

Your ref: DP3733BK

Our ref: 14739/3505/CBH/VKR



12th February 2016

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Attn: Mr David Willey

Dear David

RE: DP3733BK - Docksway Disposal Site. Latest Area 2 Groundwater Quality Monitoring Report, Round 142.

Please find enclosed the results of the groundwater quality monitoring undertaken at Area 2 of Docksway Disposal Site. Groundwater monitoring is required quarterly at the site in order to comply with Conditions 3.6.1 and 3.6.2 of the site PPC Permit. This report includes discussion on results obtained from monitoring undertaken in December 2015. We enclose with this letter report the laboratory analytical certificates for the testing undertaken.

Field Observations

Details of the field testing of the Area 2 groundwater samples during Round 142 are presented in Table 1.

Table 1 – Field Testing Results and Observations

Monitoring Point	Date Monitored	Depth to Groundwater/Leachate (m)	pH	Electrical Conductivity (µS/cm)	Temperature (°c)	Dissolved Oxygen (%)
GW09_31	16/12/2015	5.20	8.1	6756	12.02	0.20
GW03_09	16/12/2015	7.70	7.6	7041	12.22	9.30
GW12_33	16/12/2015	8.20	7.4	2803	12.60	3.30
GW06_34	16/12/2015	7.80	7.6	1568	12.59	4.80
GW12_30	16/12/2015	4.60	7.1	3471	12.74	0.00
GW09_32	16/12/2015	7.60	7.6	5189	12.61	5.00
GW07_40	16/12/2015	4.20	7.6	2441	12.29	69.80
GW06_13	17/12/2015	4.55	7.7	1338	11.74	27.80
GW06_14a	17/12/2015	4.20	7.6	9724	12.22	58.20
GW09_35	16/12/2015	7.40	7.6	13770	12.51	1.10
GW06_36				No data		
GW06_37	17/12/2015	5.05	7.8	13090	12.35	6.20
GW12_38	17/12/2015	4.30	7.4	1893	11.81	42.00
GW06_39	15/12/2015	4.50	7.6	7719	12.33	1.70
LF08_07**	17/12/2015	11.25	7.1	4023	14.46	35.20
C2B**				N/A		

** measured from top of monitoring stack

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Laboratory Testing Results

Compliance Levels

The Control and Compliance limits for Area 2 are reproduced in Tables 2 and 3.

Table 2 –PPC Permit Compliance Levels for Emissions to Groundwater (Hazardous Substances)

Monitoring Well	Benzene	Naphthalene	Xylene	EPH	Arsenic
	Compliance Limit	Compliance Limit	Compliance Limit	Compliance Limit	Compliance Limit
	ug/l	ug/l	ug/l	ug/l	ug/l
GW03_09	2	5	3	Not Required	35
GW06_13	2	5	3	Not Required	50
GW06_14a	2	5	3	Not Required	25
GW06_34	2	5	3	Not Required	65
GW06_36	2	5	3	Not Required	30
GW06_37	2	5	3	Not Required	60
GW06_39	2	5	3	Not Required	50
GW07_40	2	5	3	Not Required	35
GW09_31	13	5	3	Not Required	80
GW09_32	3	5	3	Not Required	30
GW09_35	2	5	3	Not Required	50

Table 3 –PPC Permit Compliance Levels for Emissions to Groundwater (Non-Hazardous Substances)

Monitoring Well	Nickel		Potassium		Ammoniacal Nitrogen	
	Control Level	Compliance Limit	Control Level	Compliance Limit	Control Level	Compliance Limit
	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l
GW03_09	8	10	160	180	30	35
GW06_13	12	14	100	110	30	35
GW06_14a	12	14	160	180	53	60
GW06_34	12	14	310	350	30	35
GW06_36	8	10	100	110	20	23
GW06_37	8	10	100	110	30	35
GW06_39	26.4	30	100	110	20	23
GW07_40	8	10	39.6	45	20	23
GW09_31	8	10	100	110	50	50
GW09_32	8	10	160	180	50	50
GW09_35	8	10	100	110	30	35

Compliance Limits have not yet been set for three replacement monitoring wells (GW12_30, GW12_33 and GW12_38).

Hazardous Substances (formally List I substances)

None of the hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 142.



Non-hazardous Substances

There were two exceedances of the well specific Compliance Limits for non-hazardous substances (priority contaminants) in the Area 2 monitoring wells sampled during Round 142. At GW07/40 the data indicates exceedances of both Nickel (31.1ug/l) and Potassium (162mg/l) above the compliance limits (10ug/l and 45mg/l respectively).

Leachate Measurements

Leachate levels were monitored in LF08_07, and C1A (Cell 1) during each of the Rounds 140 to 142, and in C1D and C1E (Cell 1) on two of the three rounds, however leachate levels were not monitored in C1B (Cell 1) or at any of the Cell 2 locations during this period due to issues with safe access.

The leachate levels are presented in Table 5 and the volumes of leachate removed from Area 2 during October, November and December are presented in Table 6. The leachate was sampled at LF08_07 in accordance with the PPC Permit and the laboratory analytical certificates are attached to this letter report.

Table 5 – Quarterly Leachate Data from Cell 1 and Cell 2

Monitoring Well	Monitoring Round	Leachate Head Level (m)
Cell 1		
LF08_07	Round 140	2.43
	Round 141	3.18
	Round 142	3.33
C1A (Well 1)	Round 140	4.23
	Round 141	4.38
	Round 142	4.45
C1B (Well 2)	Round 140	No access
	Round 141	No access
	Round 142	No access
C1D (Well 6)	Round 140	No access
	Round 141	2.32
	Round 142	2.32
C1E (Well 7)	Round 140	3.52
	Round 141	3.51
	Round 142	No access
Cell 2		
C2A	Round 140	N/A
	Round 141	N/A
	Round 142	N/A
C2B	Round 140	N/A
	Round 141	N/A
	Round 142	N/A
C2C	Round 140	N/A
	Round 141	N/A
	Round 142	N/A

Leachate Removed

The volume of leachate removed from Area 2 (both Cell 1 and Cell 2 combined) is summarised in Table 6 below:

Table 6 – Quarterly Leachate Data from Area 2

Monitoring Round	Leachate Removed (tonnes)
Round 140 October 2015	1720
Round 141 November 2015	1266
Round 142 December 2015	970



Concluding Remarks

None of the hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 142.

There were two exceedances of the well specific Compliance Limits for non-hazardous substances (priority contaminants) in the Area 2 monitoring wells sampled during Round 142.

Where measured, leachate levels in some locations in Area 2 are above the permitted leachate head level of 2m above the base.

PBA will continue to monitor and comment on the groundwater quality within subsequent reports. If you have any questions regarding the data, then please do not hesitate to contact us.

Yours sincerely

Kate Riley

For and on behalf of

PETER BRETT ASSOCIATES LLP

Cc. Gwyn Jones – NCC (Docksway Disposal Site)

Enc. Laboratory Analytical Testing Result