

Your ref: DP3733BK

Our ref: 14739/075/CBH/VKR

29<sup>th</sup> July 2019

PPC Team  
Natural Resources Wales  
Rivers House  
Fortran Road  
St. Mellons Business Park  
Cardiff  
CF3 0EY

**Attn: Mr David Willey**

Dear David,

**RE: DP3733BK - Docksway Disposal Site. Latest Area 2 Groundwater Quality Monitoring Report, Round 184, June 2019.**

Please find enclosed the results of the groundwater quality monitoring undertaken at Area 2 of Docksway Disposal Site. Groundwater and leachate sampling is required quarterly at the site in order to comply with Conditions 3.6.1 and 3.6.2 of the site PPC Permit.

Leachate samples were not obtained from any of the four cells in Area 2 during R181 (March 2019) due to access problems. Leachate samples were subsequently obtained from Cells 1 and 2 in May (R183) 2019 (in lieu of the missed March sampling). During R184 (June 2019), as part of the quarterly monitoring round, leachate samples were obtained from Cells 1, 2 and 3. This report includes discussion on results obtained from monitoring undertaken in May and June 2019. 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 leachate samples during Round 183 are presented in Table 1, together with depths to leachate information.

Table 1 – Field Testing Results and Observations – May 2019

Monitoring Point	Depth to Groundwater/Leachate (mbgl)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Dissolved Oxygen (%)
LF08_07	15.61	8.18	10160	19.58	60.90
C2B	23.79	8.53	14710	19.58	62.60

Details of the field testing of the Area 2 groundwater and leachate samples during Round 184 are presented in Table 2, together with depths to leachate information.

Table 2 – Field Testing Results and Observations – June 2019

Monitoring Point	Depth to Groundwater/Leachate (mbgl)	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Dissolved Oxygen (%)
GW06_39	4.23	8.15	7699	13.31	6.90
GW07_40	5.19	4.48	2229	13.17	15.00
GW12_30	4.50	7.67	2216	12.98	2.30
GW09_31	5.82	8.01	1385	13.89	0.60
GW03_09	8.00	7.78	2434	13.14	26.80
GW09_32	5.60	8.81	2608	13.34	0.00
GW12_33	7.90	7.85	2537	12.97	7.50

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GW06_34	8.90	7.87	1423	13.28	0.00
GW09_35	8.88	8.19	12760	13.35	0.90
GW09_36	9.10	8.17	14900	14.15	0.10
GW06_37	7.01	8.15	16250	14.35	0.30
GW06_13	5.88	8.35	8960	13.26	2.80
GW12_38	7.62	7.82	4692	14.29	31.30
GW06_14a	N/A	8.39	17400	14.73	86.70
LF08_07	14.94	8.41	11730	26.16	79.20
C2B	N/A	8.22	18830	38.63	33.40
C3B	14.17	8.64	12320	37.35	62.20

## Laboratory Testing Results

### Groundwater Compliance Levels

The agreed Control levels and Compliance limits for Area 2 'priority contaminants' are reproduced in Tables 3 and 4.

Table 3 –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
GW12_30	1	1	1	Not Required	160
GW12_33	1	1	1	Not Required	560
GW12_38	1	1	1	Not Required	26

Table 4 –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
GW12_30	25	30	35	40	10	12
GW12_33	5	6	50	55	15	18
GW12_38	25	30	65	70	10	12

Samples of groundwater were obtained from all fourteen of the fourteen monitoring wells in Area 2 during R184.

#### Hazardous Substances (formally List I substances)

The hazardous substances specified as “priority contaminants” in the Area 2 Hydrogeological Risk Assessment were measured at the compliance wells in June 2019 and were recorded below the well specific Compliance Limits during Round 184, with one exception. The concentration of Arsenic recorded in GW06\_37 was 71.5ug/l – which is above the Compliance Limit of 60ug/l.

#### Non-hazardous Substances

None of the non-hazardous substances agreed as “priority contaminants” (Table 4) exceeded the well specific Compliance Limits in the wells sampled during Round 184 with the exception of Ammoniacal Nitrogen at GW06\_37. At this location the concentration of Ammoniacal Nitrogen was recorded at 42.2mg/l which is above the Compliance limit (35mg/l) and higher than recorded in March 2019 (33.1 mg/l).

#### **Leachate Measurements**

Leachate head levels were recorded as follows during April to June 2019.

Table 5 – Leachate Head

<b>Monitoring Location</b>	<b>Leachate Head (m) in April 2019</b>	<b>Leachate Head (m) in May 2019</b>	<b>Leachate Head (m) in June 2019</b>
LF08_07	0.63	0.88	1.55
C1A	No access	No access	No access
C1B	1.17	1.23	1.22
C1E	0.01	0.31	0.54
C1D	0.01	0.01	0.06
C2A	1.93	2.50	1.94
C2B	1.72	1.95	No access
C2C	0.19	0.32	2.32
C3B	0.33	1.70	1.40
C4B	N/A	N/A	0.33

The leachate head levels recorded generally indicate leachate head levels below the permitted 2m (above the base) level.

#### Leachate Removed

During April to June 2019, a total of 4,641,920 kg of leachate was removed from Area 2 (Cells 1 to 4 combined).

#### Concluding Remarks

None of the hazardous or non-hazardous substances agreed as “priority contaminants” exceeded the well specific Compliance Limits at the wells sampled during Round 184 with the exception of arsenic and ammoniacal nitrogen at GW06\_37. It is proposed to review subsequent monitoring data for GW06\_37 to determine if further investigation or mitigation is required.

The leachate heads recorded in Area 2 are generally below the permitted level of 2m during the specified monitoring period.

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

A handwritten signature in black ink, appearing to read 'Kate Riley', with a checkmark to the left.

**Kate Riley**

For and on behalf of

**PETER BRETT ASSOCIATES LLP**

Encs – Laboratory Certificates

Cc. Silvia Gonzalez-Lopez – Newport City Council