

Your ref: DP3733BK

Our ref: 14739/3505/CBH/VKR



4th May 2016

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Attn: Mr David Willey

Dear David

RE: DP3733BK - Docksway Disposal Site. Latest Area 2 Groundwater Quality Monitoring Report, Round 145.

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 March and April 2016. We enclose with this letter report the laboratory analytical certificates for the testing undertaken.

Field Observations

At the time of the field testing for Round 145, the field equipment is reported as having malfunctioned and therefore no field testing data was collected. The field testing equipment was subsequently fixed and therefore details of the field testing of the Area 2 groundwater samples provided in Table 1 below, relate to field testing undertaken on the 13th April once the equipment had been fixed.

Table 1 – Field Testing Results and Observations

Monitoring Point	Date Monitored	Depth to Groundwater (m)	pH	Electrical Conductivity (µS/cm)	Temperature (°c)	Dissolved Oxygen (%)
GW06_39	13/04/2016	2.20	7.79	8629.00	12.80	3.70
GW07_40	13/04/2016	4.35	7.90	2136.00	13.04	4.80
GW12_30	13/04/2016	4.95	7.33	2830.00	11.37	6.90
GW09_31	13/04/2016	5.45	7.77	7741.00	12.42	2.20
GW03_09	No data					
GW09_32	13/04/2016	8.00	7.47	2058.00	12.94	6.00
GW12_33	13/04/2016	8.15	7.55	2781.00	12.77	3.80
GW06_34	13/04/2016	7.85	7.88	1319.00	12.24	2.30
GW09_35	13/04/2016	6.25	7.72	14030.00	12.92	5.80
GW06_36	13/04/2016	7.35	7.92	11580.00	13.76	4.40
GW06_37	13/04/2016	5.00	7.86	13380.00	13.38	7.60
GW06_13	13/04/2016	6.35	7.89	4673.00	12.65	6.10
GW12_38	13/04/2016	3.00	7.93	7000.00	12.92	3.10
GW06_14a	13/04/2016	5.95	No data			No data
LF08_07**	No data					
C2B**	No data					

** 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 145.



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 145. At GW07_40 the data indicates an exceedance of Potassium (52.9mg/l) above the compliance limit (45mg/l), and at GW06_37 there was an exceedance (33.2mg/l) of the control level (30mg/l) for Ammoniacal Nitrogen, although the compliance limit was not exceeded.

Leachate Measurements

Leachate levels were monitored in LF08_07, and C1A, C1D, C1E (Cell 1) during each of the Rounds 143 to 145, and also in C2A and C2C (Cell 2) during round 145.

The leachate levels are presented in Table 5 and the volumes of leachate removed from Area 2 during January, February and March are presented in Table 6. The leachate was sampled during R145 at LF08_07 and C2B 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 143	3.44
	Round 144	3.54
	Round 145	3.74
C1A (Well 1)	Round 143	4.40
	Round 144	5.00
	Round 145	4.80
C1B (Well 2)	Round 143	No access
	Round 144	Equipment failure
	Round 145	Equipment failure
C1D (Well 6)	Round 143	2.50
	Round 144	2.50
	Round 145	2.50
C1E (Well 7)	Round 143	2.75
	Round 144	2.80
	Round 145	2.80
Cell 2		
C2A	Round 143	No access
	Round 144	No access
	Round 145	3.25
C2B	Round 143	No access
	Round 144	No access
	Round 145	Equipment failure
C2C	Round 143	No access
	Round 144	No access
	Round 145	4.40

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 143 January 2016	1033
Round 144 February 2016	927
Round 145 March 2016	1023



Concluding Remarks

None of the hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 145.

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 145. In GW07_40, Potassium has been recorded above the well specific Compliance Limit in the last two quarterly monitoring rounds (Dec 2015 and March 2016), although the concentration recorded has reduced significantly between the two rounds and therefore no action is currently recommended. The concentrations of Potassium in GW07_40 will be closely monitored during the next monitoring rounds.

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