Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 6/12/13	Time: arrive 12:15 depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.M
Well ID: BQ-MW03	Weather: Fine, Windy

Equipment

Water quality equipment description: NA Interface probe number: S7D 3954

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
6.500 m (-) 0.355 m (=) 6.145 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
6.145 m (x) 1.96 (=) 12.044 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / ~~N~~ NA

Water Quality Parameters

Beginning purge time: 12:25 Ending purge time: 12:55

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20	12:30							brown, turbid. No odour. Well actively recharging
28	12:35							brown, turbid, purged dry after 8L. Allowed to recharge.
48	12:40							becoming clear after 30L. No odour. Purged dry after another 20L.
68	12:55							clear, no odour.
								Developed ~5 well volumes removed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

68 **Total Well Volume** Actual amount of water prior to sampling Sample time — Containers used —

— **Flow rate** mL/minute Did field parameters stabilise? Y / N / NA Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

lab in Muswellbrook

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 6/12/13	Time: arrive 10:55 depart 11:55
Project Name: Symphony	Project Number: 0224493
Site Location: Bayswater	Sampler: N.H
Well ID: BQ_MW04	Weather: Fine, windy

Equipment						
Water quality equipment description: NA				Interface probe number: SYD 3954		
Purging equipment: (please circle)	Bailer type:	Plastic	Teflon			
	Pump type:	Peristaltic	Submersible	Micro-purge	Amazon	Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
10.570 m (-) 8.215 m (=) 2.355 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
2.355 m (x) 1.96 (=) 4.616 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / ~~N~~ NA

Water Quality Parameters

Beginning purge time: 11:11 Ending purge time: 11:45

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
8	11:15							Cloudy to clear. No odour. Purged dry after 8L. Allowed to recharge.
10	11:20							clear. No odour. Purged dry after another 2L. Slow recharge
12	11:45							as above. Slow recharge.
								Developed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

12 **Total Well Volume** Actual amount of water prior to sampling Sample time — Containers used —

Flow rate mL/minute Did field parameters stabilise? Y / N / NA Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 6/12/13	Time: arrive 10:15 depart 10:55
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BQ_MW05S	Weather: Fine, windy

Equipment

Water quality equipment description: NA — Interface probe number: SYD 3954

Purging equipment (please circle): Bailer type: Plastic / Teflon — Pump type: Peristaltic / Submersible / Micro-purge / Amazon / Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
8.350 m (-) 7.215 m (=) 1.135 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.135 m (x) 1.96 (=) 2.225 L

Depth to product: — m — Product Thickness: — m — Verified with Bailer: Y / N NA

Water Quality Parameters

Beginning purge time: 10:26 — Ending purge time: 10:45

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
3	10:25							brown, turbid. No odour. Purged dry after 3L Allowed to recharge
5	10:30							brown, turbid. No odour. Purged dry after another 2L. Allowed to recharge.
7	10:35							as above.
9	10.40							as above. slow recharge.
10	10:45							Developed ~ 5 well volumes removed.

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

10 — **Total Well Volume** Actual amount of water prior to sampling — Sample time — Containers used —

— **Flow rate** mL/minute — Did field parameters stabilise? Y / N / NA — Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID —
Rinsate blank collected?	Y	N		Rinsate blank ID —

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	29.11.13	Time: arrive 840 depart	925
Project Name:	Symphony	Project Number:	0274196
Site Location:	Bayswater	Sampler:	J.L
Well ID:	BQ-MW07	Weather:	Rain

Equipment

Water quality equipment description: Interface probe number: NSW 4254 Jan

Purging equipment (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsun

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
10.985 m (-) 8.570 m (=) 2.415 m
8.570
2.415

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
2.415 m (x) 1.96 (=) ~~4.8~~ L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y | N

Water Quality Parameters

Beginning purge time: 855 Ending purge time: 915

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Very brown / turbid water - no odour
								~ 25 L
								~ 30 L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

30 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y | N | NA

Was the well dry purged? Y | N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 6/12/3	Time: arrive 14:00 depart 14:40
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BQ-MW08	Weather: Fine, windy

Equipment

Water quality equipment description: NA

Interface probe number: SYD 3954

Purging equipment: (please cirlce) Bailer type: Plastic Teflon

Pump type: Peristaltic **Submersible** (circled) Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96 (circled)	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h

V = volume in litres

P = 3.14159

r = radius in cm

h = height of water column in cm

Total Well Depth 7.300 m (-) Water level 3.115 m (=) Water Column 4.15 m

Water Column 4.15 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 8.134 L

Depth to product: — m Product Thickness: — m Verified with Bailer: ~~Y~~ N NA

Water Quality Parameters

Purging start time: 14:05 Purging finish time: 14:30 Pump intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20	14:10							brown, turbid, no odour. Purged dry after 20L. Allowed to recharge.
36	14:15							becoming clearer after 30L. Purged dry after another 16L. No odour. Allowed to recharge.
56	14:25							becoming clearer. Purged dry after 20L.
66	14:30							clear to cloudy. Purged dry after another 10L.
								Developed

Well (purge) readings ... dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume

Actual amount of water prior to sampling

Flow rate

Sample time — Containers used —

Field QC Checks

Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment completed?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Rinsate blank collected?	Y	N	Rinsate blank ID:

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	26.11.13	Time: arrive	855 depart 935
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J.H.
Well ID:	BG-MW10	Weather:	Fine

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment: (please circle)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	(1.96)	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
5.935 m (-) 0.000 m (=) 5.935 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
5.935 m (x) 1.96 (=) ~ 12 L

Depth to product: N/A m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 900 Ending purge time: 925

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Water at surface of well & continuing to overflow once cap removed. Water slightly cloudy, no odour
								Purg @ ~35 L
								Purg @ ~55 L
								~60 L
								~85 L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

95 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 9/12/13	Time: arrive 08:50 depart 09:50
Project Name: Symphony	Project Number: 0124193
Site Location: Bayswater	Sampler: N.H
Well ID: BQ_MW11	Weather: Fine, hot.

Equipment

Water quality equipment description: NA — Interface probe number: SYD 3954

Purging equipment (please circle): Bailer type: **Plastic** **Teflon**; Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 5.990 m (-) Water level 1.930 m (=) Water Column 4.06 m

Water Column 4.06 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 7.96 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y ~~N~~ NA.

Water Quality Parameters

Beginning purge time: 09:00 Ending purge time: 09:40 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20	09:05							brown, turbid, No odour.
25	09:10							brown, turbid. No odour. Purged dry after total of 25L. Allowed to recharge.
40	09:20							brown turbid. No odour. Purged dry after another 15L. Allowed to recharge.
55	09:30							becoming cloudy to clear after 45L. No odour. Purged dry after another 15L. Allowed to recharge.
70	09:40							Cloudy to clear. No odour. Purged dry after another 15L.
								Developed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

70 **Total Well Volume** Actual amount of water prior to sampling — Sample time _____ Containers used —

— **Flow rate** mL/minute — Did field parameters stabilise? Y N (NA) — Was the well dry purged? (Y) N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	29.11.13	Time: arrive 745	depart 830
Project Name:	Symphony	Project Number:	0224196
Site Location:	Bungwahl	Sampler:	J.L
Well ID:	BG MW13	Weather:	Rain

Equipment

Water quality equipment description: Interface probe number: NSW4254 JDM

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
6.73 m (-) 3.64 m (=) 3.09 m
3.64
3.09

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
3.09 m (x) 1.96 (=) 6 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: 800 Ending purge time: 815

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Very turbid silty light brown mud - No odour
								dry @ ~30L
								~40L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

~~40~~ **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 10/12/13	Time: arrive 10:00 depart 10:45
Project Name: Symphony	Project Number: 0224493
Site Location: Bayswater	Sampler: N.H
Well ID: BQ_MW014	Weather: Fine, hot; windy

Equipment

Water quality equipment description: NA

Interface probe number: SYD 3954

Purging equipment: (please cirlce)

Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 2.745 m (-) Water level 1.170 m (=) Water Column 1.245 m

Water Column 1.245 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 2.44 L

Depth to product: — m Product Thickness: — m Verified with Bailer: ~~Y~~ ~~N~~ NA

Water Quality Parameters

Beginning purge time: 10:13 Ending purge time: 10:38 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
5	10:15							brown, very turbid. No odour. Purged dry after 5L. Allowed to recharge.
~~7~~	10:22							as above. Purged dry after another 2L. Allowed to recharge.
9	10:30							as above. Purge dry aftr another 2L. Allowed to recharge. Slow recharge.
10	10:38							as above. Purged dry after another 1L.
								Developed ~5 well volumes. Removed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

10 **Total Well Volume** Actual amount of water prior to sampling

— **Flow rate** mL/minute

Sample time — Containers used —

Did field parameters stabilise? Y N (NA)

Was the well dry purged? (Y) N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	19.12.13	Time: arrive	955 depart
Project Name:	Symphony	Project Number:	0224193
Site Location:	Drysdale - Roversworth	Sampler:	J.L / S.C / H.C
Well ID:	BR - MW01	Weather:	fine

Equipment

Water quality equipment description: Interface probe number:

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** hammerhead

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
53.788 m (-) 38.444 m (=) 15.344 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
15.344 m (x) 1.96 (=) ~ 30 L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: Ending purge time: DOC 0.227

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								~ 30 mbTOC after 30 L removed
								Milky brown → cloudy water
								removed no odour
								60L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

60L **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y / N / NA Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

53.788
38.444
15.344

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	19.12.13	Time: arrive	900 depart
Project Name:	Symphony	Project Number:	0224193
Site Location:	Dayswater – Ravensworth	Sampler:	JL / S.C / H.C
Well ID:	BR-MW05	Weather:	fine

Equipment

Water quality equipment description: Interface probe number: SJ1 3954 60m

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
33.799 m (-) 20.154 m (=) 13.645 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
13.645 m (x) 1.92 (=) ~26 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: Ending purge time: WC 0.243

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								No odour
								Total Volume = 30L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume
Actual amount of water prior to sampling

Flow rate
mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

33.799
20.154
13.645

Groundwater - Well Sampling Data Form

Well Development

Job Information

Date: 19-12-13	Time: arrive 1300 depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater - Ravensworth	Sampler: S.C + J.G
Well ID: BR_MW06	Weather: Fine + Sunny

Equipment

Water quality equipment description: —

Interface probe number: Solinst 55191

Purging equipment (please cirlce):
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
21.342 m (-) 14.275 m (=) ~7 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
~7 m (x) 1.96 (=) ~14 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: 1315 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								- grey, turbid, no odour
								- After 10L, becoming clearer.
								- Total Volume = 40L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

—
Total Well Volume
Actual amount of water prior to sampling

Flow rate
mL/minute

Sample time — Containers used —

Did field parameters stabilise? ~~Y~~ ~~N~~ ~~NA~~ Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID —
Rinsate blank collected?	Y	N	Rinsate blank ID —

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	26.11.13	Time: arrive 945	depart 1030
Project Name:	Project Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BS MW01	Weather:	Fine

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

8.900 m (-) 7.220 m (=) _____ m 26/11/13

8.900 8.600 27/11/13 @ 1105

~~Water Column (x) Conversion Factor~~ (=) Litres per 1 Well Volume

_____ m (x) _____ (=) _____ L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Water clear with No odour
								30L removed @ 1000
								Site revisited @ 11:15
								negligable recharge
27/11/13 re-gauged @ 27/11/13								potentially dry well
~0.3m of water - potential								
recharge								Well yet to be created
								No well installed.

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

30 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	26.11.13 / 27.11.13	Time: arrive 1040	depart 1110
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BT MW01	Weather:	fine

Equipment

Water quality equipment description: Interface probe number:

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
13.200 m (-) 10.490 m (=) ~~_____~~ m
26.11.13
27.11.13 @ 10:55
13.200 10.700

Water Column ~~(x)~~ Conversion Factor (=) Litres per 1 Well ~~Volume~~
_____ m (x) _____ (=) _____ L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								water clear - odour similar
								to ash dam - 'moth balls'?
								50 L removed @ 10:45
								Site revisited @ 11:20 -
								no recharge
						27.11.13		* Recharge after 24hrs
								~~potential dry well~~?
								Monument (well) yet to be created

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

50 **Total Well Volume** Actual amount of water prior to sampling

Sample time _____ Containers used _____

Flow rate mL/minute

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 11/12/13	Time: arrive depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: TC
Well ID: BT_MW01	Weather: Fine

Equipment

Water quality equipment description: Interface probe number:

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 13.135 m (-) Water level 10.918 m (=) Water Column 2.217 m

Water Column ____ m (x) Conversion Factor ____ (=) Litres per 1 Well Volume 4.4 L

Depth to product: ~ m Product Thickness: — m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20	—							Development. Turbid brown, NS, NO, purged dry.

**pH, temp, cond readings not necessary if well is purged dry*

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume
Actual amount of water prior to sampling

Flow rate
mL/minute

Sample time ____ Containers used ____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID ____
Rinsate blank collected?	Y	N	Rinsate blank ID ____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	28.11.13	Time: arrive	1420 depart ~~1500~~ 1500
Project Name:	Symphony	Project Number:	
Site Location:	Drysdale	Sampler:	J. Grant
Well ID:	BV MW01	Weather:	Hot & Sunny

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
10.240 m (-) 5.760 m (=) 4.38 m
5.760
4.380

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
4.38 m (x) 1.96 (=) ~ 8.5 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1430 Ending purge time: 1450

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Very turbid light brown - No odour
								dry @ ~ 18L
								~ 22L
								~ 24L
								~ 25L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

25 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	27.11.13	Time: arrive 1600	depart 1645
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BV_MW02	Weather:	Sunny

Equipment

Water quality equipment description: Interface probe number: NDW 4254 30m

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

10.930 m (-) 4.970 m (=) 5.96 m

4.970
5.96

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

5.96 m (x) 1.96 (=) ~ 12 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1405 Ending purge time: 1420

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Turbid brown → cloudy brown
								- no odour
								dry @ 25L
								dry @ 30L
								35L
								- 40L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

40 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	27.11.13	Time: arrive	1520 depart 1600
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BV - MW03	Weather:	Sunny

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

10.020 m (-) 5.760 m (=) 4.260 m

5.760
0

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

4.260 m (x) 1.96 (=) 8.5 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1530 Ending purge time: 1550

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Very turbid reddish brown
								mud - No odour
								Dry after - 10L
								No / very slow
								recharge

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

10 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	27.11.13	Time: arrive	740 depart 815
Project Name:	Symphony	Project Number:	
Site Location:	Bungwater	Sampler:	J. Grant
Well ID:	BV-MW01	Weather:	Sunny

Equipment						
Water quality equipment description:				Interface probe number:	NSW 4754 30m	
Purging equipment: (please cirlce)	Bailer type:	**Plastic**	**Teflon**			
	Pump type:	**Peristaltic**	**Submersible**	**Micro-purge**	**Amazon**	Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
7.550 m (-) 4.475 m (=) 3.075 m
4.475
3.075

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
3.075 m (x) 1.96 (=) ~ 6 L

Depth to product: ✓ m Product Thickness: ✓ m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 750 Ending purge time: 810

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Brown - Turbid water - No odour
								Initial dry @ ~ 18L
								~ 25L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

25 **Total Well Volume** Actual amount of water prior to sampling Sample time _____ Containers used _____

Flow rate mL/minute Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Well Development	Job Information	
Date: 5/12/13	Time: arrive 09:45	depart 10:40
Project Name: Symphony	Project Number: 0224193	
Site Location: Bayswater	Sampler: N.H	
Well ID: BV-MW04	Weather: Cloudy	

Equipment

Water quality equipment description: NA — Interface probe number: SWD 3954

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon** (Stainless Steel)

Pump type: **Peristaltic** (**Submersible**) **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
11.240 m (-) 9.845 m (=) 1.395 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.395 m (x) 1.96 (=) 2.734 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / ~~N~~

Water Quality Parameters

Beginning purge time: 0958 Ending purge time: 1010

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
10	10:10							Very turbid silty water. Appears to be recharging but only bringing up V. turbid silty water.
20	10:25							Grey turbid water, less silty. Becoming ~~clear~~ cloudy after another 10L Pump not backing up this time.
30	10:30							becoming cloudy to clear after 25L. Actively recharging as pumping
								Developed

1/12/13

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

30 — **Total Well Volume** Actual amount of water prior to sampling

— — **Flow rate** mL/minute

Sample time — Containers used —

Did field parameters stabilise? Y N (NA) Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID ____
Rinsate blank collected?	Y	N		Rinsate blank ID ____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	21.11.13	Time: arrive	1315 depart 1400
Project Name:	Symphony	Project Number:	
Site Location:	Bryanston	Sampler:	J.G
Well ID:	BV MW04	Weather:	fine

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment: (please cirlce)
Bailer type: Plastic Teflon
Pump type: Peristaltic Submersible Micro-purge Amazon Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V
= Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
~~VK 3.30~~ 9.985 m (-) ~~8.64~~ 9.985 m (=) 1.345 m
1.345

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.345 m (x) 1.96 (=) ~ 2.5 L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Unable to develop - water
								level was just sloppy
								mud - repeating blockages
								in both pumps & tubing

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume
Actual amount of water prior to sampling

Flow rate
mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	21.11.13	Time: arrive	1400 depart 1430
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J.L
Well ID:	BV MW06	Weather:	fine

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30M

Purging equipment: (please cirlce) Bailer type: Plastic Teflon

Pump type: Peristaltic Submersible Micro-purge Amazon Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

11.540 m (-) 10.130 m (=) 1.41 m

10.130
1.410

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

1.41 m (x) 1.96 (=) 22.8 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1410 Ending purge time: 1420

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Dark brown turbid - No odour
								brown turbid odour
								25L removed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

25 **Total Well Volume** Actual amount of water prior to sampling

Sample time _____ Containers used _____

Flow rate mL/minute

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	21.11.13	Time: arrive	1100 depart 1120
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J.L
Well ID:	BW MW07	Weather:	Fine

Equipment						
Water quality equipment description:	/			Interface probe number:	NSW 4252 30m	
Purging equipment: (please circle)	Bailer type:	Plastic	Teflon			
	Pump type:	Peristaltic	Submersible	Micro-purge	Amazon	Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
3.550 m (-) 1.970 m (=) 1.580 m
1.970
1.580

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.580 m (x) 1.96 (=) ~3 L

Depth to product: _____ m Product Thickness: / m Verified with Bailer: Y | N

Water Quality Parameters

Beginning purge time: 1105 Ending purge time: 1115

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								turbid brown - no odour
								Initial dry @ ~ 7 L
								Dry @ ~ 9 L
								Dry @ ~ 10 L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

10 L
Total Well Volume
Actual amount of water prior to sampling

Flow rate
mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y | N | NA Was the well dry purged? Y | N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	22.11.12	Time: arrive 810	depart 900
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J.H
Well ID:	BV MW08	Weather:	Overcast

Equipment

Water quality equipment description: Interface probe number: NSW 2254 30m

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 12.030 m (-) (-) Water level 5.400 m (=) (=) Water Column 6.630 m

5.400
6.630

Water Column 6.630 m (x) (x) Conversion Factor 1.96 (=) (=) Litres per 1 Well Volume ~13 L

Depth to product: ✓ m Product Thickness: ✓ m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Turbid reddish brown
								No odour
								Becoming less turbid
								Dry @ ~45L
								Dry @ ~60L
								Dry @ ~70L
								Dry @ ~80L
								Water brown tinge - cloudy

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

80 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	25-11.13	Time: arrive 11:25	depart 1240
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BV-MW09	Weather:	Sunny

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
10.365 m (-) 4.035 m (=) 6.330 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
6.33 m (x) 1.96 (=) ~12 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1145 Ending purge time: 1200

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Dark Brown Very turbid - No odour
								Dry @ ~40L
								Dark brown cloudy / turbid

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

40 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	25.11.13	Time: arrive	1215 depart 1250
Project Name:	Symphony	Project Number:	
Site Location:	Dingwater	Sampler:	J.G
Well ID:	BV_MW10	Weather:	Fine

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

8.990 m (-) 1.495 m (=) 7.495 m

1.495
7.495

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

7.495 m (x) 1.96 (=) ~15 L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: 1223 Ending purge time: 1240

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Turbid dark brown - No odour
								Initial Dry @ ~30L
								Becoming less turbid
								Dry @ ~40L
								Dry @ ~45L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

45 **Total Well Volume** Actual amount of water prior to sampling

Sample time _____ Containers used _____

Flow rate mL/minute

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	20.11.13	Time: arrive	1230 depart 1310
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BV-MW11	Weather:	Sunny

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment: (please circle) Bailer type: Plastic Teflon

Pump type: Peristaltic Submersible Micro-purge Amazon Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

4.095 m (-) 0.865 m (=) 3.13 m

0.865 / 3.130

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

3.13 m (x) 1.96 (=) ~6 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1240 Ending purge time: 1255

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Brown & turbid - No odour
								Initial dry @ 16L
								Purged ~ 24 L

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

24 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	20.11.13	Time: arrive 800	depart 840
Project Name:	Symphony	Project Number:	
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BW_MW12	Weather:	Foggy

Equipment

Water quality equipment description: Interface probe number: NSW 4264 30m

Purging equipment (please circle): Bailer type: Plastic Teflon

Pump type: Peristaltic Submersible Micro-purge Amazon Other: Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h.
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

5.37 m (-) 0.52 m (=) 4.85 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

4.85 m (x) 1.96 (=) ~9.6 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 805 Ending purge time: 840

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20L								very turbid brown - No odour
								20 L withdrawn, slow
								recharge ~ 1L per 15 min
								after inital withdrawal of
								water column

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

20 **Total Well Volume** Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	27.11.13	Time: arrive 1430	depart 1510
Project Name:	Symphony	Project Number:	
Site Location:	Bryswater	Sampler:	J. Grant
Well ID:	BV-MW13	Weather:	Sunny

Equipment

Water quality equipment description: Interface probe number: NSW 4254 30m

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Monsoon

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column

7.805 m (-) 1.250 m (=) 6.555 m

1.250
6.555

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume

6.555 m (x) 1.96 (=) 13 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1440 Ending purge time: 1455

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								Very turbid Redish brown
								water - No odour
								dry @ ~30 L
								~40 L
								~45 L
								Slightly less turbid

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

45 **Total Well Volume** Actual amount of water prior to sampling

Sample time _____ Containers used _____

Flow rate mL/minute

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 9/12/13	Time: arrive 15:50 depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BX-MW01	Weather: Fine, becoming overcast, hot

Equipment

Water quality equipment description: Interface probe number:

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:** Stainless Steel bailer

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 11.030 m (-) Water level 10.720 m (=) Water Column 0.310 m

Water Column 0.310 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 0.608 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / N NA.

Water Quality Parameters

Beginning purge time: 16:00 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
0.8	16:05							brown, turbid, no odour. Removed with SS. bailer ~~Allowed~~ purged dry- Allowed to recharge
1 approx	16:20							slow to recharge. Purged another 0.2L. Dry.
1.2	16:35							v. slow to recharge purged another 0.2L. Dry.
								Developed ~2 well volumes removed.

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

1.2 L **Total Well Volume** Actual amount of water prior to sampling

— **Flow rate** mL/minute

Sample time — Containers used —

Did field parameters stabilise? Y / N / NA Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 6/12/13	Time: arrive 09:00 depart 9:35
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BX_MW03	Weather: Fine, windy

Equipment

Water quality equipment description: NA Interface probe number: SYD 3954

Purging equipment: (please circle)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
6.300 m (-) 4.315 m (=) 1.985 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.985 m (x) 1.96 (=) 3.891 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / ~~N~~ NA

Water Quality Parameters

Beginning purge time: 09:05 Ending purge time: 09:20

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20	09:10							brown, very turbid, silty water, well actively recharging as pumping
40	09:15							brown, becoming less turbid after 30L. Actively recharging
60	09:20							becoming cloudy to clear after 50L. Actively recharging

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

60 **Total Well Volume** Actual amount of water prior to sampling Sample time — Containers used —

— **Flow rate** mL/minute Did field parameters stabilise? Y N (NA) Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 11/12/13	Time: arrive depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: TC
Well ID: BY_MW12	Weather: Fine

Equipment

Water quality equipment description: Interface probe number:

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 9.555 m (-) Water level 4.465 m (=) Water Column 5.09 m

Water Column 5.09 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~~9.97~~ 10 L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
20								Development Turbid black, NS, NO, purged dry

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date: 10/12/13	Time: arrive 11:00	depart 11:40
Project Name: Symphony	Project Number: 0224193	
Site Location: Bayswater	Sampler: N.H	
Well ID: ~~BH~~ BH_MW21	Weather: Fine, hot, windy	

Equipment

Water quality equipment description: NA

Interface probe number: SID 3954

Purging equipment: (please circle)

Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 10.900 m (-) Water level 7.800 m (=) Water Column 3.1 m

Water Column 3.1 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 6.076 L

Depth to product: — m Product Thickness: — m Verified with Bailer: ~~Y~~ ~~N~~ NA

Water Quality Parameters

Beginning purge time: 11:10 Ending purge time: 11:35 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
17	11:13							* No monument installed yet! brown, turbid. No odour, becoming cloudy after 5L. Purged dry after 17L.
20	11:25							brown, turbid. Purged dry after another 3L. Allowed to recharge
21	11:35							as above. Very slow recharge
								~3.5 well volumes removed.
								Developed -

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling

Flow rate mL/minute

Sample time — Containers used —

Did field parameters stabilise? Y N ~~NA~~

Was the well dry purged? ~~Y~~ N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N		
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N		
Was documentation of equipment conducted?	Y	N	NA	
Were air bubbles present in vials at time of collection?	Y	N	NA	
Was sample for metals field filtered prior to preservations?	Y	N	NA	
Duplicate sample collected?	Y	N		Duplicate sample ID _____
Rinsate blank collected?	Y	N		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 13/12/13	Time: arrive 0900 depart 09:15
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BY_MW23	Weather: Fine, hot

Equipment

Water quality equipment description: NA

Interface probe number: SWB Testwell 9300159.

Purging equipment: (please circle)

Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth _____ m (-) Water level DRY m (=) Water Column _____ m

Water Column _____ m (x) Conversion Factor _____ (=) Litres per 1 Well Volume _____ L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								DRY

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling

Flow rate mL/minute

Sample time _____ Containers used _____

Did field parameters stabilise? Y / N / NA

Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 13/12/13	Time: arrive 09:50 depart 11:55
Project Name: Symphony	Project Number: 0224493
Site Location: Bayswater	Sampler: N.H
Well ID: BY_MW24	Weather: Fine hot

Equipment

Water quality equipment description: NA Interface probe number: Testud19300159

Purging equipment (please circle): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 9.060 m (-) Water level 5.985 m (=) Water Column 3.075 m

Water Column 3.075 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 6.027 L

Depth to product: — m Product Thickness: — m Verified with Bailer: ~~Y~~ N

Water Quality Parameters

Beginning purge time: 11:47 Ending purge time: 11:50 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
10	10:50							Wrong tubing. Left location to get right tubing, then returned. very turbid black no odour. Purged dry after 10L. Allowed to recharge
16	11:10							as above. Purged dry after another 6L.
20	11:20							as above. Purged dry after another 4L.
25	11:30							as above. Purged dry after another 5L.
30	11:40							
434	11:50							~5 well volumes removed. Purged dry 6 times. Developed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

34 **Total Well Volume** Actual amount of water prior to sampling Sample time — Containers used —

— **Flow rate** mL/minute Did field parameters stabilise? Y N NA Was the well dry purged? Y N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID
Rinsate blank collected?	Y	N	Rinsate blank ID

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 13/12/13	Time: arrive 11:45 depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater - Lake Liddell Caravan Park	Sampler: N.H
Well ID: BY_MW25	Weather: Fine.

Equipment

Water quality equipment description: NA

Interface probe number: Testwell 9300159

Purging equipment: (please circle)

Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 8.100 m (-) Water level 5.480 m (=) Water Column 2.62 m

Water Column 2.62 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 5.14 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y ~~N~~ NA

Water Quality Parameters

Beginning purge time: 11:58 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments to dark brown
10	12:01							very turbid, black. Purged dry after 10L
16	12:10							turbid, brown. Purged dry after another 6L. No odour. No odour
20	12:25							as above. Purged dry after another 4L
24	12:35							as above. Purged dry after another 4L.
28	12:45							↓
								~5 well volumes removed.
								Developed.

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling

Flow rate mL/minute —

Sample time — Containers used —

Did field parameters stabilise? Y N ~~NA~~

Was the well dry purged? (Y) N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID ____
Rinsate blank collected?	Y	N	Rinsate blank ID ____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 13/12/13	Time: arrive 12:50 depart 13:25
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater - Lake Liddell	Sampler: N.H
Well ID: BY_MW26	Weather: Fine

Equipment

Water quality equipment description: NA

Interface probe number: Testwell 9300159

Purging equipment: (please circle)

Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 3.465 m (-) Water level 2.030 m (=) Water Column 1.435 m

Water Column 1.435 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 2.83 L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: 12:57 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
6	13:00							brown, turbid, no odour. Purged dry after 6L.
11	13:05							as above
15	13:10							Purged dry after 11L, 15L, 20L
20	13:15							
								~10 well volumes removed
								Developed

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling

Sample time _____ Containers used _____

Flow rate mL/minute

Did field parameters stabilise? Y N NA

Was the well dry purged? Y N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Well Development

Date: 18/12/13	Time: arrive 5:15 depart 5:45
Project Name: SYMPHONY	Project Number: 224193.
Site Location: BAYSWATER	Sampler: TH
Well ID: B4_MW29.	Weather: HOT

Equipment

Water quality equipment description: Interface probe number:

Purging equipment: (please cirlce) Bailer type: Plastic Teflon stainless steel.

Pump type: Peristaltic Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
12.680 m (-) 12.591 m (=) ______ m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
______ m (x) ______ (=) ______ L

Depth to product: ______ m Product Thickness: ______ m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments

Unable to remove water from well with SS Bailer. (limited volume)

pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling — Sample time ______ Containers used ______

Flow rate mL/minute — Did field parameters stabilise? Y N NA — Was the well dry purged? Y N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID ______
Rinsate blank collected?	Y	N	Rinsate blank ID ______

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	11.12.13	Time: arrive 1020	depart 1100
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	J. Lim
Well ID:	BA_MW01	Weather:	fine

Equipment

Water quality equipment description: 90 - FLM ✓ U9114 Interface probe number: SYD 3954 60m

Purging equipment: (please cirlce)

Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
9.555 m (-) 5.248 m (=) 4.310 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
4.31 m (x) 1.96 (=) ~8.5 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1029 Ending purge time: 1042

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	1032	5.92	21.4	11.53	1.04	147	5.310	Very Cloudy Greyish brown - No
2	1035	5.80	19.9	11.26	0.62	146	5.310	odour
3	1039	5.71	19.6	11.56	0.54	142	5.310	
4	1042	5.70	19.5	11.37	0.26	141	5.310	
								Good recharge.

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

4 **Total Well Volume** Actual amount of water prior to sampling Sample time 1045 Containers used 8

~300 **Flow rate** mL/minute Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N		
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N		
Was documentation of equipment conducted?	(Y)	N	NA	
Were air bubbles present in vials at time of collection?	Y	(N)	NA	
Was sample for metals field filtered prior to preservations?	(Y)	N	NA	
Duplicate sample collected?	Y	(N)		Duplicate sample ID _____
Rinsate blank collected?	Y	(N)		Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	11.12.13	Time: arrive 905	depart 1005
Project Name:	Symphony Bayswater	Project Number: ~~0213879~~	0224193
Site Location:		Sampler:	J. Shrimpton
Well ID:	BA_MW03	Weather:	fine

Equipment						
Water quality equipment description:	U 9114 90 FL MV			Interface probe number:	SYD 3954 60m	
Purging equipment: (please cirlce)	Bailer type:	Plastic	Teflon			
	Pump type:	Peristaltic	Submersible	Micro-purge	Amazon	Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
5.940 m (-) 1.220 m (=) 4.72 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
4.72 m (x) 1.96 (=) ~ 9 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 930 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L ppm	Redox mV	Drawdown <10cm	Comments
1L	933	5.63	20.6	11.42	0.91	118	1.300	Clear - No odour
2L	936	5.61	20.5	11.40	0.69	110	1.350	
3L	939	5.60	19.9	11.30	0.33	108	1.390	
4L	943	5.60	19.8	11.30	0.28	105	1.420	

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

4 **Total Well Volume** Actual amount of water prior to sampling Sample time 950 Containers used 8

~300 **Flow rate** mL/minute Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID _____
Rinsate blank collected?	Y	(N)	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	11.12.13	Time: arrive 1105	depart 1155
Project Name:	Symphony Bayswater	Project Number:	0224193
Site Location:		Sampler:	J. Grant
Well ID:	BA_EW_MW01	Weather:	Fine

Equipment

Water quality equipment description: 90_FLMV U9114 Interface probe number: SYD 3954 60m

Purging equipment: (please circle)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
8.168 m (-) 4.419 m (=) 3.749 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
3.749 m (x) 1.96 (=) ~ 7.3 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1115 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	1119	6.60	20.1	11.30	0.64	119	4.510	Slighty Cloudy no odour
2	1123	6.61	19.3	11.17	0.37	110	4.550	
3	1127	6.61	19.0	11.15	0.29	107	4.570	
4	1131	6.61	18.9	11.10	0.23	104	4.600	
5	1135	6.61	18.9	11.09	0.21	103	4.630	

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

5 **Total Well Volume** Actual amount of water prior to sampling Sample time 1140 Containers used 8

~250 **Flow rate** mL/minute Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N		
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N		
Was documentation of equipment conducted?	(Y)	N	NA	
Were air bubbles present in vials at time of collection?	Y	(N)	NA	
Was sample for metals field filtered prior to preservations?	(N)	N	NA	
Duplicate sample collected?	Y	(N)		Duplicate sample ID
Rinsate blank collected?	Y	(N)		Rinsate blank ID

7 8.168 4.419 3.749

Groundwater - Well Sampling Data Form

Job Information

Date: 5/12/13	Time: arrive 11:46 depart 12:51
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BB_MW01	Weather: Sunny + warm

Equipment

Water quality equipment description: YSI 11C19262 Interface probe number: NSW 42533 0m.

Purging equipment: (please circle)
Bailer type: Plastic Teflon
Pump type: (Peristaltic) Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	(1.96)	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr²rh
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth: 5.53 m (-) Water level: 2.235 m (=) Water Column: ~3.2 m

Water Column: ~3.2 m (x) Conversion Factor: 1.96 (=) Litres per 1 Well Volume: ~6.45 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: 12:05 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond ~~mS~~/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.1 ppm
1	12:11	6.39	21.4	84653	5.86	58.5	2.45	Clear, no odour
2	12:16	6.41	21.5	85666	2.41	62.8	2.595	" "
3	12:22	6.46	21.9	86188	1.45	66.8	2.71	" "
4.	12:27	6.43	21.9	86593	1.54	68.8	2.815	" "

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

	Total Well Volume Actual amount of water prior to sampling
173	**Flow rate** mL/minute

Sample time 12:32 Containers used 8

Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID /
Rinsate blank collected?	Y	(N)	Rinsate blank ID /

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	5/12/13	Time: arrive	12:05 depart
Project Name:	Symphony	Project Number:	0244193
Site Location:	Bayswater	Sampler:	C. Henry
Well ID:	BB-MW02	Weather:	sunny

Equipment

Water quality equipment description: U5443 Interface probe number: 1220097447.1

Purging equipment: (please cirlce) ~~Bailer type:~~ ~~Plastic~~ ~~Teflon~~

Pump type: (Peristaltic) Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
9.925 m (-) 4.350 m (=) 5.575 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
5.575 m (x) 1.96 (=) ~ 11.2 L

Depth to product: ✓ m Product Thickness: ✓ m Verified with Bailer: Y / ~~N~~ NA

Water Quality Parameters

Beginning purge time: Ending purge time: intake depth ≈ 7.0 m

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID reading = 0.0 ppm
1	12:23	6.56	22.1	7340	3.37	108	4.600	cloudy, no odour
2	12:30	6.61	22.0	7380	2.95	114	4.710	slightly cloudy, no odour
3	12:35	6.62	22.0	7710	2.95	128	4.80	" "
4	12:40	6.61	22.0	7690	2.73	124	4.87	" "
								* sample taken

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

4 **Total Well Volume** Actual amount of water prior to sampling

~200 **Flow rate** mL/minute

Sample time 12:40 Containers used 8

Did field parameters stabilise? (Y) N NA

Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID ✓
Rinsate blank collected?	Y	(N)	Rinsate blank ID ✓

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 5/12/13	Time: arrive 15:57 depart 16:55.
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater.	Sampler: K.F.
Well ID: BB-MW03	Weather: Fine

Equipment

Water quality equipment description: YSI 11K101262 Interface probe number: NSW04253 30m

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
7.45 m (-) 5.13 m (=) 2.32 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
2.32 m (x) 196 (=) ~4.5 L

Depth to product: ~ m Product Thickness: ~ m Verified with Bailer: ~~Y~~ N

Water Quality Parameters

Beginning purge time: 16:09 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	16:15	6.22	20.0	24181	4.19	71.0	5.14	Cloudy, no odour
2	16:21	6.21	19.9	24440	3.78	65.5	5.14	" "
3	16:26	6.21	19.9	24326	3.98	64.1	5.14	" "
4	16:32	6.21	20.0	24318	3.66	65.0	5.14	" "

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

	Total Well Volume Actual amount of water prior to sampling
174	**Flow rate** mL/minute

Sample time 16:35 Containers used 8

Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID ~
Rinsate blank collected?	(Y)	N	Rinsate blank ID R01_051213-KF

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	5/12/13	Time: arrive	15:55 depart
Project Name:	Symphony	Project Number:	0244193
Site Location:	Bayswater	Sampler:	C. Henry
Well ID:	BB_MW04	Weather:	windy

Equipment

Water quality equipment description: U54432 Interface probe number: 122009747.1

Purging equipment: ~~Bailer type:~~ ~~Plastic~~ ~~Teflon~~
(please cirlce) Pump type: (Peristaltic) Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	(50mm)	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
10.835 m (-) 6.875 m (=) 3.960 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
3.960 m (x) 1.96 (=) ~ 7.8 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N) NA

Water Quality Parameters

Beginning purge time: 16:04 Ending purge time: intake depth ≈ 8.0 m

Litres	Time	PH	Temp °C	Cond µS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID reading = 0.0 ppm
1	16:09	4.88	19.5	10430	0.86	199	6.91	Cloudy, no odour
2	16:15	4.84	18.9	10580	0.44	214	6.92	" "
3	16:20	4.79	18.3	11210	0.39	211	6.92	" "
4	16:25	4.71	18.4	11590	0.27	217	6.92	" "
								* Sample taken

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

4 **Total Well Volume** Actual amount of water prior to sampling Sample time 16:25 Containers used 8

≈200 **Flow rate** mL/minute Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N		
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N		
Was documentation of equipment conducted?	(Y)	N	NA	
Were air bubbles present in vials at time of collection?	Y	(N)	NA	
Was sample for metals field filtered prior to preservations?	(Y)	N	NA	
Duplicate sample collected?	Y	(N)		Duplicate sample ID ____
Rinsate blank collected?	(Y)	N		Rinsate blank ID ROL-051213-CH

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	5/12/13	Time: arrive	13:40 depart
Project Name:	Symphony	Project Number:	0244193
Site Location:	Bayswater	Sampler:	C. Henry
Well ID:	BB-MW05	Weather:	fine

Equipment

Water quality equipment description: U5443 Interface probe number: 1220097747.1

Purging equipment: (please circle) ~~Bailer type:~~ ~~Plastic~~ ~~Teflon~~

Pump type: (Peristaltic) Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
3.840 m (-) 1.570 m (=) 1.700 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.700 m (x) 1.96 (=) ~3.3 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N) NA

Water Quality Parameters

Beginning purge time: Ending purge time: intake depth = 3.0m

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.0 ppm
1	13:58	6.97	21.2	2450	3.03	119	1.580	Cloudy, no odour
2	14:02	6.97	20.3	2260	3.17	125	1.580	" "
3	14:06	6.98	20.2	2281	3.24	131	1.580	" "
4	14:10	6.99	21.5	2298	3.36	140	1.580	" "
								* sample taken

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

4 **Total Well Volume** Actual amount of water prior to sampling Sample time 14:10 Containers used 8

~250 **Flow rate** mL/minute Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID /
Rinsate blank collected?	Y	(N)	Rinsate blank ID /

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	5/12/13	Time: arrive	13:47 depart 2:45
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K F.
Well ID:	BWGMW1D(P)	Weather:	Fine

Equipment

Water quality equipment description: 451 11K101 262 Interface probe number: PSW 4253 30m

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
6.47 m (-) 2.45 m (=) 4.02 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
4.02 m (x) 1.96 (=) ~8 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: 14:05 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	14:11	6.80	19.2	27711	0.82	46.4	2.575	Clear, no odour.
2.	14:17	6.79	18.9	26612	—	47.5	2.63	" "
3.	14:23	6.80	19.2	26150	—	46.4	2.68	" "
4.	14:29	6.80	18.6	25566	—	43.4	2.72	" "

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

Total Well Volume Actual amount of water prior to sampling — Sample time 14:32 Containers used 8

~166 **Flow rate** mL/minute — Did field parameters stabilise? Y / N / NA — Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID
Rinsate blank collected?	Y	N	Rinsate blank ID

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	18.12.13	Time: arrive	1640 depart
Project Name:	Symphony Bayswater	Project Number:	0224173
Site Location:		Sampler:	J. Grant
Well ID:	BC-MW05	Weather:	fine

Equipment

Water quality equipment description: 90FLMV U9117 Interface probe number: Syd 3954 60m

Purging equipment: (please cirlce) Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
31.810 m (-) 19.030 m (=) 12.78 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
12.78 m (x) 1.96 (=) ~ 24 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1758 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
0.5	1800	7.40	25.9	5.76	7.00	95		Dark very turbid - no odour
1.0	1802	7.38	25.8	5.86	6.46	65		
1.5	1804	7.37	25.6	5.93	6.12	58		
2.0	1806	7.36	25.5	5.95	6.05	56		
2.5	1808	7.36	25.6	5.94	5.99	54		
3.0	1810	7.36	25.6	5.94	5.98	51		

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

3 **Total Well Volume** Actual amount of water prior to sampling

250 **Flow rate** mL/minute

Sample time 1815 Containers used 7

Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID
Rinsate blank collected?	Y	(N)	Rinsate blank ID

2.71
8.81
19.03
12.78

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 29/4/13	Time: arrive 09:25 depart 10:35
Project Name: Project Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BD_EW_MW01	Weather: overcast, rain

Equipment

Water quality equipment description: YSI Interface probe number: SYD 3954

Purging equipment (please circle): Bailer type: Plastic / Teflon

Pump type: Peristaltic / Submersible / Micro-purge / Amazon / Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 14.36 m (-) Water level 7.105 m (=) Water Column _____ m

Water Column _____ m (x) Conversion Factor _____ (=) Litres per 1 Well Volume _____ L

Depth to product: _____ m Product Thickness: _____ m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: 09:57 Ending purge time: 10:26 Pump Intake Depth (mbtoc): 11.0

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	10:03	5.90	21.0	6341	4.9	41.3	7.310	Clear, no odour
2	10:09	5.89	20.0	6370	5.58	42.0	7.410	Clear, sulfur odour
3	10:15	5.90	20.0	6610	5.50	40.6	7.48	↓
4	10:21	5.90	20.0	6695	5.45	39.6	7.56	
5	10:26	5.90	20.0	6690	5.43	41.1	7.62	

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

5 L — **Total Well Volume** Actual amount of water prior to sampling

172 — **Flow rate** mL/minute

Sample time 10:30

Containers used 4x 40ml vials, 2x 100ml Amber, 1x metals, 1x ORC ultratrace metals

Did field parameters stabilise? (Y) / N / NA

Was the well dry purged? Y / (N)

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information	
Date: 29/11/13	Time: arrive 10:40 depart 10:50
Project Name: Project Symphony	Project Number: 0224193
Site Location: BD_EW_MW02	Sampler: N.H
Well ID:	Weather: overcast, showers

Equipment

Water quality equipment description: YSI Interface probe number: S40 3954

Purging equipment: (please cirlce)
Bailer type: Plastic Teflon
Pump type: (Peristaltic) Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	(1.96)	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 8.925 m (-) Water level 5.050 m (=) Water Column 3.875 m

Water Column 3.875 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 7.595 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: 10.55 Ending purge time: 11:23 Pump Intake Depth (mbtoc): 8.50

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	11:00	5.18	21.8	6085	5.42	639	5.250	clear, sulfur odour
2	11:05	5.16	21.7	6043	6.89	475.4	5.515	↓
3	11:11	5.15	21.8	6033	6.67	71.3	5.840	
4	11:17	5.14	21.7	6020	6.67	700	6.060	
5	11:23	5.14	21.7	6017	6.61	70.4	6.220	

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

5L — Total Well Volume: Actual amount of water prior to sampling
178 — Flow rate: mL/minute

Sample time 11:30

Containers used: 4x 40mL vials, 2x 100mL Ambers, 1x metals, 1x ORC ultratrace metals.

Did field parameters stabilise? (Y) N NA

Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID _____
Rinsate blank collected?	Y	(N)	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 28/11/13	Time: arrive 0745 depart 08:45
Project Name: Project Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BD_EW_MW03	Weather: Overcast, light rain

Equipment

Water quality equipment description: YSI Interface probe number: SID 3954

Purging equipment: (please cirlce)
Bailer type: **Plastic** **Teflon**
Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 11.800 m (-) Water level 6.600 m (=) Water Column 5.2 m

Water Column 5.2 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 10.192 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y / N

Water Quality Parameters

Beginning purge time: 08:22 Ending purge time: 08:52 Pump Intake Depth (mbtoc): 10.5

Litres	Time	PH	Temp °C	Cond µS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	08:28	6.04	22.3	12884	3.76	99	6.950	Clear, no odour
2	08:34	6.05	22.2	12825	7.20	35.6	7.150	
3	08:40	6.05	22.2	12766	7.12	26.3	7.370	
4	08:46	6.06	22.2	12798	6.92	22.3	7.540	
5	08:52	6.06	22.2	12805	6.87	21.3	7.640	

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

5L **Total Well Volume** Actual amount of water prior to sampling

166 **Flow rate** mL/minute

Sample time 09:00

Containers used 4x 40mL vials, 2x 100mL glass amber, 1x QAC metals (ultra trace), 1x N metals

Did field parameters stabilise? Y / N / NA

Was the well dry purged? Y / N

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID _____
Rinsate blank collected?	Y	N	Rinsate blank ID _____

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 29/11/13	Time: arrive 11:55 depart 12:55
Project Name: Project Symphony	Project Number: 0224193
Site Location: ~~[illegible]~~ Bayswater	Sampler: N.H
Well ID: BD_EW_MW04	Weather: Overcast, showers

Equipment

Water quality equipment description: YSI — Interface probe number: SYD 3954

Purging equipment: (please cirlce)

Bailer type: Plastic Teflon

Pump type: **Peristaltic** (circled) Submersible Micro-purge Amazon Other:

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.49	1.96 (circled)	7.85	12.3	17.7	31.4	49.1	70.7

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 13.640 m (-) Water level 7.535 m (=) Water Column 6.105 m

Water Column 6.105 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 11.966 L

Depth to product: — m Product Thickness: — m Verified with Bailer: Y N

Water Quality Parameters

Beginning purge time: 12:13 Ending purge time: 12:35 Pump Intake Depth (mbtoc): 11.00

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1.0	12:20	5.89	23.4	12103	7.41	14.8	7.930	Clear, no odour
1.5	12:25	5.89	23.3	12066	8.33	6.7	8.130	Clear, slight sulfur odour
2.0	12:30	5.89	23.3	12052	8.38	4.7	8.235	Clear, slight sulfur odour.
2.5	12:35	5.89	23.3	12048	8.35	4.3	8.310	Clear, slight sulfur odour
BUA								
								*Lost tubing downhole.
								↳ Retrieved 12/10/13

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

2.5L **Total Well Volume** Actual amount of water prior to sampling — Sample time 12:45 — Containers used 4x40mL H_2SO_4 vials, 2x100mL Amber glass, 1x 50mL HNO_3 metals, 1x ORC ultratrace metals

113 **Flow rate** mL/minute — Did field parameters stabilise? (Y) N NA — Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaned sampling equipment used for these samples?	(Y)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N	
Was documentation of equipment conducted?	(Y)	N	NA
Were air bubbles present in vials at time of collection?	Y	(N)	NA
Was sample for metals field filtered prior to preservations?	(Y)	N	NA
Duplicate sample collected?	Y	(N)	Duplicate sample ID
Rinsate blank collected?	(Y)	N	Rinsate blank ID Rinsate_291113_NH.

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	12.12.13	Time: arrive 1335 depart	1420
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BE_MW01	Weather:	Sunny

Equipment

Water quality equipment description: 90 FLMV U9117 Interface probe number: SYD 3954 - 60m

Purging equipment (please cirlce): Bailer type: **Plastic** **Teflon**

Pump type: **Peristaltic** **Submersible** **Micro-purge** **Amazon** **Other:**

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = Pr x r x h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth (-) Water level (=) Water Column
7.22 m (-) 2.290 m (=) 4.930 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
4.93 m (x) 1.96 (=) ~9.5 L

Depth to product: / m Product Thickness: / m Verified with Bailer: Y (N)

Water Quality Parameters

Beginning purge time: 1350 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	1353	6.84	21.9	13.12	3.45	81	2.550	Slightly cloudy ⇒ No odour
2	1357	6.80	21.3	13.23	2.98	82	2.60	
3	1401	6.64	21.3	13.21	2.94	94	2.661	
4	1404	6.57	20.7	13.17	2.81	96	2.690	
5	1408	6.56	21.3	13.14	2.71	93	2.730	

*pH, temp, cond readings not necessary if well is purged dry

Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour / drawdown depth

5 **Total Well Volume** Actual amount of water prior to sampling Sample time 1415 Containers used 7

~250 **Flow rate** mL/minute Did field parameters stabilise? (Y) N NA Was the well dry purged? Y (N)

Field QC Checks

Was pre-cleaning sampling equipment used for these samples?	(Y)	N		
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N		
Was documentation of equipment conducted?	(Y)	N	NA	
Were air bubbles present in vials at time of collection?	Y	(N)	NA	
Was sample for metals field filtered prior to preservations?	(Y)	N	NA	
Duplicate sample collected?	Y	(N)		Duplicate sample ID _____
Rinsate blank collected?	Y	(N)		Rinsate blank ID _____

7.82
2.29
4.95