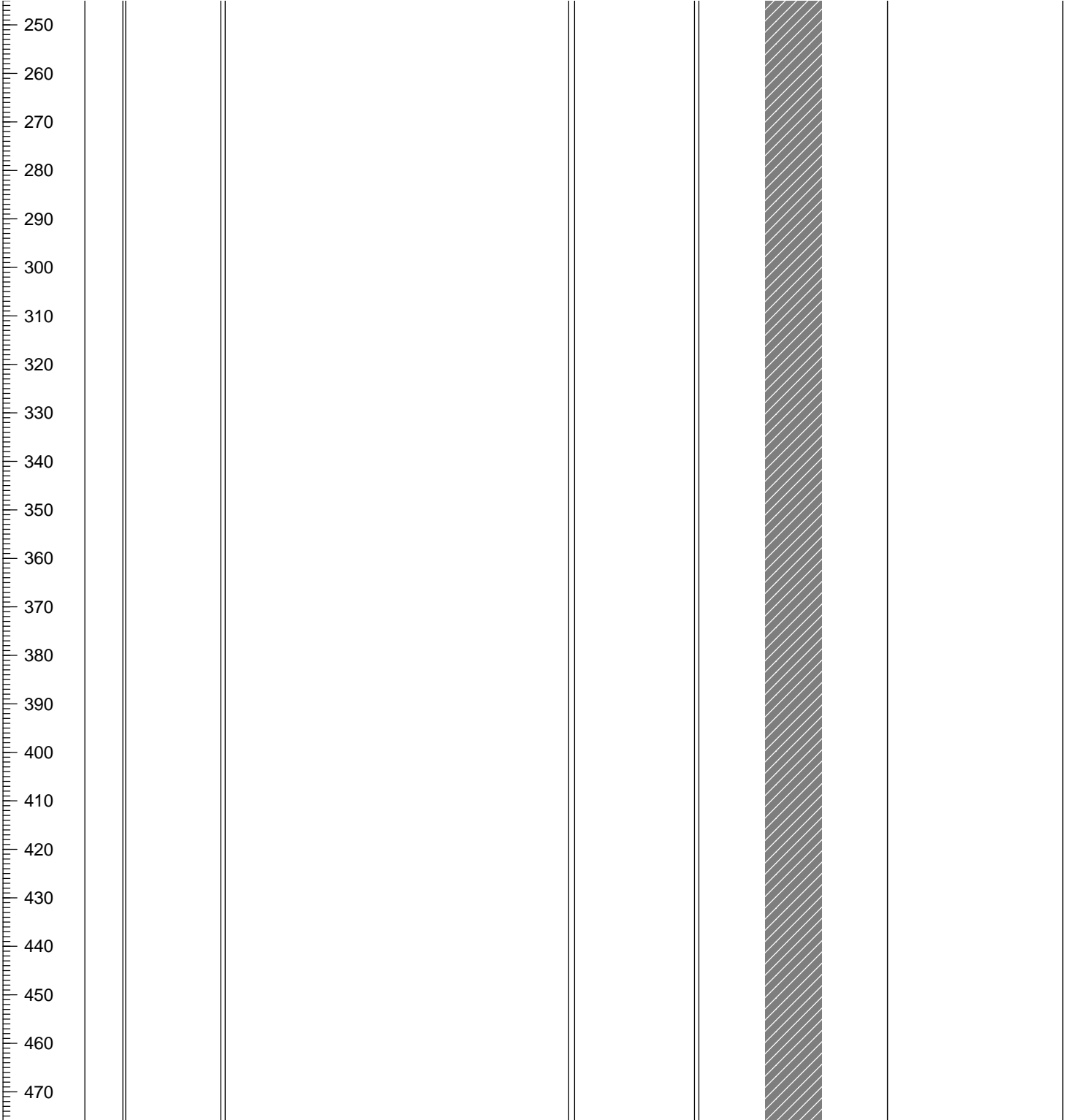
Logged By:

Collar (RL):125.73

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
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Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/04/2007

Method: (0-315.3)

Area: Tasman Mine Lease

Completed:

Fluid:

East:

Drilled:

Bit Record:

North:

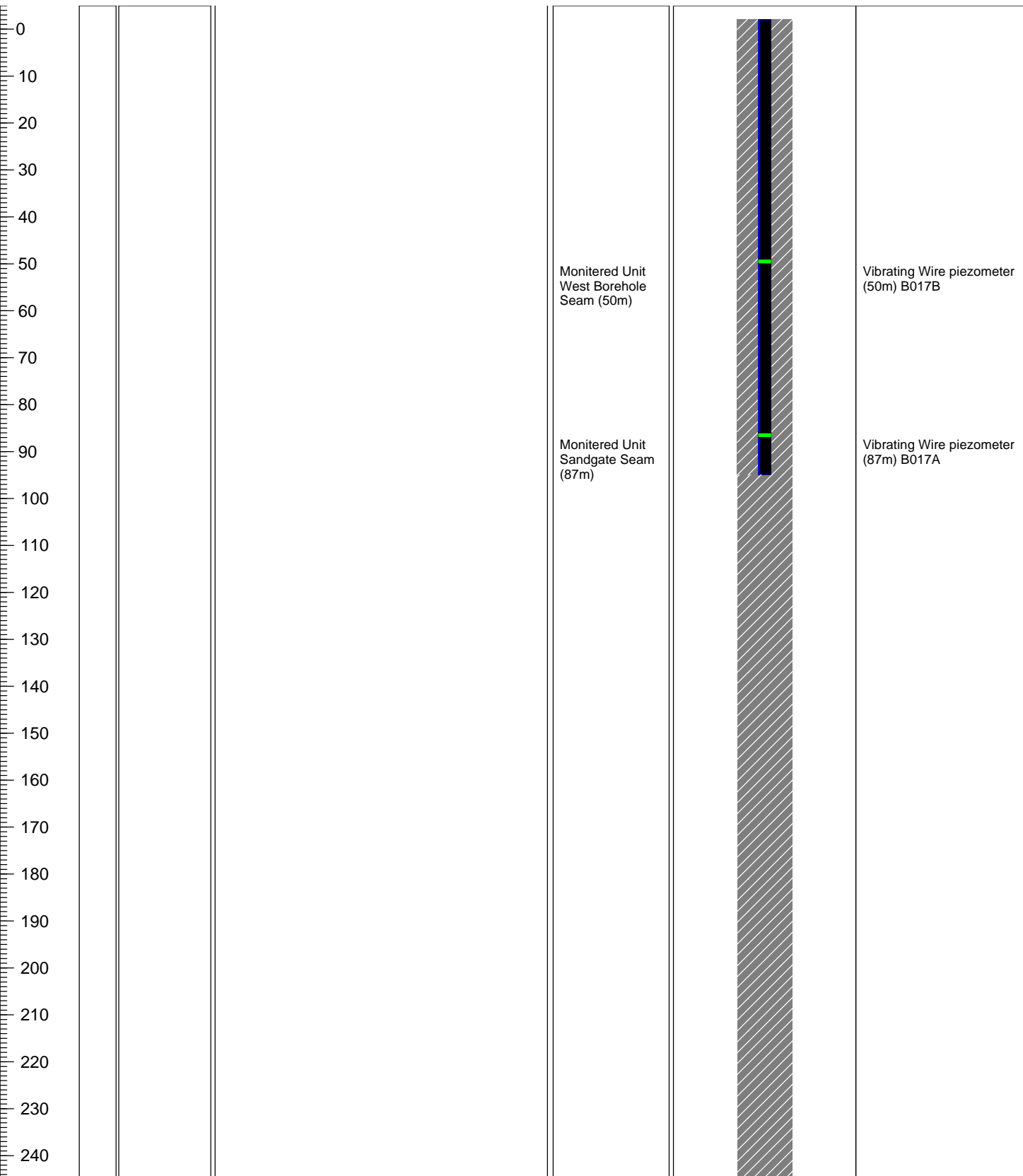
Logged By:

Collar (RL):58.59

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
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 Australia
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COMPOSITE WELL LOG

Well No: B017

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 30/04/2007

Method: (0-315.3)

Area: Tasman Mine Lease

Completed:

Fluid:

East:

Drilled:

Bit Record:

North:

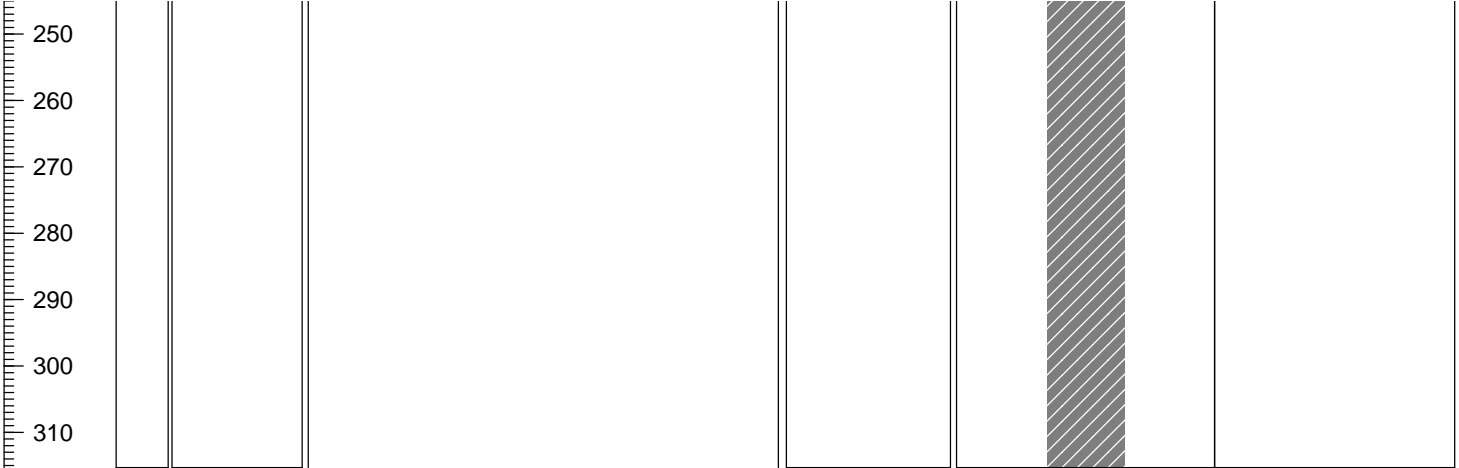
Logged By:

Collar (RL):58.59

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



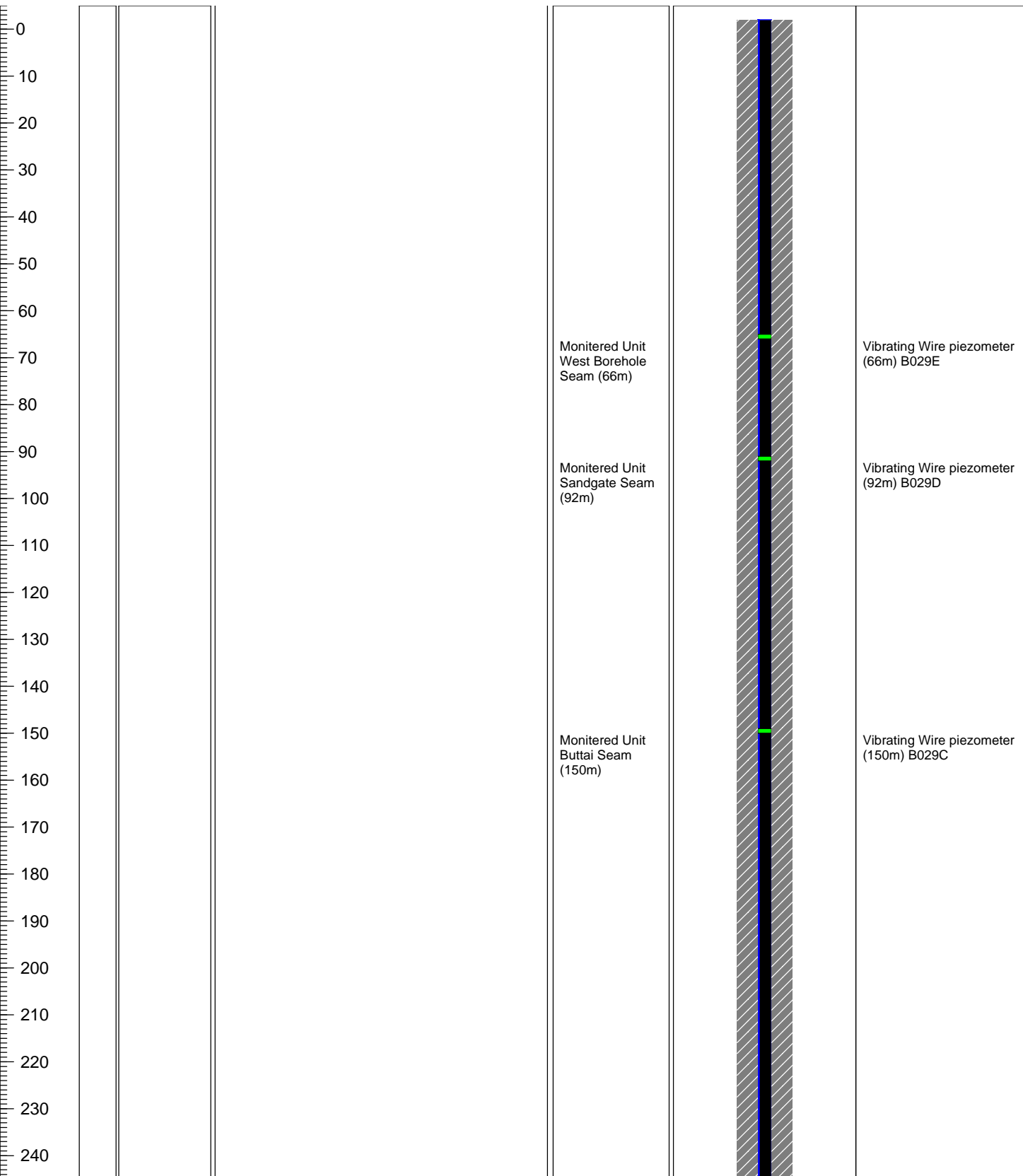
Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 23/12/2008	Method: (0-326.22)	Area: Tasman Mine Lease
Completed:	Fluid:	East: 361361.60
Drilled:	Bit Record:	North: 6360638.75
Logged By:		Collar (RL): 47.01

Static Water Level: _____ **Date:** _____

Depth (m bgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

Well No: B029

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: 23/12/2008

Method: (0-326.22)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 361361.60

Drilled:

Bit Record:

North: 6360638.75

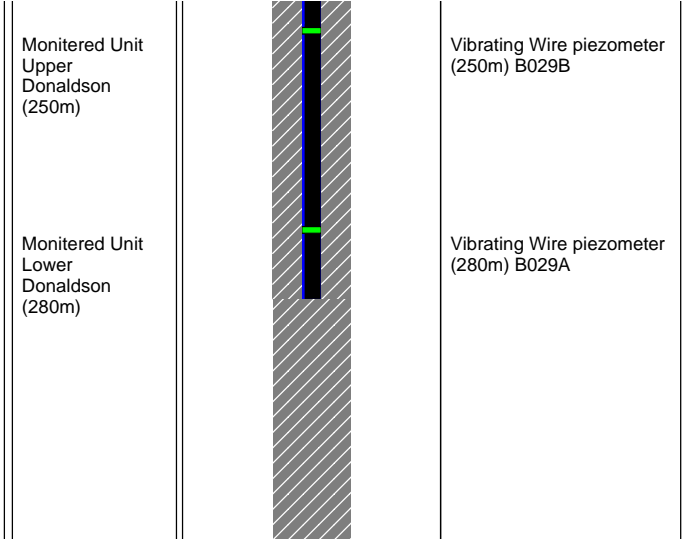
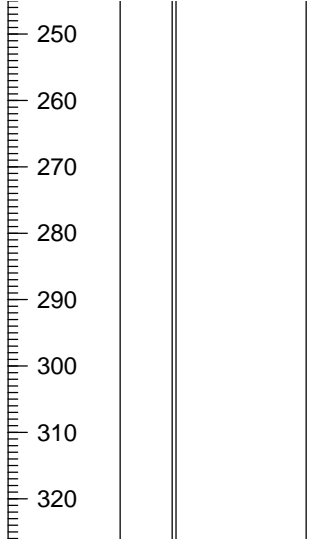
Logged By:

Collar (RL): 47.01

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



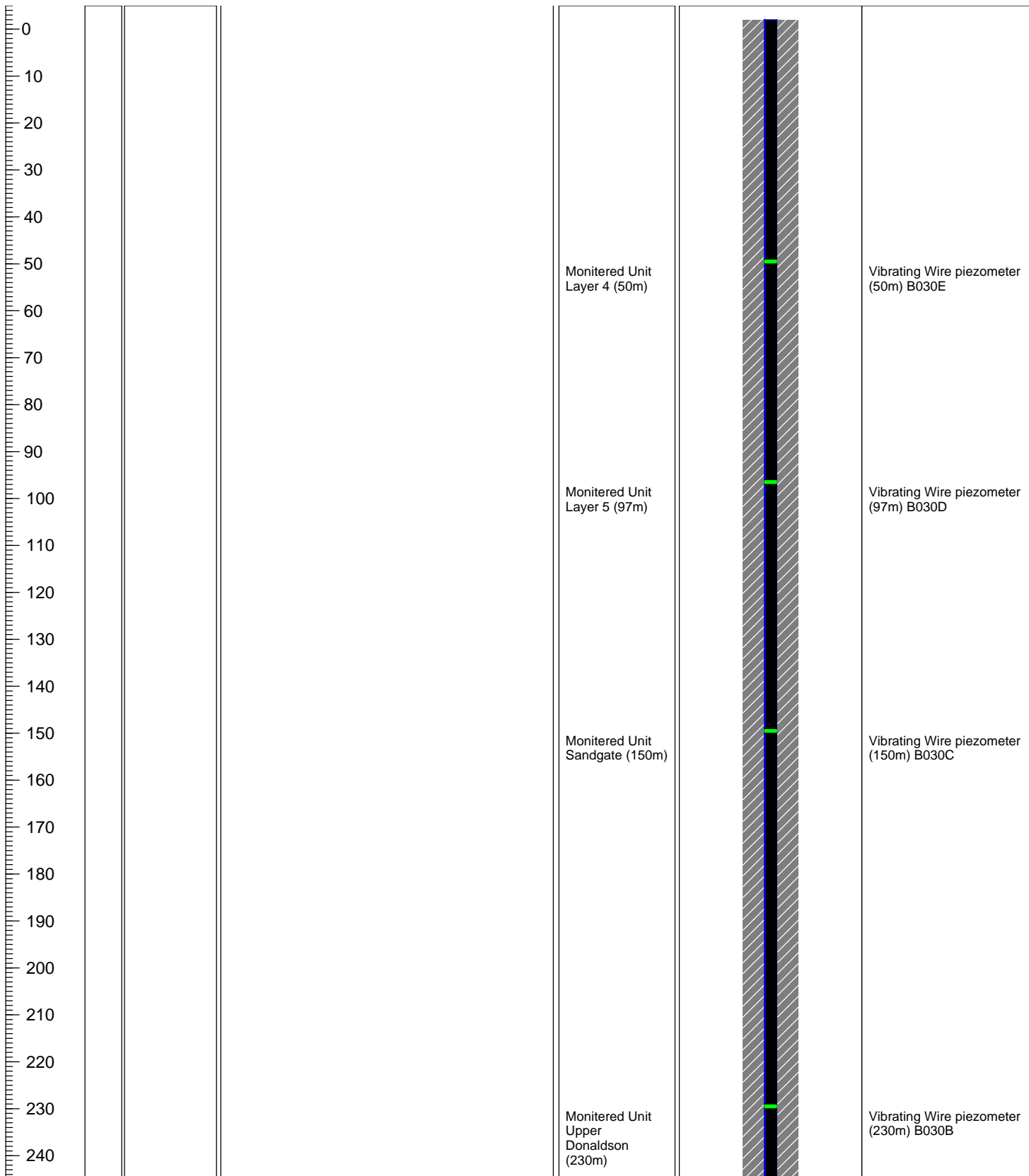
Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: November 2009	Method: (0-360.8)	Area: Tasman Mine Lease
Completed:	Fluid:	East: 361399.55
Drilled:	Bit Record:	North: 6359400.29
Logged By:		Collar (RL): 60.71

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

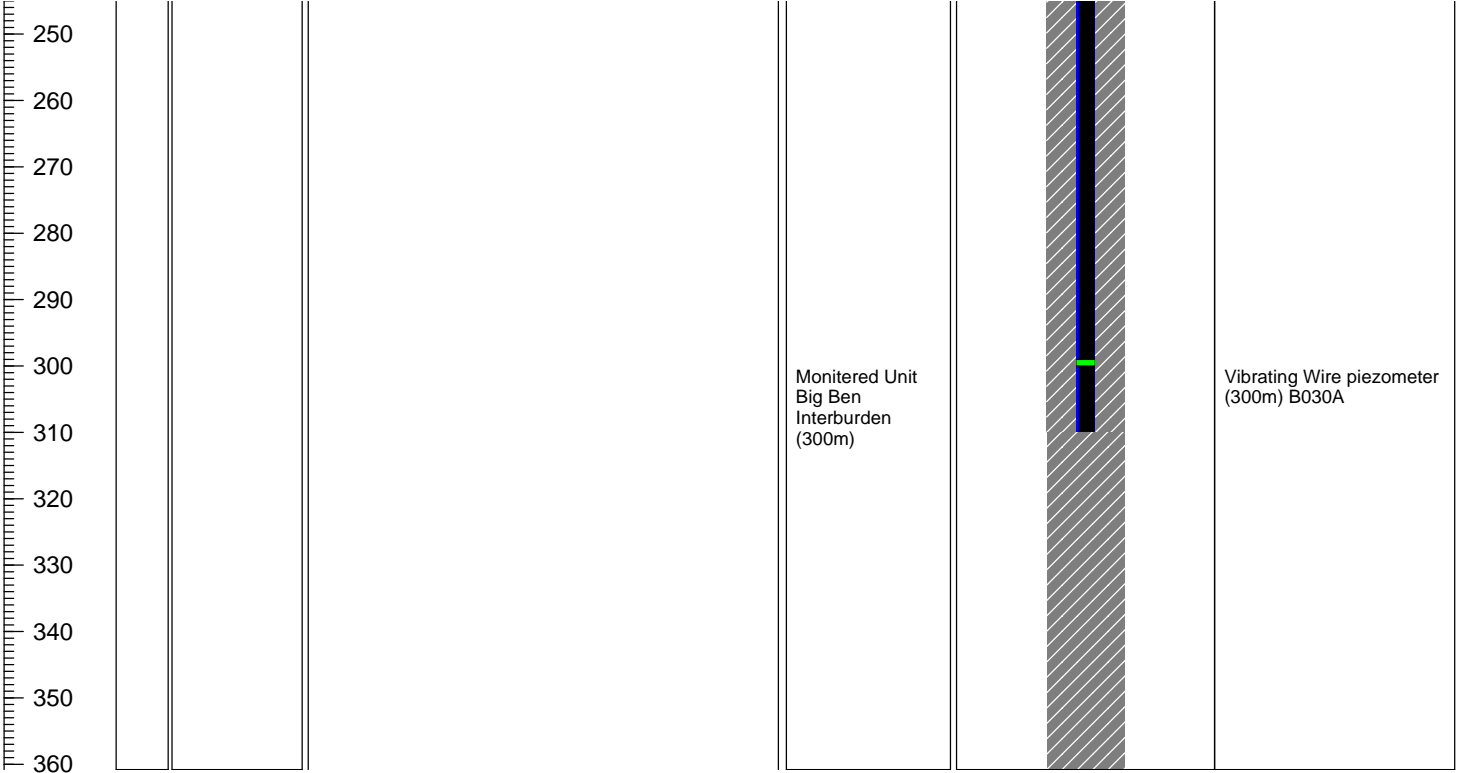
Well No: B030

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: November 2009	Method: (0-360.8)	Area: Tasman Mine Lease
Completed:	Fluid:	East: 361399.55
Drilled:	Bit Record:	North: 6359400.29
Logged By:		Collar (RL): 60.71

Static Water Level: _____ **Date:** _____

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: July 2010

Method: (0-294.8)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 360186.05

Drilled:

Bit Record:

North: 6358946.09

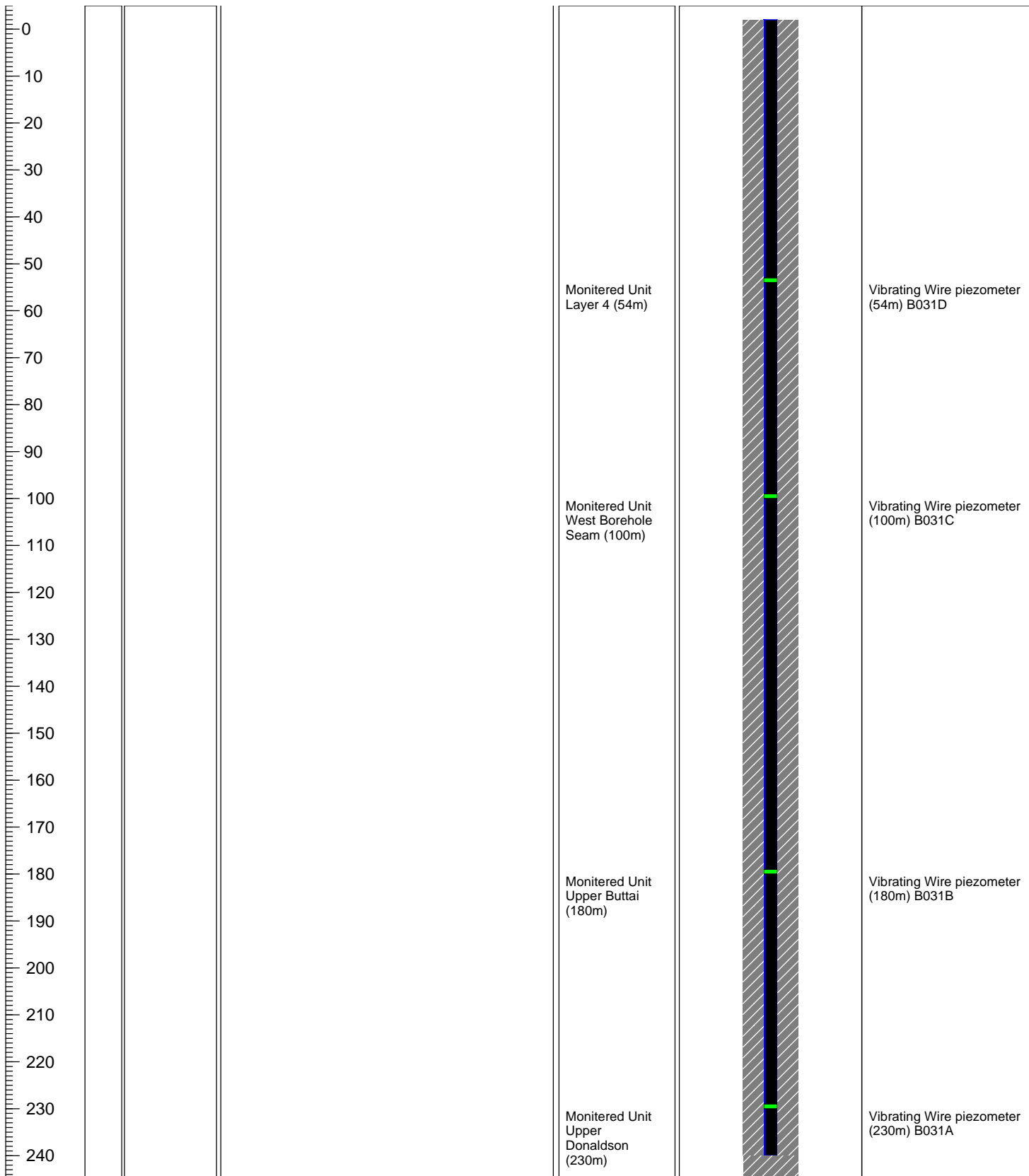
Logged By:

Collar (RL): 180.87

Static Water Level:

Date:

Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



Suit 902, Level 9, North Tower
 1-5 Railway Street, Chatswood
 NSW, 2067
 Australia
 Tel: (+61) (02) 9412 4630
 Fax: (+61) (02) 9412 4805

COMPOSITE WELL LOG

Well No: B031

Client: Donaldson Coal Operations Pty Ltd **Project:** Tasman Extension

Commenced: July 2010

Method: (0-294.8)

Area: Tasman Mine Lease

Completed:

Fluid:

East: 360186.05

Drilled:

Bit Record:

North: 6358946.09

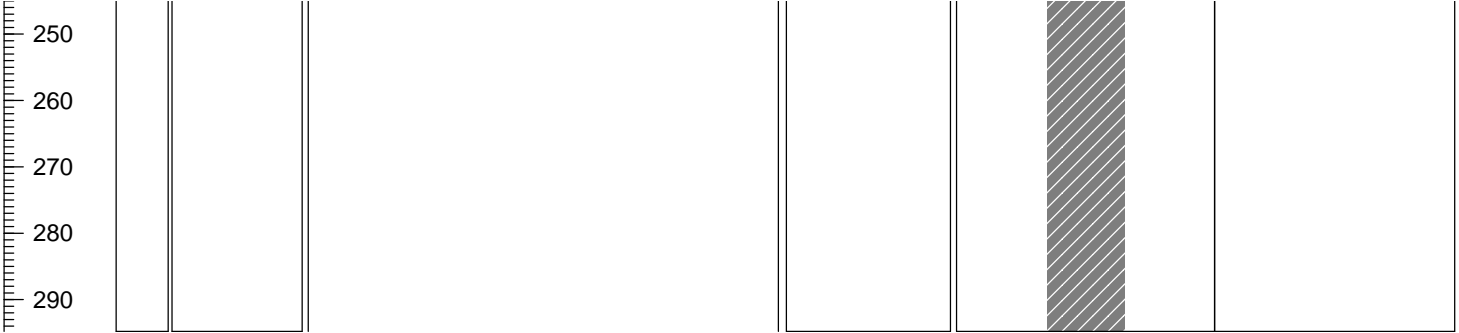
Logged By:

Collar (RL): 180.87

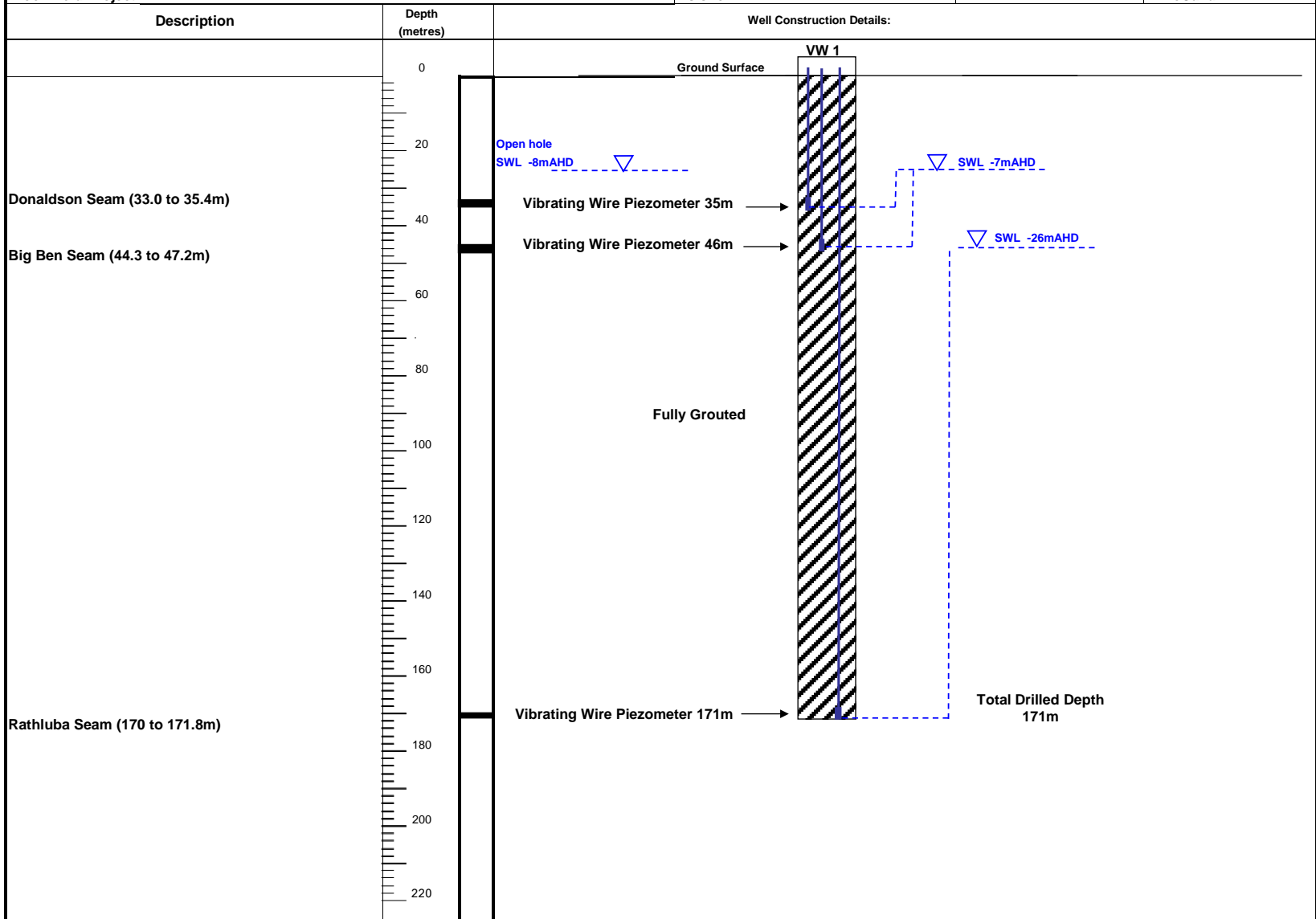
Static Water Level:

Date:

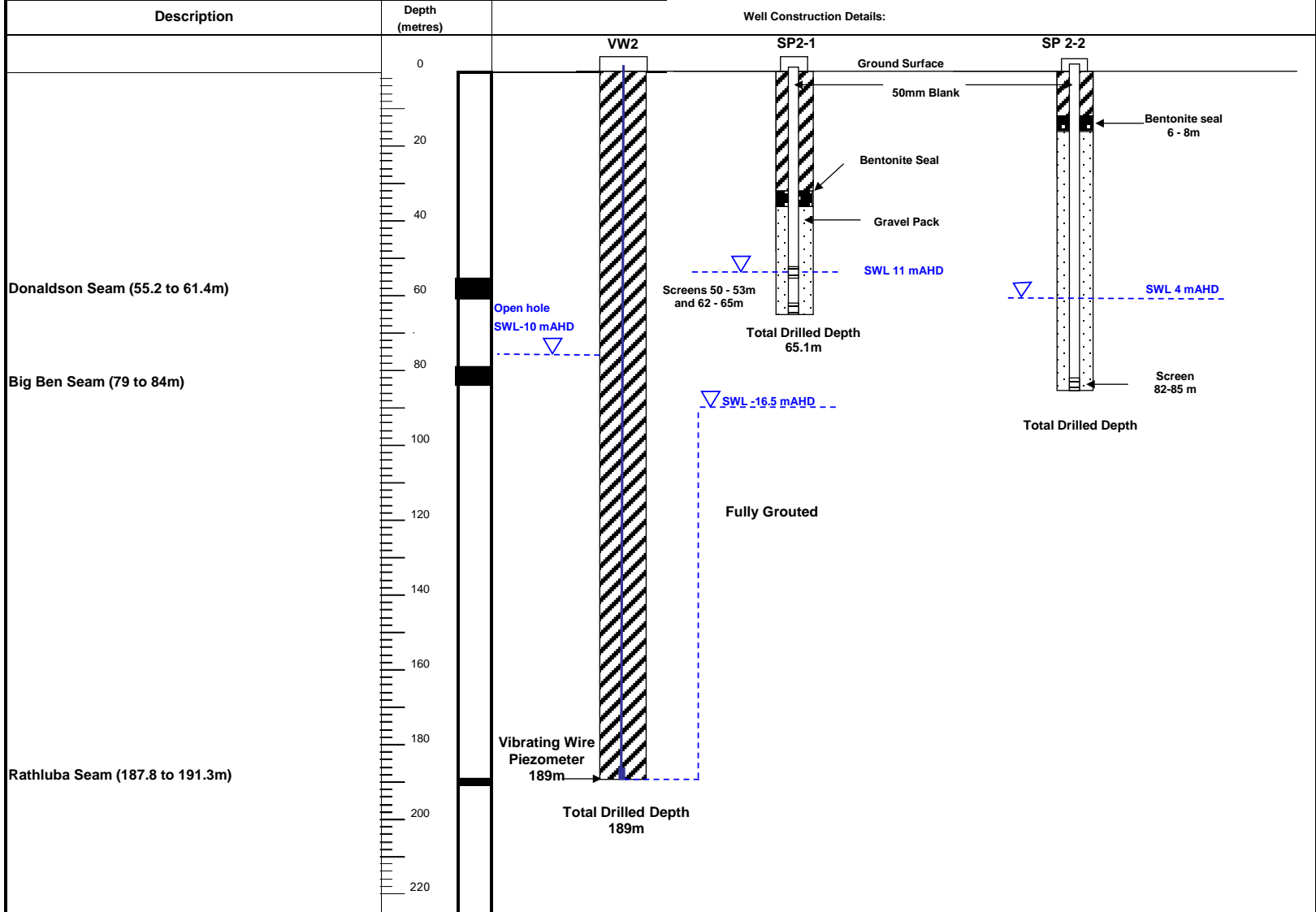
Depth (mbgl)	Bit Log	Graphic Log	Lithological Description	Field Notes	Well Completion	
					Diagram	Notes



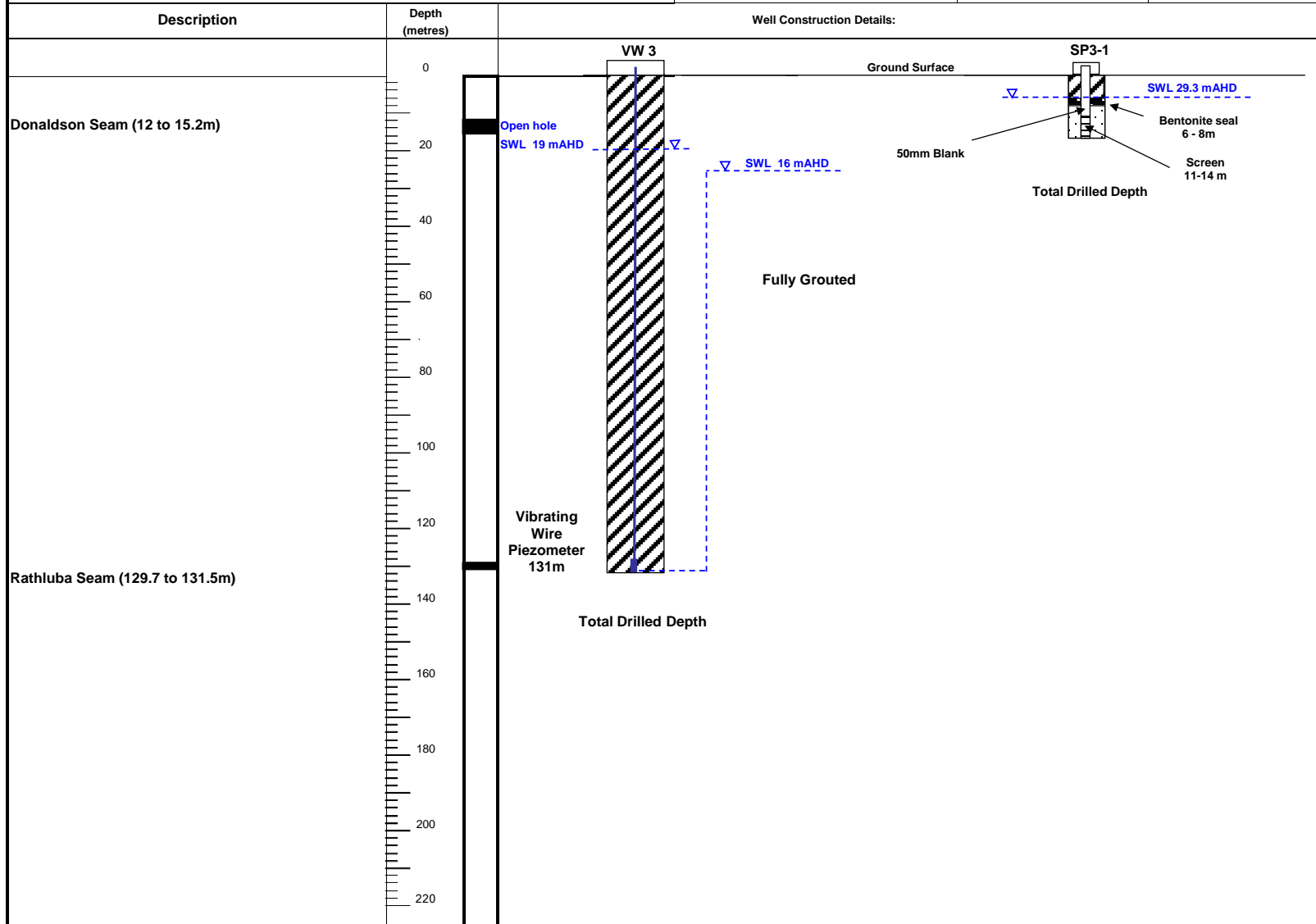
						Project No:	06-0188
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	VW 1	24.6 mAHD			Hunter Drilling Services	27-Mar-07	12-Apr-07
Location:			Hole depths:			Supervised By:	
Bloomfield Project			As shown			R McCallum	



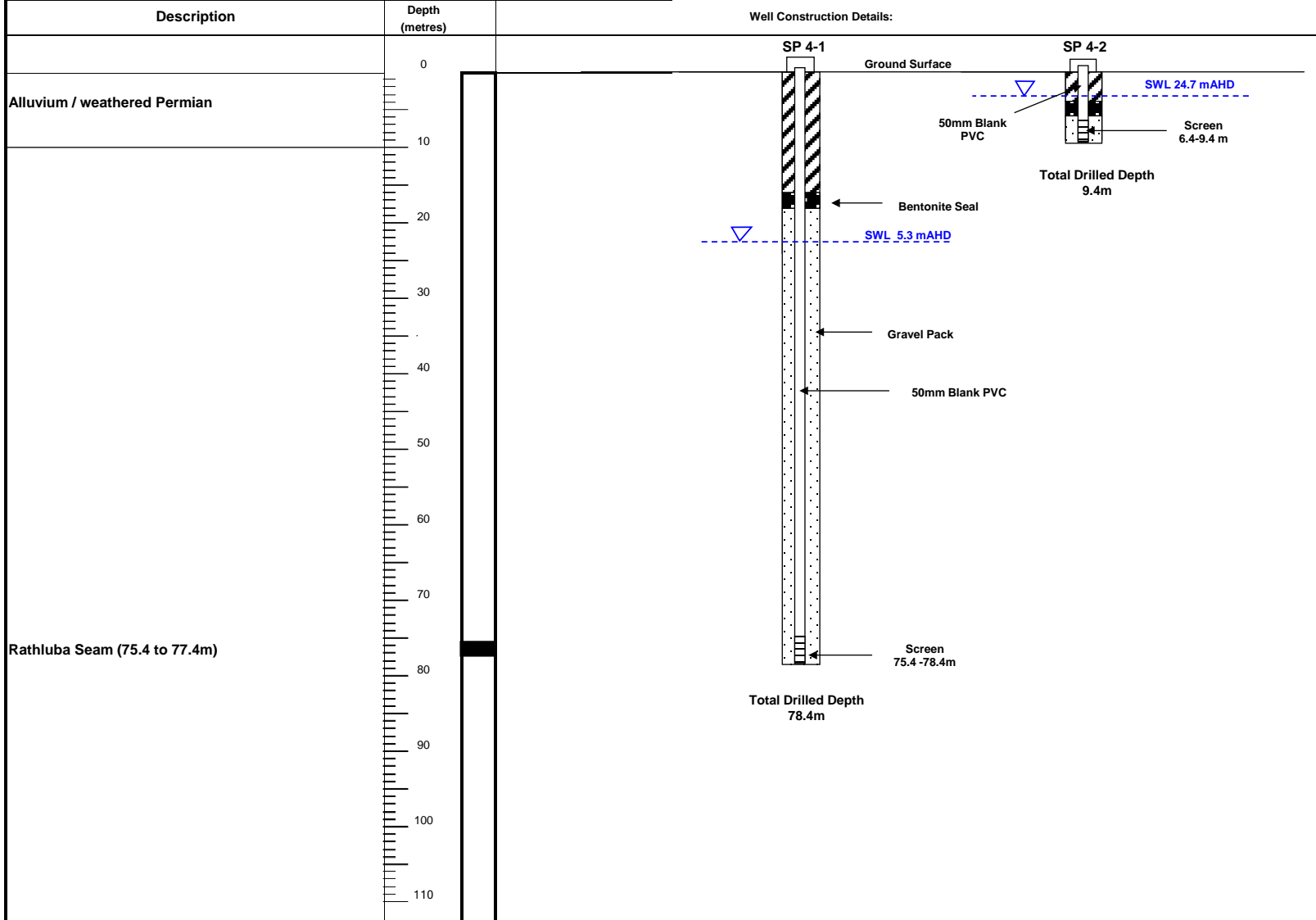
				Project No: 06-0188			
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	VW2	78.9 mAHD			Hunter Drilling Services	20-Mar-07	27-Mar-07
Location:	SP2-1	78.6 mAHD			Hunter Drilling Services	20-Mar-07	27-Mar-07
Bloomfield Project	SP2-2	79.2 mAHD			Hunter Drilling Services	20-Mar-07	27-Mar-07
				Hole depths: As shown	Supervised By: R McCallum		



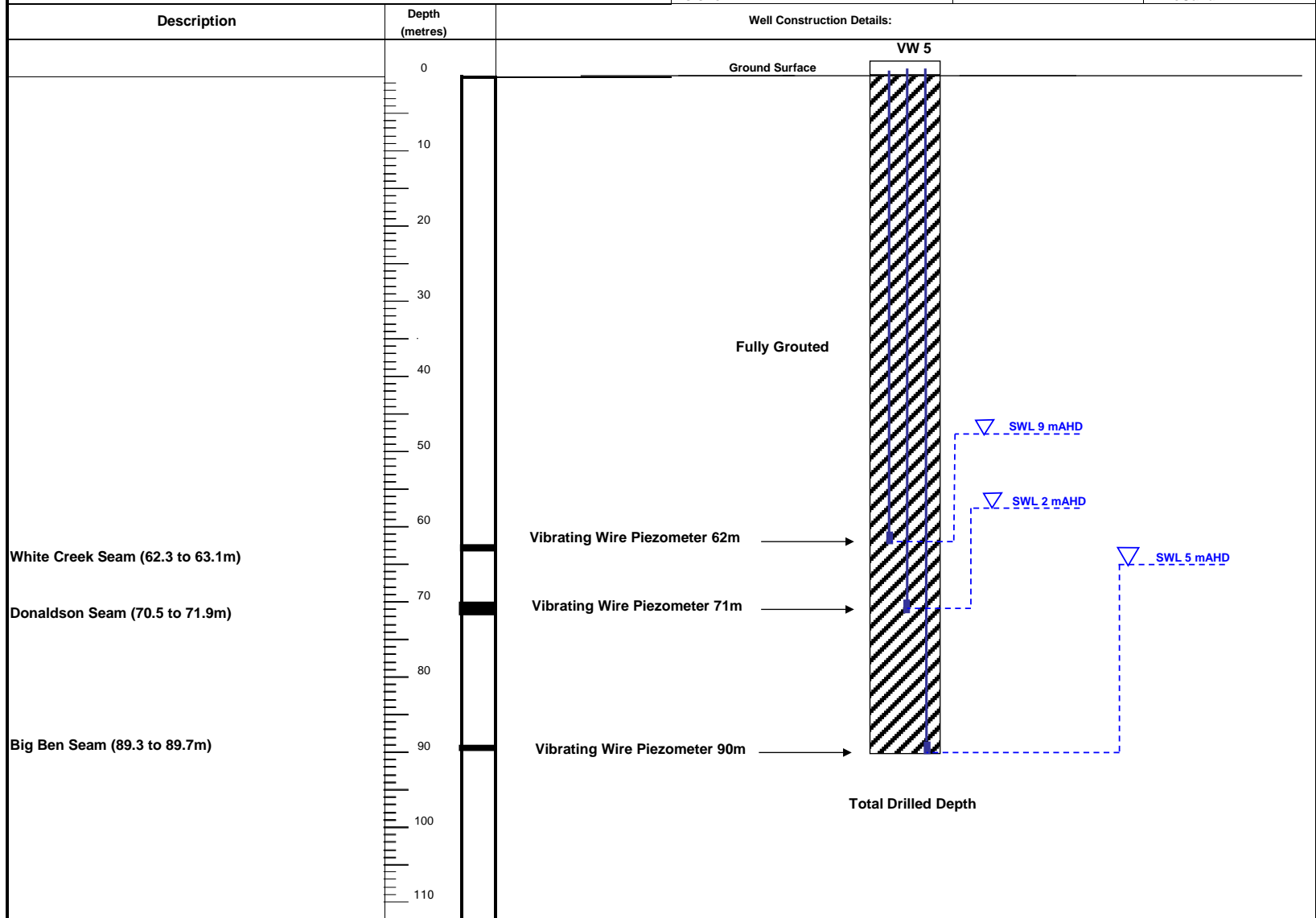
						Project No:	06-0188
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	VW3	29.6 mAHD			Hunter Drilling Services	11-May-07	14-May-07
Location:	SP3-1	30.4 mAHD			Hunter Drilling Services	11-May-07	14-May-07
Bloomfield Project			Hole depths: As shown		Supervised By: R McCallum		



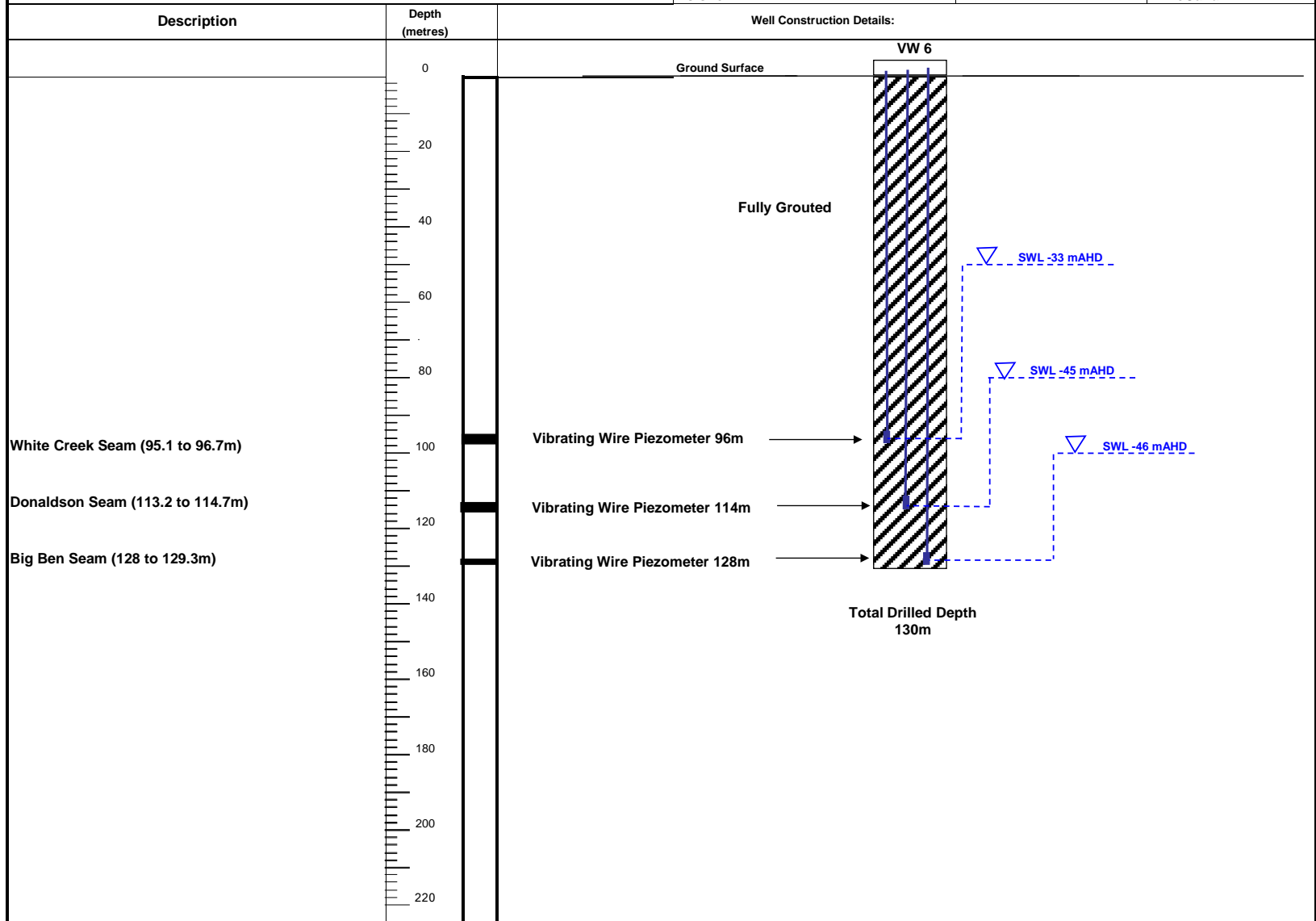
				Project No:	06-0188		
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	SP4-1	26.5 mAHD			Hunter Drilling Services	16-Mar-07	17-Mar-07
Location:	SP4-2	26.7 mAHD		0.25 m	Hunter Drilling Services	16-Mar-07	17-Mar-07
Bloomfield Project			Hole depths: As shown		Supervised By: R McCallum		



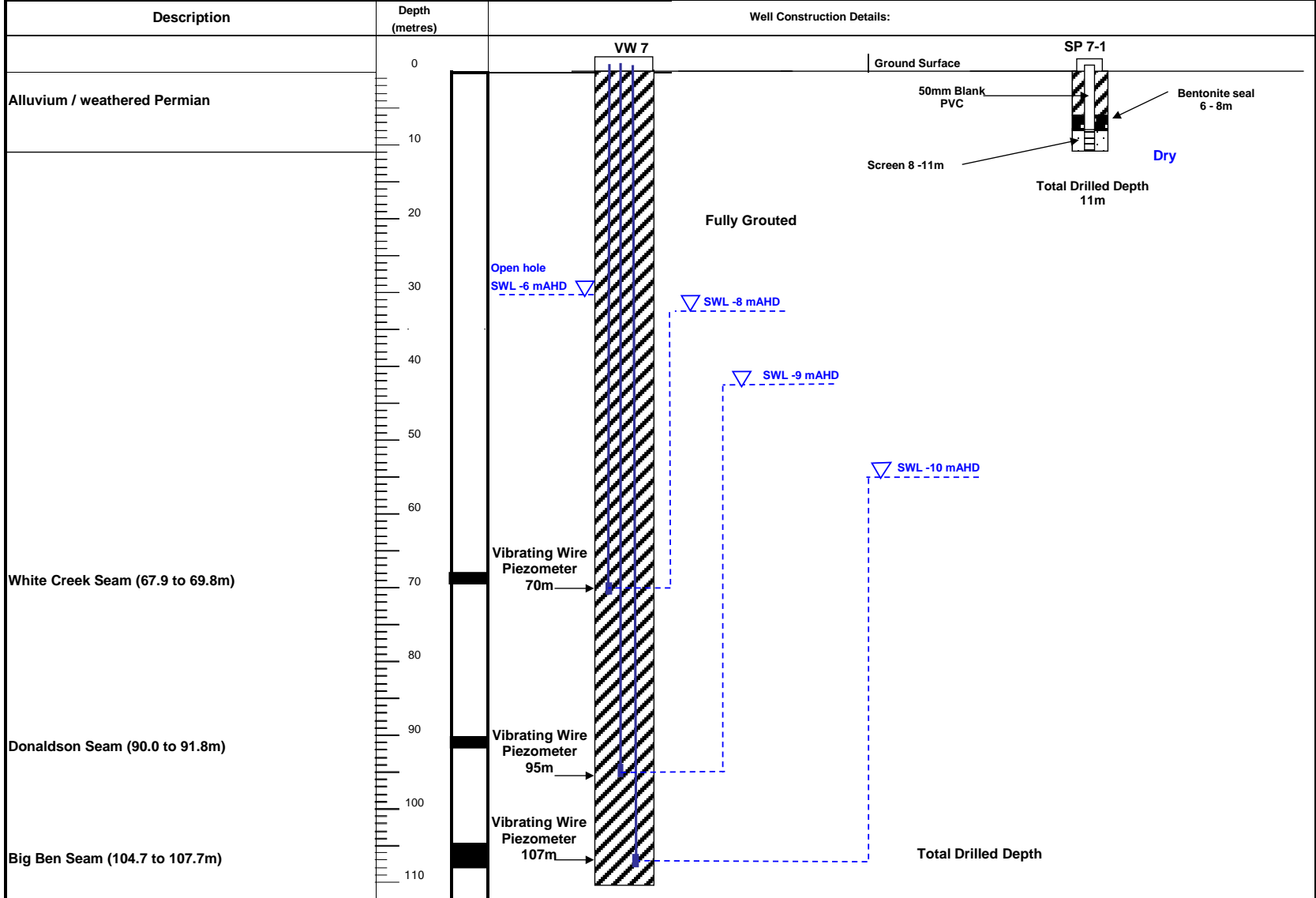
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Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	VW5	60.7 mAHD			Hunter Drilling Services	05-Apr-07	27-Apr-07
Location:				As shown		Supervised By:	
Bloomfield Project						R McCallum	



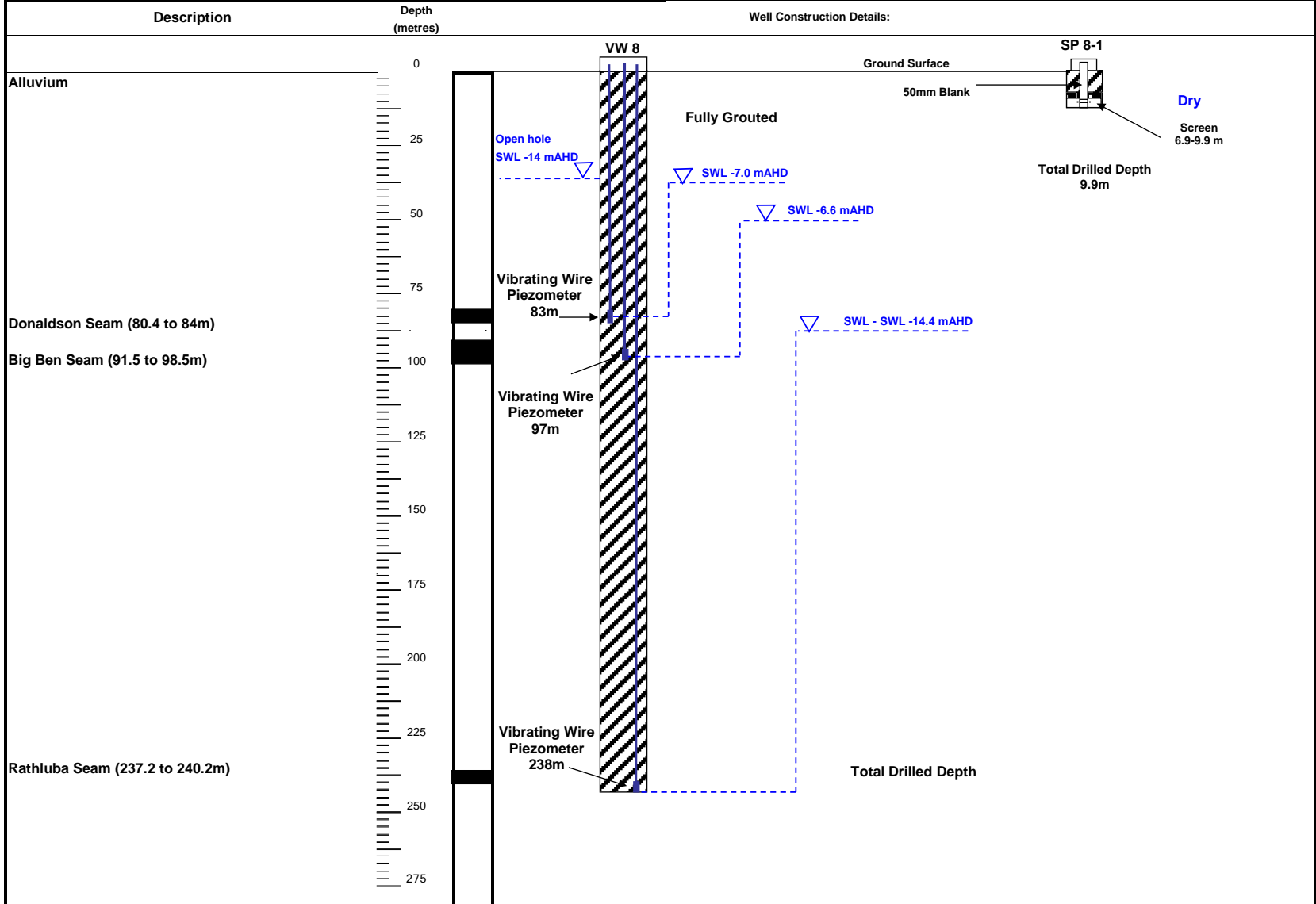
						Project No:	06-0188
Client:	Bore:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	VW6	53.6 mAHD	52.75 mAHD	0.25 m	Hunter Drilling Services	24-Apr-07	27-Apr-07
Location:			Hole depths:		Supervised By:		
Bloomfield Project			As shown		R McCallum		



						Project No:	06-0188	
Client:	Bore:	Depth:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started:	Date Finished:
Bloomfield Collieries Pty Ltd	VW7		26.8 mAHD			Hunter Drilling Services	18-Apr-07	24-Apr-07
Location:	SP7-1		26.8 mAHD			Hunter Drilling Services		
Bloomfield Project						Supervised By:		R McCallum
						As shown		

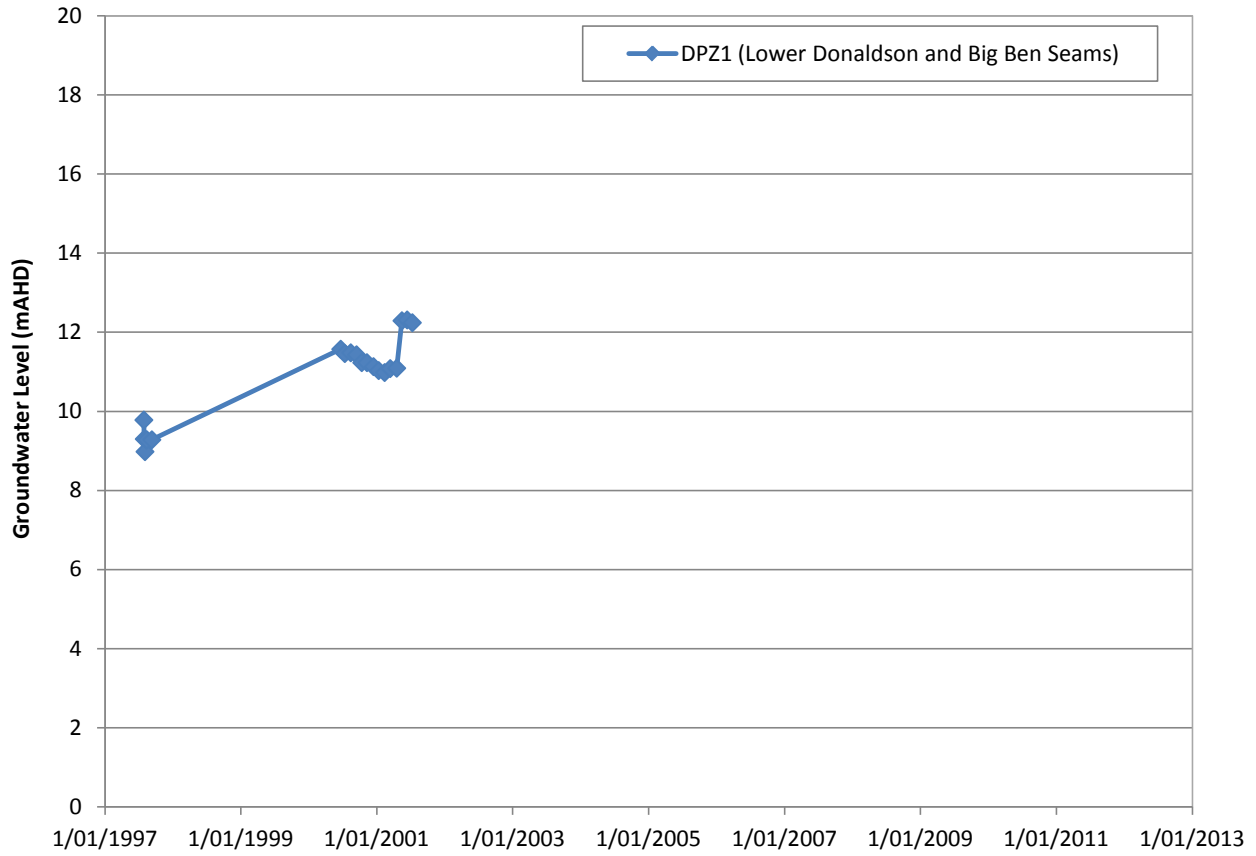


						Project No:	06-0188
Client:	Bore:	Depth:	Elevation (GL):	Elevation (TOC):	Stickup:	Drilling Contractor:	Date Started: Date Finished:
Bloomfield Collieries Pty Ltd	VW8		23.9 mAHD			Hunter Drilling Services	29-Mar-07 18-Apr-07
Location:	SP8-1		24.1 mAHD				
Bloomfield Project						Supervised By:	
As shown						R McCallum	

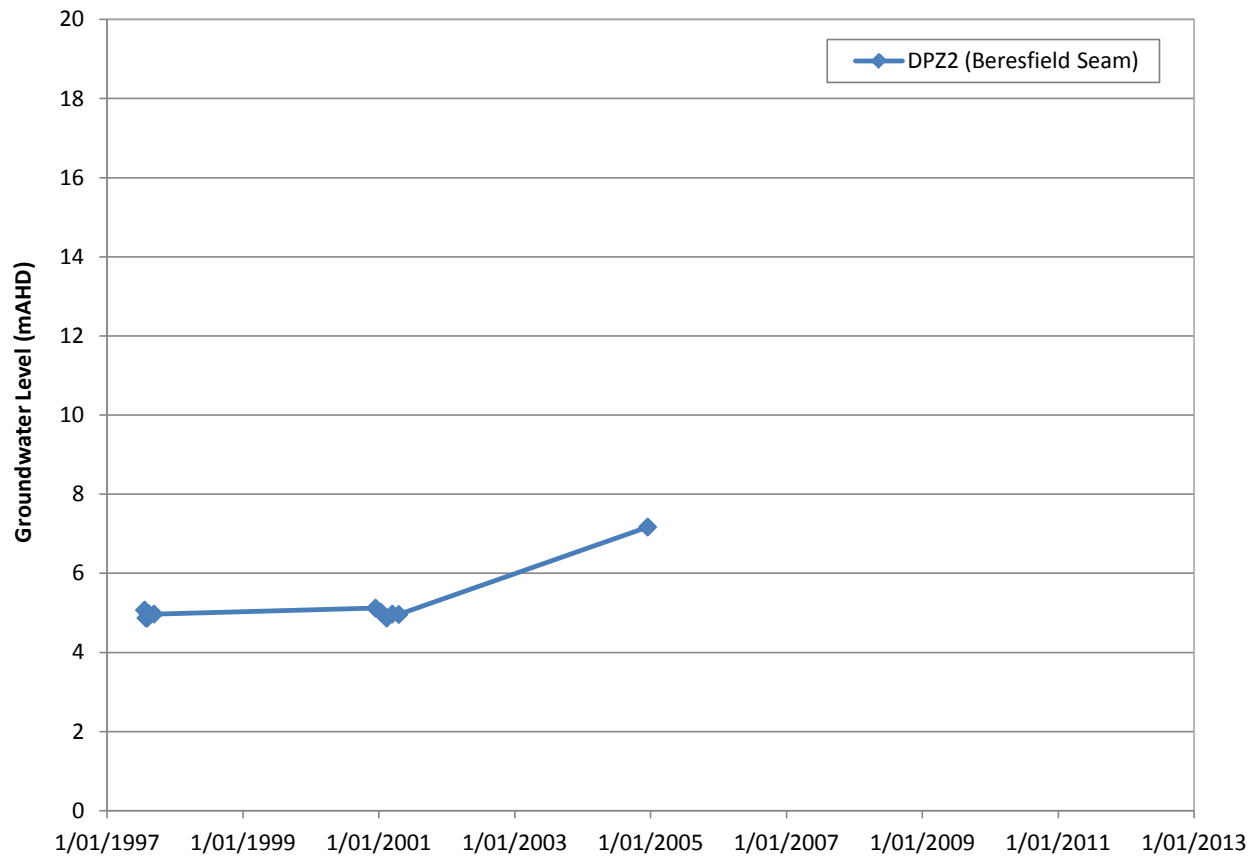


**APPENDIX B:
GROUNDWATER HYDROGRAPHS
AND HYDROSTATIC HEAD
PROFILES**

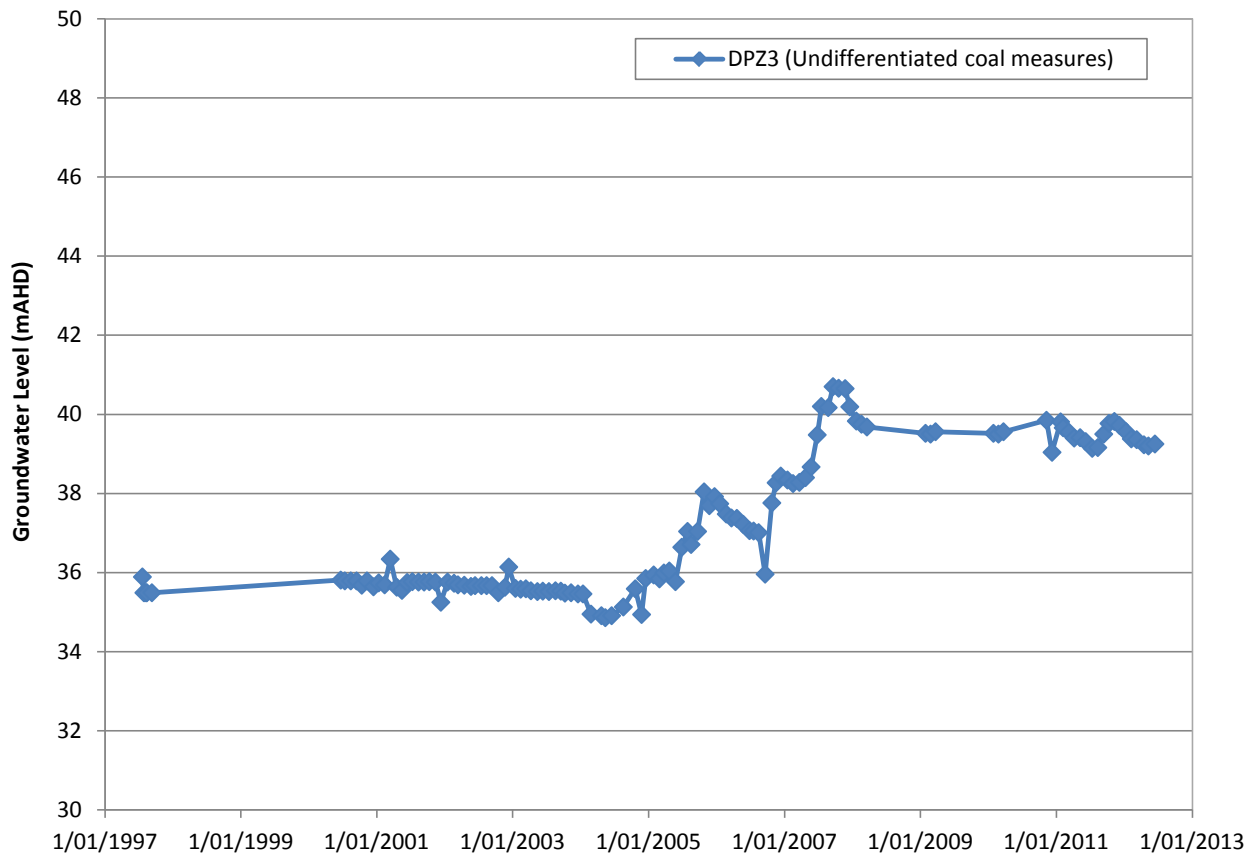
DPZ1



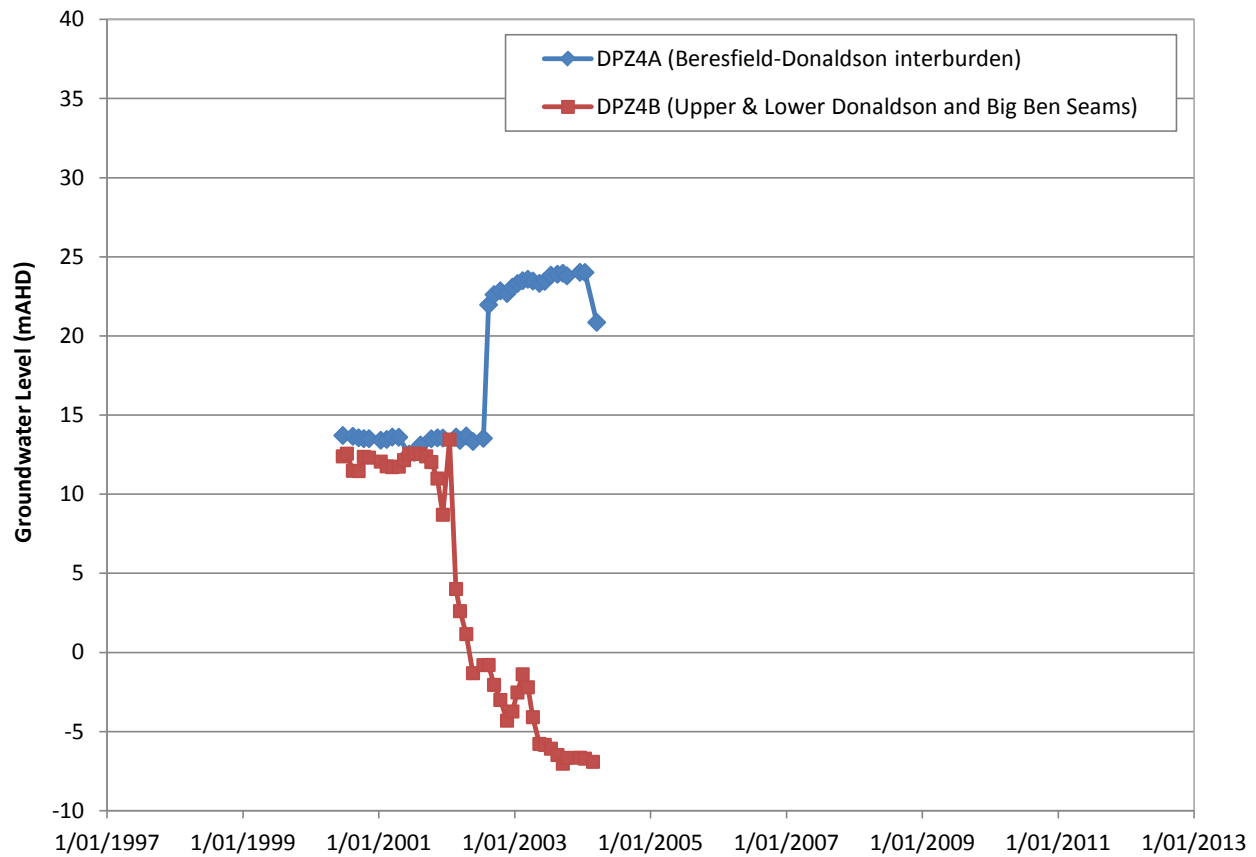
DPZ2



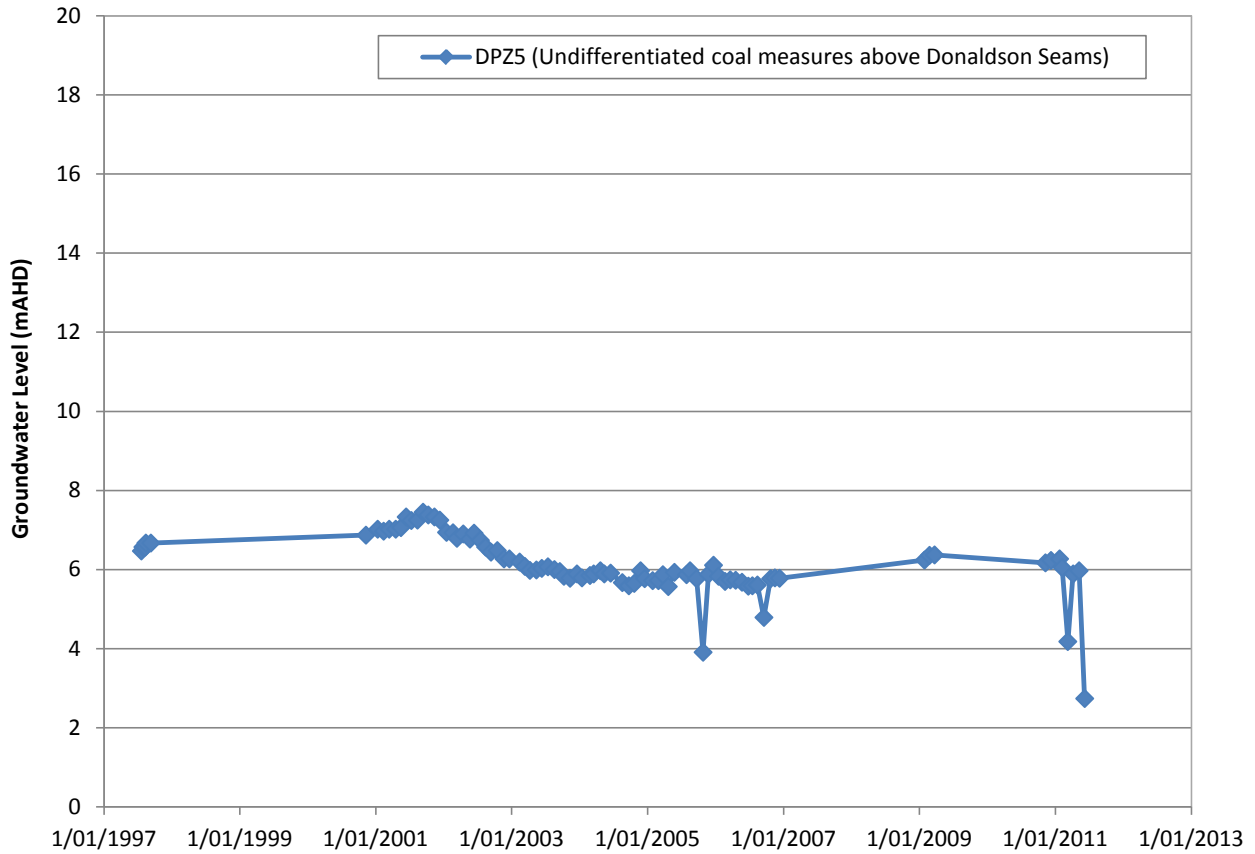
DPZ3



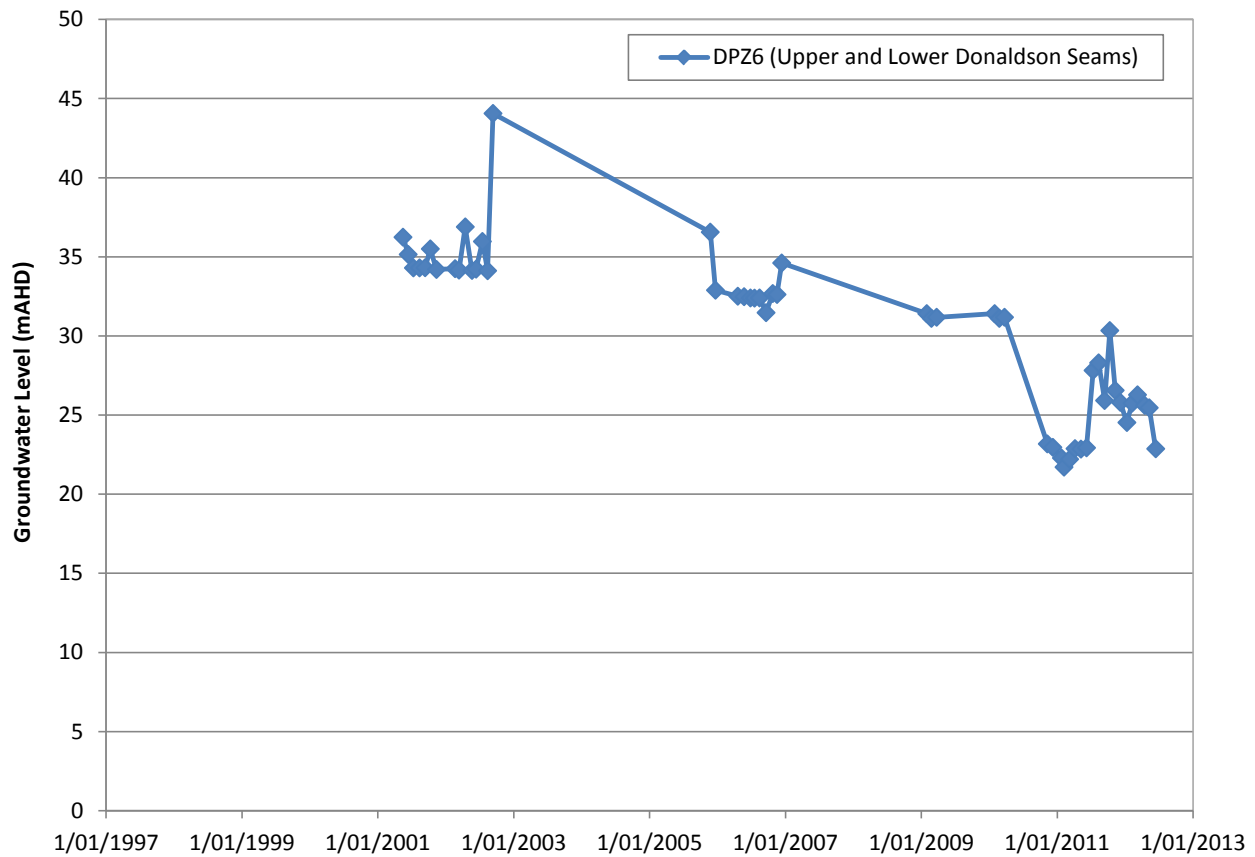
DPZ4



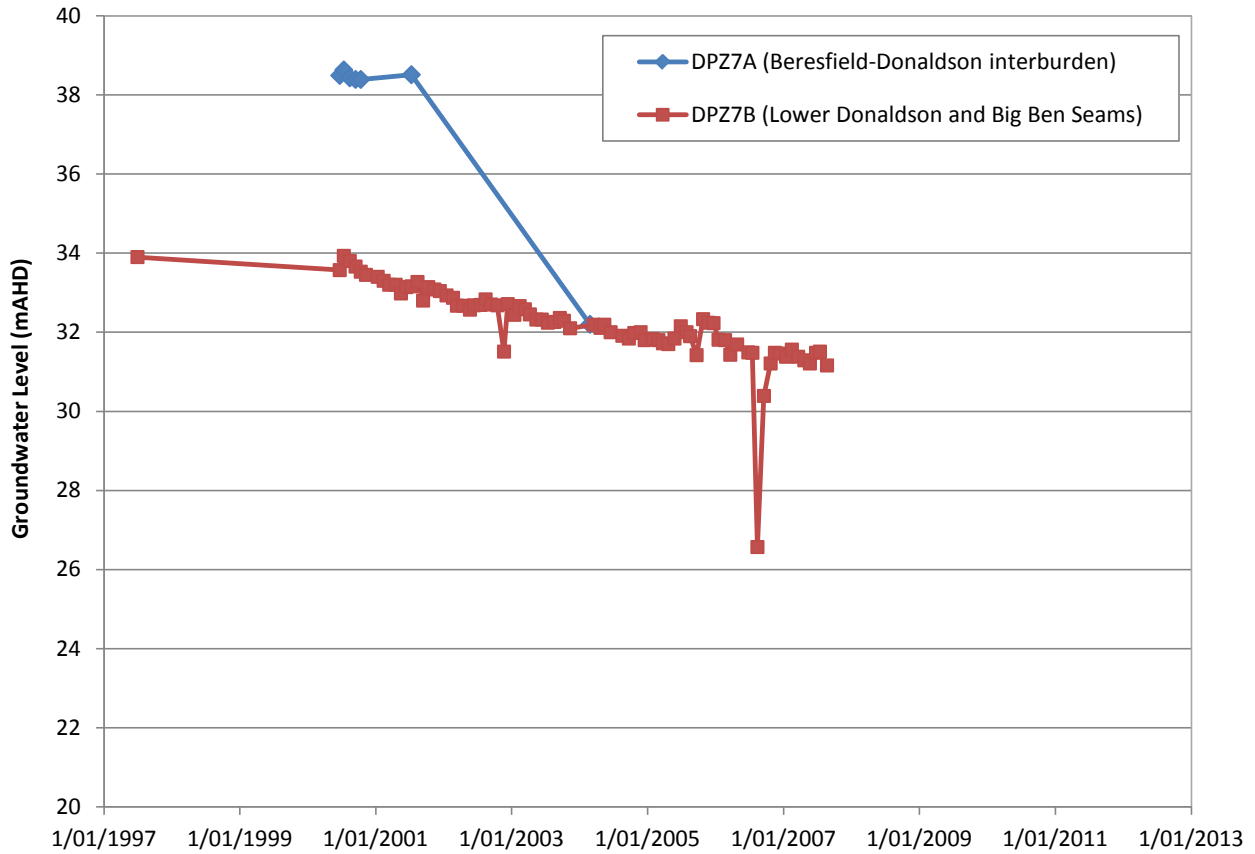
DPZ5



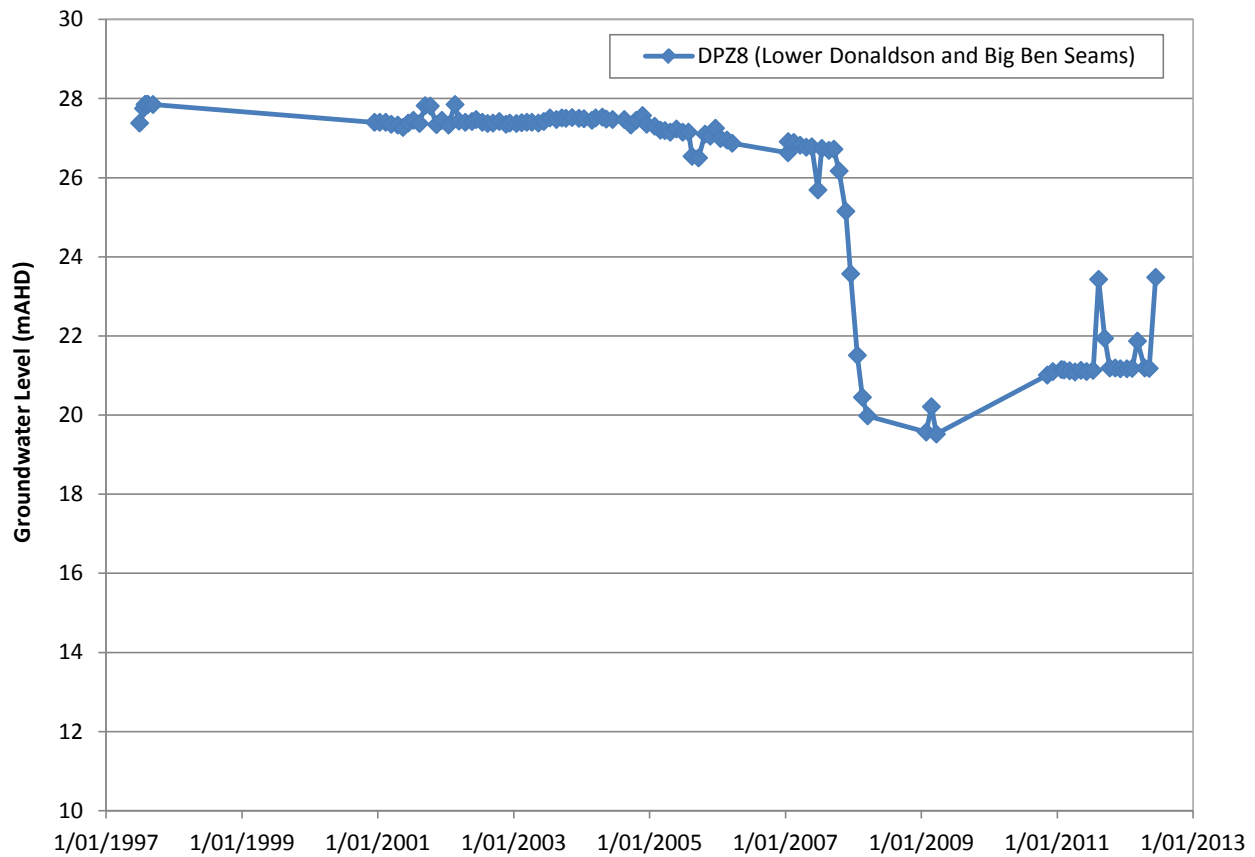
DPZ6

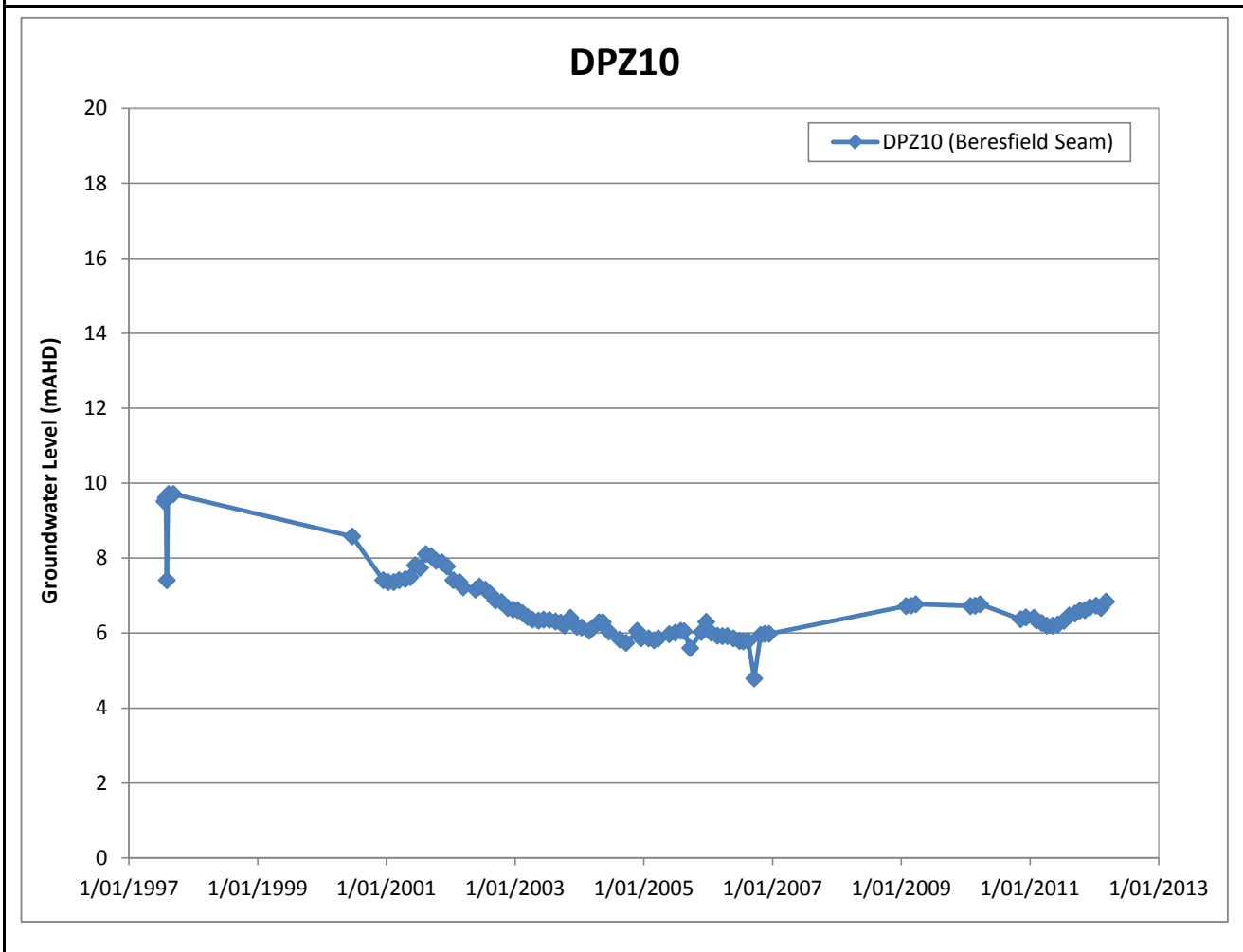
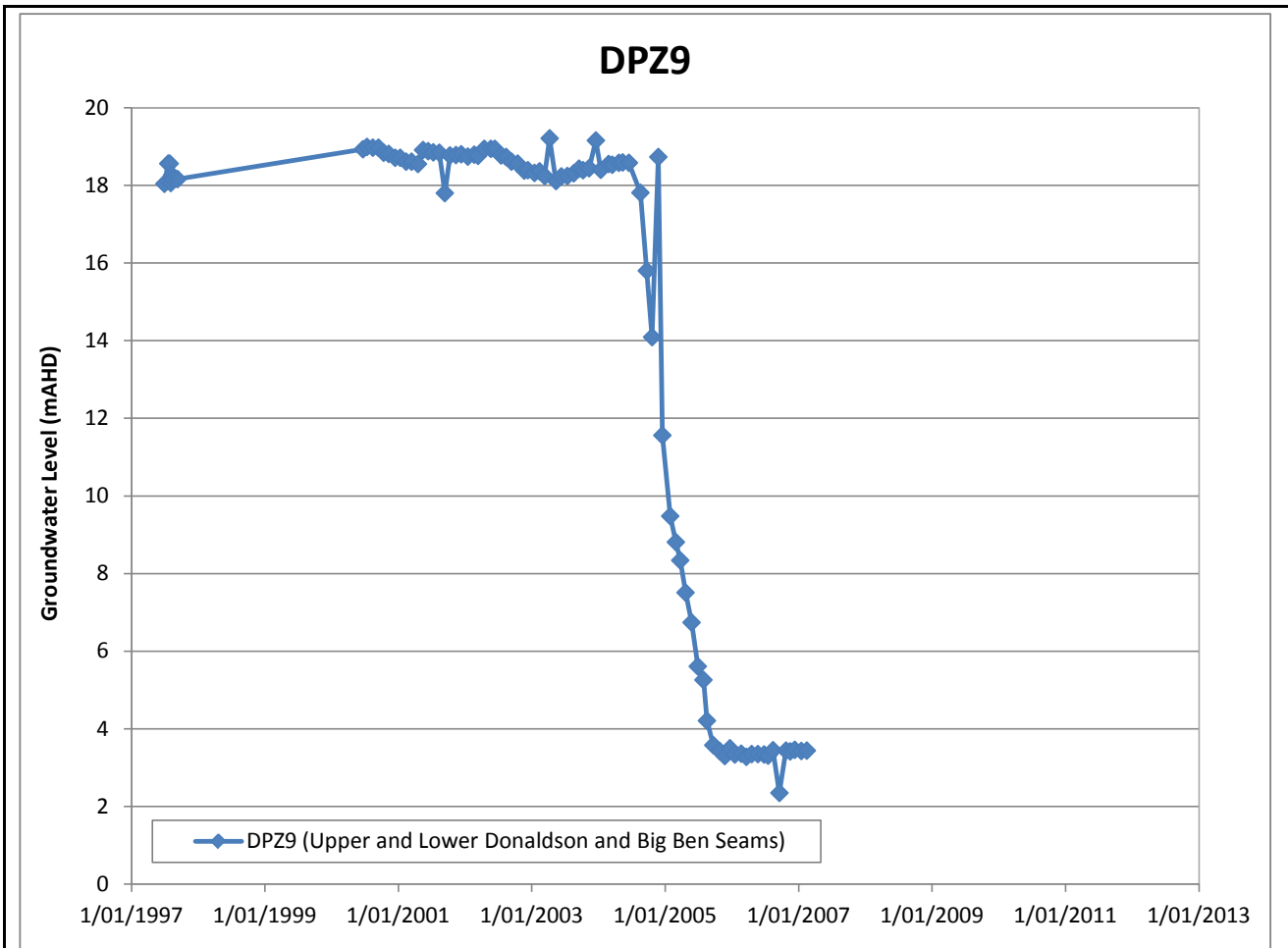


DPZ7

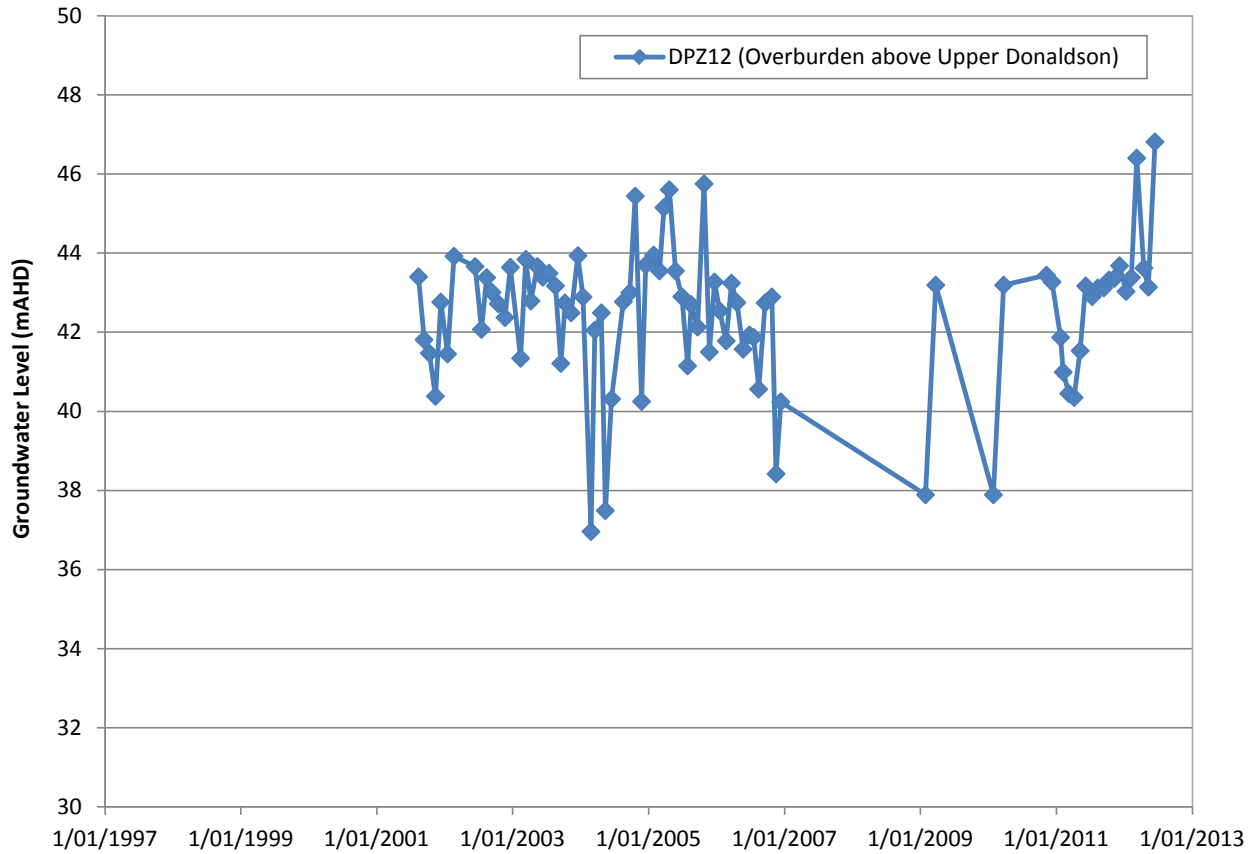


DPZ8

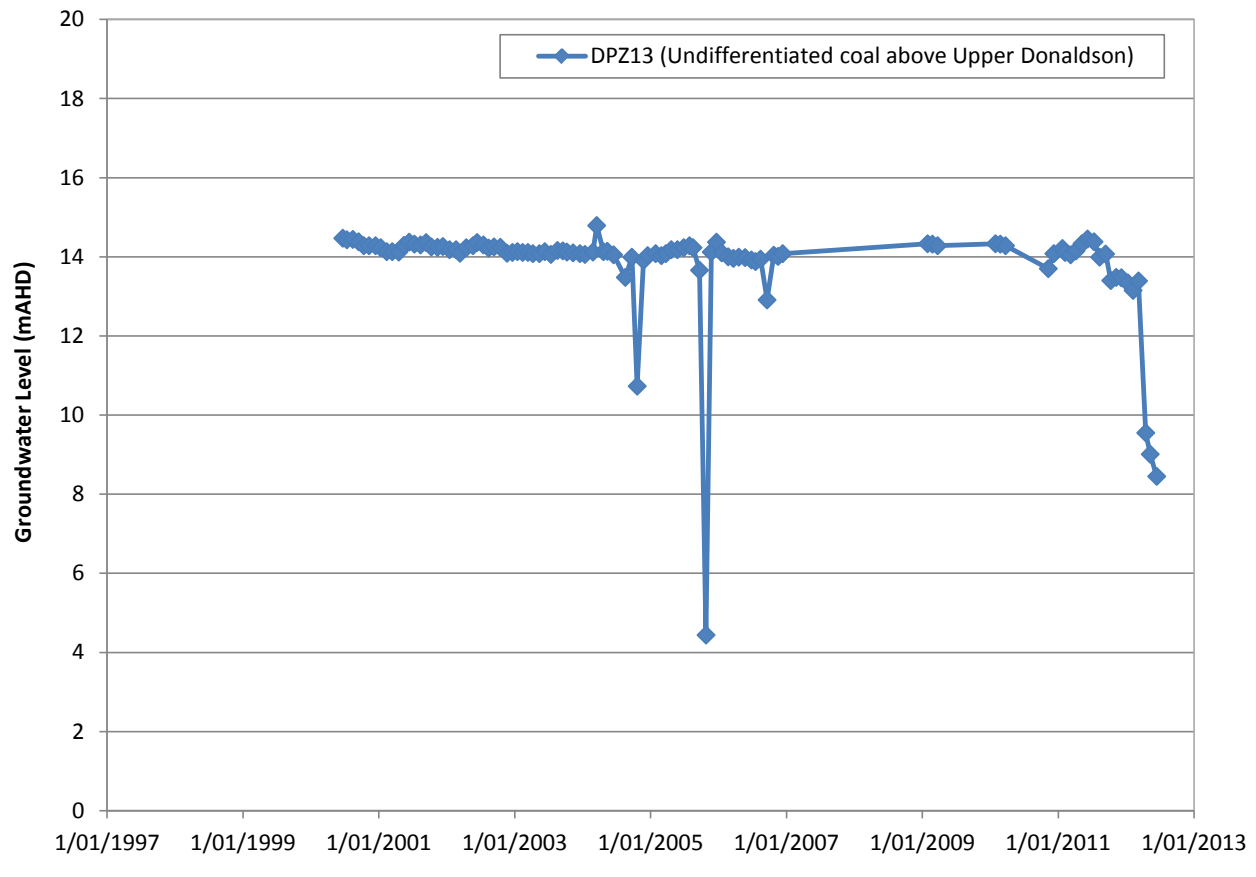




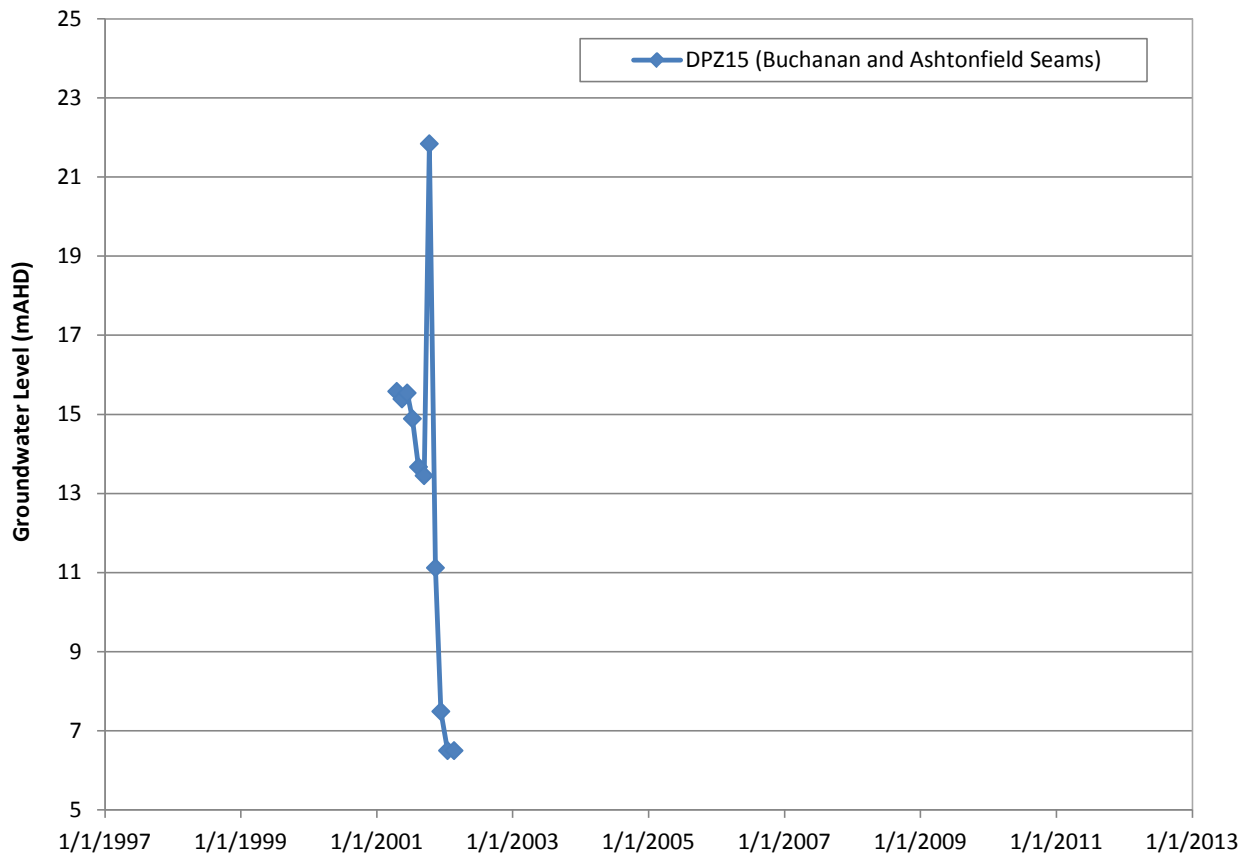
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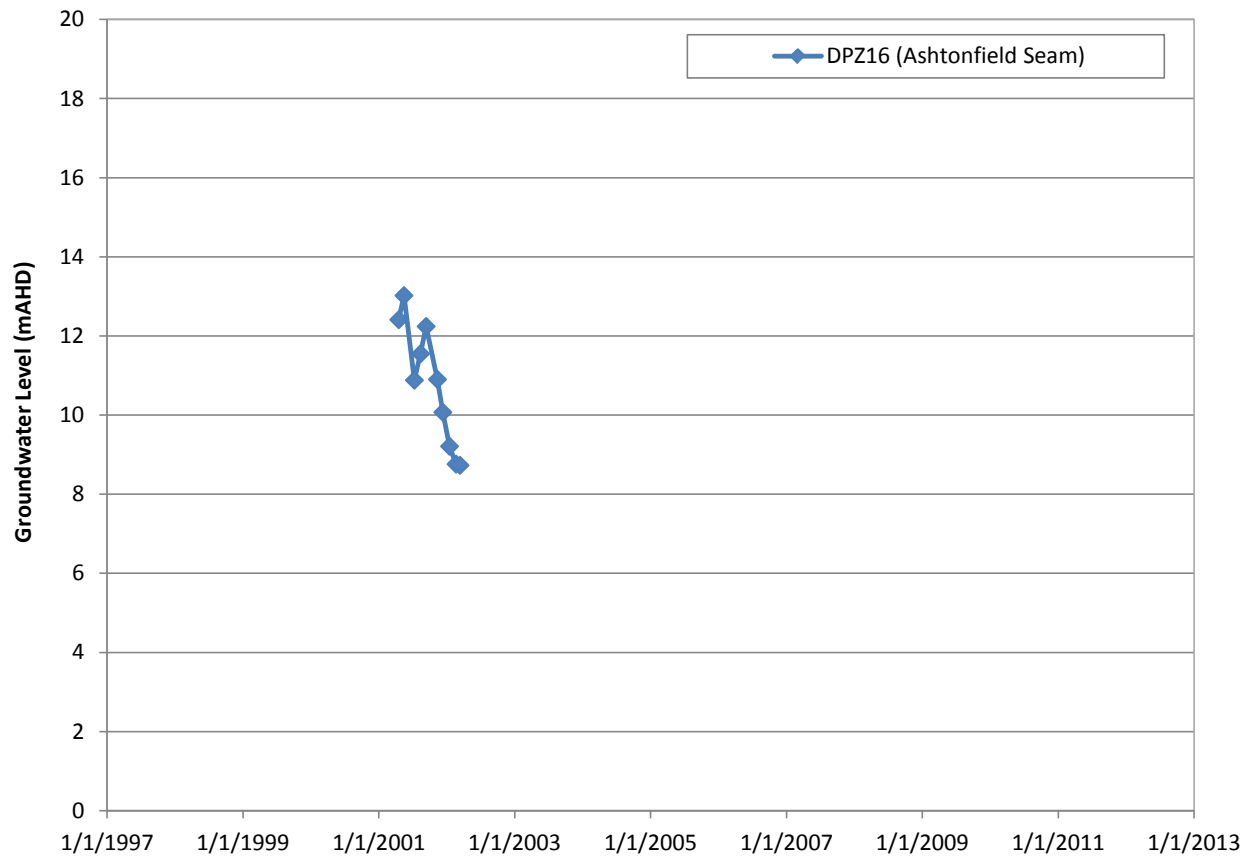
DPZ13



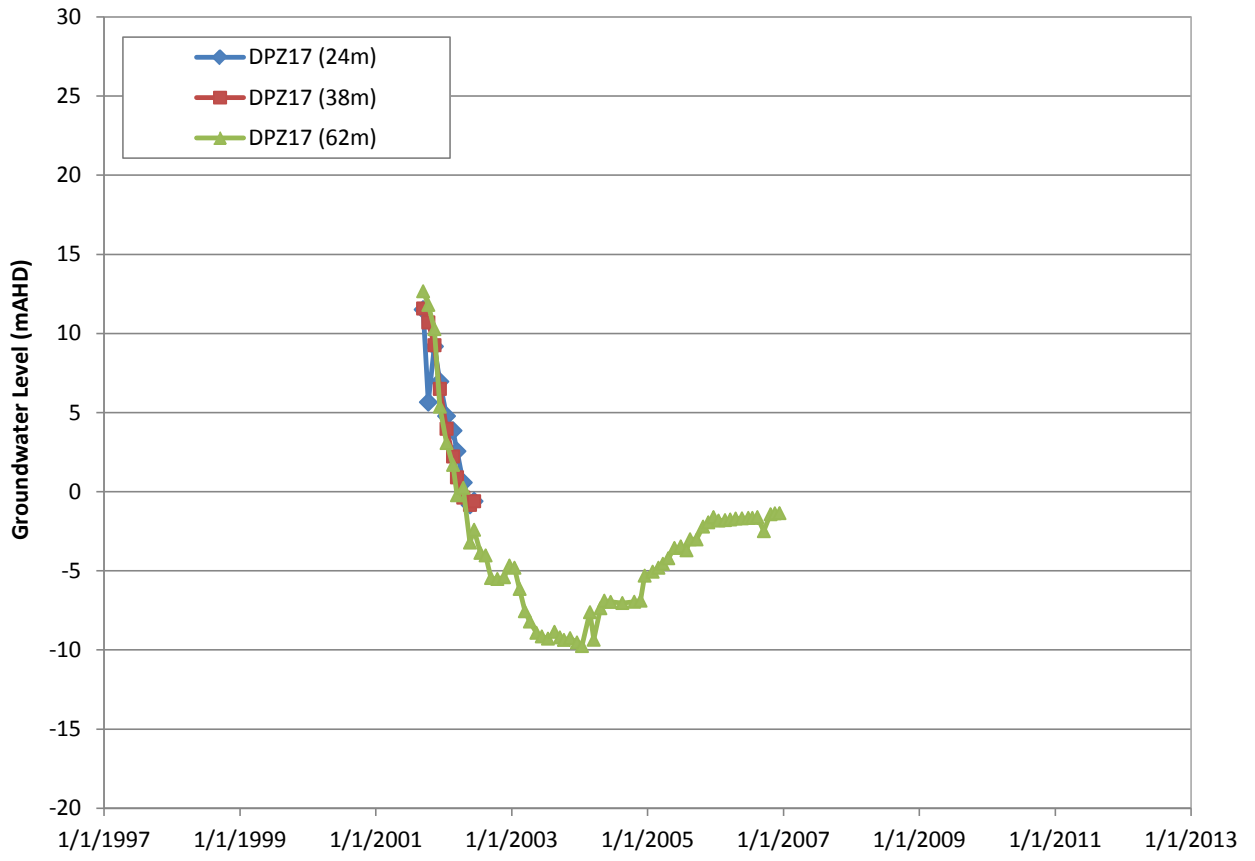
DPZ15



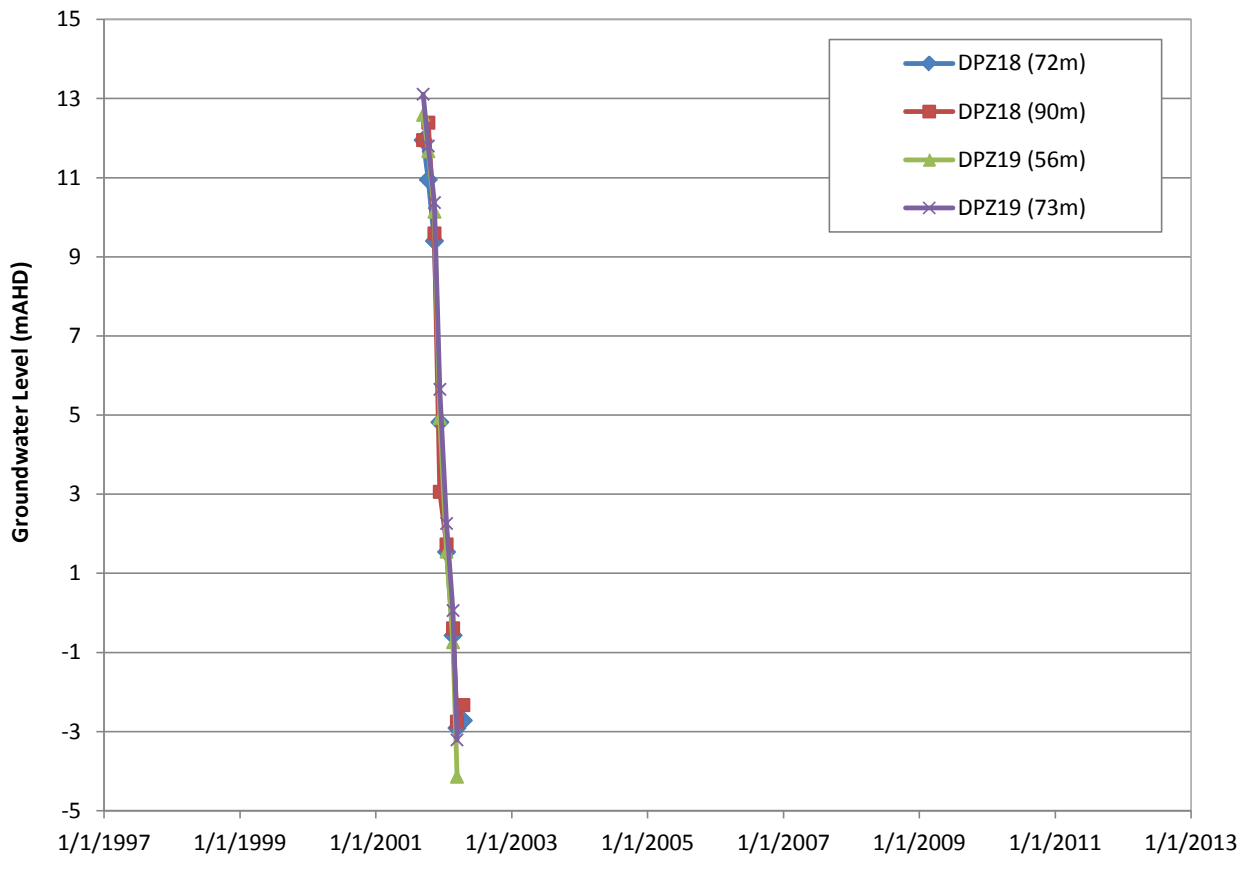
DPZ16



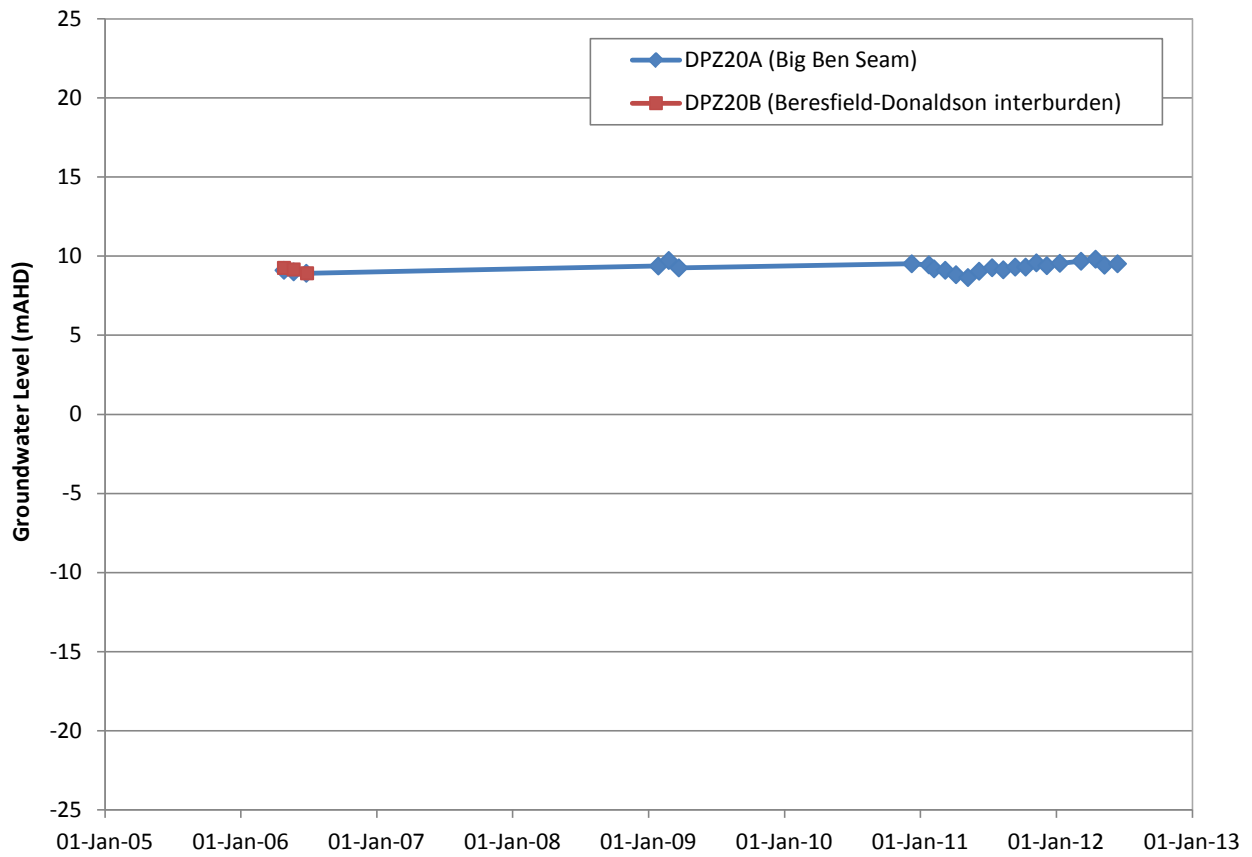
DPZ17



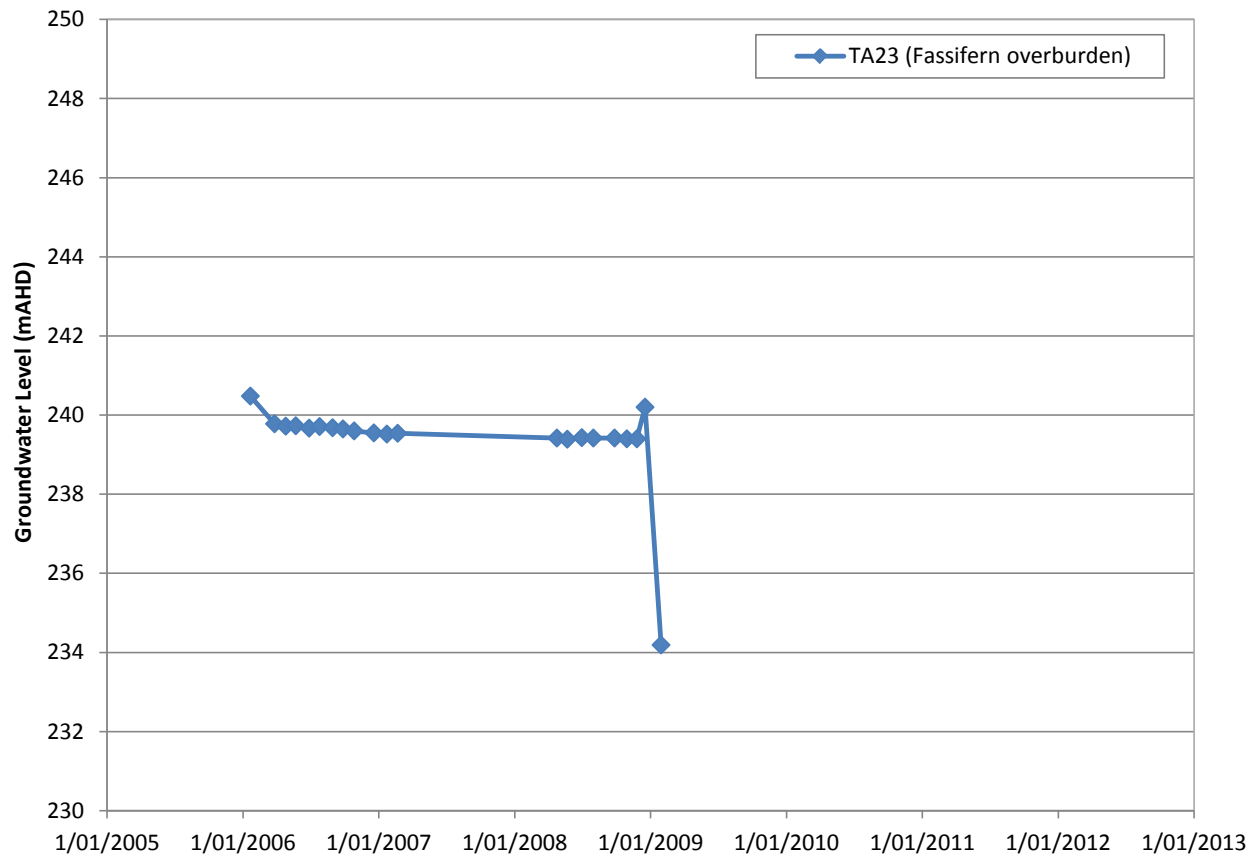
DPZ18 & DPZ19



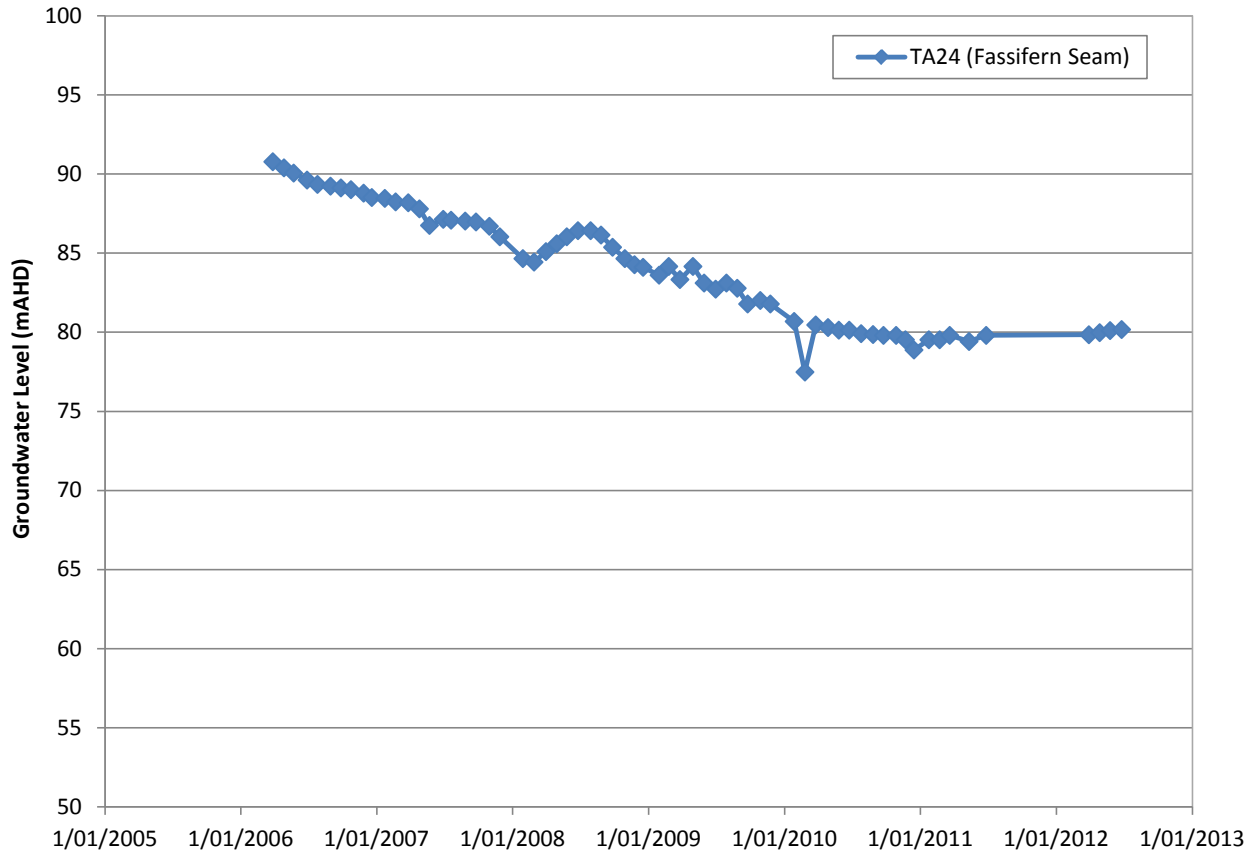
DPZ20



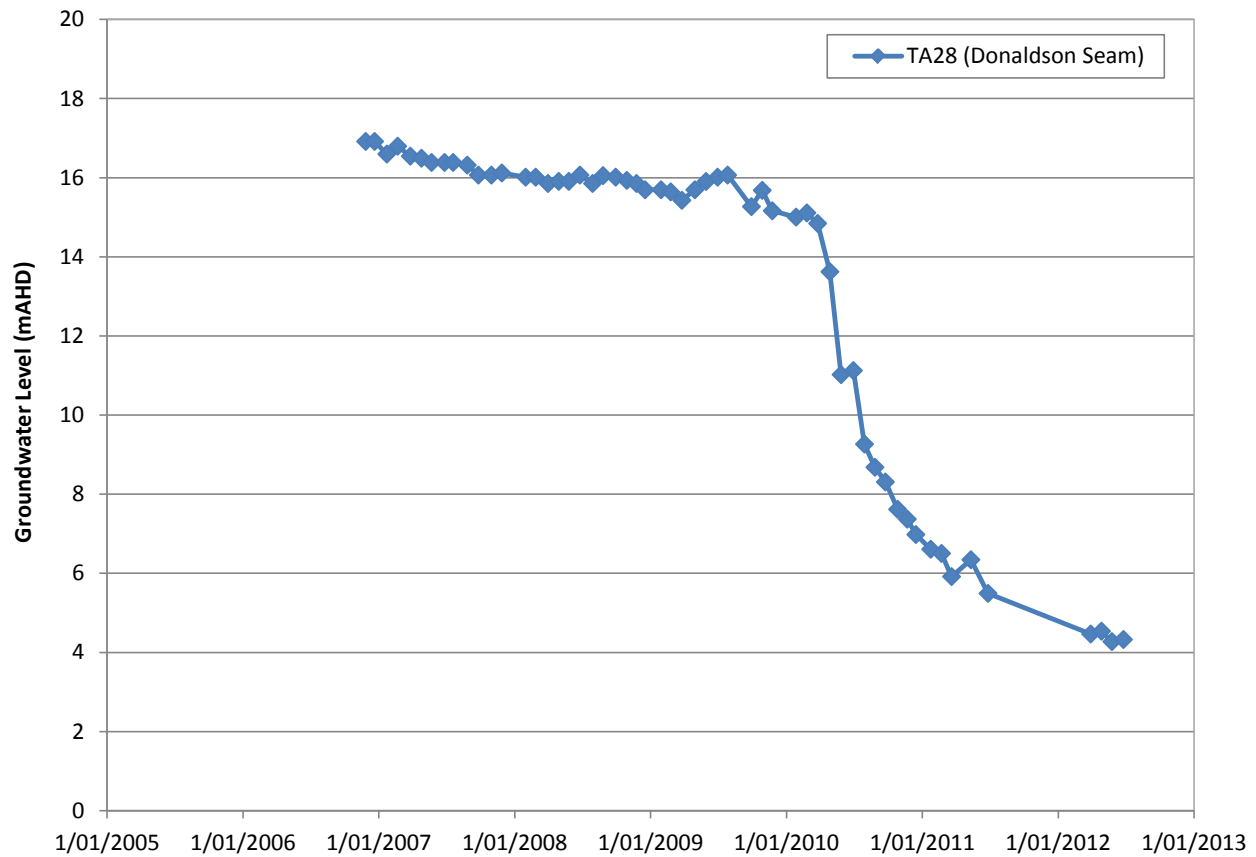
TA23



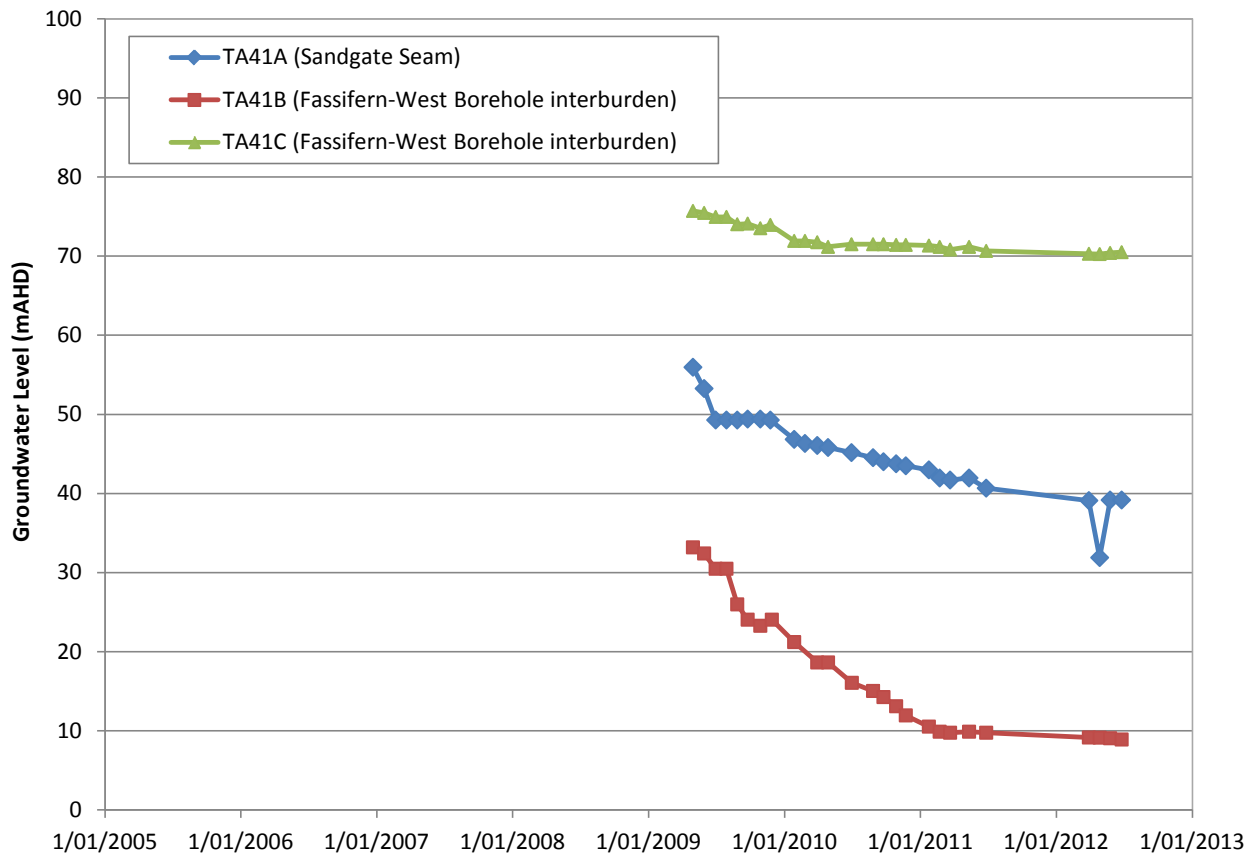
TA24



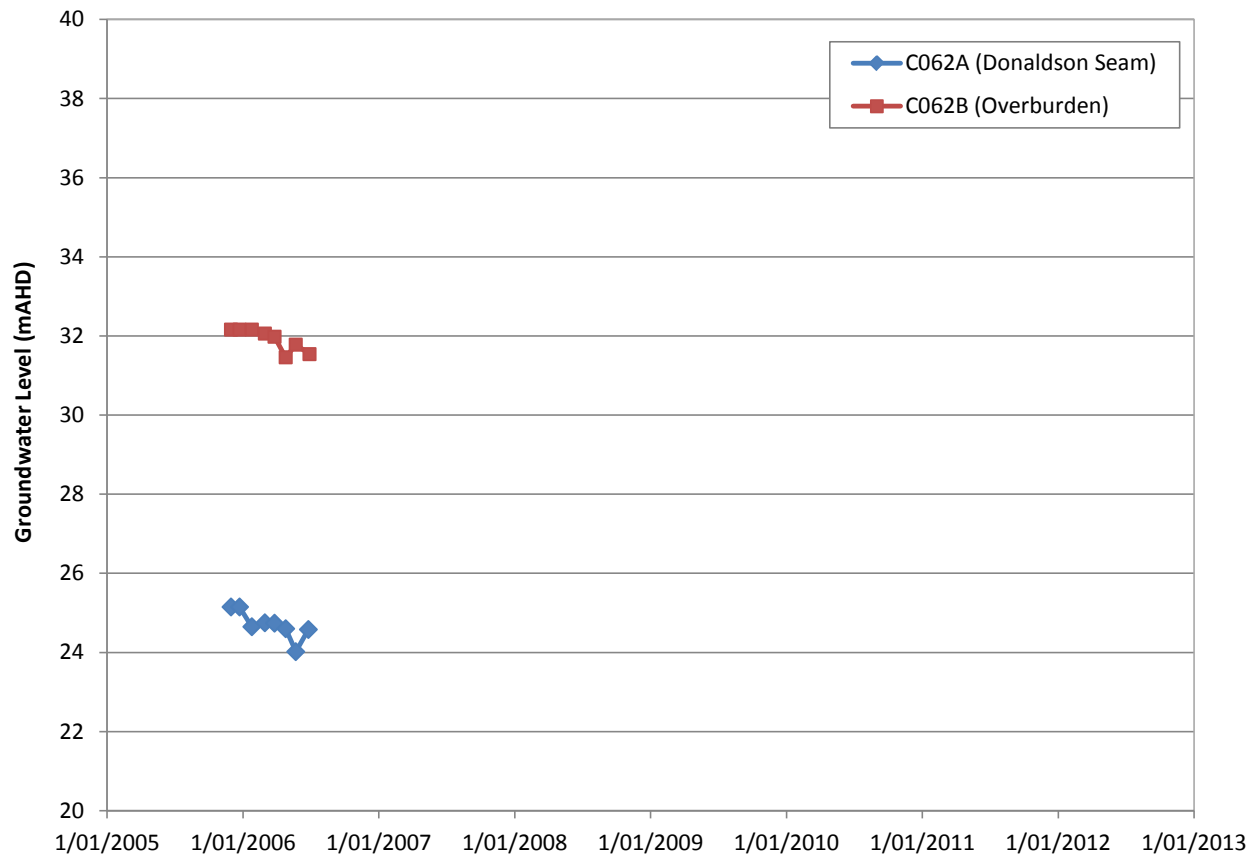
TA28



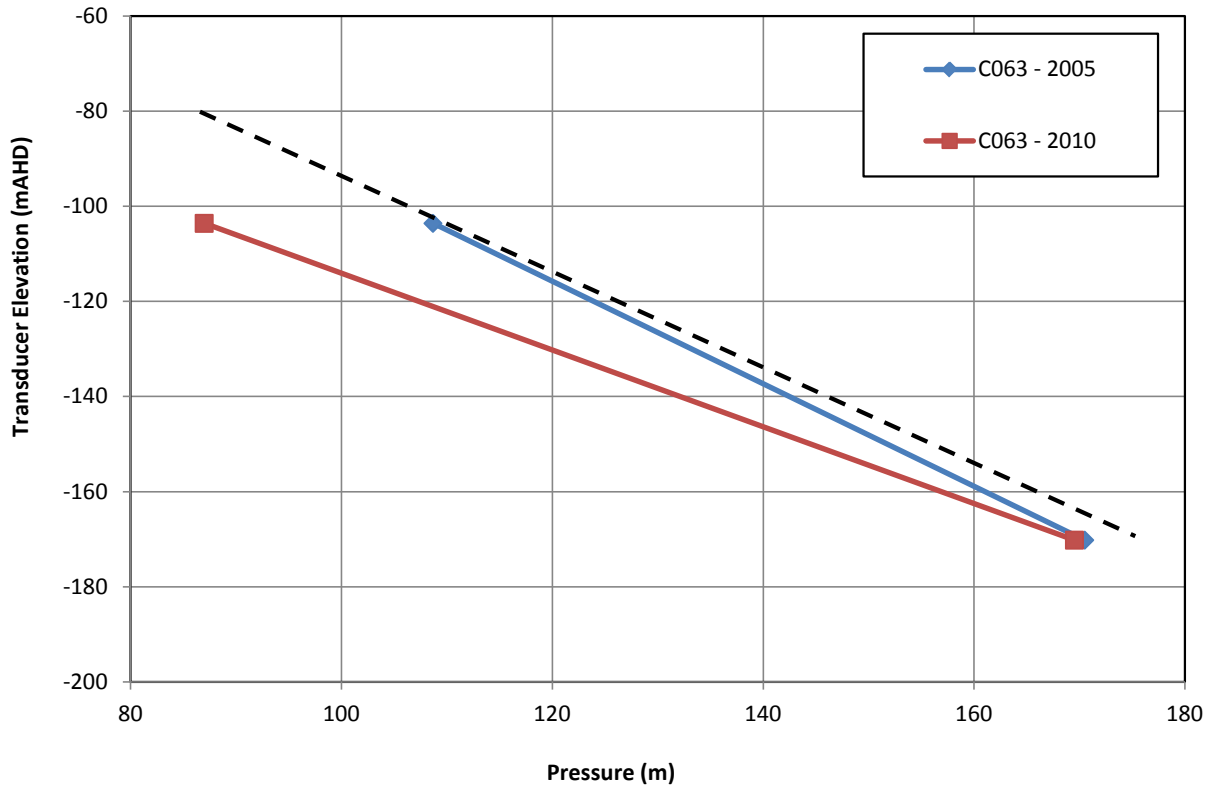
TA41



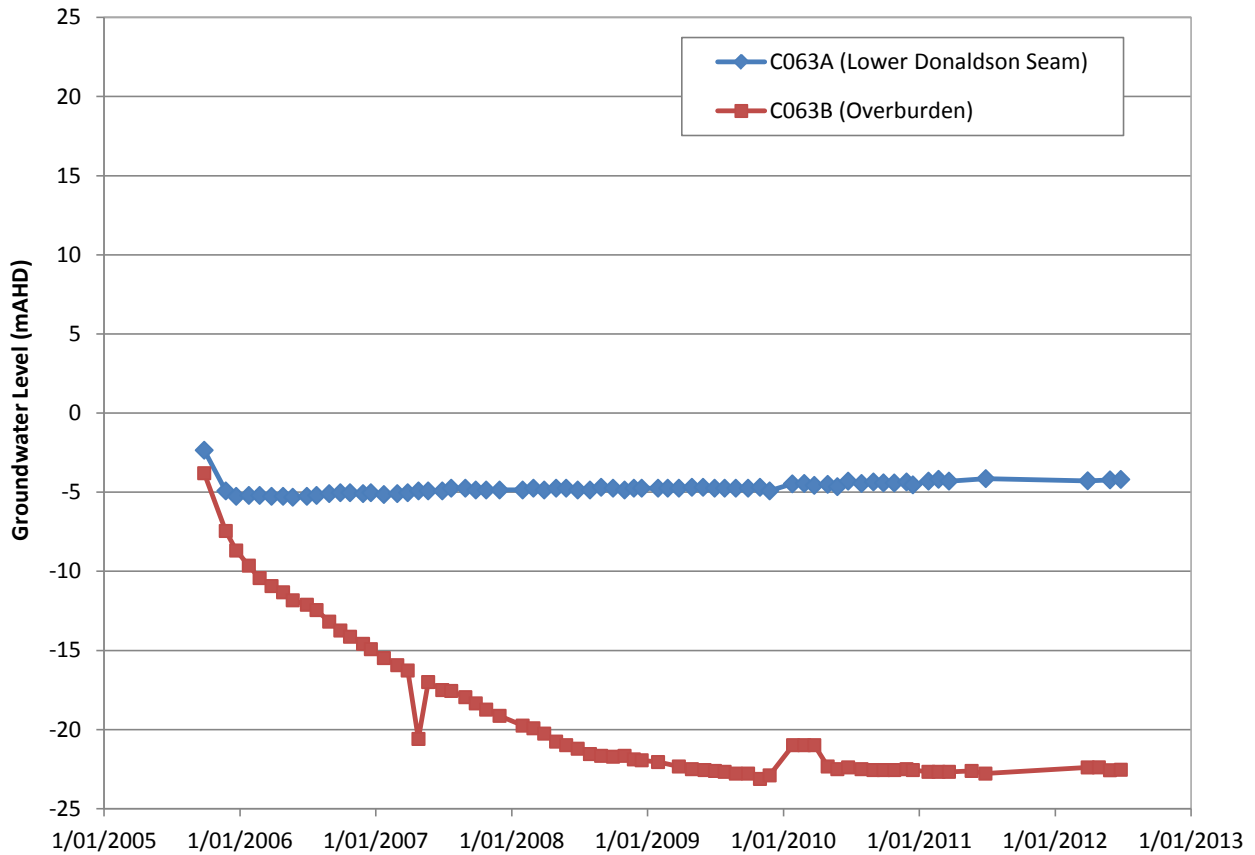
C062



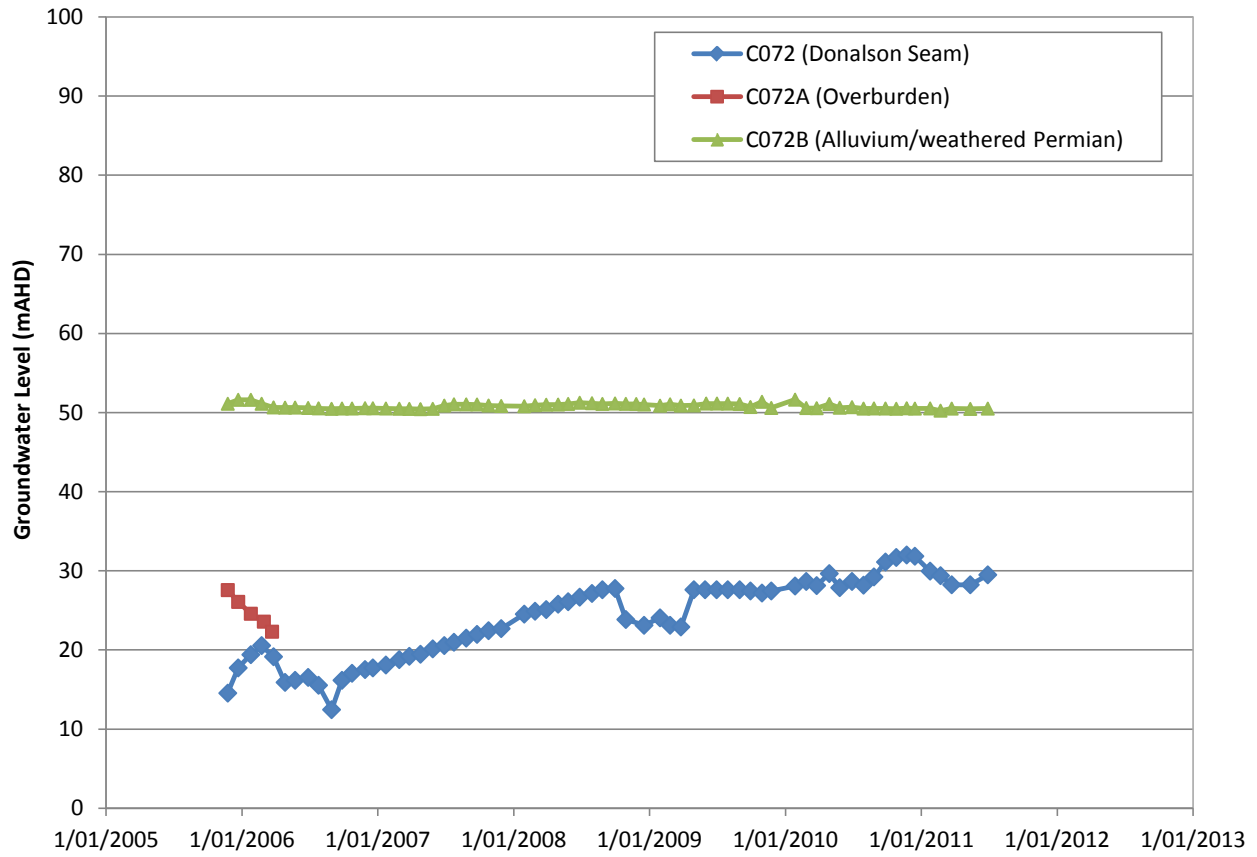
C063



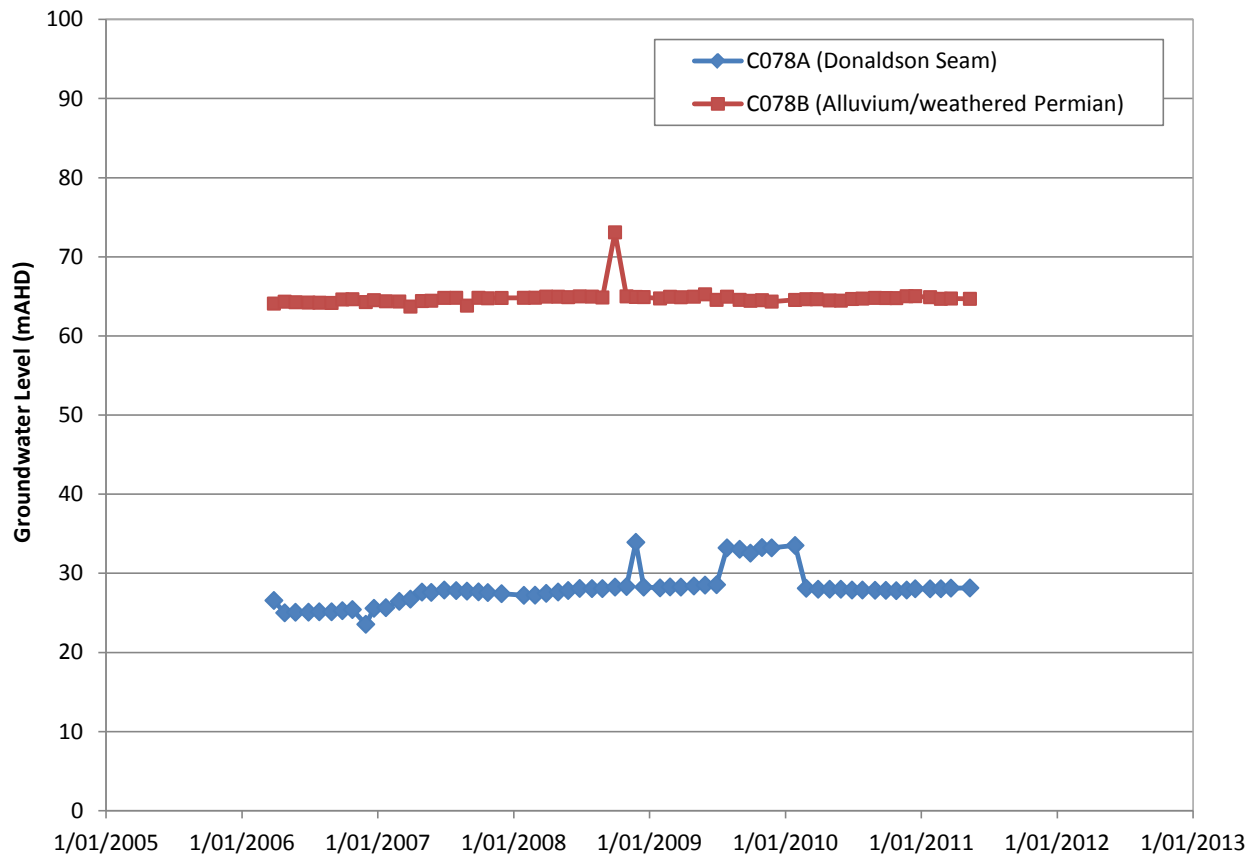
C063



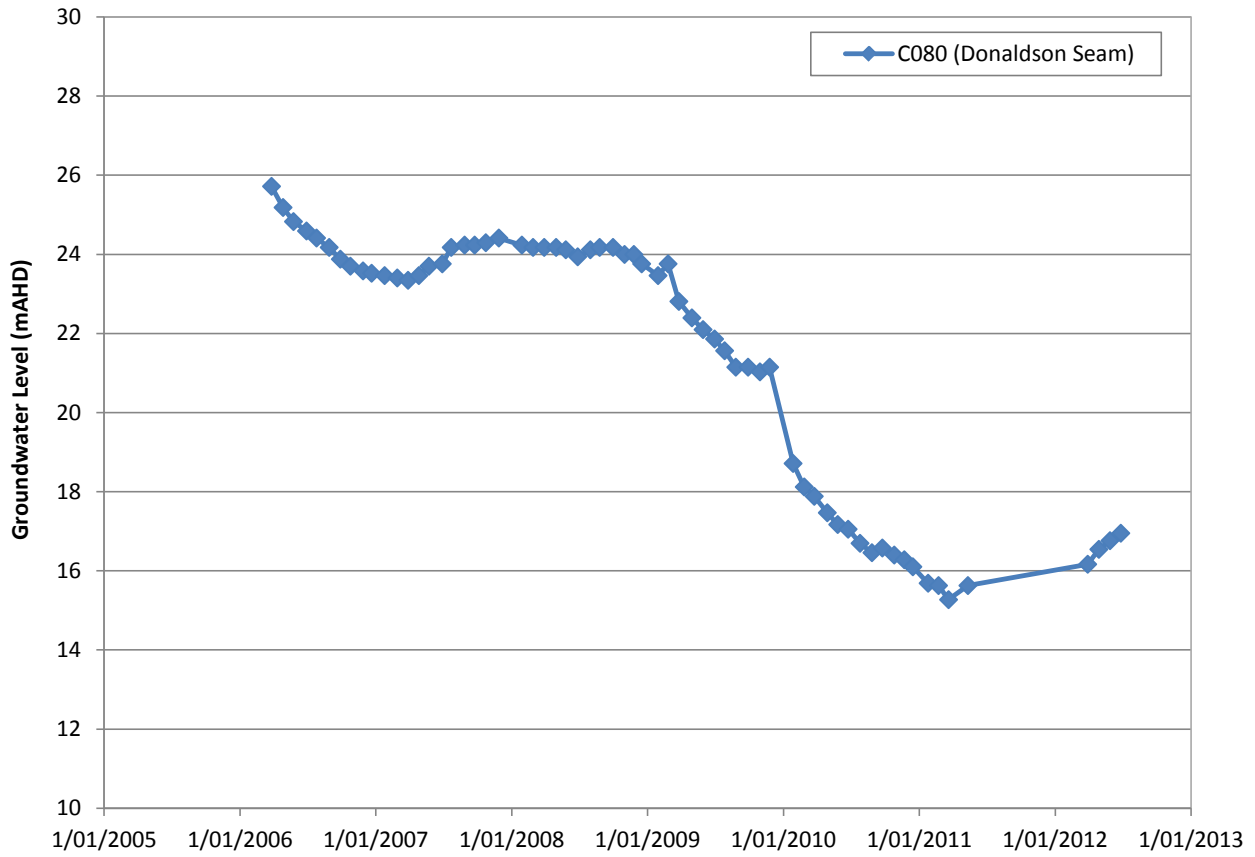
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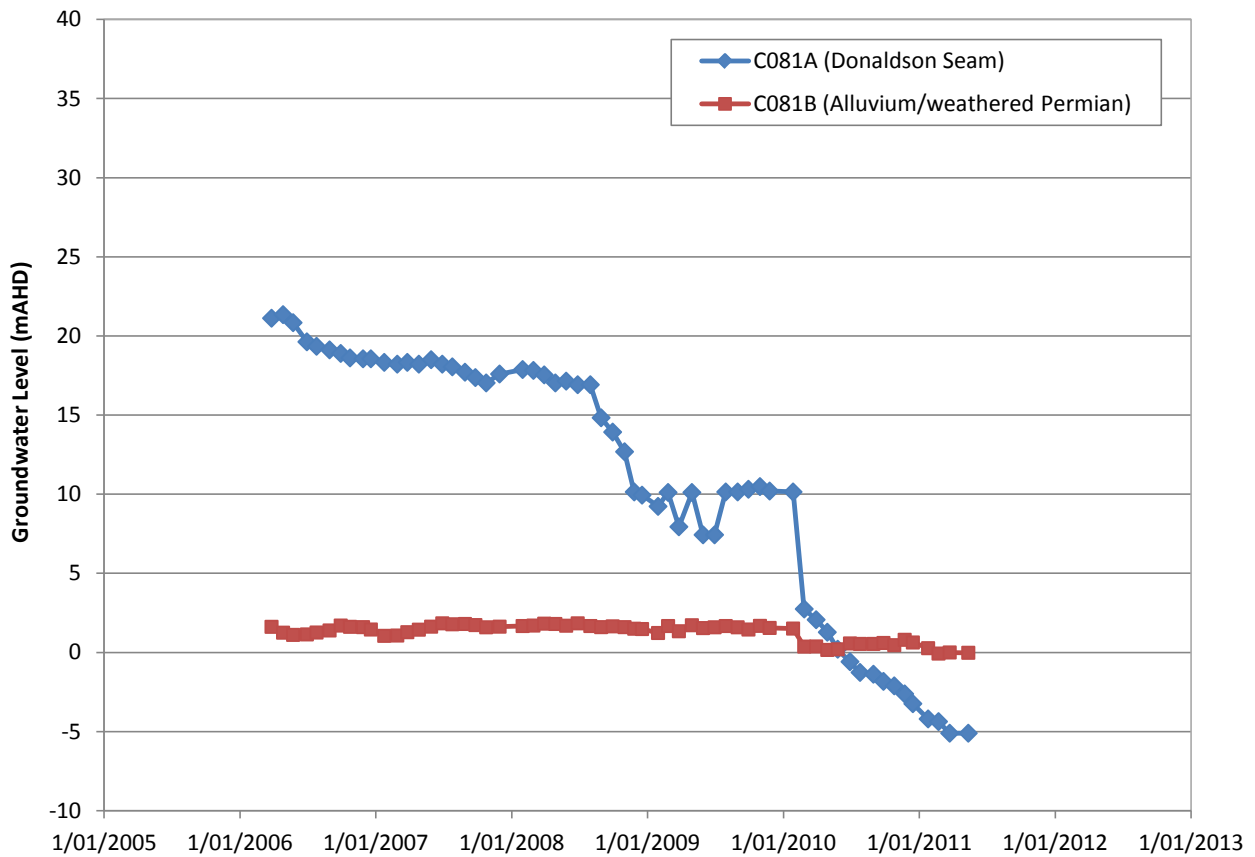
C078



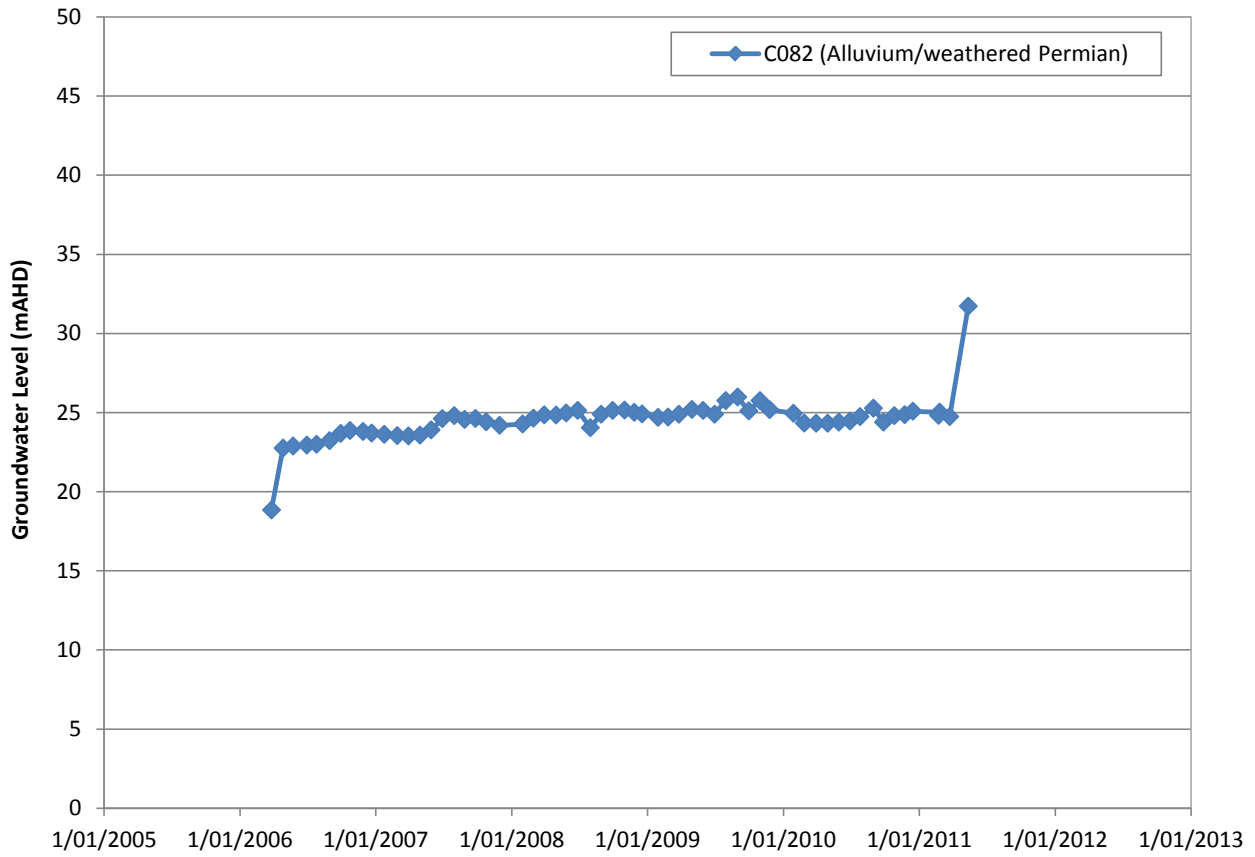
C080



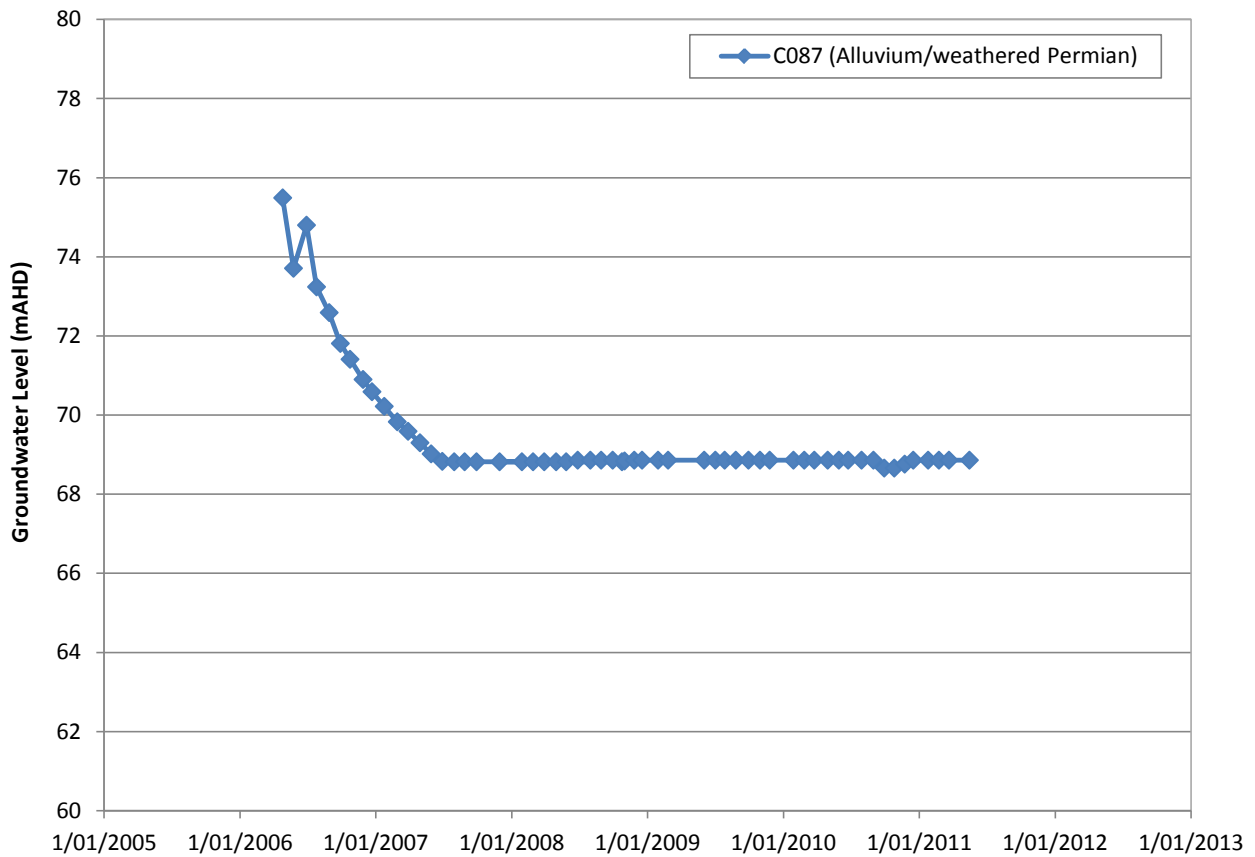
C081



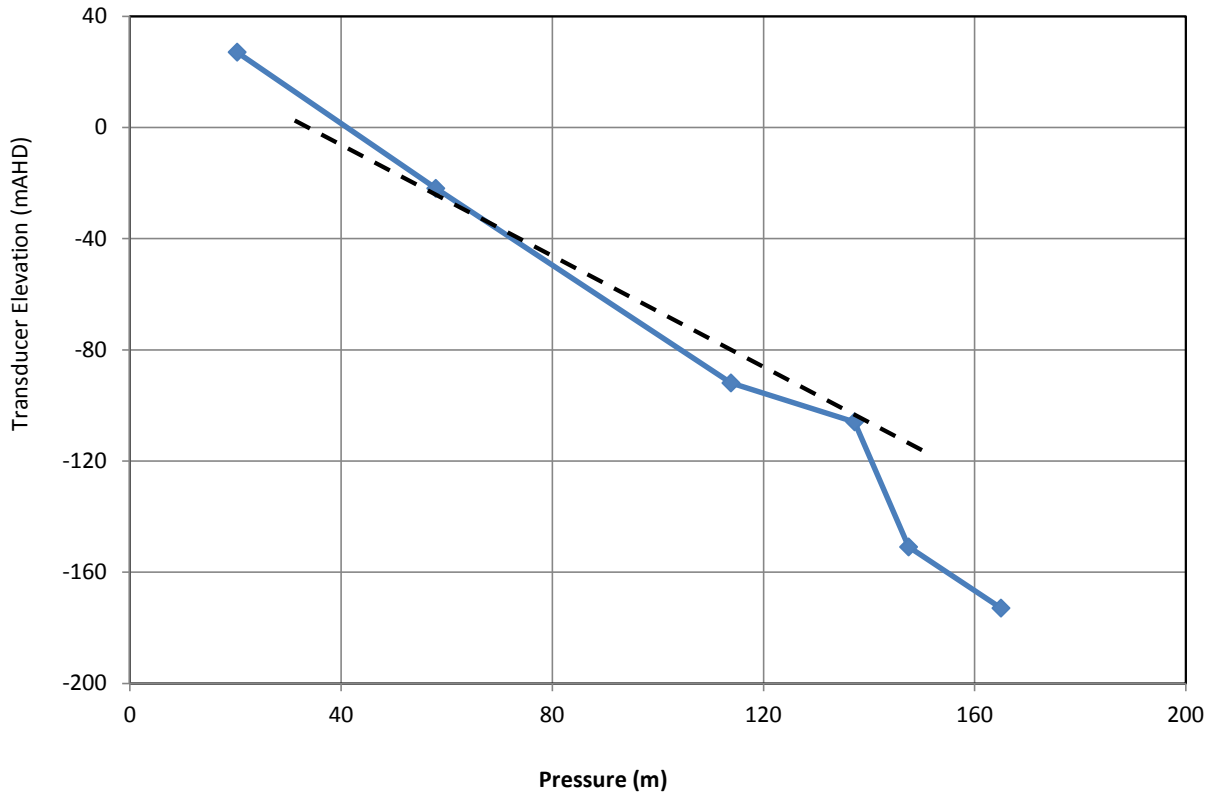
C082



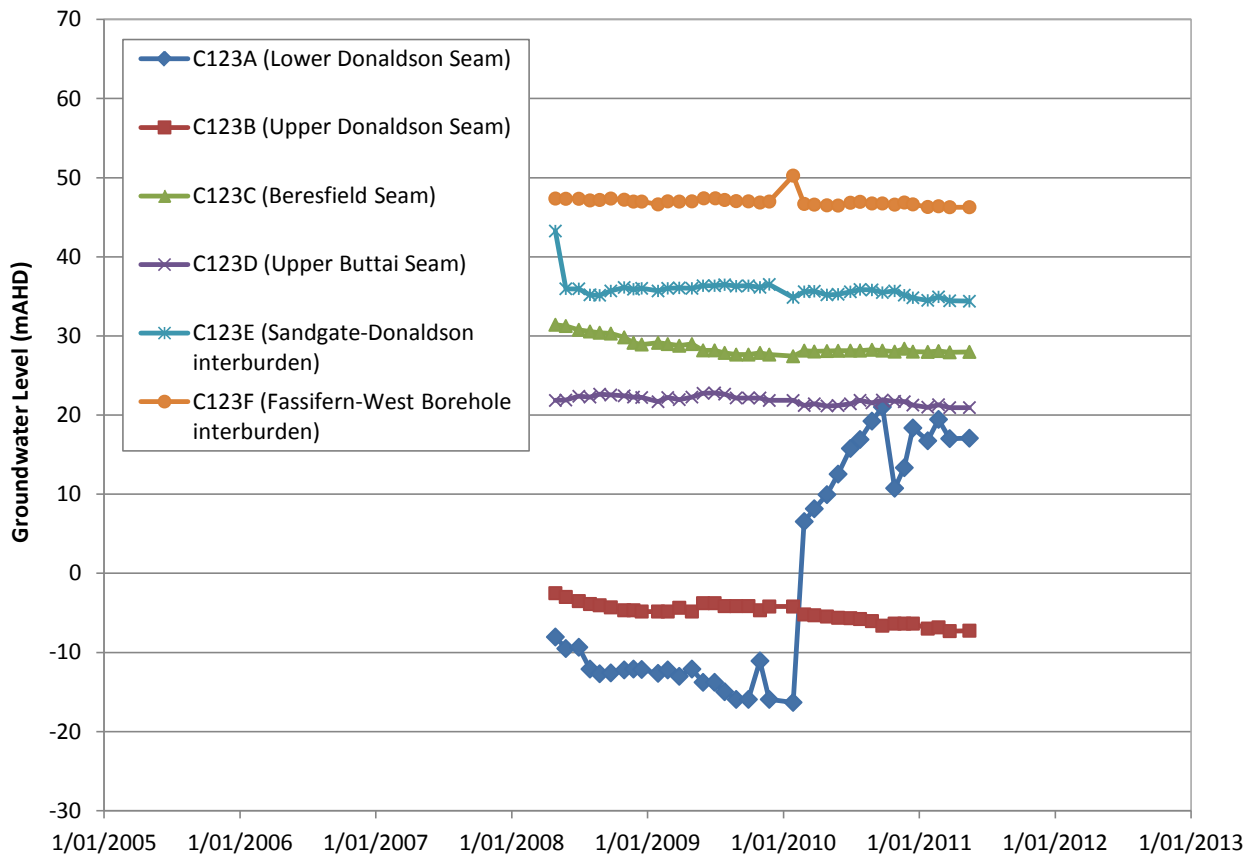
C087



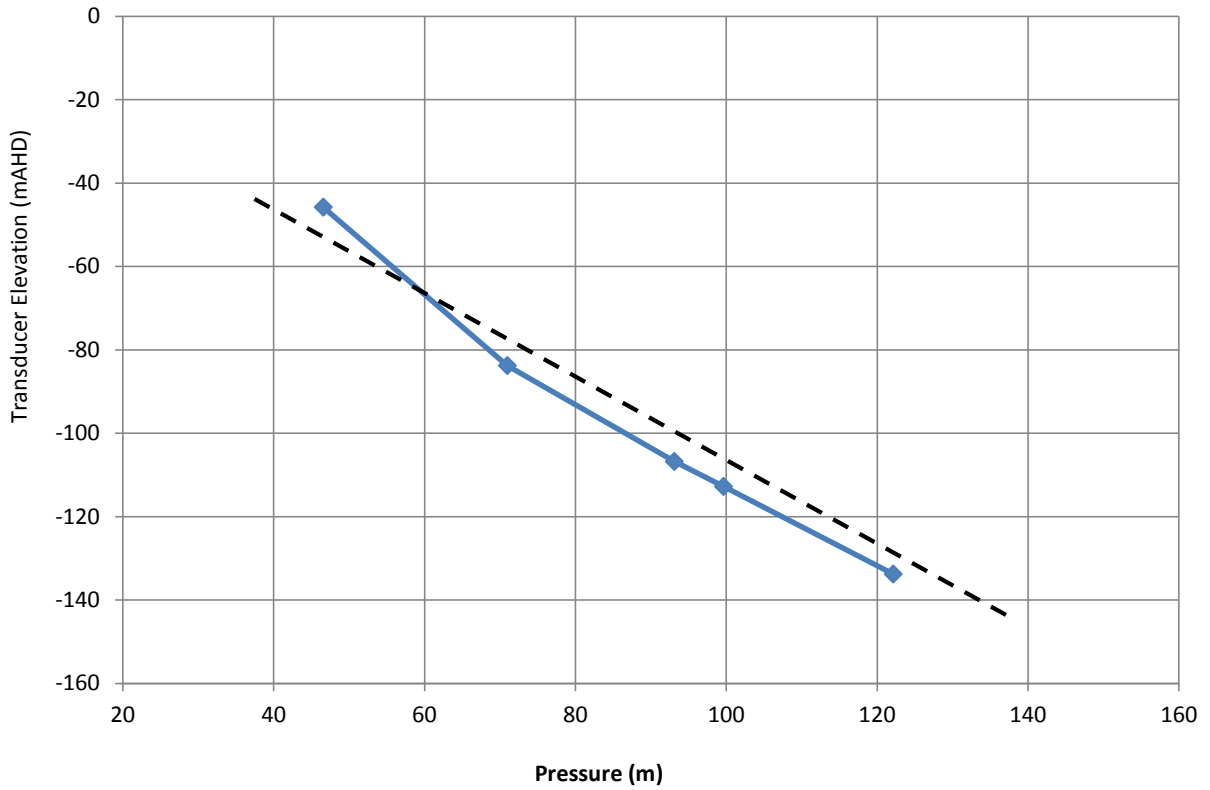
C123



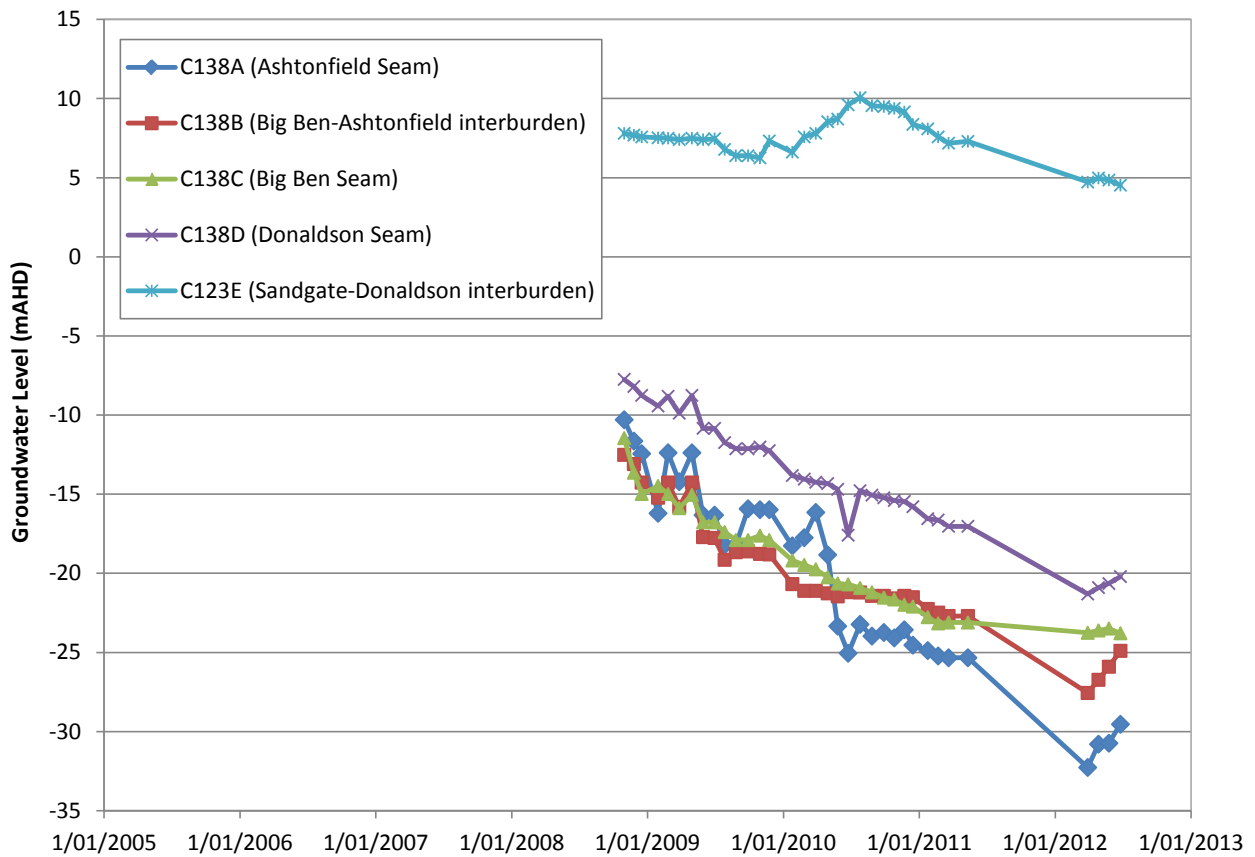
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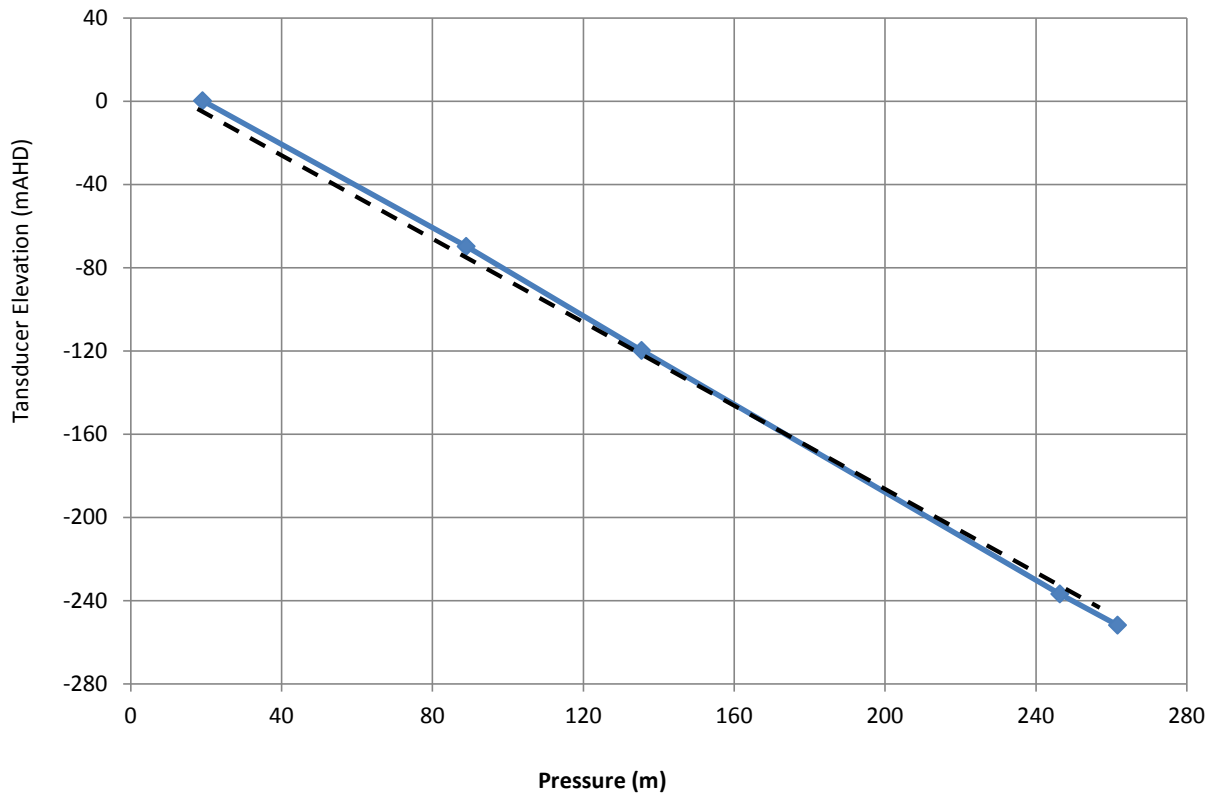
C138



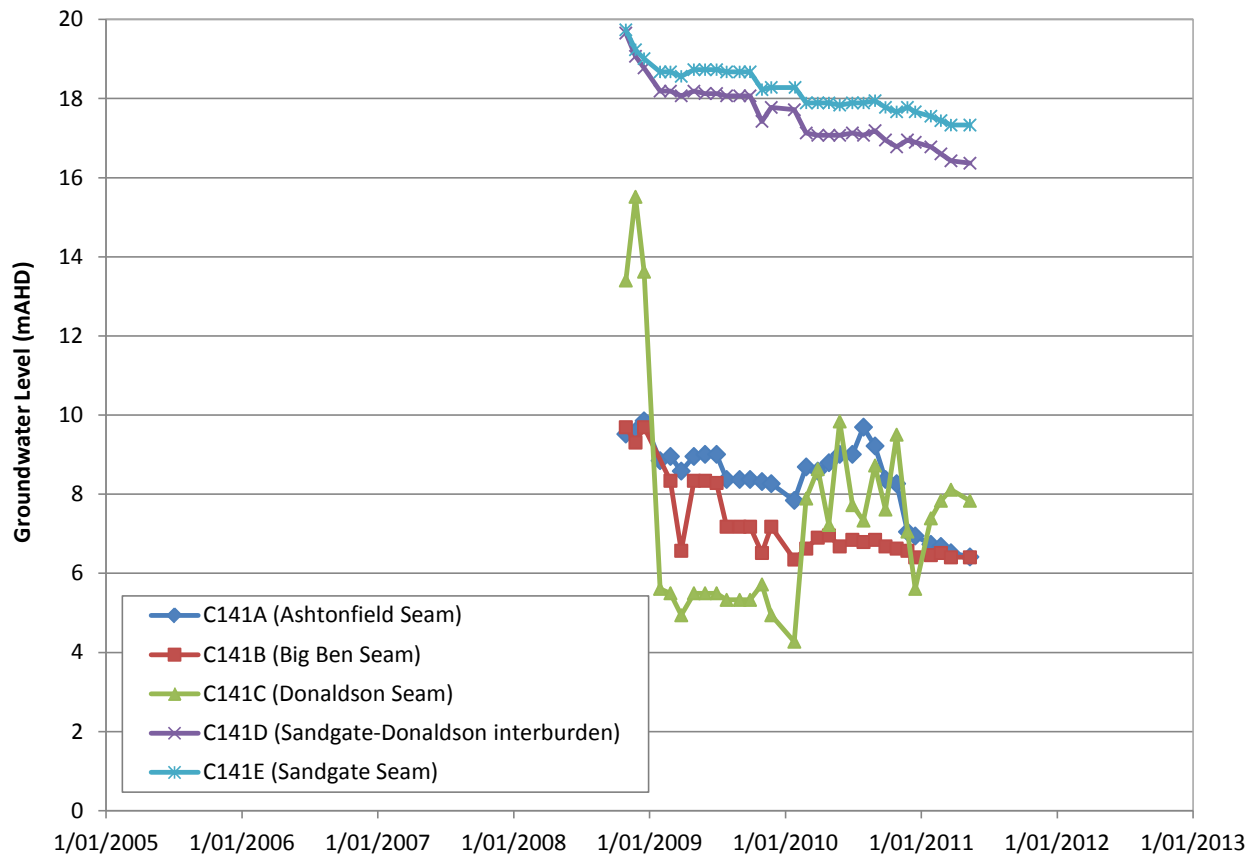
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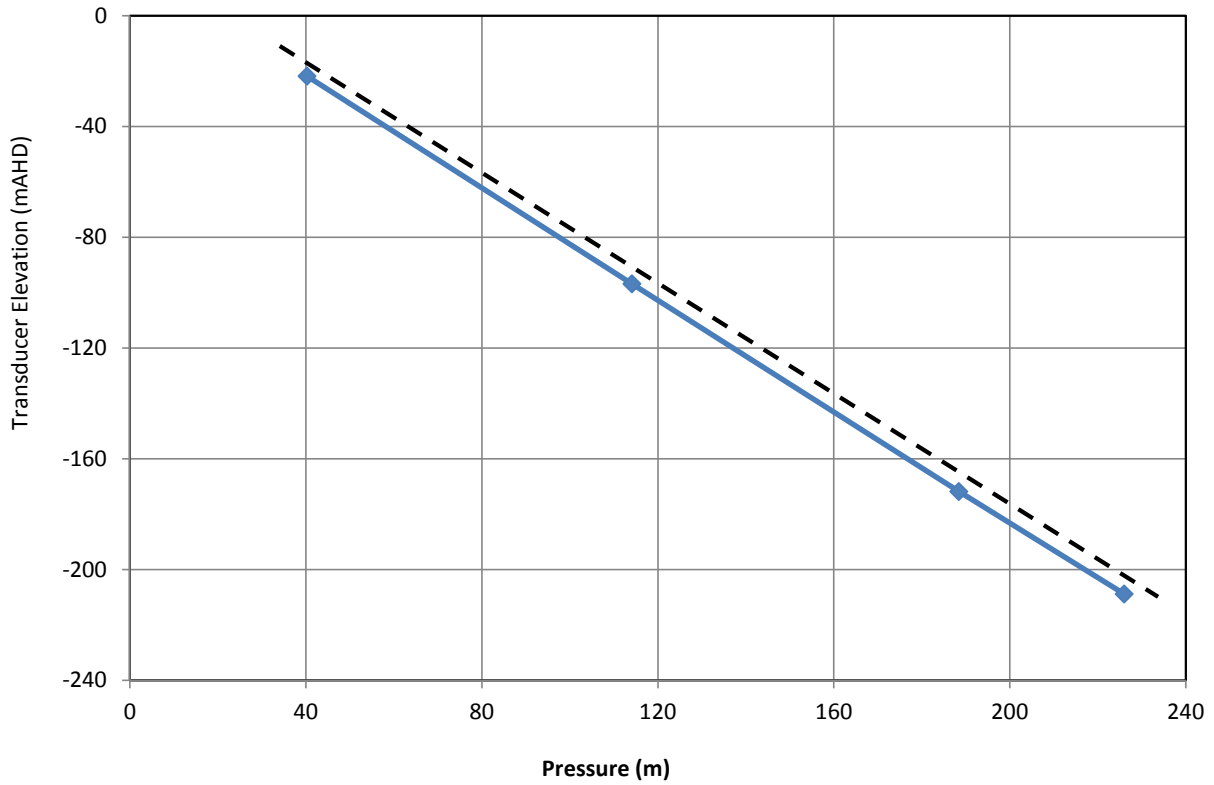
C141



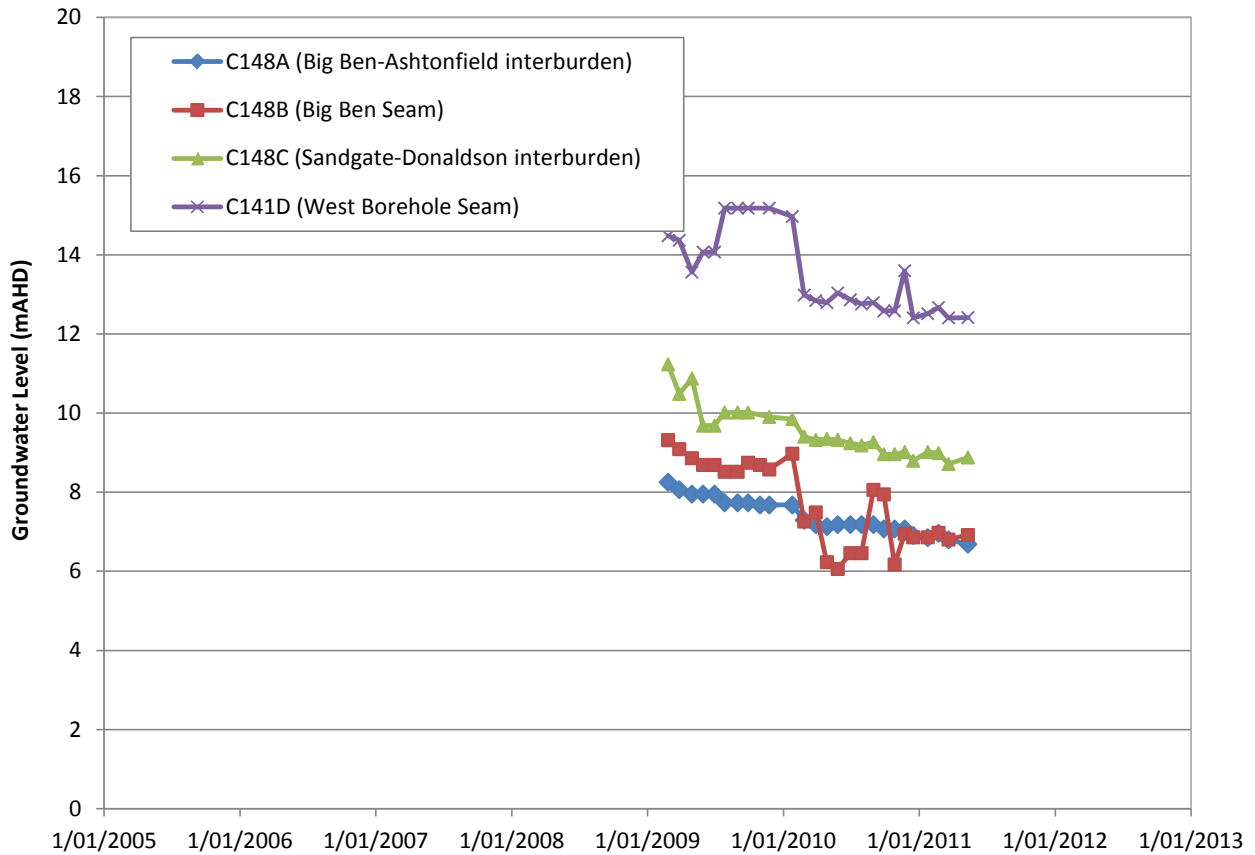
C141



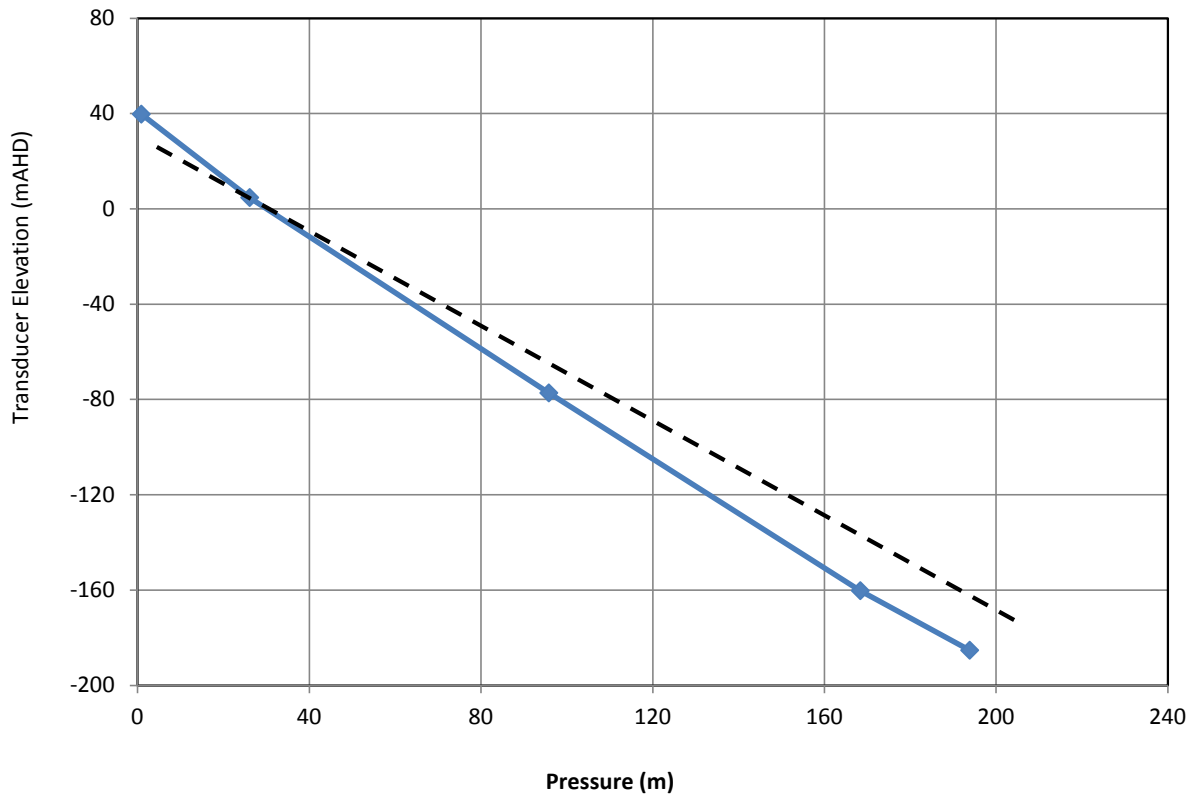
C148



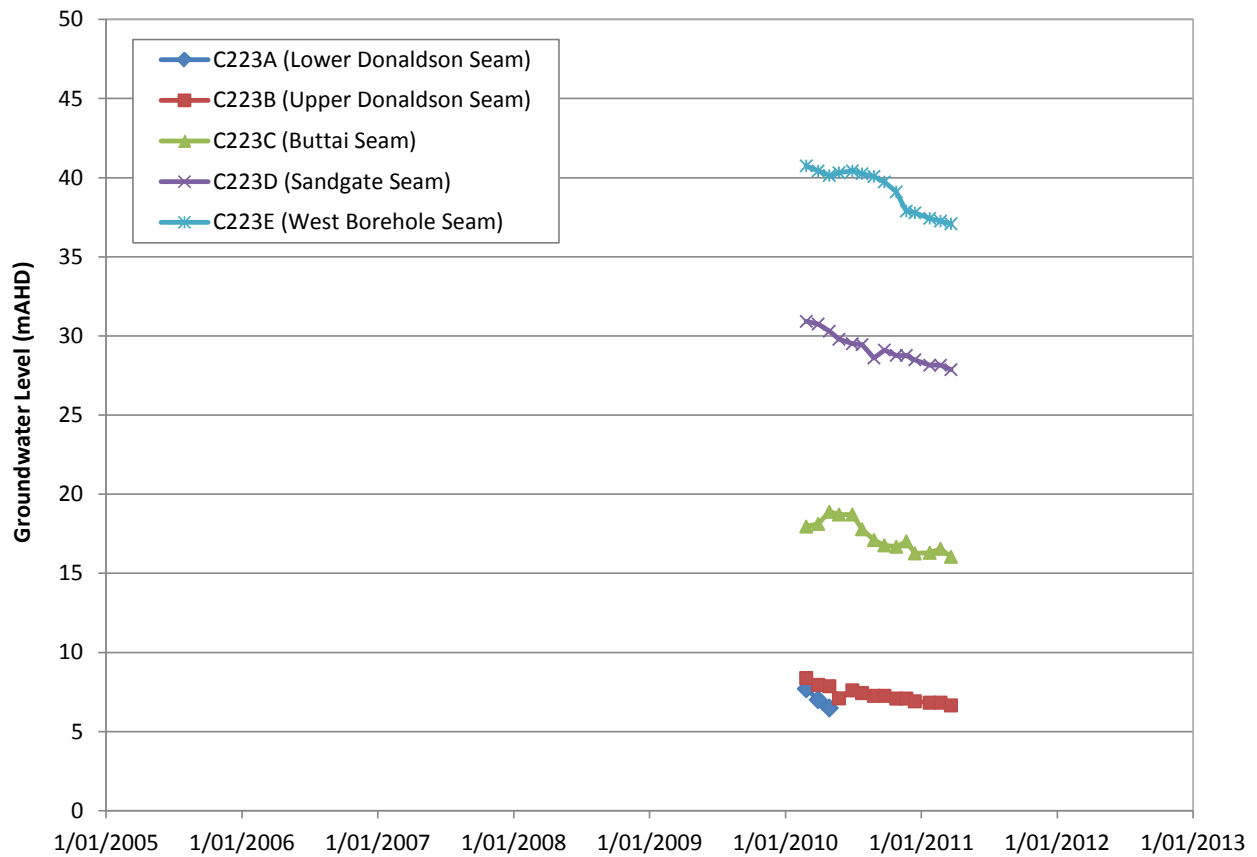
C148



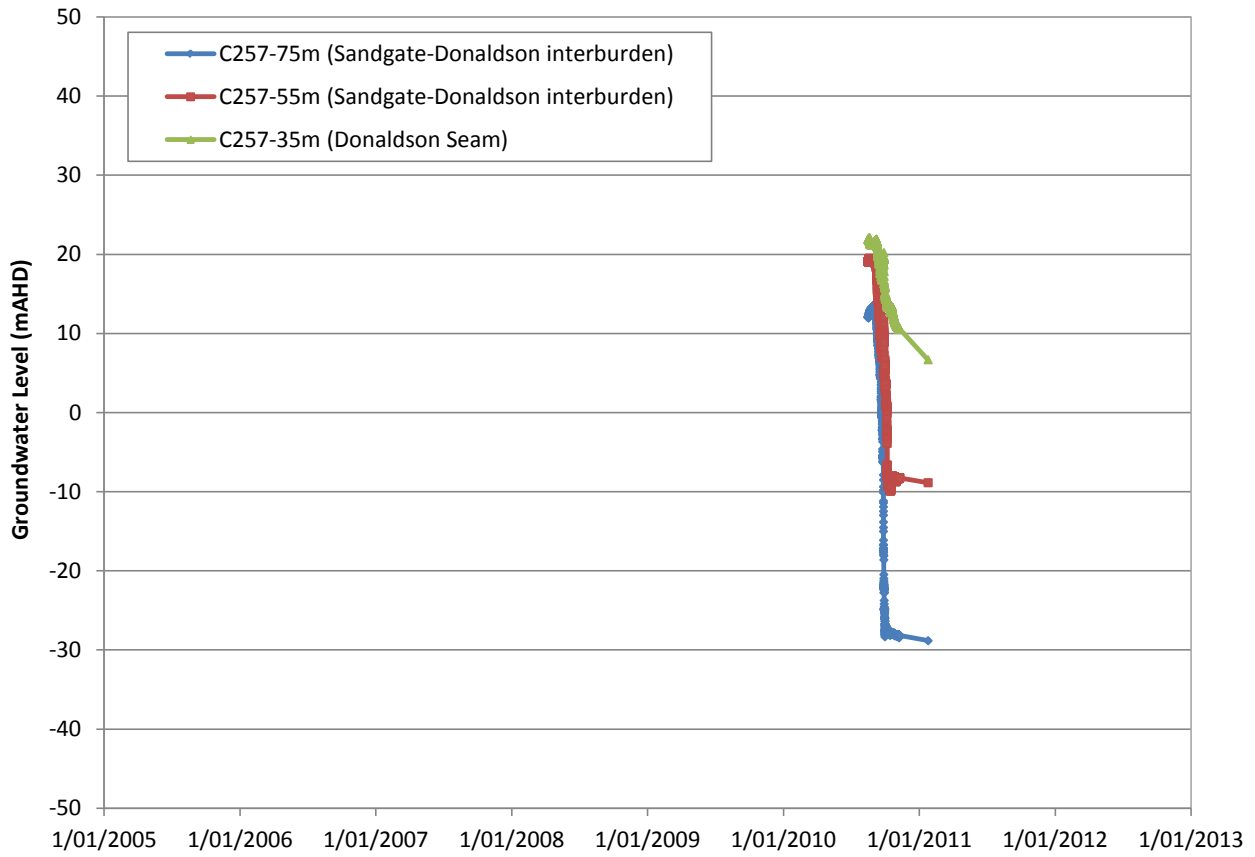
C223



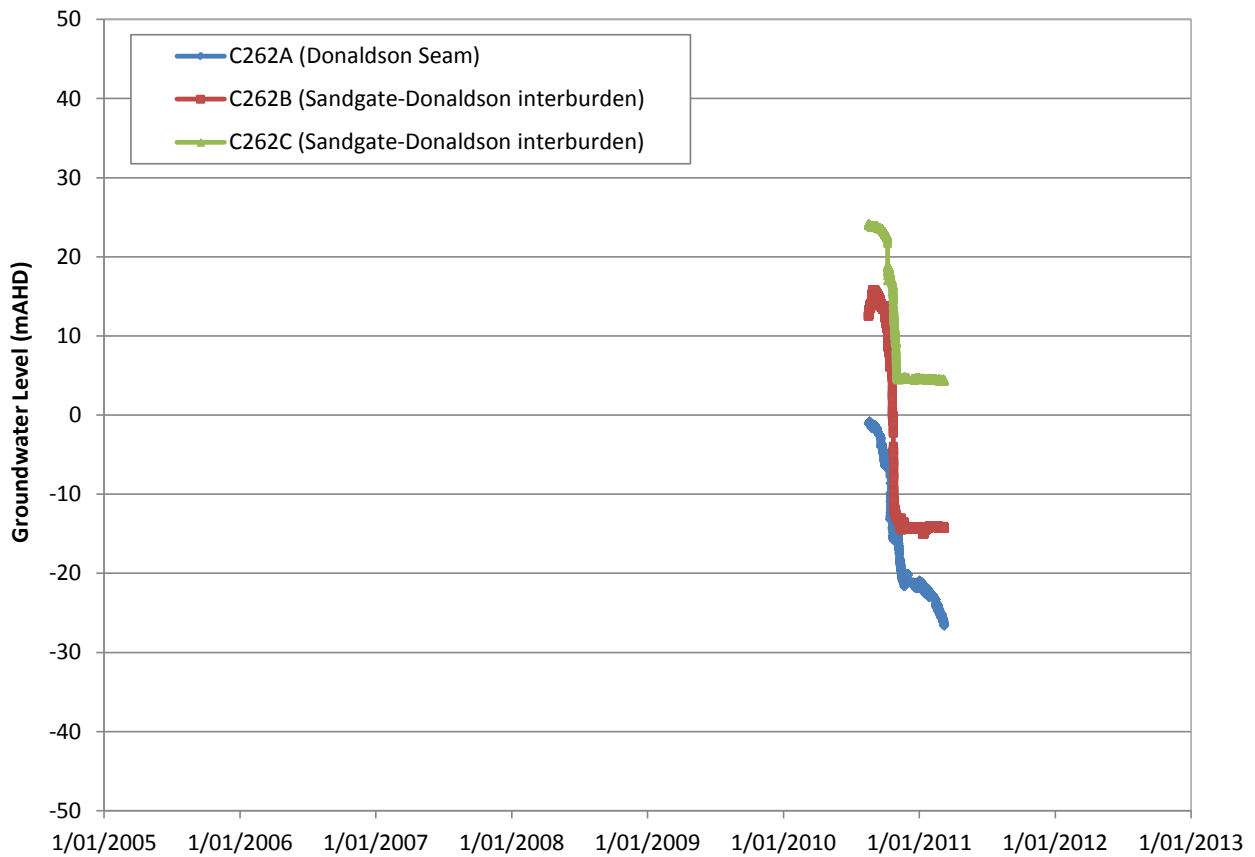
C223



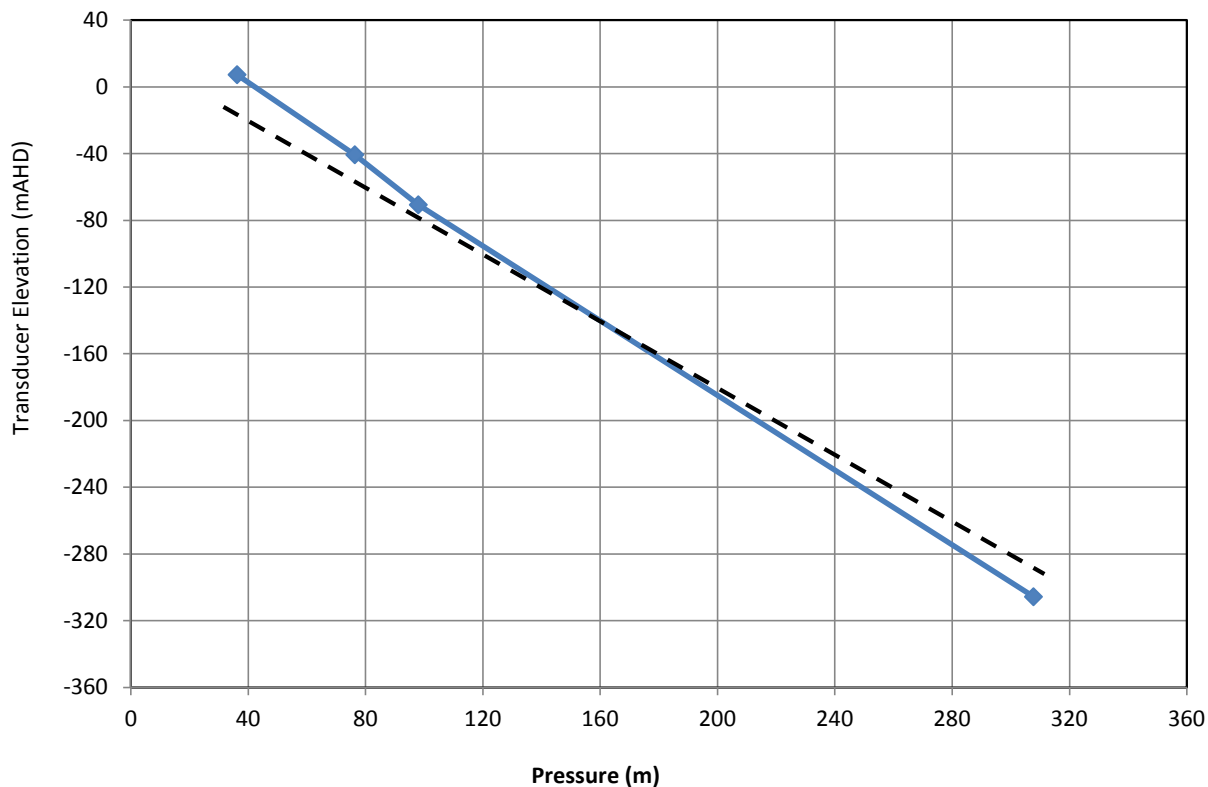
C257



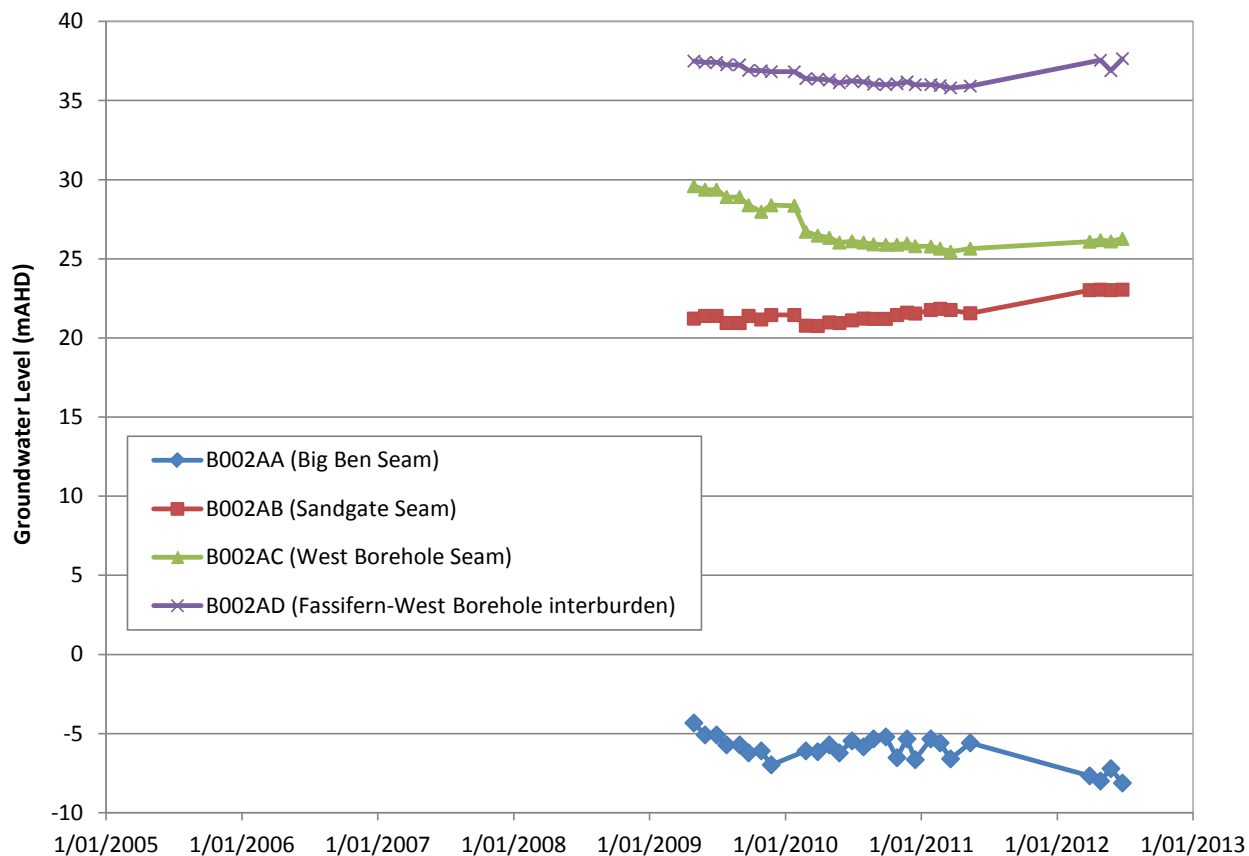
C262



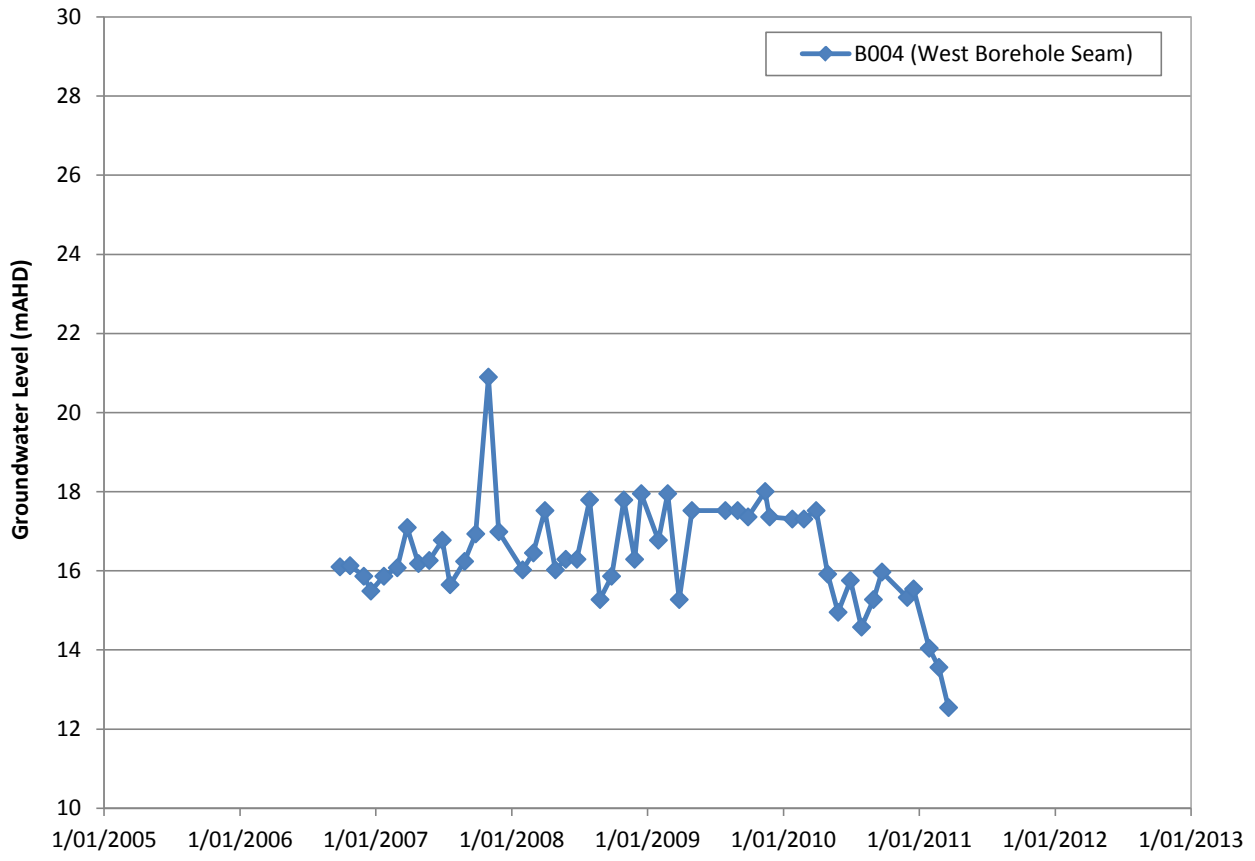
B002



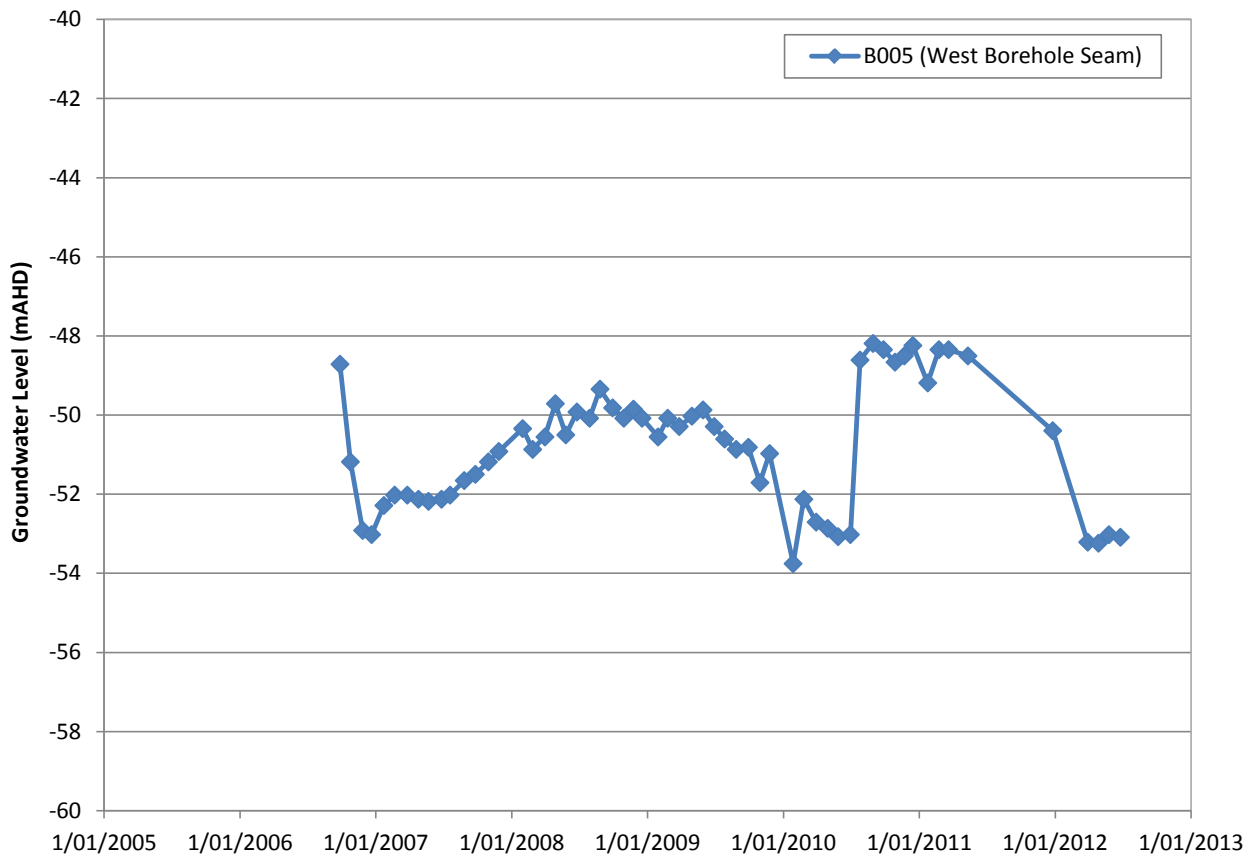
B002A



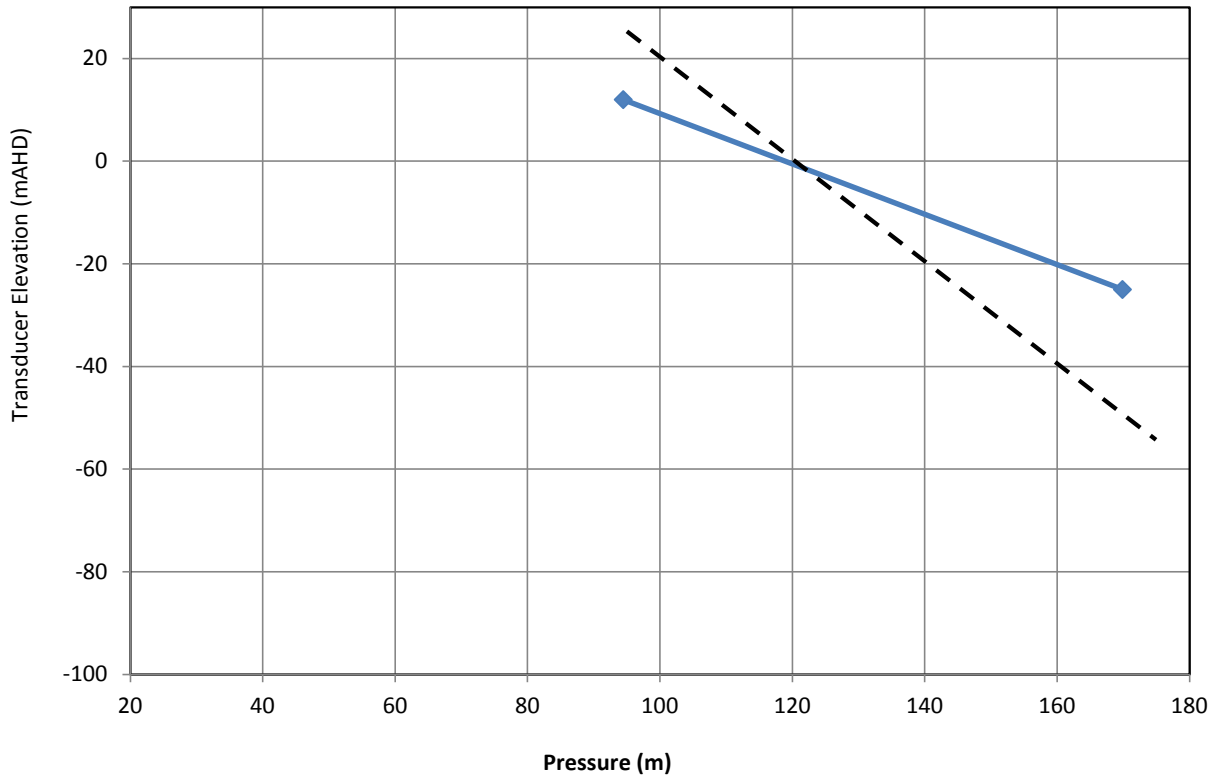
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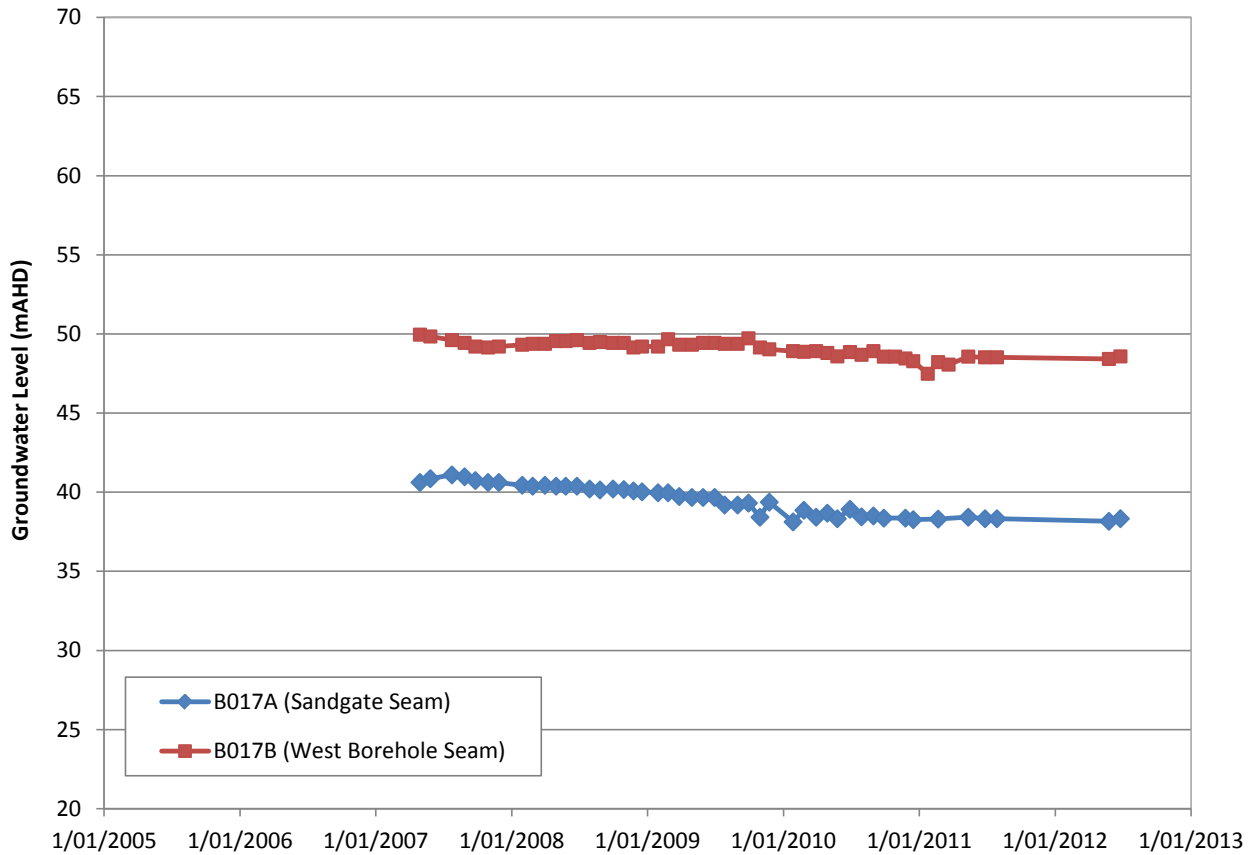
B005



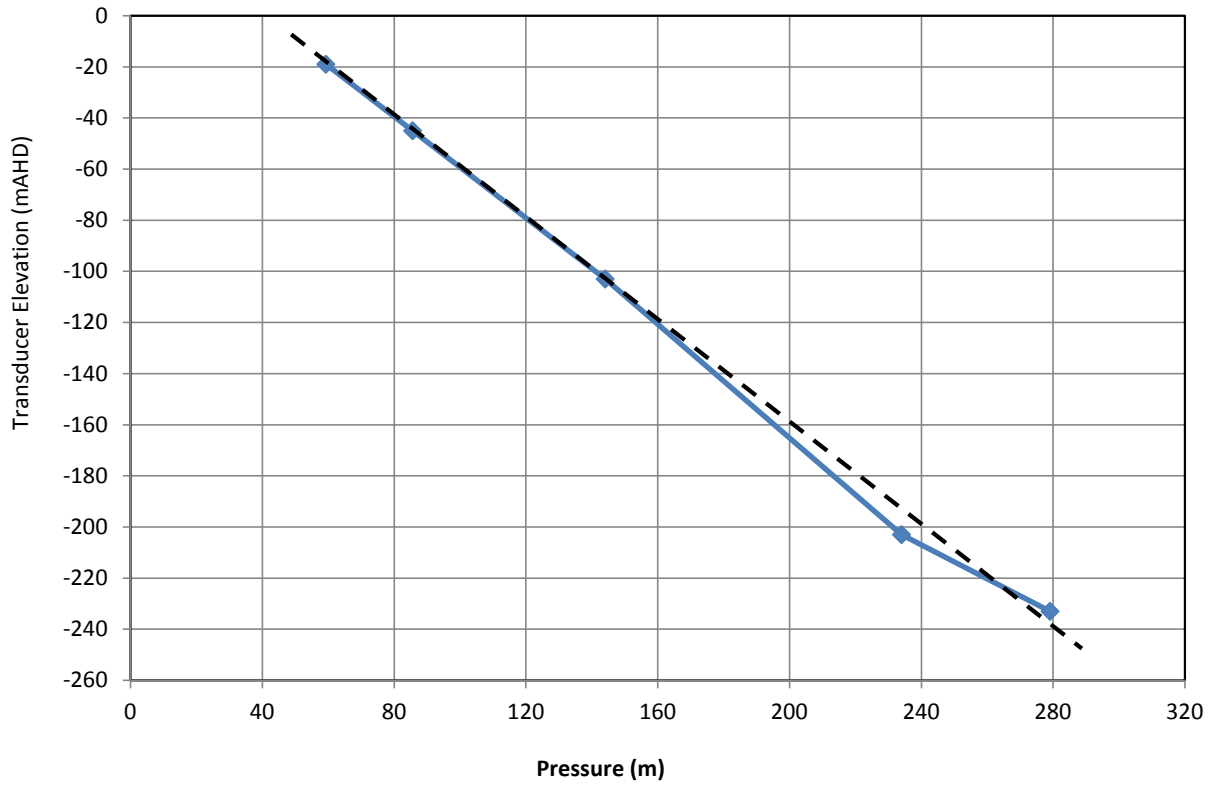
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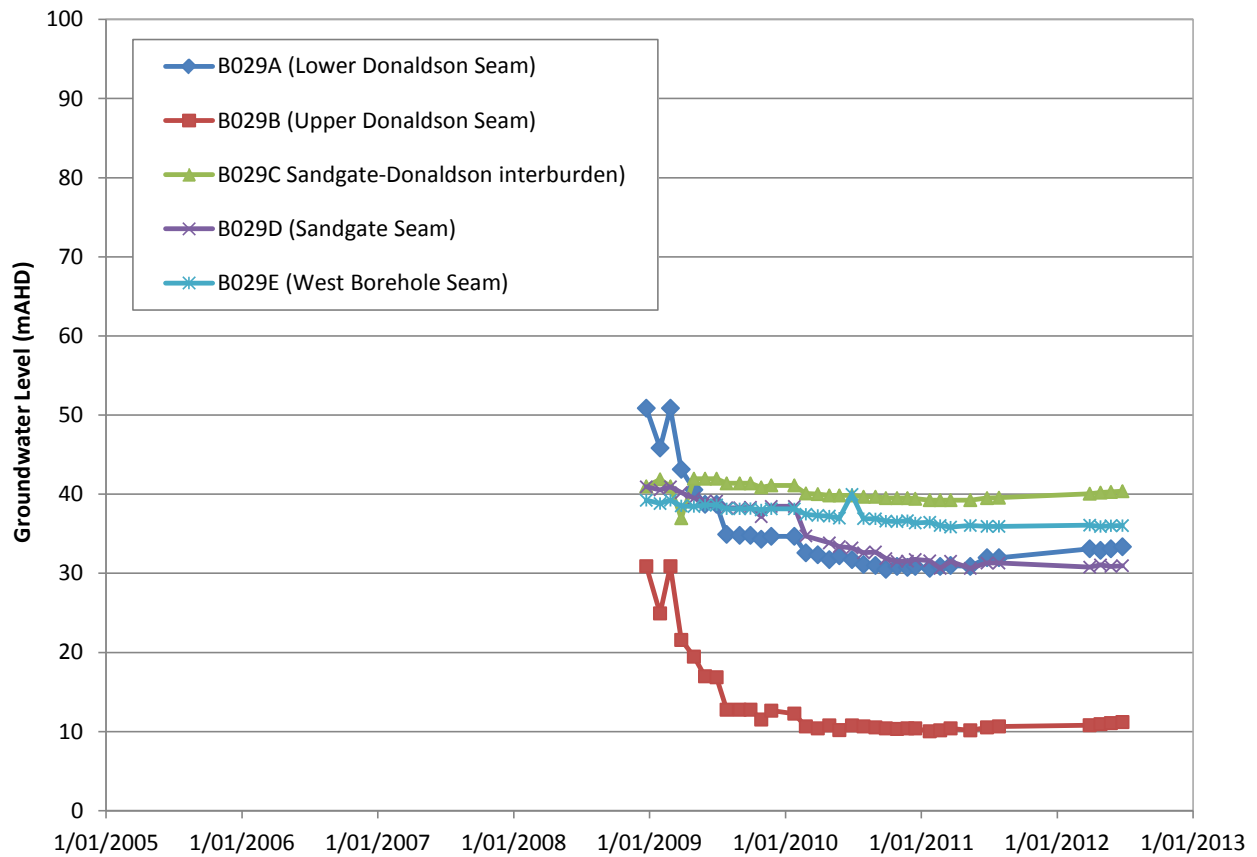
B017



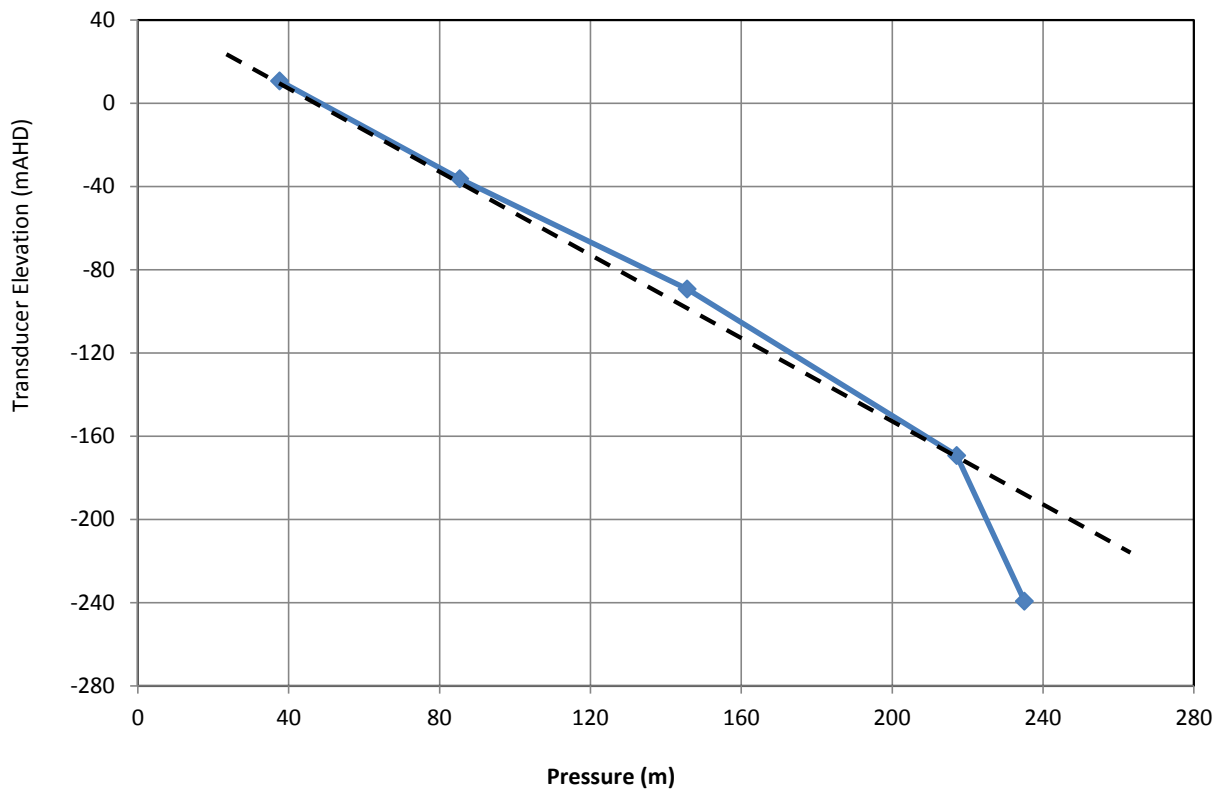
B029



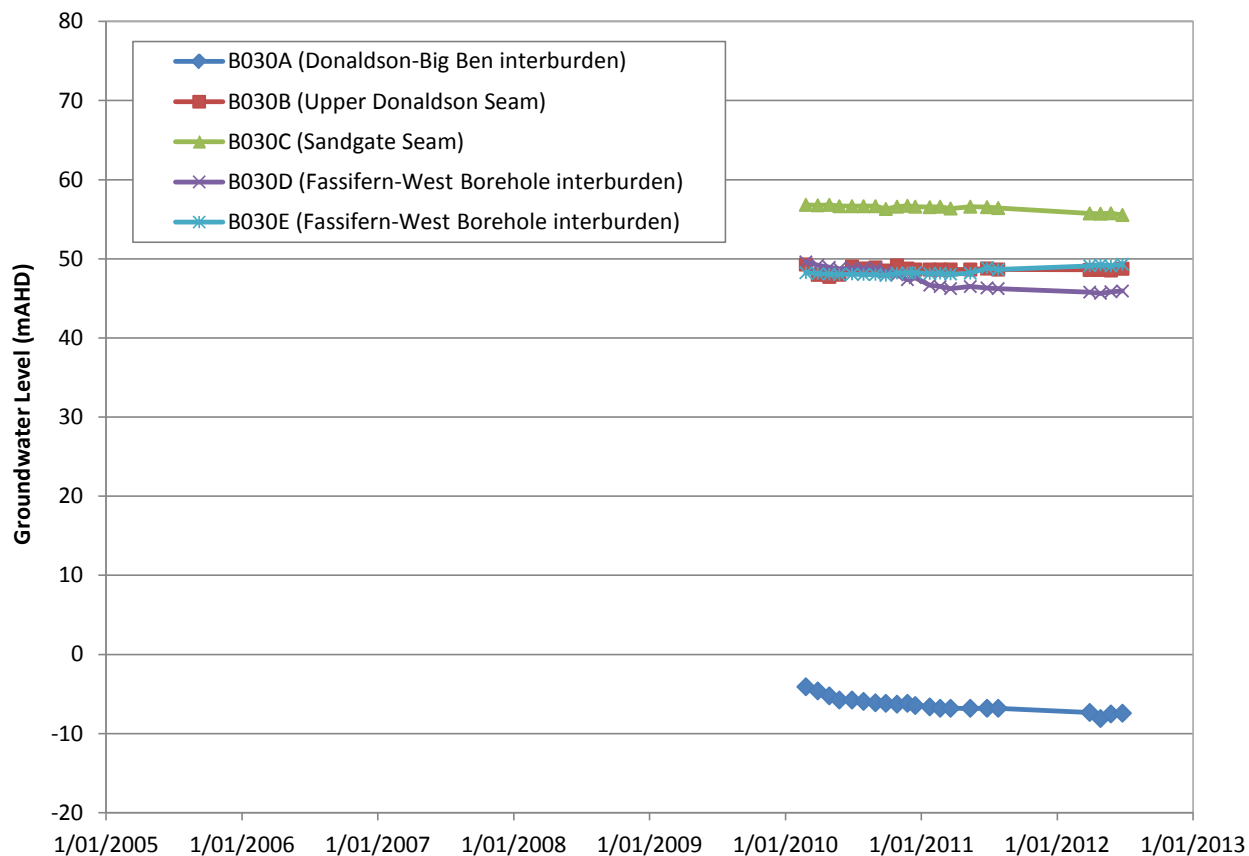
B029



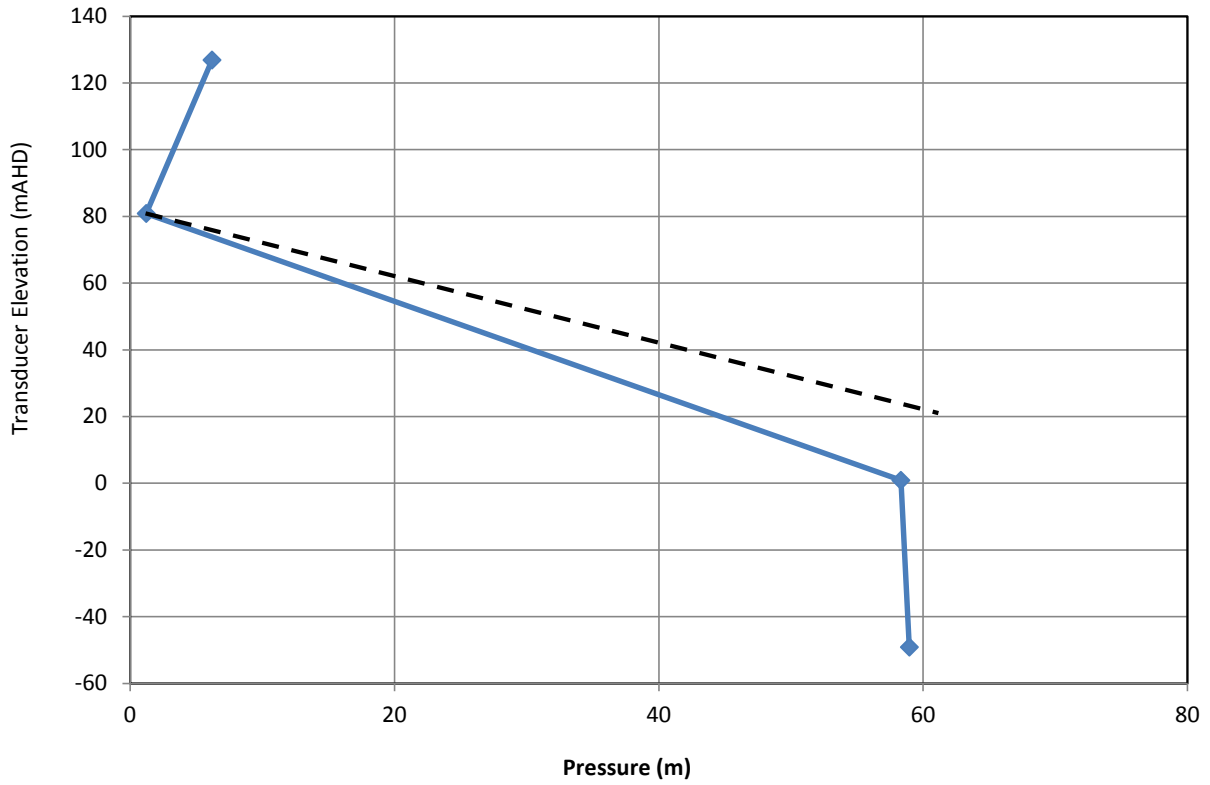
B030



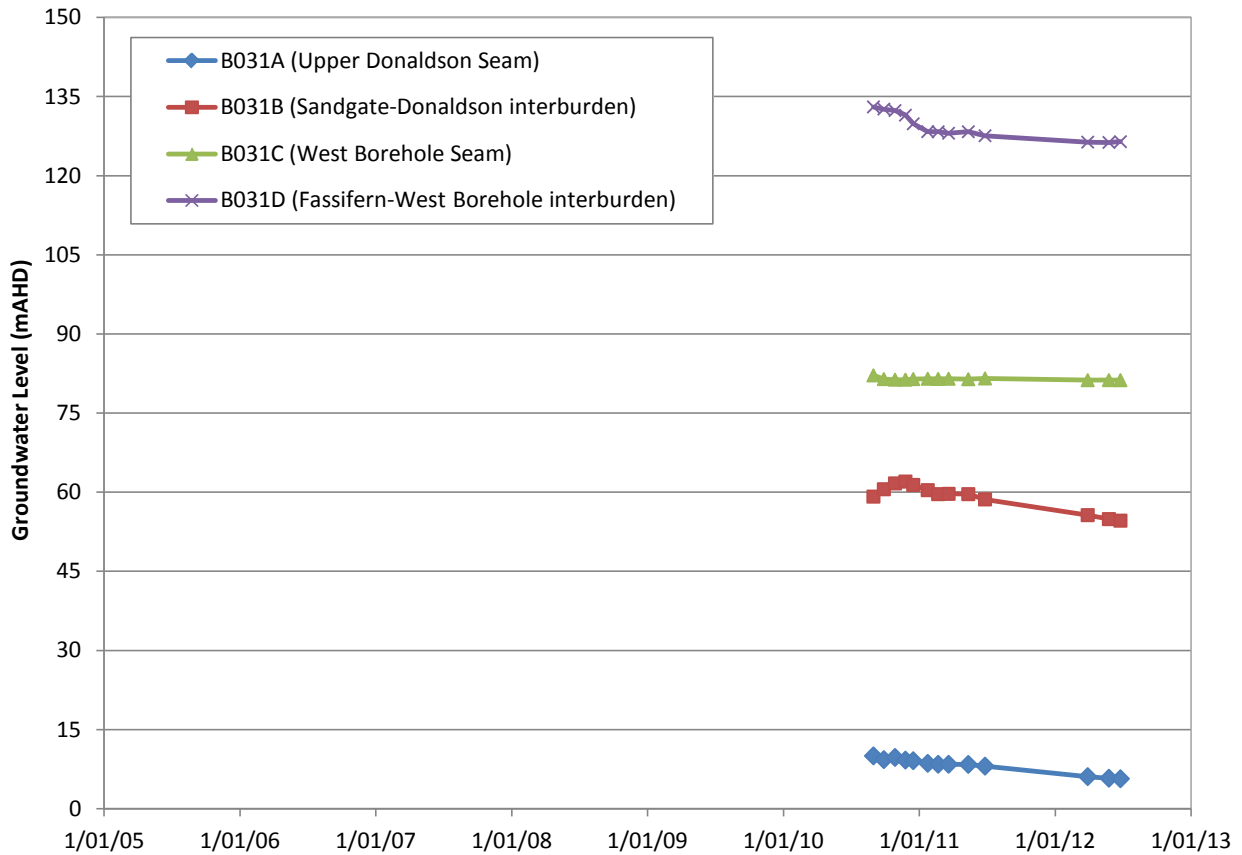
B030



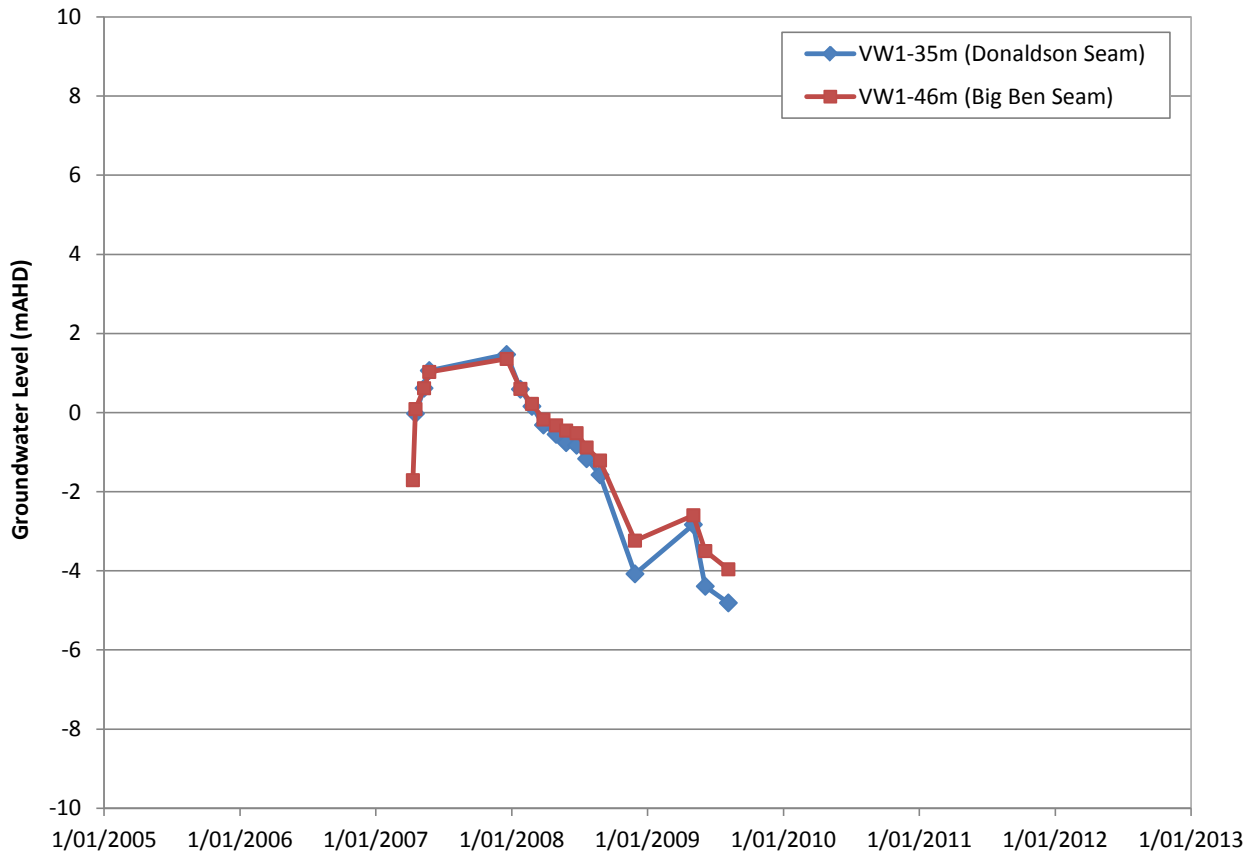
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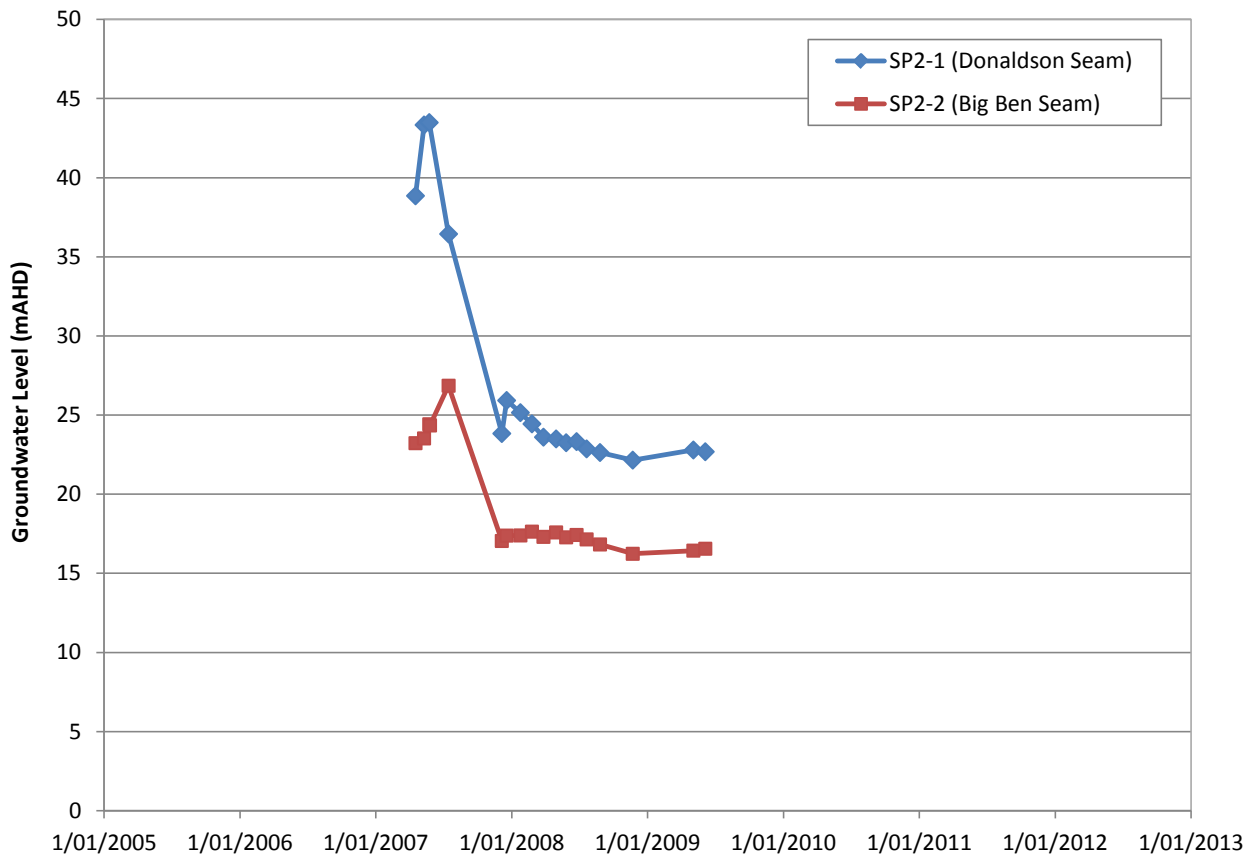
B031



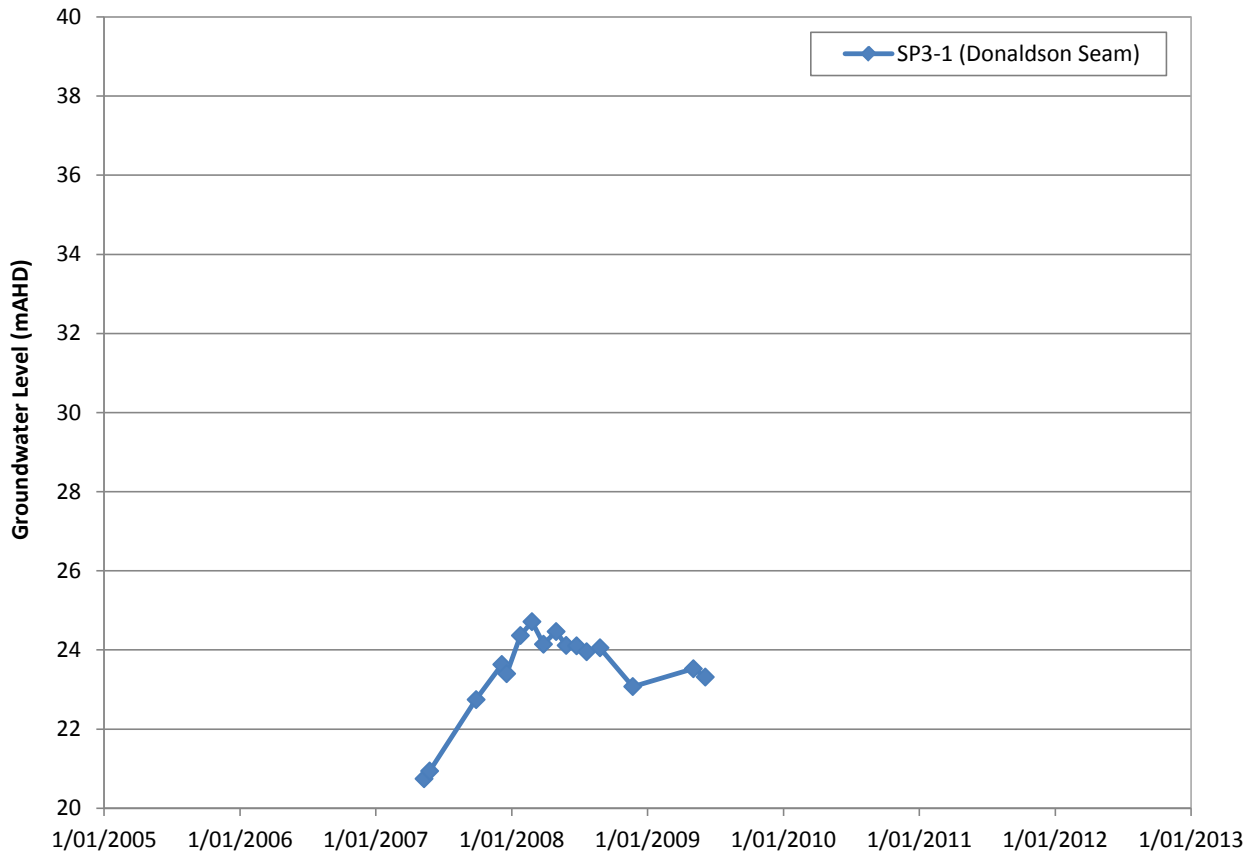
Bloomfield - Site 1



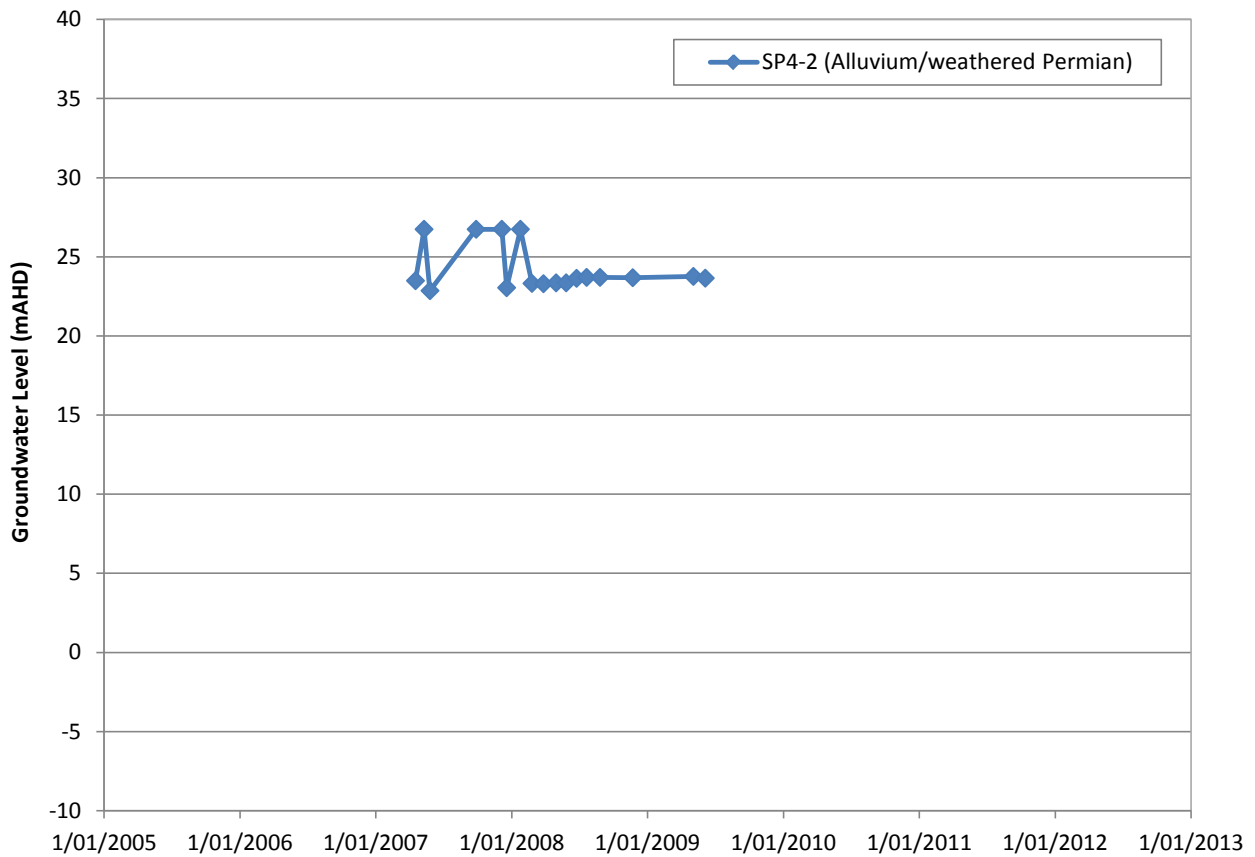
Bloomfield - Site 2



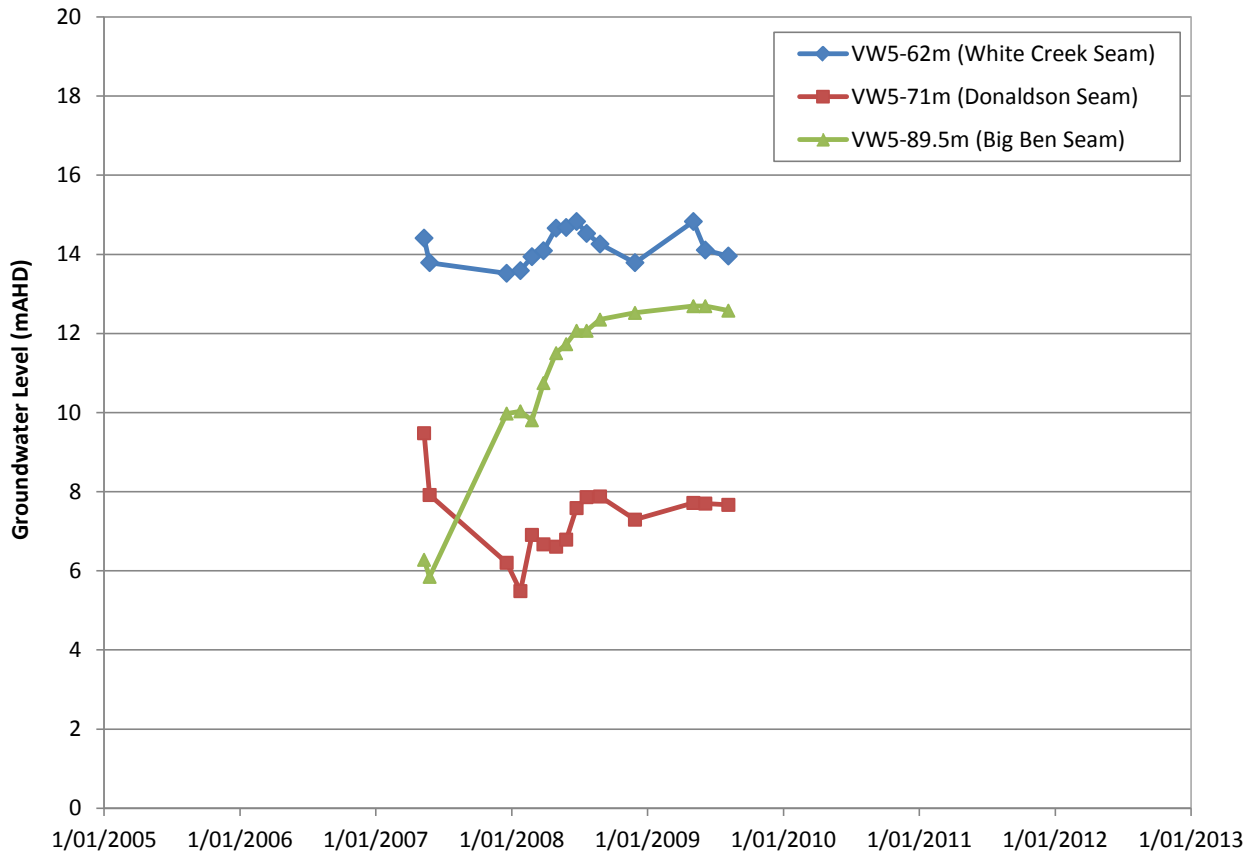
Bloomfield - Site 3



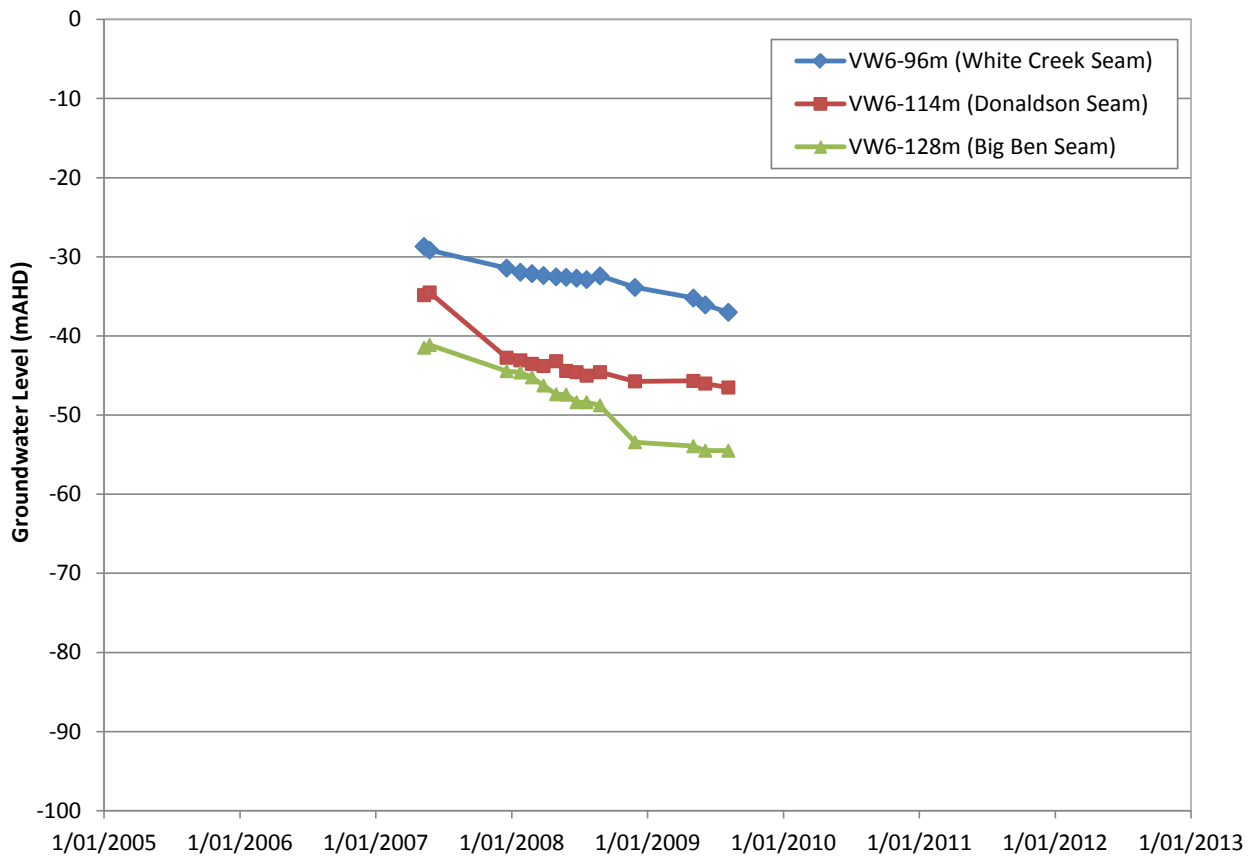
Bloomfield - Site 4



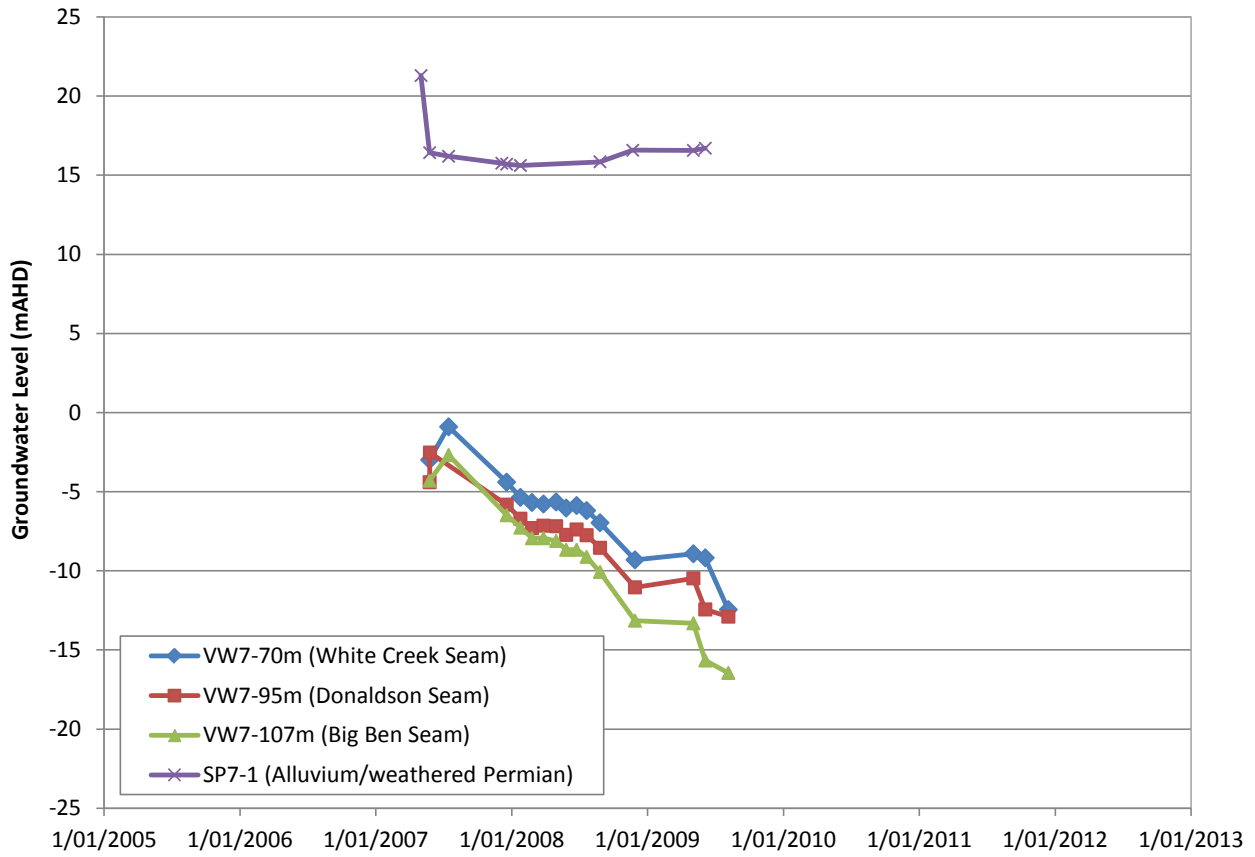
Bloomfield - Site 5



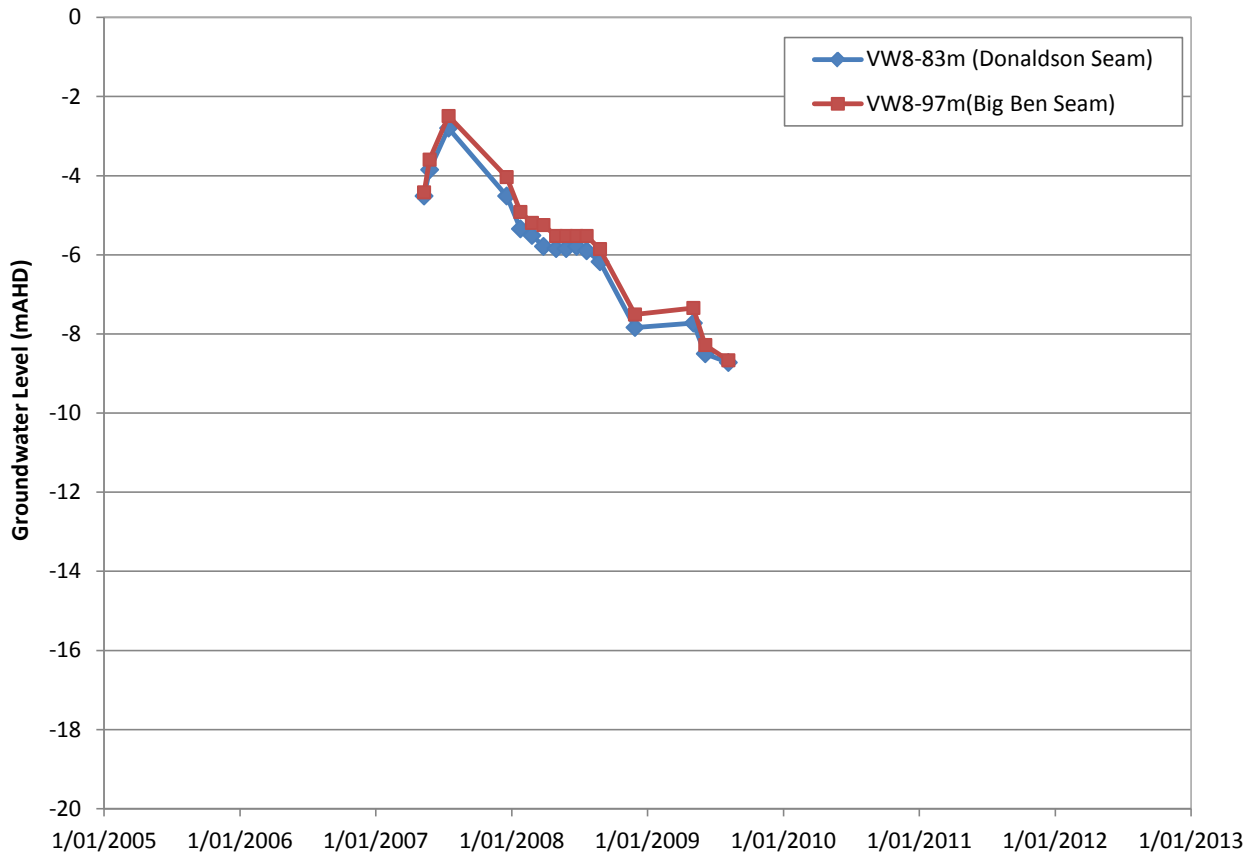
Bloomfield - Site 6



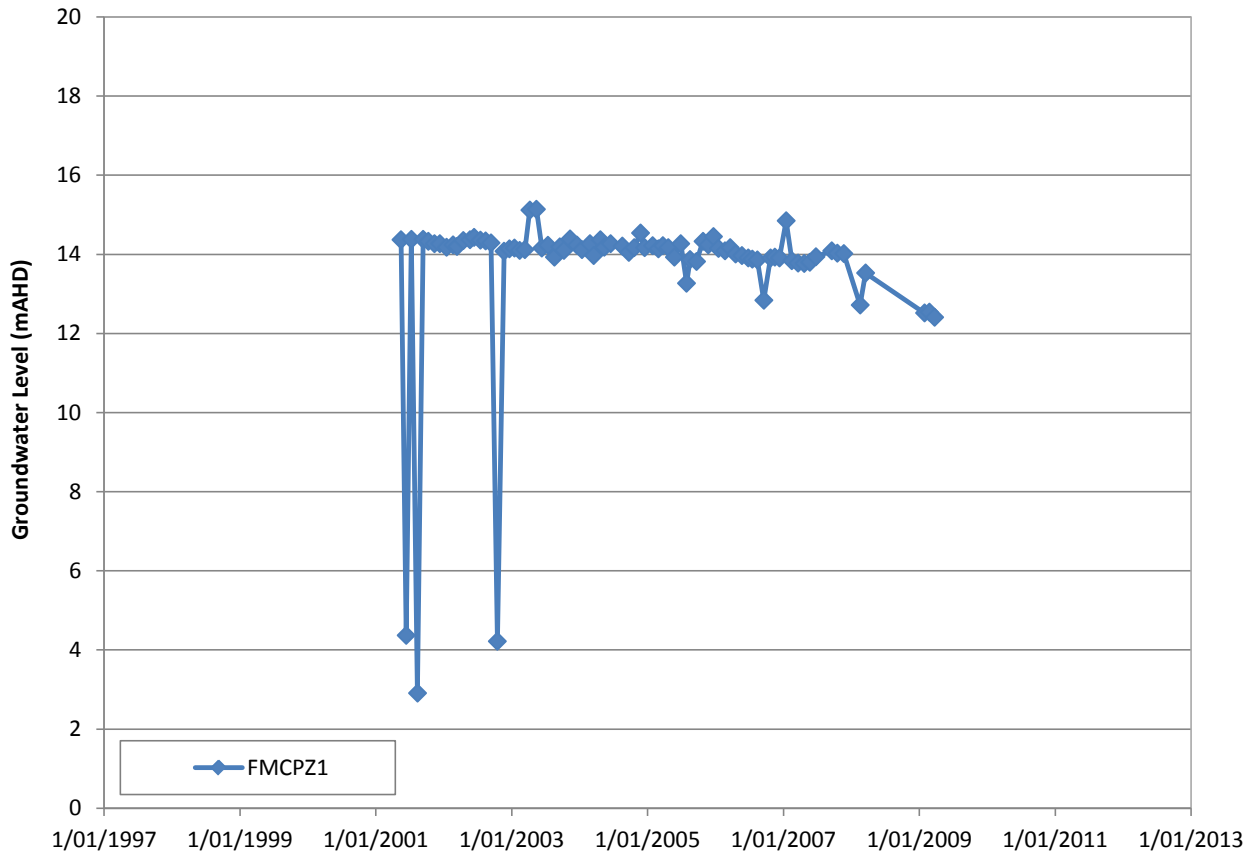
Bloomfield - Site 7



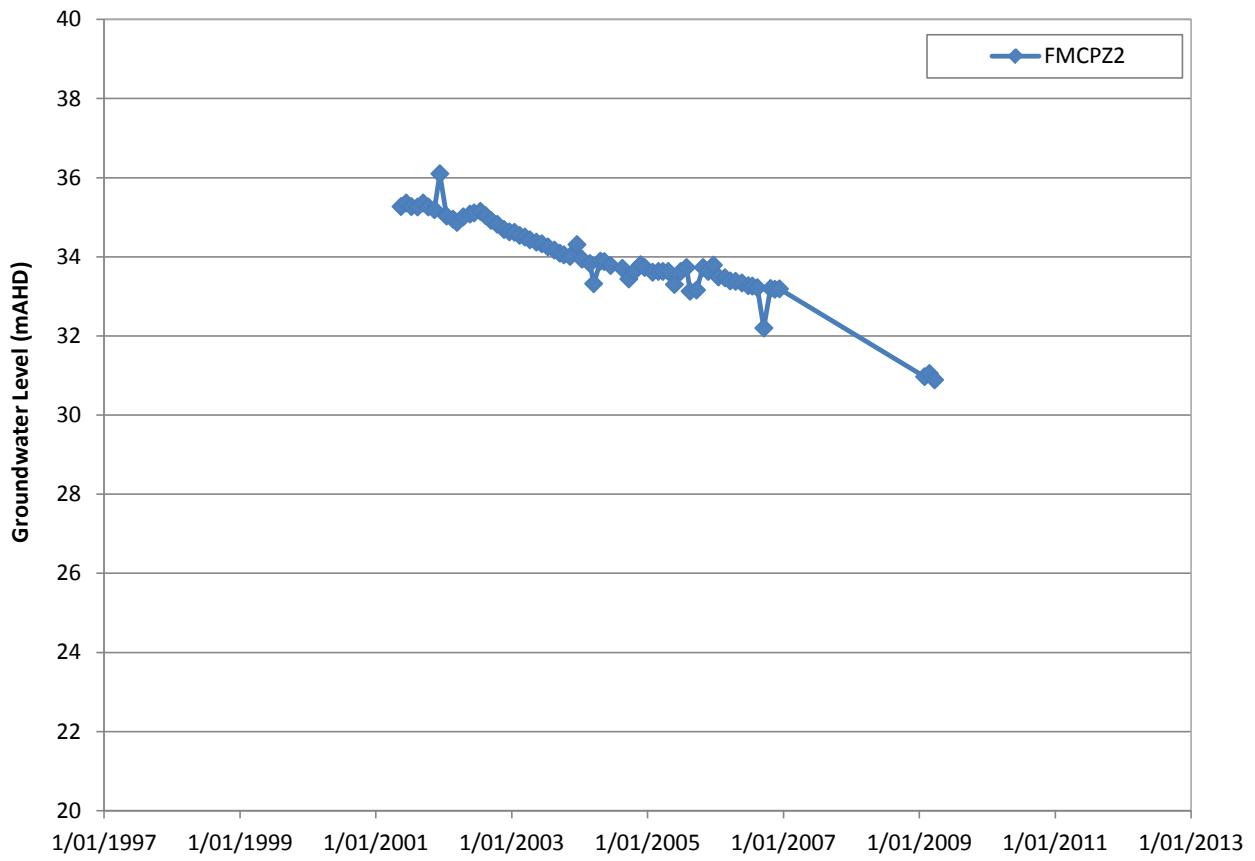
Bloomfield - Site 8



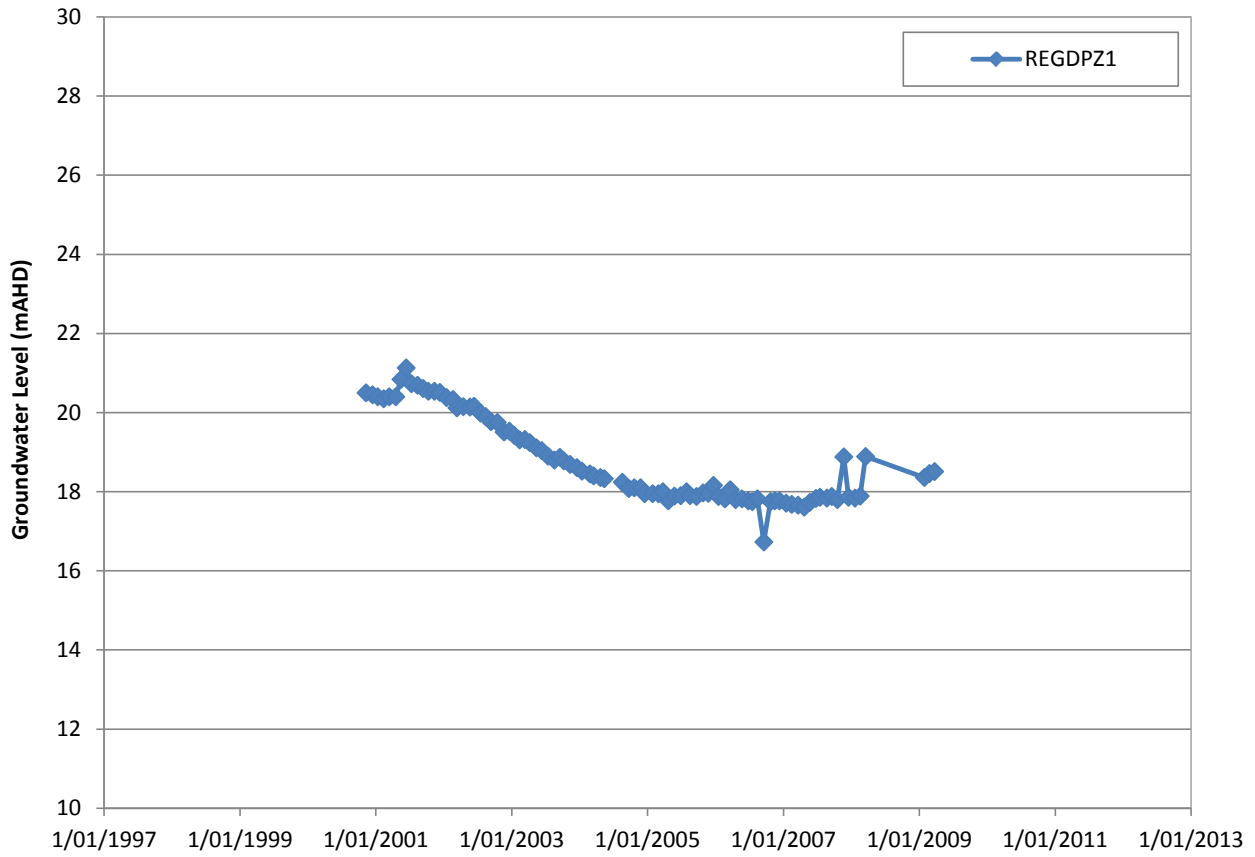
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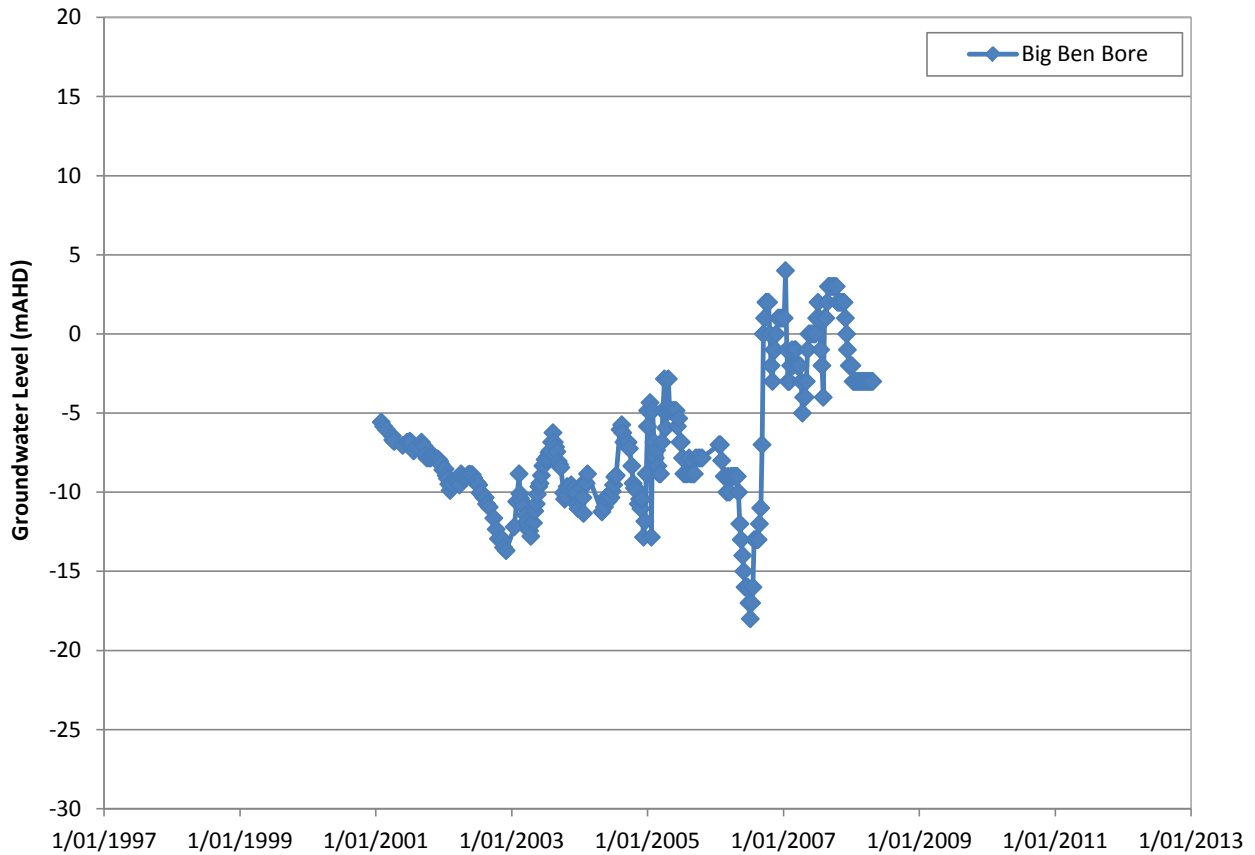
FMCPZ2



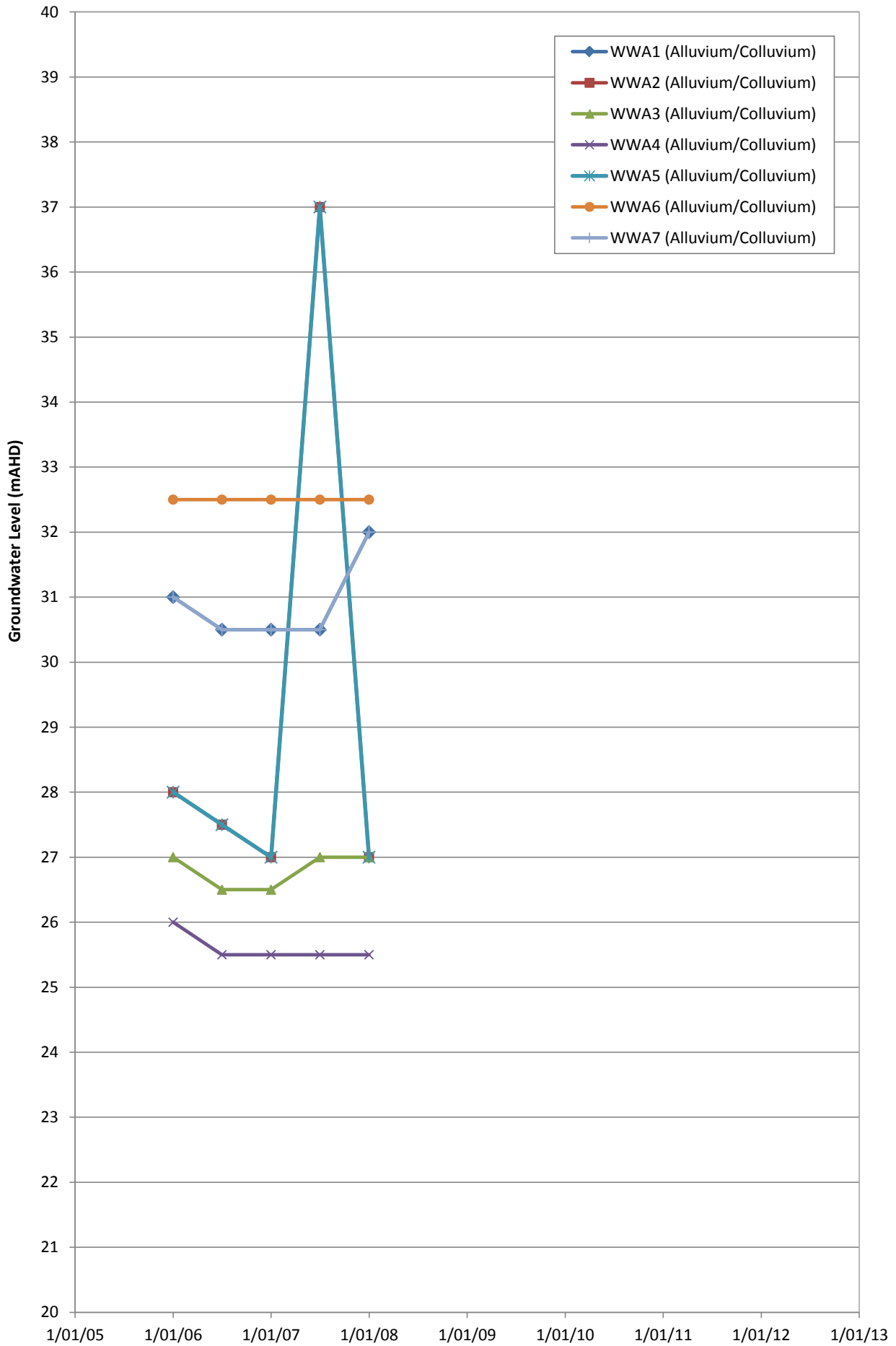
REGDPZ1



Big Ben Bore



West Wallsend



**APPENDIX C:
REGISTERED GROUNDWATER
BORES**

WORK NO	LICENSE	EASTING	NORTHING	WORK TYPE	OWNER TYPE	FINAL DEPTH (m)	COMPLETION	SALINITY (ppm)	YIELD (L/S)	Depth to STANDING WATER LEVEL (m)
GW053411	20WA210339	361,215	6,366,699	Bore open thru rock	Private	20	1/03/1981	0-500	0	0
GW053412	20WA210340	361,240	6,366,730	Bore open thru rock	Private	7.9	1/03/1981	0-500	0	0
GW051353	20BL114994	365,986	6,365,810	Bore open thru rock	Private	49.7	1/11/1980	3001-7000	0	0
GW058760	20BL130469	371,142	6,371,207	Bore	Private	33	1/10/1983	0-500	0	0
GW078044	20BL166662	370,428	6,370,151	Bore		30.1	14/11/1997		0	0
GW078045	20BL166663	371,836	6,369,892	Bore		30.5	14/11/1997		0	0
GW078047	20BL166665	370,784	6,368,800	Bore		54.3	14/11/1997		0	0
GW078120	20BL166666	371,176	6,368,590	Bore		24	14/11/1997		0	0
GW078121	20BL166667	368,619	6,367,262	Bore		43	14/11/1997		0	0
GW078122	20BL166668	368,666	6,367,663	Bore		35.4	14/11/1997		0	0
GW078123	20BL166669	369,309	6,368,165	Bore		33	14/11/1997		0	0
GW078125	20BL166671	370,970	6,368,464	Bore		30	14/11/1997		0	0
GW078126	20BL166672	371,890	6,367,736	Bore		30	14/11/1997		0	0
GW078127	20BL166673	369,073	6,366,406	Bore		30	14/11/1997		0	0
GW078128	20BL166674	370,912	6,366,923	Bore		30	14/11/1997		0	0
GW078161	20BL153302	372,698	6,359,492	Bore	Local Govt	84	3/11/1993		0	0
GW078201	20BL155029	373,395	6,360,150	Bore	Local Govt	31	3/11/1993		0.3	28
GW079892		366,598	6,372,257	Bore	(Unknown)	0			0	0
GW079061	20BL153300	372,859	6,359,576	Bore	Local Govt	0			0	0
GW079063	20BL153300	373,130	6,359,725	Bore	Local Govt	47	27/10/1993		0	0
GW079065	20BL153300	372,696	6,360,132	Bore	Local Govt	0			0	0
GW078814	20BL167109	363,496	6,360,108	Bore		256.5	30/04/1998		0	210.7
GW078815	20BL167110	364,714	6,359,586	Bore		131.1	6/11/1998		0	103
GW078816	20BL167111	363,491	6,360,077	Bore		310.5	13/05/1998		0	109.5
GW078578	20BL167496	363,861	6,358,055	Bore		99	6/11/1997		0	55
GW061307	20BL133448	371,299	6,371,148	Bore	Private	30	1/10/1984	501-1000	0	0
GW078046	20BL166664	368,651	6,368,741	Bore		30.4	14/11/1997		0	0
GW078124	20BL166670	369,883	6,368,018	Bore		40	14/11/1997		0	0
GW079948		370,081	6,372,613	Bore	(Unknown)	0			0	0
GW080034		365,222	6,370,959	Bore	(Unknown)	0			0	0
GW200626	20BL168824	371,366	6,362,331	Bore	Private	4.2	22/11/2002		0	0
GW200627	20BL168824	371,461	6,362,472	Bore	Private	4.2	22/11/2002		0	0
GW200628	20BL168824	371,384	6,362,453	Bore	Private	4.2	22/11/2003		0	0
GW200629	20BL168824	371,585	6,362,633	Bore	Private	4.2	22/11/2002		0	0

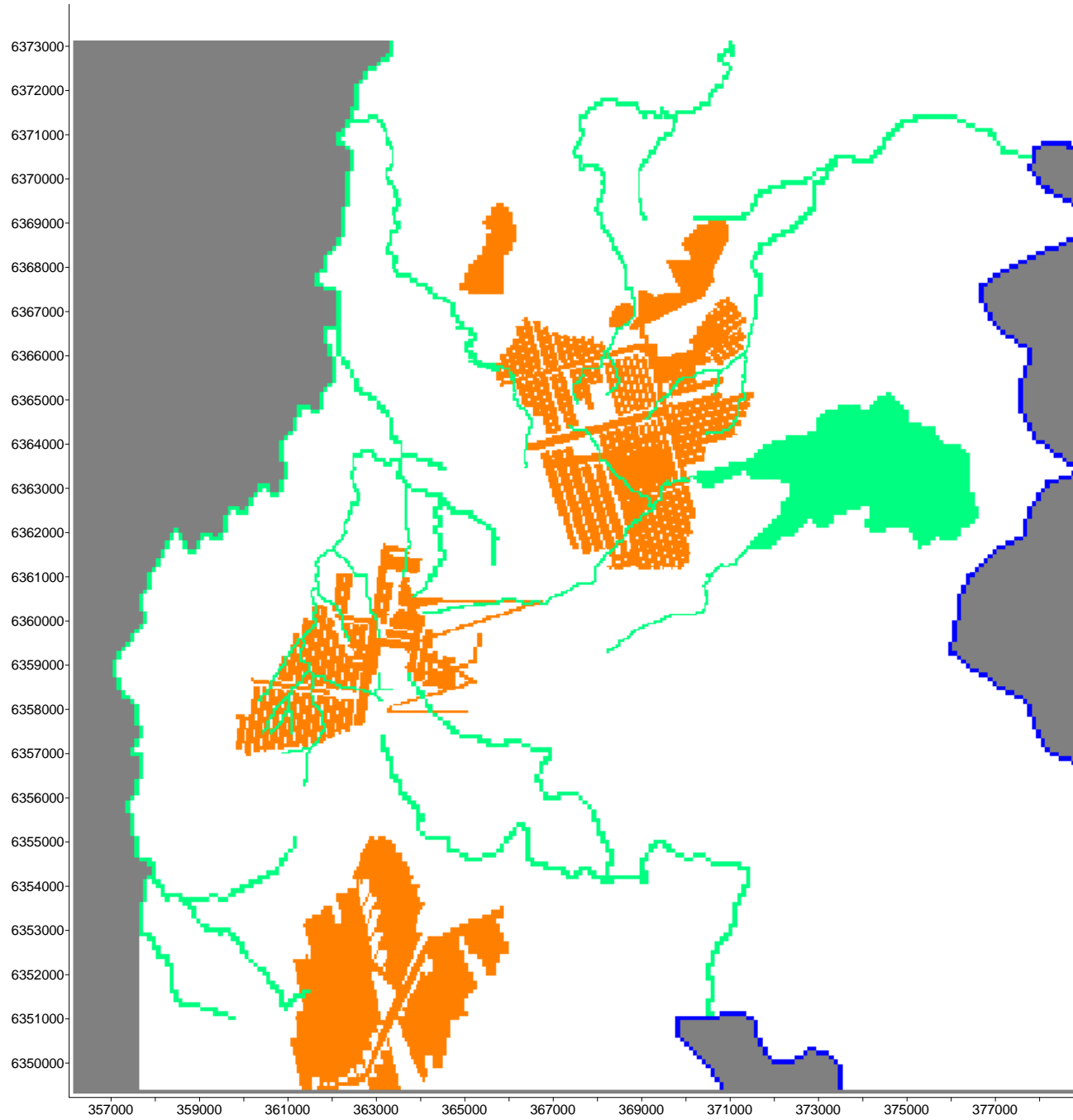
**APPENDIX D:
MODEL CALIBRATION TARGET
BORES**

Model Calibration Target Bores

Name	Easting	Northing	Formation	Layer
WWA1	364299	6353855	Alluvium/colluvium	1
WWA2	364199	6353895	Alluvium/colluvium	1
WWA3	364299	6354055	Alluvium/colluvium	1
WWA4	364299	6353955	Alluvium/colluvium	1
WWA5	364199	6354255	Alluvium/colluvium	1
WWA6	364299	6354355	Alluvium/colluvium	1
WWA7	364370	6354420	Alluvium/colluvium	1
CO72B	369915	6362569	Alluvium/weathered Permian	1
CO78B	367188	6367077	Alluvium/weathered Permian	1
CO81B	370011	6364017	Alluvium/weathered Permian	1
CO82	370319	6364647	Alluvium/weathered Permian	1
CO87	367419	6366587	Alluvium/weathered Permian	1
SP4-2	367685	6371033	Alluvium/weathered Permian	1
SP7-1	364594	6368654	Alluvium/weathered Permian	1
TAS023	360597	6357716	Fassifern Overburden	2
TAS024	364944	6359786.4	Fassifern Seam	3
TA41C	361231	6354125.7	Fassifern-West Borehole Interburden	4
TA41B	361231	6354125.7	Fassifern-West Borehole Interburden	5
B030E	361400	6359400.3	Fassifern-West Borehole Interburden	5
C123F	366288	6364703	Fassifern-West Borehole Interburden	6
B002AD	361942	6360971	Fassifern-West Borehole Interburden	6
B031D	360186	6358946.1	Fassifern-West Borehole Interburden	6
C148D	362443	6364501	West Borehole Seam	7
B002AC	361942	6360971	West Borehole Seam	7
B004	363048	6362107	West Borehole Seam	7
B005	363760	6362001	West Borehole Seam	7
B017B	360800	6359938	West Borehole Seam	7
B029E	361362	6360638.8	West Borehole Seam	7
B031C	360186	6358946.1	West Borehole Seam	7
C223E	365530	6364593.9	West Borehole Seam	7
B030D	361400	6359400.3	Fassifern-West Borehole Interburden	7
C141E	363873	6364369.7	Sandgate Seam	9
B002AB	361942	6360971	Sandgate Seam	9
B017A	360800	6359938	Sandgate Seam	9
B029D	361362	6360638.8	Sandgate Seam	9
B030C	361400	6359400.3	Sandgate Seam	9
C223D	365530	6364593.9	Sandgate Seam	9
TA41A	361231	6354125.7	Sandgate Seam	9
C223C	365530	6364593.9	Buttai Seam	10
C123E	366288	6364703	Sandgate-Donaldson Interburden	10
C123D	366288	6364703	Upper Buttai	10
DP220B	370540	6368439	Beresfield and Upper Donaldson interburden	10
C141D	363873	6364369.7	Sandgate-Donaldson Interburden	11
C148C	362443	6364501	Sandgate-Donaldson Interburden	11
C262C	370208	6367200.9	Sandgate-Donaldson Interburden	11
C257(35m)	370030	6366642	Sandgate-Donaldson Interburden	11
CO72A	369915	6362569	Overburden	11
C123C	366288	6364703	Beresfield Seam	12
DP210	371001	6368463	Beresfield Seam	12
C138E	364964	6367034	Sandgate-Donaldson Interburden	12
C262B	370208	6367200.9	Sandgate-Donaldson Interburden	12
B029C	361362	6360638.8	Sandgate-Donaldson Interburden	12
B031B	360186	6358946.1	Sandgate-Donaldson Interburden	12

C257(55m)	370030	6366642	Sandgate-Donaldson Interburden	12
DPZ12	369114	6366414	Overburden above Upper Donaldson	12
DPZ5	371366	6368779	Undifferentiated coal measures above Donaldson Seams	12
DPZ13	371249	6367557	Undifferentiated coal above Upper Donaldson	12
CO63B	372109	6366193	Overburden (above Upper Donaldson Seam)	12
C123B	366288	6364703	Upper Donaldson Seam	13
C223B	365530	6364593.9	Upper Donaldson Seam	13
B029B	361362	6360638.8	Upper Donaldson Seam	13
B030B	361400	6359400.3	Upper Donaldson Seam	13
B031A	360186	6358946.1	Upper Donaldson Seam	13
C141C	363873	6364369.7	Donaldson Seam	13
CO78A	367188	6367077	Donaldson Seam	13
TAS028	364167	6361241	Donaldson Seam	13
DPZ6	368614	6367357.1	Upper & Lower Donaldson Seams	13
DPZ9	369847	6368016	Upper & Lower Donaldson and Big Ben Seams	13
C257(75m)	370030	6366642	Donaldson Seam	13
CO63A	372109	6366193	Lower Donaldson Seam	15
C123A	366288	6364703	Lower Donaldson Seam	15
C223A	365530	6364593.9	Lower Donaldson Seam	15
B029A	361362	6360638.8	Lower Donaldson Seam	15
VW5(62m)	366534	6368071	Lower Donaldson Seam	15
VW6(96m)	365299	6368267	Lower Donaldson Seam	15
VW7(70m)	364595	6368658	Lower Donaldson Seam	15
CO72	369915	6362569	Donaldson Seam	15
CO80	368017	6365168	Donaldson Seam	15
CO81A	370011	6364017	Donaldson Seam	15
C262A	370208	6367200.9	Donaldson Seam	15
DPZ7B	368847	6367640	Lower Donaldson and Big Ben Seams	15
DPZ8	369374	6368073	Lower Donaldson and Big Ben Seams	15
C138D	364964	6367034	Donaldson Seam	15
B030A	361400	6359400.3	Donaldson-Big Ben Interburden	16
DPZ3	368773	6368608	Undifferentiated coal measures below Lower Donaldson Seam	16
SP3-1	366819	6372115	Big Ben Seam	17
VW6(114m)	365299	6368267	Big Ben Seam	17
C138C	364964	6367034	Big Ben Seam	17
C141B	363873	6364369.7	Big Ben Seam	17
C148B	362443	6364501	Big Ben Seam	17
DPZ20A	370541	6368439	Big Ben Seam	17
B002AA	361942	6360971	Big Ben Seam	17
SP2-1	365285	6371010	Big Ben Seam	17
VW1(35m)	363804	6370113	Big Ben Seam	17
VW5(71m)	366534	6368071	Big Ben Seam	17
VW7(95m)	364595	6368658	Big Ben Seam	17
VW8(83m)	363021	6369039	Big Ben Seam	17
C148A	362443	6364501	Big Ben-Ashtonfield Interburden	18
C138B	364964	6367034	Big Ben-Ashtonfield Interburden	18
SP2-2	365295	6371007	Ashtonfield Seam	19
VW1(46m)	363804	6370113	Ashtonfield Seam	19
VW5(89.5m)	366534	6368071	Ashtonfield Seam	19
VW6(128m)	365299	6368267	Ashtonfield Seam	19
VW7(107m)	364595	6368658	Ashtonfield Seam	19
VW8(97m)	363021	6369039	Ashtonfield Seam	19
C138A	364964	6367034	Ashtonfield Seam	19
C141A	363873	6364369.7	Ashtonfield Seam	19

**APPENDIX E:
DRAIN CELL MODEL SET UP**



LEGEND

- Rivers or Creeks
- No Flow
- General Head Boundary
- Drain Cells



Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.
 Note: The information shown on this map is a copyright of RPS Aquaterra Australia 2012

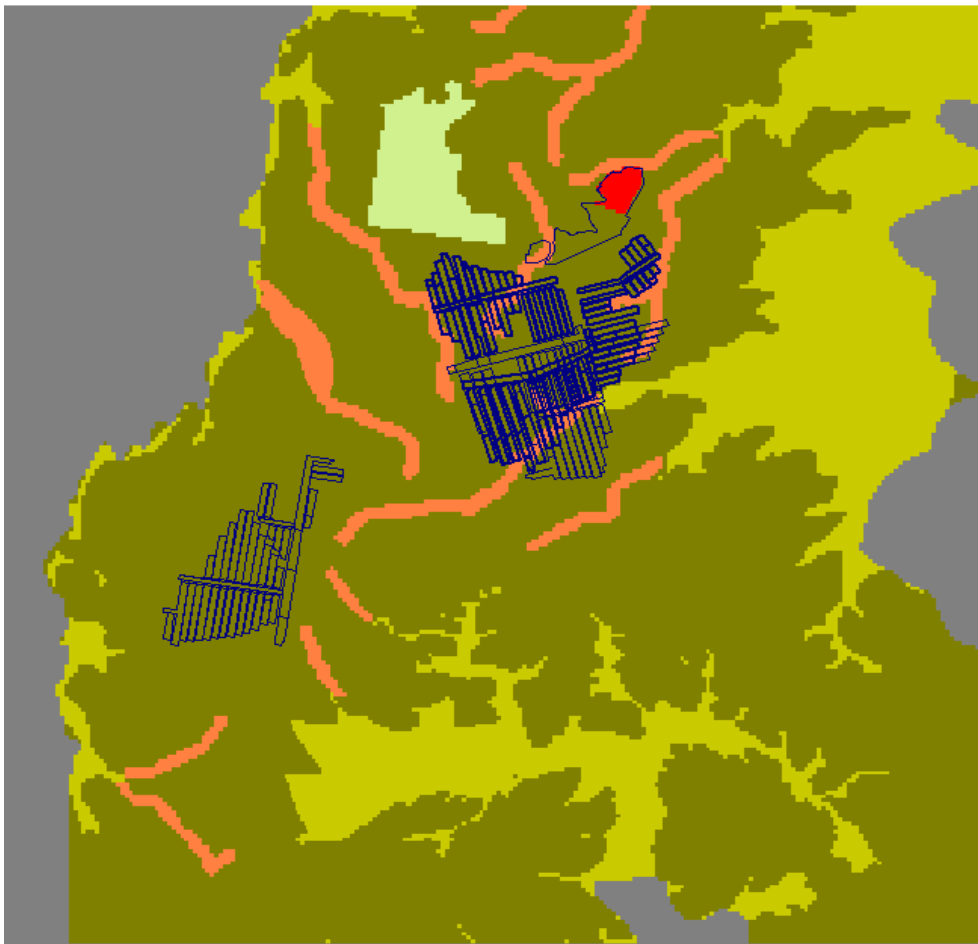


FIGURE E

Drain Cell Model Set-up

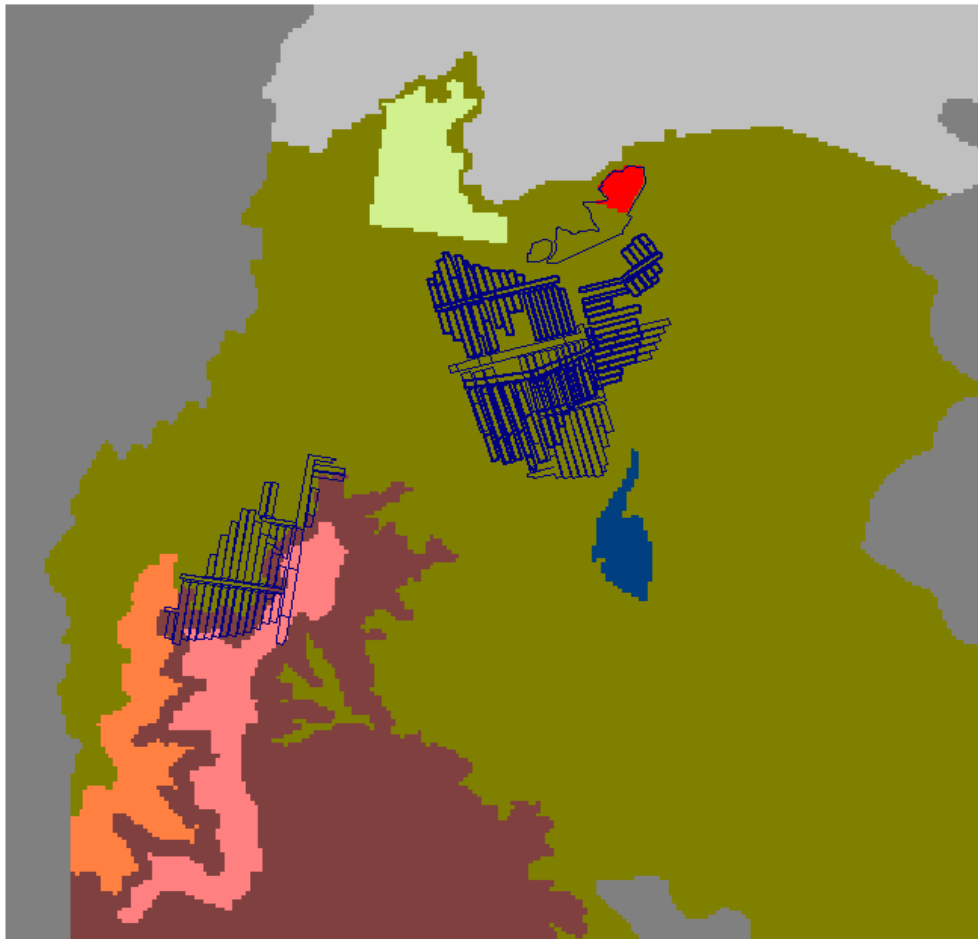
**APPENDIX F:
MODEL LAYER HYDRAULIC
CONDUCTIVITY**

Model Layer 1



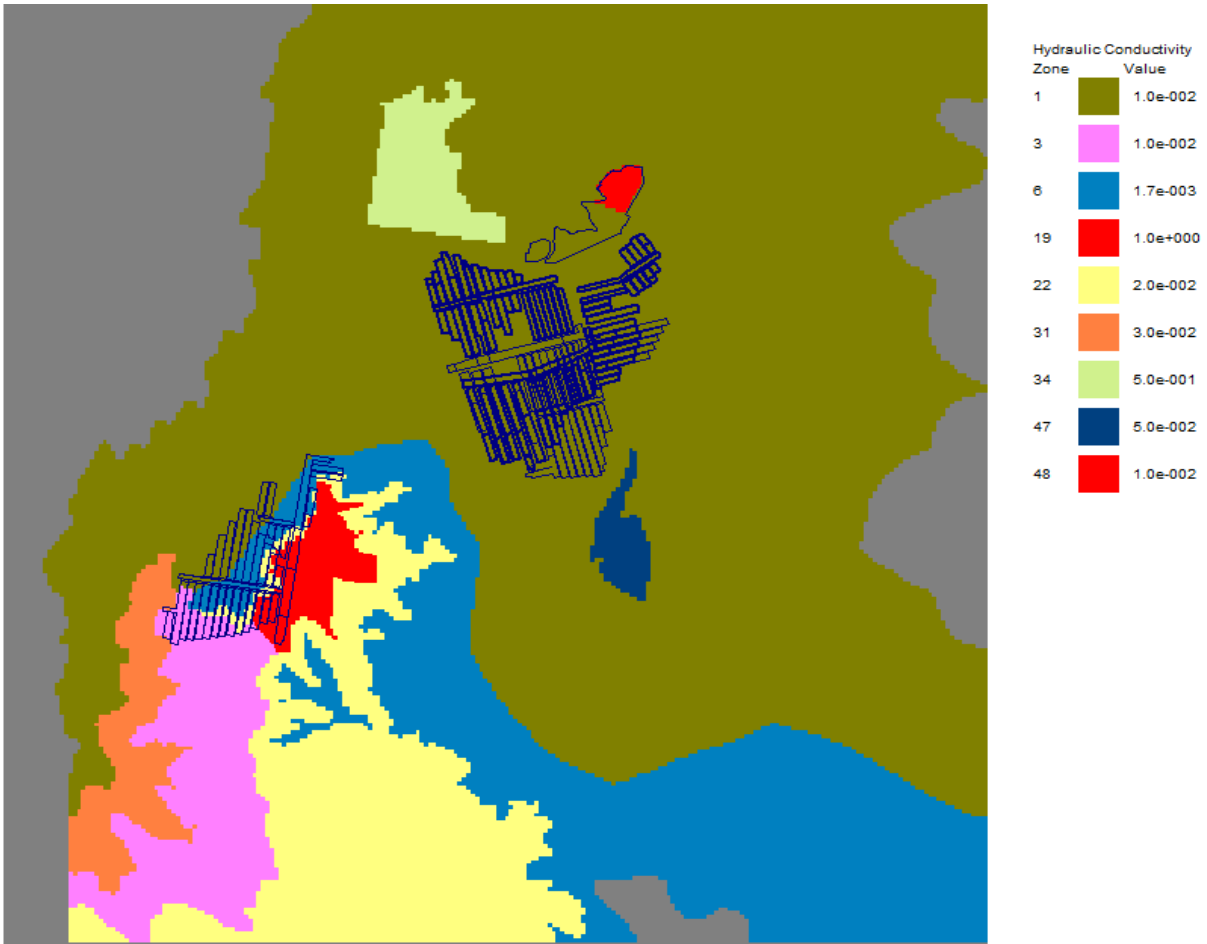
Hydraulic Conductivity Zone	Value
1	1.0e-002
2	5.0e+000
19	1.0e+000
20	2.0e-001
34	5.0e-001

Model Layer 2

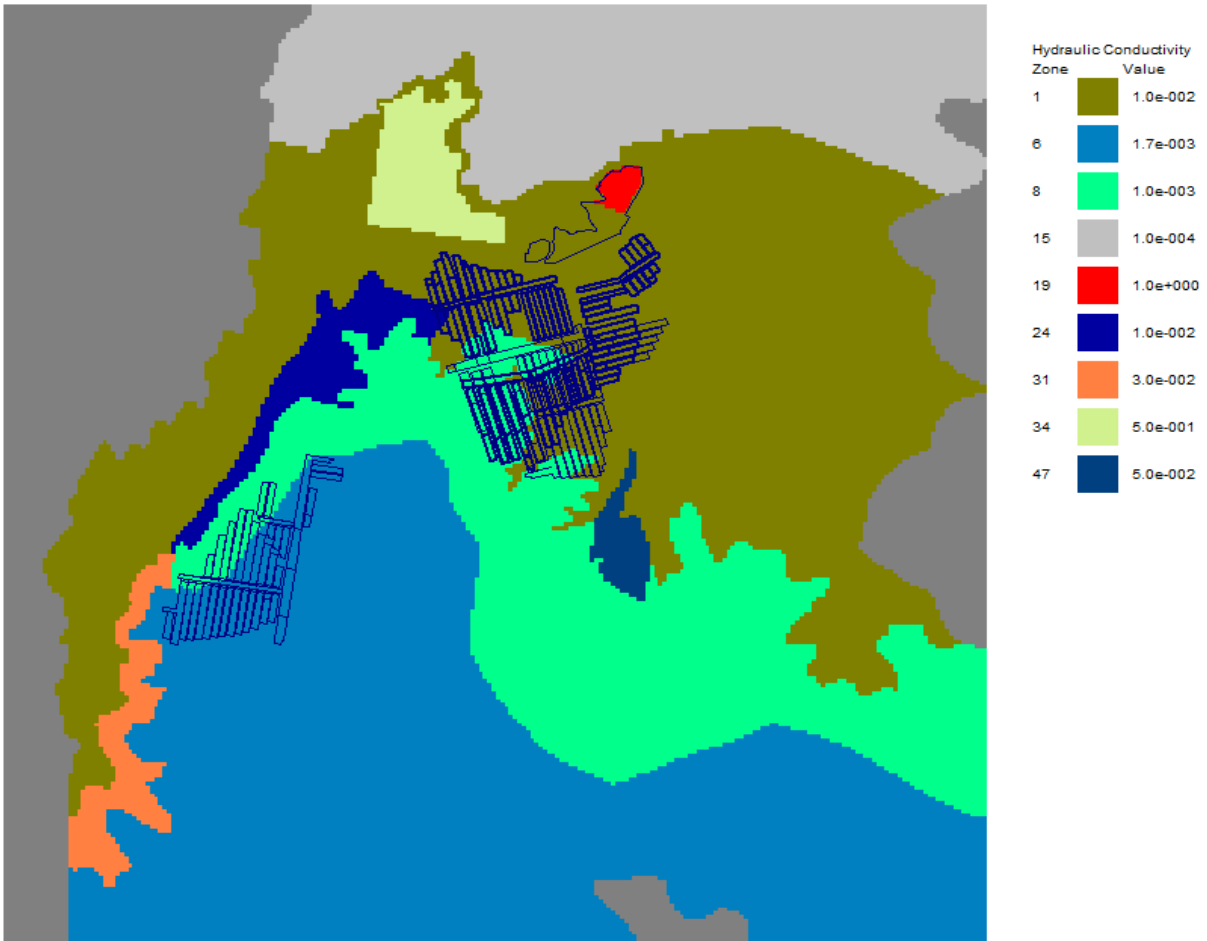


Hydraulic Conductivity Zone	Value
1	1.0e-002
4	1.0e-003
15	1.0e-004
19	1.0e+000
31	3.0e-002
33	1.0e-003
34	5.0e-001
47	5.0e-002

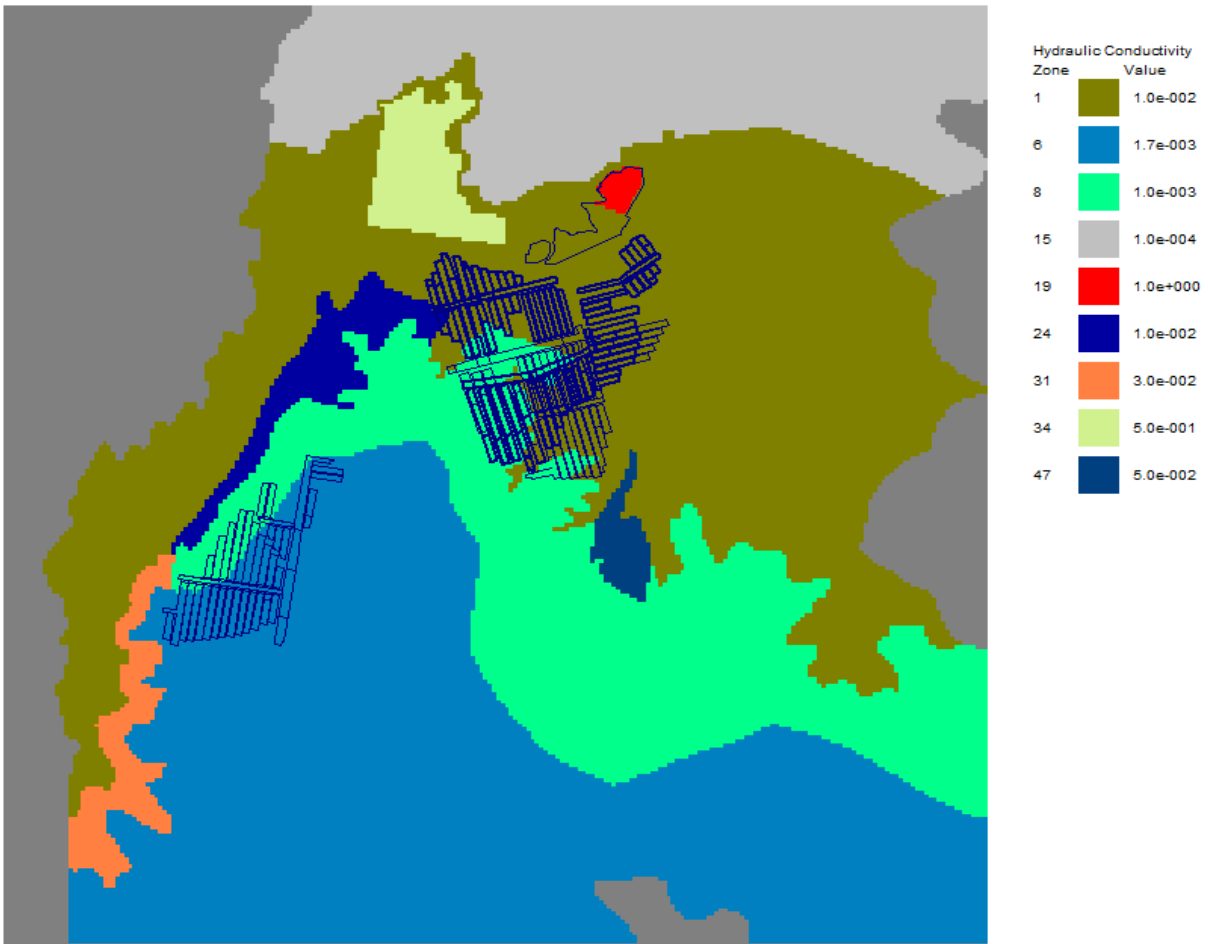
Model Layer 3



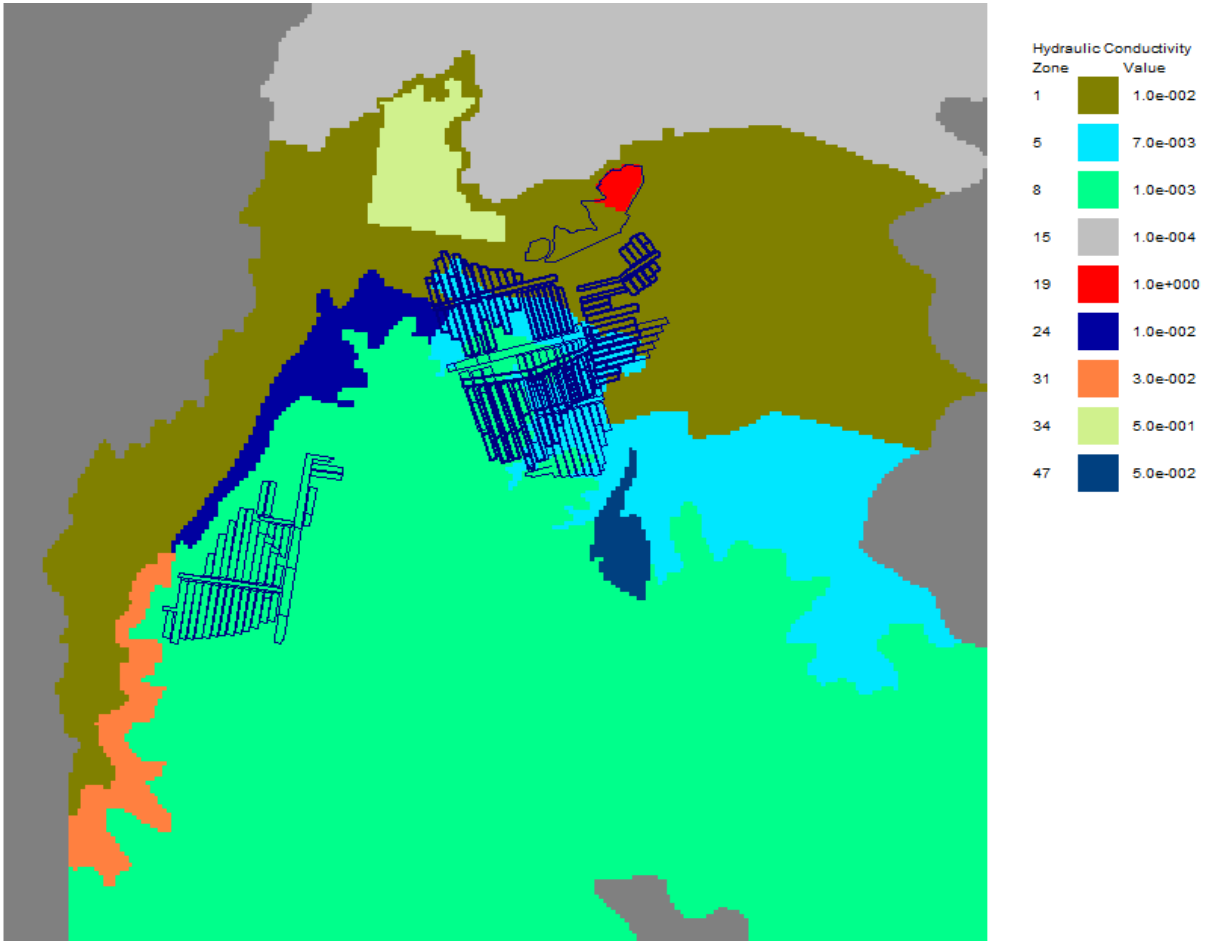
Model Layer 4



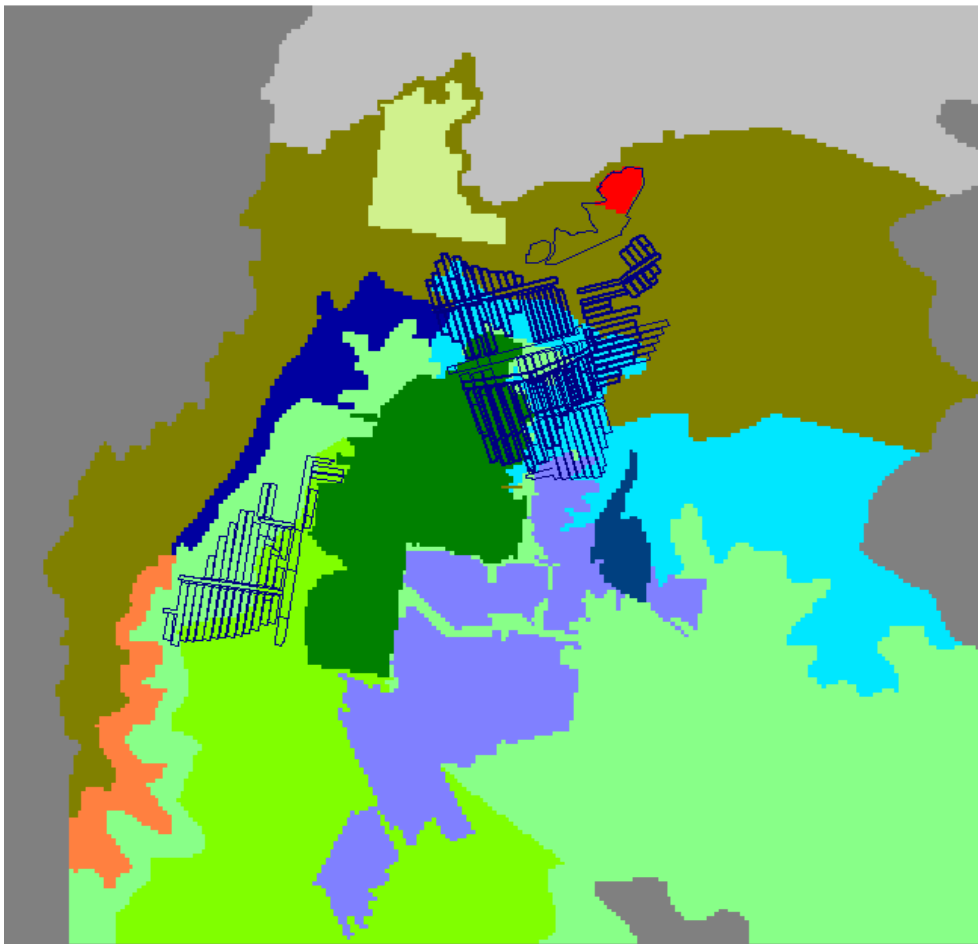
Model Layer 5



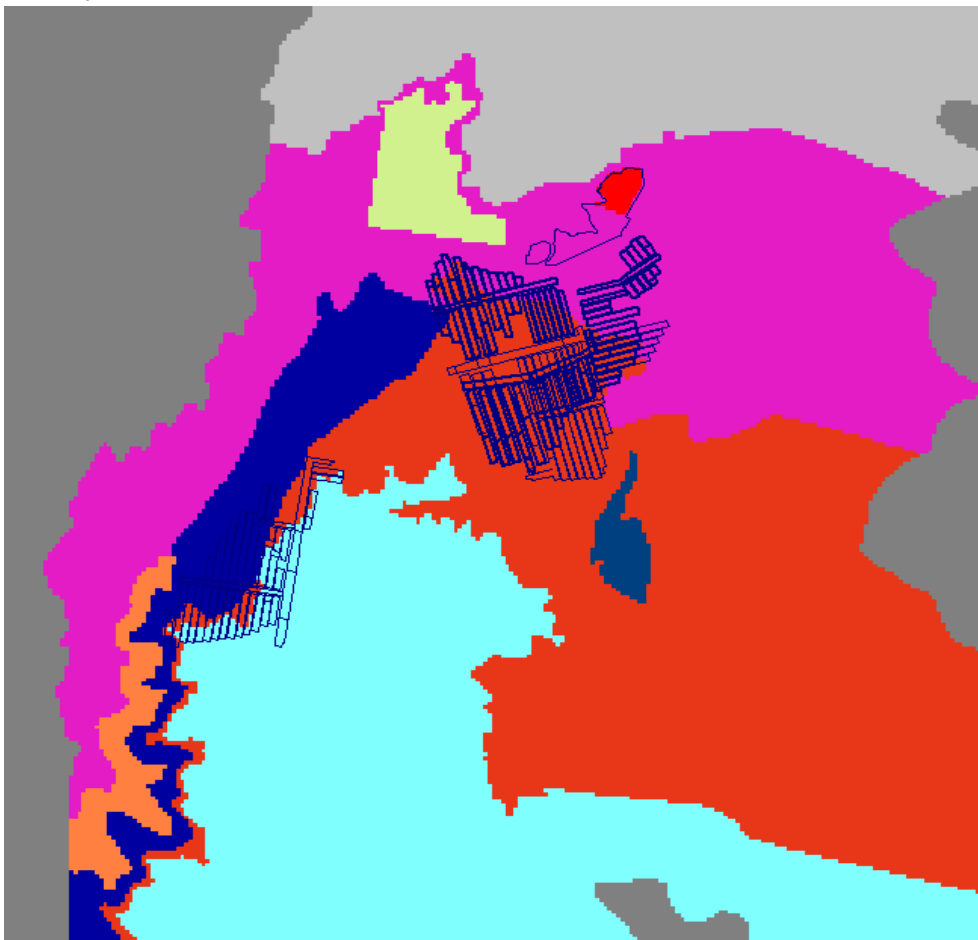
Model Layer 6



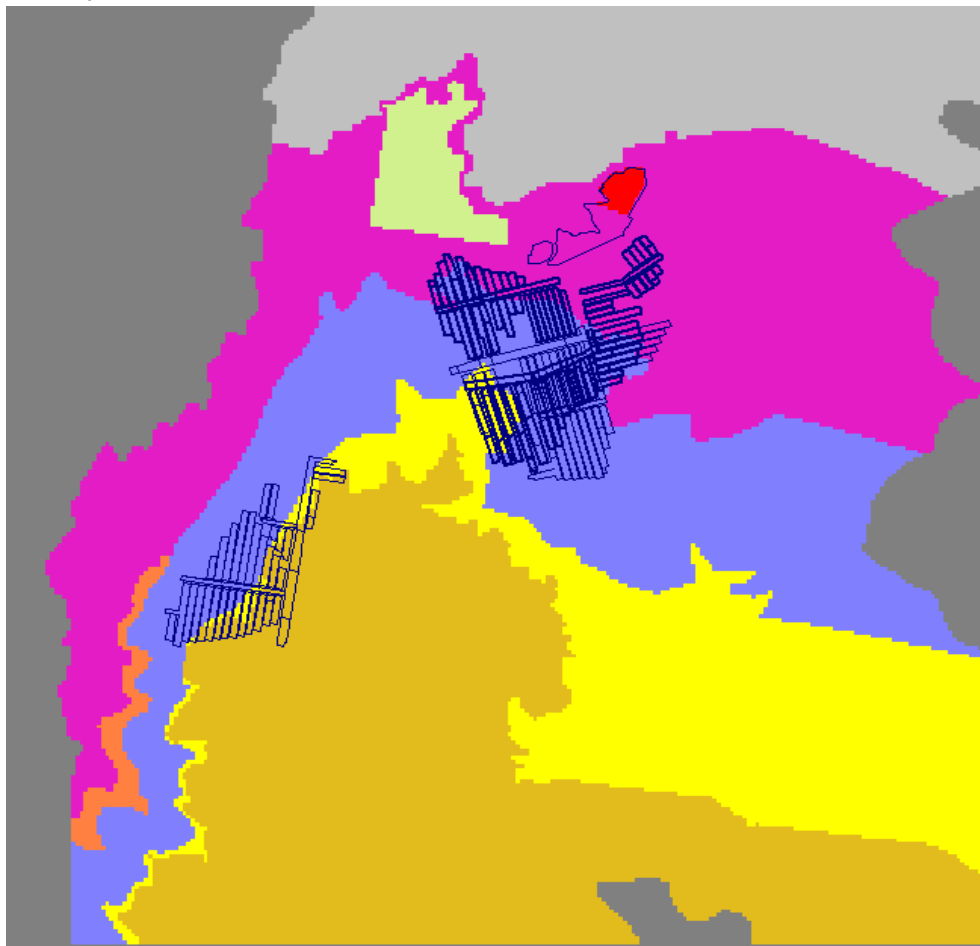
Model Layer 7



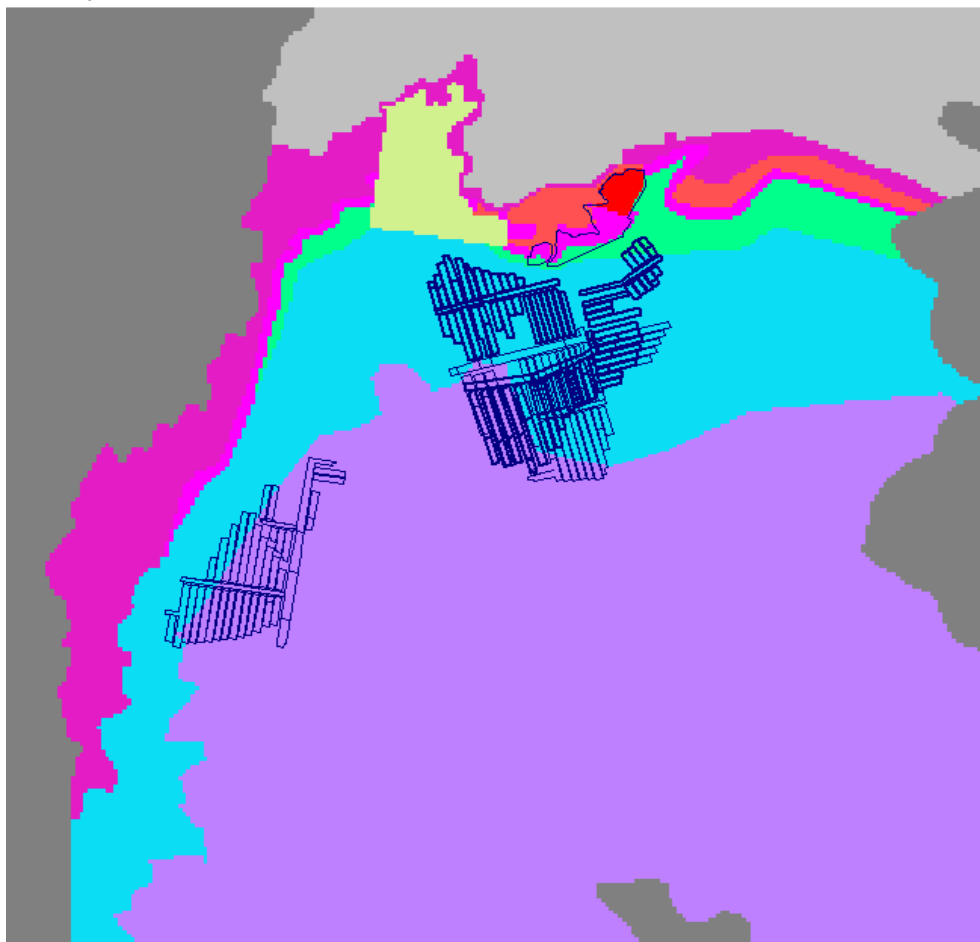
Model Layer 8



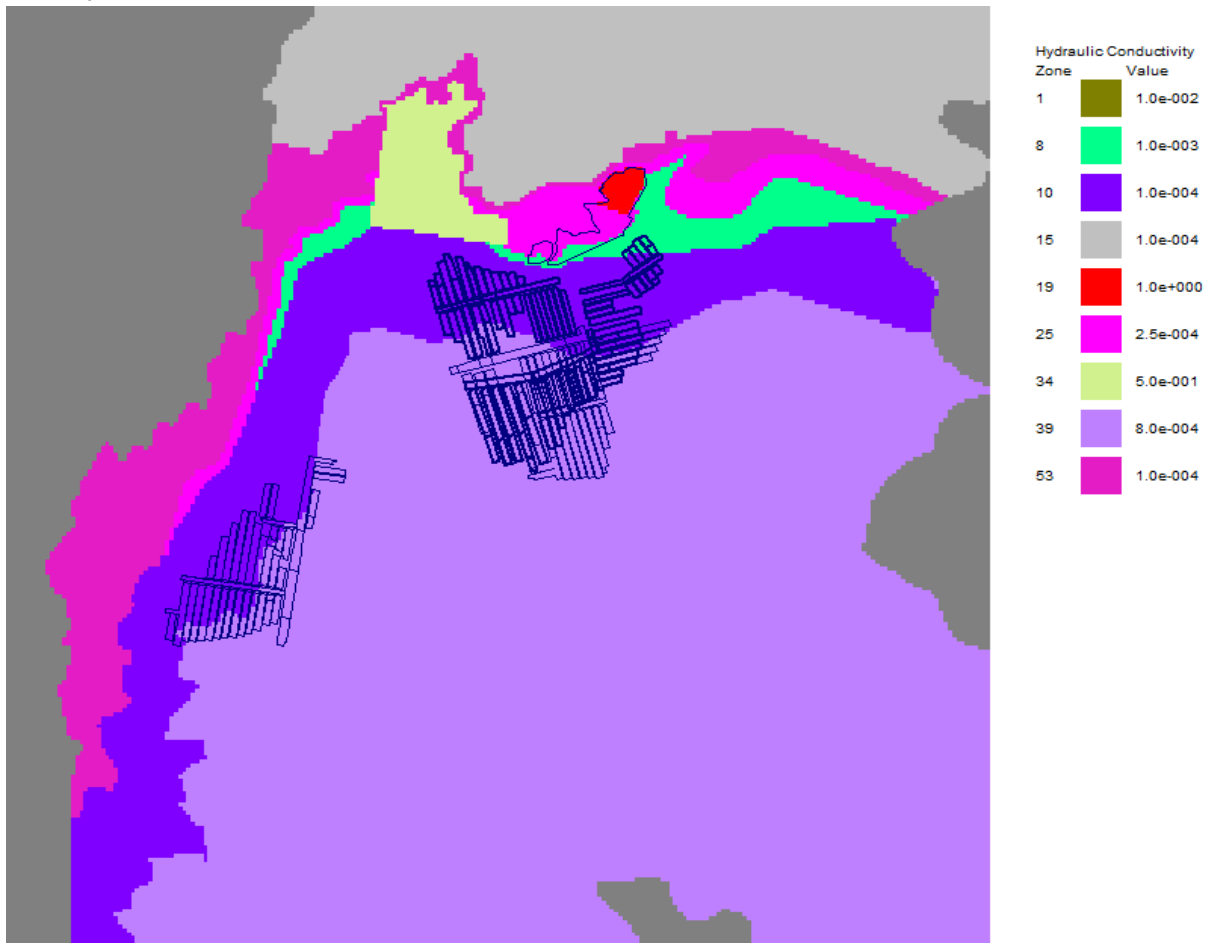
Model Layer 9



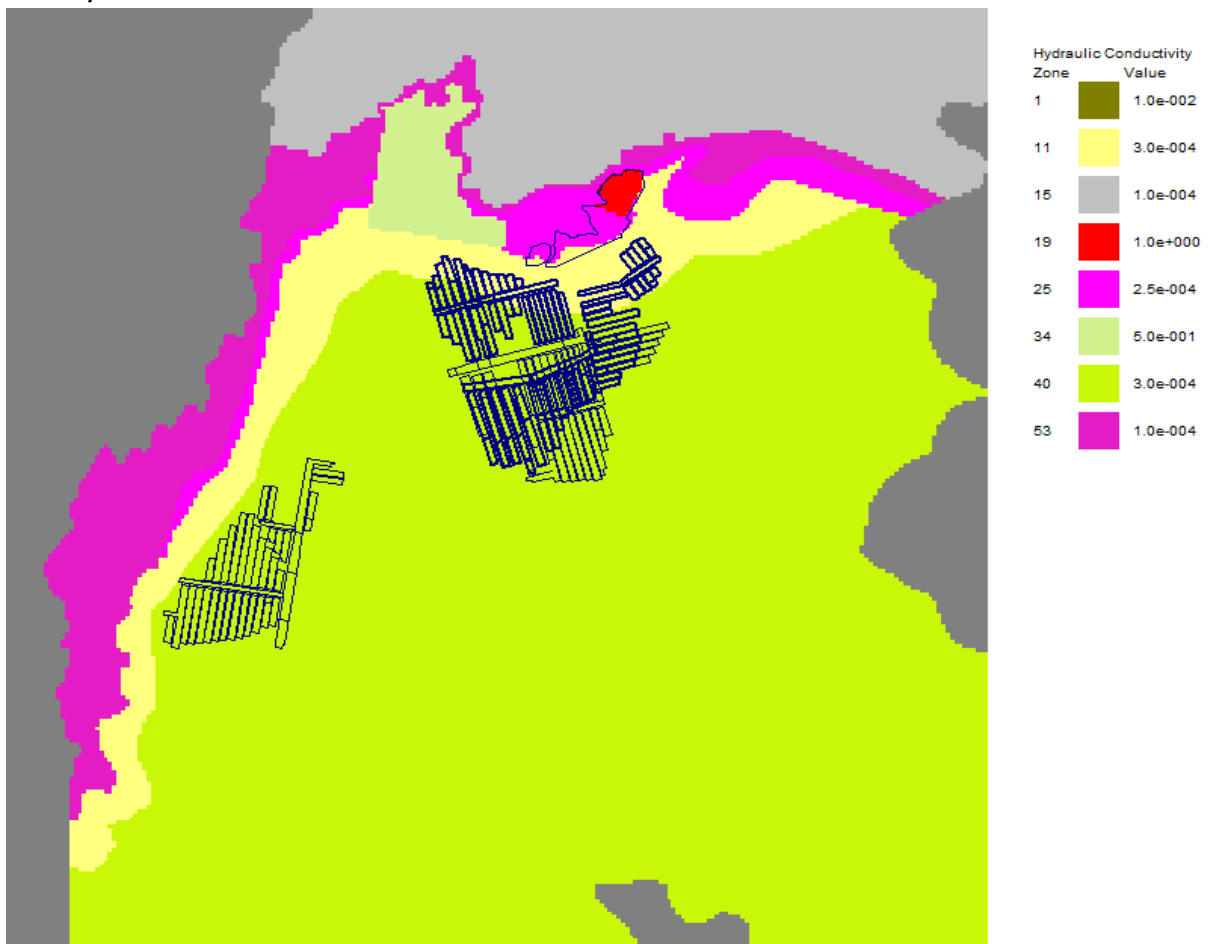
Model Layer 10



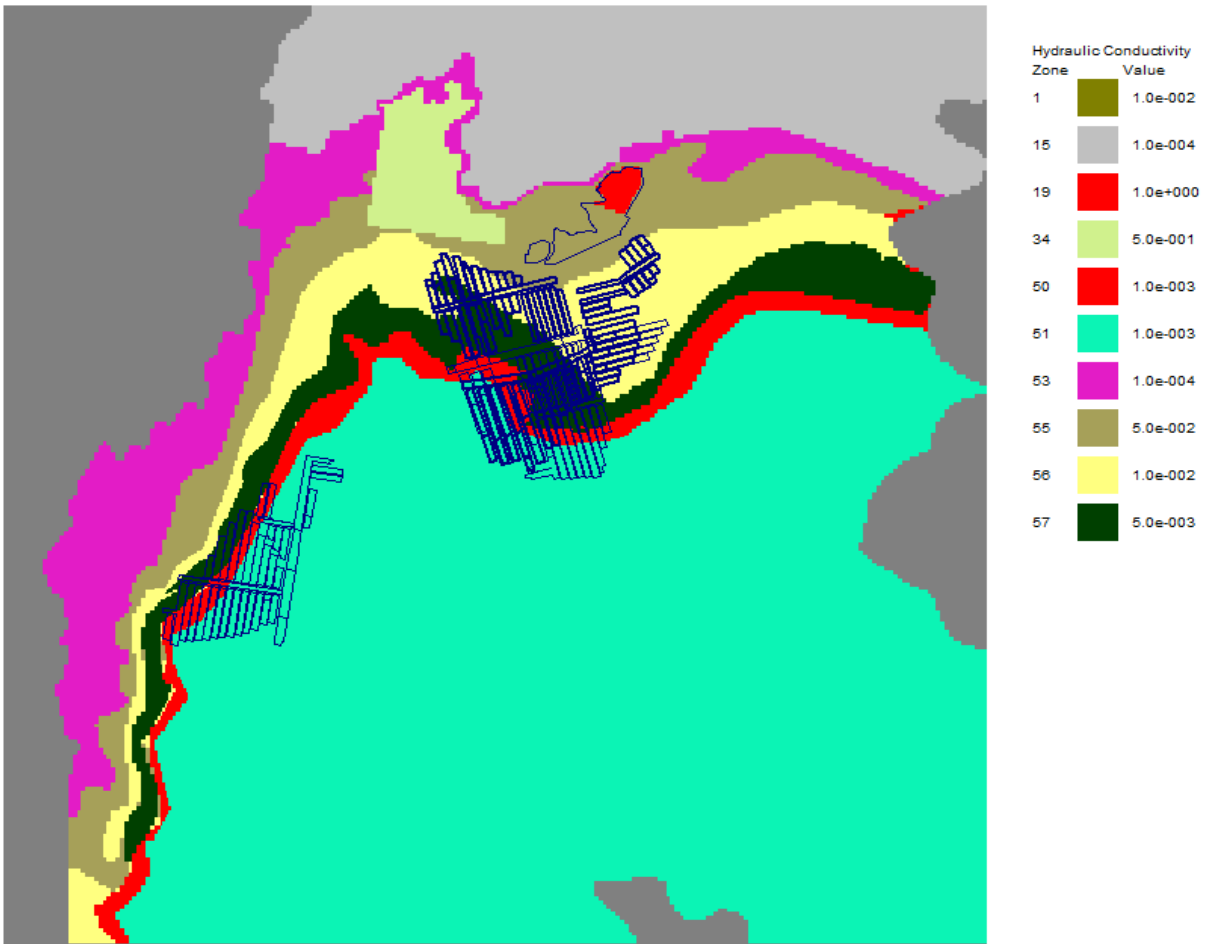
Model Layer 11



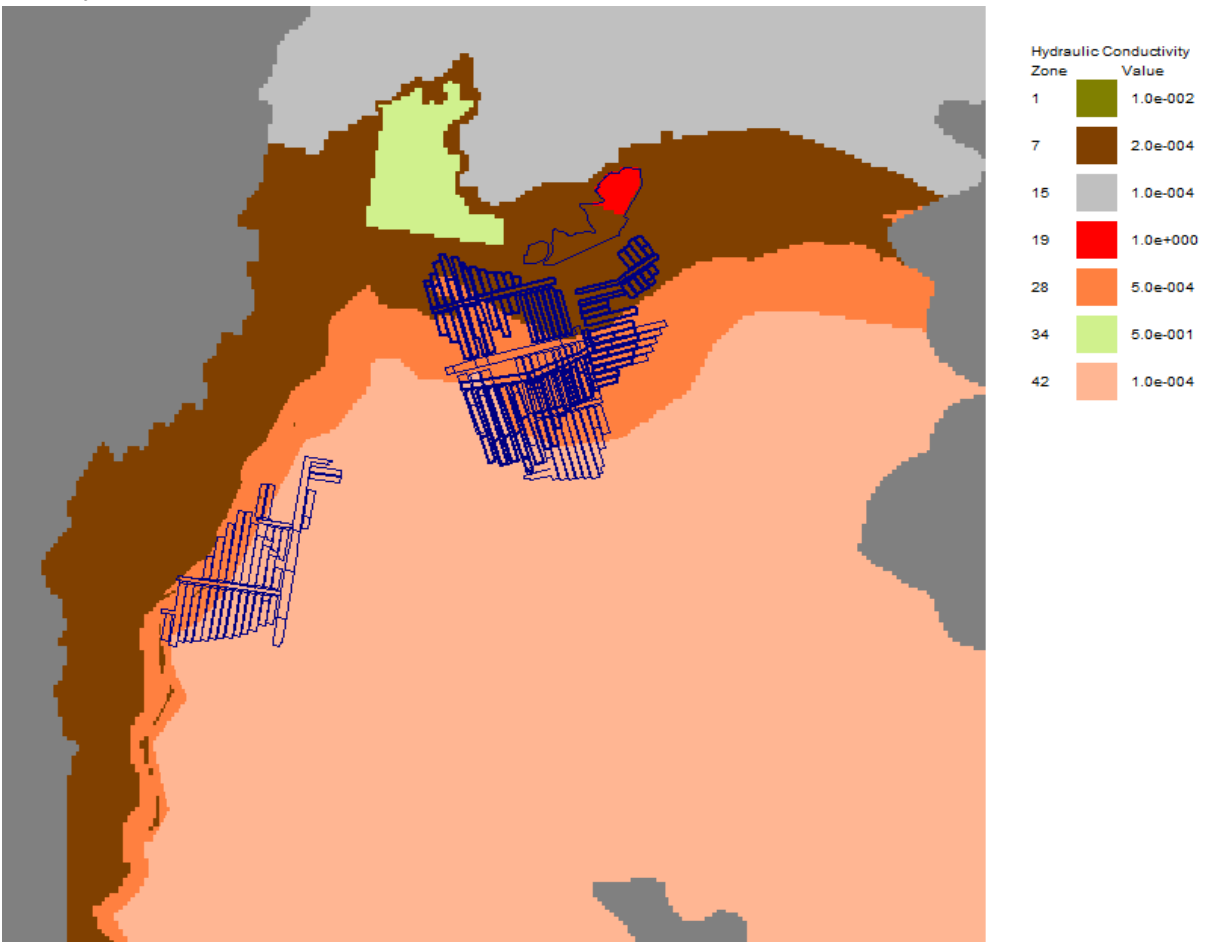
Model Layer 12



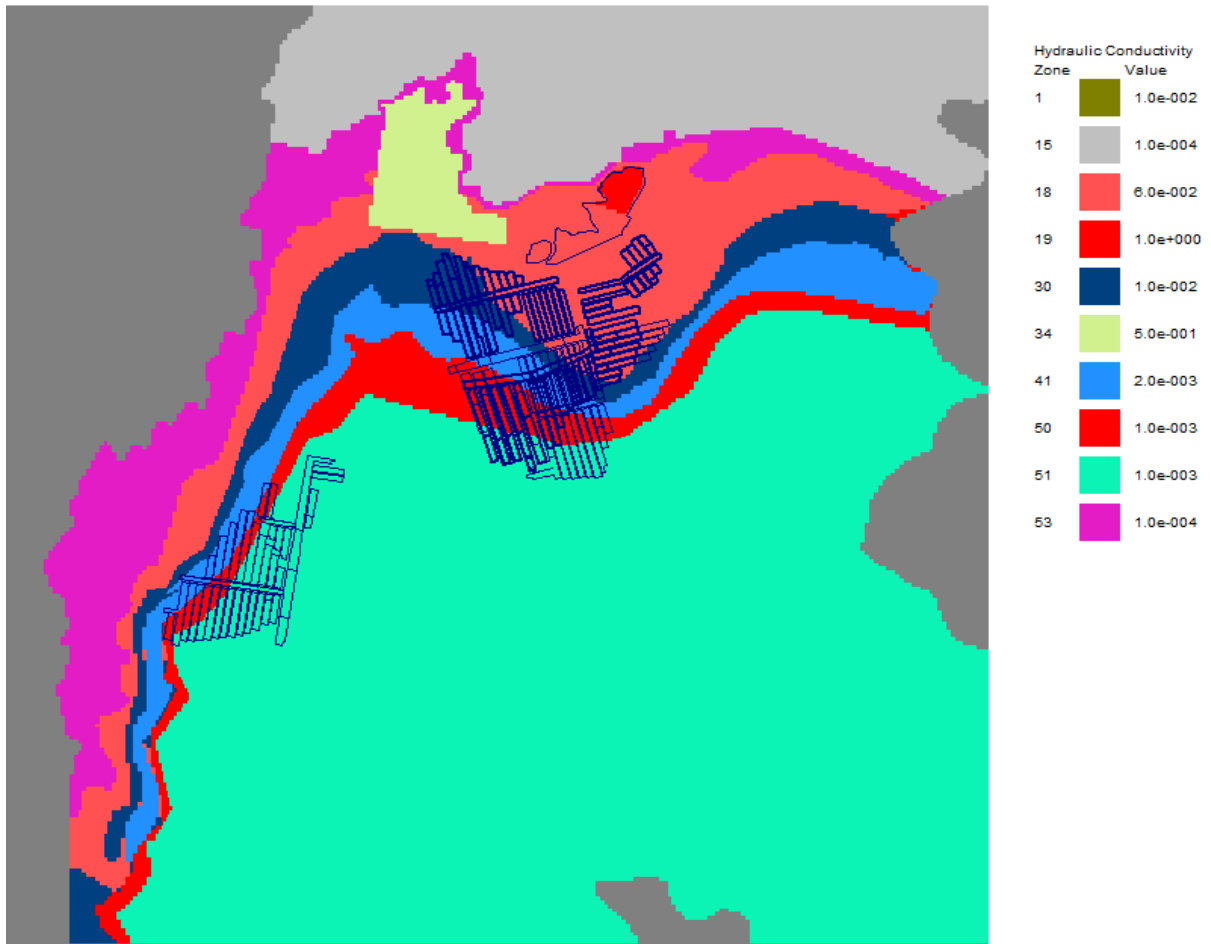
Model Layer 13



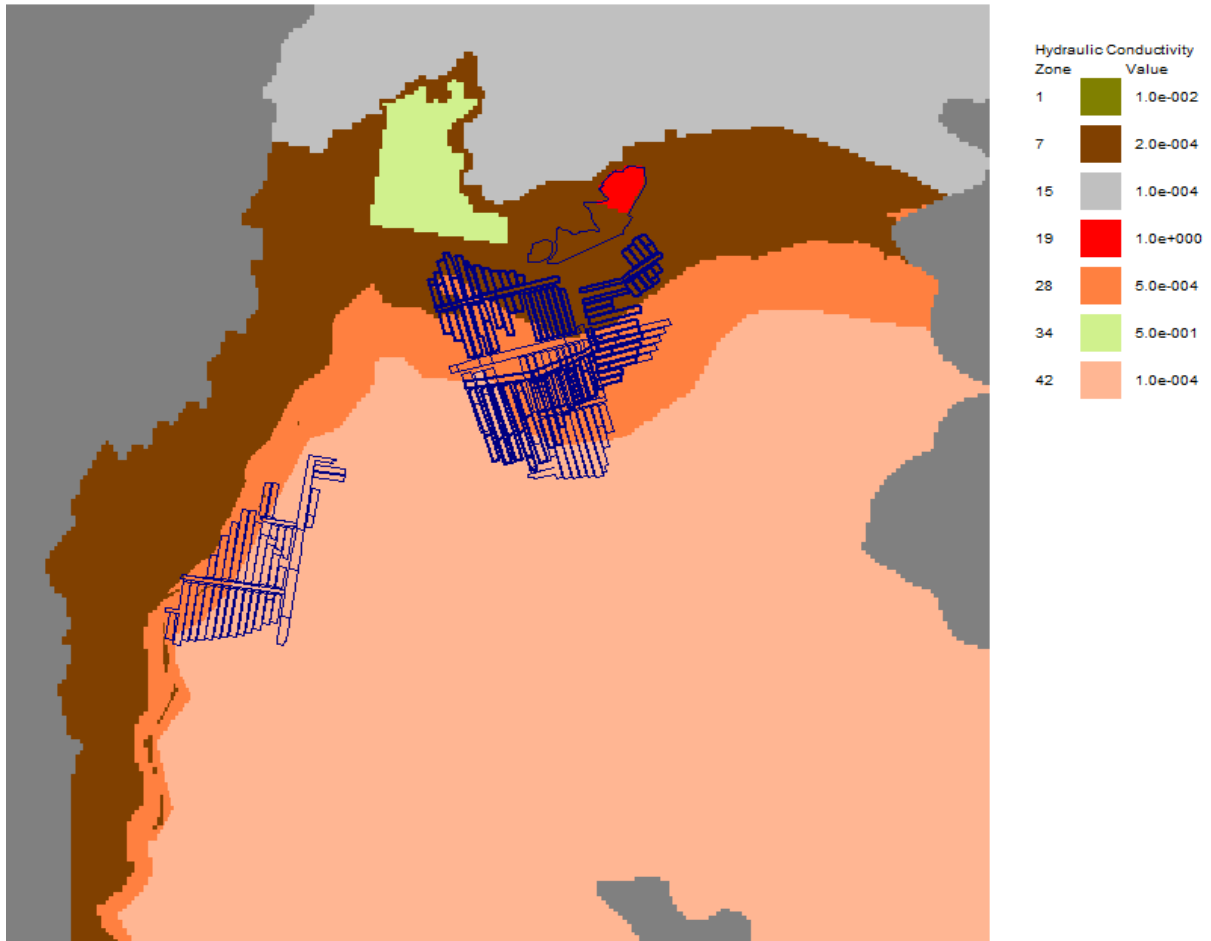
Model Layer 14



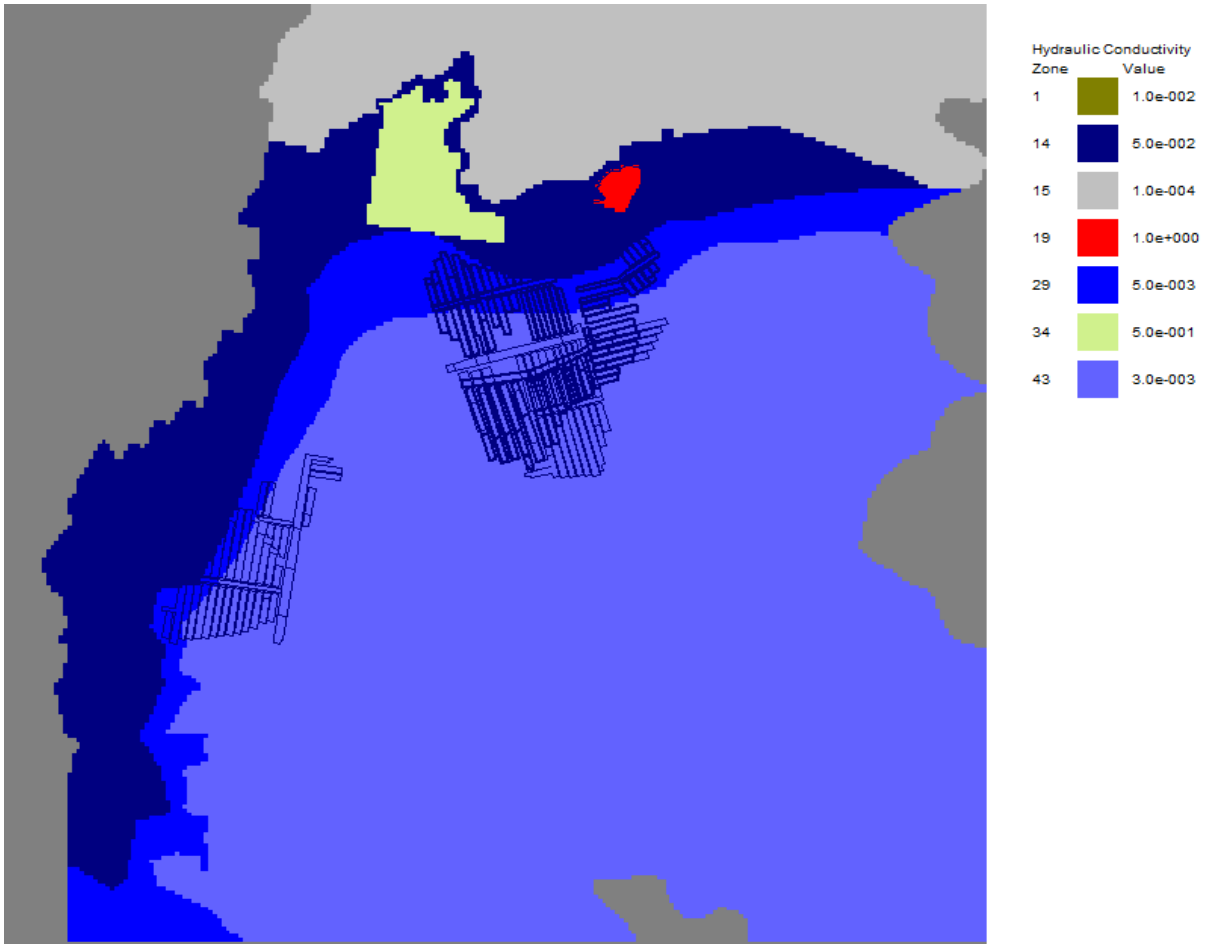
Model Layer 15



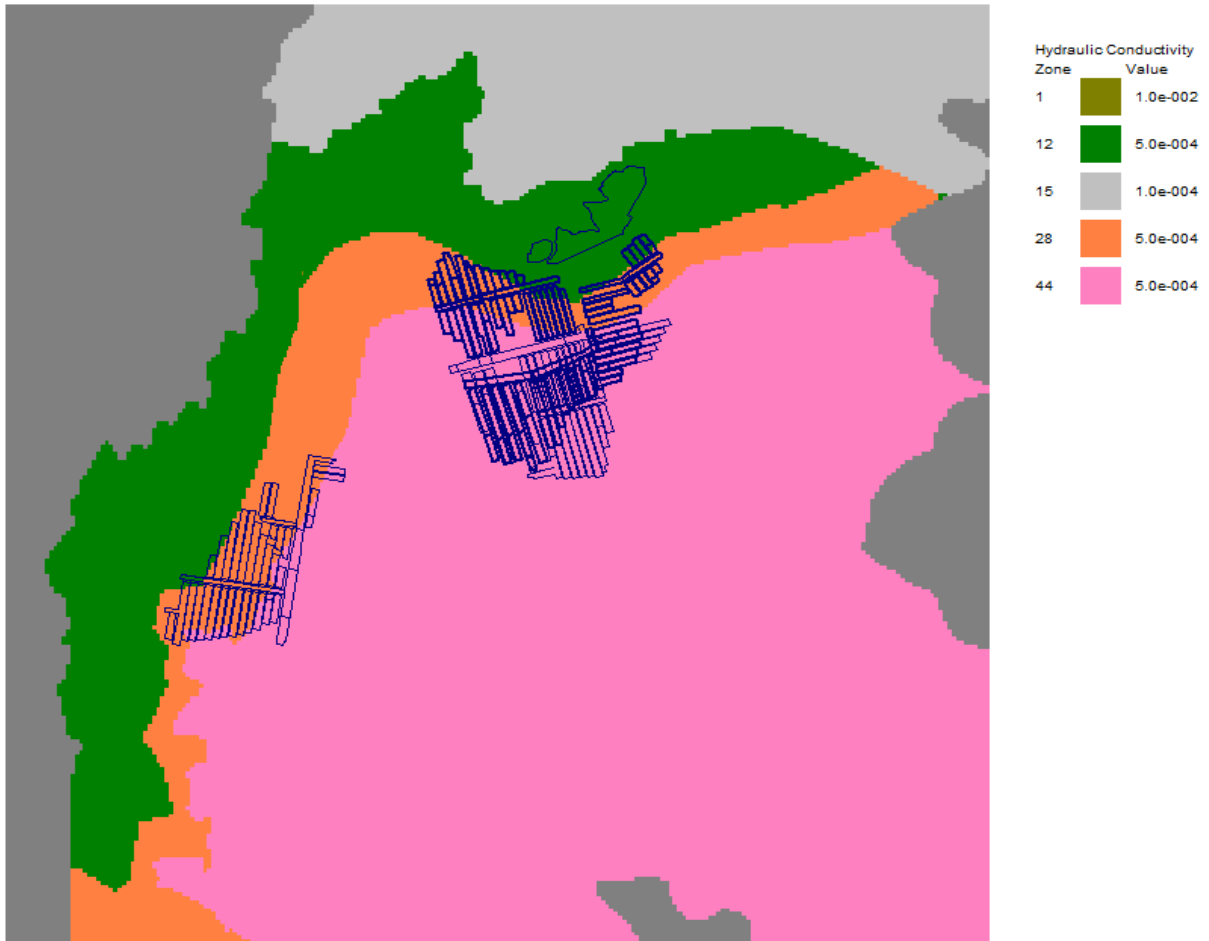
Model Layer 16



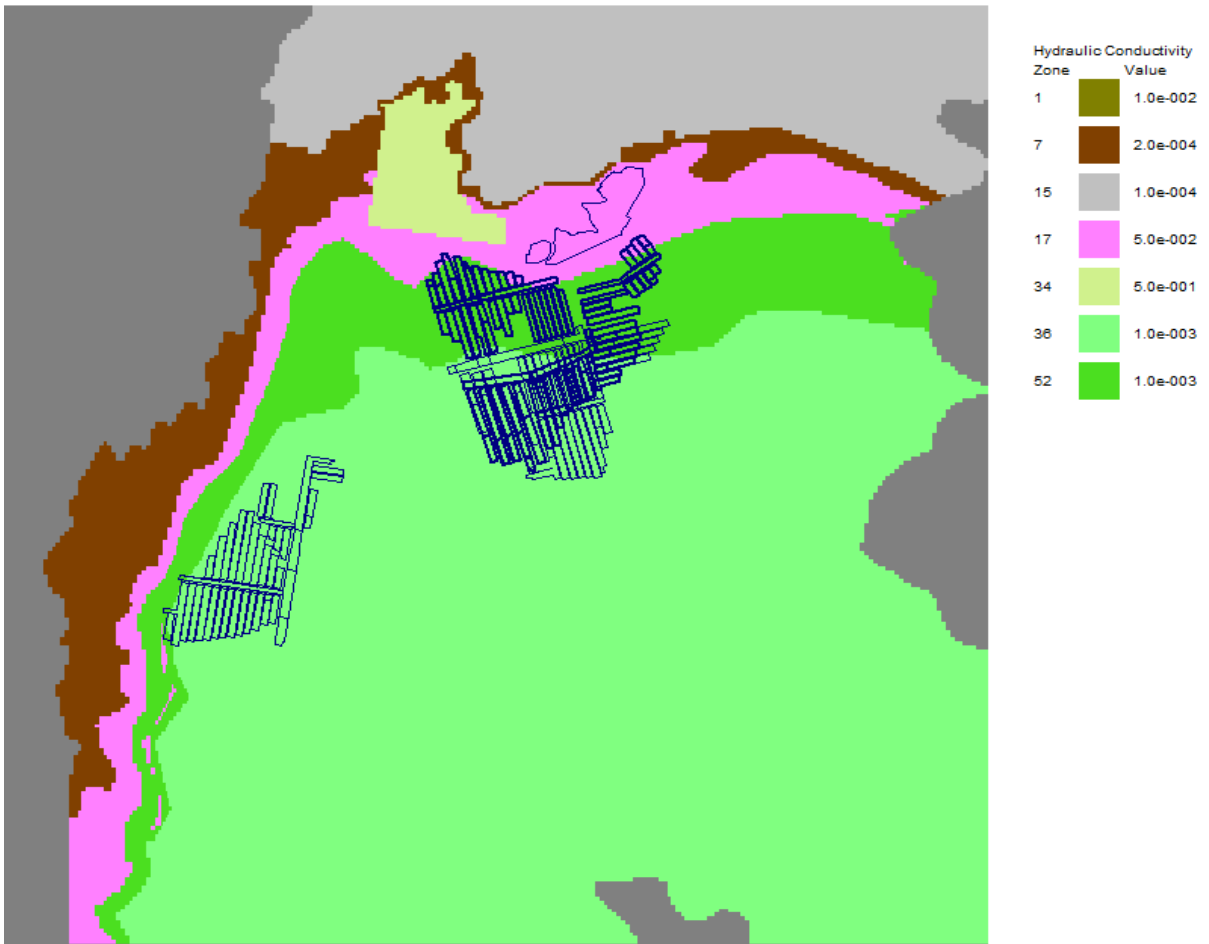
Model Layer 17



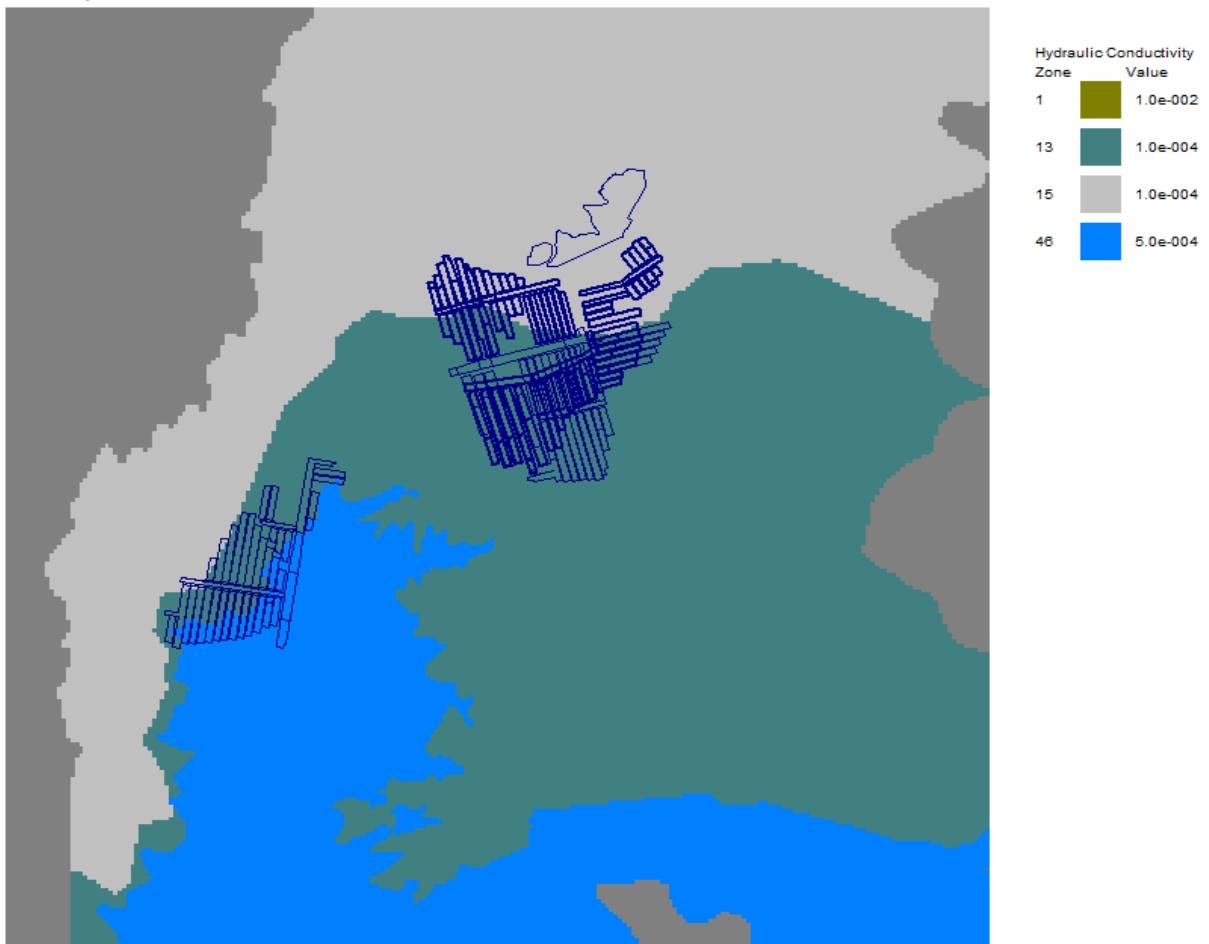
Model Layer 18



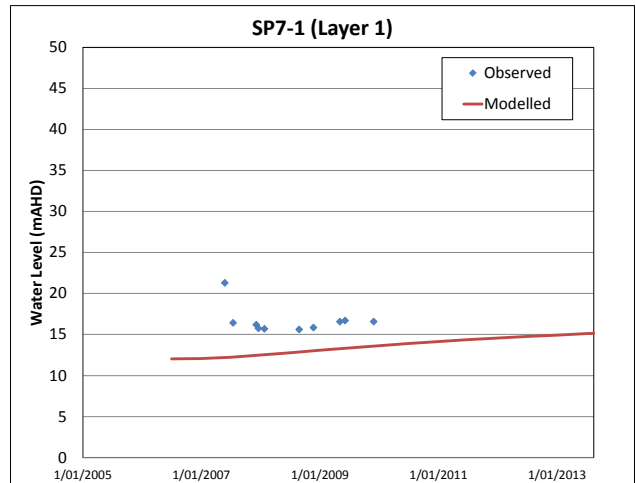
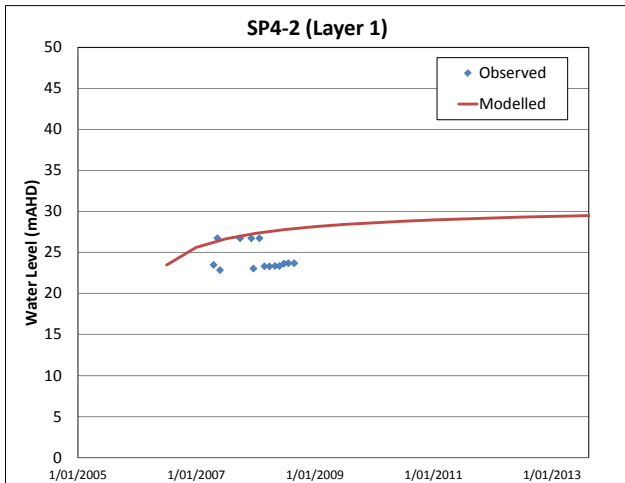
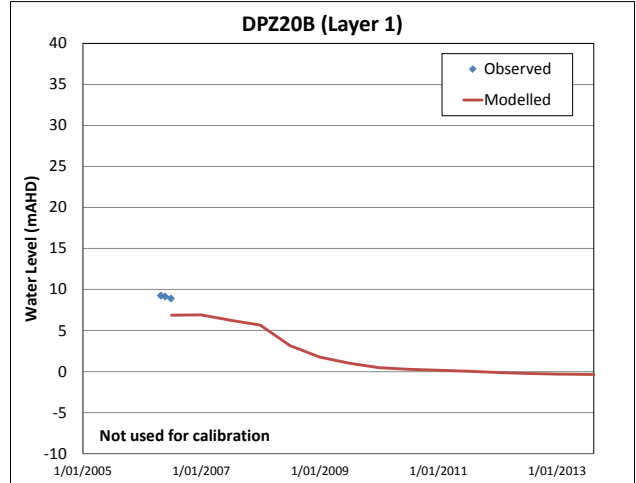
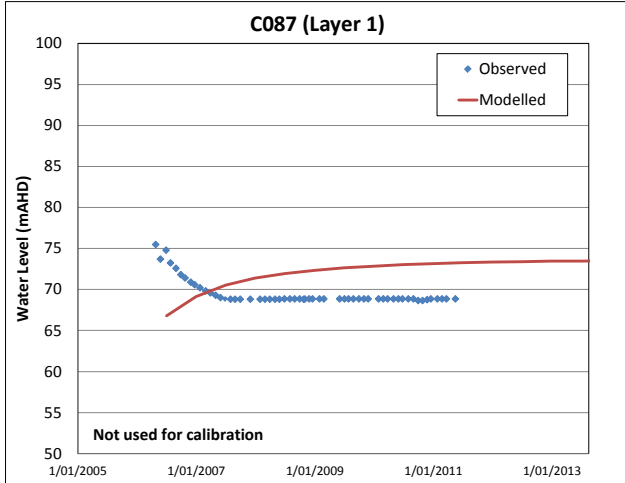
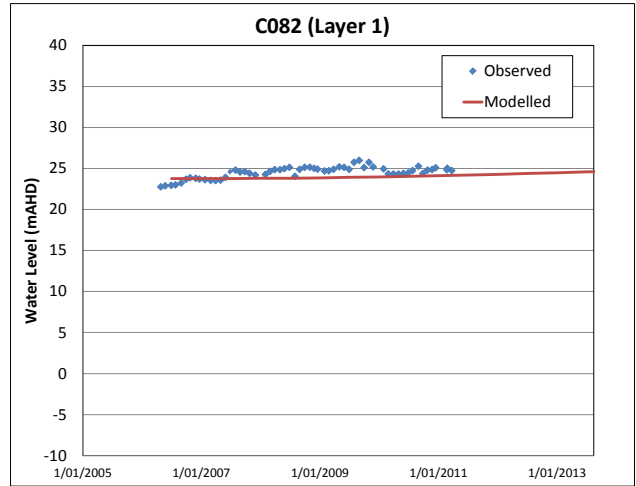
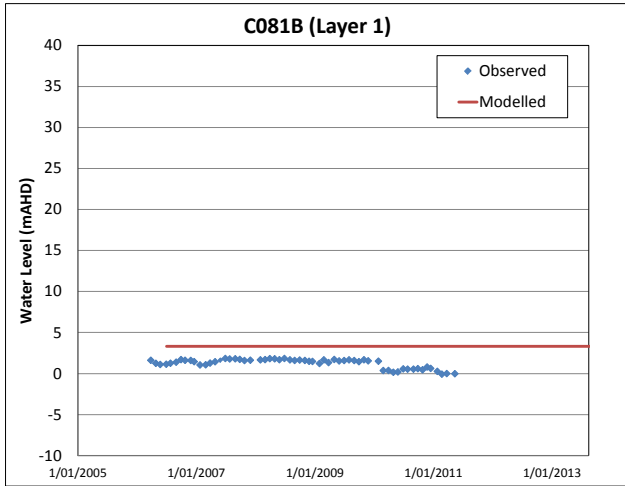
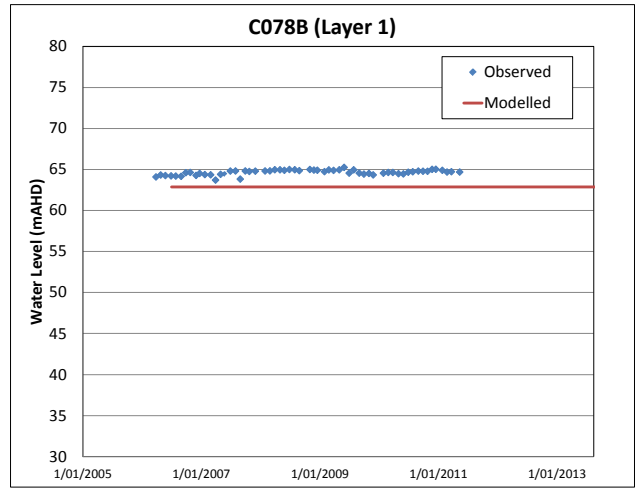
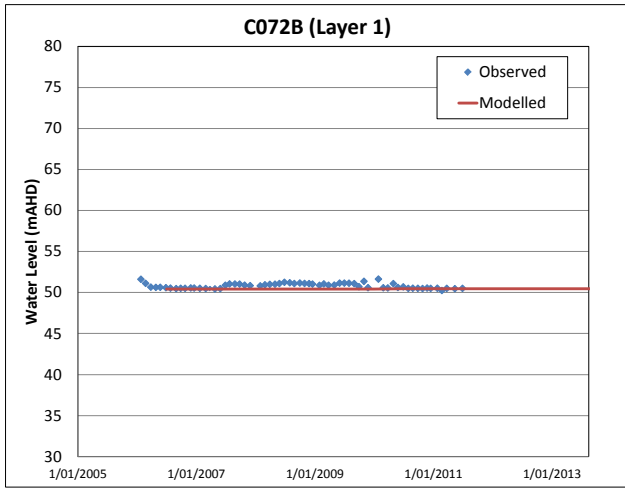
Model Layer 19

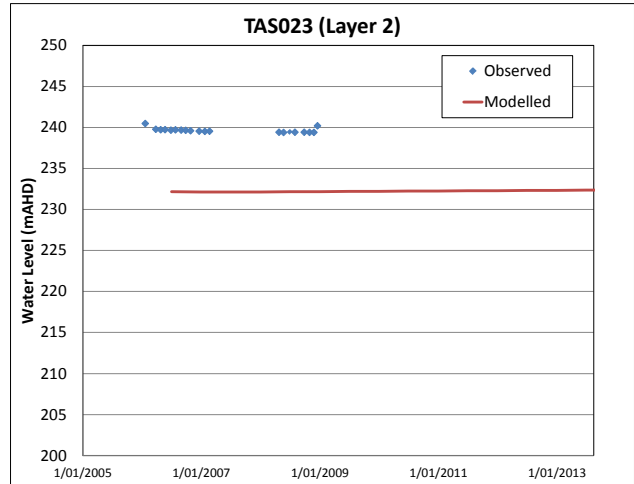
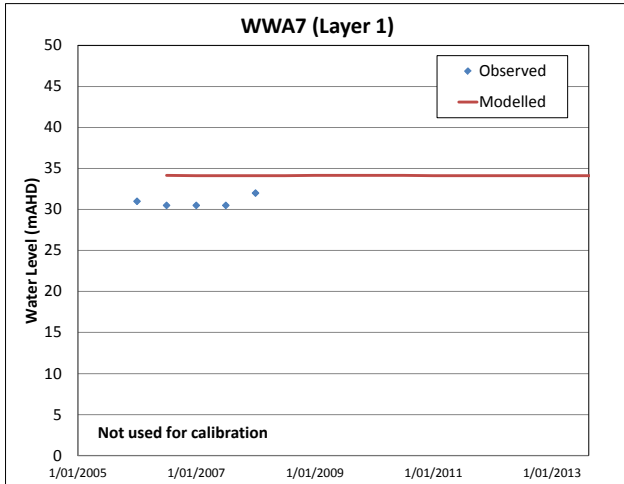
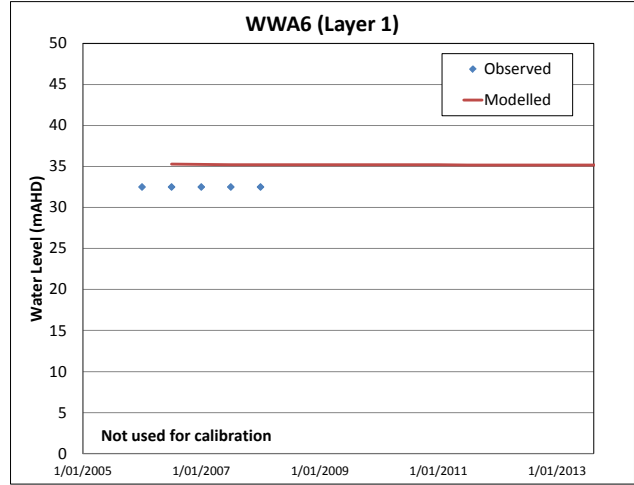
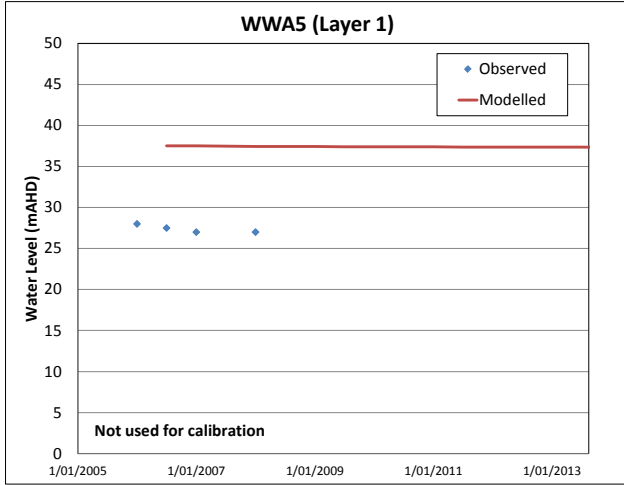
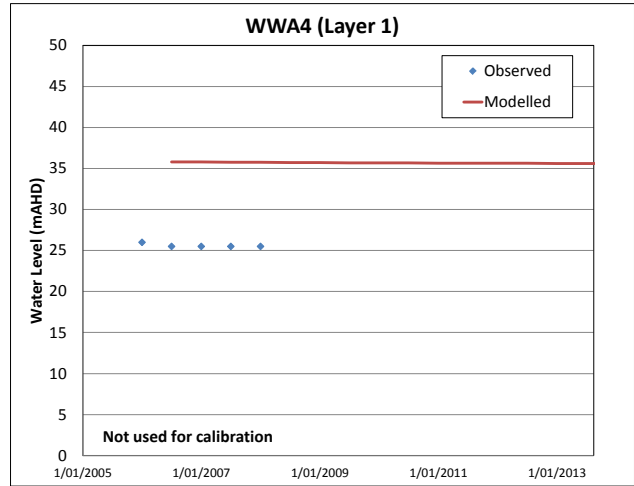
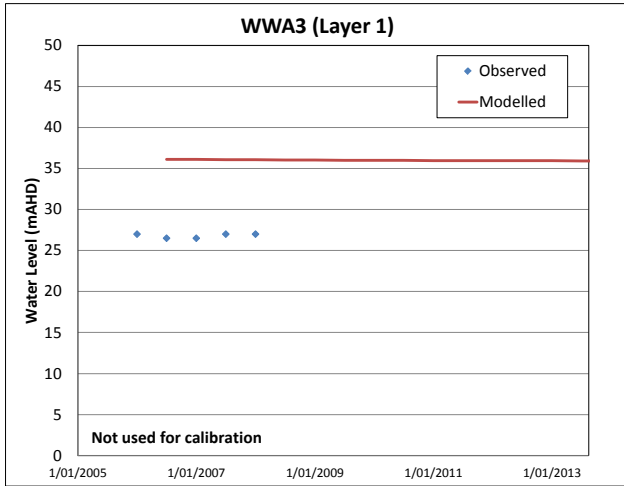
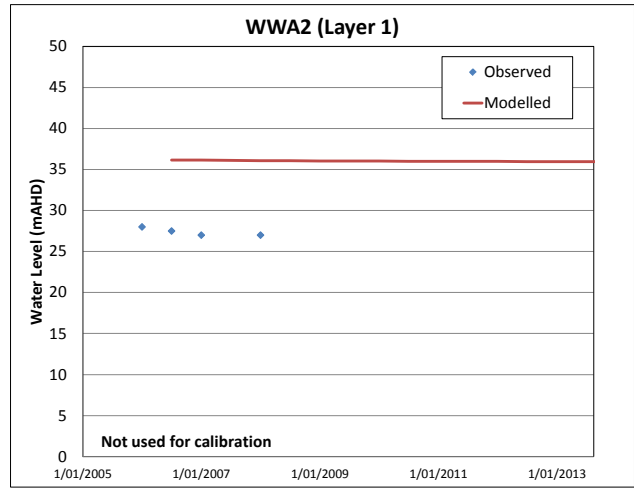
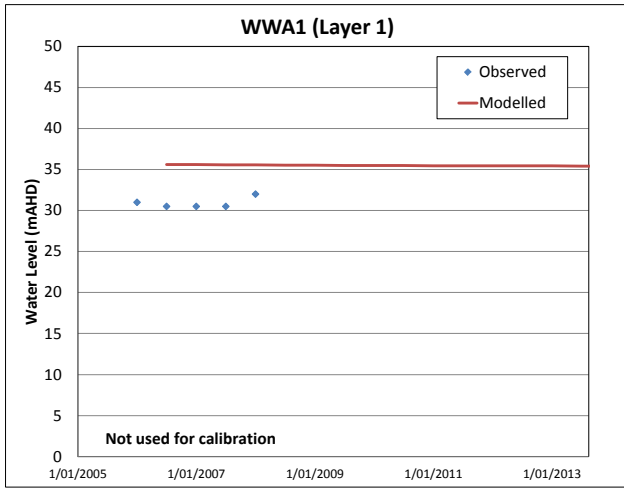


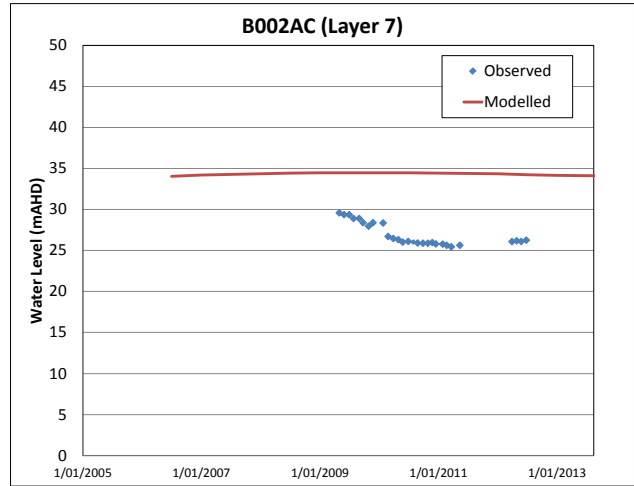
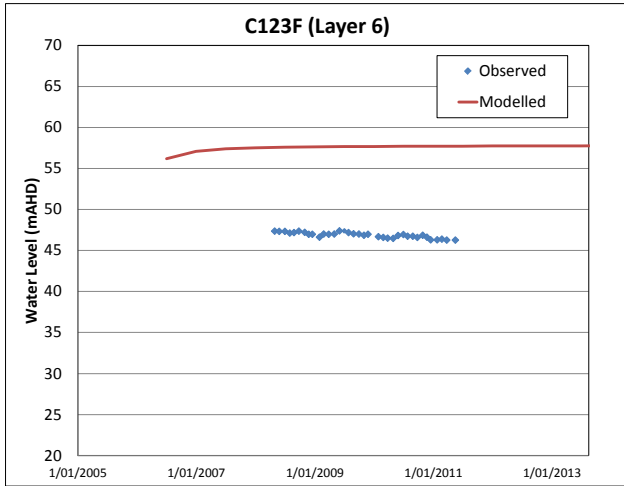
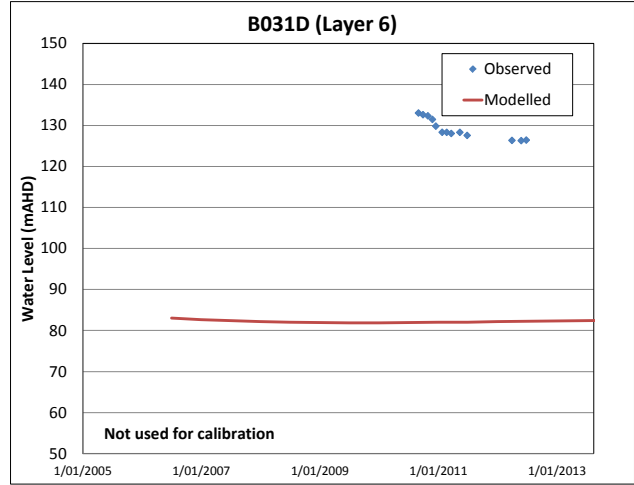
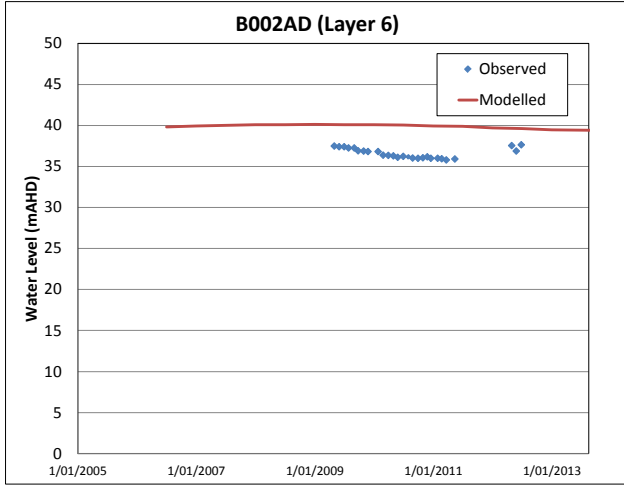
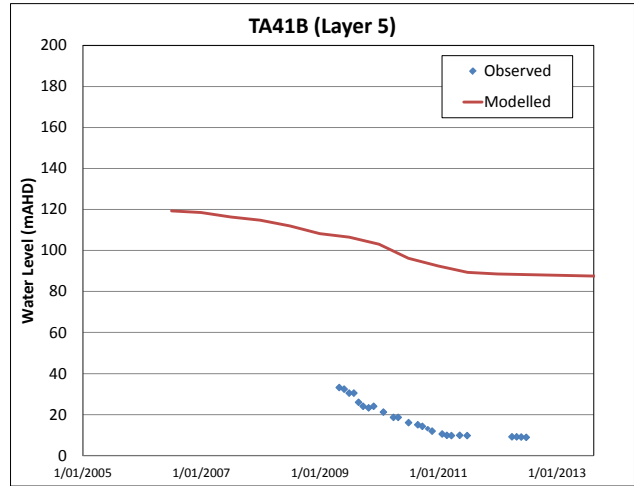
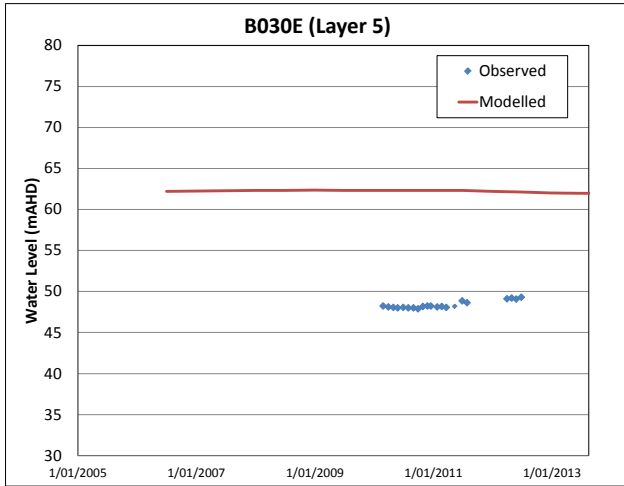
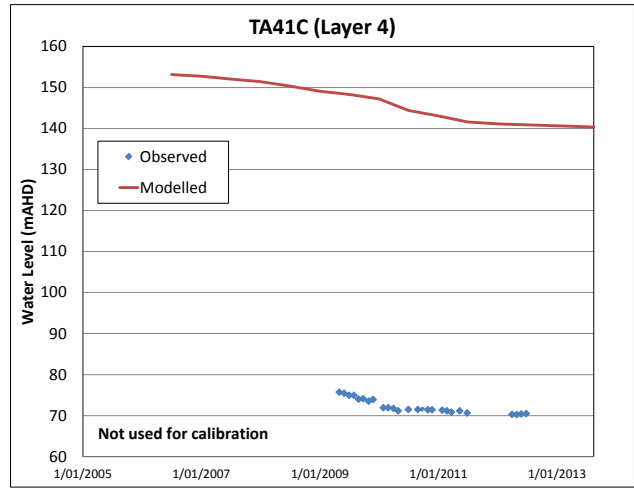
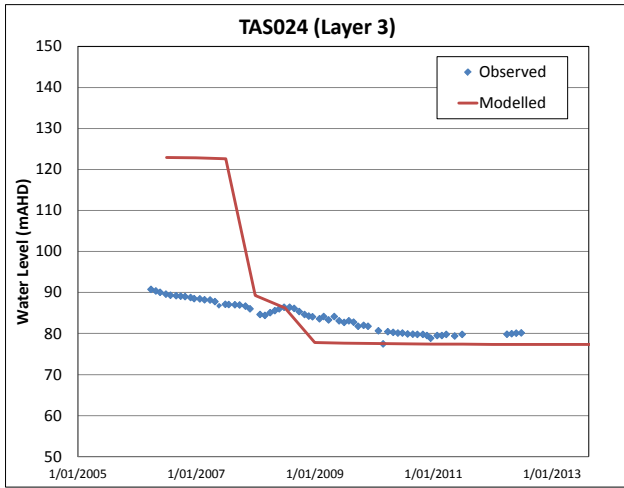
Model Layer 20

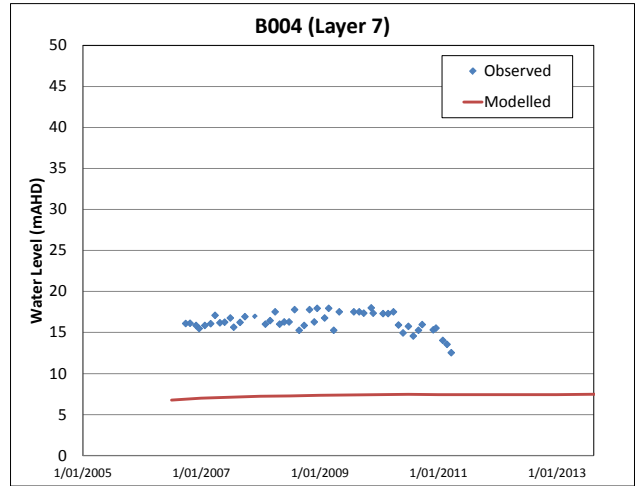
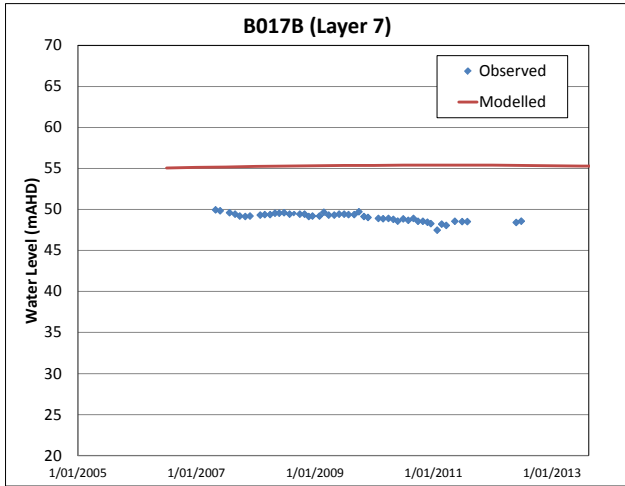
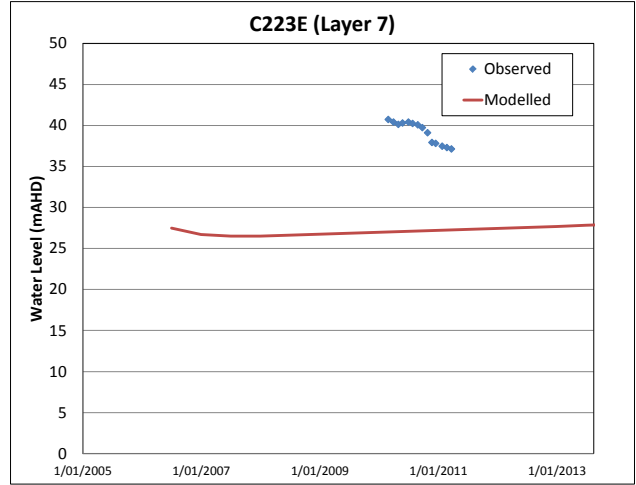
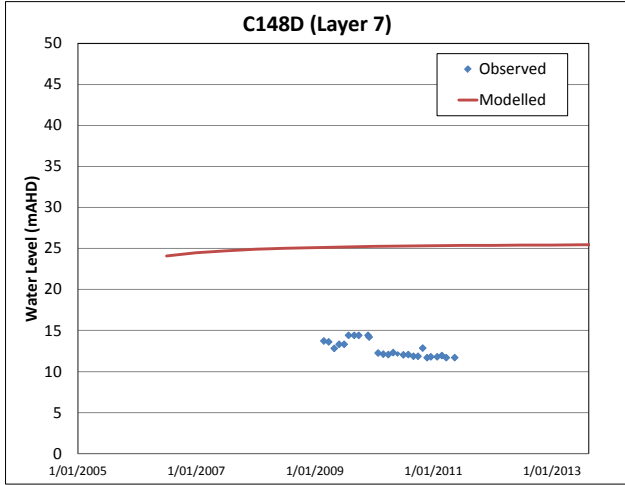
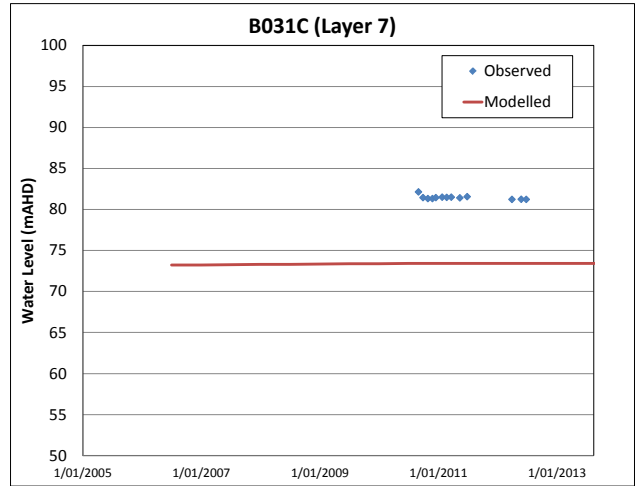
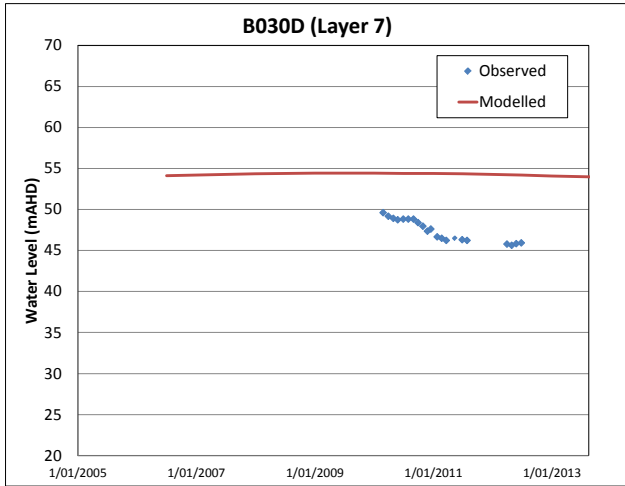
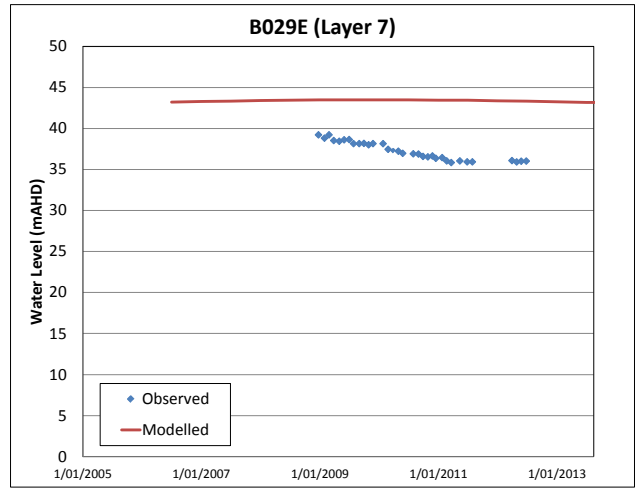
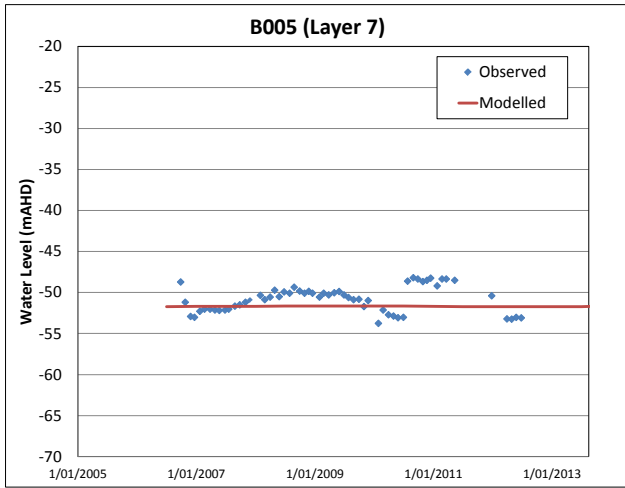


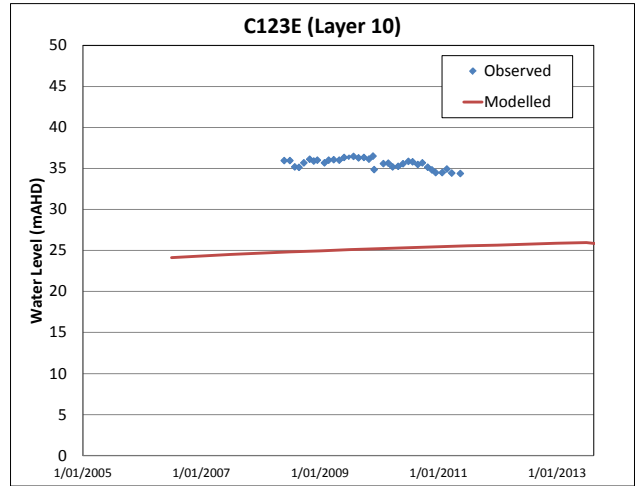
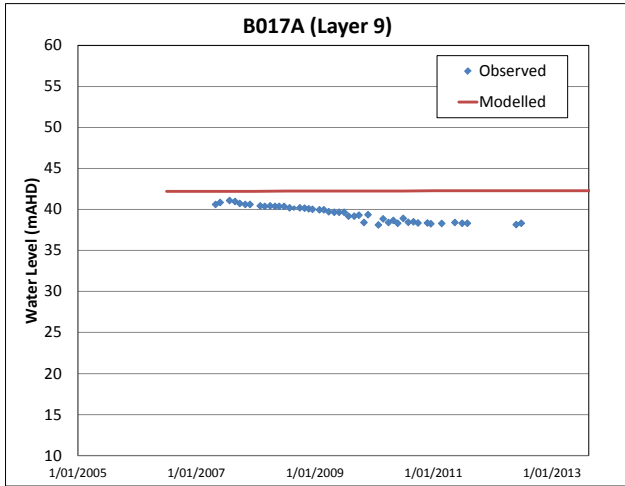
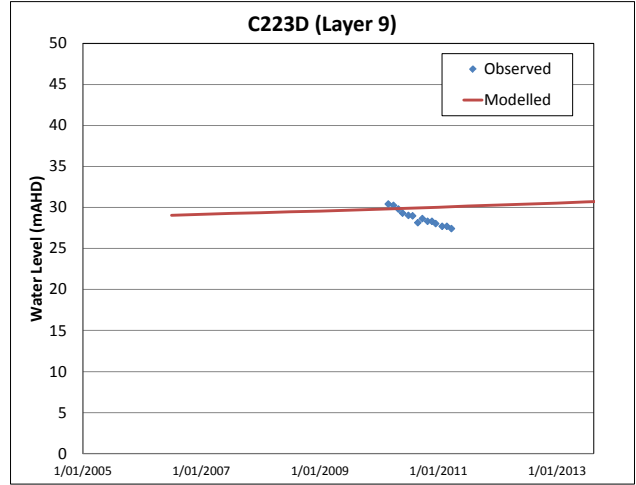
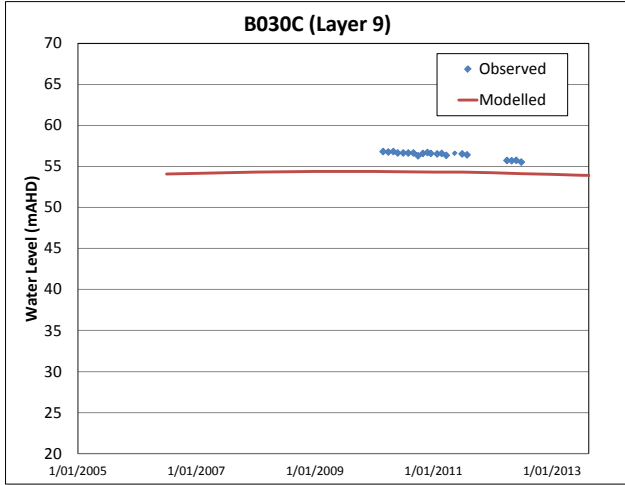
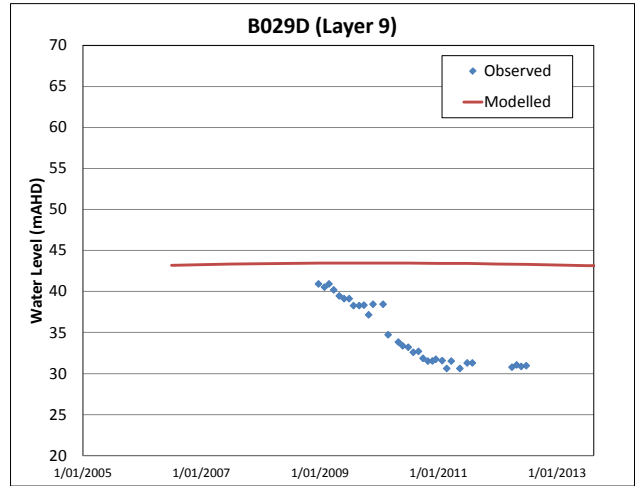
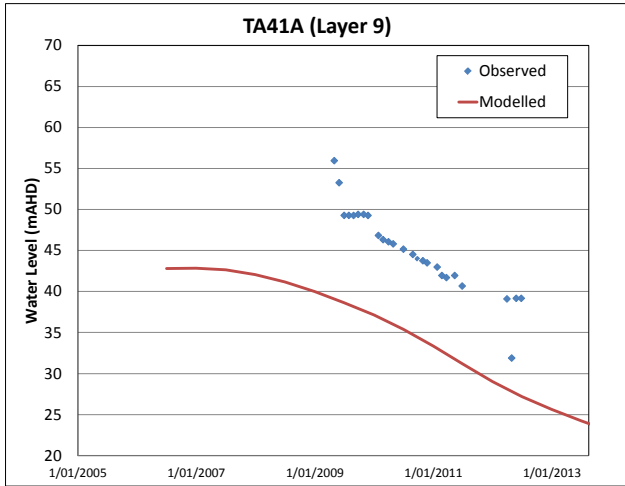
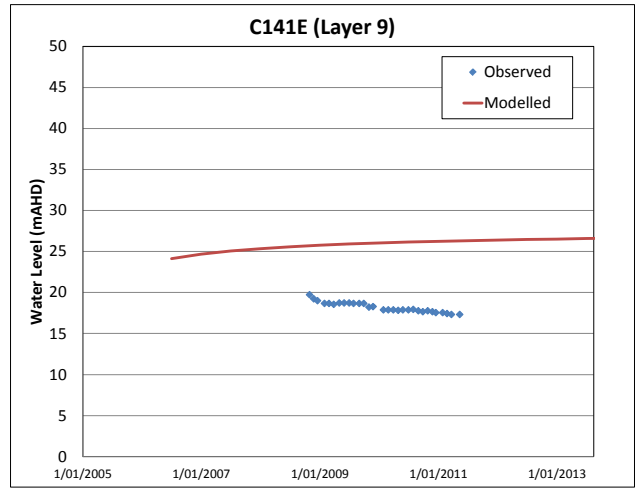
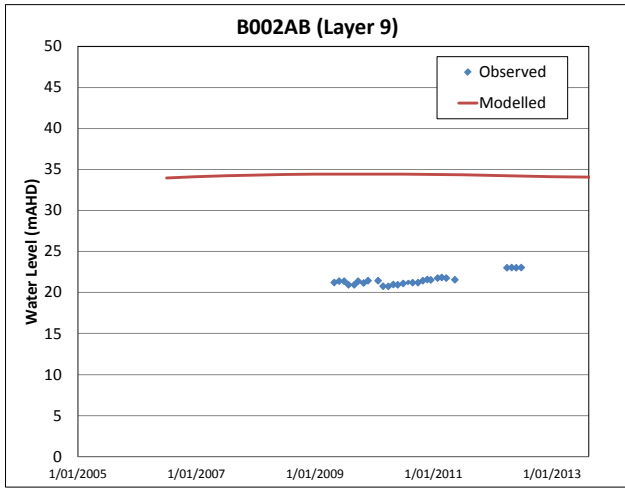
**APPENDIX G:
TRANSIENT CALIBRATION
HYDROGRAPHS**

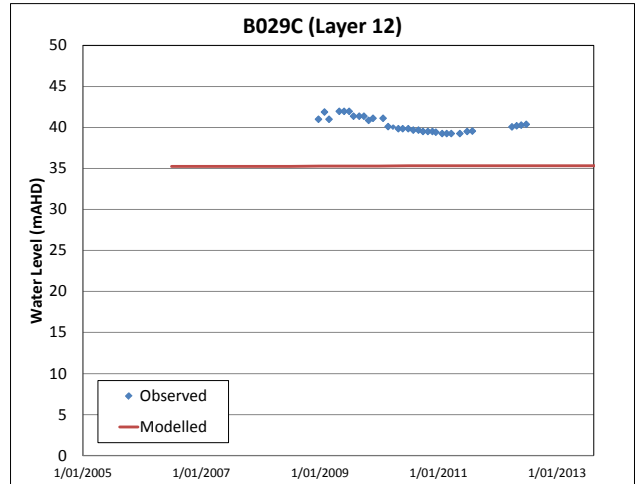
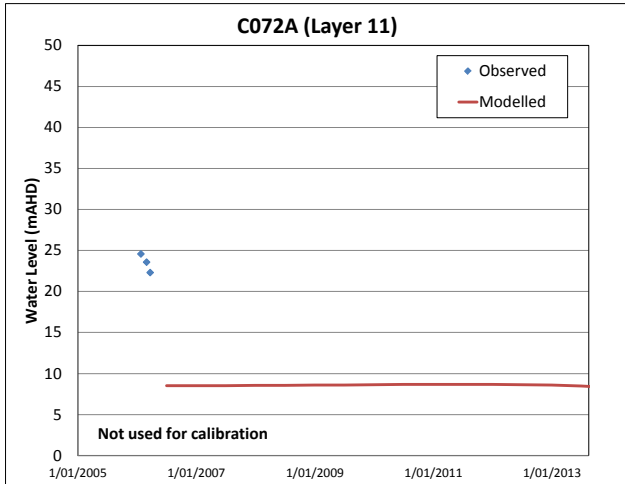
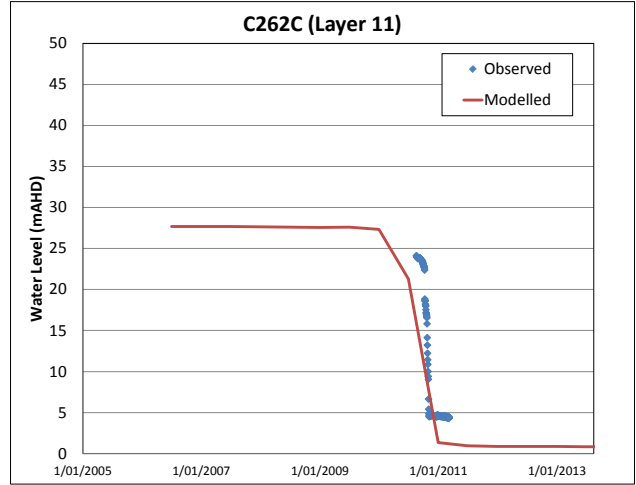
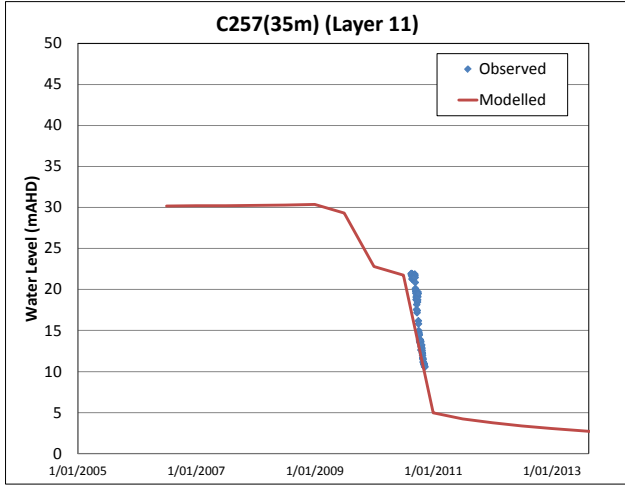
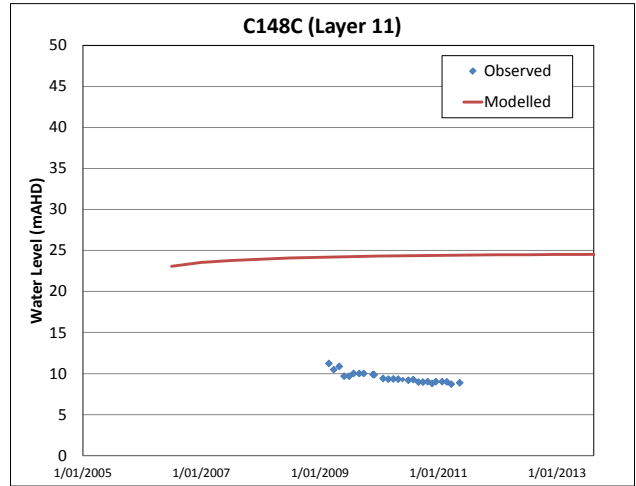
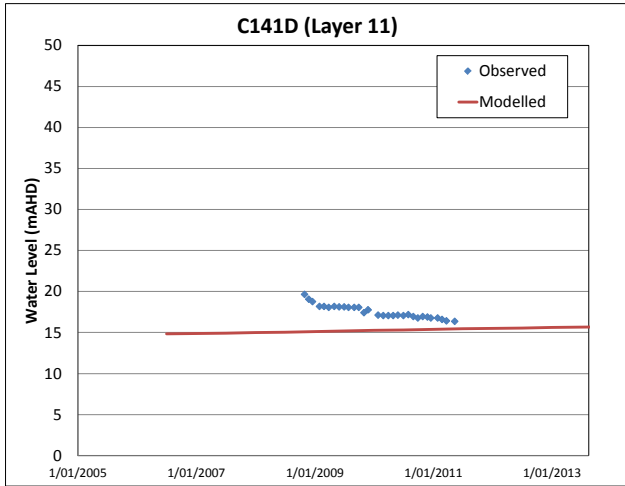
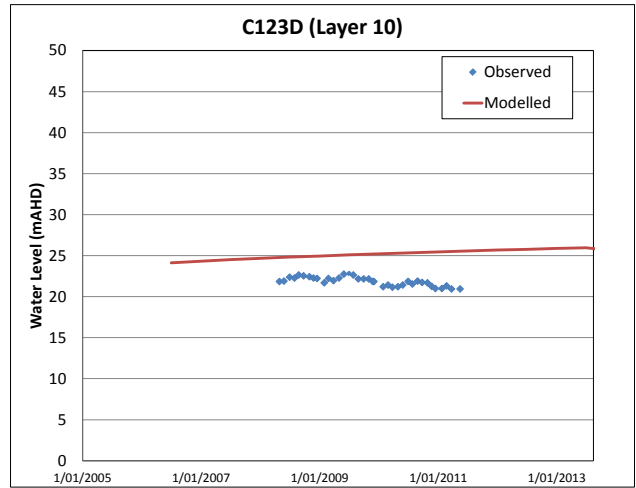
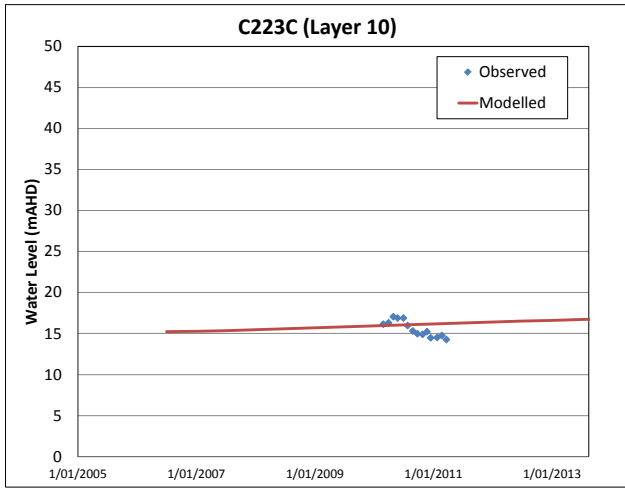


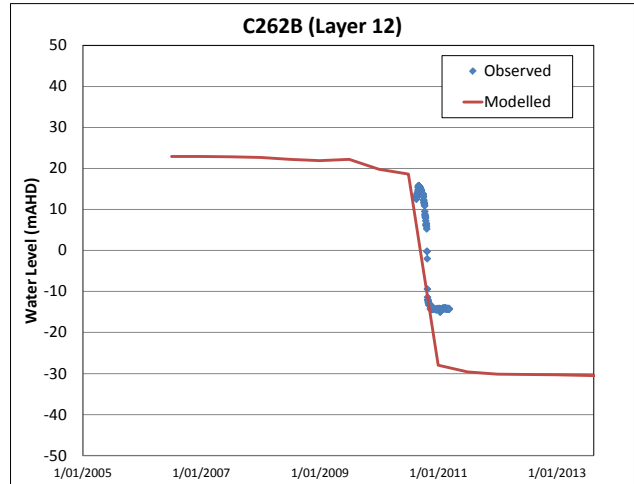
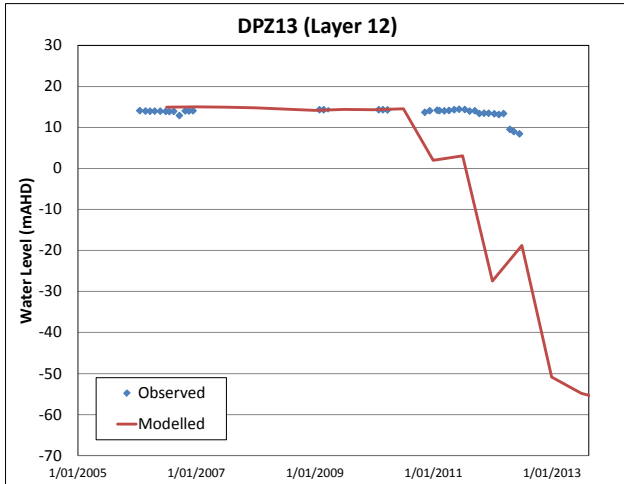
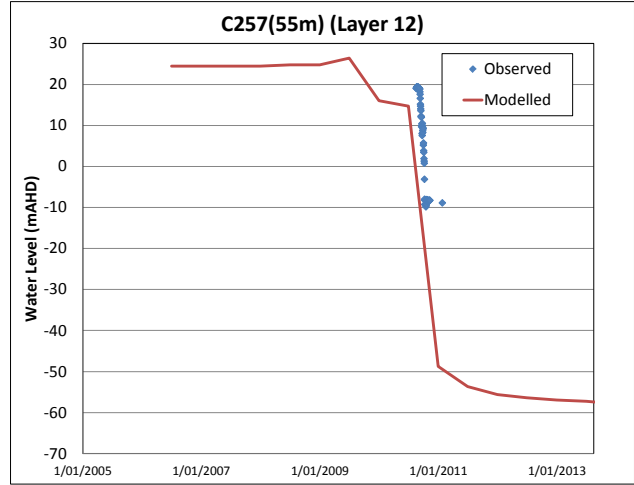
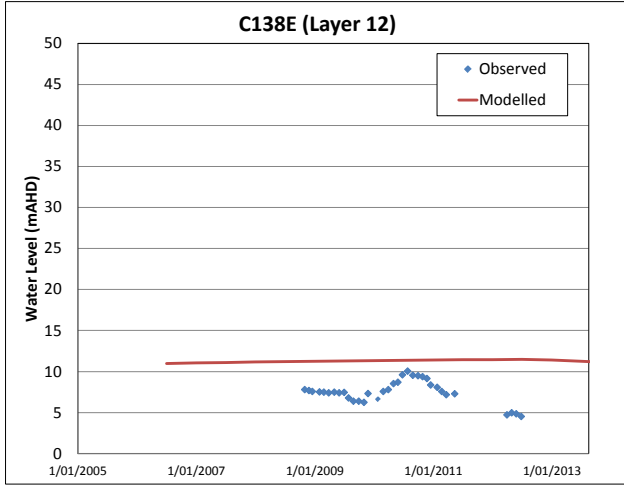
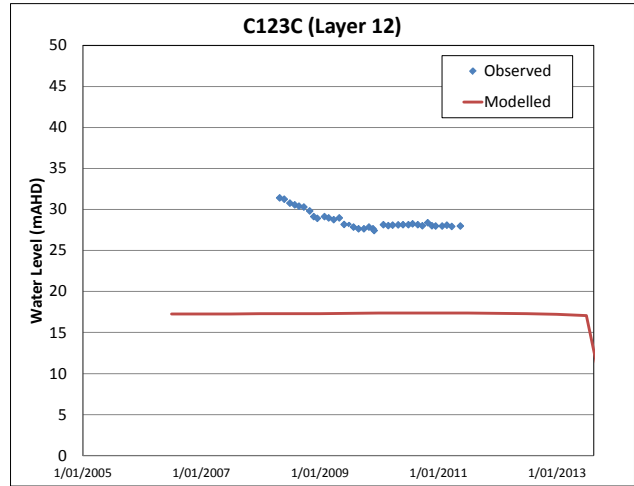
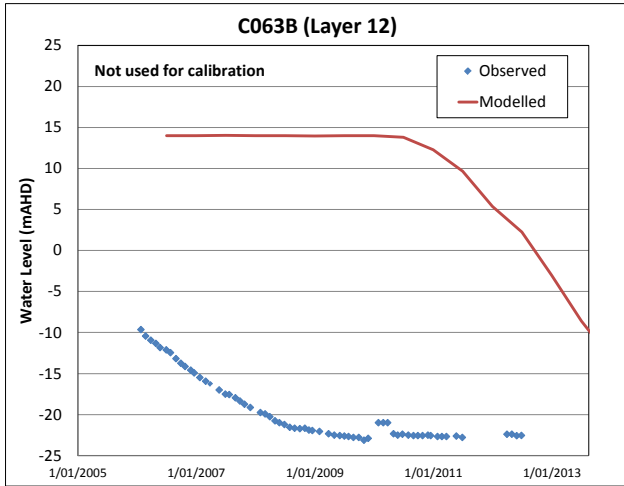
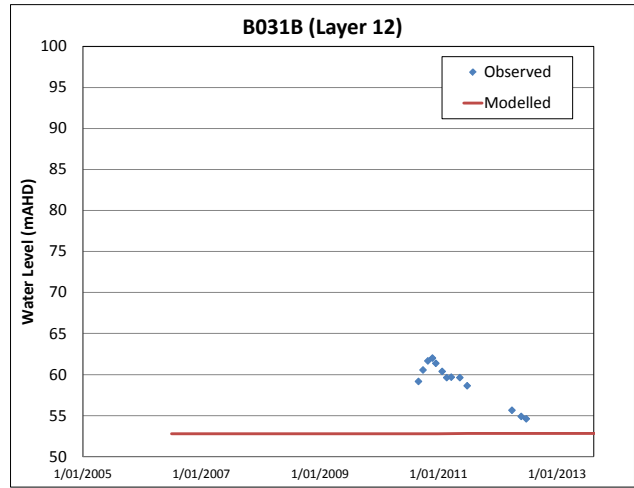
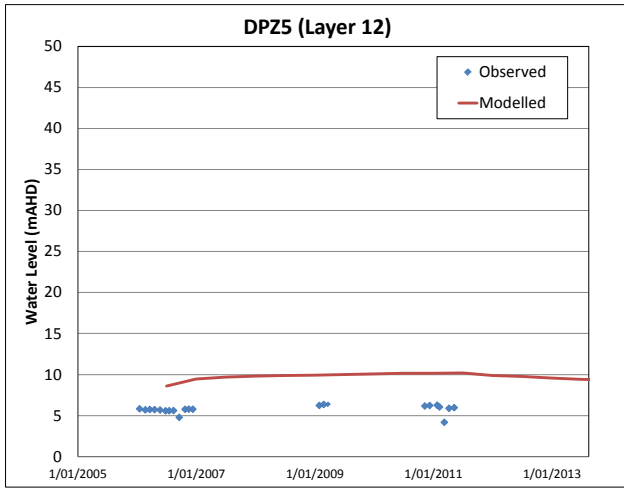


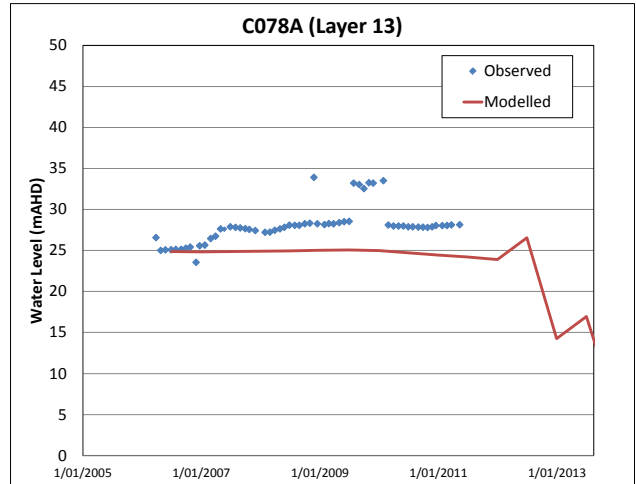
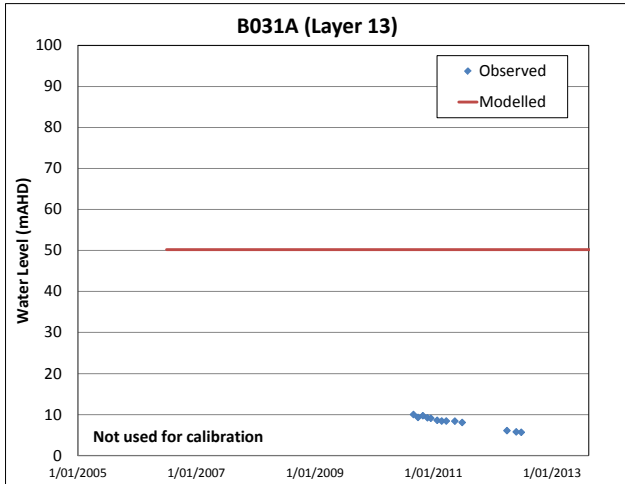
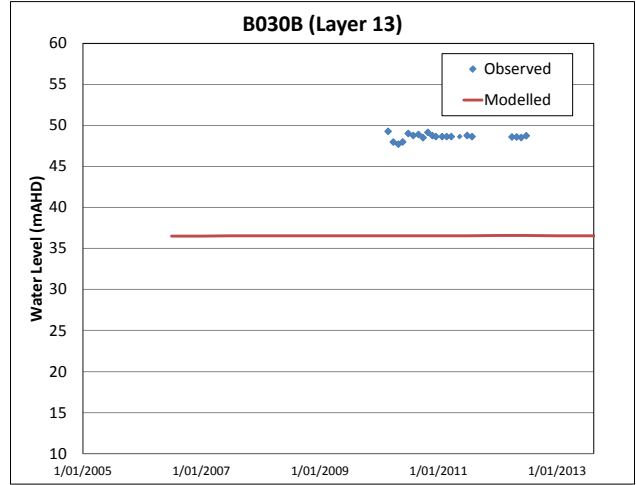
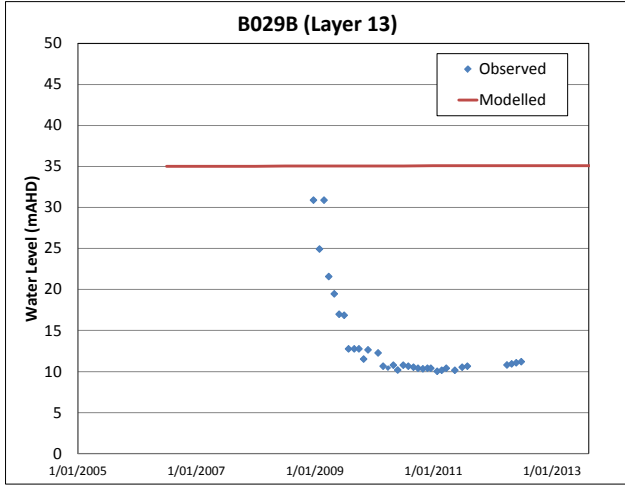
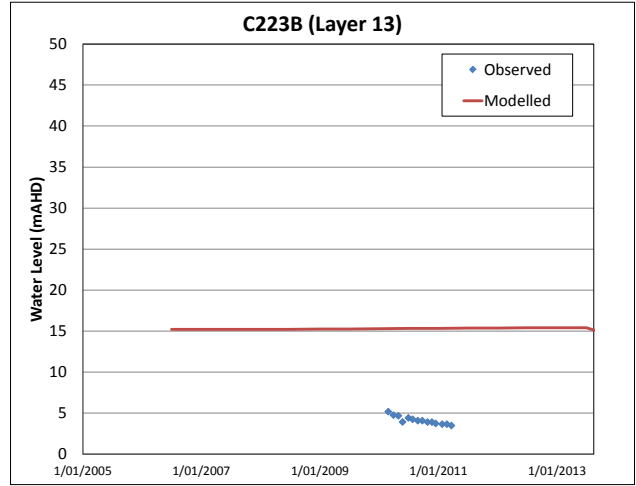
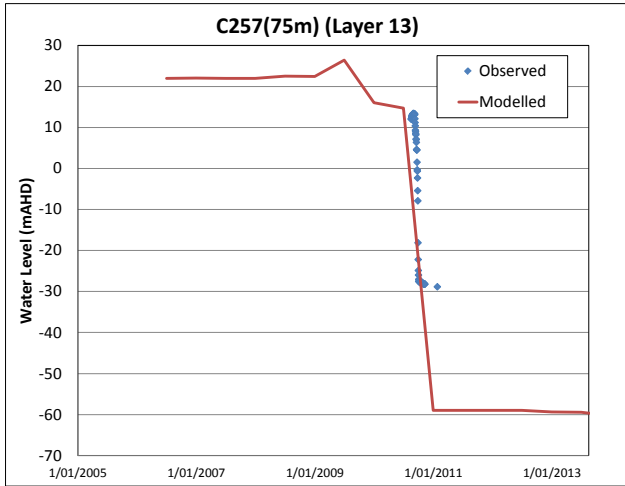
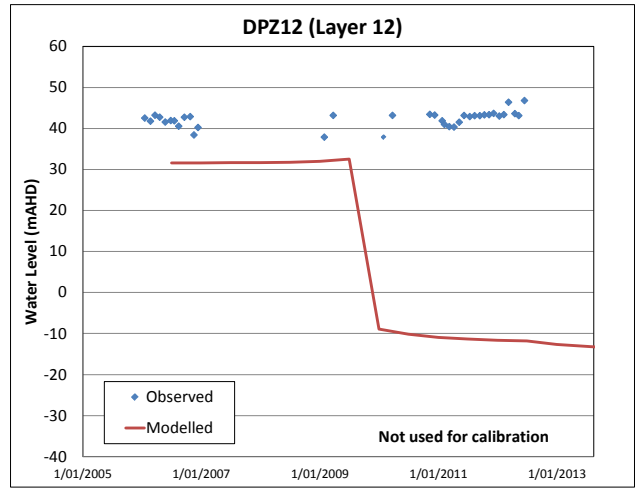
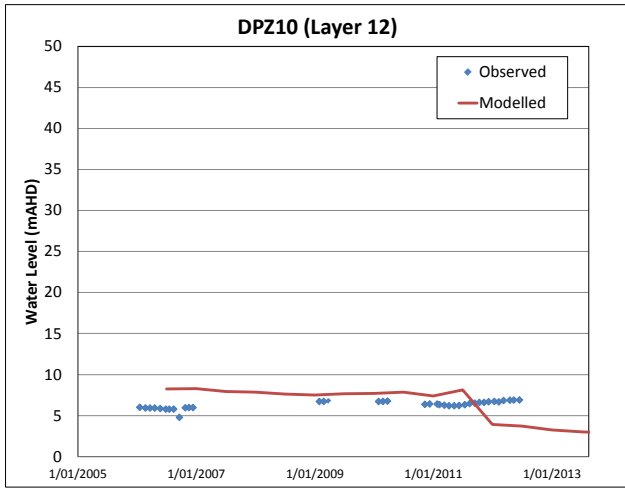


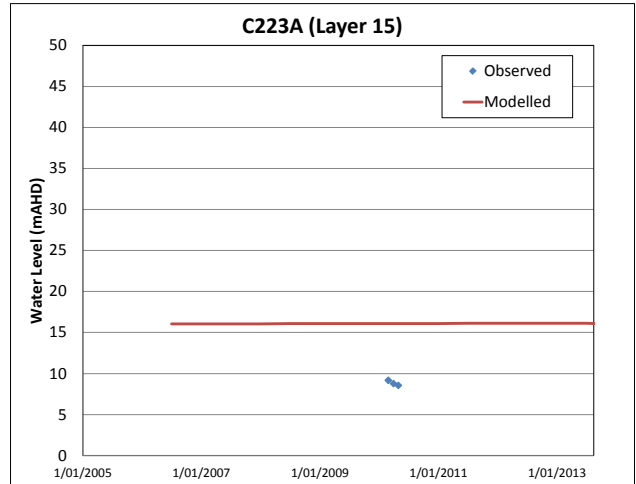
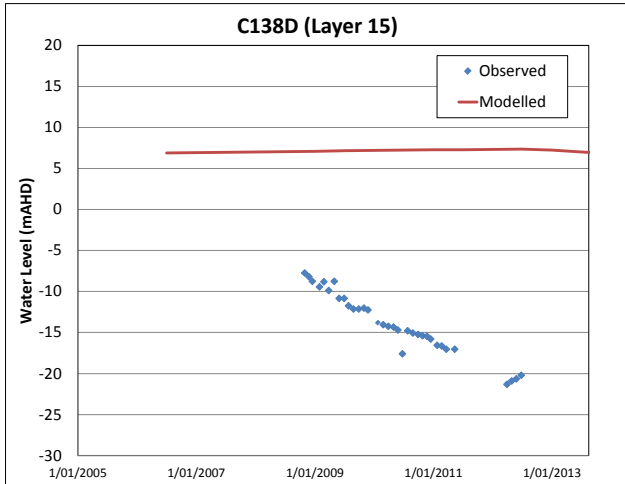
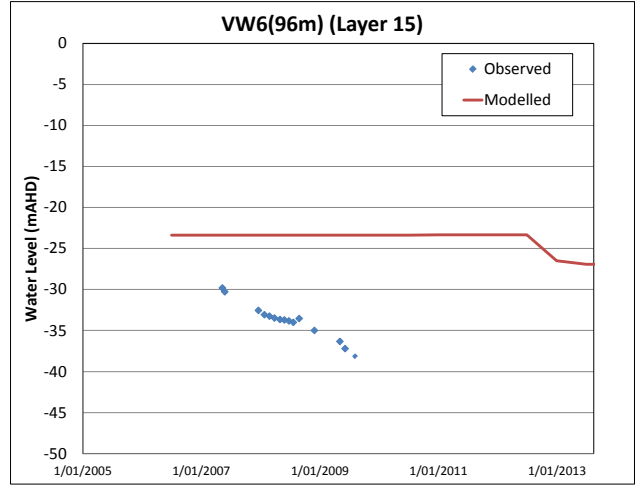
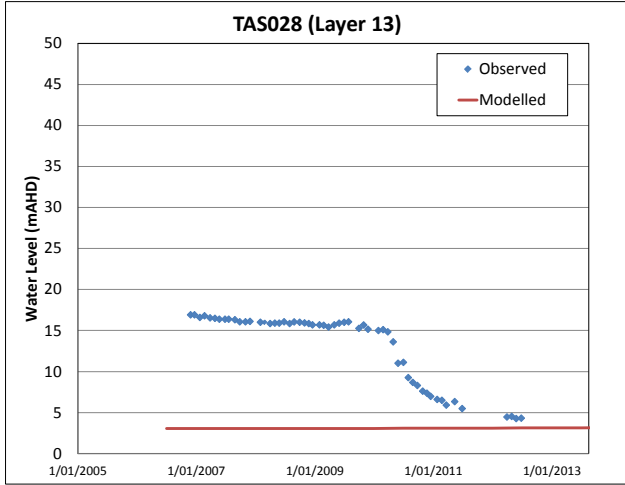
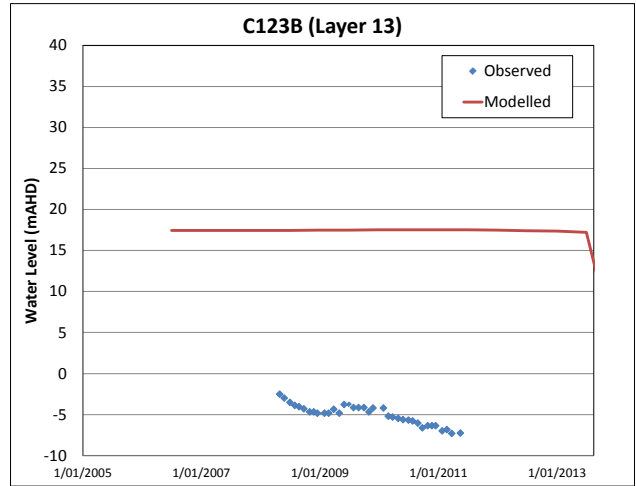
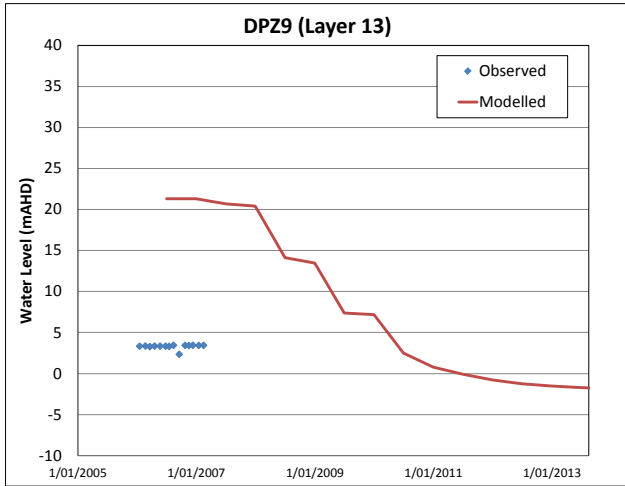
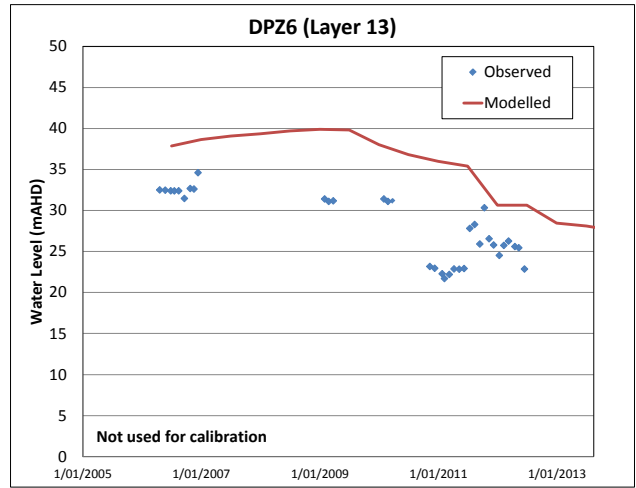
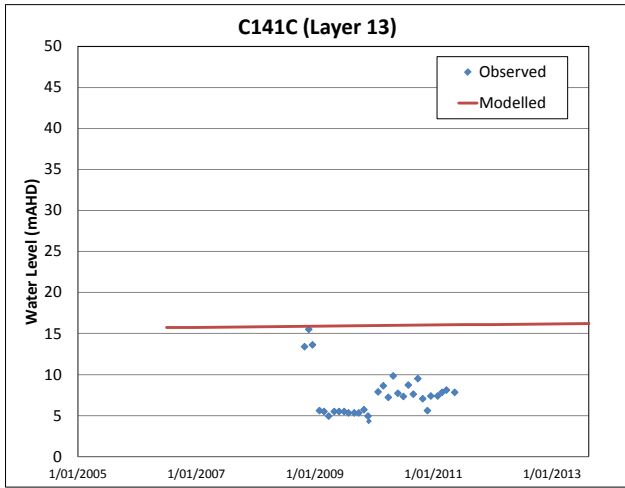


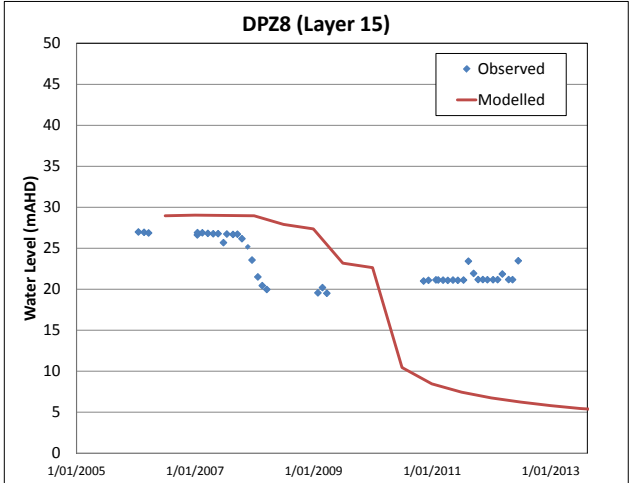
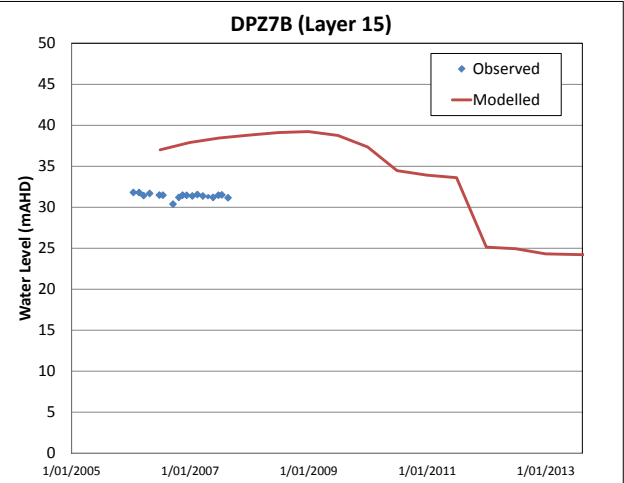
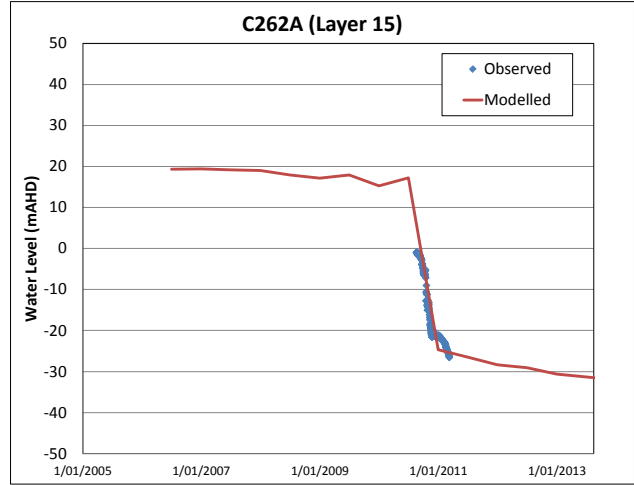
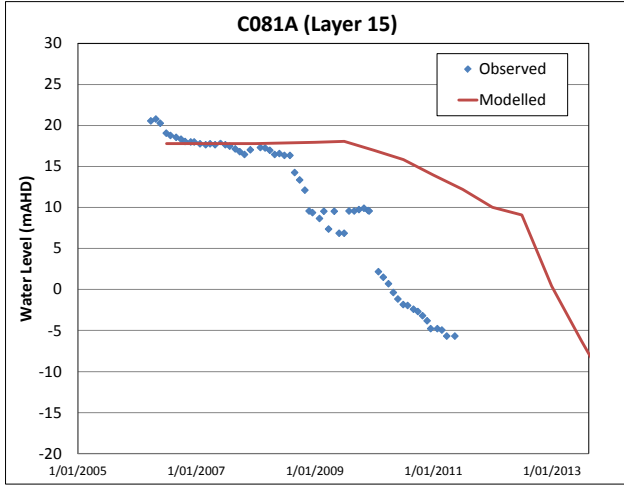
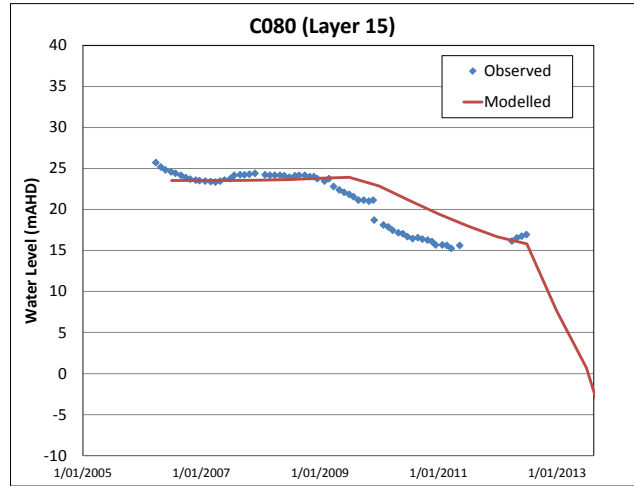
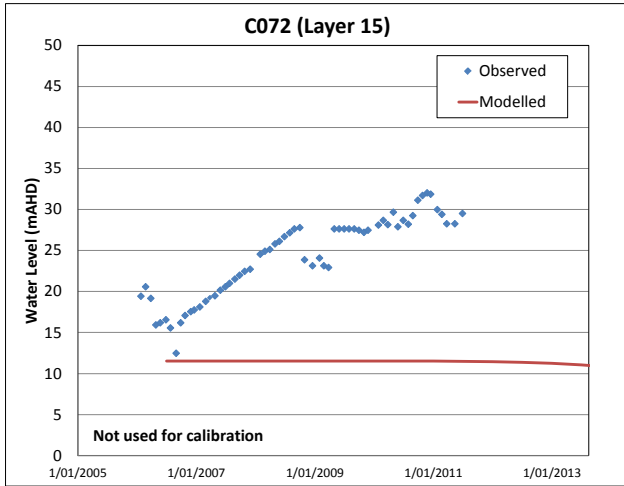
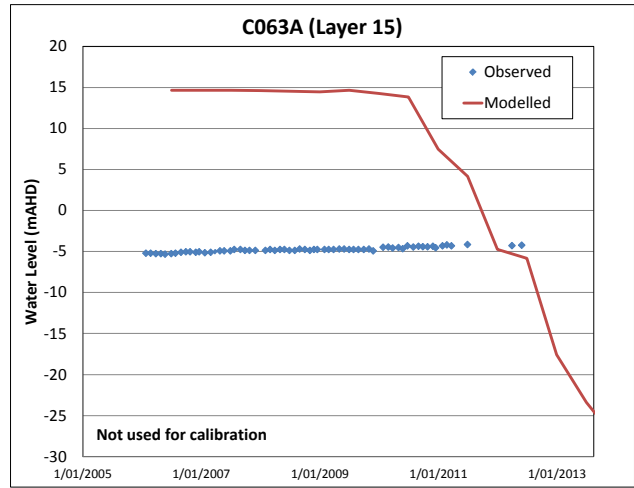
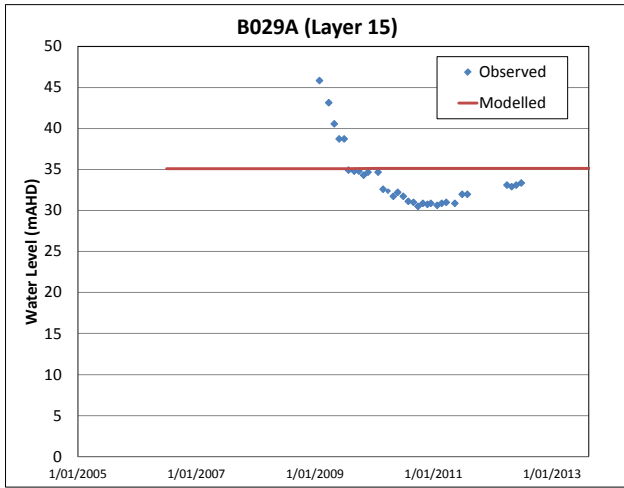


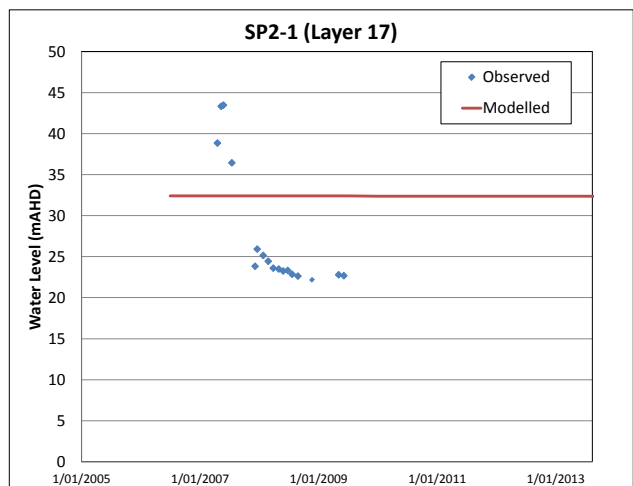
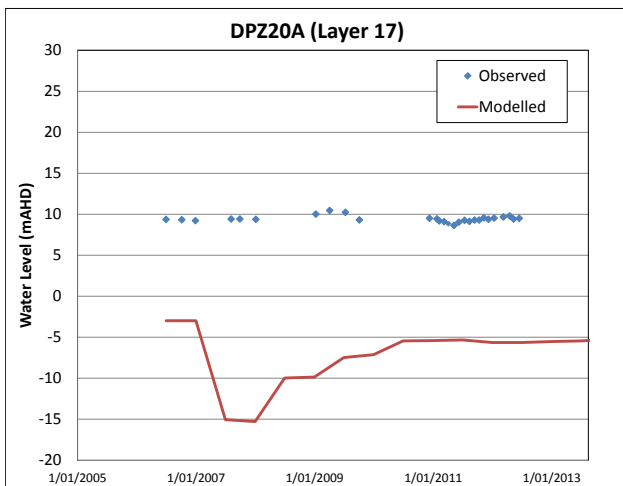
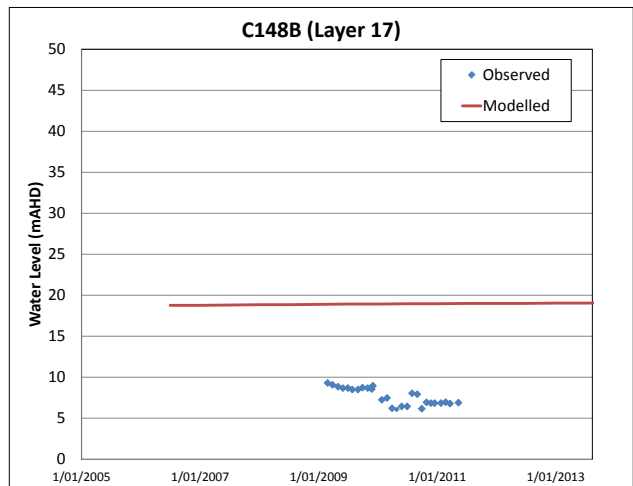
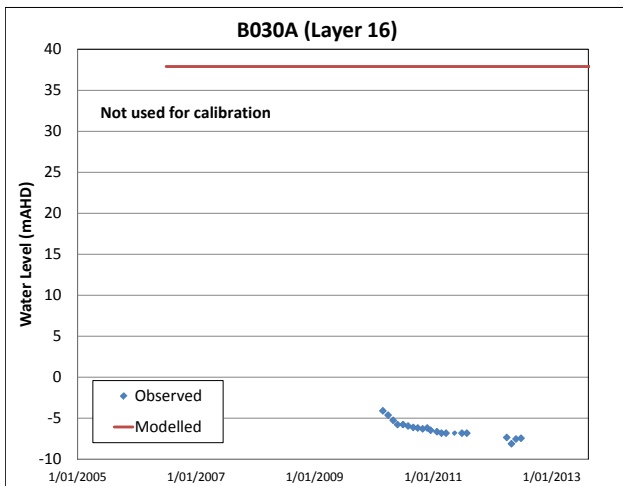
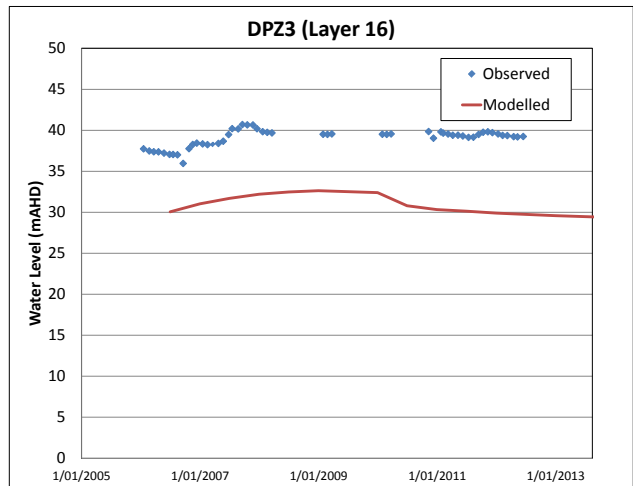
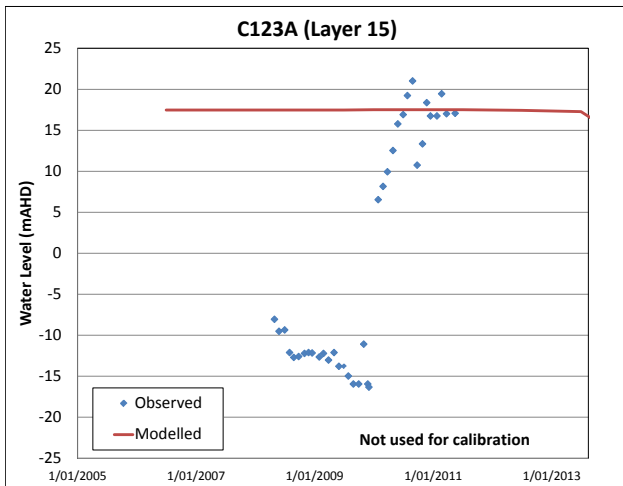
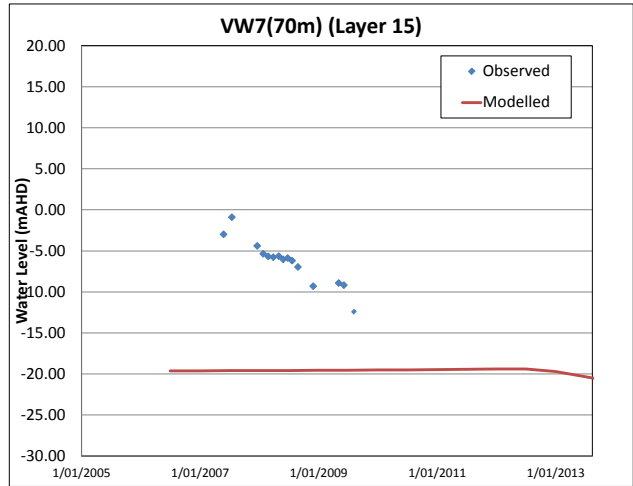
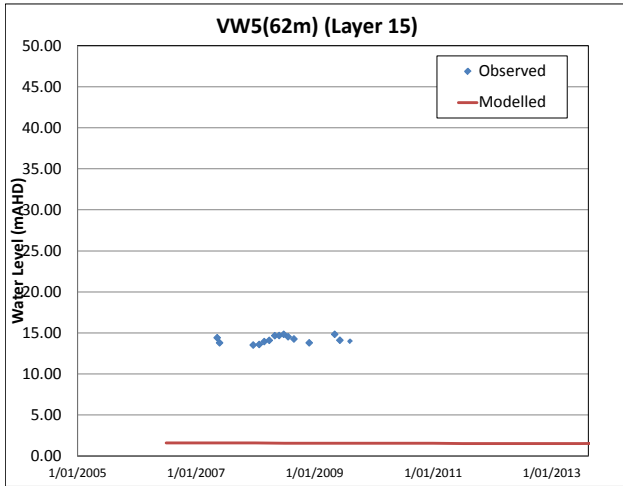


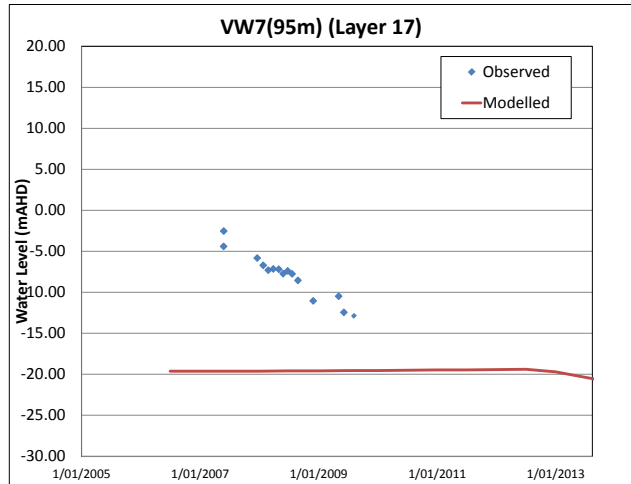
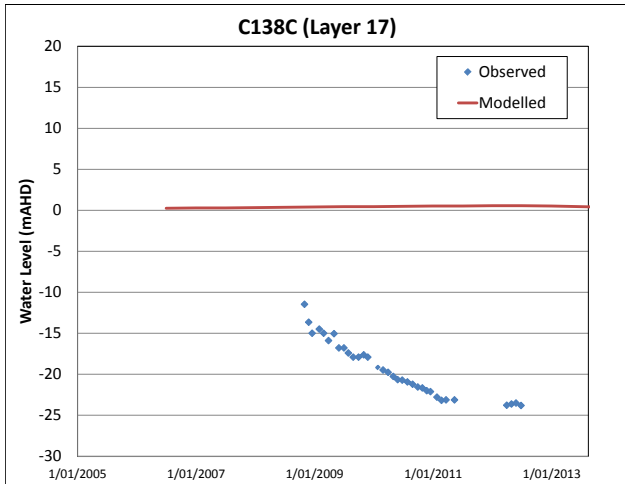
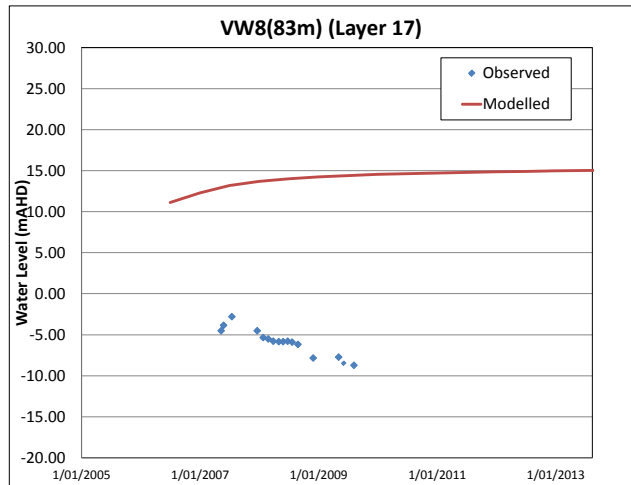
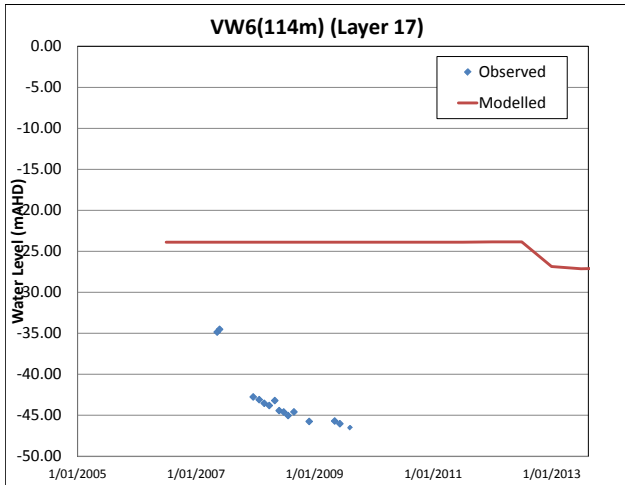
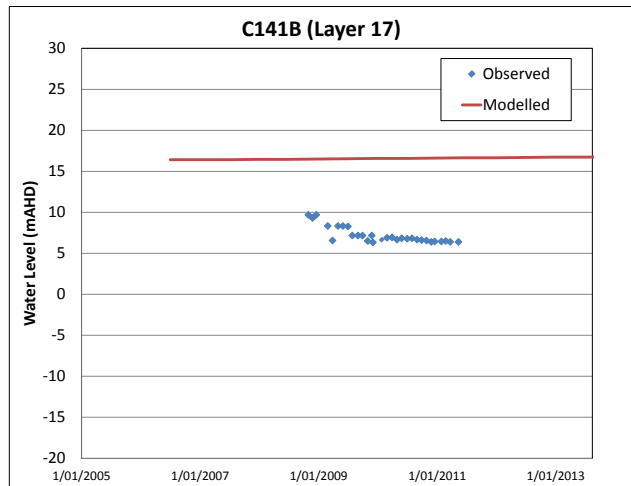
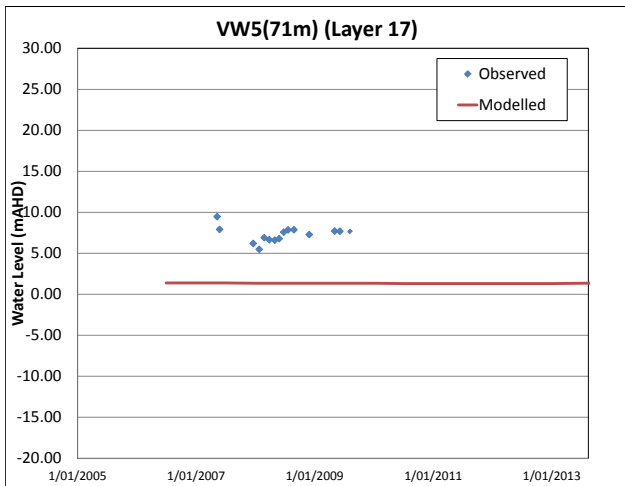
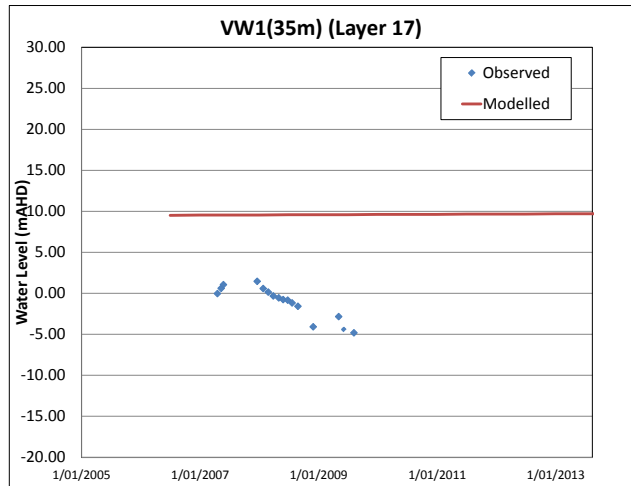
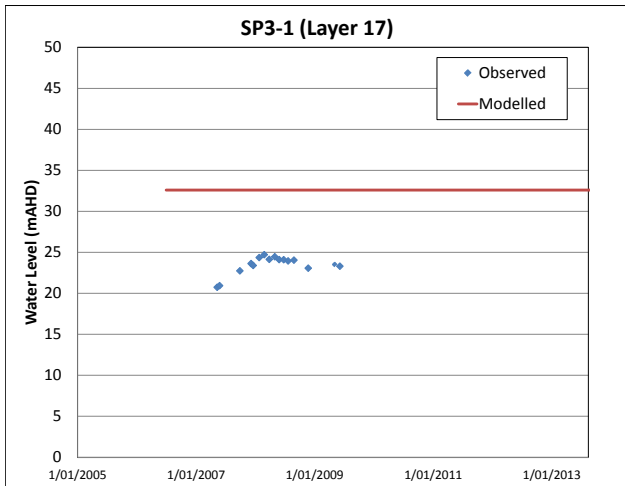


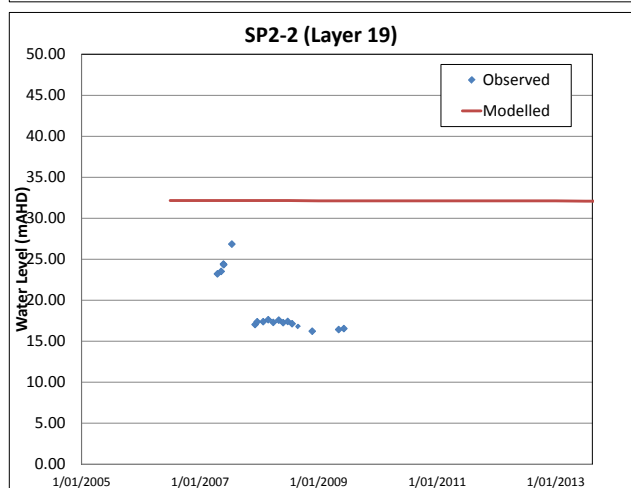
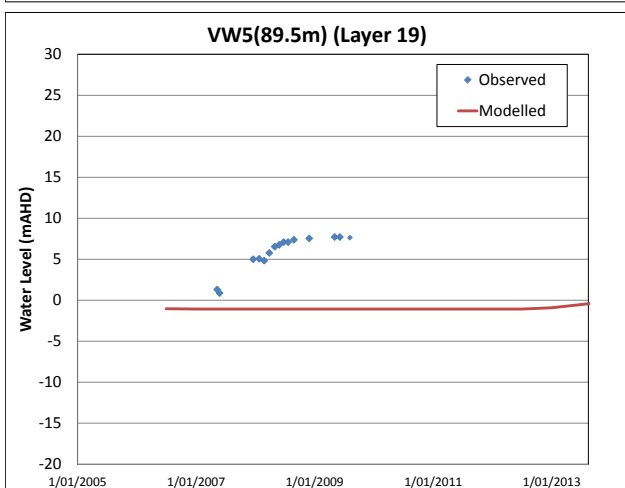
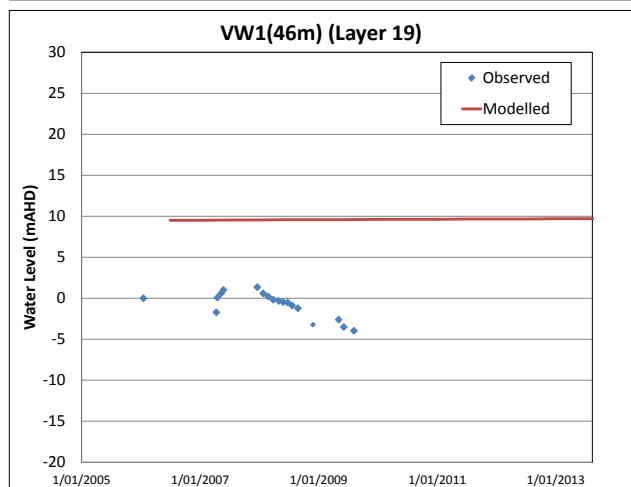
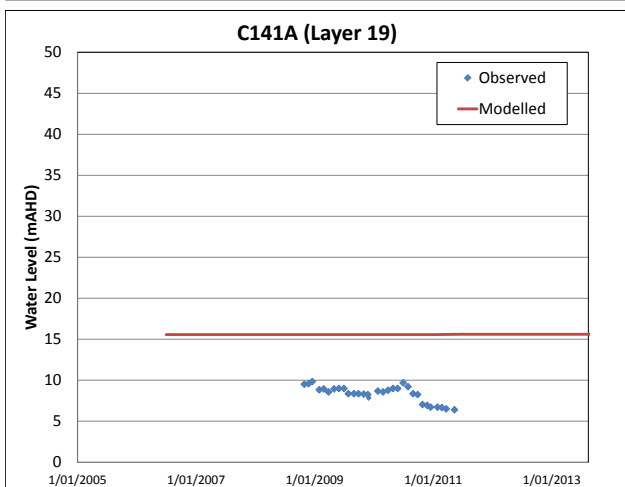
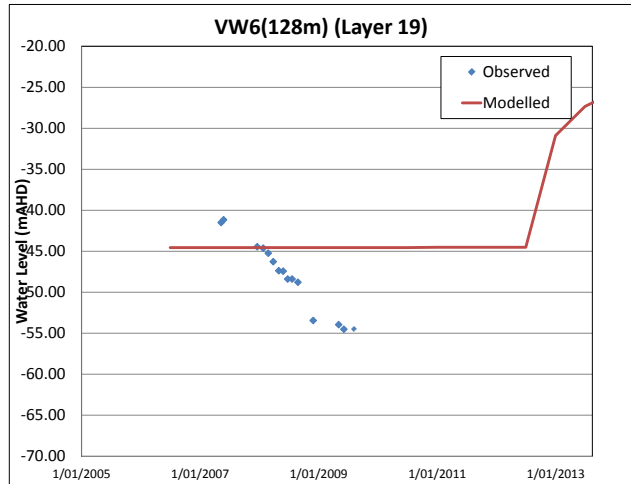
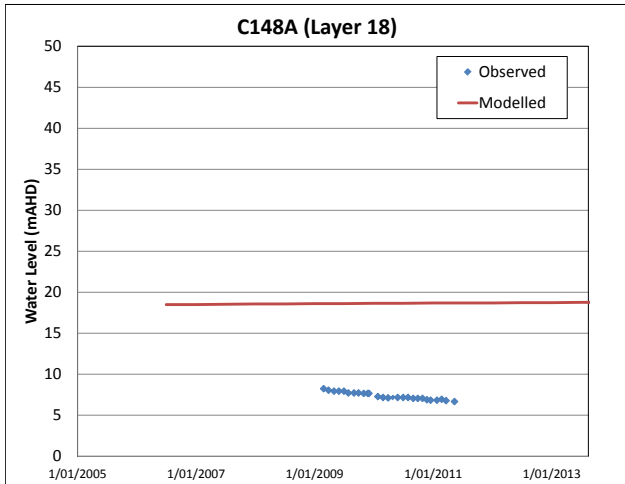
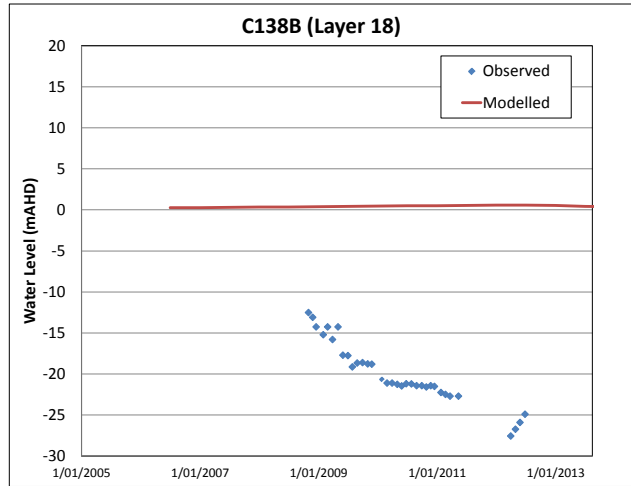
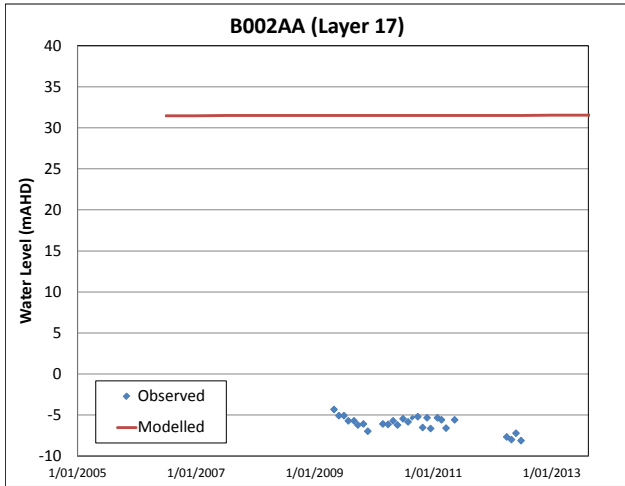


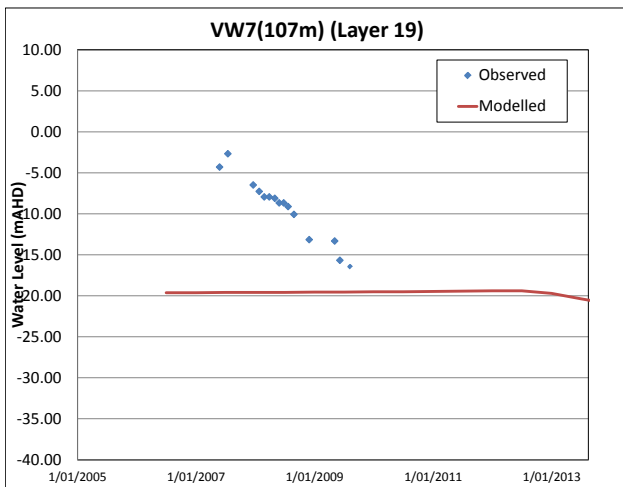
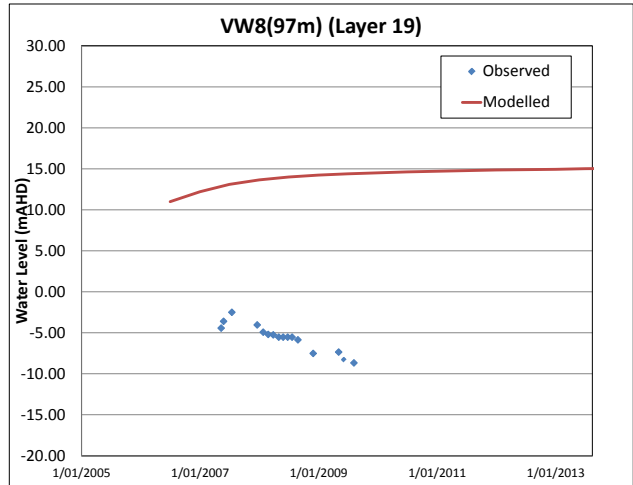
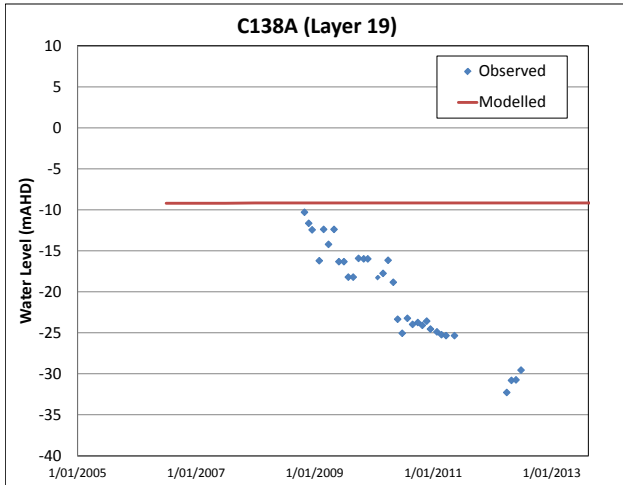












**APPENDIX H:
ABSOLUTE IMPACTS - MODIFIED
MINE PLAN**

1. ABSOLUTE IMPACTS – MODIFIED MINE PLAN

1.1 Groundwater Level Impacts

Water level contours for the alluvium/regolith, Upper Donaldson Seam and Lower Donaldson Seam during the Modification are described in Section 7.8.3 of the Abel Upgrade Modification Groundwater Assessment Report (the Report), and were shown graphically in Figures 7.19 to 7.21 of the Report.

In general, the duration of mining and the degree of caving associated with extraction means that most of the strata from the Donaldson Seams up to the Sandgate Seam within the Abel Underground Mine area will become de-watered during mining (Figure 7.23 of the Report). This will create a maximum cone of depression down to -200 mAHD in the Lower Donaldson Seam, however the low permeability of the *in situ* rock mass means that the cone will exhibit a steep gradient towards the workings, and the effects will diminish rapidly away from the area of mining.

1.1.1 Mining Phase

Under the Modification, the Donaldson seams will be almost fully dewatered under the Abel Underground Mine area by the completion of mining, with maximum drawdown of 190 and 200m predicted to occur within the Upper and Lower Donaldson seams respectively. Depressurisation of at least 10m is predicted to extend for approximately 3 km around the Abel mine lease.

The dewatering and depressurisation effects of the Modification, as well as other mining operations in the vicinity (Bloomfield and Donaldson open cut) and the residual effects of the former Stockrington mine, are shown on pressure head cross-sections on Figure 7.22 to 7.24 of the Report. By the end of the Modification operations, depressurisation is observed to occur down to the Donaldson seams in the areas of shallower depth to cover in the immediate vicinity of the Modification as water levels are drawn down to the elevations in these seams during mining.

1.1.2 Post-Mining Recovery

As discussed in Section 7.8.3 of the Report, the Donaldson seams are expected to remain significantly depressurised at the end of the 100-year post-mining recovery period.

The timing of recovery across the Abel Underground Mine area is demonstrated in simulated recovery hydrographs for key bores monitoring the Donaldson Seams within the Abel Underground Mine area. Figure H1 shows recovery hydrograph for C078A and DPZ6 located within the Upper Donaldson Seam in the northern area of the Modification (Figure 3.1 of the Report). C078A is potentially influenced by the Bloomfield workings to the north, as well as the timing of panel extraction in the Upper Donaldson Seam in the immediate area during life of mine. Over the 100-year post-mining period, water levels only show recovery of about 10 m, indicating a residual drawdown of approximately 30 m still in occurrence. Consistent slow recovery appears to be ongoing. DPZ6 is located at the boundary of the Abel Underground and Donaldson Open Cut mining leases. Continued water level decline in the post-mining period is the result of the slow distribution and equilibration of water pressures across the seam. At the end of the 100 year period water levels are predicted to remain lower than pre-mining conditions by approximately 20 m.

Figure H2 shows simulated recovery hydrographs for C080 and C081A located within the Lower Donaldson Seam in the vicinity of extraction panels to the south (Figure 3.1 of the Report). Both show slow and steady recovery over the 100-year post-mining period, which appears to be ongoing. The water levels at C081A are predicted to have made a 50% recovery (approximately 80 m) by the end of this period, while C080 will have made only a 30% recovery (approximately 40 m). This correlates with the area in the southern sector of the Abel Underground Mine area where a residual drawdown has been modelled following recovery.

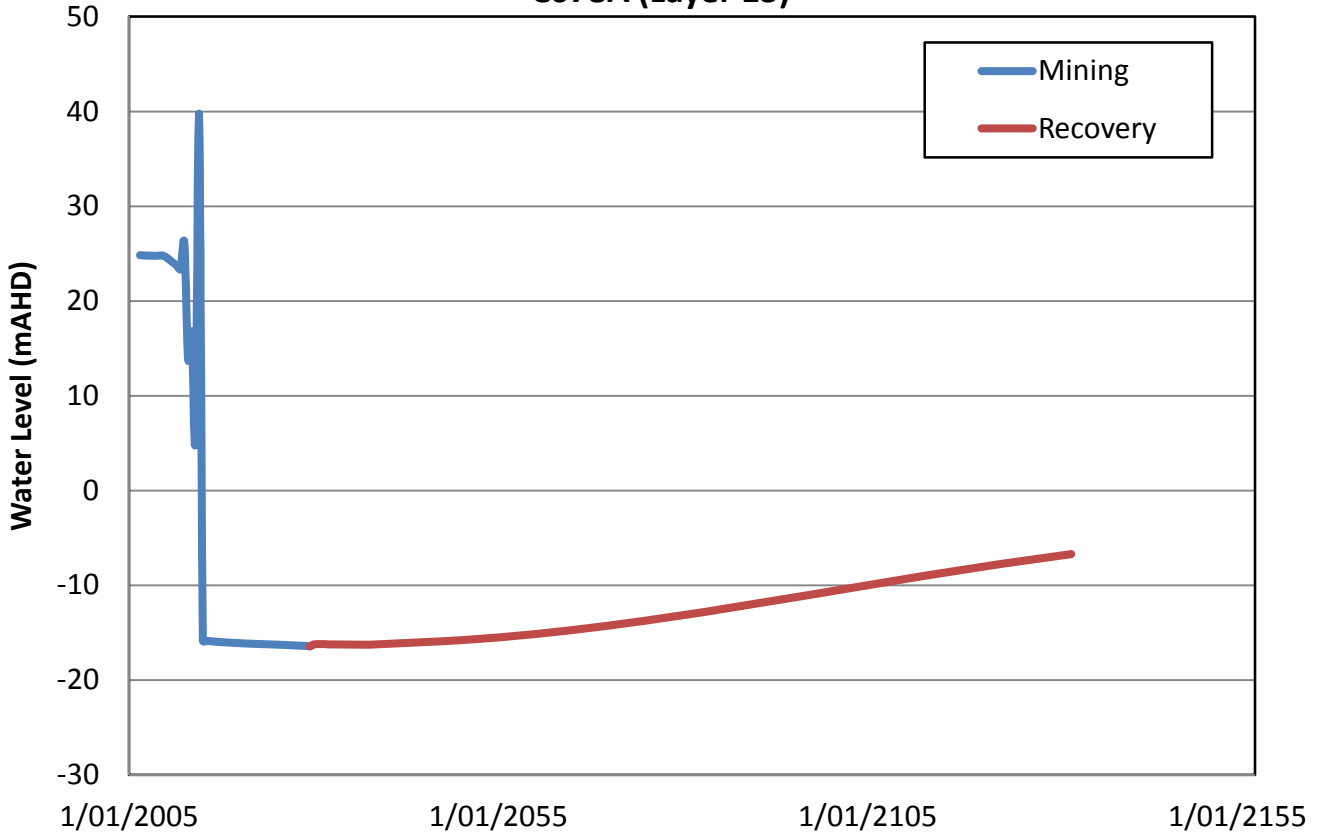
Figure H3 shows recovery hydrographs for C262A and DPZ7B located within the Lower Donaldson Seam in the northern area of the Modification (Figure 3.1 of the Report). Bore C262A is located below the mining operations in the Upper Donaldson Seam. An unsteady, stepped recovery is observed over the 100-year recovery period, which appears to taper off towards the end, with water levels lower than pre-mining conditions by approximately 10 m. The stepped recovery is inferred to result from a relatively “rapid” recovery of water levels within the Lower Donaldson Seam, which is then slowed by upward leakage and recovery in the Upper Donaldson Seam. Once the Upper Donaldson Seam voids have been filled recovery then increases again until equilibration with the greater area is reached and the recovery rate slows again. Similarly to DPZ6, DPZ7B is located at the boundary of the Abel Underground and Donaldson Open Cut mining leases, and the Lower Donaldson Seam in this area is also still predicted to be dewatered at the end of the modelled recovery period. Slow water level recovery conditions are observed throughout this period as water level recovery occurs in more dewatered sections of the Abel Underground Mine area. Water levels remain lower than pre-mining conditions by approximately 22 m.

The simulated recovery hydrographs for all modelled bores across the Model Area are provided in Appendix K.

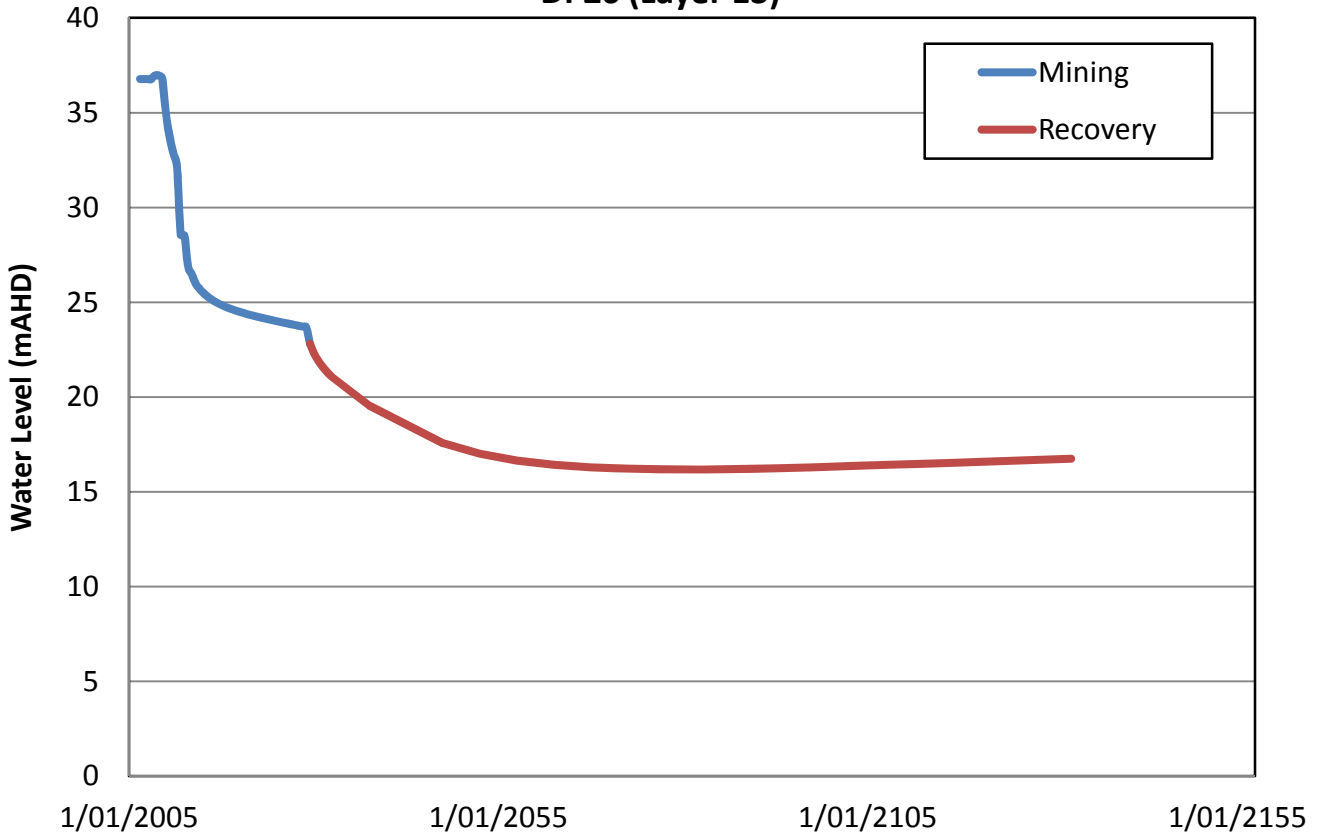
1.2 Potential Baseflow/Stream Leakage Impacts

River stream leakage from Hexham Swamp to the aquifer is seen to increase by approximately 30 m³/day, over the course of the mine life and post-mining recovery, however this represents only about 0.5% of the total river stream leakage volume. The other two watercourses which exhibit baseflow reductions over this period are Viney Creek and Buttai Creek. Viney Creek indicates a small reduction in baseflow of approximately 2.5 m³/day, which represents 92% of the baseflow contributions in this ephemeral creek. The baseflow into the ephemeral Buttai Creek is predicted to reduce over the life of the mine from about 0.8 m³/day at the start of mining to approximately zero by around 2039 (Figure 7.31 of the Report) due to the Modification.

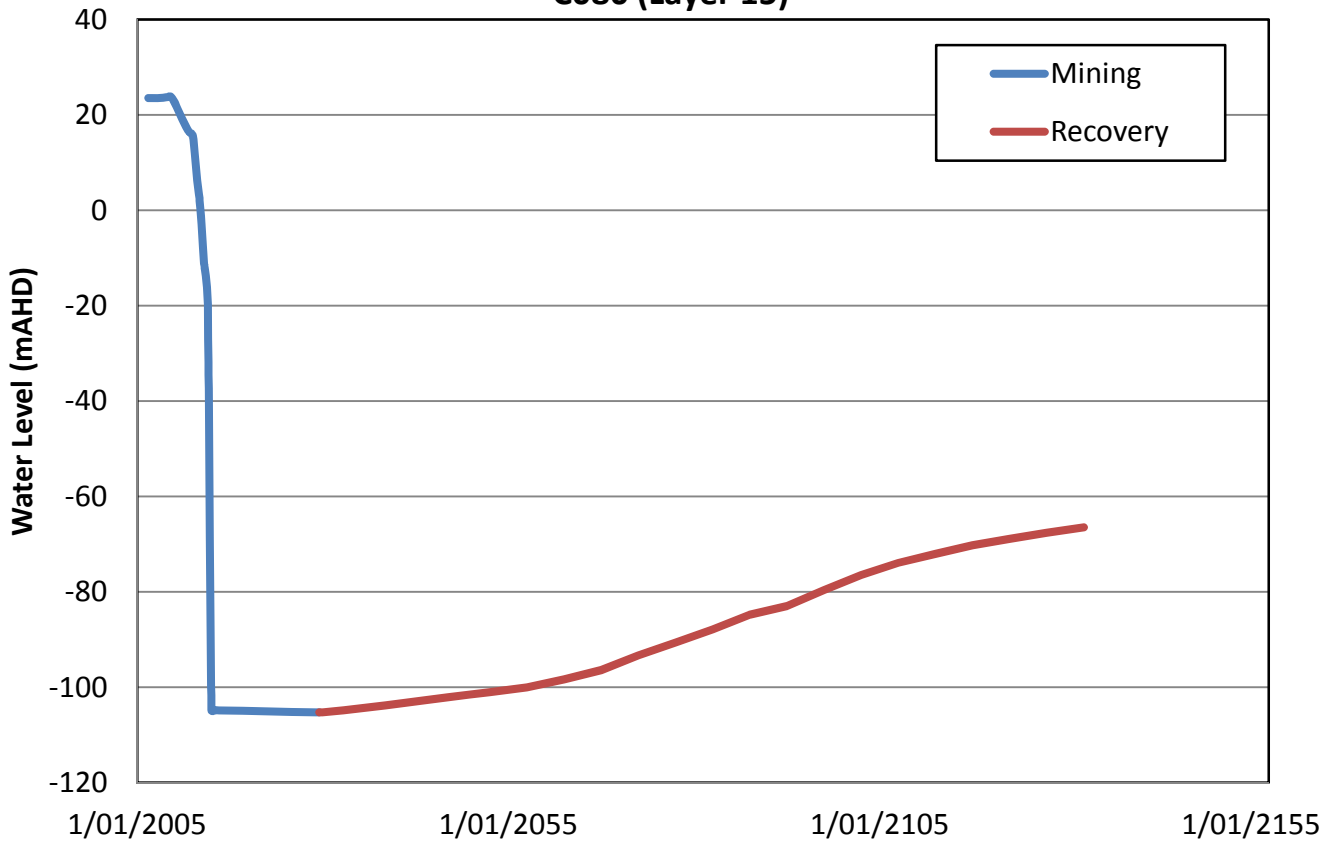
C078A (Layer 13)



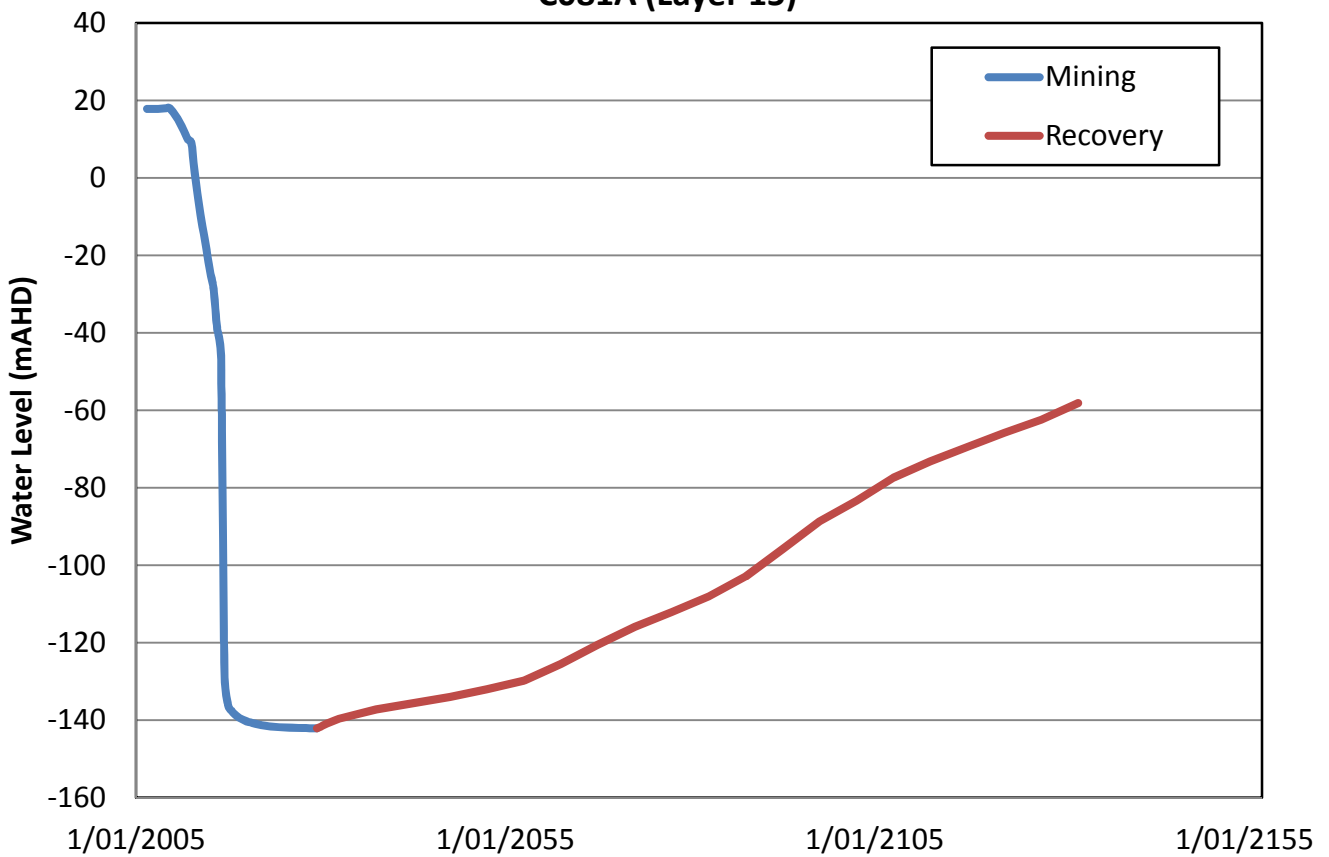
DPZ6 (Layer 13)



C080 (Layer 15)



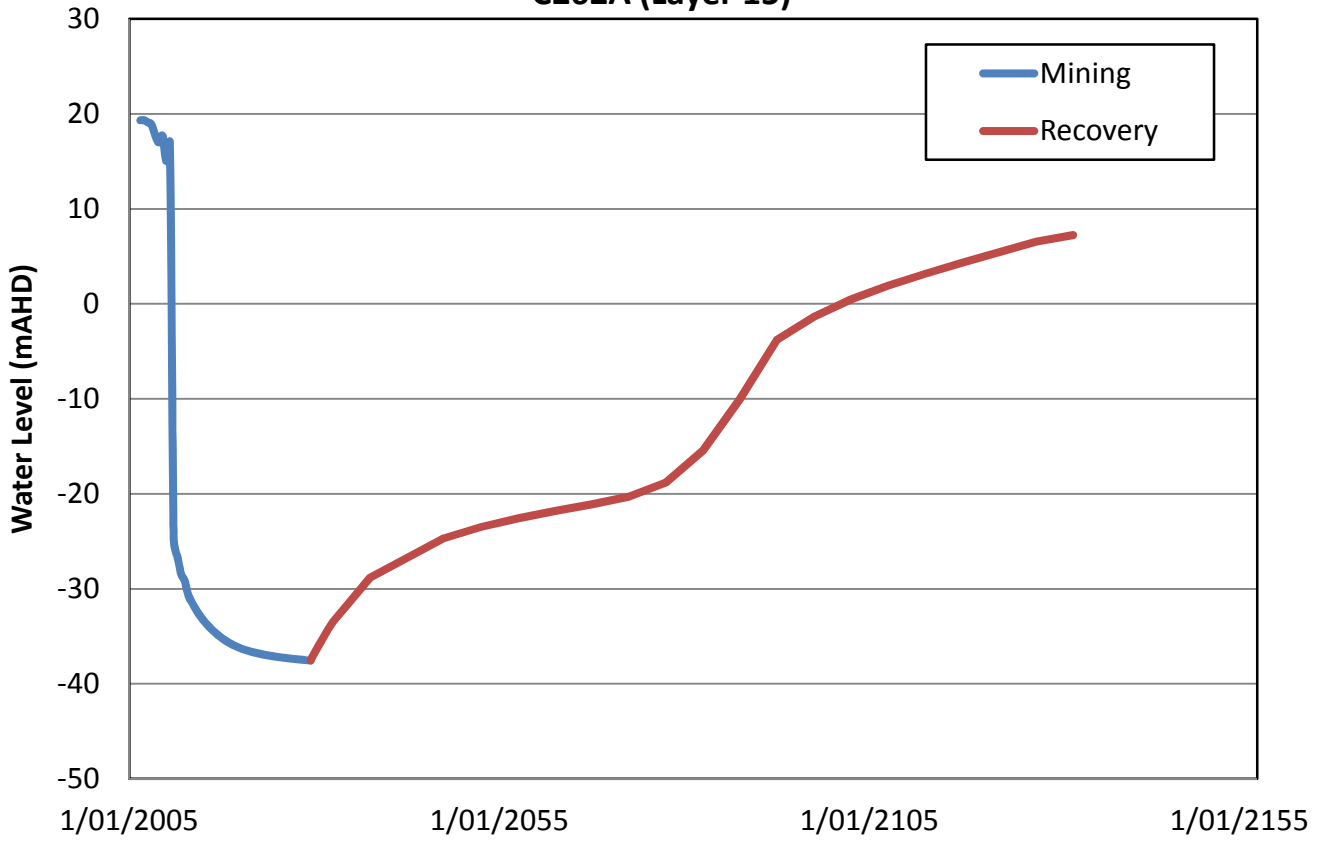
C081A (Layer 15)



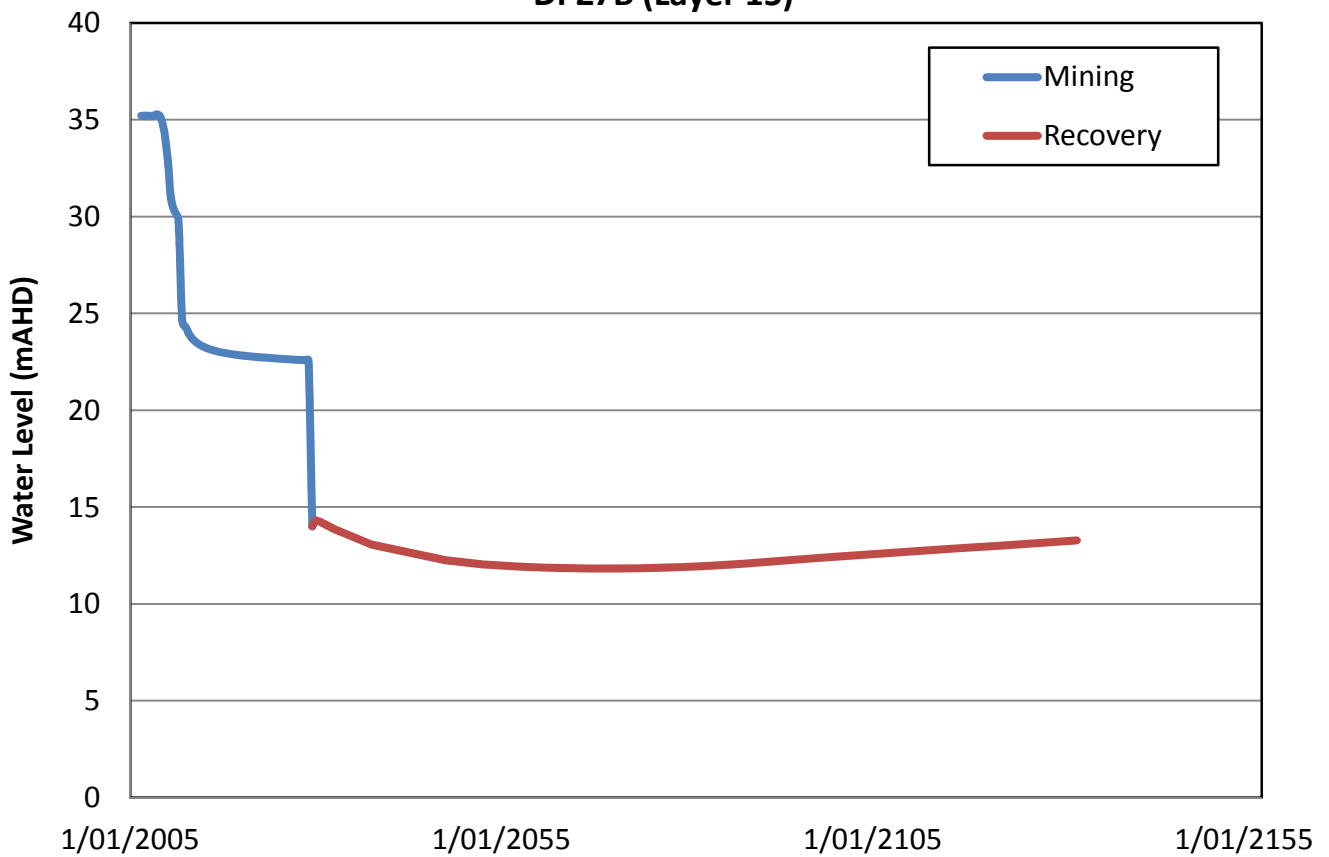
Simulated Recovery Hydrographs for C080 and C081A FIGURE H2

F:\Jobs\S64DD\300Modelling\300\320_Model_Output\322_Prediction\Rev_AA33\A33_prediction_hydrographs.xlsx\figH2

C262A (Layer 15)



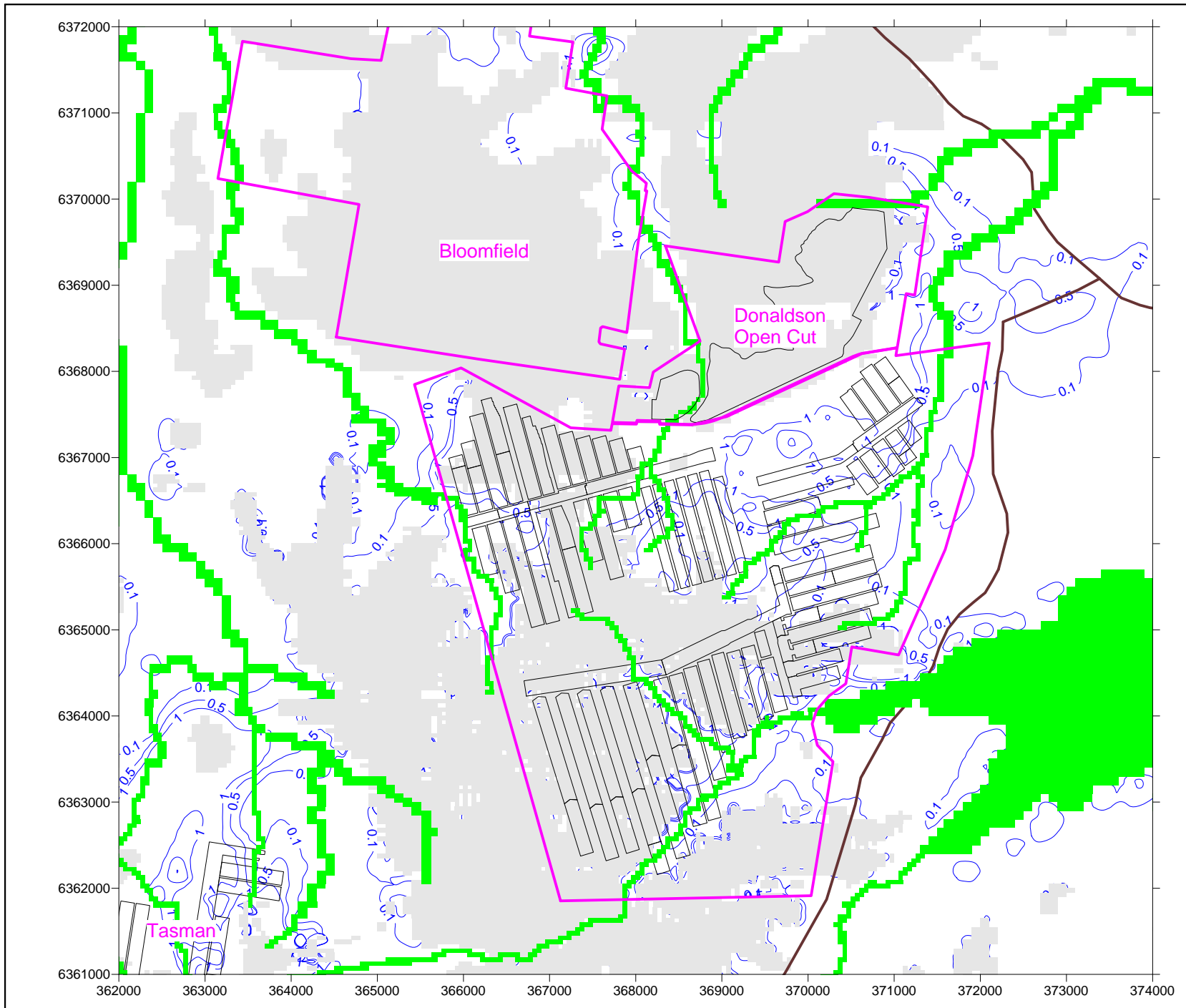
DPZ7B (Layer 15)



Simulated Recovery Hydrographs for C262A and DPZ7B FIGURE H3

F:\Jobs\S64DD\300Modelling\300\320_Model_Output\322_Prediction\Rev_AA33\A33_prediction_hydrographs.xlsx\figH3

**APPENDIX I:
PREDICTED DRAWDOWN IN
SELECTED LAYERS AT END OF
MINING (2028) – MODIFIED AND
APPROVED MINE PLAN**



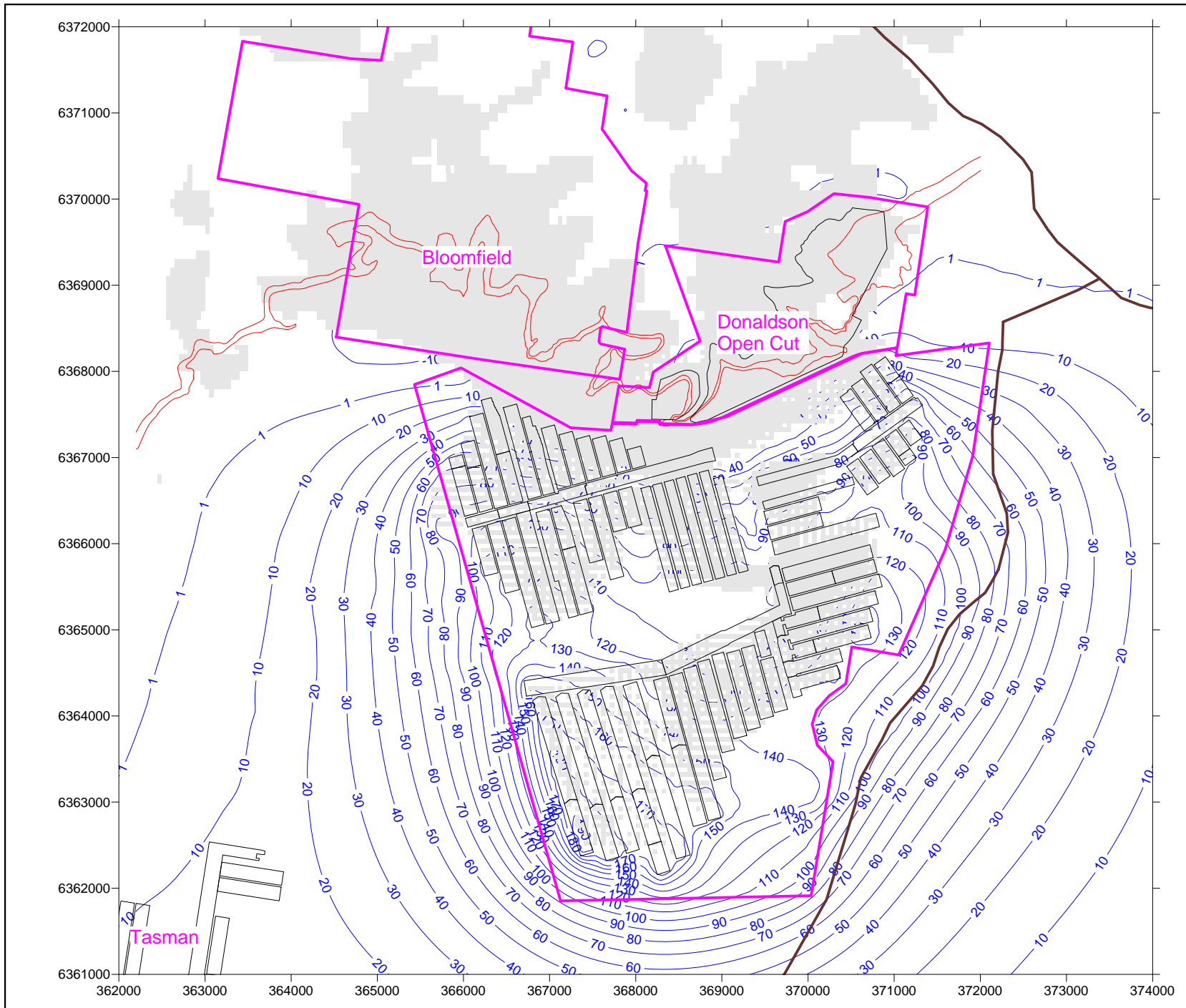
- LEGEND**
- █ River or Lake
 - Mine Plan
 - Mine Lease
 - Main Road
 - Dry Cells
 - ~⁶⁰ Predicted Drawdown (m)








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FIGURE I1
Predicted Drawdown from Commencement (2009) to Completion (2028) in the Alluvium and Regolith (Layer 1) - Modified Mine Plan



- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Δ^{50} Predicted Drawdown (m)

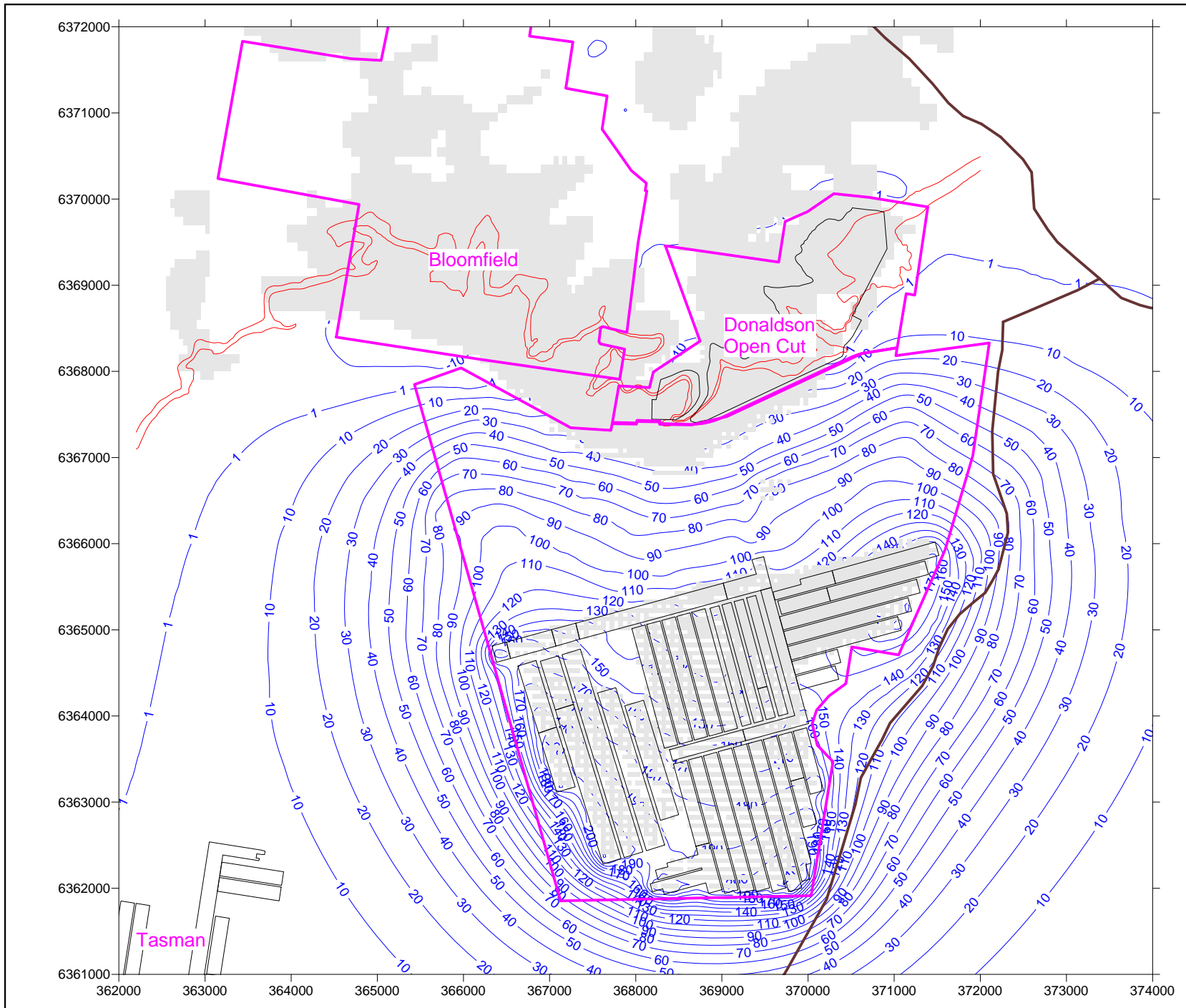


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FIGURE 12

Predicted Drawdown from Commencement (2009) to Completion (2028) in the Upper Donaldson Seam (Layer 13) - Modified Mine Plan



- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Predicted Drawdown (m)

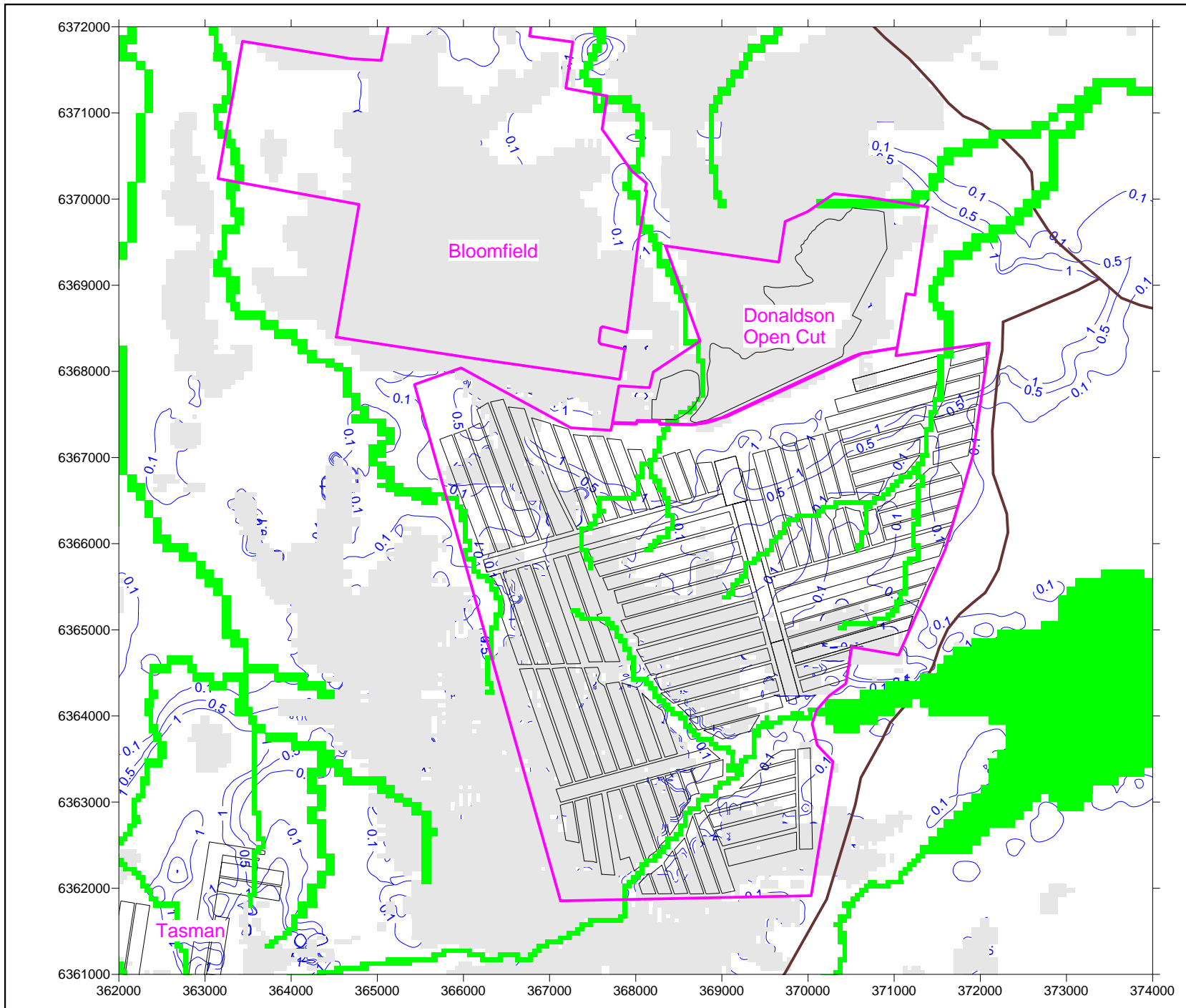


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FIGURE I3

Predicted Drawdown from Commencement (2009) to Completion (2028) in the Lower Donaldson Seam (Layer 15) - Modified Mine Plan



LEGEND

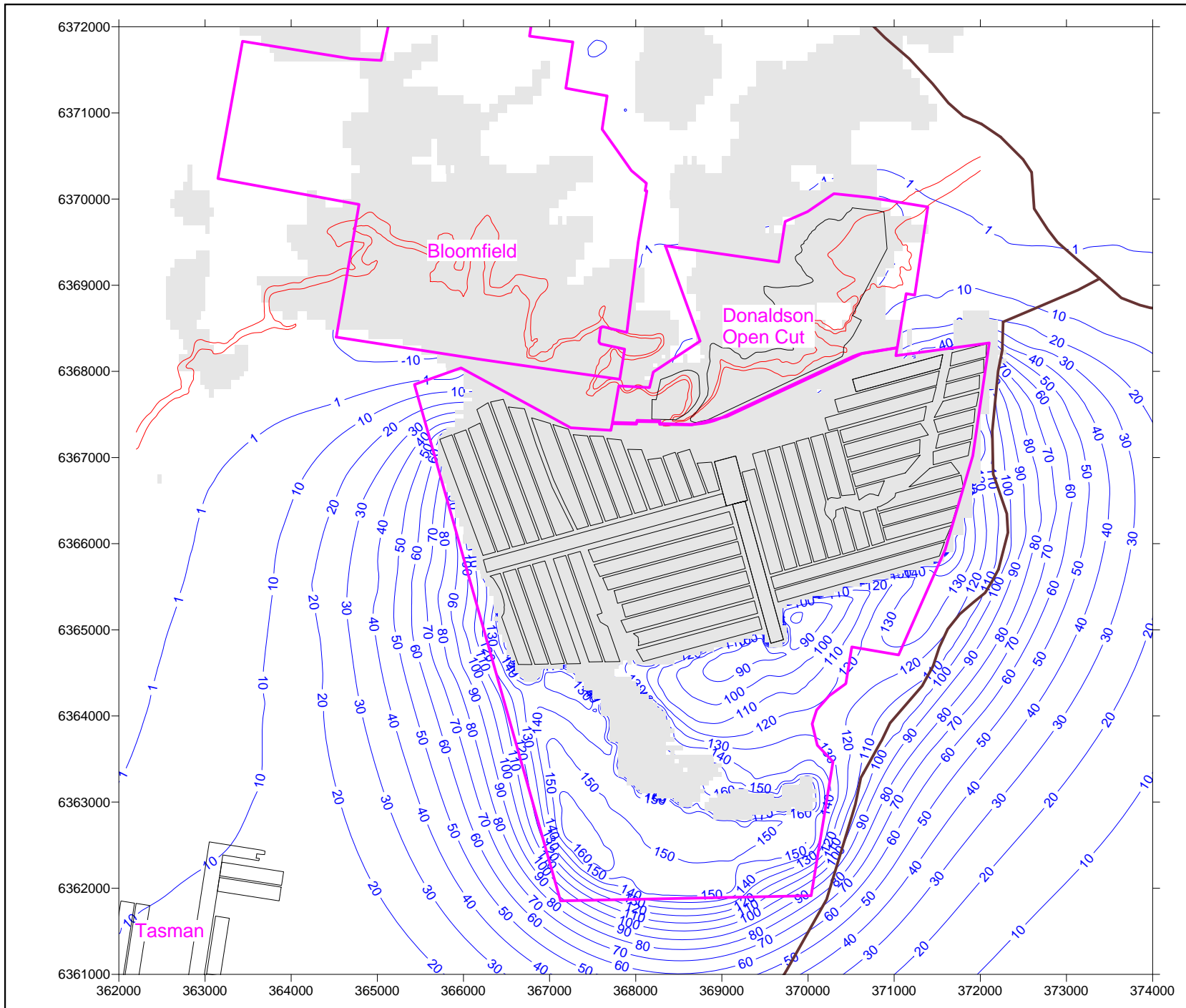
- █ River or Lake
- Mine Plan
- Mine Lease
- Main Road
- Dry Cells
- ~⁶⁰ Predicted Drawdown (m)






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FIGURE 14

Predicted Drawdown from Commencement (2009) to Completion (2028) in the Alluvium and Regolith (Layer 1) - Approved Mine Plan



- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Predicted Drawdown (m)

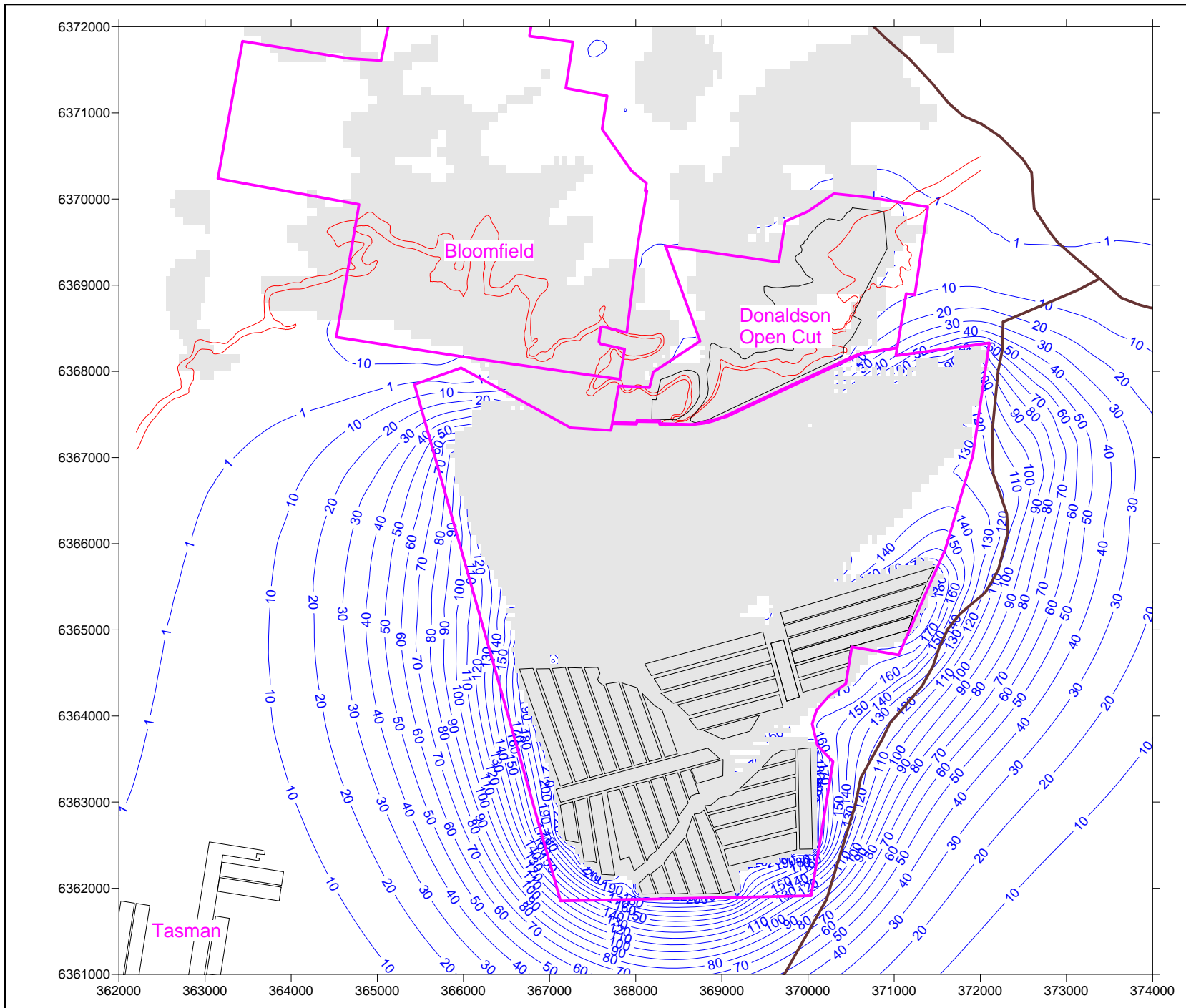


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FIGURE I5

Predicted Drawdown from Commencement (2009) to Completion (2028) in the Upper Donaldson Seam (Layer 13) - Approved Mine Plan



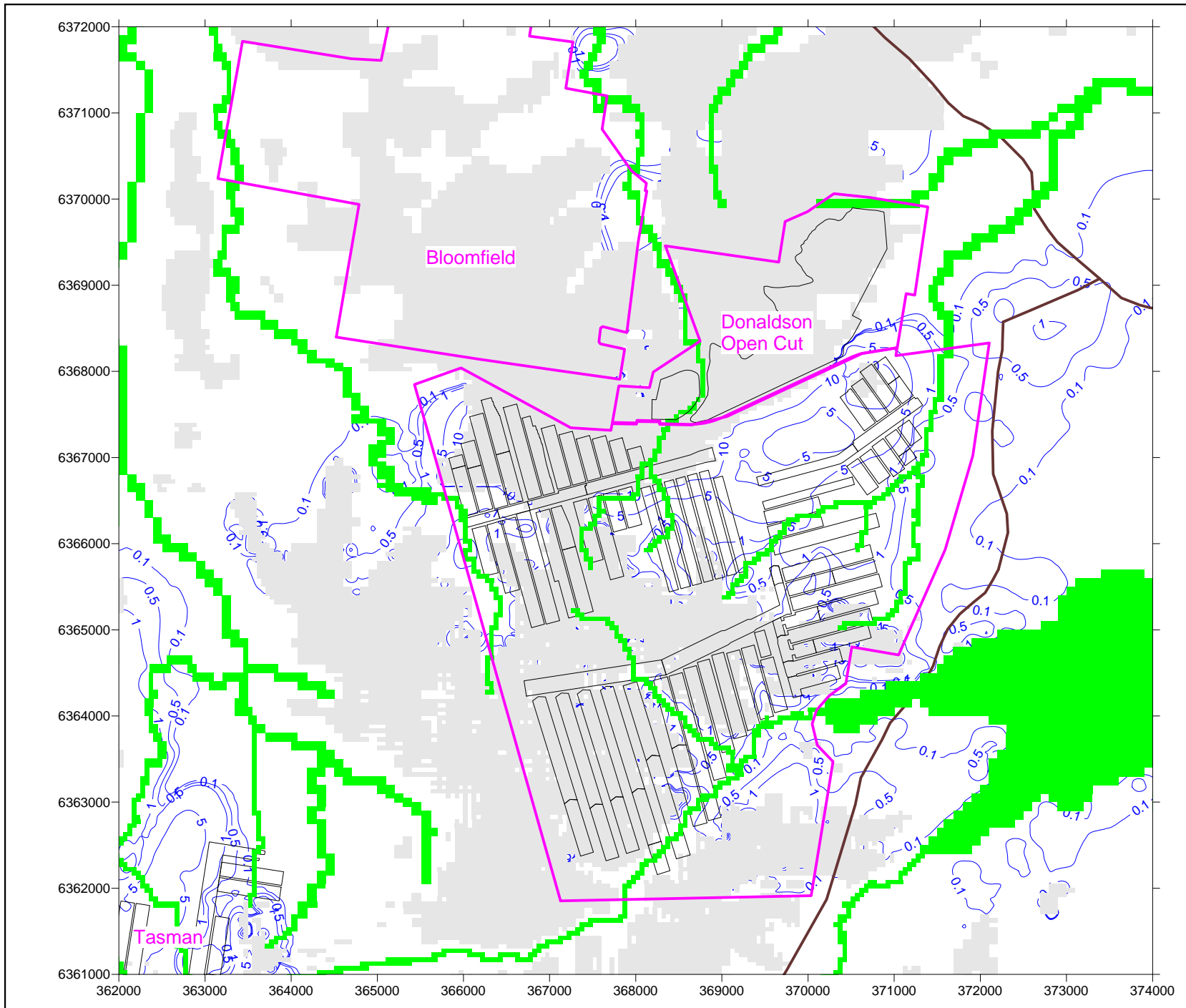
- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Predicted Drawdown (m)

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FIGURE 16
Predicted Drawdown
from Commencement (2009) to Completion (2028)
in the Lower Donaldson Seam (Layer 15)
- Approved Mine Plan

**APPENDIX J:
PREDICTED DRAWDOWN IN
SELECTED LAYERS AT 100 YEARS
RECOVERY – MODIFIED AND
APPROVED MINE PLAN**



- LEGEND**
- █ River or Lake
 - Mine Plan
 - Mine Lease
 - Main Road
 - Dry Cells
 - ~⁶⁰ Predicted Drawdown (m)

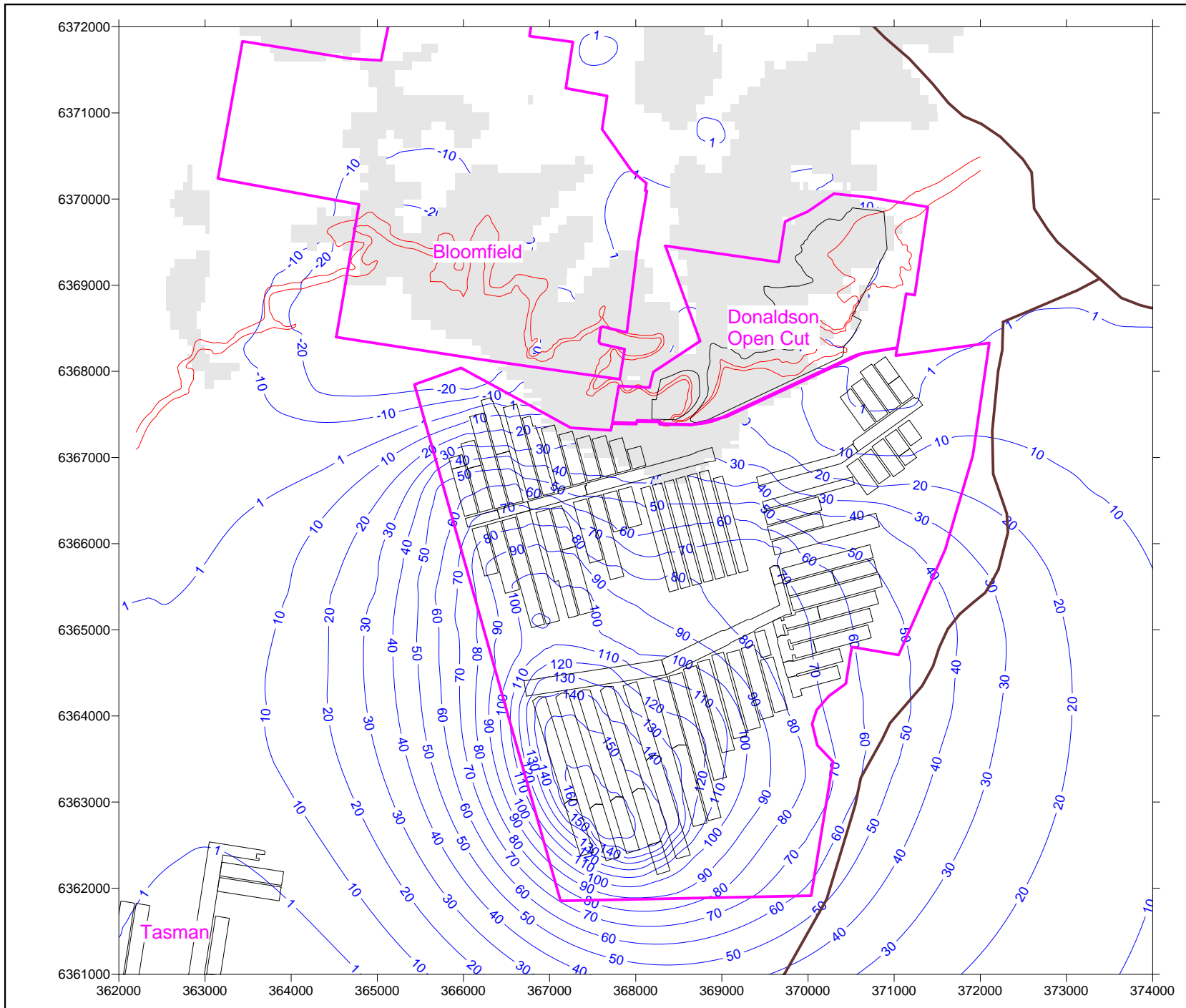







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FIGURE J1

Predicted Drawdown at 100 Years Recovery in the Alluvium and Regolith (Layer 1) - Modified Mine Plan



- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Δ^{50} Predicted Drawdown (m)

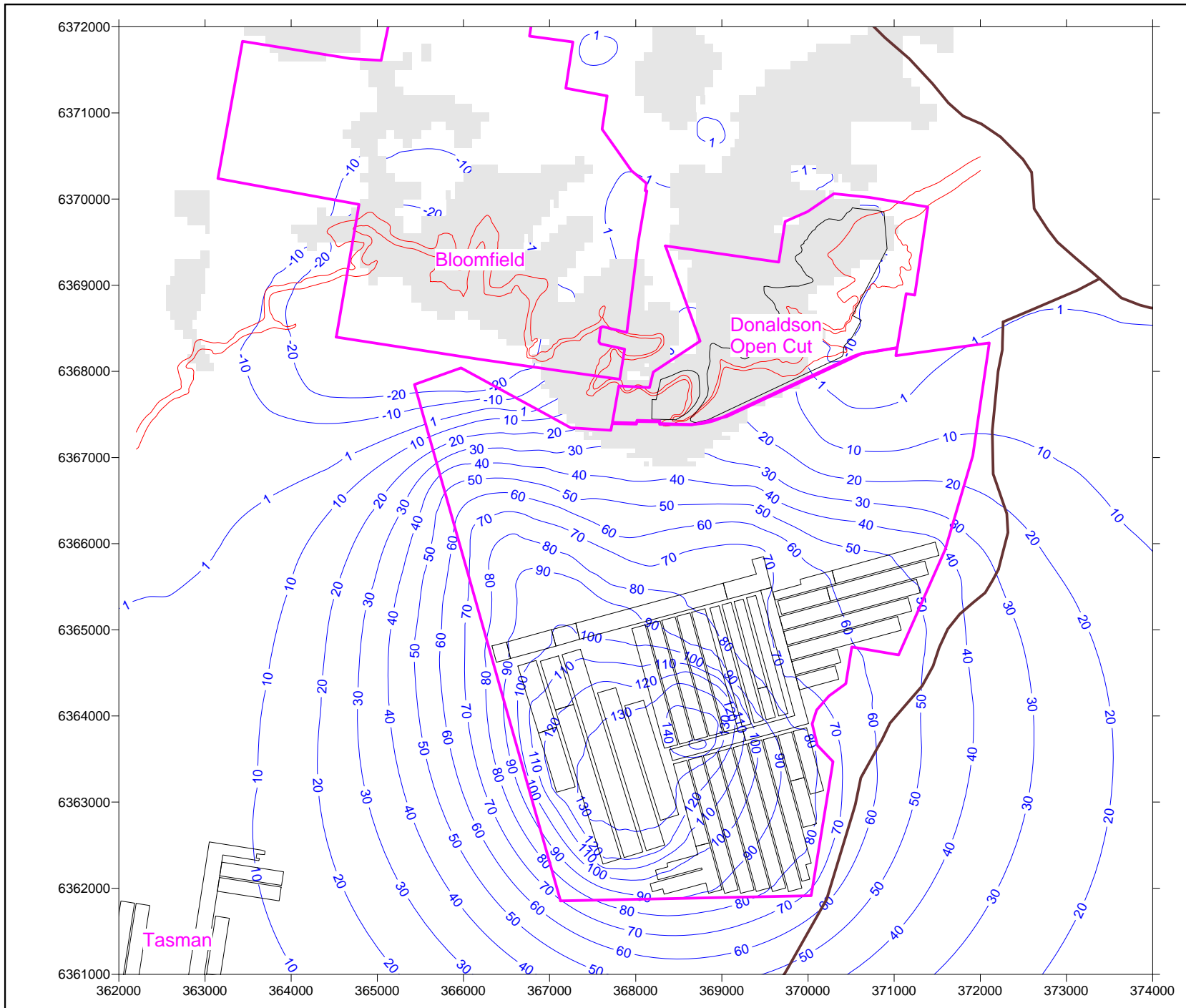





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FIGURE J2

**Predicted Drawdown at 100 Years Recovery
 in the Upper Donaldson Seam (Layer 13)
 - Modified Mine Plan**



- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Δ^{50} Predicted Drawdown (m)

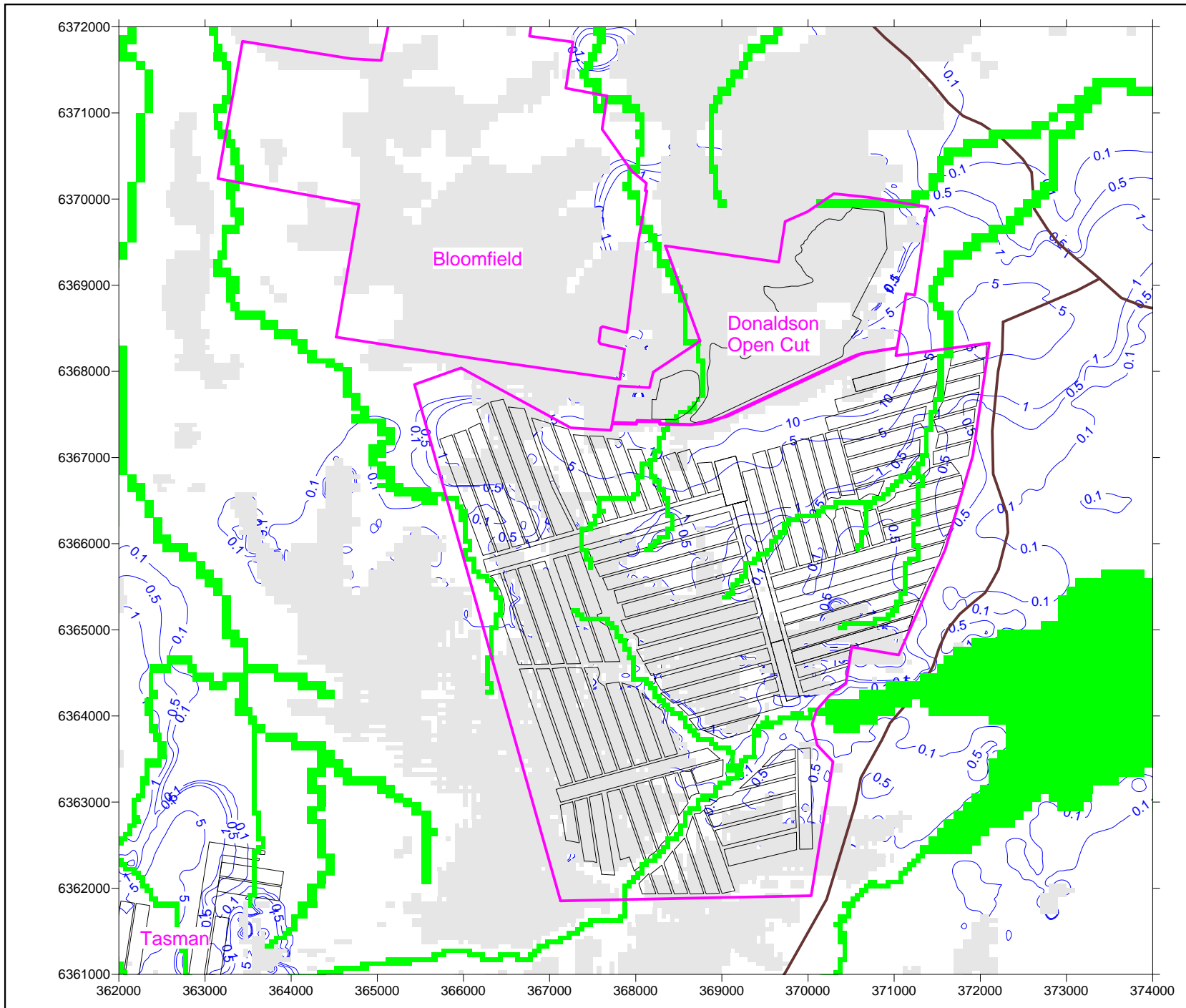


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FIGURE J3

Predicted Drawdown at 100 Years Recovery in the Lower Donaldson Seam (Layer 15) - Modified Mine Plan



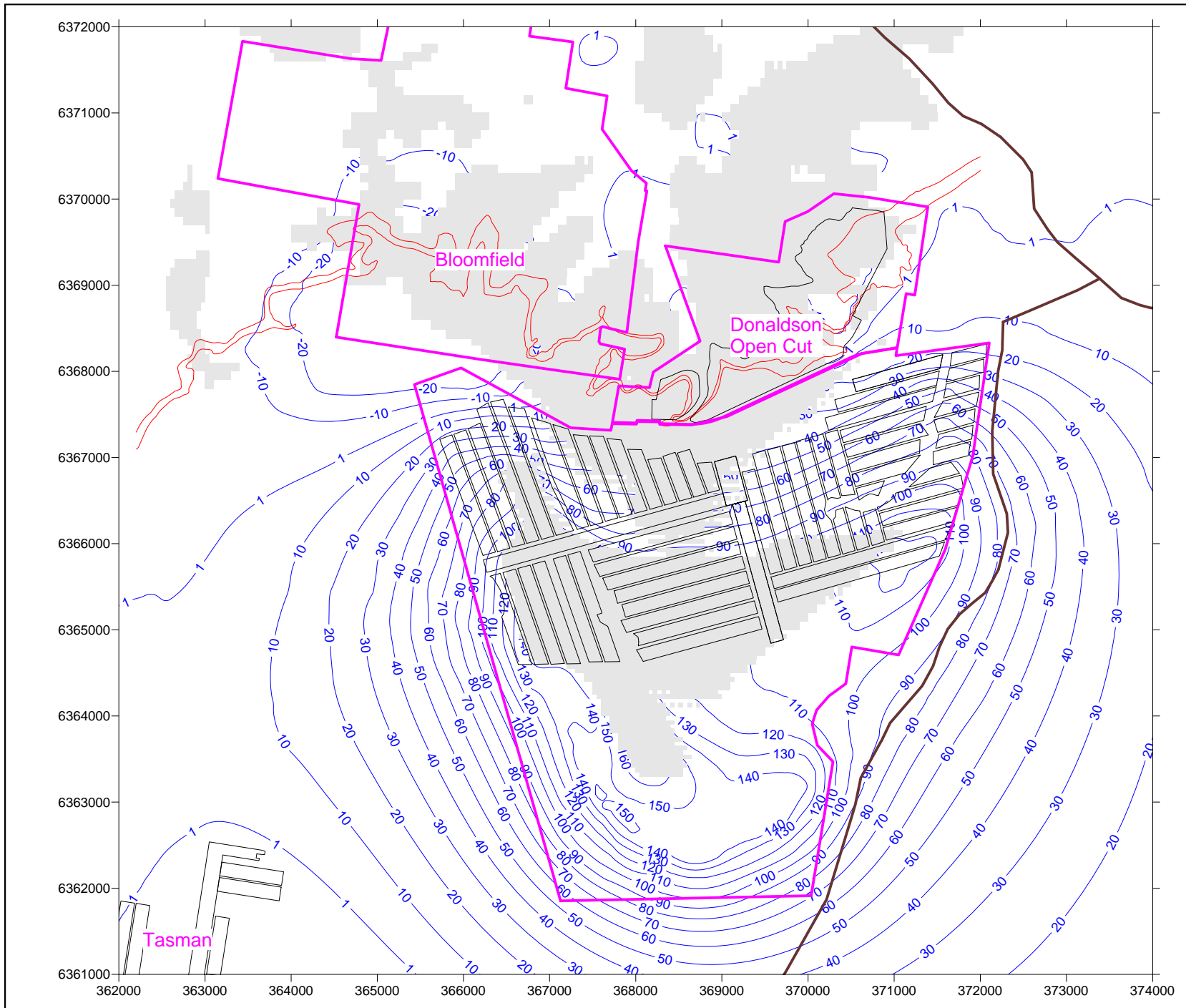
- LEGEND**
- █ River or Lake
 - Mine Plan
 - Mine Lease
 - Main Road
 - Dry Cells
 - ~⁶⁰ Predicted Drawdown (m)






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FIGURE J4

Predicted Drawdown at 100 Years Recovery in the Alluvium and Regolith (Layer 1) - Approved Mine Plan



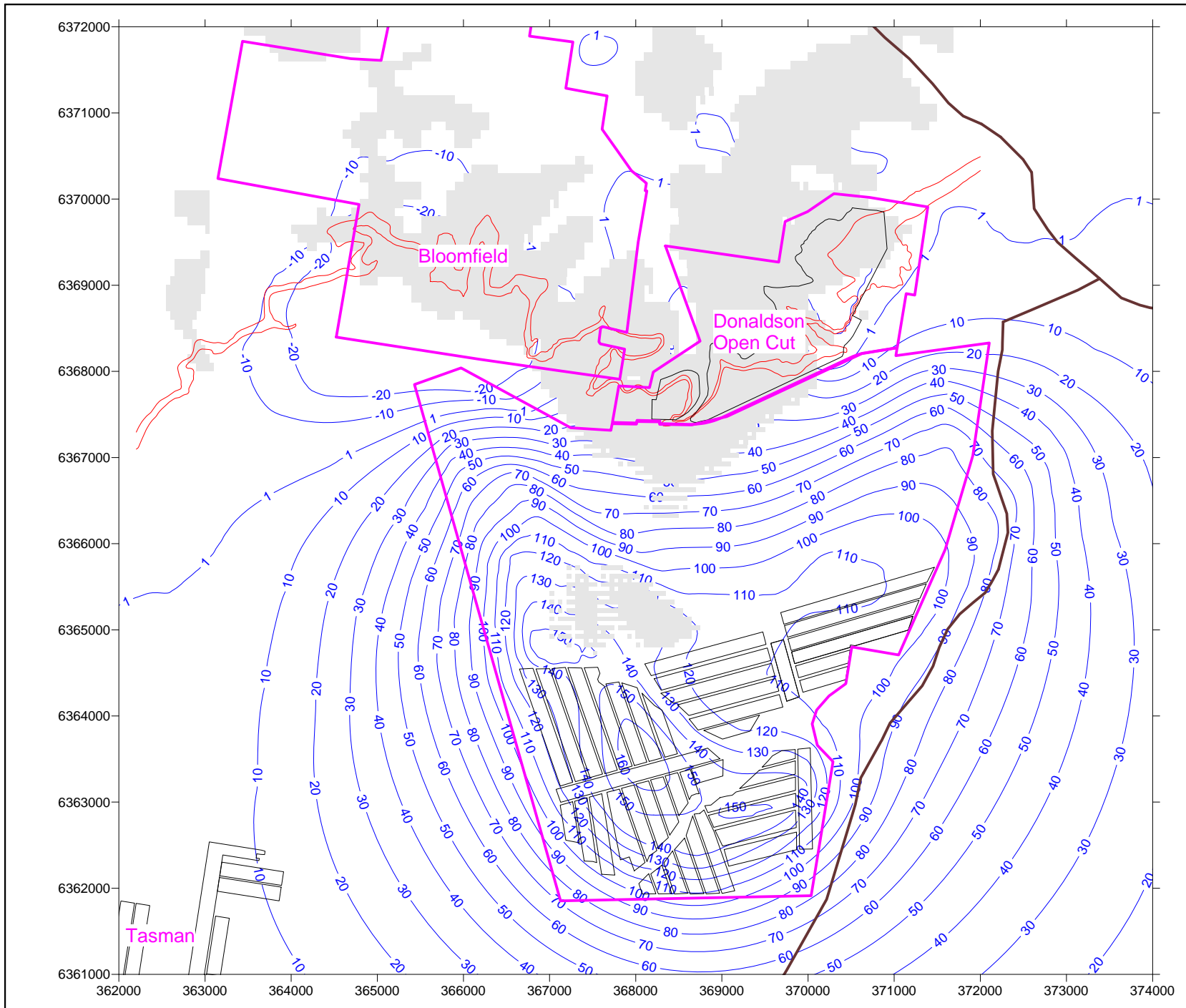
- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Predicted Drawdown (m)





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FIGURE J5

**Predicted Drawdown at 100 Years Recovery
 in the Upper Donaldson Seam (Layer 13)
 - Approved Mine Plan**



- LEGEND**
-  Mine Plan
 -  Mine Lease
 -  Main Road
 -  Dry Cells
 -  Predicted Drawdown (m)

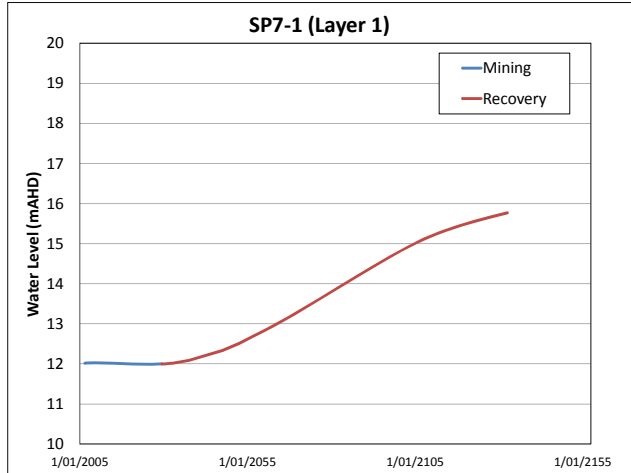
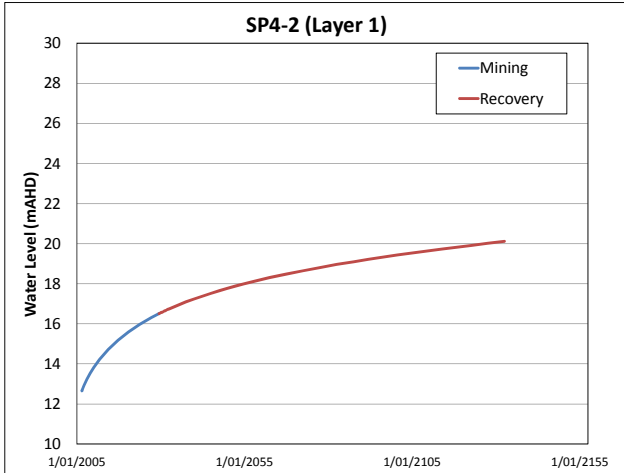
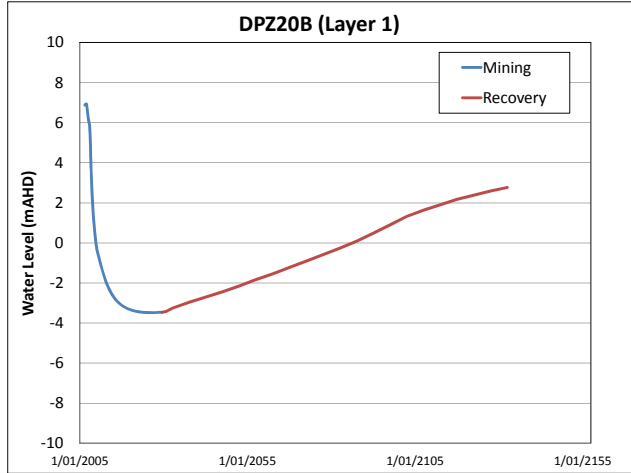
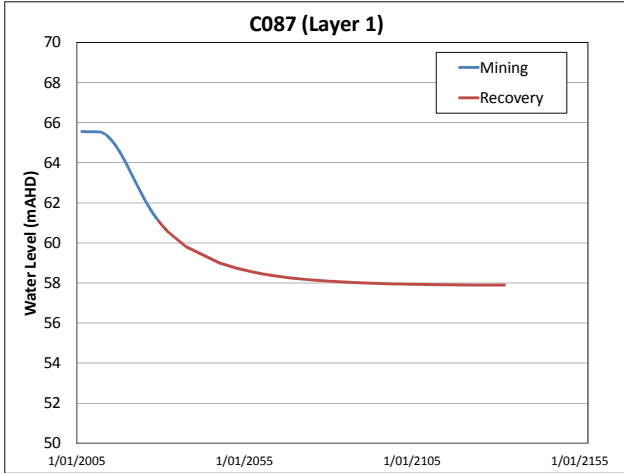
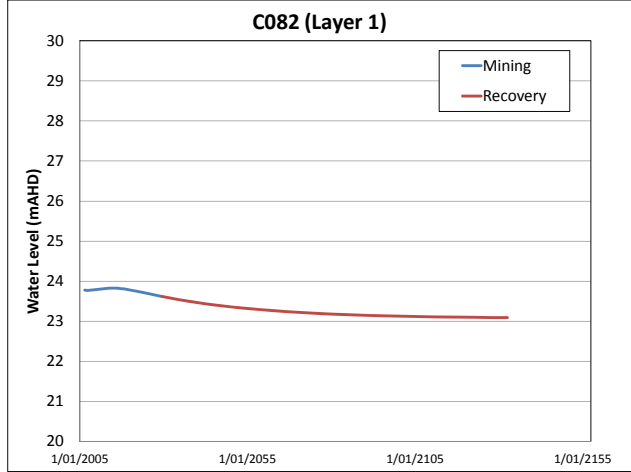
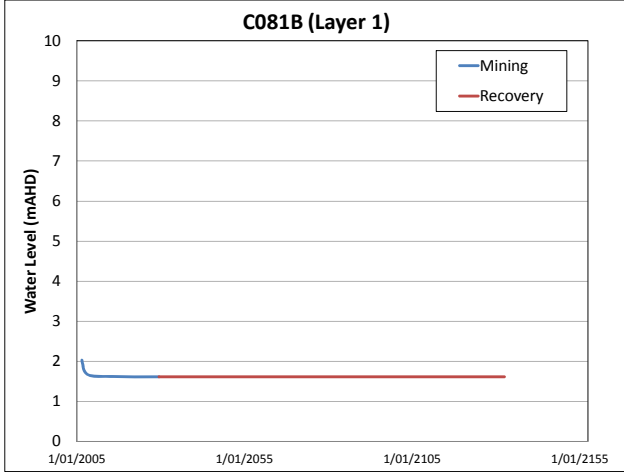
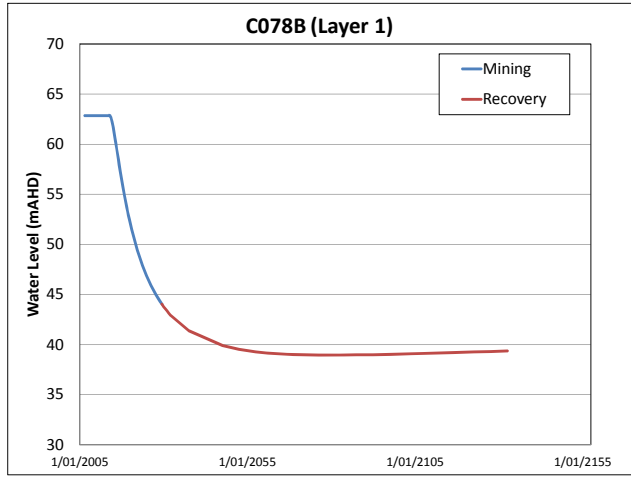
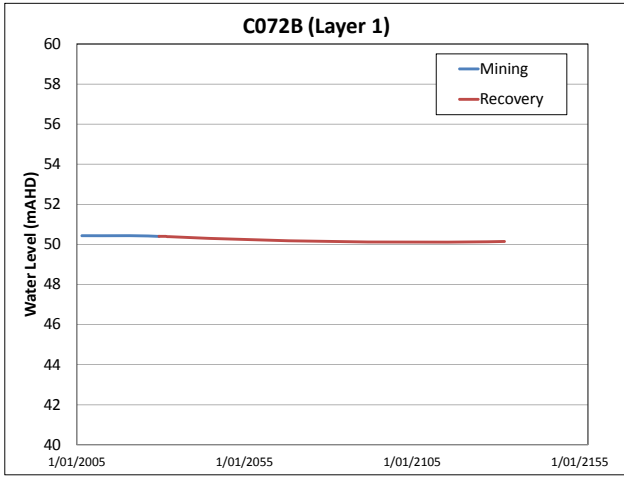
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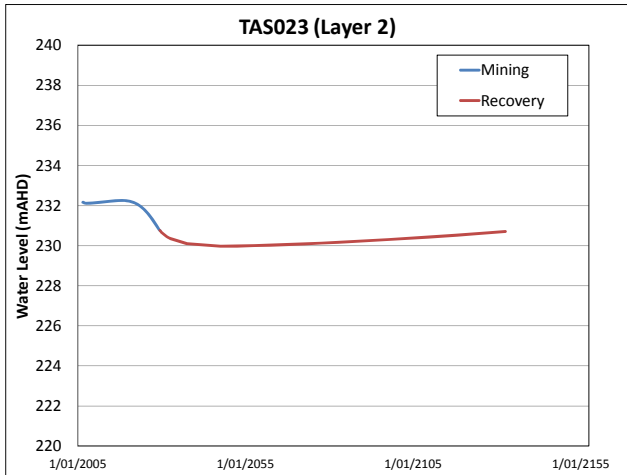
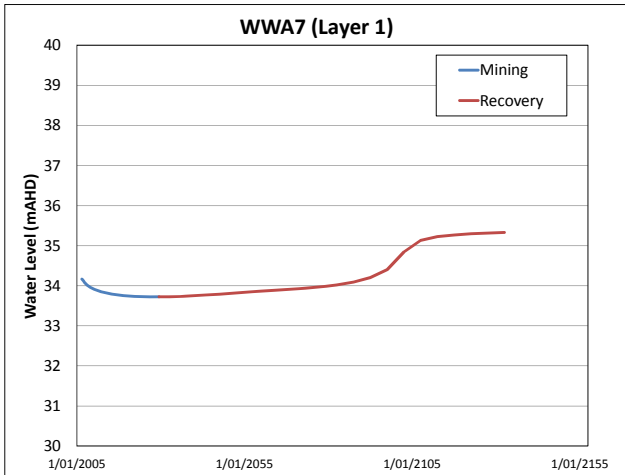
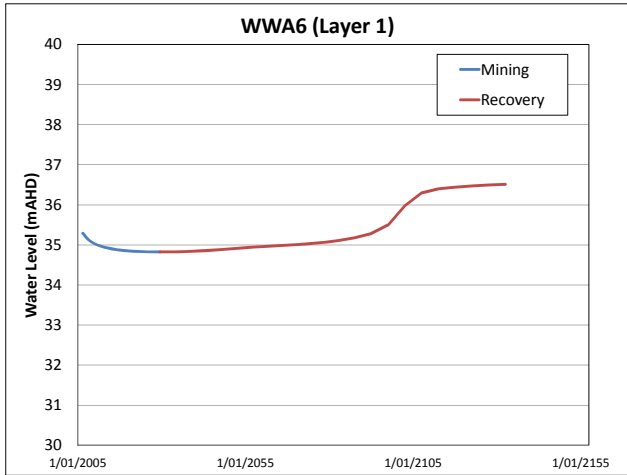
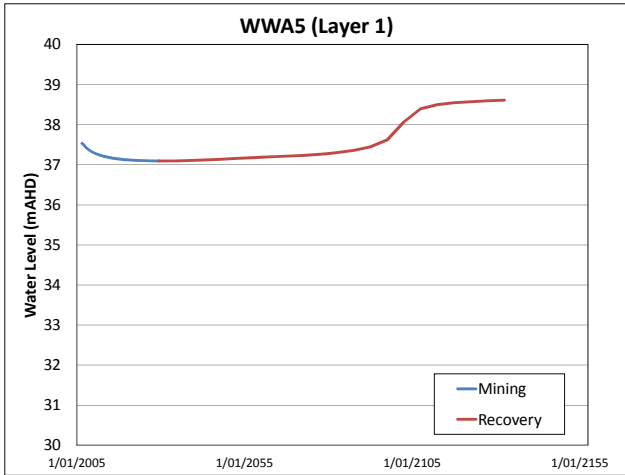
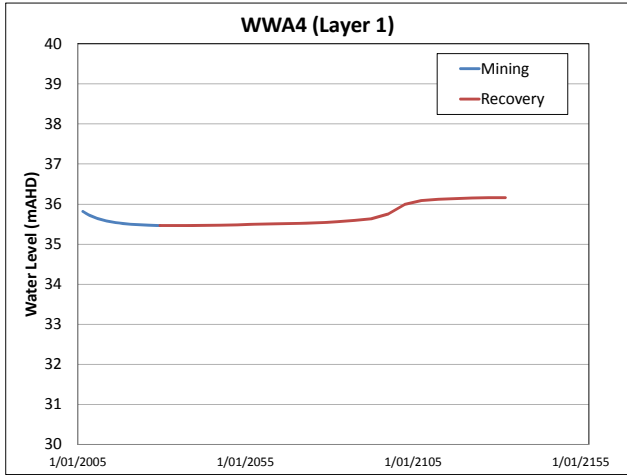
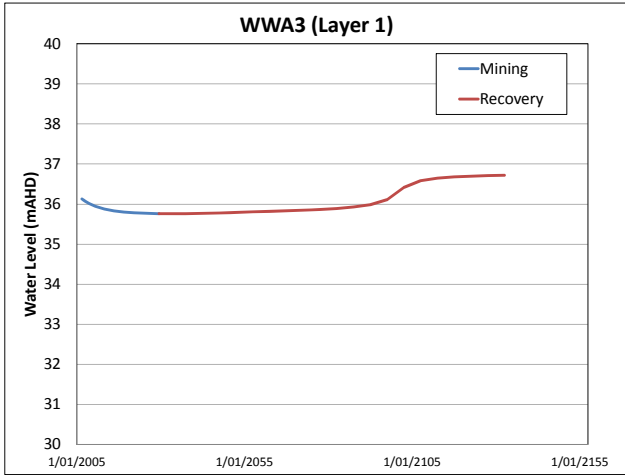
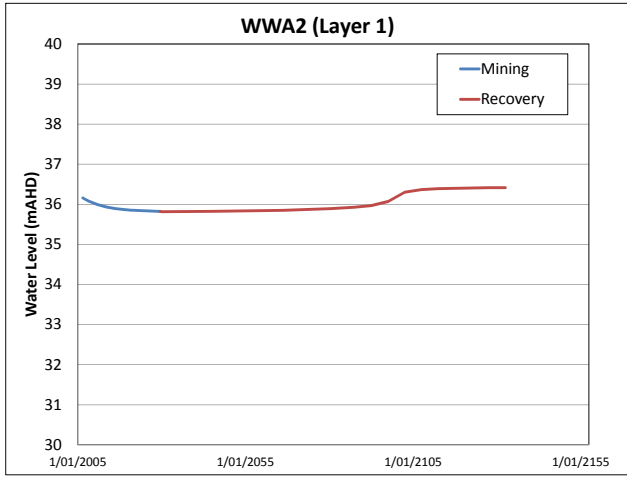
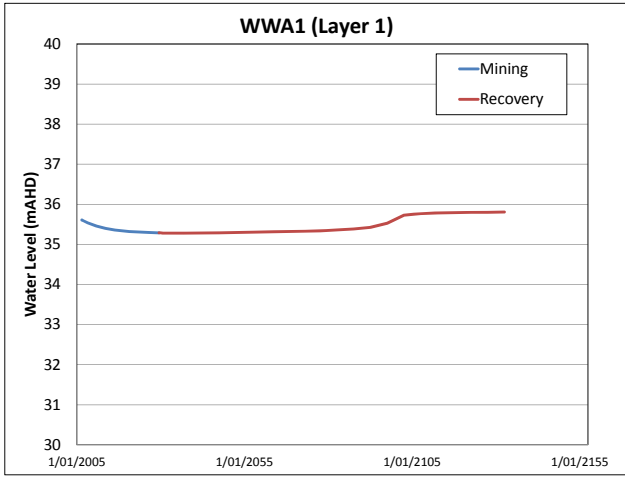


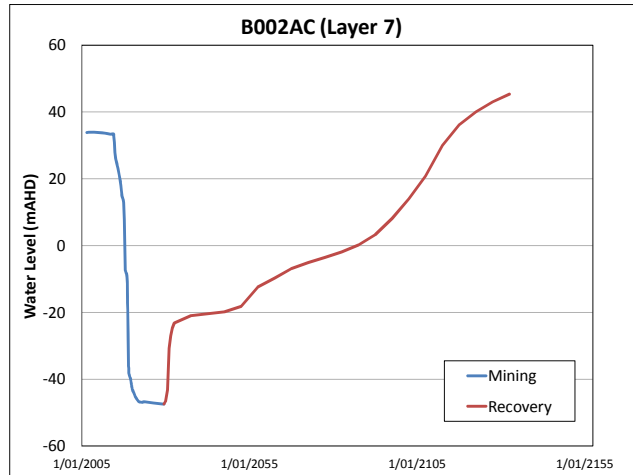
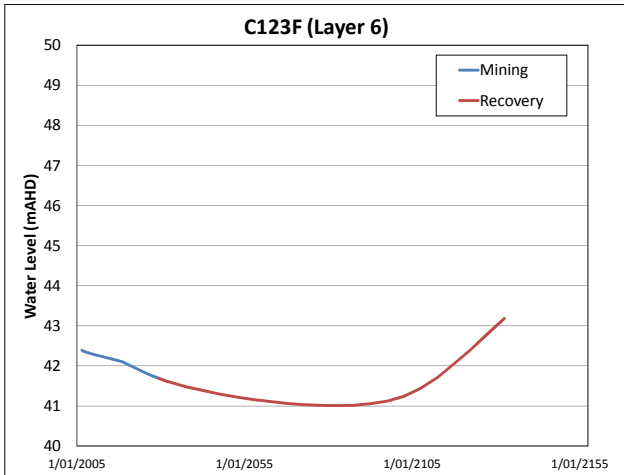
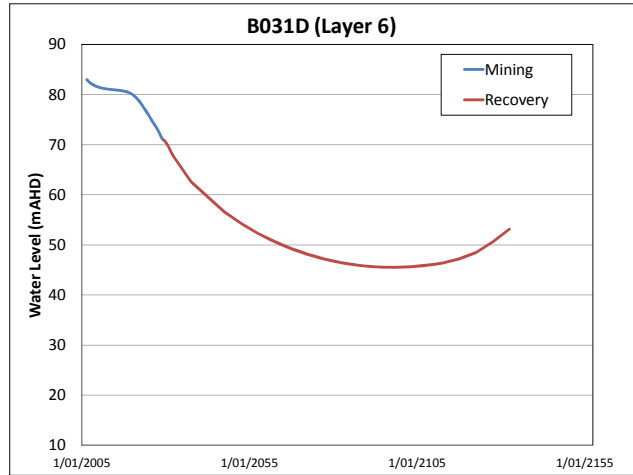
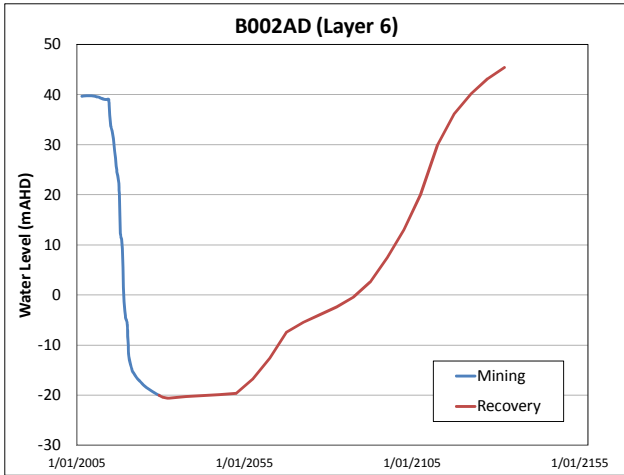
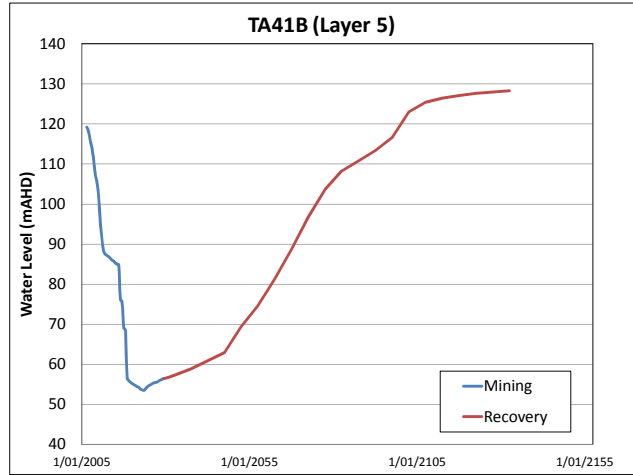
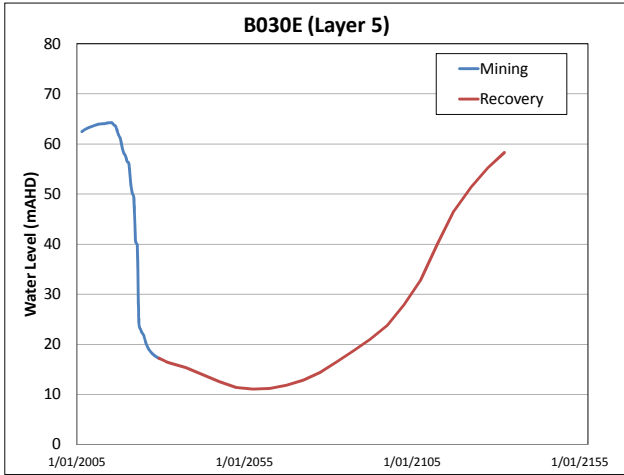
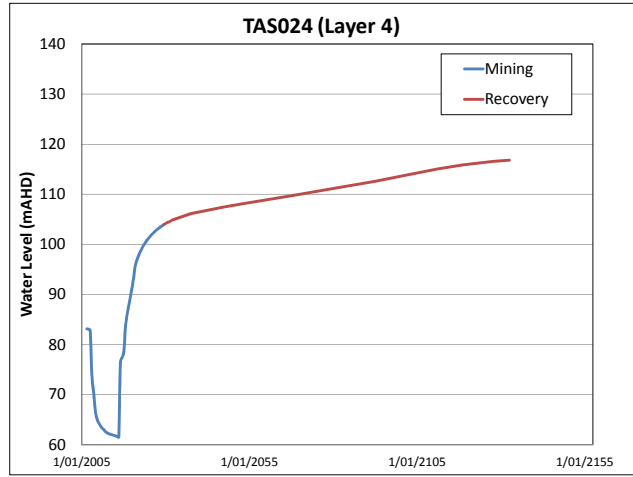
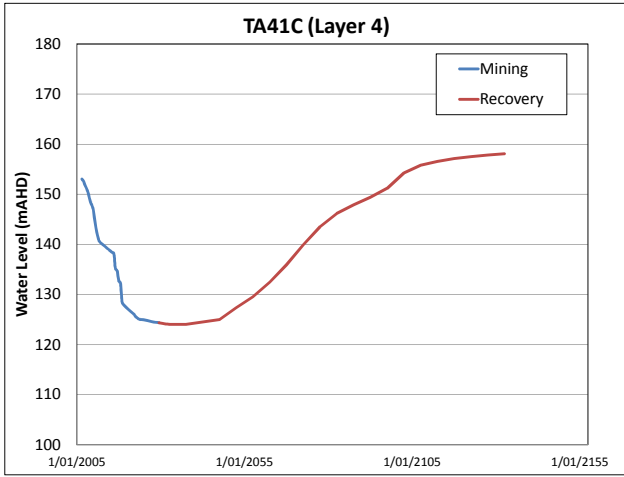
FIGURE J6

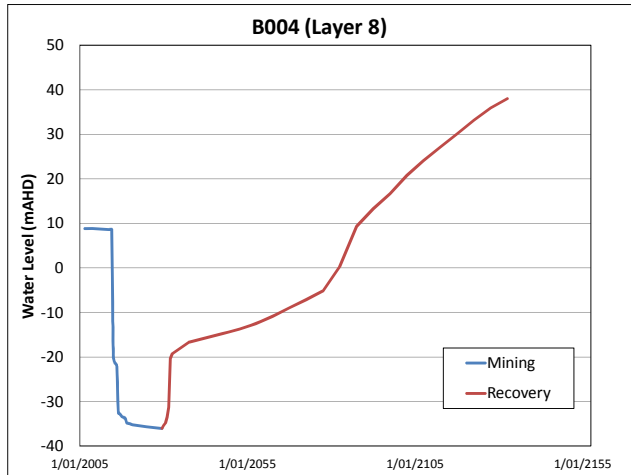
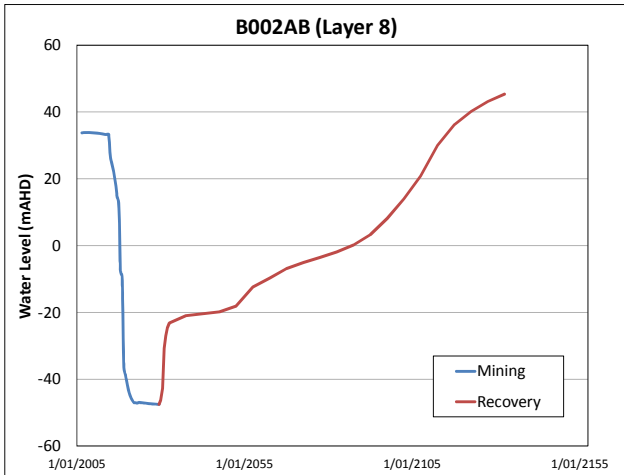
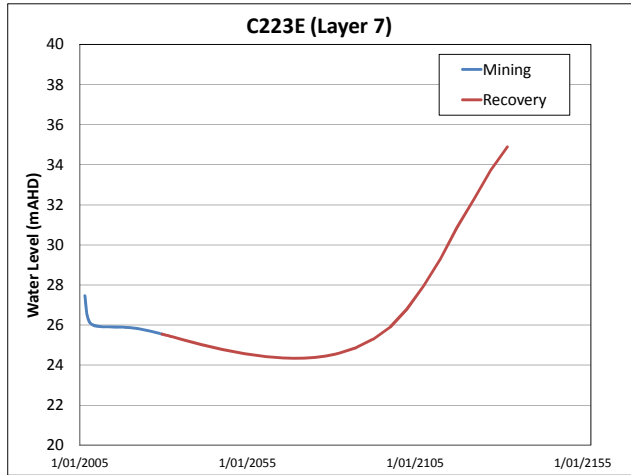
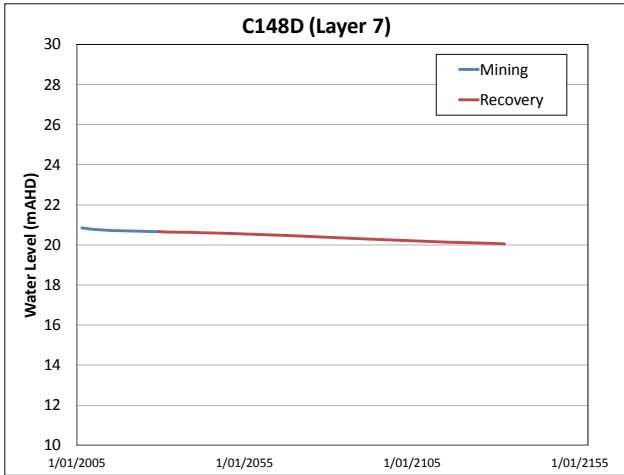
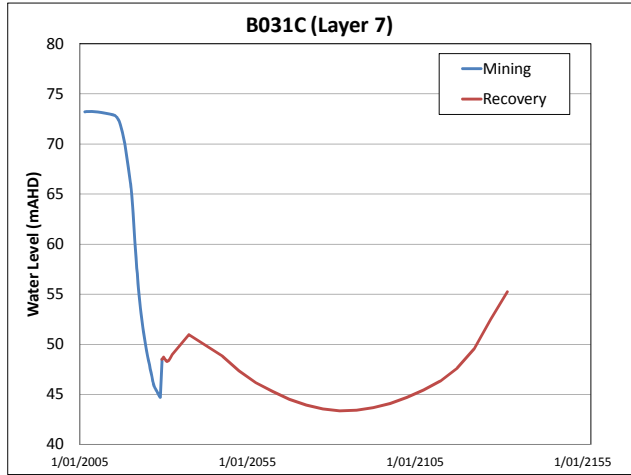
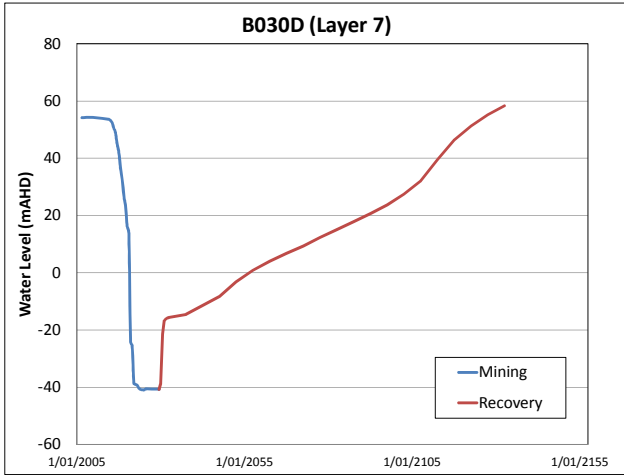
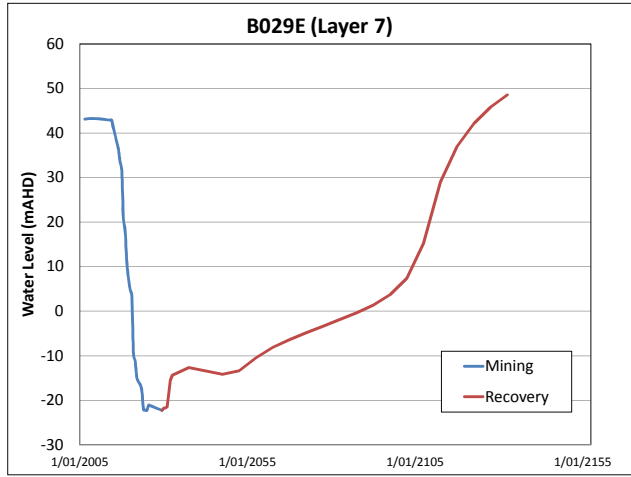
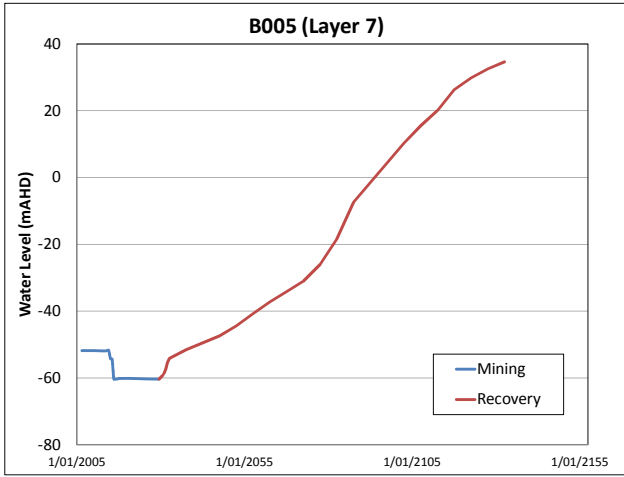
Predicted Drawdown at 100 Years Recovery in the Lower Donaldson Seam (Layer 15) - Approved Mine Plan

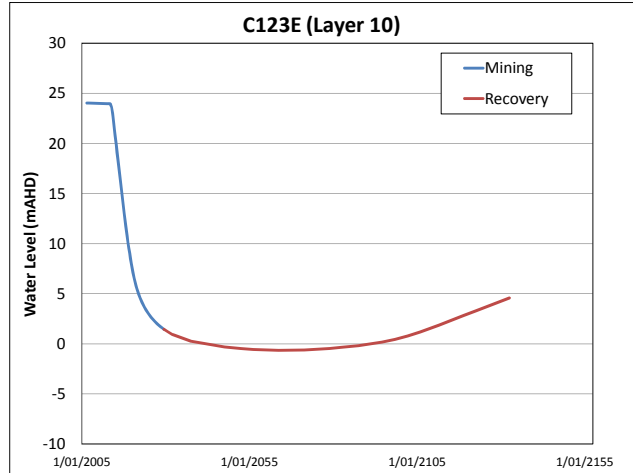
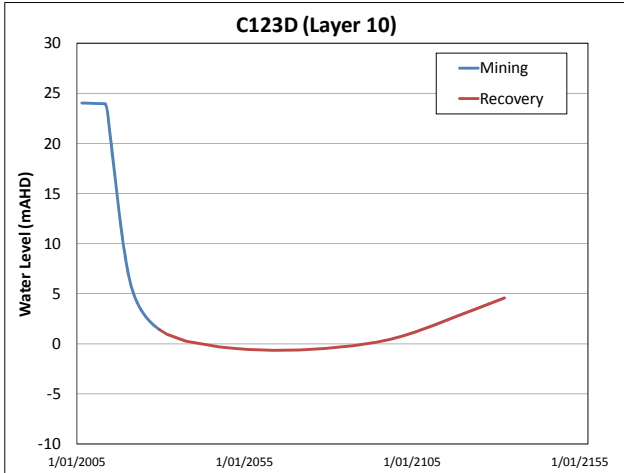
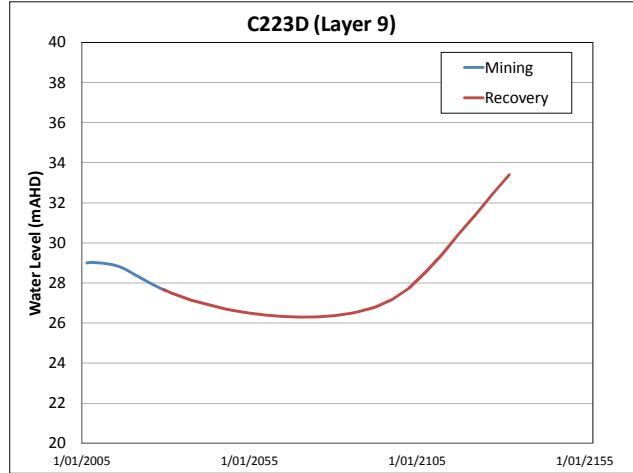
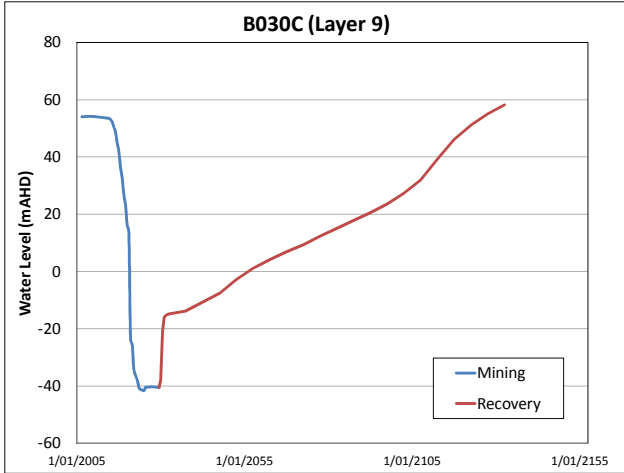
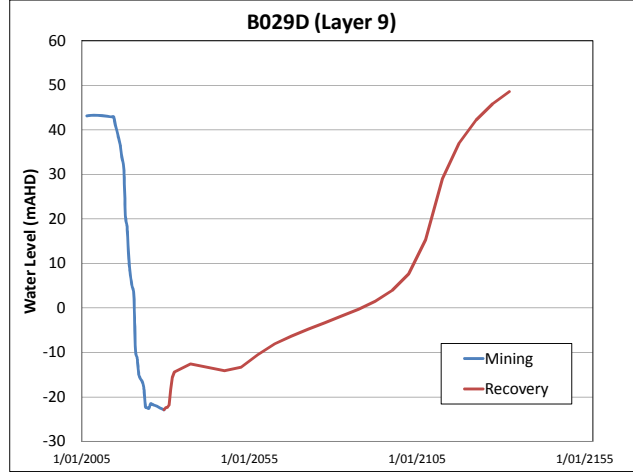
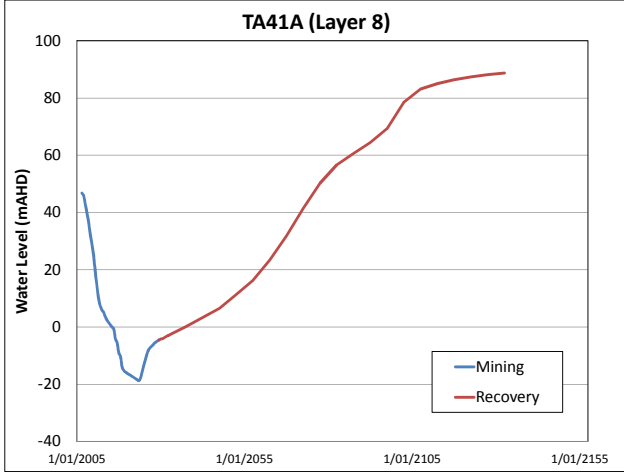
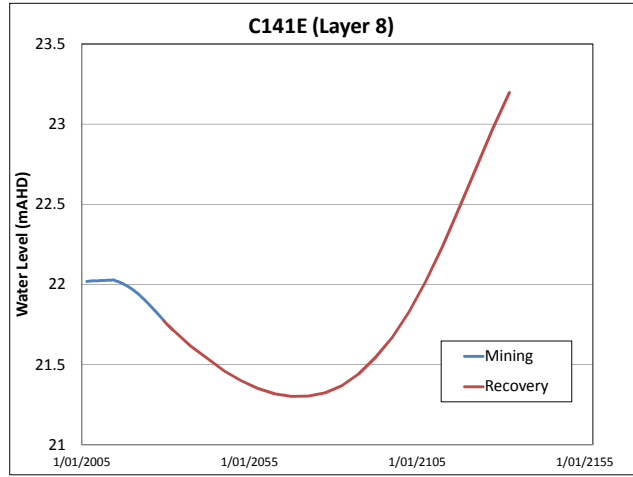
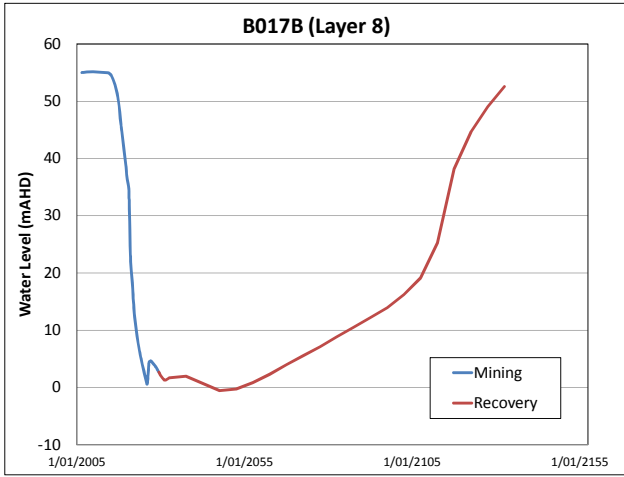
**APPENDIX K:
RECOVERY HYDROGRAPHS –
MODIFIED MINE PLAN**

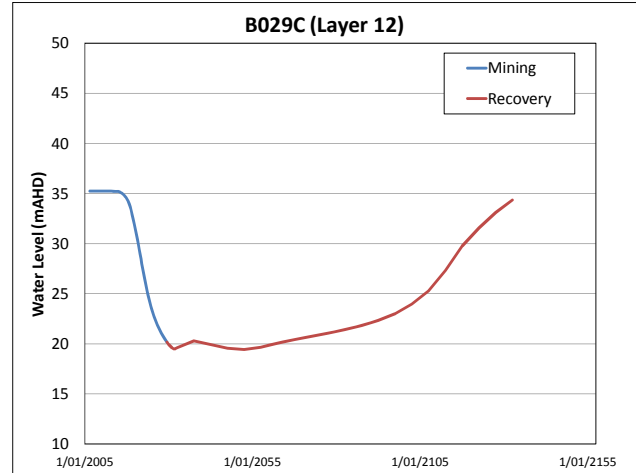
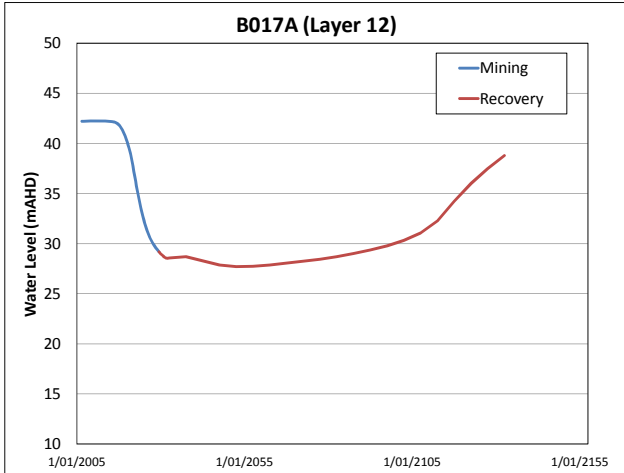
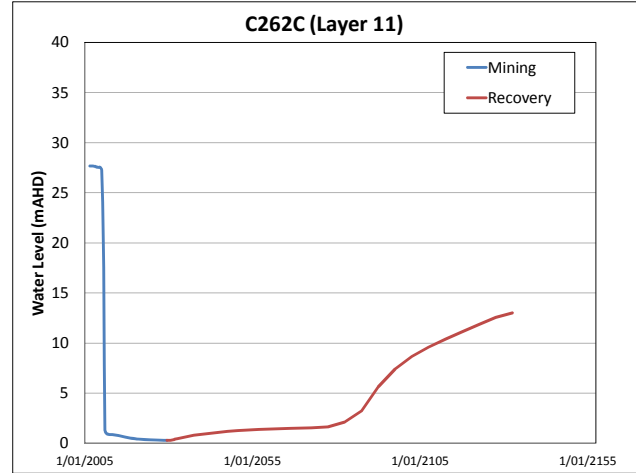
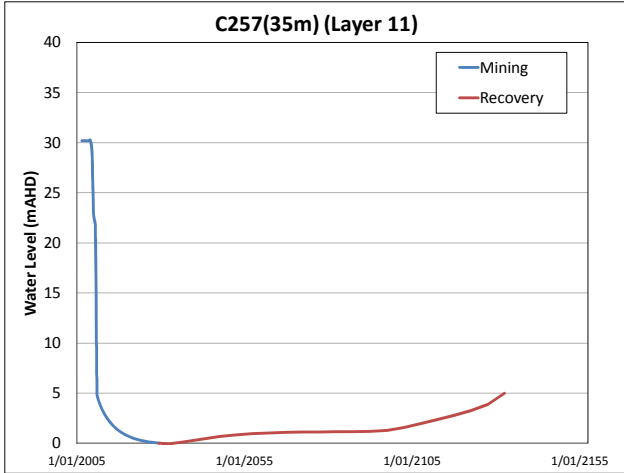
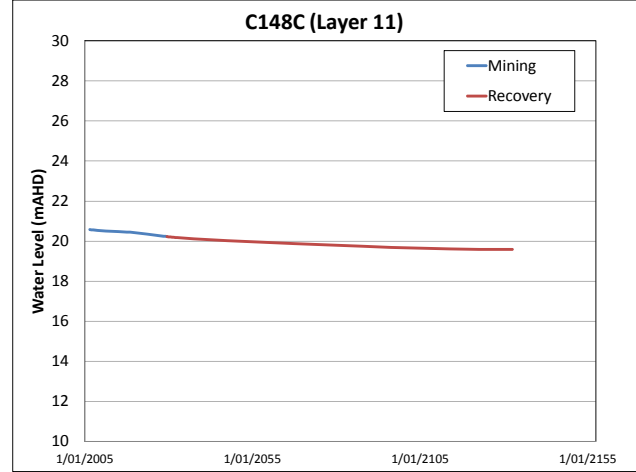
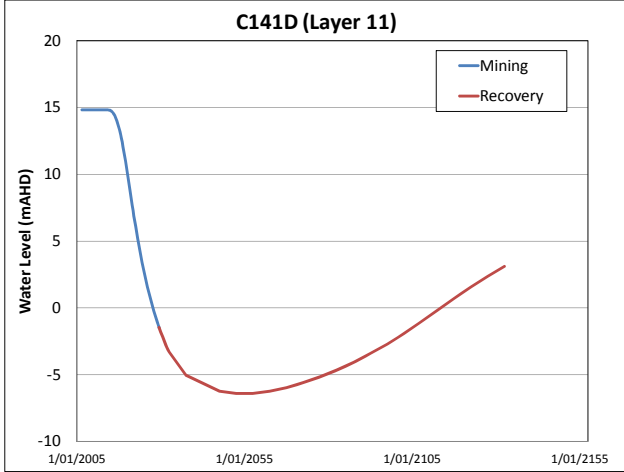
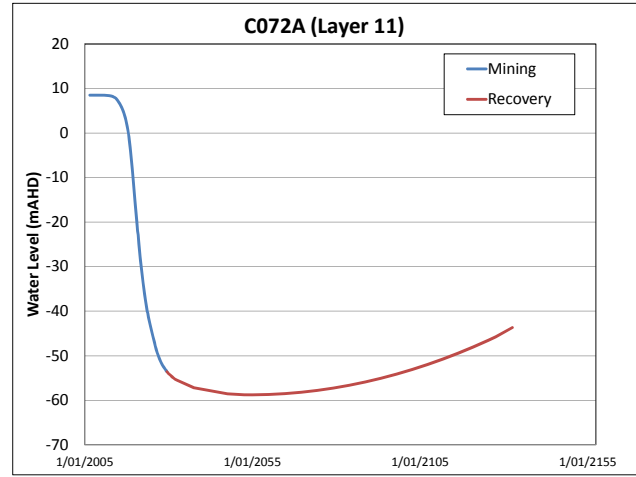
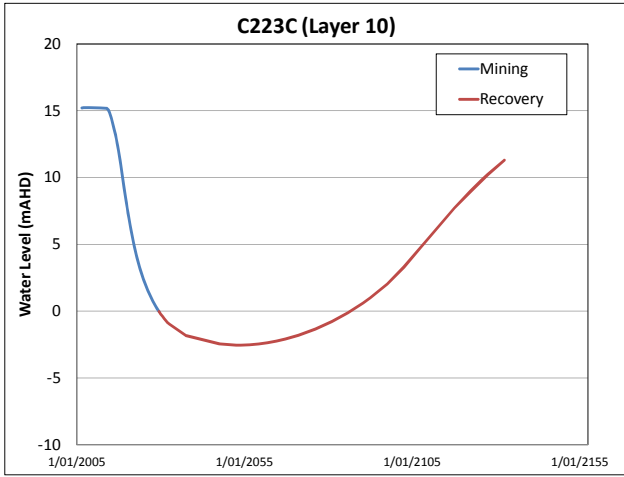


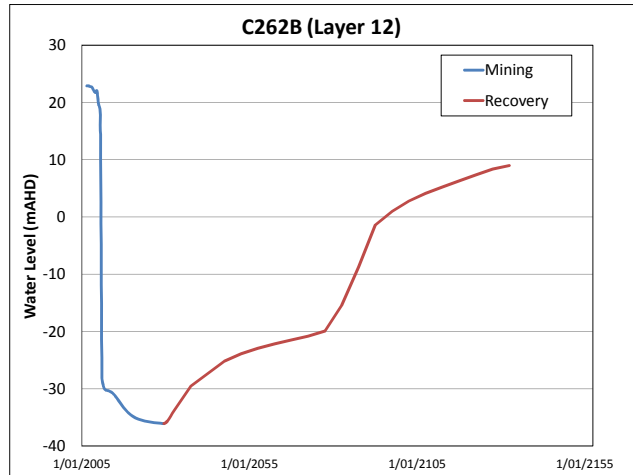
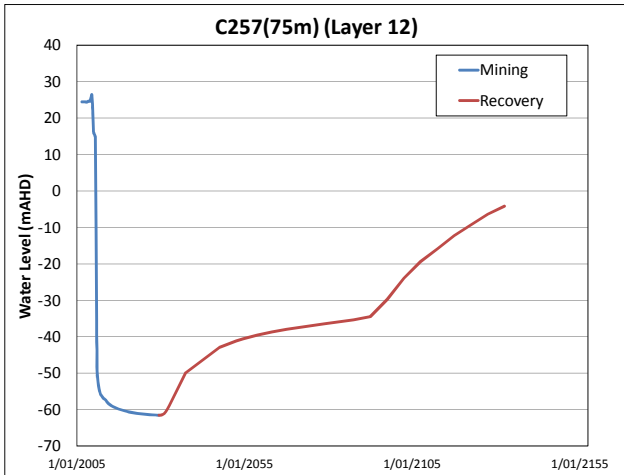
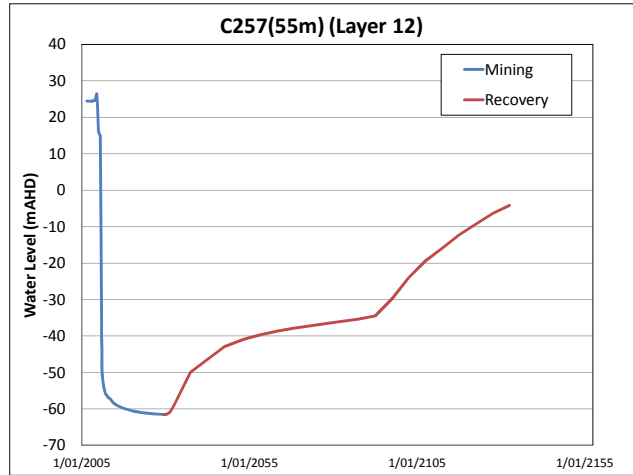
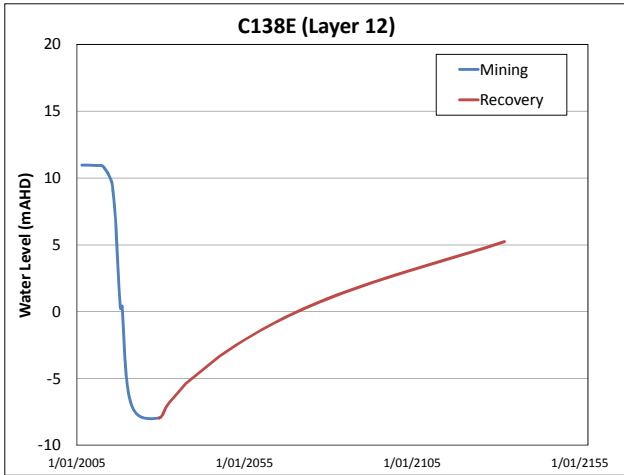
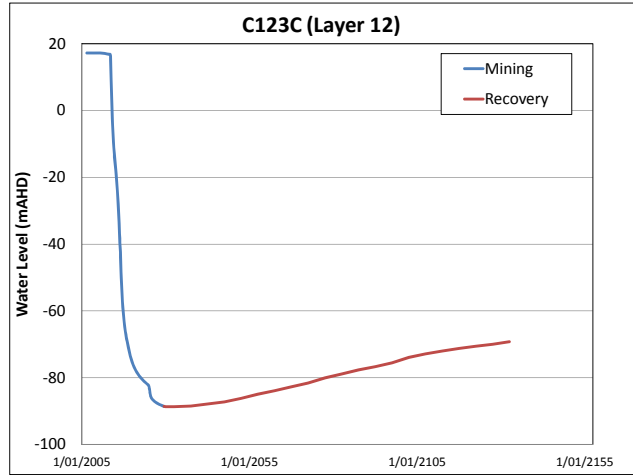
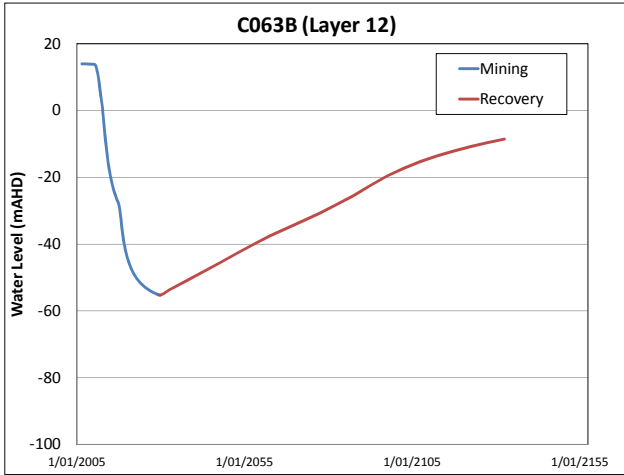
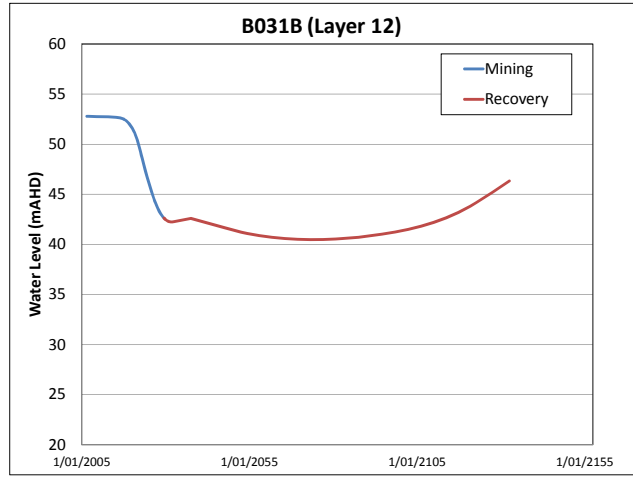
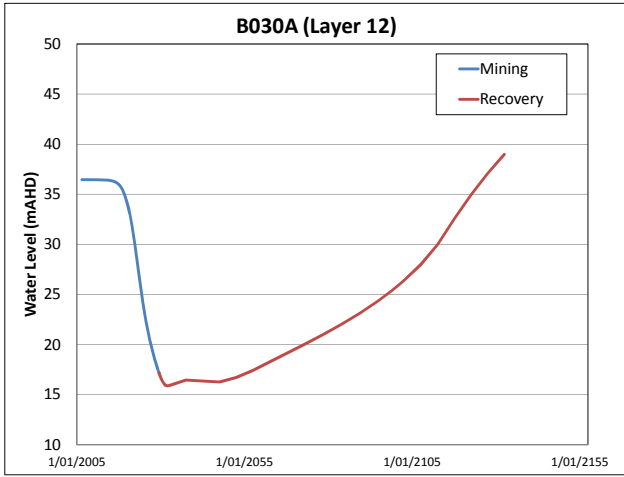


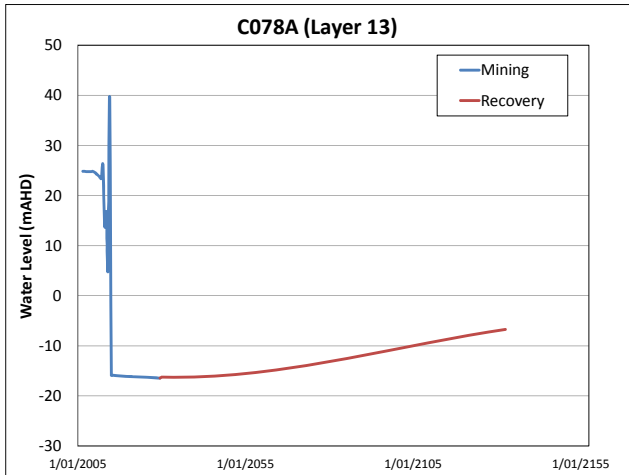
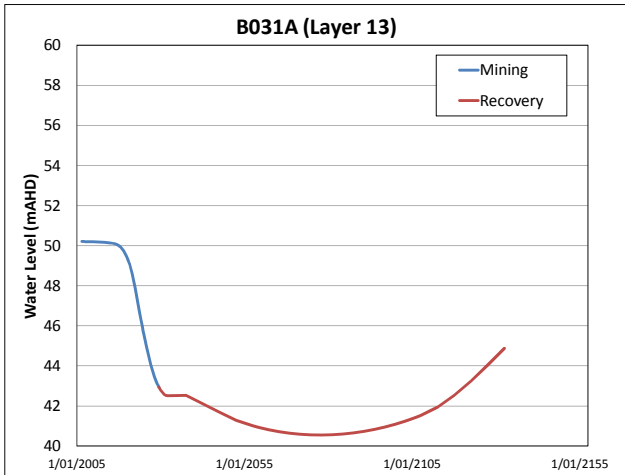
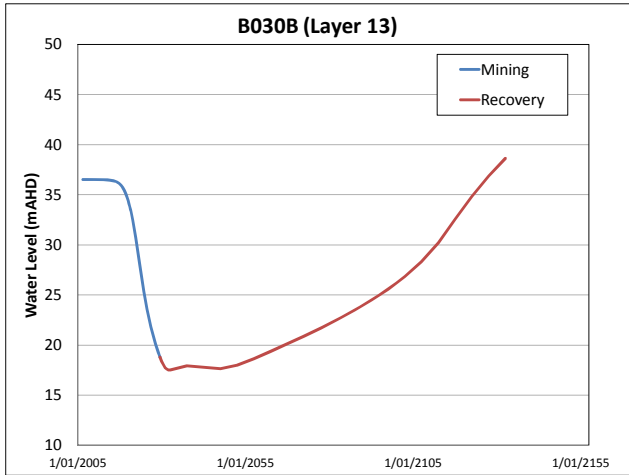
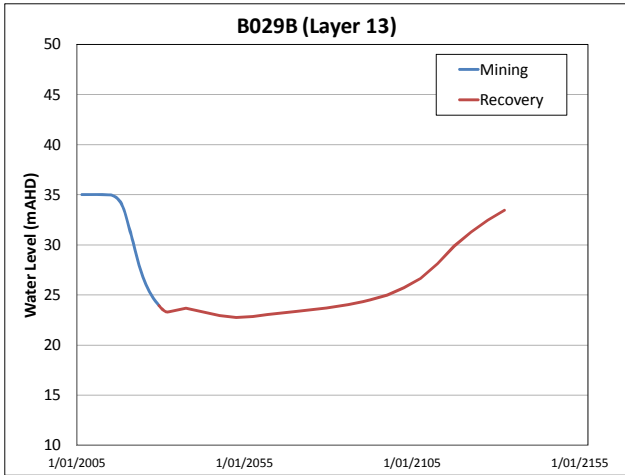
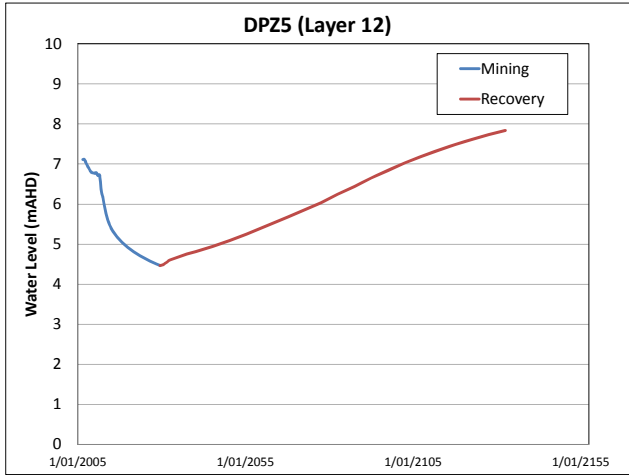
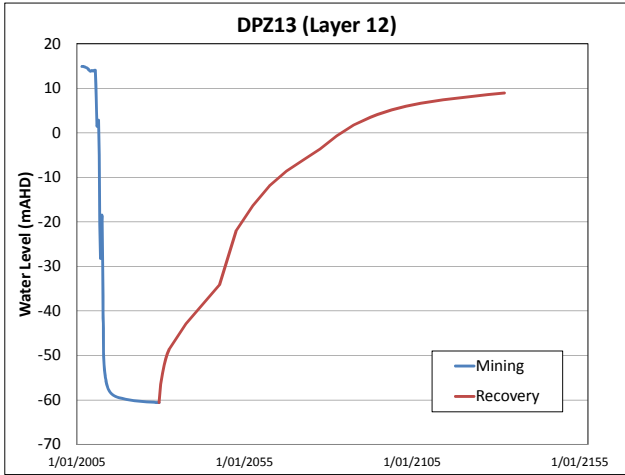
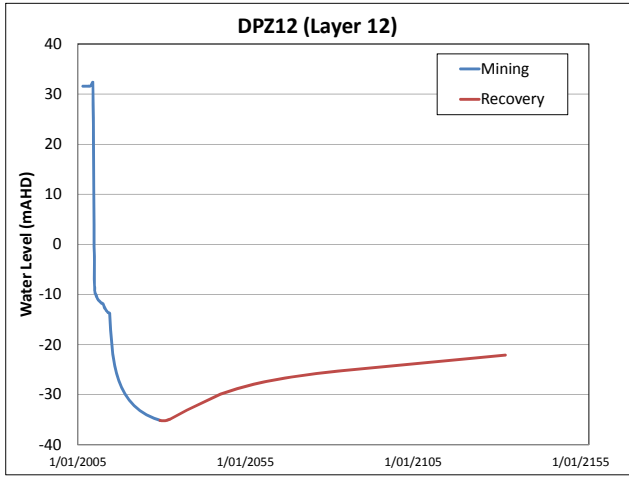
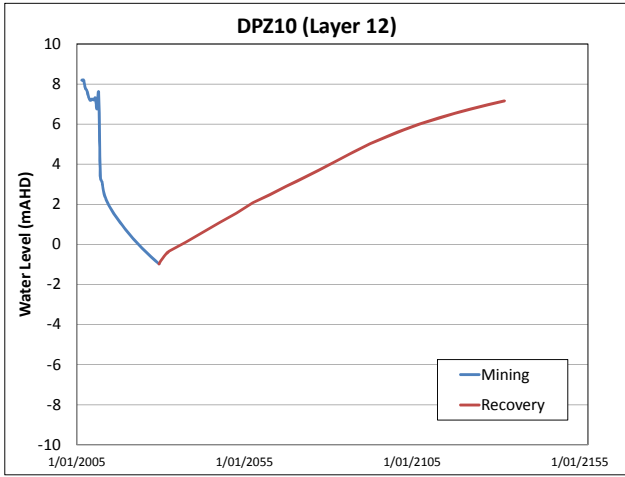


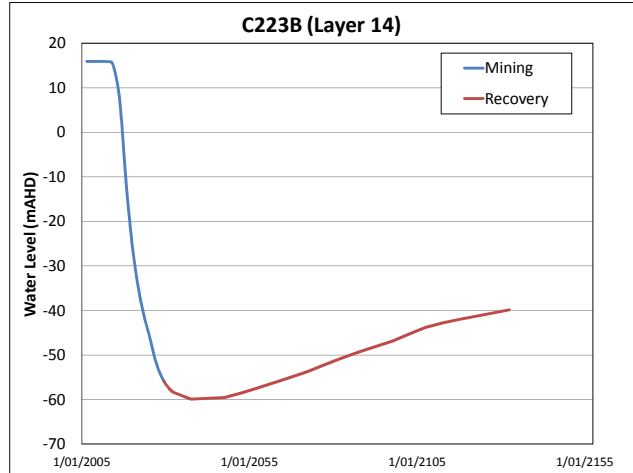
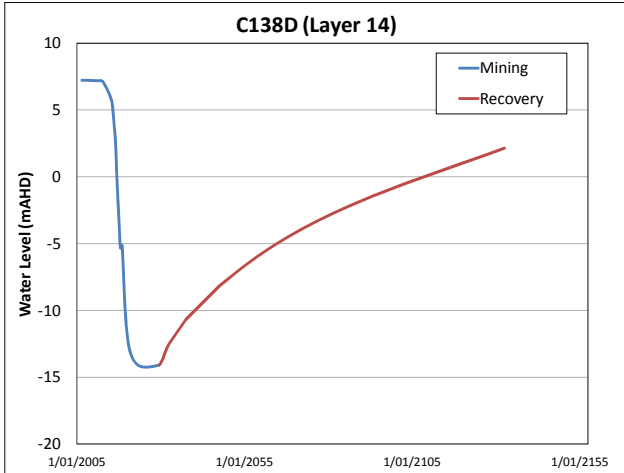
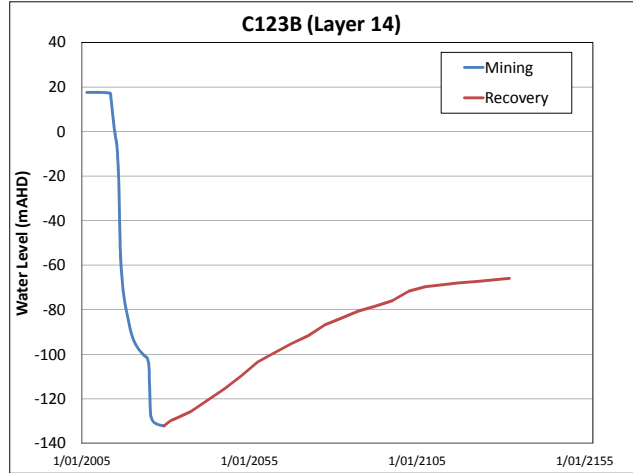
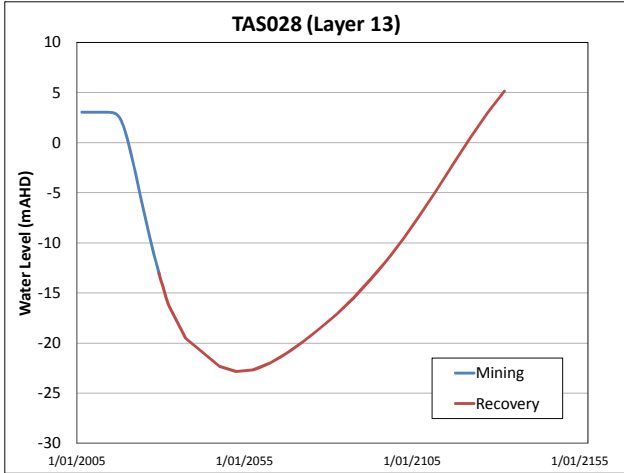
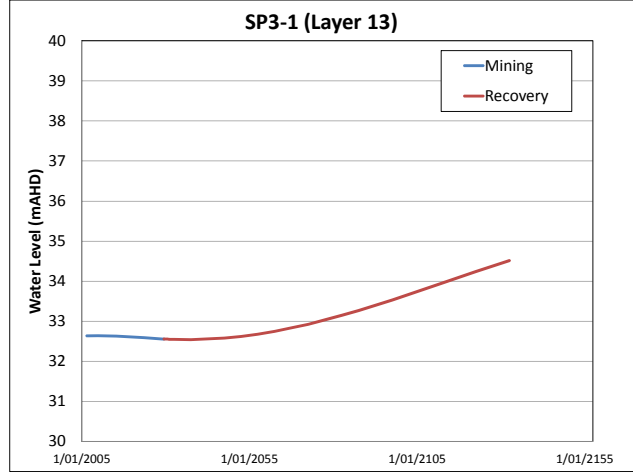
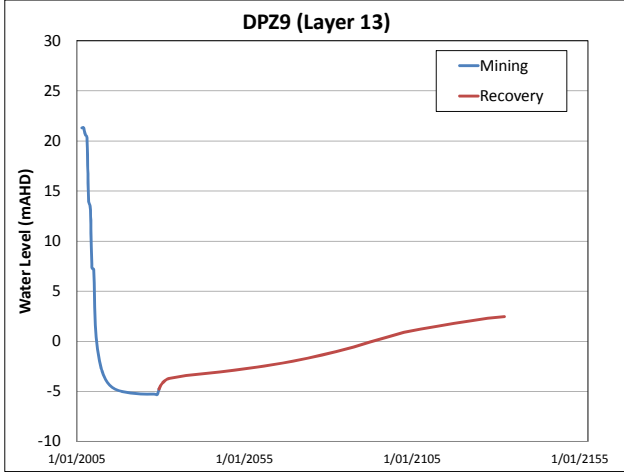
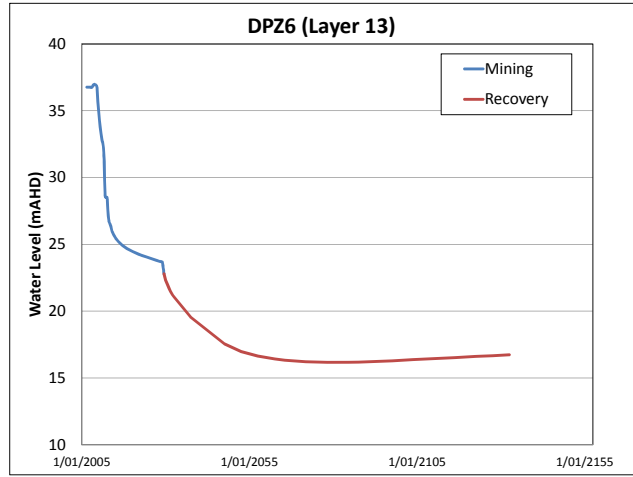
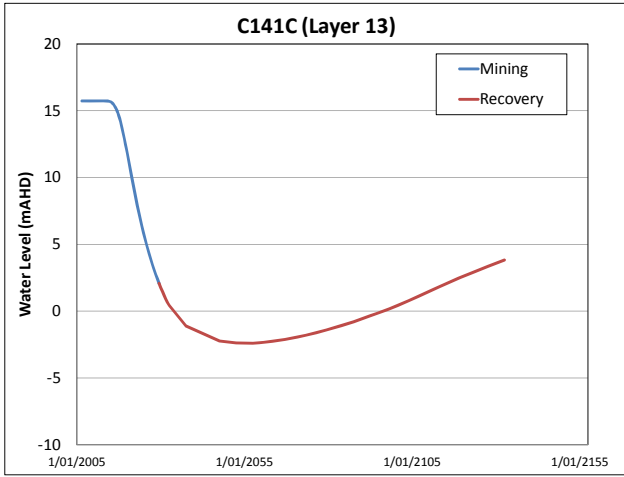


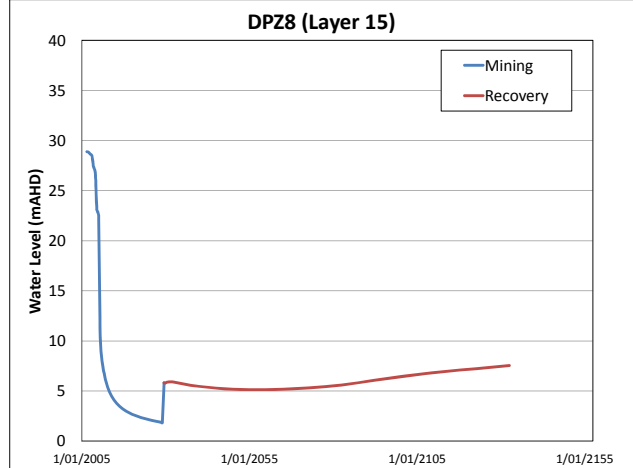
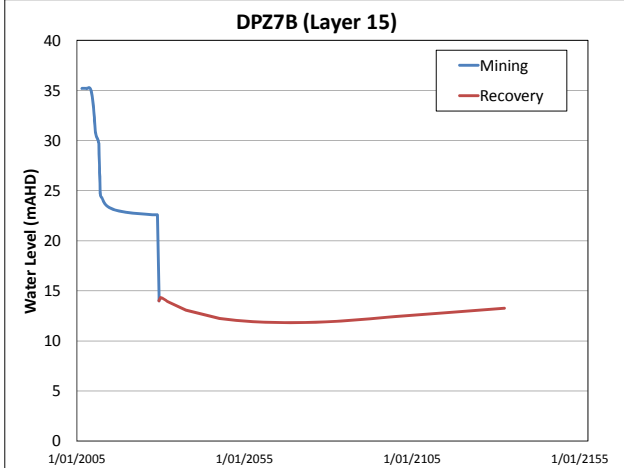
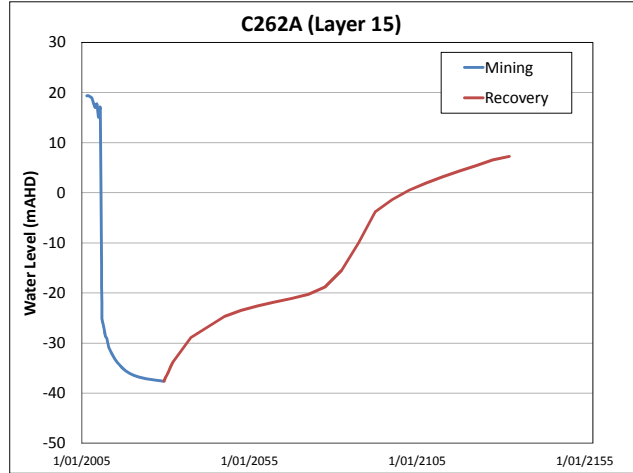
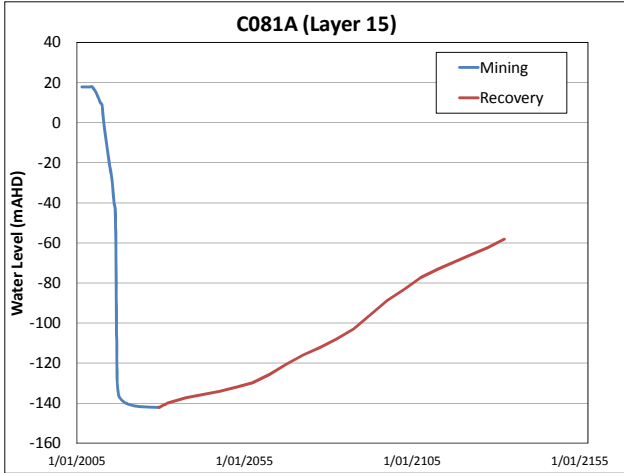
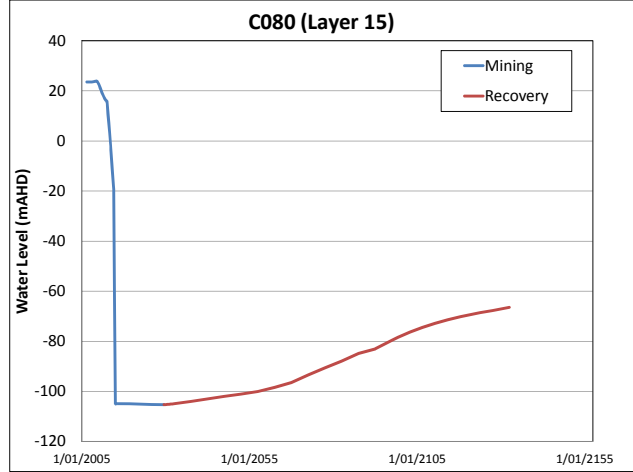
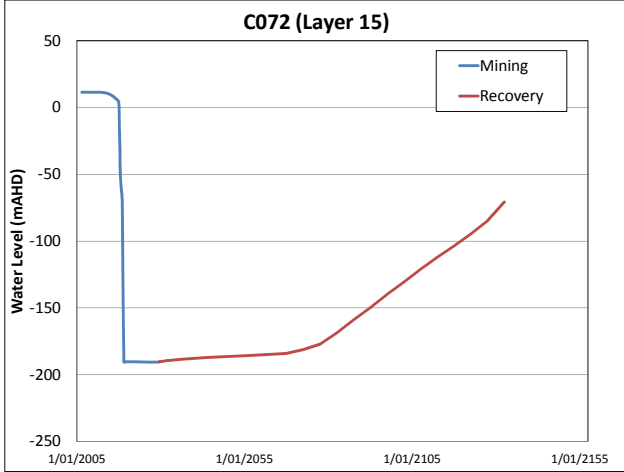
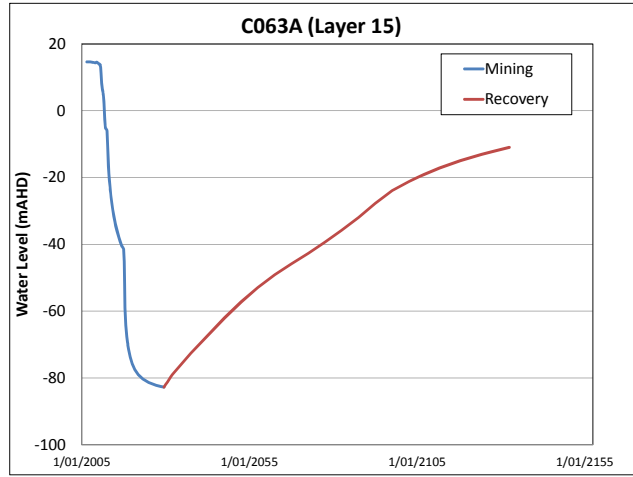
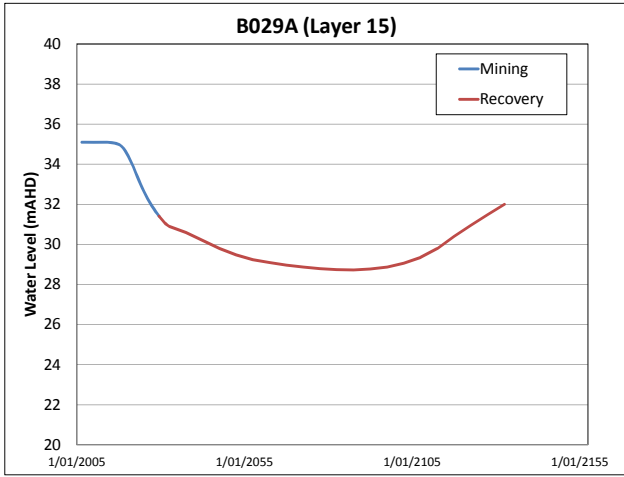


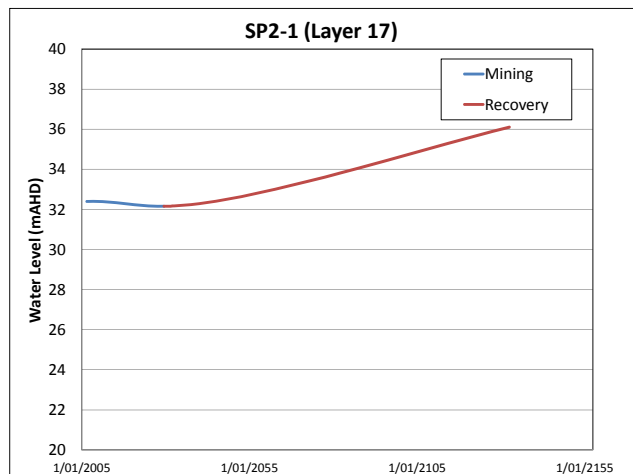
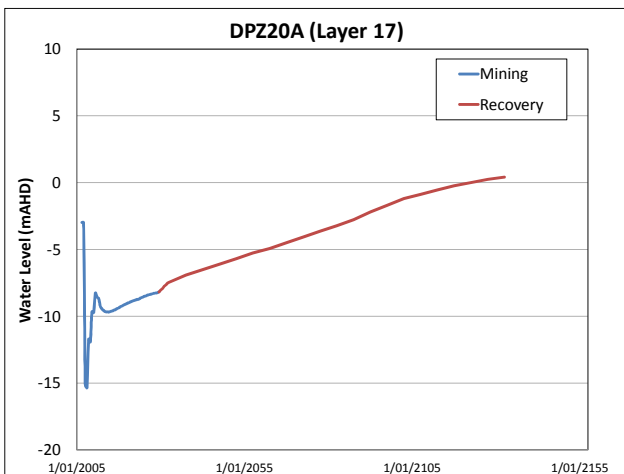
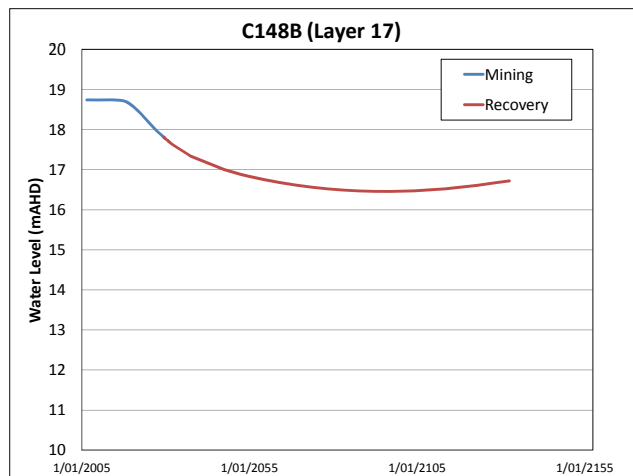
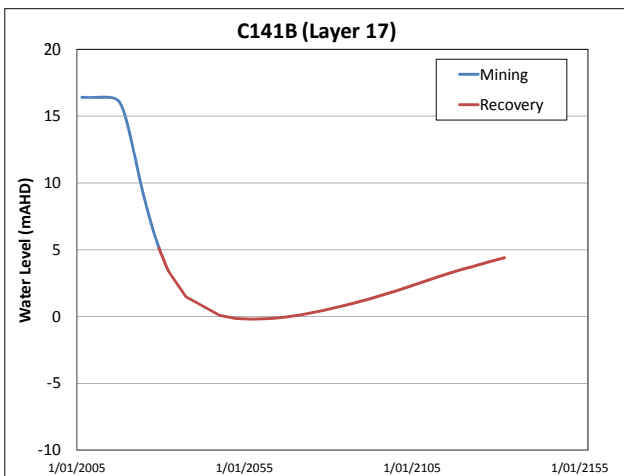
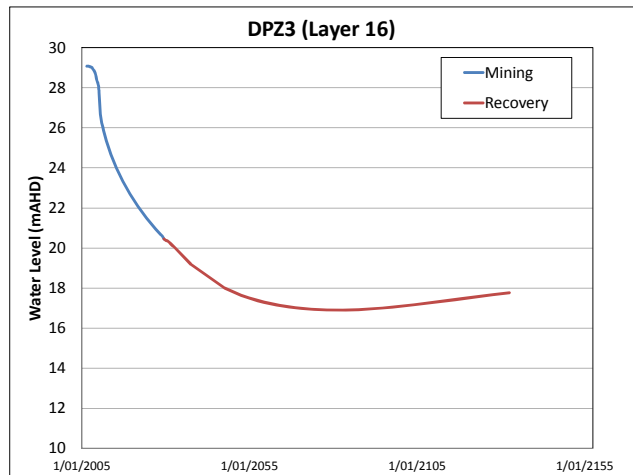
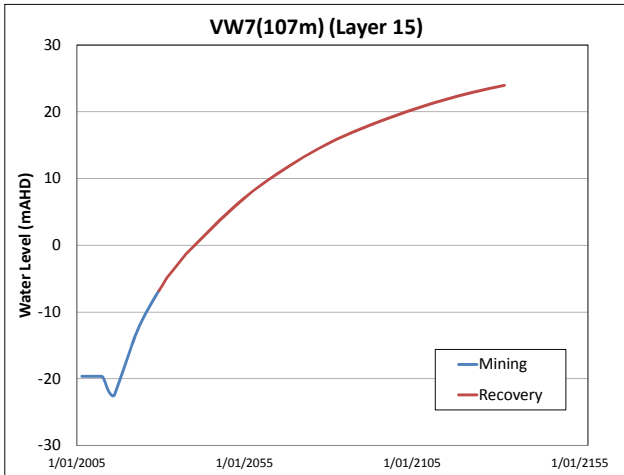
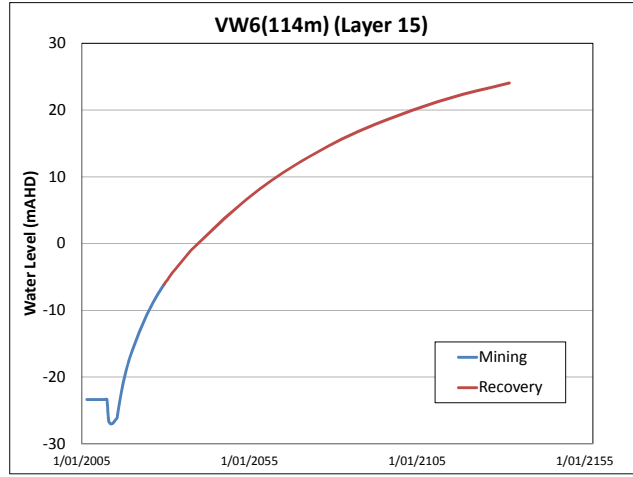
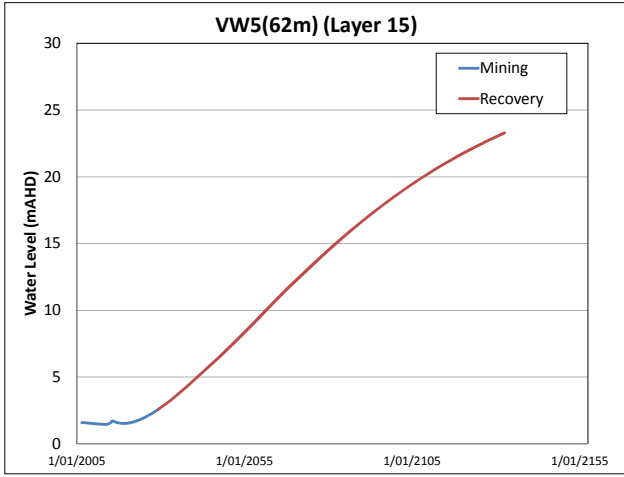


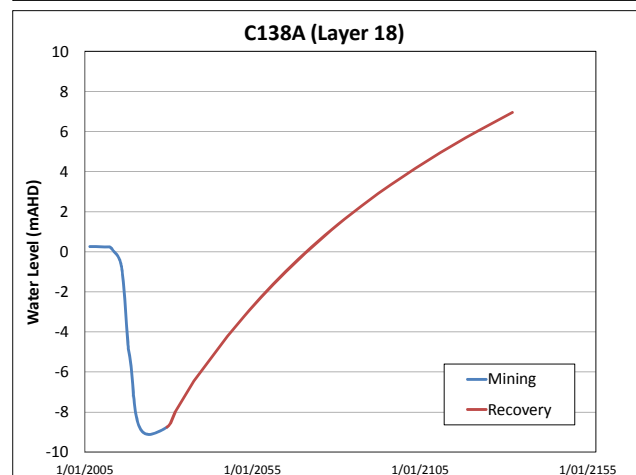
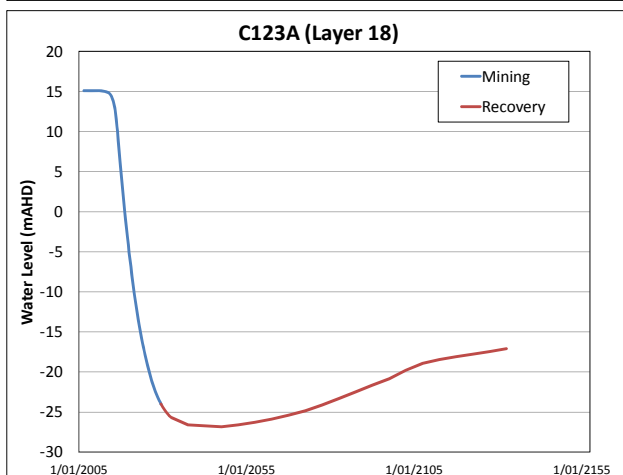
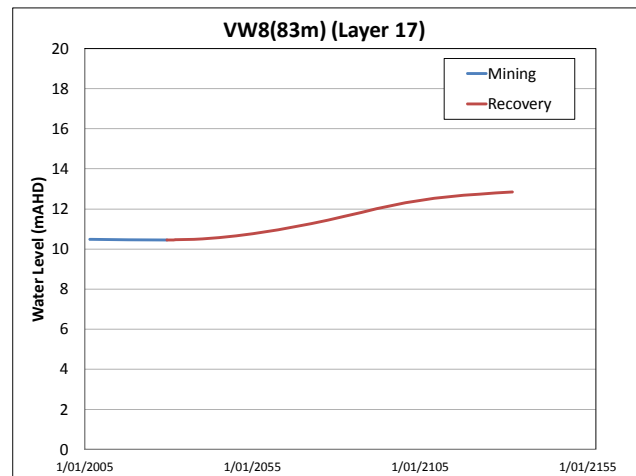
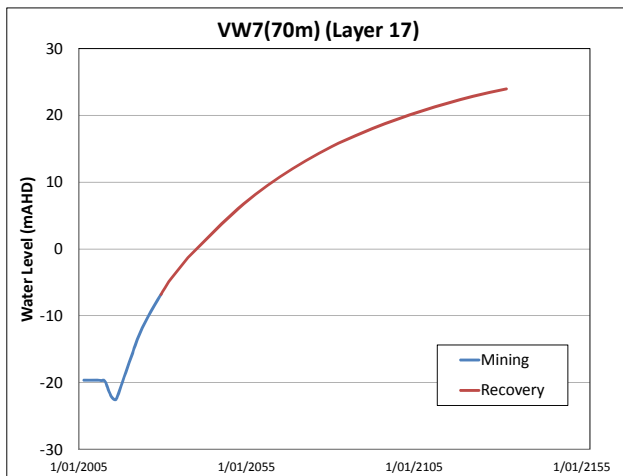
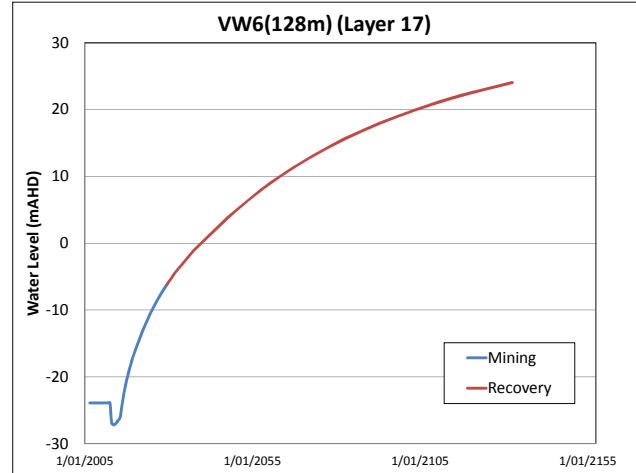
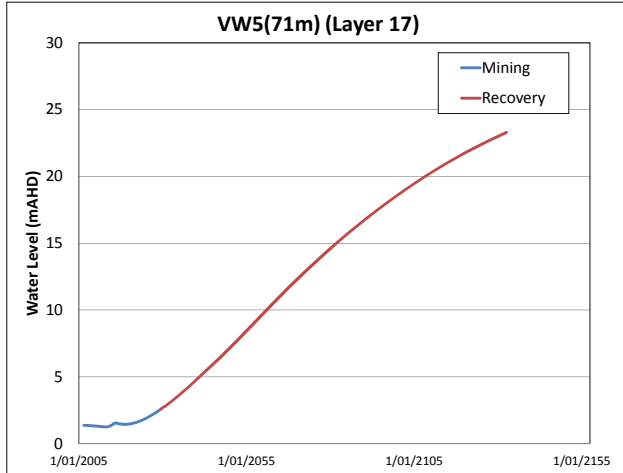
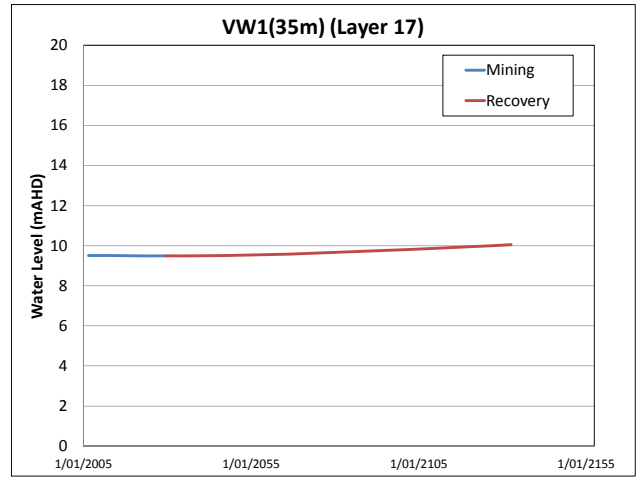
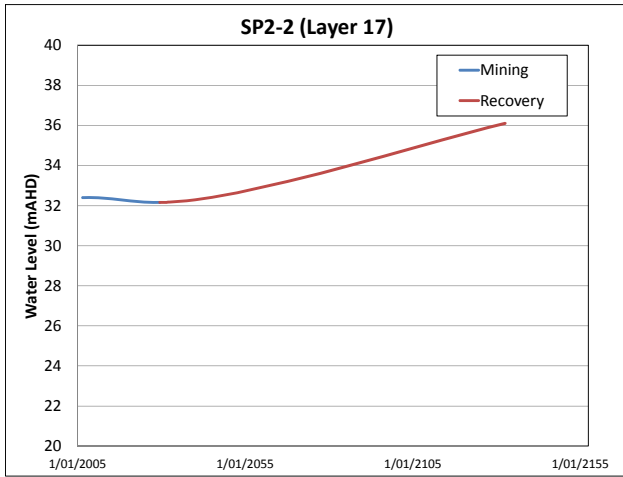


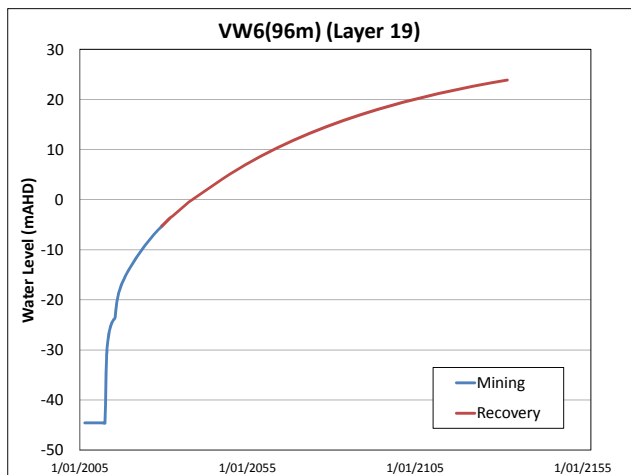
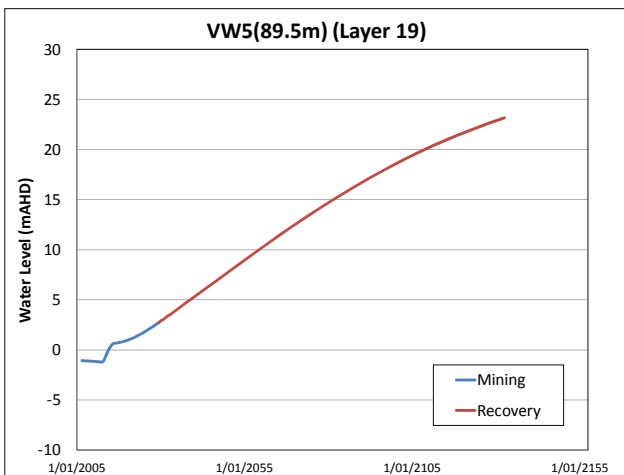
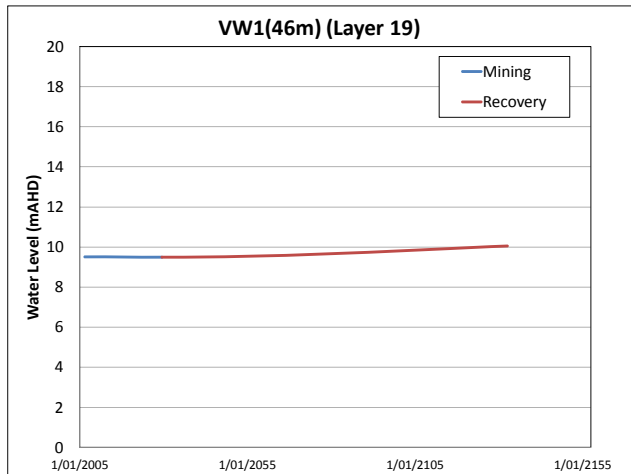
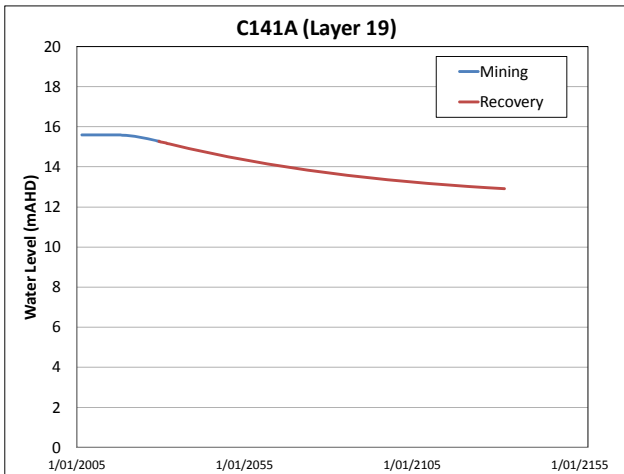
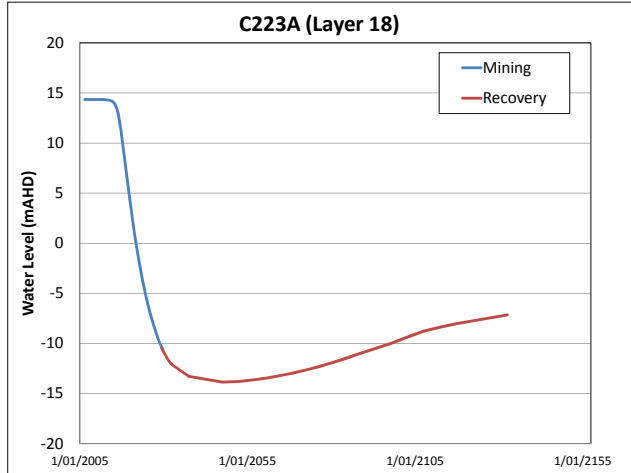
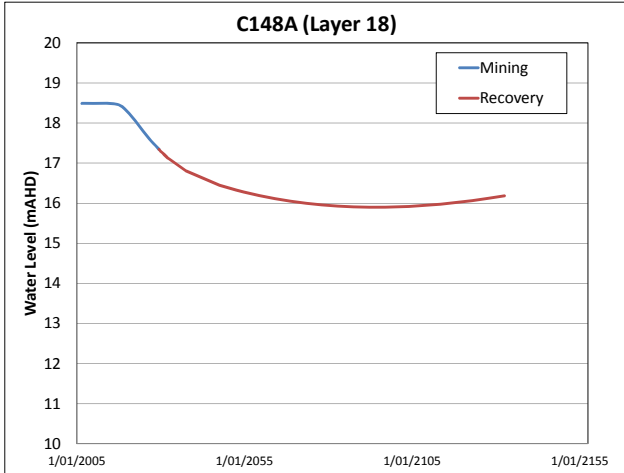
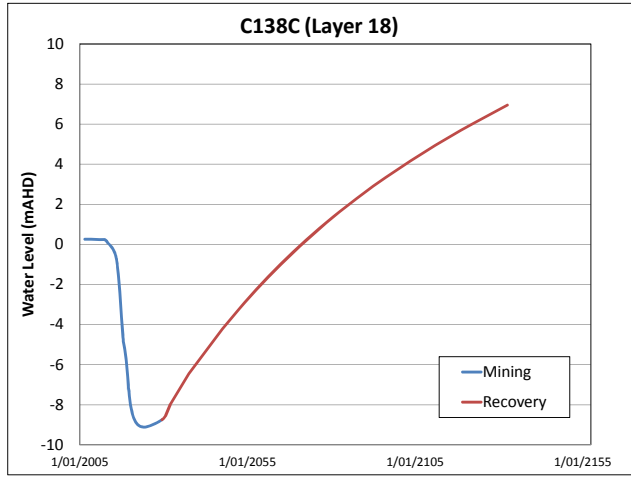
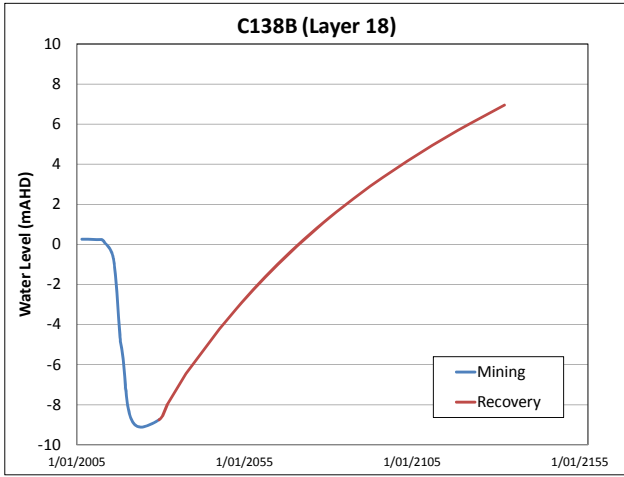


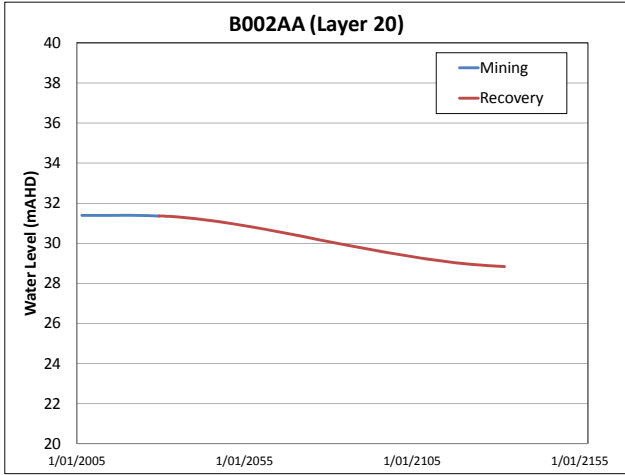
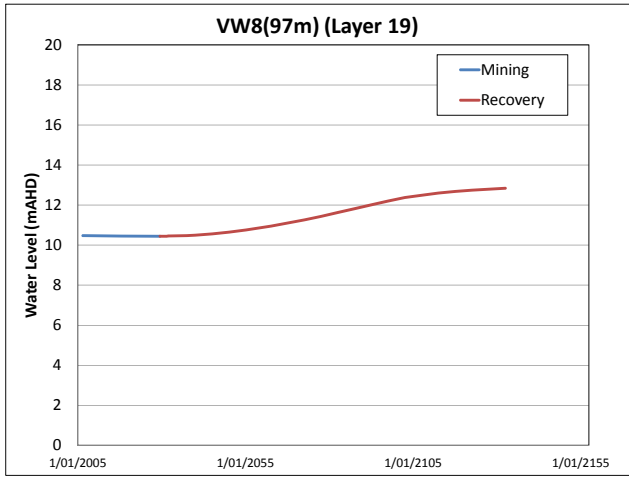
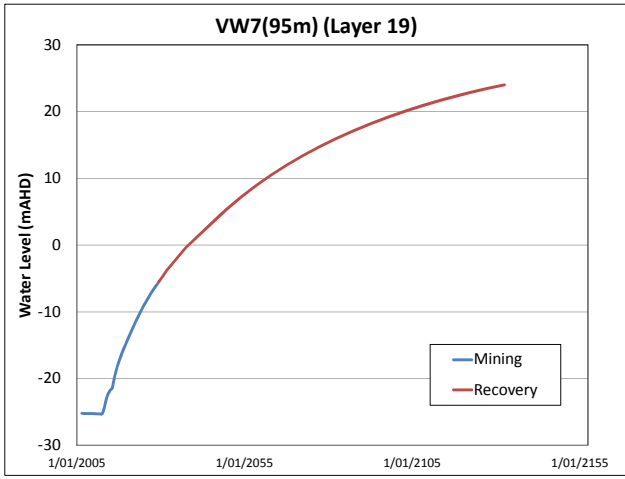












**APPENDIX L:
MODEL PARAMETERS USED IN
THE PREDICTION SIMULATION**

Layer	K Zone	Formation and Area Represented	Kh (m/d)	Kv (m/d)
1	1	Regolith	1.00E-02	1.00E-03
	2	Wallis Creek, Cockle Creek, Hexham Swamp (and Pambalong) Alluvium	5	1.00E-02
	19	Donaldson Open Cut Backfilled	1	0.1
	20	other creeks	0.2	1.00E-02
	34	Old Bloomfield Mining area	0.5	0.5
2	33	Overburden and coal seams above Fassifern Seam	1.00E-03	1.00E-03
	15		1.00E-04	5.00E-05
	4		1.00E-03	5.00E-03
3	3	Fassifern Seam	1.00E-02	5.00E-03
	22		2.00E-02	5.00E-05
4,5,6	6	Fassifern - West Borehole interburden	1.70E-03	2.00E-05
	8		1.00E-03	1.00E-05
7	16	West Borehole Seam	2.00E-02	1.00E-03
	23		1.00E-02	1.00E-03
	21	Old West Borehole mining area	10	1.00E-03
	26		2	0.1
	27		2	1.00E-05
8	5	West Borehole - Sandgate interburden	7.00E-03	5.00E-03
	37		1.00E-03	1.00E-06
	24		1.00E-02	1.00E-03
9	32	Sandgate Seam	2.00E-03	5.00E-04
	38		5.00E-03	1.00E-04
	9		1.00E-02	1.00E-03
10	39	Sandgate - Donaldson interburden	8.00E-04	8.00E-07
11	10		1.00E-04	1.00E-06
12	40		3.00E-04	6.00E-06
	25		2.50E-04	1.00E-05
13	50	Upper Donaldson Seam	1.00E-03	1.00E-04
	55		5.00E-02	1.00E-03
	56		1.00E-02	5.00E-03
	57		5.00E-03	1.00E-04
	51		1.00E-03	1.00E-04
14	7	Donaldson Seams interburden	2.00E-04	2.00E-05
	42		1.00E-04	1.00E-07
	28		5.00E-04	1.00E-06
15	50	Lower Donaldson Seam	1.00E-03	1.00E-04
	18		6.00E-02	6.00E-04
	30		1.00E-02	3.00E-05
	41		2.00E-03	1.00E-04
	51		1.00E-03	1.00E-04
16	7	Donaldson – Big Ben interburden	2.00E-04	2.00E-05
	42		1.00E-04	1.00E-07
	28		5.00E-04	1.00E-06
17	14	Big Ben Seam	5.00E-02	5.00E-03
	29		5.00E-03	3.00E-04
	43		3.00E-03	1.00E-04
18	28	Big Ben - Ashtonfield interburden	5.00E-04	1.00E-06
	44		5.00E-04	1.00E-07
	12		5.00E-04	2.00E-04
19	36	Ashtonfield Seam	1.00E-03	6.00E-04
	52		1.00E-03	1.00E-04
	17		5.00E-02	8.00E-03
20	13	Basement layer	1.00E-04	5.00E-05
	46		5.00E-04	5.00E-04
	15		1.00E-04	5.00E-05

Layer	S zone	Formation and Area Represented	Ss	Sy	Porosity
1	1	Regolith	1.00E-03	0.05	0.05
	2	Wallis Creek, Cockle Creek, Hexham Swamp (and Pambalong) Alluvium	5.00E-03	0.1	0.1
	19	Donaldson Open Cut Backfilled	5.00E-05	0.05	0.05
	20	other creeks	5.00E-04	0.05	0.05
2	4	Overburden and coal seams above Fassifern Seam	2.00E-05	0.002	0.002
	5		2.00E-05	0.002	0.002
	6		2.00E-05	0.002	0.002
	7		2.00E-05	0.002	0.002
	8		2.00E-05	0.002	0.002
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
3	3	Fassifern Seam	2.00E-05	0.002	0.002
	5		2.00E-05	0.002	0.002
	6		2.00E-05	0.002	0.002
	7		2.00E-05	0.002	0.002
	8		2.00E-05	0.002	0.002
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
4,5	5		2.00E-05	0.002	0.002
	6	Fassifern - West Borehole interburden	2.00E-05	0.002	0.002
	7		2.00E-05	0.002	0.002
	8		2.00E-05	0.002	0.002
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
6	5		2.00E-05	0.002	0.002
	7		2.00E-05	0.002	0.002
	8	Fassifern - West Borehole interburden	2.00E-05	0.002	0.002
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
7	5		2.00E-05	0.002	0.002
	7		2.00E-05	0.002	0.002
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	16	West Borehole Seam	5.00E-05	0.005	0.005
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
	21	Old West Borehole mining area	1.00E-03	0.1	0.1
8	5	West Borehole - Sandgate interburden	2.00E-05	0.002	0.002
	7		2.00E-05	0.002	0.002
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
9	7		2.00E-05	0.002	0.002

	9	Sandgate Seam	5.00E-05	0.005	0.005
	10		5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
10,11	7		2.00E-05	0.002	0.002
	10	Sandgate - Donaldson interburden	5.00E-05	0.002	0.002
	11		2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
12	7		2.00E-05	0.002	0.002
	11	Sandgate - Donaldson interburden	2.00E-05	0.002	0.002
	13		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18		1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
13	7		2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	18	Upper Donaldson Seam	1.00E-06	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
14	7	Donaldson Seams interburden	2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
15	14	Lower Donaldson Seam	1.00E-06	0.005	0.005
	15		2.00E-05	0.002	0.002
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
16	12	Donaldson – Big Ben interburden	2.00E-05	0.002	0.002
	15		2.00E-05	0.002	0.002
	19		5.00E-05	0.05	0.05
17	15		2.00E-05	0.002	0.002
	17	Big Ben Seam	5.00E-05	0.005	0.005
	19		5.00E-05	0.05	0.05
	20		5.00E-04	0.05	0.05
	22		5.00E-04	0.1	0.1
18	15	Big Ben - Ashtonfield interburden	2.00E-05	0.002	0.002
19,20	1	Ashtonfield Seam and Basement layer	1.00E-03	0.05	0.05

Layer	K Zone	Formation and Area Represented	Host zone		Fracture zone	
			Kh (m/d)	Kv (m/d)	Kh(m/d)	Kv(m/d)
1	1	Regolith	1.00E-02	1.00E-03	2*Kh(host)	5*Kv(host)
	2	Wallis Creek, Cockle Creek, Hexham Swamp (and Pambalong) Alluvium	5.00E+00	1.00E-02	NA	NA
	19	Donaldson Open Cut Backfilled	1.00E+00	1.00E-01	NA	NA
	20	other creeks	2.00E-01	1.00E-02	2*Kh(host)	5*Kv(host)
	34	Old Bloomfield Mining area	5.00E-01	5.00E-01	NA	NA
2	33		1.00E-03	1.00E-03	2*Kh(host)	1.33E-04
	15		1.00E-04	5.00E-05	NA	NA
	4	Overburden and coal seams above Fassifern Seam	1.00E-03	5.00E-03	NA	NA
3	3	Fassifern Seam	1.00E-02	5.00E-03	2*Kh(host)	1.82E-04
	22		2.00E-02	5.00E-05	NA	NA
4	6	Fassifern - West Borehole interburden	1.70E-03	2.00E-05	NA	NA
	8		1.00E-03	1.00E-05	2*Kh(host)	2.38E-04
5	6	Fassifern - West Borehole interburden	1.70E-03	2.00E-05	NA	NA
	8		1.00E-03	1.00E-05	2*Kh(host)	2.38E-04
6	6	Fassifern - West Borehole interburden	1.70E-03	2.00E-05	NA	NA
	8		1.00E-03	1.00E-05	2*Kh(host)	2.38E-04
7	16	West Borehole Seam	2.00E-02	1.00E-03	2*Kh(host)	1.00E+01
	23		1.00E-02	1.00E-03	NA	NA
	21	Old West Borehole mining area	1.00E+01	1.00E-03	2*Kh(host)	1.00E+01
	26		2.00E+00	1.00E-01	2*Kh(host)	1.00E+01
	27		2.00E+00	1.00E-05	NA	NA
8	5	West Borehole - Sandgate interburden	7.00E-03	5.00E-03	NA	NA
	37		1.00E-03	1.00E-06	NA	NA
	24		1.00E-02	1.00E-03	2*Kh(host)	1.30E-03
9	32	Sandgate Seam	2.00E-03	5.00E-04	2*Kh(host)	1.93E-03
	38		5.00E-03	1.00E-04	NA	NA
	9		1.00E-02	1.00E-03	2*Kh(host)	1.93E-03
10	39	Sandgate - Donaldson interburden	8.00E-04	8.00E-07	2*Kh(host)	2.59E-03
11	10		1.00E-04	1.00E-06	2*Kh(host)	4.32E-03
12	40		3.00E-04	6.00E-06	2*Kh(host)	6.00E-06
	25		2.50E-04	1.00E-05	NA	NA
13	50	Upper Donaldson Seam	1.00E-03	1.00E-04	1.00E+01	1.00E+01
	55		5.00E-02	1.00E-03	1.00E+01	1.00E+01
	56		1.00E-02	5.00E-03	1.00E+01	1.00E+01
	57		5.00E-03	1.00E-04	1.00E+01	1.00E+01
	51		1.00E-03	1.00E-04	1.00E+01	1.00E+01
14	7	Donaldson Seams interburden	2.00E-04	2.00E-05	2*Kh(host)	1.00E-02
	42		1.00E-04	1.00E-07	2*Kh(host)	1.00E-02
	28		5.00E-04	1.00E-06	2*Kh(host)	1.00E-02
15	50	Lower Donaldson Seam	1.00E-03	1.00E-04	1.00E+01	1.00E+01
	18		6.00E-02	6.00E-04	1.00E+01	1.00E+01
	30		1.00E-02	3.00E-05	1.00E+01	1.00E+01
	41		2.00E-03	1.00E-04	1.00E+01	1.00E+01
	51		1.00E-03	1.00E-04	1.00E+01	1.00E+01
16	7	Donaldson – Big Ben interburden	2.00E-04	2.00E-05	2*Kh(host)	3*Kv(host)
	42		1.00E-04	1.00E-07	2*Kh(host)	3*Kv(host)
	28		5.00E-04	1.00E-06	2*Kh(host)	3*Kv(host)
17	14	Big Ben Seam	5.00E-02	5.00E-03	NA	NA
	29		5.00E-03	3.00E-04	NA	NA
	43		3.00E-03	1.00E-04	NA	NA
18	28	Big Ben - Ashtonfield interburden	5.00E-04	1.00E-06	NA	NA
	44		5.00E-04	1.00E-07	NA	NA
	12		5.00E-04	2.00E-04	NA	NA
19	36	Ashtonfield Seam	1.00E-03	6.00E-04	NA	NA
	52		1.00E-03	1.00E-04	NA	NA
	17		5.00E-02	8.00E-03	NA	NA
20	13	Basement layer	1.00E-04	5.00E-05	NA	NA
	46		5.00E-04	5.00E-04	NA	NA
	15		1.00E-04	5.00E-05	NA	NA

Layer	S zone	Formation and Area Represented	Host zone			Fracture zone
			Ss	Sy	Porosity	Sy
1	1	Regolith	1.00E-03	0.05	0.05	0.025
	2	Wallis Creek, Cockle Creek, Hexham Swamp (and Pambalong) Alluvium	5.00E-03	0.1	0.1	NA
2	19	Donaldson Open Cut Backfilled	5.00E-05	0.05	0.05	NA
	20	other creeks	5.00E-04	0.05	0.05	NA
	4	Overburden and coal seams above Fassifern Seam	2.00E-05	0.002	0.002	NA
	5		2.00E-05	0.002	0.002	0.025
	6		2.00E-05	0.002	0.002	NA
	7		2.00E-05	0.002	0.002	NA
	8		2.00E-05	0.002	0.002	0.025
	10		5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
18		1.00E-06	0.005	0.005	0.025	
19		5.00E-05	0.05	0.05	0.025	
20		5.00E-04	0.05	0.05	NA	
3	3	Fassifern Seam	2.00E-05	0.002	0.002	NA
	5		2.00E-05	0.002	0.002	0.025
	6		2.00E-05	0.002	0.002	NA
	7		2.00E-05	0.002	0.002	NA
	8		2.00E-05	0.002	0.002	0.025
	10		5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
	19		5.00E-05	0.05	0.05	0.025
20		5.00E-04	0.05	0.05	NA	
4,5	5		2.00E-05	0.002	0.002	0.025
	6	Fassifern - West Borehole interburden	2.00E-05	0.002	0.002	NA
	7		2.00E-05	0.002	0.002	NA
	8		2.00E-05	0.002	0.002	0.025
	10		5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
	19		5.00E-05	0.05	0.05	0.025
	20		5.00E-04	0.05	0.05	NA
6	5		2.00E-05	0.002	0.002	0.025
	7		2.00E-05	0.002	0.002	NA
	8	Fassifern - West Borehole interburden	2.00E-05	0.002	0.002	0.025
	10		5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
	19		5.00E-05	0.05	0.05	0.025
	20		5.00E-04	0.05	0.05	NA
	7	5		2.00E-05	0.002	0.002
7			2.00E-05	0.002	0.002	NA
10			5.00E-05	0.002	0.002	0.025
11			2.00E-05	0.002	0.002	0.025
13			2.00E-05	0.002	0.002	0.025
15			2.00E-05	0.002	0.002	NA
16		West Borehole Seam	5.00E-05	0.005	0.005	0.025
18			1.00E-06	0.005	0.005	0.025
19			5.00E-05	0.05	0.05	0.025
20			5.00E-04	0.05	0.05	NA
21		Old West Borehole mining area	1.00E-03	0.1	0.1	0.1
8	5	West Borehole - Sandgate interburden	2.00E-05	0.002	0.002	0.025
	7		2.00E-05	0.002	0.002	NA
	10		5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
19		5.00E-05	0.05	0.05	0.025	
20		5.00E-04	0.05	0.05	NA	

9	7		2.00E-05	0.002	0.002	NA
	9	Sandgate Seam	5.00E-05	0.005	0.005	0.025
	10		5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
	19		5.00E-05	0.05	0.05	0.025
	20		5.00E-04	0.05	0.05	NA
10,11	7		2.00E-05	0.002	0.002	NA
	10	Sandgate - Donaldson interburden	5.00E-05	0.002	0.002	0.025
	11		2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
	19		5.00E-05	0.05	0.05	0.025
	20		5.00E-04	0.05	0.05	NA
12	7		2.00E-05	0.002	0.002	NA
	11	Sandgate - Donaldson interburden	2.00E-05	0.002	0.002	0.025
	13		2.00E-05	0.002	0.002	0.025
	15		2.00E-05	0.002	0.002	NA
	18		1.00E-06	0.005	0.005	0.025
	19		5.00E-05	0.05	0.05	0.025
	20		5.00E-04	0.05	0.05	NA
13	7		2.00E-05	0.002	0.002	NA
	15		2.00E-05	0.002	0.002	NA
	18	Upper Donaldson Seam	1.00E-06	0.005	0.005	0.1 / 0.25
	19		5.00E-05	0.05	0.05	0.1 / 0.25
	20		5.00E-04	0.05	0.05	NA
14	7	Donaldson Seams interburden	2.00E-05	0.002	0.002	0.025 / 0.05
	15		2.00E-05	0.002	0.002	NA
	19		5.00E-05	0.05	0.05	0.025 / 0.05
	20		5.00E-04	0.05	0.05	NA
15	14	Lower Donaldson Seam	1.00E-06	0.005	0.005	0.005 / 0.1
	15		2.00E-05	0.002	0.002	NA
	19		5.00E-05	0.05	0.05	0.005 / 0.1
	20		5.00E-04	0.05	0.05	NA
16	12	Donaldson – Big Ben interburden	2.00E-05	0.002	0.002	0.005
	15		2.00E-05	0.002	0.002	NA
	19		5.00E-05	0.05	0.05	0.005
17	15		2.00E-05	0.002	0.002	NA
	17	Big Ben Seam	5.00E-05	0.005	0.005	NA
	19		5.00E-05	0.05	0.05	NA
	20		5.00E-04	0.05	0.05	NA
	22		5.00E-04	0.1	0.1	NA
18	15	Big Ben - Ashtonfield interburden	2.00E-05	0.002	0.002	NA
19,20	1	Ashtonfield Seam and Basement layer	1.00E-03	0.05	0.05	NA