Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	12/12/13	Time: arrive 11:20 depart	12:10
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BO_MW03	Weather:	Fine

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW 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)	0.49	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 4.86 m (-) Water level 1.55 m (=) Water Column 3.31 m

Water Column 3.31 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 6.48 L

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

Water Quality Parameters

Beginning purge time: 11:29 Ending purge time: 11:51 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.1ppm
1	11:35	6.46	20.0	11242	5.89	37.9	1.87	cloudy, no odour
2	11:41	6.72	19.6	10802	4.69	32.6	2.07	slightly cloudy, no odour.
3	11:46	6.77	19.8	10841	3.89	21.6	2.19	" "
4	11:51	6.80	19.5	10671	2.72	6.8	2.31	" "

*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 12:00 Containers used 8

a181 **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:	12/12/13	Time: arrive	12:45 depart 14:00
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	KF.
Well ID:	BO_MW04	Weather:	Fine

Equipment

Water quality equipment description: 451 11K101262 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) *	0.49	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 3.78 m (-) Water level 1.80 m (=) Water Column 1.98 m

Water Column 1.98 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 23.88 L

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

Water Quality Parameters

Beginning purge time: 12:54 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
0.5	12:57	6.72	20.0	7376	5.04	45.6	1.92	Slightly cloudy, no odour
1.0	13:00	6.95	20.7	7086	4.63	45.3	1.97	" "
1.5	13:04	7.04	20.5	6936	4.46	43.9	1.99	Clear, no odour
2	13:07	7.07	20.8	6870	4.37	42.8	2.03	" "
2.5	13:10	7.07	20.2	6840	4.06	43.2	2.07	" "

*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 13:15 Containers used 8

156 **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:	12/12/13	Time: arrive 14:45	depart 16:15
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	I.C. F.
Well ID:	BO_MW05	Weather:	Fine

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW 4253 30m

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 5.53 m (-) Water level 3.33 m (=) Water Column 2.20 m

Water Column 2.20 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~4.31 L

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

Water Quality Parameters

Beginning purge time: 14:58 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments PID = 0.3 ppm
0.5	15:01	6.60	20.0	4844	6.45	31.6	3.35	Slightly cloudy, no odour
1	15:05	6.74	19.2	4920	6.37	23.2	3.36	" "
1.5	15:08	6.94	19.1	4844	6.23	19.7	3.35	" "
2	15:11	7.04	19.1	4805	6.15	17.6	3.37	" "
2.5	15:14	7.09	19.2	4831	6.66	13.8	3.35	" "

*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 15:22 Containers used 8+8

156 **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)	
Rinsate blank collected?	(Y)	N	

Duplicate sample ID /

Rinsate blank ID RØ1_121213_KF

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 3/12/13	Time: arrive 10:00 depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: C. Henry
Well ID: BP_MW01	Weather: sunny

Equipment

Water quality equipment description: 12D100012 Interface probe number: 122009747.1

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
3.240 m (-) 0.875 m (=) 2.365 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
2.365 m (x) 1.96 (=) ≈ 4.6 L

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

Water Quality Parameters

Beginning purge time: 10:12 Ending purge time: intake depth ≈ 2.5 m

Litres	Time	PH	Temp °C	Cond µS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	10:15	5.42	23.9	3282	0.17	74.5	0.890	Clear, no odour
2	10:19	5.19	24.0	2050	0.9	150.9	0.90	" "
3	10:24	4.91	24.0	1850	0.09	182.8	0.92	" "
4	10:27	4.92	24.1	1794	0.09	197.2	0.94	" "
5	10:33	5.00	24.0	1794	1.5	197.1	0.95	" "
								* 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

~~5~~ ~250 **Total Well Volume** Actual amount of water prior to sampling Sample time 10:33 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

Job Information

Date: 3/12/13	Time: arrive 10:05 depart 11:07
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BP_MW02	Weather: Fine

Equipment

Water quality equipment description: YSI 11K101262 Interface probe number: NSW 4253 30M

Purging equipment (please circle): 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 = 3.14186
r = radius in cm
h = height of water column in cm

Total Well Depth 8.10 m (-) Water level 0.95 m (=) Water Column 7.15 m

Water Column 7.15 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~14 L

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

Water Quality Parameters

Beginning purge time: 10:16 Ending purge time: 10:49 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	10:25	7.18	21.4	6503	1.23	96.4	0.95	Slightly cloudy, no odour.
2	10:37	6.12	20.4	5999	0.25	76.1	0.96	" "
3	10:43	6.05	20.4	5657	0.17	70.7	0.96	" "
4	10:49	6.03	20.3	5689	0.13	94.3	0.96	" "

*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 10:55 Containers used 7
121	**Flow rate** mL/minute	Did field parameters stabilise? **Y** (circled) N NA Was the well dry purged? Y N

Field QC Checks

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

Groundwater - Well Sampling Data Form

Job Information

Date: 3/12/13	Time: arrive 08:30 depart 09:46.
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: C.H. + K.F.
Well ID: BP_MW03	Weather: Fine

Equipment

Water quality equipment description: YSI 12D100012 Interface probe number: 1220097 47-1

Purging equipment: 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 = Pr²h
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth: 3.926 m (-) Water level: 2.35 m (=) Water Column: 1.576 m

Water Column 1.576 (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 3.08

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

Water Quality Parameters

Beginning purge time: 08:55 Ending purge time: 09:23 Pump Intake Depth (mbtoc):

Litres	Time	pH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Turbidity <10cm	Comments
0.5	08:59	5.62	23.4	10633	2.66	177.6	2.24	PID = 0.4 Clear, no odour
1	09:05	5.72	23.6	10602	2.71	160.7	2.36	" "
1.5	09:09	5.91	23.7	10153	2.68	143.9	2.55	" "
2	09:12	6.02	23.7	9308	2.33	126.2	2.65	" "
2.5	09:17	6.10	23.5	8986	2.51	113.2	2.80	" "
3	09:23	6.07	23.3	9030	2.57	110.0	2.95	" "

*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 09:25 Containers used 8+8

~100 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: D01_031213
Rinsate blank collected?	Y	(N)	Rinsate blank ID:

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 3/12/13	Time: arrive 14:20 depart
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: C.H + K.F.
Well ID: BP-MW04	Weather: Sunny / v. hot.

Equipment

Water quality equipment description: 11K101262 Interface probe number: 1220094747.1

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
7.430 m (-) 1.680 m (=) 5.650 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
5.650 m (x) 1.96 (=) ~~11.2~~ 11.1 L

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

Water Quality Parameters

Beginning purge time: 14:29 Ending purge time: 14:48 intake depth ≈ 6.5 mbTOC

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	14:34	5.48	24.1	5043	0.4	77.8	1.85	Cloudy, no odour
2	14:39	5.55	21.0	4888	0.05	77.5	2.00	" "
3	14:44	5.68	20.9	4804	0.04	76.4	2.04	" "
4	14:48	5.75	20.9	4906	0.05	60.1	2.05	" "

*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 7

137 **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: 3/12/13	Time: arrive 11:45 depart
Project Name: Symphony	Project Number: 0204193
Site Location: Bayswater Power Stn	Sampler: C.H + K.F
Well ID: BP_MW05	Weather: sunny/hot

Equipment

Water quality equipment description: 12D100012 Interface probe number: 1220097747.1

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
7.705 m (-) 2.615 m (=) 5.090 m

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

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

Water Quality Parameters

Beginning purge time: 11:56 Ending purge time: intake depth ≈ 6.0m

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	12:00	6.43	23.2	7091	1.00	17.1	2.645	Slightly cloudy, light brown, no odour
2	12:45	6.01	21.0	5706	0.34	19.1	2.695	" "
3	12:50	6.07	20.9	5632	0.33	24.3	2.711	" "
4	12:55	6.09	20.9	5693	0.36	21.0	2.77	" "
								* sample taken

WQM broken

new one

*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 12:55 Containers used 7

~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 /

Groundwater - Well Sampling Data Form

Job Information

Date: 3/12/13	Time: arrival 11:50 departure 12:45
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BP_MW06	Weather: Fine

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: DSW 4523 30m

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 7.07 m (-) Water level 1.16 m (=) Water Column 5.91 m

Water Column 5.91 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 11.58 L

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

Water Quality Parameters

Beginning purge time: 12:03 Ending purge time: 12:32 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	12:09	6.73	24.4	5850	0.69	50.3	1.17	Cloudy, no odour
2	12:18	6.73	24.0	5841	0.64	46.6	1.16	" "
3	12:24	6.75	24.0	5806	0.57	45.2	1.15	" "
4	12:32	6.75	24.1	5714	0.56	44.6	1.16	" "

*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 12:37 Containers used 7

Flow rate 137 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

BOC

Job Information

Date: 19.12.13	Time: arrive 9:30 depart 11:45
Project Name: Symphony.	Project Number: 0224193
Site Location: Bays water	Sampler: JW
Well ID: BQ_MW01	Weather: Sunny.

Equipment

Water quality equipment description: Aimet 9OFLMU Interface probe number: Aimet NSW 4254 30m.

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 ~50 m (-) Water level 43.126 m (=) Water Column 7.0 m

Water Column 7.0 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 14.0 L

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

Water Quality Parameters

Beginning purge time: 10:02. Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
No water to surface	at @	10:15 10:32.	increased					pressure; water pumped
0.5	10:35	7.58	22.9	0.213	4.59	152	43.09	cloudy grey. no odour.
1.0	10:39	7.43	22.0	2779	3.20	141	43.10	as above.
1.5	10:45	7.90	21.4	2.81	2.30	155	43.12	as above
Ran out of CO_2 gas change cylinders.								
2.0	10:51	8.20	21.3	2.81	2.27	143	4313	as above
2.5	10:55	8.24	22.7	2.83	2.26	143	43.14	as above
3.0	10:59	8.24	22.9	2.84	2.22	143	43.14	as above
3.5	11:02	8.25	22.9	2.84	2.23	148	43.15	as above as above.
4.0	11:06	8.26	22.9	2.85	2.22	148	43.18	

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

4.0L **Total Well Volume** Actual amount of water prior to sampling — Sample time 11:06 — Containers used 9

120 **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		1 x 1L cation/anion.
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N		4 x vials.
Was documentation of equipment conducted?	(Y)	N	NA	1 x metals.
Were air bubbles present in vials at time of collection?	Y	(N)	NA	3 x amber
Was sample for metals field filtered prior to preservations?	(Y)	N	NA	final DTW 43.19.
Duplicate sample collected?	Y	(N)		Duplicate sample ID —
Rinsate blank collected?	Y	(N)		Rinsate blank ID —

PID: 0.0ppm (M)
Soil cuttings present

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 9/12/13	Time: arrive 08:39 depart 09:36
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BQ_MW02	Weather: Fine

Equipment

Water quality equipment description: YSI 11K101262 Interface probe number: NSW 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)	0.49	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 6.58 m (-) Water level 3.10 m (=) Water Column 3.48 m

Water Column 3.48 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 6.82 L

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

Water Quality Parameters

Beginning purge time: 08:44 Ending purge time: 09:05 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond ~~mS~~/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	08:49	6.88	19.6	15389	5.31	69.9	3.37	Clear, no odour
2	08:54	6.88	19.7	14891	4.89	62.3	3.48	" "
3	09:00	6.83	19.7	14775	4.54	59.6	3.61	" "
4	09:05	6.84	19.9	14585	4.21	56.6	3.70	" "

*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 09:10 Containers used 8

190 **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

photo: DSC00082 (M) soil cuttings

Job Information

Date: 9/12/13	Time: arrive 09:50 depart 11:00
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BQ - MW03	Weather: Fine

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW 4253 30M

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 6.57 m (-) Water level 0.35 m (=) Water Column 6.26 m

Water Column 6.26 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 212.2 L

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

Water Quality Parameters

Beginning purge time: 10:00 Ending purge time: 10:21 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond ~~mS~~/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	10:05	6.35	21.5	5971	4.17	53.8	0.53	Clear, no odour
2	10:10	6.40	21.7	5663	2.90	48.4	0.48	" "
3	10:15	6.35	21.7	5453	1.11	44.8	0.47	" "
4	10:21	6.36	21.6	5253	0.80	43.0	0.48	" "

*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
190	**Flow rate** mL/minute

Sample time 10:30 Containers used 8+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 DQ1-091213-KF
Rinsate blank collected?	Y	(N)	Rinsate blank ID /

photo: DSC00083 (4)

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 9/12/13	Time: arrive 11:10 depart 12:15
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BQ_MW04	Weather: Fine

Equipment

Water quality equipment description: YSI 11K101262 Interface probe number: NSW 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)	0.49	(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 10.68 m (-) Water level 8.19 m (=) Water Column 2.49 m

Water Column 2.49 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 4.88 L

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

Water Quality Parameters

Beginning purge time: 11:28 Ending purge time: 11:52 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
0.5	11:32	6.28	21.0	8455	6.72	37.9	8.40	clear, no odour
1	11:37	6.60	20.8	8981	6.74	36.8	8.48	" "
1.5	11:41	6.71	20.4	9144	6.44	35.2	8.55	" "
2	11:44	6.76	20.6	9324	6.37	36.7	8.76	" "
2.5	11:48	6.76	20.9	9575	6.11	36.8	8.89	" "
3	11:52	6.76	20.7	9594	6.01	36.5	8.95	" "

*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
125	**Flow rate** mL/minute

Sample time 12:00 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

photo: DSC00084 (M).

Job Information

Date:	9/12/13	Time: arrive	12:35 depart 13:35
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BQ_MW05	Weather:	Fine

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW 4253 30m

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 8.35 m (-) Water level 7.23 m (=) Water Column 1.12 m

Water Column 1.12 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 2.19 L

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

Water Quality Parameters

Beginning purge time: 12:53 Ending purge time: 13:14 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
0.5	12:57	6.66	20.2	4985	4.98	37.9	7.30	Cloudy, no odour
1	13:00	6.92	20.0	5052	4.58	37.6	7.30	" "
1.5	13:04	6.98	20.0	4980	4.33	38.2	7.32	" "
2	13:07	6.96	20.0	4927	4.16	39.1	7.34	" "
2.5	13:10	6.98	19.9	4839	3.97	40.5	7.35	" "
3	13:14	7.01	19.9	4786	3.76	40.0	7.36	" "

*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
142	**Flow rate** mL/minute

Sample time 13:17 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

photo: DSC00085 (M)

Job Information

Date:	9/12/13	Time: arrive 14:00 depart 15:00	
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BQ_MW07	Weather:	Fine

Equipment

Water quality equipment description: YSI 11K101262 Interface probe number: NSW 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)	0.49	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 10.98 m (-) Water level 8.54 m (=) Water Column 2.44 m

Water Column 2.44 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 4.78 L

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

Water Quality Parameters

Beginning purge time: 14:12 Ending purge time: 14:33 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	14:17	6.57	20.6	5525	5.97	38.1	8.57	Slightly cloudy, no odour
2	14:23	6.82	20.2	5640	5.73	33.7	8.59	" "
3	14:27	6.84	20.3	5759	5.23	32.4	8.59	Clear, no odour
4	14:33	6.84	20.2	5798	4.86	32.1	8.60	" "

*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 14:36 Containers used 8

Flow rate (mL/minute): 190 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

Photo: DSC00086 (M)

Job Information

Date:	9/12/13	Time: arrive 15:20 depart	16:20
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	I.C.F.
Well ID:	BQ_MW08	Weather:	Fine

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW 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)	0.49	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 7.31 m (-) Water level 3.14 m (=) Water Column 4.17 m

Water Column 4.17 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 8.17 L

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

Water Quality Parameters

Beginning purge time: 15:30 Ending purge time: 15:50 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	15:35	6.59	18.8	4139	5.45	27.7	3.22	Slightly cloudy, no odour
2	15:40	6.73	19.0	4068	4.79	19.0	3.18	" "
3	15:45	6.75	18.7	3960	4.13	12.6	3.25	" "
4	15:50	6.78	18.6	3904	3.31	9.0	3.25	" "

*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 16:00	Containers used 8+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-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 RØ1_091213_KF

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	10/12/13	Time: arrive	15:20 depart 16:40
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	I.C.F.
Well ID:	BQ-MW10	Weather:	Fine / v. warm

Equipment

Water quality equipment description: 451 11K10262 Interface probe number: NSW 4253 30m

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 5.94 m (-) Water level 0.0 m (=) Water Column 5.94 m

Water Column 5.94 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~12 L

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

Water Quality Parameters

Beginning purge time: 15:37 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond µS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	15:42	4.33	20.3	3209	1.17	101.8	0.0	Cloudy, no odour
2	15:48	4.19	20.7	3054	0.57	103.5	0.0	" "
3	15:55	4.18	21.1	3010	0.25	70.0	0.0	Slightly cloudy, no odour
4	16:01	4.16	21.0	2989	0.13	61.5	0.0	" "
								Pipe overflowing.

*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

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

Sample time 16:05 Containers used 8+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 RØ1_101213_KF

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	10/12/13	Time: arrive 08:00 depart 09:20	
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BG_MW11	Weather:	Fine, v. warm

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW 4253 30m

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 6.00 m (-) (-) Water level 1.92 m (=) (=) Water Column 4.08 m

Water Column 4.08 m (x) (x) Conversion Factor 1.96 (=) (=) Litres per 1 Well Volume ~8 L

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

Water Quality Parameters

Beginning purge time: 08:26 Ending purge time: 08:47 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	~~Cond~~ ~mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.4ppm
1	08:30	7.38	20.6	6004	7.26	49.5	2.05	Slightly cloudy, no odour
2	08:36	7.26	20.6	6476	6.27	47.4	2.03	" "
3	08:41	7.28	20.5	6696	5.79	46.4	2.03	" "
4	08:47	7.27	20.4	6825	5.25	45.7	2.07	" "

*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 08:50	Containers used 8+8
~190	**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	TB1_101213_KF
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	14:00 depart 14:50
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F
Well ID:	BQ_MW13	Weather:	Fine + warm

Equipment

Water quality equipment description: YSI 11K101262 Interface probe number: NSW 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)	0.49	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 6.73 m (-) Water level 3.60 m (=) Water Column 3.13 m

Water Column 3.13 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 6.13 L

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

Water Quality Parameters

Beginning purge time: 14:10 Ending purge time: 14:31 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	~~µ~~Cond ~~mS~~/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments PID=0.2ppm
1	14:16	6.52	21.7	4400	1.55	29.5	3.69	slightly cloudy, no odour
2	14:21	6.59	21.7	4305	1.17	26.5	3.73	" "
3	14:26	6.71	21.6	4256	1.16	26.4	3.73	" "
4	14:31	6.73	21.4	4174	0.81	23.9	3.68	" "

*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 14:35 Containers used 8

2190 **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:	12.12.13	Time: arrive	750 depart 925
Project Name:	Symphony	Project Number:	0224193
Site Location:	Angswater	Sampler:	J. Grant
Well ID:	BG-MW14	Weather:	fine

Equipment

Water quality equipment description: 90-FLMW 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
3.165 m (-) 1.225 m (=) 1.940 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.94 m (x) 1.96 (=) ~3.5 L

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

Water Quality Parameters

Beginning purge time: 814 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO ~~mg/L~~ %	Redox mV	Drawdown <10cm	Comments
1	817	6.52	19.5	9.84	0.89	-73	1.530	Brown turbid - No odour
2	820	6.34	19.3	8.92	0.52	-74	1.620	
3	823	6.10	19.3	8.43	0.45	-46	1.680	
4	826	12.15?	19.6	7.90	0.85	6	1.750	
5	830	12.04	19.8	7.81	1.16	19	1.840	Potential faulty pH sensor
6	833	11.80	20.0	7.71	1.30	26	1.980	
7	836	11.67	20.0	7.70	1.47	23	2.020	
8	839	11.53	20.0	7.67	1.47	18	2.120	

*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

TO1 RO1

8 **Total Well Volume** Actual amount of water prior to sampling Sample time 845 Containers used 8 (9+8)

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

pH sensor questionable?

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 TO1-121213-JG
Rinsate blank collected?	(Y)	N		Rinsate blank ID RO1-121213-JG

9 samples

8 samples

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	10/12/13	Time: arrive	09:40 depart 10:35
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BQ-EW-MW01	Weather:	Fine / v.warm

Equipment

Water quality equipment description: 451 IIK 101262 Interface probe number: NSW 4253 30m.

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 6.660 m (-) Water level 0.540 m (=) Water Column 6.12 m

Water Column 6.12 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~12 L

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

Water Quality Parameters

Beginning purge time: 09:56 Ending purge time: 10:17 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments PID = 0.0 ppm
1	10:02	7.23	19.7	4818	4.60	24.4	0.60	Slightly cloudy, no odour
2	10:06	7.29	19.9	4746	3.22	25.4	0.62	" "
3	10:11	7.31	19.8	4663	2.05	25.2	0.63	" "
4	10:17	7.31	19.4	4541	1.24	23.1	0.64	" "

*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 10:25 Containers used 8

~190 **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:	10/12/13	Time: arrive 11:00	depart 12:05
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BQ_EW_MW02	Weather:	Fine / very warm

Equipment

Water quality equipment description: 451 11K101262 Interface probe number: NSW R4253 30m

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 14.92 m (-) Water level 8.70 m (=) Water Column 6.22 m

Water Column 6.22 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 12.2 L

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

Water Quality Parameters

Beginning purge time: 11:13 Ending purge time: 11:34 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments PID = 0.2ppm
1.0	11:18	6.50	20.6	5645	3.40	37.3	8.71	Clear, no odour
2	11:23	6.55	20.3	5604	2.29	35.9	8.71	" "
3	11:28	6.55	20.4	5654	1.56	35.4	8.72	" "
4	11:34	6.55	20.4	5661	1.10	34.5	8.71	" "

*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 11:40	Containers used 8
~190	**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:	10/12/13	Time: arrive 12:15 depart	13:45
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	K.F.
Well ID:	BQ_EW_MW03	Weather:	Fine/v.warm

Equipment

Water quality equipment description: 451 11K401262 Interface probe number: NSW 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)	0.49	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 15.50 m (-) Water level 9.61 m (=) Water Column 5.89 m

Water Column 5.89 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 11.5 L

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

Water Quality Parameters

Beginning purge time: 12:38 Ending purge time: 13:05 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								~~PID~~ PID=0.3ppm
0.5	12:45	6.64	24.8	6850	2.41	145	9.63	clear, sulphur odour
1	12:53	6.67	25.3	6978	2.28	+40.9	9.64	" "
1.5	12:59	6.74	25.8	7087	2.34	-123.8	9.63	" "
2	13:05	6.77	25.8	7568	2.06	-120.4	9.63	" "

*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 13:10 Containers used 8

~14 **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:	20-12-13	Time: arrive	0745 depart 915
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater-Ravensworth	Sampler:	S.C + J.G
Well ID:	BR_MW01	Weather:	Fine + Sunny

Equipment

Water quality equipment description: YSI - MWQ-842 Interface probe number: Solinst 55191

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 7.50 m (-) Water level 28.755 m (=) Water Column ~22 m

Water Column ~22 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~44 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
1	0824	5.22	23.7	6974	4.10	40.6	-	Slightly cloudy, no odour
2	0830	6.46	23.1	7268	1.21	7.5	✓	
3	0835	6.46	23.1	7288	1.37	5.6	~	
4	840	6.45	23.0	7296	1.09	4.3	~	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

4L **Total Well Volume** Actual amount of water prior to sampling Sample time 845 Containers used 9

~200 **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 RO1_2012_JG

Groundwater - Well Sampling Data Form

ERM

Job Information

Date:	14.12.13	Time: arrive	1700 depart
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater - Ravensworth	Sampler:	S.C + J.G
Well ID:	~~BR_MW05~~ BR_MW05	Weather:	Fine + Sunny

Equipment

Water quality equipment description: YSI-MWQ-842 Interface probe number: Solinst

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 33.799 m (-) Water level 20.154 m (=) Water Column 13.645 m

Water Column 13.645 m (x) Conversion Factor 1.92 (=) Litres per 1 Well Volume ~26 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
0.5	1700	8.49	23.9	2700	1.53	-70.1		Dark Grey brown turbid
1.0	1705	8.54	22.8	2697	0.60	-113.1		water.
1.5	1710	8.62	22.3	2762	0.39	-228.5		
2.0	1715	8.62	22.1	2770	0.37	-232.5		Dark floating blotches of
2.5	1720	8.61	22.1	2772	0.34	-234.5		unknown material

*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

2.5 **Total Well Volume** Actual amount of water prior to sampling Sample time 1720 Containers used 7

100ml **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:	19.12.13	Time: arrive	1530 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: TSI - MWQ-842 Interface probe number: Solinst 55191

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 21.742 m (-) Water level 14.278 m (=) Water Column ~7 m

Water Column ~7 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ~14 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
1	1545	7.82	27.4	2960	1.76	-128.8	-	grey, turbid, no odour
2	1550	7.81	27.4	2702	0.99	-129.7	-	" " "
3	1555	7.73	27.3	2547.8	1.64	-126.7	-	" " "
4	1600	7.71	27.3	2584	1.58	-126.7	-	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 1603 Containers used 7

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 14:15 depart 15:20
Project Name: Symphony.	Project Number: 0224193
Site Location: Bayswater	Sampler: JW
Well ID: BT_MW01	Weather: Sunny

Equipment

Water quality equipment description: Airmet 90 PCMV   Interface probe number: Airmet 30m NSW 4254

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

Well Gauging and Purge Volume Calculations

Casing Diameter	25mm	50mm (circled)	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 = P x r 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 13.14 m (-) Water level 11.068 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 (N circled)

Water Quality Parameters

Beginning purge time: 14:30   Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1.0	14:35	10.04	21.4	5.81	2.18	91	11.33	cloudy, strong organic odour.
2.0	14:38	9.47	20.9	5.42	2.69	99	11.41	as above
3.0	14:42	8.93	20.2	4.93	3.41	108	11.52	as above.
4.0	14:45	8.03	20.2	4.78	3.13	109	11.61	as above
5.0	14:49	8.01	20.4	4.76	3.10	110	11.63	as above
6.0	14:54	7.98	20.8	4.75	3.16	113	11.64	as above.
7.0	14:59	7.97	20.9	4.76	3.14	113	11.66	as above.

**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 15:05   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-cleaned sampling equipment used for these samples?	Y (circled)	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y (circled)	N	
Was documentation of equipment conducted?	Y (circled)	N	NA
Were air bubbles present in vials at time of collection?	Y	N (circled)	NA
Was sample for metals field filtered prior to preservations?	Y (circled)	N	NA
Duplicate sample collected?	Y	N (circled)	Duplicate sample ID
Rinsate blank collected?	Y	N (circled)	Rinsate blank ID

4 x vials.
1 x metals
3 x amber.

Groundwater - Well Sampling Data Form

ERM

Job Information

Date: 4/12/13	Time: arrive 08:55 depart 10:05
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BH_MW01	Weather: Fine, hot

Equipment

Water quality equipment description: YSI Interface probe number: 540 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 10.235 m (-) Water level 4.640 m (=) Water Column 5.595 m

Water Column 5.595 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 10.966 L

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

Water Quality Parameters

Beginning purge time: 09:15 Ending purge time: Pump Intake Depth (mbtoc): 9.5

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	09:22	5.16	23.3	23936	0.23	157.1	5.050	PID = 0.0. Cap not on tight. Cloudy, slight sulfur odour
2	09:29	5.08	23.4	23923	0.23	180.6	5.330	" " " "
3	09:36	5.09	23.3	23768	0.19	161.8	5.680	" " " "
4	09:42	5.10	23.4	23742	0.16	145.6	5.895	Cloudy, becoming clear, slight sulfur odour
5	09:49	5.11	23.4	23676	0.15	136.8	6.105	Clear, slight sulfur odour

*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

~147 **Flow rate** mL/minute

Sample time 09:55

Containers used 4x 40mL H_2SO_4 vials, 3x 100mL Amberglass, 1x ORC ultratrace metal

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 15:50 depart 16:50
Project Name: Project Symphony	Project Number: 0274193
Site Location: Bayswater	Sampler: N.H
Well ID: BH-MW082	Weather: Overcast, showers

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 10.920 m (-) Water level 4.760 m (=) Water Column 6.16 m

Water Column 6.16 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 12.074 L

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

Water Quality Parameters

Beginning purge time: 15:56 Ending purge time: 16:24 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	16:01	5.56	20.6	18038	7.25	114	5.050	cloudy to clear, no odour
2	16:05	5.48	20.6	17521	7.38	115.2	5.420	Cloudy to clear no odour
3	16:12	5.55	20.6	17101	7.58	111.3	5.870	~~cloudy to~~ clear, sulfur ~~no~~ odour.
3.5	16:16	5.56	20.6	17159	7.53	110.6	5.970	~~Cloudy to~~ clear, sulfur no odour.
4.0	16:20	5.57	20.6	17226	7.56	168.3	6.055	~~Cloudy to~~ Clear, sulfur odour
4.5	16:24	5.57	20.6	17234	7.58	165.1	6.200	Clear, sulfur odour

*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

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

160 **Flow rate** mL/minute

Sample time 16:35

Containers used 4x 40 mL H_2SO_4 3x 100 mL Ambers 1x ORC ultra trace metals 1x HNO_3 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 15:00 depart
Project Name: Project Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BH-MW03	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** **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 10.200 m (-) Water level 5.395 m (=) Water Column 4.805 m

Water Column 4.805 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 9.418 L

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

Water Quality Parameters

Beginning purge time: 15:10 Ending purge time: 15:35 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	15:16	5.11	20.2	21843	1.09	100.9	5.850	turbid. No odour
2	15:22	5.16	20.3	21934	2.24	83.0	6.370	turbid, becoming clear.
2.5	15:30	5.17	20.3	21949	2.83	72.9	6.47	clear, no odour
3.0	15:35	5.17	20.3	21953	3.66	62.0	6.65	clear, no odour

*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

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

120 ml/min **Flow rate** mL/minute

Sample time 15:45

Containers used 4x40ml H_2SO_4 vials, 2x100ml Amber, 1x OAC ultratrace metals, 1x HNO_3 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

Job Information

Date: 4/12/13	Time: arrive 10:51 depart 11:35
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: K.F.
Well ID: BV-MW01	Weather: Fine

Equipment

Water quality equipment description: 451 IIK101262 Interface probe number: NSW 4253 30m

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 = Pr²xh
V = volume in litres
P = 3.14159
r = radius in cm
h = height of water column in cm

Total Well Depth 7.56 m (-) Water level 4.46 m (=) Water Column 3.10 m

Water Column 3.10 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume ≈ 6.0 L

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

Water Quality Parameters

Beginning purge time: 11:05 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond ~~mS~~/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	11:11	5.46	22.4	9510	6.85	40.1	4.64	PID=0.0ppm Slightly cloudy, no odour
2	11:16	5.49	22.2	9777	0.30	45.7	4.69	" "
3	11:22	5.42	22.2	10089	0.08	52.0	4.72	" "
4	11:27	5.27	22.4	10578	0.03	69.5	4.74	" "
5	11:32	5.23	22.2	10805	0.07	76.1	4.76	" "

*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 11:40 Containers used 8

185 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:	19/12/13.	Time: arrive 12pm depart	12:30
Project Name:	SYMPHONY	Project Number:	0224198
Site Location:	Bayswater	Sampler:	TH
Well ID:	BW_MW04	Weather:	Hot + clear.

Equipment						
Water quality equipment description:	YDFLMW 45443			Interface probe number:	Ciratech IP 30m 42601	
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 11.318 m (-) (-) Water level 9.926 m (=) (=) Water Column 1.392 m

Water Column 1.392 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 2.73 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
	12:34	6.46	22.6	5.24	1.59	64		

(LAB SAMPLE TAKEN GIVEN THAT PERISTALTIC DID NOT WORK (parameters taken after sample collected)

*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 12:34pm Containers used 6

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:	12.12.13	Time: arrive	1440 depart 1515
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bargwanna	Sampler:	J. Grant
Well ID:	BV MW04	Weather:	fine

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
11.320 m (-) 9.880 m (=) 1.44 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.44 m (x) 1.96 (=) ~2.8 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 Sample with peristaltic pump

*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 _____

11.320
9.880
1.440

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	5/12/13	Time: arrive	0900 depart
Project Name:	Symphony	Project Number:	0244193
Site Location:	Bayswater	Sampler:	C. Henry
Well ID:	BV-MW06	Weather:	rain

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)	0.98	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
11.580 m (-) 10.020 m (=) 1.560 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
1.560 m (x) 1.96 (=) ≈ 3.2 L

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

Water Quality Parameters

Beginning purge time: 09:25 Ending purge time: intake depth = 11.0 m

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								• PID = 0.0 ppm
0.5	0930	6.56	22.3	5750	3.19	142	10.04	Cloudy, light brown, no odour
1.0	0935	6.55	22.7	5570	2.87	142	10.06	" "
1.5	0940	6.59	21.7	5180	2.37	137	10.08	" "
2.0	0945	6.59	21.5	5260	2.34	138	10.10	" "
								* 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

2.0 **Total Well Volume** Actual amount of water prior to sampling Sample time 09:45 Containers used 8

~100 **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	ORC
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: 4/12/13	Time: arrive 11:15 depart
Project Name: Symphony	Project Number: 0244193
Site Location: Bayswater	Sampler: C. Henry
Well ID: BV-MW07	Weather: hot/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
7.180 m (-) 4.110 m (=) 3.070 m

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

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

Water Quality Parameters

Beginning purge time: 11:28 Ending purge time: intake depth ≈ 6.0m

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.0 ppm
0.5	11:31	7.02	22.7	4570	1.91	132	4.115	Clear, no odour
1.0	11:40	6.97	23.4	4600	1.98	126	4.120	" "
1.5	11:45	6.99	22.7	4620	1.14	137	4.120	" "
2.0	11.48	6.97	22.2	4620	0.91	139	4.12	" "
2.5	11:51	7.00	21.8	4620	1.14	140	4.13	" "
								* 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

2.5 **Total Well Volume** Actual amount of water prior to sampling Sample time 11:51 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)	ORC
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 11:05 depart 1345
Project Name: Project Symphony	Project Number: 0224198
Site Location: BH MW08 Bayswater	Sampler: N.H / J.G
Well ID: BH-MW08	Weather: Fine, hot

Equipment

Water quality equipment description: YSI 12D100012 Interface probe number: NSW 4254 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)	0.49	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 12.040 m (-) Water level 5.375 m (=) Water Column 6.665 m

Water Column 6.665 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 13.06 L

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

Water Quality Parameters

Beginning purge time: 12:25 Ending purge time: 12:45 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
	1225	3.86	34.0	14696	55.7	280.1	4.860	Reddish brown turbid
	1230	3.84	34.3	14790	63.1	281.4	4.870	water - no odour
	1235	3.83	34.4	14825	61.9	281.9	4.870	
	1240	3.82	34.4	14836	61.0	281.8	4.870	
	1245	3.83	34.5	14836	63.1	281.4	4.880	
								Pump very slow - potential fault - advised
								Anne from Airmet

*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

~2L **Total Well Volume** Actual amount of water prior to sampling Sample time 1230 - 1330 Containers used 9

~100 **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: 28/11/13	Time: arrive 14:30 depart
Project Name: Project Symphony	Project Number: 0224193
Site Location: Blackwall Bayswater	Sampler: N.H
Well ID: BV-MW09	Weather: Fine, hot

Equipment

Water quality equipment description: YSI Professional Plus. 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 10.335 m (-) Water level 3.915 m (=) Water Column 6.42 m

Water Column 6.42 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 12.583 L

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

Water Quality Parameters

Beginning purge time: 14:05 Ending purge time: 14:32 Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	14:11	4.9	24.3	12248	7.19	129.6	4.085	clear, no odour.
2	14:17	4.91	23.8	12376	7.89	124.1	4.190	clear, no odour.
3	14:22	4.95	23.6	12408	7.96	111	4.240	clear, no odour.
4	14:27	5.08	23.4	12406	8.12	94.0	4.295	clear, no odour
5	14:32	5.09	23.5	12448	7.89	78.1	4.340	clear, no odour

*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

~180 **Flow rate** mL/minute

Sample time 14:35 Containers used 4x 40mL vials, 3x 100mL Amber glass, 1x metals, 1x ultra trace 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 _____

N

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	28.11.13	Time: arrive 1505 depart	
Project Name:	Symphony	Project Number:	0224196
Site Location:	Bayswater	Sampler:	V.H
Well ID:	BV MW10	Weather:	Fine

Equipment

Water quality equipment description: YSI   Interface probe number: Syd 3954 60m

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	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 7.97 m (-) Water level 1.420 m (=) Water Column 6.55 m

Water Column 6.55 m (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: 15:17   Ending purge time: 15:42   Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond µS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	15:22	5.69	22.6	14999	2.39	77.8	1.650	Cloudy to clear. No odour
2	15:27	5.79	22.5	14968	4.31	67.4	1.790	Clear, no odour
3	15:32	5.79	22.6	14972	6.15	65.7	1.840	Clear, no odour.
4	15:37	5.88	22.5	14883	5.89	62.5	1.860	clear, no odour.
5	15:42	5.91	22.5	14824	5.96	61.0	1.880	Clear, no odour.

*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   Sample time 15:50   Containers used 4x 40mL vial. 3x 100mL amber glass 1x metals 1x ultra trace

200 **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: 4/12/13	Time: arrive 13:10 depart 14:00
Project Name: Symphony	Project Number: 0224493
Site Location: Bayswater	Sampler: N.H
Well ID: BH_MW11	Weather: Fine, hot

Equipment

Water quality equipment description: YSI Interface probe number: SWD 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 4.050 m (-) Water level 0.980 m (=) Water Column 3.07 m

Water Column 3.07 m (x) Conversion Factor 1.96 (=) Litres per 1 Well Volume 6.02 L

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

Water Quality Parameters

Beginning purge time: 13:18 Ending purge time: Pump Intake Depth (mbtoc):

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
1	13:24	5.90	24.0	10217	0.07	-26.9	1.090	PID = 0.0 - cap not on properly. Slightly turbid/cloudy, no odour.
2	13:30	5.80	23.8	10022	0.01	-26.7	1.110	Cloudy, sulfur no odour
3	13:36	5.79	23.7	9932	0.03	-27.5	1.120	Cloudy, sulfur no odour
4	13:42	5.92	23.5	9438	0.03	-38.1	1.135	" " "
5	13:46	5.98	23.7	9052	0.09	-41.1	1.140	" " "
6	13:52	6.01	23.7	9091	0.10	-39.7	1.143	" " "

*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

6L. **Total Well Volume** Actual amount of water prior to sampling

Sample time 13:55

Containers used 4x40ml H2SO4 vials, 3x100ml Amber glass, 1xORC ultratrace metals

~176 **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:	4/2/13	Time: arrive 14:05	depart 14:55
Project Name:	Symphony	Project Number:	022493
Site Location:	Bayswater	Sampler:	N.H
Well ID:	BV_MW12	Weather:	Fine, hot

Equipment						
Water quality equipment description:	451			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)	0.98	~~1.96~~ 1.90	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
6.035 m (-) 0.41 m (=) 5.625 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
5.625 m (x) 1.96 (=) 11.025 L

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

Water Quality Parameters

Beginning purge time: 14:17 Ending purge time:

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.1
1	14:23	4.84	21.9	11193	0.18	52.5	1.070	Cloudy to clear
2	14:30	4.71	21.6	10845	0.28	75.8	1.405	Clear, no odour
3	14:36	4.68	21.7	10797	0.29	81.10	1.650	" " "
4	14:43	4.67	21.6	10791	0.32	85.1	1.800	" " "

*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

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

~153 — **Flow rate** mL/minute

Sample time 14:45

Containers used 4x 40ml HCl septa vials, 3x 100ml Amber glass, 1x ORC ultra trace metals

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: 4/12/13	Time: arrive 15:05 depart 14:20
Project Name: Symphony	Project Number: 0224193
Site Location: Bayswater	Sampler: N.H
Well ID: BV-MW13	Weather: Fine, hot

Equipment

Water quality equipment description: YSI Interface probe number: S4D 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

7.805 m (-) 1.040 m (=) 6.765 m

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

6.765 m (x) 1.96 (=) 13.259 L

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

Water Quality Parameters

Beginning purge time: 15:15 Ending purge time: 15:51

Litres	Time	PH	Temp °C	Cond mS/cm	DO mg/L	Redox mV	Drawdown <10cm	Comments
								PID = 0.1
1	15:21	4.04	22.1	11164	0.22	275.5	1.125	cloudy to clear, no odour.
2	15:27	4.03	20.7	10714	0.17	277.7	1.185	
3	15:33	4.11	20.6	10733	0.21	269.5	1.265	
4	15:39	4.30	20.6	10813	0.23	242.7	1.280	
5	15:45	4.33	20.6	10855	0.24	236.8	1.300	
6	15:51	4.37	20.6	10850	0.27	231.0	1.310	

*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

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

~166 **Flow rate** mL/minute

Sample time 15:55

Containers used 4x40ml HCl 22 vials, 3x100ml Amberglass, 1xORC ultratrace metals

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 ____

ERM

Groundwater - Well Sampling Data Form

Job Information

Date:	11.12.13	Time: arrive 1325	depart 1400
Project Name:	Symphony	Project Number:	0224193
Site Location:	Bayswater	Sampler:	J. Grant
Well ID:	BX_MW01	Weather:	Fine

Equipment

Water quality equipment description: 90_FLMW U 9114 Interface probe number: SYD 3954 60m

Purging equipment: (please circle) 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)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3

Volume of water in well / V = P r 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
11.045 m (-) 10.345 m (=) 0.700 m

Water Column (x) Conversion Factor (=) Litres per 1 Well Volume
0.700 m (x) 1.96 (=) 1.400 L

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

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
								Grab sample taken first given lack of water in well
								* failed to withdraw any water using peristaltic pump
								No 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

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	________

11.045
10.345
00.700

Groundwater - Well Sampling Data Form

ERM

Job Information			
Date:	18.12.13	Time: arrive	14:10 depart 14:40.
Project Name:	Symphony.	Project Number:	0224193
Site Location:	Bayswater	Sampler:	JW / TM
Well ID:	BX_MW01	Weather:	Sunny

Equipment

Water quality equipment description: Hermet 90 FLMV Interface probe number: Airnet NSW 4254 30m.

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 11.01 m (-) Water level 10.459 m (=) Water Column 0.5 m

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

PID 0.1ppm.

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
								Grab sample.
								Strong organic odour on water

*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 14:15 Containers used 7

—

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		4x vial
Was pre-cleaning sampling equipment properly protected from contamination?	(Y)	N		1x amber
Was documentation of equipment conducted?	(Y)	N	NA	1x metal
Were air bubbles present in vials at time of collection?	Y	(N)	NA	1x PFOS.
Was sample for metals field filtered prior to preservations?	Y	(N)	NA	final DTW - Dry.
Duplicate sample collected?	Y	(N)		Duplicate sample ID —
Rinsate blank collected?	Y	(N)		Rinsate blank ID —