Project No: MRA-005-004-ADDI-GWN Bore Hole No: ATA-1

Project: Helena East Logged By: SB

Site Location: Midland Date Logged: 14/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0	Clayey Sand Red and light grey. Clay Light brown, with some laterite gravel. Clayey Sand Reddish brown, with lateritic gravel. Damp.		X	1 2 3 4 5 6 7 7 8 9		Gatic Cover Cuttings Class 12 50mm PVC Bentonite Seal Class 12 50mm PVC Class 12 50mm PVC

Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 13.58mAHD

Northing: 6470755

Easting: 405815

Bore Hole No: ATA-2

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

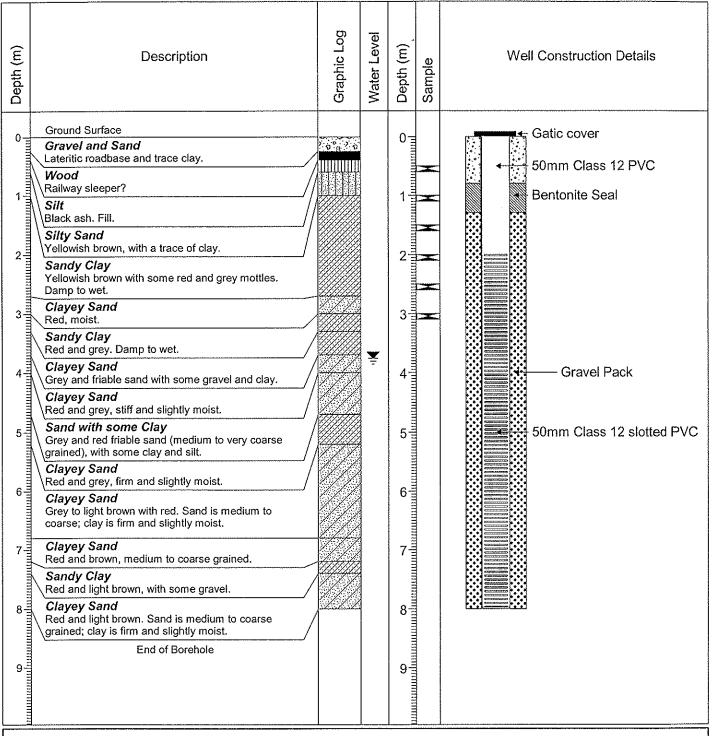
Checked By: SB

Site Location: Midland

Date Logged: 15/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000



Drilled By: GS Drilling

Northing: 6470723

Drill Method: HSA

Easting: 405797

Elevation: TOC = 13.54mAHD

Project No: MRA-005-004-ADDI-GWN Bore Hole No: ATA-3

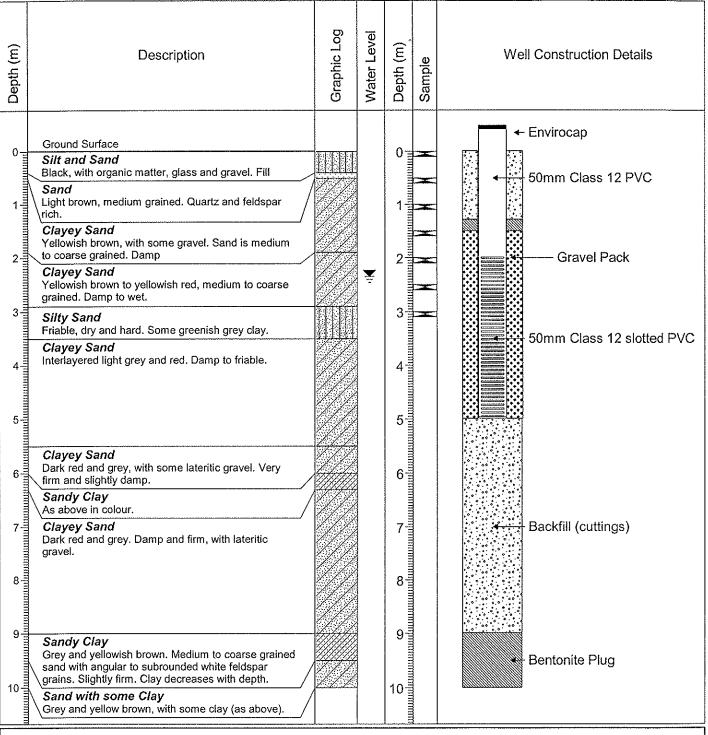
Project: Helena East Logged By: SB

Client: Midland Redevelopment Authority Checked By: SB

Site Location: Midland Date Logged: 15/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000



Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 14.19mAHD

Northing: 6470779

Easting: 405653

Bore Hole No: ATA-4

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 15/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0 1 2 3 4 5 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	End of Borehole		Y :	0 1 2 3 4 5 6 7 8 9 10		Gatic cover 50mm Class 12 PVC Bentonite Plug Gravel Pack 50mm Class 12 slotted PVC Hydrocarbon odour from 1 to 6.5m
	NULL A D. II. CO. D. III.					NI

Drilled By: GS Drilling

Northing: 6470769

Drill Method: HSA

Easting: 405690

Elevation: TOC = 13.73mAHD

Project: Helena East

Logged By: SB

Client: Midland Redevelopment

Checked By: SB

Site Location: Midland

Date Logged: 16/7/05

Bore Hole No: ATA-5



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
1 1 2 2 3 3	Ground Surface Gravel and Sand Roadbase material. Gravel and Sand Dark yellowish brown lateritic pebbles and sand. Sand Greyish brown, medium grained, quartz rich. Clay Yellowish brown, with traces of sand. Slightly moist, soft and malleable. Sand Grey, coarse to medium grained sand with some clay, interlayed with yellowish brown and red lateritic sandy	\$ 670 \$ 670		0 1 2 3	_	Gatic cover 50mm Class 12 PVC
	clay. Clayey Sand Grey clayey sand with some red lateritic mottles. Very firm, some sandy clay intervals. Medium to coarse grained quartz pebbles. Dry, variably friable.		Ť			Bentonite Seal
4	7.7 - 8.5m: Relatively water-rich horizon.			5		Gravel Pack
	<i>Clay</i> Greenish grey and red, with some medium grained			8		50mm Class 12 slotted PVC
9 10	sand. End of Borehole			9.		

Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 13.76mAHD

Northing: 6470777

Easting: 405746

Bore Hole No: ATA-6

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Drill Method: HSA

Elevation: TOC = 13.82mAHD

Date Logged: 16/7/05



Easting: 405663

Page: 1 of 1

Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0 1 2 3 4 5 6 7 8 9 10 10 10 10 10 10 10	Clayey Sand Grey, with some mottles of greyish green and yellowish brown. Sand is medium to coarse grained. Local wet intervals. End of Borehole		X 1-	0 1 2 3 4 5 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10		Finvirocap 50mm Class 12 PVC Bentonite Seal Gravel Pack 50mm Class 12 slotted PVC
	Drilled By: GS Drilling					Northing: 6470712

Bore Hole No: ATA-7

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 16/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m) Graphic Log Water Level Depth (m) Sample	Well Construction Details
Ground Surface Sand, Silt and Gravel Black, with some unconsolidated asphalt material, sand and ash/organic matter. Fill. Sandy Clay Dark reddish brown. Damp and soft. Clayey Sand Yelloliwish brown. Medium to very coarse grained, angular quartz pebbles. Clayey Sand Brown, with some red clay. Medium to very coarse grained. Slightly firm, damp. Clayey Sand Grey and red, with some sand. Dry and firm. Clayey Sand Grey and red, Sand is coarse to very coarse grained. Slightly moist, relatively friable. Clayey Sand Grey, Very firm and dry. Clayey Sand Grey, with yellow brown and some red mottles. Coarse to very coarse grained. Sand Grey and yellowish brown, medium to coarse grained sand. Damp. Clayey Sand Grey and yellow brown, firm and slightly moist. End of Borehole 8 8 9 10 10 10 10 10 10 10 10 10	FVC riser and Envirocap 50mm Class 12 PVC Bentonite Seal Gravel Pack 50mm Class 12 slotted PVC

Drilled By: GS Driling

Drill Method: HSA

Elevation: TOC = 13.7mAHD

Northing: 6470701

Easting: 405687

Bore Hole No: ATA-8

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 16/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0	Very dark grey. Some coal fragments Sand Very pale brown, medium grained quartz sand. Clay Dark yellowish brown clay with some sand and gravel. Damp and soft. Silty Sand Grey and red silty sand with some clay. Sand is medium to very coarse grained. Firm, dry and friable. Gravelly Clay Some sand. Damp, slightly firm. Sand Grey to yellow brown. Coarse grained quartz sand with trace to some clay. Damp. Minor clay interval at 6.1 - 6.2m. End of Borehole		₩ 32-2	1 2 3 4 5 6 7 8 9 10		Form Class 12 PVC Bentonite Seal Gravel Pack 50mm Class 12 slotted PVC

Drilled By: GS Drilling

Northing: 6470691

Drill Method: HSA

Easting: 405725

Elevation: TOC = 13.8mAHD

Bore Hole No: ATA-9

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 19/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0-1 1- 2- 3- 4- 5- 6- 7- 8-	Sandy Clay As above, with some mottles. Silty Sand Grey with some red. Dry and friable silty to pebbly sand with some clay. Locally wet. Silty Clay Red and grey. Firm to very firm, just damp. Some sand. Sand Pale brown to yellow brown, medium to coarse grained with trace clay.		X :	1 1 2 3 4 5 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10		50mm Class 12 PVC Bentonite Seal Gravel Pack 50mm Class 12 slotted PVC

Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 14.04 mAHD

Northing: 6470717

Easting: 405714

Project: Helena East

Client: MRA

Bore Hole No: ATA-10

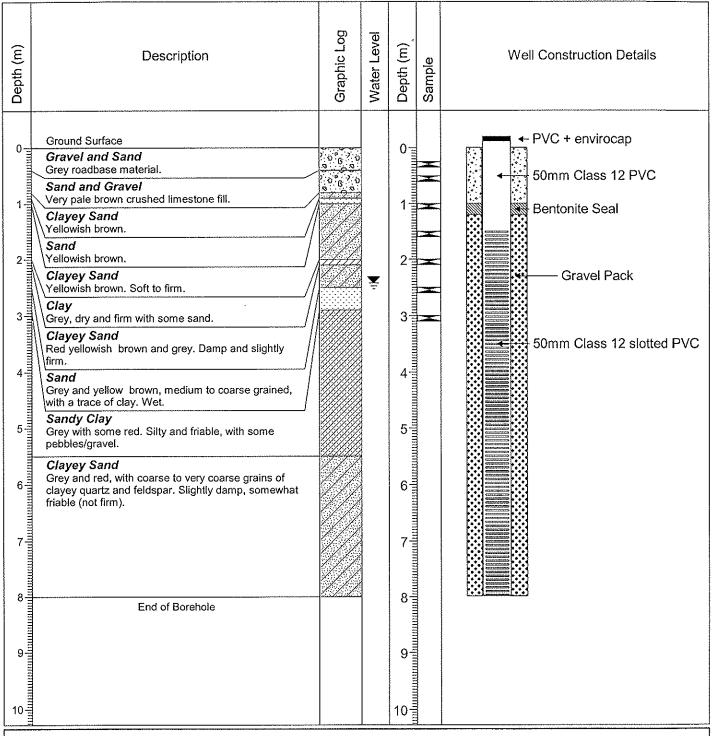
Logged By: SB

Checked By: SB

Site Location: Midland Date Logged: 20/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000



Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 13.68mAHD

Northing: 6470738

Easting: 405779

Bore Hole No: ATA-11

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 20/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0 1 2 3 4 5 6 7 8 9 10	Clayey Sand Red with some grey. Firm. End of Borehole		X	1 2 3 4 5 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10		Gatic Cover 50mm Class 12 PVC Bentonite Seal Gravel Pack 50mm Class 12 slotted PVC

Drilled By: GS Drilling

Northing: 6470716

Drill Method: HSA

Easting: 405768

Elevation: TOC = 13.39mAHD

Bore Hole No: ATA-12

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 20/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0	Ground Surface Sand, Silt and Gravel Grey to black, medium to very coarse. Fill.	10°6'20 6'8'20 70°6'20		0	-	← PVC and Envirocap
npashaaaaaagaa 2	Clayey Sand Yellowish red, moderately firm, with some fragments of ash/coal material. Fill. Silt and Sand			2	-	50mm Class 12 PVC Cuttings
3 3	Black silt and coal and light grey quartz/feldspar sand. Fill. Clayey Sand Yellowish brown clayey sand with intervals of black ash/coal, and fragments of coal. Slightly damp. Fill. Clayey Sand Brownish yellow with some red mottles. Occasional			3		Bentonite Seal
0 1 2 3 4 5 6 7 7	ash/coal fragments. Fill. Clayey Sand Brown and red, with occasional fragments of limestone, ash and gravel. Fill.			5	X	Gravel Pack
1 = =	Sand, Silt and Clay Dark grey. Fill. Silty Clay			7		50mm Class 12 slotted PVC
8 9 10 10	Black, with some sand. Soft. Silty Clay Dark grey, with some sand. Soft and wet. End of Borehole		¥.	8	-	
10				9		

Drilled By: GS Drilling

Northing: 6470659

Drill Method: HSA

Easting: 405660

Elevation: TOC = 13.76mAHD

Bore Hole No: ATA-13

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 20/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
1- 2- 3- 4- 5- 6- 7-	Dark yellow brown. Occasional fragments of coal, and trace clay. Fill. Sand Yellowish brown quartz/feldspar sand. Sand Red and yellowish brown. Coarse grained, with some clay. Sandy Clay Grey with some red mottles. Silty to pebbly, mostly dry and friable (locally), firm to very firm. Silty Sand Grey and red, with some clay and quartz/feldspar pebbles. Firm and generally friable. Quartz and feldspar pebbles. Some wet bands. Sand Grey to yellow brown. Intervals of medium to coarse grained quartz sand, with occasional horizons of ironcemented sand (very hard). Sand Yellowish brown to grey. Medium to coarse sand, with clay. End of Borehole		dry	1 2 3 4 5 6 7 8 9 10		Gatic Cover — Cuttings 50mm Class 12 PVC — Bentonite Seal — Gravel Pack 50mm Class 12 slotted PVC

Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 13.39mAHD

Northing: 6470658

Easting: 405749

Bore Hole No: ATA-14

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 21/7/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0 1 2 3 4 1 5 6 6 1 1 1 1 1 1 1 1	Clayey Sand Brownish yellow, with pebbly gravel. Damp and soft. Clayey Sand Yellowish brown, with small gravel. Damp, soft to slightly firm. Silty Sand White and light grey (some yellow brown and red).	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	dry	0 1 2 3 4 55		- PVC and Envirocap Bentonite Seal 50mm Class 12 PVC Gravel Pack
6-пининананананананананананананананананана	Clayey Sand Grey and yellow brown, medium firm. End of Borehole			7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10		Hydrocarbon odour from 1.2 to 2.2m. Possible hydrocarbon odour from 3.5 to 4m.

Drilled By: GS Drilling

Northing: 6470689

Drill Method: HSA

Easting: 405770

Elevation: TOC = 13.89mAHD

Bore Hole No: ATA-15 (deep)

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Date Logged: 3/8/05



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 15 15 11 12 13 15 15 15 15 15 15 15 15 15 15 15 15 15	Clayey Sand Grey with pale green tinge, with yellow, brown and red mottles. Saline water? Clay Clay with some sand. Firm. Clayey Sand Dark yellow brown to yellow brown. Sand Greenish grey, with some clay. Sand increases and clay decreases with depth.		X 1:	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		Sand Fill Cuttings Class 12 195mm PVC Grout Bentonite Seal Gravel Pack Class 18 50mm slotted PVC
15	End of Borehole			115		

Drilled By: GS Drilling

Drill Method: HSA

Elevation: TOC = 14.05mAHD

Northing: 6470750

Easting: 405690

Bore Hole No: ATA-16 (deep)

Project: Helena East

Logged By: SB

Client: Midland Redevelopment Authority

Checked By: SB

Site Location: Midland

Elevation: TOC = 14.21mAHD

Drill Method: HSA

Date Logged: 4/8/05 - 5/8/05



Easting: 405761

Page: 1 of 1

Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details		
0 11 2 3 4 5 6 7 8 9 10 11 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	Clayey Sand Red, stiff and relatively dry (blind drill). Clayey Sand Reddish yellow, with small angular pebbles (lateritic, mottled). Clay Grey, with some sand and some brown and yellow mottles. Sand Grey, with some clay. Minor purple mottles at 11m. Saturated. End of Borehole		X -	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15		Sand Fill Class 12 195mm PVC Grout Gravel Pack Class 18 50mm slotted PVC		
Drilled By: GS Drilling Northing: 6470729								

Project: Helena East

Client: Midland Redevelopment Authority

Site Location: Helena East

Bore Hole No: ATA-72

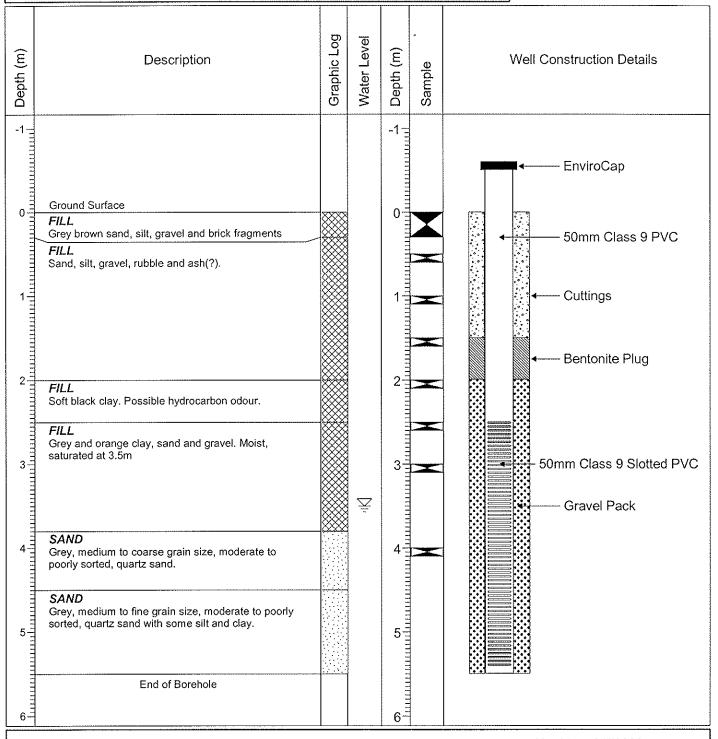
Logged By: Blaire Coleman

Checked By: Blaire Coleman

Date Logged: 27 February 2006



Dilhorn House 2 Bulwer Street PERTH WA 6000



Drilled By: GS Drilling

Drill Method: Hollow Stem Auger

Elevation: 6.390mAHD

Northing: 6470629

Easting: 405652

Project: Helena East

Client: Midland Redevelopment Authority

Site Location: Helena East

Bore Hole No: ATA-73

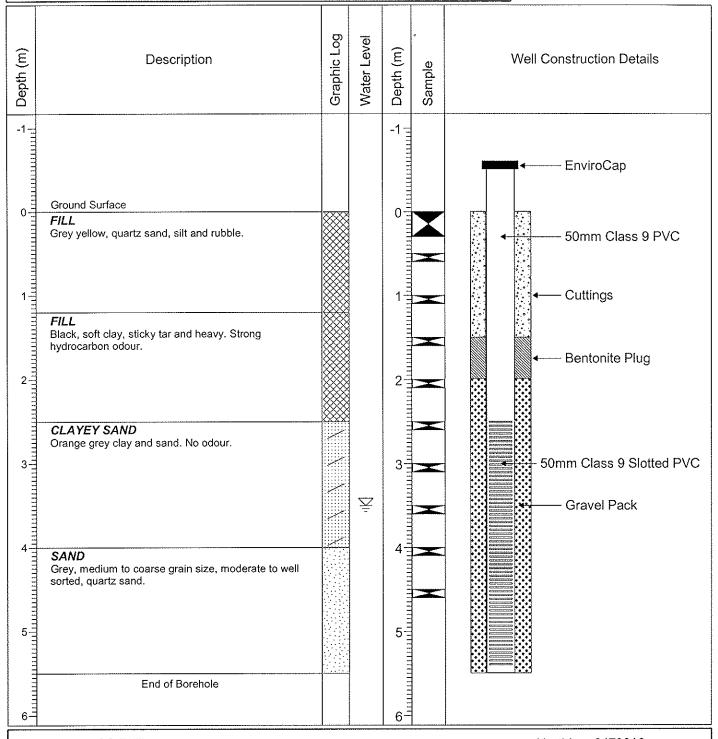
Logged By: Blaire Coleman

Checked By: Blaire Coleman

Date Logged: 27 February 2006



Dilhorn House 2 Bulwer Street PERTH WA 6000



Drilled By: GS Drilling

Drill Method: Hollow Stem Auger

Elevation: 6.492mAHD

Northing: 6470616

Easting: 405657

Bore Hole No: ATA-75

Project: Helena East

Logged By: Blaire Coleman

Client: Midland Redevelopment Authority

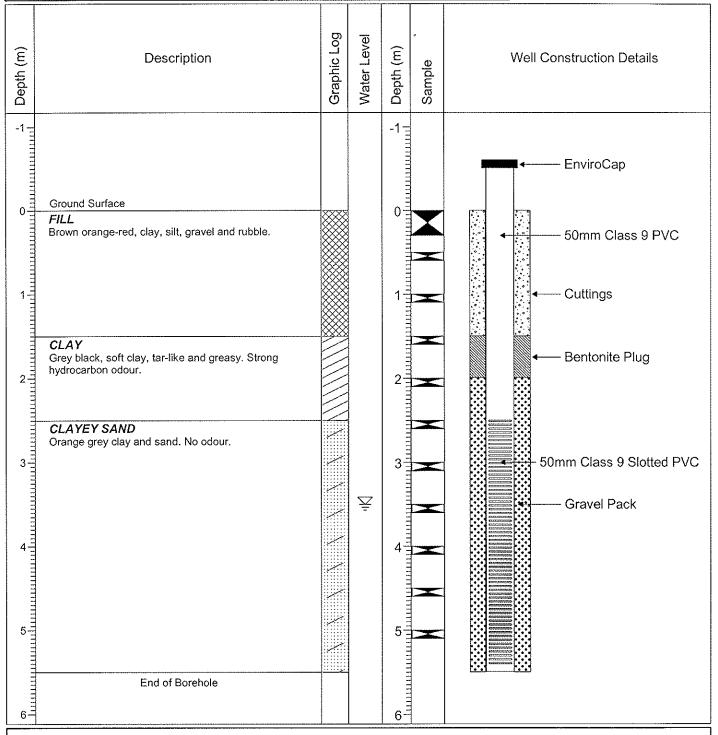
Checked By: Blaire Coleman

Site Location: Helena East

Date Logged: 27 February 2006



Dilhorn House 2 Bulwer Street **PERTH** WA 6000



Drilled By: GS Drilling

Northing: 6470601

Drill Method: Hollow Stem Auger

Easting: 405664

Elevation: 6.631mAHD

Project: Helena East

Client: Midland Redevelopment Authority

Site Location: Helena East

Bore Hole No: ATA-76

Logged By: Blaire Coleman

Checked By: Blaire Coleman

Date Logged: 27 February 2006



Dilhorn House 2 Bulwer Street PERTH WA 6000

Depth (m)	Description	Graphic Log	Water Level	Depth (m)	Sample	Well Construction Details
0	Ground Surface FILL			-1	•	← EnviroCap
	cement.			1		→ 50mm Class 9 PVC ← Cuttings
1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				2		Bentonite Plug
3				3		50mm Class 9 Slotted PVC
4			Ā	4	*	Gravel Pack
5				5		
6	End of Borehole			6		

Drilled By: GS Drilling

Drill Method: Hollow Stem Auger

Elevation: 6.226mAHD

Northing: 6470617

Easting: 405648

Project: Helena East

Client: Midland Redevelopment Authority

Site Location: Helena East

Bore Hole No: ATA-77

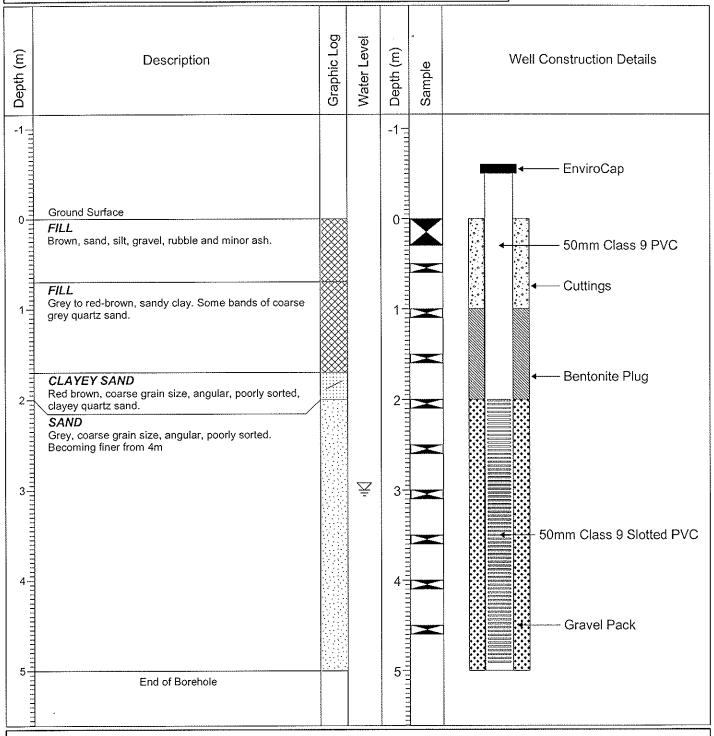
Logged By: Blaire Coleman

Checked By: Blaire Coleman

Date Logged: 28 February 2006



Dilhorn House 2 Bulwer Street PERTH WA 6000



Drilled By: GS Drilling

Drill Method: Hollow Stem Auger

Elevation: 6.146mAHD

Northing: 6470596

Easting: 405660