

APPENDIX B: BOREHOLE CONSTRUCTION LOGS

ENVIRONMENT AGENCY

Form WR – 38	Ref: prince's gate, narbeth bh1.doc	Agency No.
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BOREHOLE RECORD

A. SITE DETAILS

BOREHOLE 1

Borehole drilled for:	Prince's Gate Spring Water			
Location:	Prince's Gate, Narbeth, Pembrokeshire			
N.G.R.:				
Ground Level (if known):	SURFACE			
Drilling Company:	W.B. & A.D. MORGAN LTD., PRESTEIGNE, POWYS. LD8 2UF			
Date of Drilling:	Commenced:	20/5/04	Completed:	2/6/04

B. CONSTRUCTION DETAILS

Borehole datum (if not ground level)		<u>GROUNDLEVEL</u>			
(Point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)					
Borehole drilled diameter.....		200	mm from	<u>Surface</u>	to <u>50</u> m/depth
		450	mm from	<u>Surface</u>	to <u>12</u> m/depth
		300	mm from	<u>12</u>	to <u>50</u> m/depth
Casing material: u.P.V.C diameter		200	mm from	<u>Surface</u>	to <u>49.5</u> m/depth
and type (e.g. plain steel, plastic slotted)					
Plain	diameter	<u>200</u>	mm from	<u>Surface</u>	to <u>13.5</u> m/depth
Slotted	diameter	<u>200</u>	mm from	<u>13.5</u>	to <u>43.5</u> m/depth
Plain	diameter	<u>200</u>	mm from	<u>43.5</u>	to <u>49.5</u> m/depth
Grouting details:		12m	to surface		
Water struck at:		3m, 6m, 13m, 26	m (depth below datum – mbd)		
Rest water level on completion:		3	m (depth below datum – mbd)		
Estimated blowout yield:		5,000	Gallons per hour		

C. STRATA LOG

Description of Strata	Thickness (m)	Depth (m)
Marls	3	3
Mudstone yellow & grey	7	10
Red marl/sandstone	3	13
Red sandstone/marl with bands of limestone	18	31
Grey limestone	7	38
Red marl/sandstone	3	41
Red sandstone	10	51
Other Comments (e.g. gas encountered, saline water intercepted, etc.)		
Gravel Pack Quantity:	2.5 tonnes	Temp Steel Casing: Depth and Diameter 2m x 205mm 2m x 485mm
Cement:	1.5 tonnes	Permanent Steel: Depth and Diameter 12m x 325mm
Rig & Crew:	Klemm 709, G. Barnett, L. Griffiths	

ENVIRONMENT AGENCY

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BOREHOLE RECORD

A. SITE DETAILS

BOREHOLE 2

Borehole drilled for:	Prince's Gate Spring Water			
Location:	Prince's Gate, Narbeth, Pembrokeshire			
N.G.R.:				
Ground Level (if known):	SURFACE			
Drilling Company:	W.B. & A.D. MORGAN LTD., PRESTEIGNE, POWYS. LD8 2UF			
Date of Drilling:	Commenced:	20/5/04	Completed:	2/6/04

B. CONSTRUCTION DETAILS

Borehole datum (if not ground level) <u>GROUNDLEVEL</u>				
(Point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)				
Borehole drilled diameter.....	200	mm from	<u>Surface</u>	to <u>30</u> m/depth
	375	mm from	<u>Surface</u>	to <u>12</u> m/depth
	250	mm from	<u>12</u>	to <u>30</u> m/depth
Casing material: u.P.V.C diameter	165	mm from	<u>Surface</u>	to <u>30</u> m/depth
and type (e.g. plain steel, plastic slotted)				
Plain diameter	<u>165</u>	mm from	<u>Surface</u>	to <u>12</u> m/depth
Slotted diameter	<u>165</u>	mm from	<u>12</u>	to <u>24</u> m/depth
Plain diameter	<u>165</u>	mm from	<u>24</u>	to <u>30</u> m/depth
Grouting details:	12m	to surface		
Water struck at:	3m, 6m, 13m, 20	m (depth below datum – mbd)		
Rest water level on completion:	3	m (depth below datum – mbd)		
Estimated blowout yield:	1,000+	Gallons per hour		

C. STRATA LOG

Description of Strata		Thickness (m)	Depth (m)
Overburden & marls		3	3
Mudstones		7	10
Red marl/sandstone		3	13
Red marl/sandstone with bands of limestone		17	30
Other Comments (e.g. gas encountered, saline water intercepted, etc.)			
Gravel Pack Quantity:	1.5 tonnes	Temp Steel Casing: Depth and Diameter	2m x 205mm 2m x 400mm
Cement:	1.75 tonnes	Permanent Steel: Depth and Diameter	12m x 265mm
Rig & Crew:	Klemm 709, G. Barnett, L. Griffiths		

ENVIRONMENT AGENCY

Form WR – 38	Ref: prince's gate spring water - bh5+ casing (edwards)	Agency No.
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BOREHOLE RECORD

BH 5- Including stainless steel completion

A. SITE DETAILS

Borehole drilled for:	Endaf Edwards, Prince's Gate Spring Water			
Location:	Prince's Gate, Narberth, SA67 8JD			
N.G.R.:	SM160115			
Ground Level (if known):	SURFACE			
Drilling Company:	W.B. & A.D. MORGAN LTD., PRESTEIGNE, POWYS. LD8 2UF			
Date of Drilling:	Commenced:	29/10/14	Completed:	13/01/15

B. CONSTRUCTION DETAILS

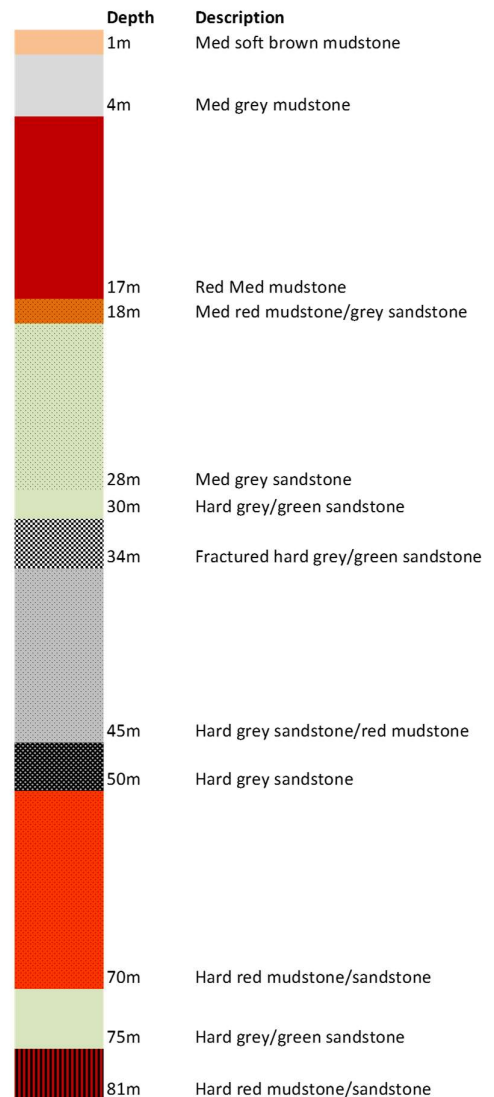
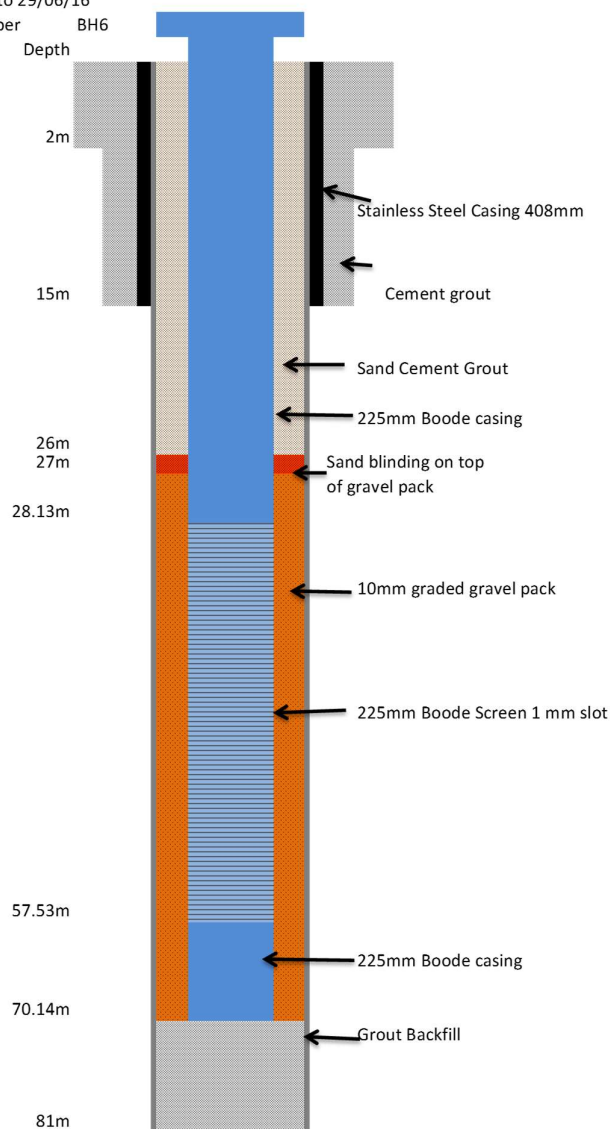
Borehole datum (if not ground level) <u>GROUNDLEVEL</u>					
(Point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)					
Borehole drilled diameter.....	460	mm from	<u>Surface</u>	to	<u>4.5</u> m/depth
	380	mm from	<u>4.5</u>	to	<u>79</u> m/depth
Casing Material- Stainless steel diameter	408	mm from	<u>surface</u>	to	<u>12</u> m/depth
Casing material: Stainless Steel diameter	200	mm from	<u>Surface</u>	to	<u>81</u> m/depth
Plain diameter	<u>200</u>	mm from	<u>Surface</u>	to	<u>25</u> m/depth
1mm Slotted diameter	<u>200</u>	mm from	<u>25</u>	to	<u>31</u> m/depth
Plain diameter	<u>200</u>	mm from	<u>31</u>	to	<u>37</u> m/depth
1mm Slotted diameter	<u>200</u>	mm from	<u>37</u>	to	<u>43</u> m/depth
Plain diameter	<u>200</u>	mm from	<u>43</u>	to	<u>49</u> m/depth
1mm Slotted diameter	<u>200</u>	mm from	<u>49</u>	to	<u>55</u> m/depth
Plain diameter	<u>200</u>	mm from	<u>55</u>	to	<u>61</u> m/depth
1mm Slotted diameter	<u>200</u>	mm from	<u>61</u>	to	<u>67</u> m/depth
Plain diameter	<u>200</u>	mm from	<u>67</u>	to	<u>73</u> m/depth
1mm slotted diameter	<u>200</u>	mm from	<u>73</u>	to	<u>79</u> m/depth
Plain diameter	<u>200</u>	mm from	<u>79</u>	to	<u>81</u> m/depth
Grouting details:	Pump Bentonite 15m to surface				
Water struck at:	3m,27,35,56 m (depth below datum – mbd)				
Rest water level on completion:	5.3 m (depth below datum – mbd)				
Estimated blowout yield:	2700 Gallons per hour				

C. STRATA LOG

Description of Strata		Thickness (m)	Depth (m)
Soft brown subsoil		1	1
Mediumbrown/grey/ red mudstone		9	10
Medium hard grey/brown mudston & sandstone bands		8	18
Medium red sandstone		9	27
Fractured red sandstone and mudstone		0.5	27.5
Medium red sandstone		8.5	36
Hard red/grey sandstone		7	43
Medium red mudstone		8	51
Hard red/grey sandstone		10	61
Medium red sandstone and mudstone		20	81
Other Comments – developed for 4.5hrs to settle gravel pack			
Gravel Pack Quantity: 9,000kg	Bentonite: 50kg	Temp Steel Casing: Depth and Diameter	2m x 506mm
Cement: 2425kg			
Rig & Crew:	Knebel, D. Morris, R. Davies		

Princes Gate Spring Water Limited
Application for a Transitional Water Resources Licence
Appendix B: Borehole Construction Logs

Site Princes Gate Spring Water
Date 08/06/16 to 29/06/16
Borehole Name/Number BH6



ENVIRONMENT AGENCY

Form WR – 38	Ref: prince's gate spring water - bh8 (jones)	Agency No.
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BOREHOLE RECORD

BH8

A. SITE DETAILS

Borehole drilled for:	Mr David Jones, Prince's Gate Spring Water			
Location:	New House Farm, Prince's Gate, Narbeth, Pembrokeshire, SA67 8JD			
N.G.R.:				
Ground Level (if known):	SURFACE			
Drilling Company:	W.B. & A.D. MORGAN LTD., PRESTEIGNE, POWYS. LD8 2UF			
Date of Drilling:	Commenced:	19/8/16	Completed:	11/8/16

B. CONSTRUCTION DETAILS

Borehole datum (if not ground level)		GROUNDLEVEL						
(Point from which all measurements of depth are taken e.g. flange, edge of chamber, etc.)								
Borehole drilled diameter.....		720	mm from	Surface	to	2	m/depth	
		560	mm from	2	to	19	m/depth	
		380	mm from	19	to	81	m/depth	
Casing material: Stainless steel	diameter	406	mm from	Surface		19	m/depth	
Casing material: u.P.V.C	diameter	225	mm from	Surface	to	81	m/depth	
and type (e.g. plain steel, plastic slotted)								
	Plain	diameter	225	mm from	Surface	to	35.78	m/depth
	Slotted	diameter	225	mm from	35.78	to	58.34	m/depth
	Plain	diameter	225	mm from	58.34	to	63.24	m/depth
	Slotted	diameter	225	mm from	63.24	to	71.70	m/depth
	Plain	diameter	225	mm from	71.70	to	81	m/depth
Grouting details:								
		Pump 33m	to surface					
Water struck at:		9m, 27m, 39m,43m, 66m, 73		m (depth below datum – mbd)				
Rest water level on completion:		14.20		m (depth below datum – mbd)				
Estimated blowout yield:		3,600		Gallons per hour				

C. STRATA LOG

Description of Strata		Thickness (m)	Depth (m)
Soft red brown sub soil		1	1
Medium red mudstone		3	4
Medium hard red mudstone		6	10
Medium hard grey/green mudstone		4	14
Medium grey/green sandstone		1	15
Medium red mudstone		1	16
Medium hard red mudstone		5	21
Medium hard grey sandstone/mudstone		8	29
Medium red mudstone		9	38
Fractured hard grey/green mudstone/sandstone		7	45
Hard red mudstone/sandstone		21	66
Hard grey sandstone		4	70
Hard red/grey sandstone/mudstone bands		11	81
Other Comments (e.g. gas encountered, saline water intercepted, etc.)			
10mm Gravel Pack Quantity: 6,500kg	Building Sand: 500kg	Temp Steel Casing:	2m x 780mm
Cement: 7,825kg		Depth and Diameter	
Rig & Crew:	Knebel, D. Morris, K. Clarke		