

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/2	10/01638/5	10/01638/10	10/01638/13	10/01638/14	10/01638/16	10/01638/17	10/01638/19	Units	Method ref
Client Sample No										
Client Sample ID	BH10/03	BH10/05	WS16	WS17b	WS18	WS18	WS19	WS20		
Depth to Top	1.00	0.50	0.70	0.60	0.50	1.60	0.85	0.50		
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	6A	7	6A	5A	6A	6A	6A	6A		
PAH 16										
Acenaphthene ^{MS}	<0.01	0.02	0.07	<0.01	<0.01	<0.01	1.75	0.19	mg/kg	A-T-019a
Acenaphthylene ^{MS}	<0.01	0.03	0.02	<0.01	<0.01	<0.01	0.06	0.06	mg/kg	A-T-019a
Anthracene ^{MS}	<0.01	0.10	0.34	<0.01	0.02	<0.01	3.10	0.79	mg/kg	A-T-019a
Benzo(a)anthracene ^{MS}	<0.01	0.55	0.71	0.03	0.11	<0.01	12	1.32	mg/kg	A-T-019a
Benzo(a)pyrene ^{MS}	<0.01	0.73	1.14	<0.01	<0.01	<0.01	8.86	2.25	mg/kg	A-T-019a
Benzo(b)fluoranthene ^{MS}	<0.01	0.34	0.60	<0.01	<0.01	<0.01	4.53	1.10	mg/kg	A-T-019a
Benzo(ghi)perylene ^{MS}	<0.01	1.61	1.87	<0.01	<0.01	<0.01	6.77	2.61	mg/kg	A-T-019a
Benzo(k)fluoranthene ^{MS}	<0.01	0.56	0.74	<0.01	<0.01	<0.01	4.40	1.37	mg/kg	A-T-019a
Chrysene ^{MS}	<0.01	1.33	2.25	0.08	0.21	<0.01	14.9	4.13	mg/kg	A-T-019a
Dibenzo(ah)anthracene ^{MS}	<0.01	0.14	0.08	<0.01	<0.01	<0.01	1.28	0.13	mg/kg	A-T-019a
Fluoranthene ^{MS}	<0.01	1.14	1.69	0.03	0.11	<0.01	20	3.71	mg/kg	A-T-019a
Fluorene ^{MS}	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.83	0.08	mg/kg	A-T-019a
Indeno(123-cd)pyrene ^{MS}	<0.01	0.45	0.40	<0.01	<0.01	<0.01	4.02	1.40	mg/kg	A-T-019a
Napthalene ^{MS}	<0.01	0.02	0.06	<0.01	0.03	<0.01	0.69	0.26	mg/kg	A-T-019a
Phenanthrene ^{MS}	<0.01	0.19	0.80	0.01	0.05	<0.01	10.1	1.80	mg/kg	A-T-019a
Pyrene ^{MS}	<0.01	1.30	1.50	0.01	0.08	<0.01	18.7	3.33	mg/kg	A-T-019a
Total PAH ^{MS}	<0.01	8.52	12.3	0.18	0.62	<0.01	112	24.5	mg/kg	A-T-019a

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Lab Sample ID	10/01638/20	10/01638/25	10/01638/26	10/01638/27	10/01638/28	10/01638/29	10/01638/31	10/01638/32	Units	Method ref
Client Sample No										
Client Sample ID	WS20	WS21	WS21	WS21	WS21	WS22	WS22	WS23		
Depth to Top	1.20	0.80	1.60	2.90	3.50	1.50	2.50	0.30		
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	6A	6	7	5A	6A	6A	6A		
% Moisture _A [#]	5.4	14.2	13.4	-	-	-	-	14.5		
% Stones >10mm _A [#]	<0.1	12.0	<0.1	-	-	-	-	11.2	% w/w	A-T-044
Asbestos Screen _A	No ACM	No ACM	No ACM	-	-	-	-	No ACM		Visual
pH ₀ ^{WW}	11.7	6.8	6.7	-	-	-	-	9.9	pH	A-T-031a
Cyanide (total) _A ^{WW}	<1	<1	<1	-	-	-	-	<1	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	-	-	-	-	<0.2	mg/kg	A-T-050e
Sulphide _A [#]	<15	<15	<15	-	-	-	-	<15	mg/kg	A-T-03-e
Total Organic Carbon ₀ ^{WW}	1.64	1.96	0.79	-	-	-	-	1.47	% w/w	A-T-032a
Arsenic ₀ ^{WW}	8	15	12	-	-	-	-	17	mg/kg	A-T-024
Cadmium ₀ ^{WW}	<0.5	<0.5	<0.5	-	-	-	-	0.6	mg/kg	A-T-024
Copper ₀ ^{WW}	363	97	30	-	-	-	-	101	mg/kg	A-T-024
Chromium ₀ ^{WW}	24	32	42	-	-	-	-	39	mg/kg	A-T-024
Lead ₀ ^{WW}	197	277	69	-	-	-	-	1110	mg/kg	A-T-024
Mercury ₀	0.36	0.73	0.25	-	-	-	-	0.94	mg/kg	A-T-024
Nickel ₀ ^{WW}	15	19	15	-	-	-	-	26	mg/kg	A-T-024
Selenium ₀ ^{WW}	<1	1	1	-	-	-	-	<1	mg/kg	A-T-024
Zinc ₀ ^{WW}	303	181	76	-	-	-	-	334	mg/kg	A-T-024

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Lab Sample ID	10/01638/20	10/01638/25	10/01638/26	10/01638/27	10/01638/28	10/01638/29	10/01638/31	10/01638/32	Units	Method ref
Client Sample No										
Client Sample ID	WS20	WS21	WS21	WS21	WS21	WS22	WS22	WS23		
Depth to Top	1.20	0.80	1.60	2.90	3.50	1.50	2.50	0.30		
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	6A	6	7	5A	6A	6A	6A		
Speciated TPH										
All >C5-C6 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
All >C6-C8 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
All >C8-C10 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
All >C10-C12 _A ^g	-	-	-	<0.1	42.0	10.7	73.4	-	mg/kg	A-T-022a
All >C12-C16 _A ^g	-	-	-	<0.1	93.3	31.5	151	-	mg/kg	A-T-022a
All >C16-C21 _A ^g	-	-	-	<0.1	62.4	27.8	126	-	mg/kg	A-T-022a
All >C21-C35 _A ^g	-	-	-	<0.1	21.7	9.8	26.2	-	mg/kg	A-T-022a
Total Aliphatics _A ^g	-	-	-	<0.1	220	79.8	377	-	mg/kg	A-T-022+022a
Aro >C5-C7 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C7-C8 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C8-C9 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C9-C10 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C10-C12 _A ^g	-	-	-	<0.1	6.7	2.6	8.6	-	mg/kg	A-T-022a
Aro >C12-C16 _A ^g	-	-	-	<0.1	44.2	16.5	40.4	-	mg/kg	A-T-022a
Aro >C16-C21 _A ^g	-	-	-	<0.1	43.8	24.9	45.0	-	mg/kg	A-T-022a
Aro >C21-C35 _A ^g	-	-	-	<0.1	11.2	7.8	9.8	-	mg/kg	A-T-022a
Total Aromatics _A ^g	-	-	-	<0.1	106	51.8	104	-	mg/kg	A-T-022+022a
TPH (All & Aro) _A ^g	-	-	-	<0.1	325	132	481	-	mg/kg	A-T-022+022a
BTEX - Benzene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - Toluene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - o Xylene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
MTBE _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a

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Client Sample No										
Client Sample ID	WS20	WS21	WS21	WS21	WS21	WS22	WS22	WS23		
Depth to Top	1.20	0.80	1.60	2.90	3.50	1.50	2.50	0.30		
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	6A	6	7	5A	6A	6A	6A		
PAH 16										
Acenaphthene _A ^{MS}	0.35	0.02	<0.01	-	<0.01	-	0.09	0.01	mg/kg	A-T-019a
Acenaphthylene _A ^R	0.02	0.02	<0.01	-	<0.01	-	0.02	0.01	mg/kg	A-T-019a
Anthracene _A ^{MS}	0.58	0.16	<0.01	-	0.08	-	0.20	0.13	mg/kg	A-T-019a
Benzo(a)anthracene _A ^R	0.82	0.69	<0.01	-	0.14	-	<0.01	0.27	mg/kg	A-T-019a
Benzo(a)pyrene _A ^{MS}	0.86	0.92	<0.01	-	<0.01	-	<0.01	0.21	mg/kg	A-T-019a
Benzo(b)fluoranthene _A ^{MS}	0.39	0.48	<0.01	-	0.12	-	<0.01	0.28	mg/kg	A-T-019a
Benzo(ghi)perylene _A ^{MS}	1.08	1.41	<0.01	-	<0.01	-	<0.01	0.46	mg/kg	A-T-019a
Benzo(k)fluoranthene _A ^{MS}	0.53	0.71	<0.01	-	0.13	-	<0.01	0.14	mg/kg	A-T-019a
Chrysene _A ^{MS}	1.73	1.51	<0.01	-	0.39	-	<0.01	1.18	mg/kg	A-T-019a
Dibenzo(ah)anthracene _A ^R	0.11	0.06	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019a
Fluoranthene _A ^{MS}	1.98	1.53	<0.01	-	0.45	-	<0.01	0.64	mg/kg	A-T-019a
Fluorene _A ^{MS}	0.12	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019a
Indeno(123-cd)pyrene _A ^R	0.33	0.48	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019a
Napthalene _A ^{MS}	0.41	0.03	<0.01	-	0.04	-	0.11	0.04	mg/kg	A-T-019a
Phenanthrene _A ^{MS}	1.42	0.43	<0.01	-	0.04	-	0.18	0.21	mg/kg	A-T-019a
Pyrene _A ^{MS}	1.59	1.36	<0.01	-	0.52	-	0.03	0.54	mg/kg	A-T-019a
Total PAH _A ^R	12.3	9.80	<0.01	-	1.97	-	0.62	4.13	mg/kg	A-T-019a

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Lab Sample ID	10/01638/34	10/01638/36	10/01638/41	10/01638/43	10/01638/44	10/01638/47	10/01638/50	10/01638/53	Units	Method ref
Client Sample No										
Client Sample ID	WS23	WS24	WS25	WS25	WS26	WS27	WS27	WS28		
Depth to Top	1.50	0.30	0.90	2.00	0.40	0.50	1.80	1.00		
Depth To Bottom	1.70						1.90			
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3	6A	6A	5A	5A	7	3A	6A		
% Moisture _A [#]	16.7	9.2	11.5	-	9.0	6.5	10.6	15.4	% w/w	A-T-044
% Stones >10mm _A [#]	<0.1	34.3	19.0	-	27.7	<0.1	15.7	4.4	% w/w	A-T-044
Asbestos Screen _A	No ACM	No ACM	No ACM	-	No ACM	No ACM	No ACM	No ACM		Visual
pH _D ^{WW}	7.1	10.8	11.5	-	10.2	12.5	8.0	7.5	pH	A-T-031a
Cyanide (total) _A ^{WW}	<1	<1	<1	-	<1	<1	<1	<1	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	-	<0.2	<0.2	0.2	<0.2	mg/kg	A-T-050e
Sulphide _A [#]	<15	<15	<15	-	<15	<15	<15	<15	mg/kg	A-T-03-e
Total Organic Carbon _D ^{WW}	0.32	1.12	0.97	-	1.57	0.30	0.13	1.86	% w/w	A-T-032a
Arsenic _D ^{WW}	18	18	14	-	21	5	27	9	mg/kg	A-T-024
Cadmium _D ^{WW}	<0.5	<0.5	<0.5	-	0.8	<0.5	<0.5	<0.5	mg/kg	A-T-024
Copper _D ^{WW}	22	44	91	-	138	17	20	35	mg/kg	A-T-024
Chromium _D ^{WW}	57	36	38	-	28	18	51	36	mg/kg	A-T-024
Lead _D ^{WW}	40	140	172	-	292	52	24	142	mg/kg	A-T-024
Mercury _D	0.24	0.84	0.49	-	0.36	0.41	0.27	0.63	mg/kg	A-T-024
Nickel _D ^{WW}	20	25	24	-	28	14	41	17	mg/kg	A-T-024
Selenium _D ^{WW}	1	<1	<1	-	<1	<1	<1	<1	mg/kg	A-T-024
Zinc _D ^{WW}	62	113	119	-	219	52	55	64	mg/kg	A-T-024

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Client Sample No										
Client Sample ID	WS23	WS24	WS25	WS25	WS26	WS27	WS27	WS28		
Depth to Top	1.50	0.30	0.90	2.00	0.40	0.50	1.80	1.00		
Depth To Bottom	1.70						1.90			
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3	6A	6A	5A	5A	7	3A	6A		
Speciated TPH										
Alli >C5-C6 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C6-C8 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C8-C10 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C10-C12 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C12-C16 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C16-C21 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C21-C35 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aliphatics _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022+023a
Aro >C5-C7 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C7-C8 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C8-C9 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C9-C10 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C10-C12 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C12-C16 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C16-C21 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C21-C35 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aromatics _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022+023a
TPH (Alli & Aro) _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022+023a
BTEX - Benzene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Toluene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - o Xylene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
MTBE _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a

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Client Sample No										
Client Sample ID	WS23	WS24	WS25	WS25	WS26	WS27	WS27	WS28		
Depth to Top	1.50	0.30	0.90	2.00	0.40	0.50	1.80	1.00		
Depth To Bottom	1.70						1.90			
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3	6A	6A	5A	5A	7	3A	6A		
PAH 16										
Acenaphthene ^{MS}	<0.01	0.23	0.01	-	0.01	0.24	<0.01	<0.01	mg/kg	A-T-019a
Acenaphthylene ^{MS}	<0.01	0.04	0.02	-	0.03	0.03	<0.01	<0.01	mg/kg	A-T-019a
Anthracene ^{MS}	<0.01	0.67	0.06	-	0.11	0.79	<0.01	<0.01	mg/kg	A-T-019a
Benzo(a)anthracene ^{MS}	<0.01	0.51	<0.01	-	0.33	0.80	<0.01	<0.01	mg/kg	A-T-019a
Benzo(a)pyrene ^{MS}	<0.01	0.76	0.23	-	0.38	1.18	<0.01	<0.01	mg/kg	A-T-019a
Benzo(b)fluoranthene ^{MS}	<0.01	0.58	0.33	-	0.23	0.44	<0.01	<0.01	mg/kg	A-T-019a
Benzo(ghi)perylene ^{MS}	<0.01	1.11	0.34	-	0.65	1.44	<0.01	<0.01	mg/kg	A-T-019a
Benzo(k)fluoranthene ^{MS}	<0.01	0.49	0.20	-	0.27	0.92	<0.01	<0.01	mg/kg	A-T-019a
Chrysene ^{MS}	<0.01	2.21	1.08	-	0.96	3.22	0.04	<0.01	mg/kg	A-T-019a
Dibenzo(ah)anthracene ^{MS}	<0.01	<0.01	<0.01	-	<0.01	0.08	<0.01	<0.01	mg/kg	A-T-019a
Fluoranthene ^{MS}	<0.01	2.13	0.72	-	0.43	2.91	0.02	<0.01	mg/kg	A-T-019a
Fluorene ^{MS}	<0.01	0.05	<0.01	-	<0.01	0.08	<0.01	<0.01	mg/kg	A-T-019a
Indeno(123-cd)pyrene ^{MS}	<0.01	<0.01	<0.01	-	<0.01	0.38	<0.01	<0.01	mg/kg	A-T-019a
Napthalene ^{MS}	<0.01	0.05	0.03	-	0.03	0.12	<0.01	<0.01	mg/kg	A-T-019a
Phenanthrene ^{MS}	<0.01	1.56	0.10	-	0.15	2.15	<0.01	<0.01	mg/kg	A-T-019a
Pyrene ^{MS}	<0.01	1.79	0.87	-	0.51	3.10	0.01	<0.01	mg/kg	A-T-019a
Total PAH ^{MS}	<0.01	12.2	3.98	-	4.10	17.9	0.07	<0.01	mg/kg	A-T-019a

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01638
Issue Number: 3

Date: 21 June, 2010

Client: Buro Happold (Bath)
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: Not specified
Date Samples Received: 19/05/10
Date Instructions Received: 15/06/10
Date Analysis Completed: 16/06/10

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Iain Haslock
Analytical Consultant

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/2	10/01638/5	10/01638/10	10/01638/13	10/01638/14	10/01638/16	10/01638/17	10/01638/19	Units	Method ref
Client Sample No										
Client Sample ID	BH10/03	BH10/05	WS16	WS17b	WS18	WS18	WS19	WS20		
Depth to Top	1.00	0.50	0.70	0.60	0.50	1.60	0.85	0.50		
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	6A	7	6A	5A	6A	6A	6A	6A		
% Moisture _A [#]	18.1	9.3	18.3	10.0	12.9	8.5	9.5	16.0		
% Stones >10mm _A [#]	2.1	<0.1	6.9	10.6	14.6	26.1	20.0	17.6	% w/w	A-T-044
Asbestos Screen _A	No ACM	No ACM	No ACM	No ACM	No ACM	No ACM	No ACM	No ACM		Visual
pH _D ^{WW}	6.8	11.3	8.2	8.4	7.3	7.0	9.8	8.9	pH	A-T-031a
Cyanide (total) _A ^{WW}	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	A-T-050e
Sulphide _A [#]	<15	<15	<15	<15	<15	<15	<15	<15	mg/kg	A-T-03-e
Total Organic Carbon _D ^{WW}	0.54	1.04	1.63	1.04	3.19	0.05	0.31	2.30	% w/w	A-T-032a
Arsenic _D ^{WW}	14	10	21	10	18	19	10	26	mg/kg	A-T-024
Cadmium _D ^{WW}	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<0.5	2.7	mg/kg	A-T-024
Copper _D ^{WW}	22	20	211	28	115	17	12	3440	mg/kg	A-T-024
Chromium _D ^{WW}	46	96	24	25	31	40	19	34	mg/kg	A-T-024
Chromium (hexavalent) _D	-	<1	-	-	-	<1	-	-	mg/kg	A-T-040a
Lead _D ^{WW}	46	69	894	110	275	18	64	1520	mg/kg	A-T-024
Mercury _D	0.30	<0.17	2.72	0.21	0.95	<0.17	0.36	1.02	mg/kg	A-T-024
Nickel _D ^{WW}	17	15	18	16	21	29	13	33	mg/kg	A-T-024
Selenium _D ^{WW}	1	1	1	<1	<1	<1	<1	1	mg/kg	A-T-024
Zinc _D ^{WW}	55	56	443	154	128	51	55	2050	mg/kg	A-T-024

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/2	10/01638/5	10/01638/10	10/01638/13	10/01638/14	10/01638/16	10/01638/17	10/01638/19	Units	Method ref
Client Sample No										
Client Sample ID	BH10/03	BH10/05	WS16	WS17b	WS18	WS18	WS19	WS20		
Depth to Top	1.00	0.50	0.70	0.60	0.50	1.60	0.85	0.50		
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	6A	7	6A	5A	6A	6A	6A	6A		
Speciated TPH										
All >C5-C6 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
All >C6-C8 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
All >C8-C10 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
All >C10-C12 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
All >C12-C16 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
All >C16-C21 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
All >C21-C35 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aliphatics _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022+023a
Aro >C5-C7 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C7-C8 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C8-C9 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C9-C10 _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C10-C12 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C12-C16 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C16-C21 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C21-C35 _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aromatics _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022+023a
TPH (All & Aro) _A ^g	-	-	-	<0.1	-	-	-	-	mg/kg	A-T-022+023a
BTEX - Benzene _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Toluene _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - o Xylene _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a
MTBE _A ^g	-	-	-	<0.01	-	-	-	-	mg/kg	A-T-022a

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/2	10/01638/5	10/01638/10	10/01638/13	10/01638/14	10/01638/16	10/01638/17	10/01638/19	Units	Method ref
Client Sample No										
Client Sample ID	BH10/03	BH10/05	WS16	WS17b	WS18	WS18	WS19	WS20		
Depth to Top	1.00	0.50	0.70	0.60	0.50	1.60	0.85	0.50		
Depth To Bottom										
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	6A	7	6A	5A	6A	6A	6A	6A		
PAH 16										
Acenaphthene ^{MS}	<0.01	0.02	0.07	<0.01	<0.01	<0.01	1.75	0.19	mg/kg	A-T-019a
Acenaphthylene ^{MS}	<0.01	0.03	0.02	<0.01	<0.01	<0.01	0.06	0.06	mg/kg	A-T-019a
Anthracene ^{MS}	<0.01	0.10	0.34	<0.01	0.02	<0.01	3.10	0.79	mg/kg	A-T-019a
Benzo(a)anthracene ^{MS}	<0.01	0.55	0.71	0.03	0.11	<0.01	12	1.32	mg/kg	A-T-019a
Benzo(a)pyrene ^{MS}	<0.01	0.73	1.14	<0.01	<0.01	<0.01	8.86	2.25	mg/kg	A-T-019a
Benzo(b)fluoranthene ^{MS}	<0.01	0.34	0.60	<0.01	<0.01	<0.01	4.53	1.10	mg/kg	A-T-019a
Benzo(ghi)perylene ^{MS}	<0.01	1.61	1.87	<0.01	<0.01	<0.01	6.77	2.61	mg/kg	A-T-019a
Benzo(k)fluoranthene ^{MS}	<0.01	0.56	0.74	<0.01	<0.01	<0.01	4.40	1.37	mg/kg	A-T-019a
Chrysene ^{MS}	<0.01	1.33	2.25	0.08	0.21	<0.01	14.9	4.13	mg/kg	A-T-019a
Dibenzo(ah)anthracene ^{MS}	<0.01	0.14	0.08	<0.01	<0.01	<0.01	1.28	0.13	mg/kg	A-T-019a
Fluoranthene ^{MS}	<0.01	1.14	1.69	0.03	0.11	<0.01	20	3.71	mg/kg	A-T-019a
Fluorene ^{MS}	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.83	0.08	mg/kg	A-T-019a
Indeno(123-cd)pyrene ^{MS}	<0.01	0.45	0.40	<0.01	<0.01	<0.01	4.02	1.40	mg/kg	A-T-019a
Napthalene ^{MS}	<0.01	0.02	0.06	<0.01	0.03	<0.01	0.69	0.26	mg/kg	A-T-019a
Phenanthrene ^{MS}	<0.01	0.19	0.80	0.01	0.05	<0.01	10.1	1.80	mg/kg	A-T-019a
Pyrene ^{MS}	<0.01	1.30	1.50	0.01	0.08	<0.01	18.7	3.33	mg/kg	A-T-019a
Total PAH ^{MS}	<0.01	8.52	12.3	0.18	0.62	<0.01	112	24.5	mg/kg	A-T-019a

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/20	10/01638/25	10/01638/26	10/01638/27	10/01638/28	10/01638/29	10/01638/31	10/01638/32	Units	Method ref
Client Sample No										
Client Sample ID	WS20	WS21	WS21	WS21	WS21	WS22	WS22	WS23		
Depth to Top	1.20	0.80	1.60	2.90	3.50	1.50	2.50	0.30		
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	6A	6	7	5A	6A	6A	6A		
% Moisture _A [#]	5.4	14.2	13.4	-	-	-	-	14.5	% w/w	A-T-044
% Stones >10mm _A [#]	<0.1	12.0	<0.1	-	-	-	-	11.2	% w/w	A-T-044
Asbestos Screen _A	No ACM	No ACM	No ACM	-	-	-	-	No ACM		Visual
pH ₀ ^{WW}	11.7	6.8	6.7	-	-	-	-	9.9	pH	A-T-031a
Cyanide (total) _A ^{WW}	<1	<1	<1	-	-	-	-	<1	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	-	-	-	-	<0.2	mg/kg	A-T-050e
Sulphide _A [#]	<15	<15	<15	-	-	-	-	<15	mg/kg	A-T-03-e
Total Organic Carbon ₀ ^{WW}	1.64	1.96	0.79	-	-	-	-	1.47	% w/w	A-T-032a
Arsenic ₀ ^{WW}	8	15	12	-	-	-	-	17	mg/kg	A-T-024
Cadmium ₀ ^{WW}	<0.5	<0.5	<0.5	-	-	-	-	0.6	mg/kg	A-T-024
Copper ₀ ^{WW}	363	97	30	-	-	-	-	101	mg/kg	A-T-024
Chromium ₀ ^{WW}	24	32	42	-	-	-	-	39	mg/kg	A-T-024
Lead ₀ ^{WW}	197	277	69	-	-	-	-	1110	mg/kg	A-T-024
Mercury ₀	0.36	0.73	0.25	-	-	-	-	0.94	mg/kg	A-T-024
Nickel ₀ ^{WW}	15	19	15	-	-	-	-	26	mg/kg	A-T-024
Selenium ₀ ^{WW}	<1	1	1	-	-	-	-	<1	mg/kg	A-T-024
Zinc ₀ ^{WW}	303	181	76	-	-	-	-	334	mg/kg	A-T-024

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/20	10/01638/25	10/01638/26	10/01638/27	10/01638/28	10/01638/29	10/01638/31	10/01638/32	Units	Method ref
Client Sample No										
Client Sample ID	WS20	WS21	WS21	WS21	WS21	WS22	WS22	WS23		
Depth to Top	1.20	0.80	1.60	2.90	3.50	1.50	2.50	0.30		
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	6A	6	7	5A	6A	6A	6A		
Speciated TPH										
All >C5-C6 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
All >C6-C8 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
All >C8-C10 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
All >C10-C12 _A ^g	-	-	-	<0.1	42.0	10.7	73.4	-	mg/kg	A-T-022a
All >C12-C16 _A ^g	-	-	-	<0.1	93.3	31.5	151	-	mg/kg	A-T-022a
All >C16-C21 _A ^g	-	-	-	<0.1	62.4	27.8	126	-	mg/kg	A-T-022a
All >C21-C35 _A ^g	-	-	-	<0.1	21.7	9.8	26.2	-	mg/kg	A-T-022a
Total Aliphatics _A ^g	-	-	-	<0.1	220	79.8	377	-	mg/kg	A-T-022+022a
Aro >C5-C7 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C7-C8 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C8-C9 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C9-C10 _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
Aro >C10-C12 _A ^g	-	-	-	<0.1	6.7	2.6	8.6	-	mg/kg	A-T-022a
Aro >C12-C16 _A ^g	-	-	-	<0.1	44.2	16.5	40.4	-	mg/kg	A-T-022a
Aro >C16-C21 _A ^g	-	-	-	<0.1	43.8	24.9	45.0	-	mg/kg	A-T-022a
Aro >C21-C35 _A ^g	-	-	-	<0.1	11.2	7.8	9.8	-	mg/kg	A-T-022a
Total Aromatics _A ^g	-	-	-	<0.1	106	51.8	104	-	mg/kg	A-T-022+022a
TPH (All & Aro) _A ^g	-	-	-	<0.1	325	132	481	-	mg/kg	A-T-022+022a
BTEX - Benzene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - Toluene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
BTEX - o Xylene _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a
MTBE _A ^g	-	-	-	<0.01	<0.05	<0.05	<0.05	-	mg/kg	A-T-022a

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/20	10/01638/25	10/01638/26	10/01638/27	10/01638/28	10/01638/29	10/01638/31	10/01638/32	Units	Method ref
Client Sample No										
Client Sample ID	WS20	WS21	WS21	WS21	WS21	WS22	WS22	WS23		
Depth to Top	1.20	0.80	1.60	2.90	3.50	1.50	2.50	0.30		
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	6A	6	7	5A	6A	6A	6A		
PAH 16										
Acenaphthene _A ^{MS}	0.35	0.02	<0.01	-	<0.01	-	0.09	0.01	mg/kg	A-T-019a
Acenaphthylene _A ^R	0.02	0.02	<0.01	-	<0.01	-	0.02	0.01	mg/kg	A-T-019a
Anthracene _A ^{MS}	0.58	0.16	<0.01	-	0.08	-	0.20	0.13	mg/kg	A-T-019a
Benzo(a)anthracene _A ^R	0.82	0.69	<0.01	-	0.14	-	<0.01	0.27	mg/kg	A-T-019a
Benzo(a)pyrene _A ^{MS}	0.86	0.92	<0.01	-	<0.01	-	<0.01	0.21	mg/kg	A-T-019a
Benzo(b)fluoranthene _A ^{MS}	0.39	0.48	<0.01	-	0.12	-	<0.01	0.28	mg/kg	A-T-019a
Benzo(ghi)perylene _A ^{MS}	1.08	1.41	<0.01	-	<0.01	-	<0.01	0.46	mg/kg	A-T-019a
Benzo(k)fluoranthene _A ^{MS}	0.53	0.71	<0.01	-	0.13	-	<0.01	0.14	mg/kg	A-T-019a
Chrysene _A ^{MS}	1.73	1.51	<0.01	-	0.39	-	<0.01	1.18	mg/kg	A-T-019a
Dibenzo(ah)anthracene _A ^R	0.11	0.06	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019a
Fluoranthene _A ^{MS}	1.98	1.53	<0.01	-	0.45	-	<0.01	0.64	mg/kg	A-T-019a
Fluorene _A ^{MS}	0.12	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019a
Indeno(123-cd)pyrene _A ^R	0.33	0.48	<0.01	-	<0.01	-	<0.01	<0.01	mg/kg	A-T-019a
Napthalene _A ^{MS}	0.41	0.03	<0.01	-	0.04	-	0.11	0.04	mg/kg	A-T-019a
Phenanthrene _A ^{MS}	1.42	0.43	<0.01	-	0.04	-	0.18	0.21	mg/kg	A-T-019a
Pyrene _A ^{MS}	1.59	1.36	<0.01	-	0.52	-	0.03	0.54	mg/kg	A-T-019a
Total PAH _A ^R	12.3	9.80	<0.01	-	1.97	-	0.62	4.13	mg/kg	A-T-019a

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/34	10/01638/36	10/01638/41	10/01638/43	10/01638/44	10/01638/47	10/01638/50	10/01638/53	Units	Method ref
Client Sample No										
Client Sample ID	WS23	WS24	WS25	WS25	WS26	WS27	WS27	WS28		
Depth to Top	1.50	0.30	0.90	2.00	0.40	0.50	1.80	1.00		
Depth To Bottom	1.70						1.90			
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3	6A	6A	5A	5A	7	3A	6A		
% Moisture _A [#]	16.7	9.2	11.5	-	9.0	6.5	10.6	15.4	% w/w	A-T-044
% Stones >10mm _A [#]	<0.1	34.3	19.0	-	27.7	<0.1	15.7	4.4	% w/w	A-T-044
Asbestos Screen _A	No ACM	No ACM	No ACM	-	No ACM	No ACM	No ACM	No ACM		Visual
pH ₀ ^{##}	7.1	10.8	11.5	-	10.2	12.5	8.0	7.5	pH	A-T-031a
Cyanide (total) _A ^{##}	<1	<1	<1	-	<1	<1	<1	<1	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	-	<0.2	<0.2	0.2	<0.2	mg/kg	A-T-050e
Sulphide _A [#]	<15	<15	<15	-	<15	<15	<15	<15	mg/kg	A-T-03-e
Total Organic Carbon ₀ ^{##}	0.32	1.12	0.97	-	1.57	0.30	0.13	1.86	% w/w	A-T-032a
Arsenic ₀ ^{##}	18	18	14	-	21	5	27	9	mg/kg	A-T-024
Cadmium ₀ ^{##}	<0.5	<0.5	<0.5	-	0.8	<0.5	<0.5	<0.5	mg/kg	A-T-024
Copper ₀ ^{##}	22	44	91	-	138	17	20	35	mg/kg	A-T-024
Chromium ₀ ^{##}	57	36	38	-	28	18	51	36	mg/kg	A-T-024
Chromium (hexavalent) ₀	-	-	-	-	-	-	<1	-	mg/kg	A-T-040a
Lead ₀ ^{##}	40	140	172	-	292	52	24	142	mg/kg	A-T-024
Mercury ₀	0.24	0.84	0.49	-	0.36	0.41	0.27	0.63	mg/kg	A-T-024
Nickel ₀ ^{##}	20	25	24	-	28	14	41	17	mg/kg	A-T-024
Selenium ₀ ^{##}	1	<1	<1	-	<1	<1	<1	<1	mg/kg	A-T-024
Zinc ₀ ^{##}	62	113	119	-	219	52	55	64	mg/kg	A-T-024

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/34	10/01638/36	10/01638/41	10/01638/43	10/01638/44	10/01638/47	10/01638/50	10/01638/53	Units	Method ref
Client Sample No										
Client Sample ID	WS23	WS24	WS25	WS25	WS26	WS27	WS27	WS28		
Depth to Top	1.50	0.30	0.90	2.00	0.40	0.50	1.80	1.00		
Depth To Bottom	1.70						1.90			
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3	6A	6A	5A	5A	7	3A	6A		
Speciated TPH										
Alli >C5-C6 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C6-C8 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C8-C10 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C10-C12 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C12-C16 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C16-C21 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C21-C35 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aliphatics _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022+023a
Aro >C5-C7 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C7-C8 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C8-C9 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C9-C10 _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C10-C12 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C12-C16 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C16-C21 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C21-C35 _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aromatics _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022+023a
TPH (Alli & Aro) _A ^g	-	-	<0.1	<0.1	-	-	-	-	mg/kg	A-T-022+023a
BTEX - Benzene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Toluene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - o Xylene _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a
MTBE _A ^g	-	-	<0.01	<0.01	-	-	-	-	mg/kg	A-T-022a

Envirolab Job Number: 10/01638

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01638/34	10/01638/36	10/01638/41	10/01638/43	10/01638/44	10/01638/47	10/01638/50	10/01638/53	Units	Method ref
Client Sample No										
Client Sample ID	WS23	WS24	WS25	WS25	WS26	WS27	WS27	WS28		
Depth to Top	1.50	0.30	0.90	2.00	0.40	0.50	1.80	1.00		
Depth To Bottom	1.70						1.90			
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	3	6A	6A	5A	5A	7	3A	6A		
PAH 16										
Acenaphthene ^{MS}	<0.01	0.23	0.01	-	0.01	0.24	<0.01	<0.01	mg/kg	A-T-019a
Acenaphthylene ^{MS}	<0.01	0.04	0.02	-	0.03	0.03	<0.01	<0.01	mg/kg	A-T-019a
Anthracene ^{MS}	<0.01	0.67	0.06	-	0.11	0.79	<0.01	<0.01	mg/kg	A-T-019a
Benzo(a)anthracene ^{MS}	<0.01	0.51	<0.01	-	0.33	0.80	<0.01	<0.01	mg/kg	A-T-019a
Benzo(a)pyrene ^{MS}	<0.01	0.76	0.23	-	0.38	1.18	<0.01	<0.01	mg/kg	A-T-019a
Benzo(b)fluoranthene ^{MS}	<0.01	0.58	0.33	-	0.23	0.44	<0.01	<0.01	mg/kg	A-T-019a
Benzo(ghi)perylene ^{MS}	<0.01	1.11	0.34	-	0.65	1.44	<0.01	<0.01	mg/kg	A-T-019a
Benzo(k)fluoranthene ^{MS}	<0.01	0.49	0.20	-	0.27	0.92	<0.01	<0.01	mg/kg	A-T-019a
Chrysene ^{MS}	<0.01	2.21	1.08	-	0.96	3.22	0.04	<0.01	mg/kg	A-T-019a
Dibenzo(ah)anthracene ^{MS}	<0.01	<0.01	<0.01	-	<0.01	0.08	<0.01	<0.01	mg/kg	A-T-019a
Fluoranthene ^{MS}	<0.01	2.13	0.72	-	0.43	2.91	0.02	<0.01	mg/kg	A-T-019a
Fluorene ^{MS}	<0.01	0.05	<0.01	-	<0.01	0.08	<0.01	<0.01	mg/kg	A-T-019a
Indeno(123-cd)pyrene ^{MS}	<0.01	<0.01	<0.01	-	<0.01	0.38	<0.01	<0.01	mg/kg	A-T-019a
Napthalene ^{MS}	<0.01	0.05	0.03	-	0.03	0.12	<0.01	<0.01	mg/kg	A-T-019a
Phenanthrene ^{MS}	<0.01	1.56	0.10	-	0.15	2.15	<0.01	<0.01	mg/kg	A-T-019a
Pyrene ^{MS}	<0.01	1.79	0.87	-	0.51	3.10	0.01	<0.01	mg/kg	A-T-019a
Total PAH ^{MS}	<0.01	12.2	3.98	-	4.10	17.9	0.07	<0.01	mg/kg	A-T-019a

Date: 01 June 2010
Your Ref: 23971
Our Ref: 10-01639-1 wac
Project Manager: Sarah Bear
Report to: Sarah Bear

Envirolab
Units 7 & 8
Sandpits Business Park
Mottram Road
Hyde
Cheshire
SK14 3AR

Final Test Report

Sample(s) of Soil from Northumberland Park
Received from Buro Happold
Camden Mill, Lower Bristol Road, Bath, BA2 3DQ.

Date of receipt: 18 May 2010
Date analysis commenced: 18 May 2010
Date analysis completed: 01 June 2010

Method Statement

Analysis is performed in accordance with documented procedures.

Samples with matrix code 7 are not predominantly sand/loam/clay and are not covered by our MCERTS accreditation.

Prepared by:

A handwritten signature in blue ink, appearing to read "M Marshall".

Melanie Marshall
Laboratory Co-ordinator

Approved by:

A handwritten signature in blue ink, appearing to read "G Scott".

Gill Scott
Laboratory Manager



Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
Tests marked "" in this report are not included in the UKAS Accreditation Schedule for Envirolab.
Analytical results reflect the quality of the sample at the time of analysis only.



Sample Details						Landfill Waste Acceptance Criteria Limits		
Envirolab Ref.	ISO17025	MCERTS	10/01639/1					
Location			BH10/05			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Depth (m)			0.70					
Sample Ref.			-					
Sample Type			-					
Sample Matrix Code			6A					
Solid Waste Analysis								
pH (pH Units)	Y	Y	-			-	>6	-
ANC to pH 4 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated
Loss on Ignition (%)	Y	Y	-			-	-	10
Total Organic Carbon (%)	Y	Y	4.63			3	5	6
PAH Sum of 17 (mg/kg)	N	N	6.91			100	-	-
Mineral Oil (mg/kg)	Y	N	48.3			500	-	-
Sum of 7 PCBs (mg/kg)	N	N	0.01			1	-	-
Sum of BTEX (mg/kg)	Y	N	<0.01			6	-	-
Eluate Analysis			2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using 12457-3 at L/S 10 l/kg (mg/kg)	
			mg/l		mg/kg		BS EN	
Arsenic	N	N	0.0096	0.0125	0.0226	0.1270	0.5	25
Barium	N	N	0.0392	0.0180	0.0921	0.2026	20	300
Cadmium	N	N	<0.001	<0.001	<0.002	<0.01	0.04	5
Chromium	N	N	0.0164	0.0149	0.0386	0.1550	0.5	70
Copper	N	N	0.0150	0.0156	0.0353	0.1605	2	100
Mercury	N	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	2
Molybdenum	N	N	0.0236	0.0084	0.0553	0.0985	0.5	30
Nickel	N	N	0.0024	0.0028	0.0056	0.0283	0.4	40
Lead	N	N	0.0032	0.0365	0.0075	0.3513	0.5	50
Antimony	N	N	0.0236	0.0124	0.0555	0.1369	0.06	5
Selenium	N	N	<0.001	<0.001	<0.002	<0.01	0.1	7
Zinc	N	N	0.0235	0.0415	0.0553	0.4149	4	200
Chloride	N	N	19	5	45	67	800	25000
Fluoride	N	N	1.0	0.8	2.2	7.9	10	500
Sulphate as SO ₄	N	N	63	21	148	251	1000	50000
Total Dissolved Solids	N	N	180	81	423	916	4000	100000
Phenol Index	N	N	<0.01	<0.01	<0.02	<0.1	1	-
Dissolved Organic Carbon	N	N	<20	<20	<40	<200	500	1000
Leach Test Information								
pH (pH Units)	N	N	8.1	8.7				
Conductivity (µS/cm)	N	N	363	162				
Mass Sample (kg)	N	N	0.200					
Dry Matter (%)	N	N	82.1					
Stage 1								
Volume Leachant, L ₂ (l)	N	N	350					
Filtered Eluate Volume, VE ₁ (l)	N	N	130					
Stage 2								
Volume Leachant, L ₈ (l)	N	N	1315					
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Sample Details						Landfill Waste Acceptance Criteria Limits		
Envirolab Ref.	ISO17025	MCERTS	10/01639/2					
Location			WS21			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Depth (m)			0.80					
Sample Ref.			-					
Sample Type			-					
Sample Matrix Code			6A					
Solid Waste Analysis								
pH (pH Units)	Y	Y	-			-	>6	-
ANC to pH 4 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated
Loss on Ignition (%)	Y	Y	-			-	-	10
Total Organic Carbon (%)	Y	Y	1.86			3	5	6
PAH Sum of 17 (mg/kg)	N	N	16.2			100	-	-
Mineral Oil (mg/kg)	Y	N	<0.10			500	-	-
Sum of 7 PCBs (mg/kg)	N	N	<0.01			1	-	-
Sum of BTEX (mg/kg)	Y	N	<0.01			6	-	-
Eluate Analysis			2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using 12457-3 at L/S 10 l/kg (mg/kg)	
			mg/l		mg/kg		BS EN	
Arsenic	N	N	0.0042	0.0040	0.0093	0.0410	0.5	25
Barium	N	N	0.1091	0.0202	0.2431	0.2688	20	300
Cadmium	N	N	<0.001	<0.001	<0.002	<0.01	0.04	5
Chromium	N	N	0.0016	<0.001	0.0035	0.0053	0.5	70
Copper	N	N	0.0370	0.0329	0.0823	0.3392	2	100
Mercury	N	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	2
Molybdenum	N	N	0.0153	0.0062	0.0342	0.0697	0.5	30
Nickel	N	N	0.0075	0.0043	0.0166	0.0461	0.4	40
Lead	N	N	0.0029	0.0075	0.0066	0.0737	0.5	50
Antimony	N	N	0.0071	0.0040	0.0158	0.0428	0.06	5
Selenium	N	N	<0.001	<0.001	<0.002	<0.01	0.1	7
Zinc	N	N	0.0175	0.0152	0.0389	0.1573	4	200
Chloride	N	N	65	12	144	161	800	15000
Fluoride	N	N	0.2	0.3	0.5	3.2	10	500
Sulphate as SO ₄	N	N	119	30	265	369	1000	20000
Total Dissolved Solids	N	N	469	147	1045	1730	4000	60000
Phenol Index	N	N	<0.01	<0.01	<0.02	<0.1	1	-
Dissolved Organic Carbon	N	N	32	23	71	242	500	800
Leach Test Information								
pH (pH Units)	N	N	8.2	8.1				
Conductivity (µS/cm)	N	N	968	298				
Mass Sample (kg)	N	N	0.200					
Dry Matter (%)	N	N	85.1					
Stage 1								
Volume Leachant, L ₂ (l)	N	N	350					
Filtered Eluate Volume, VE ₁ (l)	N	N	120					
Stage 2								
Volume Leachant, L ₈ (l)	N	N	1364					
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Sample Details						Landfill Waste Acceptance Criteria Limits			
Envirolab Ref.	ISO17025	MCERTS	10/01639/3						
Location			WS27			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Depth (m)			0.50						
Sample Ref.			-						
Sample Type			-						
Sample Matrix Code			7						
Solid Waste Analysis									
pH (pH Units)	Y	Y	-			-	>6	-	
ANC to pH 4 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
Loss on Ignition (%)	Y	Y	-			-	-	10	
Total Organic Carbon (%)	Y	Y	0.80			3	5	6	
PAH Sum of 17 (mg/kg)	N	N	15.3			100	-	-	
Mineral Oil (mg/kg)	Y	N	<0.10			500	-	-	
Sum of 7 PCBs (mg/kg)	N	N	<0.01			1	-	-	
Sum of BTEX (mg/kg)	Y	N	<0.01			6	-	-	
Eluate Analysis			2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using 12457-3 at L/S 10 l/kg (mg/kg)		BS EN
			mg/l		mg/kg				
Arsenic	N	N	0.0020	0.0021	0.0042	0.0209	0.5	2	25
Barium	N	N	0.0272	0.0248	0.0571	0.2532	20	100	300
Cadmium	N	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5
Chromium	N	N	0.0372	0.0083	0.0781	0.1172	0.5	10	70
Copper	N	N	0.0169	0.0048	0.0354	0.0620	2	50	100
Mercury	N	N	<0.0001	<0.0001	<0.0002	<0.001	0.01	0.2	2
Molybdenum	N	N	0.0168	0.0031	0.0353	0.0473	0.5	10	30
Nickel	N	N	0.0017	<0.001	0.0036	0.0072	0.4	10	40
Lead	N	N	<0.001	<0.001	<0.002	<0.01	0.5	10	50
Antimony	N	N	0.0136	0.0093	0.0286	0.0985	0.06	0.7	5
Selenium	N	N	0.0017	<0.001	0.0036	0.0007	0.1	0.5	7
Zinc	N	N	0.0043	0.0117	0.0089	0.1092	4	50	200
Chloride	N	N	25	3	52	58	800	15000	25000
Fluoride	N	N	0.1	<0.1	0.2	0.1	10	150	500
Sulphate as SO ₄	N	N	183	67	384	811	1000	20000	50000
Total Dissolved Solids	N	N	414	232	869	2553	4000	60000	100000
Phenol Index	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-
Dissolved Organic Carbon	N	N	<20	<20	<40	<200	500	800	1000
Leach Test Information									
pH (pH Units)	N	N	10.7	10.8					
Conductivity (µS/cm)	N	N	864	482					
Mass Sample (kg)	N	N	0.200						
Dry Matter (%)	N	N	88.7						
Stage 1									
Volume Leachant, L ₂ (l)	N	N	350						
Filtered Eluate Volume, VE ₁ (l)	N	N	205						
Stage 2									
Volume Leachant, L ₈ (l)	N	N	1420						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation									

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01640
Issue Number: 1

Date: 01 June, 2010

Client: Buro Happold
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: Not specified
Date Samples Received: 19/05/10
Date Instructions Received: 19/05/10
Date Analysis Completed: 01/06/10

Prepared by:



Gill Scott
Laboratory Manager

Approved by:



Iain Haslock
Analytical Consultant

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

Envirolab Job Number: 10/01640

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01640/1	10/01640/2	10/01640/3						Units	Method ref
Client Sample No										
Client Sample ID	WS16	WS20	WS28							
Depth to Top	0.70	1.20	1.00							
Depth To Bottom		1.40								
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6A	7	6							
Leachate Prep BS EN 12457-2 (10:1) _A										A-T-048
pH (leachable) _A	8.6	9.6	8.5						pH	A-T-031w
Total Dissolved Solids (leachable) _A	52	129	99						mg/l	A-T-035
Arsenic (leachable) _A [#]	25	13	2						µg/l	A-T-025
Boron (leachable) _A [#]	15	64	47						µg/l	A-T-025
Cadmium (leachable) _A [#]	<1	<1	<1						µg/l	A-T-025
Copper (leachable) _A [#]	18	53	8						µg/l	A-T-025
Chromium (leachable) _A [#]	3	28	2						µg/l	A-T-025
Lead (leachable) _A [#]	62	4	3						µg/l	A-T-025
Mercury (leachable) _A [#]	0.5	0.5	<0.1						µg/l	A-T-025
Nickel (leachable) _A [#]	1	<1	<1						µg/l	A-T-025
Selenium (leachable) _A [#]	<1	2	<1						µg/l	A-T-025
Zinc (leachable) _A [#]	13	3	15						µg/l	A-T-025

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01654
Issue Number: 1

Date: 02 June, 2010

Client: Buro Happold
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: Not specified
Date Samples Received: 19/05/10
Date Instructions Received: 19/05/10
Date Analysis Completed: 02/06/10

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Iain Haslock
Analytical Consultant

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.



Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/2	10/01654/3	10/01654/5	10/01654/6	10/01654/10	10/01654/12	10/01654/14	10/01654/17	Units	Method ref
Client Sample No										
Client Sample ID	WS19	WS19	WS10/01	WS10/01	BH10/04	BH10/04	BH10/04	BH10/01		
Depth to Top	2.00	2.40	1.10	3.00	0.30	1.80	3.80	0.20		
Depth To Bottom	2.20	2.50	1.20							
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	7	5A	5A	6AD	7	-	-		
% Moisture _A [#]	8.3	-	15.0	-	12.8	3.6	-	-	% w/w	A-T-044
% Stones >10mm _A [#]	<0.1	-	1.6	-	39.7	<0.1	-	-	% w/w	A-T-044
Asbestos Screen _A	No ACM	-	No ACM	-	No ACM	No ACM	-	-		Visual
pH _D ^{WW}	11.6	-	8.0	-	7.9	8.7	-	-	pH	A-T-031a
Cyanide (total) _A ^{MM}	<1	-	<1	-	<1	<1	-	-	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	-	<0.2	<0.2	-	-	mg/kg	A-T-050e
Sulphide _A [#]	<15	-	<15	-	<15	<15	-	-	mg/kg	A-T-03-e
Total Organic Carbon _D ^{MM}	0.21	-	0.16	-	5.42	<0.03	-	-	% w/w	A-T-032a
Arsenic _D ^{MM}	8	-	10	-	13	3	-	-	mg/kg	A-T-024
Cadmium _D ^{MM}	<0.5	-	<0.5	-	<0.5	<0.5	-	-	mg/kg	A-T-024
Copper _D ^{MM}	10	-	12	-	34	3	-	-	mg/kg	A-T-024
Chromium _D ^{MM}	17	-	33	-	32	5	-	-	mg/kg	A-T-024
Lead _D ^{MM}	27	-	15	-	198	10	-	-	mg/kg	A-T-024
Mercury _D	0.23	-	<0.17	-	1.31	<0.17	-	-	mg/kg	A-T-024
Nickel _D ^{MM}	11	-	17	-	18	5	-	-	mg/kg	A-T-024
Selenium _D ^{MM}	<1	-	<1	-	1	<1	-	-	mg/kg	A-T-024
Zinc _D ^{MM}	40	-	51	-	77	8	-	-	mg/kg	A-T-024

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/2	10/01654/3	10/01654/5	10/01654/6	10/01654/10	10/01654/12	10/01654/14	10/01654/17	Units	Method ref
Client Sample No										
Client Sample ID	WS19	WS19	WS10/01	WS10/01	BH10/04	BH10/04	BH10/04	BH10/01		
Depth to Top	2.00	2.40	1.10	3.00	0.30	1.80	3.80	0.20		
Depth To Bottom	2.20	2.50	1.20							
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	7	5A	5A	6AD	7	-	-		
Speciated TPH										
Alli >C5-C6 _A [®]	-	0.06	-	0.07	-	-	-	-	mg/kg	A-T-022a
Alli >C6-C8 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C8-C10 _A [®]	-	<0.01	-	0.02	-	-	-	-	mg/kg	A-T-022a
Alli >C10-C12 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C12-C16 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C16-C21 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C21-C35 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aliphatics _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022+02a
Aro >C5-C7 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C7-C8 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C8-C9 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C9-C10 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C10-C12 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C12-C16 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C16-C21 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C21-C35 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aromatics _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022+02a
TPH (Alli & Aro) _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022+02a
BTEX - Benzene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Toluene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - o Xylene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
MTBE _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/2	10/01654/3	10/01654/5	10/01654/6	10/01654/10	10/01654/12	10/01654/14	10/01654/17	Units	Method ref
Client Sample No										
Client Sample ID	WS19	WS19	WS10/01	WS10/01	BH10/04	BH10/04	BH10/04	BH10/01		
Depth to Top	2.00	2.40	1.10	3.00	0.30	1.80	3.80	0.20		
Depth To Bottom	2.20	2.50	1.20							
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	7	5A	5A	6AD	7	-	-		
PAH 16										
Acenaphthene ^{MS}	<0.01	-	<0.01	-	0.09	<0.01	-	-	mg/kg	A-T-019a
Acenaphthylene ^{MS}	<0.01	-	<0.01	-	0.01	<0.01	-	-	mg/kg	A-T-019a
Anthracene ^{MS}	<0.01	-	<0.01	-	0.21	<0.01	-	-	mg/kg	A-T-019a
Benzo(a)anthracene ^{MS}	0.10	-	<0.01	-	0.28	<0.01	-	-	mg/kg	A-T-019a
Benzo(a)pyrene ^{MS}	0.03	-	0.02	-	0.37	0.07	-	-	mg/kg	A-T-019a
Benzo(b)fluoranthene ^{MS}	0.01	-	0.04	-	0.26	0.02	-	-	mg/kg	A-T-019a
Benzo(ghi)perylene ^{MS}	0.17	-	0.03	-	0.63	0.03	-	-	mg/kg	A-T-019a
Benzo(k)fluoranthene ^{MS}	0.03	-	<0.01	-	0.26	<0.01	-	-	mg/kg	A-T-019a
Chrysene ^{MS}	0.24	-	<0.01	-	1.22	<0.01	-	-	mg/kg	A-T-019a
Dibenzo(ah)anthracene ^{MS}	0.02	-	0.01	-	0.03	<0.01	-	-	mg/kg	A-T-019a
Fluoranthene ^{MS}	0.11	-	<0.01	-	1.14	<0.01	-	-	mg/kg	A-T-019a
Fluorene ^{MS}	<0.01	-	<0.01	-	<0.01	<0.01	-	-	mg/kg	A-T-019a
Indeno(123-cd)pyrene ^{MS}	0.01	-	<0.01	-	0.02	<0.01	-	-	mg/kg	A-T-019a
Napthalene ^{MS}	0.05	-	0.04	-	0.06	0.02	-	-	mg/kg	A-T-019a
Phenanthrene ^{MS}	0.04	-	<0.01	-	0.44	<0.01	-	-	mg/kg	A-T-019a
Pyrene ^{MS}	0.10	-	<0.01	-	0.81	<0.01	-	-	mg/kg	A-T-019a
Total PAH ^{MS}	0.92	-	0.14	-	5.81	0.14	-	-	mg/kg	A-T-019a

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/22	10/01654/26	10/01654/27						Units	Method ref
Client Sample No										
Client Sample ID	WS17B	BH10/03	BH10/03							
Depth to Top	1.30	4.70	4.90							
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	5	-	-							
% Moisture~ _A [#]	17.2	-	-						% w/w	A-T-044
% Stones >10mm~ _A [#]	<0.1	-	-						% w/w	A-T-044
Asbestos Screen _A	No ACM	-	-							Visual
pH ₀ ^{WW}	7.8	-	-						pH	A-T-031a
Cyanide (total) _A ^{WW}	<1	-	-						mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	-	-						mg/kg	A-T-050e
Sulphide _A [#]	36	-	-						mg/kg	A-T-03-e
Total Organic Carbon ₀ ^{WW}	0.29	-	-						% w/w	A-T-032a
Arsenic ₀ ^{WW}	14	-	-						mg/kg	A-T-024
Cadmium ₀ ^{WW}	<0.5	-	-						mg/kg	A-T-024
Copper ₀ ^{WW}	17	-	-						mg/kg	A-T-024
Chromium ₀ ^{WW}	54	-	-						mg/kg	A-T-024
Lead ₀ ^{WW}	18	-	-						mg/kg	A-T-024
Mercury ₀	<0.17	-	-						mg/kg	A-T-024
Nickel ₀ ^{WW}	23	-	-						mg/kg	A-T-024
Selenium ₀ ^{WW}	2	-	-						mg/kg	A-T-024
Zinc ₀ ^{WW}	58	-	-						mg/kg	A-T-024

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/22	10/01654/26	10/01654/27						Units	Method ref
Client Sample No										
Client Sample ID	WS17B	BH10/03	BH10/03							
Depth to Top	1.30	4.70	4.90							
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	5	-	-							
PAH 16										
Acenaphthene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Acenaphthylene _A ^R	<0.01	-	-						mg/kg	A-T-019a
Anthracene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Benzo(a)anthracene _A ^R	<0.01	-	-						mg/kg	A-T-019a
Benzo(a)pyrene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Benzo(b)fluoranthene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Benzo(ghi)perylene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Benzo(k)fluoranthene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Chrysene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Dibenzo(ah)anthracene _A ^R	0.06	-	-						mg/kg	A-T-019a
Fluoranthene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Fluorene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Indeno(123-cd)pyrene _A ^R	<0.01	-	-						mg/kg	A-T-019a
Napthalene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Phenanthrene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Pyrene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Total PAH _A ^R	0.14	-	-						mg/kg	A-T-019a

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01654
Issue Number: 2 Date: 21 June, 2010

Client: Buro Happold (Bath)
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: Not specified
Date Samples Received: 19/05/10
Date Instructions Received: 15/06/10
Date Analysis Completed: 16/06/10

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Iain Haslock
Analytical Consultant

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/2	10/01654/3	10/01654/5	10/01654/6	10/01654/10	10/01654/12	10/01654/14	10/01654/17	Units	Method ref
Client Sample No										
Client Sample ID	WS19	WS19	WS10/01	WS10/01	BH10/04	BH10/04	BH10/04	BH10/01		
Depth to Top	2.00	2.40	1.10	3.00	0.30	1.80	3.80	0.20		
Depth To Bottom	2.20	2.50	1.20							
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	7	5A	5A	6AD	7	-	-		
% Moisture _A [#]	8.3	-	15.0	-	12.8	3.6	-	-	% w/w	A-T-044
% Stones >10mm _A [#]	<0.1	-	1.6	-	39.7	<0.1	-	-	% w/w	A-T-044
Asbestos Screen _A	No ACM	-	No ACM	-	No ACM	No ACM	-	-		Visual
pH _D ^{WW}	11.6	-	8.0	-	7.9	8.7	-	-	pH	A-T-031a
Cyanide (total) _A ^{MM}	<1	-	<1	-	<1	<1	-	-	mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	-	<0.2	<0.2	-	-	mg/kg	A-T-050e
Sulphide _A [#]	<15	-	<15	-	<15	<15	-	-	mg/kg	A-T-03-e
Total Organic Carbon _D ^{MM}	0.21	-	0.16	-	5.42	<0.03	-	-	% w/w	A-T-032a
Arsenic _D ^{MM}	8	-	10	-	13	3	-	-	mg/kg	A-T-024
Cadmium _D ^{MM}	<0.5	-	<0.5	-	<0.5	<0.5	-	-	mg/kg	A-T-024
Copper _D ^{MM}	10	-	12	-	34	3	-	-	mg/kg	A-T-024
Chromium _D ^{MM}	17	-	33	-	32	5	-	-	mg/kg	A-T-024
Lead _D ^{MM}	27	-	15	-	198	10	-	-	mg/kg	A-T-024
Mercury _D	0.23	-	<0.17	-	1.31	<0.17	-	-	mg/kg	A-T-024
Nickel _D ^{MM}	11	-	17	-	18	5	-	-	mg/kg	A-T-024
Selenium _D ^{MM}	<1	-	<1	-	1	<1	-	-	mg/kg	A-T-024
Zinc _D ^{MM}	40	-	51	-	77	8	-	-	mg/kg	A-T-024

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/2	10/01654/3	10/01654/5	10/01654/6	10/01654/10	10/01654/12	10/01654/14	10/01654/17	Units	Method ref
Client Sample No										
Client Sample ID	WS19	WS19	WS10/01	WS10/01	BH10/04	BH10/04	BH10/04	BH10/01		
Depth to Top	2.00	2.40	1.10	3.00	0.30	1.80	3.80	0.20		
Depth To Bottom	2.20	2.50	1.20							
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	7	5A	5A	6AD	7	-	-		
Speciated TPH										
Alli >C5-C6 _A [®]	-	0.06	-	0.07	-	-	-	-	mg/kg	A-T-022a
Alli >C6-C8 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Alli >C8-C10 _A [®]	-	<0.01	-	0.02	-	-	-	-	mg/kg	A-T-022a
Alli >C10-C12 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C12-C16 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C16-C21 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Alli >C21-C35 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aliphatics _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022+02a
Aro >C5-C7 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C7-C8 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C8-C9 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C9-C10 _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
Aro >C10-C12 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C12-C16 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C16-C21 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Aro >C21-C35 _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022a
Total Aromatics _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022+02a
TPH (Alli & Aro) _A [®]	-	<0.1	-	<0.1	-	-	-	-	mg/kg	A-T-022+02a
BTEX - Benzene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Toluene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - Ethyl Benzene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - m & p Xylene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
BTEX - o Xylene _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a
MTBE _A [®]	-	<0.01	-	<0.01	-	-	-	-	mg/kg	A-T-022a

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/2	10/01654/3	10/01654/5	10/01654/6	10/01654/10	10/01654/12	10/01654/14	10/01654/17	Units	Method ref
Client Sample No										
Client Sample ID	WS19	WS19	WS10/01	WS10/01	BH10/04	BH10/04	BH10/04	BH10/01		
Depth to Top	2.00	2.40	1.10	3.00	0.30	1.80	3.80	0.20		
Depth To Bottom	2.20	2.50	1.20							
Date Sampled										
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Matrix Code	7	7	5A	5A	6AD	7	-	-		
PAH 16										
Acenaphthene ^{MS}	<0.01	-	<0.01	-	0.09	<0.01	-	-	mg/kg	A-T-019a
Acenaphthylene ^{MS}	<0.01	-	<0.01	-	0.01	<0.01	-	-	mg/kg	A-T-019a
Anthracene ^{MS}	<0.01	-	<0.01	-	0.21	<0.01	-	-	mg/kg	A-T-019a
Benzo(a)anthracene ^{MS}	0.10	-	<0.01	-	0.28	<0.01	-	-	mg/kg	A-T-019a
Benzo(a)pyrene ^{MS}	0.03	-	0.02	-	0.37	0.07	-	-	mg/kg	A-T-019a
Benzo(b)fluoranthene ^{MS}	0.01	-	0.04	-	0.26	0.02	-	-	mg/kg	A-T-019a
Benzo(ghi)perylene ^{MS}	0.17	-	0.03	-	0.63	0.03	-	-	mg/kg	A-T-019a
Benzo(k)fluoranthene ^{MS}	0.03	-	<0.01	-	0.26	<0.01	-	-	mg/kg	A-T-019a
Chrysene ^{MS}	0.24	-	<0.01	-	1.22	<0.01	-	-	mg/kg	A-T-019a
Dibenzo(ah)anthracene ^{MS}	0.02	-	0.01	-	0.03	<0.01	-	-	mg/kg	A-T-019a
Fluoranthene ^{MS}	0.11	-	<0.01	-	1.14	<0.01	-	-	mg/kg	A-T-019a
Fluorene ^{MS}	<0.01	-	<0.01	-	<0.01	<0.01	-	-	mg/kg	A-T-019a
Indeno(123-cd)pyrene ^{MS}	0.01	-	<0.01	-	0.02	<0.01	-	-	mg/kg	A-T-019a
Napthalene ^{MS}	0.05	-	0.04	-	0.06	0.02	-	-	mg/kg	A-T-019a
Phenanthrene ^{MS}	0.04	-	<0.01	-	0.44	<0.01	-	-	mg/kg	A-T-019a
Pyrene ^{MS}	0.10	-	<0.01	-	0.81	<0.01	-	-	mg/kg	A-T-019a
Total PAH ^{MS}	0.92	-	0.14	-	5.81	0.14	-	-	mg/kg	A-T-019a

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/22	10/01654/26	10/01654/27						Units	Method ref
Client Sample No										
Client Sample ID	WS17B	BH10/03	BH10/03							
Depth to Top	1.30	4.70	4.90							
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	5	-	-							
% Moisture~ _A [#]	17.2	-	-						% w/w	A-T-044
% Stones >10mm~ _A [#]	<0.1	-	-						% w/w	A-T-044
Asbestos Screen _A	No ACM	-	-							Visual
pH ₀ ^{MM}	7.8	-	-						pH	A-T-031a
Cyanide (total) _A ^{MM}	<1	-	-						mg/kg	A-T-042&TCN
Phenols - Total by HPLC _A	<0.2	-	-						mg/kg	A-T-050e
Sulphide _A [#]	36	-	-						mg/kg	A-T-03-e
Total Organic Carbon ₀ ^{MM}	0.29	-	-						% w/w	A-T-032a
Arsenic ₀ ^{MM}	14	-	-						mg/kg	A-T-024
Cadmium ₀ ^{MM}	<0.5	-	-						mg/kg	A-T-024
Copper ₀ ^{MM}	17	-	-						mg/kg	A-T-024
Chromium ₀ ^{MM}	54	-	-						mg/kg	A-T-024
Chromium (hexavalent) ₀	<1	-	-						mg/kg	A-T-040a
Lead ₀ ^{MM}	18	-	-						mg/kg	A-T-024
Mercury ₀	<0.17	-	-						mg/kg	A-T-024
Nickel ₀ ^{MM}	23	-	-						mg/kg	A-T-024
Selenium ₀ ^{MM}	2	-	-						mg/kg	A-T-024
Zinc ₀ ^{MM}	58	-	-						mg/kg	A-T-024

Envirolab Job Number: 10/01654

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01654/22	10/01654/26	10/01654/27						Units	Method ref
Client Sample No										
Client Sample ID	WS17B	BH10/03	BH10/03							
Depth to Top	1.30	4.70	4.90							
Depth To Bottom	1.40									
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	5	-	-							
PAH 16										
Acenaphthene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Acenaphthylene _A ^R	<0.01	-	-						mg/kg	A-T-019a
Anthracene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Benzo(a)anthracene _A ^R	<0.01	-	-						mg/kg	A-T-019a
Benzo(a)pyrene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Benzo(b)fluoranthene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Benzo(ghi)perylene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Benzo(k)fluoranthene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Chrysene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Dibenzo(ah)anthracene _A ^R	0.06	-	-						mg/kg	A-T-019a
Fluoranthene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Fluorene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Indeno(123-cd)pyrene _A ^R	<0.01	-	-						mg/kg	A-T-019a
Napthalene _A ^{MS}	0.02	-	-						mg/kg	A-T-019a
Phenanthrene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Pyrene _A ^{MS}	<0.01	-	-						mg/kg	A-T-019a
Total PAH _A ^R	0.14	-	-						mg/kg	A-T-019a

Date: 02 June 2010
Your Ref: 23971
Our Ref: 10-01655-1 wac
Project Manager: Sarah Bear
Report to: Sarah Bear

Envirolab
Units 7 & 8
Sandpits Business Park
Mottram Road
Hyde
Cheshire
SK14 3AR

Final Test Report

Sample(s) of Soil from Northumberland Park
Received from Buro Happold
Camden Mill, Lower Bristo Road, Bath BA2 3DQ

Date of receipt: 19 May 2010
Date analysis commenced: 19 May 2010
Date analysis completed: 02 June 2010

Method Statement

Analysis is performed in accordance with documented procedures.

Samples with matrix code 7 are not predominantly sand/loam/clay and are not covered by our MCERTS accreditation.

Prepared by:

A handwritten signature in blue ink, appearing to read "M Marshall".

Melanie Marshall
Laboratory Co-ordinator

Approved by:

A handwritten signature in blue ink, appearing to read "G Scott".

Gill Scott
Laboratory Manager



Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
Tests marked "" in this report are not included in the UKAS Accreditation Schedule for Envirolab.
Analytical results reflect the quality of the sample at the time of analysis only.



Sample Details						Landfill Waste Acceptance Criteria Limits			
Envirolab Ref.	ISO17025	MCERTS	10/01655/1						
Location			WS19			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Depth (m)			1.20 -1.40						
Sample Ref.			-						
Sample Type			-						
Sample Matrix Code			7						
Solid Waste Analysis									
pH (pH Units)	Y	Y	-			-	>6	-	
ANC to pH 4 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
Loss on Ignition (%)	Y	Y	-			-	-	10	
Total Organic Carbon (%)	Y	Y	0.28			3	5	6	
PAH Sum of 17 (mg/kg)	N	N	2.26			100	-	-	
Mineral Oil (mg/kg)	Y	N	<0.10			500	-	-	
Sum of 7 PCBs (mg/kg)	N	N	<0.01			1	-	-	
Sum of BTEX (mg/kg)	Y	N	<0.01			6	-	-	
Eluate Analysis			2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using 12457-3 at L/S 10 l/kg (mg/kg)		BS EN
			mg/l		mg/kg				
Arsenic	N	N	0.0111	0.0078	0.0221	0.0814	0.5	2	25
Barium	N	N	0.0120	0.0101	0.0239	0.1027	20	100	300
Cadmium	N	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5
Chromium	N	N	0.0028	0.0010	0.0056	0.0123	0.5	10	70
Copper	N	N	0.0108	0.0040	0.0215	0.0477	2	50	100
Mercury	N	N	0.0001	<0.0001	0.0002	0.0006	0.01	0.2	2
Molybdenum	N	N	0.0062	0.0012	0.0124	0.0173	0.5	10	30
Nickel	N	N	0.0013	<0.001	0.0026	0.0088	0.4	10	40
Lead	N	N	<0.001	0.0019	<0.002	<0.01	0.5	10	50
Antimony	N	N	0.0041	0.0019	0.0082	0.0212	0.06	0.7	5
Selenium	N	N	0.0028	<0.001	0.0056	0.0108	0.1	0.5	7
Zinc	N	N	0.0113	0.0135	0.0227	0.1327	4	50	200
Chloride	N	N	7	2	15	22	800	15000	25000
Fluoride	N	N	0.3	0.1	0.5	1.5	10	150	500
Sulphate as SO ₄	N	N	50	10	100	146	1000	20000	50000
Total Dissolved Solids	N	N	144	77	288	847	4000	60000	100000
Phenol Index	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-
Dissolved Organic Carbon	N	N	<20	<20	<40	<200	500	800	1000
Leach Test Information									
pH (pH Units)	N	N	9.7	9.9					
Conductivity (µS/cm)	N	N	291	152					
Mass Sample (kg)	N	N	0.200						
Dry Matter (%)	N	N	91.6						
Stage 1									
Volume Leachant, L ₂ (l)	N	N	350						
Filtered Eluate Volume, VE ₁ (l)	N	N	210						
Stage 2									
Volume Leachant, L ₈ (l)	N	N	1468						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation									

Sample Details						Landfill Waste Acceptance Criteria Limits			
Envirolab Ref.	ISO17025	MCERTS	10/01655/2						
Location			WS26			Inert Waste Landfill	Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill	Hazardous Waste Landfill	
Depth (m)			1.30 -1.50						
Sample Ref.			-						
Sample Type			-						
Sample Matrix Code			6A						
Solid Waste Analysis									
pH (pH Units)	Y	Y	-			-	>6	-	
ANC to pH 4 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
Loss on Ignition (%)	Y	Y	-			-	-	10	
Total Organic Carbon (%)	Y	Y	1.90			3	5	6	
PAH Sum of 17 (mg/kg)	N	N	6.26			100	-	-	
Mineral Oil (mg/kg)	Y	N	231			500	-	-	
Sum of 7 PCBs (mg/kg)	N	N	0.07			1	-	-	
Sum of BTEX (mg/kg)	Y	N	0.72			6	-	-	
Eluate Analysis			2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using 12457-3 at L/S 10 l/kg (mg/kg)		BS EN
			mg/l		mg/kg				
Arsenic	N	N	0.0052	0.0046	0.0105	0.0462	0.5	2	25
Barium	N	N	0.0187	0.0124	0.0374	0.1302	20	100	300
Cadmium	N	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5
Chromium	N	N	0.0255	0.0065	0.0511	0.0829	0.5	10	70
Copper	N	N	0.1484	0.0443	0.2976	0.5396	2	50	100
Mercury	N	N	0.0016	0.0004	0.0031	0.0052	0.01	0.2	2
Molybdenum	N	N	0.0233	0.0049	0.0467	0.0663	0.5	10	30
Nickel	N	N	0.0068	0.0024	0.0136	0.0279	0.4	10	40
Lead	N	N	<0.001	<0.001	<0.002	<0.01	0.5	10	50
Antimony	N	N	0.0098	0.0084	0.0196	0.0856	0.06	0.7	5
Selenium	N	N	0.0039	0.0014	0.0077	0.0164	0.1	0.5	7
Zinc	N	N	0.0017	0.0268	0.0034	0.2449	4	50	200
Chloride	N	N	10	2	19	31	800	15000	25000
Fluoride	N	N	<0.1	<0.1	<0.2	<1	10	150	500
Sulphate as SO ₄	N	N	21	13	42	138	1000	20000	50000
Total Dissolved Solids	N	N	412	288	826	2997	4000	60000	100000
Phenol Index	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-
Dissolved Organic Carbon	N	N	<20	<20	<40	<200	500	800	1000
Leach Test Information									
pH (pH Units)	N	N	11.2	11.2					
Conductivity (µS/cm)	N	N	869	596					
Mass Sample (kg)	N	N	0.200						
Dry Matter (%)	N	N	91.5						
Stage 1									
Volume Leachant, L ₂ (l)	N	N	350						
Filtered Eluate Volume, VE ₁ (l)	N	N	170						
Stage 2									
Volume Leachant, L ₈ (l)	N	N	1464						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation									

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01714
Issue Number: 1

Date: 09 June, 2010

Client: Buro Happold (Bath)
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: 023970200605
Date Samples Received: 25/05/10
Date Instructions Received: 25/05/10
Date Analysis Completed: 09/06/10

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Iain Haslock
Analytical Consultant

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.



Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/1	10/01714/2	10/01714/3	10/01714/4	10/01714/5	10/01714/6	10/01714/7	10/01714/8	Units	Method ref
Client Sample No										
Client Sample ID	WS21	WS17b	WS16	WS24	WS28	WS26	WS29a	WS27		
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
pH (w) _A ^g	7.5	7.3	7.4	7.4	7.3	7.5	7.3	7.3	pH	A-T-021w
Hardness _A ^g	275	425	337	285	352	312	291	370	mg/l Ca CO ₃	A-T-048
Total Dissolved Solids _A ^g	487	884	678	374	546	738	522	726	mg/l	A-T-035
Total Suspended Solids _A ^g	2790	1600	20400	1660	4660	19000	3520	2680	mg/l	A-T-036
Ammoniacal nitrogen (w) _A ^g	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/l	A-T-033w
Cyanide (free) (w) _A ^g	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	A-T-042wPCN
Phenols - Total by HPLC (w) _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	A-T-050w
Arsenic (dissolved) _A ^g	<1	<1	1	<1	<1	<1	<1	<1	µg/l	A-T-025
Boron (dissolved) _A ^g	158	223	203	140	175	207	162	202	µg/l	A-T-025
Cadmium (dissolved) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Copper (dissolved) _A ^g	2	3	2	2	5	1	2	4	µg/l	A-T-025
Chromium (dissolved) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Lead (dissolved) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Mercury (dissolved) _A ^g	0.4	0.4	0.2	0.2	0.1	0.1	0.1	<0.1	µg/l	A-T-025
Nickel (dissolved) _A ^g	3	7	5	7	8	6	6	7	µg/l	A-T-025
Selenium (dissolved) _A ^g	2	4	2	1	1	2	2	2	µg/l	A-T-025
Zinc (dissolved) _A ^g	1	4	1	<1	1	4	<1	1	µg/l	A-T-025

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/1	10/01714/2	10/01714/3	10/01714/4	10/01714/5	10/01714/6	10/01714/7	10/01714/8	Units	Method ref
Client Sample No										
Client Sample ID	WS21	WS17b	WS16	WS24	WS28	WS26	WS29a	WS27		
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
Speciated TPH										
Alli >C5-C6 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Alli >C6-C8 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Alli >C8-C10 (w) _A ^g	<1	<1	6	7	<1	<1	<1	<1	µg/l	A-T-022w
Alli >C10-C12 (w) _A ^g	20	<5	63	<5	<5	<5	<5	<5	µg/l	A-T-022w
Alli >C12-C16 (w) _A ^g	168	<5	219	<5	<5	<5	<5	<5	µg/l	A-T-022w
Alli >C16-C21 (w) _A ^g	210	<5	351	<5	<5	<5	<5	<5	µg/l	A-T-022w
Alli >C21-C35 (w) _A ^g	49	<5	103	<5	<5	<5	<5	<5	µg/l	A-T-022w
Total Aliphatics (w) _A ^g	447	<5	741	7	<5	<5	<5	<5	µg/l	A-T-022+02w
Aro >C5-C7 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C7-C8 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C8-C9 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C9-C10 (w) _A ^g	<1	<1	6	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C10-C12 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Aro >C12-C16 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Aro >C16-C21 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Aro >C21-C35 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Total Aromatics (w) _A ^g	<5	<5	6	<5	<5	<5	<5	<5	µg/l	A-T-022+02w
TPH (Alli & Aro) (w) _A ^g	447	<5	747	7	<5	<5	<5	<5	µg/l	A-T-022+02w
BTEX - Benzene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - Ethyl Benzene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - Toluene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - m & p Xylene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - o Xylene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
MTBE (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/1	10/01714/2	10/01714/3	10/01714/4	10/01714/5	10/01714/6	10/01714/7	10/01714/8	Units	Method ref
Client Sample No										
Client Sample ID	WS21	WS17b	WS16	WS24	WS28	WS26	WS29a	WS27		
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10	20-May-10		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
PAH-16MS (w)										
Acenaphthene (w) _A ^g	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Acenaphthylene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Anthracene (w) _A ^g	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(a)anthracene (w) _A ^g	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(a)pyrene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(b)fluoranthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(ghi)perylene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(k)fluoranthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Chrysene (w) _A ^g	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Dibenzo(ah)anthracene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Fluoranthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Fluorene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Indeno(123-cd)pyrene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Naphthalene (w) _A ^g	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Phenanthrene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Pyrene (w) _A ^g	0.03	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Total PAH (w) _A ^g	0.04	<0.01	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/9	10/01714/10	10/01714/11	10/01714/12	10/01714/13	10/01714/14	10/01714/15	10/01714/16	Units	Method ref
Client Sample No										
Client Sample ID	WS25	BH09-12	BH10-05	BH10-03	WS10-01	WS19	WS18	WS20		
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10	20-May-10	20-May-10	20-May-10	21-May-10	21-May-10	20-May-10	20-May-10		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
pH (w) _A ^g	7.3	7.2	7.2	7.2	7.4	7.5	7.6	7.3		
Hardness _A ^g	209	337	511	323	288	321	301	315	mg/l Ca CO ₃	A-T-048
Total Dissolved Solids _A ^g	402	534	740	670	498	502	514	608	mg/l	A-T-035
Total Suspended Solids _A ^g	9730	102	1550	4150	416	5350	2700	643	mg/l	A-T-036
Ammoniacal nitrogen (w) _A ^g	<0.1	<0.1	1.4	0.3	<0.1	<0.1	0.4	<0.1	mg/l	A-T-032w
Cyanide (free) (w) _A ^g	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	A-T-042wPCN
Phenols - Total by HPLC (w) _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	A-T-050w
Arsenic (dissolved) _A ^g	<1	<1	<1	1	<1	<1	2	<1	µg/l	A-T-025
Boron (dissolved) _A ^g	131	172	221	158	157	148	133	187	µg/l	A-T-025
Cadmium (dissolved) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Copper (dissolved) _A ^g	3	3	2	3	1	<1	3	2	µg/l	A-T-025
Chromium (dissolved) _A ^g	<1	<1	<1	1	<1	<1	<1	<1	µg/l	A-T-025
Lead (dissolved) _A ^g	<1	1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Mercury (dissolved) _A ^g	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	µg/l	A-T-025
Nickel (dissolved) _A ^g	12	6	6	7	6	6	5	4	µg/l	A-T-025
Selenium (dissolved) _A ^g	<1	2	2	4	2	2	<1	3	µg/l	A-T-025
Zinc (dissolved) _A ^g	1	4	3	2	1	<1	3	<1	µg/l	A-T-025

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/9	10/01714/10	10/01714/11	10/01714/12	10/01714/13	10/01714/14	10/01714/15	10/01714/16	Units	Method ref
Client Sample No										
Client Sample ID	WS25	BH09-12	BH10-05	BH10-03	WS10-01	WS19	WS18	WS20		
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10	20-May-10	20-May-10	20-May-10	21-May-10	21-May-10	20-May-10	20-May-10		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
Speciated TPH										
Alli >C5-C6 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Alli >C6-C8 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Alli >C8-C10 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Alli >C10-C12 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Alli >C12-C16 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Alli >C16-C21 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Alli >C21-C35 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Total Aliphatics (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022+02w
Aro >C5-C7 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C7-C8 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C8-C9 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C9-C10 (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C10-C12 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Aro >C12-C16 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Aro >C16-C21 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Aro >C21-C35 (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022w
Total Aromatics (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022+02w
TPH (Alli & Aro) (w) _A ^g	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022+02w
BTEX - Benzene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - Ethyl Benzene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - Toluene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - m & p Xylene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - o Xylene (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
MTBE (w) _A ^g	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/9	10/01714/10	10/01714/11	10/01714/12	10/01714/13	10/01714/14	10/01714/15	10/01714/16	Units	Method ref
Client Sample No										
Client Sample ID	WS25	BH09-12	BH10-05	BH10-03	WS10-01	WS19	WS18	WS20		
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10	20-May-10	20-May-10	20-May-10	21-May-10	21-May-10	20-May-10	20-May-10		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
PAH-16MS (w)										
Acenaphthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Acenaphthylene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Anthracene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(a)anthracene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(a)pyrene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(b)fluoranthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(ghi)perylene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Benzo(k)fluoranthene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	µg/l	A-T-019w
Chrysene (w) _A ^g	0.02	<0.01	0.02	<0.01	<0.01	0.01	<0.01	<0.01	µg/l	A-T-019w
Dibenzo(ah)anthracene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Fluoranthene (w) _A ^g	0.02	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.01	µg/l	A-T-019w
Fluorene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Indeno(123-cd)pyrene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Naphthalene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Phenanthrene (w) _A ^g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	µg/l	A-T-019w
Pyrene (w) _A ^g	0.04	0.01	<0.01	0.03	<0.01	0.05	<0.01	<0.01	µg/l	A-T-019w
Total PAH (w) _A ^g	0.09	0.01	0.02	0.05	<0.01	0.11	<0.01	<0.01	µg/l	A-T-019w

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/17								Units	Method ref
Client Sample No										
Client Sample ID	WS23									
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10									
Sample Type	Water - W									
Sample Matrix Code										
pH (w) _A ^g	7.3								pH	A-T-021w
Hardness _A ^g	276								mg/l Ca CO ₃	A-T-049
Total Dissolved Solids _A ^g	519								mg/l	A-T-025
Total Suspended Solids _A ^g	89								mg/l	A-T-036
Ammoniacal nitrogen (w) _A ^g	<0.1								mg/l	A-T-032w
Cyanide (free) (w) _A ^g	<0.002								mg/l	A-T-042wFCN
Phenols - Total by HPLC (w) _A	<0.01								mg/l	A-T-050w
Arsenic (dissolved) _A ^g	<1								µg/l	A-T-025
Boron (dissolved) _A ^g	147								µg/l	A-T-025
Cadmium (dissolved) _A ^g	<1								µg/l	A-T-025
Copper (dissolved) _A ^g	2								µg/l	A-T-025
Chromium (dissolved) _A ^g	<1								µg/l	A-T-025
Lead (dissolved) _A ^g	<1								µg/l	A-T-025
Mercury (dissolved) _A ^g	<0.1								µg/l	A-T-025
Nickel (dissolved) _A ^g	4								µg/l	A-T-025
Selenium (dissolved) _A ^g	2								µg/l	A-T-025
Zinc (dissolved) _A ^g	<1								µg/l	A-T-025

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/17								Units	Method ref
Client Sample No										
Client Sample ID	WS23									
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10									
Sample Type	Water - W									
Sample Matrix Code										
Speciated TPH										
All >C5-C6 (w) _A ^g	<1								µg/l	A-T-022w
All >C6-C8 (w) _A ^g	<1								µg/l	A-T-022w
All >C8-C10 (w) _A ^g	<1								µg/l	A-T-022w
All >C10-C12 (w) _A ^g	<5								µg/l	A-T-022w
All >C12-C16 (w) _A ^g	<5								µg/l	A-T-022w
All >C16-C21 (w) _A ^g	<5								µg/l	A-T-022w
All >C21-C35 (w) _A ^g	<5								µg/l	A-T-022w
Total Aliphatics (w) _A ^g	<5								µg/l	A-T-022+02w
Aro >C5-C7 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C7-C8 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C8-C9 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C9-C10 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C10-C12 (w) _A ^g	<5								µg/l	A-T-022w
Aro >C12-C16 (w) _A ^g	<5								µg/l	A-T-022w
Aro >C16-C21 (w) _A ^g	<5								µg/l	A-T-022w
Aro >C21-C35 (w) _A ^g	<5								µg/l	A-T-022w
Total Aromatics (w) _A ^g	<5								µg/l	A-T-022+02w
TPH (All & Aro) (w) _A ^g	<5								µg/l	A-T-022+02w
BTEX - Benzene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - Ethyl Benzene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - Toluene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - m & p Xylene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - o Xylene (w) _A ^g	<1								µg/l	A-T-022w
MTBE (w) _A ^g	<1								µg/l	A-T-022w

Envirolab Job Number: 10/01714

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01714/17								Units	Method ref
Client Sample No										
Client Sample ID	WS23									
Depth to Top										
Depth To Bottom										
Date Sampled	20-May-10									
Sample Type	Water - W									
Sample Matrix Code										
PAH-16MS (w)										
Acenaphthene (w) _A ^g	<0.01								µg/l	A-T-019w
Acenaphthylene (w) _A ^g	<0.01								µg/l	A-T-019w
Anthracene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(a)anthracene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(a)pyrene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(b)fluoranthene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(ghi)perylene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(k)fluoranthene (w) _A ^g	<0.01								µg/l	A-T-019w
Chrysene (w) _A ^g	<0.01								µg/l	A-T-019w
Dibenzo(ah)anthracene (w) _A ^g	<0.01								µg/l	A-T-019w
Fluoranthene (w) _A ^g	<0.01								µg/l	A-T-019w
Fluorene (w) _A ^g	<0.01								µg/l	A-T-019w
Indeno(123-cd)pyrene (w) _A ^g	<0.01								µg/l	A-T-019w
Naphthalene (w) _A ^g	<0.01								µg/l	A-T-019w
Phenanthrene (w) _A ^g	<0.01								µg/l	A-T-019w
Pyrene (w) _A ^g	<0.01								µg/l	A-T-019w
Total PAH (w) _A ^g	<0.01								µg/l	A-T-019w

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01723
Issue Number: 1

Date: 09 June, 2010

Client: Buro Happold (Bath)
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: 023971200605
Date Samples Received: 25/05/10
Date Instructions Received: 25/05/10
Date Analysis Completed: 09/06/10

Prepared by:



Gill Scott
Laboratory Manager

Approved by:



John Gustafson
Director

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.



Envirolab Job Number: 10/01723

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01723/3	10/01723/7	10/01723/12						Units	Method ref
Client Sample No										
Client Sample ID	WS16	WS29a	BH10-02							
Depth to Top	2.10	0.70	1.70							
Depth To Bottom	2.30									
Date Sampled	18-May-10	19-May-10	20-May-10							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	7	5A	7							
% Moisture _A [®]	6.0	12.2	3.9						% w/w	A-T-044
% Stones >10mm _A [®]	<0.1	18.5	<0.1						% w/w	A-T-044
Asbestos Screen _A	No ACM	No ACM	No ACM							Visual
pH _D ^{MS}	8.3	8.4	8.5						pH	A-T-031a
Cyanide (total) _A ^{MS}	<1	<1	<1						mg/kg	A-T-042/TCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2						mg/kg	A-T-088a
Sulphide _A [®]	<15	<15	<15						mg/kg	A-T-032-a
Total Organic Carbon _D ^{MS}	0.16	1.86	<0.03						% w/w	A-T-033a
Arsenic _D ^{MS}	2	13	8						mg/kg	A-T-024
Cadmium _D ^{MS}	<0.5	<0.5	<0.5						mg/kg	A-T-024
Copper _D ^{MS}	7	72	6						mg/kg	A-T-024
Chromium _D ^{MS}	14	28	17						mg/kg	A-T-024
Lead _D ^{MS}	14	261	12						mg/kg	A-T-024
Mercury _D	<0.17	0.68	<0.17						mg/kg	A-T-024
Nickel _D ^{MS}	9	21	14						mg/kg	A-T-024
Selenium _D ^{MS}	<1	<1	<1						mg/kg	A-T-024
Zinc _D ^{MS}	32	214	18						mg/kg	A-T-024

Envirolab Job Number: 10/01723

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01723/3	10/01723/7	10/01723/12							
Client Sample No										
Client Sample ID	WS16	WS29a	BH10-02							
Depth to Top	2.10	0.70	1.70							
Depth To Bottom	2.30									
Date Sampled	18-May-10	19-May-10	20-May-10							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	7	5A	7							
Speciated TPH										
All >C5-C6 _A [®]	<0.01	-	-						mg/kg	A-T-022a
All >C6-C8 _A [®]	<0.01	-	-						mg/kg	A-T-022a
All >C8-C10 _A [®]	<0.01	-	-						mg/kg	A-T-022a
All >C10-C12 _A [®]	0.4	-	-						mg/kg	A-T-022a
All >C12-C16 _A [®]	25.2	-	-						mg/kg	A-T-022a
All >C16-C21 _A [®]	53.5	-	-						mg/kg	A-T-022a
All >C21-C35 _A [®]	18.4	-	-						mg/kg	A-T-022a
Total Aliphatics _A [®]	97.6	-	-						mg/kg	A-T-022+22a
Aro >C5-C7 _A [®]	<0.01	-	-						mg/kg	A-T-022a
Aro >C7-C8 _A [®]	<0.01	-	-						mg/kg	A-T-022a
Aro >C8-C9 _A [®]	<0.01	-	-						mg/kg	A-T-022a
Aro >C9-C10 _A [®]	<0.01	-	-						mg/kg	A-T-022a
Aro >C10-C12 _A [®]	<0.1	-	-						mg/kg	A-T-022a
Aro >C12-C16 _A [®]	11.3	-	-						mg/kg	A-T-022a
Aro >C16-C21 _A [®]	37.8	-	-						mg/kg	A-T-022a
Aro >C21-C35 _A [®]	15.7	-	-						mg/kg	A-T-022a
Total Aromatics _A [®]	64.8	-	-						mg/kg	A-T-022+22a
TPH (All & Aro) _A [®]	162	-	-						mg/kg	A-T-022+22a
BTEX - Benzene _A [®]	<0.01	-	-						mg/kg	A-T-022a
BTEX - Toluene _A [®]	<0.01	-	-						mg/kg	A-T-022a
BTEX - Ethyl Benzene _A [®]	<0.01	-	-						mg/kg	A-T-022a
BTEX - m & p Xylene _A [®]	<0.01	-	-						mg/kg	A-T-022a
BTEX - o Xylene _A [®]	<0.01	-	-						mg/kg	A-T-022a
MTBE _A [®]	<0.01	-	-						mg/kg	A-T-022a

Envirolab Job Number: 10/01723

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01723/3	10/01723/7	10/01723/12						Units	Method ref
Client Sample No										
Client Sample ID	WS16	WS29a	BH10-02							
Depth to Top	2.10	0.70	1.70							
Depth To Bottom	2.30									
Date Sampled	18-May-10	19-May-10	20-May-10							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	7	5A	7							
PAH 16										
Acenaphthene ^{MS}	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Acenaphthylene [*]	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Anthracene ^{MS}	<0.01	0.03	0.08						mg/kg	A-T-015a
Benzo(a)anthracene [*]	<0.01	<0.01	0.12						mg/kg	A-T-015a
Benzo(a)pyrene ^{MS}	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Benzo(b)fluoranthene ^{MS}	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Benzo(ghi)perylene ^{MS}	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Benzo(k)fluoranthene ^{MS}	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Chrysene ^{MS}	<0.01	<0.01	0.59						mg/kg	A-T-015a
Dibenzo(ah)anthracene [*]	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Fluoranthene ^{MS}	<0.01	0.02	0.27						mg/kg	A-T-015a
Fluorene ^{MS}	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Indeno(123-cd)pyrene [*]	<0.01	<0.01	<0.01						mg/kg	A-T-015a
Napthalene ^{MS}	<0.01	<0.01	0.04						mg/kg	A-T-015a
Phenanthrene ^{MS}	0.09	0.04	0.26						mg/kg	A-T-015a
Pyrene ^{MS}	0.05	<0.01	0.23						mg/kg	A-T-015a
Total PAH [*]	0.14	0.09	1.60						mg/kg	A-T-015a

Date: 09 June 2010
Your Ref: 23971
Our Ref: 10-01724-1 wac
Project Manager: Sarah Bear
Report to: Sarah Bear

Envirolab
Units 7 & 8
Sandpits Business Park
Mottram Road
Hyde
Cheshire
SK14 3AR

Final Test Report

Sample(s) of Soil from Northumberland Park
Received from Buro Happold
Camden Mill, Lower Bristol Road, Bath BA2 3DQ

Date of receipt: 25 May 2010
Date analysis commenced: 25 May 2010
Date analysis completed: 09 June 2010

Method Statement

Analysis is performed in accordance with documented procedures.

Samples with matrix code 7 are not predominantly sand/loam/clay and are not covered by our MCERTS accreditation.

Prepared by:

A handwritten signature in blue ink, appearing to read "M Marshall".

Melanie Marshall
Laboratory Co-ordinator

Approved by:

A handwritten signature in blue ink, appearing to read "John Gustafson".

John Gustafson
Director



Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
Tests marked "" in this report are not included in the UKAS Accreditation Schedule for Envirolab.
Analytical results reflect the quality of the sample at the time of analysis only.



Sample Details						Landfill Waste Acceptance Criteria Limits			
Envirolab Ref.	ISO17025	MCERTS	10/01724/1						
Location			WS29a			Inert Waste Landfill	Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill	Hazardous Waste Landfill	
Depth (m)			0.70						
Sample Ref.			-						
Sample Type			-						
Sample Matrix Code			5a						
Solid Waste Analysis									
pH (pH Units)	Y	Y	-			-	>6	-	
ANC to pH 4 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg)	N	N	-			-	to be evaluated	to be evaluated	
Loss on Ignition (%)	Y	Y	-			-	-	10	
Total Organic Carbon (%)	Y	Y	2.75			3	5	6	
PAH Sum of 17 (mg/kg)	N	N	2.49			100	-	-	
Mineral Oil (mg/kg)	Y	N	<0.10			500	-	-	
Sum of 7 PCBs (mg/kg)	N	N	<0.01			1	-	-	
Sum of BTEX (mg/kg)	Y	N	<0.01			6	-	-	
Eluate Analysis			2:1	8:1	2:1	Cumulative 10:1	Limit values for compliance leaching test using 12457-3 at L/S 10 l/kg (mg/kg)		
			mg/l		mg/kg		BS EN		
Arsenic	N	N	0.0133	0.0146	0.0295	0.1484	0.5	2	25
Barium	N	N	0.0215	0.0150	0.0479	0.1588	20	100	300
Cadmium	N	N	<0.001	<0.001	<0.002	<0.01	0.04	1	5
Chromium	N	N	0.0020	0.0044	0.0045	0.0433	0.5	10	70
Copper	N	N	0.0255	0.0249	0.0569	0.2548	2	50	100
Mercury	N	N	<0.0001	0.0001	<0.0002	<0.001	0.01	0.2	2
Molybdenum	N	N	0.0247	0.0079	0.0551	0.0950	0.5	10	30
Nickel	N	N	0.0039	0.0023	0.0087	0.0253	0.4	10	40
Lead	N	N	0.0023	0.0189	0.0051	0.1797	0.5	10	50
Antimony	N	N	0.0684	0.0383	0.1523	0.4162	0.06	0.7	5
Selenium	N	N	0.0037	0.0017	0.0081	0.0193	0.1	0.5	7
Zinc	N	N	0.0601	0.0119	0.1337	0.1612	4	50	200
Chloride	N	N	7	3	16	31	800	15000	25000
Fluoride	N	N	0.3	0.3	0.6	2.8	10	150	500
Sulphate as SO ₄	N	N	123	28	274	364	1000	20000	50000
Total Dissolved Solids	N	N	203	70	452	825	4000	60000	100000
Phenol Index	N	N	<0.01	<0.01	<0.02	<0.1	1	-	-
Dissolved Organic Carbon	N	N	<20	<20	<40	<200	500	800	1000
Leach Test Information									
pH (pH Units)	N	N	8.0	8.1					
Conductivity (µS/cm)	N	N	410	141					
Mass Sample (kg)	N	N	0.200						
Dry Matter (%)	N	N	85.2						
Stage 1									
Volume Leachant, L ₂ (l)	N	N	350						
Filtered Eluate Volume, VE ₁ (l)	N	N	140						
Stage 2									
Volume Leachant, L ₈ (l)	N	N	1365						
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation									

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 10/01731
Issue Number: 1
Date: 08 June, 2010

Client: Buro Happold (Bath)
Camden Mill
Lower Bristol Road
Bath
UK
BA2 3DQ

Project Manager: Sarah Bear
Project Name: Northumberland Park
Project Ref: 023971
Order No: 23971200605
Date Samples Received: 26/05/10
Date Instructions Received: 26/05/10
Date Analysis Completed: 08/06/10

Prepared by:



Melanie Marshall
Laboratory Coordinator

Approved by:



Iain Haslock
Analytical Consultant

Notes - Soil samples for chemical analysis

All results are reported as dry weight (<40°C).

Stones >10mm are removed from the sample prior to analysis and results corrected where appropriate.

Subscript A indicates analysis performed on the sample as received, D indicates analysis performed on dried & crushed sample.

Superscript M indicates method accredited to MCERTS.

Predominant Matrix Codes - 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

Secondary Matrix Codes - A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Notes - General

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

Envirolab Job Number: 10/01731

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01731/1								Units	Method ref
Client Sample No										
Client Sample ID	BH10-02									
Depth to Top										
Depth To Bottom										
Date Sampled	24-May-10									
Sample Type	Water - W									
Sample Matrix Code										
pH (w) _A ^g	7.2								pH	A-T-021w
Hardness _A ^g	258								mg/l Ca CO ₃	A-T-048
Total Dissolved Solids _A ^g	304								mg/l	A-T-025
Total Suspended Solids _A ^g	1780								mg/l	A-T-036
Ammoniacal nitrogen (w) _A ^g	1.3								mg/l	A-T-032w
Cyanide (free) (w) _A ^g	<0.002								mg/l	A-T-042wFCN
Phenols - Total by HPLC (w) _A	<0.01								mg/l	A-T-050w
Arsenic (dissolved) _A ^g	1								µg/l	A-T-025
Boron (dissolved) _A ^g	158								µg/l	A-T-025
Cadmium (dissolved) _A ^g	<1								µg/l	A-T-025
Copper (dissolved) _A ^g	3								µg/l	A-T-025
Chromium (dissolved) _A ^g	<1								µg/l	A-T-025
Lead (dissolved) _A ^g	<1								µg/l	A-T-025
Mercury (dissolved) _A ^g	<0.1								µg/l	A-T-025
Nickel (dissolved) _A ^g	9								µg/l	A-T-025
Selenium (dissolved) _A ^g	4								µg/l	A-T-025
Zinc (dissolved) _A ^g	3								µg/l	A-T-025

Envirolab Job Number: 10/01731

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01731/1									
Client Sample No										
Client Sample ID	BH10-02									
Depth to Top										
Depth To Bottom										
Date Sampled	24-May-10									
Sample Type	Water - W									
Sample Matrix Code										
Speciated TPH										
All >C5-C6 (w) _A ^g	<1								µg/l	A-T-022w
All >C6-C8 (w) _A ^g	<1								µg/l	A-T-022w
All >C8-C10 (w) _A ^g	<1								µg/l	A-T-022w
All >C10-C12 (w) _A ^g	<5								µg/l	A-T-022w
All >C12-C16 (w) _A ^g	<5								µg/l	A-T-022w
All >C16-C21 (w) _A ^g	<5								µg/l	A-T-022w
All >C21-C35 (w) _A ^g	14								µg/l	A-T-022w
Total Aliphatics (w) _A ^g	14								µg/l	A-T-022+02w
Aro >C5-C7 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C7-C8 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C8-C9 (w) _A ^g	5								µg/l	A-T-022w
Aro >C9-C10 (w) _A ^g	<1								µg/l	A-T-022w
Aro >C10-C12 (w) _A ^g	<5								µg/l	A-T-022w
Aro >C12-C16 (w) _A ^g	<5								µg/l	A-T-022w
Aro >C16-C21 (w) _A ^g	<5								µg/l	A-T-022w
Aro >C21-C35 (w) _A ^g	<5								µg/l	A-T-022w
Total Aromatics (w) _A ^g	<5								µg/l	A-T-022+02w
TPH (All & Aro) (w) _A ^g	18								µg/l	A-T-022+02w
BTEX - Benzene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - Ethyl Benzene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - Toluene (w) _A ^g	<1								µg/l	A-T-022w
BTEX - m & p Xylene (w) _A ^g	2								µg/l	A-T-022w
BTEX - o Xylene (w) _A ^g	<1								µg/l	A-T-022w
MTBE (w) _A ^g	<1								µg/l	A-T-022w

Envirolab Job Number: 10/01731

Client Project Name: Northumberland Park

Client Project Ref: 023971

Lab Sample ID	10/01731/1								Units	Method ref
Client Sample No										
Client Sample ID	BH10-02									
Depth to Top										
Depth To Bottom										
Date Sampled	24-May-10									
Sample Type	Water - W									
Sample Matrix Code										
PAH-16MS (w)										
Acenaphthene (w) _A ^g	<0.01								µg/l	A-T-019w
Acenaphthylene (w) _A ^g	<0.01								µg/l	A-T-019w
Anthracene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(a)anthracene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(a)pyrene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(b)fluoranthene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(ghi)perylene (w) _A ^g	<0.01								µg/l	A-T-019w
Benzo(k)fluoranthene (w) _A ^g	<0.01								µg/l	A-T-019w
Chrysene (w) _A ^g	<0.01								µg/l	A-T-019w
Dibenzo(ah)anthracene (w) _A ^g	<0.01								µg/l	A-T-019w
Fluoranthene (w) _A ^g	<0.01								µg/l	A-T-019w
Fluorene (w) _A ^g	<0.01								µg/l	A-T-019w
Indeno(123-cd)pyrene (w) _A ^g	<0.01								µg/l	A-T-019w
Naphthalene (w) _A ^g	<0.01								µg/l	A-T-019w
Phenanthrene (w) _A ^g	<0.01								µg/l	A-T-019w
Pyrene (w) _A ^g	0.03								µg/l	A-T-019w
Total PAH (w) _A ^g	0.03								µg/l	A-T-019w

Appendix C – Groundwater Monitoring Field Sheets

Groundwater Sampling Sheet

Project Name	Northumberland Park	Project No	023971
Sample Location	W21 WS21	Sampler	S Bear
Date	20.5.10	Time	5.37pm

Sampling Method	dedicated water-a	Duplicate Collected (if applicable)	none
Type and calibration date of equipment for insitu measurements			

	Field Measurements	
	pre-purge	post-purge
pH	/	
Conductivity (uS/cm-1)	/	
Temperature	/	
DO	/	
Odour	slight HC	None
Redox	/	
Turbidity	cloudy	
TDS (ppm)	/	
Colour	clear	
Depth to LNAPL*	ND	
Depth to DNAPL*	ND	
Depth to Water *	2.670	
Depth of Well	6.0m	
Datum (mAOD)	mbgl	
Weather	Sunny	

Purging Measurements			
Start Time:		End Time:	
Vol (l)	Temp (°C)	pH	EC (uS/cm ⁻¹)
Pumped approx 3 well volumes (150L)			
then sampled			
		S Bear	

Calculation of water to be purged prior to sampling		
For standard situations		Well Volume
Diameter of standpipe = 50mm; diameter of borehole = 150mm; porosity of gravel pack ~0.25	17.7L per meter water column**	3.33
Diameter of standpipe = 50mm; diameter of borehole = 200mm; porosity of gravel pack ~0.25	28.0L per meter water column**	59L
Universal calculation		
Diameter of standpipe (d _s) in cm; diameter of borehole (d _b) in cm; porosity of gravel pack (n) - (dimensionless)	$0.236 \times \left[d^2 + \left(\frac{d_s^2}{d_b^2} - d_b^2 \right) \times n \right]$ per meter water column*	

Comments and observations
Condition on monitoring installation
Ground conditions (ie flooded; frosty; frozen etc)
water purged clear, slight HC odour in water purged at beginning, with slight sheen. No odour at end of purging

* = to be measured from the survey point i.e top of casing or ground level
 ** = water column = well depth bgl. - water depth bgl.
 ppm = parts per million
 TDS = total dissolved solids
 samples contained some sediment though.

Groundwater Sampling Sheet

Project Name	Northumberland Park	Project No	023971
Sample Location	WS23	Sampler	S Beav
Date	21.5.10	Time	10:20am

Sampling Method	Dedicated Waterwa	Duplicate Collected (if applicable)	none
Type and calibration date of equipment for insitu measurements			

	Field Measurements	
	pre-purge	post-purge
pH	7.5	7.5
Conductivity ($\mu\text{S/cm}$ -1)	150	150
Temperature	22	22
DO	8.5	8.5
Odour	none	none
Redox	150	150
Turbidity	clear	clear
TDS (ppm)	150	150
Colour	clear	clear
Depth to LNAPL *	ND	ND
Depth to DNAPL *	ND	ND
Depth to Water *	2.695	2.695
Depth of Well	5.57	5.57
Datum (mAOD)	mbgl	mbgl
Weather	Fine	Fine

[illegible]

Calculation of water to be purged prior to sampling

For standard situations		Well Volume
Diameter of standpipe = 50mm; diameter of borehole = 150mm; porosity of gravel pack ~0.25	17.7L per meter water column**	2.875 51L
Diameter of standpipe = 50mm; diameter of borehole = 200mm; porosity of gravel pack ~0.25	28.0L per meter water column**	
Universal calculation		
Diameter of standpipe (d_s) in cm; diameter of borehole (d_b) in cm; porosity of gravel pack (n) - (dimensionless)	$0.236 \times \left[d^2 + (d_s^2 - d_b^2) \times n \right]$ per meter water column*	

Comments and observations

Condition on monitoring installation *Good*

Ground conditions (ie flooded; frosty; frozen etc)

*Water purged clear, no sediment in sample
no odour or visible sheen on surface.*

* = to be measured from the survey point i.e top of casing or ground level

** = water column = well depth bgl. - water depth bgl.

ppm = parts per million

TDS = total dissolved solids

Groundwater Sampling Sheet

Project Name	Northumberland Park	Project No	023971
Sample Location	WS24	Sampler	S. Bror
Date	20.5.10	Time	1.48pm

Sampling Method	Dedicated waterways	Duplicate Collected (if applicable)	none
Type and calibration date of equipment for insitu measurements			

	Field Measurements	
	pre-purge	post-purge
pH	—	
Conductivity (μScm^{-1})	—	
Temperature	—	
DO	—	
Odour	none	
Redox	—	
Turbidity	cloudy	
TDS (ppm)	—	
Colour	low or n	
Depth to LNAPL*	ND	
Depth to DNAPL*	ND	
Depth to Water *	2.78	
Depth of Well	5.33m	
Datum (mAOD)	891	
Weather	overcast	

[illegible]

Calculation of water to be purged prior to sampling		
For standard situations		Well Volume
Diameter of standpipe = 50mm; diameter of borehole = 150mm; porosity of gravel pack ~0.25	17.7L per meter water column**	2.55
Diameter of standpipe = 50mm; diameter of borehole = 200mm; porosity of gravel pack ~0.25	28.0L per meter water column**	45L
Universal calculation		
Diameter of standpipe (d_s) in cm; diameter of borehole (d_b) in cm; porosity of gravel pack (n) - (dimensionless)	$0.236 \times \left[d^2 + (d_b^2 - d_s^2) \times n \right]$ per meter water column*	

	Comments and observations
--	---------------------------

Condition on monitoring installation

Ground conditions (ie flooded, frosty, frozen etc)

high sediment content in sample

* = to be measured from the survey point i.e top of casing or ground level

** = water column = well depth bgl. - water depth bgl.

ppm = parts per million

TDS = total dissolved solids

Groundwater Sampling Sheet

Project Name	Northumberland Park	Project No	023971
Sample Location	WS26	Sampler	Christine Kennelly
Date	20.5.10	Time	10.30

Sampling Method	Dedicated Waterra	Duplicate Collected (if applicable)	none
Type and calibration date of equipment for insitu measurements			

	Field Measurements	
	pre-purge	post-purge
pH	—	
Conductivity (μScm^{-1})	—	
Temperature	—	
DO	—	
Odour	none	
Redox	—	
Turbidity	—	
TDS (ppm)	—	
Colour	brown	
Depth to LNAPL*	ND	
Depth to DNAPL*	ND	
Depth to Water *	2.735	
Depth of Well	4.95	
Datum (mAOD)	mbg1	
Weather	micro Cloudy.	

[illegible]

Calculation of water to be purged prior to sampling

For standard situations		Well Volume
Diameter of standpipe = 50mm; diameter of borehole = 150mm; porosity of gravel pack ~0.25	17.7L per meter water column**	39L (120C)
Diameter of standpipe = 50mm; diameter of borehole = 200mm; porosity of gravel pack ~0.25	28.0L per meter water column**	
Universal calculation		
Diameter of standpipe (d_s) in cm; diameter of borehole (d_b) in cm; porosity of gravel pack (n) - (dimensionless)	$0.236 \times \left[d^2 + (d_s^2 - d_b^2) \times n \right]$ per meter water column*	

	Comments and observations
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Condition on monitoring installation	
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Ground conditions (ie flooded; frosty; frozen etc)

* = to be measured from the survey point i.e top of casing or ground level

** = water column = well depth bgl. - water depth bgl.

ppm = parts per million

TDS = total dissolved solids

Groundwater Sampling Sheet

Project Name	Northumberland Park	Project No	023971
Sample Location	WS27	Sampler	Christine Kennedy
Date	20.5.10	Time	15.45

Sampling Method	Dedicated Water	Duplicate Collected (if applicable)	none
Type and calibration date of equipment for insitu measurements			

	Field Measurements	
	pre-purge	post-purge
pH	—	
Conductivity (uS/cm-1)	—	
Temperature	—	
DO	—	
Odour	none	
Redox	—	
Turbidity	silty	
TDS (ppm)	—	
Colour	Brown	
Depth to LNAPL*	ND	
Depth to DNAPL*	ND	
Depth to Water *	1.95M	
Depth of Well	4.37M	
Datum (mAOD)	mbgl	
Weather	cloudy	

Purging Measurements			
Start Time:		End Time:	
Vol (l)	Temp (°C)	pH	EC (uS/cm ⁻¹)
Purged ~2 well volume.			
(80L) then sampled.			
Christine Kennedy			

Calculation of water to be purged prior to sampling

For standard situations		Well Volume
Diameter of standpipe = 50mm; diameter of borehole = 150mm; porosity of gravel pack ~0.25	17.7L per meter water column**	43L (130L)
Diameter of standpipe = 50mm; diameter of borehole = 200mm; porosity of gravel pack ~0.25	28.0L per meter water column**	
Universal calculation		
Diameter of standpipe (d _s) in cm; diameter of borehole (d _b) in cm; porosity of gravel pack (n) - (dimensionless)	$0.236 \times \left[d^2 + \left(\frac{d_s^2}{d_b^2} - d_s^2 \right) \times n \right]$ per meter water column*	

Comments and observations

Condition on monitoring installation

Ground conditions (ie flooded; frosty; frozen etc)

* = to be measured from the survey point i.e top of casing or ground level

** = water column = well depth bgl. - water depth bgl.

ppm = parts per million

TDS = total dissolved solids

Groundwater Sampling Sheet

Project Name	Northumberland Park	Project No	023971
Sample Location	WS28 Development	Sampler	Megan Parker Seal
Date	20.5.10	Time	3.25 -
dedicated			
Sampling Method	Watera	Duplicate Collected (if applicable)	No
Type and calibration date of equipment for insitu measurements	NA		

	Field Measurements	
	pre-purge	post-purge
pH	—	
Conductivity (μScm^{-1})	—	
Temperature	—	
DO	—	
Odour	none	
Redox	—	
Turbidity	silty	
TDS (ppm)	—	
Colour	light brown	
Depth to LNAPL*	NA	
Depth to DNAPL*	NA	
Depth to Water *	1.99m	
Depth of Well	4.73m	
Datum (mAOD)	mbgl	
Weather	overcast	

[illegible]

Calculation of water to be purged prior to sampling	
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For standard situations		Well Volume
Diameter of standpipe = 50mm; diameter of borehole = 150mm; porosity of gravel pack ~0.25	17.7L per meter water column**	2.74
Diameter of standpipe = 50mm; diameter of borehole = 200mm; porosity of gravel pack ~0.25	28.0L per meter water column**	4.9L
Universal calculation		
Diameter of standpipe (d_s) in cm; diameter of borehole (d_b) in cm; porosity of gravel pack (n) - (dimensionless)	$0.236 \times \left[d_b^2 + (d_s^2 - d_b^2) \times n \right]$ per meter water column*	

Comments and observations	
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Condition on monitoring installation

Inside stadium - good quality concrete

Ground conditions (ie flooded; frosty; frozen etc)

Ground conditions (ie flooded; frosty; frozen etc)

* = to be measured from the survey point; i.e. top of casing or ground level

** = water column = well depth bgl. - water depth bgl.

ppm = parts per million

TDS = total dissolved solids

Appendix D – Ground Gas Monitoring Field Sheets

Index to symbols used in 202324-1

Value	Description
AR	As Received
N	Analysis is not UKAS accredited



SAL Reference: 202224					
Customer Reference: 14621 E					
Gas Bag Analysed as Gas Bag					
Volatile Organic Compounds (USEPA 824)					
SAL Reference				202224-001	
Customer Sample Reference				1652435 1643061-WS22-	
Test Sample				A-H	
Determinand	Method	LCD	Units	Symbol	
1,1,1,2-Tetrachloroethane	GC/MS	10	mg/m ³	N	<10
1,1,1-Trichloroethane	GC/MS	10	mg/m ³	N	<10
1,1,2,2-Tetrachloroethane	GC/MS	10	mg/m ³	N	<10
1,1,2-Trichloroethane	GC/MS	10	mg/m ³	N	<10
1,1,2-Trichloroethylene	GC/MS	10	mg/m ³	N	<10
1,1-Dichloroethane	GC/MS	10	mg/m ³	N	<10
1,1-Dichloroethylene	GC/MS	10	mg/m ³	N	<10
1,1-Dichloropropene	GC/MS	10	mg/m ³	N	<10
1,2,3-Trichloropropane	GC/MS	10	mg/m ³	N	<10
1,2,4-Trichlorobenzene	GC/MS	10	mg/m ³	N	<10
1,2-dibromothane	GC/MS	10	mg/m ³	N	<10
1,2-Dichlorobenzene	GC/MS	10	mg/m ³	N	<10
1,2-Dichloroethane	GC/MS	10	mg/m ³	N	<10
1,2-Dichloropropane	GC/MS	10	mg/m ³	N	<10
1,3,5-Trichlorobenzene	GC/MS	10	mg/m ³	N	<10
1,3-Dichloropropane	GC/MS	10	mg/m ³	N	<10
1,4-Dichlorobenzene	GC/MS	10	mg/m ³	N	<10
2,2-Dichloropropane	GC/MS	10	mg/m ³	N	<10
2-Chlorotoluene	GC/MS	10	mg/m ³	N	<10
4-Chlorotoluene	GC/MS	10	mg/m ³	N	<10
Benzene	GC/MS	10	mg/m ³	N	<10
Bromobenzene	GC/MS	10	mg/m ³	N	<10
Bromochloromethane	GC/MS	10	mg/m ³	N	<10
Bromodichloromethane	GC/MS	10	mg/m ³	N	<10
Bromoform	GC/MS	10	mg/m ³	N	<10
Bromomethane	GC/MS	10	mg/m ³	N	<10
Carbon tetrachloride	GC/MS	10	mg/m ³	N	<10
Chlorobenzene	GC/MS	10	mg/m ³	N	<10
Chlorodibromomethane	GC/MS	10	mg/m ³	N	<10
Chloroethane	GC/MS	10	mg/m ³	N	<10
Chloroform	GC/MS	10	mg/m ³	N	<10
Chloromethane	GC/MS	10	mg/m ³	N	<10
Cis-1,2-Dichloroethylene	GC/MS	10	mg/m ³	N	<10
Cis-1,3-Dichloropropene	GC/MS	10	mg/m ³	N	<10
Dibromomethane	GC/MS	10	mg/m ³	N	<10
Dichloromethane	GC/MS	10	mg/m ³	N	<10
Ethylbenzene	GC/MS	10	mg/m ³	N	<10
Meth-Para-Xylene	GC/MS	10	mg/m ³	N	<10
Ortho-Xylene	GC/MS	10	mg/m ³	N	<10
Styrene	GC/MS	10	mg/m ³	N	<10
Tetrafluoroethylene	GC/MS	10	mg/m ³	N	<10
Toluene	GC/MS	10	mg/m ³	N	<10
Trans-1,2-Dichloroethylene	GC/MS	10	mg/m ³	N	<10
Trichlorofluoromethane	GC/MS	10	mg/m ³	N	<10
Vinyl chloride monomer	GC/MS	10	mg/m ³	N	<10

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following:
NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP – No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. Results relate only to the items tested
13. Surrogate recoveries – Most of our organic methods include surrogates, the recovery of which is monitored and reported.
For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 – 130 %.
14. Product analyses – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 – C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

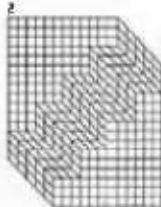
Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type

Common Name

Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-



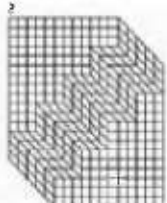
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: WS16
 DATE/TIME: 20/5/2010 8:52am
 WEATHER: overcast
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m)bgf: 2.98m
 STANDPIPE DEPTH (m)bgf: 4.90m
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.2	4	0.4	18.3	0	10	1029	-	0
1	0.2	003%	0.4	18.3	0	10	1029	-	0
2	0.2	3	0.4	18.3	0	11	1029	-	0
3	0.2	3	0.4	18.2	0	11	1029	-	0
4	0.2	4	0.5	18.0	0	11	1029	-	
5	0.2	4	0.5	18.0	0	11	1029	-	
6									
7									
8									
9									
10									

COMMENTS: Flow reading taken after concentrations



Buro Happold

GAS MONITORING DATA

JOB NUMBER:
 SITE: *Tottenham Hotspur FC*
 BOREHOLE IDENTITY: *WS16b*
 DATE/TIME: *20/05/2010*
 WEATHER: *Overcast but warm*
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m) bgl:
 STANDPIPE DEPTH (m) bgl:
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	19.9	0	0	1029	0	0
1	0.2	3	0.3	18.9	0	5ppm		0	
2	0.2	3	0.4	18.7	0	6ppm		0	
3	0.2	3	0.4	18.7	0	6ppm		0	
4	0.2	3	0.4	18.7	0	6ppm		0	
5									
6									
7									
8									
9									
10									

COMMENTS:



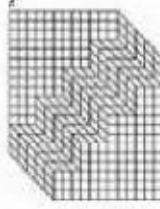
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: WS17b
 DATE/TIME: 20.5.10 11am
 WEATHER: overcast
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m) bgl: 2.915 m
 STANDPIPE DEPTH (m) bgl: 6.0 m
 RISING/FALLING PRESSURE :

Time (min)	Methane (%w/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%w/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.1	0	0	1028	—	0
1	0	0	0.1	19.5	0	3	1028	—	0
2	0	0	0.1	19.5	0	3	1028	—	0
3	0	0	0.1	19.5	0	3	1028	—	0
4	0.1	1	0.1	19.5	0	2	1028	—	
5	0.1	1	0.1	19.5	0	2	1028	—	
6									
7									
8									
9									
10									

COMMENTS: Flow rate taken after concentrations



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland Park Development
BOREHOLE IDENTITY: WS17(c)
DATE/TIME: 11.14 am 20.5.10
WEATHER: Overcast
AMBIENT TEMP(°C):
DEPTH TO WATER (m) bgl: Dry
STANDPIPE DEPTH (m) bgl: 2.5m
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.1	0	0	1028	—	0.1
1	0	0	0.1	19.7	0	1	1028	—	0.1
2	0	0	0.1	19.7	0	1	1028	—	0.2
3	0	0	0.1	19.7	0	0	1028	—	0.2
4	0	0	0.1	19.7	0	0	1028	—	0.2
5									
6									
7									
8									
9									
10									

COMMENTS: Flow readings taken following concentrations



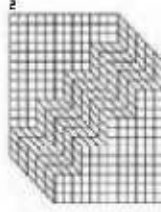
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland park development
BOREHOLE IDENTITY: WS18
DATE/TIME: 21.5.10 11.08am
WEATHER: Fine
AMBIENT TEMP(°C):
DEPTH TO WATER (m)bgf: 2.30m
STANDPIPE DEPTH (m)bgf: 4.45m
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.1	0	0	1029	—	-1.9 (1st)
1	0.1	1	0.3	16.8	0	1	1029	—	-1.3 (2nd)
2	0.1	1	0.2	17.5	0	1	1029	—	
3	0.1	1	0.2	17.8	0	1	1029	—	
4	0.1	1	0.2	18.0	0	1	1029	—	
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

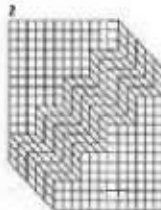
JOB NUMBER: 02397H
 SITE: Northumberland Park development
 BOREHOLE IDENTITY: W519
 DATE/TIME: 20/05/2010
 WEATHER: Warm rain and sunny
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m) bgl: 2.44m
 STANDPIPE DEPTH (m) bgl: 4.50m

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	1	0	19.5	0	0	1028	0	0
1	0.1	2	0	19.2	0	2ppm		0	
2	0.1	2	0	19.2	0	2ppm		0	
3	0.1	2	0	19.2	0	2ppm		0	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:

2nd on gravel



Buro Happold

GAS MONITORING DATA

JOB NUMBER:

SITE: *Northumberland Park development*

BOREHOLE IDENTITY:

WS20

DATE/TIME:

20/05/2010

WEATHER:

Overcast and warm

AMBIENT TEMP(°C):

3.30m

DEPTH TO WATER (m) bgl:

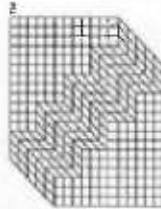
STANDPIPE DEPTH (m) bgl:

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	19.2	0	0	1028	0	0
1	0	0	0.3	18.5	0	24ppm		0	
2	0	0	0.3	18.4	0	25ppm		0	
3	0	0	0.3	18.4	0	26ppm		0	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:

3rd (near 2nd)



Buro Happold

GAS MONITORING DATA

JOB NUMBER:

SITE: Northumberland park development

BOREHOLE IDENTITY: W520a

DATE/TIME:

WEATHER: Overcast and warm

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: dry

STANDPIPE DEPTH (m) bgl: 2.55m

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	19.5	0	0	1028	0	0
1	0	0	0	19.5	0	1ppm		0	
2	0	0	0	19.6	0	1ppm		0	
3	0.1	0	0	19.6	0	1ppm		0	
4	0	0	0	19.6	0	1ppm		0	
5									
6									
7									
8									
9									
10									

COMMENTS:

middle on
tarmac)
1st



Buro Happold

GAS MONITORING DATA

JOB NUMBER:

SITE: Northumberland Park Development

BOREHOLE IDENTITY: WSZ1

DATE/TIME: 20/05/2010

WEATHER: Overcast and warm

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: 2.670

STANDPIPE DEPTH (m) bgl: 6.0m

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0.1	20	0	0	1028	0	0
1	0	0	2.7	15.8	0	4ppm		0	
2	0	0	2.9	15.5	0	4ppm		0	
3	0	0	3	15.4	0	4ppm		0	
4	0.1	1	3.1	15.2	0	4ppm		0	
5	0	0	3.1	15.2	0			0	
6									
7									
8									
9									
10									

COMMENTS:

4th (oe I
had difficulty
opening) -



Buro Happold

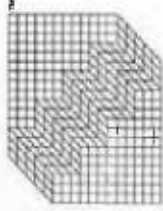
GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland park development
 BOREHOLE IDENTITY: W522
 DATE/TIME: 20/05/2010
 WEATHER: sunny now and warm
 AMBIENT TEMP(°C): ~~21.0~~
 DEPTH TO WATER (m) bgl: ~~2.1~~
 STANDPIPE DEPTH (m) bgl:
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	19.6	0	0	1028	0	0
1	0.2	3%	1.6	17.7	0	7ppm	.	0	
2	0.2	3	1.6	17.7	0	7ppm		0	
3	0.2	4	1.7	17.7	0	8ppm		0	
4	0.2	4	1.7	17.7	0	8ppm		0	
5									
6									
7									
8									
9									
10									

COMMENTS:

Ticket area



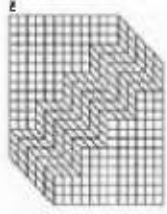
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland park development
 BOREHOLE IDENTITY: W523
 DATE/TIME: 20/05/2010
 WEATHER: Sunny new and warm
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m)bgl: ~~2.980~~ 2.980
 STANDPIPE DEPTH (m)bgl: ~~5.570~~ 5.570
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	19.7	0	0	1028	0	0
1	0.1	0	0	18.4	0	16ppm		0	
2	0.1	0	0	18.4	0	17ppm		0	
3	0.1	0	0	18.5	0	17ppm		0	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:



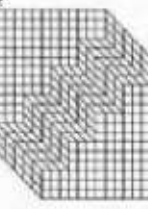
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland Park Development
BOREHOLE IDENTITY: WS24
DATE/TIME: 20/05/2010
WEATHER: Overcast and warm
AMBIENT TEMP(°C):
DEPTH TO WATER (m)bgl: 2.78 M bgl
STANDPIPE DEPTH (m)bgl: 5.33 M bgl
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	19.8	0	0	1028	0	0
1	0	0	0.4	16.1	0	4ppm		0	
2	0.1	1	0.4	16	0	4ppm		0	
3	0.1	1	0.4	15.9	0	4ppm		0	
4	0.1	1	0.4	15.9	0	4ppm		0	
5									
6									
7									
8									
9									
10									

COMMENTS:



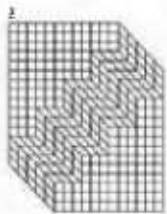
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland Park development
BOREHOLE IDENTITY: WS25
DATE/TIME: 20/05/2010
WEATHER: Overcast and warm
AMBIENT TEMP(°C):
DEPTH TO WATER (m)bgl: 2.74M
STANDPIPE DEPTH (m)bgl: 6.25M
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.4	0	0	1028	0	0
1	0.1	1	0	17.1	0	5ppm		0	
2	0.1	1	0	16.9	0	5ppm		0	
3	0.1	1	0	16.8	0	5ppm		0	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:



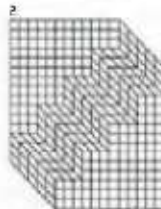
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland Park Development
BOREHOLE IDENTITY: WS26
DATE/TIME: 20.5.10 9.44am
WEATHER: Overcast
AMBIENT TEMP(°C):
DEPTH TO WATER (m)bgli: 2.735m bgl
STANDPIPE DEPTH (m)bgli: 4.95m bgl
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.3	0	0	1029	—	0
1	0	0 0.2	0.2	18.8	0	42	1029	—	0
2	0	0	0.2	18.8	0	49	1029	—	
3	0	0	0.2	18.7	0	54	1029	—	
4	0	0	0.3	18.6	0	57	1029	—	
5	0.1	1	0.3	18.6	0	59	1029	—	
6	0.1	1	0.3	18.5	0	59	1029	—	
7									
8									
9									
10									

COMMENTS:



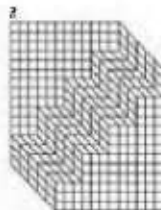
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: WS27
 DATE/TIME: 20/5/10 : 15:35
 WEATHER: warm/cloudy
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m)bgl: 1.95m
 STANDPIPE DEPTH (m)bgl: 4.37m
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.6	0	0	1028	0	+0.1
1	0	0	0.2	19.6	0	0	-	-	0
2	0	0	0.2	19.4	0	1	-	-	0
3	0	0	0.2	19.4	0	1	-	-	+0.1
4	0	0	0.2	19.4	0	1	-	-	
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER:

SITE: *Northumberland Park Development*

BOREHOLE IDENTITY:

DATE/TIME: *2010512cp*WEATHER: *Overcast and warm*AMBIENT TEMP(°C): *WS28*DEPTH TO WATER (m)bgli: *1.99m*STANDPIPE DEPTH (m)bgli: *4.73m*

RISING/FALLING PRESSURE:

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.5	0	0	1028	0	0
1	0	0	2	16.7	0	20		0	
2	0.1	1	2	16.5	0	20		0	
3	0.1	1	2.1	16.3	0	2		0	
4	0.1	1	2.1	16.4	0	2		0	
5	0.1	1	2.1	16.4	0	2		0	
6									
7									
8									
9									
10									

COMMENTS:



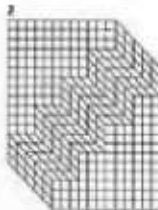
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: WS27(a)
 DATE/TIME: 2010512010
 WEATHER: Overcast and warm
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m)bgl: 2.76M
 STANDPIPE DEPTH (m)bgl: 5.32M
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20	0	0	1028	0	0
1	0	0	0.9	18.8	0	31ppm		0	
2	0	0	0.9	18.7	0	32ppm		0	
3	0	0	0.9	18.5	0	33ppm		0	
4	0	0	0.9	18.4	0	34ppm		0	
5	0	0	1	18.4	0	34ppm		0	
6	0	0	0.9	18.4	0	34ppm		0	
7									
8									
9									
10									

COMMENTS:



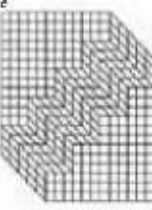
Buro Happold

GAS MONITORING DATA

JOB NUMBER:
SITE: Northumberland Park
BOREHOLE IDENTITY: WS10/01
DATE/TIME:
WEATHER: Sunny and warm
AMBIENT TEMP(°C):
DEPTH TO WATER (m)bgl: 2.36m
STANDPIPE DEPTH (m)bgl:
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0.0	20.0	0	0	1028	0	6
1	0.1	2	0.1	18.9	0	11ppm		0	
2	0.2	3	0.1	18.9	0	13ppm		0	
3	0.2	3	0.1	18.9	0	13ppm		0	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland Park Development
BOREHOLE IDENTITY: BH0103
DATE/TIME: 10.33am 20.5.10
WEATHER: overcast
AMBIENT TEMP(°C):
DEPTH TO WATER (m)bgl: 2.620m
STANDPIPE DEPTH (m)bgl: 4.335mbgl
RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.2	0	0	1029	—	0
1	0	0	1.2	14	0	24	1029	—	0
2	0	0	1.3	13.8	0	21	1029	—	0
3	0	0	1.3	13.7	0	20	1029	—	0
4	0	0	1.4	13.7	0	20	1029	—	0
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: BH10/05
 DATE/TIME: 20/5/2010 9.24am
 WEATHER: Overcast
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m)bgf: 3.105
 STANDPIPE DEPTH (m)bgf: 5.05m
 RISING/FALLING PRESSURE: Falling

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0.2	19.6	0	0	1028	—	0
1	0	0	0.2	19.6	0	0	1028	—	
2	0	0	0.2	19.6	0	0	1028	—	
3	0	0	0.3	19.6	0	0	1028	—	
4	0	0	0.3	19.6	0	0	1028	—	
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

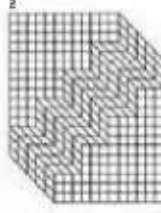
GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: WS16
 DATE/TIME: 24-5-10 11:20am
 WEATHER: Fine
 AMBIENT TEMP(°C): 30°C
 DEPTH TO WATER (m)bgl:
 STANDPIPE DEPTH (m)bgl:

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	2	0.9	16.4	0	1	1011	—	0
1	0.2	4	1	15.1	0	1	1011	—	0
2	0.2	4	1.1	15.1	0	2	1011	—	
3	0.2	4	1.1	15.0	0	1	1011	—	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971

SITE: Northumberland Park Development

BOREHOLE IDENTITY: W5169

DATE/TIME: 24.5.10 11.25am

WEATHER: Fine

AMBIENT TEMP(°C): 30°C

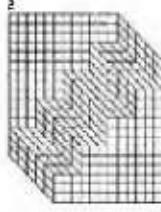
DEPTH TO WATER (m)bgl:

STANDPIPE DEPTH (m)bgl:

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.2	3	0.5	18.0	0	1	1011	—	-0.1
1	0.2	3	0.5	18.1	0	2	1011	—	-0.1
2	0.2	3	0.6	18.1	0	2	1011	—	
3	0.2	3	0.6	18.0	0	2	1011	—	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park
 BOREHOLE IDENTITY: WS17C
 DATE/TIME: 24.5.10 11.13am
 WEATHER: Fine
 AMBIENT TEMP(°C):
 DEPTH TO WATER (m) bgl:
 STANDPIPE DEPTH (m) bgl:
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	1	0.1	18.5	0	0	1011	—	0.3
1	0.1	1	0.1	18.8	0	0	1011	—	0.3
2	0.1	1	0.1	18.9	0	0	1011	—	
3	0.1	1	0.1	18.9	0	0	1011	—	
4									
5									
6									
7									
8									
9									
10									

COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971

SITE: Northumberland Port Development

BOREHOLE IDENTITY: VIS17b

DATE/TIME: 24/5/10 11:10am

WEATHER: Fine

AMBIENT TEMP(°C): ~30°C

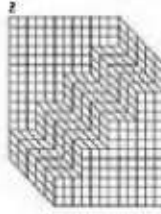
DEPTH TO WATER (m)bgl:

STANDPIPE DEPTH (m)bgl:

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	2	0	20	0	0	1011	—	0.5
1	0.1	1	0.1	18.4	0	0	1011	—	0.5
2	0.1	1	0.1	18.3	0	0	1011	—	
3	0.1	1	0.1	18.3	0	0	1011	—	
4	0.1	1	0.1	18.3	0	0	1011	—	
5									
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COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
SITE: Northumberland Park Development

BOREHOLE IDENTITY: WS22

DATE/TIME: 24.5.10

WEATHER: Fine

AMBIENT TEMP(°C): 30°C

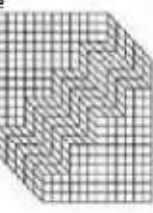
DEPTH TO WATER (m) bgl:

STANDPIPE DEPTH (m) bgl:

RIISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.2	3	0	19.1	0	4	1011	—	-0.2
1	0.2	4	1.8	17.4	0	4	1011	—	-0.2
2	0.2	4	1.8	17.4	0	4	1011	—	
3	0.3	5	1.8	17.4	0	4	1011	—	
4	0.3	5	1.8	17.2	0	3	1011	—	
5	0.3	5	1.8	17.0	0	3	1011	—	
6									
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9									
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COMMENTS:



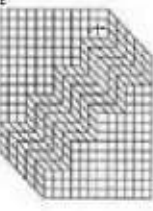
Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Port Development
 BOREHOLE IDENTITY: W520 (2)
 DATE/TIME: 24.09.10
 WEATHER: Fine
 AMBIENT TEMP(°C): 30°C
 DEPTH TO WATER (m)bgl:
 STANDPIPE DEPTH (m)bgl:
 RISING/FALLING PRESSURE :

Time (min)	Methane (%w/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.2	3	0.1	18.1	0	2	1011	—	-0.4
1	0.2	3	0	18.1	0	1	1011	—	-0.4
2	0.2	3	0	18.0	0	2	1011	—	
3	0.2	3	0	18.0	0	2	1011	—	
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COMMENTS:



Buro Happold

GAS MONITORING DATA

JOB NUMBER: 023971
 SITE: Northumberland Park Development
 BOREHOLE IDENTITY: WS20
 DATE/TIME: 24.5.10
 WEATHER: Fine
 AMBIENT TEMP(°C): 30°C
 DEPTH TO WATER (m) bgl:
 STANDPIPE DEPTH (m) bgl:
 RISING/FALLING PRESSURE :

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.2	3	0	17.8	0	6	1011	—	-0.5
1	0.2	3	0.2	16.6	0	23	1011	—	-0.5
2	0.2	3	0.2	16.5	0	23	1011	—	
3	0.2	3	0.2	16.4	0	24	1011	—	
4									
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: W516

DATE/TIME: 28th May 2010

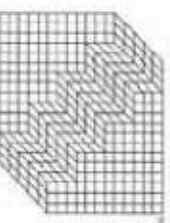
WEATHER: Cloudy and Sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl:

STANDPIPE DEPTH (m) bgl:

RIISING/FALLING PRESSURE: 1011mb



Buro Happold

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.8	0	0	1011mb	0	0
1	0.1	2%	0.6	19.3	0	1ppm		0	
2	0.1	2%	0.6	19.3	0	1ppm		0	
3	0.1	2%	0.6	19.3	0	1ppm		0	
4	0.1	2%	0.6	19.2	0	1ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: WS16b

DATE/TIME: 28th May 2010

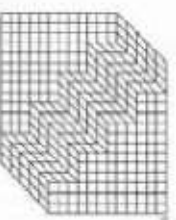
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl:

STANDPIPE DEPTH (m) bgl:

RIISING/FALLING PRESSURE : 1011mb



Buro Happold

Trane (min)	Methane (%v/v)	Methane (%LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	1%	0	20.8	0	0	1011mb	0	0
1	0.1	1%	0.3	20.2	0	2ppm		0	
2	0.1	2%	0.3	20.1	0	2ppm		0	
3	0.1	2%	0.3	20	0	2ppm		0	
4	0.1	2%	0.4	20	0	2ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: LUS17b

DATE/TIME: 28th May 2010

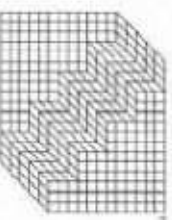
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m)bg1: 2.92m

STANDPIPE DEPTH (m)bg1: 5.95m

RIISING/FALLING PRESSURE : 1011mb



Buro Happold

Time (min)	Methane (%v/v)	Methane (%LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.8	0	0	1011mb	0	0
1	0.1	2%	0.2	19.9	0	1ppm		0	
2	0.1	2%	0.2	19.9	0	1ppm		0	
3	0.1	2%	0.2	19.9	0	1ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 029370

SITE: Northumberland Park Development

BOREHOLE IDENTITY: W617C

DATE/TIME: 28th May 2010

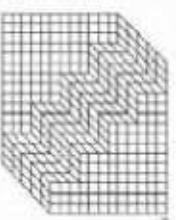
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m)bgl: DRY

STANDPIPE DEPTH (m)bgl: 2.55m

RIISING/FALLING PRESSURE: 1011mb



Buro Happold

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	1%	0	20.8	0	0	1011mb	0	0
1	0.1	1%	0.1	20.6	0	1ppm		0	
2	0.1	1%	0.1	20.6	0	1ppm		0	
3	0.1	1%	0.1	20.6	0	1ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: WS18

DATE/TIME: 28th May 2010

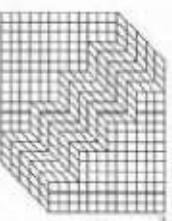
WEATHER: Cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: 2.31m

STANDPIPE DEPTH (m) bgl: 5.69m

RISING/FALLING PRESSURE: 1012mb rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (%LEL)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	21	0	0	1012	0	0
1	0.1	1%	0.4	17	0	1ppm		0	
2	0.1	1%	0.2	18.9	0	1ppm		0	
3	0.1	1%	0.2	19.1	0	1ppm		0	
4	0.1	1%	0.2	19.1	0	1ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: W519

DATE/TIME: 28th May 2010

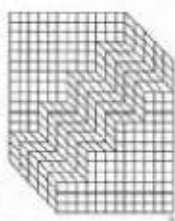
WEATHER: Cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: 2.44m

STANDPIPE DEPTH (m) bgl: 6.56m

RISING/FALLING PRESSURE: 1012mb rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (%LEL)	Carbon Dioxide (%v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	21	0	0	1012mb	0	0
1	0	0	0	20.3	0	3ppm		0	
2	0	0	0	20.3	0	3ppm		0	
3	0	0	0	20.3	0	3ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: W520

DATE/TIME: 28th May 2010

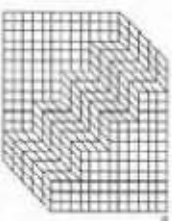
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m)bg1: 3.33m

STANDPIPE DEPTH (m)bg1: 6.30m

RIISING/FALLING PRESSURE: 101mb rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	2%	0	20.6	0	0	101mb	0	0.2
1	0.1	2%	0	20.6	0	1ppm		0	
2	0.1	2%	0	20.6	0	1ppm		0	
3	0.1	2%	0	20.6	0	1ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: WS20a

DATE/TIME: 28th May 2010

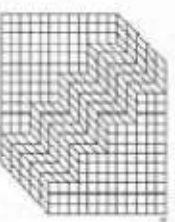
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: Dry

STANDPIPE DEPTH (m) bgl: 2.52m

RIISING/FALLING PRESSURE: 1011mb rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	1%	0	20.5	0	0	1011mb	0	0.1
1	0.1	2%	0	20.2	0	2ppm		0	
2	0.1	2%	0	20.2	0	2ppm		0	
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Rare Development

BOREHOLE IDENTITY: W521

DATE/TIME: 28th May 2010

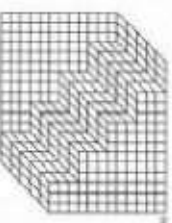
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: 3m

STANDPIPE DEPTH (m) bgl: 6.07m

RISING/FALLING PRESSURE: 1011mb rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	2%	0	20.6	0	0	1011mb	0	0
1	0.1	2%	3.3	15.8	0	3ppm		0	
2	0.1	2%	3.4	15.7	0	3ppm		0	
3	0.1	2%	3.4	15.6	0	3ppm		0	
4									
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: WS22

DATE/TIME: 28th May 2010

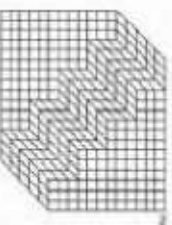
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: 2.33M

STANDPIPE DEPTH (m) bgl: 2.59M

RISING/FALLING PRESSURE: 1011mb rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (%LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0	0	0	20.8	0	0	1011mb	0	0
1	0.1	1%	0	21	0	1ppm		0	
2	0.1	1%	0	21	0	1ppm		0	
3	0.1	1%	0	21	0	1ppm		0	
4									
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COMMENTS:

GAS MONITORING DATA

JOB NUMBER: 023970

SITE: Northumberland Park Development

BOREHOLE IDENTITY: W523

DATE/TIME: 28th May 2010

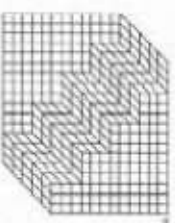
WEATHER: cloudy and sunny

AMBIENT TEMP(°C):

DEPTH TO WATER (m) bgl: 2.70m

STANDPIPE DEPTH (m) bgl: 6.54m

RISING/FALLING PRESSURE: 101mb Rising



Buro Happold

Time (min)	Methane (%v/v)	Methane (% LEL)	Carbon Dioxide (% v/v)	Oxygen (%v/v)	Hydrogen (ppm)	Carbon Monoxide (ppm)	Pressure (mb)	VOC (ppm)	Flow Rate (l/hr)
0	0.1	1%	0	20.2	0	0	101mb	0	0
1	0.1	1%	0.1	19.4	0	9ppm		0	
2	0.1	1%	0.1	19.3	0	9ppm		0	
3	0.1	1%	0.2	19.3	0	9ppm		0	
4									
5									
6									
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COMMENTS: