Table 3 - Field Observations of Fluid Levels in Wells and Groundwater Quality

Well ID	Date	Depth to NAPL [m bgl]	Depth to Water (DTW) [m bgl]	Depth to Bottom (DTB) [m bgl]	Relative Elevation of Well Cover [m AOD]	Relative Elevation of Top of Well Casing [m AOD]	Relative Elevation of Water Level [m AOD]	O.d.P [mV]	Temperature [deg C]	pH	Conductivity [µS/cm@25C]	Dissolved Oxygen [%]	Sampling Method	Comments
BH2	Oct 2003 - 1st Round (BASELINE EVENT)	--	5.2	6.7	5.82	5.69	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.18	6.88			--	--	--	--	--	--	HDPE Bailer	Good yield. Recovered purged water observed to be clear. NVO.
	Apr 2007 - Third Round	--	4.08	6.98			--	--	--	--	--	--	HDPE Bailer	Good yield. Recovered purged water observed to be clear with no streaks or odour. NVO.
	Sep 2012 - Fourth Round	--	4.4	6.84			--	--	--	--	--	--	HDPE Bailer	Dark brown for first 5L. Organic matter and orange colouring from 5L to 24L purge. Slight oil sheen noted.
	Sep 2015 - Fifth Round	--	4.121	6.764			1.569	-107.1	14.7	6.82	1609	0.374	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 3L. NVO.
BH3	Oct 2003 - 1st Round (BASELINE EVENT)	--	5.5	6.5	6.55	6.49	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	5.27	6.18			--	--	--	--	--	--	HDPE Bailer	Good yield. Water brown in colour. Some very fine, white possibly living organisms noted. NVO.
	Apr 2007 - Third Round	--	4.91	5.94			--	--	--	--	--	--	HDPE Bailer	Good yield. Initially slightly grey in colour with small amount of organic matter. Cleared after initial 20L to become brown in colour. No streaks or odour.
	Sep 2012 - Fourth Round	--	5.23	5.38			--	--	--	--	--	--	HDPE Bailer	Dark brown/black purge water, lots of organic material in water. NVO.
	Sep 2015 - Fifth Round	--	5.14	6.035			1.35	-81	15.1	6.88	1449	0.946	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 1L. NVO.
BH4	Oct 2003 - 1st Round (BASELINE EVENT)	--	4.8	6.7	6.21	6.18	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.96	6.31			--	--	--	--	--	--	HDPE Bailer	Good yield to final purge volume of 40L. No odour. Slight oily sheen on water surface.
	Apr 2007 - Third Round	--	4.72	6.23			--	--	--	--	--	--	HDPE Bailer	Good yield. NVO.
	Sep 2012 - Fourth Round	--	4.9	4.95			--	--	--	--	--	--	--	No sample obtainable - insufficient water volume.
	Sep 2015 - Fifth Round	--	4.83	6.169			1.35	32.8	15	6.6	522	5.61	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 0.5L. NVO.
BH5	Oct 2003 - 1st Round (BASELINE EVENT)	--	5	7	6.185	6.085	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.94	6.47			--	--	--	--	--	--	HDPE Bailer	Good yield. NVO.
	Apr 2007 - Third Round	--	4.57	6.23			--	--	--	--	--	--	HDPE Bailer	Good yield. NVO.
	Sep 2012 - Fourth Round	--	Dry	4.87			--	--	--	--	--	--	--	No sample obtainable - insufficient water volume.
	Sep 2015 - Fifth Round	--	4.755	6.07			1.33	25.5	16.1	6.73	775	1.518	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 0.5L. NVO.
BH7	Oct 2003 - 1st Round (BASELINE EVENT)	--	5.3	6.7	6.45	6.425	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	5.07	6.84			--	--	--	--	--	--	HDPE Bailer	Good yield. Clear grey water. NVO.
	Apr 2007 - Third Round	--	4.93	6.84			--	--	--	--	--	--	HDPE Bailer	Good yield.Clear grey water. NVO.
	Sep 2012 - Fourth Round	--	5.21	6.49			--	--	--	--	--	--	HDPE Bailer	No comments provided.
	Sep 2015 - Fifth Round	--	5.11	6.947			1.315	-98.6	16.8	7.09	1707	0.539	Peristaltic Pump	Well de-silted. Clear water NVO.

Table 3 - Field Observations of Fluid Levels in Wells and Groundwater Quality

Well ID	Date	Depth to NAPL [m bgl]	Depth to Water (DTW) [m bgl]	Depth to Bottom (DTB) [m bgl]	Relative Elevation of Well Cover [m AOD]	Relative Elevation of Top of Well Casing [m AOD]	Relative Elevation of Water Level [m AOD]	O.d.P [mV]	Temperature [deg C]	pH	Conductivity [µS/cm@25C]	Dissolved Oxygen [%]	Sampling Method	Comments
BH8	Oct 2003 - 1st Round (BASELINE EVENT)	--	4.9	7.2	6.2	6.155	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.86	6.34			--	--	--	--	--	--	HDPE Bailer	Good yield. Slight oil streak observed on the water surface of the first 10L that were removed. No oil streaks were observed on the purge water removed thereafter.
	Apr 2007 - Third Round	--	4.88	6.39			--	--	--	--	--	--	HDPE Bailer	Good yield. NVO.
	Sep 2012 - Fourth Round	--	4.95	6.25			--	--	--	--	--	--	HDPE Bailer	No comments provided.
	Sep 2015 - Fifth Round	--	4.815	6.822			1.34	4.4	15.2	6.74	1350	1.793	Peristaltic Pump	Well de-silted. Clear water. NVO.
BH9	Oct 2003 - 1st Round (BASELINE EVENT)	--	1.9	2.2	5.9	5.775	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	--	--			--	--	--	--	--	--	--	No information reported by CRA.
	Apr 2007 - Third Round	--	--	--			--	--	--	--	--	--	--	No information reported by CRA.
	Sep 2012 - Fourth Round	--	--	--			--	--	--	--	--	--	--	No information reported by CRA.
	Sep 2015 - Fifth Round	--	1.75	2.497			4.025	-138.7	24.5	7.45	1544	0.374	Peristaltic Pump	Well de-silted. Black water turning grey after approx. 1L purge. Black sediments noted with organic odour. No sheen noted. Well turned dry after approx. 2L purge. Sample collected after approx. 50mins recharge. Shallow groundwater well within the Perched Water.
BH10	Oct 2003 - 1st Round (BASELINE EVENT)	--	5	7	5.94	5.835	--	--	--	--	--	--	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.41	7.13			--	--	--	--	--	--	HDPE Bailer	Recovered purge water observed as grey and clear. NVO.
	Apr 2007 - Third Round	--	4.39	7.17			--	--	--	--	--	--	HDPE Bailer	Good yield.Clear grey groundwater. NVO.
	Sep 2012 - Fourth Round	--	4.96	5.53			--	--	--	--	--	--	HDPE Bailer	Continuous slight orange colour during purge. NVO.
	Sep 2015 - Fifth Round	--	4.277	7.031			1.558	24.6	15.5	6.8	748	0.55	Peristaltic Pump	Well de-silted. Light brown water turning clear after approx. 3L purge. NVO.
BH104B	Oct 2003 - 1st Round (BASELINE EVENT)	--	4	6	5.81	5.715	--	--	--	--	--	--	No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.13	5.09			--	--	--	--	--	--	HDPE Bailer	Good yield. Brown in colour. Some oily streaks were initially observed on surface water but cleared after 20L.
	Apr 2007 - Third Round	--	4.12	5.89			--	--	--	--	--	--	HDPE Bailer	Good yield. Brown in colour. NVO.
	Sep 2012 - Fourth Round	--	4.39	5.92			--	--	--	--	--	--	HDPE Bailer	Light orange in the first 2L of purge, clear thereafter to 14L. NVO.
	Sep 2015 - Fifth Round	--	4.141	4.931			1.574	-88.6	15.7	6.84	1153	1.067	Peristaltic Pump	Well de-silted. Clear water NVO.
BH109	Oct 2003 - 1st Round (BASELINE EVENT)	--	4.500	6	6.28	6.14	--	--	--	--	--	--	No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	--	--	--			--	--	--	--	--	--	--	No information reported by CRA.
	Apr 2007 - Third Round	--	4.400	6.18			--	--	--	--	--	--	--	No information reported by CRA.
	Sep 2012 - Fourth Round	--	--	--			--	--	--	--	--	--	--	No information reported by CRA.
	Sep 2015 - Fifth Round	--	4.507	6.142			1.633	-68.9	12.5	7.1	1409	4.686	Peristaltic Pump	Well de-silted. Light brown water turning clear after approx. 1.5L. NVO
BH110	Oct 2003 - 1st Round (BASELINE EVENT)	--	4.600	5.6	6.3	6.24	--	--	--	--	--	--	No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	--	4.880	5.52			--	--	--	--	--	--	HDPE Bailer	Good yield. Some very fine white possible live organisms observed. Pipe installation too marrow to use standard bailer. Sampled directly from HDPE pipe. No streaks or odour.
	Apr 2007 - Third Round	--	4.650	5.49			--	--	--	--	--	--	HDPE Bailer	Good yield. Initially slightly grey in colour with small amount of organic matter. Cleared after initial 30L to become brown in colour. NVO.
	Sep 2012 - Fourth Round	--	4.960	5.53			--	--	--	--	--	--	HDPE Bailer	Dark brown colour, clearing up throughout purge. NVO.
	Sep 2015 - Fifth Round	--	4.805	5.516			1.435	-18.4	17.2	6.99	1183	1.991	Peristaltic Pump	Well de-silted. Clear water NVO.

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Well ID	Date	Depth to NAPL [m bgl]	Depth to Water (DTW) [m bgl]	Depth to Bottom (DTB) [m bgl]	Relative Elevation of Well Cover [m AOD]	Relative Elevation of Top of Well Casing [m AOD]	Relative Elevation of Water Level [m AOD]	O.d.P [mV]	Temperature [deg C]	pH	Conductivity [µS/cm@25C]	Dissolved Oxygen [%]	Sampling Method	Comments
BH111	Oct 2003 - 1st Round (BASELINE EVENT)	--	4.900	7.6 (*)	6.45	6.41	--	--	--	--	--	--	No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	--	5.090	7.53			--	--	--	--	--	--	HDPE Bailer	Iniatial purged water recovered dark brown / black. Soon cleared on purging. Purged then left overnight before purging again. Total purged volume 150L. Some sand recovered from well during purging. NVO.
	Apr 2007 - Third Round	--	4.880	7.58			--	--	--	--	--	--	HDPE Bailer	Initial purged water recovered dark grey. Soon cleared on purging. NVO.
	Sep 2012 - Fourth Round	--	5.220	7.59			--	--	--	--	--	--	HDPE Bailer	Orange colour throghout purge. NVO.
	Sep 2015 - Fifth Round	--	5.097	7.653			1.313	-132.6	15.9	6.97	1486	0.44	Peristaltic Pump	Well de-silted. Clear water. NVO.
BH112	Oct 2003 - 1st Round (BASELINE EVENT)	--	Dry	3	6.35	6.305	--	--	--	--	--	--	No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	--	1.19	--			--	--	--	--	--	--	--	No information reported by CRA.
	Apr 2007 - Third Round	--	Dry	2.67			--	--	--	--	--	--	--	Well dry. Sample not collected.
	Sep 2012 - Fourth Round	--	--	--			--	--	--	--	--	--	--	Well not located.
	Sep 2015 - Fifth Round	--	Dry	2.766			--	--	--	--	--	--	--	Dry. NVO.
BH201A	Sep 2015	--	3.586	5.559	5.72	5.575	1.989	-52.7	15.7	7.14	900	0.638	Peristaltic Pump	Light brown water turning clear after approx. 2L purge. NVO.

Table 4 - Metals and Inorganics

						Location ID	BH201A	BH201A	BH202A	BH203A	BH204	BH204	BH205	BH205	BH206	BH207	BH207	BH208A	BH208A
						Sample Depth	0.7	1.9-2	0.8	0.5	1.3	3.3	1	2.5	1.1	0.7	2.6-3.5	0.8	1.1
						Sample Date	25/08/2015	25/08/2015	25/08/2015	20/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	25/08/2015	25/08/2015	25/08/2015	25/08/2015
Chemical Gr	Chemical Name	Unit	EQL	GAC_HH_COM/IND_SAND_1.45-3.48%TOC	GAC_HH_RES+PL_SAND_1.45-3.48%TOC	GAC_HH_RES-PL_SAND_1.45-3.48%TOC													
Metals	Arsenic	mg/kg	0.6	640#5	*37#5*	40#5	15	14.5	9.55	12.1	10.9	30	13.7	21.8	19.9	17.8	16.3	16.6	16.6
	Cadmium	mg/kg	0.02	190#5	*11#5*	85#5	0.35	0.255	0.227	0.29	0.21	0.319	0.414	0.263	0.324	0.609	0.377	0.377	0.328
	Chromium (III+VI)	mg/kg	0.9				17.2	15.4	10.4	31.2	17.4	15.2	20	20.6	21.9	15.9	16.8	18.5	18.8
	Copper	mg/kg	1.4	68000#5	*2400#5*	7100#5	22.6	2.33	6.09	35.3	8.93	3.08	25.8	4.42	12.8	48	6.14	66.5	8.23
	Lead	mg/kg	0.7	2300#4	*200#4*	310#4	151	5.8	13.2	59.6	10.6	6.08	96.4	10.2	39.4	*264*	8.15	*251*	19.7
	Mercury	mg/kg	0.14	1100#5	*40#5*	56#5	0.289	<0.14	<0.14	<0.14	<0.14	<0.14	0.162	<0.14	<0.14	0.487	<0.14	0.608	<0.14
	Nickel	mg/kg	0.2	980#5	*130#5*	180#5	17.9	14.8	12.2	38.2	16.5	21.8	17.4	20	22.4	18	18.5	19.3	17.1
	Selenium	mg/kg	1	12000#5	*250#5*	430#5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Zinc	mg/kg	1.9	730000#5	*3700#5*	40000#5	50	19.7	25.3	96.4	44.4	25.3	93	28.2	54.2	131	25.9	69.9	35.6
	Chromium (hexavalent)	mg/kg	0.6	33#5	*6#5*	6#5	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Inorganics	Sulphate	mg/kg	48				<48	<48	<48	8120	4280	2040	3750	883	573	<48	<48	<48	<48
	Moisture	%					14	3.8	9.9	11	16	7.2	8.8	5.2	12	14	7.7	17	11
	Ammoniacal Nitrogen as NH4	mg/kg	15				<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
	Easily Liberated Sulphide (Moisture	mg/kg	15				<15	<15	<15	20	<15	<15	<15	<15	<15	<15	<15	<15	<15
	pH (Lab)	pH_Units	1				9.32	8.74	11	11.7	9.55	8.43	11.3	9.88	8.95	9	8.36	8.77	8.17

						Location ID	BH209	BH209	BH210	BH210	BH211	BH211	BH212	BH212	BH213	BH213	BH214	BH2A
						Sample Depth	0.5	2.7-3.4	0.8	2.2-2.8	0.7	2.2	0.6	1.8-2.5	0.6	1.7-2	0.85	0.5
						Sample Date	25/08/2015	25/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015	27/08/2015	27/08/2015	27/08/2015	27/08/2015	25/08/2015	25/08/2015
Chemical Gr	Chemical Name	Unit	EQL	GAC_HH_COM/IND_SAND_1.45-3.48%TOC	GAC_HH_RES+PL_SAND_1.45-3.48%TOC	GAC_HH_RES-PL_SAND_1.45-3.48%TOC												
Metals	Arsenic	mg/kg	0.6	640#5	*37#5*	40#5	12.7	13.4	23.6	20.2	11.8	19.5	19.2	18.8	19.1	19.1	11.8	14.5
	Cadmium	mg/kg	0.02	190#5	*11#5*	85#5	0.378	0.308	0.449	0.341	0.347	0.391	1.44	0.393	0.547	0.389	0.265	0.289
	Chromium (III+VI)	mg/kg	0.9				20.4	17.6	25.9	16.6	17	24.1	6.94	16.9	17.1	20.2	18.5	16.7
	Copper	mg/kg	1.4	68000#5	*2400#5*	7100#5	54.3	3.25	31.2	5.29	9.01	6.47	13.9	4.3	29.6	6.42	19.8	41
	Lead	mg/kg	0.7	2300#4	*200#4*	310#4	140	8.4	32.7	5.73	44.5	7.8	*271*	5.92	*2910*	6.91	38.9	191
	Mercury	mg/kg	0.14	1100#5	*40#5*	56#5	<0.14	<0.14	<0.14	<0.14	0.152	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.493
	Nickel	mg/kg	0.2	980#5	*130#5*	180#5	18.7	20.3	24.5	21.2	16.5	22.6	6.81	19.2	14.7	22	16.6	17.9
	Selenium	mg/kg	1	12000#5	*250#5*	430#5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Zinc	mg/kg	1.9	730000#5	*3700#5*	40000#5	118	22.7	43.4	21.9	41.3	28.4	276	23.4	906	26.2	58.5	63.9
	Chromium (hexavalent)	mg/kg	0.6	33#5	*6#5*	6#5	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Inorganics	Sulphate	mg/kg	48				<48	<48	481	<48	545	88.2	1090	49.6	7440	80.7	<48	<48
	Moisture	%					9.4	6	13	6.9	12	8.9	7	5.7	17	6.5	8	15
	Ammoniacal Nitrogen as NH4	mg/kg	15				<15	<15	45.6	<15	<15	<15	18.2	<15	<15	<15	<15	<15
	Easily Liberated Sulphide (Moisture	mg/kg	15				<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
	pH (Lab)	pH_Units	1				12	10.9	9.67	8.35	10.3	8.66	8.95	7.72	8.04	7.84	12	10.6

						Location ID	BH2A	BH3A	BH4A	BH4A	BH5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
						Sample Depth	1.5	0.5	0.9	3.5-4	0.5	2.5-3	0.7	2.5-3	0.5	3-3.5	0.5	2.2-3.3
						Sample Date	25/08/2015	28/08/2015	27/08/2015	27/08/2015	28/08/2015	28/08/2015	27/08/2015	27/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015
Chemical Gr	Chemical Name	Unit	EQL	GAC_HH_COM/IND_SAND_1.45-3.48%TOC	GAC_HH_RES+PL_SAND_1.45-3.48%TOC	GAC_HH_RES-PL_SAND_1.45-3.48%TOC												
Metals	Arsenic	mg/kg	0.6	640#5	*37#5*	40#5	11.6	18.9	14.2	21.4	19.1	22.4	*94*	16.4	13.7	14.7	16.5	15.5
	Cadmium	mg/kg	0.02	190#5	*11#5*	85#5	0.219	0.475	0.603	0.385	1.13	0.533	2.03	0.325	0.344	0.338	0.395	0.378
	Chromium (III+VI)	mg/kg	0.9				25.8	19.5	16.9	21.5	25.4	21.6	28.7	16.5	13.9	19.1	18.9	21.1
	Copper	mg/kg	1.4	68000#5	*2400#5*	7100#5	9.74	49.3	31.4	6.36	28	3.56	82.3	4.42	80.7	5.98	8.36	12
	Lead	mg/kg	0.7	2300#4	*200#4*	310#4	16.9	178	*309*	8.03	85.7	9.05	*468*	5.77	41.4	6.89	12.4	23.7
	Mercury	mg/kg	0.14	1100#5	*40#5*	56#5	<0.14	0.151	<0.14	<0.14	1.9	<0.14	0.702	<0.14	<0.14	<0.14	<0.14	<0.14
	Nickel	mg/kg	0.2	980#5	*130#5*	180#5	21.4	29.2	15.6	24.2	17.1	20.7	36	19.4	37.6	18.8	23.6	20.7
	Selenium	mg/kg	1	12000#5	*250#5*	430#5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Zinc	mg/kg	1.9	730000#5	*3700#5*	40000#5	47.4	89.3	217	28.5	101	28.6	1640	20.8	24.4	25.5	34.5	62.4
	Chromium (hexavalent)	mg/kg	0.6	33#5	*6#5*	6#5	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Inorganics	Sulphate	mg/kg	48				<48	579	841	63.9	356	95.9	601	74.7	775	80.9	212	1040
	Moisture	%					15	6.3	7.1	4.4	7	5.8	28	4.8	17	9.5	7.3	14
	Ammoniacal Nitrogen as NH4	mg/kg	15				<15	<15	23.8	<15	27.7	<15	35.3	15.8	18.4	18.4	<15	71.4
	Easily Liberated Sulphide (Moisture	mg/kg	15				<15	<15	<15	<15	<15	<15	<15	<15	40.4	<15	<15	252
	pH (Lab)	pH_Units	1				8.45	8.22	7.92	8.01	7.86	7.86	7.67	8.01	8.38	7.66	10.2	11.2

Comments

GAC: Generic Assessment Criteria

(blank): No assessment criteria available

- : Not analysed

#1 USEPA RSL

#2 Dutch Serious 2009

#3 Dutch Intervention 2009

#4 Defra C4SL 12/2014

#5 AECOM (modified LQM/CIEH S4ULs)

#6 AECOM (modified EIC)

Key

XXX	Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=1.45 to <3.48%
XXX	Exceedance of HH Soil. Residential with Plant Uptake. Sand. TOC >=1.45 to <3.48%
XXX	Exceedance of HH Soil. Residential without Plant Uptake. Sand. TOC >=1.45 to <3.48%

Table 5 - TPH, BTEX, Oxygenates, Chlorinated Hydrocarbons, PAHs, PCBs, Hydrogenated Benzenes, Hydrogenated Hydrocarbons, Solvents, Organics, Other and Asbestos Concentrations in Soils

						Location ID	BH201A	BH201A	BH202A	BH203A	BH204	BH204	BH205	BH205	BH206	BH207	BH207	BH208A	BH208A	BH209	BH209	BH210	BH210	BH211	BH211	BH212	BH212	BH213	BH213	BH214	BH2A	BH2A	BH3A	BH4A	BH4A	BH5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
						Sample Depth	0.7	1.9-2	0.8	0.5	1.3	3.3	1	2.5	1.1	0.7	2.6-3.5	0.8	1.1	0.5	2.7-3.4	0.8	2.2-2.8	0.7	2.2	0.6	1.8-2.5	0.6	1.7-2	0.85	0.5	1.5	0.5	0.9	3.5-4	0.5	2.5-3	0.7	2.5-3	0.5	3-3.5	0.5	2.2-3.3
						Sample Date	25/08/2015	25/08/2015	25/08/2015	20/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	25/08/2015	25/08/2015	25/08/2015	25/08/2015	25/08/2015	25/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015	27/08/2015	27/08/2015	27/08/2015	27/08/2015	25/08/2015	25/08/2015	25/08/2015	28/08/2015	27/08/2015	27/08/2015	28/08/2015	28/08/2015	27/08/2015	27/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015
Chemical Gr	Chemical Name	Unit	EQL	GAC_HH_COM/IND_SAND_1.45-3.48%TOC	GAC_HH_RES+PL_SAND_1.45-3.48%TOC	GAC_HH_RES-PL_SAND_1.45-5-3.48%TOC																																					
TPH	GRO >C5-C12	mg/kg	0.04				<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	0.243	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	5.16	<0.044	<0.044	<0.044	<0.044	<0.044	0.05	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	0.178	0.106
	>C5-C6 Aliphatics	mg/kg	0.01	3300#5	34#5	34#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	>C6-C8 Aliphatics	mg/kg	0.01	9200#5	93#5	93#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0129	<0.01	<0.01	<0.01	<0.01	0.0312	<0.01	<0.01	<0.01	<0.01	<0.01	0.0342	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0145	<0.01	<0.01	0.0197
	>C8-C10 Aliphatics	mg/kg	0.01	2500#5	26#5	26#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0259	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.01	0.0131	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0109	<0.01	0.0119	0.022
	>C10-C12 Aliphatics	mg/kg	0.01	12000#5	130#5	130#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0939	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2.06	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0874	0.0255
	>C12-C16 Aliphatics	mg/kg	0.1	66000#5	1000#5	1000#5	<0.1	<0.1	<0.1	2.5	0.48	0.808	5.15	0.466	0.337	0.682	<0.1	0.876	<0.1	5.72	<0.1	<0.1	<0.1	15.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.97	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.555	<0.1	<0.1	1.29
	>C16-C21 Aliphatics	mg/kg	0.1				<0.1	<0.1	<0.1	9.99	<0.1	<0.1	30	<0.1	<0.1	6.7	<0.1	1.2	<0.1	29.7	<0.1	3.15	<0.1	23.2	<0.1	<0.1	<0.1	<0.1	<0.1	20.7	0.177	<0.1	3.14	1.68	<0.1	0.234	<0.1	<0.1	<0.1	1.23	<0.1	<0.1	3.06
	>C16-C35 Aliphatics	mg/kg		1.6E6#5	64000#5	64000#5	<0.2	<0.2	14.35	107.49	<0.2	<0.2	150	<0.2	1.71	21.5	<0.2	5.03	<0.2	128.6	0.9	21.75	<0.2	80.5	<0.2	<0.2	<0.2	6.11	<0.2	120.7	2.277	<0.2	12.93	56.18	<0.2	6.894	<0.2	21.95	<0.2	7.06	<0.2	<0.2	9.75
	>C21-C35 Aliphatics	mg/kg	0.1				<0.1	<0.1	14.3	97.5	<0.1	<0.1	120	<0.1	1.66	14.8	<0.1	3.83	<0.1	98.9	0.85	18.6	<0.1	57.3	<0.1	<0.1	<0.1	6.06	<0.1	100	2.1	<0.1	9.79	54.5	<0.1	6.66	<0.1	21.9	<0.1	5.83	<0.1	<0.1	6.69
	>C35-C44 Aliphatics	mg/kg	0.1	1.6E6#5	64000#5	64000#5	<0.1	<0.1	<0.1	70	<0.1	<0.1	39.4	<0.1	<0.1	4.24	<0.1	<0.1	<0.1	39.1	<0.1	1.92	<0.1	10.6	<0.1	<0.1	<0.1	<0.1	<0.1	28.4	<0.1	<0.1	3.03	32.4	<0.1	0.968	<0.1	5.13	<0.1	0.567	<0.1	<0.1	<0.1
	>C12-C44 Aliphatics	mg/kg	0.1				<0.1	<0.1	14.3	180	0.48	0.808	195	0.466	2	26.4	<0.1	5.9	<0.1	173	0.85	23.7	<0.1	106	<0.1	<0.1	<0.1	6.06	<0.1	154	2.28	<0.1	15.9	88.5	<0.1	7.86	<0.1	27	<0.1	8.18	<0.1	<0.1	11
	>EC5-EC7 Aromatics	mg/kg	0.01	23000#5	100#5	250#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	>EC7-EC8 Aromatics	mg/kg	0.01	58000#5	230#5	690#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	>EC8-EC10 Aromatics	mg/kg	0.01	4300#5	41#5	45#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0291	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.671	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0151
	>EC10-EC12 Aromatics	mg/kg	0.01	19000#5	140#5	240#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0626	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.38	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0583	0.0174
	>EC12-EC16 Aromatics	mg/kg	0.1	37000#5	320#5	1800#5	0.792	<0.1	<0.1	1.61	0.486	0.402	4.43	0.519	<0.1	0.705	<0.1	1.56	<0.1	1.65	<0.1	<0.1	<0.1	4.15	<0.1	<0.1	<0.1	2.15	<0.1	1.5	0.511	1.7	0.714	1.61	<0.1	0.358	<0.1	1.92	<0.1	<0.1	<0.1	<0.1	2.81
	>EC16-EC21 Aromatics	mg/kg	0.1	28000#5	540#5	1900#5	2.79	<0.1	<0.1	6.76	<0.1	<0.1	21.9	<0.1	<0.1	3.83	<0.1	3.21	<0.1	17.8	<0.1	<0.1	<0.1	10.5	<0.1	0.496	<0.1	10.6	<0.1	10.6	1.86	1.41	4.78	17.1	<0.1	2.62	<0.1	8.47	<0.1	<0.1	<0.1	<0.1	19.4
	>EC21-EC35 Aromatics	mg/kg	0.1	28000#5	1500#5	1900#5	8.85	<0.1	3.8	78.3	0.269	0.462	75.1	0.693	3.46	20	<0.1	11.2	<0.1	71	0.961	4.96	<0.1	26.6	<0.1	4.6	<0.1	31.1	<0.1	50.3	9.32	6.2	24.7	74.7	<0.1	16.1	<0.1	70	<0.1	<0.1	<0.1	<0.1	66.3
	>EC35-EC44 Aromatics	mg/kg	0.1	28000#5	1500#5	1900#5	3.15	<0.1	1.07	118	<0.1	<0.1	55.1	<0.1	<0.1	16.6	<0.1	3.99	<0.1	39.9	<0.1	1.4	<0.1	10.5	<0.1	<0.1	<0.1	10.9	<0.1	33.3	4.61	4	12.7	37.3	<0.1	8.05	<0.1	28.5	<0.1	<0.1	<0.1	<0.1	16.4
	>EC40-EC44 Aromatics	mg/kg	0.1				1.14	<0.1	<0.1	46.4	<0.1	<0.1	25.3	<0.1	<0.1	7.78	<0.1	1.48	<0.1	17.4	<0.1	<0.1	<0.1	3.89	<0.1	<0.1	<0.1	3.97	<0.1	14.8	1.93	1.7	5.16	14.2	<0.1	2.87	<0.1	10.5	<0.1	<0.1	<0.1	<0.1	5.98
	>EC12-EC44 Aromatics	mg/kg	0.1				15.6	<0.1	4.86	205	0.755	0.864	156	1.21	3.46	41.1	<0.1	19.9	<0.1	130	0.961	6.36	<0.1	51.9	<0.1	5.1	<0.1	54.8	<0.1	95.6	16.3	13.3	42.9	131	<0.1	27.1	<0.1	109	<0.1	<0.1	<0.1	<0.1	105
	>C5-C44 Aliphatics & Aromatics	mg/kg	0.1				15.6	<0.1	19.1	385	1.23	1.68	352	1.68	5.47	67.5	<0.1	25.9	<0.1	304	1.82	30	<0.1	163	<0.1	5.1	<0.1	60.9	<0.1	250	18.6	13.3	58.9	219	<0.1	35	<0.1	136	<0.1	8.22	<0.1	0.111	116
BTEX	Benzene	mg/kg	0.01	24#5	0.12#5	0.25#5	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.01	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.01	<0.009	<0.01	<0.009	<0.009	<0.009
	Toluene	mg/kg	0	58000#5	230#5	710#5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.007 - 0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.07 - 0.0024	<0.002	<0.002	<0.002
	Ethylbenzene	mg/kg	0	6200#5	55#5	70#5	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0445 - 0.005	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	Xylene (m & p)	mg/kg	0.01				<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.01 - 0.0075	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
	Xylene Total	mg/kg	0.01	2500#1	3.4#3	3.4#3	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
	Xylene (o)	mg/kg	0	7200#5	64#5	74#5	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	Total BTEX	mg/kg	0.02				<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
Oxygenates	MTBE	mg/kg	0.01	5740#6	35.3#6	40.5#6	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Tert Amyl Methyl Ether	mg/kg	0.01				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
Chlorinated H	Chloromethane	mg/kg	0.01	0.573#6	0.0036#6	0.00446#6	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.07	<0.007	<0.007	<0.007
	Vinyl chloride	mg/kg	0.01	0.04#5	0.00037#5	0.0004#5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
	Chloroethane	mg/kg	0.01	640#6	4.22#6	5.12#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	1,1-dichloroethene	mg/kg	0.01	22.6#6	0.153#6	0.184#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	Dichloromethane	mg/kg	0.01	162#6	0.608#6	1.16#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	trans-1,2-dichloroethene	mg/kg	0.01	18.9#6	0.126#6	0.127#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	1,1-dichloroethane	mg/kg	0.01	208#6	1.41#6	1.7#6	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.08	<0.008	<0.008	<0.008
	cis-1,2-dichloroethene	mg/kg	0.01	11.3#6	0.0699#6	0.0854#6	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.06	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.06	<0.006	<0.06	<0.006	<0.006	<0.006
	Chloroform	mg/kg	0.01	81#5	0.68#5	0.75#5	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.08	<0.008	<0.008	<0.008
	1,1,1-trichloroethane	mg/kg	0.01	640#5	6.6#5	6.7#5	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.07	<0.007	<0.007	<0.007
	Carbon tetrachloride	mg/kg	0.01	3#5	0.021#5	0.021#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Trichloroethene	mg/kg	0.01	1.2#5	0.013#5	0.013#5	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.254	0.0181	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
	1,1,2-trichloroethane	mg/kg	0.01	89.7#6	0.552#6	0.755#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	Tetrachloroethene	mg/kg	0.01	19#5	0.14#5	0.14#5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
	Sum of PCE and TCE	mg/kg					<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	0.279	0.0206	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.14	<0.014	<0.14	<0.014	<0.014	<0.014
	TCE+DCE+VC	mg/kg					<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	0.414	0.0341	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	<0.41	<0.041	<0.41	<0.041	<0.041	<0.041
	PCE+TCE+DCE+VC	mg/kg					<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	0.439	0.0366	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.46	<0.046	<0.46	<0.046	<0.046	<0.046
PAH	Naphthalene	mg/kg	0.01	220#5	2.1#5	2.1#5	0.013 - 0.038	<0.009	<0.009	0.013 - 0.010	<0.009	<0.009	0.173 - 0.196	<0.009	<0.009	0.013 - 0.04	<0.009	0.13 - 0.018	<0.009	0.013 - 0.044	<0.009	<0.009	<0.009	0.013 - 0.053	<0.009	<0.009	<0.009	0.013 - 0.027	<0.009	0.013 - 0.021	0.013 - 0.028	<0.009	0.013 - 0.034	0.013 - 0.05	<0.009	0.013 - 0.015	<0.009	0.13 - 0.069	<0.009	0.13 - 0.111	<0.009	<0.009	0.013 - 0.0327
	Acenaphthylene	mg/kg	0.01	90000#5	400#5	3300#5	0.0574	<0.012	<0.012	<0.012	<0.012	<0.012	0.0453	<0.012	<0.012	0.0486	<0.012	<0.012	<0.012	0.0566	<0.012	<0.012	<0.012	0.0148	<0.012	0.0205	<0.012	0.0278	<0.012	0.0171	<0.012	<0.012	0.0299	0.083	<0.012	0.0289	<0.012	0.0843	<0.012	0.016	<0.012	<0.012	0.015
	Acenaphthene	mg/kg	0.01	90000#5	480#5	3300#5	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.0732	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.0606	<0.008	<0.008	<0.008	0.0481	<0.008	<0.008	<0.008	0.0159	<0.008	0.0505	<0.008	<0.008	<0.008	0.0418	<0.008	0.00932	<0.008	0.0115	<0.008	<0.008	<0.008	<0.008	0.011
	Fluorene	mg/kg	0.01	66000#5	390#5	3200#5	0.0183	<0.01	<0.01	<0.01	<0.01	<0.01	0.0796	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0479	<0.01	<0.01	<0.01	0.0486	<0.01	<0.01	<0.01	0.0121	<0.01	0.0387	<0.01	<0.01	<0.01	0.0482	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0546
	Phenanthrene	mg/kg	0.02	22000#5	220#5	1400#5	0.512	<0.015	<0.015	0.16	<0.015	<0.015	0.811	<0.015	0.0284	0.223	<0.015	0.128	<0.015	1.3	<0.015	0.0277	<0.015	0.352	<0.015	0.218	<0.015	0.329	<0.015	1.01	0.119	<0.015	0.188	1.19	<0.015	0.147	<0.015	0.307	<0.015	0.215	<0.015	<0.015	0.36
	Anthracene	mg/kg	0.02	530000#5	5300#5	34000#5	0.0982	<0.016	<0.016	0.041	<0.016	<0.016	0.179	<0.016	<0.016	0.0506	<0.016	0.0199	<0.016	0.258	<0.016	<0.016	<0.016	0.0788	<0.016	0.0859	<0.016	0.0718	<0.016	0.184	<0.016	<0.016	0.036	0.317	<0.016	0.0399	<0.016	0.107	<0.016	0.0332	<0.016	<0.016	0.105
	Fluoranthene	mg/kg	0.02	23000#5	560#5	1600#5	0.835	<0.017	<0.017	0.429	<0.017	<0.017	1.31	<0.017	0.0473	0.592	<0.017	0.137	<0.017	2.18	<0.017	0.047	<0.017	0.389	<0.017	1.27	<0.017	0.82	<0.017	1.57	0.0893	<0.017	0.445	2.5	<0.017	0.417	<0.017	0.967	<0.017	0.237	<0.017	<0.017	0.4
	Pyrene	mg/kg	0.02	54000#5	1200#5	3700#5	0.682	<0.015	<0.015	0.412	<0.015	<0.015	1.51	<0.015	0.0532	0.534	<0.015	0.118	<0.015	1.89	<0.015	0.0436	<0.015	0.317	<0.015	0.975	<0.015	0.729	<0.015	1.26	0.0839	<0.015	0.384	2.09	<0.015	0.359	0.0298	0.971	<0.015	0.186	<0.015	0.0167	0.317
	Benz(a)anthracene	mg/kg	0.01	170#5	11#5	14#5	0.401	<0.014	<0.014	0.192	<0.014	<0.014	1.06	<0.014	<0.014	0.419	<0.014	0.0873	<0.014	1.06	<0.014	0.0481	<0.014	0.174	<0.014	0.927	<0.014	0.449	<0.014	0.66	0.0909	<0.014	0.245	1.32	<0.014	0.227	<0.014	0.63	<0.014	0.128	<0.014	0.0247	0.283
	Chrysene	mg/kg	0.01	350#5	22#5	31#5	0.382	<0.01	<0.01	0.194	<0.01	<0.01	0.976	<0.01	0.0163	0.414	<0.01	0.0863	<0.01	0.988	<0.01	0.0285	<0.01	0.151	<0.01	0.908	<0.01	0.414	<0.01	0.608	0.103	<0.01	0.291	1.06	<0.01	0.236	0.0245	0.684	<0.01	0.137	<0.01	<0.01	0.218
	Benzo(a) pyrene	mg/kg	0.02	36#5	2.7#5	3.2#5	0.357	<0.015	<0.015	0.203	<0.015	<0.015	0.97	<0.015	0.0382	0.632	<0.015	0.0594	<0.015	0.837	<0.015	0.03	<0.015	0.147	<0.015	1.05	<0.015	0.485	<0.015	0.545	0.0834	<0.015	0.289	1.47	<0.015	0.26	<0.015	1.05	<0.015	0.122	<0.015	0.0182	0.259
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.02	510#5	36#5	45#5	0.192	<0.018	<0.018	0.124	<0.018	<0.018	0.543	<0.018	0.029	0.408	<0.018	0.0306	<0.018	0.547	<0.018	<0.018	<0.018	0.0775	<0.018	0.668	<0.018	0.27	<0.018	0.297	0.0481	<0.018	0.21	0.787	<0.018	0.156	<0.018	0.975	<0.018	0.0766	<0.018	<0.018	0.121
	Dibenz(a,h)anthracene	mg/kg	0.02	3.6#5	0.28#5	0.32#5	0.0606	<0.023	<0.023	0.0327	<0.023	<0.023	0.186	<0.023	<0.023	0.124	`	<0.023	<0.023	0.151	<0.023	<0.023	<0.023	<0.023	<0.023	0.195	<0.023	0.0732	<0.023	0.0882	<0.023	<0.023	0.0634	0.216	<0.023	0.0468	<0.023	0.269	<0.023	<0.023	<0.023	<0.023	0.0404
	Benzo(g,h,i)perylene	mg/kg	0.02	4000#5	340#5	360#5	0.233	<0.024	<0.024	0.142	<0.024	<0.024	0.676	<0.024	0.0301	0.521	<0.024	0.0442	<0.024	0.556	<0.024	0.0286	<0.024	0.105	<0.024	0.755	<0.024	0.358	<0.024	0.385	0.0682	<0.024	0.245	0.967	<0.024	0.196	<0.024	1.16	<0.024	0.108	<0.024	<0.024	0.144
	Benzo(b)fluoranthene	mg/kg	0.02	45#5	3.3#5	4#5	0.47	<0.015	<0.015	0.206	<0.015	<0.015	1.3	<0.015	0.0377	0.805	<0.015	0.0973	<0.015	1.25	<0.015	0.0388	<0.015	0.199	<0.015	1.46	<0.015	0.588	<0.015	0.715	0.135	<0.015	0.459	1.7	<0.015	0.391	0.0235	1.93	<0.015	0.193	<0.015	0.0246	0.306
	Benzo(k)fluoranthene	mg/kg	0.01	1200#5	92#5	110#5	0.192	<0.014	<0.014	0.103	<0.014	<0.014	0.546	<0.014	0.0197	0.281	<0.014	0.0345	<0.014	0.434	<0.014	0.0181	<0.014	0.0907	<0.014	0.503	<0.014	0.255	<0.014	0.287	0.0553	<0.014	0.134	0.609	<0.014	0.132	<0.014	0.724	<0.014	0.0599	<0.014	<0.014	0.108
	Benzo(b)&(k)fluoranthene	mg/kg					0.662	<0.029	<0.029	0.309	<0.029	<0.029	1.846	<0.029	0.0574	1.086	<0.029	0.1318	<0.029	1.684	<0.029	0.0569	<0.029	0.2897	<0.029	1.963	<0.029	0.843	<0.029	1.002	0.1903	<0.029	0.593	2.309	<0.029	0.523	0.0305	2.654	<0.029	0.2529	<0.029	0.0316	0.414
	PAHs (sum of 4)	mg/kg					1.087	<0.071	<0.071	0.575	<0.071	<0.071	3.065	<0.071	0.1165	2.015	<0.071	0.2066	<0.071	2.787	<0.071	0.0945	<0.071	0.4722	<0.071	3.386	<0.071	1.471	<0.071	1.684	0.3066	<0.071	1.048	4.063	<0.071	0.875	0.0515	4.789	<0.071	0.4375	<0.071	0.0526	0.679
	PAH 16 Total	mg/kg	0.12				4.53	<0.118	<0.118	2.25	<0.118	<0.118	10.4	<0.118	0.3	5.09	<0.118	0.861	<0.118	11.6	<0.118	0.311	<0.118	2.25	<0.118	9.03	<0.118	4.92	<0.118	7.74	0.905	<0.118	3.05	14.5	<0.118	2.66	<0.118	9.95	<0.118	1.62	<0.118	<0.118	2.78
	benzo(g,h,i)perylene + indeno(1,2,3-	mg/kg					0.425	<0.042	<0.042	0.266	<0.042	<0.042	1.219	<0.042	0.0591	0.929	<0.042	0.0748	<0.042	1.103	<0.042	0.0376	<0.042	0.1825	<0.042	1.423	<0.042	0.628	<0.042	0.682	0.1163	<0.042	0.455	1.754	<0.042	0.352	<0.042	2.135	<0.042	0.1846	<0.042	<0.042	0.265
	Coal Tar (Bap as surrogate marker)	mg/kg		15#5	0.98#5	1.2#5	0.357	<0.015	<0.015	0.203	<0.015	<0.015	0.97	<0.015	0.0382	0.632	<0.015	0.0594	<0.015	0.837	<0.015	0.03	<0.015	0.147	<0.015	1.05	<0.015	0.485	<0.015	0.545	0.0834	<0.015	0.289	1.47	<0.015	0.26	<0.015	1.05	<0.015	0.122	<0.015	0.0182	0.259
PCBs	Tetrachlorobiphenyl, 3,3,4,4- (PCB 7	mg/kg	0	0.16#1	0.037#1	0.037#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Tetrachlorobiphenyl, 3,4,4,5- (PCB 8	mg/kg	0	0.053#1	0.012#1	0.012#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,3,4,4- (PC	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PC	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 118	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 2,3,4,4,5- (PC	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Pentachlorobiphenyl, 3,3,4,4,5- (PC	mg/kg	0	0.00016#1	0.000037#1	0.000037#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PC	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,3,4,4,5- (PC	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 2,3,4,4,5,5- (PC	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hexachlorobiphenyl, 3,3,4,4,5,5- (PC	mg/kg	0	0.00053#1	0.00012#1	0.00012#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Heptachlorobiphenyl, 2,3,3,4,4,5,5- (	mg/kg	0	0.53#1	0.12#1	0.12#1	-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total PCB WHO 12	mg/kg	0.04				-	-	-	-	-	-	-	-	-	-	-	<0.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 28	mg/kg	0				-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 52	mg/kg	0				-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 101	mg/kg	0				-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 138	mg/kg	0				-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 153	mg/kg	0				-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PCB 180	mg/kg	0				-	-	-	-	-	-	-	-	-	-	-	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total PCB 7 Congeners	mg/kg	0.02		0.2#3	0.2#3	-	-	-	-	-	-	-	-	-	-	-	<0.021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halogenated	Chlorobenzene	mg/kg	0.01	59#5	0.38#5	0.38#5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	0.0955	<0.05	<0.005	<0.005	<0.005
	Bromobenzene	mg/kg	0.01	105#6	0.75#6	0.892#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	2-chlorotoluene	mg/kg	0.01	23000#1	1600#1	1600#1	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09	<0.009	<0.09	<0.009	<0.009	<0.009
	4-chlorotoluene	mg/kg	0.01	23000#1	1600#1	1600#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	1,3-dichlorobenzene	mg/kg	0.01	34#5	0.37#5	0.38#5	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.08	<0.008	<0.008	<0.008
	1,4-dichlorobenzene	mg/kg	0.01	4800#5	52#5	52#5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
	1,2-dichlorobenzene	mg/kg	0.01	2200#5	20#5	20#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
	1,2,4-trichlorobenzene	mg/kg	0.02	240#5	2.3#5	2.3#5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.2	<0.02	<0.02	<0.02
	1,2,3-trichlorobenzene	mg/kg	0.02	110#5	1.3#5	1.3#5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.2	<0.02	<0.02	<0.02
Halogenated	Dichlorodifluoromethane	mg/kg	0.01	370#1	87#1	87#1	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.06	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.06	<0.006	<0.06	<0.006	<0.006	<0.006
	Bromomethane	mg/kg	0.01	30#1	6.8#1	6.8#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Trichlorofluoromethane	mg/kg	0.01	3100#1	730#1	730#1	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.06	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
	1,2-dibromoethane	mg/kg	0.01	0.16#1	0.036#1	0.036#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Solvents	Carbon disulfide	mg/kg	0.01	11#5	0.11#5	0.11#5	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.07	<0.007	<0.007	<0.007
Organics	TOC	%	0.2				1.21	<0.2	0.274	0.396	0.266	<0.2	0.627	<0.2	0.522	1.96	0.785	3.76	0.461	0.615	<0.2	0.358	<0.2	<0.2	<0.2	<0.2	<0.2	2.07	<0.2	0.216	1.89	0.248	1.52	2.08	<0.2	1.33	<0.2	3.51	<0.2	19.1	<0.2	<0.2	0.443
Other	Waste Limit, Total	%	0.1				-	-	-	-	-	-	-	-	-	<0.1	-	<0.1	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos	Amosite Asbestos	-					1	0	0	0	0	0	1	0	0	0	-	0	-	0	0	1	-	0	-	0	-	0	-	0	0	-	0	1	-	0	0	0	-	0	-	0	-
	Chrysotile Asbestos	-					0	0	0	1	0	0	0	0	0	1	-	1	-	1	0	0	-	0	-	0	-	0	-	0	0	-	0	1	-	0	0	0	-	0	-	0	-
	Crocidoilite Asbestos	-					0	0	0	0	0	0	0	0	0	0	-	0	-	0	0	0	-	0	-	0	-	0	-	0	0	-	0	0	-	0	0	0	-	0	-	0	-
	Additional Asbestos Components (Us	-					-	-	-	1	-	-	1	-	-	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
	Fibrous Actinolite	-					0	0	0	0	0	0	0	0	0	0	-	0	-	0	0	0	-	0	-	0	-	0	-	0	0	-	0	0	-	0	0	0	-	0	-	0	-
	Fibrous Anthophyllite	-					0	0	0	0	0	0	0	0	0	0	-	0	-	0	0	0	-	0	-	0	-	0	-	0	0	-	0	0	-	0	0	0	-	0	-	0	-
	Fibrous Tremolite	-					0	0	0	0	0	0	0	0	0	0	-	0	-	0	0	0	-	0	-	0	-	0	-	0	0	-	0	0	-	0	0	0	-	0	-	0	-
	Non-Asbestos Fibre	-					0	0	0	0	0	0	0	0	0	0	-	0	-	0	0	0	-	1	-	0	-	0	-	0	0	-	0	0	-	0	0	0	-	0	-	0	-

Comments

GAC: Generic Assessment Criteria
(blank): No assessment criteria available
 - : Not analysed

#1 USEPA RSL
#2 Dutch Serious 2009
#3 Dutch Intervention 2009
#4 Defra C4SL 12/2014
#5 AECOM (modified LQM/CIEH S4ULs)
#6 AECOM (modified EIC)

Key

XXX	Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=1.45 to <3.48%
XXX	Exceedance of HH Soil. Residential with Plant Uptake. Sand. TOC >=1.45 to <3.48%
XXX	Exceedance of HH Soil. Residential without Plant Uptake. Sand. TOC >=1.45 to <3.48%

Table 6 - VOC Concentrations in Soils

						Location ID	BH201A	BH201A	BH202A	BH203A	BH204	BH204	BH205	BH205	BH206	BH207	BH207	BH208A
						Sample Depth	0.7	1.9-2	0.8	0.5	1.3	3.3	1	2.5	1.1	0.7	2.6-3.5	0.8
						Sample Date	25/08/2015	25/08/2015	25/08/2015	20/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	25/08/2015	25/08/2015	25/08/2015
Chemical Gr	Chemical Name	Unit	EQL	GAC_HH_COM/IND_SAND_1.45-3.48%TOC	GAC_HH_RES+PL_SAND_1.45-3.48%TOC	GAC_HH_RES-PL_SAND_1.45-3.48%TOC												
VOC	2,2-dichloropropane	mg/kg	0.01				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	Bromochloromethane	mg/kg	0.01	630#1	*150#1*	150#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	1,1-dichloropropene	mg/kg	0.01				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	1,2-dichloroethane	mg/kg	0.01	0.42#5	*0.0041#5*	0.0044#5	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
	1,2-dichloropropane	mg/kg	0.01	2.65#6	*0.0146#6*	0.0172#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Dibromomethane	mg/kg	0.01	98#1	*23#1*	23#1	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09
	Bromodichloromethane	mg/kg	0.01	1.3#1	*0.29#1*	0.29#1	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07
	cis-1,3-dichloropropene	mg/kg	0.01				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	trans-1,3-dichloropropene	mg/kg	0.01				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	1,3-dichloropropane	mg/kg	0.01	23000#1	*1600#1*	1600#1	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07
	Chlorodibromomethane	mg/kg	0.01	3.2#1	*0.73#1*	0.73#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	1,1,1,2-tetrachloroethane	mg/kg	0.01	120#5	*1.2#5*	1.3#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	Styrene	mg/kg	0.01	3550#6	*13.4#6*	29.5#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	Bromoform	mg/kg	0.01	730#6	*3#6*	4.55#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	Isopropylbenzene	mg/kg	0.01	1540#6	*9.87#6*	10.1#6	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
	1,1,2,2-tetrachloroethane	mg/kg	0.01	260#5	*1.9#5*	2.9#5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	1,2,3-trichloropropane	mg/kg	0.02	0.11#1	*0.0051#1*	0.0051#1	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*
	n-propylbenzene	mg/kg	0.01	4530#6	*32.4#6*	34.4#6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	1,3,5-trimethylbenzene	mg/kg	0.01	12000#1	*780#1*	780#1	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08
	tert-butylbenzene	mg/kg	0.01	120000#1	*7800#1*	7800#1	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.14
	1,2,4-trimethylbenzene	mg/kg	0.01	46.6#6	*0.335#6*	0.411#6	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09
	sec-butylbenzene	mg/kg	0.01	120000#1	*7800#1*	7800#1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	p-isopropyltoluene	mg/kg	0.01				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
	n-butylbenzene	mg/kg	0.01	58000#1	*3900#1*	3900#1	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.11
	1,2-dibromo-3-chloropropane	mg/kg	0.01	0.064#1	*0.0053#1*	0.0053#1	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*
	Hexachlorobutadiene	mg/kg	0.02	33#5	*0.26#5*	0.27#5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2
	1,2-Dichloroethene	mg/kg			*0.2#3*	0.2#3	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.16
	Trihalomethanes	mg/kg					<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.35

Location ID	BH208A	BH209	BH209	BH210	BH210	BH211	BH211	BH212	BH212	BH213	BH213	BH214
Sample Depth	1.1	0.5	2.7-3.4	0.8	2.2-2.8	0.7	2.2	0.6	1.8-2.5	0.6	1.7-2	0.85
Sample Date	25/08/2015	25/08/2015	25/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015	27/08/2015	27/08/2015	27/08/2015	27/08/2015	25/08/2015
Chemical Name												
2,2-dichloropropane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromochloromethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-dichloropropene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-dichloroethane	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
1,2-dichloropropane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromomethane	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Bromodichloromethane	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
cis-1,3-dichloropropene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,3-dichloropropene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-dichloropropane	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Chlorodibromomethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,1,2-tetrachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Styrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromoform	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Isopropylbenzene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-tetrachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,3-trichloropropane	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*
n-propylbenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,3,5-trimethylbenzene	`	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
tert-butylbenzene	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
1,2,4-trimethylbenzene	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
sec-butylbenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p-isopropyltoluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
n-butylbenzene	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
1,2-dibromo-3-chloropropane	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*
Hexachlorobutadiene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloroethene	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Trihalomethanes	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035

Location ID	BH2A	BH2A	BH3A	BH4A	BH4A	BH5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
Sample Depth	0.5	1.5	0.5	0.9	3.5-4	0.5	2.5-3	0.7	2.5-3	0.5	3-3.5	0.5	2.2-3.3
Sample Date	25/08/2015	25/08/2015	28/08/2015	27/08/2015	27/08/2015	28/08/2015	28/08/2015	27/08/2015	27/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015
Chemical Name													
2,2-dichloropropane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromochloromethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-dichloropropene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-dichloroethane	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
1,2-dichloropropane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromomethane	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09	<0.009	<0.09	<0.009	<0.009	<0.009
Bromodichloromethane	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.07	<0.007	<0.007	<0.007
cis-1,3-dichloropropene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
trans-1,3-dichloropropene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
1,3-dichloropropane	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.07	<0.007	<0.07	<0.007	<0.007	<0.007
Chlorodibromomethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
1,1,1,2-tetrachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
Styrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
Bromoform	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
Isopropylbenzene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
1,1,2,2-tetrachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
1,2,3-trichloropropane	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*	*<0.016*
n-propylbenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
1,3,5-trimethylbenzene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.08	<0.008	<0.08	<0.008	<0.008	<0.008
tert-butylbenzene	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.14	<0.014	<0.14	<0.014	<0.014	<0.014
1,2,4-trimethylbenzene	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.09	<0.009	<0.09	<0.009	<0.009	<0.009
sec-butylbenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
p-isopropyltoluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.01	<0.01	<0.01
n-butylbenzene	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.11	<0.011	<0.11	<0.011	<0.011	<0.011
1,2-dibromo-3-chloropropane	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*	*<0.014*
Hexachlorobutadiene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.2	<0.02	<0.02	<0.02
1,2-Dichloroethene	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.16	<0.016	<0.16	<0.016	<0.016	<0.016
Trihalomethanes	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.35	<0.035	<0.35	<0.035	<0.035	<0.035

Comments

GAC: Generic Assessment Criteria
(blank): No assessment criteria available
 - : Not analysed

#1 USEPA RSL
#2 Dutch Serious 2009
#3 Dutch Intervention 2009
#4 Defra C4SL 12/2014
#5 AECOM (modified LQM/CIEH S4ULs)
#6 AECOM (modified EIC)

Key

XXX	Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=1.45 to <3.48%
XXX	Exceedance of HH Soil. Residential with Plant Uptake. Sand. TOC >=1.45 to <3.48%
XXX	Exceedance of HH Soil. Residential without Plant Uptake. Sand. TOC >=1.45 to <3.48%

Table 7 - Metals and Inorganics Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte		Units	EQL	DWS GAC	EQS Coastal GAC														
Metals	Antimony (Filtered)	µg/L	0.16	**5#1**		0.171	0.415	0.36	<0.16	0.681	0.726	2.06	0.27	0.172	0.64	0.464	0.199	0.306	0.816
	Arsenic (Filtered)	µg/L	0.12	**10#1**	*25#4*	***39.4***	7.32	5.08	5.12	***45.4***	**15.7**	**14.4**	3.79	**17.3**	***32.6***	**14**	**22**	6.51	4.8
	Barium (Filtered)	µg/L	0.03	**700#3**		116	64.2	22.1	47.9	73.4	83.4	39.9	15.4	66	18.2	40.7	104	79.1	21.4
	Beryllium (Filtered)	µg/L	0.07	**25#5**		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
	Boron (Filtered)	µg/L	9.4	**1000#1**	*7000#7*	133	152	52.7	99.2	138	130	27.8	82.3	140	107	137	65.1	106	52.2
	Cadmium (Filtered)	µg/L	0.1	**5#1**	*0.2#4*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*0.228*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Chromium (III+VI) (Filtered)	µg/L	0.22	**50#1**	*0.6#4*	*2.23*	*3.62*	*1.53*	*2.26*	*5.24*	*3.98*	*7.52*	*1.21*	*1.71*	*3.56*	*3.44*	*3.75*	*2.27*	*1.22*
	Cobalt (Filtered)	µg/L	0.06	**6#5**	*3#7*	0.3	2.33	0.594	*3.15*	*3.29*	2.77	***9.27***	0.337	1.25	***9.39***	*4.36*	1.79	***11.8***	0.262
	Copper (Filtered)	µg/L	0.85	**2000#1**	*5#4*	1.95	1.13	0.939	1.09	1.59	1.4	*61.3*	1.16	1.74	1.26	1.29	<0.85	1.08	1.13
	Lead (Filtered)	µg/L	0.02	**25#1**	*7.2#4*	0.059	0.034	0.066	0.057	0.072	0.033	*22.8*	<0.02	0.057	0.085	0.04	<0.02	0.098	0.028
	Manganese (Filtered)	µg/L	0.04	**50#1**		**772**	**91.2**	8.89	**860**	**1200**	**169**	**983**	23	**665**	**1320**	**126**	**2270**	**1180**	7.19
	Mercury (Filtered)	µg/L	0.01	**1#1**	*0.05#4*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0171	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Nickel (Filtered)	µg/L	0.15	**20#1**	*20#4*	6.63	6.92	1.77	5.5	8.43	7.03	12.3	2.26	8.43	11	6.1	3.85	18.4	1.81
	Selenium (Filtered)	µg/L	0.39	**10#1**		9.71	9.06	0.781	1.67	1.13	1.92	1.87	1.86	7.19	3	**13.2**	2.87	1.76	0.897
	Silver	µg/L	1.5	**94#5**	*0.5#7*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*	*<1.5*
	Thallium (Filtered)	µg/L	0.96	**0.2#5**		**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**	**<0.96**
	Vanadium (Filtered)	µg/L	0.24	**86#5**	*100#7*	0.657	1.56	1.61	1.33	2.35	1.56	7.67	0.759	0.67	1.57	1.33	1.07	0.941	1.45
	Zinc (Filtered)	µg/L	0.41	**6000#5**	*40#4*	15.7	8.79	12.6	5.59	11.2	9.92	*280*	1.27	11.9	27.4	4.62	6	17.5	5.01
Inorganics	Nitrate (as NO3-)	mg/L	0.3	**50#1**		<0.3	5.18	21.5	6.42	0.926	4.42	<0.3	18.7	2.01	0.942	5.64	0.94	9.17	21.9
	ORTHOPHOSPHATE (PO4-P)	mg/L	0.05			<0.05	0.465	7.3	1.55	0.07	0.302	14.1	4.46	<0.05	0.297	0.216	<0.05	0.056	7.28
	Ammoniacal Nitrogen as N	mg/L	0.2	**0.389#1**		0.268	<0.2	<0.2	**0.508**	**0.707**	**0.619**	**5.66**	<0.2	<0.2	**1.23**	<0.2	**4.74**	<0.2	<0.2
	Ammonium as NH4 BRE	mg/L	0.3			0.345	<0.3	<0.3	0.653	0.909	0.796	7.28	<0.3	<0.3	1.58	<0.3	6.09	<0.3	<0.3
	Sulphate (soluble)	mg/l	2			457	57.4	43	79.9	74.5	61.6	<2	70.1	287	75	55.2	37.5	82.2	42.3
	COD	mg/L	7			<7	<7	8.09	21.2	10.1	10.5	3330	<7	7.65	190	<7	43.5	<7	<7
	pH (Lab)	pH_Units	1			7.59	7.45	7.1	7.39	7.9	7.38	7.55	7.56	7.22	7.49	7.52	7.32	8.09	7.14

Notes:

GAC	Generic Assessment Criteria
DWS	UK Drinking Water Standards
EQS Coastal	Environmental Water Quality Standard - Coastal Waters
EQL	Estimated Quantitation Limit
░	Laboratory Method Detection Limit is greater than GAC
▓	GAC Exceedance

#1 WS Regs 2010 (Eng/Wal)
#2 WHO Petroleum In DW 2008
#3 WHO DWG 2011
#4 WFD EQS 2010 Coastal (Eng/Wal)
#5 USEPA RSL (tapwater)
#6 SEPA WAT-SG-53 Marine EQS - MAC - 2013
#7 SEPA WAT-SG-53 Marine EQS - AA - 2013
#8 PNEC (EU REACH) - Coastal
#9 New Hampshire DES (2009)
#10 California Draft health protective concentration
#11 Calc WHO

Table 8 - TPH, BTEX, MTBE and TAME Concentrations in Groundwater

				Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
				Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte		Units	EQL	DWS GAC														
TPH	GRO >C5-C10	µg/L	10		<10	<10	<10	<10	<10	<10	281	<10	<10	<10	<10	<10	<10	<10
	EPH >C6-C10	µg/L	100		<100	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	<100
	EPH >C6-C40	µg/L	100		<100	<100	<100	<100	<100	<100	1430	<100	<100	159	<100	<100	<100	<100
	EPH >C10-C40	µg/L	46		<46	<46	<46	<46	<46	<46	1430	<46	<46	159	<46	65.8	<46	<46
	>C12-C16 Aliphatics	µg/L	10	**300**[#2]	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C16-C21 Aliphatics	µg/L	10	**300**[#2]	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C16-C35 Aliphatics	µg/L	-		-	<20	<20	<20	-	<20	-	-	-	<20	<20	<20	-	<20
	>C21-C35 Aliphatics	µg/L	10	**300**[#2]	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C12-C35 Aliphatics	µg/L	10		-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC12-EC16 Aromatics	µg/L	10	**90**[#2]	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC16-EC21 Aromatics	µg/L	10	**90**[#2]	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC21-EC35 Aromatics	µg/L	10	**90**[#2]	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC12-EC35 Aromatics	µg/L	10		-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C5-C35 Aliphatics & Aromatics	µg/L	10		-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
BTEX	Benzene	µg/L	1	**1**[#1]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	1	**700**[#3]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Ethylbenzene	µg/L	1	**300**[#3]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Xylene (m & p)	µg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Xylene Total	µg/L	-	**500**[#3]	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	1	**9.99000000000018E11**[#1]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Total BTEX	µg/L	28		<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28
Oxygenates	MTBE	µg/L	1	**900**[#11]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Tert Amyl Methyl Ether	µg/L	1	**140**[#9]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

GAC	Generic Assessment Criteria
DWS	UK Drinking Water Standards
EQL	Estimated Quantitation Limit

#1 WS Regs 2010 (Eng/Wal)
#2 WHO Petroleum In DW 2008
#3 WHO DWG 2011
#4 WFD EQS 2010 Coastal (Eng/Wal)
#5 USEPA RSL (tapwater)
#6 SEPA WAT-SG-53 Marine EQS - MAC - 2013
#7 SEPA WAT-SG-53 Marine EQS - AA - 2013
#8 PNEC (EU REACH) - Coastal
#9 New Hampshire DES (2009)
#10 California Draft health protective concentration
#11 Calc WHO

Table 9 - PAH Concentrations in Groundwater

				Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
				Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte	Units	EQL	DWS GAC	EQS Coastal GAC														
Naphthalene	µg/L	1	**6#11**	*1.2#4*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	1	**18#11**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Acenaphthene	µg/L	1	**18#11**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Fluorene	µg/L	1	**12#11**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Phenanthrene	µg/L	1	**4#11**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Anthracene	µg/L	1	**90#11**	*0.1#4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<4*	*<1*	*<1*	*<2*	*<1*	*<1*	*<1*	-
Fluoranthene	µg/L	1	**4#11**	*0.1#4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	***6.12***	*<1*	*<1*	*<2*	*<1*	*<1*	*<1*	-
Pyrene	µg/L	1	**9#11**		<1	<1	<1	<1	<1	<1	4.78	<1	<1	<2	<1	<1	<1	-
Benz(a)anthracene	µg/L	1	**0.1#11**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
Chrysene	µg/L	1	**1#11**		<1	<1	<1	<1	<1	<1	**<4**	<1	<1	**<2**	<1	<1	<1	-
Benzo(a) pyrene	µg/L	1	**0.01#1**	*0.05#4*	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***4.69***	***<1***	***<1***	***<2***	***<1***	***<1***	***<1***	-
Indeno(1,2,3-c,d)pyrene	µg/L	1	**9.99000000000029E11#1**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Dibenz(a,h)anthracene	µg/L	1	**0.01#11**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
Benzo(g,h,i)perylene	µg/L	1	**9.99000000000029E11#1**		<1	<1	<1	<1	<1	<1	4.05	<1	<1	<2	<1	<1	<1	-
Benzo(b)fluoranthene	µg/L	1	**9.99000000000029E11#1**		<1	<1	<1	<1	<1	<1	6.42	<1	<1	<2	<1	<1	<1	-
Benzo(k)fluoranthene	µg/L	1	**9.99000000000029E11#1**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Benzo(b)&(k)fluoranthene	µg/L	-		*0.03#4*	*<2*	*<2*	*<2*	*<2*	*<2*	*<2*	*8.42*	*<2*	*<2*	*<4*	*<2*	*<2*	*<2*	-
PAHs (sum of 4)	µg/L	-	**0.1#1**		**<4**	**<4**	**<4**	**<4**	**<4**	**<4**	**14.47**	**<4**	**<4**	**<8**	**<4**	**<4**	**<4**	-
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L	-		*0.002#4*	*<2*	*<2*	*<2*	*<2*	*<2*	*<2*	*6.05*	*<2*	*<2*	*<4*	*<2*	*<2*	*<2*	-
Coal Tar (Bap as surrogate marker)	µg/L	-			<1	<1	<1	<1	<1	<1	4.69	<1	<1	<2	<1	<1	<1	-

Notes:

Generic Assessment Criteria	GAC
UK Drinking Water Standards	DWS
Environmental Water Quality Standard - Coastal Waters	EQS Coastal
Estimated Quantitation Limit	EQL
Laboratory Method Detection Limit is greater than GAC	░
GAC Exceedance	▓

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#11 Calc WHO

Table 10 - VOCs and SVOCs Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte		Units	EQL	DWS GAC	EQS Coastal GAC														
VOC	2,2-dichloropropane	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromochloromethane	µg/L	1	**83#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-dichloropropene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dichloroethane	µg/L	1	**3#1**	*10#4*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dichloropropane	µg/L	1	**0.1#1**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Dibromomethane	µg/L	1	**8#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromodichloromethane	µg/L	1	**0.13#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	cis-1,3-dichloropropene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	trans-1,3-dichloropropene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,3-dichloropropane	µg/L	1	**0.1#1**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Chlorodibromomethane	µg/L	1	**9.99000000000015E11 #1**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,1,2-tetrachloroethane	µg/L	1	**0.57#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Styrene	µg/L	1	**20#3**	*50#7*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromoform	µg/L	1	**9.99000000000015E11**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Isopropylbenzene	µg/L	1	**450#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,2,2-tetrachloroethane	µg/L	1	**0.076#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	1,2,3-trichloropropane	µg/L	1	**0.00075#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	n-propylbenzene	µg/L	1	**660#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,3,5-trimethylbenzene	µg/L	1	**120#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	tert-butylbenzene	µg/L	1	**690#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2,4-trimethylbenzene	µg/L	1	**15#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	sec-butylbenzene	µg/L	1	**2000#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	p-isopropyltoluene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	n-butylbenzene	µg/L	1	**1000#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dibromo-3-chloropropane	µg/L	1	**0.1#1**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Hexachlorobutadiene	µg/L	1	**0.6#3**	*0.1#4*	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***
	1,2-Dichloroethene	µg/L		**50#3**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Trihalomethanes	µg/L		**100#1**		<4	<4	3.07	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	2.91
SVOC	2-methylnaphthalene	µg/L	1	**24#3**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-bromophenyl phenyl ether	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-chlorophenyl phenyl ether	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Azobenzene	µg/L	1	**0.12#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	Bis(2-chloroethoxy) methane	µg/L	1	**59#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Bis(2-chloroethyl)ether	µg/L	1	**0.014#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	Carbazole	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Dibenzofuran	µg/L	1	**7.9#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Hexachlorocyclopentadiene	µg/L	1	**31#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Hexachloroethane	µg/L	1	**0.9#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
Chlorinated Hydrocarbons	Chloromethane	µg/L	1	**20#3**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Vinyl chloride	µg/L	1	**0.5#1**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Chloroethane	µg/L	1	**21000#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-dichloroethene	µg/L	1	**30#3**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dichloromethane	µg/L	3	**20#3**	*20#4*	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
	trans-1,2-dichloroethene	µg/L	1	**360#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-dichloroethane	µg/L	1	**2.7#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	cis-1,2-dichloroethene	µg/L	1	**36#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chloroform	µg/L	1	**.99000000000015E11#**	*2.5#4*	<1	<1	1.57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.41
	1,1,1-trichloroethane	µg/L	1	**2000#3**	*100#4*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Carbon tetrachloride	µg/L	1	**3#1**	*12#4*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Trichloroethene	µg/L	1	**.99000000000017E11#**	*10#4*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,2-trichloroethane	µg/L	1	**0.28#5**	*300#4*	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
	Tetrachloroethene	µg/L	1	**.99000000000017E11#**	*10#4*	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Sum of PCE and TCE	µg/L		**10#1**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	TCE+DCE+VC	µg/L				<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	PCE+TCE+DCE+VC	µg/L				<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6

Table 10 - VOCs and SVOCs Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte		Units	EQL	DWS GAC	EQS Coastal GAC														
Phenolics	2-methylphenol	µg/L	1	**930#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2-nitrophenol	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2,4-dimethylphenol	µg/L	1	**360#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-chloro-3-methylphenol	µg/L	1	**1400#5**	*40#4*	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-methylphenol	µg/L	1	**1900#5**		<1	<1	<1	<1	<1	<1	172	<1	<1	<2	<1	5.42	<1	-
	4-nitrophenol	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Phenol	µg/L	1	**5800#5**	*7.7#4*	<1	<1	<1	<1	<1	<1	*10.7*	<1	<1	<2	<1	<1	<1	-
	2-chloronaphthalene	µg/L	1	**750#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Amino Aliphatics	N-nitrosodi-n-propylamine	µg/L	1	**0.011#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
Anilines	2-nitroaniline	µg/L	1	**190#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	3-nitroaniline	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-chloroaniline	µg/L	1	**0.36#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	4-nitroaniline	µg/L	1	**3.8#5**		<1	<1	<1	<1	<1	<1	**<4**	<1	<1	<2	<1	<1	<1	-
Explosives	2,4-Dinitrotoluene	µg/L	1	**0.24#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	2,6-dinitrotoluene	µg/L	1	**0.048#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	Nitrobenzene	µg/L	1	**0.14#5**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
Halogenated Benzenes	1,3,5-Trichlorobenzene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chlorobenzene	µg/L	1	**300#3**		1.7	<1	<1	<1	1.77	<1	1.89	<1	<1	<1	<1	<1	1.8	<1
	Bromobenzene	µg/L	1	**62#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	2-chlorotoluene	µg/L	1	**240#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4-chlorotoluene	µg/L	1	**250#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,3-dichlorobenzene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,4-dichlorobenzene	µg/L	1	**300#3**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dichlorobenzene	µg/L	1	**1000#3**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2,4-trichlorobenzene	µg/L	1	**1.1#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2,3-trichlorobenzene	µg/L	1	**7#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Hexachlorobenzene	µg/L	1	**1#3**	*0.01#4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	***<4***	*<1*	*<1*	***<2***	*<1*	*<1*	*<1*	-
Halogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	**200#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromomethane	µg/L	1	**7.5#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Trichlorofluoromethane	µg/L	1	**1100#5**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dibromoethane	µg/L	1	**0.1#1**		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
Halogenated Phenols	2-chlorophenol	µg/L	1	**0.1#3**	*50#4*	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	2,4-dichlorophenol	µg/L	1	**0.3#3**	*20#4*	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<4**	**<1**	**<1**	**<2**	**<1**	**<1**	**<1**	-
	2,4,5-trichlorophenol	µg/L	1	**9#3**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2,4,6-trichlorophenol	µg/L	1	**200#3**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Pentachlorophenol	µg/L	1	**9#3**	*0.4#4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<4*	*<1*	*<1*	*<2*	*<1*	*<1*	*<1*	-

Table 10 - VOCs and SVOCs Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte		Units	EQL	DWS GAC	EQS Coastal GAC														
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	2	**8#3**	*1.3#4*	*<2*	*<2*	*<2*	*<2*	*<2*	*<2*	*<8*	*<2*	*<2*	*<4*	*<2*	*<2*	*<2*	-
	Butyl benzyl phthalate	µg/L	1	**16#5**	*20#7*	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Di-n-butyl phthalate	µg/L	1	**900#5**	*8#7*	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Di-n-octyl phthalate	µg/L	5	**200#5**	*20#7*	<5	<5	<5	<5	<5	<5	<20	<5	<5	<10	<5	<5	<5	-
	Diethylphthalate	µg/L	1	**15000#5**	*200#7*	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Dimethyl phthalate	µg/L	1		*800#7*	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Solvents	Carbon disulfide	µg/L	1	**810#5**		<1	<1	<1	<1	<1	<1	2.28	<1	<1	<1	<1	<1	<1	<1
	Isophorone	µg/L	1	**78#5**		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-

Notes:

GAC	Generic Assessment Criteria
DWS	UK Drinking Water Standards
EQS Coastal	Environmental Water Quality Standard - Coastal Waters
EQL	Estimated Quantitation Limit
░	Laboratory Method Detection Limit is greater than GAC
▓	GAC Exceedance

#1 WS Regs 2010 (Eng/Wal)
#2 WHO Petroleum In DW 2008
#3 WHO DWG 2011
#4 WFD EQS 2010 Coastal (Eng/Wal)
#5 USEPA RSL (tapwater)
#6 SEPA WAT-SG-53 Marine EQS - MAC - 2013
#7 SEPA WAT-SG-53 Marine EQS - AA - 2013
#8 PNEC (EU REACH) - Coastal
#9 New Hampshire DES (2009)
#10 California Draft health protective concentration
#11 Calc WHO

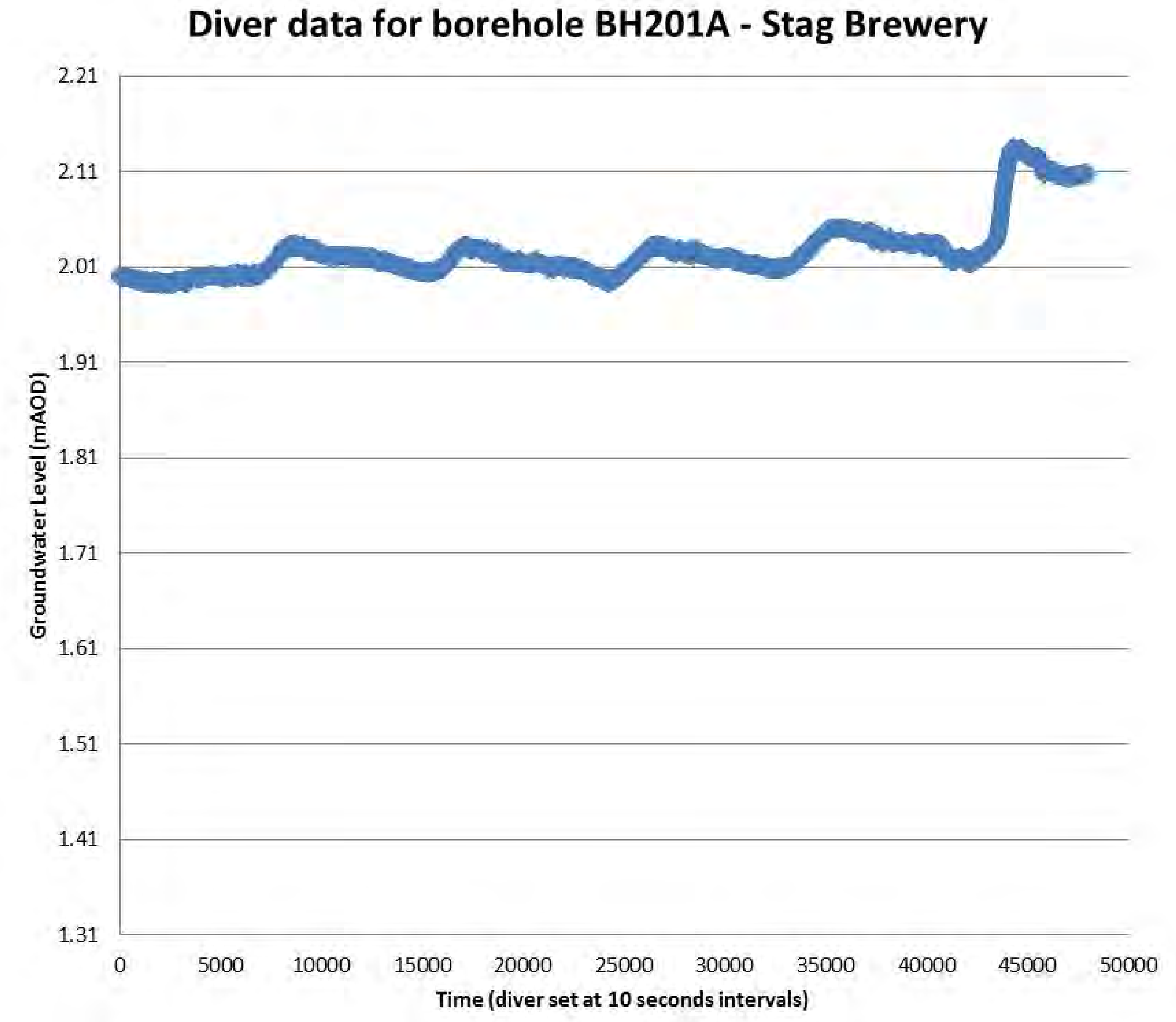
Table 11 - Field Duplicate QA Check

			Well ID	**BH4**	**DUP01**	**RPD**
			Date Sampled	**01/09/2015**	**01/09/2015**	
Method Type	**Analyte**	**Units**	**EQL**			
EPH by GC-FID	>C10-C40	µg/l		<46	<46	0
GRO by Headspace GC-FID	>C5-C10	µg/l		<10	<10	0
	MTBE	µg/l		<1	<1	0
	Benzene	µg/l		<1	<1	0
	Toluene	µg/l		<1	<1	0
	Ethylbenzene	µg/l		<1	<1	0
	Xylene (m & p)	µg/l		<1	<1	0
	Xylene (o)	µg/l		<1	<1	0
Metals by ICP-OES	Arsenic (Filtered)	µg/l		52.7	52.2	0
	Boron (Filtered)	µg/l		<0.1	<0.1	0
	Cadmium (Filtered)	µg/l		1.53	1.22	11
	Chromium (III+VI) (Filtered)	µg/l		0.939	1.13	9
	Copper (Filtered)	µg/l		0.066	0.028	40
	Lead (Filtered)	µg/l		<0.01	<0.01	0
	Mercury (Filtered)	µg/l		1.77	1.81	1
	Nickel (Filtered)	µg/l		0.781	0.897	7
	Selenium (Filtered)	µg/l		12.6	5.01	43
	Zinc (Filtered)	µg/l		21.5	21.9	1
pH by Metrohm	pH (Lab)	-		7.1	7.14	0
SO4, Cl, NO3, NO2, PO4, Amm N2, Thiocyanate, He...	Nitrate (as NO3-)	mg/l		7.3	7.28	0
	ORTHOPHOSPHATE (PO4-P)	mg/l		<0.2	<0.2	0
	Ammoniacal Nitrogen as N	mg/l		<0.3	<0.3	0
	Ammonium as NH4 BRE	mg/l		43	42.3	1
	Sulphate (soluble)	µg/l		28.2	28.4	0

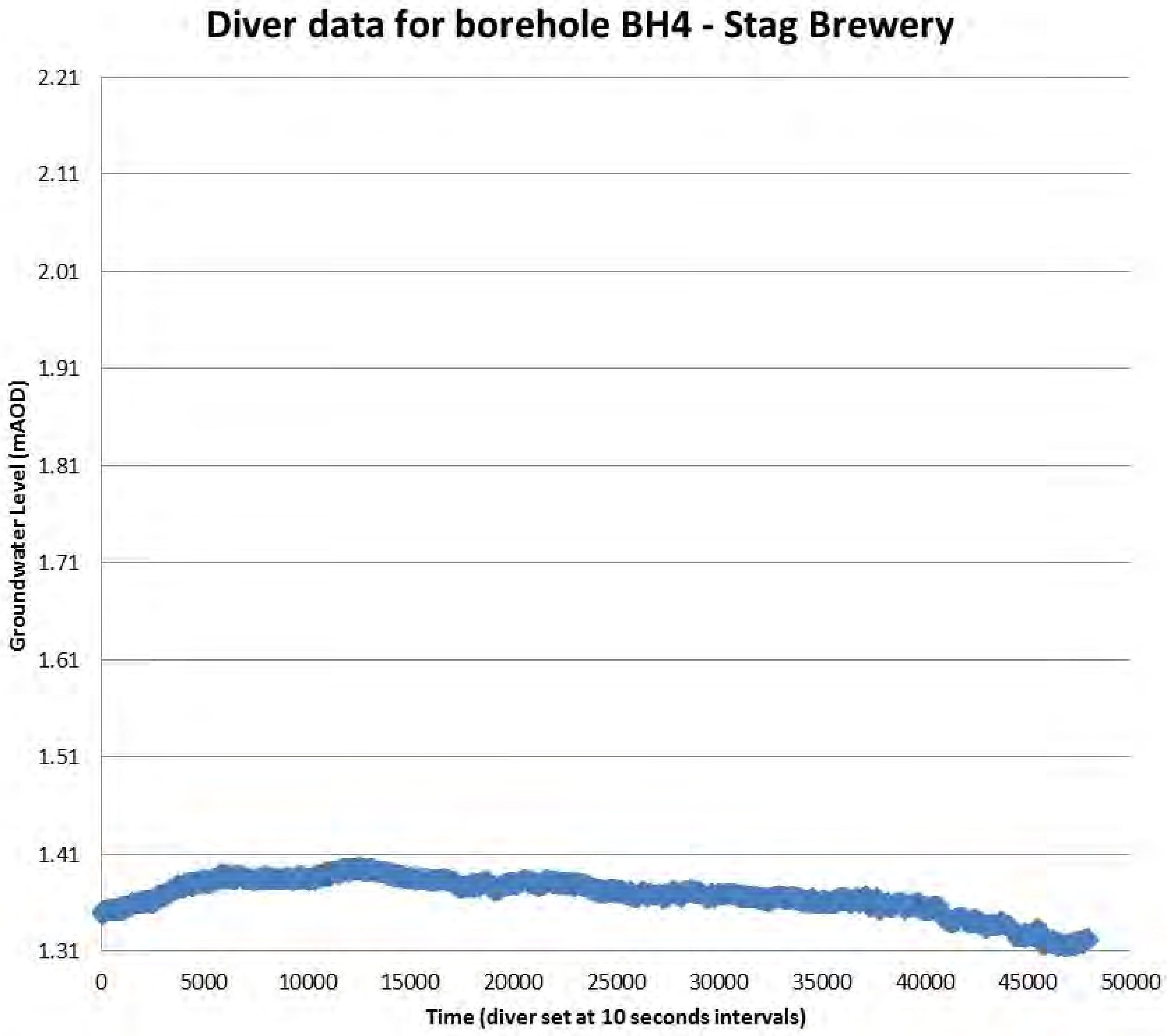
*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

GRAPHS

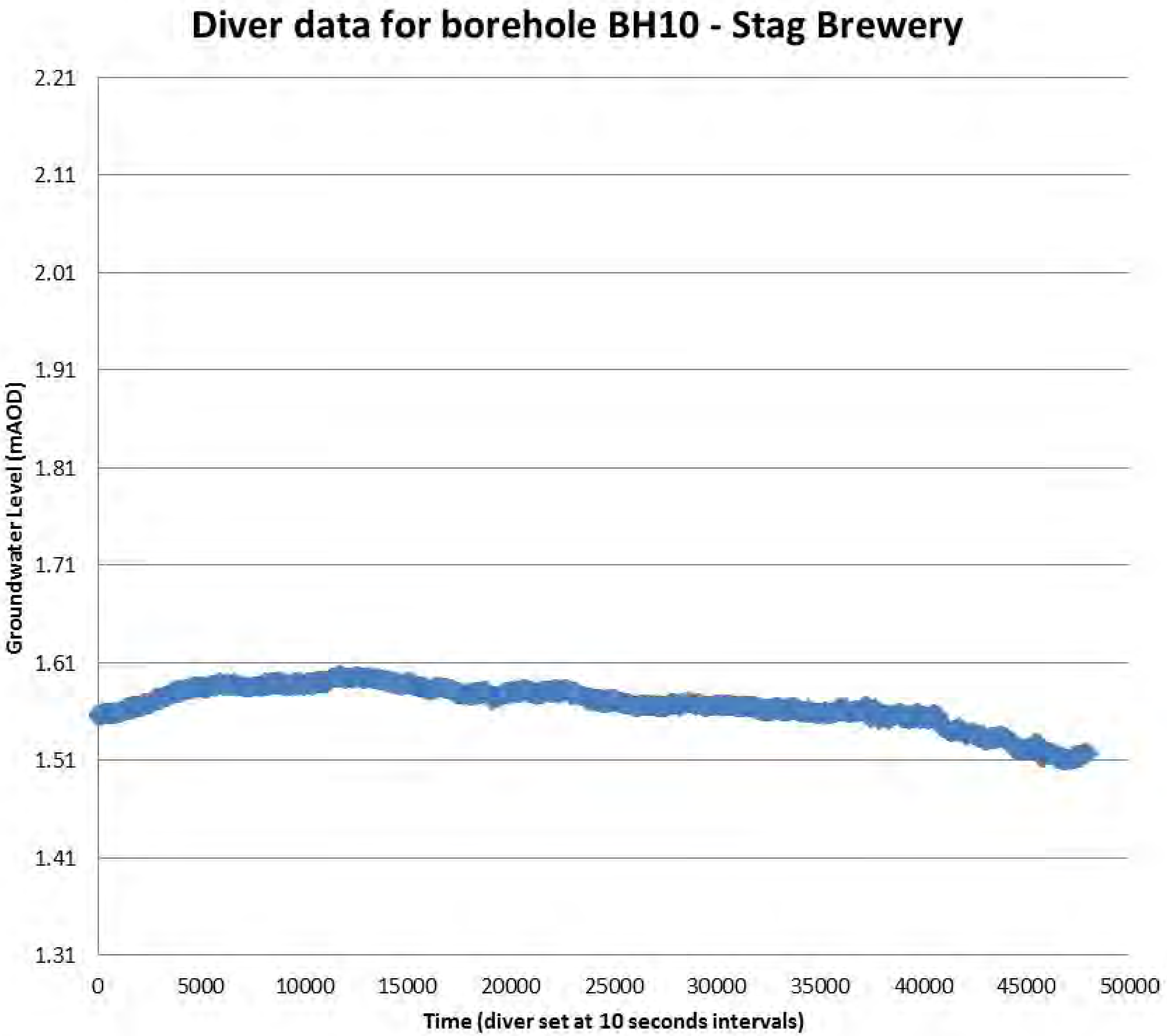
GRAPH 1


Diver data for borehole BH201A - Stag Brewery

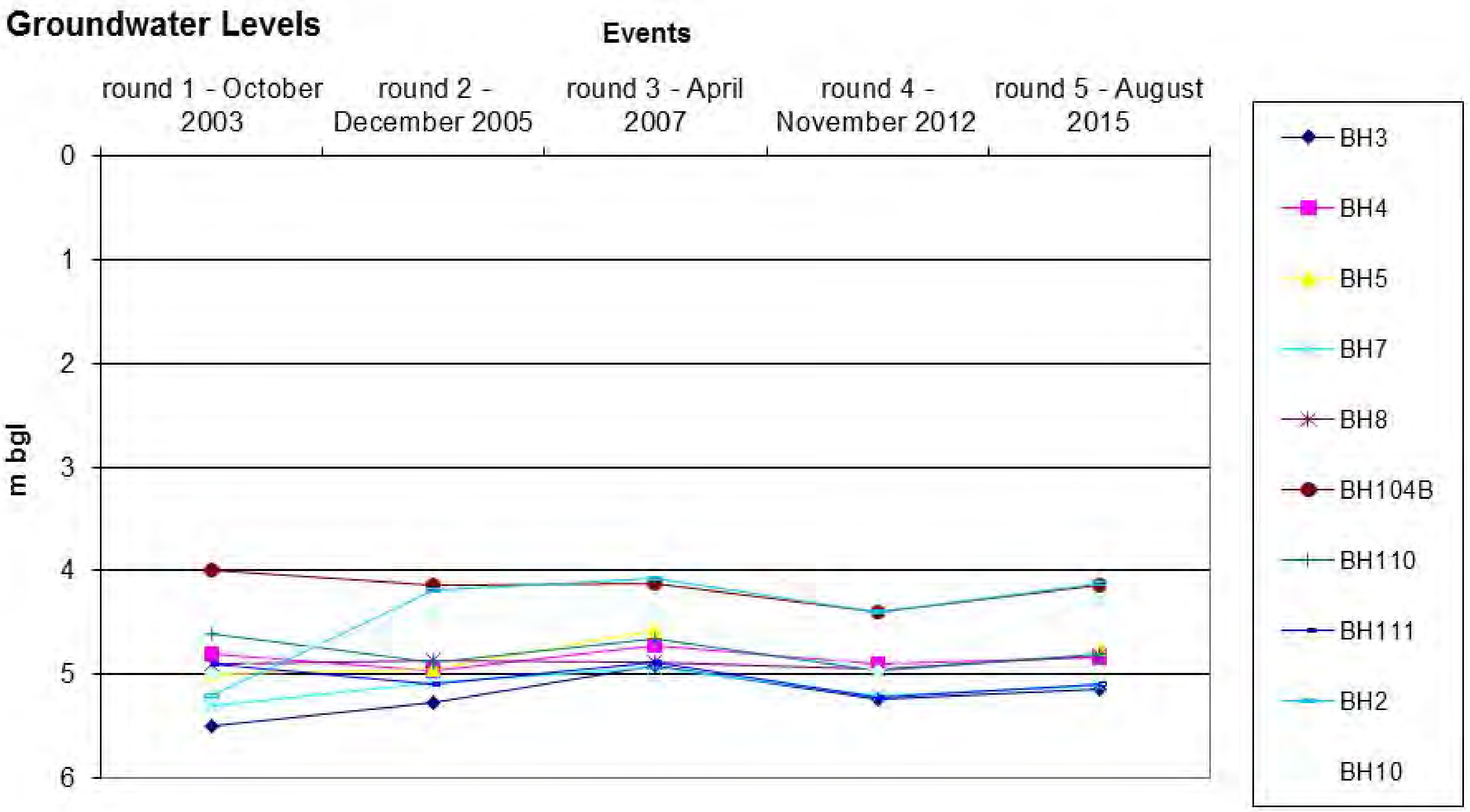
GRAPH 2


Diver data for borehole BH4 - Stag Brewery
Groundwater Level (mAOD)
2.21
2.11
2.01
1.91
1.81
1.71
1.61
1.51
1.41
1.31
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
Time (diver set at 10 seconds intervals)

GRAPH 3


Diver data for borehole BH10 - Stag Brewery
Groundwater Level (mAOD)
2.21
2.11
2.01
1.91
1.81
1.71
1.61
1.51
1.41
1.31
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
Time (diver set at 10 seconds intervals)

GRAPH 4


Groundwater Levels
Events
round 1 - October 2003
round 2 - December 2005
round 3 - April 2007
round 4 - November 2012
round 5 - August 2015
m bgl
0
1
2
3
4
5
6
BH3
BH4
BH5
BH7
BH8
BH104B
BH110
BH111
BH2
BH10

APPENDIX A – DE-SILTING & DEVELOPMENT OF EXISTING MONITORING WELLS

DE-SILTING OF MONITORING WELLS

The review of the historical information in the previous SPMP reports between October 2003 and November 2012 indicated the depths of four groundwater monitoring wells to have decreased due to accumulation of sand and silt in the standpipes. The changes in depth are presented in **Table A1.**

Table A1 – Changes in Wells Depths

Well ID	Dip Round 1 October 2003 [m bgl]	Dip Round 2 December 2005 [m bgl]	Dip Round 3 April 2007 [m bgl]	Dip Round 4 November 2012 [m bgl]	Change in Depth [m]
BH3	6.60	6.18	5.94	5.38	-1.22
BH4	6.70	6.31	6.23	4.95	-1.75
BH5	7.00	6.47	6.23	4.87	-2.13
BH10	7.13	7.13	7.13	5.53	-1.47

On 24 and 25 August 2015 AECOM undertook the de-silting of the thirteen existing groundwater monitoring wells: BH2, BH3, BH4, BH5, BH7, BH8, BH9, BH10, BH104B, BH109, BH110, BH111 and BH112.

Air lift surging techniques were used to de-silt the thirteen monitoring wells. The monitoring wells were alternatively surged and pumped with air using a compressor in combination with a peristaltic pump. Air is injected into the base of the silted wells and the air bubbles created a surging effect that carries water and dislodged sediments upwards and out of the well. As the groundwater reaches the top of the casing, the air supply is shut off, allowing the aerated water column to fall. A peristaltic pump is then used to pump the well to remove the silt and sand deposits from the screen from the base of the wells.

A summary of the results of the de-silting works is in **Table A2.**

Table A2: De-silting of Groundwater Monitoring Wells (AECOM, 24-25 August 2015)

Well ID	Well Screen Interval [m bgl] (Formation)	Standing Water Level [m bgl]	Initial Depth to Bottom of Well [m bgl]	Final Depth to Bottom of Well After De-silting [m bgl]	Comments
BH2	3.0 – 6.8 (Gravel)	4.150	6.540	6.800	Good recharge. 2 litres of sludge / silt removed and the well returned to its as constructed depth.
BH3	2.5 – 6.5 (Sand)	5.250	5.130	6.095	Initially dry. Organic material removed. Good recharge thereafter.
BH4	2.5 – 6.7m (Sand)	4.895	4.090	6.190	Initially dry. Organic material removed. Good groundwater recharge thereafter.
BH5	3.0 – 7.0m (Sand)	4.840	4.750	6.100	Initially dry. Organic material removed. Good recharge thereafter.
BH7	2.5 – 6.7m (*) (Sand)	5.140	6.470	7.150	Good recharge. 3 litres of sludge / silt removed.

Table A2: De-silting of Groundwater Monitoring Wells (AECOM, 24-25 August 2015)

Well ID	Well Screen Interval [m bgl] (Formation)	Standing Water Level [m bgl]	Initial Depth to Bottom of Well [m bgl]	Final Depth to Bottom of Well After De-silting [m bgl]	Comments
BH8	3.0 – 7.2m (Sand)	4.875	6.240	6.900	Good recharge. 1.5 litres of sludge / silt removed.
BH9	No information available. (**)	Dry	2.360	2.650	Initially dry. Very little sludge removed. Recharges slowly.
BH10	3.0 – 7.0m (Sand)	4.375	5.015	7.035	Good recharge. Silty sludge removed. Well returned to its as constructed depth.
BH104B	1.0 – 6.0m (MG + sandy Clay+Sand)	4.190	4.880	4.980	Good recharge. Very little sludge removed.
BH109	1.0 – 6.0m (sandy Clay + Sand)	4.550	6.130	6.150	Good recharge. 1 litre of sand / sludge removed.
BH110	0.8 – 5.70m (MG + Sand + Gravel)	4.855	4.750	5.530	Initially dry. Silty sludge removed. Good groundwater recharge thereafter.
BH111	1.0 – 7.6m (MG + Sand)	5.150	7.470	7.657	Good recharge. Well returned to its as constructed depth.
BH112	1.0 – 3.0m (MG+Grave)	Dry	2.680	2.780	Well found dry. Very little sludge removed. Remaining deposits could not be removed as very compacted.

MG – Made Ground

m bgl – metres below ground level

(*) Well Assumed deeper. Original CRA, 2003 BH7 borehole log indicates 6.70m bgl as the final depth to installation but the well measurements carried out in August 2015 indicate that the depth to bottom of this well reached 7.150m bgl. During the September 2015 groundwater monitoring event this was measured to 6.947m bgl as a result of further silt deposited after the de-silting event.

(**) Based on the original CRA, 2003 borehole log, no monitoring well was installed within the Made Ground in this location. However, analyses of groundwater samples were carried out. Following the initial AECOM July 2015 site walkover, a 50mm well standpipe was noted within a steel cover flush to the ground. Based on the review of the historical groundwater monitoring reports and September 2015 dipping activities, BH9 is considered complete with a groundwater monitoring installation. No information on the well screen interval is available for review.

The volume of groundwater/silt/sand sludge removed from the wells was between 1.5 and 50 litres. Following the purging, standing water levels ranging between 4.150m and 5.250m bgl were measured in the monitoring wells, with the exception of well BH112 which remained dry. The post-desilting and development water column thicknesses for monitoring and sampling ranged between 0.675m (BH110) and 2.660m (BH10).

No historical information is reported to detail the construction of the monitoring well at BH9. However, the drilling of BH9A, immediately adjacent to BH9, recorded an obstruction at 3.3m bgl, thought to represent a relict concrete slab. This is consistent with the drilling refusal reported on the BH9 at 2.2m bgl. It is therefore considered that BH9 is installed within the Made Ground and groundwater samples collected from this location are representative of perched water. With the exception of BH9, where fast drawdown and slow recharge of the perched groundwater was noted, the monitoring wells displayed relatively slow drawdown and rapid recharge. This, along with the amount of water available, suggested that the monitoring network is suitable for monitoring and sampling from the superficial aquifer beneath the Site.

APPENDIX B – EXPLORATORY HOLE LOGS

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH109A**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 28-08-15 End Date 28-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	(0.35) 0.35	CONCRETE		⊠ ■
0.5		<0.1		⊠	(0.35) 0.70	MADE GROUND: Brown, grey, sandy, fine to coarse, angular to subagular gravel. Sand is fine to coarse. Gravel is concrete, red and yellow brick and natural stone.	Dry NVO	■
1.0	⊠ BH109A_0.8	<0.1		▤	(0.50) 1.20	Soft, dark brown, sandy, gravelly clay. Sand is fine to coarse. Gravel is fine to medium, angular to subangular of flint.	Damp NVO	■
1.5		<0.1		▤	(0.70) 1.90	Brown, sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium subrounded of flint.	Damp NVO	■
2.0		<0.1		○	2.10	Brown, sandy fine to medium, subrounded to subangular GRAVEL of flint. Sand is fine to coarse.	Damp NVO	■
2.5		<0.1		⁘	(0.70) 2.80	Brown, grey, slightly gravelly, fine to coarse SAND. Gravel is fine, subrounded of flint.	Damp NVO	■
3.0		<0.1		⁘	(0.70) 3.50	Brown/orange, gravelly, fine to coarse SAND. Gravel is fine to medium, subangular to subrounded of flint.	Damp NVO	■
3.5		<0.1				Borehole terminated at 3.5m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
⊠ Cement seal	⊠ Small disturbed sample	▨ Concrete	⊠ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		▤ Sandy gravelly CLAY	○ Sandy Gravel	
		⁘ Gravelly Sand		
		▼ Groundwater Table	▽ Groundwater Strike	

		Logged By	Approved By
		CG	MM

AECOM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH201**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 20-08-15 End Date 20-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer.	1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.25	TARMAC over CONCRETE		☒
0.5				☒	(0.45) 0.70	MADE GROUND: Dense, sandy, fine-medium, angular-subangular gravel of brick and concrete. Sand is fine to coarse.	Dry NVO.	☒
						Borehole terminated at 0.7m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend	GENERAL REMARKS
☒ Cement seal		☐ Ashphalt ☒ Made Ground ▼ Groundwater Table ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 0.7mbgl

		Logged By	CG	Approved By	MM

Borehole Log

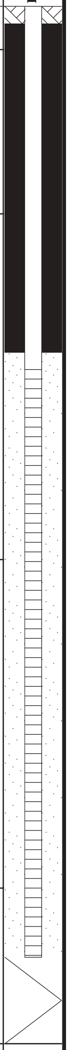
Project Name and Site Location		Client		BOREHOLE No
Stag Brewery, Mortlake, London SW14		AB Inbev		**BH201A**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
47075502	Start Date 24-08-15 End Date 25-08-15			
Contractor		Method / Plant Used		Sheet
ESL		Concrete Corer and Solid Stem Auger.		1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water
0.5		<0.1	
0.7	☒ BH201A_0.7		
1.0		<0.1	
1.5		<0.1	
2.0	☒ BH201A_1.9-2.0	<0.1	
2.5		<0.1	
3.0		<0.1	
3.5		<0.1	
3.7			1 (Groundwater Strike)
4.0			
4.5			
5.0			
5.5			
6.0			

STRATA

Legend	Depth (Thickness)	DESCRIPTION	COMMENTS
	0.25	TARMAC over CONCRETE	
☒	(0.95) 1.20	MADE GROUND: Brown/red/ yellow, gravelly, fine-coarse sand. Gravel is fine-coarse, angular-subangular of brick, flint and natural stone.	Damp NVO
⁘	(2.00) 3.20	Light brown, dense, medium-fine SAND with occasional rounded flint.	Dry NVO
⊠	(1.90) 5.10	SAND and GRAVEL. Gravel is medium-coarse flint. Sand is fine-coarse dense light brown.	Wet from 3.7mbgl NVO
☰	(0.90) 6.00	Grey, mottled dark brown, possibly stiff CLAY (LONDON CLAY).	Dry, NVO.
		Borehole terminated at 6.0m bgl.	

Installation



Backfill

- ▧ Cement seal riser
- ▮ Bentonite seal riser
- ▥ Filter pack riser
- ▦ Filter pack screen
- ▷ Hole Collapse

Sample Details

- ☒ Small disturbed sample

Legend

☐ Ashphalt	☒ Made Ground
⁘ Sand	⊠ Silty/clayey PEAT
☰ Clay	
▼ Groundwater Table	1 Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG/MM	Approved By	GM

AECOM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev	BOREHOLE No **BH202**
Job No 47075502	Date Start Date 24-08-15 End Date 24-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL		Method / Plant Used Concrete Corer.	Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick-ness)	DESCRIPTION	COMMENTS	Installation
				☐	0.25	TARMAC over CONCRETE		▨
0.5		<0.1		☒	(0.35) 0.60	MADE GROUND: Grey, dense, sand and gravel of concrete. Sand is fine-coarse. Gravel is fine-medium, angular-subangular.	Dry NVO	■
				☒	0.80	MADE GROUND: Brown, sandy, fine-medium, angular-subangular gravel of concrete. Sand is fine-coarse.	Dry NVO	■
						Borehole terminated at 0.8m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal ■ Bentonite Fill		☐ Ashphalt ▼ Groundwater Table	☒ Made Ground ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14	Client AB Inbev	BOREHOLE No **BH202A**

Job No 47075502	Date Start Date 24-08-15 End Date 24-08-15	Ground Level (m)	Co-Ordinates ()

Contractor ESL	Method / Plant Used Concrete Corer and Solid Stem Auger.	Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				☐	0.25	TARMAC over CONCRETE		☒
0.5		<0.1		☒	(0.35) 0.60	MADE GROUND: Grey, sandy, fine-medium, angular-subangular gravel of concrete. Sand is fine-coarse.	Wet NVO	■
1.0	☒ BH202A_0.8	<0.1		☒	(1.20)	MADE GROUND: Brown, gravelly, fine-coarse sand. Gravel is fine-medium, subangular-subrounded of concrete.	Dry NVO	■
1.5		<0.1		☒	1.80			■
						Borehole terminated at 1.8m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal ■ Bentonite Fill	☒ Small disturbed sample	☐ Ashphalt ▼ Groundwater Table	☒ Made Ground ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By CG	Approved By MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev	BOREHOLE No **BH203**
Job No 47075502	Date Start Date 20-08-15 End Date 20-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL		Method / Plant Used Concrete Corer and Solid Stem Auger.	Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	STRATA Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.20	TARMAC over CONCRETE		▨
0.5		<0.1		☒	(0.70) 0.90	MADE GROUND: Very dense, sandy, fine-medium, angular-subangular gravel of yellow and red brick, granite and concrete.	Dry NVO	■
					1.00	Concrete / possible granite slab.		
					(2.00) 3.00	No recovery.		
						Borehole terminated at 3.0m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend	GENERAL REMARKS
▨ Cement seal riser ■ Bentonite seal riser ▥ Filter pack riser ▤ Filter pack screen		☐ Ashphalt ☒ Made Ground ▼ Groundwater Table ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By CG	Approved By MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH203A**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 20-08-15 End Date 20-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Solid Stem Auger.	1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION (STRATA)	COMMENTS	Installation
					0.20	TARMAC over CONCRETE		▧
0.5	☒ BH203A_0.5	<0.1		☒	(0.70) 0.90	MADE GROUND: Very dense, sandy, angular to sub-angular gravel of brick, granite and concrete.	Dry NVO	■
				▨	1.00	Concrete / granite slab.		■
1.0		<0.1				No recovery.	Damp, NVO.	■
1.5		<0.1						■
2.0		<0.1			(2.50)			■
2.5		<0.1						■
3.0								■
3.5					3.50			■
				▨	3.60	Concrete / granite slab.		■
4.0					(1.20)	No recovery.	Damp, NVO.	▥
4.5					4.80			▥
5.0				☰	5.00	Possibly CLAY (no recovery).	Wet. NVO.	▥
						Borehole terminated at 5.0m bgl.		

Backfill

- ▧ Cement seal riser
- ■ Bentonite seal riser
- ▥ Filter pack riser
- ▤ Filter pack screen

Sample Details

- ☒ Small disturbed sample

Legend

☐ Ashphalt	☒ Made Ground
▨ Concrete	☰ Clay
▼ Groundwater Table	▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH204**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 21-08-15 End Date 21-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.28	TARMAC over CONCRETE	Dry NVO	☒ ■
				☒	0.40	MADE GROUND: Pea shingle.	Dry NVO	■
0.5				▨	0.70	CONCRETE	Dry NVO	■
		<0.1		☒	0.80	MADE GROUND: Red bricks.	Dry NVO	■
1.0				☒	(0.40) 1.20	MADE GROUND: Brown/ red, sandy, fine-medium, angular-subangular brick gravel.	Dry NVO	■
1.5	☒ BH204_1.3	<0.1		☒	1.50	MADE GROUND: Very soft, brown/ red, very sandy clay. Sand is fine-coarse.	Dry NVO	■
2.0 2.5 3.0		<0.1 <0.1		☒	(1.50) 3.00	MADE GROUND: Dark grey/ black, sandy, fine-medium, angular-subangular gravel of flint. Sand is fine-coarse.	Dry NVO	■
				⁘	3.20	Orange/ yellow, fine-coarse SAND.	Dry NVO	■
3.5	☒ BH204_3.3	<0.1		○	3.50	Brown, sandy, fine-medium, subangular-subrounded GRAVEL.	Damp NVO	■
						Borehole terminated at 3.5m bgl.		

Backfill

☒ Cement seal

■ Bentonite Fill

Sample Details

☒ Small disturbed sample

Legend

☐ Ashphalt

☒ Made Ground

▨ Concrete

⁘ Sand

○ Sandy Gravel

▼ Groundwater Table

▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH205**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 21-08-15 End Date 21-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water
0.5			
		<0.1	
1.0	☒ BH205_1.0		
		<0.1	
1.5			
2.0		<0.1	
2.5	☒ BH205_2.5	<0.1	
3.0		<0.1	

STRATA

Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
▨	0.27	CONCRETE		☒ ■
☒	(0.53) 0.80	MADE GROUND: Grey, dense, fine to coarse sand and gravel of concrete.	Dry NVO	■
☒	(1.70) 2.50	MADE GROUND: Very dense, brown, sandy, fine-medium, angular-subangular gravel of brick, concrete, flint, glass. Sand is fine-coarse. Little ricovery.	Dry NVO	■
○	(0.50) 3.00	Brown/ orange, gravelly, fine-coarse SAND. Gravel is fine-medium, subangular-subrounded, becoming more gravelly with depth. Little recovery.	Dry NVO	■
		Borehole terminated at 3.0m bgl.		

Backfill

☒ Cement seal

■ Bentonite Fill

Sample Details

☒ Small disturbed sample

Legend

▨ Concrete

☒ Made Ground

○ Gravelly Sand

▼ Groundwater Table

▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev		BOREHOLE No **BH206**
Job No 47075502	Date Start Date 21-08-15 End Date 21-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.		Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.20	TARMAC over CONCRETE		▨
0.5				☒	(0.80) 1.00	MADE GROUND: Grey, dense, fine to coarse sand and gravel of concrete.	Dry, NVO.	■
1.0	☒ BH206_1.1	<0.1		☒	(0.80) 1.80	MADE GROUND: Soft brown sandy clay. Gravel is fine-medium, angular-subangular of brick and concrete.	Dry, NVO.	■
1.5		<0.1						
						Borehole terminated at 1.8m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal ■ Bentonite Fill	☒ Small disturbed sample	☐ Ashphalt ▼ Groundwater Table	☒ Made Ground ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By CG	Approved By MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14			Client AB Inbev	BOREHOLE No **BH207**
Job No 47075502	Date Start Date 25-08-15 End Date 25-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.		Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.20	TARMAC		
0.5	BH207_0.7	<0.1		☒	(0.90) 1.10	MADE GROUND: Grey/red, dense, fine to coarse sand and gravel of concrete and brick.	Dry, NVO.	
1.0 1.5 2.0		<0.1 <0.1			(1.50) 2.60	Soft, gravelly, brown CLAY. Gravel is fine-medium, subangular-subrounded of flint. (Possibly reworked)	Dry, NVO.	
2.5 3.0 3.5	BH207_2.6-3.5	<0.1 <0.1 <0.1			(0.90) 3.50	Brown, dense, gravelly SAND. Gravel fine, occasionally medium of flint. Sand is fine to medium.	Dry, NVO.	
						Borehole terminated at 3.5m bgl.		

Backfill

- ☒ Cement seal
- ■ Bentonite Fill

Sample Details

- ☒ Small disturbed sample

Legend

- ☐ Ashphalt
- ☒ Made Ground
- Gravelly Clay
- Gravelly Sand
- ▼ Groundwater Table
- Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev		BOREHOLE No **BH208**
Job No 47075502	Date Start Date 25-08-15 End Date 25-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer.		Sheet 1 of 1

				STRATA				
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.25	CONCRETE		▨
0.5		<0.1		☒	(0.55) 0.80	MADE GROUND: Brown, sandy, medium gravel of concrete, brick and flint.	Dry, NVO.	■
						Borehole terminated at 0.8m bgl due to refusal on concrete.		

Backfill

- ☒ Cement seal
- ■ Bentonite Fill

Sample Details

Legend

▨ Concrete	☒ Made Ground
▼ Groundwater Table	▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

Logged By	CG	Approved By	MM

AECOM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH208A**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 25-08-15 End Date 25-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.25	CONCRETE		☒
0.5		<0.1		☒	0.50	MADE GROUND: Fine to medium, angular to subangular concrete gravel.	Dry NVO	■
1.0	☒ BH208A_0.8 ☒ BH208A_1.1	<0.1		☒	(0.50) 1.00	MADE GROUND: Dark brown, slightly clayey, gravelly, fine to coarse sand. Gravel fine occasionally coarse, subangular to subrounded of brick and flint.	Dry NVO	■
1.5 2.0 2.5 3.0 3.5		<0.1 <0.1 <0.1 <0.1		○	(2.50) 3.50	Medium density, brown, gravelly, fine to coarse SAND. Gravel is fine to medium, subangular to subrounded of flint. Very sandy between 1.5m and 1.9m.	Dry NVO	■
						Borehole terminated at 3.5m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal	☒ Small disturbed sample	▨ Concrete	☒ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		○ Gravelly Sand		
		▼ Groundwater Table	▽ Groundwater Strike	

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location		Client		BOREHOLE No
Stag Brewery, Mortlake, London SW14		AB Inbev		**BH209**
Job No 47075502	Date Start Date 25-08-15 End Date 25-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.		Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.27	CONCRETE		☒
0.5	☒ BH209_0.5	<0.1		☒		MADE GROUND: Brown, grey/ black, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular of brick and concrete. Becoming	Dry NVO	■
1.0								■
		<0.1						■
1.5					(2.43)			■
2.0								■
2.5					2.70			■
	☒ BH209_2.7-3.4	<0.1		○		Brown, gravelly, fine to coarse SAND. Gravel is fine to medium, subangular to subrounded of flint. Very little gravel between 3.0 -3.2m. Poor recovery between 1.2m - 3.4m. Driller noted it becoming dense at 2.7m.	Dry NVO	■
3.0					(0.70)			■
					3.40			■
						Borehole terminated at 3.4m bgl.		

Backfill

- ☒ Cement seal
- ■ Bentonite Fill

Sample Details

- ☒ Small disturbed sample

Legend

▨ Concrete	☒ Made Ground
○ Gravelly Sand	
▼ Groundwater Table	▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH210**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 26-08-15 End Date 26-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

STRATA

Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
	0.30	CONCRETE		▨
	(0.90) 1.20	MADE GROUND: Dense, brown, sandy, fine to coarse, subangular to rounded gravel of natural stones.	Dry NVO	■
	(0.90) 2.10	Soft, brown, sandy CLAY (possibly reworked clay).	Dry NVO	■
	(1.40) 3.50	Brown, gravelly, fine to coarse SAND. Gravel is fine to medium to subrounded of flint. Becoming more gravelly with depth.	Dry NVO	■
		Borehole terminated at 3.5m bgl.		

Depth BGL	Sample / Test Details	PID (ppm)	Water
0.5		<0.1	
	BH210_0.8		
1.0			
		<0.1	
1.5			
2.0		<0.1	
	BH210_2.2-2.8	<0.1	
2.5			
		<0.1	
3.0			
3.5		<0.1	

Backfill

- ☒ Cement seal
- ■ Bentonite Fill

Sample Details

- ☒ Small disturbed sample

Legend

- Concrete
- Made Ground
- Sandy Clay
- Gravelly Sand
- ▼ Groundwater Table
- Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

AECOM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH211**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 26-08-15 End Date 26-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.25	CONCRETE		▨
0.5 1.0	☒ BH211_0.7	<0.1		☒	(1.25) 1.50	MADE GROUND: Brown, sandy, fine to coarse, subangular to rounded gravel of natural stone, wood and occasional brick. Becoming clayey with depth.	Dry NVO	■
1.5 2.0		<0.1		▤	(0.60) 2.10	Soft, brown, grey, sandy, gravelly CLAY. Gravel is fine to medium, subangular to angular and subrounded of flint. Sand is fine to coarse. (possibly reworked clay)	Dry NVO	■
	☒ BH211_2.2	<0.1 <0.1		⁘	(1.40) 3.50	Brown, gravelly, fine to coarse SAND. Gravel is fine to medium, subangular to rounded of flint. Becoming more gravelly with depth.	Dry NVO	■
						Borehole terminated at 3.5m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal	☒ Small disturbed sample	▨ Concrete	☒ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		▤ Gravelly Sandy Clay	⁘ Gravelly Sand	
		▼ Groundwater Table	▽ Groundwater Strike	

		Logged By	CG	Approved By	MM

AECOM

Borehole Log

Project Name and Site Location		Client		BOREHOLE No
Stag Brewery, Mortlake, London SW14		AB Inbev		**BH212**
Job No 47075502	Date Start Date 27-08-15 End Date 27-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.		Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.30	CONCRETE		▨
0.5	BH212_0.6	<0.1		☒	(1.40)	MADE GROUND: Pink / red, gravelly, fine to coarse sand. Gravel is fine to medium of flint with occasional coarse brick and crushed concrete.	Dry NVO	■
1.0		<0.1		☒				■
1.5		<0.1		☒	1.70			■
	BH212_1.8-2.5	<0.1		○		Dense, brown, gravelly fine to coarse SAND. Gravel is fine to medium subangular to rounded. Becoming more gravelly with depth.	Dry NVO	■
2.0				○				■
2.5		<0.1		○	(1.80)			■
3.0		<0.1		○				■
3.5		<0.1		○	3.50			■
						Borehole terminated at 3.5m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal	☒ Small disturbed sample	▨ Concrete	☒ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		○ Gravelly Sand		
		▼ Groundwater Table	▽ Groundwater Strike	

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH213**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 27-08-15 End Date 27-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.24	CONCRETE		▨
0.5	☒ BH213_0.6	<0.1		☒	(0.76) 1.00	MADE GROUND: Brown / grey, slightly clayey, sandy, fine to coarse, angular to subangular gravel of brick, concrete, tile and plastic. Sand is fine to coarse.	Damp NVO	■
1.0		<0.1			(0.60) 1.60	Soft brown grey slightly gravelly CLAY. (Possibly reworked clay)		■
1.5								■
	☒ BH213_1.7-2.0	<0.1			(1.40) 3.00	Dense, brown, gravelly, fine to coarse SAND. Gravel is fine to medium, angular to subrounded of flint. Occasional sand and gravel pockets throughout.	Damp NVO	■
2.0								■
2.5		<0.1						■
3.0		<0.1				Borehole terminated at 3.0m bgl.		

Backfill

- ☒ Cement seal
- ■ Bentonite Fill

Sample Details

- ☒ Small disturbed sample

Legend

- ▨ Concrete
- ☒ Made Ground
- ▭ Gravelly Clay
- ▭ Gravelly Sand
- ▼ Groundwater Table
- ▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

AECOM

Borehole Log

Project Name and Site Location		Client		BOREHOLE No
Stag Brewery, Mortlake, London SW14		AB Inbev		**BH214**
Job No 47075502	Date Start Date 25-08-15 End Date 25-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Solid Stem Auger.		Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick-ness)	DESCRIPTION	COMMENTS	Installation
					0.05	TARMAC		☒
				▨	0.20	CONCRETE		■
0.5				☒	(0.60) 0.80	MADE GROUND: Light brown, dense, sandy gravel. Sand is medium to coarse. Gravel is medium to coarse, subangular to subrounded of flint and concrete.	Dry NVO	■
1.0 1.5 2.0 2.5	☒ BH214_0.85	<0.1		☒	(1.80) 2.60	MADE GROUND: Light brown, dense gravelly sand. Sand is medium to coarse. Gravel is medium to coarse, subangular to subrounded of flint and concrete.	Dry NVO	■
						Borehole terminated at 2.6m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal	☒ Small disturbed sample	☐ Ashphalt	▨ Concrete	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		☒ Made Ground		
		▼ Groundwater Table	▽ Groundwater Strike	

		Logged By	MM	Approved By	GM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev	BOREHOLE No **BH214A**
Job No 47075502	Date Start Date 25-08-15 End Date 25-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL		Method / Plant Used Concrete Corer and Solid Stem Auger.	Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.05	TARMAC		☒
				▨	0.20	CONCRETE		■
0.5				☒	(0.60) 0.80	MADE GROUND: Light brown, dense, sandy gravel. Sand is medium to coarse. Gravel is medium to coarse, subangular to subrounded of flint and concrete.	Dry NVO	■
1.0 1.5 2.0				☒	(1.20) 2.00	MADE GROUND: Light brown, dense gravelly sand. Sand is medium to coarse. Gravel is medium to coarse, subangular to subrounded of flint and concrete.	Dry NVO	■
						Borehole terminated at 2.0m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal ■ Bentonite Fill		☐ Ashphalt ☒ Made Ground ▼ Groundwater Table	▨ Concrete ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By MM	Approved By GM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev	BOREHOLE No **BH2A**
Job No 47075502	Date Start Date 25-08-15 End Date 25-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.	Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water
0.5	☒ BH2A_0.5	<0.1	
1.0		<0.1	
1.5	☒ BH2A_1.5	<0.1	
2.0		<0.1	
2.5		<0.1	
3.0		<0.1	
3.5			

STRATA

Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
Concrete	0.25	CONCRETE		Cement seal
Made Ground	(0.55) 0.80	MADE GROUND: Brown sandy fine-medium angular gravel of flint and crushed concrete. Sand is fine-coarse.	Dry NVO	Bentonite Fill
Concrete	1.10	CONCRETE	Dry NVO	Bentonite Fill
Sandy Clay	(1.40) 2.50	Soft, brown, sandy CLAY. (Possibly reworked clay)	Dry NVO	Bentonite Fill
Gravelly Sand	(1.00) 3.50	Dense, brown, gravelly, fine-coarse SAND. Gravel is fine-medium, subangular-subrounded of flint.	Dry NVO	Bentonite Fill
		Borehole terminated at 3.5m bgl.		

Backfill	Sample Details	Legend	
☒ Cement seal	☒ Small disturbed sample	Concrete	Made Ground
■ Bentonite Fill		Sandy Clay	Gravelly Sand
		▼ Groundwater Table	Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

Logged By	CG	Approved By	MM

AECOM

Borehole Log

Project Name and Site Location		Client		BOREHOLE No
Stag Brewery, Mortlake, London SW14		AB Inbev		**BH3A**
Job No 47075502	Date Start Date 28-08-15 End Date 28-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.		Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				Concrete	0.25	CONCRETE.		Cement seal
0.5	☒ BH3A_0.5	<0.1		Made Ground	(1.25) 1.50	MADE GROUND: Brown, gravelly, fine-coarse sand. Gravel is fine-medium, occasionally coarse, angular-subangular of brick, glass and concrete.	Dry NVO	Bentonite Fill
1.0		<0.1						
1.5		<0.1		Sandy Gravel	(0.50) 2.00	Dense, brown, sandy, fine-medium, subangular-subrounded GRAVEL of flint. Sand is fine-coarse.	Dry NVO	
2.0		<0.1		Gravelly Sand	(1.00) 3.00	Dense, brown, gravelly, fine-coarse SAND. Gravel is subangular-subrounded fine-coarse of flint.	Dry NVO	
2.5		<0.1						
3.0		<0.1				Borehole terminated at 3.0m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal	☒ Small disturbed sample	Concrete	☒ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		Sandy Gravel	Gravelly Sand	
		▼ Groundwater Table	Groundwater Strike	

		Logged By	CG	Approved By	MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH4A**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 27-08-15 End Date 27-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water
0.5		<0.1	
0.9	☒ BH4A_0.9		
1.0		<0.1	
1.5		<0.1	
2.0		<0.1	
2.5		<0.1	
3.0		<0.1	
3.5	☒ BH4A_3.5-4.0	<0.1	
4.0		<0.1	

Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
☒	(1.30) 1.30	MADE GROUND: Brown, grey, slightly clayey, gravelly, fine-coarse sand. Gravel is fine-medium, angular-subangular of concrete, brick tile and rootlets.	Dry. Possible asbestos fragments.	▨ ■
○	(2.70) 4.00	Brown, very gravelly, fine-coarse SAND. Gravel is fine-medium, subangular-subrounded of flint.	Dry NVO	■
		Borehole terminated at 4.0m bgl.		

Backfill	Sample Details	Legend	
☒ Cement seal	☒ Small disturbed sample	☒ Made Ground	○ Gravelly Sand
■ Bentonite Fill		▼ Groundwater Table	▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

		Logged By	CG	Approved By	MM

TE_08.02.10 STAG LOGS - FULL.GPJ AGS3_ALL.GDT 22/9/15

AECOM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev	BOREHOLE No **BH5A**
Job No 47075502	Date Start Date 28-08-15 End Date 28-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.	Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				☒	0.10	MADE GROUND: Pea gravel.		▨
0.5	☒ BH5A_0.5	<0.1		☒	(1.70) 1.80	MADE GROUND: Brown, slightly clayey, gravelly, fine-coarse sand. Gravel is fine-medium, occasionally coarse, subangular-subrounded of red brick.	Dry NVO	■
1.0		<0.1						
1.5		<0.1						
2.0		<0.1		○	(1.20) 3.00	Dense, brown, gravelly, fine-coarse SAND. Gravel is fine-medium, subangular-rounded of flint.	Dry NVO	■
2.5		<0.1						
3.0		<0.1				Borehole terminated at 3.0m bgl.		

Backfill	Sample Details	Legend	
☒ Cement seal	☒ Small disturbed sample	☒ Made Ground	○ Gravelly Sand
■ Bentonite Fill		▼ Groundwater Table	▽ Groundwater Strike

GENERAL REMARKS

NVO - No visual or Olfactory Evidence of Contamination.
m bgl - meters below ground level.
Hand pitted to 1.2mbgl

Logged By	CG	Approved By	MM

AECOM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev		BOREHOLE No **BH7A**
Job No 47075502	Date Start Date 27-08-15 End Date 27-08-15	Ground Level (m)	Co-Ordinates ()	
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.		Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	(0.55) 0.55	CONCRETE		☒ / ■
0.7	☒ BH7A_0.7	<0.1		☒	(0.65) 1.20	MADE GROUND: Soft, dark brown/grey, slightly gravelly, silty clay. Gravel is fine and subangular of red brick with fragments of wood.	Damp NVO	■
1.3		<0.1		▤	1.50	Brown, slightly gravelly CLAY. Gravel is medium to coarse of flint.	Dry NVO	■
1.8		<0.1		⁘	(1.50) 3.00	Dense, brown, gravelly, fine-coarse SAND. Gravel content increases with depth. Gravel is fine-medium, subangular-subrounded of flint.	Dry NVO	■
2.5	☒ BH7A_2.5-3.0	<0.1						■
3.0		<0.1				Borehole terminated at 3.0m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal	☒ Small disturbed sample	▨ Concrete	☒ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl
■ Bentonite Fill		▤ Gravelly Clay	⁘ Gravelly Sand	
		▼ Groundwater Table	∇ Groundwater Strike	

		Logged By CG	Approved By MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14		Client AB Inbev	BOREHOLE No **BH7B**
Job No 47075502	Date Start Date 27-08-15 End Date 27-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL		Method / Plant Used Concrete Corer.	Sheet 1 of 1

STRATA

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				▨	0.20	CONCRETE		▨
				☒	0.30	MADE GROUND: Brown, sandy, fine-medium, angular-subangular gravel of flint and concrete. Sand is fine-coarse.	Dry NVO	▨
0.5				▨	0.60	CONCRETE with rebar.		▨
						Borehole terminated at 0.6m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal		▨ Concrete	☒ Made Ground	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 0.6mbgl
		▼ Groundwater Table	▽ Groundwater Strike	

		Logged By CG	Approved By MM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14			Client AB Inbev		BOREHOLE No **BH8A**
Job No 47075502	Date Start Date 26-08-15 End Date 26-08-15	Ground Level (m)	Co-Ordinates ()		
Contractor ESL		Method / Plant Used Concrete Corer and Premier Rig.			Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water
0.5	☒ BH8A	2.1	
1.0		<0.1	
1.5		<0.1	
2.0		<0.1	
		<0.1	
2.5			
3.0	☒ BH8A_3.0-3.5	<0.1	
3.5		<0.1	

STRATA

Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
▨	0.20	CONCRETE		☒
☒	0.40	MADE GROUND: Grey, sandy, fine-medium gravel of concrete.	Dry NVO	■
☒	(0.40) 0.80	MADE GROUND: Black sand and gravel. Gravel is medium to coarse, angular to sub-rounded of flint. Sand is fine-coarse of ash.	Dry. Black ash noted.	■
▤	(1.40) 2.20	Soft, brown/ grey, sandy, gravelly CLAY. (Possibly reworked clay).	Dry NVO	■
⁙	(1.30) 3.50	Dense, brown, gravelly, fine-coarse SAND. Gravel is fine-medium subangular-rounded of flint.	Dry NVO	■
		Borehole termonated at 3.0m bgl.		

Backfill	Sample Details	Legend		GENERAL REMARKS
☒ Cement seal ■ Bentonite Fill	☒ Small disturbed sample	▨ Concrete ▤ Gravelly Sandy Clay ▼ Groundwater Table	☒ Made Ground ⁙ Gravelly Sand ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By CG	Approved By MM

Borehole Log

Project Name and Site Location	Client	BOREHOLE No
Stag Brewery, Mortlake, London SW14	AB Inbev	**BH9A**

Job No	Date	Ground Level (m)	Co-Ordinates ()
47075502	Start Date 26-08-15 End Date 26-08-15		

Contractor	Method / Plant Used	Sheet
ESL	Concrete Corer and Premier Rig.	1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
				Concrete	0.30	CONCRETE		Cement seal
0.5	BH9A_0.5	<0.1		Made Ground	(1.90) 2.20	MADE GROUND: Dense, brown, gravelly, fine-coarse sand. Gravel is fine-medium, subrounded-rounded of natural stone, becoming clayey with depth. Poor recovery.	Dry NVO	Bentonite Fill
1.0		<0.1						
1.5								
2.0			1 ▼					
2.5	BH9A_2.2-3.3			Made Ground	(1.10) 3.30	MADE GROUND: Black, sandy, fine-medium, angular, red/grey gravel of flint and crushed concrete. Sand is fine-coarse. Poor recovery.	Wet NVO	Bentonite Fill
3.0								
						Borehole terminated at 3.3m bgl due to refusal on concrete.		

Backfill	Sample Details	Legend	GENERAL REMARKS
☒ Cement seal ■ Bentonite Fill	☒ Small disturbed sample	Concrete ☒ Made Ground ▼ Groundwater Table 1 ▽ Groundwater Strike	NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl

		Logged By	Approved By
		CG	MM

APPENDIX C – LABORATORY CERTIFICATE

ALcontrol Laboratories

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: mkt@alcontrol.com
Website: www.alcontrol.com

AECOM
St. George's House
2nd Floor
5 St. George's Road
Wimbledon
Greater London
SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date:	08 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150822-16
Your Reference:	
Location:	Stag Brewery
Report No:	328751

We received 8 samples on Saturday August 22, 2015 and 6 of these samples were scheduled for analysis which was completed on Monday September 07, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING
1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11942793	BH204		1.30	21/08/2015
11942794	BH204		1.80	21/08/2015
11942796	BH204		3.30	21/08/2015
11942797	BH205		1.00	21/08/2015
11942798	BH205		2.50	21/08/2015
11942799	BH206		1.10	21/08/2015
11942791	BH203A		0.50	20/08/2015
11942792	BH203A		2.50	21/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 328751
Superseded Report:

SOLID

Results Legend

X Test

N No Determination Possible

Lab Sample No(s)			11942793			11942796			11942797			11942798			11942799			11942791		
Customer Sample Reference			BH204			BH204			BH205			BH205			BH206			BH203A		
AGS Reference																				
Depth (m)			1.30			3.30			1.00			2.50			1.10			0.50		
Container			250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 6		X			X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 6		X			X			X			X			X			X	
Asbestos Quant. - Waste Limit	All	NDPs: 0 Tests: 2								X									X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 6		X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 6			X			X			X			X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 6		X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 6		X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 5	X			X			X			X						X		
Total Organic Carbon	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 6	X			X			X			X			X			X		

SOLID

Results Legend

X **Test**

N **No Determination Possible**

	Lab Sample No(s)	11942793	11942796	11942797	11942798	11942799	11942791
	Customer Sample Reference	BH204	BH204	BH205	BH205	BH206	BH203A
	AGS Reference						
	Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
	Container	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL
VOC MS (S)	All	NDPs: 0 Tests: 6					
			X (60g VOC)	X (60g VOC)	X (60g VOC)	X (60g VOC)	X (60g VOC)

Sample Descriptions

Grain Sizes

very fine	fine	medium	coarse	very coarse
<0.063mm	0.063mm - 0.1mm	0.1mm - 2mm	2mm - 10mm	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11942793	BH204	1.30	Dark Brown	Sandy Clay	0.1 - 2 mm	Stones	Vegetation
11942796	BH204	3.30	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation
11942797	BH205	1.00	Light Brown	Sandy Loam	0.1 - 2 mm	Brick	Stones
11942798	BH205	2.50	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation
11942799	BH206	1.10	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Brick	Stones
11942791	BH203A	0.50	Light Brown	Sandy Loam	0.1 - 2 mm	Brick	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 328751
Superseded Report:

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
		Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	20/08/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015
		SDG Ref	150822-16	150822-16	150822-16	150822-16	150822-16	150822-16
		Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
		AGS Reference						
Component	**LOD/Units**	**Method**						
Moisture Content Ratio (% of as received sample)	%	PM024	16	7.2	8.8	5.2	12	11
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M	<15 M	<15 M	<15 M
Organic Carbon, Total	<0.2 %	TM132	0.266 M	<0.2 M	0.627 M	<0.2 M	0.522 M	0.396 M
pH	1 pH Units	TM133	9.55 M	8.43 M	11.3 M	9.88 M	8.95 M	11.7 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 #	<15 #	<15 #	<15 #	<15 #	20 #
Arsenic	<0.6 mg/kg	TM181	10.9 M	30 M	13.7 M	21.8 M	19.9 M	12.1 M
Cadmium	<0.02 mg/kg	TM181	0.21 M	0.319 M	0.414 M	0.263 M	0.324 M	0.29 M
Chromium	<0.9 mg/kg	TM181	17.4 M	15.2 M	20 M	20.6 M	21.9 M	31.2 M
Copper	<1.4 mg/kg	TM181	8.93 M	3.08 M	25.8 M	4.42 M	12.8 M	35.3 M
Lead	<0.7 mg/kg	TM181	10.6 M	6.08 M	96.4 M	10.2 M	39.4 M	59.6 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	0.162 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	16.5 M	21.8 M	17.4 M	20 M	22.4 M	38.2 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	44.4 M	25.3 M	93 M	28.2 M	54.2 M	96.4 M
Sulphate, Total	<48 mg/kg	TM221	4280 M	2040 M	3750 M	883 M	573 M	8120 M

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 328751
Superseded Report:

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
		Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	20/08/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015
		SDG Ref	150822-16	150822-16	150822-16	150822-16	150822-16	150822-16
		Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
		AGS Reference						
Component	**LOD/Units**	**Method**						
Naphthalene-d8 % recovery**	%	TM218	106	103	104	102	104	104
Acenaphthene-d10 % recovery**	%	TM218	103	102	103	102	105	105
Phenanthrene-d10 % recovery**	%	TM218	104	102	105	101	107	107
Chrysene-d12 % recovery**	%	TM218	96.7	99.7	112	101	98.9	101
Perylene-d12 % recovery**	%	TM218	104	99.7	110	102	105	107
Naphthalene	<9 µg/kg	TM218	<9 M	<9 M	173 M	<9 M	<9 M	10.3 M
Acenaphthylene	<12 µg/kg	TM218	<12 M	<12 M	45.3 M	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<8 M	<8 M	73.2 M	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<10 M	<10 M	79.6 M	<10 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	<15 M	<15 M	811 M	<15 M	28.4 M	160 M
Anthracene	<16 µg/kg	TM218	<16 M	<16 M	179 M	<16 M	<16 M	41 M
Fluoranthene	<17 µg/kg	TM218	<17 M	<17 M	1310 M	<17 M	47.3 M	429 M
Pyrene	<15 µg/kg	TM218	<15 M	<15 M	1510 M	<15 M	53.2 M	412 M
Benz(a)anthracene	<14 µg/kg	TM218	<14 M	<14 M	1060 M	<14 M	<14 M	192 M
Chrysene	<10 µg/kg	TM218	<10 M	<10 M	976 M	<10 M	16.3 M	194 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15 M	<15 M	1300 M	<15 M	37.7 M	206 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14 M	<14 M	546 M	<14 M	19.7 M	103 M
Benzo(a)pyrene	<15 µg/kg	TM218	<15 M	<15 M	970 M	<15 M	38.2 M	203 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18 M	<18 M	543 M	<18 M	29 M	124 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M	<23 M	186 M	<23 M	<23 M	32.7 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24 M	<24 M	676 M	<24 M	30.1 M	142 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118	10400	<118	300	2250

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method						
		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
		Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	20/08/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015
		SDG Ref	150822-16	150822-16	150822-16	150822-16	150822-16	150822-16
		Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
		AGS Reference						
GRO Surrogate % recovery**	%	TM089	74	96	72	98	80	73
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	243 M	<44 M	<44 M	<44 M
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M	<5 M	<5 M	<5 M
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Toluene	<2 µg/kg	TM089	<2 M	<2 M	5.4 M	<2 M	<2 M	<2 M
Ethylbenzene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	7.55 M	<6 M	<6 M	<6 M
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	12.9	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	25.9	<10	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	93.9	<10	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	480	808	5150	466	337	2500
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	30000	<100	<100	9990
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	<100	120000	<100	1660	97500
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	39400	<100	<100	70000
Total Aliphatics >C12-C44	<100 µg/kg	TM173	480	808	195000	466	2000	180000
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	29.1	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	62.6	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	486	402	4430	519	<100	1610
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	21900	<100	<100	6760
Aromatics >EC21-EC35	<100 µg/kg	TM173	269	462	75100	693	3460	78300
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	<100	55100	<100	<100	118000
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	25300	<100	<100	46400
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	755	864	156000	1210	3460	205000
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1230	1680	352000	1680	5470	385000

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
		Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	20/08/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015
		SDG Ref	150822-16	150822-16	150822-16	150822-16	150822-16	150822-16
		Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
		AGS Reference						
Component	**LOD/Units**	**Method**						
Dibromofluoromethane**	%	TM116	117	102	96.6	98.9	116	71.6
Toluene-d8**	%	TM116	99.6	99.9	91.2	97.9	101	87.7
4-Bromofluorobenzene**	%	TM116	101	101	77.1	101	90.4	70.8
Dichlorodifluoromethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M	<6 M	<6 M
Chloromethane	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Vinyl Chloride	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M	<6 M	<6 M
Bromomethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Chloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M	<6 M	<6 M
1,1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Carbon Disulphide	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
Dichloromethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1,1-Dichloroethane	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M	<6 M	<6 M
2,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Bromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Chloroform	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
1,1-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Carbontetrachloride	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1,2-Dichloroethane	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M	<5 M	<5 M
Benzene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Trichloroethene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Dibromomethane	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Toluene	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 328751
Superseded Report:

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
		Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	20/08/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015
		SDG Ref	150822-16	150822-16	150822-16	150822-16	150822-16	150822-16
		Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
Tetrachloroethene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M	<5 M	<5 M
Dibromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1,2-Dibromoethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M	<5 M	<5 M
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Ethylbenzene	<4 µg/kg	TM116	<4 M	<4 M	<4 M	<4 M	<4 M	<4 M
p/m-Xylene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
o-Xylene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Styrene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Isopropylbenzene	<5 µg/kg	TM116	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 M	<16 M	<16 M	<16 M	<16 M	<16 M
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Propylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
4-Chlorotoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
tert-Butylbenzene	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M	<14 M	<14 M
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
4-Isopropyltoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M	<5 M	<5 M
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<11	<11	<11	<11
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M	<14 M	<14 M
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<20	<20	<20	<20
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<20	<20	<20	<20
Naphthalene	<13 µg/kg	TM116	<13 M	<13 M	196 M	<13 M	<13 M	<13 M

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
		Depth (m)	1.30	3.30	1.00	2.50	1.10	0.50
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	20/08/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015	22/08/2015
		SDG Ref	150822-16	150822-16	150822-16	150822-16	150822-16	150822-16
		Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 \#	<20 \#	<20 \#	<20 \#	<20 \#	<20 \#

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 328751
Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH204 1.30 SOLID 21/08/2015 00:00:00 22/08/2015 16:18:39 150822-16 11942793 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH204 3.30 SOLID 21/08/2015 00:00:00 22/08/2015 16:12:02 150822-16 11942796 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH205 1.00 SOLID 21/08/2015 00:00:00 22/08/2015 16:24:15 150822-16 11942797 TM048	24/08/2015	Chris Swindells	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH205 2.50 SOLID 21/08/2015 00:00:00 22/08/2015 15:28:37 150822-16 11942798 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH206 1.10 SOLID 21/08/2015 00:00:00 22/08/2015 15:33:31 150822-16 11942799 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH203A 0.50 SOLID 20/08/2015 00:00:00 24/08/2015 07:59:04 150822-16 11942791 TM048	25/08/15	Martin Cotterell	Soil containing loose fibres and debris typical of asbestos bitumen	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Waste Limit

		Additional Asbestos Components (Using TM048)	Analysts Comments	Waste Limit, Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH205 1.00 SOLID 21/08/2015 00:00:00 27/08/2015 15:58:07 150822-16 11942797 TM 304	Chrysotile (#)	Loose fibres in soil	<0.1 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH203A 0.50 SOLID 20/08/2015 00:00:00 03/09/2015 06:41:42 150822-16 11942791 TM 304	None (#)	N/C	<0.1 (#)

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	11942793	11942796	11942797	11942798	11942799	11942791
Customer Sample Ref.	BH204	BH204	BH205	BH205	BH206	BH203A
AGS Ref.						
Depth	1.30	3.30	1.00	2.50	1.10	0.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015
Asbestos ID in Solid Samples	24-Aug-2015	24-Aug-2015	24-Aug-2015	24-Aug-2015	24-Aug-2015	25-Aug-2015
Asbestos Quant. - Waste Limit			03-Sep-2015			07-Sep-2015
Easily Liberated Sulphide	27-Aug-2015	28-Aug-2015	27-Aug-2015	27-Aug-2015	27-Aug-2015	27-Aug-2015
EPH CWG (Aliphatic) GC (S)	28-Aug-2015	28-Aug-2015	03-Sep-2015	28-Aug-2015	28-Aug-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	28-Aug-2015	28-Aug-2015	03-Sep-2015	28-Aug-2015	28-Aug-2015	03-Sep-2015
GRO by GC-FID (S)	29-Aug-2015	29-Aug-2015	29-Aug-2015	29-Aug-2015	29-Aug-2015	29-Aug-2015
Hexavalent Chromium (s)	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015
Metals in solid samples by OES	26-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015
PAH by GCMS	26-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015
pH	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015
Sample description	24-Aug-2015	22-Aug-2015	22-Aug-2015	22-Aug-2015	22-Aug-2015	22-Aug-2015
Total Organic Carbon	01-Sep-2015	01-Sep-2015	02-Sep-2015	01-Sep-2015	01-Sep-2015	02-Sep-2015
Total Sulphate	28-Aug-2015	28-Aug-2015	28-Aug-2015	28-Aug-2015	28-Aug-2015	28-Aug-2015
TPH CWG GC (S)	29-Aug-2015	29-Aug-2015	03-Sep-2015	29-Aug-2015	29-Aug-2015	03-Sep-2015
VOC MS (S)	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1157
Exchangeable Ammonium as NH4	TM024	**93.03** 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1159	QC 1129
Easily Liberated Sulphide	TM180	**106.83** 49.14 : 123.89	**95.34** 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1124	QC 1179
Total Aliphatics >C12-C35	TM173	**98.33** 71.67 : 116.67	**92.29** 68.25 : 114.73

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1124	QC 1179
Total Aromatics >EC12-EC35	TM173	**84.0** 59.92 : 107.95	**82.0** 60.67 : 124.27

GRO by GC-FID (S)

Component	Method Code	QC 1197
Benzene by GC (Moisture Corrected)	TM089	**96.0** 82.67 : 117.96
Ethylbenzene by GC (Moisture Corrected)	TM089	**90.0** 80.45 : 118.61
m & p Xylene by GC (Moisture Corrected)	TM089	**89.75** 79.25 : 119.43
MTBE GC-FID (Moisture Corrected)	TM089	**99.0** 79.10 : 122.51
o Xylene by GC (Moisture Corrected)	TM089	**90.5** 80.03 : 117.19
QC	TM089	**107.33** 75.74 : 124.65
Toluene by GC (Moisture Corrected)	TM089	**94.0** 82.06 : 117.54

Hexavalent Chromium (s)

Component	Method Code	QC 1111	QC 1157
Hexavalent Chromium	TM151	**98.0** 92.20 : 106.60	**98.0** 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1164	QC 1154	QC 1117
Aluminium	TM181	**120.77** 86.49 : 129.71	**94.62** 86.49 : 129.71	**102.31** 86.49 : 129.71
Antimony	TM181	**100.0** 77.50 : 122.50	**92.83** 77.50 : 122.50	**108.96** 77.50 : 122.50
Arsenic	TM181	**95.58** 82.63 : 117.37	**85.93** 82.63 : 117.37	**106.19** 82.63 : 117.37
Barium	TM181	**100.0** 79.45 : 120.55	**92.48** 79.45 : 120.55	**102.26** 79.45 : 120.55
Beryllium	TM181	**101.71** 85.92 : 121.27	**92.09** 85.92 : 121.27	**104.96** 85.92 : 121.27
Boron	TM181	**132.82** 77.41 : 143.83	**93.13** 77.41 : 143.83	**105.34** 77.41 : 143.83
Cadmium	TM181	**93.78** 81.95 : 118.05	**88.57** 81.95 : 118.05	**105.04** 81.95 : 118.05
Chromium	TM181	**100.39** 81.29 : 118.71	**88.24** 81.29 : 118.71	**96.47** 81.29 : 118.71
Cobalt	TM181	**97.5** 83.86 : 116.14	**88.0** 83.86 : 116.14	**103.5** 83.86 : 116.14
Copper	TM181	**101.22** 78.57 : 121.43	**92.7** 78.57 : 121.43	**106.49** 78.57 : 121.43
Iron	TM181	**107.59** 87.50 : 122.82	**95.86** 87.50 : 122.82	**102.07** 87.50 : 122.82
Lead	TM181	**88.19** 74.18 : 117.25	**90.94** 74.18 : 117.25	**98.82** 74.18 : 117.25
Manganese	TM181	**104.2** 82.91 : 117.09	**95.2** 82.91 : 117.09	**100.0** 82.91 : 117.09
Mercury	TM181	**92.46** 81.99 : 118.01	**87.6** 81.99 : 118.01	**105.03** 81.99 : 118.01
Molybdenum	TM181	**96.97** 81.45 : 118.55	**92.04** 81.45 : 118.55	**110.19** 81.45 : 118.55
Nickel	TM181	**100.0** 79.64 : 120.36	**90.7** 79.64 : 120.36	**104.65** 79.64 : 120.36
Phosphorus	TM181	**99.7** 81.03 : 118.97	**91.21** 81.03 : 118.97	**100.15** 81.03 : 118.97
Selenium	TM181	**104.79** 87.05 : 121.93	**95.73** 87.05 : 121.93	**114.87** 87.05 : 121.93
Strontium	TM181	**105.75** 83.64 : 116.36	**89.27** 83.64 : 116.36	**99.23** 83.64 : 116.36
Thallium	TM181	**93.37** 77.50 : 122.50	**84.25** 77.50 : 122.50	**97.84** 77.50 : 122.50
Tin	TM181	**97.67** 78.30 : 113.98	**96.01** 78.30 : 113.98	**111.3** 78.30 : 113.98
Titanium	TM181	**121.88** 71.02 : 128.98	**99.22** 71.02 : 128.98	**103.91** 71.02 : 128.98

Metals in solid samples by OES

		QC 1164	QC 1154	QC 1117
Vanadium	TM181	**103.82** 86.61 : 113.39	**91.18** 86.61 : 113.39	**102.94** 86.61 : 113.39
Zinc	TM181	**99.51** 90.81 : 120.30	**91.88** 90.81 : 120.30	**108.12** 90.81 : 120.30

PAH by GCMS

Component	**Method Code**	QC 1112	QC 1121	QC 1102
Acenaphthene	TM218	**99.5** 70.00 : 130.00	**97.0** 76.50 : 121.50	**97.5** 76.50 : 121.50
Acenaphthylene	TM218	**87.5** 70.00 : 130.00	**89.0** 73.50 : 118.50	**90.0** 73.50 : 118.50
Anthracene	TM218	**93.0** 70.00 : 130.00	**93.0** 74.25 : 117.75	**96.0** 74.25 : 117.75
Benz(a)anthracene	TM218	**97.0** 70.00 : 130.00	**108.5** 82.07 : 118.33	**101.0** 82.07 : 118.33
Benzo(a)pyrene	TM218	**98.5** 70.00 : 130.00	**101.5** 79.75 : 116.97	**105.5** 79.75 : 116.97
Benzo(b)fluoranthene	TM218	**98.5** 70.00 : 130.00	**101.0** 82.41 : 117.15	**101.0** 82.41 : 117.15
Benzo(ghi)perylene	TM218	**94.5** 70.00 : 130.00	**107.5** 77.09 : 114.38	**96.0** 77.09 : 114.38
Benzo(k)fluoranthene	TM218	**95.0** 70.00 : 130.00	**100.5** 81.43 : 115.17	**100.5** 81.43 : 115.17
Chrysene	TM218	**95.0** 70.00 : 130.00	**104.0** 82.50 : 113.51	**97.0** 82.50 : 113.51
Dibenzo(ah)anthracene	TM218	**95.0** 70.00 : 130.00	**106.0** 81.00 : 120.00	**98.0** 81.00 : 120.00
Fluoranthene	TM218	**97.0** 70.00 : 130.00	**96.0** 78.67 : 117.61	**96.5** 78.67 : 117.61
Fluorene	TM218	**98.0** 70.00 : 130.00	**93.5** 76.50 : 121.50	**95.5** 76.50 : 121.50
Indeno(123cd)pyrene	TM218	**92.5** 70.00 : 130.00	**104.0** 79.19 : 117.60	**96.0** 79.19 : 117.60
Naphthalene	TM218	**96.0** 70.00 : 130.00	**91.0** 77.00 : 117.50	**94.5** 77.00 : 117.50
Phenanthrene	TM218	**98.5** 70.00 : 130.00	**95.5** 75.00 : 123.00	**98.0** 75.00 : 123.00
Pyrene	TM218	**95.5** 70.00 : 130.00	**94.0** 77.82 : 116.98	**95.0** 77.82 : 116.98

pH

Component	**Method Code**	QC 1188	QC 1135
pH	TM133	**100.5** 96.22 : 103.78	**99.75** 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Total Organic Carbon

Component	Method Code	QC 1110	QC 1121
Total Organic Carbon	TM132	**98.63** 88.82 : 111.18	**94.06** 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1128
Total Sulphate	TM221	**112.12** 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1125	QC 1180
1,1,1,2-tetrachloroethane	TM116	**101.8** 83.24 : 124.28	**100.6** 83.24 : 124.28
1,1,1-Trichloroethane	TM116	**88.8** 81.77 : 121.07	**107.6** 81.77 : 121.07
1,1,2-Trichloroethane	TM116	**97.0** 79.24 : 112.23	**94.6** 79.24 : 112.23
1,1-Dichloroethane	TM116	**91.6** 72.58 : 116.06	**107.4** 72.58 : 116.06
1,2-Dichloroethane	TM116	**94.8** 77.50 : 122.50	**109.8** 77.50 : 122.50
1,4-Dichlorobenzene	TM116	**88.0** 73.23 : 116.39	**97.4** 73.23 : 116.39
2-Chlorotoluene	TM116	**88.4** 69.22 : 110.64	**93.0** 69.22 : 110.64
4-Chlorotoluene	TM116	**86.2** 68.57 : 106.26	**92.0** 68.57 : 106.26
Benzene	TM116	**95.4** 84.33 : 124.27	**107.2** 84.33 : 124.27
Carbon Disulphide	TM116	**98.6** 77.20 : 122.80	**110.4** 77.20 : 122.80
Carbontetrachloride	TM116	**100.2** 84.20 : 119.90	**107.6** 84.20 : 119.90
Chlorobenzene	TM116	**103.4** 85.28 : 129.96	**106.4** 85.28 : 129.96
Chloroform	TM116	**92.4** 82.73 : 119.72	**106.8** 82.73 : 119.72
Chloromethane	TM116	**128.8** 55.16 : 145.46	**122.4** 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	**96.4** 73.56 : 118.93	**107.4** 73.56 : 118.93
Dibromomethane	TM116	**95.2** 73.40 : 116.60	**92.0** 73.40 : 116.60
Dichloromethane	TM116	**94.8** 76.16 : 121.98	**107.4** 76.16 : 121.98

VOC MS (S)

		QC 1125	QC 1180
Ethylbenzene	TM116	**94.0** 80.07 : 125.98	**103.0** 80.07 : 125.98
Hexachlorobutadiene	TM116	**68.8** 30.92 : 132.28	**120.0** 30.92 : 132.28
Isopropylbenzene	TM116	**82.2** 69.27 : 125.32	**102.8** 69.27 : 125.32
Naphthalene	TM116	**110.0** 79.15 : 121.98	**102.2** 79.15 : 121.98
o-Xylene	TM116	**86.8** 75.46 : 111.52	**88.2** 75.46 : 111.52
p/m-Xylene	TM116	**94.9** 76.97 : 121.75	**101.0** 76.97 : 121.75
Sec-Butylbenzene	TM116	**74.6** 49.27 : 129.90	**108.8** 49.27 : 129.90
Tetrachloroethene	TM116	**106.2** 87.96 : 133.65	**113.6** 87.96 : 133.65
Toluene	TM116	**92.6** 79.23 : 114.58	**103.2** 79.23 : 114.58
Trichloroethene	TM116	**91.8** 84.09 : 114.24	**100.8** 84.09 : 114.24
Trichlorofluoromethane	TM116	**90.8** 76.22 : 114.82	**107.0** 76.22 : 114.82
Vinyl Chloride	TM116	**77.8** 59.68 : 118.68	**97.4** 59.68 : 118.68

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

ALcontrol Laboratories

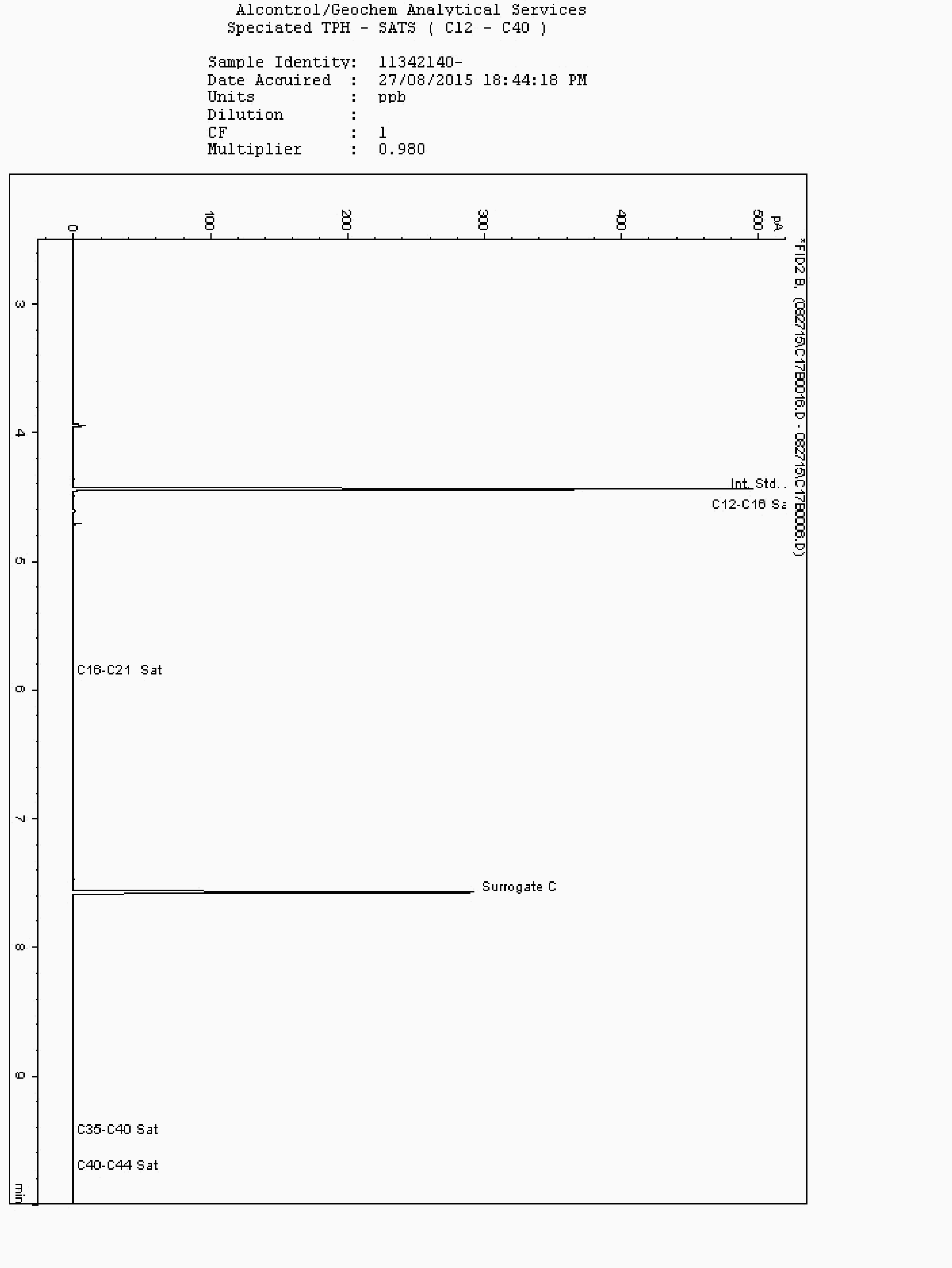
Validated

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11954758	**Depth :**	3.30
		Sample ID :	BH204		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11342140-
Date Acquired  :  27/08/2015 18:44:18 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

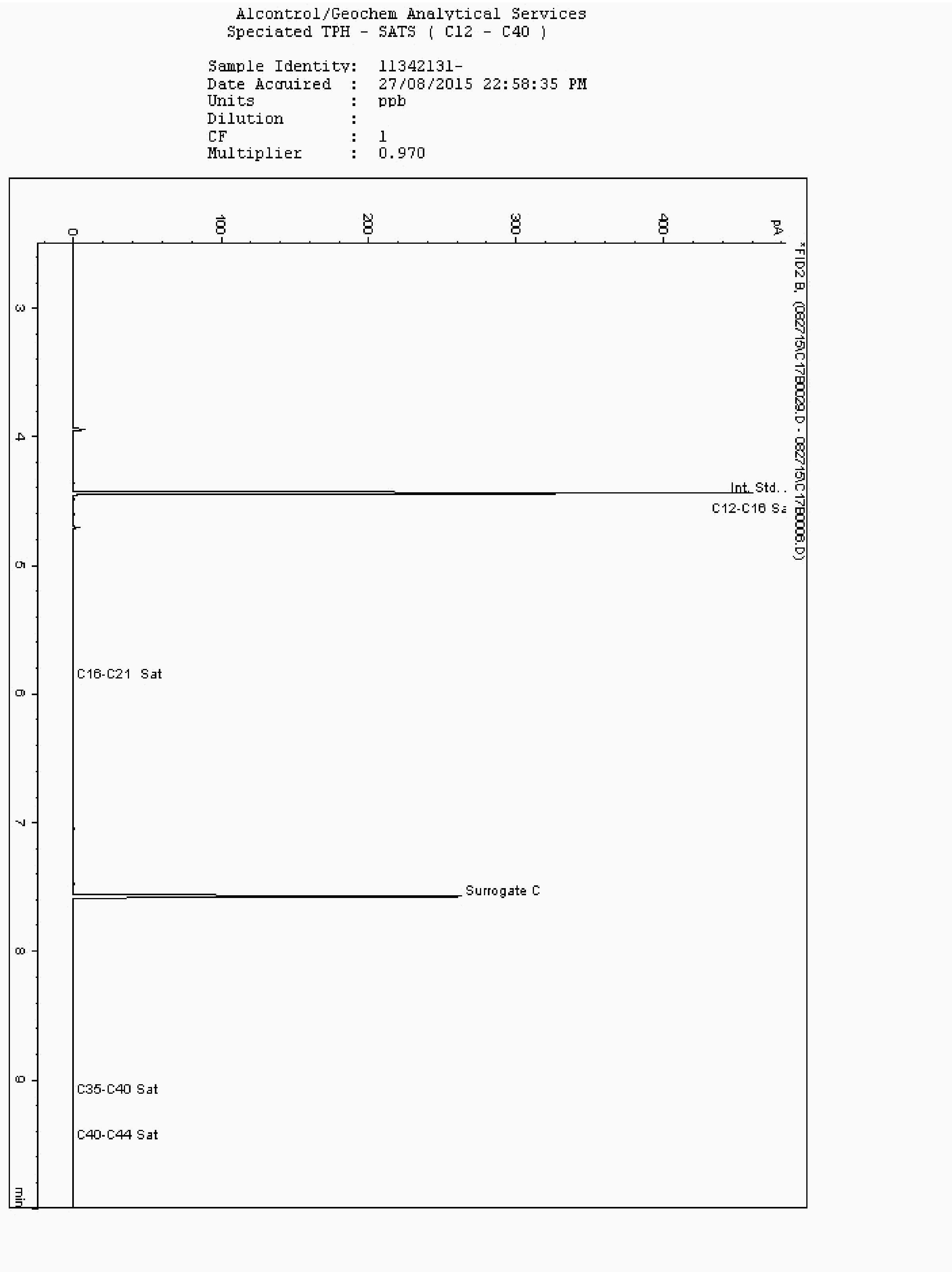
Order Number:
Report Number: 328751
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 11954791
Sample ID : BH204

Depth : 1.30



```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11342131-
Date Acquired  :  27/08/2015 22:58:35 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.970
```

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 328751
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 11956254
Sample ID : BH206

Depth : 1.10

```
          Alcontrol/Geochem Analytical Services
        Speciated TPH - SATS ( C12 - C40 )

    Sample Identity:  11342167-
    Date Acquired  :  27/08/2015 23:18:56 PM
    Units          :  ppb
    Dilution       :
    CF             :  1
    Multiplier     :  0.960
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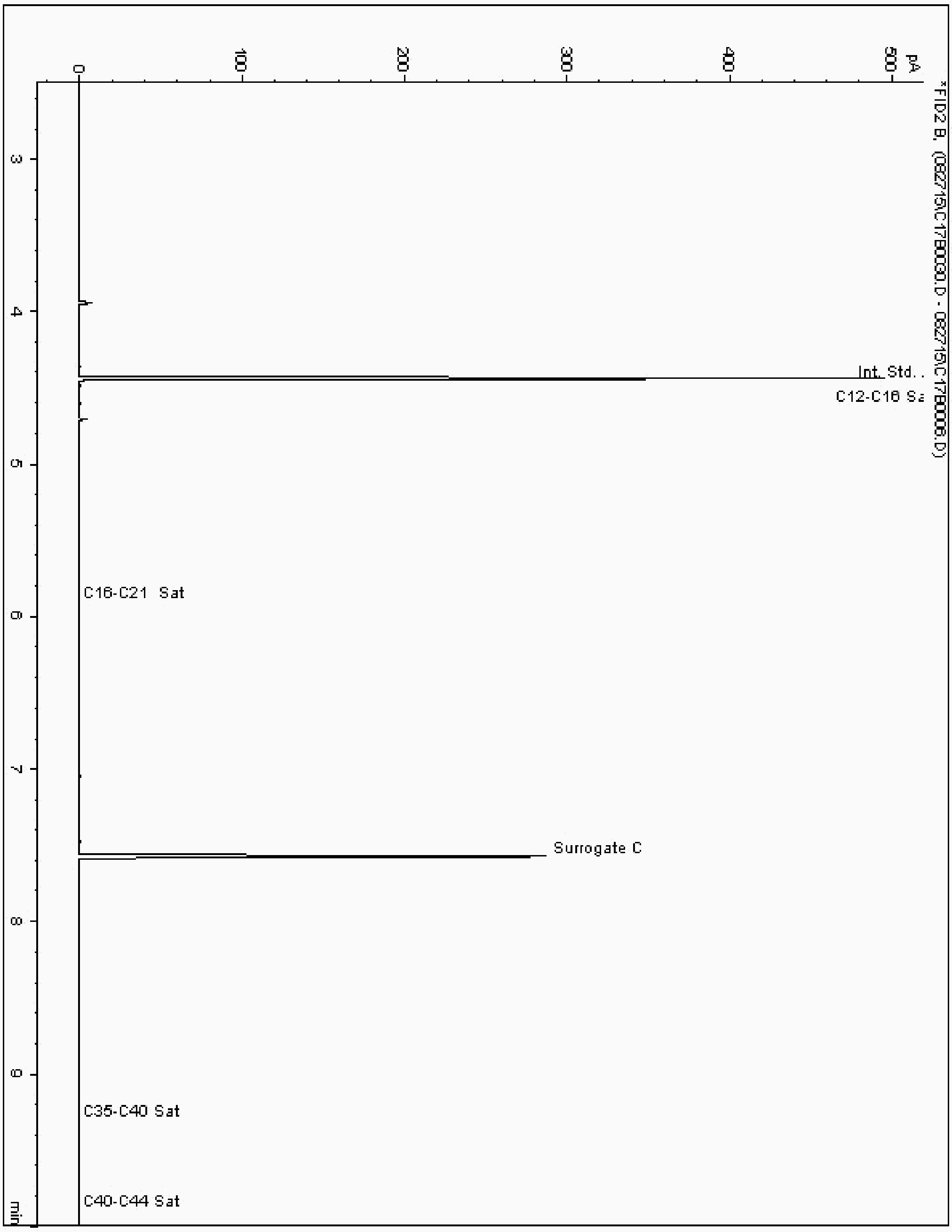
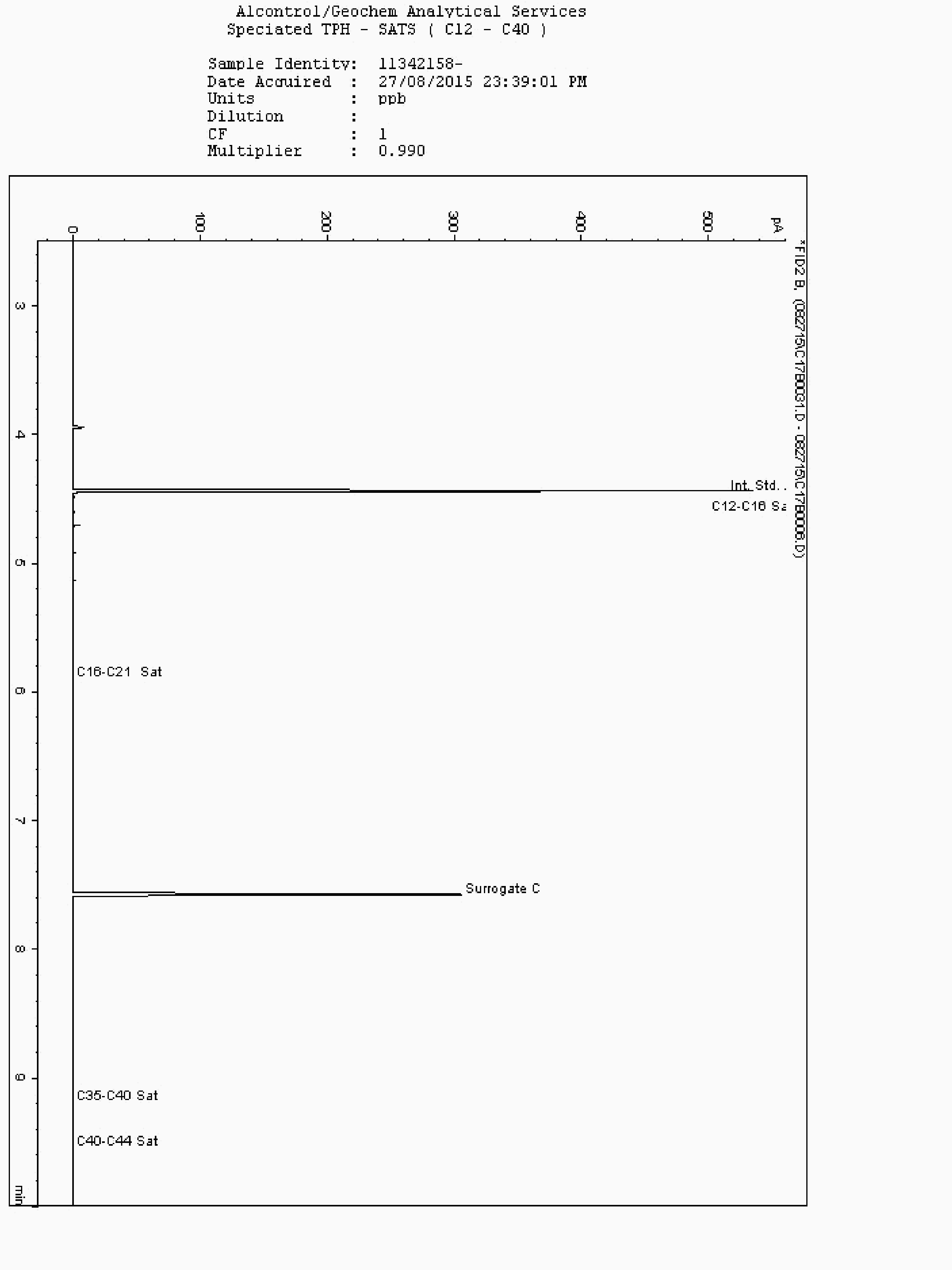


Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11956372	**Depth :**	2.50
		Sample ID :	BH205		

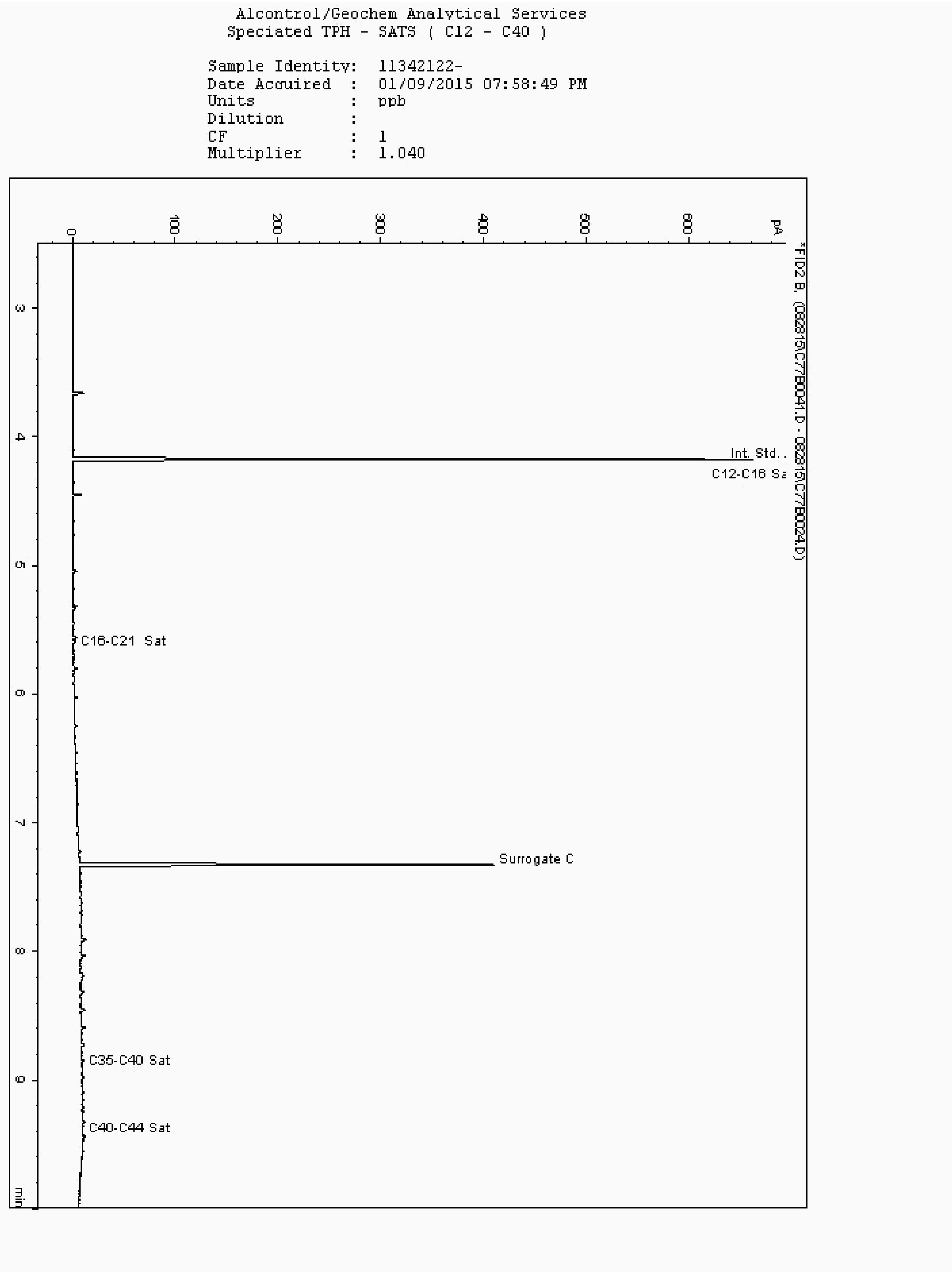


```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11342158-
Date Acquired  :  27/08/2015 23:39:01 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.990
```

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11959414
Sample ID : BH203A
Depth : 0.50



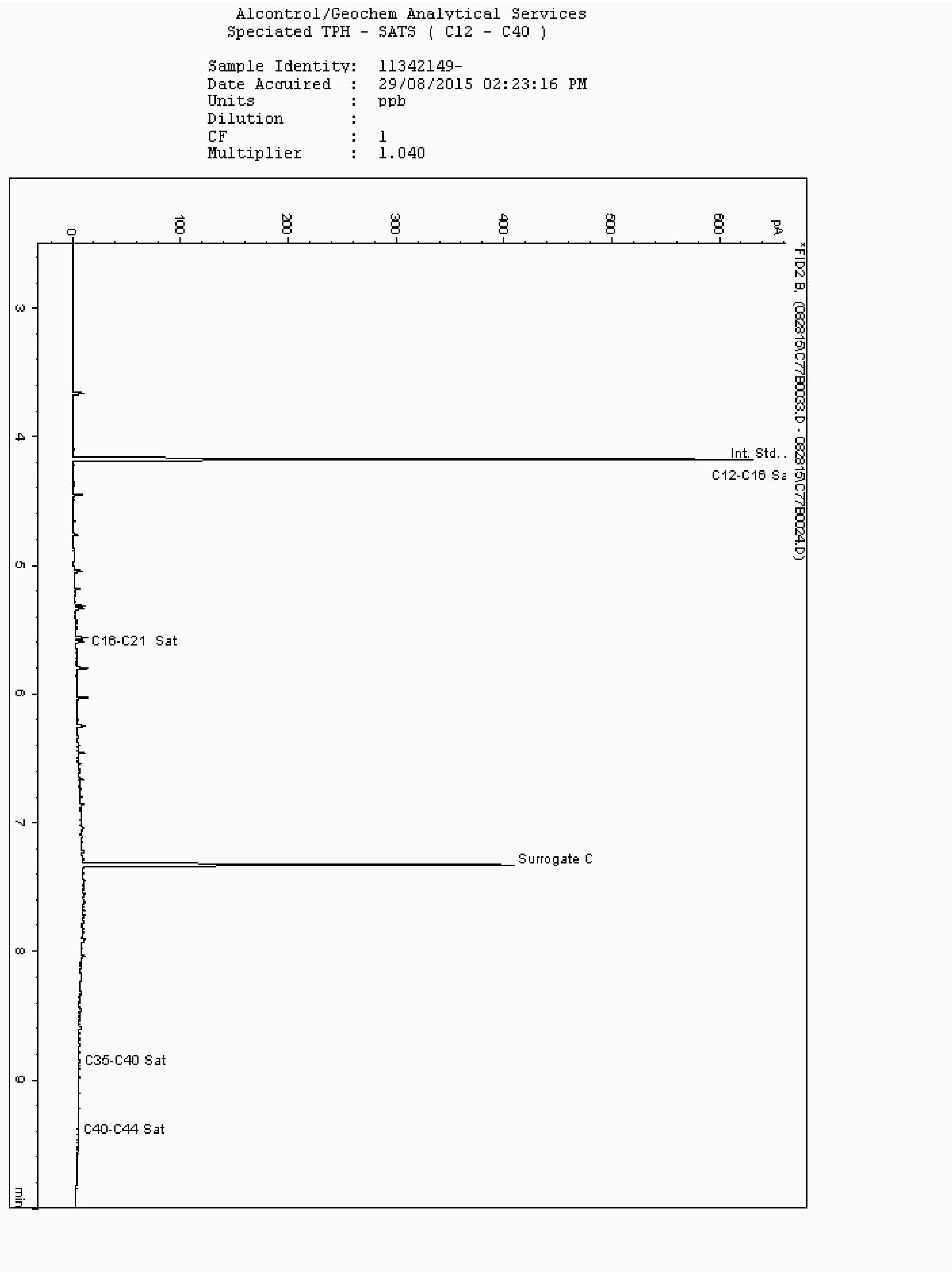
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

```
Sample Identity:  11342122-
Date Acquired  :  01/09/2015 07:58:49 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  1.040
```

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 328751
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11959467
Sample ID : BH205
Depth : 1.00

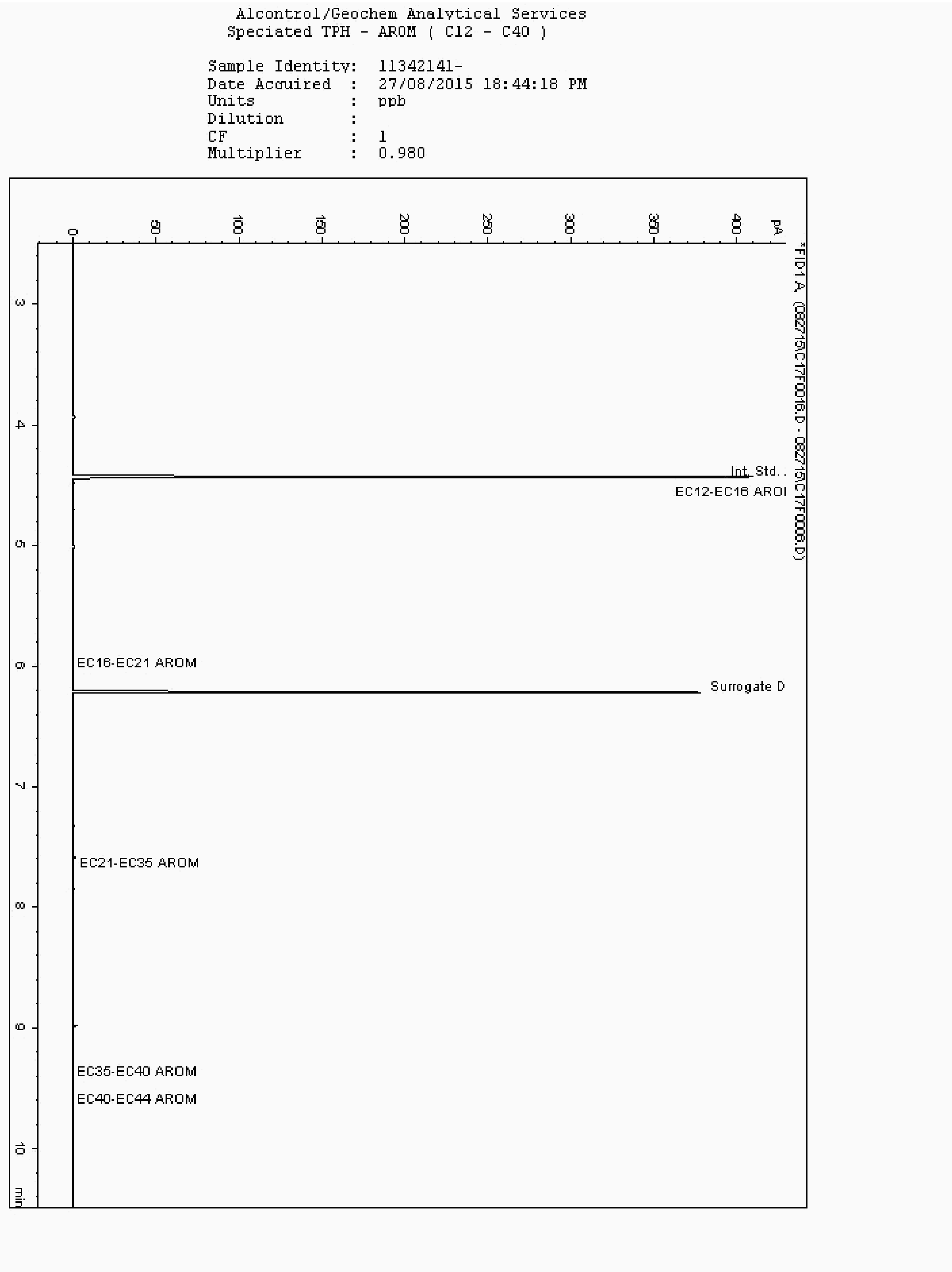


```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11342149-
Date Acquired  :  29/08/2015 02:23:16 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  1.040
```

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11954758	**Depth :**	3.30
		Sample ID :	BH204		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11342141-
Date Acquired  :  27/08/2015 18:44:18 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

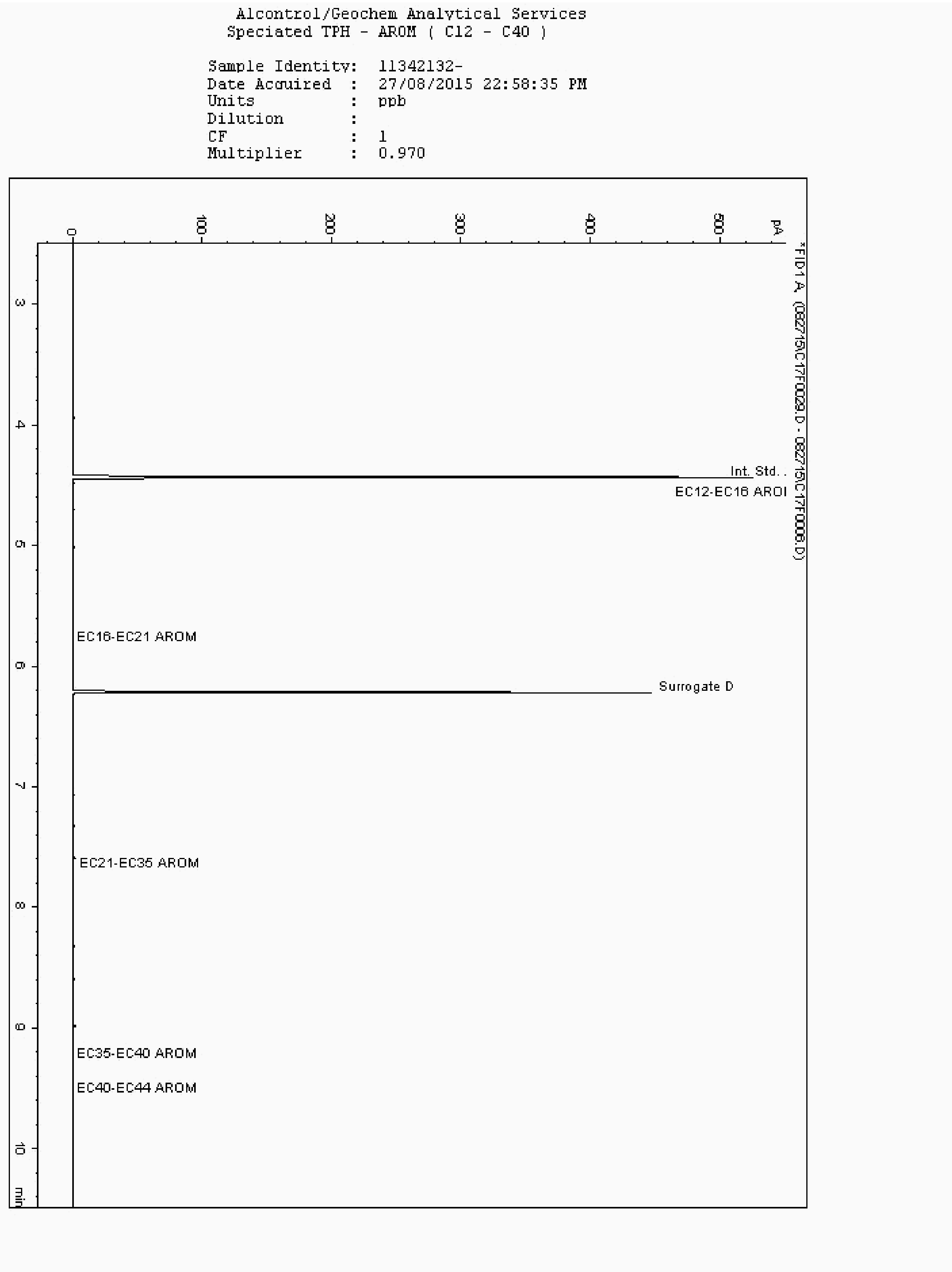
Order Number:
Report Number: 328751
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11954791
Sample ID : BH204

Depth : 1.30



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11342132-
Date Acquired  :  27/08/2015 22:58:35 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.970
```

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

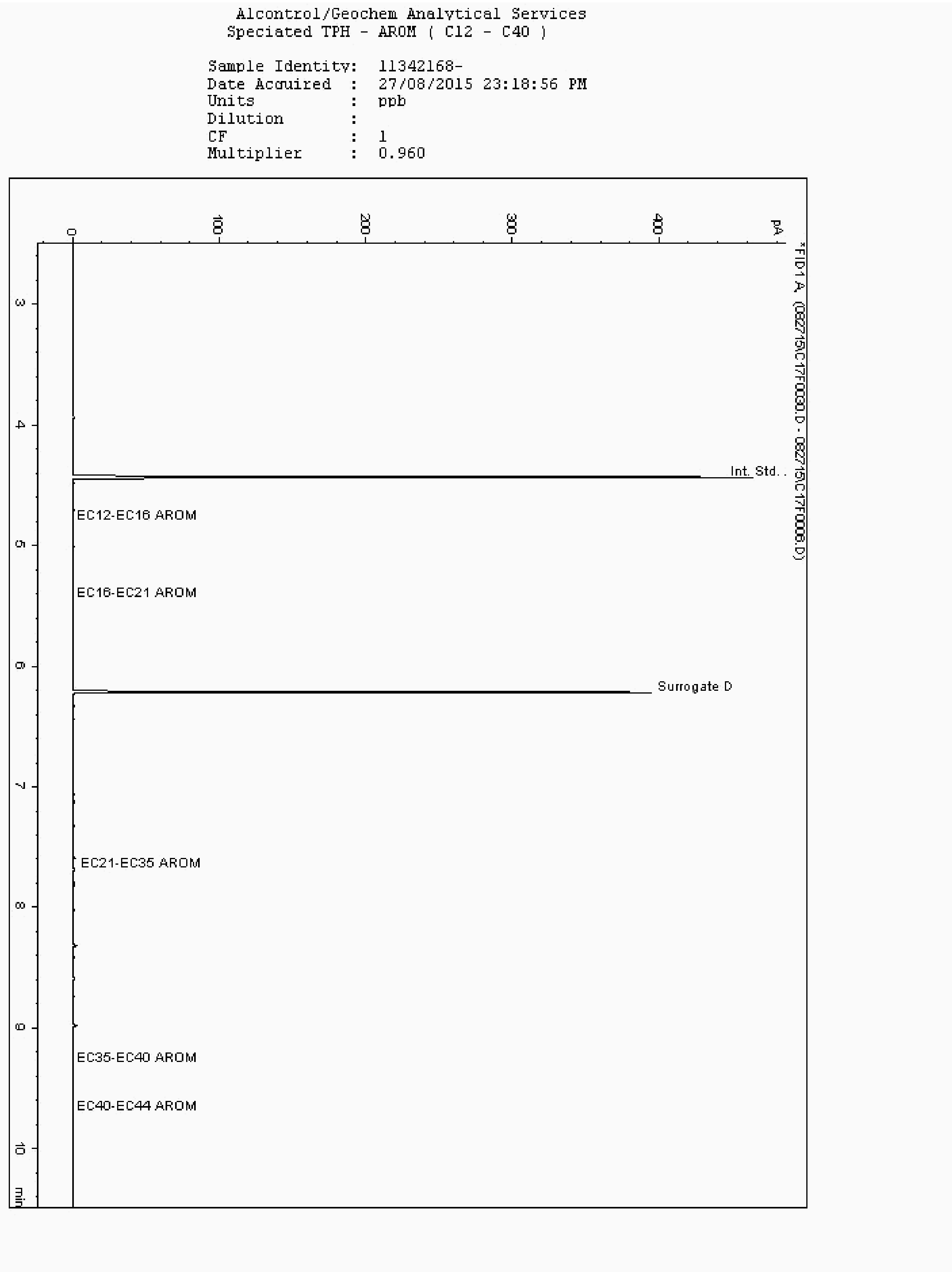
Order Number:
Report Number: 328751
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11956254
Sample ID : BH206

Depth : 1.10



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11342168-
Date Acquired  :  27/08/2015 23:18:56 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.960
```

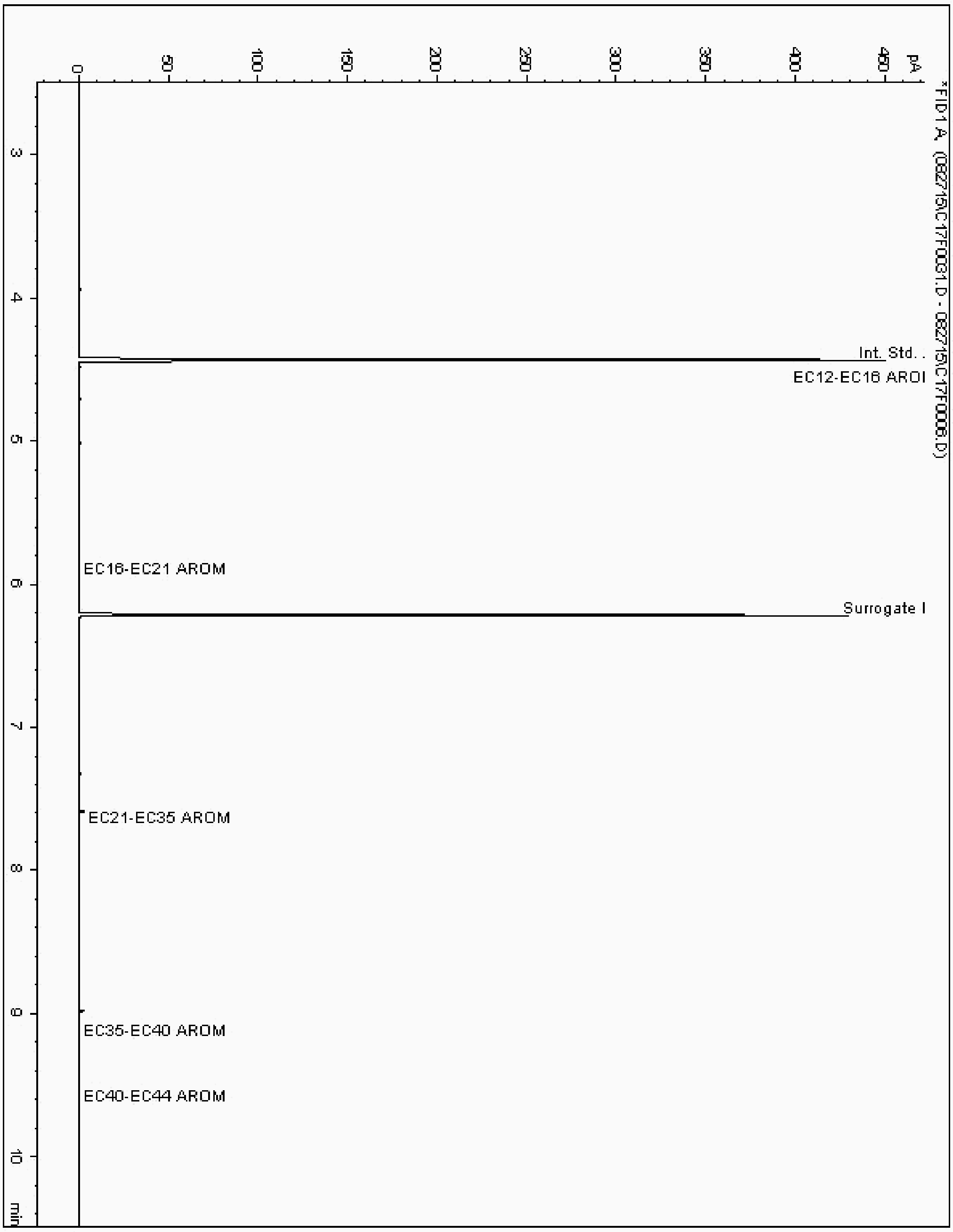
SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11956372	**Depth :**	2.50
		Sample ID :	BH205		

```
         Alcontrol/Geochem Analytical Services
       Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11342159-
Date Acquired  :  27/08/2015 23:39:01 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.990
```

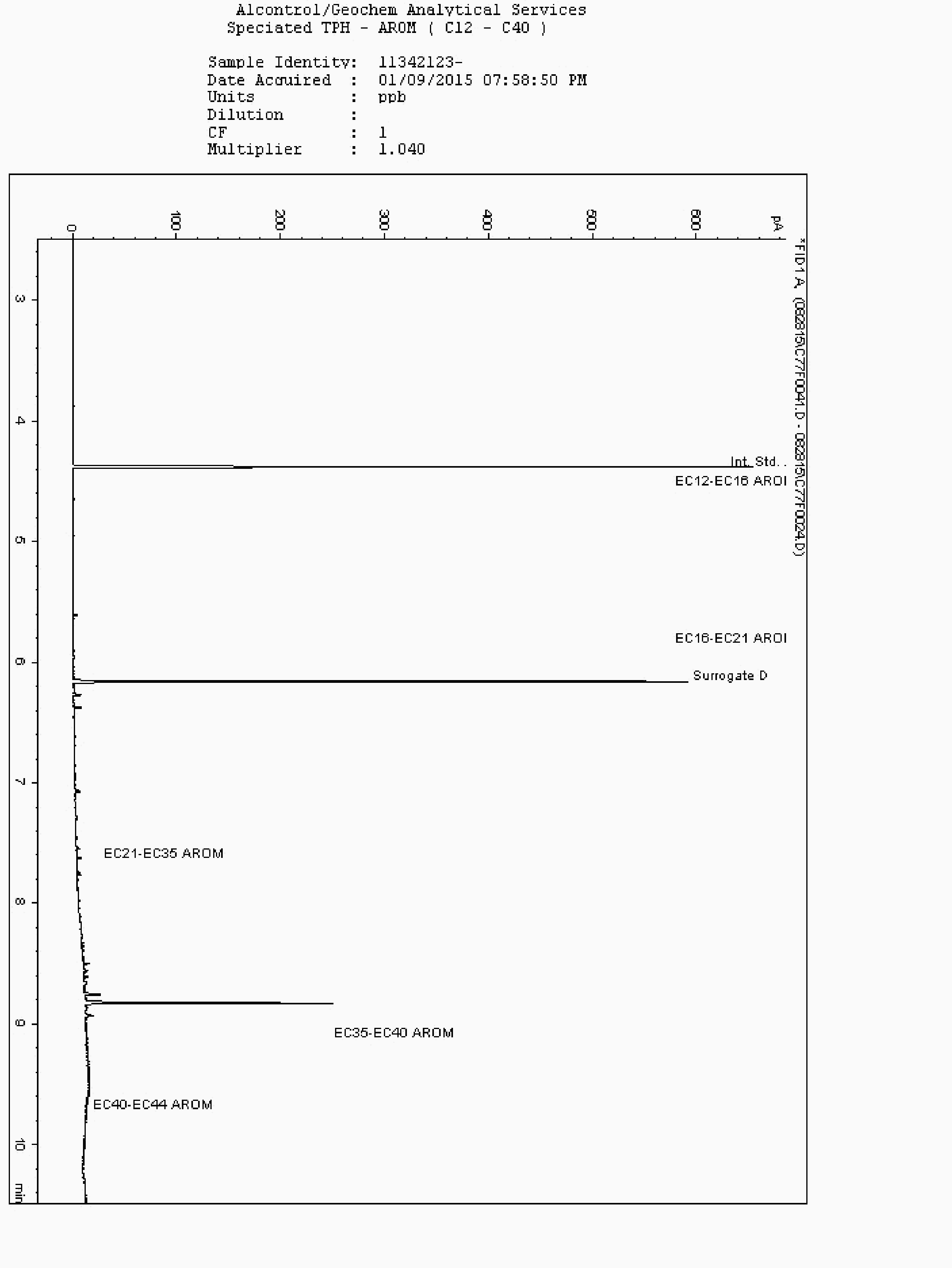


CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11959414	**Depth :**	0.50
		Sample ID :	BH203A		



```
        Alcontrol/Geochem Analytical Services
      Speciated TPH - AROM ( C12 - C40 )

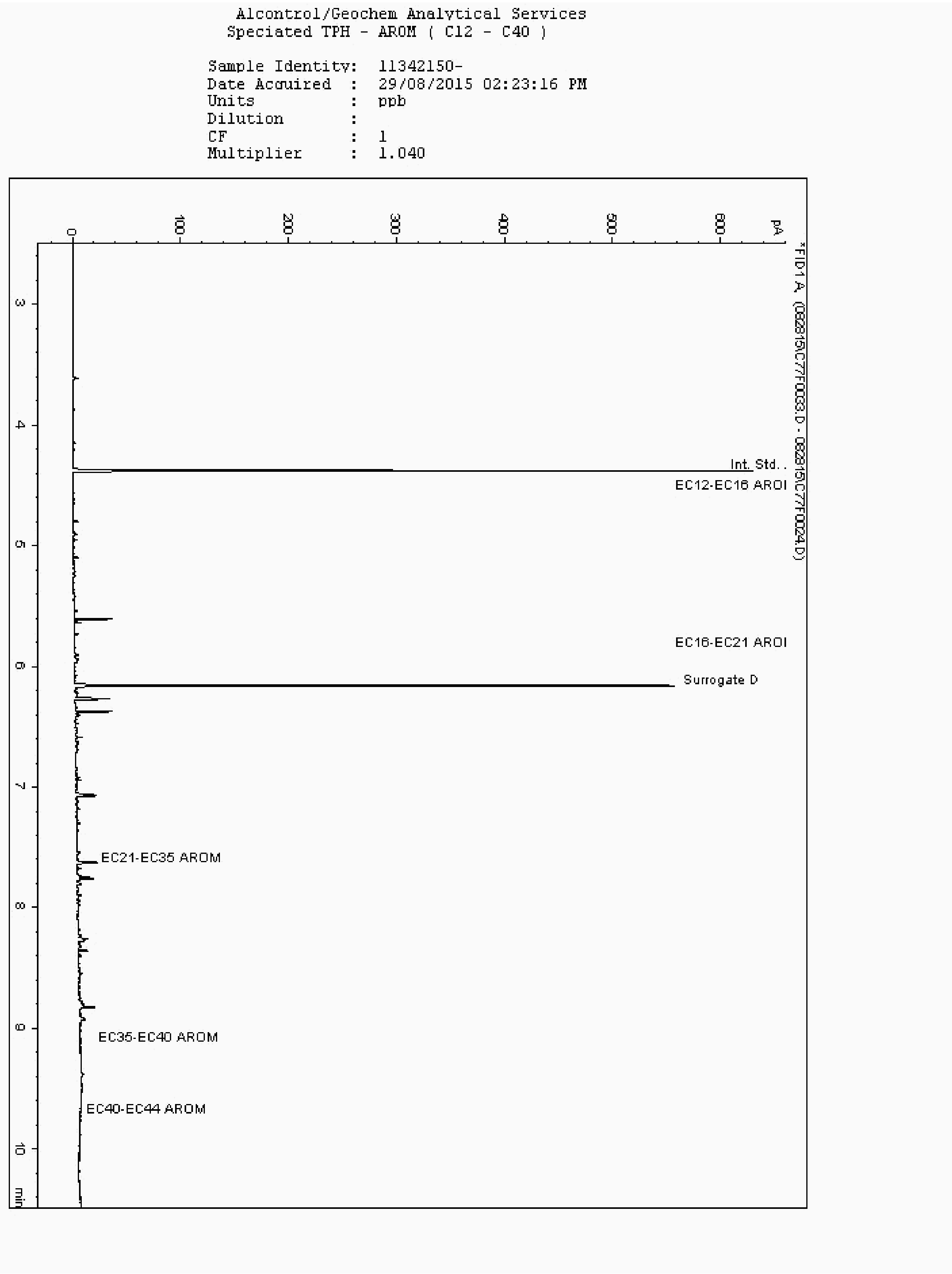
   Sample Identity:  11342123-
   Date Acquired  :  01/09/2015 07:58:50 PM
   Units          :  ppb
   Dilution       :
   CF             :  1
   Multiplier     :  1.040
```

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11959467
Sample ID : BH205

Depth : 1.00



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

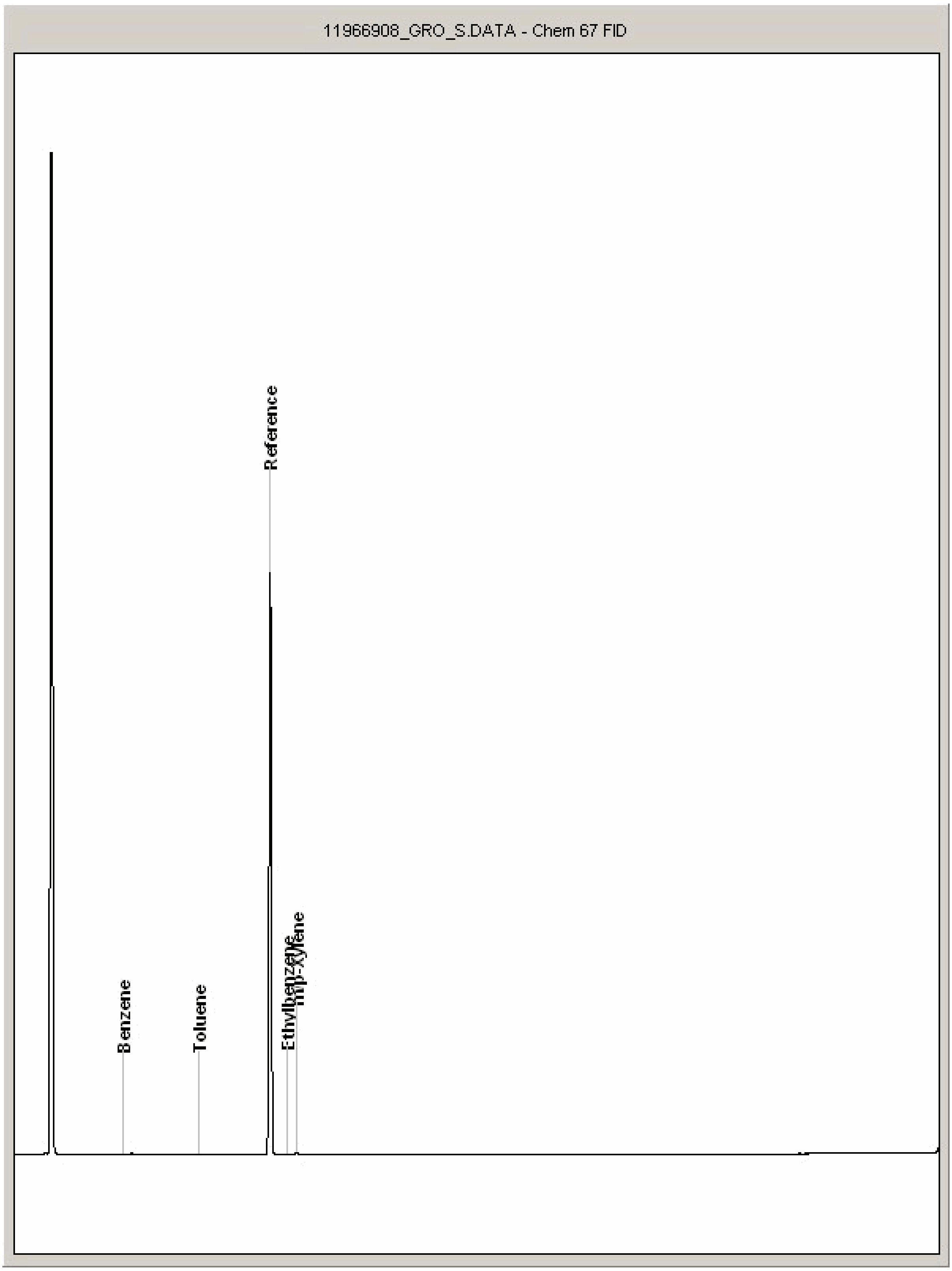
Sample Identity:  11342150-
Date Acquired  :  29/08/2015 02:23:16 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  1.040
```

CERTIFICATE OF ANALYSIS

SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

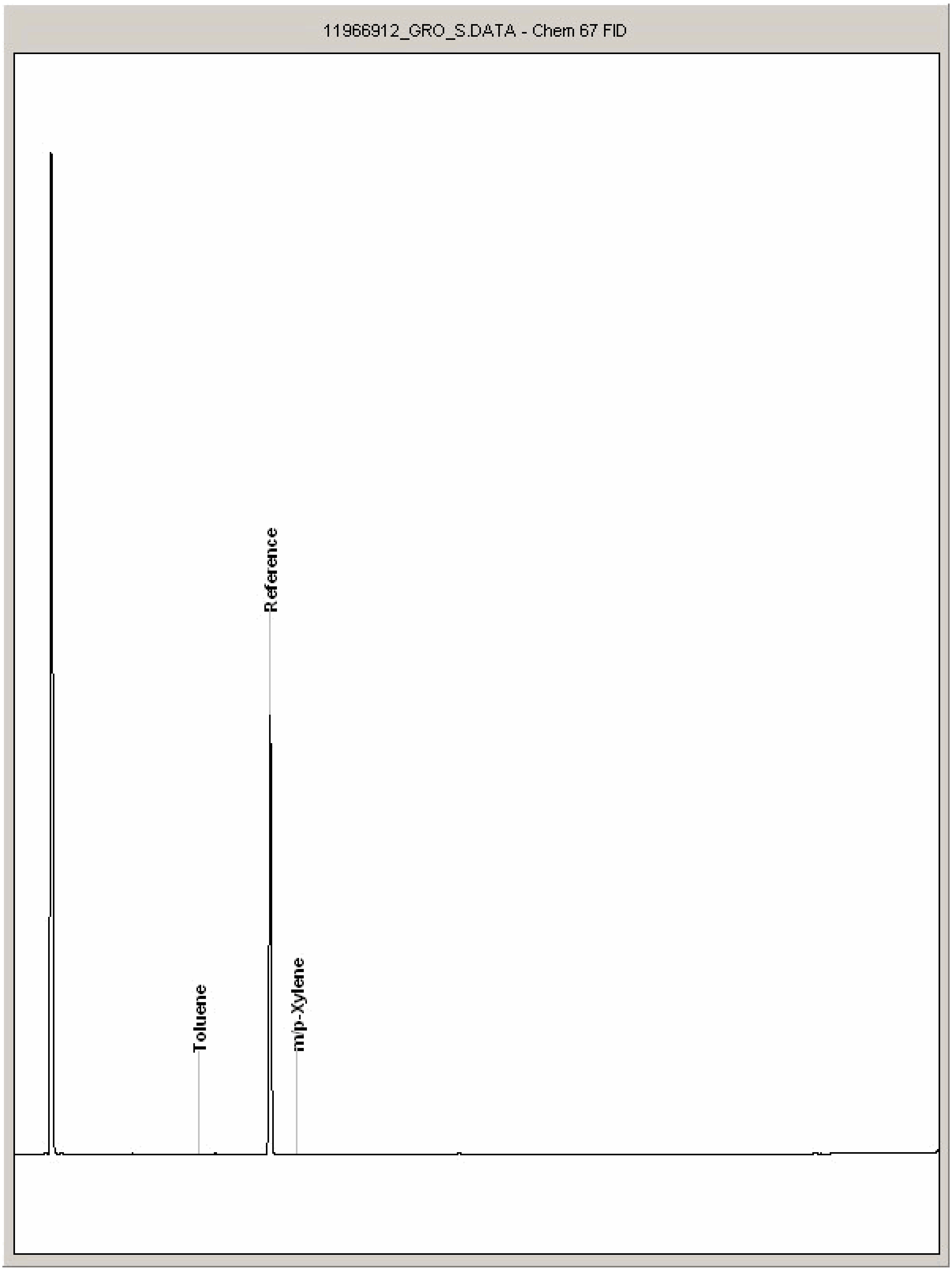
Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11966908	**Depth :**	1.10
		Sample ID :	BH206		



Chromatogram

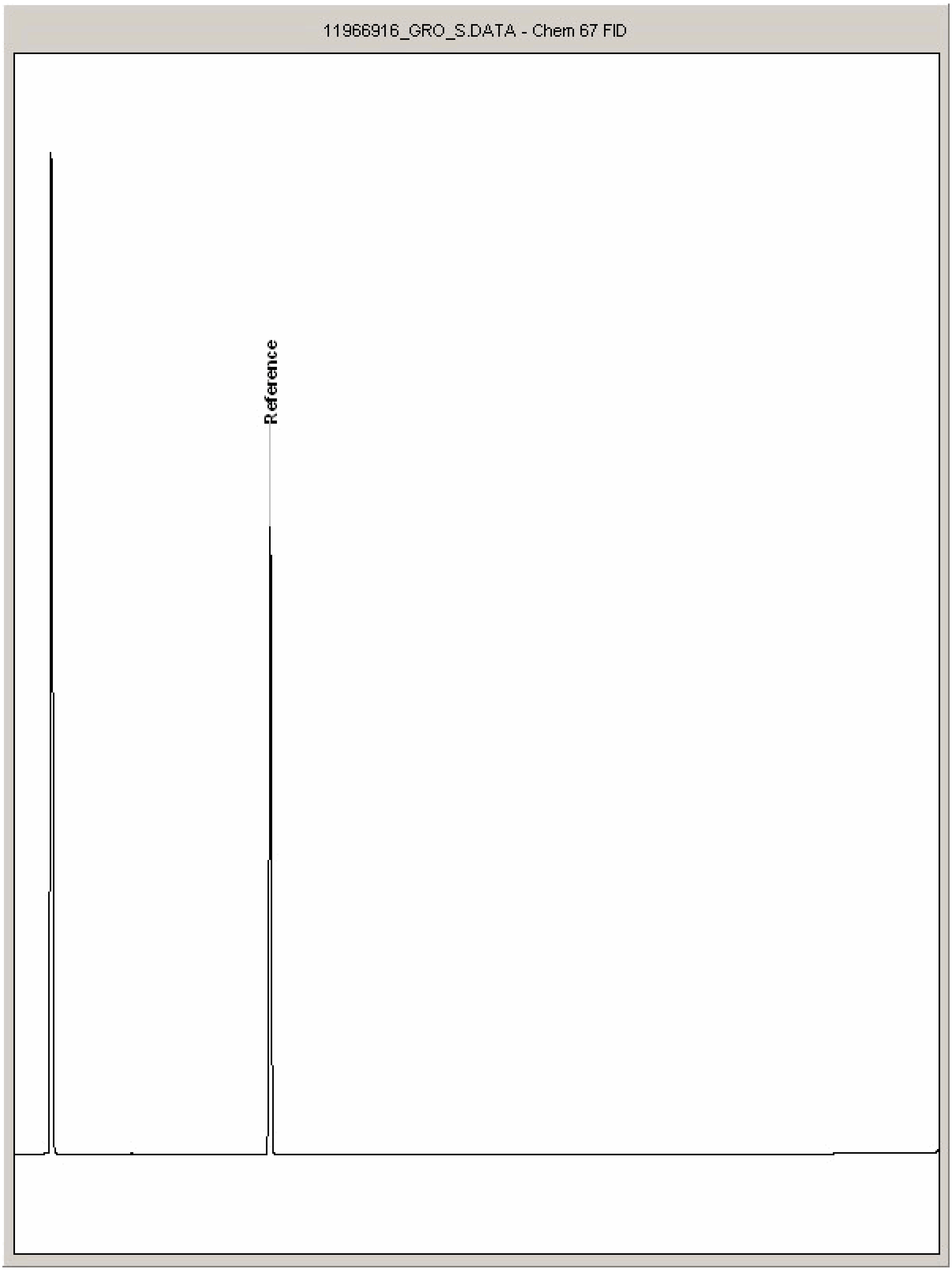
Analysis:	GRO by GC-FID (S)	**Sample No :**	11966912	**Depth :**	0.50
		Sample ID :	BH203A		



SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

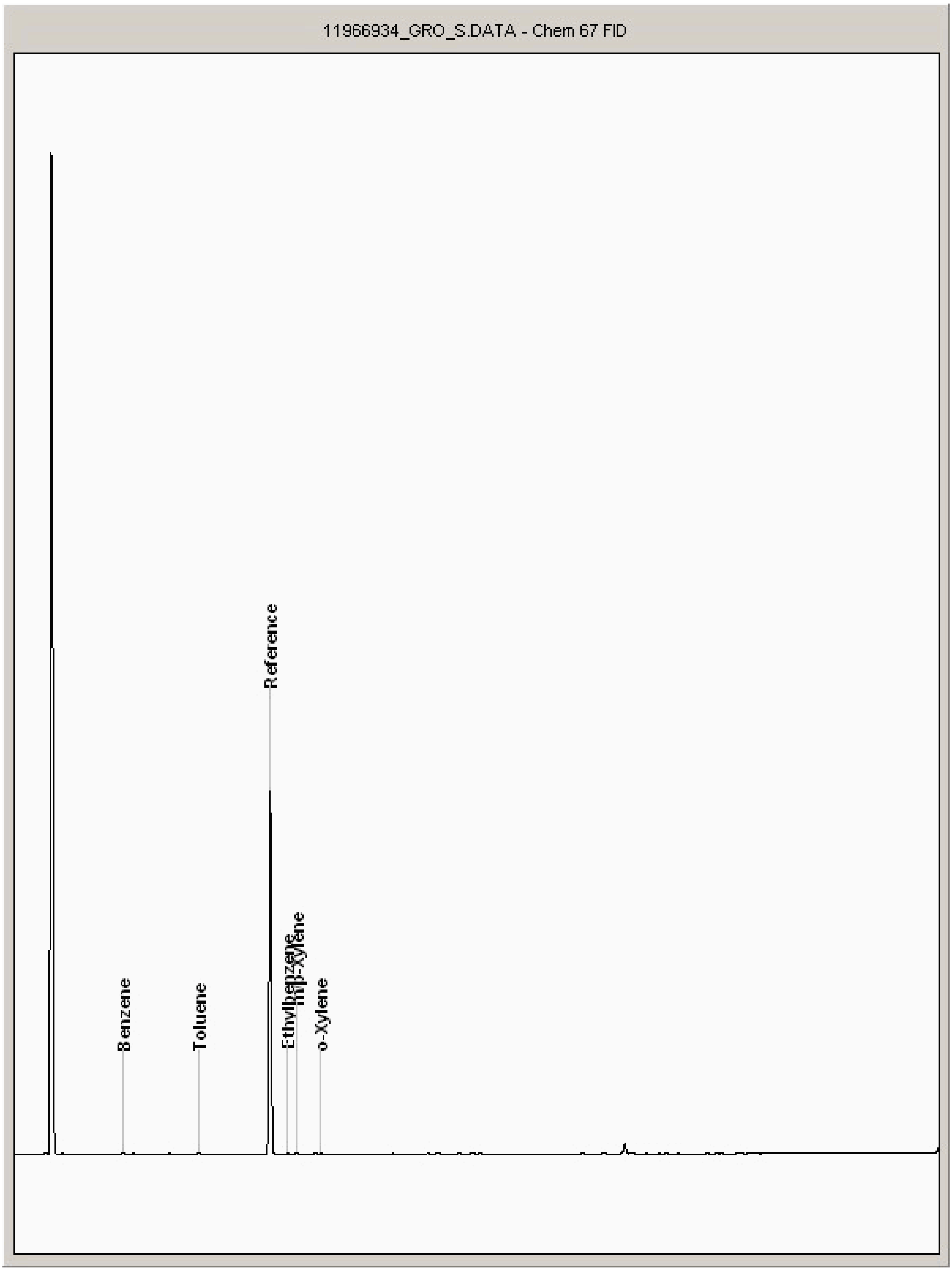
Analysis:	GRO by GC-FID (S)	**Sample No :**	11966916	**Depth :**	2.50
		Sample ID :	BH205		



SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11966934	**Depth :**	1.00
		Sample ID :	BH205		



SDG: 150822-16
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

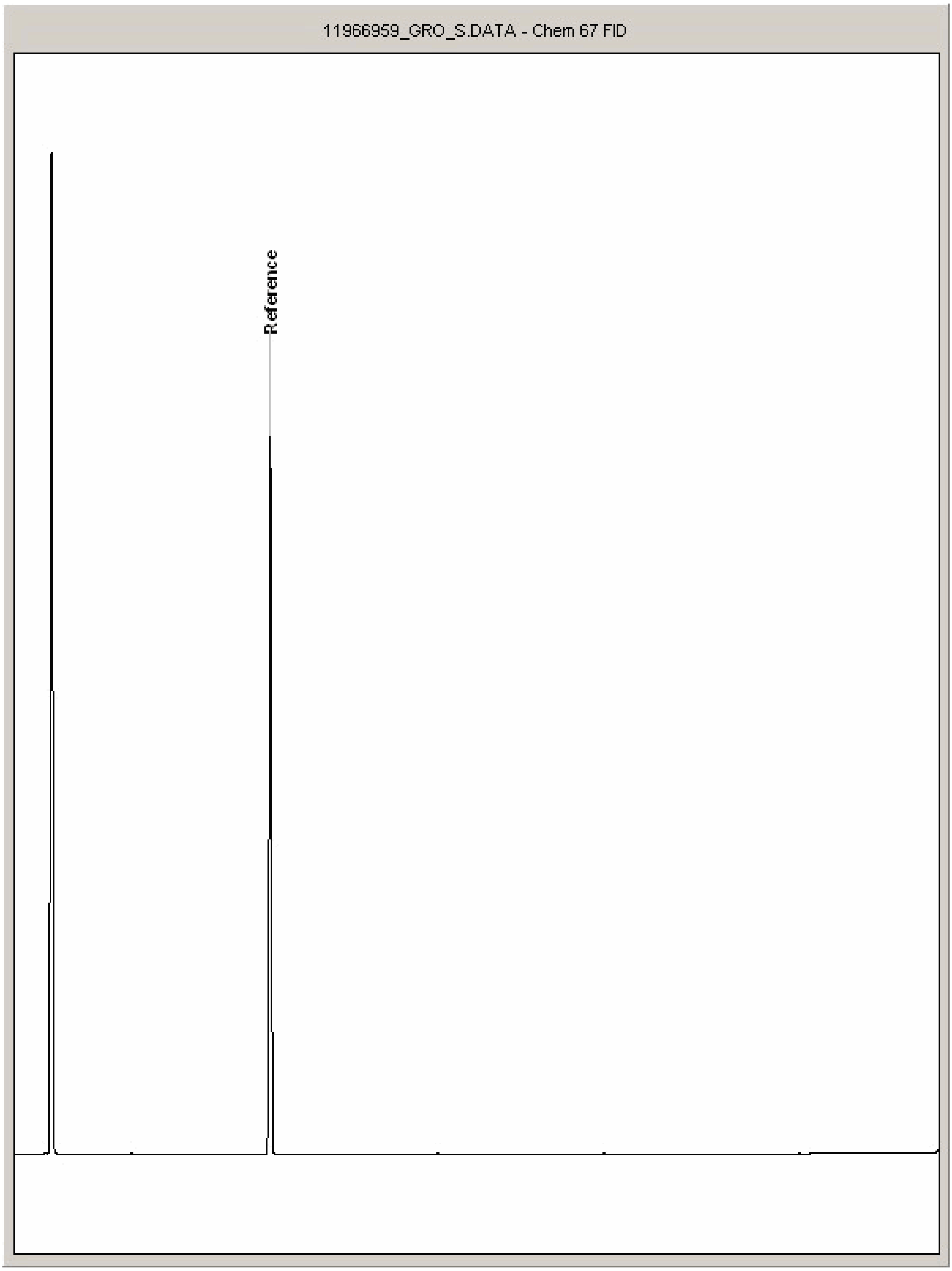
Order Number:
Report Number: 328751
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11966959
Sample ID : BH204

Depth : 3.30



SDG:	150822-16	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	328751
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

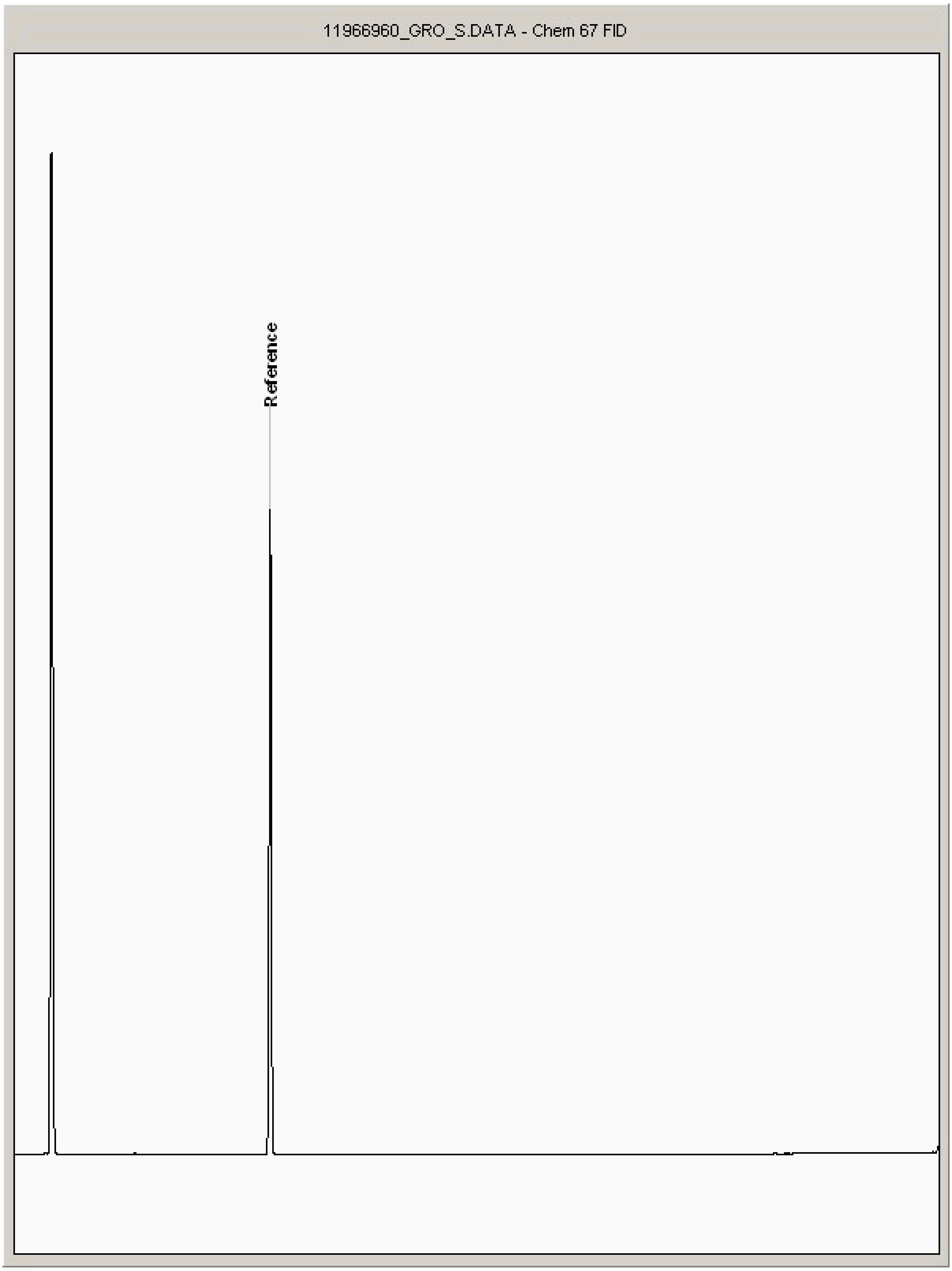
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11966960

Sample ID : BH204

Depth : 1.30



Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

SDG: 150826-58
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order No.:
Report No:

Asbestos Identification

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH201A NS Z 0.70 SOLID 25/08/2015 00:00:00 27/08/2015 13:33:29 150826-58 11963169 TM048 11351888	3/9/15	Kevin Hughes	Loose fibres in soil	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH201A NS Z 1.90 - 2.00 SOLID 25/08/2015 00:00:00 27/08/2015 13:47:50 150826-58 11963171 TM048 11351923	3/9/15	Kevin Hughes	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH202A NS Z 0.80 SOLID 25/08/2015 00:00:00 27/08/2015 13:38:24 150826-58 11963170 TM048 11351909	3/9/15	Kevin Hughes	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH207 NS Z 0.70 SOLID 25/08/2015 00:00:00 27/08/2015 14:00:07 150826-58 11963172 TM048 11351937	3/9/15	Kevin Hughes	Loose fibres in soil	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH208A NS Z 0.80 SOLID 25/08/2015 00:00:00 27/08/2015 11:24:24 150826-58 11963174 TM048 11351964	3/9/15	Kevin Hughes	Loose fibres in soil	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected

SDG:	150826-58	**Customer:**	AECOM
Job:	H_URS_WIM-273	**Attention:**	Gary Marshall
Client Reference:		**Order No.:**	
Location:	Stag Brewery	**Report No:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH209 NS Z 0.50 SOLID 25/08/2015 00:00:00 28/08/2015 12:31:33 150826-58 11963177 TM048 11351994	3/9/15	Kevin Hughes	Loose fibres in soil	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH2A NS Z 0.50 SOLID 25/08/2015 00:00:00 28/08/2015 12:46:35 150826-58 11963166 TM048 11351834	3/9/15	Kevin Hughes	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected

ALcontrol Laboratories

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AECOM
St. George's House
2nd Floor
5 St. George's Road
Wimbledon
Greater London
SW19 4DR

Attention: Gary Marshall

PRELIMINARY/INTERIM REPORT

Date:	09 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150828-41
Your Reference:	
Location:	Stag Brewery
Report No:	329009

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

This is a preliminary report which has not had final authorisation.

Approved By:

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING
1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977605	BH4A		0.90	27/08/2015
11977606	BH4A		3.50 - 4.00	27/08/2015
11977603	BH7A		0.70	27/08/2015
11977604	BH7A		2.50 - 3.00	27/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

PRELIMINARY/INTERIM REPORT

SDG: 150828-41
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329009
Superseded Report:

SOLID

Results Legend

X **Test**

N **No Determination Possible**

Lab Sample No(s)			11977605			11977606			11977603			11977604		
Customer Sample Reference			BH4A			BH4A			BH7A			BH7A		
AGS Reference														
Depth (m)			0.90			3.50 - 4.00			0.70			2.50 - 3.00		
Container			250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2		X						X				
Asbestos Quant. - Waste Limit	All	NDPs: 0 Tests: 1		X										
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4		X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4			X			X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4		X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 4	X			X			X			X		
pH	All	NDPs: 0 Tests: 4		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 4	X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		

SOLID

Results Legend

X **Test**

N **No Determination Possible**

	Lab Sample No(s)		11977605			11977606			11977603			11977604		
	Customer Sample Reference		BH4A			BH4A			BH7A			BH7A		
	AGS Reference													
	Depth (m)		0.90			3.50 - 4.00			0.70			2.50 - 3.00		
	Container		250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
VOC MS (S)	All	NDPs: 0 Tests: 4			X			X			X			X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11977605	BH4A	0.90	Dark Brown	Sand	0.1 - 2 mm	Brick	Concrete/Aggregate
11977606	BH4A	3.50 - 4.00	Light Brown	Sand	0.1 - 2 mm	Stones	None
11977603	BH7A	0.70	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Brick	Stones
11977604	BH7A	2.50 - 3.00	Light Brown	Sand	0.1 - 2 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

PRELIMINARY/INTERIM REPORT

SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH4A	BH4A	BH7A	BH7A
		Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015
		Sampled Time	00:00:00	.	.	.
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015
		SDG Ref	150828-41	150828-41	150828-41	150828-41
		Lab Sample No.(s)	11977605	11977606	11977603	11977604
		AGS Reference				
Component	**LOD/Units**	**Method**				
Moisture Content Ratio (% of as received sample)	%	PM024	7.1	4.4	28	4.8
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	23.8 M	<15 M	35.3 M	15.8 M
Organic Carbon, Total	<0.2 %	TM132	2.08 M	<0.2 M	3.51 M	<0.2 M
pH	1 pH Units	TM133	7.92 M	8.01 M	7.67 M	8.01 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #	<0.6 #
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 ♦ #	<15 ♦ #	<15 ♦ #	<15 ♦ #
Arsenic	<0.6 mg/kg	TM181	14.2 M	21.4 M	94 M	16.4 M
Cadmium	<0.02 mg/kg	TM181	0.603 M	0.385 M	2.03 M	0.325 M
Chromium	<0.9 mg/kg	TM181	16.9 M	21.5 M	28.7 M	16.5 M
Copper	<1.4 mg/kg	TM181	31.4 M	6.36 M	82.3 M	4.42 M
Lead	<0.7 mg/kg	TM181	309 M	8.03 M	468 M	5.77 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	0.702 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	15.6 M	24.2 M	36 M	19.4 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	217 M	28.5 M	1640 M	20.8 M
Sulphate, Total	<48 mg/kg	TM221	841 M	63.9 M	601 M	74.7 M

PRELIMINARY/INTERIM REPORT

SDG: 150828-41
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329009
Superseded Report:

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH4A	BH4A	BH7A	BH7A		
		Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-41	150828-41	150828-41	150828-41		
		Lab Sample No.(s)	11977605	11977606	11977603	11977604		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Naphthalene-d8 % recovery**	%	TM218	97.2	92.6	104	92.3		
Acenaphthene-d10 % recovery**	%	TM218	98.5	92.1	104	91.4		
Phenanthrene-d10 % recovery**	%	TM218	99	89.7	104	89.4		
Chrysene-d12 % recovery**	%	TM218	93.5	79.4	94.8	80.1		
Perylene-d12 % recovery**	%	TM218	102	86.9	101	88.5		
Naphthalene	<9 µg/kg	TM218	56 M	<9 M	69.9 M	<9 M		
Acenaphthylene	<12 µg/kg	TM218	83 M	<12 M	84.3 M	<12 M		
Acenaphthene	<8 µg/kg	TM218	41.8 M	<8 M	11.5 M	<8 M		
Fluorene	<10 µg/kg	TM218	48.2 M	<10 M	<10 M	<10 M		
Phenanthrene	<15 µg/kg	TM218	1190 M	<15 M	307 M	<15 M		
Anthracene	<16 µg/kg	TM218	317 M	<16 M	107 M	<16 M		
Fluoranthene	<17 µg/kg	TM218	2500 M	<17 M	967 M	<17 M		
Pyrene	<15 µg/kg	TM218	2090 M	<15 M	971 M	<15 M		
Benz(a)anthracene	<14 µg/kg	TM218	1320 M	<14 M	630 M	<14 M		
Chrysene	<10 µg/kg	TM218	1060 M	<10 M	684 M	<10 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	1700 M	<15 M	1930 M	<15 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	609 M	<14 M	724 M	<14 M		
Benzo(a)pyrene	<15 µg/kg	TM218	1470 M	<15 M	1050 M	<15 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	787 M	<18 M	975 M	<18 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	216 M	<23 M	269 M	<23 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	967 M	<24 M	1160 M	<24 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	14500	<118	9950	<118		

SDG: 150828-41
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329009
Superseded Report:

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH4A	BH4A	BH7A	BH7A		
Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
Sampled Time	00:00:00	.	.	.		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-41	150828-41	150828-41	150828-41		
Lab Sample No.(s)	11977605	11977606	11977603	11977604		
AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	74	117	28	129		
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	<44 M	<44 M		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M	<5 M		
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	<10 M		
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2 M	<2 M		
Ethylbenzene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M	<6 M		
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100	<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	1680	<100	<100	<100		
Aliphatics >C21-C35	<100 µg/kg	TM173	54500	<100	21900	<100		
Aliphatics >C35-C44	<100 µg/kg	TM173	32400	<100	5130	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	88500	<100	27000	<100		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC12-EC16	<100 µg/kg	TM173	1610	<100	1920	<100		
Aromatics >EC16-EC21	<100 µg/kg	TM173	17100	<100	8470	<100		
Aromatics >EC21-EC35	<100 µg/kg	TM173	74700	<100	70000	<100		
Aromatics >EC35-EC44	<100 µg/kg	TM173	37300	<100	28500	<100		
Aromatics >EC40-EC44	<100 µg/kg	TM173	14200	<100	10500	<100		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	131000	<100	109000	<100		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	219000	<100	136000	<100		

PRELIMINARY/INTERIM REPORT

SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH4A	BH4A	BH7A	BH7A		
Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
Sampled Time	00:00:00	.	.	.		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-41	150828-41	150828-41	150828-41		
Lab Sample No.(s)	11977605	11977606	11977603	11977604		
AGS Reference						

Component	LOD/Units	Method	BH4A	BH4A	BH7A	BH7A		
Dibromofluoromethane**	%	TM116	120	103	112	124		
Toluene-d8**	%	TM116	98.1	103	99.5	110		
4-Bromofluorobenzene**	%	TM116	69.9	94.2	74.1	106		
Dichlorodifluoromethane	<6 µg/kg	TM116	<6 M	<6 M	<60 M	<6 M		
Chloromethane	<7 µg/kg	TM116	<7 #	<7 #	<70 #	<7 #		
Vinyl Chloride	<6 µg/kg	TM116	<6 M	<6 M	<60 M	<6 M		
Bromomethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Chloroethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6 M	<60 M	<6 M		
1,1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10 #	<100 #	<10 #		
Carbon Disulphide	<7 µg/kg	TM116	<7 M	<7 M	<70 M	<7 M		
Dichloromethane	<10 µg/kg	TM116	<10 #	<10 #	<100 #	<10 #		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
1,1-Dichloroethane	<8 µg/kg	TM116	<8 M	<8 M	<80 M	<8 M		
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 M	<6 M	<60 M	<6 M		
2,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Bromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Chloroform	<8 µg/kg	TM116	<8 M	<8 M	<80 M	<8 M		
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7 M	<7 M	<70 M	<7 M		
1,1-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Carbontetrachloride	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
1,2-Dichloroethane	<5 µg/kg	TM116	<5 M	<5 M	<50 M	<5 M		
Benzene	<9 µg/kg	TM116	<9 M	<9 M	<90 M	<9 M		
Trichloroethene	<9 µg/kg	TM116	<9 #	<9 #	<90 #	<9 #		
1,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Dibromomethane	<9 µg/kg	TM116	<9 M	<9 M	<90 M	<9 M		
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7 M	<70 M	<7 M		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Toluene	<7 µg/kg	TM116	<7 M	<7 M	<70 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<100	<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		

PRELIMINARY/INTERIM REPORT

SDG: 150828-41
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329009
Superseded Report:

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH4A	BH4A	BH7A	BH7A		
		Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-41	150828-41	150828-41	150828-41		
		Lab Sample No.(s)	11977605	11977606	11977603	11977604		
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<7 µg/kg	TM116	<7 M	<7 M	<70 M	<7 M		
Tetrachloroethene	<5 µg/kg	TM116	<5 M	<5 M	<50 M	<5 M		
Dibromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
1,2-Dibromoethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<50 M	95.5 M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Ethylbenzene	<4 µg/kg	TM116	<4 M	<4 M	<40 M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	<10 #	<10 #	<100 #	<10 #		
o-Xylene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Styrene	<10 µg/kg	TM116	<10 #	<10 #	<100 #	<10 #		
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Isopropylbenzene	<5 µg/kg	TM116	<5 #	<5 #	<50 #	<5 #		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 M	<16 M	<160 M	<16 M		
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
Propylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<90 M	<9 M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 M	<8 M	<80 M	<8 M		
4-Chlorotoluene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
tert-Butylbenzene	<14 µg/kg	TM116	<14 M	<14 M	<140 M	<14 M		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<90 #	<9 #		
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
4-Isopropyltoluene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<80 M	<8 M		
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<50 M	<5 M		
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<110	<11		
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10 M	<10 M	<100 M	<10 M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<140 M	<14 M		
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 #	<10 #	<100 #	<10 #		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<200	<20		
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<200	<20		
Naphthalene	<13 µg/kg	TM116	<13 M	<13 M	<130 M	<13 M		

PRELIMINARY/INTERIM REPORT

SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH4A	BH4A	BH7A	BH7A		
		Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-41	150828-41	150828-41	150828-41		
		Lab Sample No.(s)	11977605	11977606	11977603	11977604		
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 #	<20 #	<200 #	<20 #		

SDG: 150828-41
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329009
Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH4A 0.90 SOLID 27/08/2015 00:00:00 28/08/2015 18:57:49 150828-41 11977605 TM048	3/9/15	Rebecca Rawlings	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH7A 0.70 SOLID 27/08/2015 00:00:00 28/08/2015 19:05:13 150828-41 11977603 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	11977605	11977606	11977603	11977604
Customer Sample Ref.	BH4A	BH4A	BH7A	BH7A
AGS Ref.				
Depth	0.90	3.50 - 4.00	0.70	2.50 - 3.00
Type	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	04-Sep-2015		04-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	04-Sep-2015	03-Sep-2015	04-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pH	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	28-Aug-2015	29-Aug-2015	28-Aug-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	04-Sep-2015	07-Sep-2015	04-Sep-2015	07-Sep-2015
TPH CWG GC (S)	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	03-Sep-2015	03-Sep-2015

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1292	QC 1205
Exchangeable Ammonium as NH4	TM024	**86.07** 79.30 : 104.61	**98.01** 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1219	QC 1231
Easily Liberated Sulphide	TM180	**93.21** 49.14 : 123.89	**94.71** 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aliphatics >C12-C35	TM173	**85.21** 62.50 : 112.50	**87.08** 70.80 : 111.51

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aromatics >EC12-EC35	TM173	**82.67** 60.62 : 126.95	**82.67** 65.21 : 121.32

GRO by GC-FID (S)

Component	Method Code	QC 1173	QC 1290
Benzene by GC (Moisture Corrected)	TM089	**95.0** 76.33 : 121.87	**100.0** 76.23 : 120.71
Ethylbenzene by GC (Moisture Corrected)	TM089	**99.0** 75.73 : 123.83	**100.5** 73.32 : 122.02
m & p Xylene by GC (Moisture Corrected)	TM089	**97.5** 75.52 : 120.32	**100.75** 72.90 : 122.64
MTBE GC-FID (Moisture Corrected)	TM089	**94.0** 77.89 : 119.70	**101.0** 72.17 : 124.81
o Xylene by GC (Moisture Corrected)	TM089	**93.5** 74.15 : 124.59	**100.5** 71.65 : 124.40
QC	TM089	**99.2** 62.31 : 122.61	**105.5** 55.00 : 145.00
Toluene by GC (Moisture Corrected)	TM089	**93.5** 77.91 : 122.33	**100.5** 74.60 : 120.38

Hexavalent Chromium (s)

Component	Method Code	QC 1285
Hexavalent Chromium	TM151	**102.0** 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1206	QC 1292
Aluminium	TM181	**99.23** 86.49 : 129.71	**108.46** 86.49 : 129.71
Antimony	TM181	**94.27** 77.50 : 122.50	**95.34** 77.50 : 122.50
Arsenic	TM181	**92.92** 82.63 : 117.37	**92.92** 82.63 : 117.37
Barium	TM181	**96.24** 79.45 : 120.55	**99.25** 79.45 : 120.55
Beryllium	TM181	**98.91** 85.92 : 121.27	**100.31** 85.92 : 121.27
Boron	TM181	**105.34** 77.41 : 143.83	**109.92** 77.41 : 143.83
Cadmium	TM181	**95.8** 81.95 : 118.05	**95.63** 81.95 : 118.05
Chromium	TM181	**93.33** 81.29 : 118.71	**96.47** 81.29 : 118.71
Cobalt	TM181	**95.83** 83.86 : 116.14	**96.67** 83.86 : 116.14
Copper	TM181	**97.7** 78.57 : 121.43	**98.51** 78.57 : 121.43
Iron	TM181	**95.86** 87.50 : 122.82	**101.38** 87.50 : 122.82
Lead	TM181	**93.7** 74.18 : 117.25	**92.91** 74.18 : 117.25
Manganese	TM181	**100.0** 82.91 : 117.09	**100.0** 82.91 : 117.09
Mercury	TM181	**94.3** 81.99 : 118.01	**93.47** 81.99 : 118.01
Molybdenum	TM181	**92.2** 81.45 : 118.55	**92.36** 81.45 : 118.55
Nickel	TM181	**95.93** 79.64 : 120.36	**97.67** 79.64 : 120.36
Phosphorus	TM181	**97.76** 81.03 : 118.97	**97.32** 81.03 : 118.97
Selenium	TM181	**105.3** 87.05 : 121.93	**105.47** 87.05 : 121.93
Strontium	TM181	**98.08** 83.64 : 116.36	**98.47** 83.64 : 116.36
Thallium	TM181	**87.56** 77.50 : 122.50	**91.38** 77.50 : 122.50
Tin	TM181	**92.03** 78.30 : 113.98	**92.69** 78.30 : 113.98
Titanium	TM181	**103.91** 71.02 : 128.98	**103.13** 71.02 : 128.98

Metals in solid samples by OES

		QC 1206	QC 1292
Vanadium	TM181	**93.53** 86.61 : 113.39	**95.0** 86.61 : 113.39
Zinc	TM181	**97.73** 89.82 : 114.54	**98.05** 89.82 : 114.54

PAH by GCMS

Component	**Method Code**	QC 1122	QC 1106
Acenaphthene	TM218	**88.5** 78.75 : 116.25	**91.5** 78.84 : 114.36
Acenaphthylene	TM218	**85.0** 76.45 : 110.05	**85.5** 65.50 : 119.50
Anthracene	TM218	**87.5** 67.15 : 124.45	**91.0** 75.54 : 110.88
Benz(a)anthracene	TM218	**95.5** 82.00 : 127.00	**97.5** 78.02 : 127.38
Benzo(a)pyrene	TM218	**97.5** 75.60 : 124.20	**99.5** 79.21 : 128.01
Benzo(b)fluoranthene	TM218	**97.5** 81.20 : 121.77	**96.0** 86.21 : 131.42
Benzo(ghi)perylene	TM218	**96.5** 77.49 : 119.12	**95.0** 80.11 : 120.52
Benzo(k)fluoranthene	TM218	**94.5** 83.50 : 116.50	**97.0** 78.77 : 120.72
Chrysene	TM218	**93.0** 78.35 : 114.42	**94.5** 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	**94.0** 77.15 : 122.45	**93.5** 76.39 : 122.63
Fluoranthene	TM218	**91.0** 79.08 : 114.40	**95.0** 77.25 : 117.75
Fluorene	TM218	**90.5** 79.03 : 113.38	**95.5** 79.28 : 117.35
Indeno(123cd)pyrene	TM218	**96.0** 75.65 : 125.15	**93.0** 78.87 : 122.50
Naphthalene	TM218	**92.0** 77.25 : 112.60	**93.0** 74.75 : 118.25
Phenanthrene	TM218	**90.5** 78.25 : 115.44	**95.0** 78.61 : 113.98
Pyrene	TM218	**90.0** 78.07 : 114.06	**94.0** 76.15 : 115.26

pH

Component	**Method Code**	QC 1218	QC 1227
pH	TM133	**100.25** 97.19 : 102.81	**100.5** 97.19 : 102.81

Total Organic Carbon

Total Organic Carbon

Component	**Method Code**	QC 1254	QC 1297
Total Organic Carbon	TM132	**100.46** 88.82 : 111.18	**97.72** 89.40 : 103.09

Total Sulphate

Component	**Method Code**	QC 1235	QC 1273
Total Sulphate	TM221	**102.27** 78.49 : 121.51	**103.79** 78.49 : 121.51

VOC MS (S)

Component	**Method Code**	QC 1128	QC 1175	QC 1164
1,1,1,2-tetrachloroethane	TM116	**95.6** 83.24 : 124.28	**102.6** 83.24 : 124.28	**105.6** 76.60 : 121.00
1,1,1-Trichloroethane	TM116	**100.8** 81.77 : 121.07	**102.4** 81.77 : 121.07	**101.0** 77.80 : 123.40
1,1,2-Trichloroethane	TM116	**100.4** 79.24 : 112.23	**94.2** 79.24 : 112.23	**92.6** 75.40 : 119.80
1,1-Dichloroethane	TM116	**103.0** 72.58 : 116.06	**106.6** 72.58 : 116.06	**106.8** 80.84 : 124.49
1,2-Dichloroethane	TM116	**118.8** 77.50 : 122.50	**112.0** 77.50 : 122.50	**108.2** 91.00 : 135.67
1,4-Dichlorobenzene	TM116	**96.2** 73.23 : 116.39	**95.4** 73.23 : 116.39	**102.4** 80.88 : 114.60
2-Chlorotoluene	TM116	**85.6** 69.22 : 110.64	**86.6** 69.22 : 110.64	**97.2** 74.00 : 117.20
4-Chlorotoluene	TM116	**89.0** 68.57 : 106.26	**87.4** 68.57 : 106.26	**93.4** 71.20 : 113.20
Benzene	TM116	**103.2** 84.33 : 124.27	**106.0** 84.33 : 124.27	**99.6** 79.60 : 125.20
Carbon Disulphide	TM116	**110.4** 77.20 : 122.80	**107.4** 77.20 : 122.80	**101.4** 74.91 : 122.14
Carbontetrachloride	TM116	**98.2** 84.20 : 119.90	**102.8** 84.20 : 119.90	**101.0** 76.80 : 121.20
Chlorobenzene	TM116	**102.4** 85.28 : 129.96	**103.2** 85.28 : 129.96	**102.4** 83.47 : 116.82
Chloroform	TM116	**108.2** 82.73 : 119.72	**106.6** 82.73 : 119.72	**107.0** 82.00 : 128.80
Chloromethane	TM116	**123.4** 55.16 : 145.46	**117.2** 55.16 : 145.46	**129.8** 74.62 : 135.86
Cis-1,2-Dichloroethene	TM116	**108.4** 73.56 : 118.93	**108.4** 73.56 : 118.93	**109.8** 81.20 : 128.00
Dibromomethane	TM116	**104.4** 73.40 : 116.60	**98.0** 73.40 : 116.60	**90.8** 73.40 : 116.60
Dichloromethane	TM116	**113.2** 76.16 : 121.98	**108.2** 76.16 : 121.98	**109.2** 86.60 : 137.00

VOC MS (S)

		QC 1128	QC 1175	QC 1164
Ethylbenzene	TM116	**94.0** 80.07 : 125.98	**99.2** 80.07 : 125.98	**95.4** 73.60 : 115.60
Hexachlorobutadiene	TM116	**69.0** 30.92 : 132.28	**89.2** 30.92 : 132.28	**70.2** 33.65 : 130.56
Isopropylbenzene	TM116	**82.6** 69.27 : 125.32	**92.6** 69.27 : 125.32	**93.4** 72.52 : 117.52
Naphthalene	TM116	**110.0** 79.15 : 121.98	**107.4** 79.15 : 121.98	**104.4** 83.23 : 126.48
o-Xylene	TM116	**77.6** 75.46 : 111.52	**84.8** 75.46 : 111.52	**93.4** 69.60 : 110.40
p/m-Xylene	TM116	**90.2** 76.97 : 121.75	**96.6** 76.97 : 121.75	**91.4** 71.30 : 112.70
Sec-Butylbenzene	TM116	**69.6** 49.27 : 129.90	**85.8** 49.27 : 129.90	**93.2** 59.20 : 125.20
Tetrachloroethene	TM116	**102.2** 87.96 : 133.65	**110.6** 87.96 : 133.65	**105.2** 85.92 : 127.92
Toluene	TM116	**99.0** 79.23 : 114.58	**100.6** 79.23 : 114.58	**89.6** 76.08 : 110.17
Trichloroethene	TM116	**94.6** 84.09 : 114.24	**98.4** 84.09 : 114.24	**98.6** 78.17 : 121.37
Trichlorofluoromethane	TM116	**107.4** 76.22 : 114.82	**104.4** 76.22 : 114.82	**109.6** 83.78 : 132.82
Vinyl Chloride	TM116	**98.2** 59.68 : 118.68	**100.8** 59.68 : 118.68	**104.0** 66.81 : 138.46

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

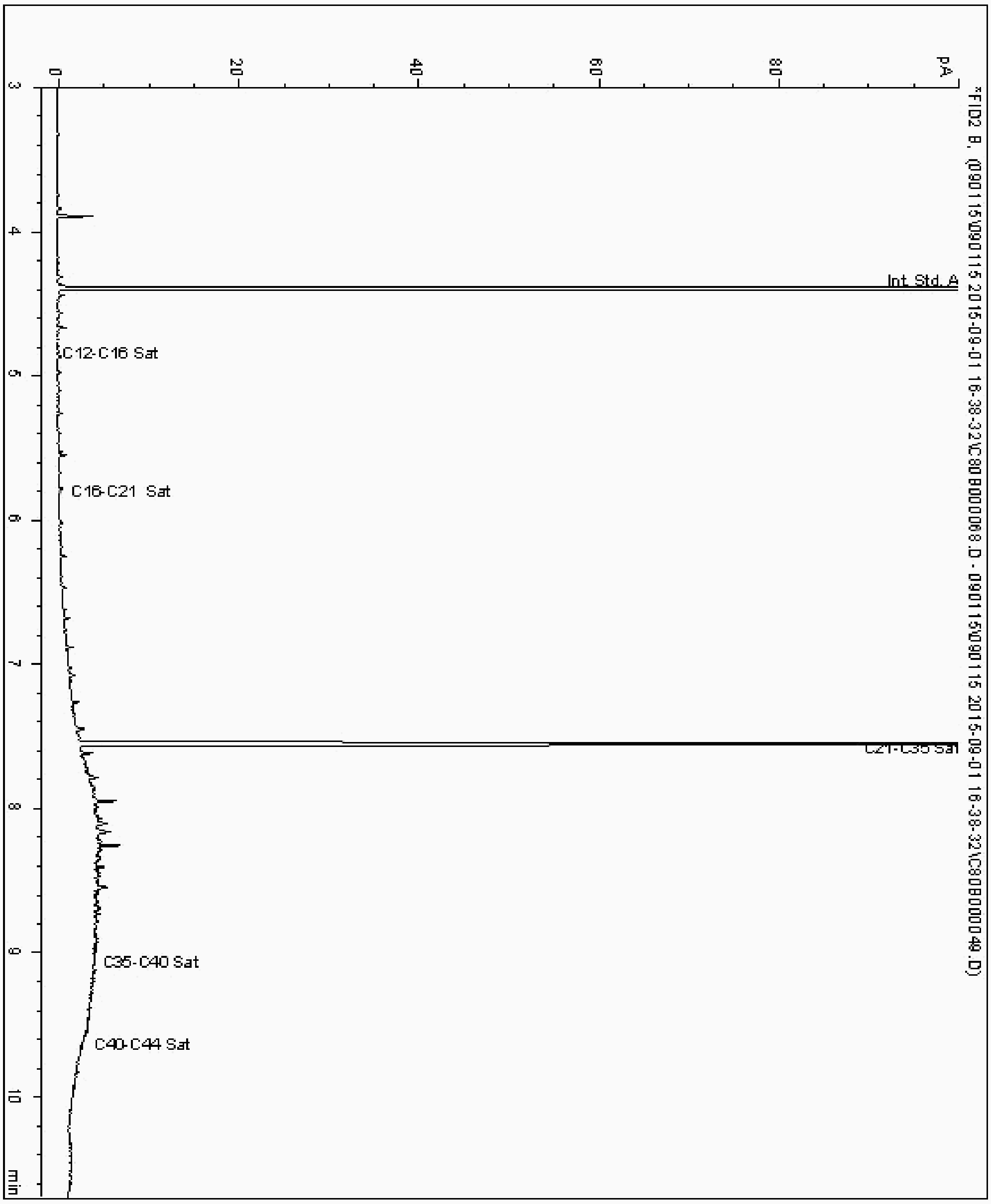
SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11981792	**Depth :**	0.90
		Sample ID :	BH4A		

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

```
Sample Identity:  11364167-
Date Acquired  :  02/09/15 11:40:32
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.990
```



PRELIMINARY/INTERIM REPORT

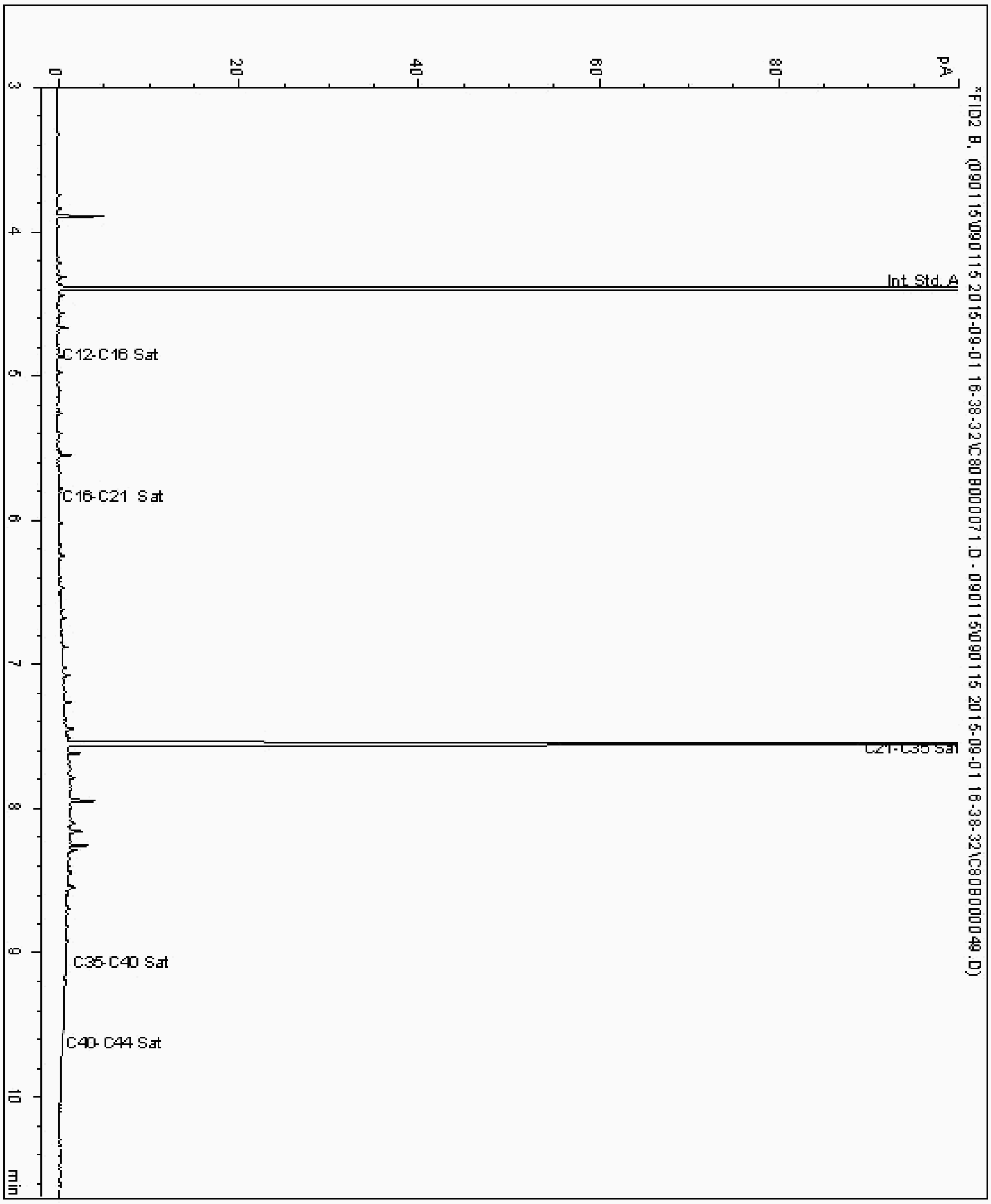
SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11981802	**Depth :**	0.70
		Sample ID :	BH7A		

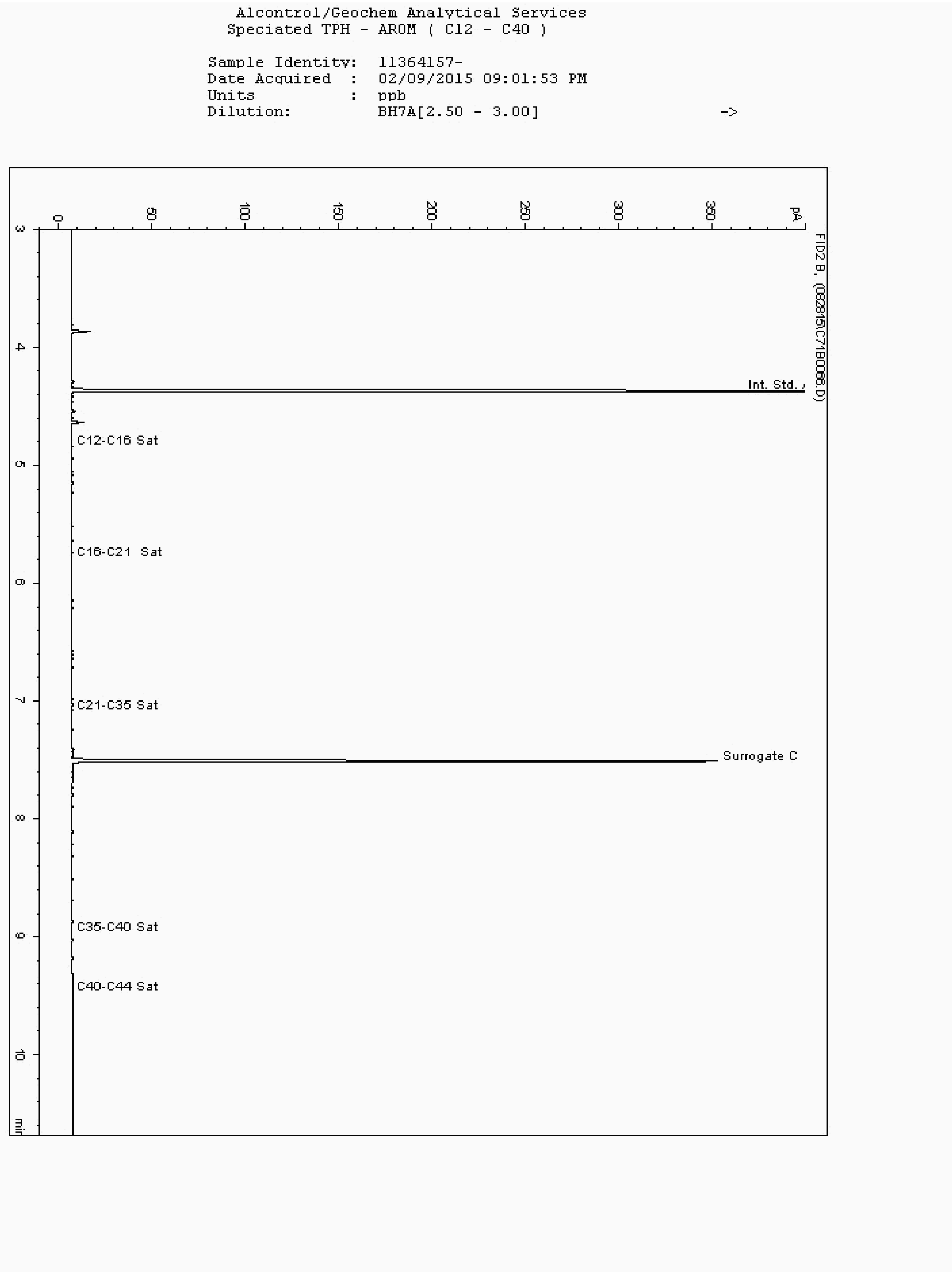
```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11364144-
Date Acquired  :  02/09/15 12:32:00
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```



Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11983540
Sample ID : BH7A
Depth : 2.50 - 3.00



```
     Alcontrol/Geochem Analytical Services
   Speciated TPH - AROM ( C12 - C40 )

 Sample Identity:  11364157-
 Date Acquired  :  02/09/2015 09:01:53 PM
 Units          :  ppb
 Dilution:         BH7A[2.50 - 3.00]              ->
```

SDG: 150828-41
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329009
Superseded Report:

Chromatogram

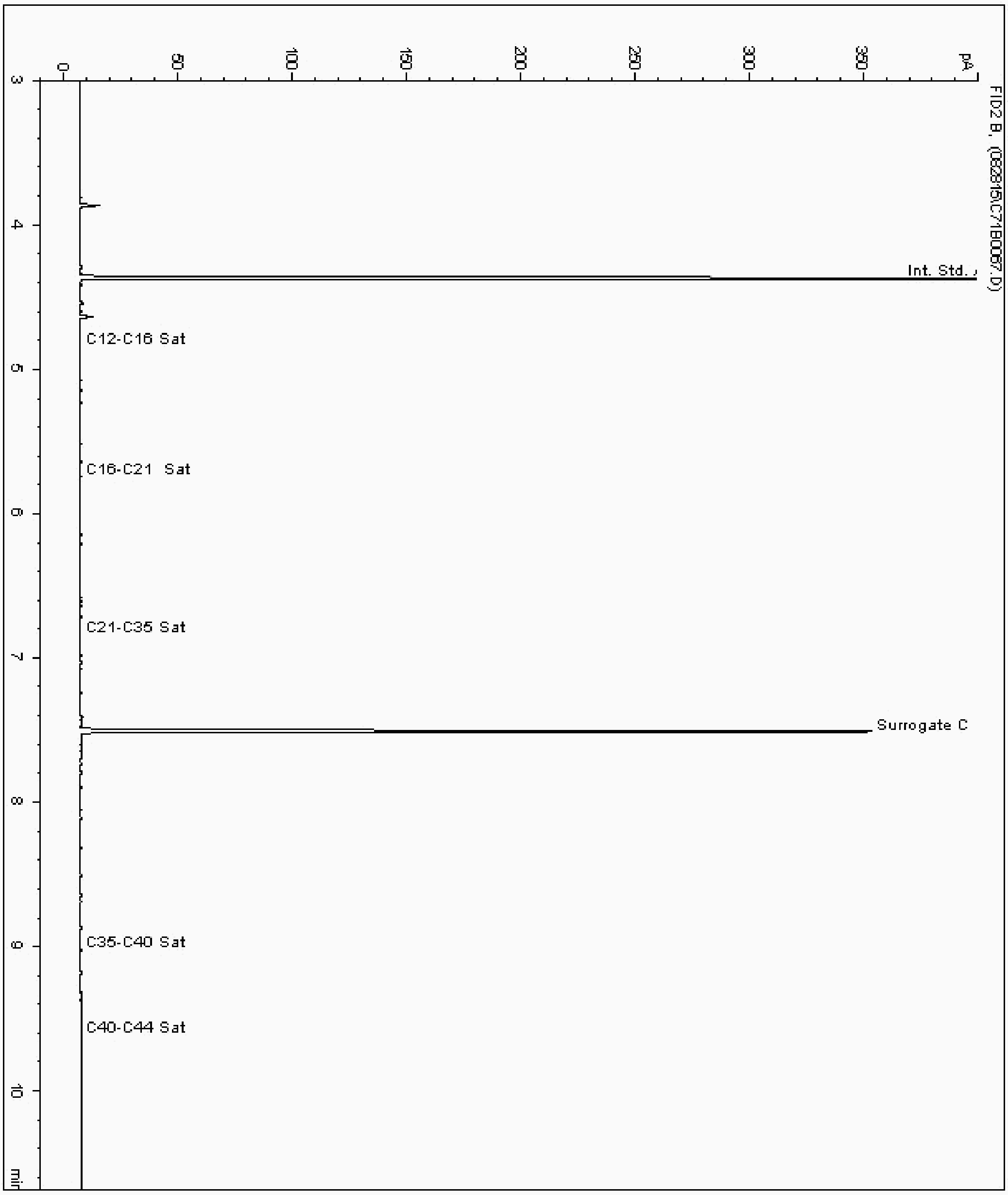
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 11983599
Sample ID : BH4A

Depth : 3.50 - 4.00

```
          Alcontrol/Geochem Analytical Services
        Speciated TPH - AROM ( C12 - C40 )

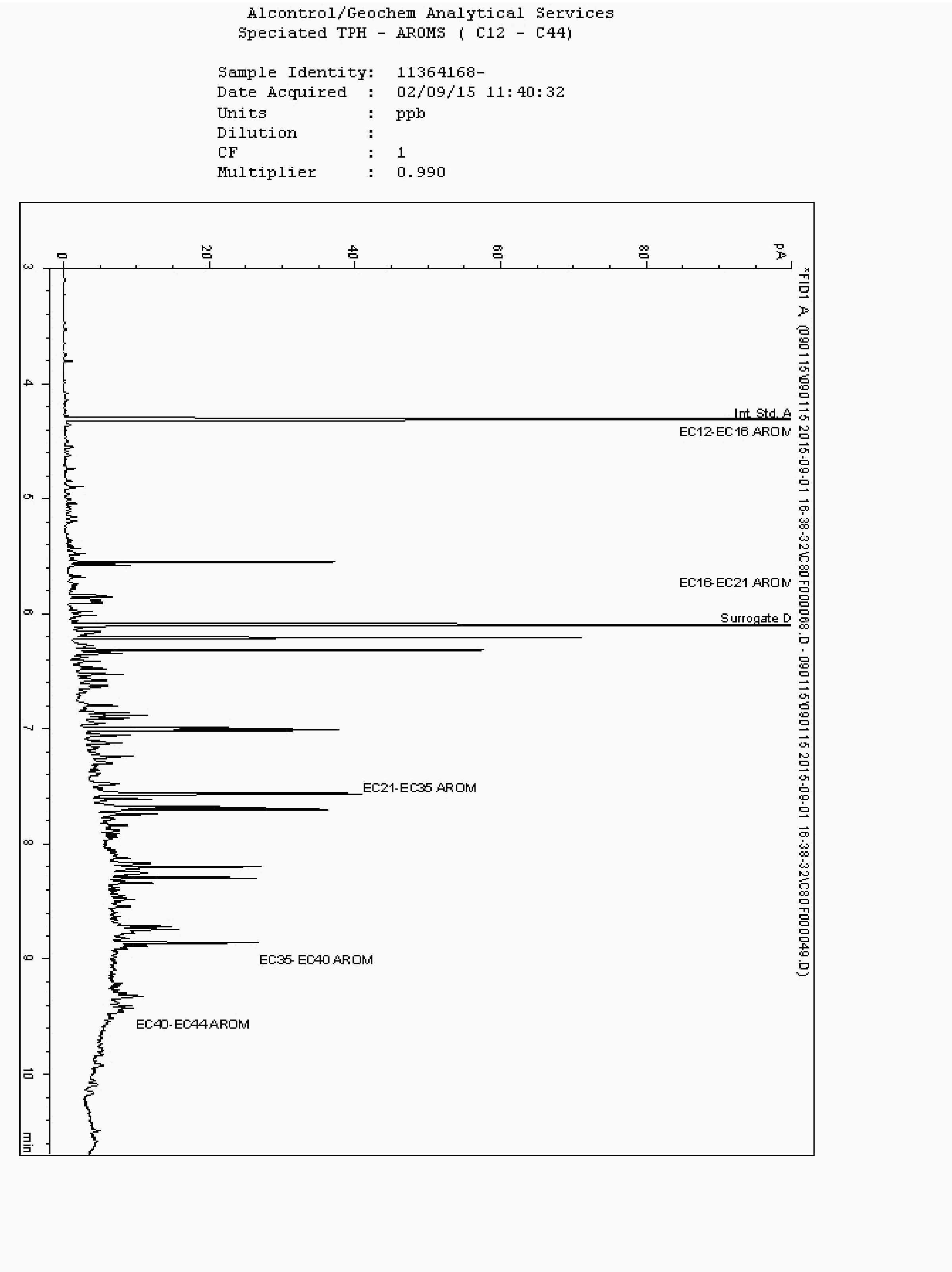
      Sample Identity:  11364180-
      Date Acquired  :  02/09/2015 09:21:45 PM
      Units          :  ppb
      Dilution:         BH4A[3.50 - 4.00]                ->
```



SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11981792	**Depth :**	0.90
		Sample ID :	BH4A		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROMS ( C12 - C44)

Sample Identity:  11364168-
Date Acquired  :  02/09/15 11:40:32
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.990
```

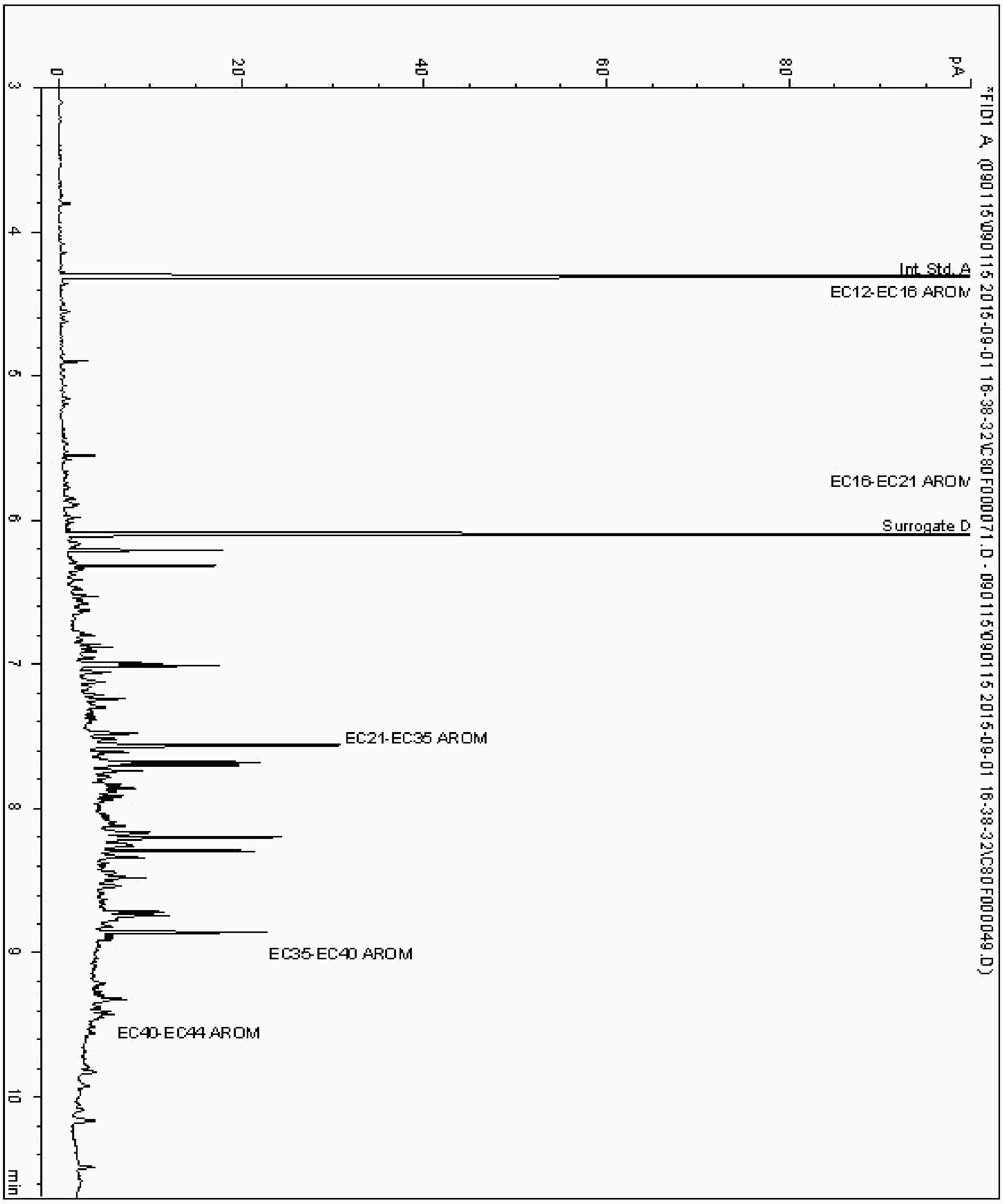
SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11981802	**Depth :**	0.70
		Sample ID :	BH7A		

```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROMS ( C12 - C44)

Sample Identity:  11364145-
Date Acquired  :  02/09/15 12:32:00
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```



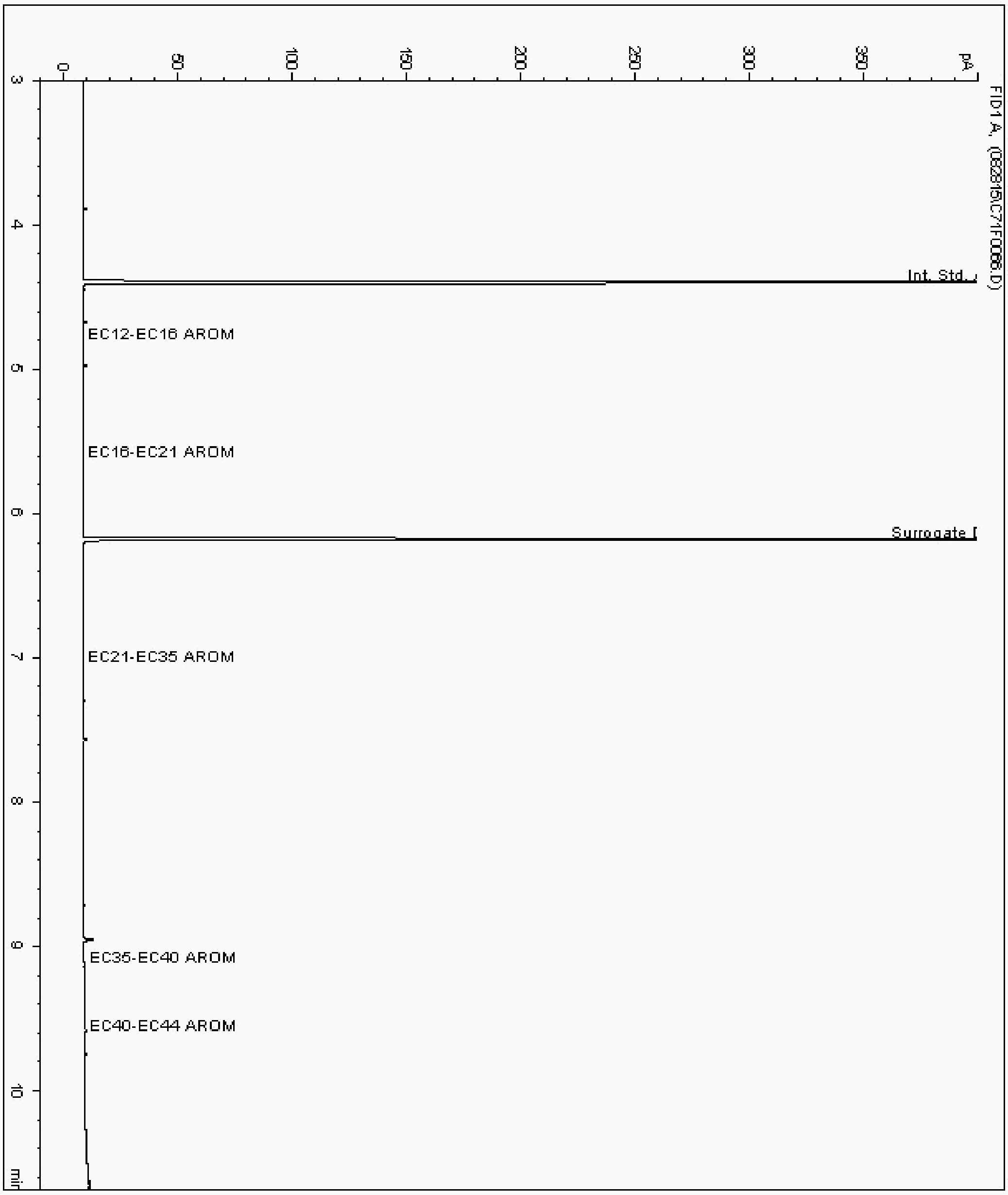
SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11983540	**Depth :**	2.50 - 3.00
		Sample ID :	BH7A		

```
          Alcontrol/Geochem Analytical Services
        Speciated TPH - AROM ( C12 - C40 )

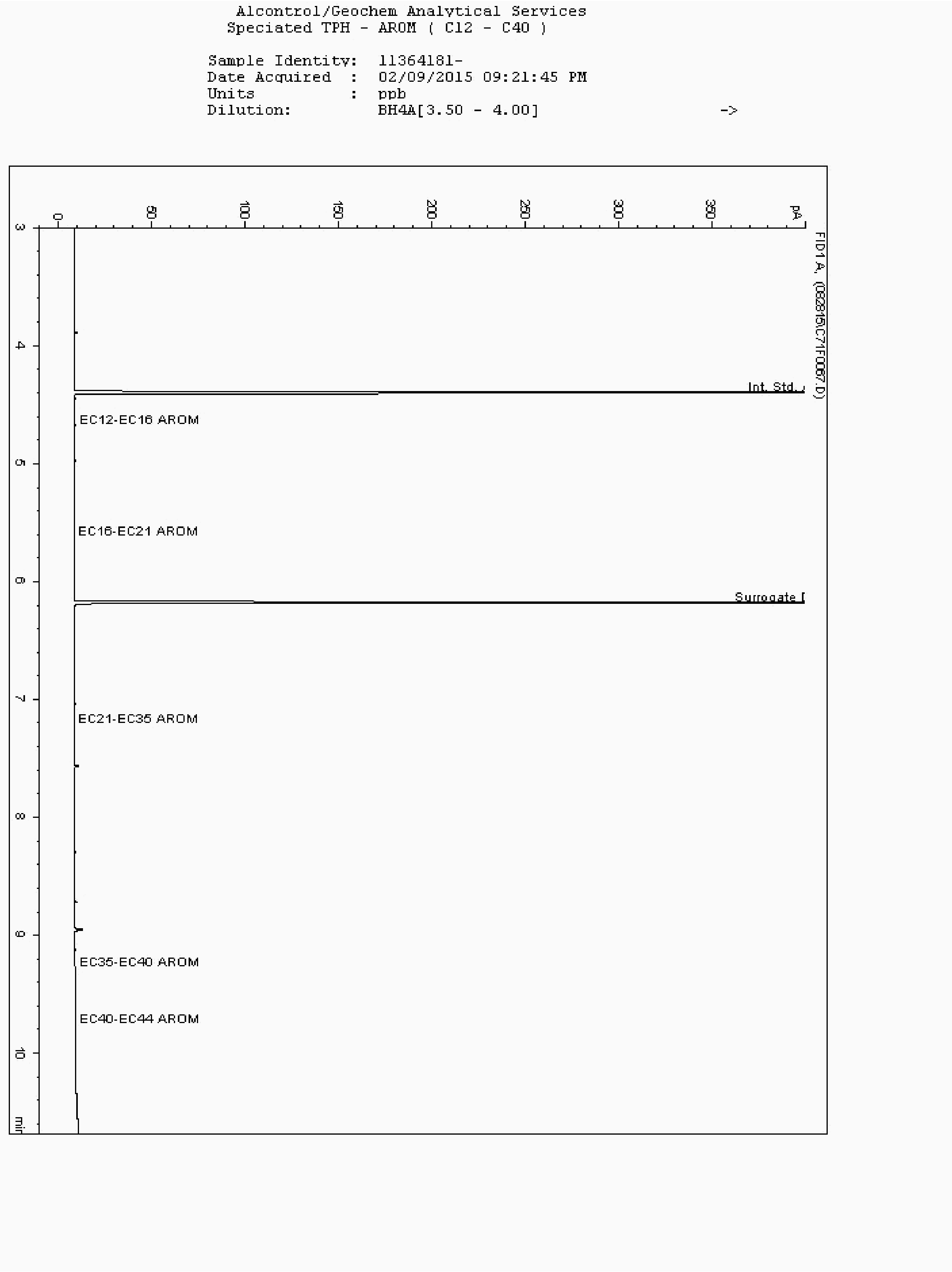
      Sample Identity:  11364158-
      Date Acquired  :  02/09/2015 09:01:53 PM
      Units          :  ppb
      Dilution:         BH7A[2.50 - 3.00]              ->
```



SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11983599	**Depth :**	3.50 - 4.00
		Sample ID :	BH4A		



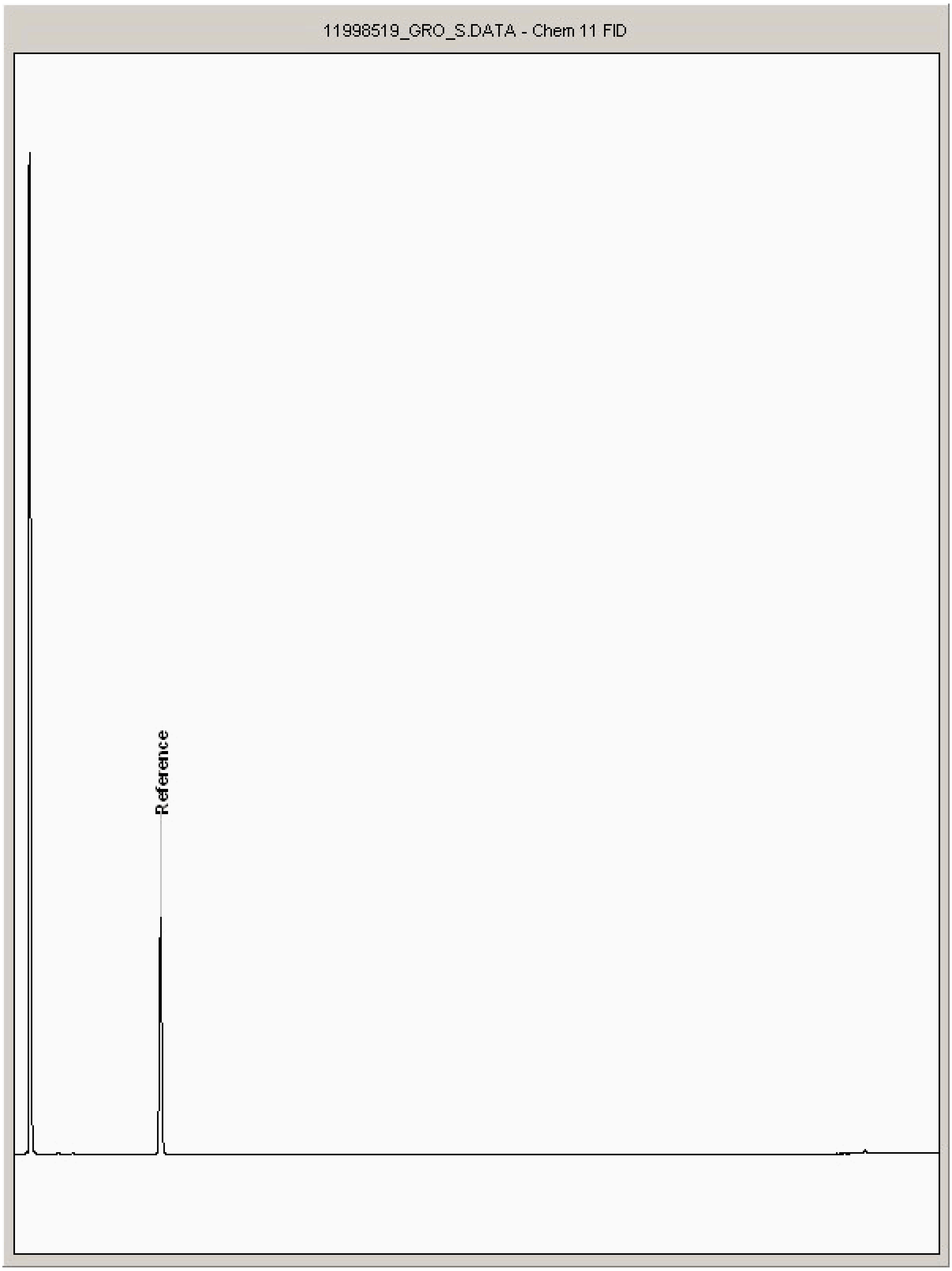
```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364181-
Date Acquired  :  02/09/2015 09:21:45 PM
Units          :  ppb
Dilution:         BH4A[3.50 - 4.00]                ->
```

SDG:	150828-41	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329009
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11998519	**Depth :**	0.70
		Sample ID :	BH7A		

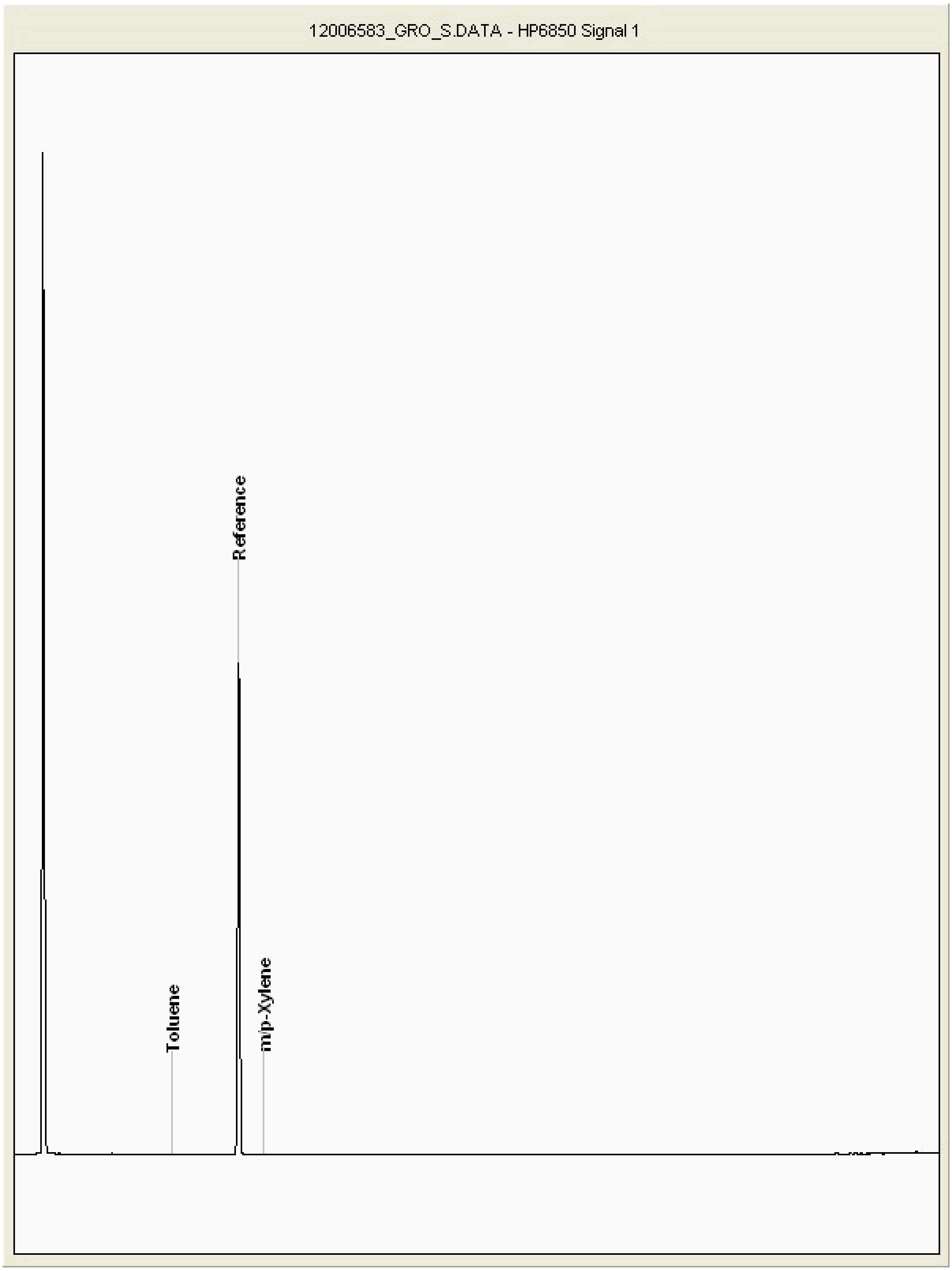


Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12006583
Sample ID : BH4A

Depth : 0.90

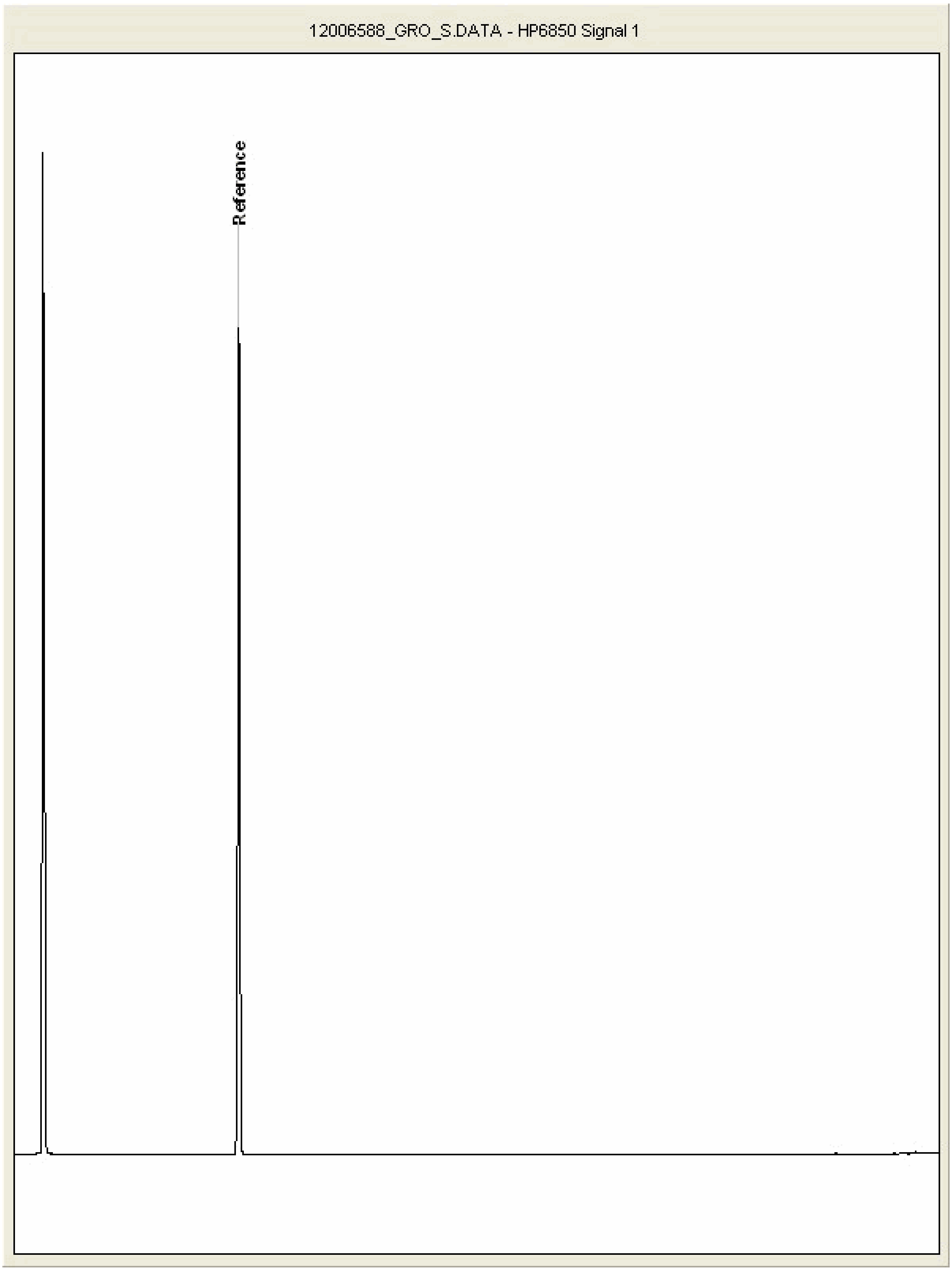


Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12006588
Sample ID : BH7A

Depth : 2.50 - 3.00

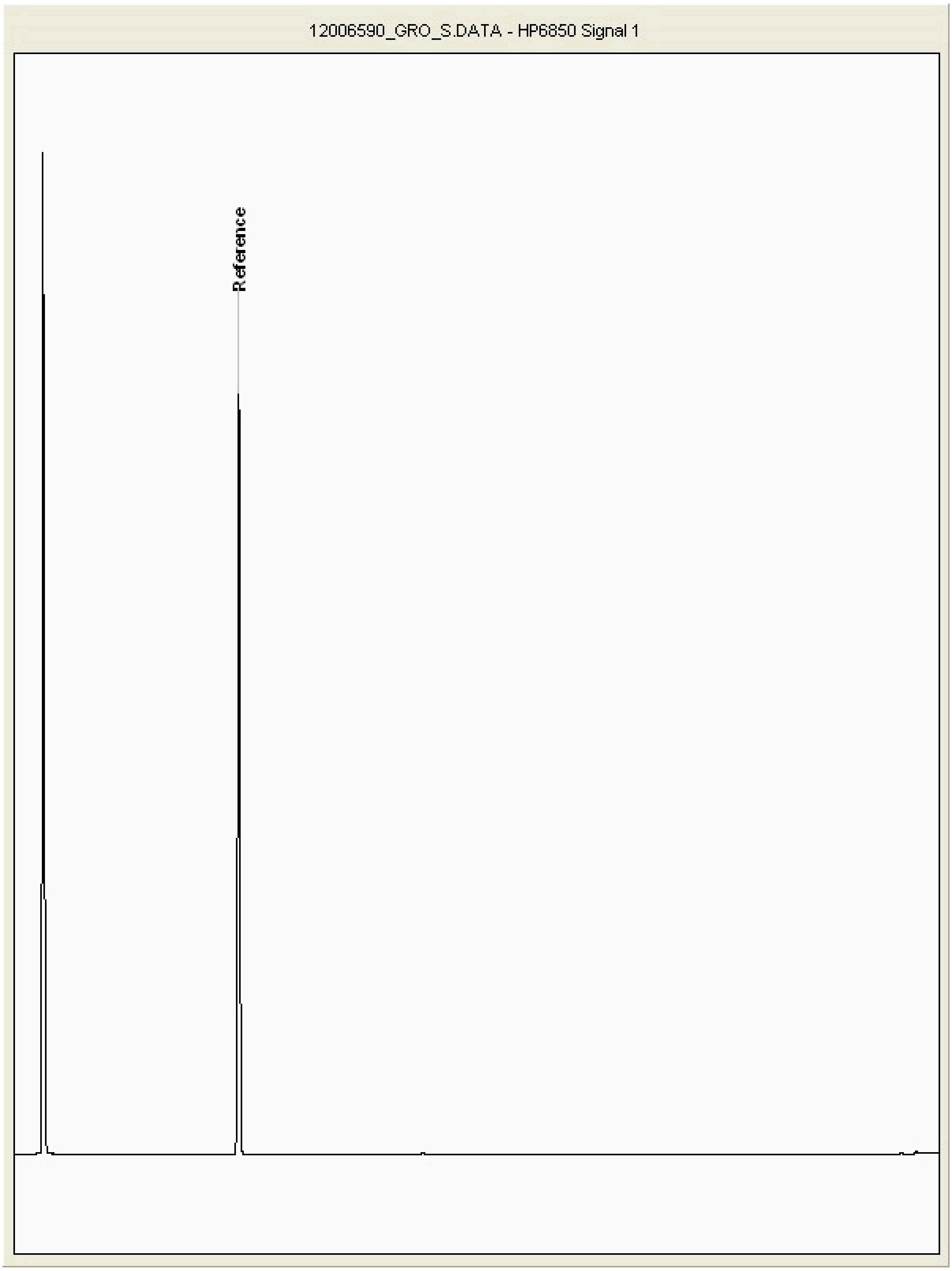


Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12006590
Sample ID : BH4A

Depth : 3.50 - 4.00



Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Last Updated : 2010/09/08

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

ALcontrol Laboratories

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Website: www.alcontrol.com

AECOM
St. George's House
2nd Floor
5 St. George's Road
Wimbledon
Greater London
SW19 4DR

Attention: Gary Marshall

PRELIMINARY/INTERIM REPORT

Date:	09 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150828-44
Your Reference:	
Location:	Stag Brewery
Report No:	329060

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

This is a preliminary report which has not had final authorisation.

Approved By:

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING 1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977692	BH210		0.80	26/08/2015
11977693	BH210		2.20 - 2.80	26/08/2015
11977694	BH211		0.70	26/08/2015
11977695	BH211		2.20	26/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

PRELIMINARY/INTERIM REPORT

SDG: 150828-44
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329060
Superseded Report:

SOLID

Results Legend

X **Test**

N **No Determination Possible**

Lab Sample No(s)			11977692			11977693			11977694			11977695		
Customer Sample Reference			BH210			BH210			BH211			BH211		
AGS Reference														
Depth (m)			0.80			2.20 - 2.80			0.70			2.20		
Container			250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2		X						X				
Asbestos Quant. - Waste Limit	All	NDPs: 0 Tests: 1		X										
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4		X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4			X			X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4		X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 4	X			X			X			X		
pH	All	NDPs: 0 Tests: 4		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 4	X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		

PRELIMINARY/INTERIM REPORT

SDG: 150828-44
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329060
Superseded Report:

SOLID

Results Legend

X	**Test**
N	**No Determination Possible**

Lab Sample No(s)			11977692			11977693			11977694			11977695		
Customer Sample Reference			BH210			BH210			BH211			BH211		
AGS Reference														
Depth (m)			0.80			2.20 - 2.80			0.70			2.20		
Container			250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
VOC MS (S)	All	NDPs: 0 Tests: 4			X			X			X			X

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11977692	BH210	0.80	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	None
11977693	BH210	2.20 - 2.80	Light Brown	Loamy Sand	0.1 - 2 mm	Vegetation	Stones
11977694	BH211	0.70	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	Vegetation
11977695	BH211	2.20	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

PRELIMINARY/INTERIM REPORT

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH210	BH210	BH211	BH211		
		Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-44	150828-44	150828-44	150828-44		
		Lab Sample No.(s)	11977692	11977693	11977694	11977695		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Moisture Content Ratio (% of as received sample)	%	PM024	13	6.9	12	8.9		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	45.6 M	<15 M	<15 M	<15 M		
Organic Carbon, Total	<0.2 %	TM132	0.358 M	<0.2 M	<0.2 M	<0.2 M		
pH	1 pH Units	TM133	9.67 M	8.35 M	10.3 M	8.66 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #	<0.6 #		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 ♦ #	<15 ♦ #	<15 ♦ #	<15 ♦ #		
Arsenic	<0.6 mg/kg	TM181	23.6 M	20.2 M	11.8 M	19.5 M		
Cadmium	<0.02 mg/kg	TM181	0.449 M	0.341 M	0.347 M	0.391 M		
Chromium	<0.9 mg/kg	TM181	25.9 M	16.6 M	17 M	24.1 M		
Copper	<1.4 mg/kg	TM181	31.2 M	5.29 M	9.01 M	6.47 M		
Lead	<0.7 mg/kg	TM181	32.7 M	5.73 M	44.5 M	7.8 M		
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	0.152 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181	24.5 M	21.2 M	16.5 M	22.6 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #		
Zinc	<1.9 mg/kg	TM181	43.4 M	21.9 M	41.3 M	28.4 M		
Sulphate, Total	<48 mg/kg	TM221	481 M	<48 M	545 M	88.2 M		

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH210	BH210	BH211	BH211		
		Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-44	150828-44	150828-44	150828-44		
		Lab Sample No.(s)	11977692	11977693	11977694	11977695		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Naphthalene-d8 % recovery**	%	TM218	103	102	97.1	95.7		
Acenaphthene-d10 % recovery**	%	TM218	98.9	94.5	95.1	96.4		
Phenanthrene-d10 % recovery**	%	TM218	95.9	94.2	92.9	96.8		
Chrysene-d12 % recovery**	%	TM218	92.5	78.5	92	88.1		
Perylene-d12 % recovery**	%	TM218	94.6	86.2	97	95.7		
Naphthalene	<9 µg/kg	TM218	<9 M	<9 M	53.8 M	<9 M		
Acenaphthylene	<12 µg/kg	TM218	<12 M	<12 M	14.8 M	<12 M		
Acenaphthene	<8 µg/kg	TM218	<8 M	<8 M	48.1 M	<8 M		
Fluorene	<10 µg/kg	TM218	<10 M	<10 M	48.6 M	<10 M		
Phenanthrene	<15 µg/kg	TM218	27.7 M	<15 M	352 M	<15 M		
Anthracene	<16 µg/kg	TM218	<16 M	<16 M	78.8 M	<16 M		
Fluoranthene	<17 µg/kg	TM218	47 M	<17 M	389 M	<17 M		
Pyrene	<15 µg/kg	TM218	43.6 M	<15 M	317 M	<15 M		
Benz(a)anthracene	<14 µg/kg	TM218	48.1 M	<14 M	174 M	<14 M		
Chrysene	<10 µg/kg	TM218	28.5 M	<10 M	151 M	<10 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	38.8 M	<15 M	199 M	<15 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	18.1 M	<14 M	90.7 M	<14 M		
Benzo(a)pyrene	<15 µg/kg	TM218	30 M	<15 M	147 M	<15 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18 M	<18 M	77.5 M	<18 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M	<23 M	<23 M	<23 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	28.6 M	<24 M	105 M	<24 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	311	<118	2250	<118		

PRELIMINARY/INTERIM REPORT

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH210	BH210	BH211	BH211		
		Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-44	150828-44	150828-44	150828-44		
		Lab Sample No.(s)	11977692	11977693	11977694	11977695		
		AGS Reference						
Component	**LOD/Units**	**Method**						
GRO Surrogate % recovery**	%	TM089	105	119	109	110		
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	5160 M	<44 M		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M	<5 M		
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	<10 M		
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2 M	<2 M		
Ethylbenzene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M	<6 M		
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	34.2	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	1010	13.1		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	2060	<10		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	15100	<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	3150	<100	23200	<100		
Aliphatics >C21-C35	<100 µg/kg	TM173	18600	<100	57300	<100		
Aliphatics >C35-C44	<100 µg/kg	TM173	1920	<100	10600	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	23700	<100	106000	<100		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	671	<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	1380	<10		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	4150	<100		
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	10500	<100		
Aromatics >EC21-EC35	<100 µg/kg	TM173	4960	<100	26600	<100		
Aromatics >EC35-EC44	<100 µg/kg	TM173	1400	<100	10500	<100		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	3890	<100		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	6360	<100	51900	<100		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	30000	<100	163000	<100		

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH210	BH210	BH211	BH211		
		Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-44	150828-44	150828-44	150828-44		
		Lab Sample No.(s)	11977692	11977693	11977694	11977695		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Dibromofluoromethane**	%	TM116	130	119	128	123		
Toluene-d8**	%	TM116	102	111	103	111		
4-Bromofluorobenzene**	%	TM116	89.8	102	94.5	102		
Dichlorodifluoromethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
Chloromethane	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #		
Vinyl Chloride	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
Bromomethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Chloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
1,1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
Carbon Disulphide	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
Dichloromethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,1-Dichloroethane	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
2,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Bromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Chloroform	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
1,1-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Carbontetrachloride	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2-Dichloroethane	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
Benzene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M		
Trichloroethene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #		
1,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Dibromomethane	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M		
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Toluene	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<10	<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		

PRELIMINARY/INTERIM REPORT

SDG: 150828-44
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329060
Superseded Report:

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH210	BH210	BH211	BH211		
		Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-44	150828-44	150828-44	150828-44		
		Lab Sample No.(s)	11977692	11977693	11977694	11977695		
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
Tetrachloroethene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
Dibromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2-Dibromoethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Ethylbenzene	<4 µg/kg	TM116	<4 M	<4 M	<4 M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
o-Xylene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Styrene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Isopropylbenzene	<5 µg/kg	TM116	<5 #	<5 #	<5 #	<5 #		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 M	<16 M	<16 M	<16 M		
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Propylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
4-Chlorotoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
tert-Butylbenzene	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #		
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
4-Isopropyltoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<11	<11		
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M		
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<20	<20		
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<20	<20		
Naphthalene	<13 µg/kg	TM116	<13 M	<13 M	<13 M	<13 M		

PRELIMINARY/INTERIM REPORT

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH210	BH210	BH211	BH211		
		Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-44	150828-44	150828-44	150828-44		
		Lab Sample No.(s)	11977692	11977693	11977694	11977695		
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 #	<20 #	<20 #	<20 #		

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH210 0.80 SOLID 26/08/2015 00:00:00 29/08/2015 10:30:50 150828-44 11977692 TM048	03/09/2015	Rebecca Rawlings	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH211 0.70 SOLID 26/08/2015 00:00:00 29/08/2015 10:17:28 150828-44 11977694 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	11977692	11977693	11977694	11977695
Customer Sample Ref.	BH210	BH210	BH211	BH211
AGS Ref.				
Depth	0.80	2.20 - 2.80	0.70	2.20
Type	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	03-Sep-2015		03-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	02-Sep-2015	07-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pH	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	29-Aug-2015	28-Aug-2015	29-Aug-2015	28-Aug-2015
Total Organic Carbon	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Total Sulphate	08-Sep-2015	04-Sep-2015	07-Sep-2015	04-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1292	QC 1205
Exchangeable Ammonium as NH4	TM024	**86.07** 79.30 : 104.61	**98.01** 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1219	QC 1231
Easily Liberated Sulphide	TM180	**93.21** 49.14 : 123.89	**94.71** 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1165	QC 1197
Total Aliphatics >C12-C35	TM173	**97.92** 69.19 : 111.75	**92.08** 71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1197
Total Aromatics >EC12-EC35	TM173	**85.33** 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1100	QC 1290	QC 1294
Benzene by GC (Moisture Corrected)	TM089	**110.0** 82.67 : 117.96	**100.0** 76.23 : 120.71	**101.5** 79.00 : 121.00
Ethylbenzene by GC (Moisture Corrected)	TM089	**110.5** 80.45 : 118.61	**100.5** 73.32 : 122.02	**104.0** 79.00 : 121.00
m & p Xylene by GC (Moisture Corrected)	TM089	**110.0** 79.25 : 119.43	**100.75** 72.90 : 122.64	**104.25** 79.00 : 121.00
MTBE GC-FID (Moisture Corrected)	TM089	**114.5** 79.10 : 122.51	**101.0** 72.17 : 124.81	**106.5** 74.48 : 125.29
o Xylene by GC (Moisture Corrected)	TM089	**111.5** 80.03 : 117.19	**100.5** 71.65 : 124.40	**104.5** 79.00 : 121.00
QC	TM089	**102.79** 75.74 : 124.65	**105.5** 55.00 : 145.00	**98.6** 73.70 : 123.60
Toluene by GC (Moisture Corrected)	TM089	**110.5** 82.06 : 117.54	**100.5** 74.60 : 120.38	**102.5** 79.00 : 121.00

Hexavalent Chromium (s)

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	**100.0** 92.20 : 106.60	**102.0** 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1206	QC 1292
Aluminium	TM181	**99.23** 86.49 : 129.71	**108.46** 86.49 : 129.71
Antimony	TM181	**94.27** 77.50 : 122.50	**95.34** 77.50 : 122.50
Arsenic	TM181	**92.92** 82.63 : 117.37	**92.92** 82.63 : 117.37
Barium	TM181	**96.24** 79.45 : 120.55	**99.25** 79.45 : 120.55
Beryllium	TM181	**98.91** 85.92 : 121.27	**100.31** 85.92 : 121.27
Boron	TM181	**105.34** 77.41 : 143.83	**109.92** 77.41 : 143.83
Cadmium	TM181	**95.8** 81.95 : 118.05	**95.63** 81.95 : 118.05
Chromium	TM181	**93.33** 81.29 : 118.71	**96.47** 81.29 : 118.71
Cobalt	TM181	**95.83** 83.86 : 116.14	**96.67** 83.86 : 116.14
Copper	TM181	**97.7** 78.57 : 121.43	**98.51** 78.57 : 121.43
Iron	TM181	**95.86** 87.50 : 122.82	**101.38** 87.50 : 122.82
Lead	TM181	**93.7** 74.18 : 117.25	**92.91** 74.18 : 117.25
Manganese	TM181	**100.0** 82.91 : 117.09	**100.0** 82.91 : 117.09
Mercury	TM181	**94.3** 81.99 : 118.01	**93.47** 81.99 : 118.01
Molybdenum	TM181	**92.2** 81.45 : 118.55	**92.36** 81.45 : 118.55
Nickel	TM181	**95.93** 79.64 : 120.36	**97.67** 79.64 : 120.36
Phosphorus	TM181	**97.76** 81.03 : 118.97	**97.32** 81.03 : 118.97
Selenium	TM181	**105.3** 87.05 : 121.93	**105.47** 87.05 : 121.93
Strontium	TM181	**98.08** 83.64 : 116.36	**98.47** 83.64 : 116.36
Thallium	TM181	**87.56** 77.50 : 122.50	**91.38** 77.50 : 122.50
Tin	TM181	**92.03** 78.30 : 113.98	**92.69** 78.30 : 113.98
Titanium	TM181	**103.91** 71.02 : 128.98	**103.13** 71.02 : 128.98

Metals in solid samples by OES

		QC 1206	QC 1292
Vanadium	TM181	**93.53** 86.61 : 113.39	**95.0** 86.61 : 113.39
Zinc	TM181	**97.73** 89.82 : 114.54	**98.05** 89.82 : 114.54

PAH by GCMS

Component	**Method Code**	QC 1134	QC 1154	QC 1106
Acenaphthene	TM218	**88.5** 78.41 : 114.87	**92.0** 77.34 : 118.20	**91.5** 78.84 : 114.36
Acenaphthylene	TM218	**80.5** 72.38 : 111.60	**86.5** 62.65 : 116.35	**85.5** 65.50 : 119.50
Anthracene	TM218	**89.5** 72.78 : 117.53	**89.5** 73.54 : 114.21	**91.0** 75.54 : 110.88
Benz(a)anthracene	TM218	**88.0** 79.50 : 130.50	**102.5** 74.99 : 132.24	**97.5** 78.02 : 127.38
Benzo(a)pyrene	TM218	**91.0** 79.50 : 130.50	**102.0** 80.75 : 127.25	**99.5** 79.21 : 128.01
Benzo(b)fluoranthene	TM218	**87.5** 78.10 : 127.57	**99.5** 75.84 : 127.12	**96.0** 86.21 : 131.42
Benzo(ghi)perylene	TM218	**95.0** 81.67 : 122.61	**97.0** 74.74 : 124.03	**95.0** 80.11 : 120.52
Benzo(k)fluoranthene	TM218	**97.0** 81.20 : 118.10	**98.0** 80.00 : 125.00	**97.0** 78.77 : 120.72
Chrysene	TM218	**94.5** 80.60 : 117.80	**98.0** 77.24 : 120.84	**94.5** 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	**104.0** 77.93 : 124.42	**96.5** 76.00 : 122.50	**93.5** 76.39 : 122.63
Fluoranthene	TM218	**91.5** 80.39 : 114.39	**92.5** 78.51 : 118.75	**95.0** 77.25 : 117.75
Fluorene	TM218	**92.0** 79.50 : 118.50	**93.0** 76.95 : 117.18	**95.5** 79.28 : 117.35
Indeno(123cd)pyrene	TM218	**100.0** 80.30 : 128.30	**98.5** 75.34 : 127.46	**93.0** 78.87 : 122.50
Naphthalene	TM218	**97.5** 82.25 : 118.25	**95.0** 76.24 : 112.91	**93.0** 74.75 : 118.25
Phenanthrene	TM218	**95.5** 71.53 : 114.48	**93.5** 76.49 : 119.30	**95.0** 78.61 : 113.98
Pyrene	TM218	**91.5** 79.12 : 114.39	**91.0** 78.25 : 118.17	**94.0** 76.15 : 115.26

pH

Component	**Method Code**	QC 1218	QC 1227
pH	TM133	**100.25** 97.19 : 102.81	**100.5** 97.19 : 102.81

Total Organic Carbon

Total Organic Carbon

Component	Method Code	QC 1245	QC 1297
Total Organic Carbon	TM132	**98.17** 89.40 : 103.09	**97.72** 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1273	QC 1292
Total Sulphate	TM221	**102.27** 78.49 : 121.51	**103.79** 78.49 : 121.51	**99.24** 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1172	QC 1128
1,1,1,2-tetrachloroethane	TM116	**101.0** 76.60 : 121.00	**95.6** 83.24 : 124.28
1,1,1-Trichloroethane	TM116	**96.2** 77.80 : 123.40	**100.8** 81.77 : 121.07
1,1,2-Trichloroethane	TM116	**90.6** 75.40 : 119.80	**100.4** 79.24 : 112.23
1,1-Dichloroethane	TM116	**99.8** 80.84 : 124.49	**103.0** 72.58 : 116.06
1,2-Dichloroethane	TM116	**104.8** 91.00 : 135.67	**118.8** 77.50 : 122.50
1,4-Dichlorobenzene	TM116	**105.6** 80.88 : 114.60	**96.2** 73.23 : 116.39
2-Chlorotoluene	TM116	**94.2** 74.00 : 117.20	**85.6** 69.22 : 110.64
4-Chlorotoluene	TM116	**90.2** 71.20 : 113.20	**89.0** 68.57 : 106.26
Benzene	TM116	**97.6** 79.60 : 125.20	**103.2** 84.33 : 124.27
Carbon Disulphide	TM116	**99.4** 74.91 : 122.14	**110.4** 77.20 : 122.80
Carbontetrachloride	TM116	**100.2** 76.80 : 121.20	**98.2** 84.20 : 119.90
Chlorobenzene	TM116	**102.0** 83.47 : 116.82	**102.4** 85.28 : 129.96
Chloroform	TM116	**98.4** 82.00 : 128.80	**108.2** 82.73 : 119.72
Chloromethane	TM116	**117.2** 74.62 : 135.86	**123.4** 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	**103.6** 81.20 : 128.00	**108.4** 73.56 : 118.93
Dibromomethane	TM116	**88.4** 73.40 : 116.60	**104.4** 73.40 : 116.60
Dichloromethane	TM116	**101.6** 86.60 : 137.00	**113.2** 76.16 : 121.98

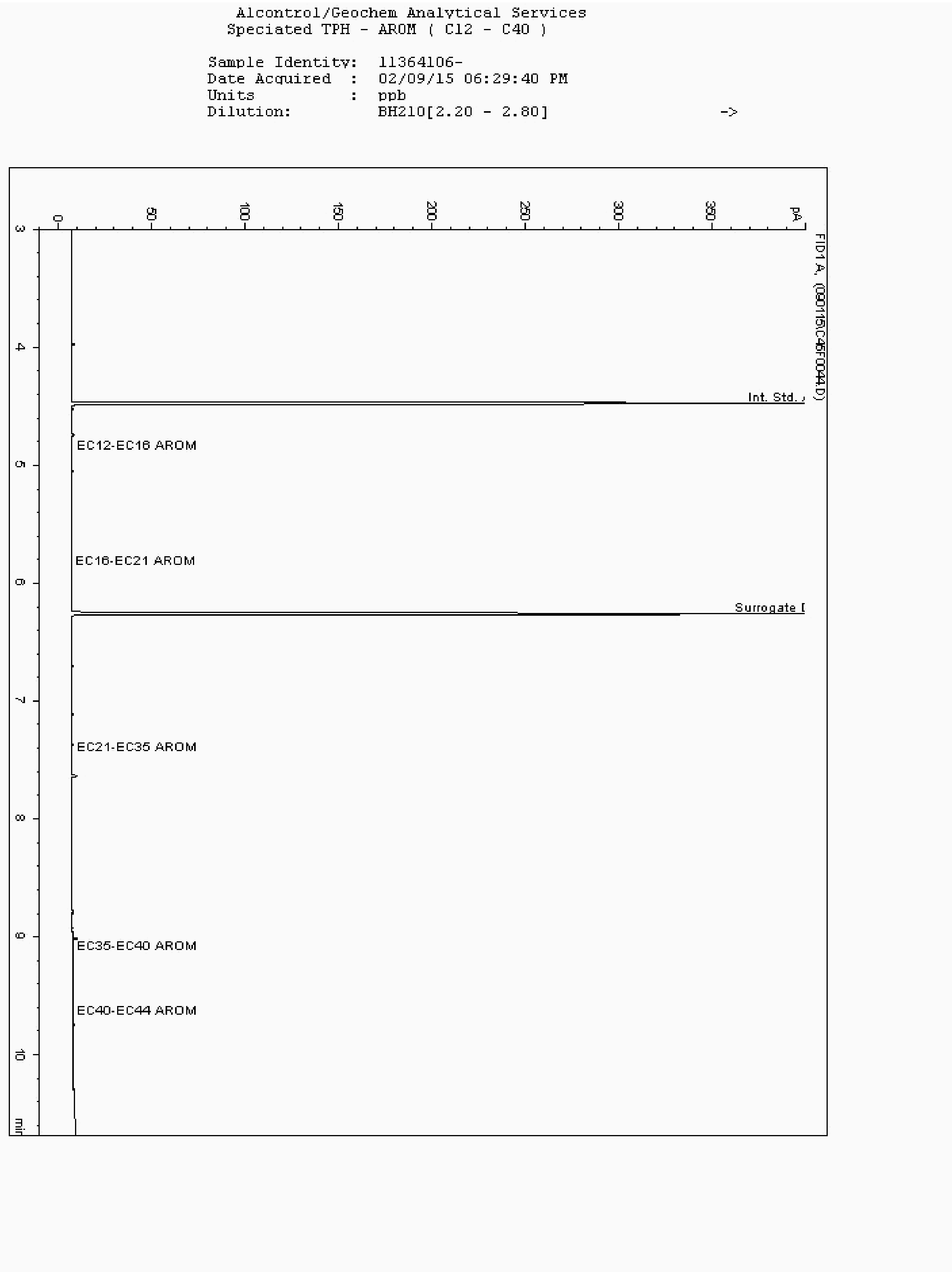
VOC MS (S)

		QC 1172	QC 1128
Ethylbenzene	TM116	**96.6** 73.60 : 115.60	**94.0** 80.07 : 125.98
Hexachlorobutadiene	TM116	**114.0** 33.65 : 130.56	**69.0** 30.92 : 132.28
Isopropylbenzene	TM116	**92.0** 72.52 : 117.52	**82.6** 69.27 : 125.32
Naphthalene	TM116	**107.0** 83.23 : 126.48	**110.0** 79.15 : 121.98
o-Xylene	TM116	**92.4** 69.60 : 110.40	**77.6** 75.46 : 111.52
p/m-Xylene	TM116	**94.1** 71.30 : 112.70	**90.2** 76.97 : 121.75
Sec-Butylbenzene	TM116	**116.4** 59.20 : 125.20	**69.6** 49.27 : 129.90
Tetrachloroethene	TM116	**104.6** 85.92 : 127.92	**102.2** 87.96 : 133.65
Toluene	TM116	**90.2** 76.08 : 110.17	**99.0** 79.23 : 114.58
Trichloroethene	TM116	**96.4** 78.17 : 121.37	**94.6** 84.09 : 114.24
Trichlorofluoromethane	TM116	**102.2** 83.78 : 132.82	**107.4** 76.22 : 114.82
Vinyl Chloride	TM116	**94.6** 66.81 : 138.46	**98.2** 59.68 : 118.68

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11980752
Sample ID : BH210
Depth : 2.20 - 2.80



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:   11364106-
Date Acquired  :   02/09/15 06:29:40 PM
Units          :   ppb
Dilution:          BH210[2.20 - 2.80]                 ->
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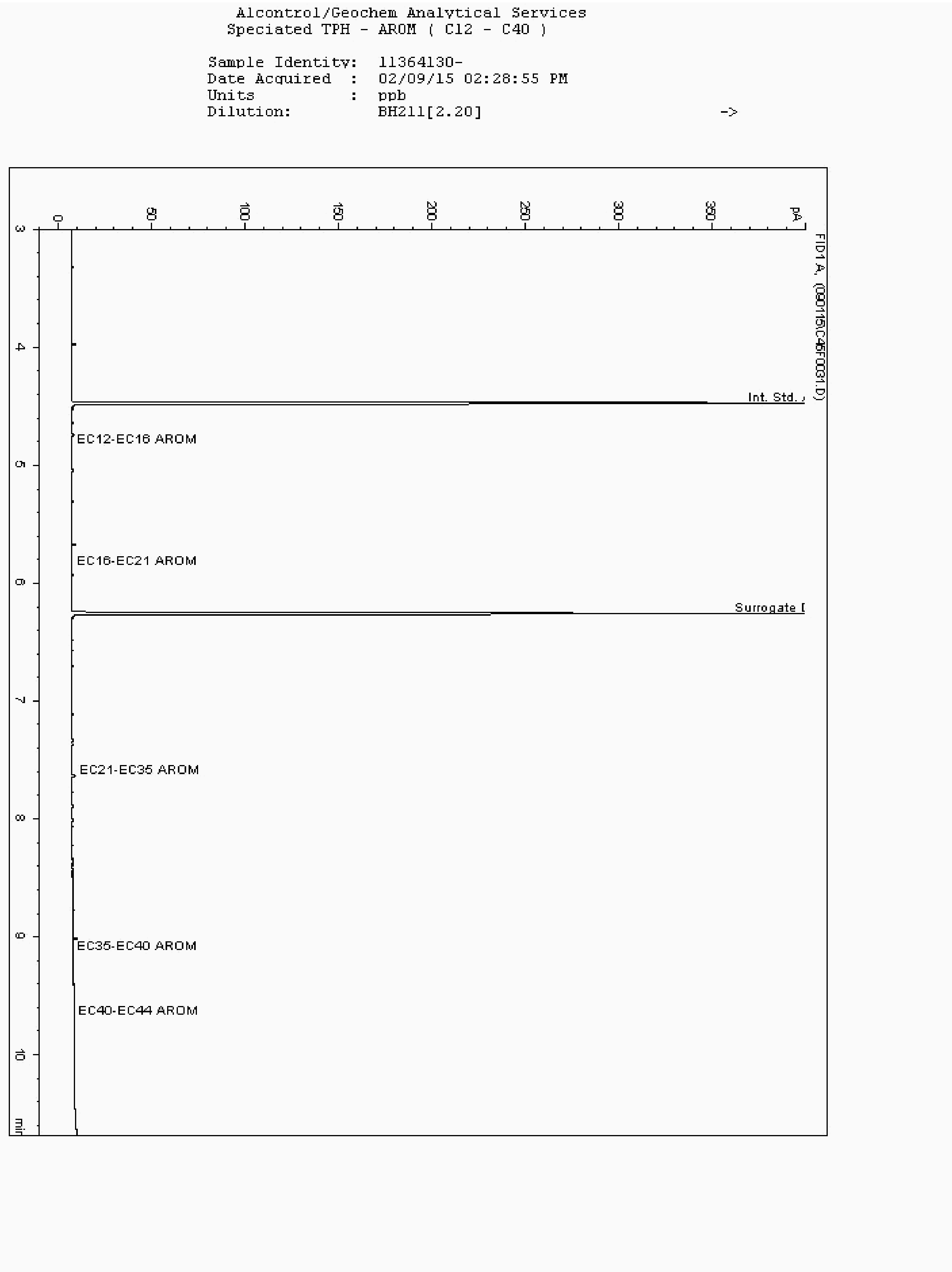
Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11980788
Sample ID : BH211
Depth : 2.20



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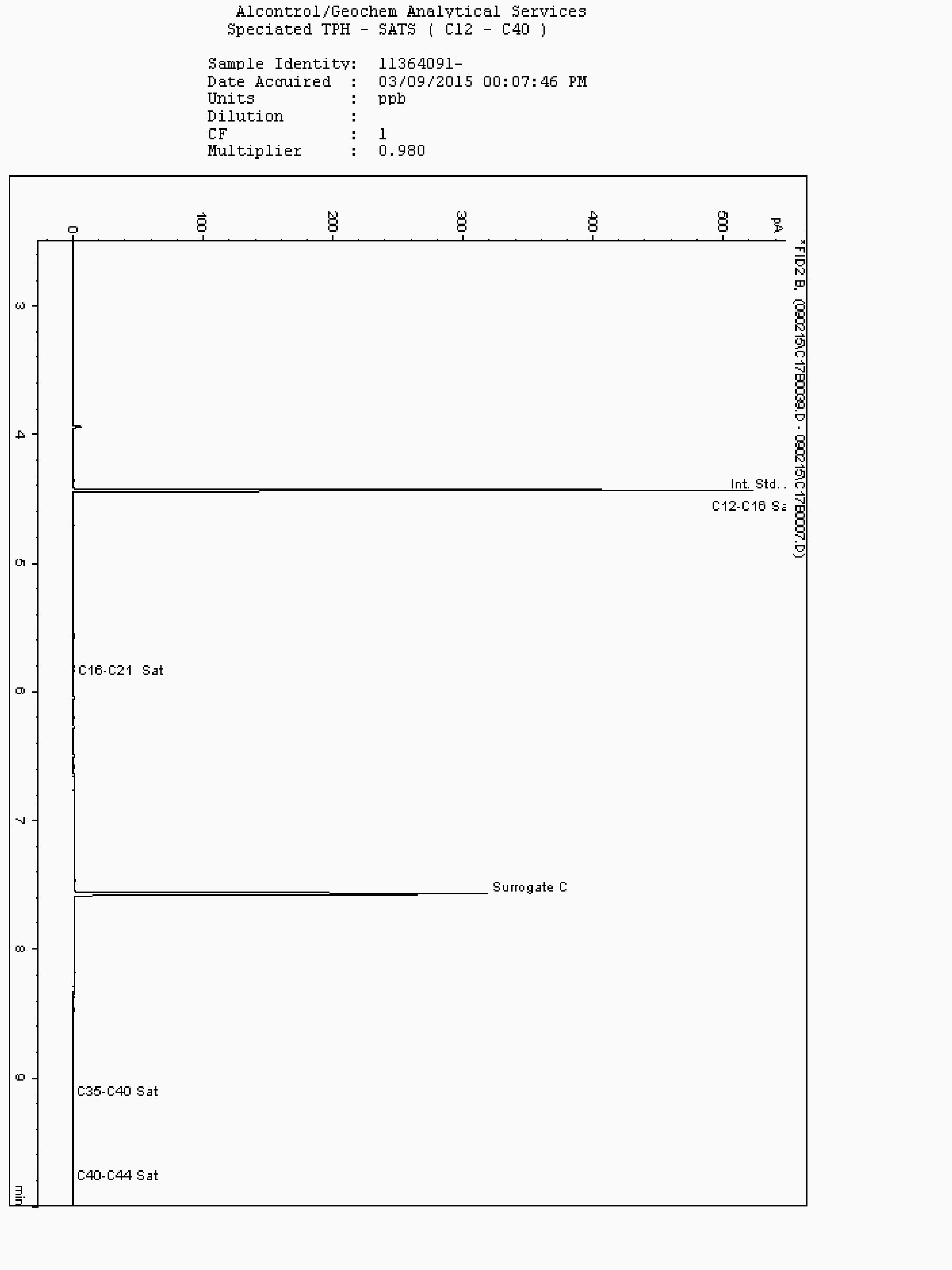
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364130-
Date Acquired  :  02/09/15 02:28:55 PM
Units          :  ppb
Dilution:         BH211[2.20]                    ->
```

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11982958	**Depth :**	0.80
		Sample ID :	BH210		



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Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11364091-
Date Acquired  :  03/09/2015 00:07:46 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
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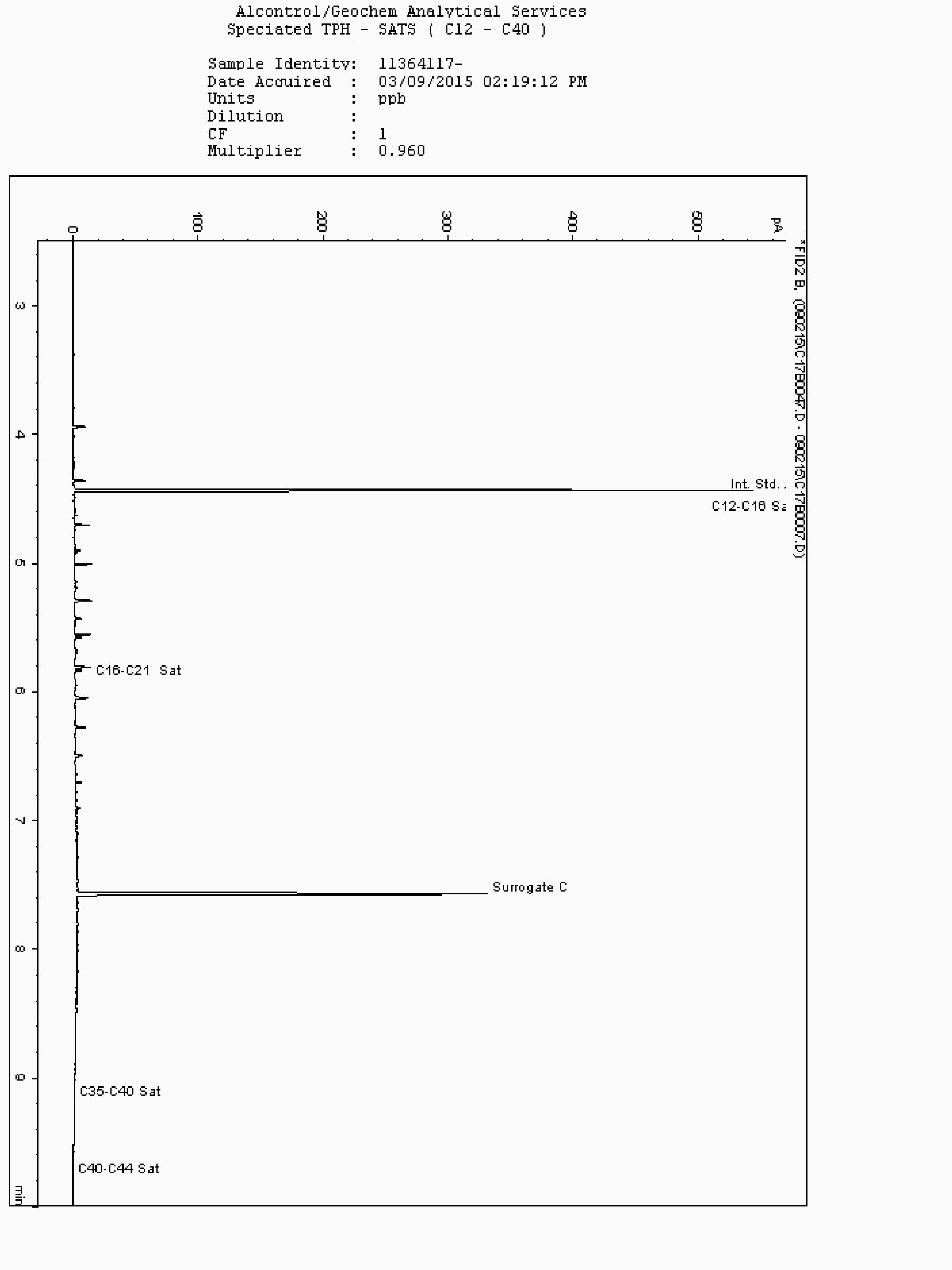
SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11983028	**Depth :**	0.70
		Sample ID :	BH211		

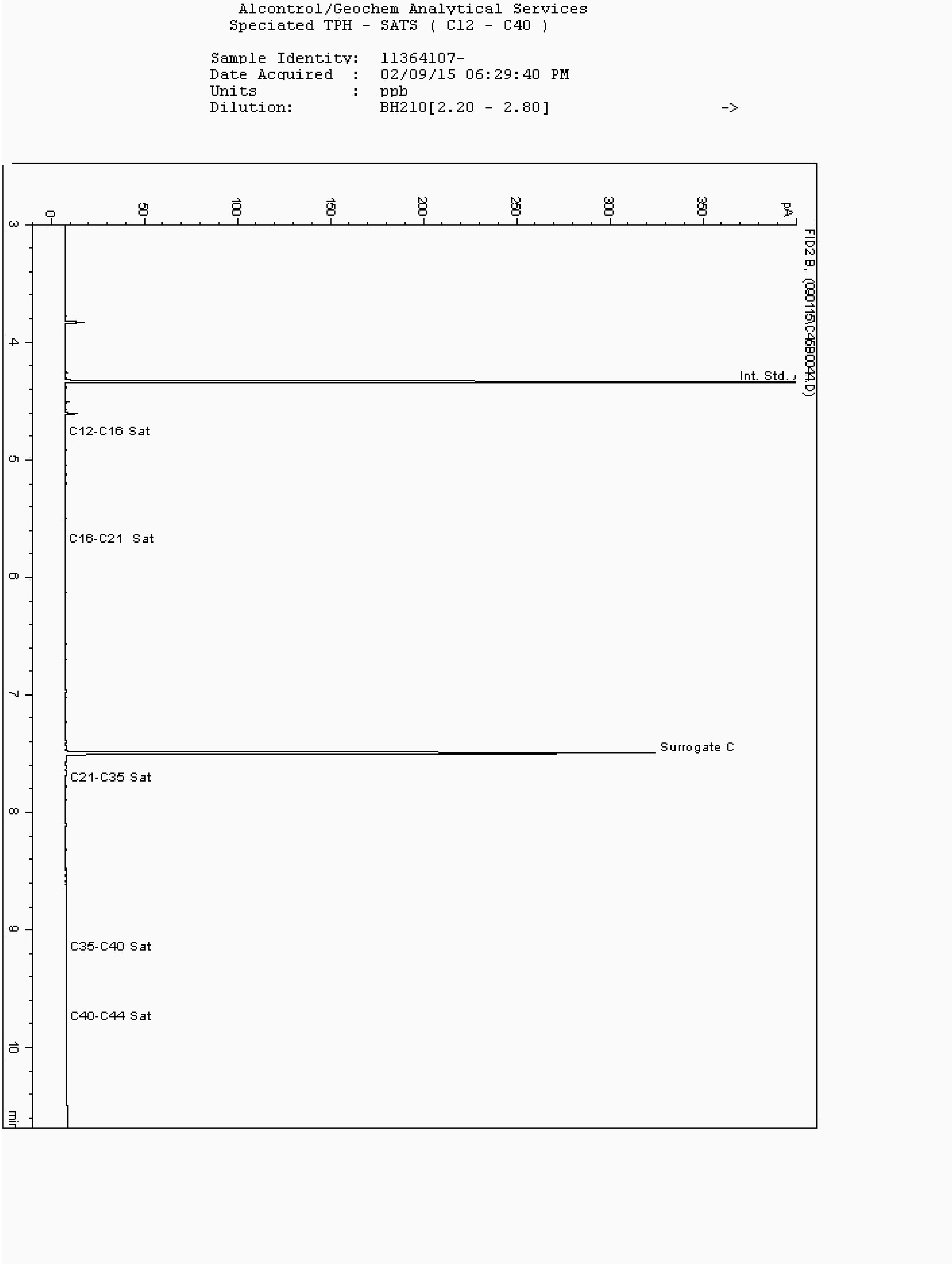


Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

```
Sample Identity:  11364117-
Date Acquired  :  03/09/2015 02:19:12 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.960
```

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
Sample No : 11980752
Sample ID : BH210
Depth : 2.20 - 2.80



```
 Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11364107-
Date Acquired  :  02/09/15 06:29:40 PM
Units          :  ppb
Dilution:         BH210[2.20 - 2.80]               ->
```

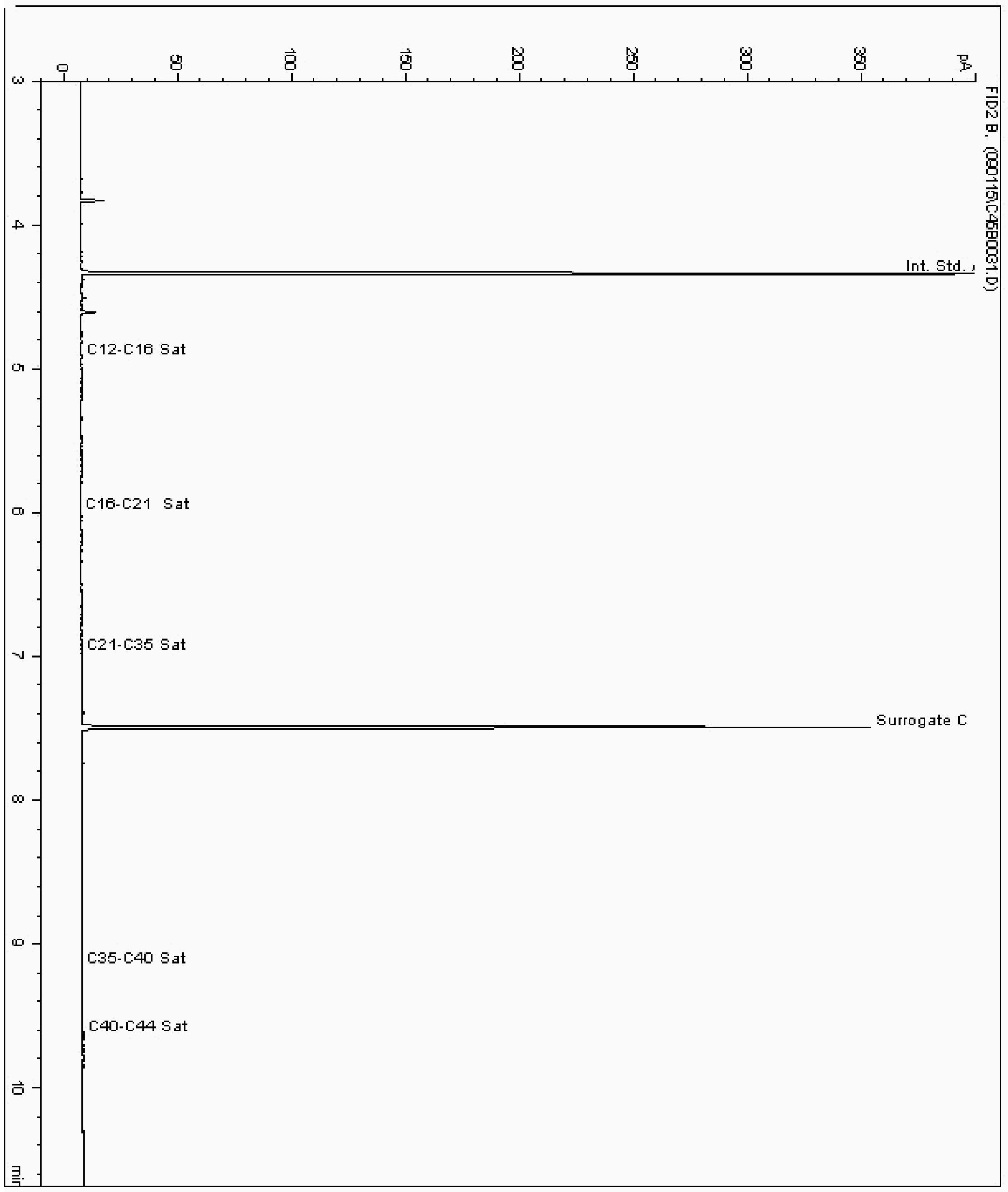
SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11980788	**Depth :**	2.20
		Sample ID :	BH211		

```
      Alcontrol/Geochem Analytical Services
    Speciated TPH - SATS ( C12 - C40 )

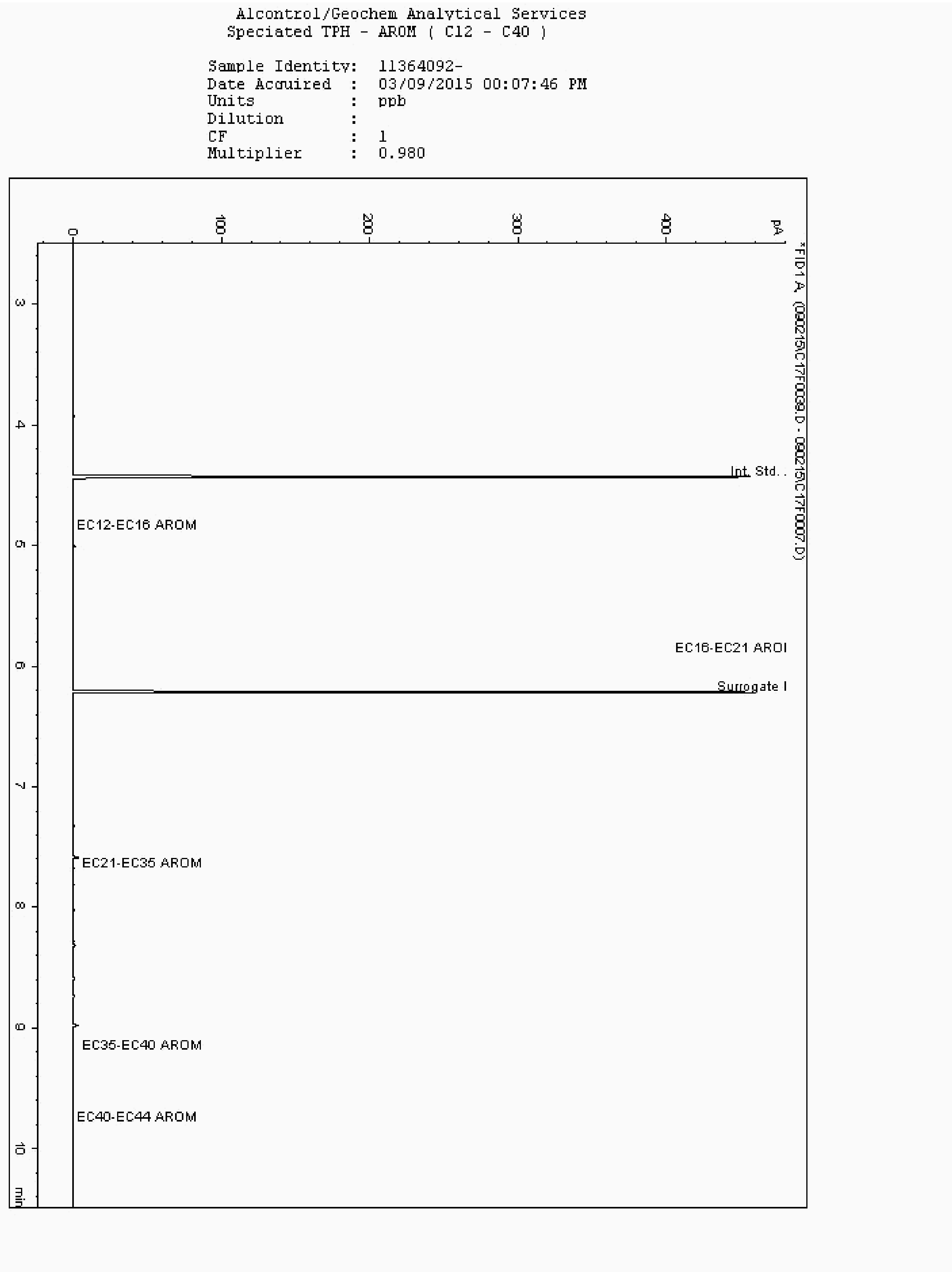
  Sample Identity:  11364131-
  Date Acquired  :  02/09/15 02:28:55 PM
  Units          :  ppb
  Dilution:         BH211[2.20]                     ->
```



SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11982958	**Depth :**	0.80
		Sample ID :	BH210		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

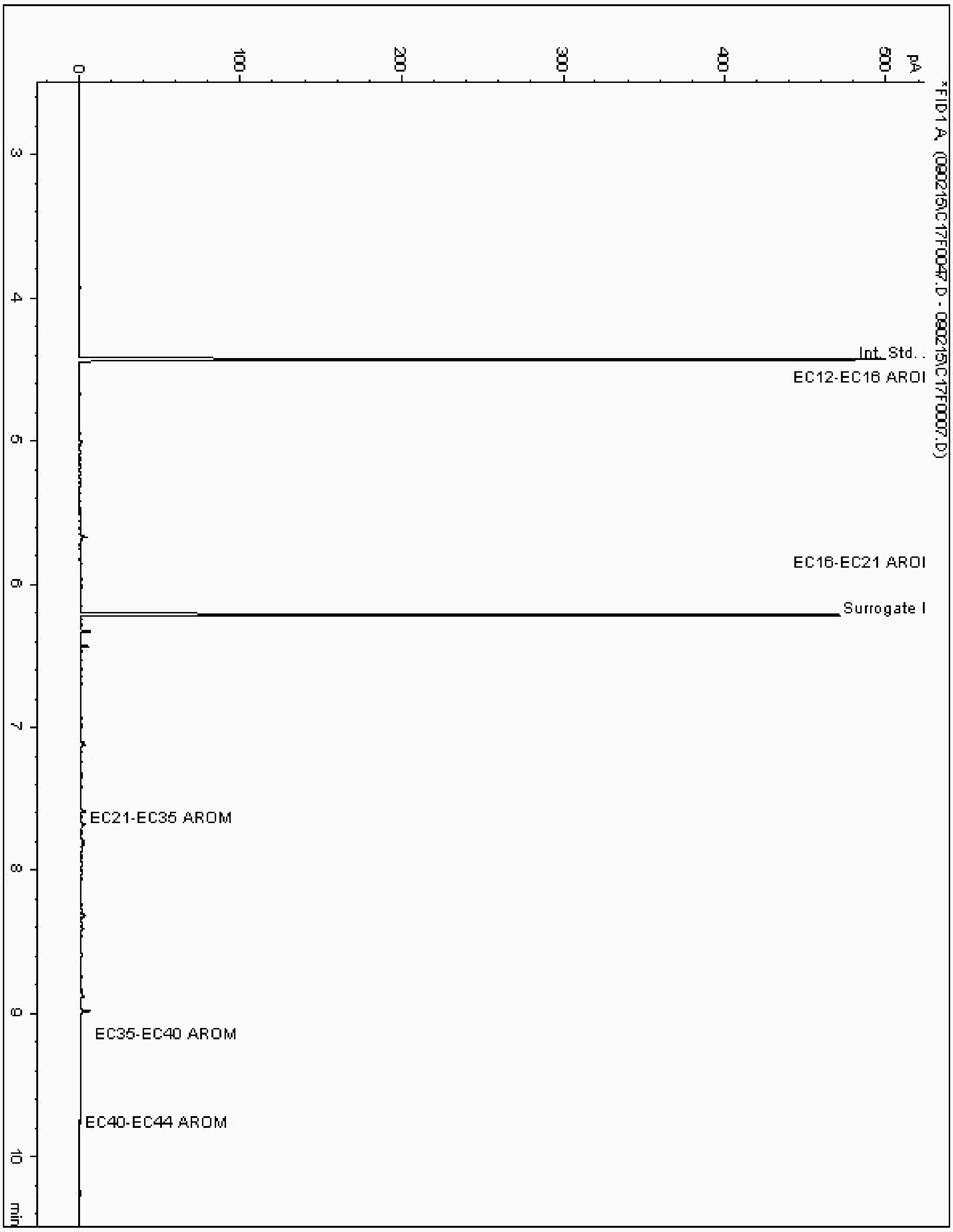
Sample Identity:  11364092-
Date Acquired  :  03/09/2015 00:07:46 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11983028	**Depth :**	0.70
		Sample ID :	BH211		

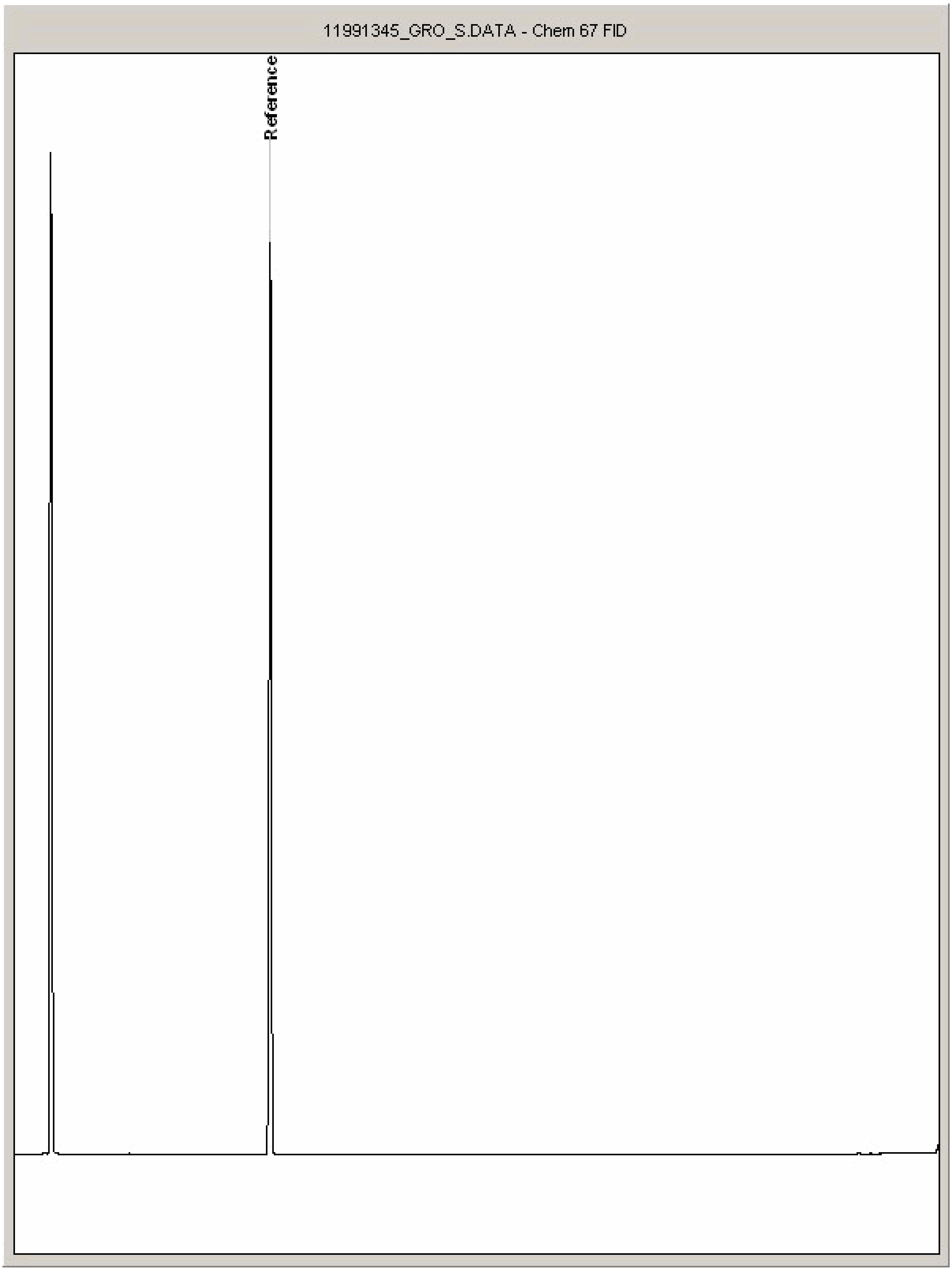
```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364118-
Date Acquired  :  03/09/2015 02:19:11 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.960
```



Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11991345	**Depth :**	2.20 - 2.80
		Sample ID :	BH210		

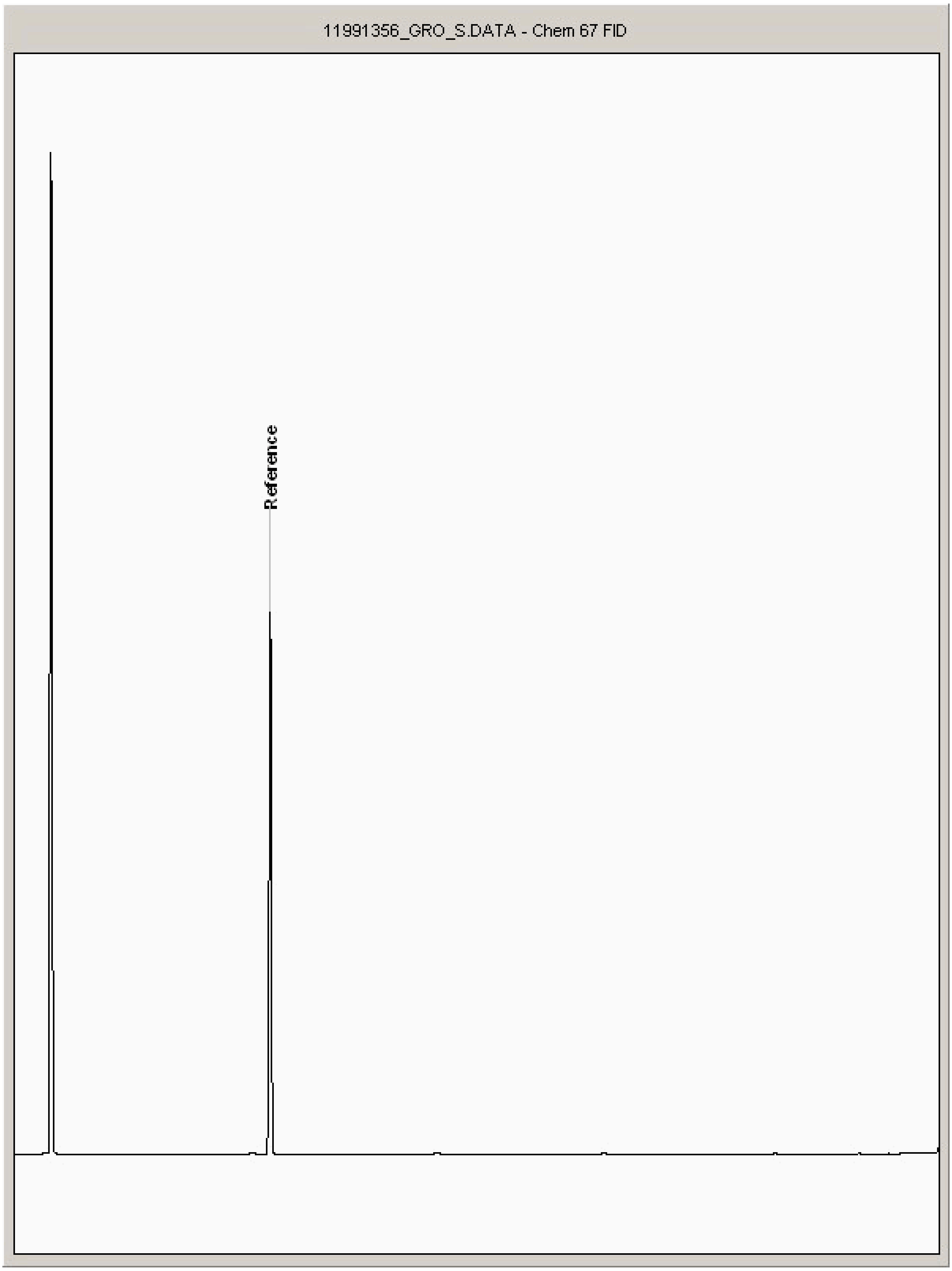


PRELIMINARY/INTERIM REPORT

SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

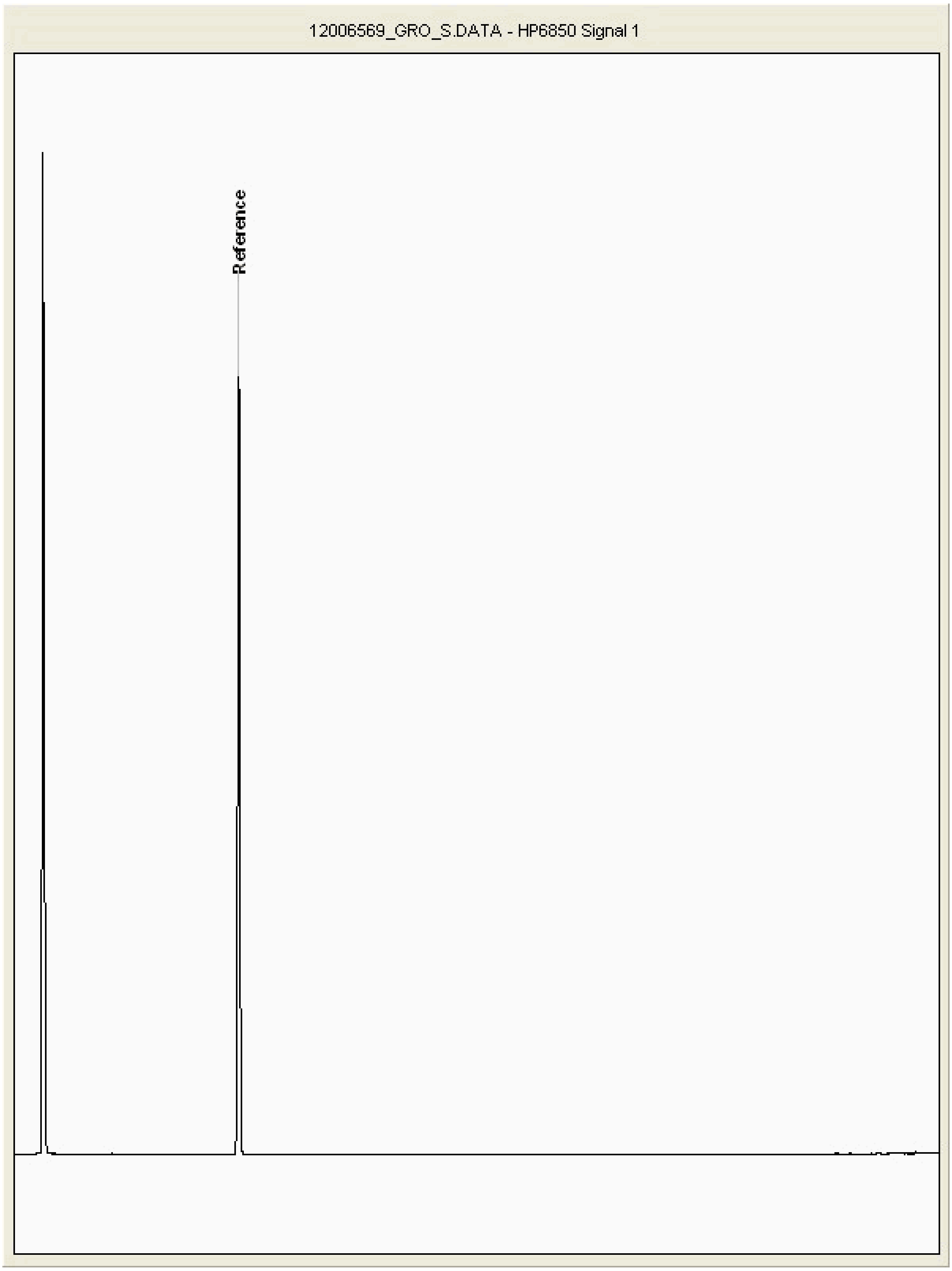
Analysis:	GRO by GC-FID (S)	**Sample No :**	11991356	**Depth :**	2.20
		Sample ID :	BH211		



SDG: 150828-44
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329060
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)
Sample No : 12006569
Sample ID : BH210
Depth : 0.80



SDG:	150828-44	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329060
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

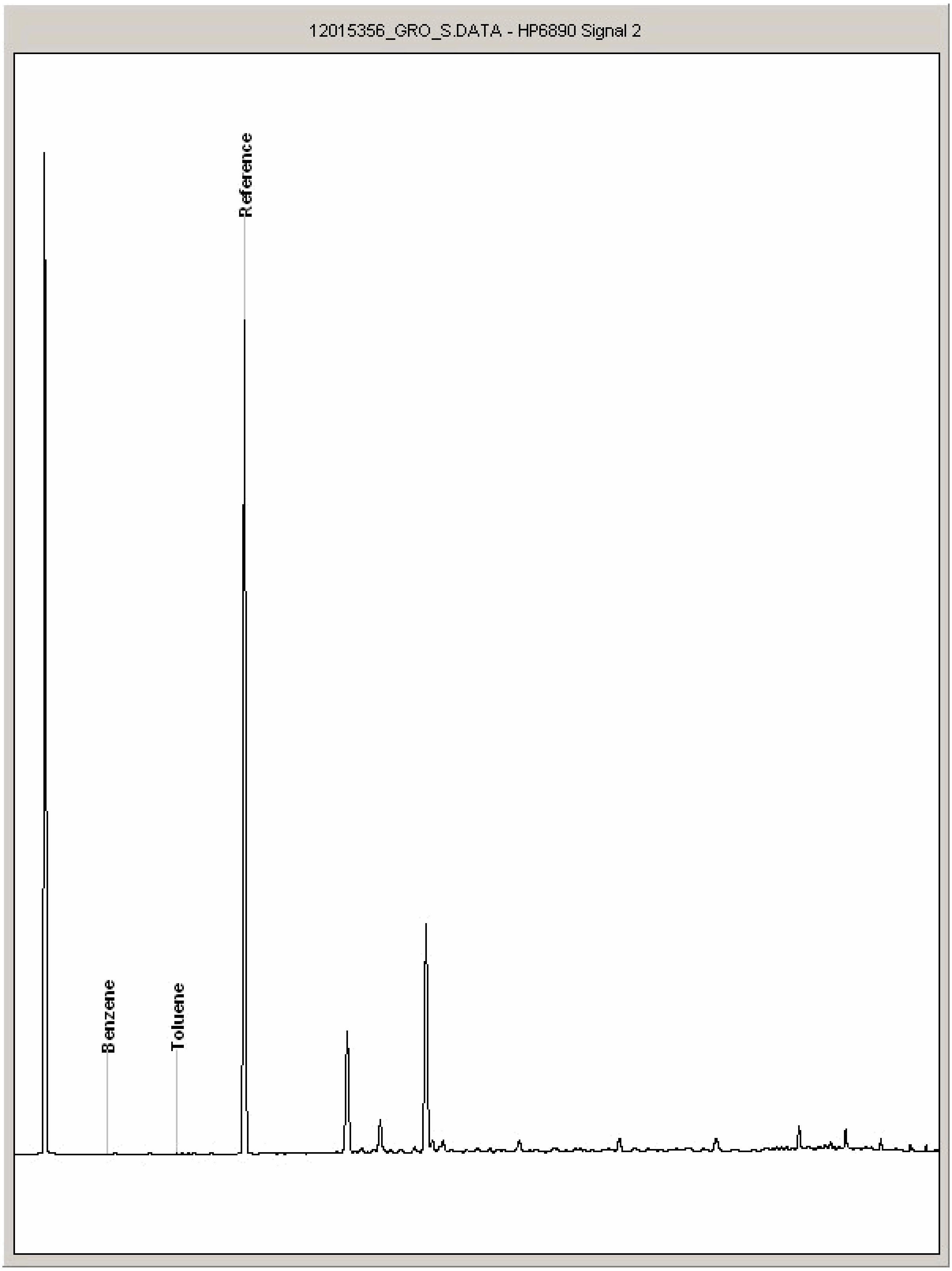
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12015356

Sample ID : BH211

Depth : 0.70



Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Last Updated : 2010/09/08

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

ALcontrol Laboratories

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AECOM
St. George's House
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5 St. George's Road
Wimbledon
Greater London
SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date:	09 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150828-48
Your Reference:	
Location:	Stag Brewery
Report No:	329008

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING
1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977832	BH212		0.60	27/08/2015
11977833	BH212		1.80 - 2.50	27/08/2015
11977835	BH213		0.60	27/08/2015
11977837	BH213		1.70 - 2.00	27/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

SOLID

Results Legend

X **Test**

N **No Determination Possible**

Lab Sample No(s)			11977832			11977833			11977835			11977837		
Customer Sample Reference			BH212			BH212			BH213			BH213		
AGS Reference														
Depth (m)			0.60			1.80 - 2.50			0.60			1.70 - 2.00		
Container			250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2		X						X				
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4		X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4			X			X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4		X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 4	X			X			X			X		
pH	All	NDPs: 0 Tests: 4		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 4	X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 4			X			X			X			X

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11977832	BH212	0.60	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	None
11977833	BH212	1.80 - 2.50	Light Brown	Sand	0.1 - 2 mm	Stones	None
11977835	BH213	0.60	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	Tile/Insulation Board
11977837	BH213	1.70 - 2.00	Light Brown	Sand	0.1 - 2 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH212	BH212	BH213	BH213		
		Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-48	150828-48	150828-48	150828-48		
		Lab Sample No.(s)	11977832	11977833	11977835	11977837		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Moisture Content Ratio (% of as received sample)	%	PM024	7	5.7	17	6.5		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	18.2 M	<15 M	<15 M	<15 M		
Organic Carbon, Total	<0.2 %	TM132	<0.2 M	<0.2 M	2.07 M	<0.2 M		
pH	1 pH Units	TM133	8.95 M	7.72 M	8.04 M	7.84 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #	<0.6 #		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 ♦ #	<15 ♦ #	<15 ♦ #	<15 ♦ #		
Arsenic	<0.6 mg/kg	TM181	19.2 M	18.8 M	19.1 M	19.1 M		
Cadmium	<0.02 mg/kg	TM181	1.44 M	0.393 M	0.547 M	0.389 M		
Chromium	<0.9 mg/kg	TM181	6.94 M	16.9 M	17.1 M	20.2 M		
Copper	<1.4 mg/kg	TM181	13.9 M	4.3 M	29.6 M	6.42 M		
Lead	<0.7 mg/kg	TM181	271 M	5.92 M	2910 M	6.91 M		
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181	6.81 M	19.2 M	14.7 M	22 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #		
Zinc	<1.9 mg/kg	TM181	276 M	23.4 M	906 M	26.2 M		
Sulphate, Total	<48 mg/kg	TM221	1090 M	49.6 M	7440 M	80.7 M		

Validated

CERTIFICATE OF ANALYSIS

SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329008
Superseded Report:

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH212	BH212	BH213	BH213		
		Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-48	150828-48	150828-48	150828-48		
		Lab Sample No.(s)	11977832	11977833	11977835	11977837		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Naphthalene-d8 % recovery**	%	TM218	97.6	94.5	98.6	96.2		
Acenaphthene-d10 % recovery**	%	TM218	94.2	90.6	95	92.2		
Phenanthrene-d10 % recovery**	%	TM218	91.1	87.3	91.2	89.6		
Chrysene-d12 % recovery**	%	TM218	91.4	77.2	90.4	79		
Perylene-d12 % recovery**	%	TM218	97.3	78.4	95.7	80.7		
Naphthalene	<9 µg/kg	TM218	<9 M	<9 M	27.4 M	<9 M		
Acenaphthylene	<12 µg/kg	TM218	20.5 M	<12 M	27.8 M	<12 M		
Acenaphthene	<8 µg/kg	TM218	<8 M	<8 M	15.9 M	<8 M		
Fluorene	<10 µg/kg	TM218	<10 M	<10 M	12.1 M	<10 M		
Phenanthrene	<15 µg/kg	TM218	218 M	<15 M	329 M	<15 M		
Anthracene	<16 µg/kg	TM218	85.9 M	<16 M	71.8 M	<16 M		
Fluoranthene	<17 µg/kg	TM218	1270 M	<17 M	820 M	<17 M		
Pyrene	<15 µg/kg	TM218	975 M	<15 M	729 M	<15 M		
Benz(a)anthracene	<14 µg/kg	TM218	927 M	<14 M	449 M	<14 M		
Chrysene	<10 µg/kg	TM218	908 M	<10 M	414 M	<10 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	1460 M	<15 M	588 M	<15 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	503 M	<14 M	255 M	<14 M		
Benzo(a)pyrene	<15 µg/kg	TM218	1050 M	<15 M	485 M	<15 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	668 M	<18 M	270 M	<18 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	195 M	<23 M	73.2 M	<23 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	755 M	<24 M	358 M	<24 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	9030	<118	4920	<118		

CERTIFICATE OF ANALYSIS

SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329008
Superseded Report:

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH212	BH212	BH213	BH213		
		Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-48	150828-48	150828-48	150828-48		
		Lab Sample No.(s)	11977832	11977833	11977835	11977837		
		AGS Reference						
Component	**LOD/Units**	**Method**						
GRO Surrogate % recovery**	%	TM089	114	127	76	110		
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	<44 M	<44 M		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M	<5 M		
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	<10 M		
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2 M	<2 M		
Ethylbenzene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M	<6 M		
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100	<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	<100	<100		
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	<100	6060	<100		
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	<100	6060	<100		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	2150	<100		
Aromatics >EC16-EC21	<100 µg/kg	TM173	496	<100	10600	<100		
Aromatics >EC21-EC35	<100 µg/kg	TM173	4600	<100	31100	<100		
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	<100	10900	<100		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	3970	<100		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	5100	<100	54800	<100		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	5100	<100	60900	<100		

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH212	BH212	BH213	BH213		
Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-48	150828-48	150828-48	150828-48		
Lab Sample No.(s)	11977832	11977833	11977835	11977837		
AGS Reference						

Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	114	124	121	116		
Toluene-d8**	%	TM116	102	111	108	110		
4-Bromofluorobenzene**	%	TM116	94.1	105	85.4	104		
Dichlorodifluoromethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
Chloromethane	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #		
Vinyl Chloride	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
Bromomethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Chloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
1,1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
Carbon Disulphide	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
Dichloromethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,1-Dichloroethane	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 M	<6 M	<6 M	<6 M		
2,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Bromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Chloroform	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
1,1-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Carbontetrachloride	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2-Dichloroethane	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
Benzene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M		
Trichloroethene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #		
1,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Dibromomethane	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M		
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Toluene	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<10	<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		

CERTIFICATE OF ANALYSIS

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH212	BH212	BH213	BH213		
Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-48	150828-48	150828-48	150828-48		
Lab Sample No.(s)	11977832	11977833	11977835	11977837		
AGS Reference						

Component	LOD/Units	Method						
1,3-Dichloropropane	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M		
Tetrachloroethene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
Dibromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2-Dibromoethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Ethylbenzene	<4 µg/kg	TM116	<4 M	<4 M	<4 M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
o-Xylene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Styrene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Isopropylbenzene	<5 µg/kg	TM116	<5 #	<5 #	<5 #	<5 #		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 M	<16 M	<16 M	<16 M		
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
Propylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
4-Chlorotoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
tert-Butylbenzene	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #		
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
4-Isopropyltoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M		
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M	<5 M		
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<11	<11		
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M		
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<20	<20		
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<20	<20		
Naphthalene	<13 µg/kg	TM116	<13 M	<13 M	<13 M	<13 M		

CERTIFICATE OF ANALYSIS

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	BH212	BH212	BH213	BH213		
		Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
		Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-48	150828-48	150828-48	150828-48		
		Lab Sample No.(s)	11977832	11977833	11977835	11977837		
		AGS Reference						
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 #	<20 #	<20 #	<20 #		

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH212 0.60 SOLID 27/08/2015 00:00:00 29/08/2015 13:54:20 150828-48 11977832 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH213 0.60 SOLID 27/08/2015 00:00:00 29/08/2015 13:59:40 150828-48 11977835 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	11977832	11977833	11977835	11977837
Customer Sample Ref.	BH212	BH212	BH213	BH213
AGS Ref.				
Depth	0.60	1.80 - 2.50	0.60	1.70 - 2.00
Type	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	08-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	03-Sep-2015		03-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	07-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pH	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	29-Aug-2015	28-Aug-2015	29-Aug-2015	28-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	04-Sep-2015	07-Sep-2015	04-Sep-2015	07-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1292	QC 1205
Exchangeable Ammonium as NH4	TM024	**86.07** 79.30 : 104.61	**98.01** 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1262	QC 1219
Easily Liberated Sulphide	TM180	**88.38** 49.14 : 123.89	**93.21** 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1165	QC 1197
Total Aliphatics >C12-C35	TM173	**97.92** 69.19 : 111.75	**92.08** 71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1197
Total Aromatics >EC12-EC35	TM173	**85.33** 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1100	QC 1232
Benzene by GC (Moisture Corrected)	TM089	**110.0** 82.67 : 117.96	**104.0** 76.33 : 121.87
Ethylbenzene by GC (Moisture Corrected)	TM089	**110.5** 80.45 : 118.61	**105.5** 75.73 : 123.83
m & p Xylene by GC (Moisture Corrected)	TM089	**110.0** 79.25 : 119.43	**104.5** 75.52 : 120.32
MTBE GC-FID (Moisture Corrected)	TM089	**114.5** 79.10 : 122.51	**101.5** 77.89 : 119.70
o Xylene by GC (Moisture Corrected)	TM089	**111.5** 80.03 : 117.19	**100.0** 74.15 : 124.59
QC	TM089	**102.79** 75.74 : 124.65	**101.18** 62.31 : 122.61
Toluene by GC (Moisture Corrected)	TM089	**110.5** 82.06 : 117.54	**101.0** 77.91 : 122.33

CERTIFICATE OF ANALYSIS

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Hexavalent Chromium (s)

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	**100.0** 92.20 : 106.60	**102.0** 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1235	QC 1206
Aluminium	TM181	**98.46** 86.49 : 129.71	**99.23** 86.49 : 129.71
Antimony	TM181	**97.13** 77.50 : 122.50	**94.27** 77.50 : 122.50
Arsenic	TM181	**92.92** 82.63 : 117.37	**92.92** 82.63 : 117.37
Barium	TM181	**95.49** 79.45 : 120.55	**96.24** 79.45 : 120.55
Beryllium	TM181	**100.47** 85.92 : 121.27	**98.91** 85.92 : 121.27
Boron	TM181	**99.24** 77.41 : 143.83	**105.34** 77.41 : 143.83
Cadmium	TM181	**96.47** 81.95 : 118.05	**95.8** 81.95 : 118.05
Chromium	TM181	**93.73** 81.29 : 118.71	**93.33** 81.29 : 118.71
Cobalt	TM181	**96.5** 83.86 : 116.14	**95.83** 83.86 : 116.14
Copper	TM181	**99.46** 78.57 : 121.43	**97.7** 78.57 : 121.43
Iron	TM181	**97.24** 87.50 : 122.82	**95.86** 87.50 : 122.82
Lead	TM181	**94.09** 74.18 : 117.25	**93.7** 74.18 : 117.25
Manganese	TM181	**100.0** 82.91 : 117.09	**100.0** 82.91 : 117.09
Mercury	TM181	**92.46** 81.99 : 118.01	**94.3** 81.99 : 118.01
Molybdenum	TM181	**93.79** 81.45 : 118.55	**92.2** 81.45 : 118.55
Nickel	TM181	**95.93** 79.64 : 120.36	**95.93** 79.64 : 120.36
Phosphorus	TM181	**98.21** 81.03 : 118.97	**97.76** 81.03 : 118.97
Selenium	TM181	**108.21** 87.05 : 121.93	**105.3** 87.05 : 121.93
Strontium	TM181	**96.55** 83.64 : 116.36	**98.08** 83.64 : 116.36
Thallium	TM181	**88.72** 77.50 : 122.50	**87.56** 77.50 : 122.50
Tin	TM181	**92.69** 78.30 : 113.98	**92.03** 78.30 : 113.98
Titanium	TM181	**97.66** 71.02 : 128.98	**103.91** 71.02 : 128.98

Metals in solid samples by OES

		QC 1235	QC 1206
Vanadium	TM181	**93.53** 86.61 : 113.39	**93.53** 86.61 : 113.39
Zinc	TM181	**98.05** 89.82 : 114.54	**97.73** 89.82 : 114.54

PAH by GCMS

Component	**Method Code**	QC 1154	QC 1196
Acenaphthene	TM218	**92.0** 77.34 : 118.20	**89.5** 78.75 : 116.25
Acenaphthylene	TM218	**86.5** 62.65 : 116.35	**85.5** 76.45 : 110.05
Anthracene	TM218	**89.5** 73.54 : 114.21	**89.0** 67.15 : 124.45
Benz(a)anthracene	TM218	**102.5** 74.99 : 132.24	**97.5** 82.00 : 127.00
Benzo(a)pyrene	TM218	**102.0** 80.75 : 127.25	**99.5** 75.60 : 124.20
Benzo(b)fluoranthene	TM218	**99.5** 75.84 : 127.12	**99.0** 81.20 : 121.77
Benzo(ghi)perylene	TM218	**97.0** 74.74 : 124.03	**96.0** 77.49 : 119.12
Benzo(k)fluoranthene	TM218	**98.0** 80.00 : 125.00	**96.5** 83.50 : 116.50
Chrysene	TM218	**98.0** 77.24 : 120.84	**95.5** 78.35 : 114.42
Dibenzo(ah)anthracene	TM218	**96.5** 76.00 : 122.50	**95.0** 77.15 : 122.45
Fluoranthene	TM218	**92.5** 78.51 : 118.75	**92.5** 79.08 : 114.40
Fluorene	TM218	**93.0** 76.95 : 117.18	**91.5** 79.03 : 113.38
Indeno(123cd)pyrene	TM218	**98.5** 75.34 : 127.46	**96.5** 75.65 : 125.15
Naphthalene	TM218	**95.0** 76.24 : 112.91	**92.5** 77.25 : 112.60
Phenanthrene	TM218	**93.5** 76.49 : 119.30	**92.0** 78.25 : 115.44
Pyrene	TM218	**91.0** 78.25 : 118.17	**91.0** 78.07 : 114.06

pH

Component	**Method Code**	QC 1218	QC 1227
pH	TM133	**100.25** 97.19 : 102.81	**100.5** 97.19 : 102.81

Total Organic Carbon

Total Organic Carbon

Component	Method Code	QC 1254	QC 1297
Total Organic Carbon	TM132	**100.46** 88.82 : 111.18	**97.72** 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1273
Total Sulphate	TM221	**102.27** 78.49 : 121.51	**103.79** 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1172	QC 1128
1,1,1,2-tetrachloroethane	TM116	**101.0** 76.60 : 121.00	**95.6** 83.24 : 124.28
1,1,1-Trichloroethane	TM116	**96.2** 77.80 : 123.40	**100.8** 81.77 : 121.07
1,1,2-Trichloroethane	TM116	**90.6** 75.40 : 119.80	**100.4** 79.24 : 112.23
1,1-Dichloroethane	TM116	**99.8** 80.84 : 124.49	**103.0** 72.58 : 116.06
1,2-Dichloroethane	TM116	**104.8** 91.00 : 135.67	**118.8** 77.50 : 122.50
1,4-Dichlorobenzene	TM116	**105.6** 80.88 : 114.60	**96.2** 73.23 : 116.39
2-Chlorotoluene	TM116	**94.2** 74.00 : 117.20	**85.6** 69.22 : 110.64
4-Chlorotoluene	TM116	**90.2** 71.20 : 113.20	**89.0** 68.57 : 106.26
Benzene	TM116	**97.6** 79.60 : 125.20	**103.2** 84.33 : 124.27
Carbon Disulphide	TM116	**99.4** 74.91 : 122.14	**110.4** 77.20 : 122.80
Carbontetrachloride	TM116	**100.2** 76.80 : 121.20	**98.2** 84.20 : 119.90
Chlorobenzene	TM116	**102.0** 83.47 : 116.82	**102.4** 85.28 : 129.96
Chloroform	TM116	**98.4** 82.00 : 128.80	**108.2** 82.73 : 119.72
Chloromethane	TM116	**117.2** 74.62 : 135.86	**123.4** 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	**103.6** 81.20 : 128.00	**108.4** 73.56 : 118.93
Dibromomethane	TM116	**88.4** 73.40 : 116.60	**104.4** 73.40 : 116.60
Dichloromethane	TM116	**101.6** 86.60 : 137.00	**113.2** 76.16 : 121.98

VOC MS (S)

		QC 1172	QC 1128
Ethylbenzene	TM116	**96.6** 73.60 : 115.60	**94.0** 80.07 : 125.98
Hexachlorobutadiene	TM116	**114.0** 33.65 : 130.56	**69.0** 30.92 : 132.28
Isopropylbenzene	TM116	**92.0** 72.52 : 117.52	**82.6** 69.27 : 125.32
Naphthalene	TM116	**107.0** 83.23 : 126.48	**110.0** 79.15 : 121.98
o-Xylene	TM116	**92.4** 69.60 : 110.40	**77.6** 75.46 : 111.52
p/m-Xylene	TM116	**94.1** 71.30 : 112.70	**90.2** 76.97 : 121.75
Sec-Butylbenzene	TM116	**116.4** 59.20 : 125.20	**69.6** 49.27 : 129.90
Tetrachloroethene	TM116	**104.6** 85.92 : 127.92	**102.2** 87.96 : 133.65
Toluene	TM116	**90.2** 76.08 : 110.17	**99.0** 79.23 : 114.58
Trichloroethene	TM116	**96.4** 78.17 : 121.37	**94.6** 84.09 : 114.24
Trichlorofluoromethane	TM116	**102.2** 83.78 : 132.82	**107.4** 76.22 : 114.82
Vinyl Chloride	TM116	**94.6** 66.81 : 138.46	**98.2** 59.68 : 118.68

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

CERTIFICATE OF ANALYSIS

SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

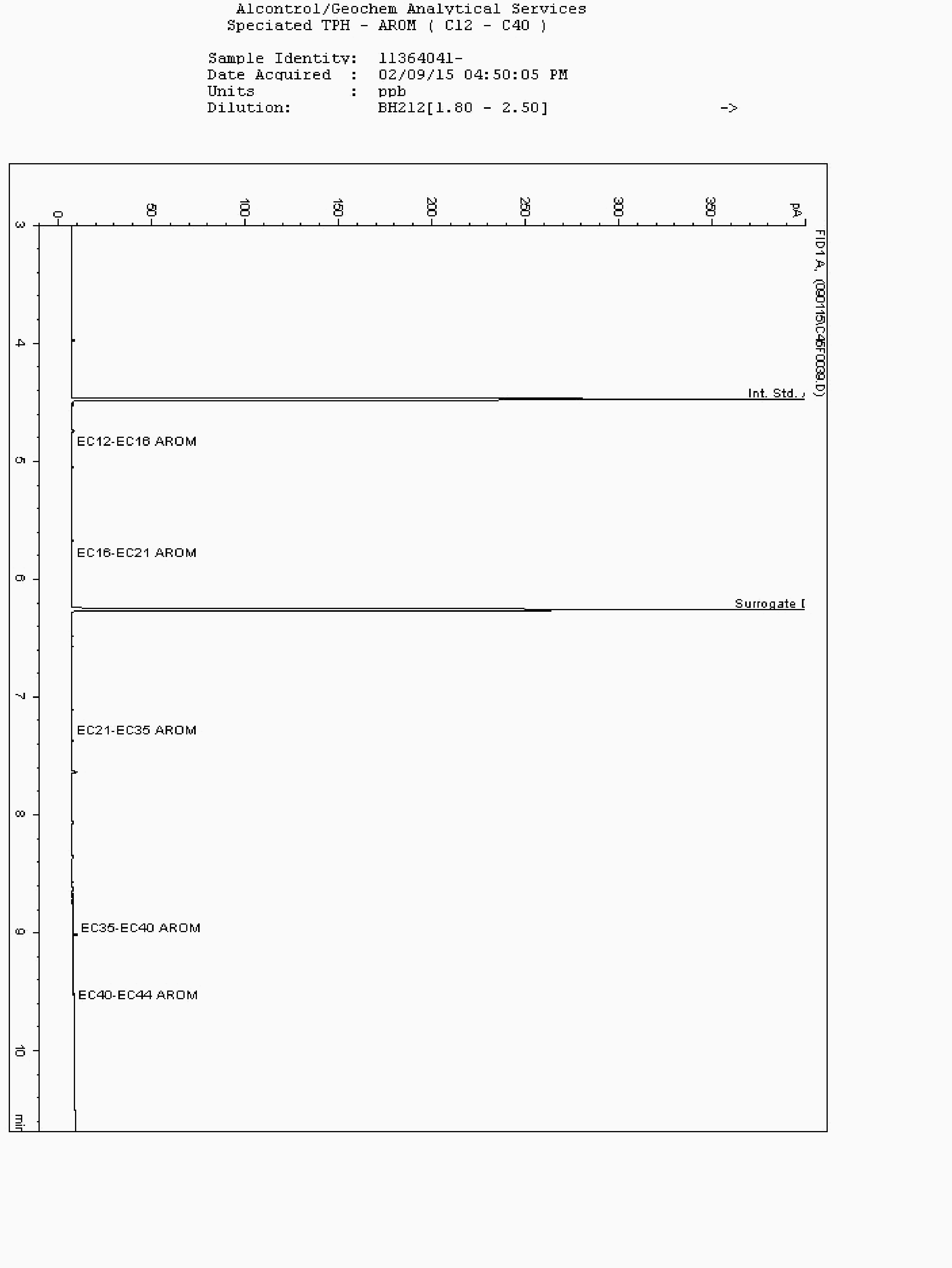
Order Number:
Report Number: 329008
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 11980853
Sample ID : BH212

Depth : 1.80 - 2.50



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364041-
Date Acquired  :  02/09/15 04:50:05 PM
Units          :  ppb
Dilution:         BH212[1.80 - 2.50]              ->
```

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11980893
Sample ID : BH213
Depth : 1.70 - 2.00

```
          Alcontrol/Geochem Analytical Services
        Speciated TPH - AROM ( C12 - C40 )

      Sample Identity:  11364075-
      Date Acquired  :  02/09/15 05:29:55 PM
      Units          :  ppb
      Dilution:         BH213[1.70 - 2.00]              ->
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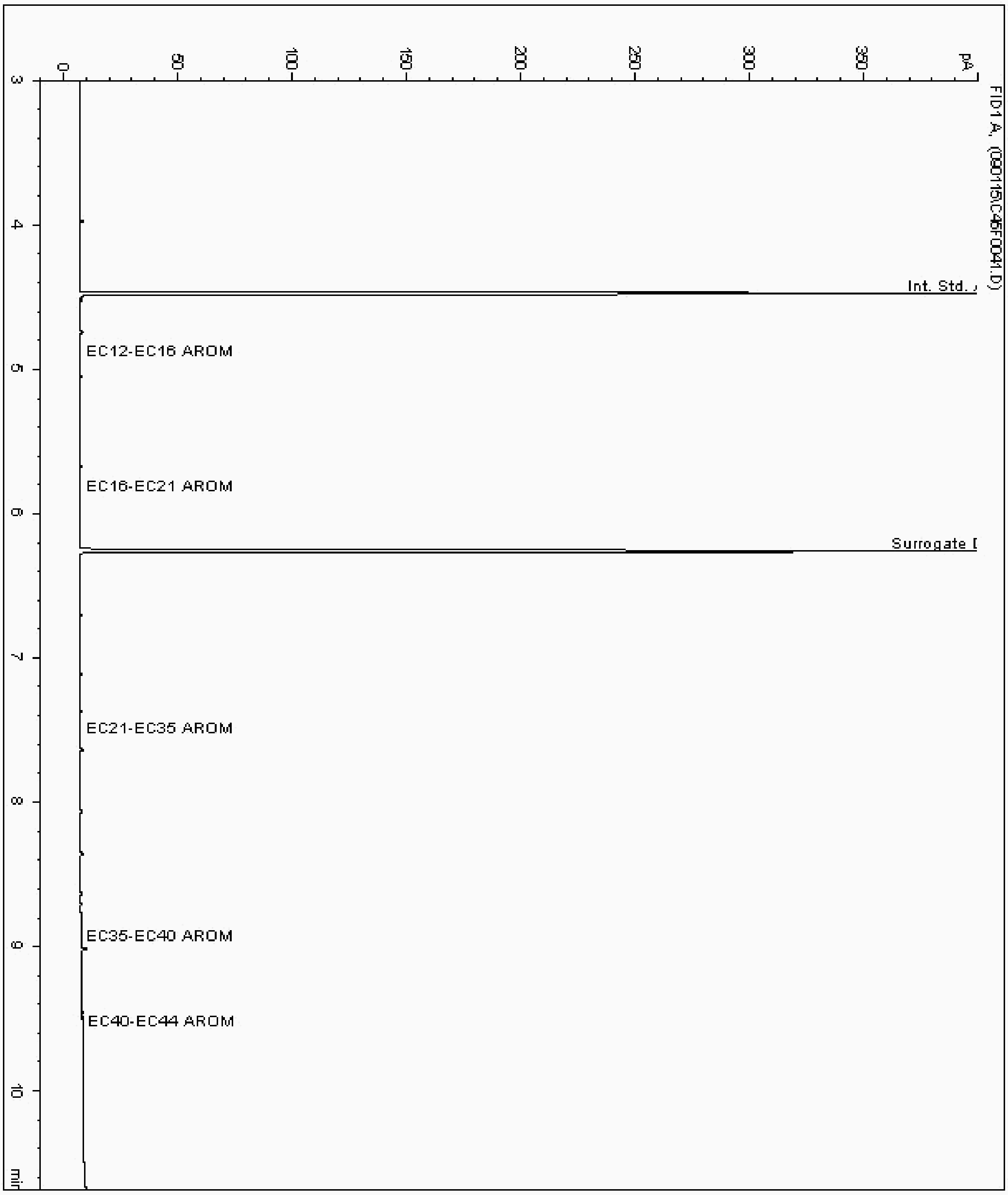


SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

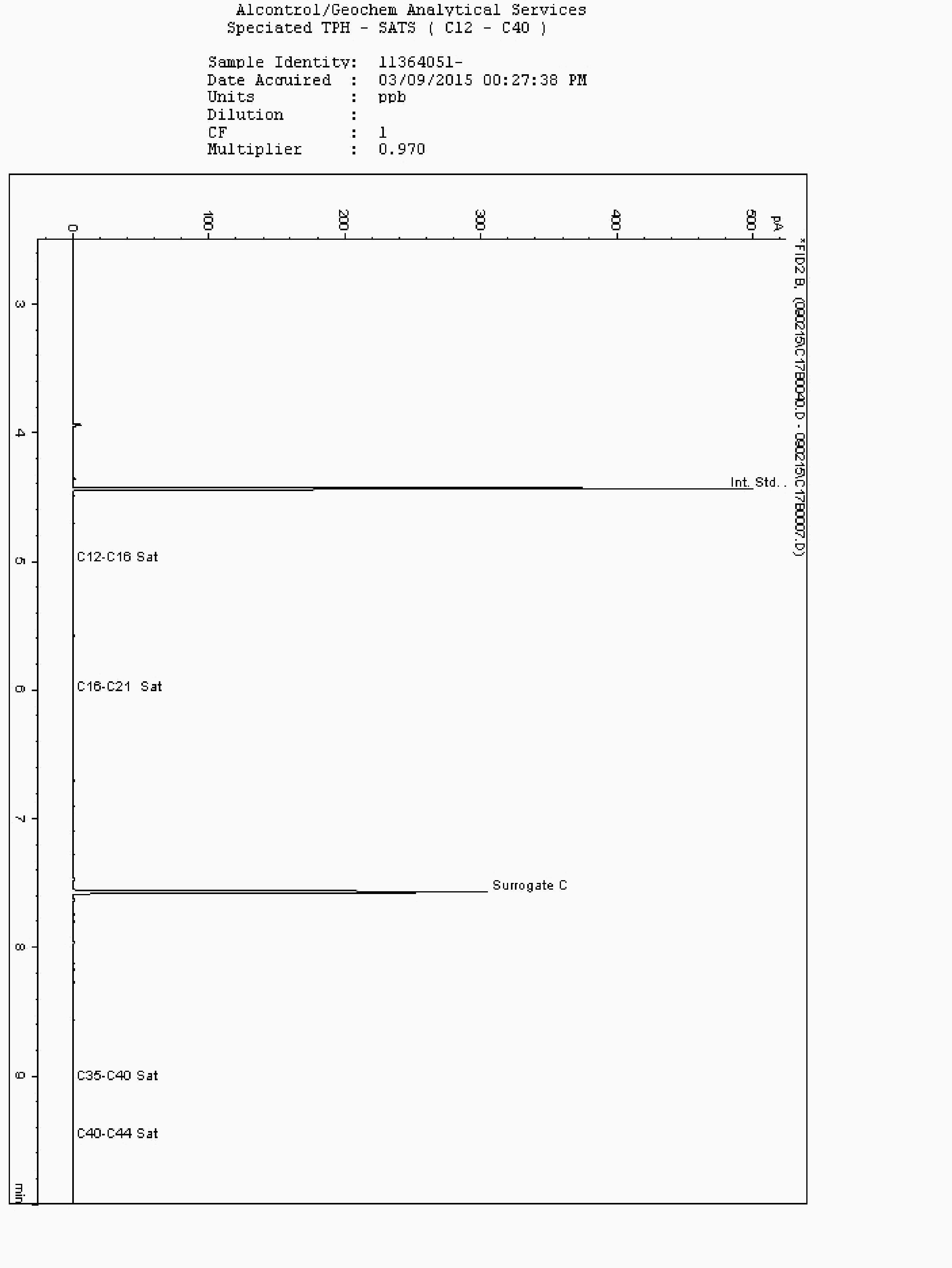
Order Number:
Report Number: 329008
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 11984526
Sample ID : BH213

Depth : 0.60



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Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

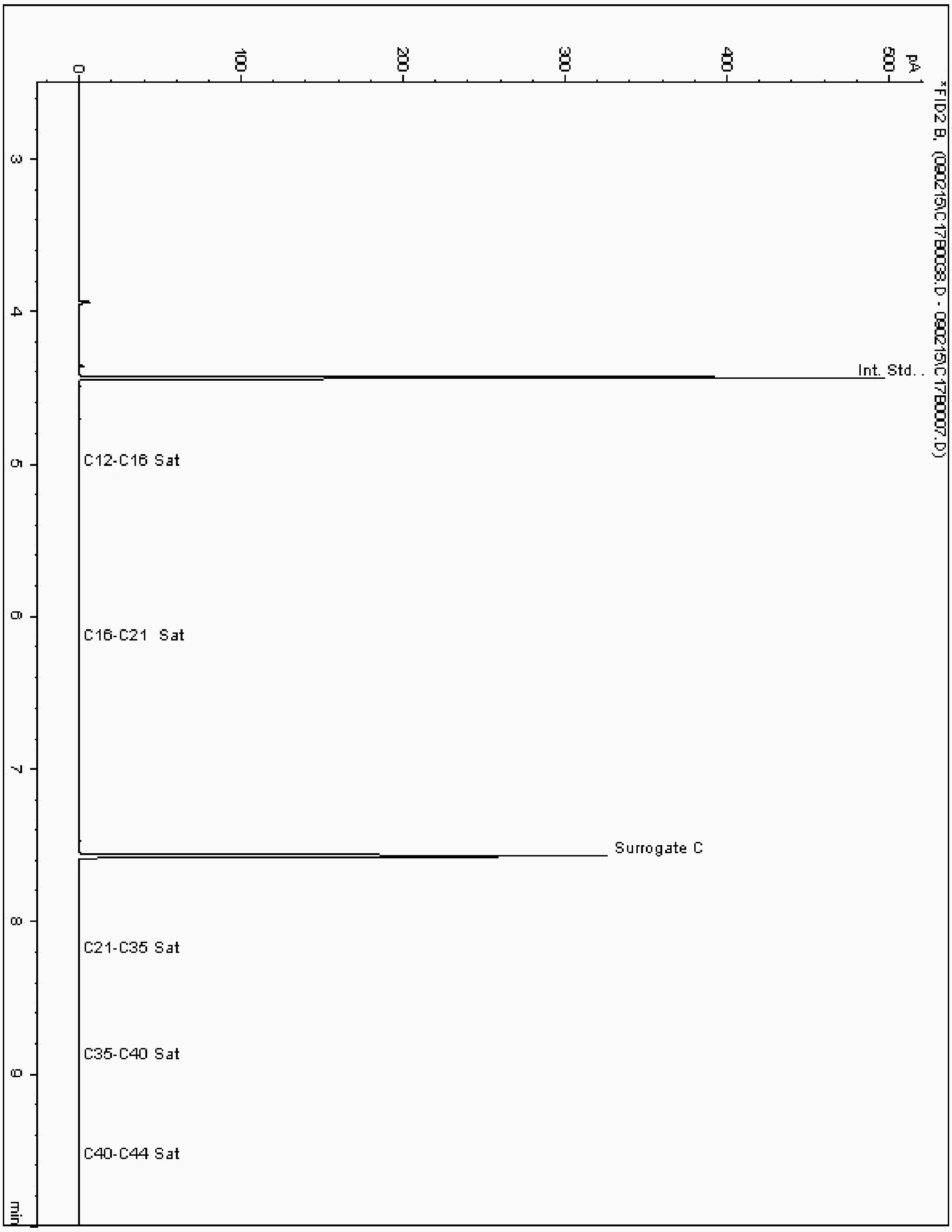
Sample Identity:  11364051-
Date Acquired  :  03/09/2015 00:27:38 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.970
```

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11984654
Sample ID : BH212
Depth : 0.60

```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11364026-
Date Acquired  :  02/09/2015 23:47:52 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```



CERTIFICATE OF ANALYSIS

SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

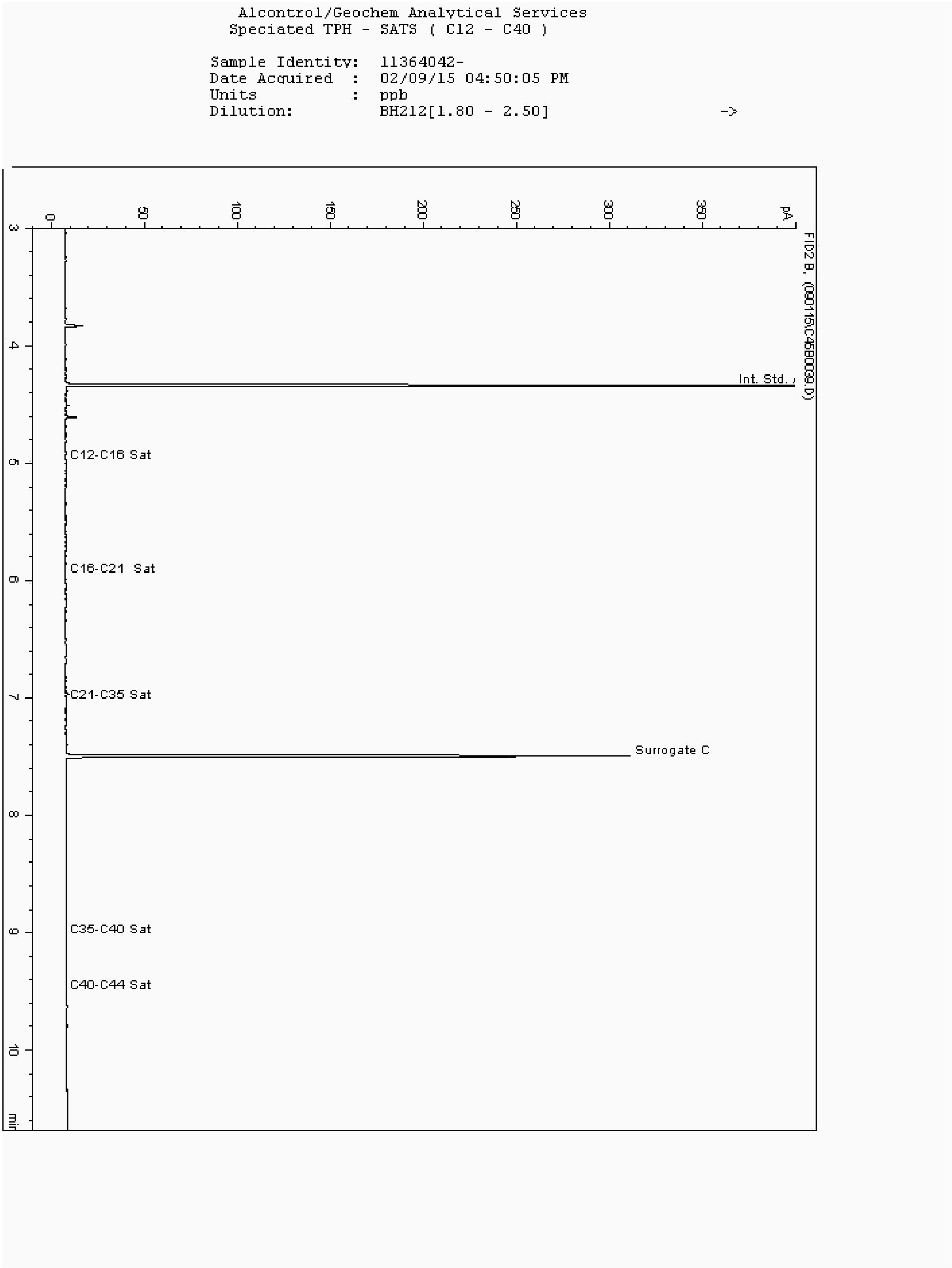
Order Number:
Report Number: 329008
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11980853
Sample ID : BH212

Depth : 1.80 - 2.50



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        Alcontrol/Geochem Analytical Services
      Speciated TPH - SATS ( C12 - C40 )

    Sample Identity:  11364042-
    Date Acquired  :  02/09/15 04:50:05 PM
    Units          :  ppb
    Dilution:         BH212[1.80 - 2.50]              ->
```
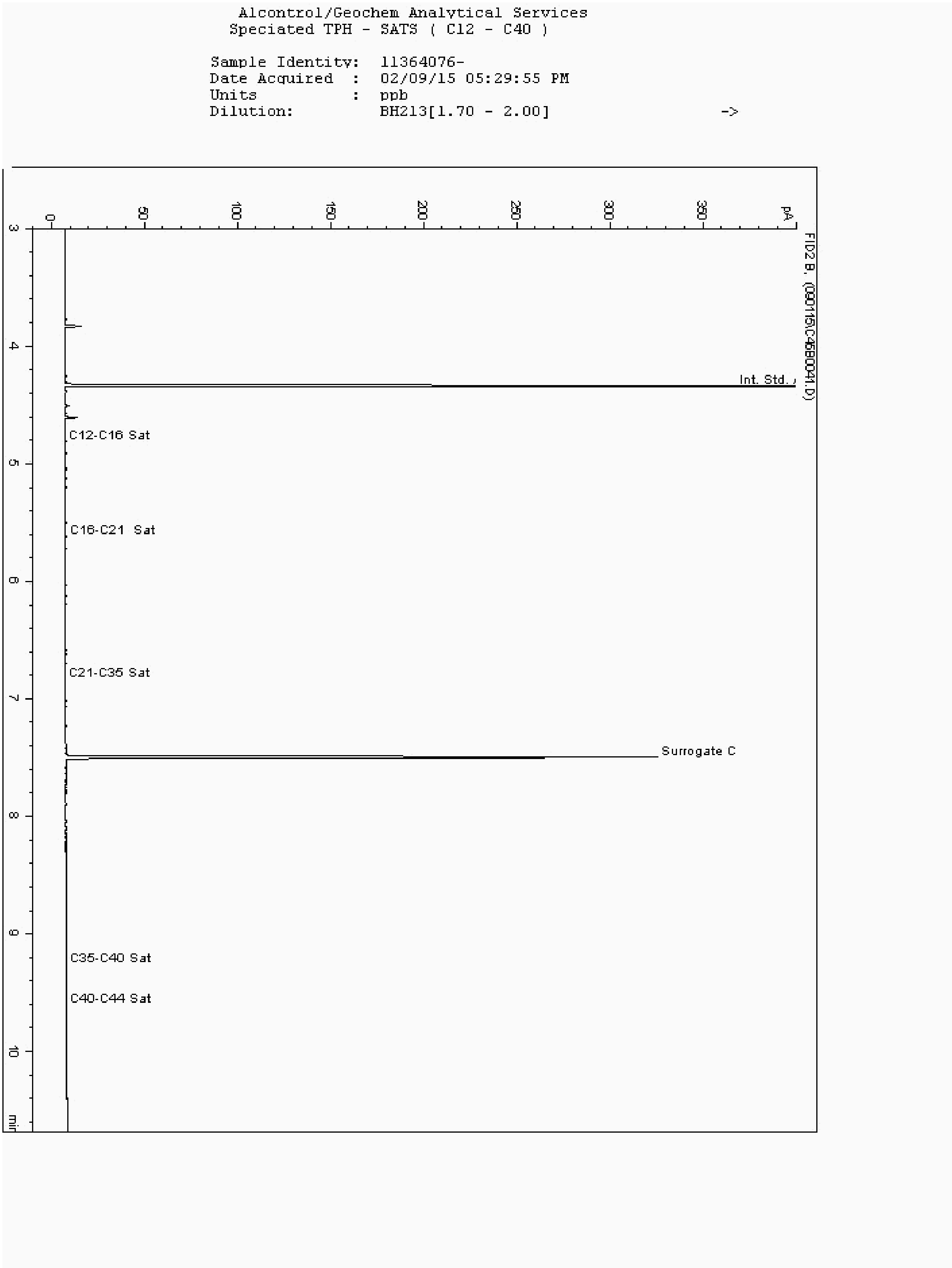

CERTIFICATE OF ANALYSIS

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11980893	**Depth :**	1.70 - 2.00
		Sample ID :	BH213		



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Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

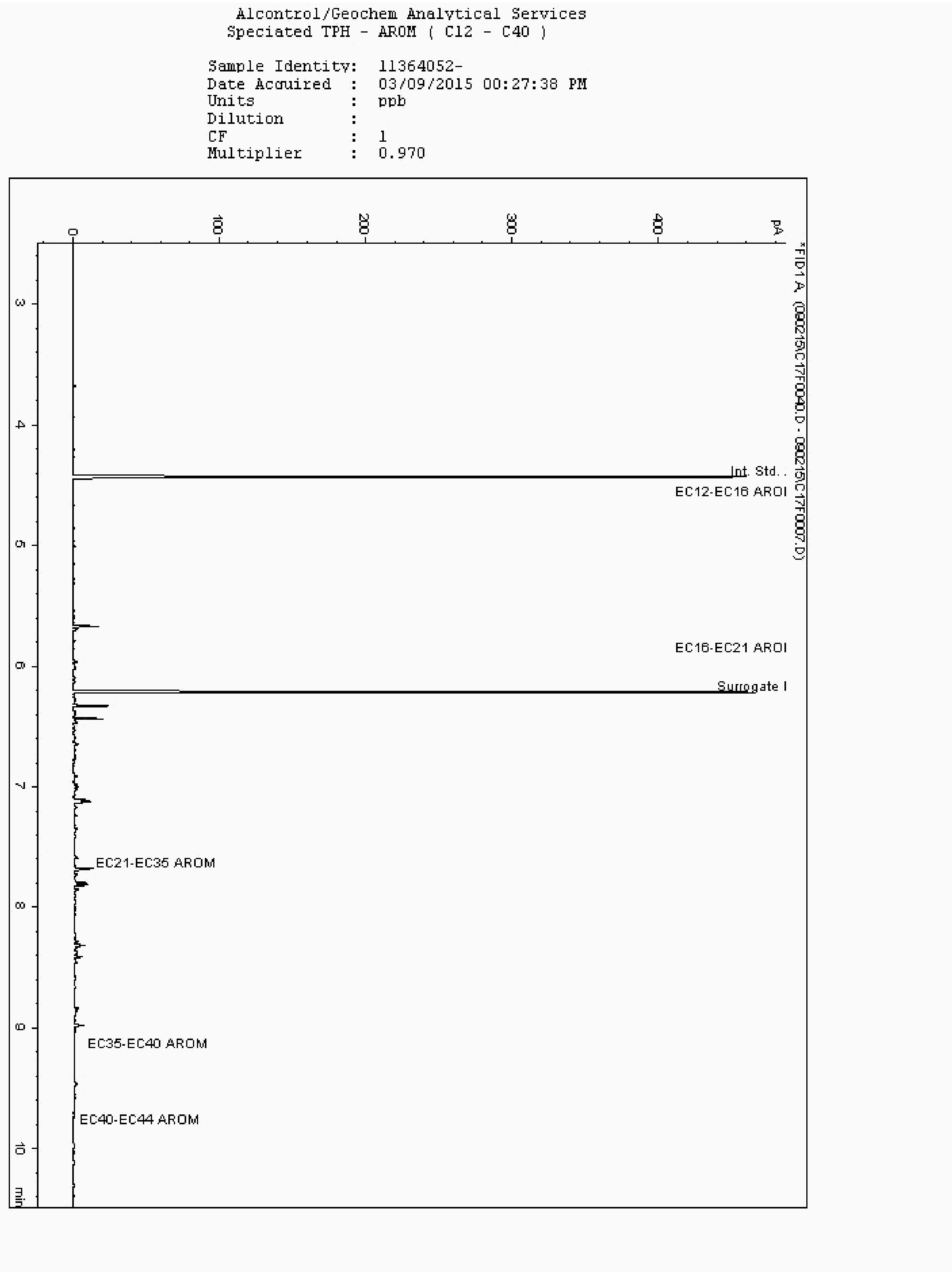
Sample Identity:   11364076-
Date Acquired  :   02/09/15 05:29:55 PM
Units          :   ppb
Dilution:          BH213[1.70 - 2.00]              ->
```

CERTIFICATE OF ANALYSIS

SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329008
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
Sample No : 11984526
Sample ID : BH213
Depth : 0.60



Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 11364052-
Date Acquired : 03/09/2015 00:27:38 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.970

CERTIFICATE OF ANALYSIS

SDG: 150828-48
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

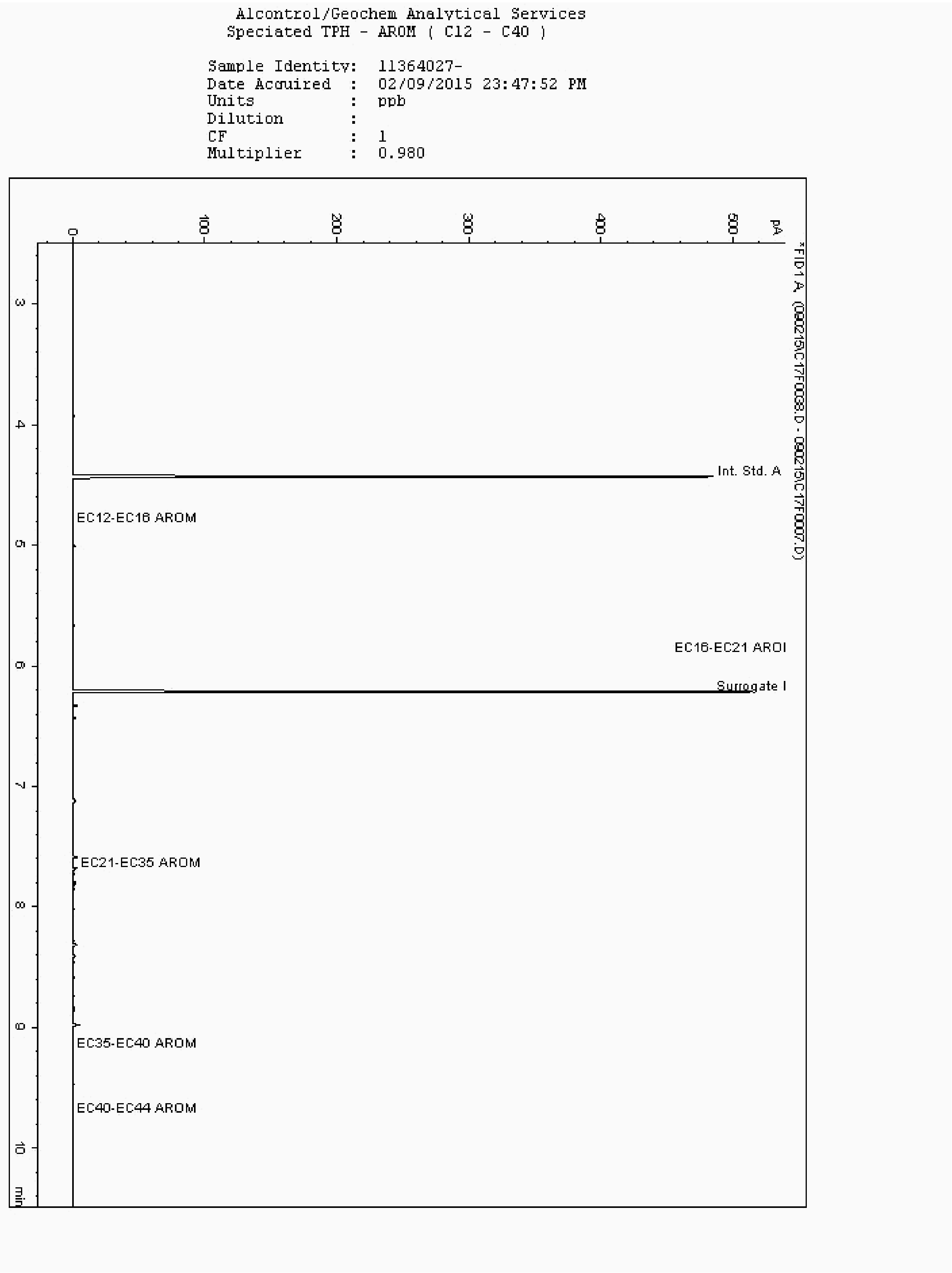
Order Number:
Report Number: 329008
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11984654
Sample ID : BH212

Depth : 0.60



Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

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Sample Identity:  11364027-
Date Acquired  :  02/09/2015 23:47:52 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```

SDG:	150828-48	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329008
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

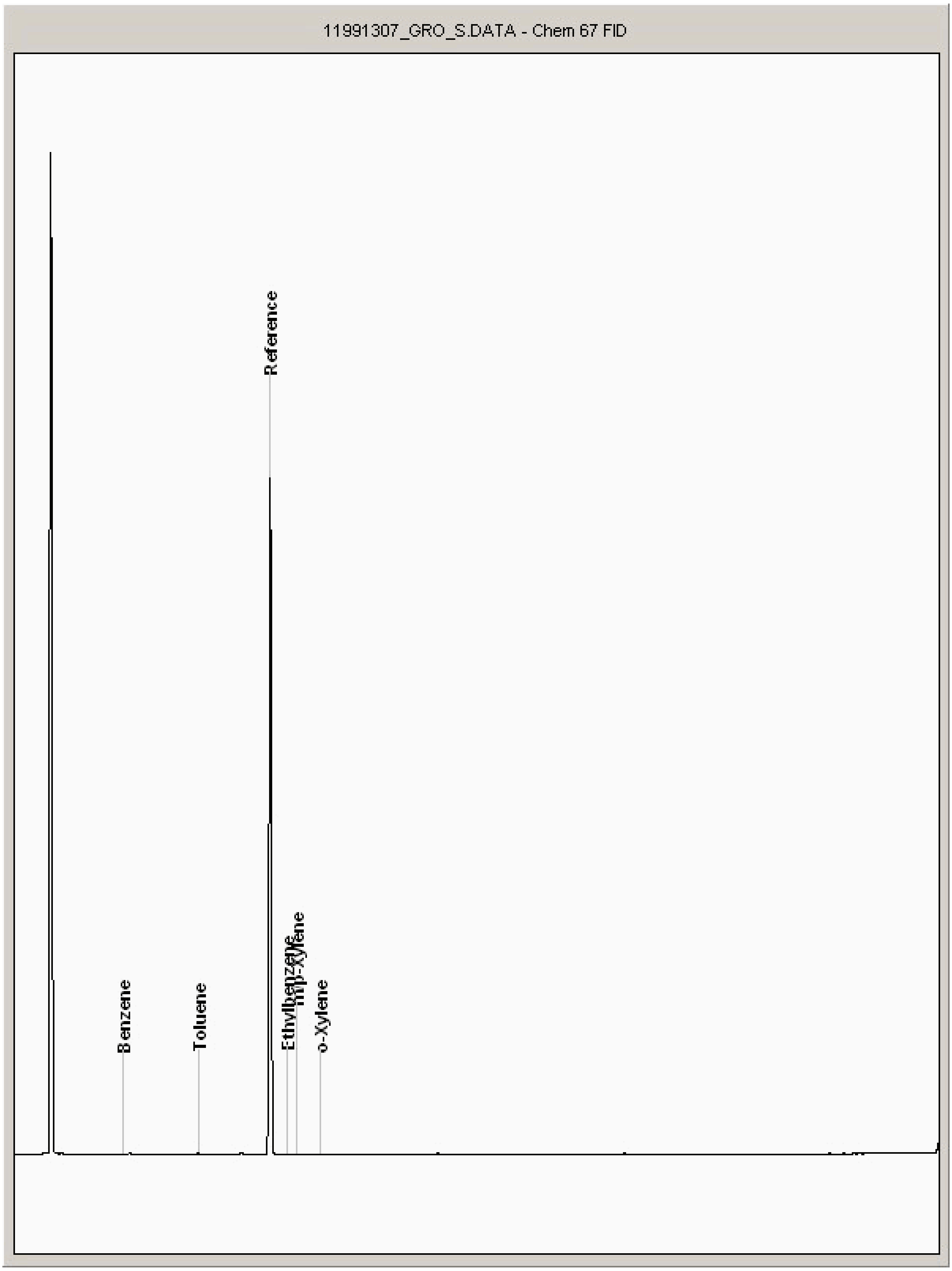
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11991307

Sample ID : BH213

Depth : 0.60



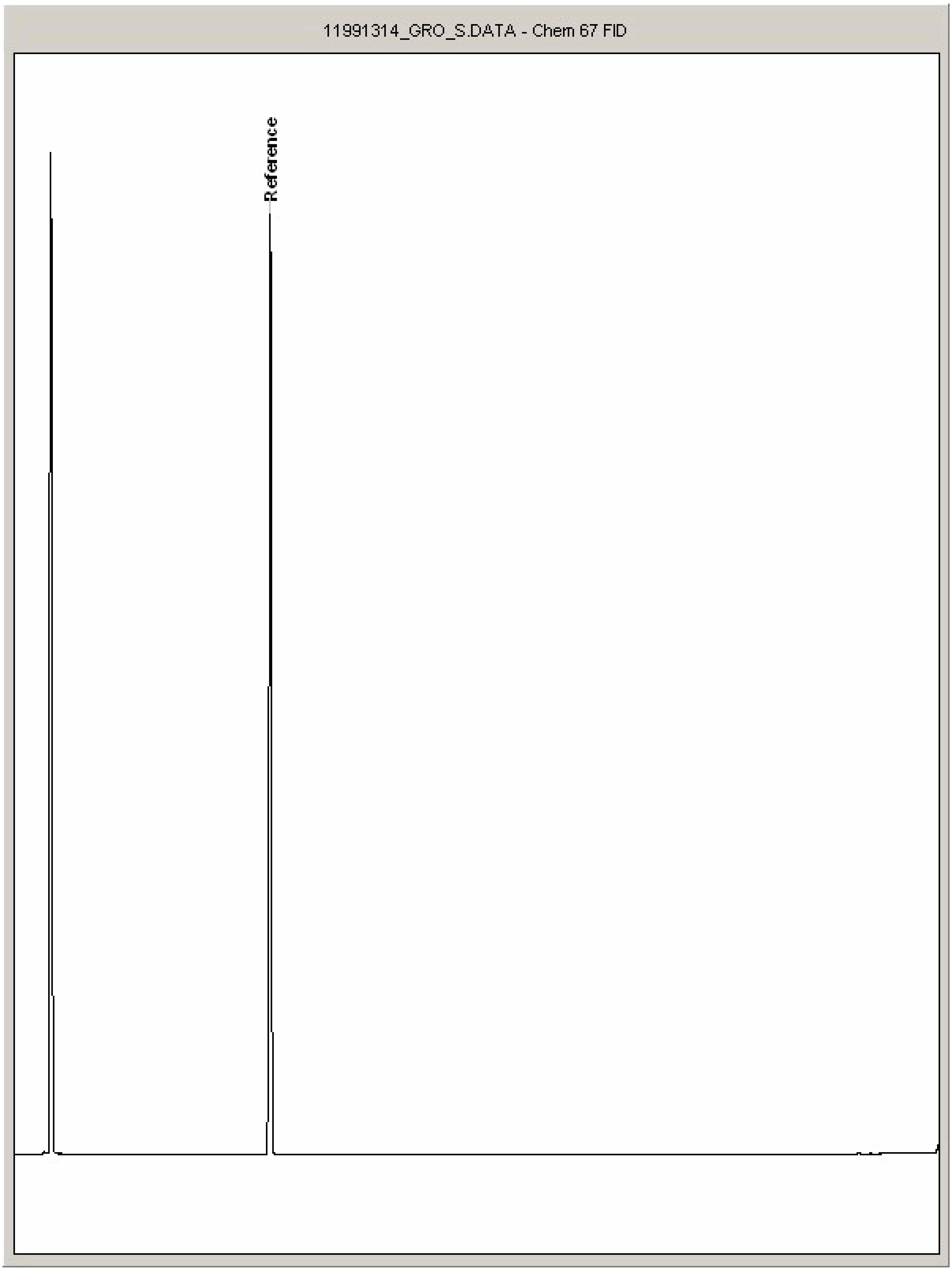
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11991314

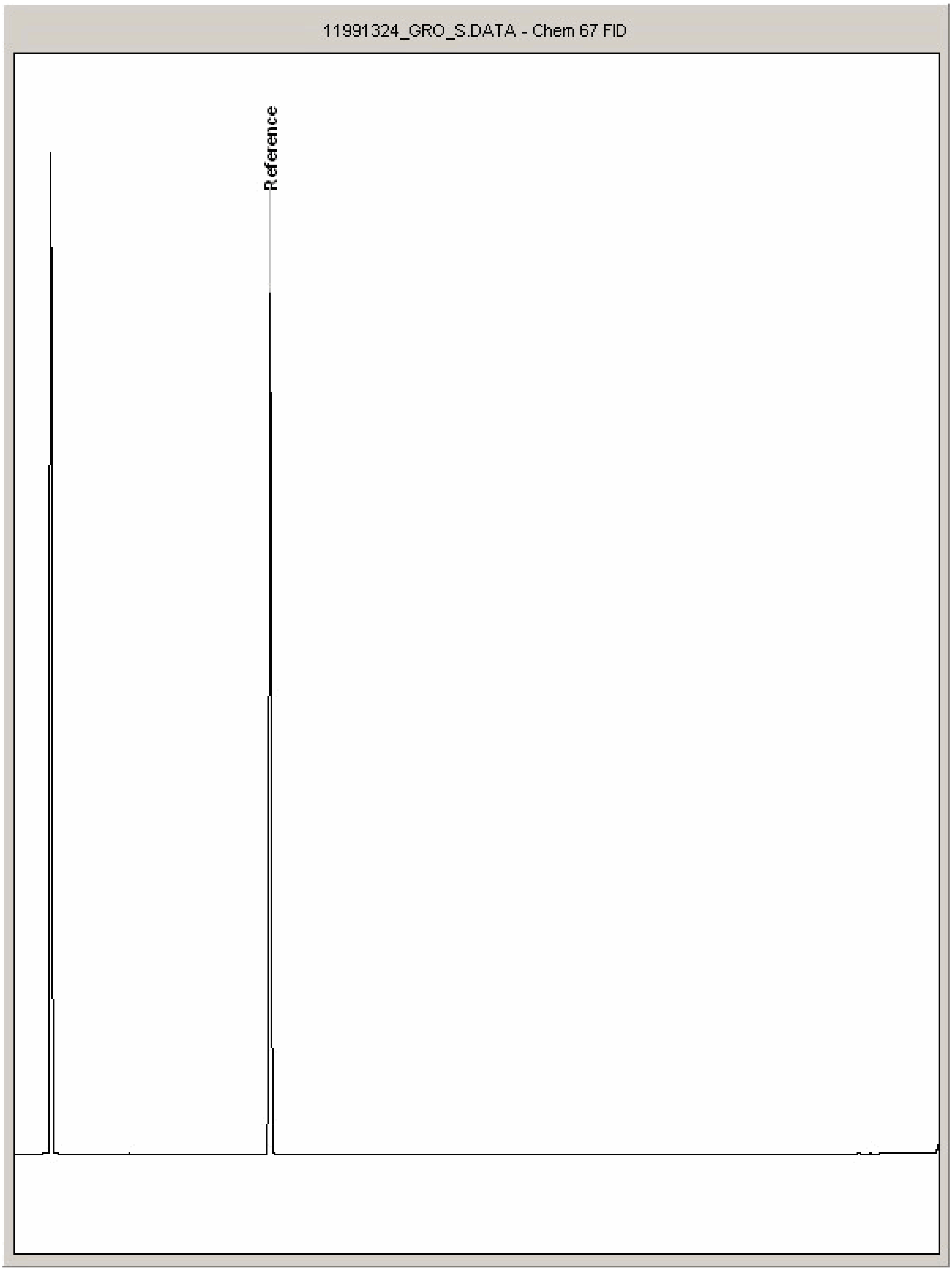
Sample ID : BH212

Depth : 1.80 - 2.50



Chromatogram

Analysis: GRO by GC-FID (S) **Sample No :** 11991324 **Depth :** 1.70 - 2.00
Sample ID : BH213



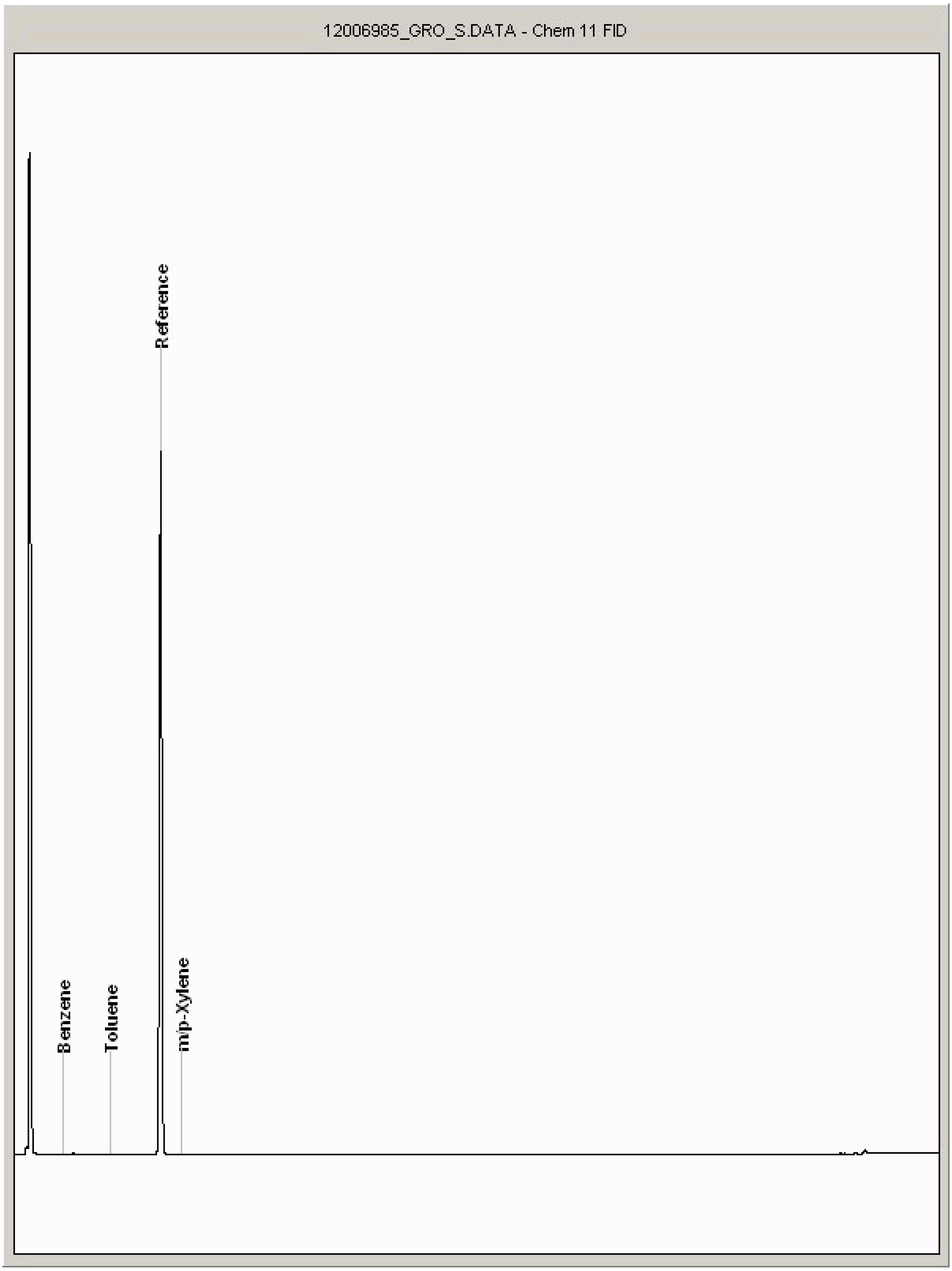
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12006985

Sample ID : BH212

Depth : 0.60


12006985_GRO_S.DATA - Chem 11 FID

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

ALcontrol Laboratories

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AECOM
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Greater London
SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date:	09 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150828-57
Your Reference:	
Location:	Stag Brewery
Report No:	329023

We received 5 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING
1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11978081	BH8A		0.50	26/08/2015
11978082	BH8A		0.90	26/08/2015
11978083	BH8A		3.00 - 3.50	26/08/2015
11978079	BH9A		0.50	26/08/2015
11978080	BH9A		2.20 - 3.30	26/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 150828-57
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329023
Superseded Report:

SOLID

Results Legend

- X **Test**
- N **No Determination Possible**

Lab Sample No(s)			11978081			11978083			11978079			11978080		
Customer Sample Reference			BH8A			BH8A			BH9A			BH9A		
AGS Reference														
Depth (m)			0.50			3.00 - 3.50			0.50			2.20 - 3.30		
Container			250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4		X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2		X						X				
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4		X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4			X			X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4		X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 4	X			X			X			X		
pH	All	NDPs: 0 Tests: 4		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 4	X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 4	X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 4			X			X			X			X

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11978081	BH8A	0.50	Black	Sand	0.1 - 2 mm	Stones	None
11978083	BH8A	3.00 - 3.50	Light Brown	Sand	0.1 - 2 mm	Stones	None
11978079	BH9A	0.50	Light Brown	Sand	0.1 - 2 mm	Stones	None
11978080	BH9A	2.20 - 3.30	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH8A	BH8A	BH9A	BH9A		
Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
Sampled Time	.	.	.	.		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-57	150828-57	150828-57	150828-57		
Lab Sample No.(s)	11978081	11978083	11978079	11978080		
AGS Reference						

Component	LOD/Units	Method	BH8A	BH8A	BH9A	BH9A		
Moisture Content Ratio (% of as received sample)	%	PM024	17	9.5	7.3	14		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	18.4 M	<15 M	71.4 M		
Organic Carbon, Total	<0.2 %	TM132	19.1 M	<0.2 M	<0.2 M	0.443 M		
pH	1 pH Units	TM133	8.38 M	7.66 M	10.2 M	11.2 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #	<0.6 #		
Sulphide, Easily liberated	<15 mg/kg	TM180	40.4 ♦ #	<15 ♦ #	<15 ♦ #	252 ♦ #		
Arsenic	<0.6 mg/kg	TM181	13.7 M	14.7 M	16.5 M	15.5 M		
Cadmium	<0.02 mg/kg	TM181	0.344 M	0.338 M	0.395 M	0.378 M		
Chromium	<0.9 mg/kg	TM181	13.9 M	19.1 M	18.9 M	21.1 M		
Copper	<1.4 mg/kg	TM181	80.7 M	5.98 M	8.36 M	12 M		
Lead	<0.7 mg/kg	TM181	41.4 M	6.89 M	12.4 M	23.7 M		
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181	37.6 M	18.8 M	23.6 M	20.7 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #		
Zinc	<1.9 mg/kg	TM181	24.4 M	25.5 M	34.5 M	62.4 M		
Sulphate, Total	<48 mg/kg	TM221	775 M	80.9 M	212 M	1040 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH8A	BH8A	BH9A	BH9A		
		Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-57	150828-57	150828-57	150828-57		
		Lab Sample No.(s)	11978081	11978083	11978079	11978080		
		AGS Reference						
Component	**LOD/Units**	**Method**						
Naphthalene-d8 % recovery**	%	TM218	122	101	99	95.4		
Acenaphthene-d10 % recovery**	%	TM218	124	97.4	98.4	94.8		
Phenanthrene-d10 % recovery**	%	TM218	118	93.6	96.9	93.4		
Chrysene-d12 % recovery**	%	TM218	99.3	83.8	92.1	84.9		
Perylene-d12 % recovery**	%	TM218	96.2	83.6	99	91.4		
Naphthalene	<9 µg/kg	TM218	111 M	<9 M	<9 M	32.7 M		
Acenaphthylene	<12 µg/kg	TM218	16 M	<12 M	<12 M	15 M		
Acenaphthene	<8 µg/kg	TM218	<8 M	<8 M	<8 M	11 M		
Fluorene	<10 µg/kg	TM218	<10 M	<10 M	<10 M	54.6 M		
Phenanthrene	<15 µg/kg	TM218	215 M	<15 M	<15 M	360 M		
Anthracene	<16 µg/kg	TM218	33.2 M	<16 M	<16 M	105 M		
Fluoranthene	<17 µg/kg	TM218	237 M	<17 M	<17 M	400 M		
Pyrene	<15 µg/kg	TM218	186 M	<15 M	16.7 M	317 M		
Benz(a)anthracene	<14 µg/kg	TM218	128 M	<14 M	24.7 M	283 M		
Chrysene	<10 µg/kg	TM218	137 M	<10 M	<10 M	218 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	193 M	<15 M	24.6 M	306 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	59.9 M	<14 M	<14 M	108 M		
Benzo(a)pyrene	<15 µg/kg	TM218	122 M	<15 M	18.2 M	259 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	76.6 M	<18 M	<18 M	121 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M	<23 M	<23 M	40.4 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	108 M	<24 M	<24 M	144 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1620	<118	<118	2780		

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH8A	BH8A	BH9A	BH9A		
Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
Sampled Time	.	.	.	.		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-57	150828-57	150828-57	150828-57		
Lab Sample No.(s)	11978081	11978083	11978079	11978080		
AGS Reference						

Component	LOD/Units	Method	BH8A	BH8A	BH9A	BH9A		
GRO Surrogate % recovery**	%	TM089	72	107	113	97		
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	178 M	106 M		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M	<5 M		
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	<10 M		
Toluene	<2 µg/kg	TM089	2.42 M	<2 M	<2 M	<2 M		
Ethylbenzene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M	<6 M		
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	14.5	<10	<10	19.7		
Aliphatics >C8-C10	<10 µg/kg	TM089	10.9	<10	11.9	22		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	87.4	25.5		
Aliphatics >C12-C16	<100 µg/kg	TM173	555	<100	<100	1290		
Aliphatics >C16-C21	<100 µg/kg	TM173	1230	<100	<100	3060		
Aliphatics >C21-C35	<100 µg/kg	TM173	5830	<100	<100	6690		
Aliphatics >C35-C44	<100 µg/kg	TM173	567	<100	<100	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	8180	<100	<100	11000		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	15.1		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	58.3	17.4		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100	2810		
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	<100	19400		
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100	<100	<100	66300		
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	<100	<100	16400		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	<100	5980		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	<100	<100	<100	105000		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	8220	<100	111	116000		

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH8A	BH8A	BH9A	BH9A		
Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
Sampled Time	.	.	.	.		
Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
SDG Ref	150828-57	150828-57	150828-57	150828-57		
Lab Sample No.(s)	11978081	11978083	11978079	11978080		
AGS Reference						

Component	LOD/Units	Method	BH8A	BH8A	BH9A	BH9A		
Dibromofluoromethane**	%	TM116	114	109	120	112		
Toluene-d8**	%	TM116	102	101	102	102		
4-Bromofluorobenzene**	%	TM116	88.1	95	96.1	92.2		
Dichlorodifluoromethane	<6 µg/kg	TM116	<60 M	<6 M	<6 M	<6 M		
Chloromethane	<7 µg/kg	TM116	<70 #	<7 #	<7 #	<7 #		
Vinyl Chloride	<6 µg/kg	TM116	<60 M	<6 M	<6 M	<6 M		
Bromomethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Chloroethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Trichlorofluorormethane	<6 µg/kg	TM116	<60 M	<6 M	<6 M	<6 M		
1,1-Dichloroethene	<10 µg/kg	TM116	<100 #	<10 #	<10 #	<10 #		
Carbon Disulphide	<7 µg/kg	TM116	<70 M	<7 M	<7 M	<7 M		
Dichloromethane	<10 µg/kg	TM116	<100 #	<10 #	<10 #	<10 #		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
1,1-Dichloroethane	<8 µg/kg	TM116	<80 M	<8 M	<8 M	<8 M		
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<60 M	<6 M	<6 M	<6 M		
2,2-Dichloropropane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Bromochloromethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Chloroform	<8 µg/kg	TM116	<80 M	<8 M	<8 M	<8 M		
1,1,1-Trichloroethane	<7 µg/kg	TM116	<70 M	<7 M	<7 M	<7 M		
1,1-Dichloropropene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Carbontetrachloride	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
1,2-Dichloroethane	<5 µg/kg	TM116	<50 M	<5 M	<5 M	<5 M		
Benzene	<9 µg/kg	TM116	<90 M	<9 M	<9 M	<9 M		
Trichloroethene	<9 µg/kg	TM116	<90 #	<9 #	<9 #	<9 #		
1,2-Dichloropropane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Dibromomethane	<9 µg/kg	TM116	<90 M	<9 M	<9 M	<9 M		
Bromodichloromethane	<7 µg/kg	TM116	<70 M	<7 M	<7 M	<7 M		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Toluene	<7 µg/kg	TM116	<70 M	<7 M	<7 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<100	<10	<10	<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH8A	BH8A	BH9A	BH9A		
		Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-57	150828-57	150828-57	150828-57		
		Lab Sample No.(s)	11978081	11978083	11978079	11978080		
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<7 µg/kg	TM116	<70 M	<7 M	<7 M	<7 M		
Tetrachloroethene	<5 µg/kg	TM116	<50 M	<5 M	<5 M	<5 M		
Dibromochloromethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
1,2-Dibromoethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Chlorobenzene	<5 µg/kg	TM116	<50 M	<5 M	<5 M	<5 M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Ethylbenzene	<4 µg/kg	TM116	<40 M	<4 M	<4 M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	<100 #	<10 #	<10 #	<10 #		
o-Xylene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Styrene	<10 µg/kg	TM116	<100 #	<10 #	<10 #	<10 #		
Bromoform	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Isopropylbenzene	<5 µg/kg	TM116	<50 #	<5 #	<5 #	<5 #		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
1,2,3-Trichloropropane	<16 µg/kg	TM116	<160 M	<16 M	<16 M	<16 M		
Bromobenzene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
Propylbenzene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
2-Chlorotoluene	<9 µg/kg	TM116	<90 M	<9 M	<9 M	<9 M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<80 M	<8 M	<8 M	<8 M		
4-Chlorotoluene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
tert-Butylbenzene	<14 µg/kg	TM116	<140 M	<14 M	<14 M	<14 M		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<90 #	<9 #	<9 #	<9 #		
sec-Butylbenzene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
4-Isopropyltoluene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
1,3-Dichlorobenzene	<8 µg/kg	TM116	<80 M	<8 M	<8 M	<8 M		
1,4-Dichlorobenzene	<5 µg/kg	TM116	<50 M	<5 M	<5 M	<5 M		
n-Butylbenzene	<11 µg/kg	TM116	<110	<11	<11	<11		
1,2-Dichlorobenzene	<10 µg/kg	TM116	<100 M	<10 M	<10 M	<10 M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<140 M	<14 M	<14 M	<14 M		
Tert-amyl methyl ether	<10 µg/kg	TM116	<100 #	<10 #	<10 #	<10 #		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<200	<20	<20	<20		
Hexachlorobutadiene	<20 µg/kg	TM116	<200	<20	<20	<20		
Naphthalene	<13 µg/kg	TM116	<130 M	<13 M	<13 M	<13 M		

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH8A	BH8A	BH9A	BH9A		
		Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30		
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid		
		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
		Sampled Time	.	.	.	.		
		Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
		SDG Ref	150828-57	150828-57	150828-57	150828-57		
		Lab Sample No.(s)	11978081	11978083	11978079	11978080		
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<200 #	<20 #	<20 #	<20 #		

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH8A 0.50 SOLID 26/08/2015 00:00:00 01/09/2015 12:03:31 150828-57 11978081 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH9A 0.50 SOLID 26/08/2015 00:00:00 01/09/2015 11:54:18 150828-57 11978079 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM243		Mixed Anions In Soils By Kone		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	11978081	11978083	11978079	11978080
Customer Sample Ref.	BH8A	BH8A	BH9A	BH9A
AGS Ref.				
Depth	0.50	3.00 - 3.50	0.50	2.20 - 3.30
Type	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	04-Sep-2015		04-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	02-Sep-2015	02-Sep-2015	03-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	08-Sep-2015	04-Sep-2015
pH	08-Sep-2015	08-Sep-2015	08-Sep-2015	04-Sep-2015
Sample description	01-Sep-2015	29-Aug-2015	01-Sep-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	07-Sep-2015	07-Sep-2015	07-Sep-2015	04-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
VOC MS (S)	03-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1292	QC 1205
Exchangeable Ammonium as NH4	TM024	**86.07** 79.30 : 104.61	**98.01** 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1262	QC 1219
Easily Liberated Sulphide	TM180	**88.38** 49.14 : 123.89	**93.21** 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194	QC 1146
Total Aliphatics >C12-C35	TM173	**85.21** 62.50 : 112.50	**87.08** 70.80 : 111.51	**90.21** 71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194	QC 1146
Total Aromatics >EC12-EC35	TM173	**82.67** 60.62 : 126.95	**82.67** 65.21 : 121.32	**83.33** 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1105	QC 1173
Benzene by GC (Moisture Corrected)	TM089	**83.5** 79.00 : 121.00	**95.0** 76.33 : 121.87
Ethylbenzene by GC (Moisture Corrected)	TM089	**83.5** 79.00 : 121.00	**99.0** 75.73 : 123.83
m & p Xylene by GC (Moisture Corrected)	TM089	**83.75** 79.00 : 121.00	**97.5** 75.52 : 120.32
MTBE GC-FID (Moisture Corrected)	TM089	**85.5** 74.48 : 125.29	**94.0** 77.89 : 119.70
o Xylene by GC (Moisture Corrected)	TM089	**83.5** 79.00 : 121.00	**93.5** 74.15 : 124.59
QC	TM089	**112.68** 73.70 : 123.60	**99.2** 62.31 : 122.61
Toluene by GC (Moisture Corrected)	TM089	**83.5** 79.00 : 121.00	**93.5** 77.91 : 122.33

Hexavalent Chromium (s)

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	**100.0** 92.20 : 106.60	**102.0** 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1272	QC 1286	QC 1235
Aluminium	TM181	**108.46** 86.49 : 129.71	**109.23** 86.49 : 129.71	**98.46** 86.49 : 129.71
Antimony	TM181	**98.92** 77.50 : 122.50	**98.21** 77.50 : 122.50	**97.13** 77.50 : 122.50
Arsenic	TM181	**94.69** 82.63 : 117.37	**93.81** 82.63 : 117.37	**92.92** 82.63 : 117.37
Barium	TM181	**99.25** 79.45 : 120.55	**99.25** 79.45 : 120.55	**95.49** 79.45 : 120.55
Beryllium	TM181	**101.09** 85.92 : 121.27	**101.24** 85.92 : 121.27	**100.47** 85.92 : 121.27
Boron	TM181	**112.21** 77.41 : 143.83	**115.27** 77.41 : 143.83	**99.24** 77.41 : 143.83
Cadmium	TM181	**97.65** 81.95 : 118.05	**97.31** 81.95 : 118.05	**96.47** 81.95 : 118.05
Chromium	TM181	**109.41** 81.29 : 118.71	**99.22** 81.29 : 118.71	**93.73** 81.29 : 118.71
Cobalt	TM181	**97.83** 83.86 : 116.14	**97.17** 83.86 : 116.14	**96.5** 83.86 : 116.14
Copper	TM181	**100.68** 78.57 : 121.43	**100.14** 78.57 : 121.43	**99.46** 78.57 : 121.43
Iron	TM181	**102.76** 87.50 : 122.82	**100.69** 87.50 : 122.82	**97.24** 87.50 : 122.82
Lead	TM181	**95.28** 74.18 : 117.25	**93.7** 74.18 : 117.25	**94.09** 74.18 : 117.25
Manganese	TM181	**100.0** 82.91 : 117.09	**100.0** 82.91 : 117.09	**100.0** 82.91 : 117.09
Mercury	TM181	**94.47** 81.99 : 118.01	**93.97** 81.99 : 118.01	**92.46** 81.99 : 118.01
Molybdenum	TM181	**100.64** 81.45 : 118.55	**94.75** 81.45 : 118.55	**93.79** 81.45 : 118.55
Nickel	TM181	**109.88** 79.64 : 120.36	**98.26** 79.64 : 120.36	**95.93** 79.64 : 120.36
Phosphorus	TM181	**99.11** 81.03 : 118.97	**97.91** 81.03 : 118.97	**98.21** 81.03 : 118.97
Selenium	TM181	**106.5** 87.05 : 121.93	**107.01** 87.05 : 121.93	**108.21** 87.05 : 121.93
Strontium	TM181	**102.3** 83.64 : 116.36	**102.68** 83.64 : 116.36	**96.55** 83.64 : 116.36
Thallium	TM181	**92.21** 77.50 : 122.50	**90.55** 77.50 : 122.50	**88.72** 77.50 : 122.50
Tin	TM181	**94.35** 78.30 : 113.98	**93.69** 78.30 : 113.98	**92.69** 78.30 : 113.98
Titanium	TM181	**103.91** 71.02 : 128.98	**103.13** 71.02 : 128.98	**97.66** 71.02 : 128.98

Metals in solid samples by OES

		QC 1272	QC 1286	QC 1235
Vanadium	TM181	**97.06** 86.61 : 113.39	**96.76** 86.61 : 113.39	**93.53** 86.61 : 113.39
Zinc	TM181	**100.97** 89.82 : 114.54	**100.32** 89.82 : 114.54	**98.05** 89.82 : 114.54

PAH by GCMS

Component	**Method Code**	QC 1191	QC 1196	QC 1106	QC 1137
Acenaphthene	TM218	**85.5** 70.00 : 130.00	**89.5** 78.75 : 116.25	**91.5** 78.84 : 114.36	**96.0** 78.84 : 114.36
Acenaphthylene	TM218	**78.0** 70.00 : 130.00	**85.5** 76.45 : 110.05	**85.5** 65.50 : 119.50	**90.0** 65.50 : 119.50
Anthracene	TM218	**79.0** 70.00 : 130.00	**89.0** 67.15 : 124.45	**91.0** 75.54 : 110.88	**97.5** 75.54 : 110.88
Benz(a)anthracene	TM218	**81.0** 70.00 : 130.00	**97.5** 82.00 : 127.00	**97.5** 78.02 : 127.38	**104.0** 78.02 : 127.38
Benzo(a)pyrene	TM218	**80.0** 70.00 : 130.00	**99.5** 75.60 : 124.20	**99.5** 79.21 : 128.01	**105.5** 79.21 : 128.01
Benzo(b)fluoranthene	TM218	**78.0** 70.00 : 130.00	**99.0** 81.20 : 121.77	**96.0** 86.21 : 131.42	**101.5** 86.21 : 131.42
Benzo(ghi)perylene	TM218	**83.0** 70.00 : 130.00	**96.0** 77.49 : 119.12	**95.0** 80.11 : 120.52	**100.0** 80.11 : 120.52
Benzo(k)fluoranthene	TM218	**79.0** 70.00 : 130.00	**96.5** 83.50 : 116.50	**97.0** 78.77 : 120.72	**103.0** 78.77 : 120.72
Chrysene	TM218	**77.5** 70.00 : 130.00	**95.5** 78.35 : 114.42	**94.5** 78.77 : 118.99	**100.5** 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	**79.0** 70.00 : 130.00	**95.0** 77.15 : 122.45	**93.5** 76.39 : 122.63	**100.0** 76.39 : 122.63
Fluoranthene	TM218	**83.5** 70.00 : 130.00	**92.5** 79.08 : 114.40	**95.0** 77.25 : 117.75	**101.0** 77.25 : 117.75
Fluorene	TM218	**86.0** 70.00 : 130.00	**91.5** 79.03 : 113.38	**95.5** 79.28 : 117.35	**98.5** 79.28 : 117.35
Indeno(123cd)pyrene	TM218	**78.5** 70.00 : 130.00	**96.5** 75.65 : 125.15	**93.0** 78.87 : 122.50	**99.0** 78.87 : 122.50
Naphthalene	TM218	**91.5** 70.00 : 130.00	**92.5** 77.25 : 112.60	**93.0** 74.75 : 118.25	**95.0** 74.75 : 118.25
Phenanthrene	TM218	**84.0** 70.00 : 130.00	**92.0** 78.25 : 115.44	**95.0** 78.61 : 113.98	**100.5** 78.61 : 113.98
Pyrene	TM218	**82.5** 70.00 : 130.00	**91.0** 78.07 : 114.06	**94.0** 76.15 : 115.26	**99.5** 76.15 : 115.26

pH

Component	**Method Code**	QC 1208	QC 1218	QC 1227	QC 1293
pH	TM133	**100.13** 97.19 : 102.81	**100.25** 97.19 : 102.81	**100.5** 97.19 : 102.81	**100.63** 97.19 : 102.81

Total Organic Carbon

Total Organic Carbon

Component	Method Code	QC 1254	QC 1245
Total Organic Carbon	TM132	**100.46** 88.82 : 111.18	**98.17** 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1218	QC 1273
Total Sulphate	TM221	**115.15** 78.49 : 121.51	**103.79** 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1128	QC 1175
1,1,1,2-tetrachloroethane	TM116	**95.6** 83.24 : 124.28	**102.6** 83.24 : 124.28
1,1,1-Trichloroethane	TM116	**100.8** 81.77 : 121.07	**102.4** 81.77 : 121.07
1,1,2-Trichloroethane	TM116	**100.4** 79.24 : 112.23	**94.2** 79.24 : 112.23
1,1-Dichloroethane	TM116	**103.0** 72.58 : 116.06	**106.6** 72.58 : 116.06
1,2-Dichloroethane	TM116	**118.8** 77.50 : 122.50	**112.0** 77.50 : 122.50
1,4-Dichlorobenzene	TM116	**96.2** 73.23 : 116.39	**95.4** 73.23 : 116.39
2-Chlorotoluene	TM116	**85.6** 69.22 : 110.64	**86.6** 69.22 : 110.64
4-Chlorotoluene	TM116	**89.0** 68.57 : 106.26	**87.4** 68.57 : 106.26
Benzene	TM116	**103.2** 84.33 : 124.27	**106.0** 84.33 : 124.27
Carbon Disulphide	TM116	**110.4** 77.20 : 122.80	**107.4** 77.20 : 122.80
Carbontetrachloride	TM116	**98.2** 84.20 : 119.90	**102.8** 84.20 : 119.90
Chlorobenzene	TM116	**102.4** 85.28 : 129.96	**103.2** 85.28 : 129.96
Chloroform	TM116	**108.2** 82.73 : 119.72	**106.6** 82.73 : 119.72
Chloromethane	TM116	**123.4** 55.16 : 145.46	**117.2** 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	**108.4** 73.56 : 118.93	**108.4** 73.56 : 118.93
Dibromomethane	TM116	**104.4** 73.40 : 116.60	**98.0** 73.40 : 116.60
Dichloromethane	TM116	**113.2** 76.16 : 121.98	**108.2** 76.16 : 121.98

VOC MS (S)

		QC 1128	QC 1175
Ethylbenzene	TM116	**94.0** 80.07 : 125.98	**99.2** 80.07 : 125.98
Hexachlorobutadiene	TM116	**69.0** 30.92 : 132.28	**89.2** 30.92 : 132.28
Isopropylbenzene	TM116	**82.6** 69.27 : 125.32	**92.6** 69.27 : 125.32
Naphthalene	TM116	**110.0** 79.15 : 121.98	**107.4** 79.15 : 121.98
o-Xylene	TM116	**77.6** 75.46 : 111.52	**84.8** 75.46 : 111.52
p/m-Xylene	TM116	**90.2** 76.97 : 121.75	**96.6** 76.97 : 121.75
Sec-Butylbenzene	TM116	**69.6** 49.27 : 129.90	**85.8** 49.27 : 129.90
Tetrachloroethene	TM116	**102.2** 87.96 : 133.65	**110.6** 87.96 : 133.65
Toluene	TM116	**99.0** 79.23 : 114.58	**100.6** 79.23 : 114.58
Trichloroethene	TM116	**94.6** 84.09 : 114.24	**98.4** 84.09 : 114.24
Trichlorofluoromethane	TM116	**107.4** 76.22 : 114.82	**104.4** 76.22 : 114.82
Vinyl Chloride	TM116	**98.2** 59.68 : 118.68	**100.8** 59.68 : 118.68

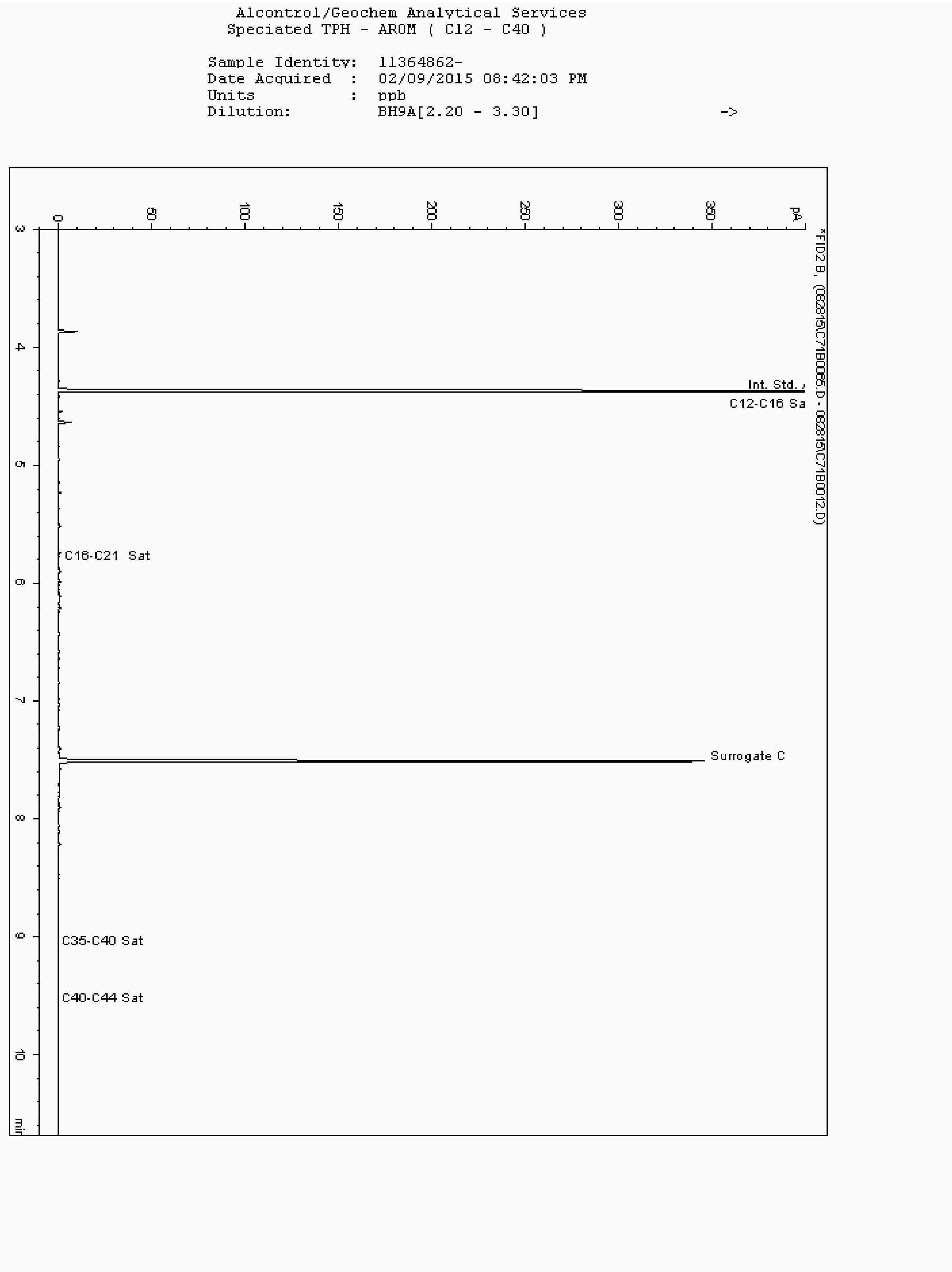
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11982640	**Depth :**	2.20 - 3.30
		Sample ID :	BH9A		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364862-
Date Acquired  :  02/09/2015 08:42:03 PM
Units          :  ppb
Dilution:         BH9A[2.20 - 3.30]                ->
```

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11982647	**Depth :**	3.00 - 3.50
		Sample ID :	BH8A		

```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364901-
Date Acquired  :  02/09/2015 07:22:34 PM
Units          :  ppb
Dilution:         BH8A[3.00 - 3.50]              ->
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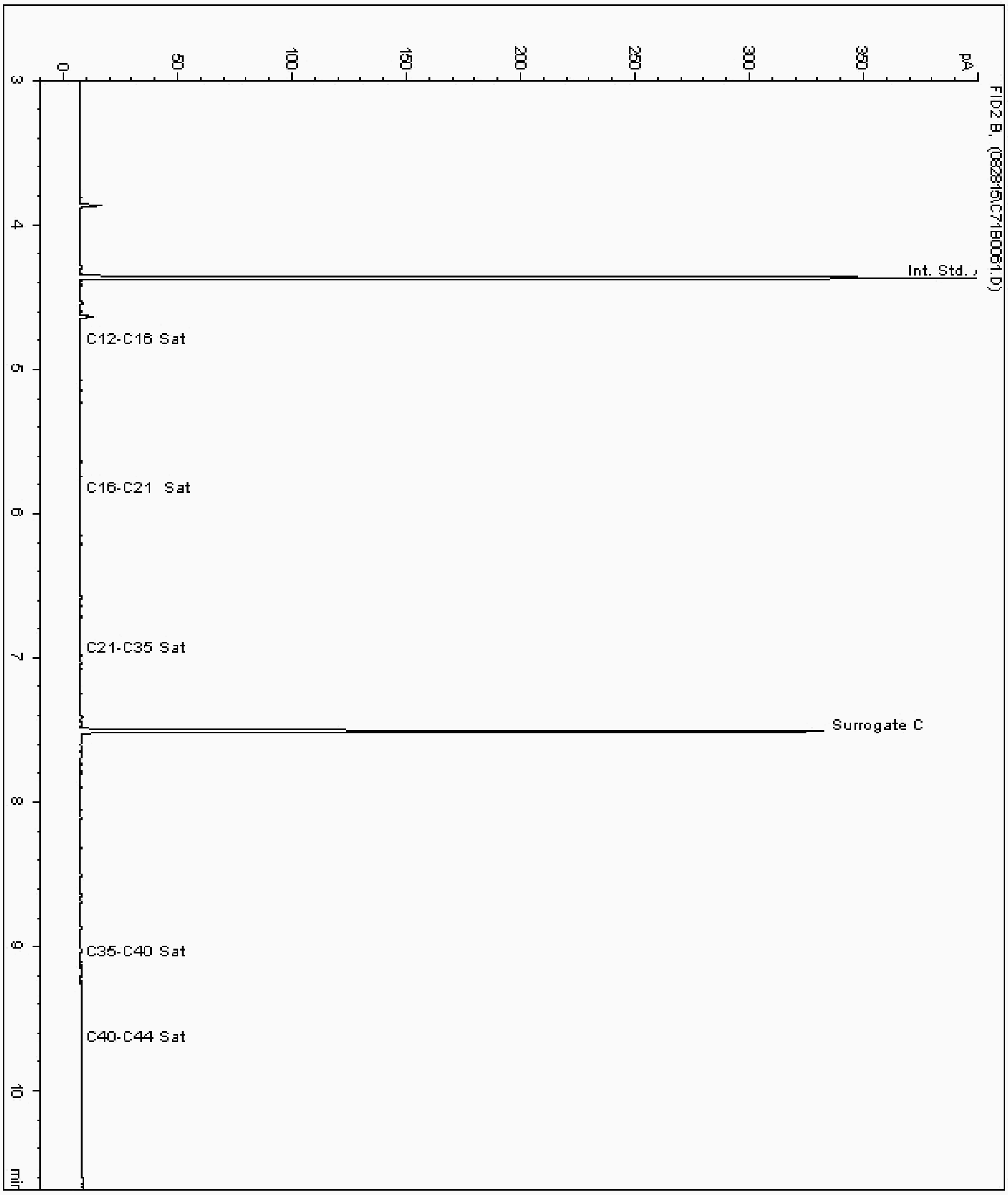


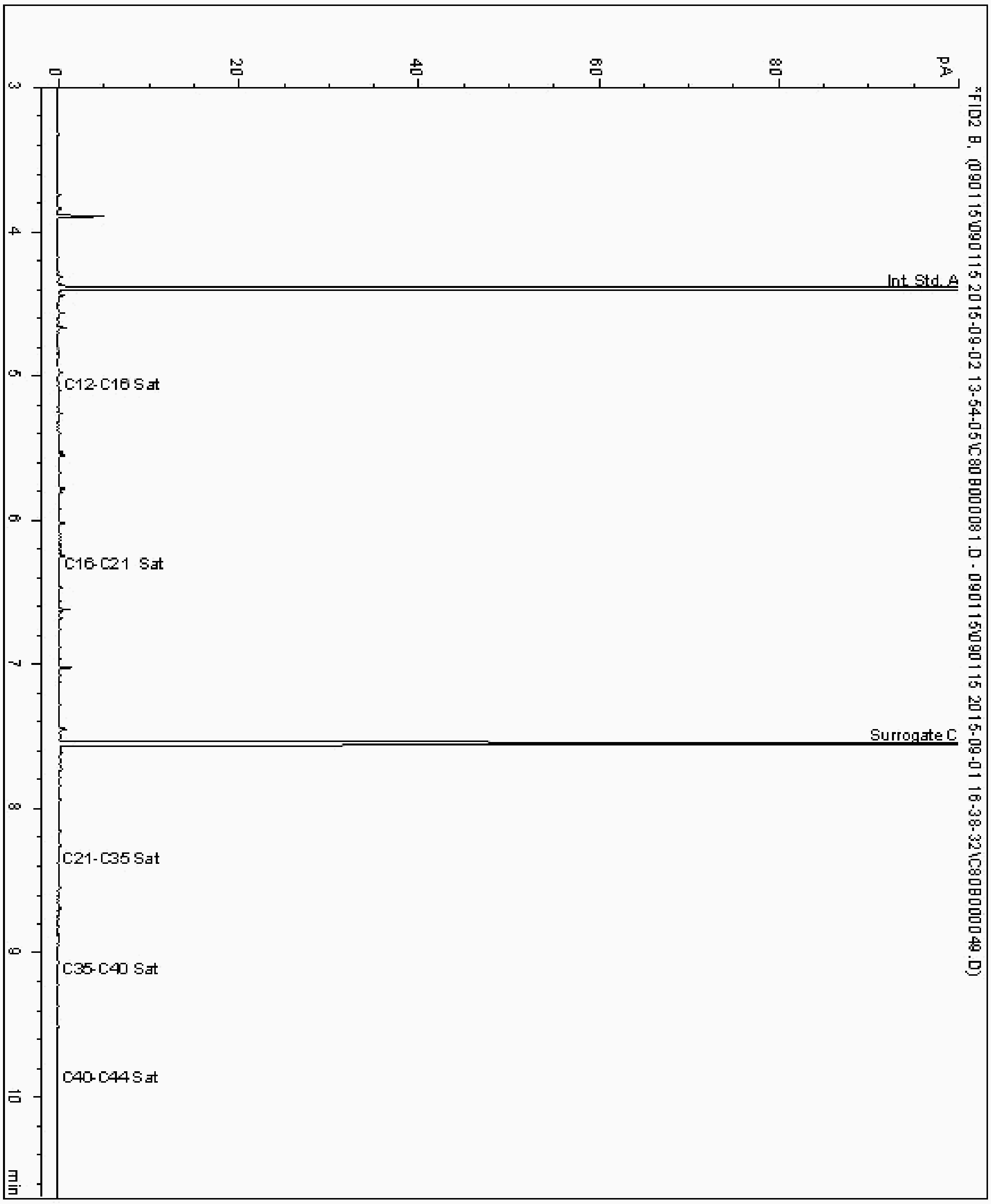
SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11989024	**Depth :**	0.50
		Sample ID :	BH9A		

```
          Alcontrol/Geochem Analytical Services
        Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11364846-
Date Acquired  :  02/09/15 15:29:04
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.980
```



CERTIFICATE OF ANALYSIS

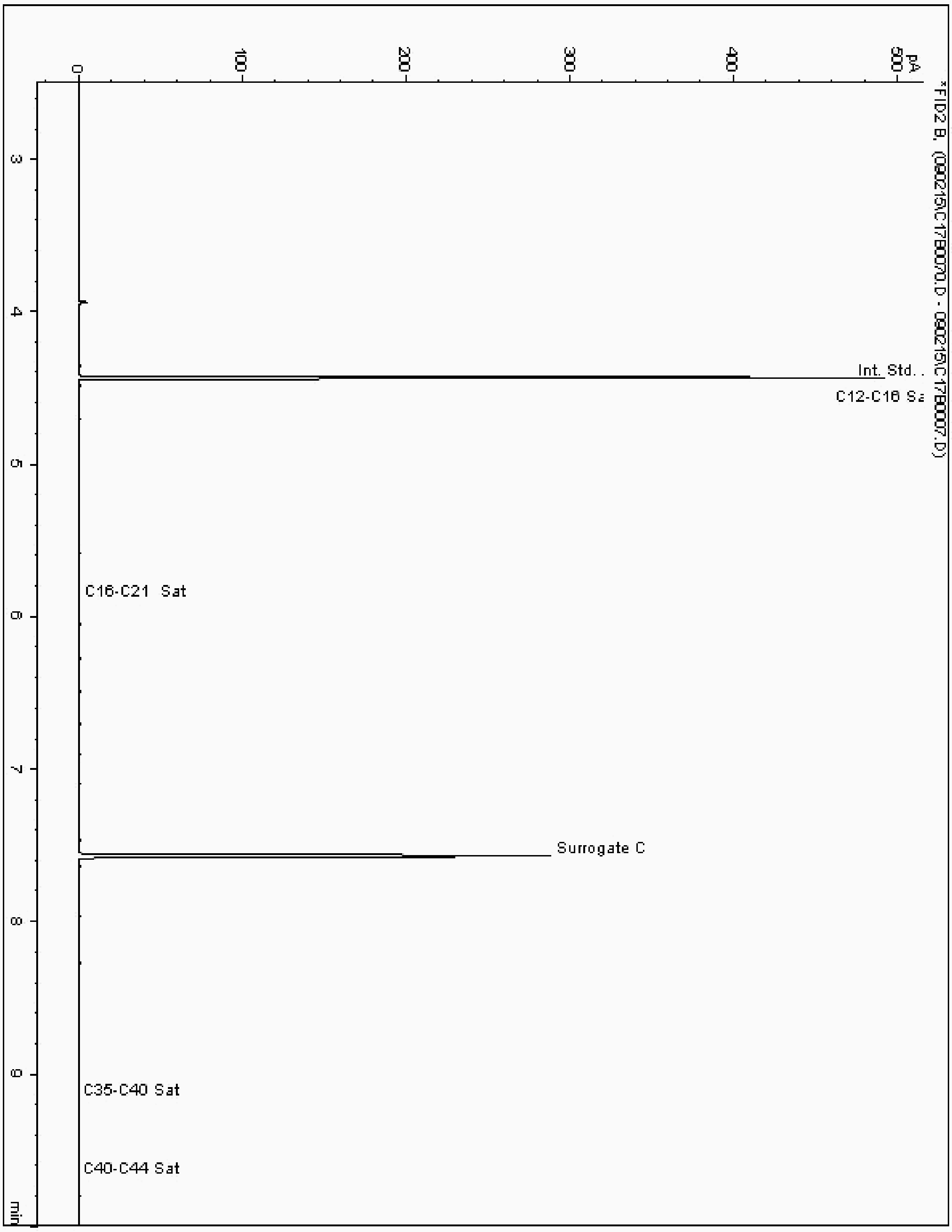
SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11989052	**Depth :**	0.50
		Sample ID :	BH8A		

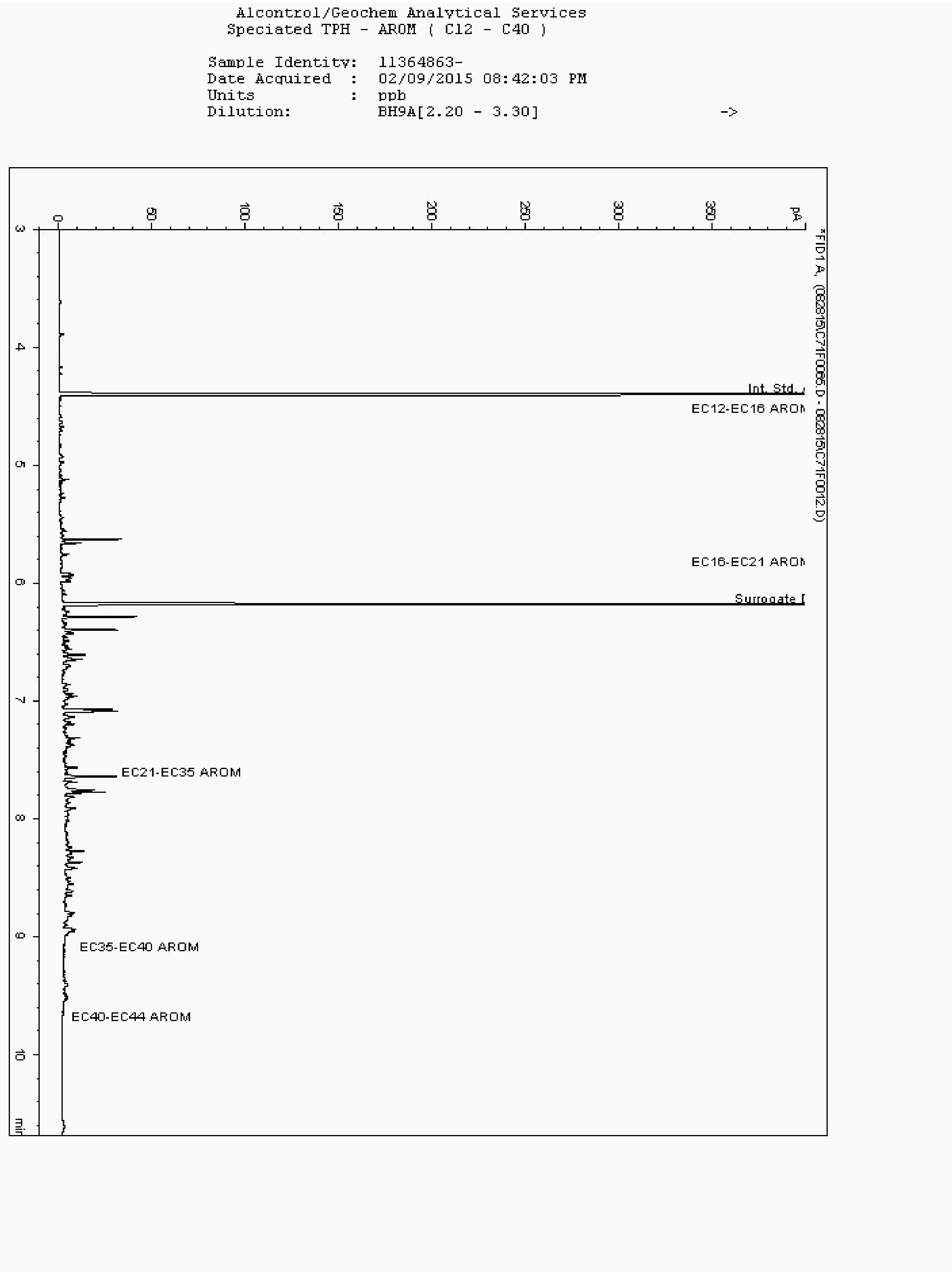
```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11364879-
Date Acquired  :  03/09/2015 09:03:05 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.950
```



Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)
Sample No : 11982640
Sample ID : BH9A
Depth : 2.20 - 3.30



```
      Alcontrol/Geochem Analytical Services
    Speciated TPH - AROM ( C12 - C40 )

  Sample Identity:  11364863-
  Date Acquired  :  02/09/2015 08:42:03 PM
  Units          :  ppb
  Dilution:         BH9A[2.20 - 3.30]                  ->
```

Chromatogram

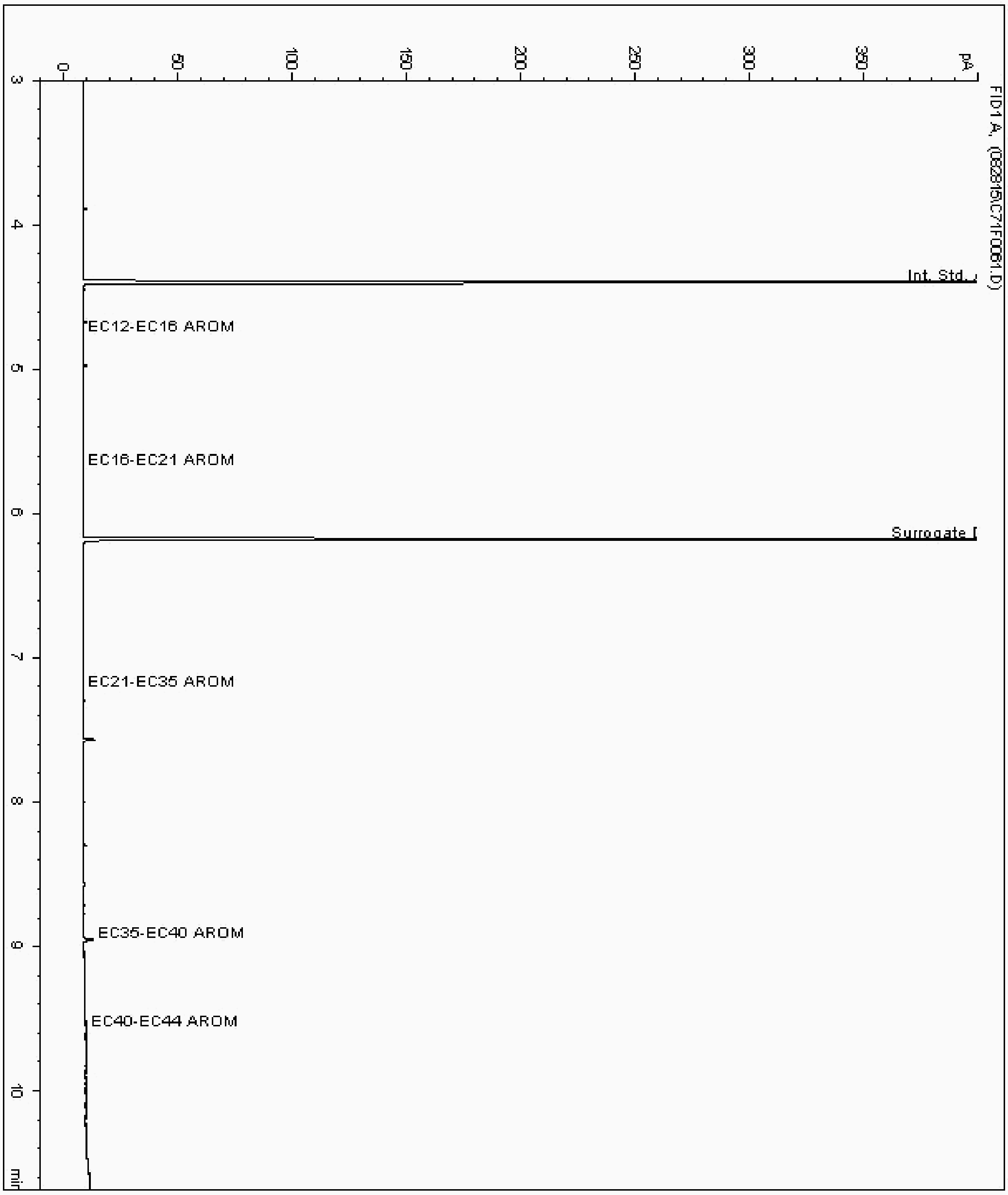
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11982647
Sample ID : BH8A

Depth : 3.00 - 3.50

```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11364902-
Date Acquired  :  02/09/2015 07:22:34 PM
Units          :  ppb
Dilution:         BH8A[3.00 - 3.50]              ->
```

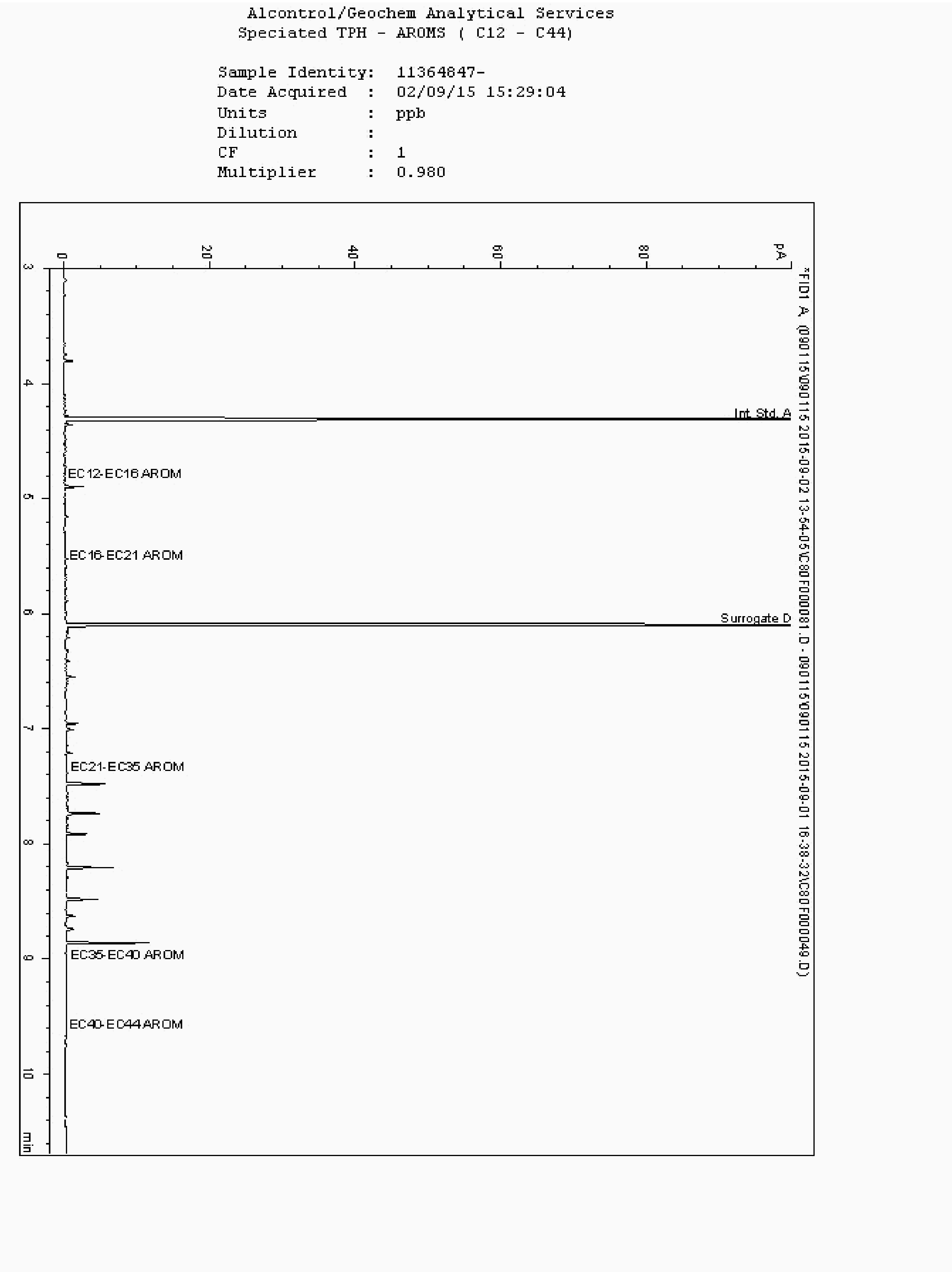


CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11989024	**Depth :**	0.50
		Sample ID :	BH9A		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROMS ( C12 - C44)

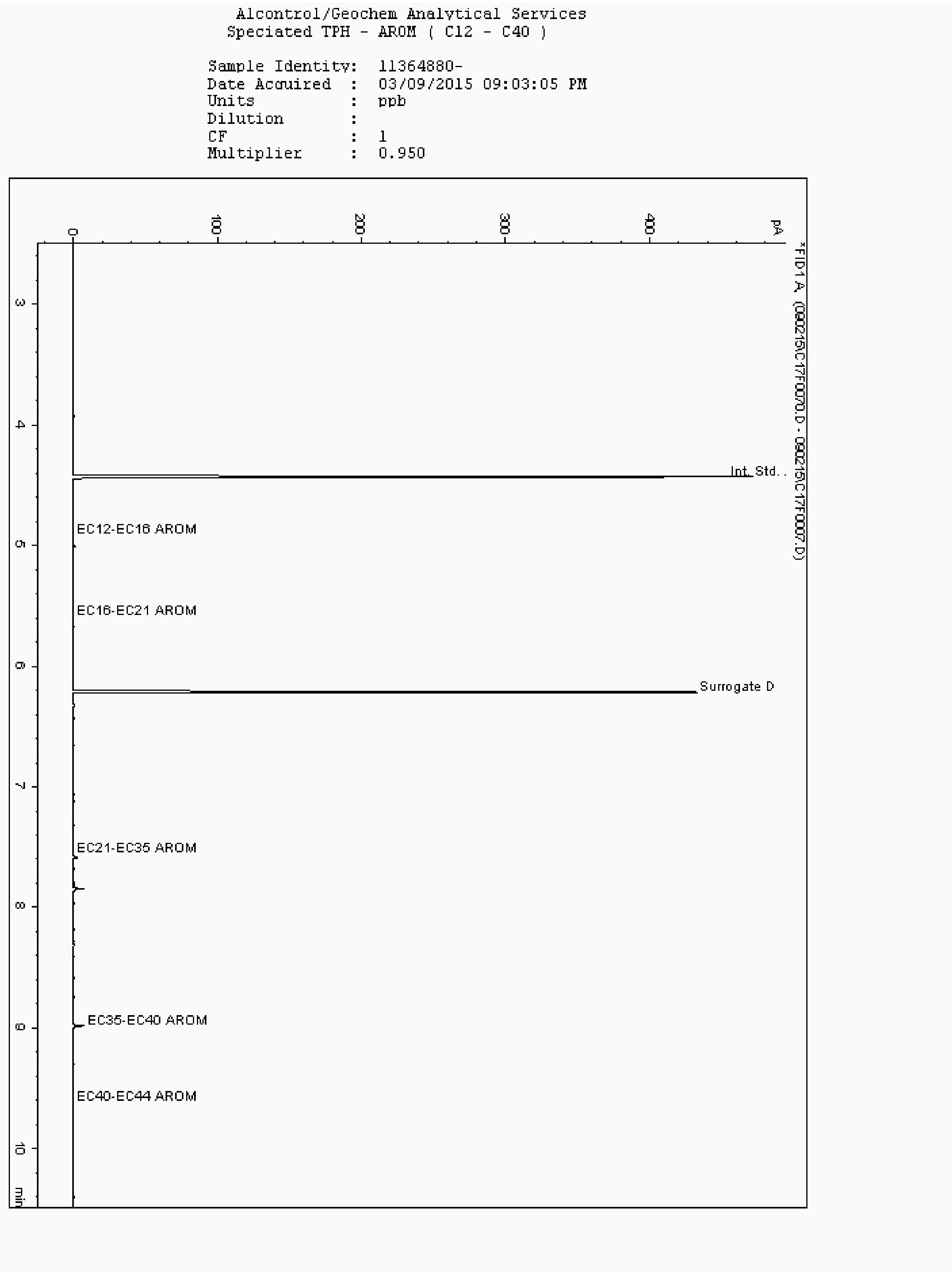
Sample Identity:  11364847-
Date Acquired   :  02/09/15 15:29:04
Units           :  ppb
Dilution        :
CF              :  1
Multiplier      :  0.980
```

CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11989052	**Depth :**	0.50
		Sample ID :	BH8A		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

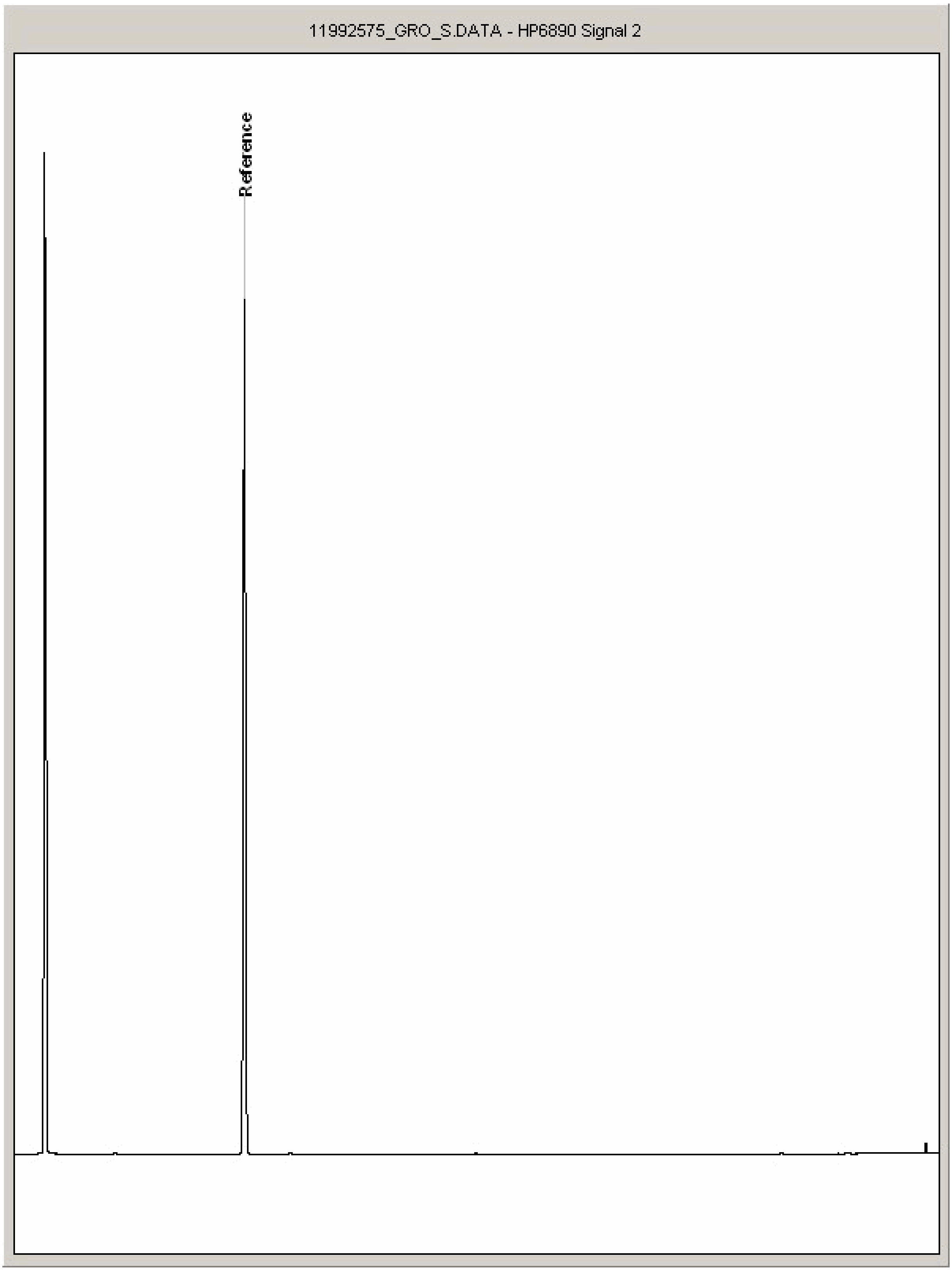
Sample Identity:  11364880-
Date Acquired  :  03/09/2015 09:03:05 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.950
```

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11992575
Sample ID : BH8A

Depth : 3.00 - 3.50

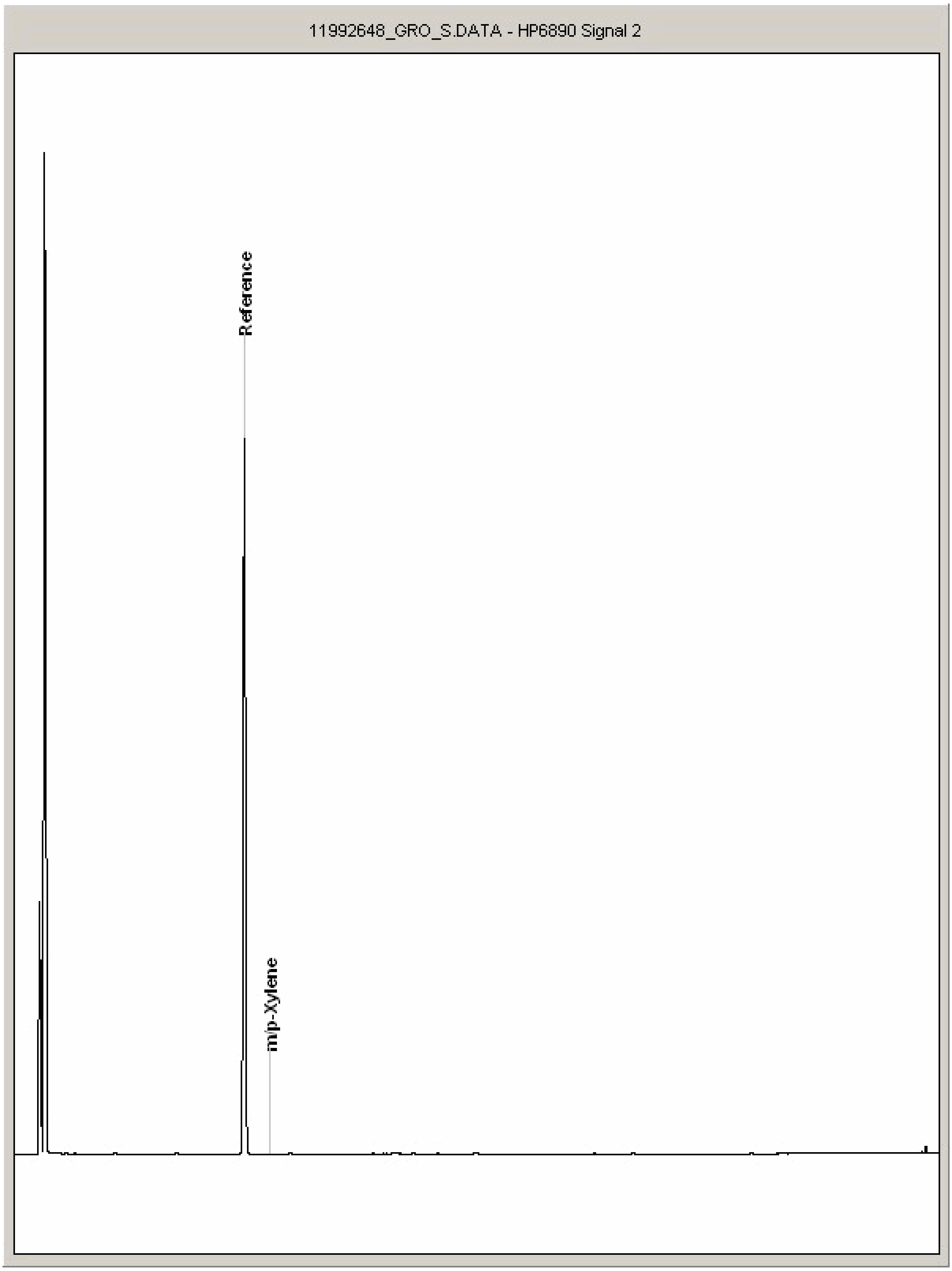


CERTIFICATE OF ANALYSIS

SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11992648	**Depth :**	2.20 - 3.30
		Sample ID :	BH9A		



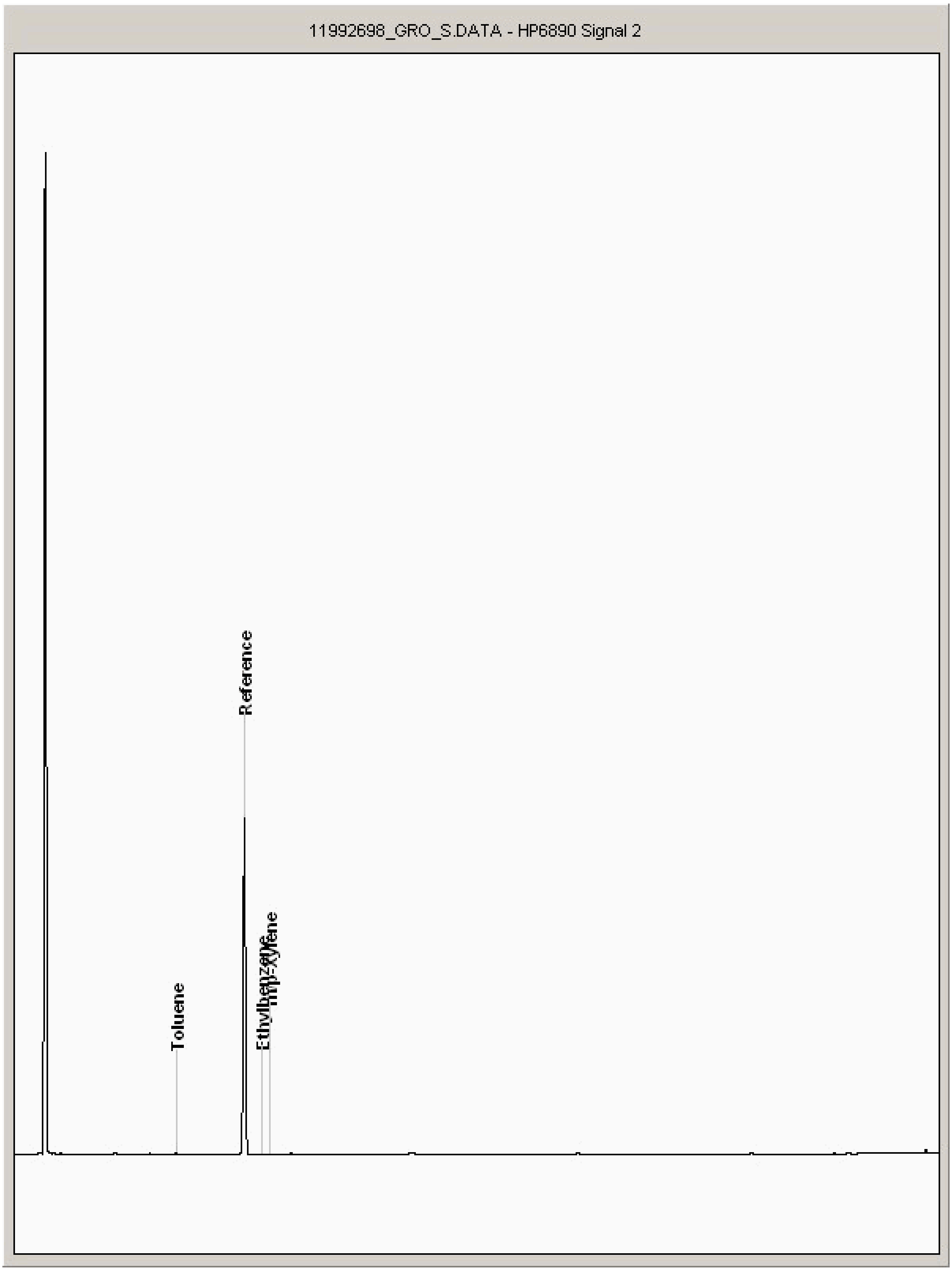
Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11992698

Sample ID : BH8A

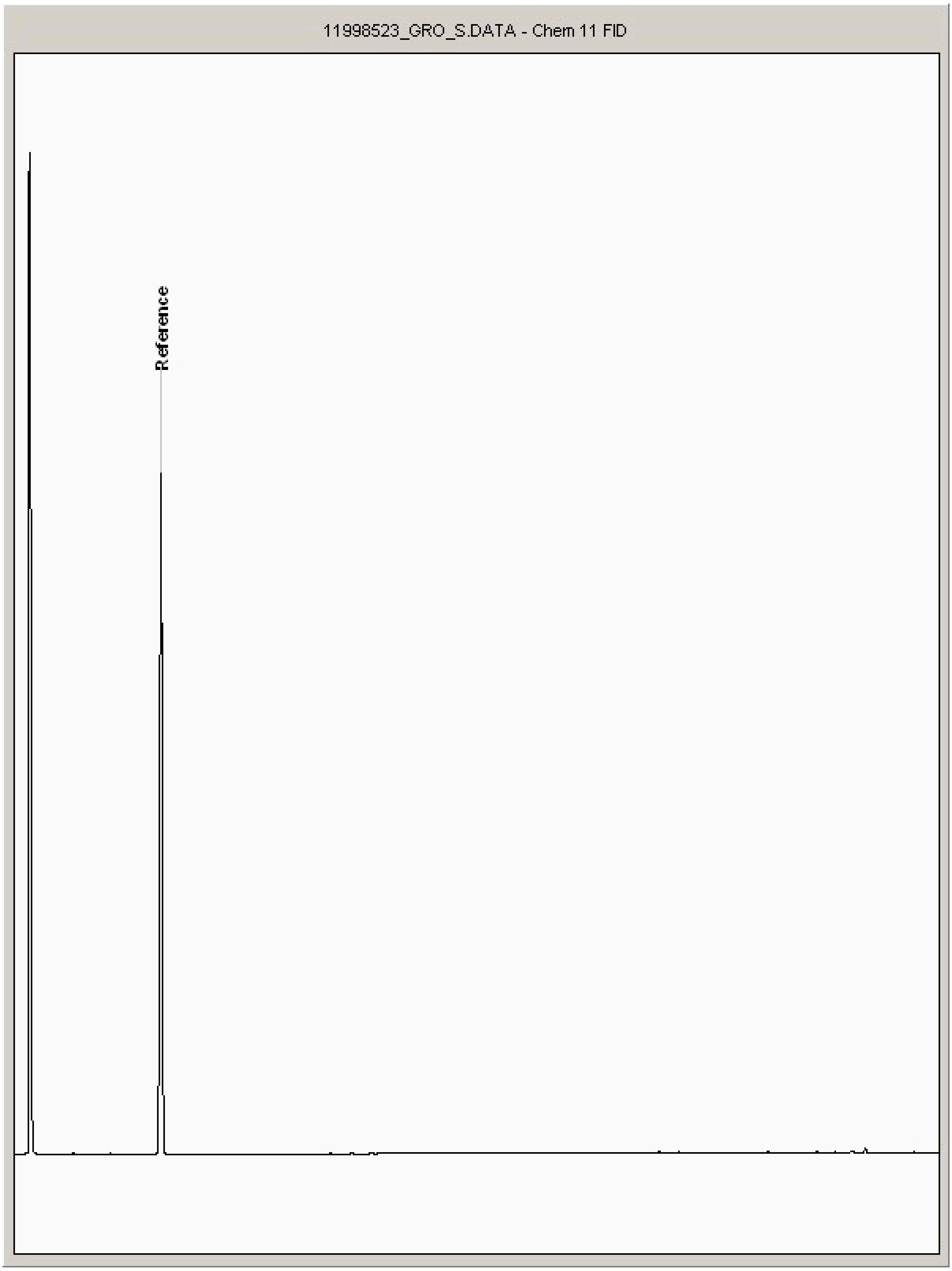
Depth : 0.50



SDG:	150828-57	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329023
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11998523	**Depth :**	0.50
		Sample ID :	BH9A		



Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Last Updated : 2010/09/08

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

ALcontrol Laboratories

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AECOM
St. George's House
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Greater London
SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date:	10 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150829-68
Your Reference:	
Location:	Stag Brewery
Report No:	329373

We received 4 samples on Saturday August 29, 2015 and 4 of these samples were scheduled for analysis which was completed on Thursday September 10, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING
1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11984669	BH3A		0.50	28/08/2015
11984670	BH3A		1.50 - 2.00	28/08/2015
11984671	BH5A		0.50	28/08/2015
11984672	BH5A		2.50 - 3.00	28/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 150829-68
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329373
Superseded Report:

SOLID

Results Legend

X **Test**

N **No Determination Possible**

	Lab Sample No(s)		11984669			11984670	11984671			11984672		
	Customer Sample Reference		BH3A			BH3A	BH5A			BH5A		
	AGS Reference											
	Depth (m)		0.50			1.50 - 2.00	0.50			2.50 - 3.00		
	Container		250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (AL	400g Tub (ALE214)	60g VOC (ALE215)
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3		X				X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3		X				X			X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3		X				X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 3	X				X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 3	X				X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3			X				X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3		X				X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 3	X				X			X		
PAH by GCMS	All	NDPs: 0 Tests: 3	X				X			X		
pH	All	NDPs: 0 Tests: 3		X				X			X	
Sample description	All	NDPs: 0 Tests: 4	X			X	X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 3	X				X			X		
Total Sulphate	All	NDPs: 0 Tests: 3	X				X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	X				X			X		
VOC MS (S)	All	NDPs: 0 Tests: 3			X				X			X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11984669	BH3A	0.50	Dark Brown	Sand	0.1 - 2 mm	Stones	None
11984670	BH3A	1.50 - 2.00	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	None
11984671	BH5A	0.50	Light Brown	Sand	0.1 - 2 mm	Stones	Vegetation
11984672	BH5A	2.50 - 3.00	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH3A	BH5A	BH5A
Depth (m)	0.50	0.50	2.50 - 3.00
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	28/08/2015	28/08/2015	28/08/2015
Sampled Time	.	.	.
Date Received	29/08/2015	29/08/2015	29/08/2015
SDG Ref	150829-68	150829-68	150829-68
Lab Sample No.(s)	11984669	11984671	11984672
AGS Reference			

Component	**LOD/Units**	**Method**	BH3A	BH5A	BH5A
Moisture Content Ratio (% of as received sample)	%	PM024	6.3	7	5.8
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	27.7 M	<15 M
Organic Carbon, Total	<0.2 %	TM132	1.52 M	1.33 M	<0.2 M
pH	1 pH Units	TM133	8.22 M	7.86 M	7.86 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6 #	<0.6 #
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 & #	<15 & #	<15 & #
Arsenic	<0.6 mg/kg	TM181	18.9 M	19.1 M	22.4 M
Cadmium	<0.02 mg/kg	TM181	0.475 M	1.13 M	0.533 M
Chromium	<0.9 mg/kg	TM181	19.5 M	25.4 M	21.6 M
Copper	<1.4 mg/kg	TM181	49.3 M	28 M	3.56 M
Lead	<0.7 mg/kg	TM181	178 M	85.7 M	9.05 M
Mercury	<0.14 mg/kg	TM181	0.151 M	1.9 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	29.2 M	17.1 M	20.7 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	89.3 M	101 M	28.6 M
Sulphate, Total	<48 mg/kg	TM221	579 M	356 M	95.9 M

CERTIFICATE OF ANALYSIS

SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH3A	BH5A	BH5A			
		Depth (m)	0.50	0.50	2.50 - 3.00			
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
		Date Sampled	28/08/2015	28/08/2015	28/08/2015			
		Sampled Time	.	.	.			
		Date Received	29/08/2015	29/08/2015	29/08/2015			
		SDG Ref	150829-68	150829-68	150829-68			
		Lab Sample No.(s)	11984669	11984671	11984672			
		AGS Reference						
Component	**LOD/Units**	**Method**						
Naphthalene-d8 % recovery**	%	TM218	95	96.9	97.3			
Acenaphthene-d10 % recovery**	%	TM218	90.7	92.6	96			
Phenanthrene-d10 % recovery**	%	TM218	89.2	90.5	94.6			
Chrysene-d12 % recovery**	%	TM218	83.6	85	86.6			
Perylene-d12 % recovery**	%	TM218	87.7	92.4	90.2			
Naphthalene	<9 µg/kg	TM218	34.7 M	15.9 M	<9 M			
Acenaphthylene	<12 µg/kg	TM218	29.9 M	28.9 M	<12 M			
Acenaphthene	<8 µg/kg	TM218	<8 M	9.32 M	<8 M			
Fluorene	<10 µg/kg	TM218	<10 M	<10 M	<10 M			
Phenanthrene	<15 µg/kg	TM218	188 M	147 M	<15 M			
Anthracene	<16 µg/kg	TM218	36 M	39.9 M	<16 M			
Fluoranthene	<17 µg/kg	TM218	445 M	417 M	<17 M			
Pyrene	<15 µg/kg	TM218	384 M	359 M	29.8 M			
Benz(a)anthracene	<14 µg/kg	TM218	245 M	227 M	<14 M			
Chrysene	<10 µg/kg	TM218	291 M	236 M	24.5 M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	459 M	391 M	23.5 M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	134 M	132 M	<14 M			
Benzo(a)pyrene	<15 µg/kg	TM218	289 M	260 M	<15 M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	210 M	156 M	<18 M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	63.4 M	46.8 M	<23 M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	245 M	196 M	<24 M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	3050	2660	<118			

CERTIFICATE OF ANALYSIS

SDG: 150829-68
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329373
Superseded Report:

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH3A	BH5A	BH5A			
Depth (m)	0.50	0.50	2.50 - 3.00			
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
Date Sampled	28/08/2015	28/08/2015	28/08/2015			
Sampled Time	.	.	.			
Date Received	29/08/2015	29/08/2015	29/08/2015			
SDG Ref	150829-68	150829-68	150829-68			
Lab Sample No.(s)	11984669	11984671	11984672			
AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	69	72	99			
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	<44 M			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 M	<5 M	<5 M			
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M			
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2 M			
Ethylbenzene	<3 µg/kg	TM089	5.34 M	<3 M	<3 M			
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M			
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M			
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9			
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10			
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100			
Aliphatics >C16-C21	<100 µg/kg	TM173	3140	234	<100			
Aliphatics >C21-C35	<100 µg/kg	TM173	9790	6660	<100			
Aliphatics >C35-C44	<100 µg/kg	TM173	3030	968	<100			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	15900	7860	<100			
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10			
Aromatics >EC12-EC16	<100 µg/kg	TM173	714	358	<100			
Aromatics >EC16-EC21	<100 µg/kg	TM173	4780	2620	<100			
Aromatics >EC21-EC35	<100 µg/kg	TM173	24700	16100	<100			
Aromatics >EC35-EC44	<100 µg/kg	TM173	12700	8050	<100			
Aromatics >EC40-EC44	<100 µg/kg	TM173	5160	2870	<100			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	42900	27100	<100			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	58900	35000	<100			

SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH3A	BH5A	BH5A			
		Depth (m)	0.50	0.50	2.50 - 3.00			
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
		Date Sampled	28/08/2015	28/08/2015	28/08/2015			
		Sampled Time	.	.	.			
		Date Received	29/08/2015	29/08/2015	29/08/2015			
		SDG Ref	150829-68	150829-68	150829-68			
		Lab Sample No.(s)	11984669	11984671	11984672			
		AGS Reference						
Component	**LOD/Units**	**Method**						
Dibromofluoromethane**	%	TM116	116	122	120			
Toluene-d8**	%	TM116	104	103	113			
4-Bromofluorobenzene**	%	TM116	69.3	72.4	102			
Dichlorodifluoromethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M			
Chloromethane	<7 µg/kg	TM116	<7 #	<7 #	<7 #			
Vinyl Chloride	<6 µg/kg	TM116	<6 M	<6 M	<6 M			
Bromomethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Chloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6 M	<6 M			
1,1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10 #	<10 #			
Carbon Disulphide	<7 µg/kg	TM116	<7 M	<7 M	<7 M			
Dichloromethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
1,1-Dichloroethane	<8 µg/kg	TM116	<8 M	<8 M	<8 M			
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 M	<6 M	<6 M			
2,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Bromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Chloroform	<8 µg/kg	TM116	<8 M	<8 M	<8 M			
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M			
1,1-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Carbontetrachloride	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
1,2-Dichloroethane	<5 µg/kg	TM116	<5 M	<5 M	<5 M			
Benzene	<9 µg/kg	TM116	<9 M	<9 M	<9 M			
Trichloroethene	<9 µg/kg	TM116	<9 #	<9 #	<9 #			
1,2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Dibromomethane	<9 µg/kg	TM116	<9 M	<9 M	<9 M			
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7 M	<7 M			
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Toluene	<7 µg/kg	TM116	<7 M	<7 M	<7 M			
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<10			
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			

CERTIFICATE OF ANALYSIS

SDG: 150829-68
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329373
Superseded Report:

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH3A	BH5A	BH5A			
		Depth (m)	0.50	0.50	2.50 - 3.00			
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
		Date Sampled	28/08/2015	28/08/2015	28/08/2015			
		Sampled Time	.	.	.			
		Date Received	29/08/2015	29/08/2015	29/08/2015			
		SDG Ref	150829-68	150829-68	150829-68			
		Lab Sample No.(s)	11984669	11984671	11984672			
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<7 µg/kg	TM116	<7 M	<7 M	<7 M			
Tetrachloroethene	<5 µg/kg	TM116	<5 M	<5 M	<5 M			
Dibromochloromethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
1,2-Dibromoethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Chlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Ethylbenzene	<4 µg/kg	TM116	4.45 M	<4 M	<4 M			
p/m-Xylene	<10 µg/kg	TM116	<10 #	<10 #	<10 #			
o-Xylene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Styrene	<10 µg/kg	TM116	<10 #	<10 #	<10 #			
Bromoform	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Isopropylbenzene	<5 µg/kg	TM116	<5 #	<5 #	<5 #			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 M	<16 M	<16 M			
Bromobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
Propylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
2-Chlorotoluene	<9 µg/kg	TM116	<9 M	<9 M	<9 M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M			
4-Chlorotoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
tert-Butylbenzene	<14 µg/kg	TM116	<14 M	<14 M	<14 M			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #			
sec-Butylbenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
4-Isopropyltoluene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5 M	<5 M	<5 M			
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<11			
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10 M	<10 M	<10 M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14 M	<14 M	<14 M			
Tert-amyl methyl ether	<10 µg/kg	TM116	<10 #	<10 #	<10 #			
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<20			
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<20			
Naphthalene	<13 µg/kg	TM116	<13 M	<13 M	<13 M			

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method						
		Customer Sample R	BH3A	BH5A	BH5A			
		Depth (m)	0.50	0.50	2.50 - 3.00			
		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
		Date Sampled	28/08/2015	28/08/2015	28/08/2015			
		Sampled Time	.	.	.			
		Date Received	29/08/2015	29/08/2015	29/08/2015			
		SDG Ref	150829-68	150829-68	150829-68			
		Lab Sample No.(s)	11984669	11984671	11984672			
		AGS Reference						
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 #	<20 #	<20 #			

SDG: 150829-68
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329373
Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH3A 0.50 SOLID 28/08/2015 00:00:00 01/09/2015 10:13:47 150829-68 11984669 TM048	2/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH5A 0.50 SOLID 28/08/2015 00:00:00 01/09/2015 10:15:44 150829-68 11984671 TM048	2/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH5A 2.50 - 3.00 SOLID 28/08/2015 00:00:00 03/09/2015 03:31:51 150829-68 11984672 TM048	09/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	11984669	11984670	11984671	11984672
Customer Sample Ref.	BH3A	BH3A	BH5A	BH5A
AGS Ref.				
Depth	0.50	1.50 - 2.00	0.50	2.50 - 3.00
Type	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015		09-Sep-2015	09-Sep-2015
Asbestos ID in Solid Samples	02-Sep-2015		02-Sep-2015	09-Sep-2015
Easily Liberated Sulphide	08-Sep-2015		08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	02-Sep-2015		02-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	04-Sep-2015		04-Sep-2015	10-Sep-2015
Metals in solid samples by OES	07-Sep-2015		07-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015		03-Sep-2015	03-Sep-2015
pH	09-Sep-2015		09-Sep-2015	09-Sep-2015
Sample description	01-Sep-2015	29-Aug-2015	01-Sep-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015		10-Sep-2015	07-Sep-2015
Total Sulphate	04-Sep-2015		04-Sep-2015	04-Sep-2015
TPH CWG GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015		02-Sep-2015	02-Sep-2015

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1205
Exchangeable Ammonium as NH4	TM024	**98.01** 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1231
Easily Liberated Sulphide	TM180	**94.71** 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aliphatics >C12-C35	TM173	**85.21** 62.50 : 112.50	**87.08** 70.80 : 111.51

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aromatics >EC12-EC35	TM173	**82.67** 60.62 : 126.95	**82.67** 65.21 : 121.32

GRO by GC-FID (S)

Component	Method Code	QC 1141
Benzene by GC (Moisture Corrected)	TM089	**93.0** 76.33 : 121.87
Ethylbenzene by GC (Moisture Corrected)	TM089	**91.5** 75.73 : 123.83
m & p Xylene by GC (Moisture Corrected)	TM089	**92.0** 75.52 : 120.32
MTBE GC-FID (Moisture Corrected)	TM089	**95.0** 77.89 : 119.70
o Xylene by GC (Moisture Corrected)	TM089	**91.0** 74.15 : 124.59
QC	TM089	**93.51** 62.31 : 122.61
Toluene by GC (Moisture Corrected)	TM089	**92.0** 77.91 : 122.33

Hexavalent Chromium (s)

Component	Method Code	QC 1187	QC 1229
Hexavalent Chromium	TM151	**96.0** 92.20 : 106.60	**100.0** 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1293	QC 1251
Aluminium	TM181	**96.15** 86.49 : 129.71	**118.46** 86.49 : 129.71
Antimony	TM181	**95.34** 77.50 : 122.50	**94.62** 77.50 : 122.50
Arsenic	TM181	**90.27** 82.63 : 117.37	**95.58** 82.63 : 117.37
Barium	TM181	**100.75** 79.45 : 120.55	**100.75** 79.45 : 120.55
Beryllium	TM181	**98.76** 85.92 : 121.27	**101.55** 85.92 : 121.27
Boron	TM181	**88.55** 77.41 : 143.83	**129.01** 77.41 : 143.83
Cadmium	TM181	**93.28** 81.95 : 118.05	**94.29** 81.95 : 118.05
Chromium	TM181	**90.2** 81.29 : 118.71	**102.75** 81.29 : 118.71
Cobalt	TM181	**92.33** 83.86 : 116.14	**98.17** 83.86 : 116.14
Copper	TM181	**99.32** 78.57 : 121.43	**99.05** 78.57 : 121.43
Iron	TM181	**96.55** 87.50 : 122.82	**104.83** 87.50 : 122.82
Lead	TM181	**93.7** 74.18 : 117.25	**91.34** 74.18 : 117.25
Manganese	TM181	**98.0** 82.91 : 117.09	**103.4** 82.91 : 117.09
Mercury	TM181	**90.28** 81.99 : 118.01	**93.63** 81.99 : 118.01
Molybdenum	TM181	**91.24** 81.45 : 118.55	**91.88** 81.45 : 118.55
Nickel	TM181	**92.44** 79.64 : 120.36	**100.0** 79.64 : 120.36
Phosphorus	TM181	**94.34** 81.03 : 118.97	**97.32** 81.03 : 118.97
Selenium	TM181	**102.05** 87.05 : 121.93	**102.91** 87.05 : 121.93
Strontium	TM181	**90.04** 83.64 : 116.36	**103.07** 83.64 : 116.36
Thallium	TM181	**93.03** 77.50 : 122.50	**86.57** 77.50 : 122.50
Tin	TM181	**90.03** 78.30 : 113.98	**91.69** 78.30 : 113.98
Titanium	TM181	**90.63** 71.02 : 128.98	**114.06** 71.02 : 128.98

Metals in solid samples by OES

		QC 1293	QC 1251
Vanadium	TM181	**89.12** 86.61 : 113.39	**97.94** 86.61 : 113.39
Zinc	TM181	**95.29** 89.82 : 114.54	**101.14** 89.82 : 114.54

PAH by GCMS

Component	**Method Code**	QC 1179	QC 1161
Acenaphthene	TM218	**92.5** 79.96 : 117.68	**85.0** 76.50 : 121.50
Acenaphthylene	TM218	**87.0** 76.25 : 113.75	**84.5** 73.50 : 118.50
Anthracene	TM218	**92.0** 75.14 : 109.30	**86.0** 74.25 : 117.75
Benz(a)anthracene	TM218	**96.0** 82.90 : 120.19	**95.5** 82.07 : 118.33
Benzo(a)pyrene	TM218	**96.0** 82.80 : 121.21	**92.0** 79.75 : 116.97
Benzo(b)fluoranthene	TM218	**96.0** 81.11 : 119.79	**98.5** 82.41 : 117.15
Benzo(ghi)perylene	TM218	**88.5** 81.23 : 116.67	**89.0** 77.09 : 114.38
Benzo(k)fluoranthene	TM218	**92.0** 79.07 : 114.76	**95.5** 81.43 : 115.17
Chrysene	TM218	**93.5** 77.94 : 118.46	**94.5** 82.50 : 113.51
Dibenzo(ah)anthracene	TM218	**92.0** 79.94 : 120.03	**92.5** 81.00 : 120.00
Fluoranthene	TM218	**94.0** 77.89 : 110.15	**90.0** 78.67 : 117.61
Fluorene	TM218	**95.0** 80.93 : 113.54	**87.5** 76.50 : 121.50
Indeno(123cd)pyrene	TM218	**92.5** 80.37 : 120.17	**91.0** 79.19 : 117.60
Naphthalene	TM218	**94.5** 79.70 : 112.37	**90.0** 77.00 : 117.50
Phenanthrene	TM218	**95.0** 78.44 : 113.95	**88.5** 75.00 : 123.00
Pyrene	TM218	**92.0** 81.17 : 112.33	**88.0** 77.82 : 116.98

pH

Component	**Method Code**	QC 1220	QC 1256
pH	TM133	**101.39** 96.22 : 103.78	**100.88** 97.19 : 102.81

Total Organic Carbon

Total Organic Carbon

Component	**Method Code**	QC 1297	QC 1208	QC 1227
Total Organic Carbon	TM132	**97.72** 89.40 : 103.09	**99.54** 89.40 : 103.09	**95.89** 89.40 : 103.09

Total Sulphate

Component	**Method Code**	QC 1235	QC 1298
Total Sulphate	TM221	**102.27** 78.49 : 121.51	**117.42** 78.49 : 121.51

VOC MS (S)

Component	**Method Code**	QC 1154
1,1,1,2-tetrachloroethane	TM116	**105.0** 76.60 : 121.00
1,1,1-Trichloroethane	TM116	**102.2** 77.80 : 123.40
1,1,2-Trichloroethane	TM116	**94.4** 75.40 : 119.80
1,1-Dichloroethane	TM116	**107.0** 80.84 : 124.49
1,2-Dichloroethane	TM116	**109.4** 91.00 : 135.67
1,4-Dichlorobenzene	TM116	**105.4** 80.88 : 114.60
2-Chlorotoluene	TM116	**102.8** 74.00 : 117.20
4-Chlorotoluene	TM116	**97.2** 71.20 : 113.20
Benzene	TM116	**100.6** 79.60 : 125.20
Carbon Disulphide	TM116	**104.4** 74.91 : 122.14
Carbontetrachloride	TM116	**101.4** 76.80 : 121.20
Chlorobenzene	TM116	**103.4** 83.47 : 116.82
Chloroform	TM116	**108.0** 82.00 : 128.80
Chloromethane	TM116	**129.8** 74.62 : 135.86
Cis-1,2-Dichloroethene	TM116	**113.4** 81.20 : 128.00
Dibromomethane	TM116	**94.4** 73.40 : 116.60
Dichloromethane	TM116	**111.8** 86.60 : 137.00

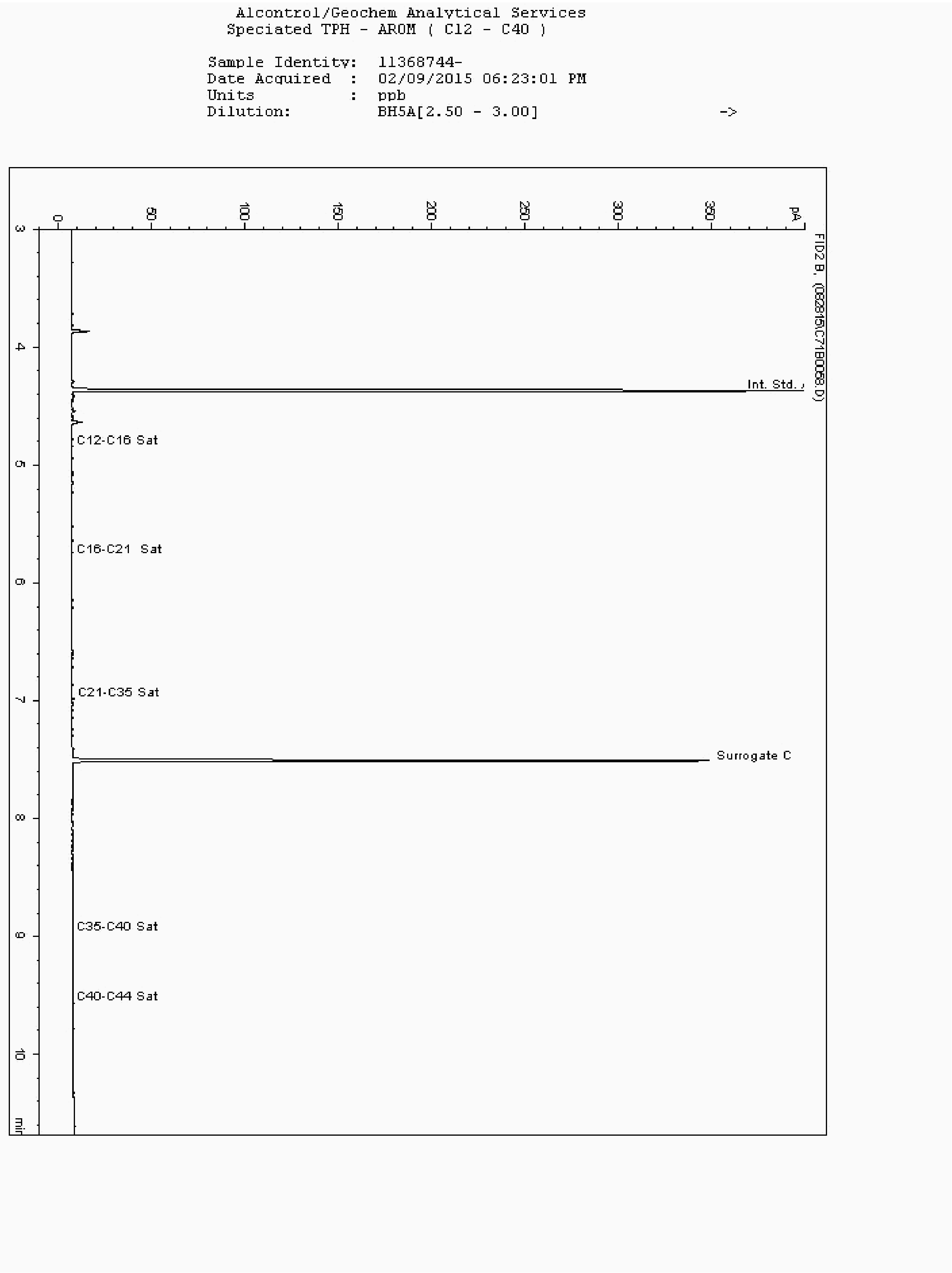
VOC MS (S)

		QC 1154
Ethylbenzene	TM116	**97.8** 73.60 : 115.60
Hexachlorobutadiene	TM116	**86.2** 33.65 : 130.56
Isopropylbenzene	TM116	**101.0** 72.52 : 117.52
Naphthalene	TM116	**106.0** 83.23 : 126.48
o-Xylene	TM116	**92.2** 69.60 : 110.40
p/m-Xylene	TM116	**93.6** 71.30 : 112.70
Sec-Butylbenzene	TM116	**105.0** 59.20 : 125.20
Tetrachloroethene	TM116	**105.8** 85.92 : 127.92
Toluene	TM116	**92.6** 76.08 : 110.17
Trichloroethene	TM116	**101.2** 78.17 : 121.37
Trichlorofluoromethane	TM116	**109.0** 83.78 : 132.82
Vinyl Chloride	TM116	**101.6** 66.81 : 138.46

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11985336
Sample ID : BH5A
Depth : 2.50 - 3.00



```
   Alcontrol/Geochem Analytical Services
 Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11368744-
Date Acquired  :  02/09/2015 06:23:01 PM
Units          :  ppb
Dilution:         BH5A[2.50 - 3.00]                  ->
```

CERTIFICATE OF ANALYSIS

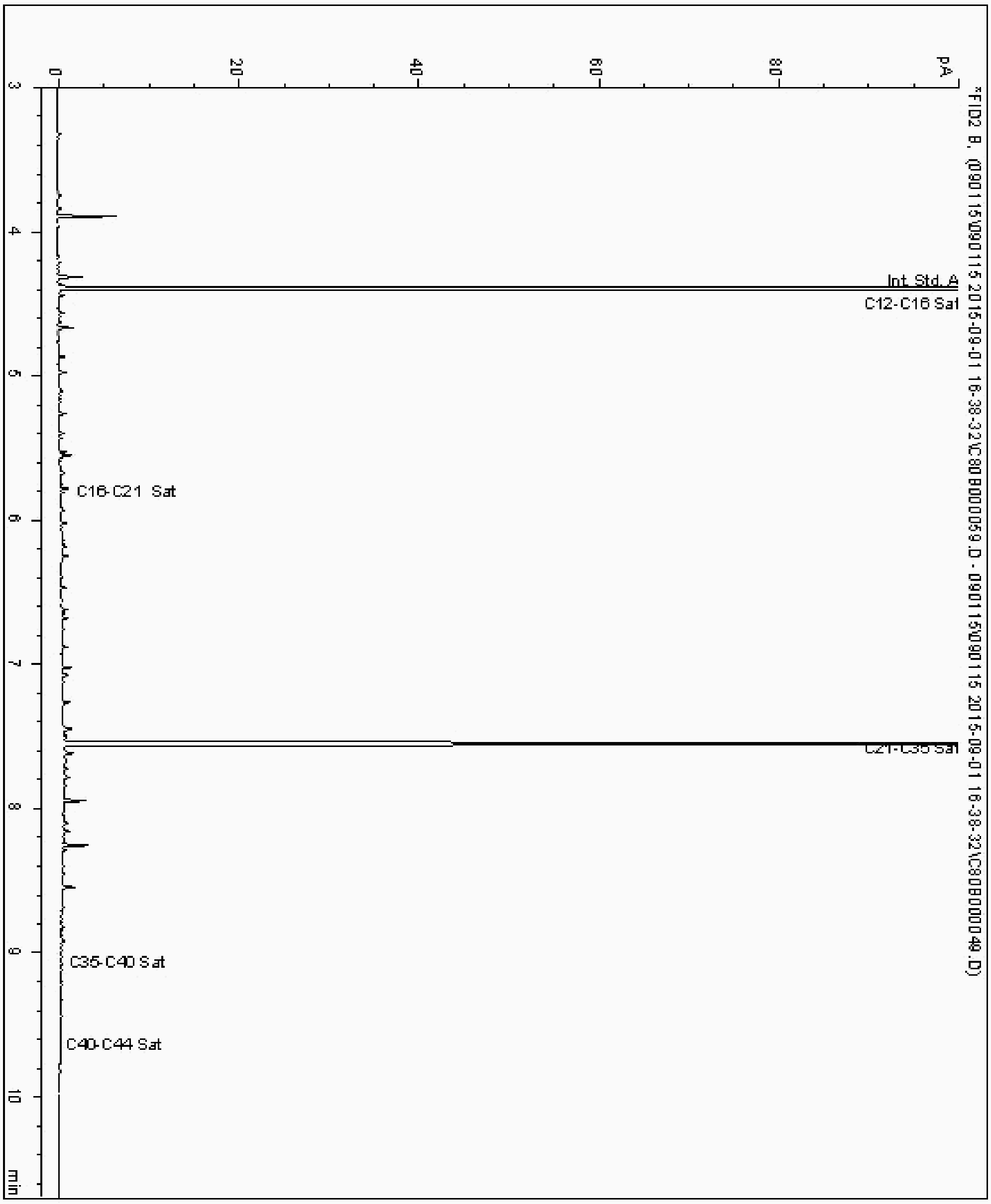
SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) GC (S)	**Sample No :**	11987620	**Depth :**	0.50
		Sample ID :	BH3A		

```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11368708-
Date Acquired  :  02/09/15 09:07:08
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.950
```

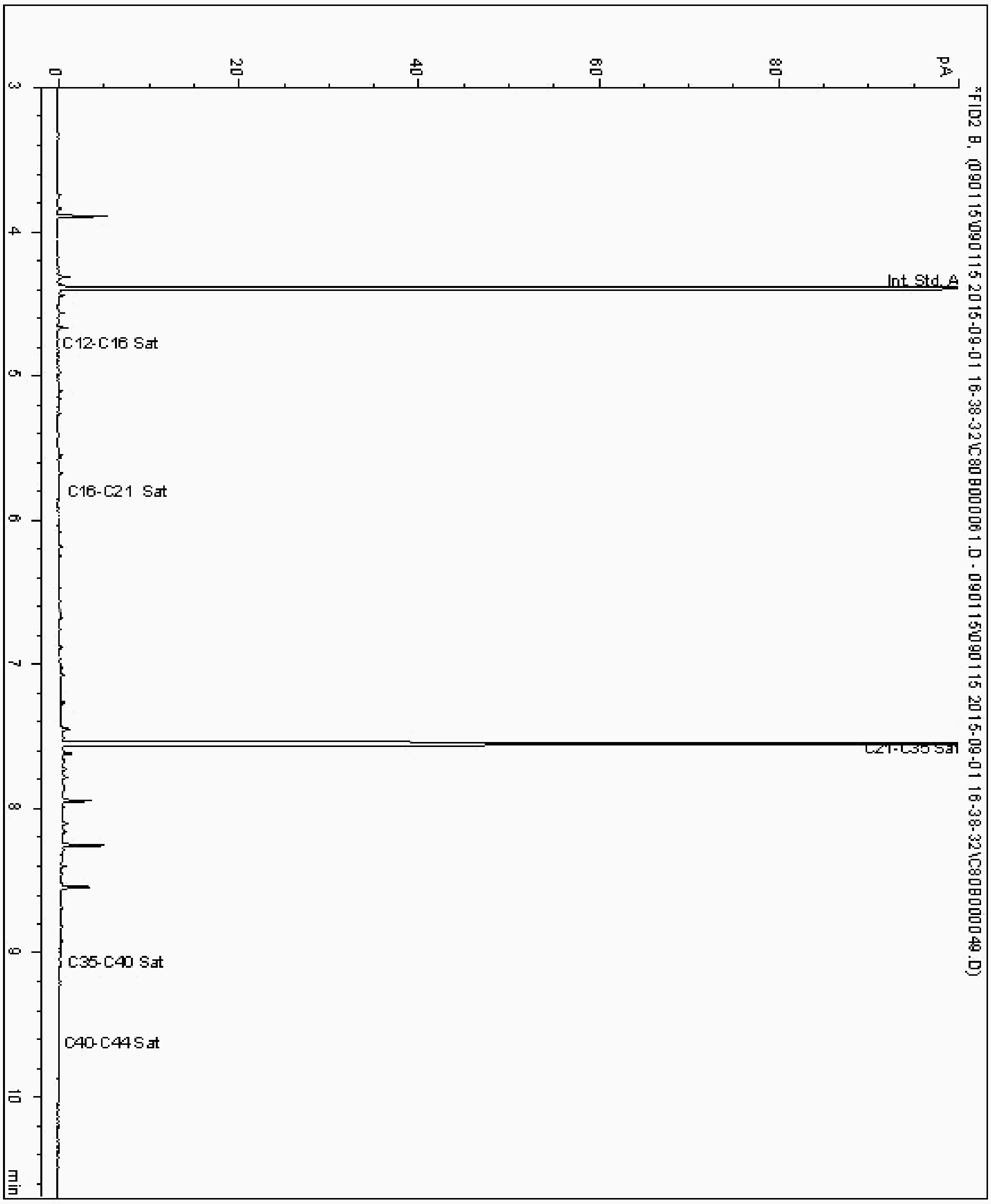


Chromatogram

Analysis: EPH CWG (Aliphatic) GC (S)
Sample No : 11988122
Sample ID : BH5A
Depth : 0.50

```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11368731-
Date Acquired  :  02/09/15 09:38:12
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.960
```

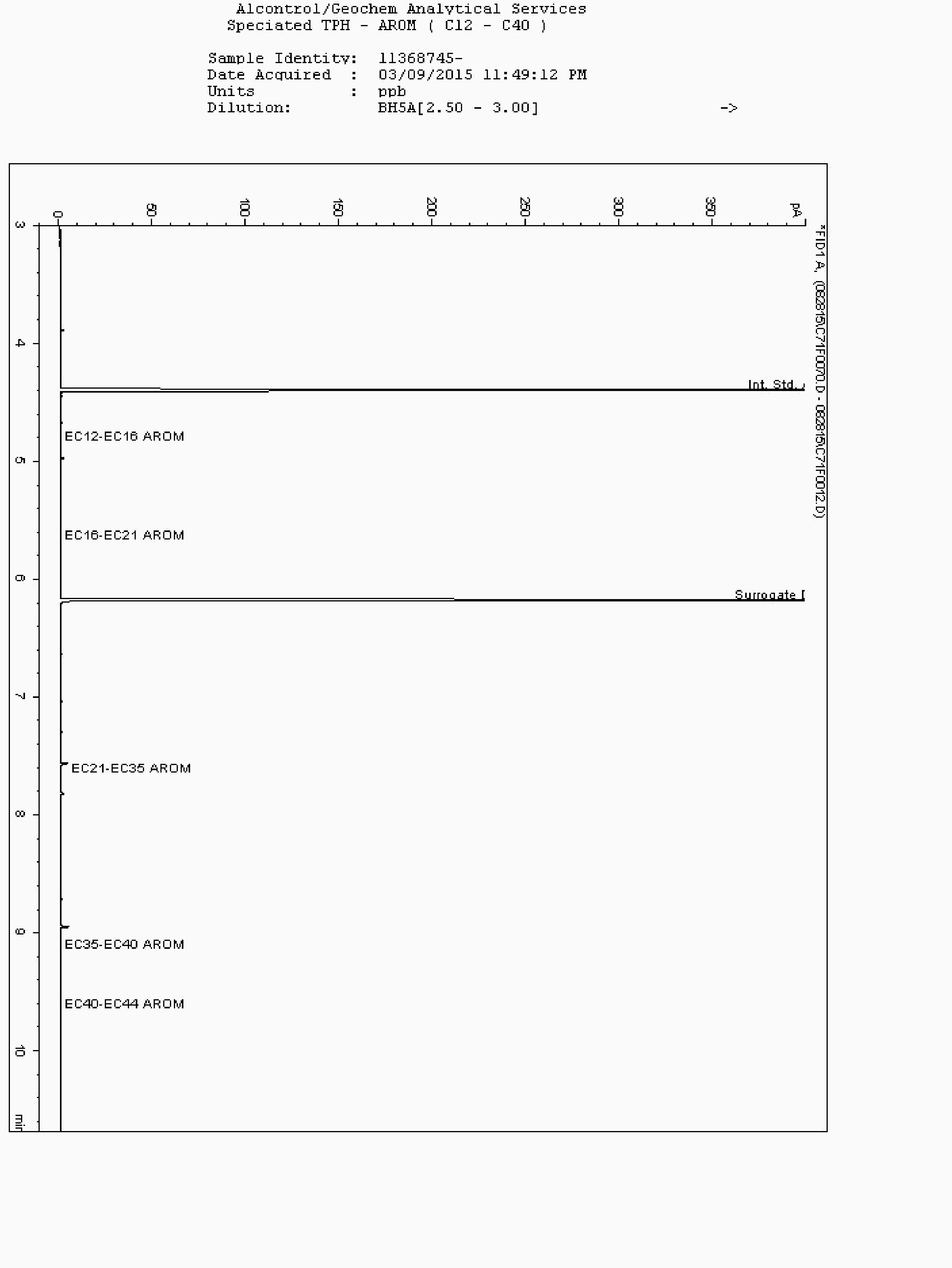


CERTIFICATE OF ANALYSIS

SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11985336	**Depth :**	2.50 - 3.00
		Sample ID :	BH5A		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11368745-
Date Acquired  :  03/09/2015 11:49:12 PM
Units          :  ppb
Dilution:         BH5A[2.50 - 3.00]                ->
```

SDG: 150829-68
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

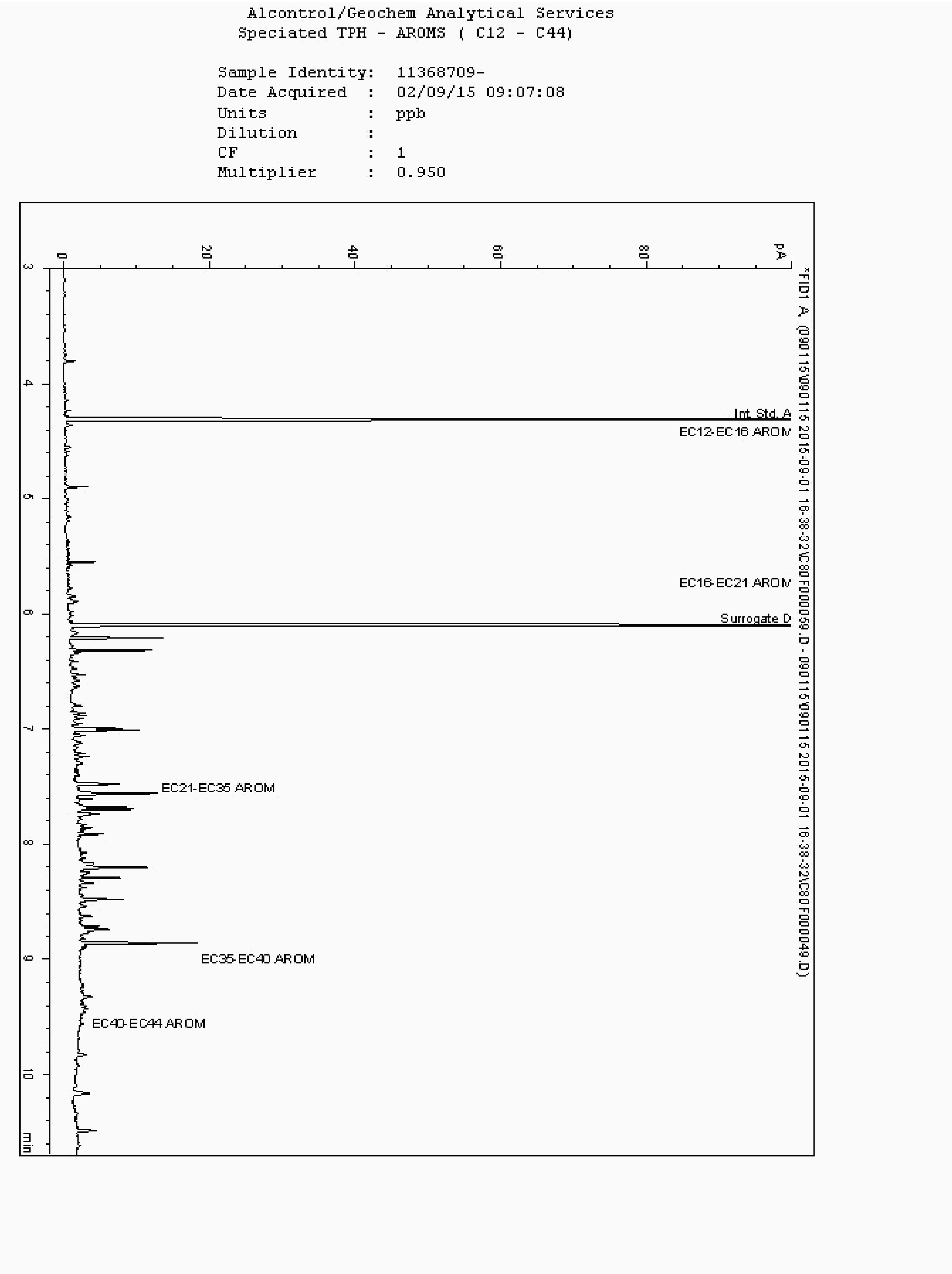
Order Number:
Report Number: 329373
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 11987620
Sample ID : BH3A

Depth : 0.50



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROMS ( C12 - C44)

Sample Identity:  11368709-
Date Acquired   :  02/09/15 09:07:08
Units           :  ppb
Dilution        :
CF              :  1
Multiplier      :  0.950
```

CERTIFICATE OF ANALYSIS

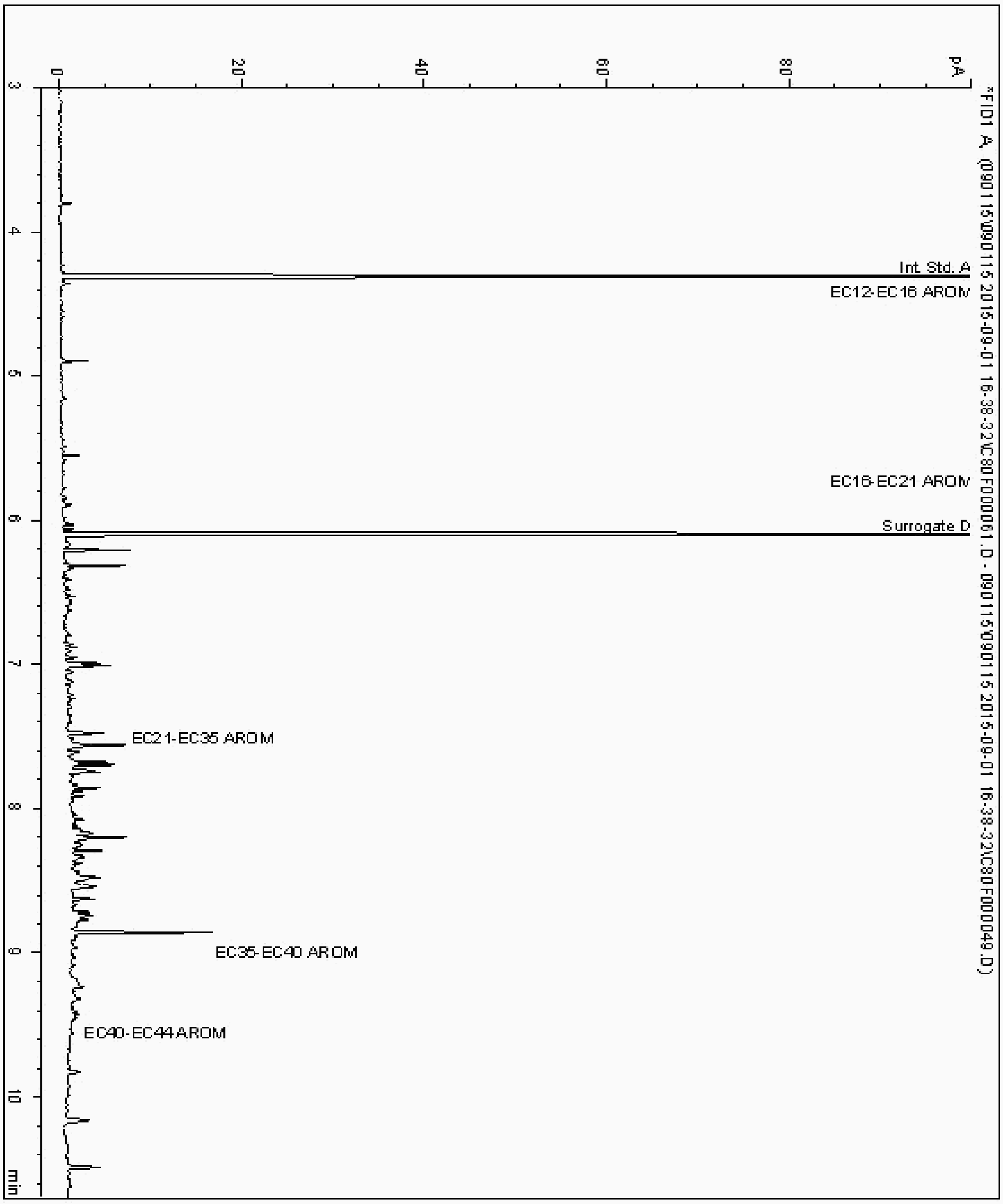
SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) GC (S)	**Sample No :**	11988122	**Depth :**	0.50
		Sample ID :	BH5A		

```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROMS ( C12 - C44)

Sample Identity:  11368732-
Date Acquired  :  02/09/15 09:38:12
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.960
```

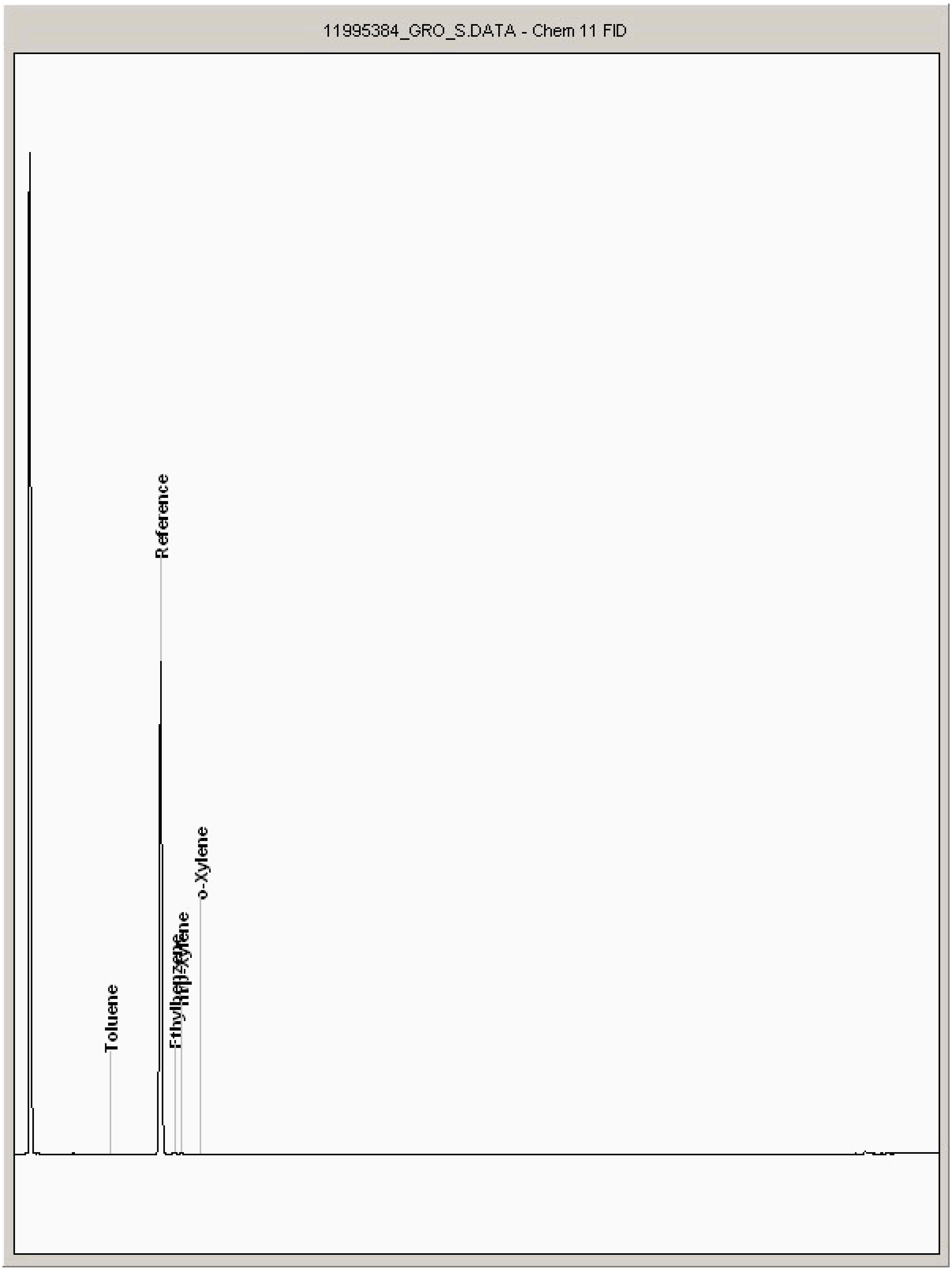


Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11995384
Sample ID : BH3A

Depth : 0.50



ALcontrol Laboratories

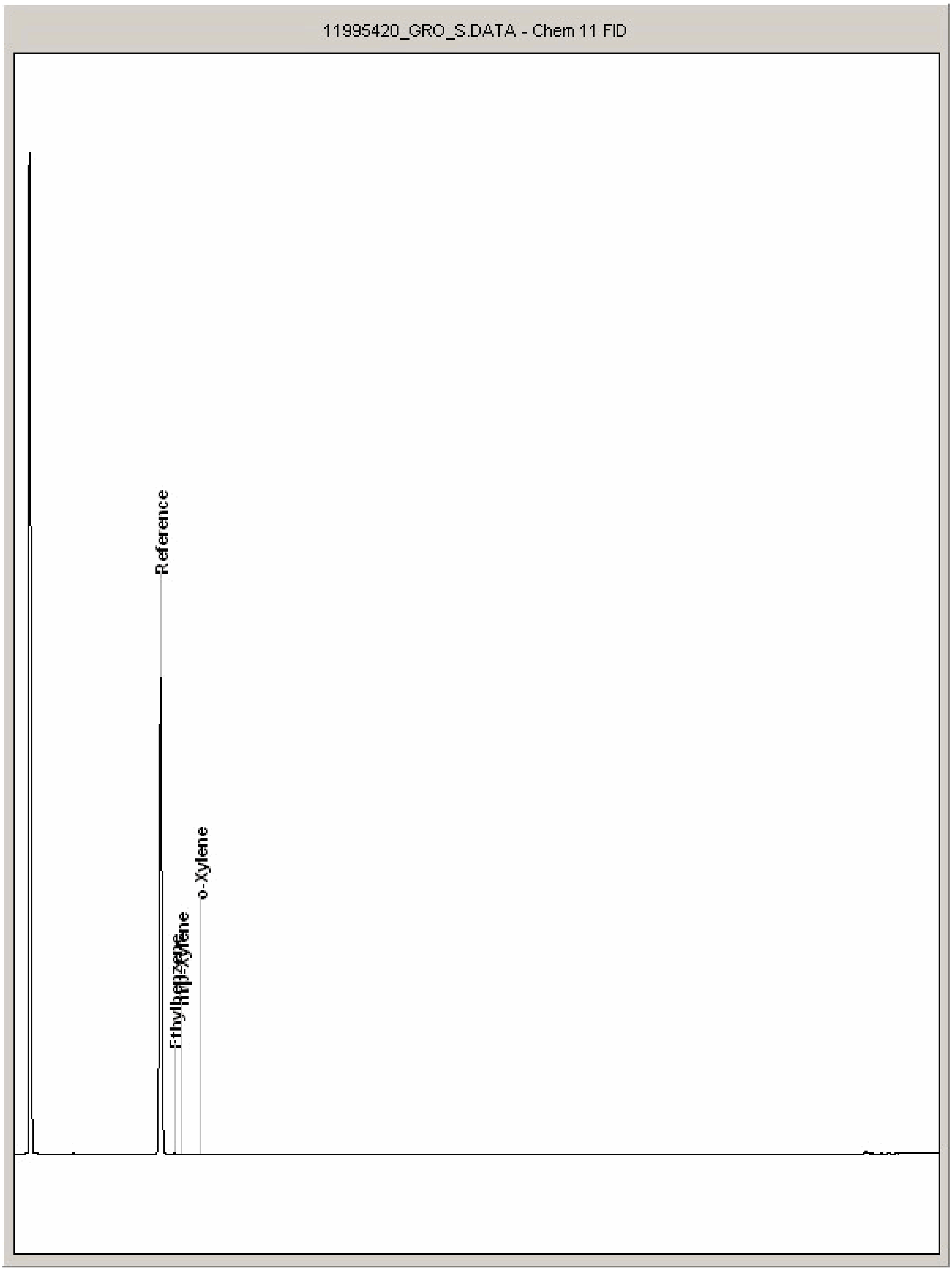
Validated

CERTIFICATE OF ANALYSIS

SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (S)	**Sample No :**	11995420	**Depth :**	0.50
		Sample ID :	BH5A		



CERTIFICATE OF ANALYSIS

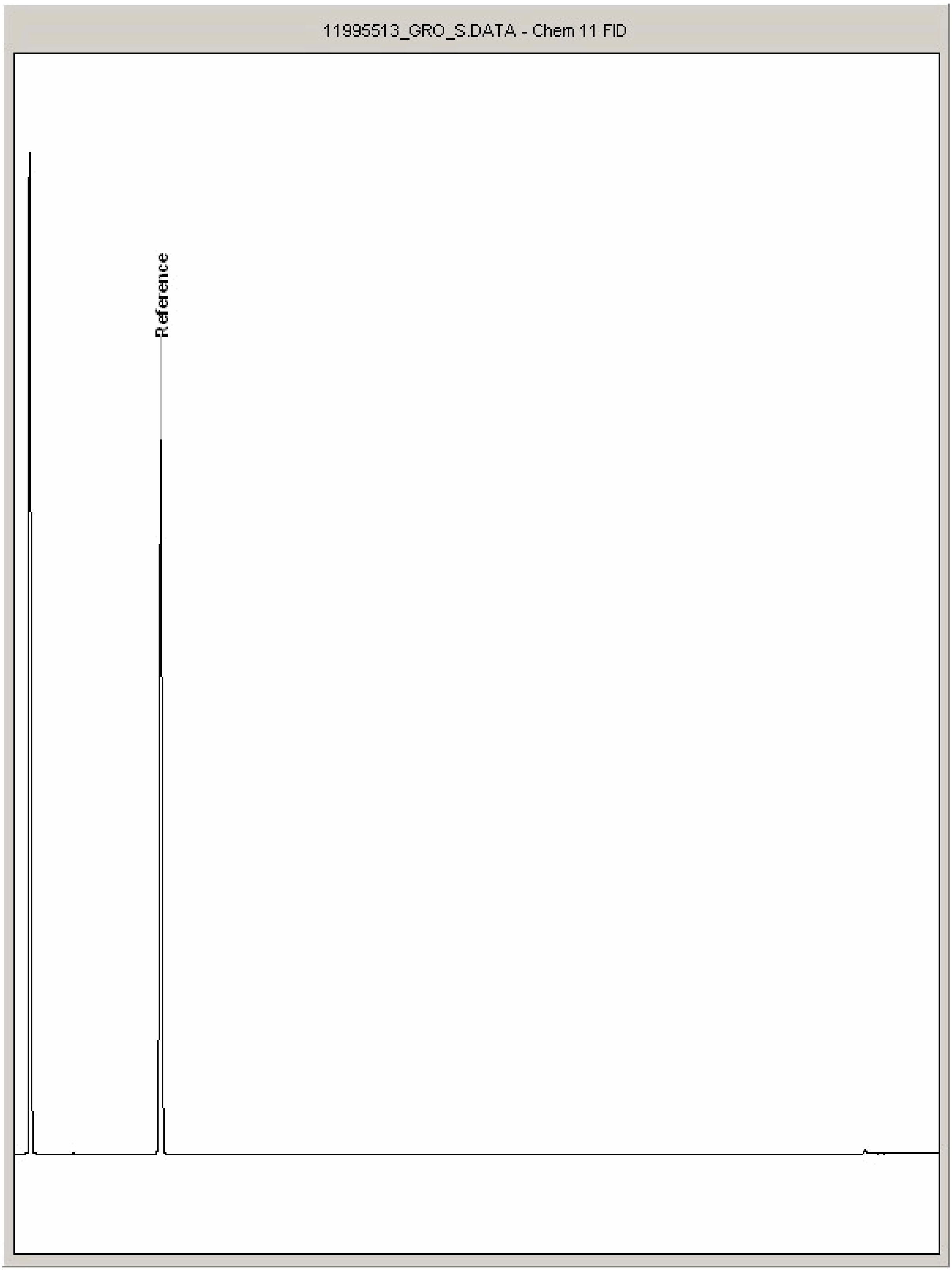
SDG:	150829-68	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329373
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 11995513
Sample ID : BH5A

Depth : 2.50 - 3.00



Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Last Updated : 2010/09/08

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

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email: mkt@alcontrol.com
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AECOM
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Wimbledon
Greater London
SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: 14 September 2015
Customer: H_URS_WIM
Sample Delivery Group (SDG): 150902-38
Your Reference:
Location: Stag Brewery
Report No: 329713

We received 8 samples on Wednesday September 02, 2015 and 8 of these samples were scheduled for analysis which was completed on Monday September 14, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11995368	BH3			01/09/2015
11995366	BH4			01/09/2015
11995367	BH5			01/09/2015
11995371	BH8			01/09/2015
11995370	BH109			01/09/2015
11995369	BH110			01/09/2015
11995372	BH111			01/09/2015
11995373	DUP01			01/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

LIQUID

Results Legend

- **X** Test
- **N** No Determination Possible

	Lab Sample No(s)		11995368							11995366							11995367							11995371							11995370							11995369				
	Customer Sample Reference		BH3							BH4							BH5							BH8							BH109							BH110				
	AGS Reference																																									
	Depth (m)																																									
	Container		0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H_2SO_4 (ALE244)	HNO_3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H_2SO_4 (ALE244)	HNO_3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H_2SO_4 (ALE244)	HNO_3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H_2SO_4 (ALE244)	HNO_3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H_2SO_4 (ALE244)	HNO_3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H_2SO_4 (ALE244)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8					X							X							X							X							X							X
Anions by Kone (w)	All	NDPs: 0 Tests: 8			X							X							X							X							X							X		
COD Unfiltered	All	NDPs: 0 Tests: 8		X							X							X							X							X							X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8						X							X							X							X							X						
Dissolved W, Nb and Zr by ICP-MS	All	NDPs: 0 Tests: 8						X							X							X							X							X						
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8	X							X							X							X							X							X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X							X							X							X							X							X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X							X							X							X							X							X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8							X							X							X							X							X					
Mercury Dissolved	All	NDPs: 0 Tests: 8				X							X							X							X							X							X	
pH Value	All	NDPs: 0 Tests: 8			X							X							X							X							X							X		
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7	X							X							X							X							X							X				
Total EPH (aq)	All	NDPs: 0 Tests: 8	X							X							X							X							X							X				
TPH CWG (W)	All	NDPs: 0 Tests: 8	X							X							X							X							X							X				
VOC MS (W)	All	NDPs: 0 Tests: 8							X							X							X							X							X					

CERTIFICATE OF ANALYSIS

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329713
Superseded Report:

LIQUID

Results Legend

X **Test**

N **No Determination Possible**

	Lab Sample No(s)			11995369							11995372							11995373
	Customer Sample Reference			BH110							BH111							DUP01
	AGS Reference																	
	Depth (m)																	
	Container		HNO3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8							X							X		
Anions by Kone (w)	All	NDPs: 0 Tests: 8					X							X				
COD Unfiltered	All	NDPs: 0 Tests: 8				X							X					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8	X							X							X	
Dissolved W, Nb and Zr by ICP-MS	All	NDPs: 0 Tests: 8	X							X							X	
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8			X							X						
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8			X							X						
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8			X							X						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8		X							X							X
Mercury Dissolved	All	NDPs: 0 Tests: 8						X							X			
pH Value	All	NDPs: 0 Tests: 8					X							X				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7			X													
Total EPH (aq)	All	NDPs: 0 Tests: 8			X							X						
TPH CWG (W)	All	NDPs: 0 Tests: 8			X							X						
VOC MS (W)	All	NDPs: 0 Tests: 8		X							X							X

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time	.	00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2 #	<0.2 #	0.508 #	0.619 #	1.23 #	<0.2 #
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099	<0.3 #	<0.3 #	0.653 #	0.796 #	1.58 #	<0.3 #
COD, unfiltered	<7 mg/l	TM107	<7 #	8.09 #	21.2 #	10.5 #	190 #	<7 #
Antimony (diss.filt)	<0.16 µg/l	TM152	0.415	0.36	<0.16	0.726	0.64	0.464
Arsenic (diss.filt)	<0.12 µg/l	TM152	7.32 #	5.08 #	5.12 #	15.7 #	32.6 #	14 #
Barium (diss.filt)	<0.03 µg/l	TM152	64.2 #	22.1 #	47.9 #	83.4 #	18.2 #	40.7 #
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07 #	<0.07 #	<0.07 #	<0.07 #	<0.07 #	<0.07 #
Boron (diss.filt)	<9.4 µg/l	TM152	152 #	52.7 #	99.2 #	130 #	107 #	137 #
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152	3.62 #	1.53 #	2.26 #	3.98 #	3.56 #	3.44 #
Cobalt (diss.filt)	<0.06 µg/l	TM152	2.33 #	0.594 #	3.15 #	2.77 #	9.39 #	4.36 #
Copper (diss.filt)	<0.85 µg/l	TM152	1.13 #	0.939 #	1.09 #	1.4 #	1.26 #	1.29 #
Lead (diss.filt)	<0.02 µg/l	TM152	0.034 #	0.066 #	0.057 #	0.033 #	0.085 #	0.04 #
Manganese (diss.filt)	<0.04 µg/l	TM152	91.2 #	8.89 #	860 #	169 #	1320 #	126 #
Nickel (diss.filt)	<0.15 µg/l	TM152	6.92 #	1.77 #	5.5 #	7.03 #	11 #	6.1 #
Selenium (diss.filt)	<0.39 µg/l	TM152	9.06 #	0.781 #	1.67 #	1.92 #	3 #	13.2 #
Thallium (diss.filt)	<0.96 µg/l	TM152	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.56 #	1.61 #	1.33 #	1.56 #	1.57 #	1.33 #
Zinc (diss.filt)	<0.41 µg/l	TM152	8.79 #	12.6 #	5.59 #	9.92 #	27.4 #	4.62 #
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172	<46 #	<46 #	<46 #	<46 #	159 #	<46 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100	<100	<100	159	<100
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Sulphate	<2 mg/l	TM184	57.4 #	43 #	79.9 #	61.6 #	75 #	55.2 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184	0.465 #	7.3 #	1.55 #	0.302 #	0.297 #	0.216 #
Nitrate as NO3	<0.3 mg/l	TM184	5.18 #	21.5 #	6.42 #	4.42 #	0.942 #	5.64 #
pH	<1 pH Units	TM256	7.45 #	7.1 #	7.39 #	7.38 #	7.49 #	7.52 #
Silver (diss.filt)	<1.5 µg/l	TM283	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5

CERTIFICATE OF ANALYSIS

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329713
Superseded Report:

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH111	DUP01				
		Depth (m)	.	.				
		Sample Type	Water(GW/SW)	Water(GW/SW)				
		Date Sampled	01/09/2015	01/09/2015				
		Sampled Time	.	.				
		Date Received	02/09/2015	02/09/2015				
		SDG Ref	150902-38	150902-38				
		Lab Sample No.(s)	11995372	11995373				
		AGS Reference						
Component	**LOD/Units**	**Method**						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	4.74 #	<0.2 #				
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099	6.09 #	<0.3 #				
COD, unfiltered	<7 mg/l	TM107	43.5 #	<7 #				
Antimony (diss.filt)	<0.16 µg/l	TM152	0.199	0.816				
Arsenic (diss.filt)	<0.12 µg/l	TM152	22 #	4.8 #				
Barium (diss.filt)	<0.03 µg/l	TM152	104 #	21.4 #				
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07 #	<0.07 #				
Boron (diss.filt)	<9.4 µg/l	TM152	65.1 #	52.2 #				
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1 #	<0.1 #				
Chromium (diss.filt)	<0.22 µg/l	TM152	3.75 #	1.22 #				
Cobalt (diss.filt)	<0.06 µg/l	TM152	1.79 #	0.262 #				
Copper (diss.filt)	<0.85 µg/l	TM152	<0.85 #	1.13 #				
Lead (diss.filt)	<0.02 µg/l	TM152	<0.02 #	0.028 #				
Manganese (diss.filt)	<0.04 µg/l	TM152	2270 #	7.19 #				
Nickel (diss.filt)	<0.15 µg/l	TM152	3.85 #	1.81 #				
Selenium (diss.filt)	<0.39 µg/l	TM152	2.87 #	0.897 #				
Thallium (diss.filt)	<0.96 µg/l	TM152	<0.96	<0.96				
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.07 #	1.45 #				
Zinc (diss.filt)	<0.41 µg/l	TM152	6 #	5.01 #				
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172	65.8 #	<46 #				
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100				
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #				
Sulphate	<2 mg/l	TM184	37.5 #	42.3 #				
Phosphate (ortho) as PO4	<0.05 mg/l	TM184	<0.05 #	7.28 #				
Nitrate as NO3	<0.3 mg/l	TM184	0.94 #	21.9 #				
pH	<1 pH Units	TM256	7.32 #	7.14 #				
Silver (diss.filt)	<1.5 µg/l	TM283	<1.5	<1.5				

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time	.	00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<2	<1
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Chlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Nitrophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
3-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<2	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
4-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
4-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<2	<1
Azobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Acenaphthylene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Acenaphthene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2 #	<2 #	<2 #	<2 #	<4 #	<2 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time		00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Carbazole (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Chrysene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Dibenzofuran (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Diethyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5 #	<5 #	<5 #	<5 #	<10 #	<5 #
Fluoranthene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Fluorene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Pentachlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<2	<1
Phenol (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<2	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Hexachloroethane (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Nitrobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Naphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Isophorone (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<1	<1	<1	<1	<2	<1
Phenanthrene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Pyrene (aq)	<1 µg/l	TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329713
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH111						
Depth (m)	.						
Sample Type	Water(GW/SW)						
Date Sampled	01/09/2015						
Sampled Time	.						
Date Received	02/09/2015						
SDG Ref	150902-38						
Lab Sample No.(s)	11995372						
AGS Reference							

Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1 #					
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #					
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #					
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1					
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #					
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #					
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 #					
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1 #					
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #					
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #					
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1 #					
2-Chlorophenol (aq)	<1 µg/l	TM176	<1 #					
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1 #					
2-Methylphenol (aq)	<1 µg/l	TM176	<1 #					
2-Nitroaniline (aq)	<1 µg/l	TM176	<1 #					
2-Nitrophenol (aq)	<1 µg/l	TM176	<1 #					
3-Nitroaniline (aq)	<1 µg/l	TM176	<1 #					
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1 #					
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1 #					
4-Chloroaniline (aq)	<1 µg/l	TM176	<1					
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1 #					
4-Methylphenol (aq)	<1 µg/l	TM176	5.42 #					
4-Nitroaniline (aq)	<1 µg/l	TM176	<1 #					
4-Nitrophenol (aq)	<1 µg/l	TM176	<1					
Azobenzene (aq)	<1 µg/l	TM176	<1 #					
Acenaphthylene (aq)	<1 µg/l	TM176	<1 #					
Acenaphthene (aq)	<1 µg/l	TM176	<1 #					
Anthracene (aq)	<1 µg/l	TM176	<1 #					
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1 #					
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1 #					
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2 #					
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 #					

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH111						
Depth (m)	.						
Sample Type	Water(GW/SW)						
Date Sampled	01/09/2015						
Sampled Time	.						
Date Received	02/09/2015						
SDG Ref	150902-38						
Lab Sample No.(s)	11995372						
AGS Reference							

Component	LOD/Units	Method	BH111					
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<1 #					
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1 #					
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1 #					
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1 #					
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1 #					
Carbazole (aq)	<1 µg/l	TM176	<1 #					
Chrysene (aq)	<1 µg/l	TM176	<1 #					
Dibenzofuran (aq)	<1 µg/l	TM176	<1 #					
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 #					
Diethyl phthalate (aq)	<1 µg/l	TM176	<1 #					
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1 #					
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1 #					
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5 #					
Fluoranthene (aq)	<1 µg/l	TM176	<1 #					
Fluorene (aq)	<1 µg/l	TM176	<1 #					
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1 #					
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1 #					
Pentachlorophenol (aq)	<1 µg/l	TM176	<1					
Phenol (aq)	<1 µg/l	TM176	<1					
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1 #					
Hexachloroethane (aq)	<1 µg/l	TM176	<1 #					
Nitrobenzene (aq)	<1 µg/l	TM176	<1 #					
Naphthalene (aq)	<1 µg/l	TM176	<1 #					
Isophorone (aq)	<1 µg/l	TM176	<1 #					
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<1					
Phenanthrene (aq)	<1 µg/l	TM176	<1 #					
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1 #					
Pyrene (aq)	<1 µg/l	TM176	<1 #					

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time	.	00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Benzene	<7 µg/l	TM245	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Toluene	<4 µg/l	TM245	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
Ethylbenzene	<5 µg/l	TM245	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
m,p-Xylene	<8 µg/l	TM245	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
o-Xylene	<3 µg/l	TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100	<100	<100

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

TPH CWG (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH111	DUP01
		Depth (m)	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015
		Sampled Time	.	.
		Date Received	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38
		Lab Sample No.(s)	11995372	11995373
		AGS Reference		
Component	**LOD/Units**	**Method**		
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 #	<3 #
Benzene	<7 µg/l	TM245	<7 #	<7 #
Toluene	<4 µg/l	TM245	<4 #	<4 #
Ethylbenzene	<5 µg/l	TM245	<5 #	<5 #
m,p-Xylene	<8 µg/l	TM245	<8 #	<8 #
o-Xylene	<3 µg/l	TM245	<3 #	<3 #
Sum of detected BTEX	<28 µg/l	TM245	<28	<28
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10
GRO >C5-C10	<10 µg/l	TM245	<10	<10
EPH (C6-C10)	<100 µg/l	TM245	<100	<100

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time	.	00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
Dibromofluoromethane**	%	TM208	88.6 1	92.5 1	89.5 1	88.4 1	88.2 1	87.9 1
Toluene-d8**	%	TM208	81.8 1	82.6 1	81.9 1	81.5 1	82.2 1	83.1 1
4-Bromofluorobenzene**	%	TM208	81.4 1	79.4 1	80.6 1	77.1 1	79.5 1	81 1
Dichlorodifluoromethane	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1
Chloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Vinyl chloride	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Bromomethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Chloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Carbon disulphide	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Dichloromethane	<3 µg/l	TM208	<3 1 #	<3 1 #	<3 1 #	<3 1 #	<3 1 #	<3 1 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1
Bromochloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Chloroform	<1 µg/l	TM208	<1 1 #	1.57 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Carbontetrachloride	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1
Benzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Trichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Dibromomethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Bromodichloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Toluene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time	.	00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Tetrachloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Dibromochloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Chlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Ethylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
m,p-Xylene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
o-Xylene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Styrene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Bromoform	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Isopropylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Bromobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Propylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
n-Butylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Naphthalene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
		Sampled Time	.	00:00:00	.	.	.	.
		Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
		SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1 1	<1 1	<1 1	<1 1	<1 1	<1 1

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH111	DUP01				
Depth (m)	.	.				
Sample Type	Water(GW/SW)	Water(GW/SW)				
Date Sampled	01/09/2015	01/09/2015				
Sampled Time	.	.				
Date Received	02/09/2015	02/09/2015				
SDG Ref	150902-38	150902-38				
Lab Sample No.(s)	11995372	11995373				
AGS Reference						

Component	LOD/Units	Method	BH111	DUP01				
Dibromofluoromethane**	%	TM208	91.7 1	90.5 1				
Toluene-d8**	%	TM208	80.4 1	80.1 1				
4-Bromofluorobenzene**	%	TM208	77.9 1	78 1				
Dichlorodifluoromethane	<1 µg/l	TM208	<1 1	<1 1				
Chloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Vinyl chloride	<1 µg/l	TM208	<1 1 #	<1 1 #				
Bromomethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Chloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Trichlorofluoromethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,1-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Carbon disulphide	<1 µg/l	TM208	<1 1 #	<1 1 #				
Dichloromethane	<3 µg/l	TM208	<3 1 #	<3 1 #				
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 1 #	<1 1 #				
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,1-Dichloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #				
2,2-Dichloropropane	<1 µg/l	TM208	<1 1	<1 1				
Bromochloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Chloroform	<1 µg/l	TM208	<1 1 #	1.41 1 #				
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,1-Dichloropropene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Carbontetrachloride	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,2-Dichloroethane	<1 µg/l	TM208	<1 1	<1 1				
Benzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Trichloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,2-Dichloropropane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Dibromomethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Bromodichloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Toluene	<1 µg/l	TM208	<1 1 #	<1 1 #				
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #				

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH111	DUP01				
Depth (m)	.	.				
Sample Type	Water(GW/SW)	Water(GW/SW)				
Date Sampled	01/09/2015	01/09/2015				
Sampled Time	.	.				
Date Received	02/09/2015	02/09/2015				
SDG Ref	150902-38	150902-38				
Lab Sample No.(s)	11995372	11995373				
AGS Reference						

Component	**LOD/Units**	**Method**	BH111	DUP01				
1,3-Dichloropropane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Tetrachloroethene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Dibromochloromethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,2-Dibromoethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Chlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Ethylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
m,p-Xylene	<1 µg/l	TM208	<1 1 #	<1 1 #				
o-Xylene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Styrene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Bromoform	<1 µg/l	TM208	<1 1 #	<1 1 #				
Isopropylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 1	<1 1				
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 1 #	<1 1 #				
Bromobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Propylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
2-Chlorotoluene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
4-Chlorotoluene	<1 µg/l	TM208	<1 1 #	<1 1 #				
tert-Butylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
sec-Butylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
4-iso-Propyltoluene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
n-Butylbenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 1	<1 1				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 1	<1 1				
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
Hexachlorobutadiene	<1 µg/l	TM208	<1 1 #	<1 1 #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 1 #	<1 1 #				
Naphthalene	<1 µg/l	TM208	<1 1 #	<1 1 #				

CERTIFICATE OF ANALYSIS

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329713
Superseded Report:

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH111	DUP01				
		Depth (m)	.	.				
		Sample Type	Water(GW/SW)	Water(GW/SW)				
		Date Sampled	01/09/2015	01/09/2015				
		Sampled Time	.	.				
		Date Received	02/09/2015	02/09/2015				
		SDG Ref	150902-38	150902-38				
		Lab Sample No.(s)	11995372	11995373				
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #				
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1 1	<1 1				

14:19:25 14/09/2015

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM283		Determination of Dissolved Niobium, Tungsten, and Zirconium in Water Matrices by ICP-MS		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	11995368	11995366	11995367	11995371	11995370	11995369	11995372	11995373
Customer Sample Ref.	BH3	BH4	BH5	BH8	BH109	BH110	BH111	DUP01
AGS Ref.								
Depth								
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	08-Sep-2015	08-Sep-2015	07-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Anions by Kone (w)	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015
COD Unfiltered	05-Sep-2015	05-Sep-2015	05-Sep-2015	05-Sep-2015	05-Sep-2015	05-Sep-2015	05-Sep-2015	05-Sep-2015
Dissolved Metals by ICP-MS	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	08-Sep-2015	09-Sep-2015	09-Sep-2015
Dissolved W, Nb and Zr by ICP-MS	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH (DRO) (C10-C40) Aqueous (W)	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015
EPH CWG (Aliphatic) Aqueous GC (W)	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015
EPH CWG (Aromatic) Aqueous GC (W)	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015
GRO by GC-FID (W)	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	08-Sep-2015
Mercury Dissolved	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Nitrite by Kone (w)	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015
pH Value	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015	10-Sep-2015
SVOC MS (W) - Aqueous	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	
Total EPH (aq)	11-Sep-2015	11-Sep-2015	11-Sep-2015	11-Sep-2015	11-Sep-2015	11-Sep-2015	11-Sep-2015	11-Sep-2015
TPH CWG (W)	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015
VOC MS (W)	04-Sep-2015	04-Sep-2015	04-Sep-2015	03-Sep-2015	04-Sep-2015	04-Sep-2015	03-Sep-2015	03-Sep-2015

ASSOCIATED AQC DATA

Ammoniacal Nitrogen

Component	Method Code	QC 1224	QC 1233	QC 1270
Ammoniacal Nitrogen as N	TM099	**96.0** 91.84 : 108.16	**102.8** 91.84 : 108.16	**102.0** 91.84 : 108.16

Anions by Kone (w)

Component	Method Code	QC 1236	QC 1219
Chloride	TM184	94.64 : 106.82	94.23 : 107.50
Phosphate (Ortho as PO4)	TM184	96.40 : 108.40	**105.6** 96.41 : 109.80
Sulphate (soluble)	TM184	**99.6** 96.47 : 104.74	94.38 : 108.93
TON as NO3	TM184	**102.5** 93.05 : 112.12	93.93 : 110.49

COD Unfiltered

Component	Method Code	QC 1264	QC 1268	QC 1273
COD	TM107	**100.57** 95.90 : 102.57	**100.19** 95.90 : 102.57	**99.43** 95.90 : 102.57

Dissolved Metals by ICP-MS

Component	Method Code	QC 1270	QC 1278
Aluminium	TM152	**106.13** 88.58 : 117.87	**104.93** 88.58 : 117.87
Antimony	TM152	**101.73** 87.01 : 109.33	**101.73** 87.01 : 109.33
Arsenic	TM152	**102.4** 89.45 : 113.51	**98.67** 89.45 : 113.51
Barium	TM152	**102.4** 90.47 : 113.85	**102.67** 90.47 : 113.85
Beryllium	TM152	**96.27** 84.68 : 120.26	**105.6** 84.68 : 120.26
Boron	TM152	**95.6** 82.95 : 121.47	**100.13** 82.95 : 121.47
Cadmium	TM152	**101.47** 90.40 : 113.29	**103.6** 90.40 : 113.29
Chromium	TM152	**100.13** 90.01 : 114.05	**102.53** 90.01 : 114.05
Cobalt	TM152	**100.67** 87.14 : 117.85	**100.93** 87.14 : 117.85
Copper	TM152	**100.67** 88.43 : 114.27	**103.6** 88.43 : 114.27
Lead	TM152	**95.33** 89.53 : 109.90	**96.0** 89.53 : 109.90

Dissolved Metals by ICP-MS

		QC 1270	QC 1278
Lithium	TM152	**97.07** 84.32 : 123.11	**105.33** 84.32 : 123.11
Manganese	TM152	**99.87** 91.43 : 113.17	**103.2** 91.43 : 113.17
Molybdenum	TM152	**102.13** 80.73 : 113.85	**101.2** 80.73 : 113.85
Nickel	TM152	**100.0** 87.68 : 113.94	**100.53** 87.68 : 113.94
Phosphorus	TM152	**106.67** 86.68 : 118.34	**100.8** 86.68 : 118.34
Selenium	TM152	**101.33** 91.03 : 113.34	**100.93** 91.03 : 113.34
Strontium	TM152	**101.07** 90.44 : 114.09	**102.13** 90.44 : 114.09
Tellurium	TM152	**104.53** 80.93 : 116.91	**102.53** 80.93 : 116.91
Thallium	TM152	**96.13** 90.27 : 111.31	**96.4** 90.27 : 111.31
Tin	TM152	**100.27** 83.07 : 112.37	**100.53** 83.07 : 112.37
Titanium	TM152	**102.53** 92.65 : 111.58	**101.87** 92.65 : 111.58
Uranium	TM152	**92.13** 88.60 : 110.35	**97.33** 88.60 : 110.35
Vanadium	TM152	**100.4** 88.43 : 116.60	**103.07** 88.43 : 116.60
Zinc	TM152	**99.87** 89.84 : 113.06	**105.33** 89.84 : 113.06

Dissolved W, Nb and Zr by ICP-MS

Component	**Method Code**	QC 1290
Bismuth	TM283	**92.13** 66.55 : 123.56
Niobium	TM283	**107.6** 85.00 : 115.00
Silver	TM283	**105.33** 81.37 : 112.35
Tungsten	TM283	**85.87** 85.00 : 115.00
Zirconium	TM283	**102.27** 85.00 : 115.00

EPH (DRO) (C10-C40) Aqueous (W)

Component	**Method Code**	QC 1208	QC 1212
EPH (DRO) (C10-C40)	TM172	**96.5** 59.22 : 112.78	**77.0** 59.47 : 106.15

EPH CWG (Aliphatic) Aqueous GC (W)

EPH CWG (Aliphatic) Aqueous GC (W)

Component	Method Code	QC 1219
Total Aliphatics >C12-C35	TM174	**79.17** 66.67 : 110.42

EPH CWG (Aromatic) Aqueous GC (W)

Component	Method Code	QC 1220
Total Aromatics >EC12-EC35	TM174	**88.67** 63.00 : 121.00

GRO by GC-FID (W)

Component	Method Code	QC 1199	QC 1175	QC 1286
Benzene by GC	TM245	**95.5** 76.72 : 118.62	**104.5** 79.00 : 121.00	**90.0** 77.50 : 122.50
Ethylbenzene by GC	TM245	**90.0** 74.74 : 116.76	**104.0** 79.00 : 121.00	**87.5** 77.50 : 122.50
m & p Xylene by GC	TM245	**89.75** 73.06 : 114.58	**103.5** 79.00 : 121.00	**87.75** 77.50 : 122.50
MTBE GC-FID	TM245	**98.5** 80.00 : 121.03	**108.0** 79.00 : 121.00	**92.0** 77.50 : 122.50
o Xylene by GC	TM245	**90.0** 70.00 : 130.00	**103.0** 79.00 : 121.00	**87.5** 77.50 : 122.50
QC	TM245	**101.89** 70.00 : 130.00	**104.28** 79.00 : 121.00	**102.19** 74.88 : 125.54
Toluene by GC	TM245	**92.0** 79.35 : 119.27	**105.0** 79.00 : 121.00	**88.5** 77.50 : 122.50

Mercury Dissolved

Component	Method Code	QC 1262	QC 1200
Mercury Dissolved (CVAF)	TM183	**98.5** 73.51 : 120.83	**95.5** 73.51 : 120.83

pH Value

Component	Method Code	QC 1201	QC 1215
pH	TM256	**101.08** 99.20 : 102.85	**100.54** 99.37 : 102.65

SVOC MS (W) - Aqueous

SVOC MS (W) - Aqueous

Component	Method Code	QC 1208	QC 1247
4-Bromophenylphenylether	TM176	**87.2** 55.04 : 128.00	**82.4** 65.62 : 120.95
Benzo(a)anthracene	TM176	**87.2** 52.64 : 123.68	**82.4** 62.83 : 114.26
Benzo(a)pyrene	TM176	**79.68** 49.60 : 114.40	**80.8** 54.19 : 105.67
Butylbenzyl phthalate	TM176	**93.6** 49.04 : 127.76	**82.4** 45.10 : 118.90
Hexachlorobutadiene	TM176	**77.52** 42.80 : 108.20	**61.28** 43.12 : 110.32
Naphthalene	TM176	**92.0** 47.20 : 116.80	**85.6** 69.48 : 118.94
Nitrobenzene	TM176	**88.8** 58.70 : 110.90	**79.52** 69.13 : 107.62
Phenol	TM176	**50.08** 30.25 : 79.75	**49.12** 30.92 : 74.19

VOC MS (W)

Component	Method Code	QC 1188	QC 1162
1,1,1,2-Tetrachloroethane	TM208	**91.0** 84.25 : 114.84	**94.5** 87.29 : 112.22
1,1,1-Trichloroethane	TM208	**90.0** 84.67 : 111.97	**91.5** 83.02 : 113.68
1,1-Dichloroethane	TM208	**93.5** 80.19 : 121.45	**95.0** 77.85 : 123.56
1,2-Dichloroethane	TM208	**94.0** 77.68 : 127.05	**96.5** 80.96 : 124.37
2-Chlorotoluene	TM208	**91.0** 85.81 : 116.77	**96.5** 84.42 : 112.35
4-Chlorotoluene	TM208	**92.0** 87.22 : 115.45	**96.5** 88.70 : 113.67
Benzene	TM208	**91.0** 82.30 : 120.49	**95.0** 85.85 : 118.22
Bromomethane	TM208	**101.0** 76.16 : 123.35	**103.0** 78.68 : 126.84
Carbontetrachloride	TM208	**93.0** 83.96 : 117.98	**93.5** 82.06 : 117.49
Chlorobenzene	TM208	**93.0** 85.75 : 114.88	**97.5** 77.50 : 122.50
Chloroform	TM208	**95.0** 84.84 : 119.97	**100.0** 77.50 : 122.50
Chloromethane	TM208	**117.5** 53.63 : 141.38	**113.0** 64.99 : 145.80
Cis-1,2-Dichloroethene	TM208	**104.0** 81.65 : 120.44	**108.0** 82.70 : 120.11
Dichloromethane	TM208	**94.0** 79.31 : 122.56	**99.5** 80.45 : 125.21
Ethylbenzene	TM208	**89.5** 80.74 : 110.74	**90.0** 81.00 : 111.00
Hexachlorobutadiene	TM208	**98.5** 68.91 : 121.59	**99.0** 79.39 : 111.07
o-Xylene	TM208	**91.0** 85.43 : 113.21	**95.0** 84.32 : 113.42

VOC MS (W)

		QC 1188	QC 1162
p/m-Xylene	TM208	**89.25** 80.94 : 113.51	**92.75** 82.25 : 112.25
Tert-butyl methyl ether	TM208	**98.0** 59.77 : 129.51	**93.0** 76.57 : 125.98
Tetrachloroethene	TM208	**91.0** 83.21 : 115.40	**93.5** 84.88 : 110.14
Toluene	TM208	**90.0** 86.02 : 114.04	**93.0** 85.71 : 113.18
Trichloroethene	TM208	**91.0** 83.50 : 113.50	**94.0** 87.32 : 112.88
Vinyl Chloride	TM208	**92.5** 63.71 : 124.88	**88.0** 67.57 : 130.24

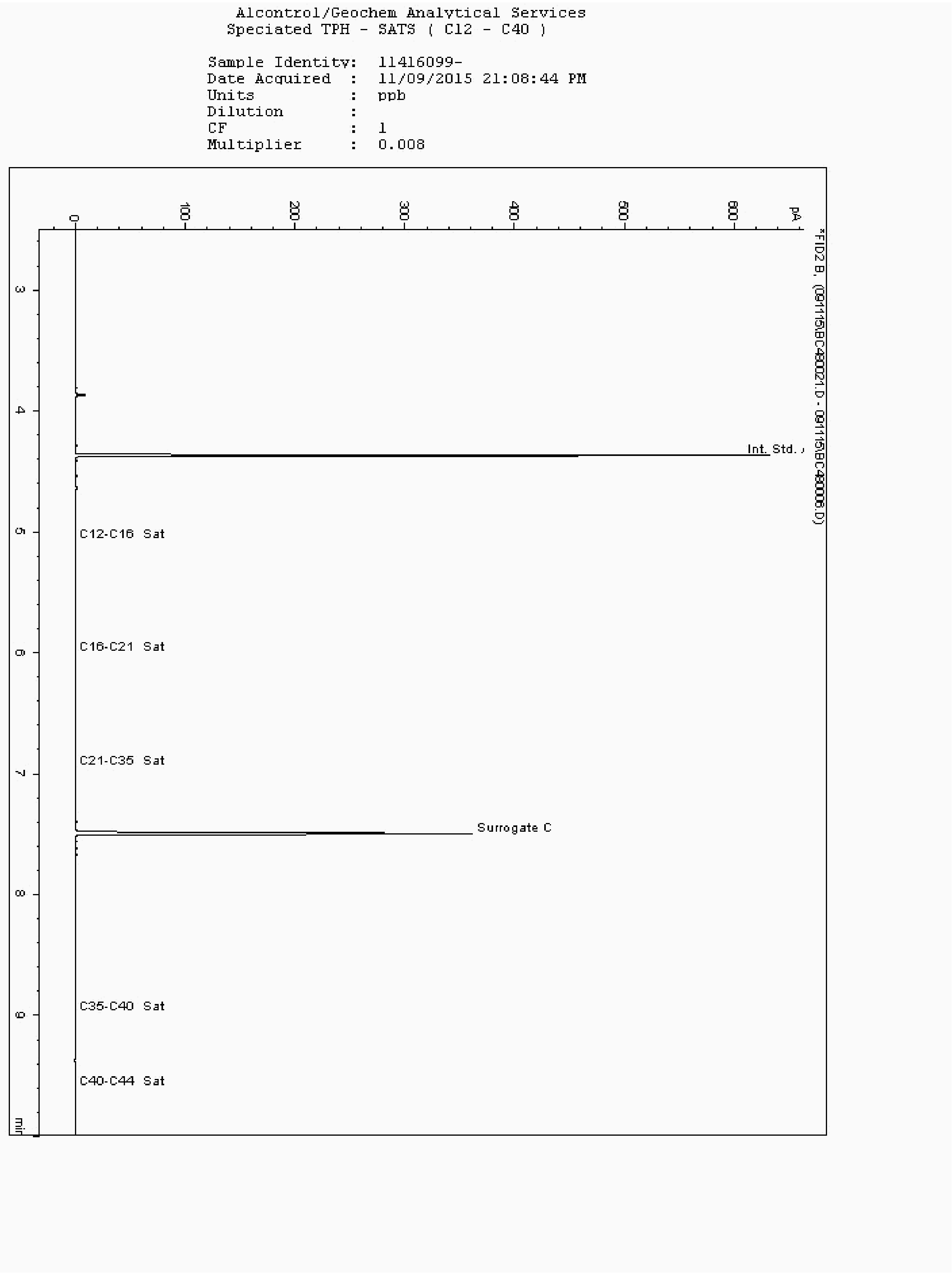
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) Aqueous GC (W)	**Sample No :**	12041687	**Depth :**
		Sample ID :	BH109	

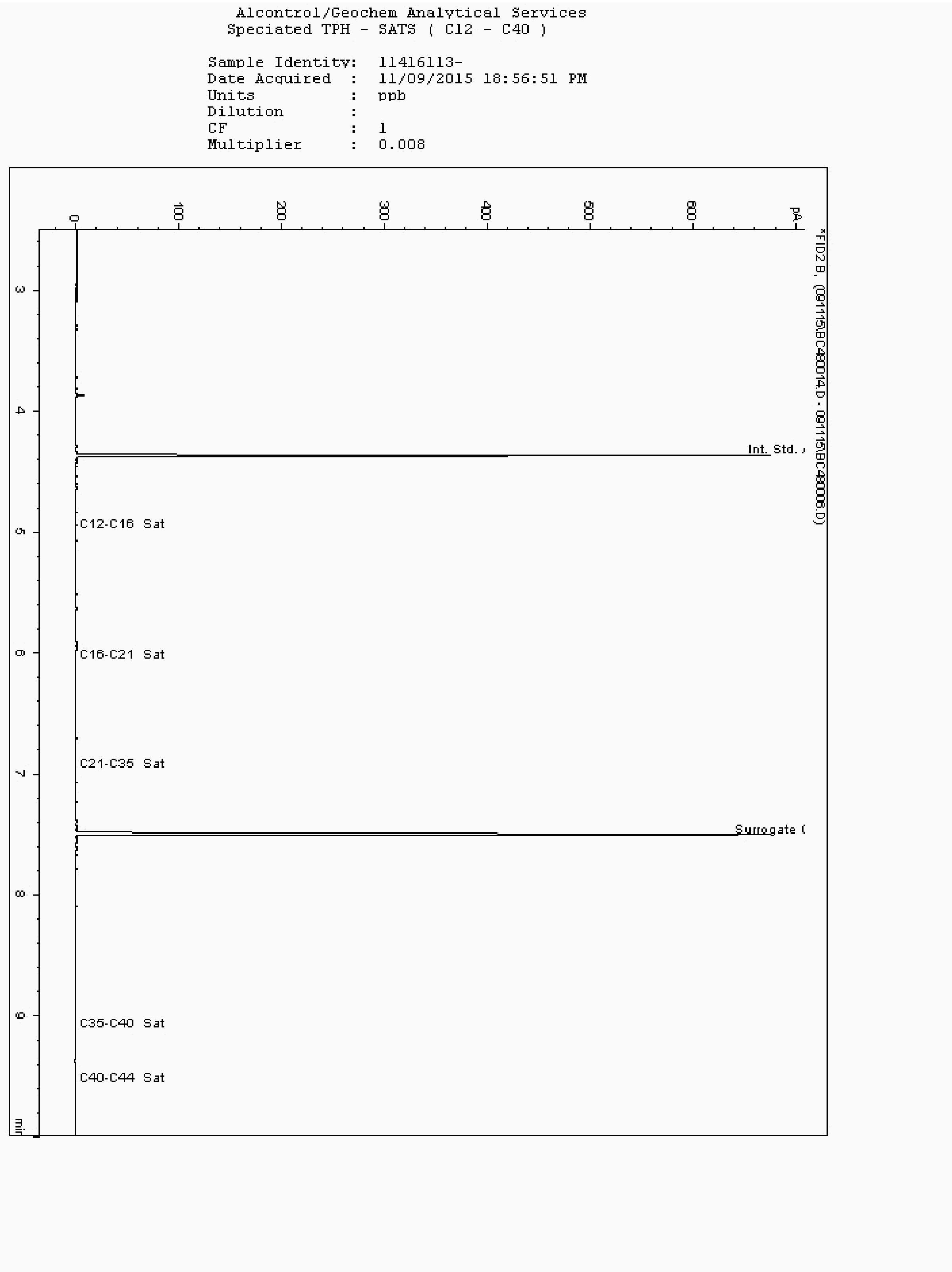


```
      Alcontrol/Geochem Analytical Services
    Speciated TPH - SATS ( C12 - C40 )

  Sample Identity:  11416099-
  Date Acquired  :  11/09/2015 21:08:44 PM
  Units          :  ppb
  Dilution       :
  CF             :  1
  Multiplier     :  0.008
```

Chromatogram

Analysis: EPH CWG (Aliphatic) Aqueous GC (W)
Sample No : 12041693
Sample ID : BH111
Depth :

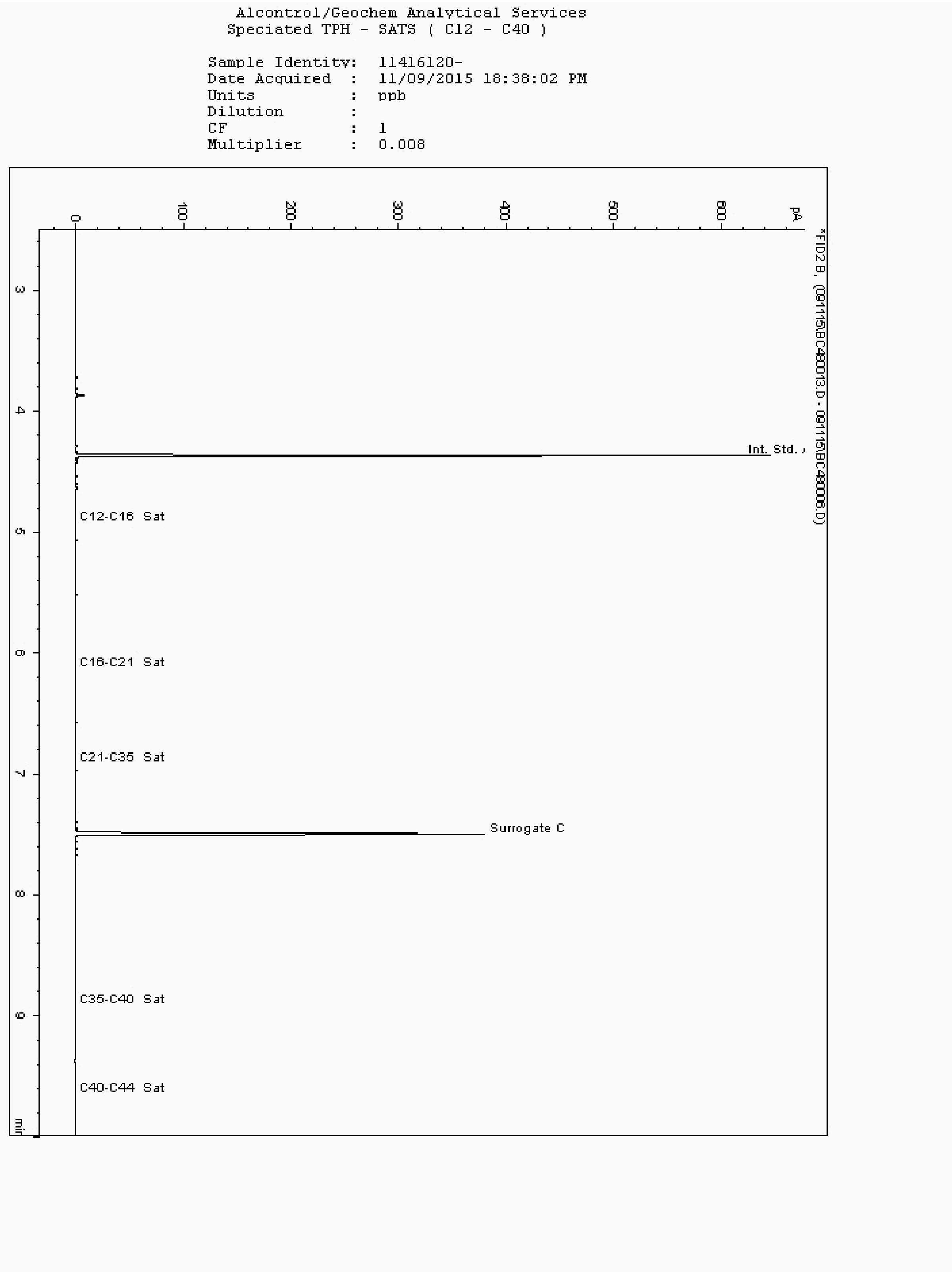


```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11416113-
Date Acquired  :  11/09/2015 18:56:51 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

Chromatogram

Analysis:	EPH CWG (Aliphatic) Aqueous GC (W)	**Sample No :**	12041696	**Depth :**
		Sample ID :	DUP01	



```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

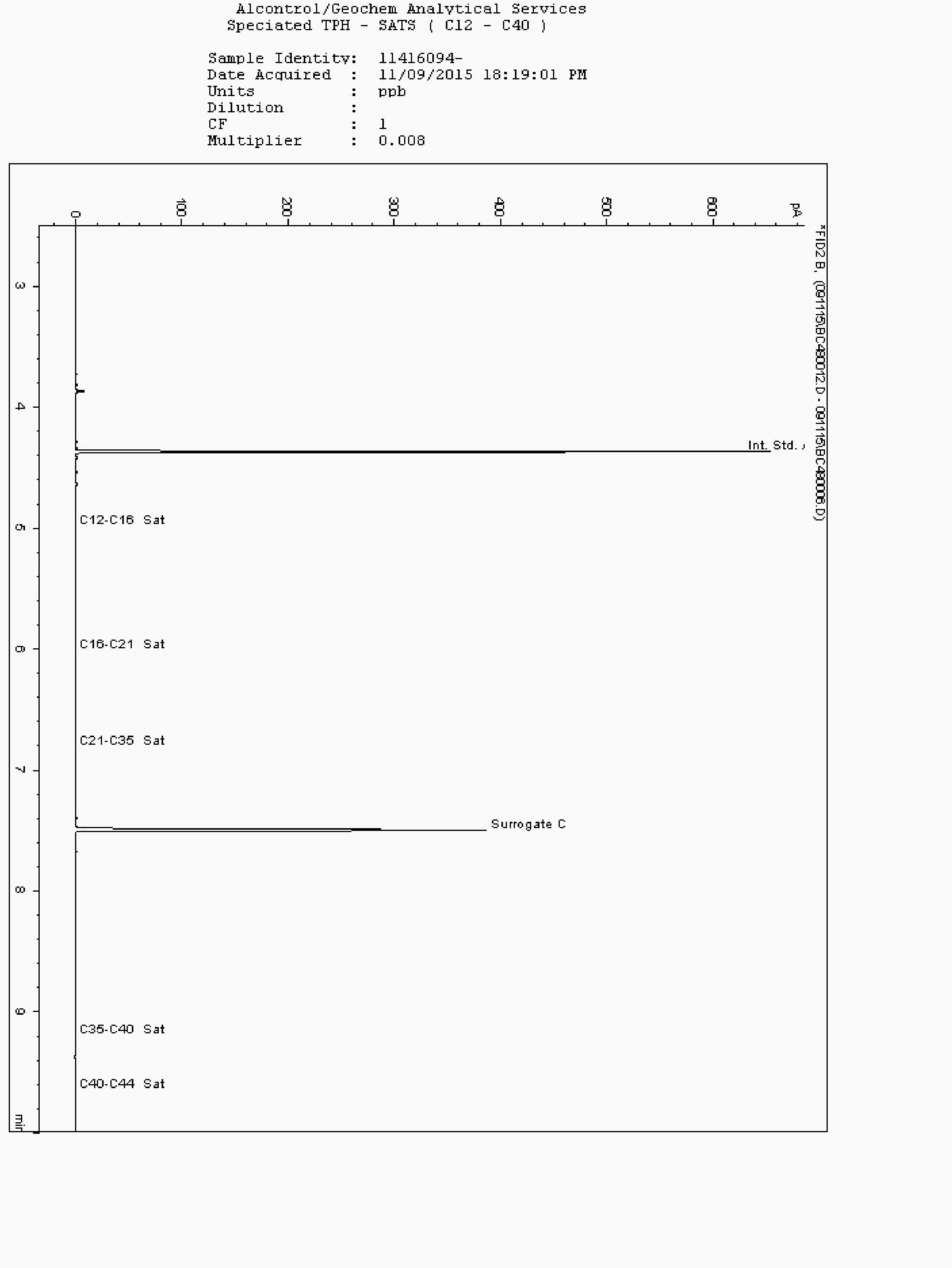
Sample Identity:  11416120-
Date Acquired  :  11/09/2015 18:38:02 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

CERTIFICATE OF ANALYSIS

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329713
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) Aqueous GC (W)
Sample No : 12041700
Sample ID : BH110
Depth :



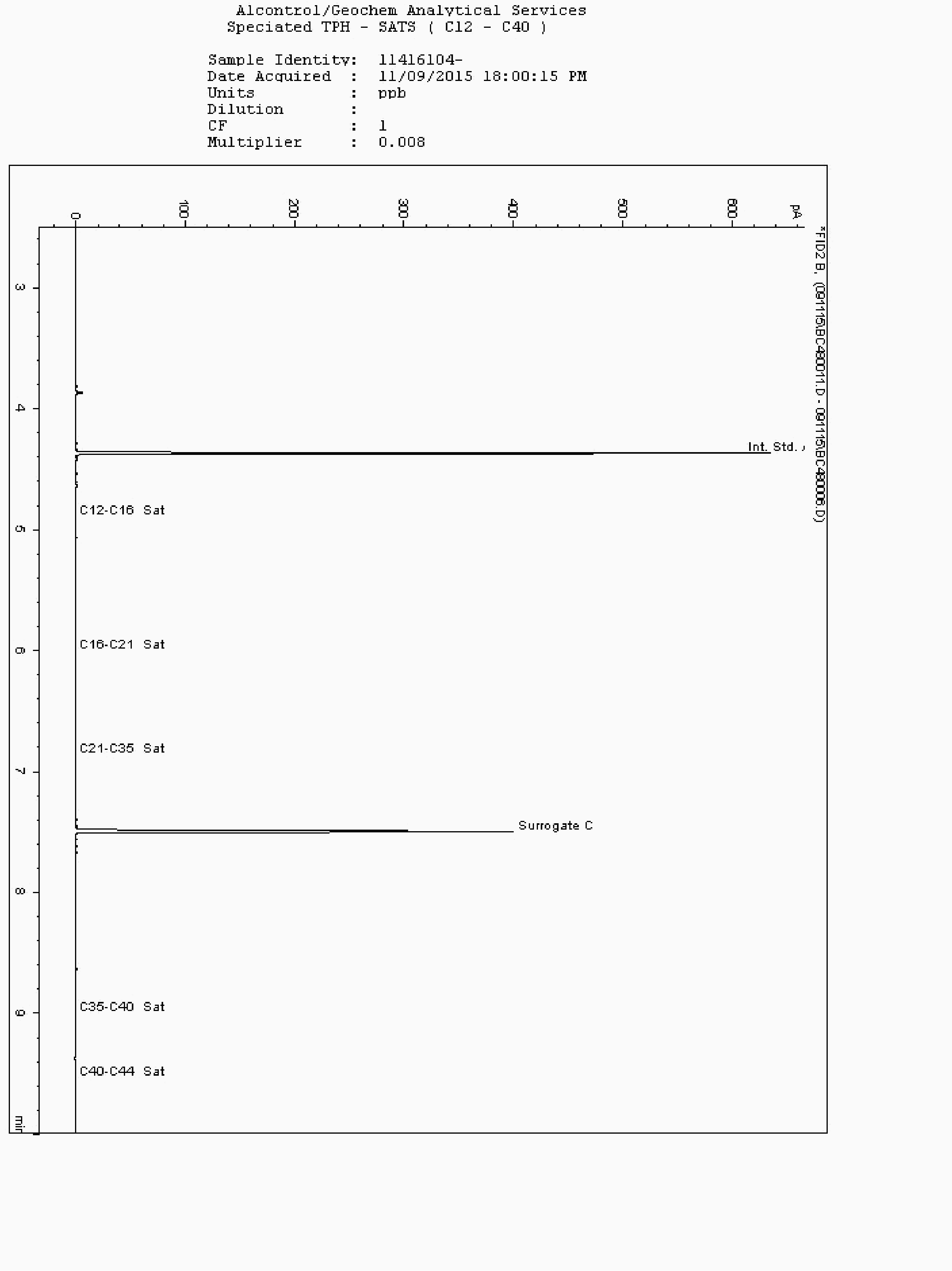
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

```
Sample Identity:  11416094-
Date Acquired  :  11/09/2015 18:19:01 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329713
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aliphatic) Aqueous GC (W)
Sample No : 12041705
Sample ID : BH8
Depth :



```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

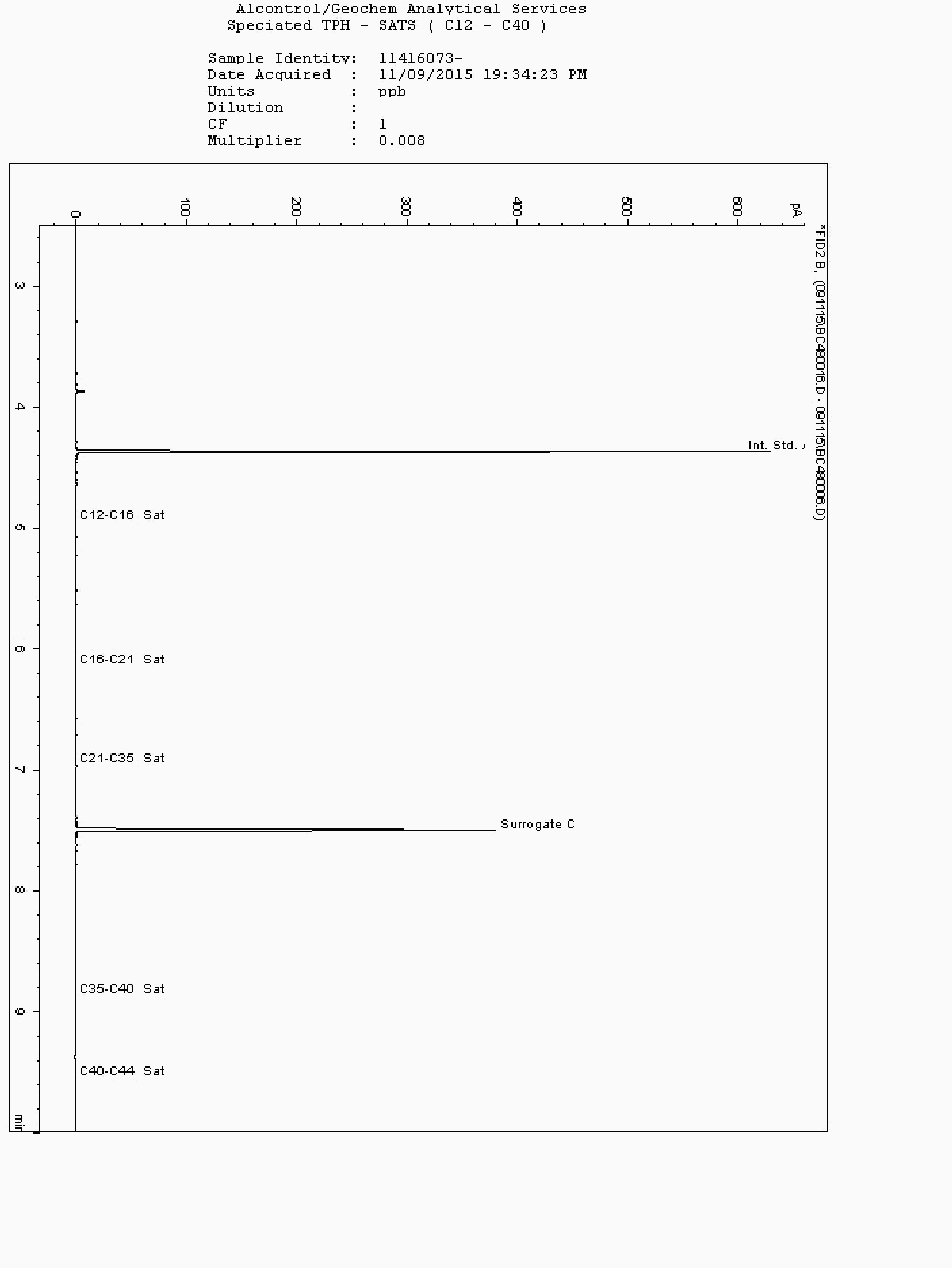
Sample Identity:  11416104-
Date Acquired   :  11/09/2015 18:00:15 PM
Units           :  ppb
Dilution        :
CF              :  1
Multiplier      :  0.008
```

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aliphatic) Aqueous GC (W)	**Sample No :**	12041823	**Depth :**	
		Sample ID :	BH4		

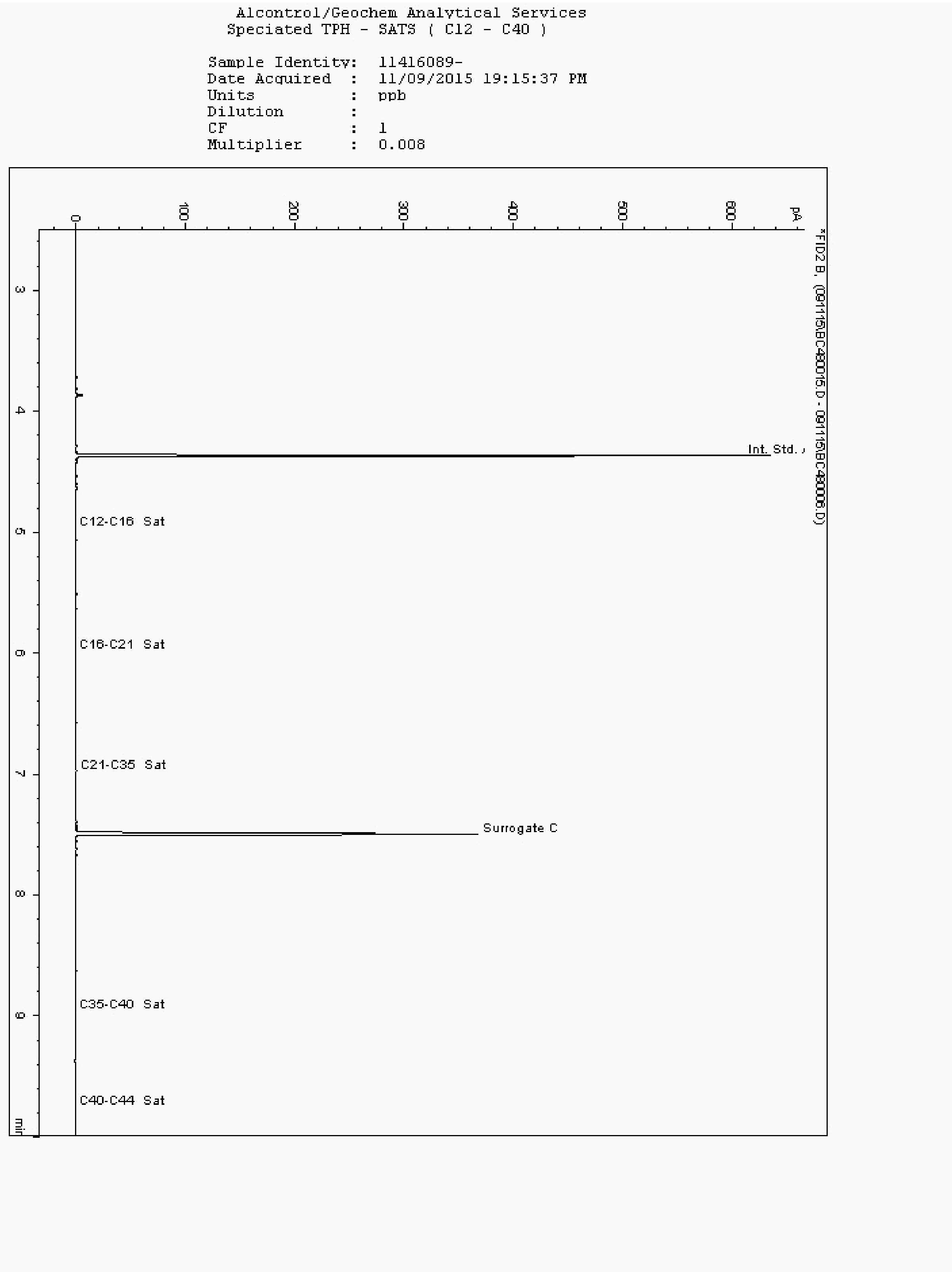


```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11416073-
Date Acquired  :  11/09/2015 19:34:23 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

Chromatogram

Analysis:	EPH CWG (Aliphatic) Aqueous GC (W)	**Sample No :**	12041835	**Depth :**	
		Sample ID :	BH3		

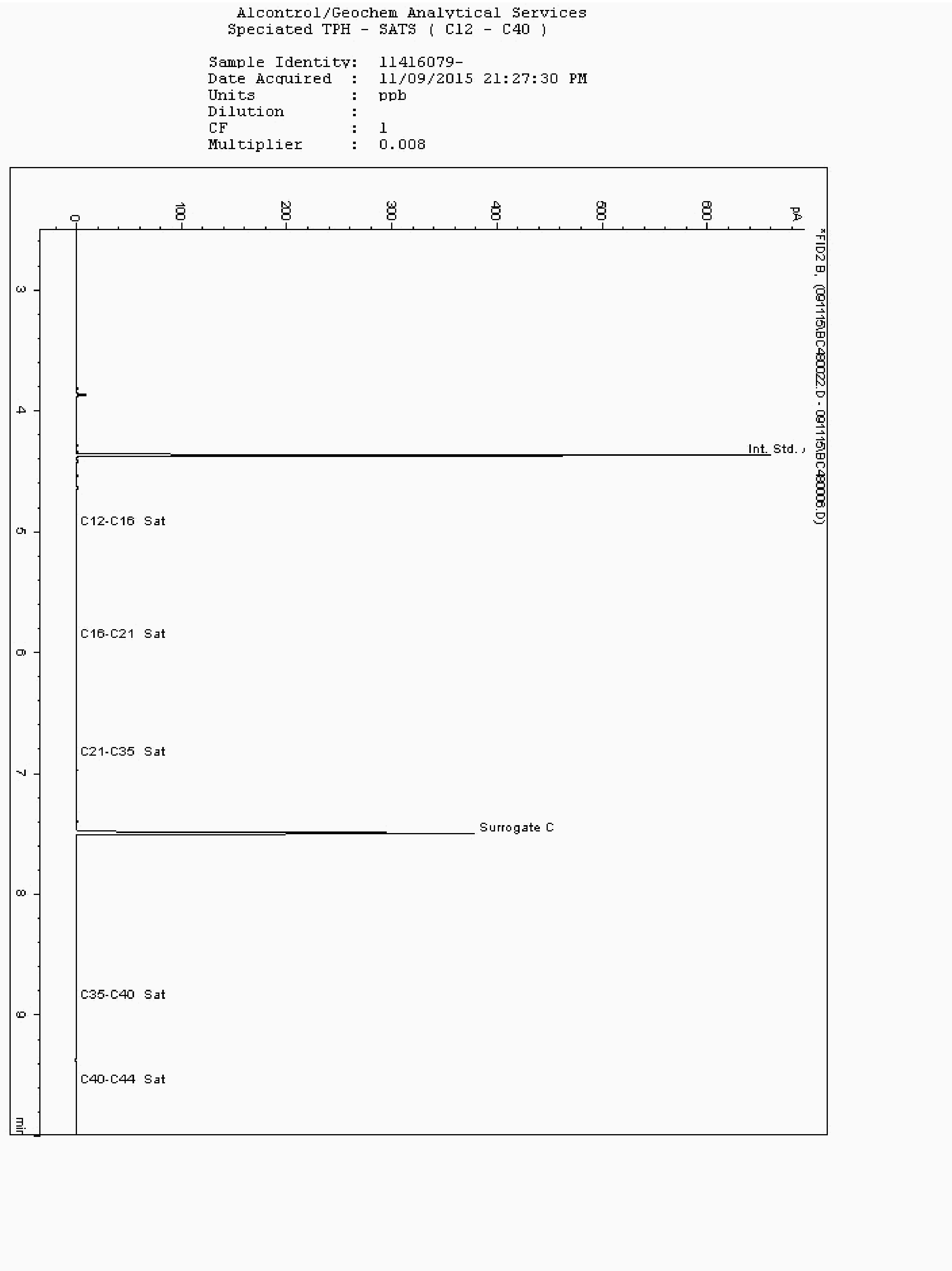


```
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS ( C12 - C40 )

Sample Identity:  11416089-
Date Acquired  :  11/09/2015 19:15:37 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

Chromatogram

Analysis:	EPH CWG (Aliphatic) Aqueous GC (W)	**Sample No :**	12041844	**Depth :**	
		Sample ID :	BH5		



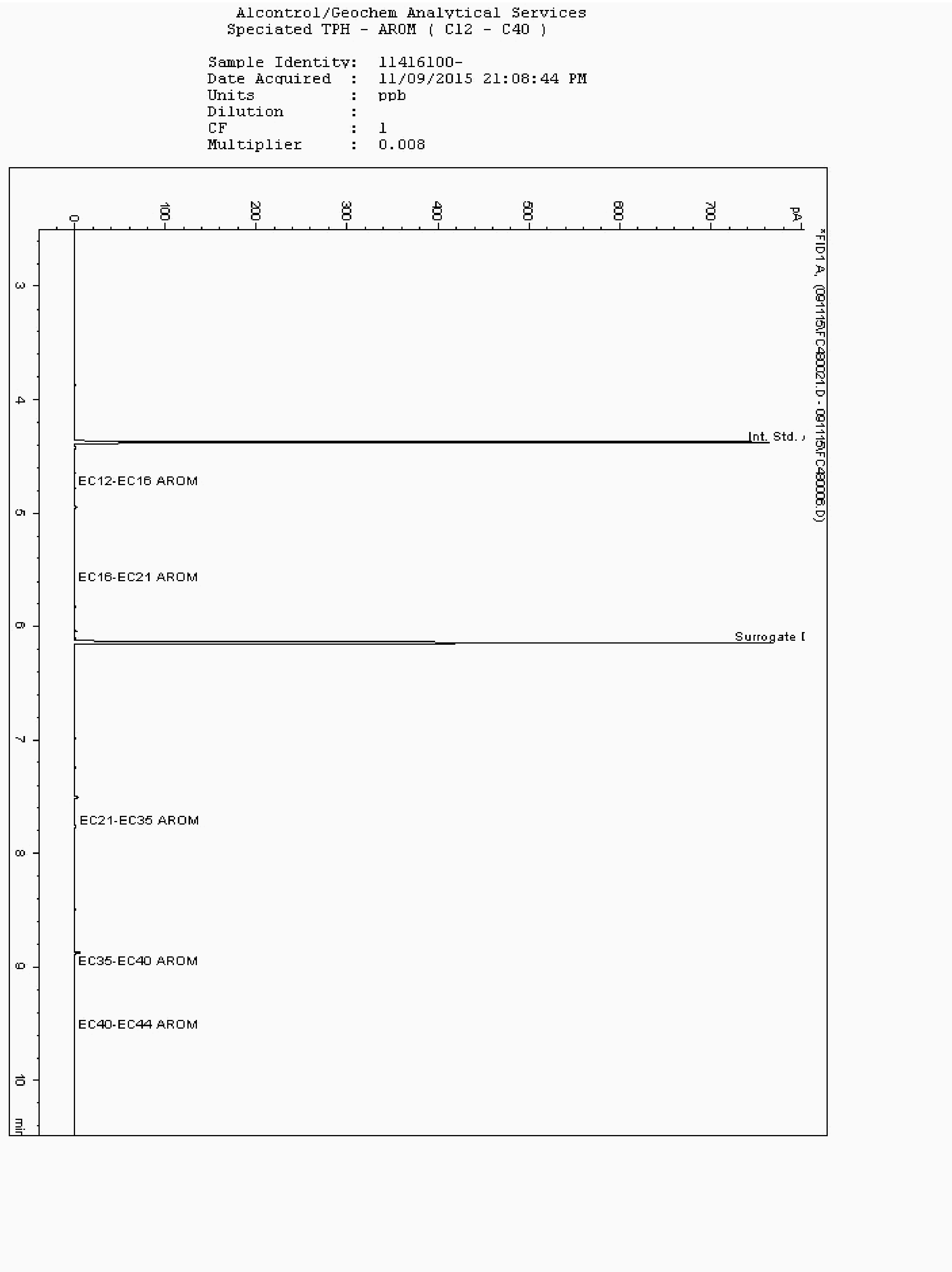
Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 11416079-
Date Acquired : 11/09/2015 21:27:30 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329713
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W)
Sample No : 12041687
Sample ID : BH109
Depth :



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11416100-
Date Acquired  :  11/09/2015 21:08:44 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

CERTIFICATE OF ANALYSIS

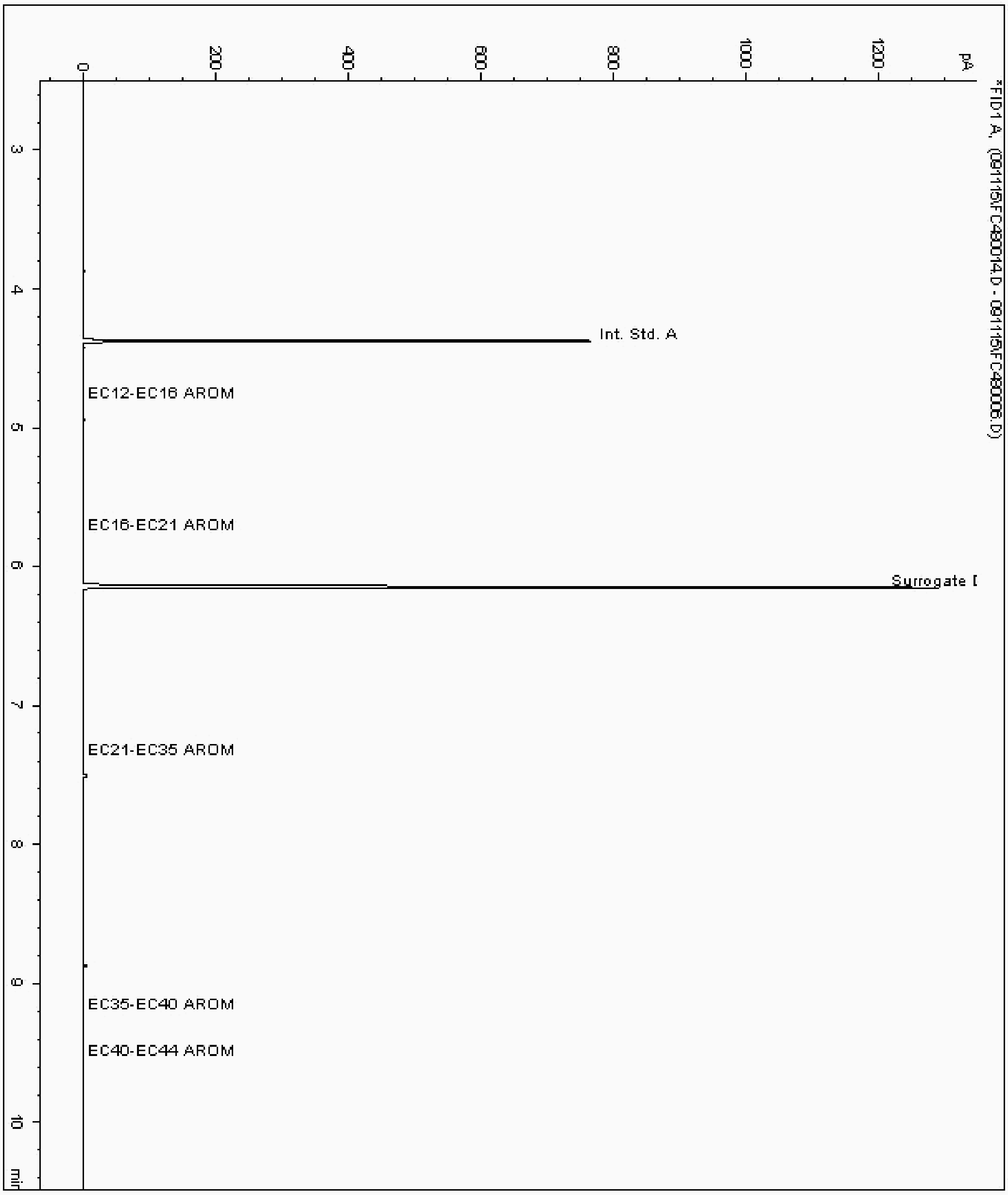
SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) Aqueous GC (W)	**Sample No :**	12041693	**Depth :**	
		Sample ID :	BH111		

```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11416114-
Date Acquired   :  11/09/2015 18:56:50 PM
Units           :  ppb
Dilution        :
CF              :  1
Multiplier      :  0.008
```

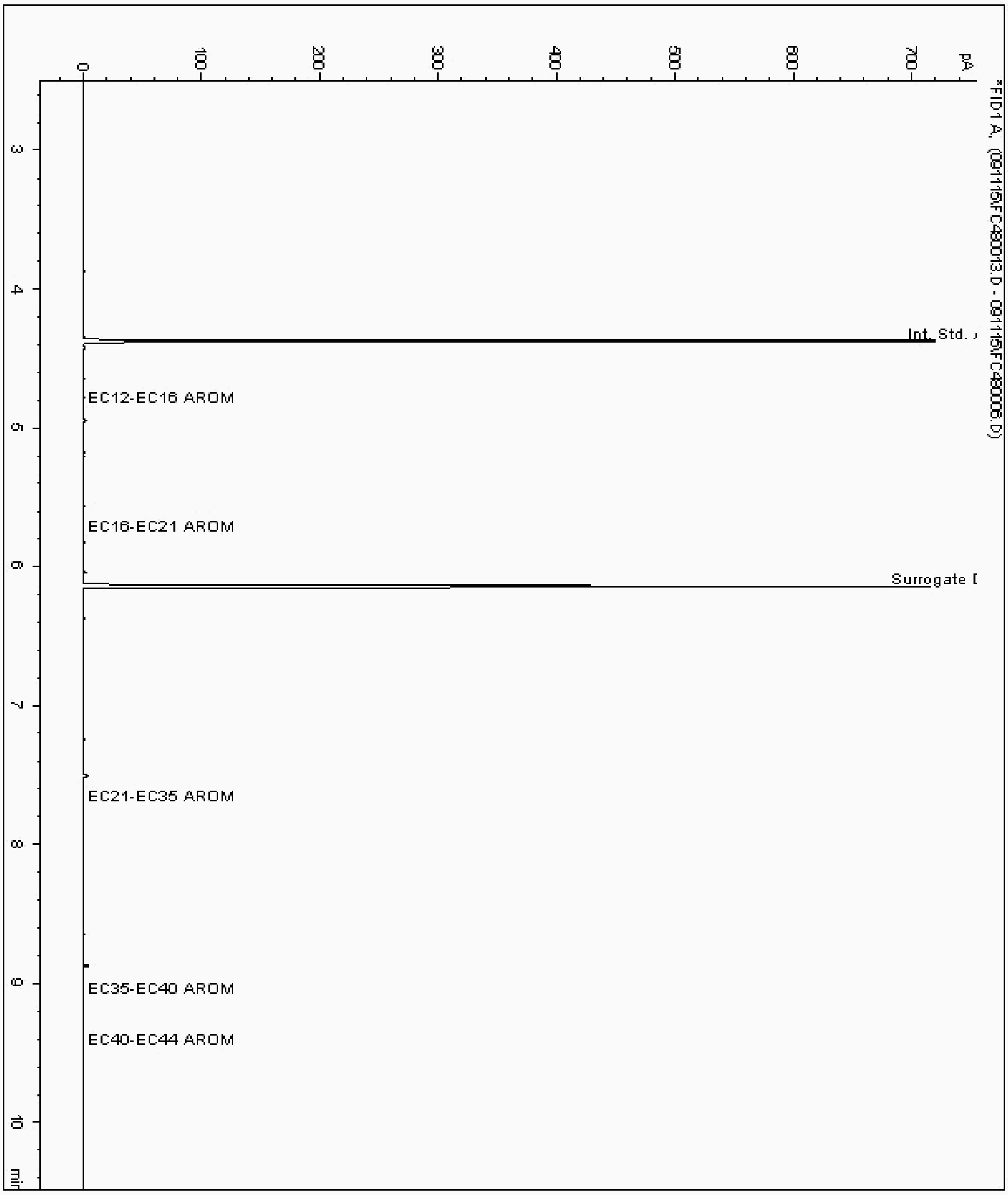


Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W)
Sample No : 12041696
Sample ID : DUP01
Depth :

```
      Alcontrol/Geochem Analytical Services
    Speciated TPH - AROM ( C12 - C40 )

  Sample Identity:  11416121-
  Date Acquired  :  11/09/2015 18:38:02 PM
  Units          :  ppb
  Dilution       :
  CF             :  1
  Multiplier     :  0.008
```

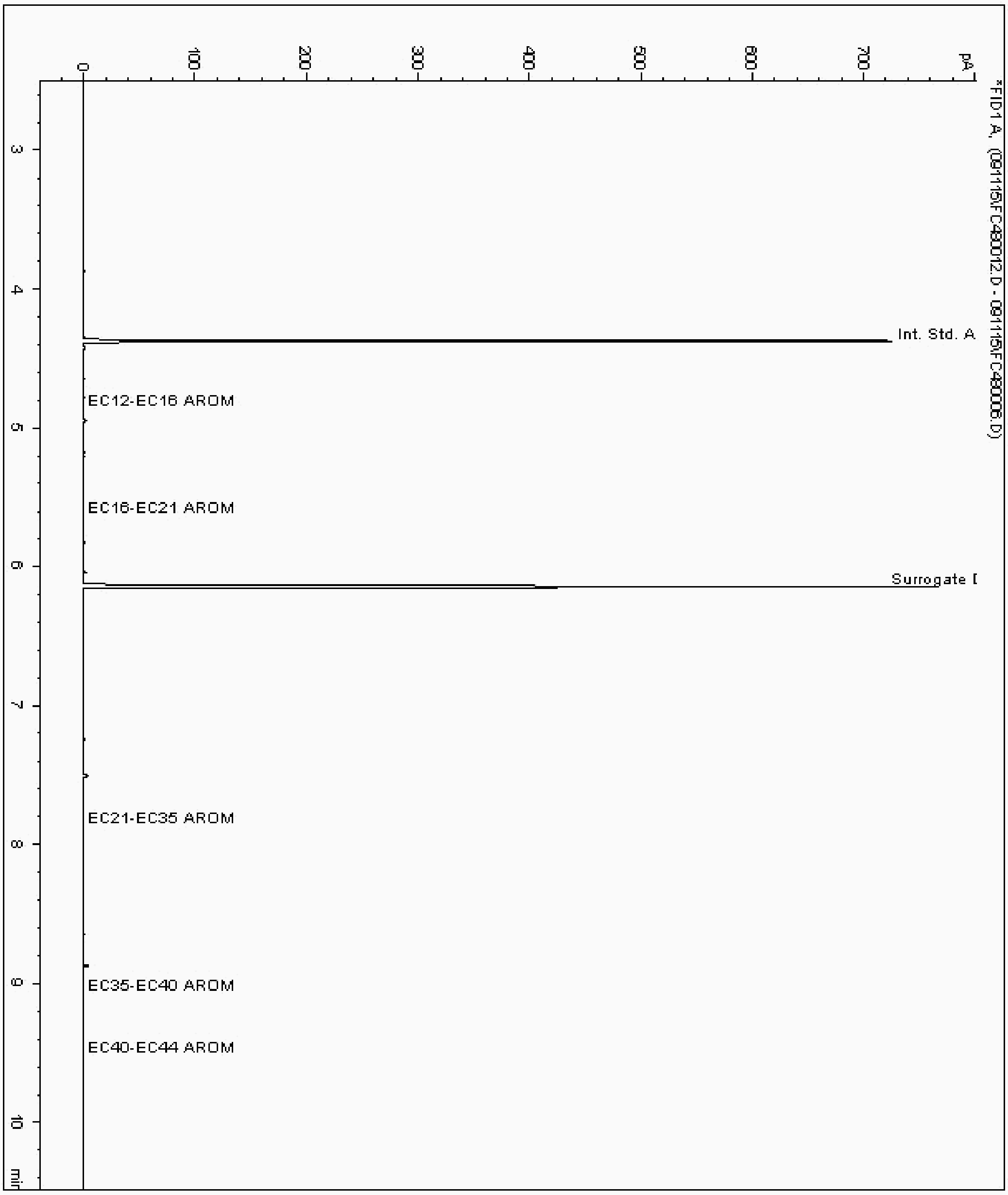


Chromatogram

Analysis:	EPH CWG (Aromatic) Aqueous GC (W)	**Sample No :**	12041700	**Depth :**	
		Sample ID :	BH110		

```
     Alcontrol/Geochem Analytical Services
   Speciated TPH - AROM ( C12 - C40 )

Sample Identity:  11416095-
Date Acquired  :  11/09/2015 18:19:02 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```



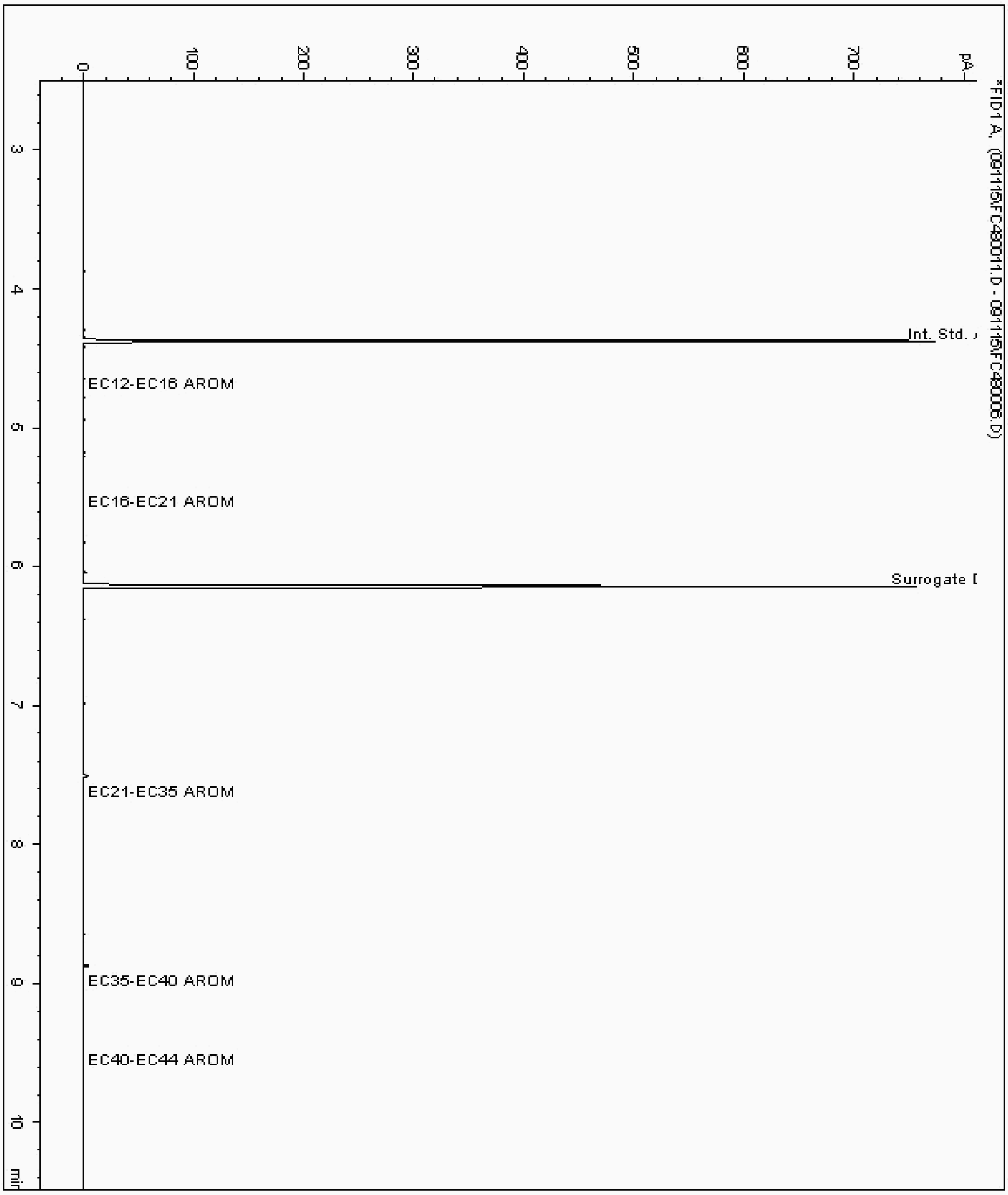
SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329713
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W)
Sample No : 12041705
Sample ID : BH8
Depth :

```
   Alcontrol/Geochem Analytical Services
 Speciated TPH - AROM ( C12 - C40 )

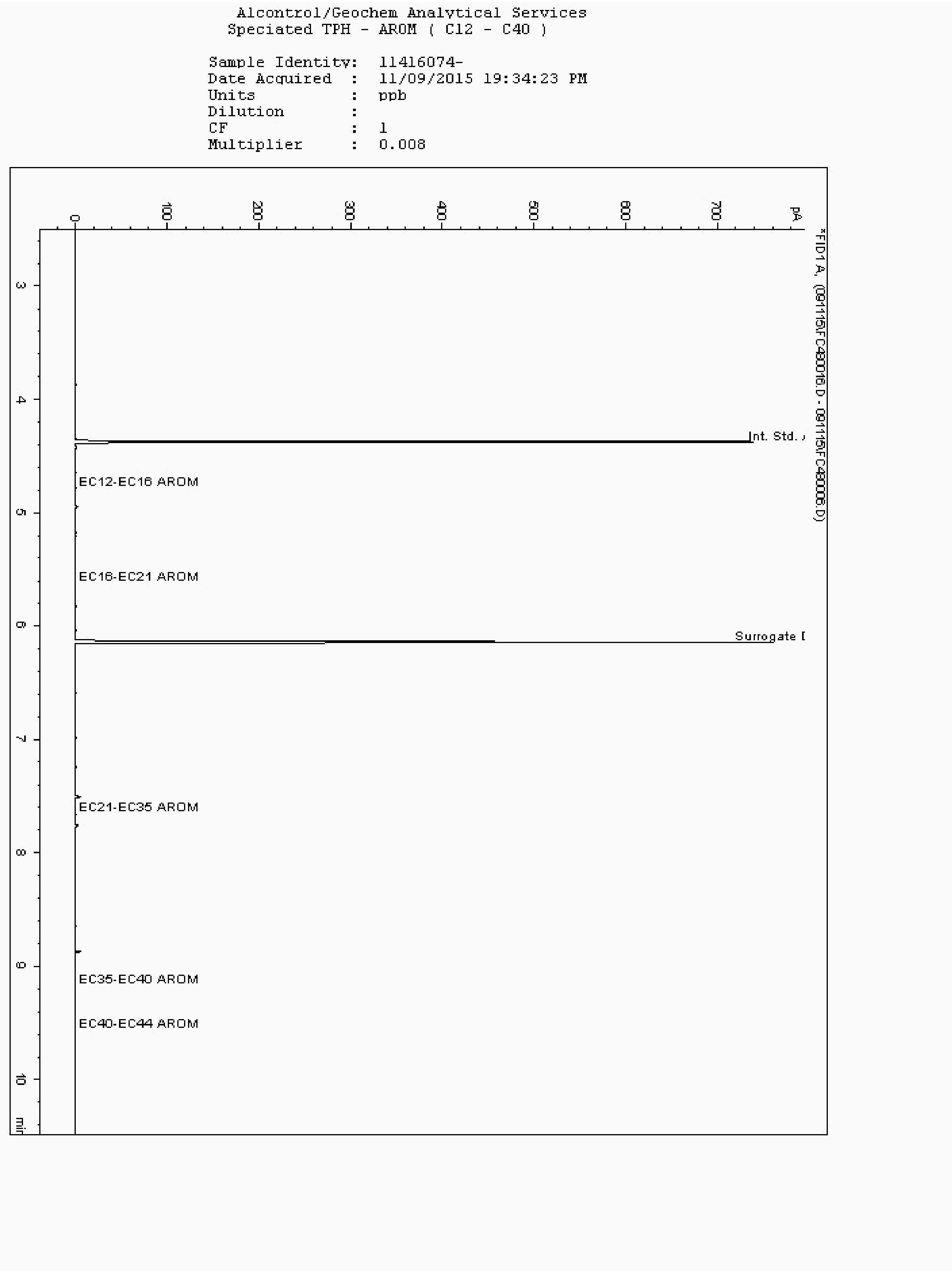
Sample Identity:  11416105-
Date Acquired  :  11/09/2015 18:00:16 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```



SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH CWG (Aromatic) Aqueous GC (W)	**Sample No :**	12041823	**Depth :**	
		Sample ID :	BH4		



```
Alcontrol/Geochem Analytical Services
Speciated TPH - AROM ( C12 - C40 )

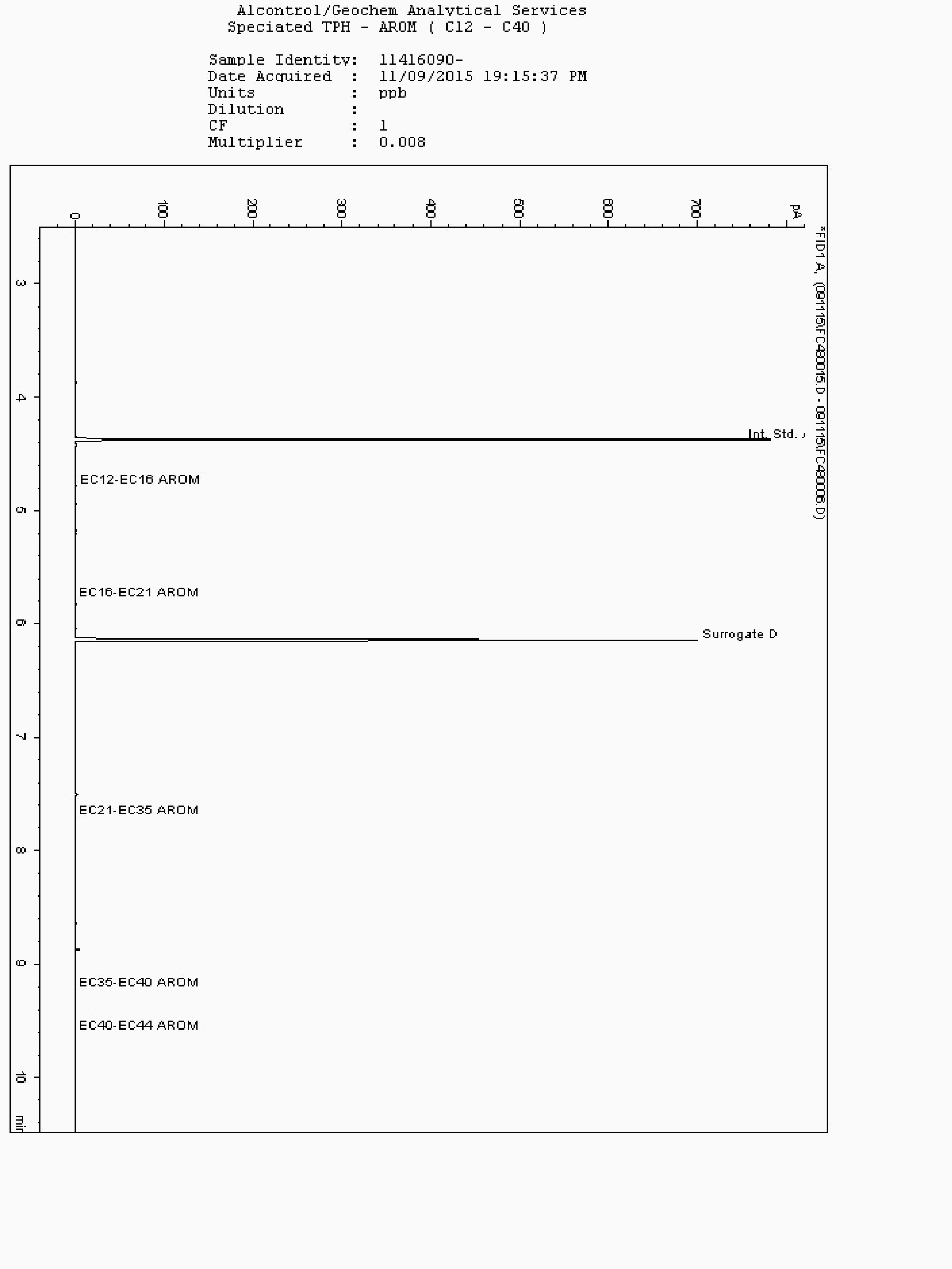
Sample Identity:  11416074-
Date Acquired   :  11/09/2015 19:34:23 PM
Units           :  ppb
Dilution        :
CF              :  1
Multiplier      :  0.008
```

CERTIFICATE OF ANALYSIS

SDG: 150902-38
Job: H_URS_WIM-273
Client Reference:
Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall
Order Number:
Report Number: 329713
Superseded Report:

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W)
Sample No : 12041835
Sample ID : BH3
Depth :



```
Alcontrol/Geochem Analytical Services
  Speciated TPH - AROM ( C12 - C40 )

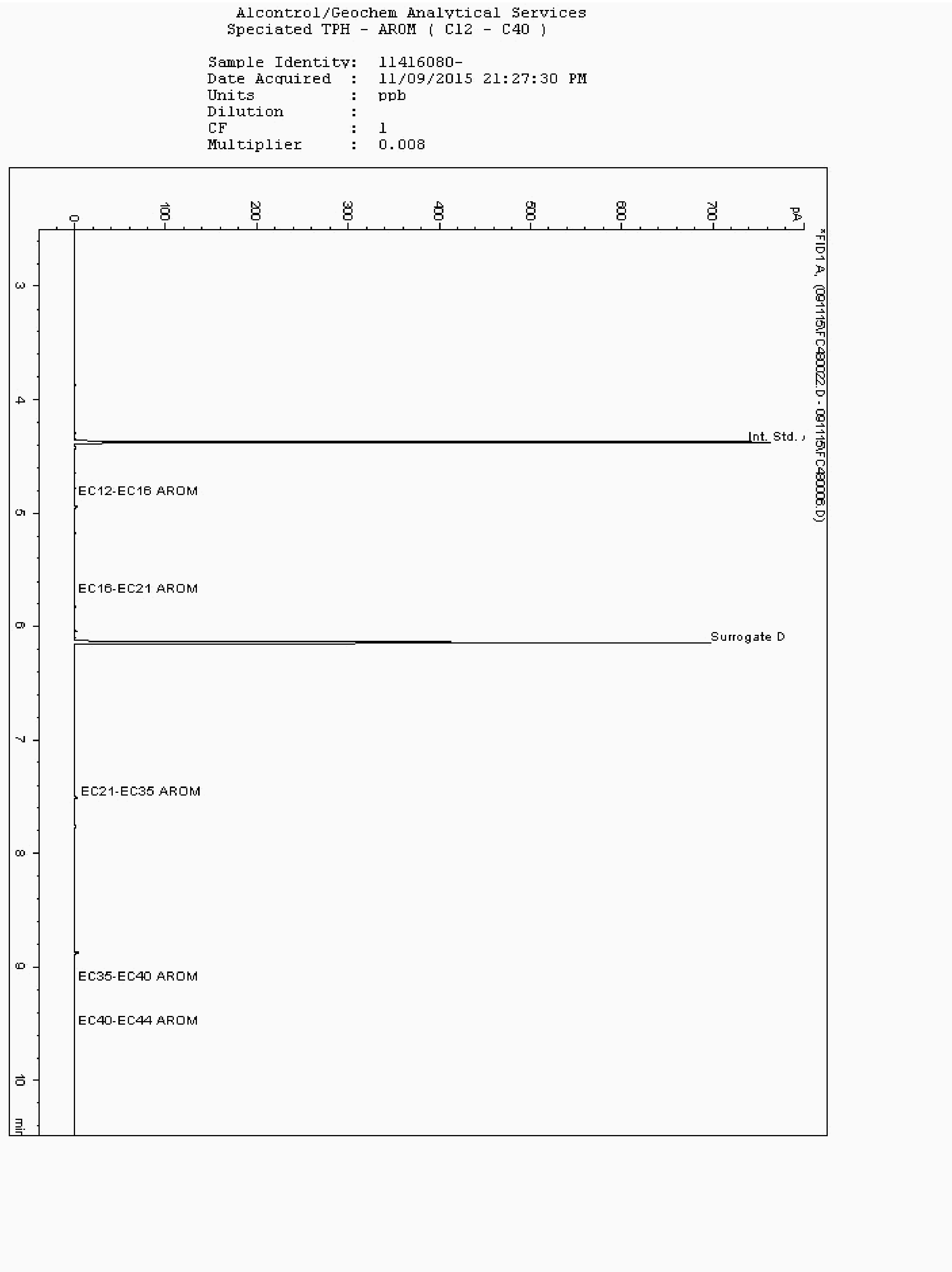
Sample Identity:  11416090-
Date Acquired  :  11/09/2015 19:15:37 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis: EPH CWG (Aromatic) Aqueous GC (W)	**Sample No :**	12041844	**Depth :**	
	Sample ID :	BH5		

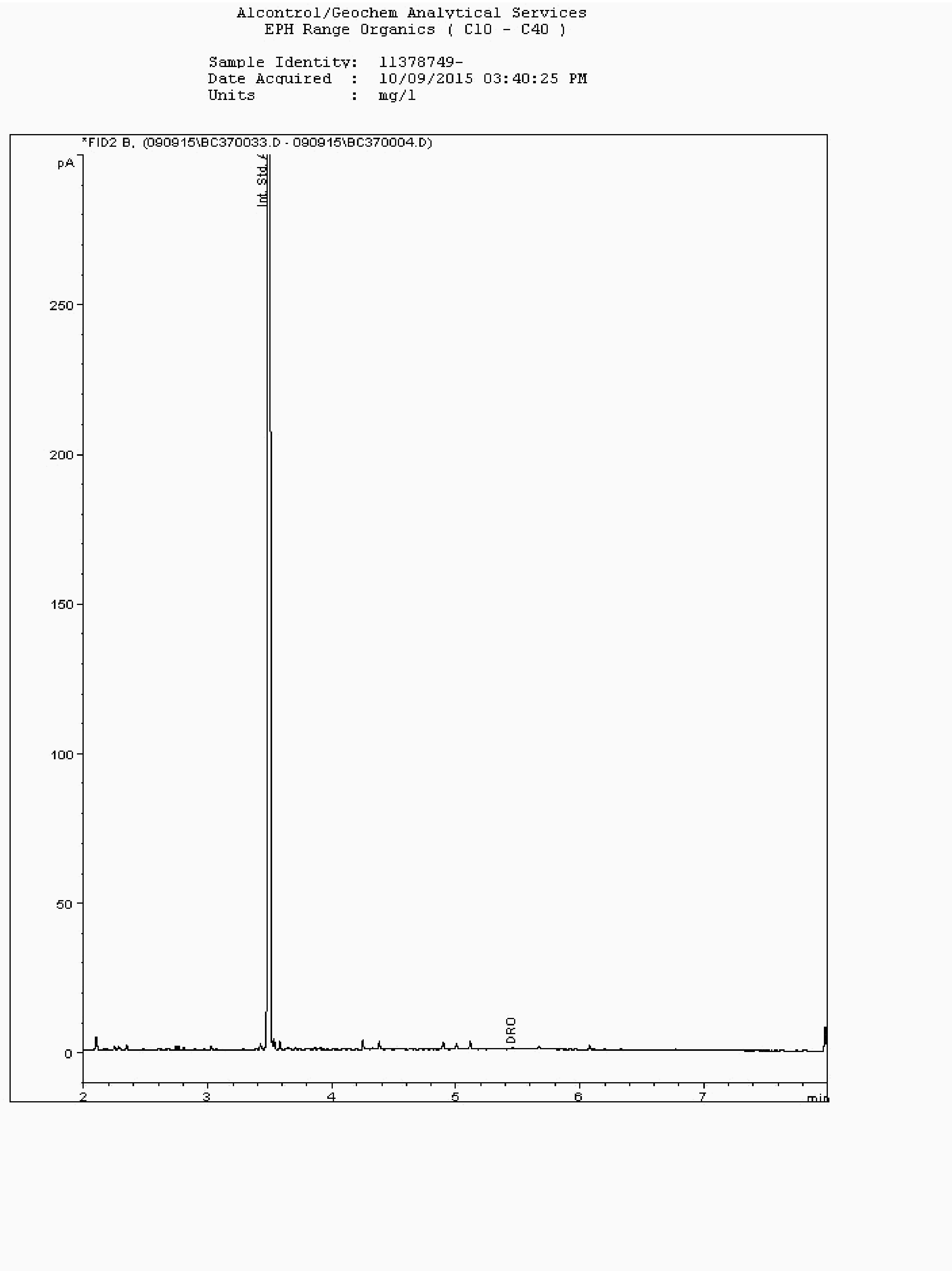


Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

```
Sample Identity:  11416080-
Date Acquired  :  11/09/2015 21:27:30 PM
Units          :  ppb
Dilution       :
CF             :  1
Multiplier     :  0.008
```

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W)
Sample No : 12010785
Sample ID : BH8
Depth :



```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11378749-
Date Acquired  :  10/09/2015 03:40:25 PM
Units          :  mg/l
```

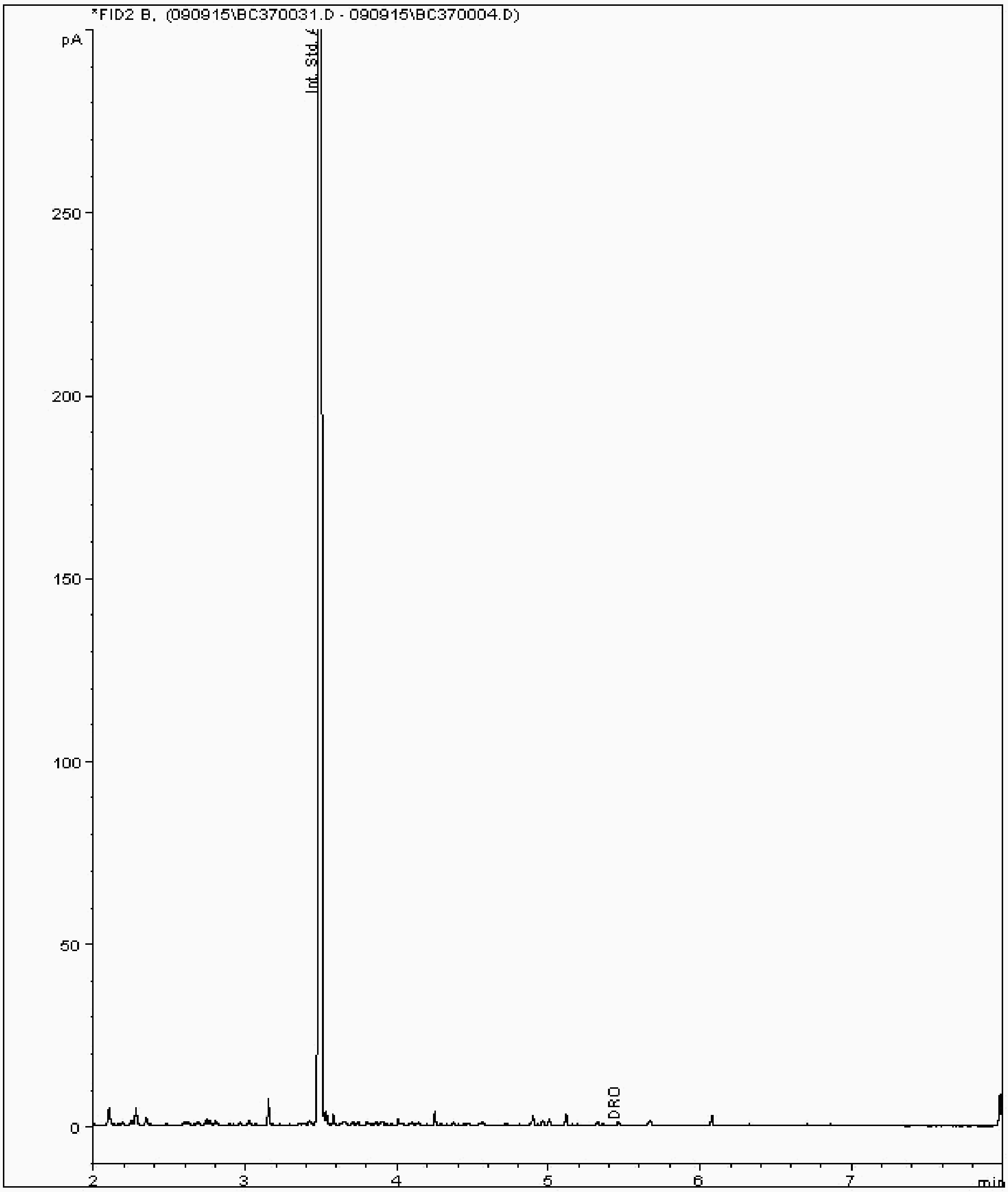
SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12010813	**Depth :**	
		Sample ID :	DUP01		

```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

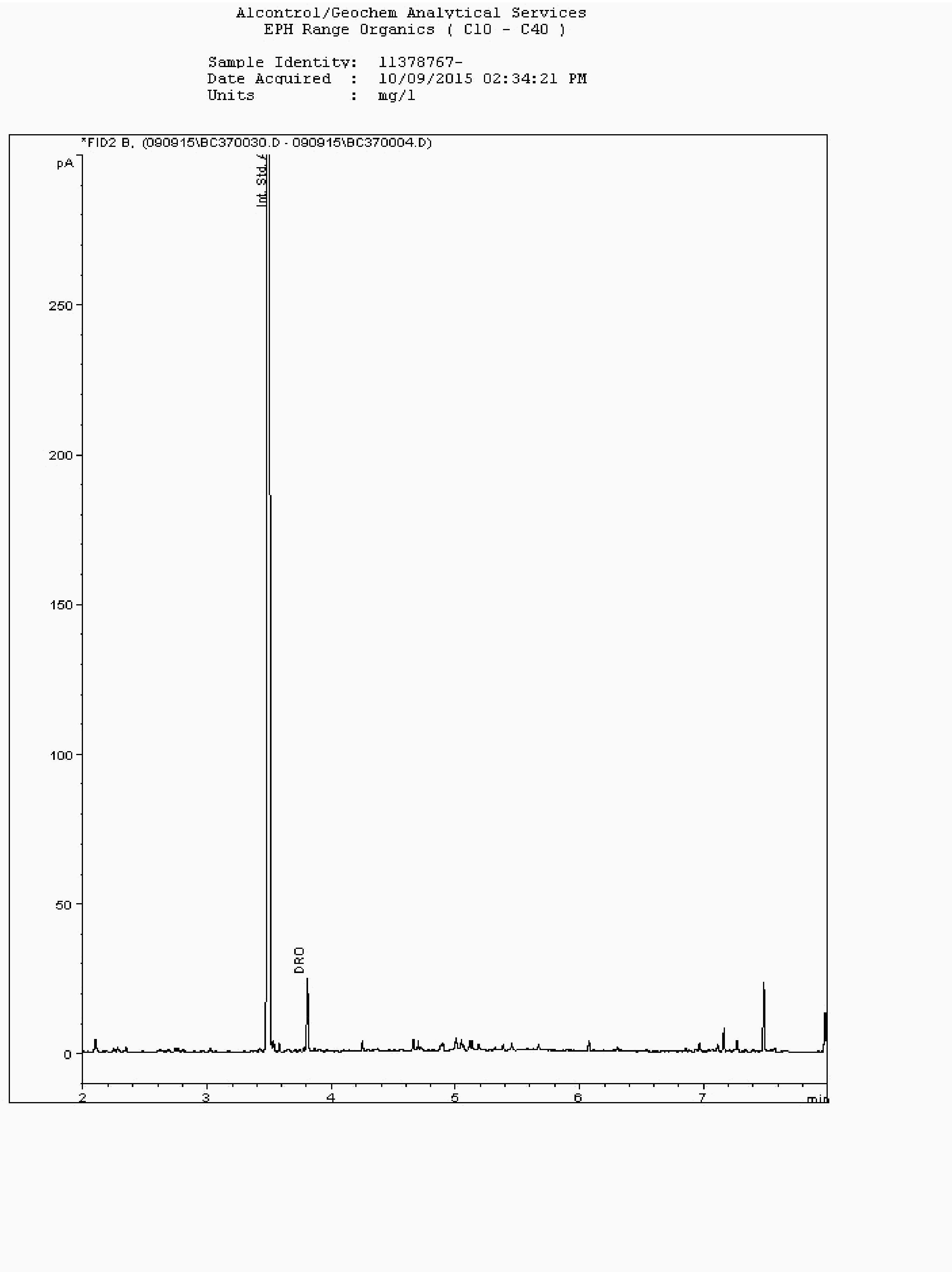
Sample Identity:  11378785-
Date Acquired   :  10/09/2015 02:56:26 PM
Units           :  mg/l
```



SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12010836	**Depth :**	
		Sample ID :	BH111		

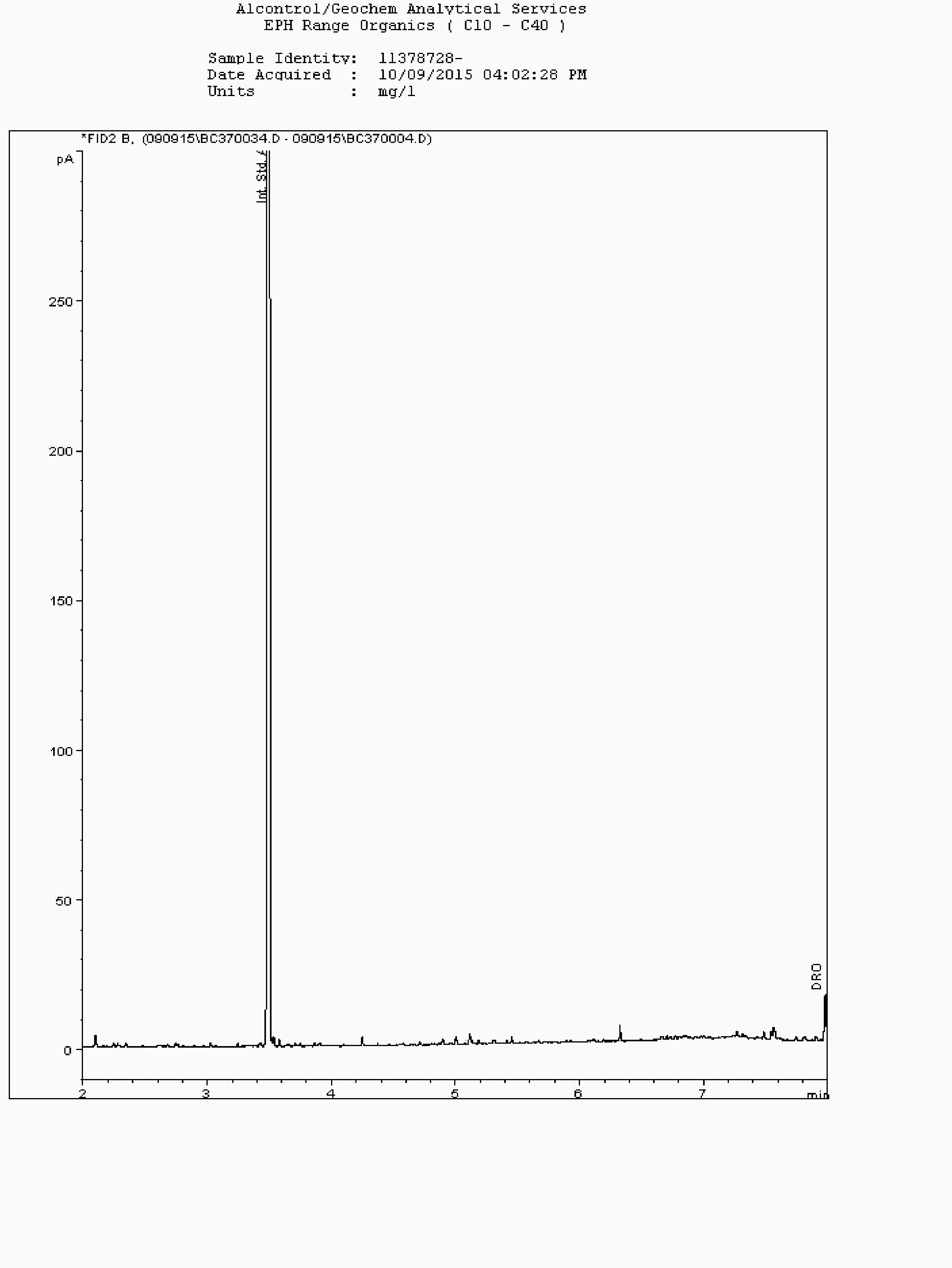


```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11378767-
Date Acquired   :  10/09/2015 02:34:21 PM
Units           :  mg/l
```

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W)
Sample No : 12010862
Sample ID : BH109
Depth :



```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11378728-
Date Acquired  :  10/09/2015 04:02:28 PM
Units          :  mg/l
```

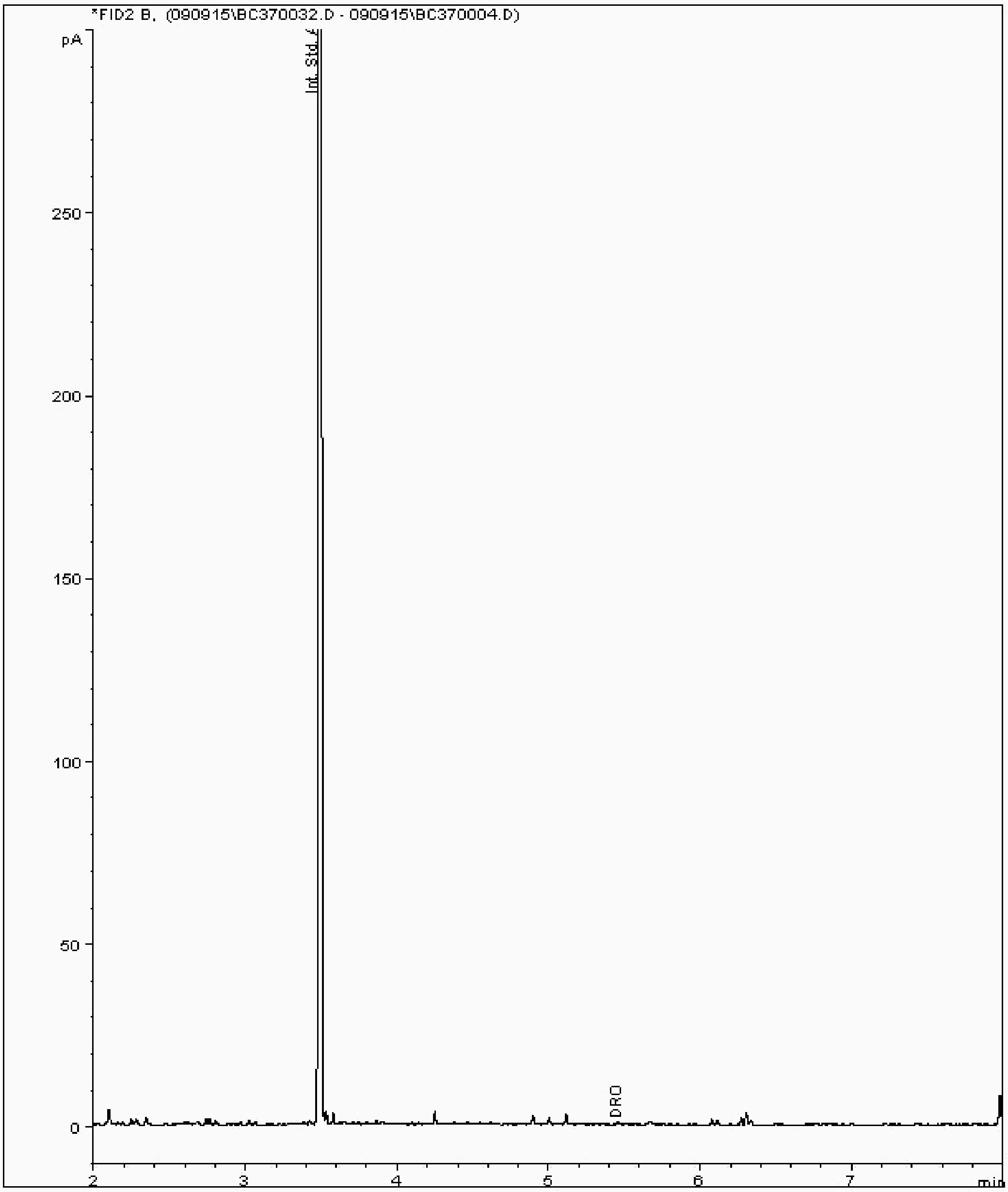
SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12010877	**Depth :**	
		Sample ID :	BH110		

```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11378714-
Date Acquired   :  10/09/2015 03:18:35 PM
Units           :  mg/l
```



CERTIFICATE OF ANALYSIS

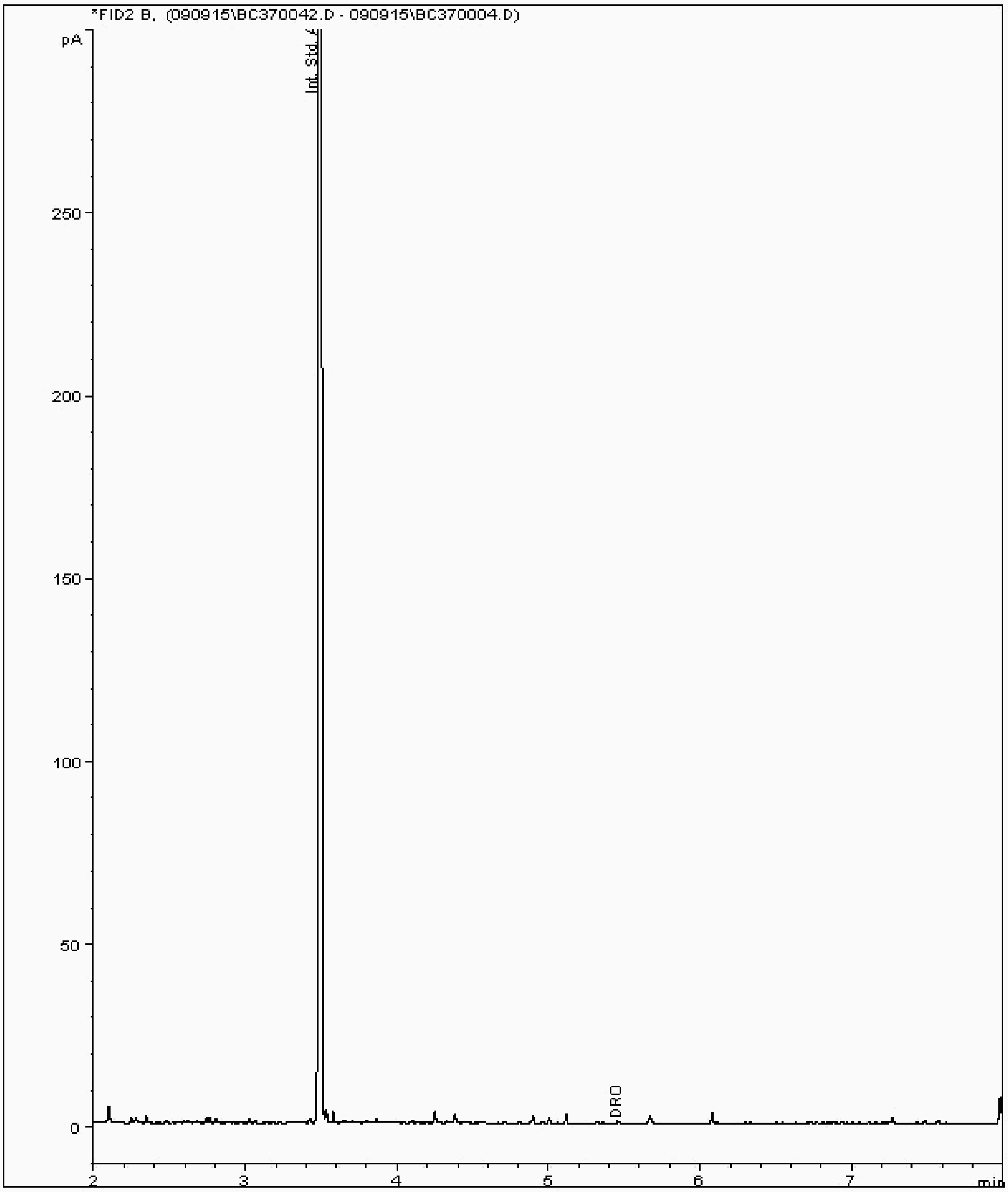
SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12012900	**Depth :**	
		Sample ID :	BH5		

Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

Sample Identity: 11378677-
Date Acquired : 10/09/2015 06:59:22 PM
Units : mg/l

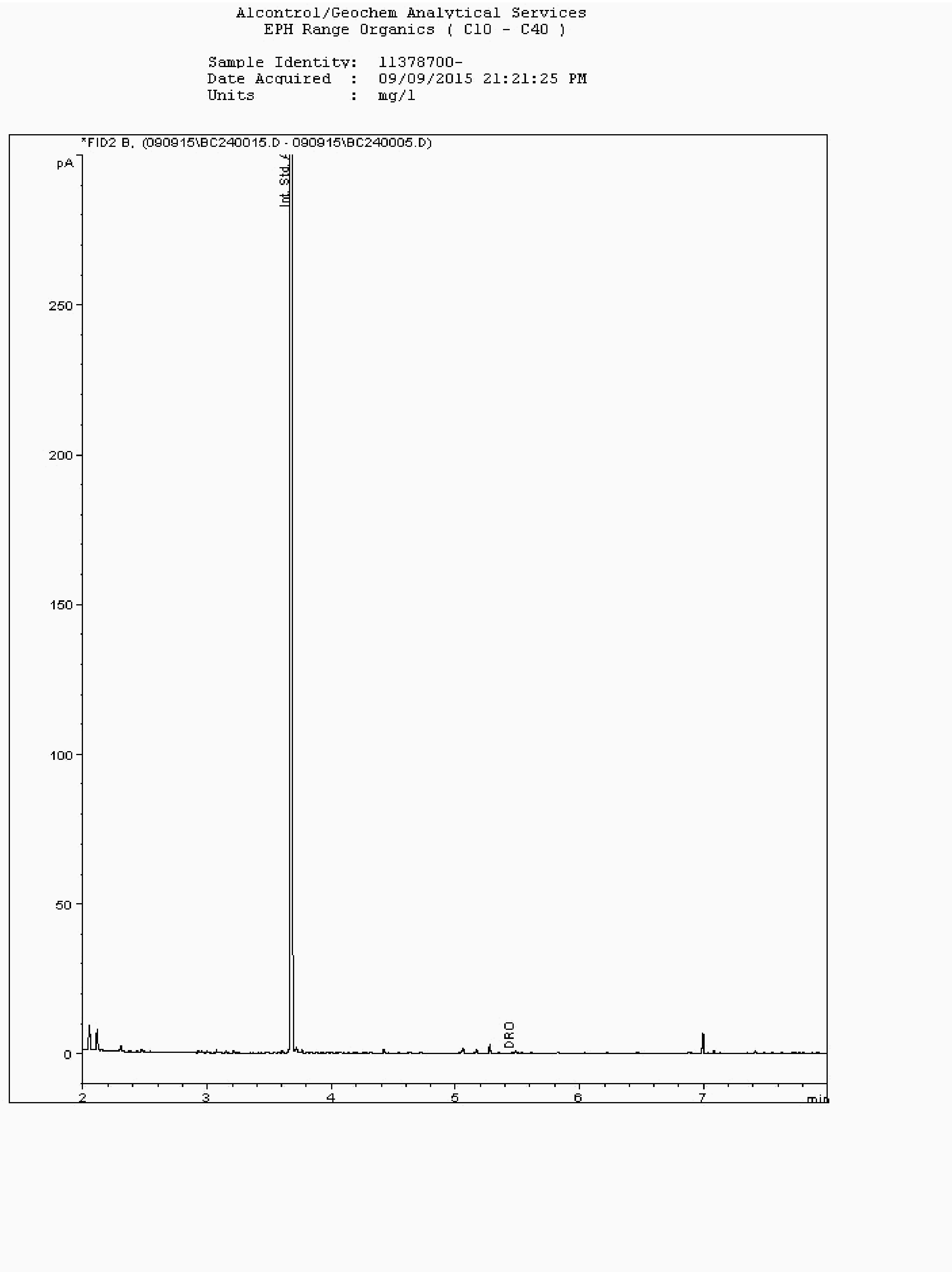


CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12012997	**Depth :**	
		Sample ID :	BH3		



Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

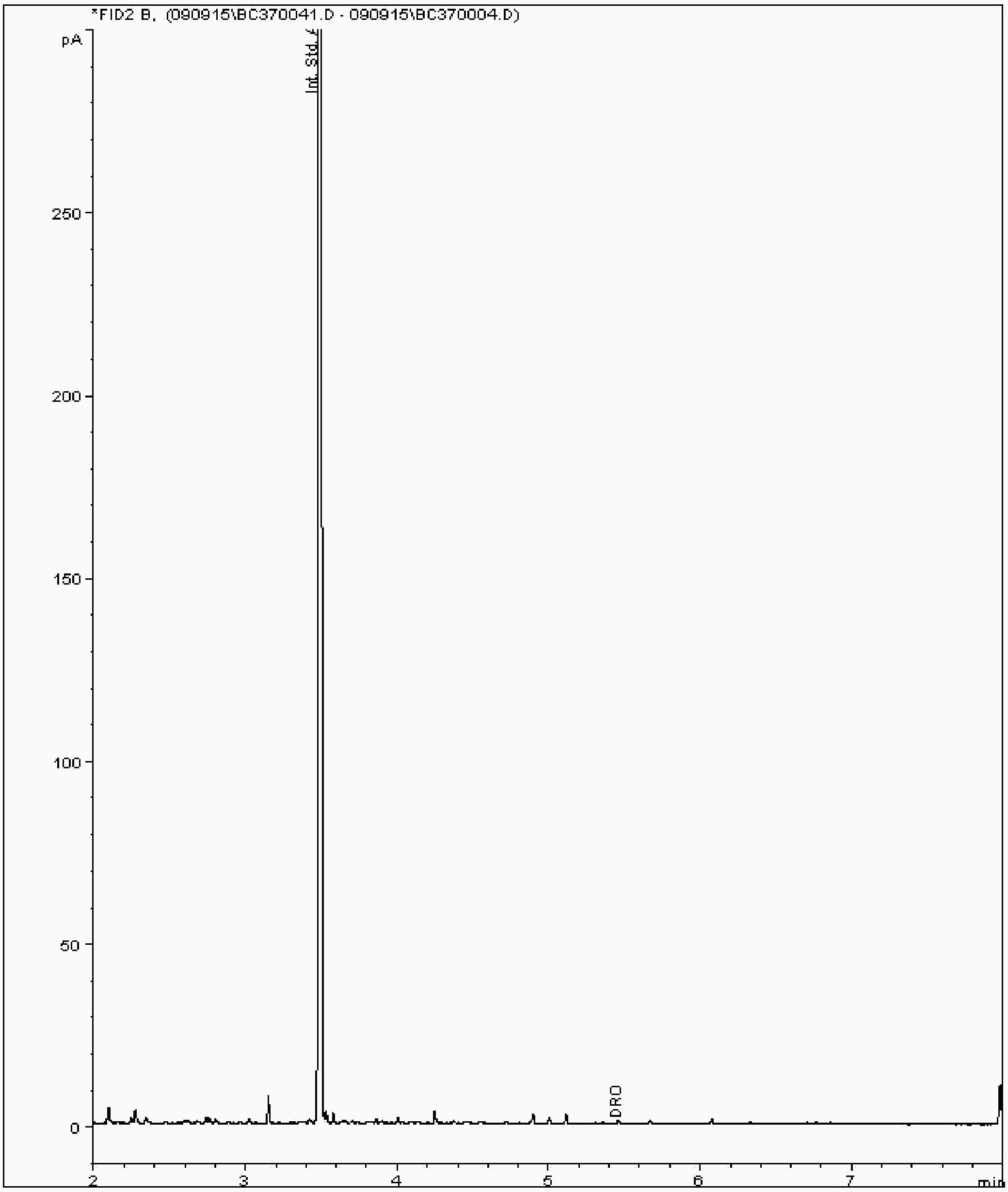
Sample Identity: 11378700-
Date Acquired : 09/09/2015 21:21:25 PM
Units : mg/l

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12013027	**Depth :**	
	Sample ID :	BH4		

Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

Sample Identity: 11378662-
Date Acquired : 10/09/2015 06:37:21 PM
Units   : mg/l



SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

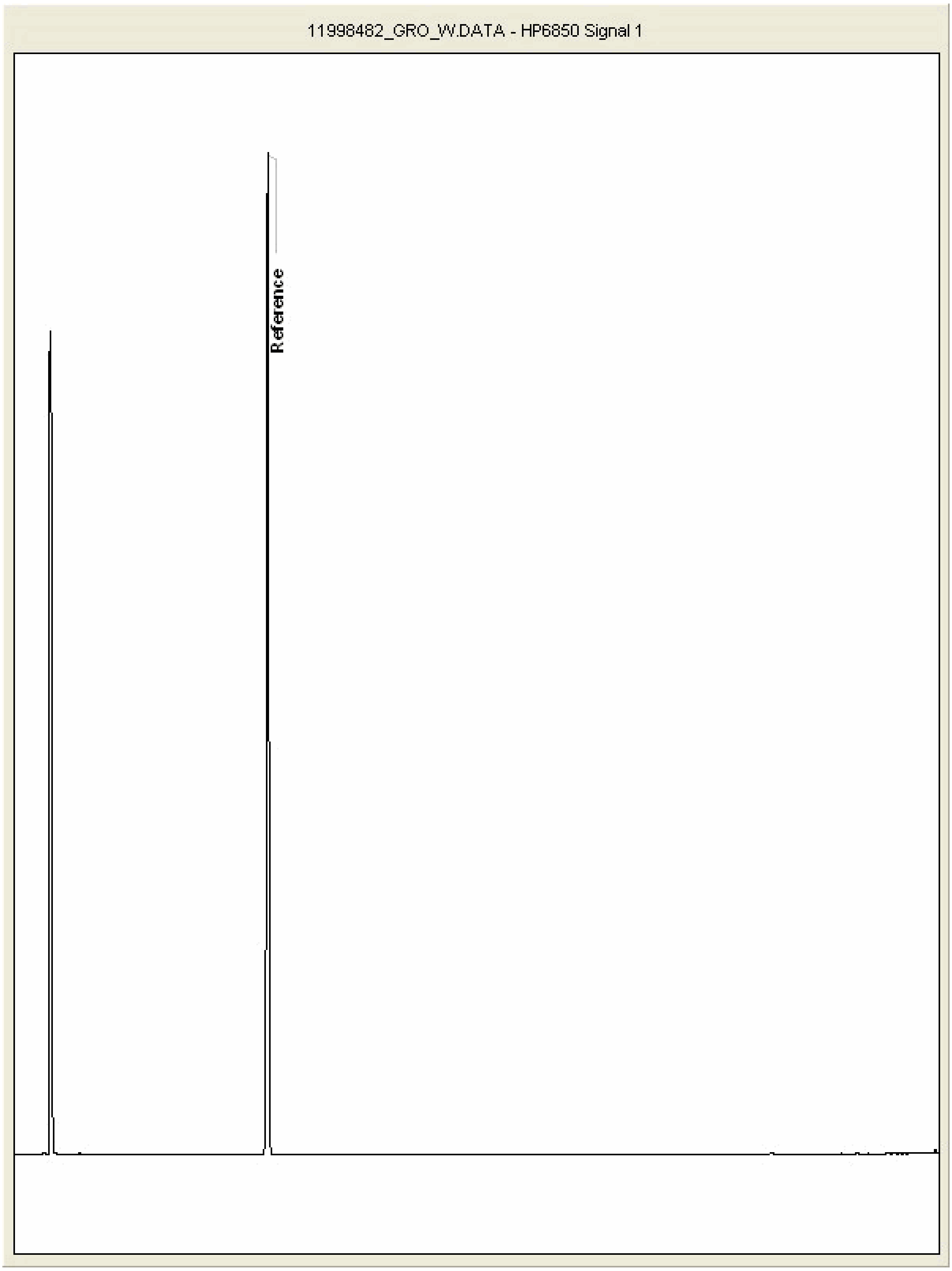
Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 11998482

Sample ID : BH8

Depth :



CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

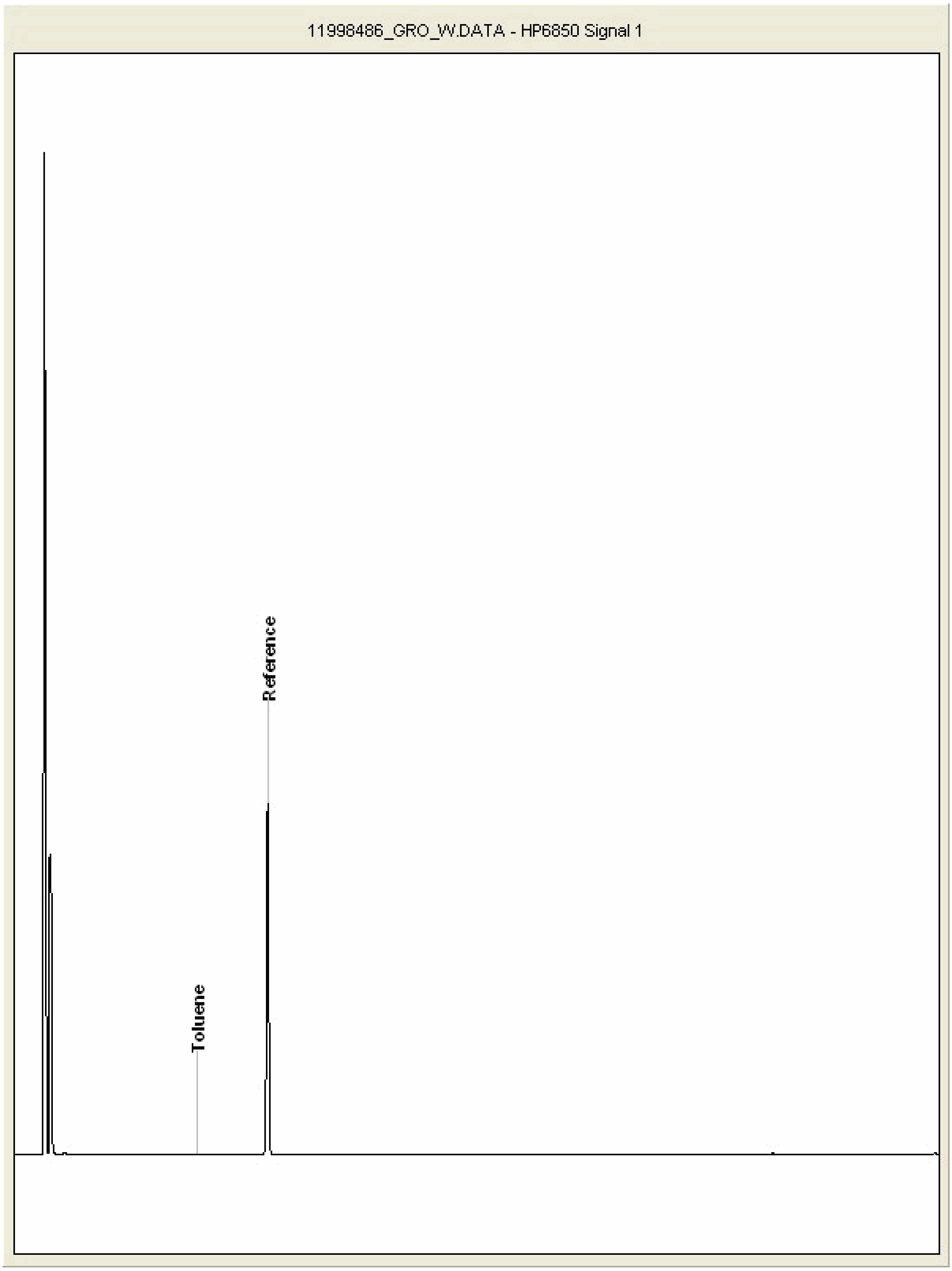
Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 11998486

Sample ID : BH111

Depth :

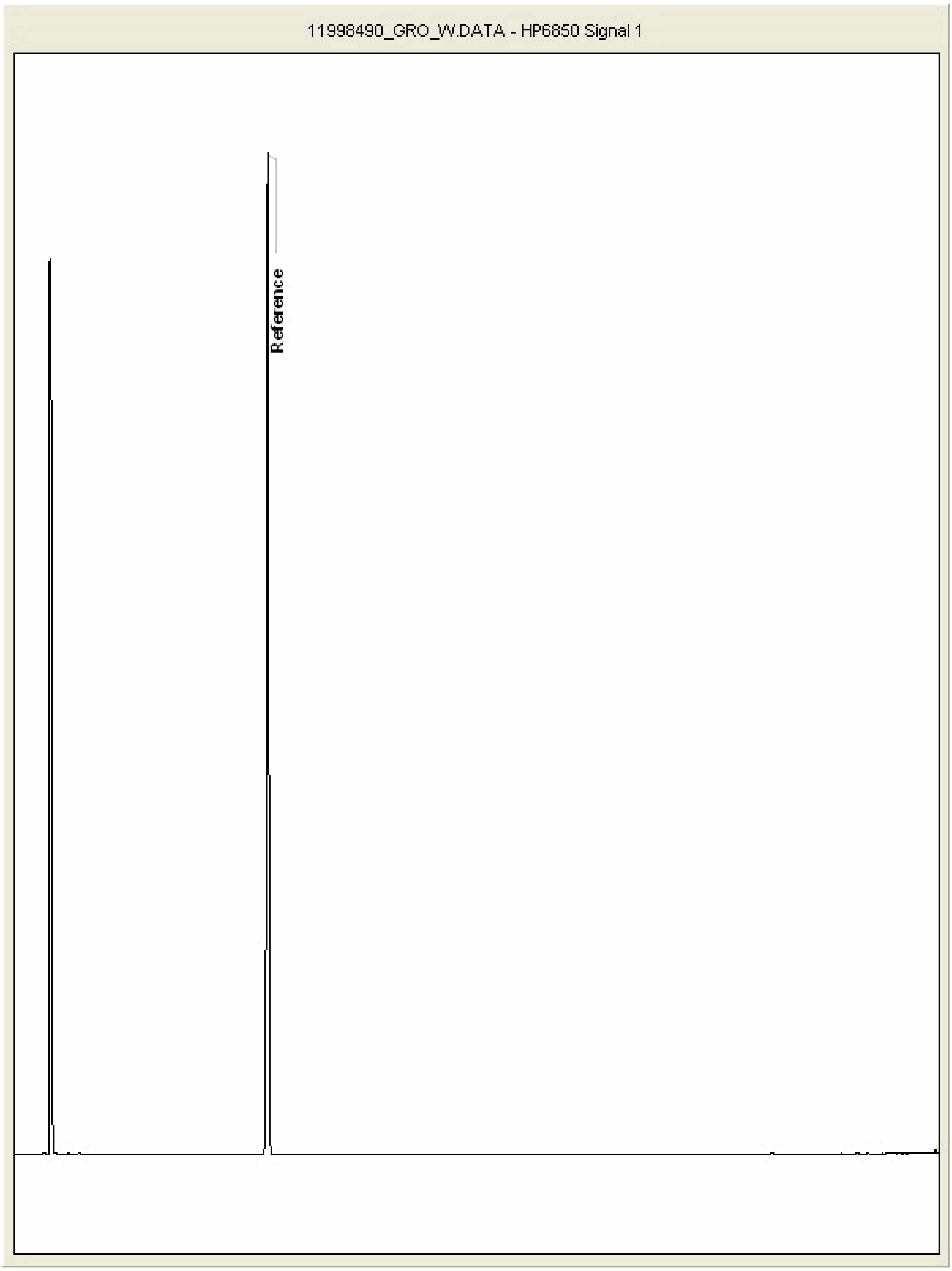


SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (W)	**Sample No :**	11998490	**Depth :**	
		Sample ID :	BH109		

11998490_GRO_W.DATA - HP6850 Signal 1

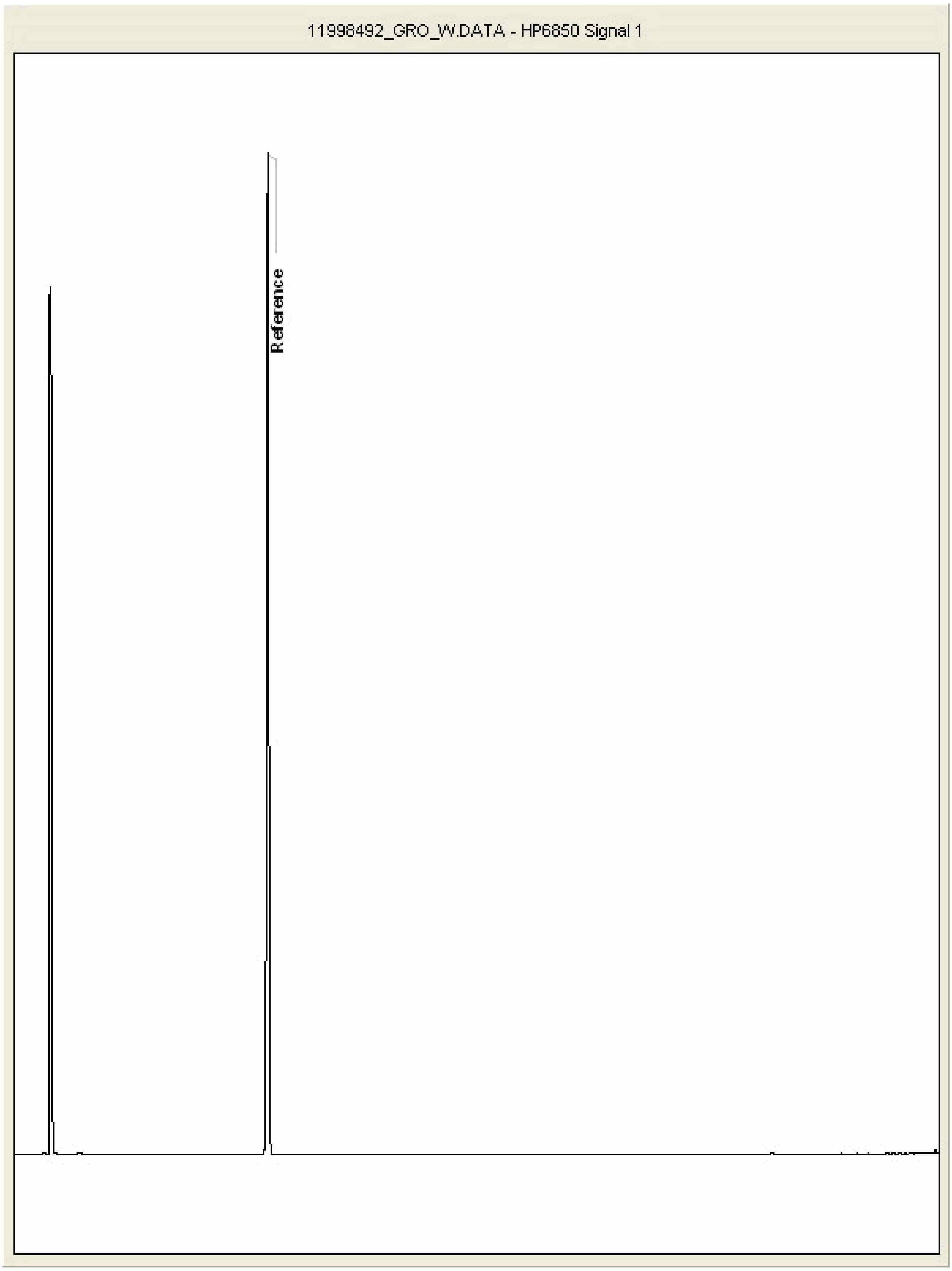


Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 11998492
Sample ID : BH110

Depth :



CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

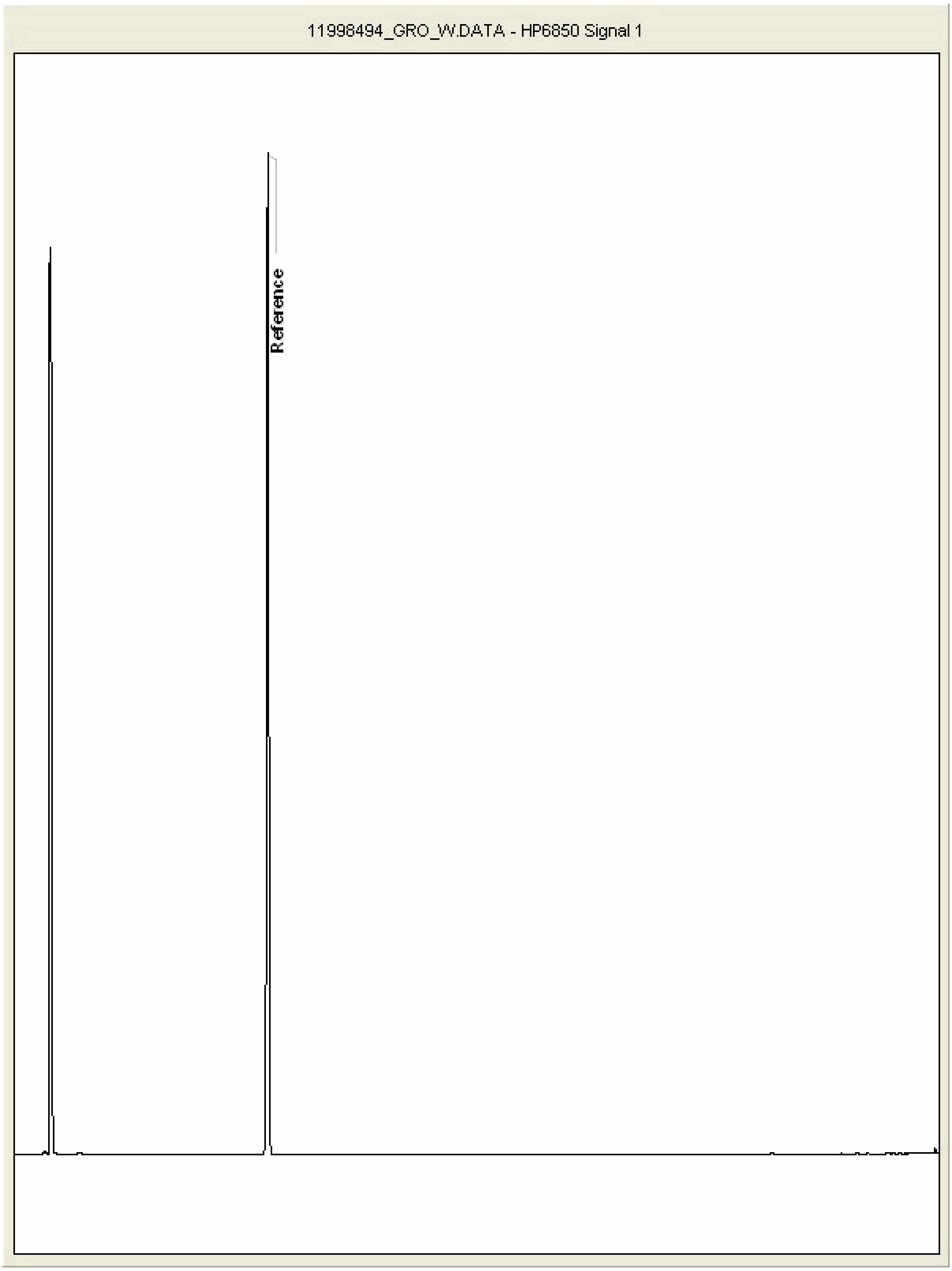
Analysis: GRO by GC-FID (W)

Sample No : 11998494

Sample ID : BH5

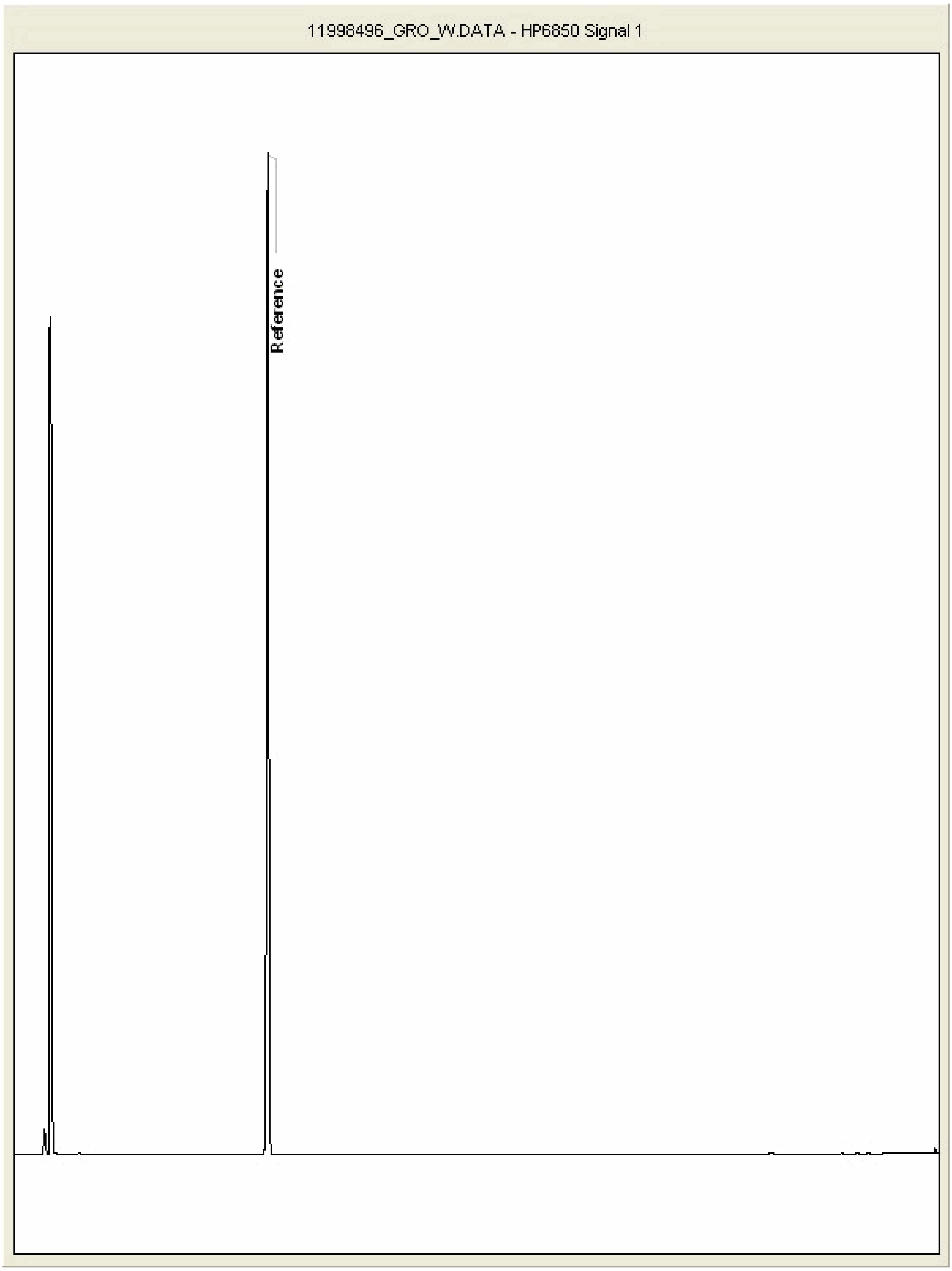
Depth :

11998494_GRO_W.DATA - HP6850 Signal 1



Chromatogram

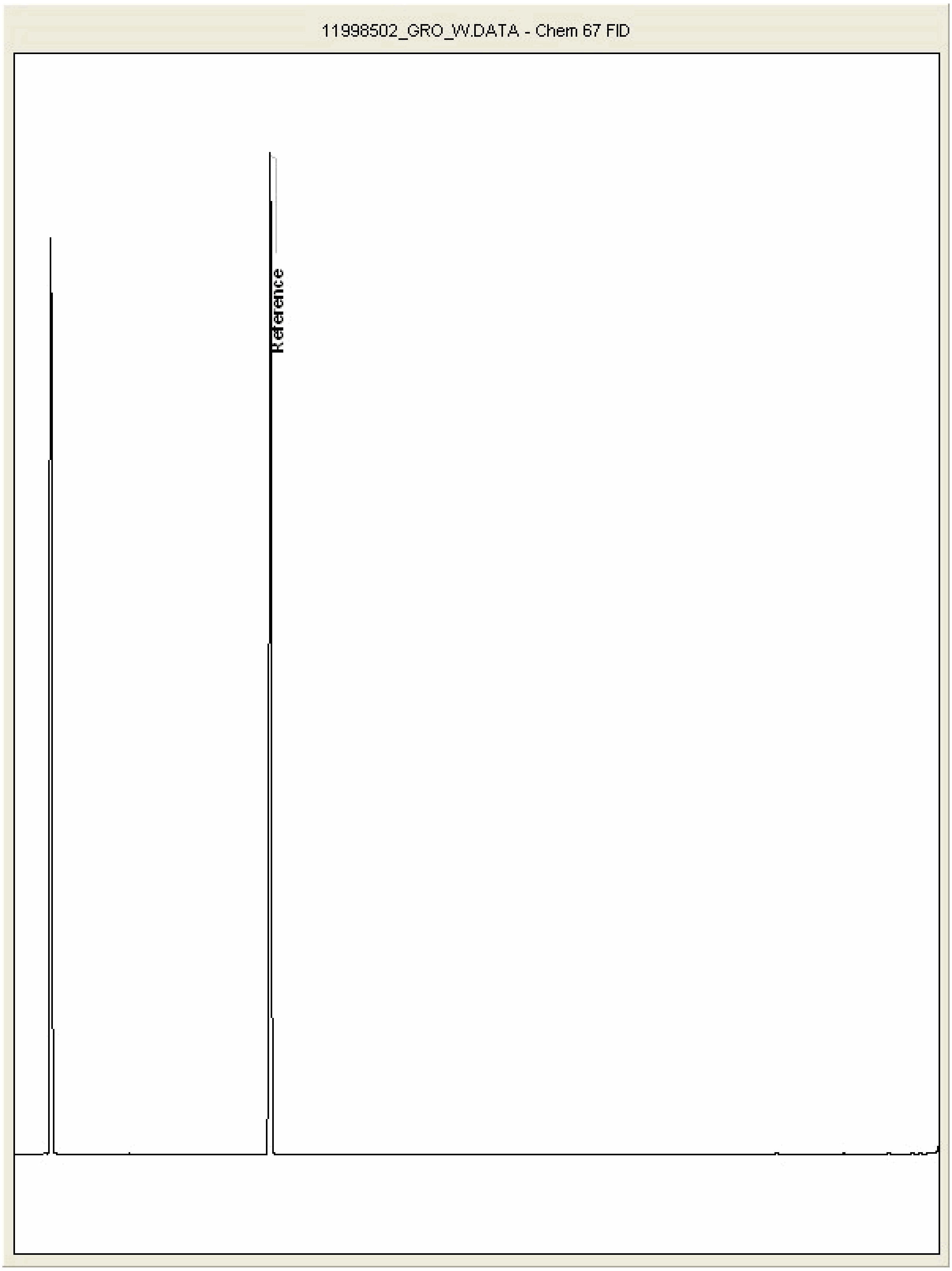
Analysis: GRO by GC-FID (W)
Sample No : 11998496
Sample ID : BH3
Depth :



SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (W)	**Sample No :**	11998502	**Depth :**	
		Sample ID :	BH4		

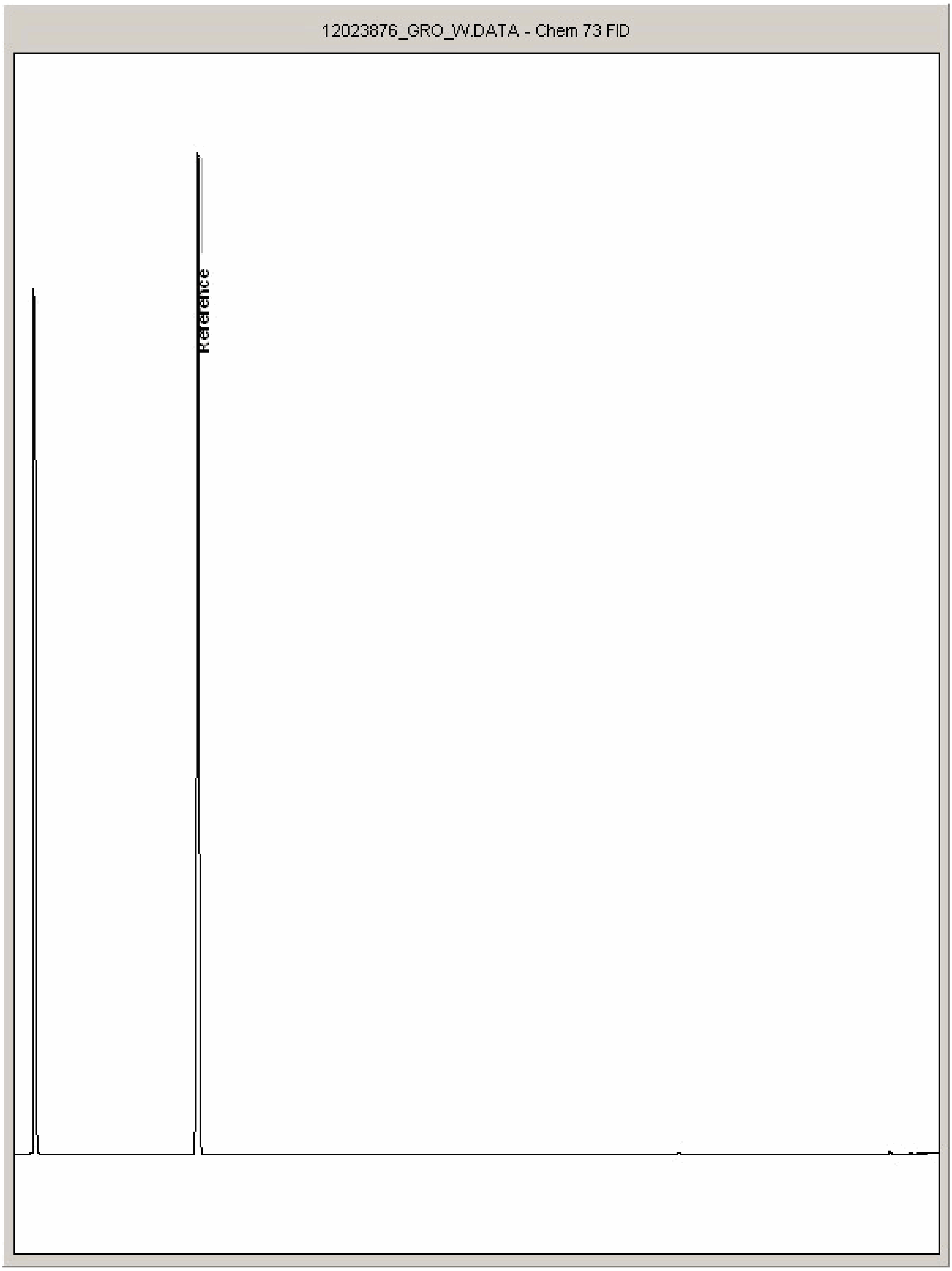


Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 12023876
Sample ID : DUP01

Depth :



CERTIFICATE OF ANALYSIS

SDG:	150902-38	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329713
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

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 Dimethypenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Last Updated : 2010/09/08

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

ALcontrol Laboratories

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AECOM
St. George's House
2nd Floor
5 St. George's Road
Wimbledon
Greater London
SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date:	09 September 2015
Customer:	H_URS_WIM
Sample Delivery Group (SDG):	150903-66
Your Reference:	
Location:	Stag Brewery
Report No:	329161

We received 6 samples on Thursday September 03, 2015 and 6 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12003516	BH2			02/09/2015
12003511	BH7			01/09/2015
12003512	BH9			02/09/2015
12003513	BH10			01/09/2015
12003515	BH201A			02/09/2015
12003514	BH104B			02/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 150903-66
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329161
Superseded Report:

LIQUID

Results Legend

X	**Test**
N	**No Determination Possible**

Lab Sample No(s)			12003516							12003511							12003512						
Customer Sample Reference			BH2							BH7							BH9						
AGS Reference																							
Depth (m)																							
Container			0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 6					X							X							X		
Anions by Kone (w)	All	NDPs: 0 Tests: 6			X							X							X				
COD Unfiltered	All	NDPs: 0 Tests: 6		X							X							X					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6						X							X							X	
Dissolved W, Nb and Zr by ICP-MS	All	NDPs: 0 Tests: 6						X							X							X	
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 6	X							X							X						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 6							X							X							X
Mercury Dissolved	All	NDPs: 0 Tests: 6				X							X							X			
pH Value	All	NDPs: 0 Tests: 6			X							X							X				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 6	X							X							X						
Total EPH (aq)	All	NDPs: 0 Tests: 6	X							X							X						
VOC MS (W)	All	NDPs: 0 Tests: 6							X							X							X

Lab Sample No(s)			12003513							12003515							12003514				
Customer Sample Reference			BH10							BH201A							BH104B				
AGS Reference																					
Depth (m)																					
Container			0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	0.5l glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 6					X							X							X
Anions by Kone (w)	All	NDPs: 0 Tests: 6			X							X							X		
COD Unfiltered	All	NDPs: 0 Tests: 6		X							X							X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6						X							X						
Dissolved W, Nb and Zr by ICP-MS	All	NDPs: 0 Tests: 6						X							X						
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 6	X							X							X				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 6							X							X					
Mercury Dissolved	All	NDPs: 0 Tests: 6				X							X							X	
pH Value	All	NDPs: 0 Tests: 6			X							X							X		
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 6	X							X							X				
Total EPH (aq)	All	NDPs: 0 Tests: 6	X							X							X				
VOC MS (W)	All	NDPs: 0 Tests: 6							X							X					

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

LIQUID

Results Legend

X	**Test**
N	**No Determination Possible**

Lab Sample No(s)			12003514	
Customer Sample Reference			BH104B	
AGS Reference				
Depth (m)				
Container			HNO3 Filtered (ALE	Vial (ALE297)
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6	X	
Dissolved W, Nb and Zr by ICP-MS	All	NDPs: 0 Tests: 6	X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 6		X
VOC MS (W)	All	NDPs: 0 Tests: 6		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
		SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
		Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
		AGS Reference						
Component	**LOD/Units**	**Method**						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	0.268 #	0.707 #	5.66 #	<0.2 #	<0.2 #	<0.2 #
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099	0.345 #	0.909 #	7.28 #	<0.3 #	<0.3 #	<0.3 #
COD, unfiltered	<7 mg/l	TM107	<7 #	10.1 #	3330 #	<7 #	<7 #	7.65 #
Antimony (diss.filt)	<0.16 µg/l	TM152	0.171	0.681	2.06	0.27	0.306	0.172
Arsenic (diss.filt)	<0.12 µg/l	TM152	39.4 #	45.4 #	14.4 #	3.79 #	6.51 #	17.3 #
Barium (diss.filt)	<0.03 µg/l	TM152	116 #	73.4 #	39.9 #	15.4 #	79.1 #	66 #
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07 #	<0.07 #	<0.07 #	<0.07 #	<0.07 #	<0.07 #
Boron (diss.filt)	<9.4 µg/l	TM152	133 #	138 #	27.8 #	82.3 #	106 #	140 #
Cadmium (diss.filt)	<0.1 µg/l	TM152	<0.1 #	<0.1 #	0.228 #	<0.1 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152	2.23 #	5.24 #	7.52 #	1.21 #	2.27 #	1.71 #
Cobalt (diss.filt)	<0.06 µg/l	TM152	0.3 #	3.29 #	9.27 #	0.337 #	11.8 #	1.25 #
Copper (diss.filt)	<0.85 µg/l	TM152	1.95 #	1.59 #	61.3 #	1.16 #	1.08 #	1.74 #
Lead (diss.filt)	<0.02 µg/l	TM152	0.059 #	0.072 #	22.8 #	<0.02 #	0.098 #	0.057 #
Manganese (diss.filt)	<0.04 µg/l	TM152	772 #	1200 #	983 #	23 #	1180 #	665 #
Nickel (diss.filt)	<0.15 µg/l	TM152	6.63 #	8.43 #	12.3 #	2.26 #	18.4 #	8.43 #
Selenium (diss.filt)	<0.39 µg/l	TM152	9.71 #	1.13 #	1.87 #	1.86 #	1.76 #	7.19 #
Thallium (diss.filt)	<0.96 µg/l	TM152	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96
Vanadium (diss.filt)	<0.24 µg/l	TM152	0.657 #	2.35 #	7.67 #	0.759 #	0.941 #	0.67 #
Zinc (diss.filt)	<0.41 µg/l	TM152	15.7 #	11.2 #	280 #	1.27 #	17.5 #	11.9 #
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172	<46 #	<46 #	1430 #	<46 #	<46 #	<46 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100	1430	<100	<100	<100
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	0.0171 #	<0.01 #	<0.01 #	<0.01 #
Sulphate	<2 mg/l	TM184	457 #	74.5 #	<2 #	70.1 #	82.2 #	287 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184	<0.05 #	0.07 #	14.1 #	4.46 #	0.056 #	<0.05 #
Nitrate as NO3	<0.3 mg/l	TM184	<0.3 #	0.926 #	<0.3 #	18.7 #	9.17 #	2.01 #
pH	<1 pH Units	TM256	7.59 #	7.9 #	7.55 #	7.56 #	8.09 #	7.22 #
Silver (diss.filt)	<1.5 µg/l	TM283	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

GRO by GC-FID (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
		SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
		Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
		AGS Reference						
Component	**LOD/Units**	**Method**						
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Benzene	<7 µg/l	TM245	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Toluene	<4 µg/l	TM245	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
Ethylbenzene	<5 µg/l	TM245	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
m,p-Xylene	<8 µg/l	TM245	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
o-Xylene	<3 µg/l	TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Sum of detected BTEX	<28 µg/l	TM245	<28	<28	<28	<28	<28	<28
GRO >C5-C10	<10 µg/l	TM245	<10	<10	281	<10	<10	<10
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100		<100	<100

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
		SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
		Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<4	<1	<1	<1
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Chlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Nitrophenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
3-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	<1	<4	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
4-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #	172 #	<1 #	<1 #	<1 #
4-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	<1	<4	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Acenaphthylene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Acenaphthene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2 #	<2 #	<8 #	<2 #	<2 #	<2 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
		SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
		Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
		AGS Reference						
Component	**LOD/Units**	**Method**						
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1 #	<1 #	6.42 #	<1 #	<1 #	<1 #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1 #	<1 #	4.69 #	<1 #	<1 #	<1 #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1 #	<1 #	4.05 #	<1 #	<1 #	<1 #
Carbazole (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Chrysene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Dibenzofuran (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Diethyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5 #	<5 #	<20 #	<5 #	<5 #	<5 #
Fluoranthene (aq)	<1 µg/l	TM176	<1 #	<1 #	6.12 #	<1 #	<1 #	<1 #
Fluorene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Pentachlorophenol (aq)	<1 µg/l	TM176	<1	<1	<4	<1	<1	<1
Phenol (aq)	<1 µg/l	TM176	<1	<1	10.7	<1	<1	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Hexachloroethane (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Nitrobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Naphthalene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Isophorone (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<1	<1	<4	<1	<1	<1
Phenanthrene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Pyrene (aq)	<1 µg/l	TM176	<1 #	<1 #	4.78 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	BH2	BH7	BH9	BH10	BH201A	BH104B
Customer Sample R			BH2	BH7	BH9	BH10	BH201A	BH104B
Depth (m)			.	.	.	.	.	.
Sample Type			Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
Date Sampled			02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
Sampled Time			.	.	.	.	.	.
Date Received			03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
SDG Ref			150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
Lab Sample No.(s)			12003516	12003511	12003512	12003513	12003515	12003514
AGS Reference								
Dibromofluoromethane**	%	TM208	89.4	87.9	83	117	90.6	119
Toluene-d8**	%	TM208	80.2	80.5	81.6	99.4	81.4	99.8
4-Bromofluorobenzene**	%	TM208	78.8	78.1	78.6	96.2	80.2	97.4
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208	<1 #	<1 #	2.28 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 150903-66
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329161
Superseded Report:

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
		Depth (m)	.	.	.	.	.	.
		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
		Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
		Sampled Time	.	.	.	.	.	.
		Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
		SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
		Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
		AGS Reference						
Component	**LOD/Units**	**Method**						
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	1.7 #	1.77 #	1.89 #	<1 #	1.8 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 1 #	<1 #	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 150903-66
Job: H_URS_WIM-273
Client Reference:

Location: Stag Brewery
Customer: AECOM
Attention: Gary Marshall

Order Number:
Report Number: 329161
Superseded Report:

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
Depth (m)	.	.	.	.	.	.
Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
Sampled Time	.	.	.	.	.	.
Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
AGS Reference						

Component	LOD/Units	Method	BH2	BH7	BH9	BH10	BH201A	BH104B
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM283		Determination of Dissolved Niobium, Tungsten, and Zirconium in Water Matrices by ICP-MS		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Test Completion Dates

Lab Sample No(s)	12003516	12003511	12003512	12003513	12003515	12003514
Customer Sample Ref.	BH2	BH7	BH9	BH10	BH201A	BH104B
AGS Ref.						
Depth						
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
Anions by Kone (w)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	09-Sep-2015
COD Unfiltered	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	05-Sep-2015
Dissolved Metals by ICP-MS	06-Sep-2015	08-Sep-2015	06-Sep-2015	07-Sep-2015	08-Sep-2015	06-Sep-2015
Dissolved W, Nb and Zr by ICP-MS	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH (DRO) (C10-C40) Aqueous (W)	07-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015	07-Sep-2015	08-Sep-2015
GRO by GC-FID (W)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Mercury Dissolved	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	08-Sep-2015
Nitrite by Kone (w)	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	09-Sep-2015
pH Value	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	07-Sep-2015
SVOC MS (W) - Aqueous	07-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015	07-Sep-2015	08-Sep-2015
Total EPH (aq)	08-Sep-2015	08-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015	09-Sep-2015
VOC MS (W)	07-Sep-2015	07-Sep-2015	07-Sep-2015	09-Sep-2015	07-Sep-2015	09-Sep-2015

ASSOCIATED AQC DATA

Ammoniacal Nitrogen

Component	Method Code	QC 1214	QC 1207
Ammoniacal Nitrogen as N	TM099	**102.8** 91.84 : 108.16	**104.4** 91.84 : 108.16

Anions by Kone (w)

Component	Method Code	QC 1269	QC 1243
Chloride	TM184	**99.4** 94.64 : 106.82	94.23 : 107.50
Phosphate (Ortho as PO4)	TM184	96.40 : 108.40	**102.4** 96.41 : 109.80
Sulphate (soluble)	TM184	**101.2** 96.47 : 104.74	94.38 : 108.93
TON as NO3	TM184	**98.5** 93.05 : 112.12	93.93 : 110.49

COD Unfiltered

Component	Method Code	QC 1200	QC 1252
COD	TM107	**97.91** 95.90 : 102.57	**100.38** 95.90 : 102.57

Dissolved Metals by ICP-MS

Component	Method Code	QC 1282	QC 1276
Aluminium	TM152	**103.33** 88.58 : 117.87	**100.53** 88.58 : 117.87
Antimony	TM152	**100.4** 87.01 : 109.33	**100.53** 87.01 : 109.33
Arsenic	TM152	**99.87** 89.45 : 113.51	**100.67** 89.45 : 113.51
Barium	TM152	**99.33** 90.47 : 113.85	**98.53** 90.47 : 113.85
Beryllium	TM152	**102.13** 84.68 : 120.26	**102.4** 84.68 : 120.26
Boron	TM152	**98.93** 82.95 : 121.47	**99.73** 82.95 : 121.47
Cadmium	TM152	**102.93** 90.40 : 113.29	**101.73** 90.40 : 113.29
Chromium	TM152	**102.27** 90.01 : 114.05	**102.27** 90.01 : 114.05
Cobalt	TM152	**102.0** 87.14 : 117.85	**100.8** 87.14 : 117.85
Copper	TM152	**97.6** 88.43 : 114.27	**100.53** 88.43 : 114.27
Lead	TM152	**96.67** 89.53 : 109.90	**96.53** 89.53 : 109.90

Dissolved Metals by ICP-MS

		QC 1282	QC 1276
Lithium	TM152	**103.07** 84.32 : 123.11	**102.8** 84.32 : 123.11
Manganese	TM152	**102.13** 91.43 : 113.17	**102.13** 91.43 : 113.17
Molybdenum	TM152	**98.27** 80.73 : 113.85	**98.93** 80.73 : 113.85
Nickel	TM152	**100.27** 87.68 : 113.94	**100.13** 87.68 : 113.94
Phosphorus	TM152	**88.93** 86.68 : 118.34	**100.93** 86.68 : 118.34
Selenium	TM152	**100.4** 91.03 : 113.34	**100.53** 91.03 : 113.34
Strontium	TM152	**102.0** 90.44 : 114.09	**100.67** 90.44 : 114.09
Tellurium	TM152	**90.27** 80.93 : 116.91	**85.6** 80.93 : 116.91
Thallium	TM152	**96.27** 90.27 : 111.31	**98.93** 90.27 : 111.31
Tin	TM152	**101.47** 83.07 : 112.37	**99.6** 83.07 : 112.37
Titanium	TM152	**102.93** 92.65 : 111.58	**101.07** 92.65 : 111.58
Uranium	TM152	**94.13** 88.60 : 110.35	**94.53** 88.60 : 110.35
Vanadium	TM152	**102.27** 88.43 : 116.60	**102.53** 88.43 : 116.60
Zinc	TM152	**95.73** 89.84 : 113.06	**101.6** 89.84 : 113.06

Dissolved W, Nb and Zr by ICP-MS

Component	Method Code	QC 1290
Bismuth	TM283	**92.13** 66.55 : 123.56
Niobium	TM283	**107.6** 85.00 : 115.00
Silver	TM283	**105.33** 81.37 : 112.35
Tungsten	TM283	**85.87** 85.00 : 115.00
Zirconium	TM283	**102.27** 85.00 : 115.00

EPH (DRO) (C10-C40) Aqueous (W)

Component	Method Code	QC 1284	QC 1280
EPH (DRO) (C10-C40)	TM172	**80.5** 59.47 : 106.15	**72.5** 59.22 : 112.78

GRO by GC-FID (W)

GRO by GC-FID (W)

Component	Method Code	QC 1234
Benzene by GC	TM245	**98.0** 77.50 : 122.50
Ethylbenzene by GC	TM245	**97.5** 77.50 : 122.50
m & p Xylene by GC	TM245	**97.75** 77.50 : 122.50
MTBE GC-FID	TM245	**101.0** 77.50 : 122.50
o Xylene by GC	TM245	**97.0** 77.50 : 122.50
QC	TM245	**104.67** 74.88 : 125.54
Toluene by GC	TM245	**98.5** 77.50 : 122.50

Mercury Dissolved

Component	Method Code	QC 1282	QC 1248
Mercury Dissolved (CVAF)	TM183	**108.0** 73.51 : 120.83	**96.1** 73.51 : 120.83

pH Value

Component	Method Code	QC 1280	QC 1258
pH	TM256	**101.62** 99.37 : 102.65	**101.08** 99.20 : 102.85

SVOC MS (W) - Aqueous

Component	Method Code	QC 1255	QC 1208	QC 1247
4-Bromophenylphenylether	TM176	**65.28** 55.04 : 128.00	**87.2** 55.04 : 128.00	**82.4** 65.62 : 120.95
Benzo(a)anthracene	TM176	**66.0** 52.64 : 123.68	**87.2** 52.64 : 123.68	**82.4** 62.83 : 114.26
Benzo(a)pyrene	TM176	**58.24** 49.60 : 114.40	**79.68** 49.60 : 114.40	**80.8** 54.19 : 105.67
Butylbenzyl phthalate	TM176	**70.32** 49.04 : 127.76	**93.6** 49.04 : 127.76	**82.4** 45.10 : 118.90
Hexachlorobutadiene	TM176	**59.36** 42.80 : 108.20	**77.52** 42.80 : 108.20	**61.28** 43.12 : 110.32
Naphthalene	TM176	**67.92** 47.20 : 116.80	**92.0** 47.20 : 116.80	**85.6** 69.48 : 118.94
Nitrobenzene	TM176	**69.36** 58.70 : 110.90	**88.8** 58.70 : 110.90	**79.52** 69.13 : 107.62
Phenol	TM176	**38.08** 30.25 : 79.75	**50.08** 30.25 : 79.75	**49.12** 30.92 : 74.19

VOC MS (W)

Component	**Method Code**	QC 1272	QC 1223	QC 1239
1,1,1,2-Tetrachloroethane	TM208	**91.5** 84.25 : 114.84	**94.5** 77.50 : 122.50	**100.5** 84.25 : 114.84
1,1,1-Trichloroethane	TM208	**90.0** 84.67 : 111.97	**96.5** 77.50 : 122.50	**96.0** 84.67 : 111.97
1,1-Dichloroethane	TM208	**92.0** 80.19 : 121.45	**107.0** 77.50 : 122.50	**99.5** 80.19 : 121.45
1,2-Dichloroethane	TM208	**93.0** 77.68 : 127.05	**98.0** 77.50 : 122.50	**99.0** 77.68 : 127.05
2-Chlorotoluene	TM208	**93.0** 85.81 : 116.77	**97.0** 77.50 : 122.50	**99.0** 85.81 : 116.77
4-Chlorotoluene	TM208	**92.5** 87.22 : 115.45	**97.5** 77.50 : 122.50	**100.0** 87.22 : 115.45
Benzene	TM208	**90.5** 82.30 : 120.49	**103.0** 77.50 : 122.50	**101.0** 82.30 : 120.49
Bromomethane	TM208	**99.0** 76.16 : 123.35	**104.0** 75.87 : 132.10	**90.0** 76.16 : 123.35
Carbontetrachloride	TM208	**92.5** 83.96 : 117.98	**98.5** 77.50 : 122.50	**99.5** 83.96 : 117.98
Chlorobenzene	TM208	**94.5** 85.75 : 114.88	**99.5** 77.50 : 122.50	**100.0** 85.75 : 114.88
Chloroform	TM208	**94.0** 84.84 : 119.97	**103.0** 77.50 : 122.50	**104.5** 84.84 : 119.97
Chloromethane	TM208	**96.0** 53.63 : 141.38	**131.0** 77.12 : 138.43	**113.5** 53.63 : 141.38
Cis-1,2-Dichloroethene	TM208	**102.5** 81.65 : 120.44	**111.0** 77.50 : 122.50	**111.0** 81.65 : 120.44
Dichloromethane	TM208	**93.5** 79.31 : 122.56	**113.0** 77.50 : 122.50	**104.0** 79.31 : 122.56
Ethylbenzene	TM208	**89.5** 80.74 : 110.74	**96.0** 78.88 : 104.73	**94.0** 80.74 : 110.74
Hexachlorobutadiene	TM208	**101.5** 68.91 : 121.59	**81.5** 72.12 : 118.38	**91.5** 68.91 : 121.59
o-Xylene	TM208	**91.0** 85.43 : 113.21	**96.0** 82.27 : 108.61	**95.0** 85.43 : 113.21
p/m-Xylene	TM208	**90.0** 80.94 : 113.51	**97.0** 74.83 : 118.29	**95.0** 80.94 : 113.51
Tert-butyl methyl ether	TM208	**102.5** 59.77 : 129.51	**87.0** 75.13 : 130.32	**88.5** 59.77 : 129.51
Tetrachloroethene	TM208	**91.5** 83.21 : 115.40	**95.0** 82.93 : 109.54	**101.5** 83.21 : 115.40
Toluene	TM208	**90.0** 86.02 : 114.04	**96.5** 80.95 : 110.35	**98.5** 86.02 : 114.04
Trichloroethene	TM208	**92.0** 83.50 : 113.50	**96.5** 82.90 : 111.55	**96.5** 83.50 : 113.50
Vinyl Chloride	TM208	**84.5** 63.71 : 124.88	**105.5** 64.36 : 126.94	**82.0** 63.71 : 124.88

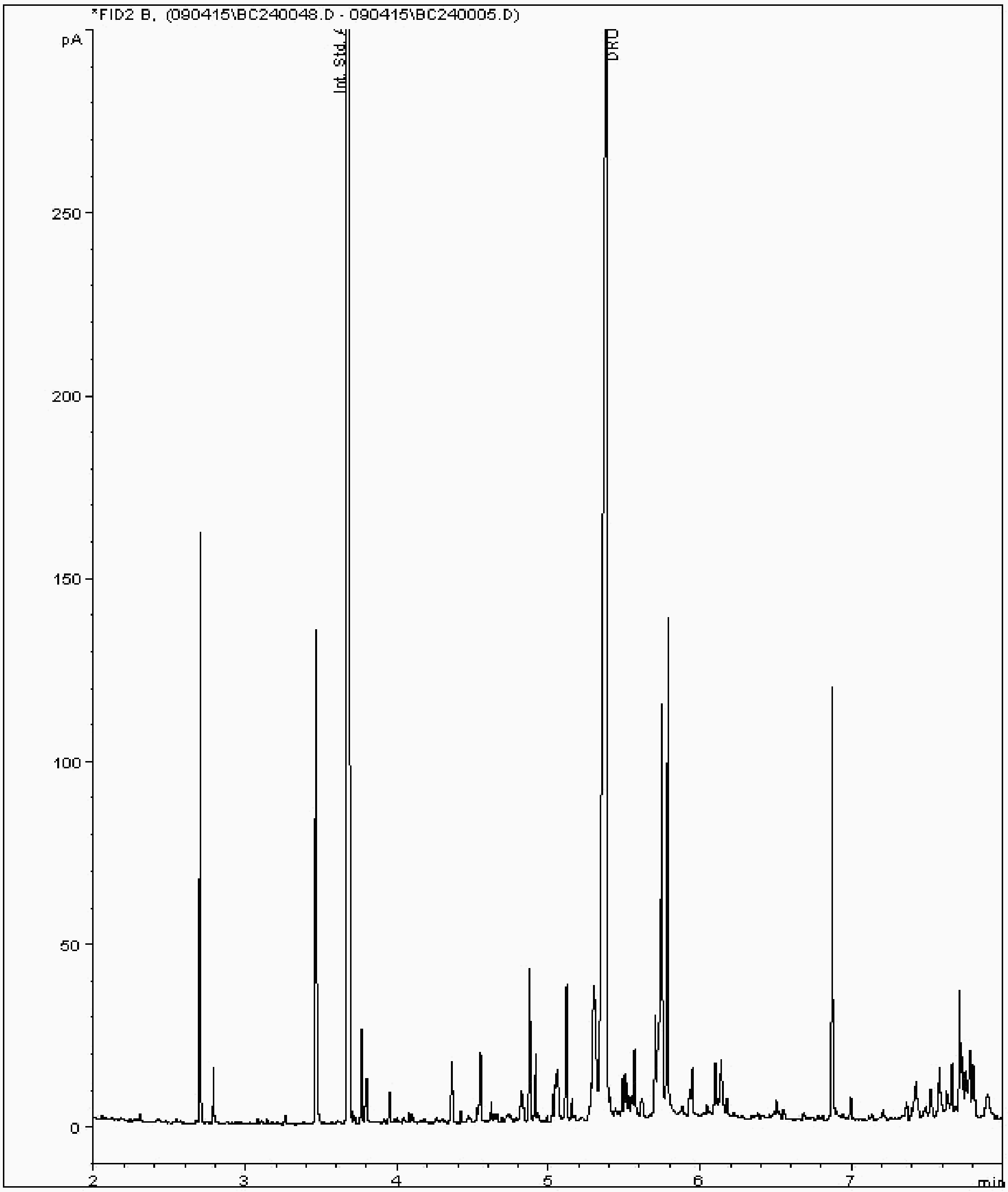
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12008285	**Depth :**	
		Sample ID :	BH9		

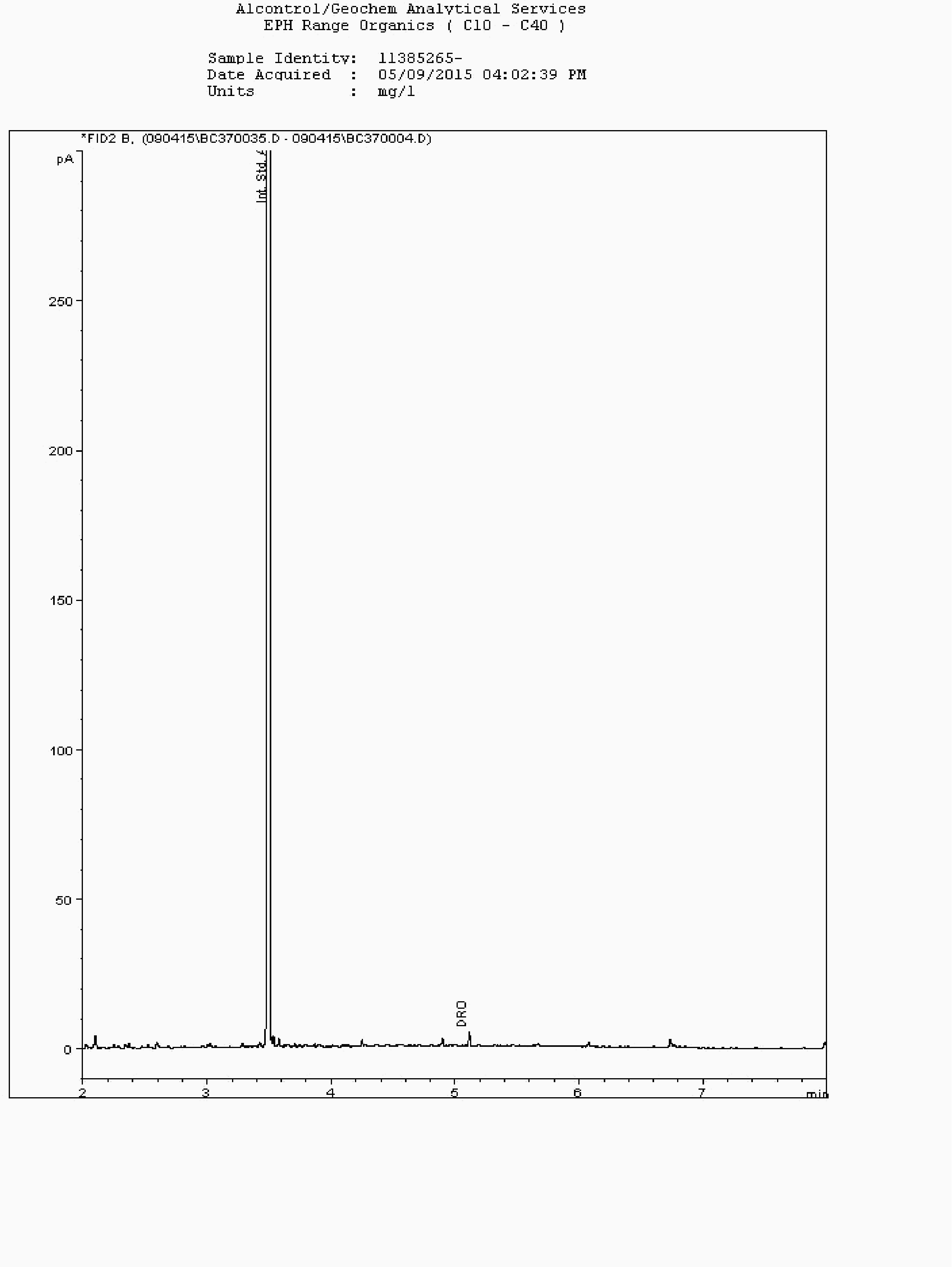
```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11385279-
Date Acquired   :  07/09/2015 18:32:19 PM
Units           :  mg/l
```



Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12008287	**Depth :**	
		Sample ID :	BH7		



```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

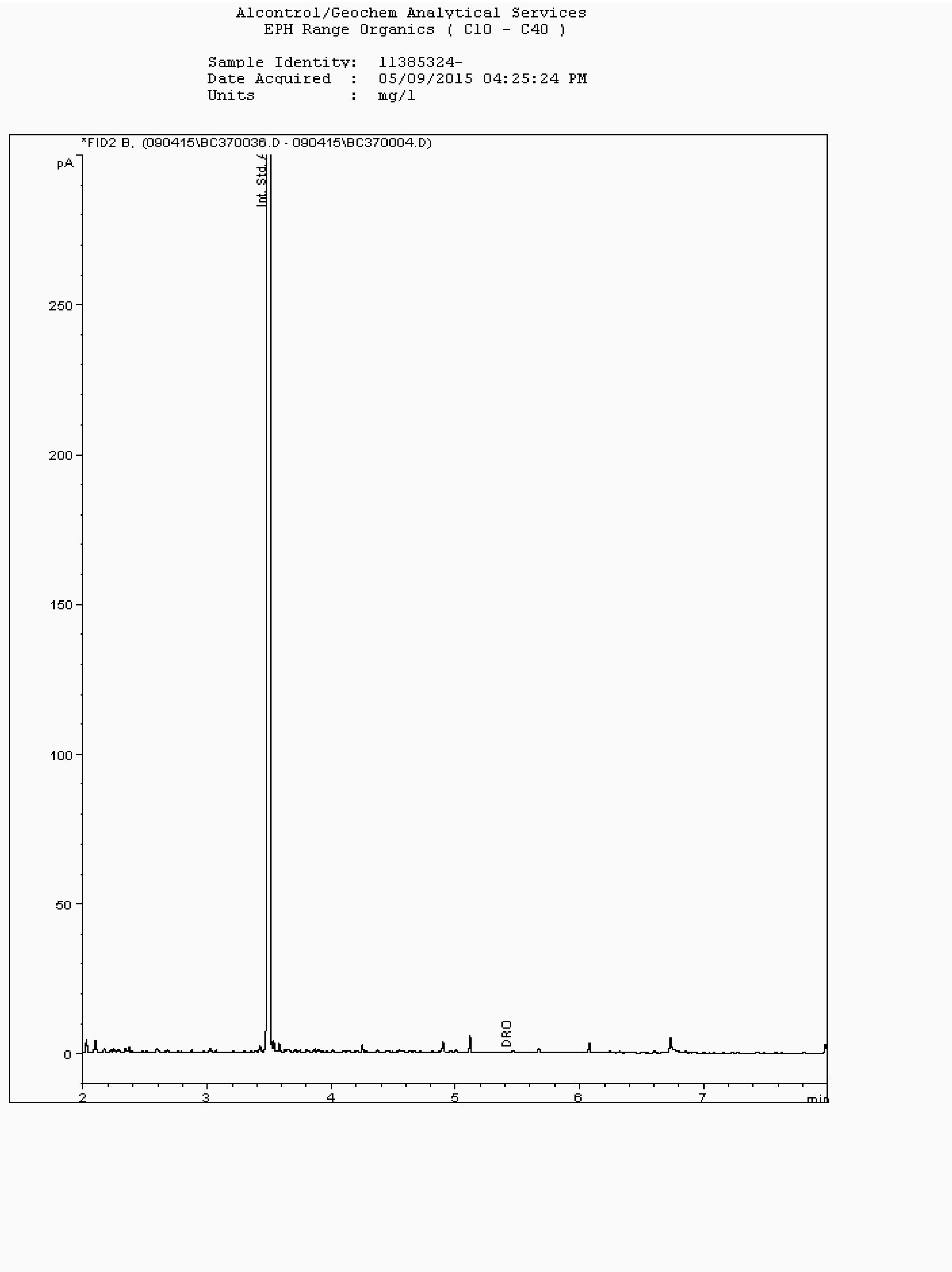
Sample Identity:  11385265-
Date Acquired  :  05/09/2015 04:02:39 PM
Units          :  mg/l
```

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12008289	**Depth :**	
		Sample ID :	BH201A		



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Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11385324-
Date Acquired  :  05/09/2015 04:25:24 PM
Units          :  mg/l
```
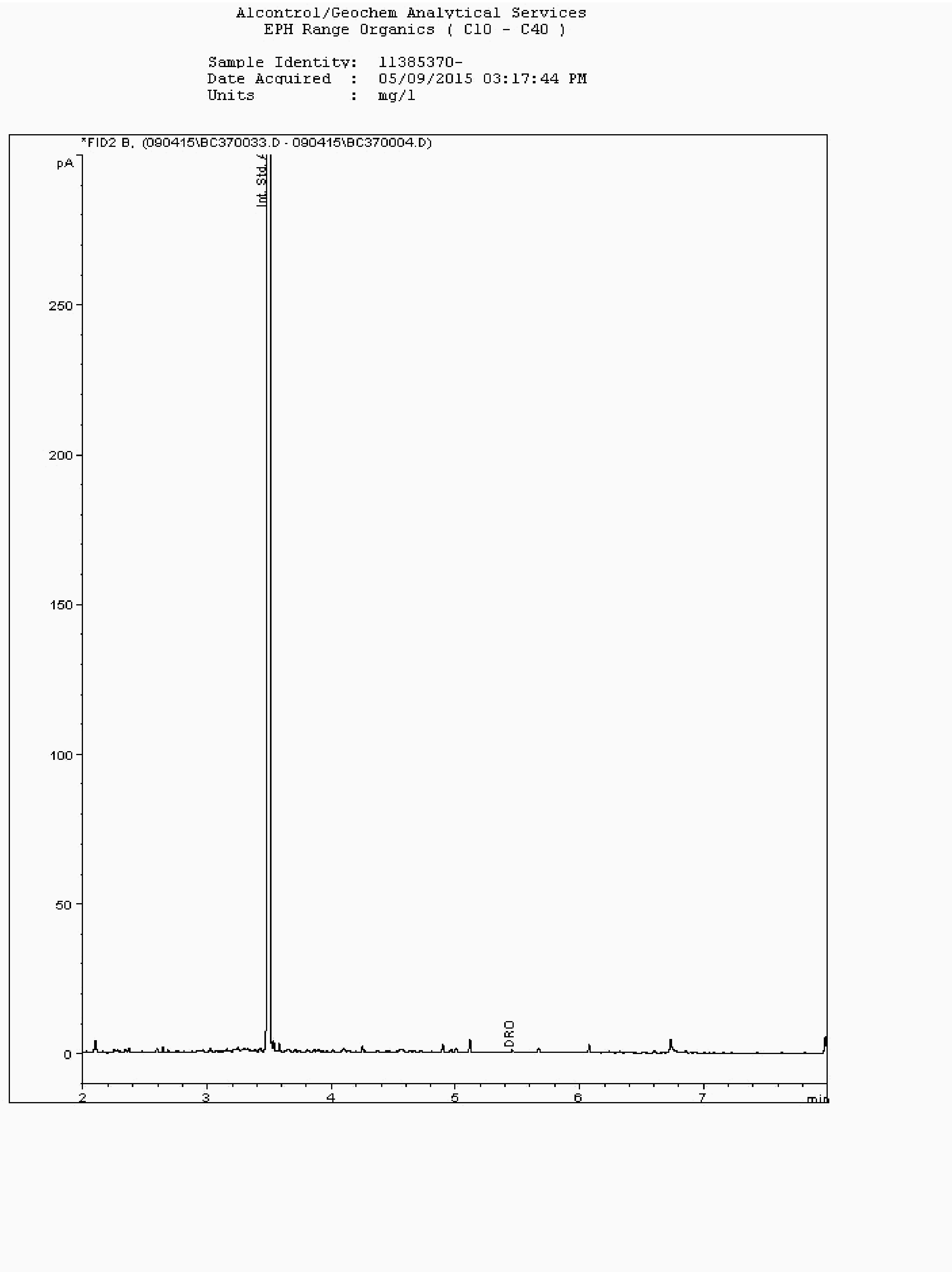

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W)
Sample No : 12008291
Sample ID : BH2
Depth :



Alcontrol/Geochem Analytical Services
EPH Range Organics (C10 - C40)

Sample Identity: 11385370-
Date Acquired : 05/09/2015 03:17:44 PM
Units : mg/l

CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	EPH (DRO) (C10-C40) Aqueous (W)	**Sample No :**	12008293	**Depth :**	
		Sample ID :	BH10		

```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11385293-
Date Acquired  :  05/09/2015 02:55:03 PM
Units          :  mg/l
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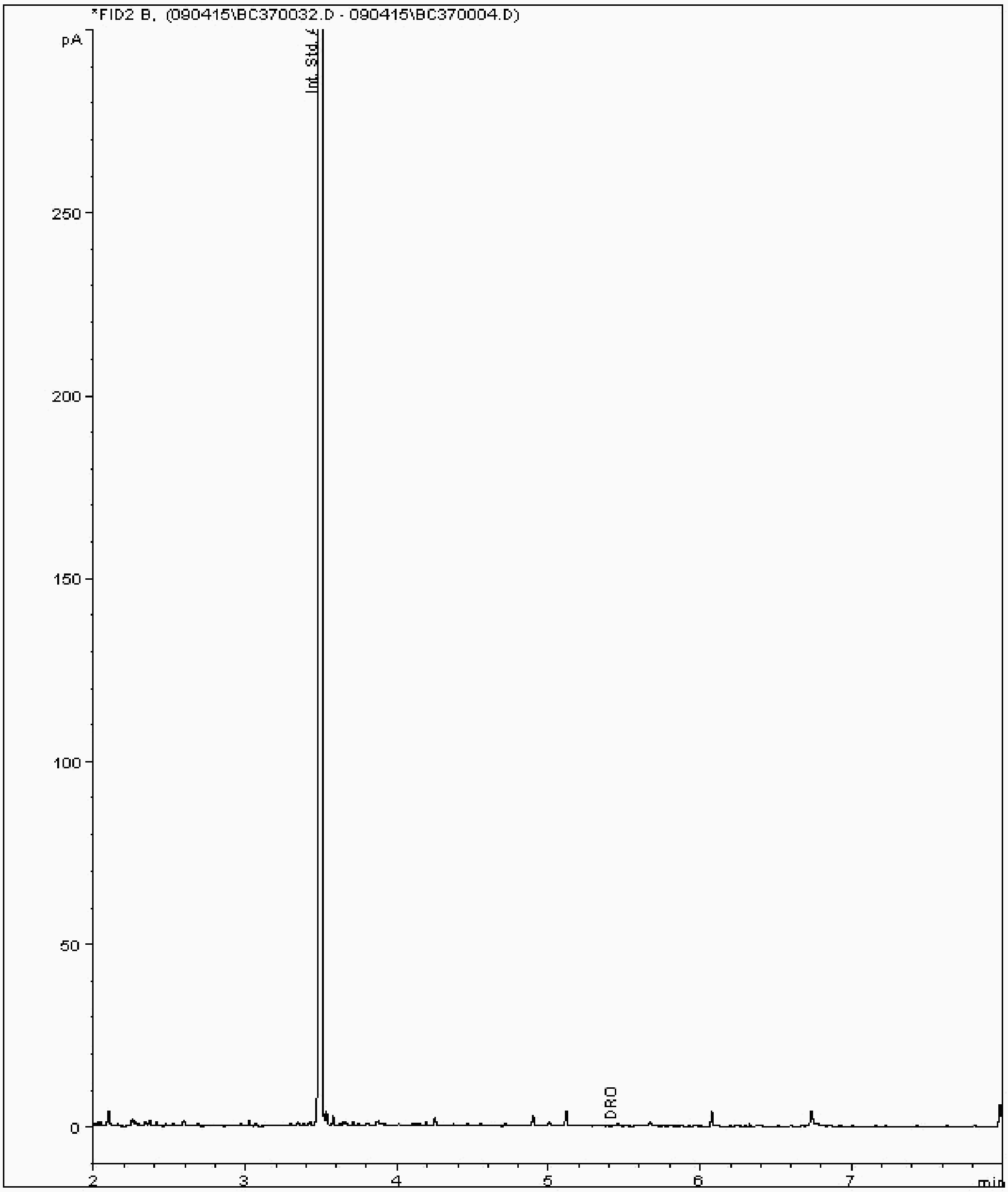

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 12015642

Sample ID : BH104B

Depth :

```
Alcontrol/Geochem Analytical Services
   EPH Range Organics ( C10 - C40 )

Sample Identity:  11389081-
Date Acquired  :  08/09/2015 12:08:27 PM
Units          :  mg/l
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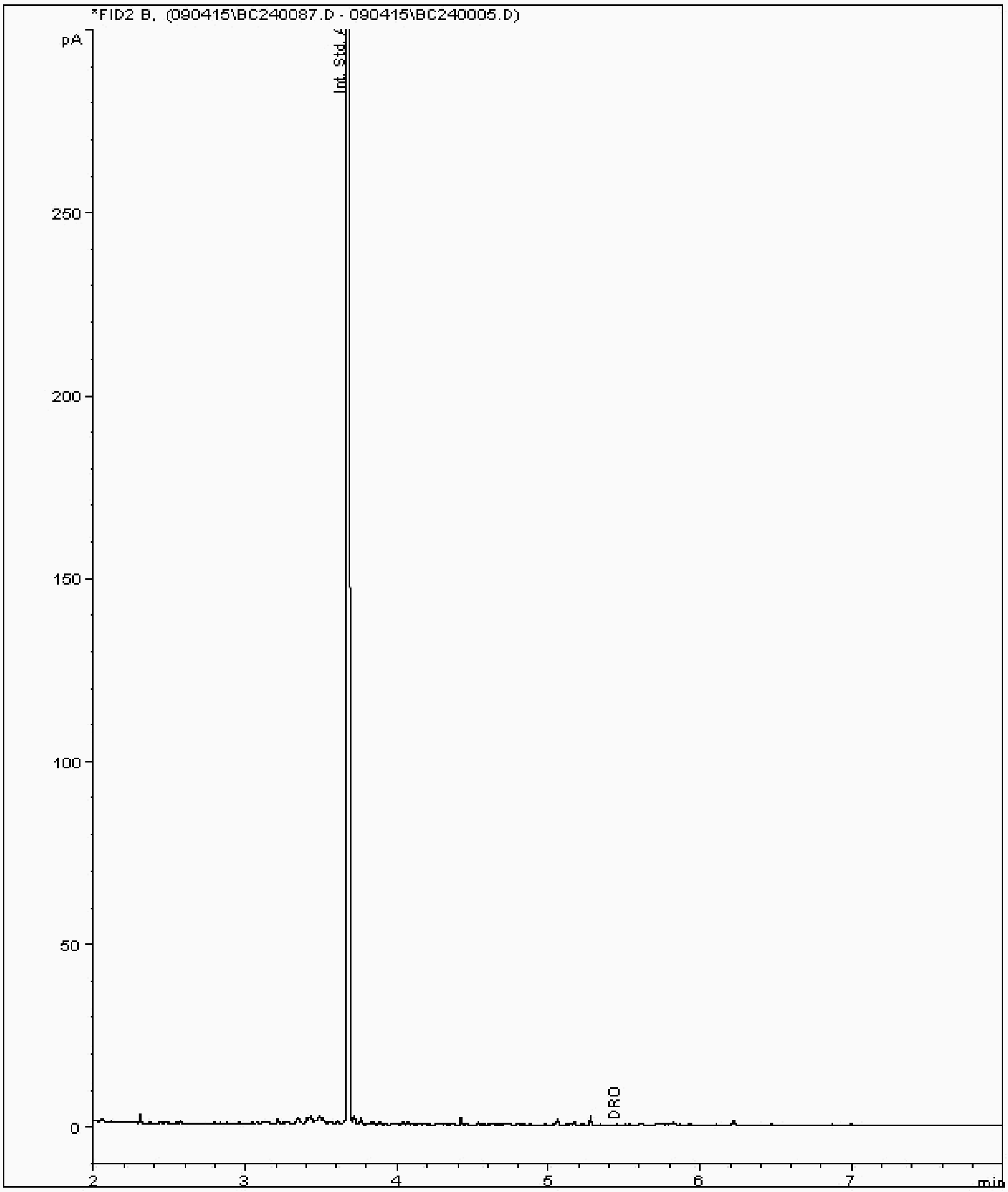
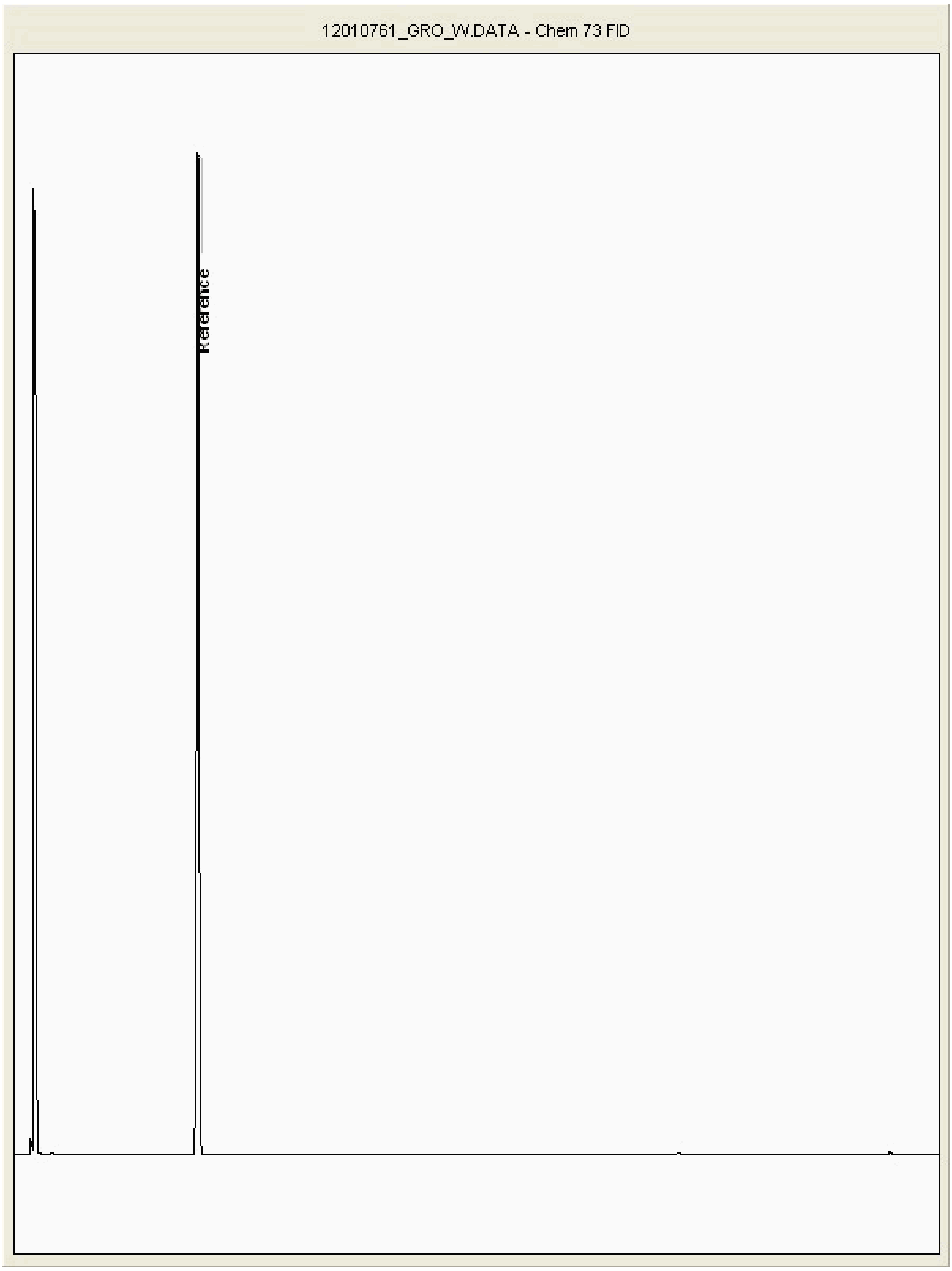


SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (W)	**Sample No :**	12010761	**Depth :**	
		Sample ID :	BH104B		



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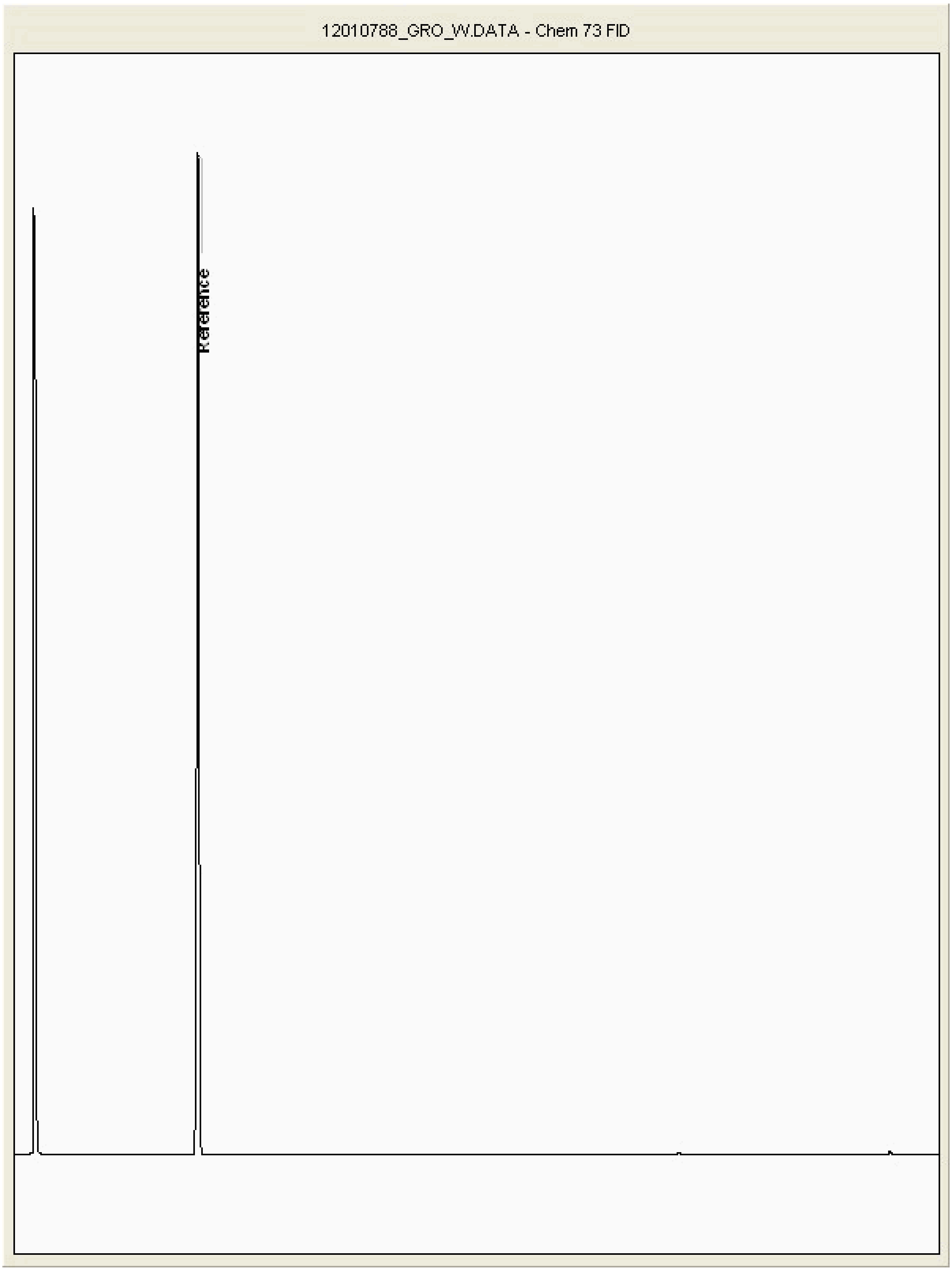
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 12010788
Sample ID : BH10

Depth :

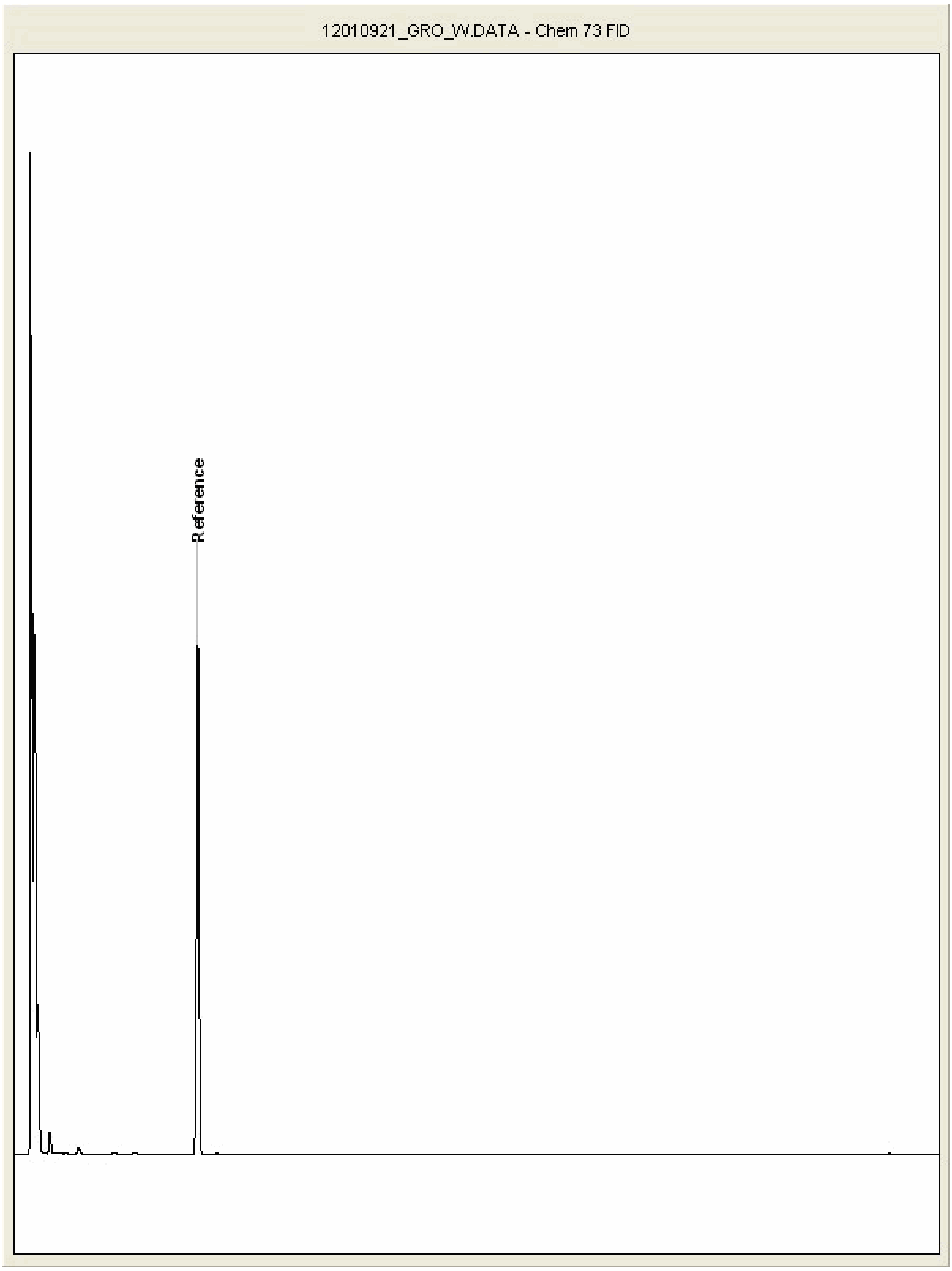


CERTIFICATE OF ANALYSIS

SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

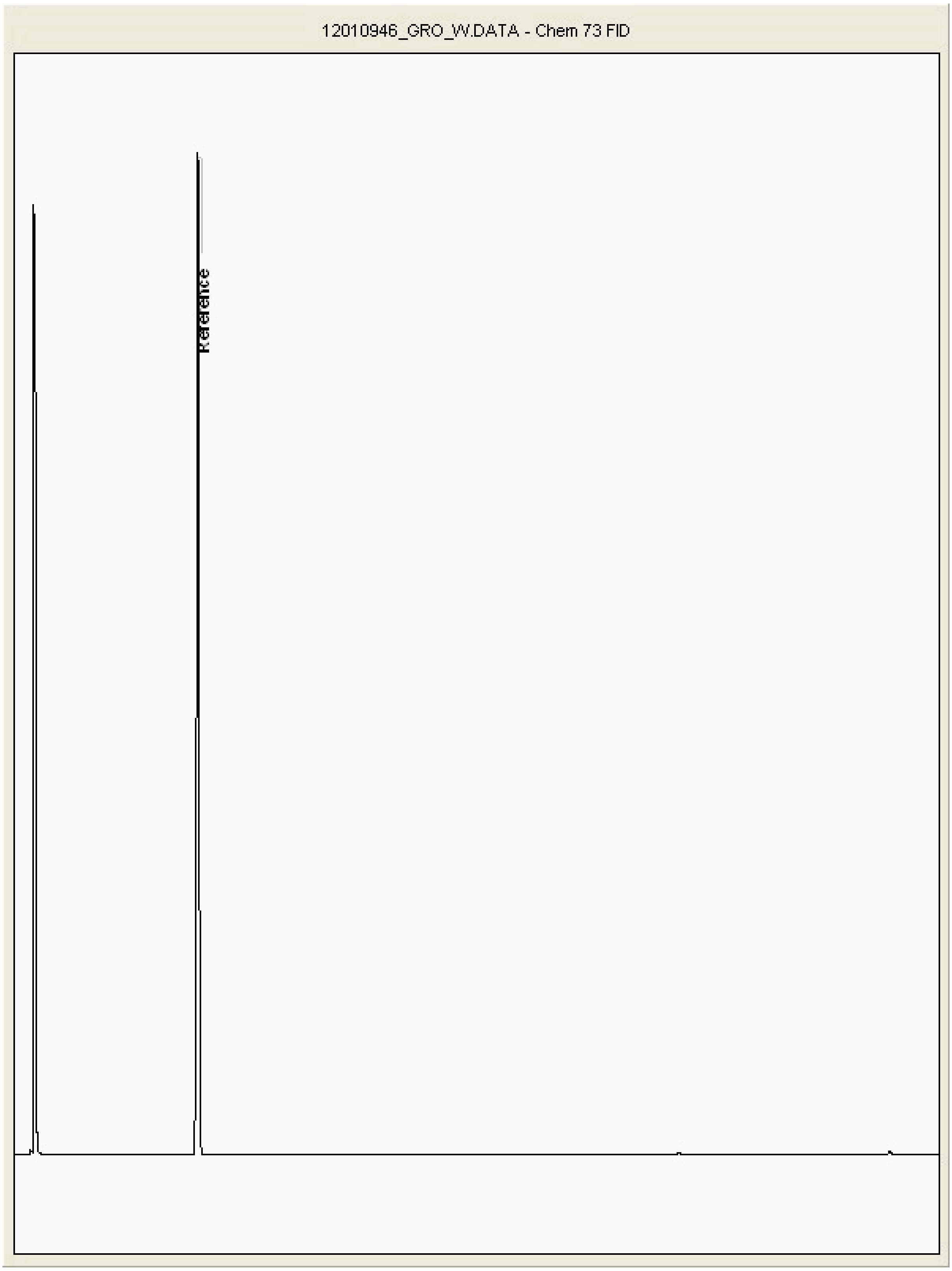
Analysis:	GRO by GC-FID (W)	**Sample No :**	12010921	**Depth :**	
		Sample ID :	BH9		



SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (W)	**Sample No :**	12010946	**Depth :**	
		Sample ID :	BH7		

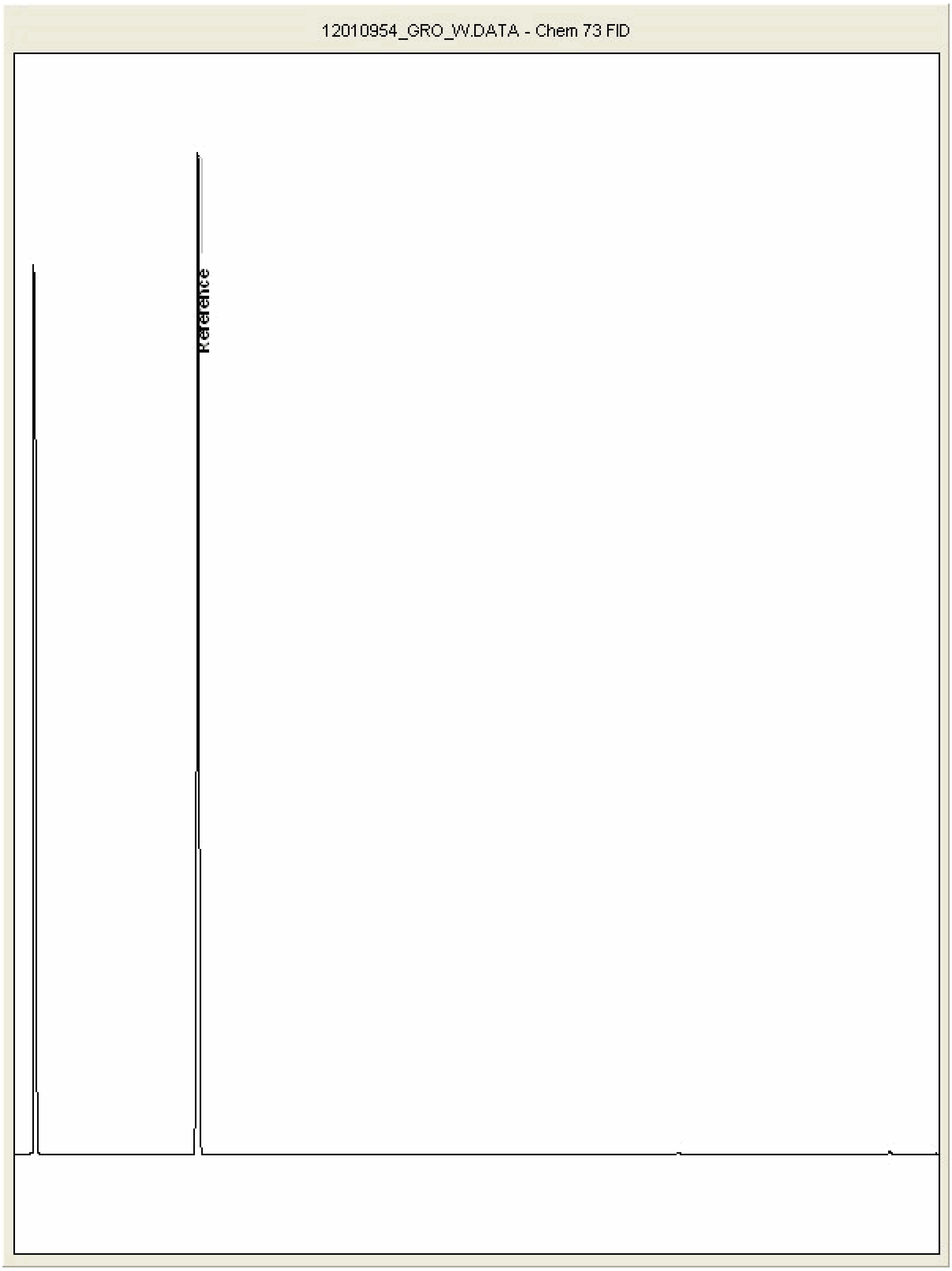


Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 12010954
Sample ID : BH201A

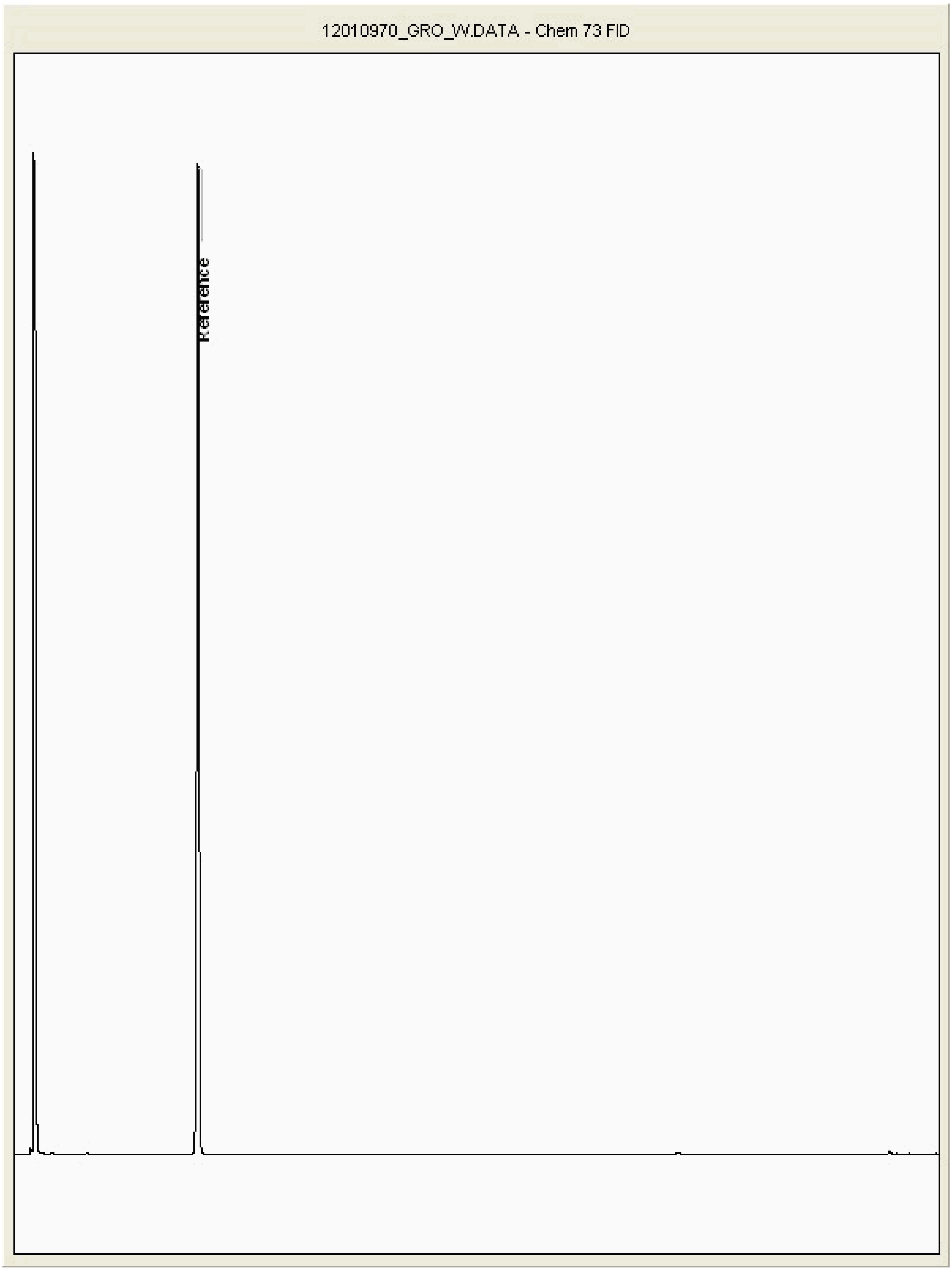
Depth :



SDG:	150903-66	**Location:**	Stag Brewery	**Order Number:**	
Job:	H_URS_WIM-273	**Customer:**	AECOM	**Report Number:**	329161
Client Reference:		**Attention:**	Gary Marshall	**Superseded Report:**	

Chromatogram

Analysis:	GRO by GC-FID (W)	**Sample No :**	12010970	**Depth :**	
		Sample ID :	BH2		



Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) 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 Dimethyphenol, 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.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. 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.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. 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 themajor 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.

24. 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.

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

LIQUID MATRICES EXTRACTION SUMMARY

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

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).

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

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.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC 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 all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples 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 analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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 Dimethyphenol, 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 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. 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 C5-C12 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.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
•	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk 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).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has 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).

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

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 HSG 264.

The identification of asbestos containing materials and soils 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.

C. Ground level plans current and proposed

NOTES:

DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE. ALL OMISSIONS AND DISCREPANCIES TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.

NORTH

LBRUT 2 APPLICATION	25/02/22	BJ	-
Revision description	Date	Check	Rev

SQUIRE & PARTNERS

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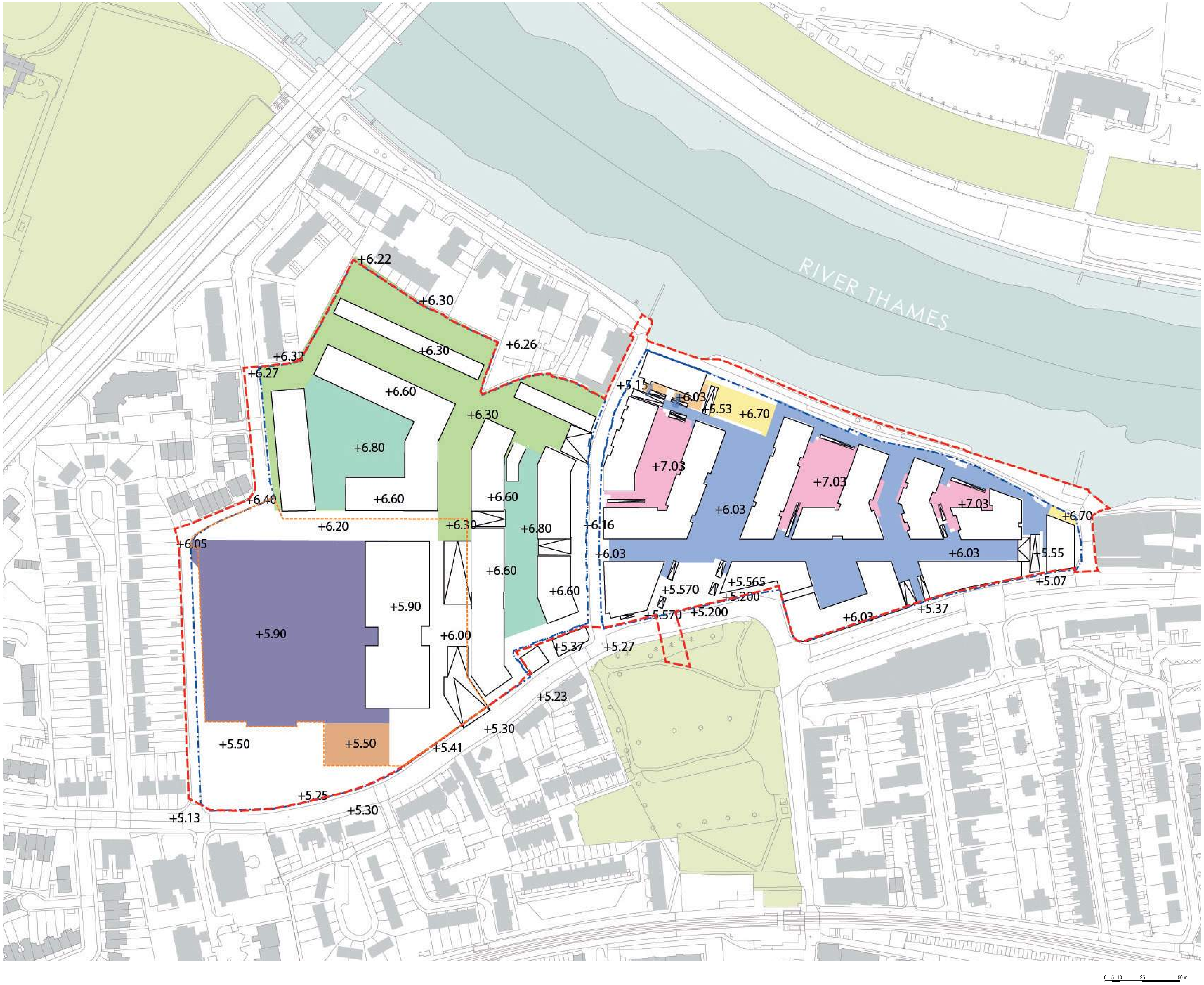
Project
Stag Brewery
Richmond

Drawing
EXISTING SITE SURVEY

Drawn	Date	Scale
RKB	08/03/22	1 : 1250 @ A0 1 : 2500 @ A2
Job Number	Drawing number	Revision
18125	JA12_Z0_P_00_009	-



rev	details	by	date
D00	Issued for Planning	RJ	02.02.2018
D01	Issued for Planning	RJ	09.02.2018
D02	Planning Substitution	RJ	11.04.2019
D03	Issued for Planning	RM	24.04.2020

Notes

1.0 All dimensions in millimeters.
1.2 Use only dimensions shown.

🟥	+7.03
🟩	+6.80
🟨	+6.70
🟩	+6.30
🟦	+6.03
🟪	+5.90
🟧	+5.53
🟫	+5.50
⊠	Grading
— —	Site Application Boundary
- - -	School Application Boundary

ISSUE FOR COORDINATION

N

Project

STAG BREWERY

Drawing

Proposed Site Wide Landscape Level Plan

Date	Scale	Drawn	Checked
02.02.2018	1:2500 @ A3	CL	RM

Drawing status	Revision
DESIGN	D03

Drawing number

P10736-00-004-105

client

DARTMOUTH CAPITAL
Alameda House, 90-100 Sydney Street, London SW3 6NJ

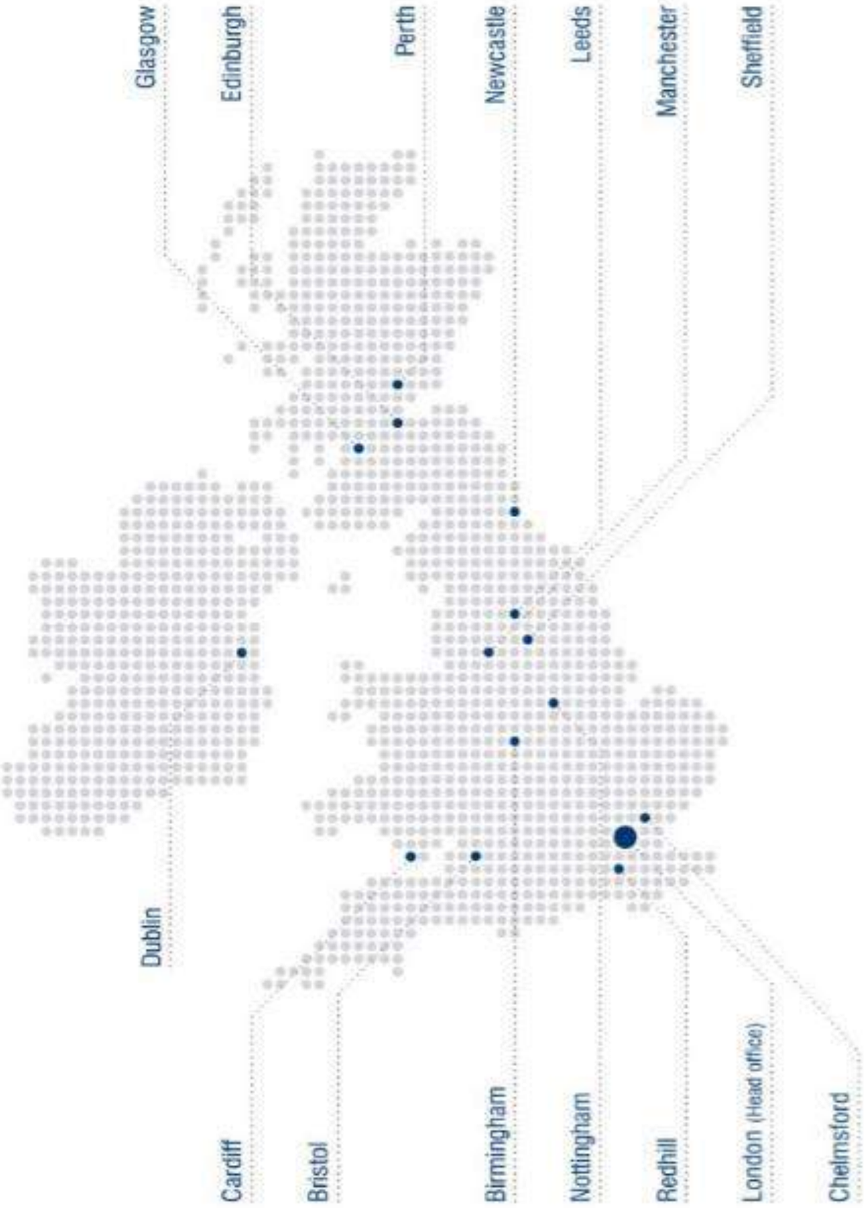
GILLESPIES
1 St John's Square, London EC1M 4DH
P: 0207 2532929 E: design.london@gillespies.co.uk

\\lon-srv-01\ProjectData\P10736-00-004 Stag Brewery Planning Application 2022\Drawings\01 Design\CAD\100 Series\P10736-00-001-105 [Levels Plan].dwg

D. Drainage Strategy

Superseded - refer to Appendix E of Basement Impact Assessment for updated Drainage Strategy dated April 2023.

UK and Ireland Office Locations



C. Flood Risk Assessment

Document Reference: WIE18671

APPENDIX 12.1
FLOOD RISK ASSESSMENT

Stag Brewery, Mortlake

Flood Risk Assessment

For Reselton Properties

March 2022

EXECUTIVE SUMMARY OF REPORT

This report documents work undertaken by Hydro-Logic Services for Reselton Properties Limited between 2016 and 2022 in relation to the proposed redevelopment of the former Stag Brewery site at Mortlake. The latter stages of this work have been undertaken through Corylus Planning and Environmental Ltd.

The purpose of the work was to:

- Provide guidance to the Project team on the issues of flood risk and drainage
- Prepare a Flood Risk Assessment (FRA) suitable for submission with the Planning Applications

The key outcomes of the work are summarised in Section 5 of this Report.

The work delivered the following outputs:

- This report, including
- Flood Emergency Plan (Appendix G)
- Drainage Strategy (submitted under separate cover).

This is Revision 5 of the FRA and reflects changes to the layout of the revised Hybrid Scheme that have been finalised in 2022.

Contributors:

Alan Corner	Project Director, SUDS Specialist & Reviewer
Dr Paul Webster	Project Manager & Flood Risk Specialist
Rodrigo Magno	Hydraulic modeller
Phil Cannard	Hydrologist

Document Status and Revision History:

Version	Date	Author(s)	Authorisation	Status/Comment
3 issue	Oct 2019	P Webster	A Corner	Issue version for Original Scheme
4 issue	May 2020	P Webster	A Corner	Issue version for Revised Scheme
5 issue	Feb 2022	P Webster	A Corner	Issue version for hybrid development

Limitation of liability and use

The work described in this report was undertaken for the party or parties stated; for the purpose or purposes stated; to the time and budget constraints stated. No liability is accepted for use by other parties or for other purposes, or unreasonably beyond the terms and parameters of its commission and its delivery to normal professional standards.

TABLE OF CONTENTS

1. Introduction

1.1 Planning Background

This Flood Risk Assessment (FRA) has been prepared by Hydro-Logic Services (through Corylus) on behalf of Reselton Properties Limited ("the Applicant") in support of two linked planning applications ("the Applications") for the comprehensive redevelopment of the former Stag Brewery Site in Mortlake ("the Site") within the London Borough of Richmond upon Thames (LBRuT).

The Proposals

The Applications seek planning permission for:

Application A: "Hybrid application to include the demolition of existing buildings to allow for comprehensive phased redevelopment of the site:
Planning permission is sought in detail for works to the east side of Ship Lane which comprise:

a) Demolition of existing buildings (except the Maltings and the façade of the Bottling Plant and former Hotel), walls, associated structures, site clearance and groundworks
b) Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 9 storeys plus a basement of one to two storeys below ground
c) Residential apartments
d) Flexible use floorspace for:
    i. Retail, financial and professional services, café/restaurant and drinking establishment uses
    ii. Offices
    iii. Non-residential institutions and community use
    iv. Boathouse
e) Hotel / public house with accommodation
f) Cinema
g) Offices
h) New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works
i) Provision of on-site cycle, vehicle and servicing parking at surface and basement level
j) Provision of public open space, amenity and play space and landscaping
k) Flood defence and towpath works
l) Installation of plant and energy equipment

Planning permission is also sought in outline with all matters reserved for works to the west of Ship Lane which comprise:

a) The erection of a single storey basement and buildings varying in height from 3 to 8 storeys
b) Residential development
c) Provision of on-site cycle, vehicle and servicing parking
d) Provision of public open space, amenity and play space and landscaping
e) New pedestrian, vehicle and cycle accesses and internal routes, and associated highways works"

Application B: "Detailed planning permission for the erection of a three-storey building to provide a new secondary school with sixth form; sports pitch with floodlighting, external MUGA and play space; and associated external works including landscaping, car and cycle parking, new access routes and other associated works"

Together, Applications A and B described above comprise the 'Proposed Development'.

1.2 Background to Submission

The current applications follow earlier planning applications which were refused by the Greater London Authority and the GLA. The refused applications were for:

a) Application A – hybrid planning application for comprehensive mixed use redevelopment of the former Stag Brewery site consisting of:

   i. Land to the east of Ship Lane applied for in detail (referred to as 'Development Area 1' throughout); and
   ii. Land to the west of Ship Lane (excluding the school) applied for in outline (referred to as 'Development Area 2' throughout).

b) Application B – detailed planning application for the school (on land to the west of Ship Lane).
c) Application C – detailed planning application for highways and landscape works at Chalkers Corner.

The London Borough of Richmond (the Council) originally resolved to grant planning permission for Applications A and B but refuse Application C.

Following the LBRuT's resolution to approve the Applications A and B, the Mayor called-in the Applications and became the determining authority. The Mayor's reasons for calling in the Applications were set out in his Stage II letter (dated 4 May 2020) but specifically related to concerns regarding what he considered was a low percentage of affordable housing being proposed for the Site and the need to secure a highways solution for the scheme following the LBRuT's refusal of Application C.

Working with the Mayor's team, the Applicant sought to meaningfully respond to the Mayor's concerns on the Applications. A summary of the revisions to the scheme made and submitted to the GLA in July 2020 is as follows:

i. Increase in residential unit provision from up to 813 units to up to 1,250 units;
ii. Increase in affordable housing provision from (up to) 17%, to 30%;
iii. Increase in height for some buildings of up to three storeys;
iv. Change to the layout of Blocks 18 and 19, conversion of Block 20 from a terrace row of housing to two four storey buildings;
v. Reduction in the size of the western basement, resulting in an overall car parking spaces reduction of 186 spaces and introduction of an additional basement storey under Block 1;
vi. Internal layout changes and removal of the nursing home and assisted living in Development Area 2;
vii. Landscaping amendments, including canopy removal of four trees on the north west corner of the Site; and
viii. Alternative options to Chalkers Corner in order to mitigate traffic impacts through works to highway land only and allow the withdrawal of Application C.

The application was amended to reflect these changes.

Notwithstanding this, and despite GLA officers recommending approval, the Mayor refused the applications in August 2021.

The Mayor's reasons for refusal in respect of Application A were:

(i) height, bulk and mass, which would result in an unduly obtrusive and discordant form of development in this 'arcadian' setting which would be harmful to the townscape, character and appearance of the surrounding area;
(ii) heritage impact. The proposals, by reason of its height, scale, bulk and massing would result in less than substantial harm to the significance of several listed buildings and conservation areas in the vicinity. The Mayor considered that the less than substantial harm was not clearly and convincingly outweighed by the public benefits, including Affordable Housing, that the proposals would deliver;
(iii) neighbouring amenity issues. The proposal, by reason of the excessive bulk, scale and siting of Building 20 and 21 in close proximity to the rear of neighbouring residential properties in Parliament Mews and the rear gardens of properties on Thames Bank, would result in an unacceptable overbearing an unneighbourly impact, including direct overlooking of private amenity spaces. The measures in the Design Code would not sufficiently mitigate these impacts; and
(iv) no section 106 agreement in place.

Application B was also refused because it is intrinsically linked with Application A and therefore could not be bought forward in isolation.

1.3 The Proposed New Scheme

This 3rd iteration of the scheme seeks to respond directly to the Mayor's reasons for refusal and in doing so also addresses a number of the concerns raised by the LBRuT.

The amendments can be summarised as follows:

i. A revised energy strategy is proposed in order to address the London Plan (2021) requirements;
ii. Several residential blocks have been reduced in height to better respond to the listed buildings along the Thames riverfront and to respect the setting of the Maltings building, identified as a Building of Townscape Merit (BTM) by the LBRuT;
iii. Reconfiguration of layout of Buildings 20 and 21 has been undertaken to provide lower rise buildings to better respond to the listed buildings along the Thames riverfront; and
iv. Chalkers Corner light highways mitigation works.

The school proposals (submitted under 'Application B') are unchanged. The Applicant acknowledges LBRuT's identified need for a secondary school at the Site and the applications continue to support the delivery of a school. It is expected that the principles to be agreed under the draft Community Use Agreement (CUA) will be the same as those associated with the refused school application (LBRuT ref: 18/0548/FUL, GLA ref: GLA/4172a/07).

Overall, it is considered that together, the Applications respond successfully to the concerns raised by stakeholders in respect of the previous schemes and during pre-application discussions on the revised Proposed Development. As a result, it is considered that the scheme now represents a balanced development that delivers the principal LBRuT objectives from the Site.

1.4 Purpose of this Report

This Report presents a Flood Risk Assessment (FRA) for the Site. The FRA includes the development of a Drainage Strategy. The development of the Drainage Strategy has been undertaken by Waterman Infrastructure & Environment Limited ('Waterman IE'), in conjunction with Hydro-Logic Services and is summarised within this FRA.

The National Planning Policy Framework (NPPF) was published on 2012, revised most recently in July 2021 and sets out the Government's planning policies for England and how these are expected to be applied. Flooding is addressed, principally in paragraphs 159 to 169 of the NPPF. These seek to avoid inappropriate development in areas at risk of flooding by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.

A site-specific flood risk assessment is required for proposals of 1 hectare or greater in Flood Zone 1; all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3, or in an area within Flood Zone 1 which has critical drainage problems (as notified to the local planning authority by the Environment Agency); and where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding.

A site-specific flood risk assessment must demonstrate the following:

- that the development will be safe for its lifetime taking account of the vulnerability of its users;
- it should not increase flood risk elsewhere;
- it should if possible, reduce flood risk overall.

1.5 Sources of Information and Consultation

A Scoping (Level 1) Flood Risk Assessment was prepared for the site in July 2016 (Appendix B). This was submitted to the Environment Agency and London Borough of Richmond upon Thames (LBRuT). Useful responses were obtained from both organisations, as shown in Appendix C . In particular, these have helped to Scope the requirements for this full FRA.

This Report has also been informed by:

- Product 4 flood data provided by the Environment Agency to Waterman IE in February 2016 (Ref KSL 2030);
- Product 7 flood data (The Lower Thames Model) provided to Hydro-Logic Services in January 2017 (Ref KSL 24434);
- Product 4 & 8 flood data, provided by the Environment Agency to Hydro-Logic in July 2017 (Ref KSL 52746);
- Development proposals provided by Squire and Partners throughout the project;
- Landscaping and River wall proposals provided by Gillespies LLP;
- Site visit by Dr Paul Webster on 16th June 2016.

1.6 Structure of Report

The Report has been structured in order to deal with key flood related issues of the NPPF Practice Guide, for which a checklist has been reproduced as Appendix A of this Report. The principal sections of the Report are as follows:

- Section 2 refers to spatial planning considerations by reference to the proposed land use and flood zoning;
- Section 3 presents an assessment of the existing flood risk at the application sites;
- Section 4 presents an assessment of flood risks associated with the proposed development along with any mitigation that may be required;
- Section 5 presents a summary of the main findings.

Additional Appendices are provided that deal with the following:

- Appendix B is the Scoping Level FRA submitted by Hydro-Logic Services to the Environment Agency and LBRuT;
- Appendix C provides the responses of the Environment Agency and LBRuT to the Scoping Level FRA;
- Appendix D is a Breach Analysis;
- Appendix E shows extracts from sewer maps provided by Thames Water;
- Appendix F provides the Environment Agency Climate Change Allowances (at February 2016);
- Appendix G is the Flood Emergency Plan
- Appendix H provides drawings of the proposed passive defence for Ship Lane;
- Appendix I is the Environment Agency response to tidal defence proposals.

2. Spatial Planning Considerations

2.1 Location Plan and Site Plan

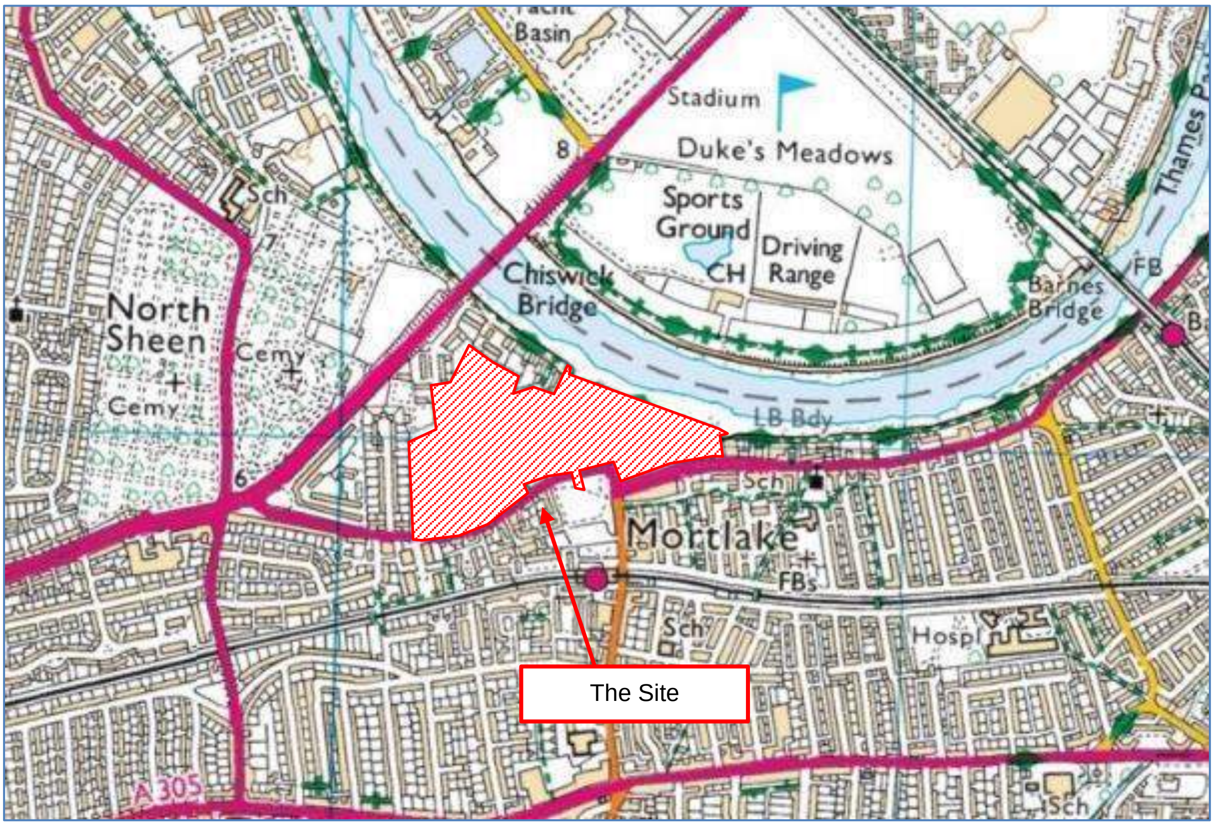
The "Site" is the former location of the Stag Brewery, located at Mortlake in the London Borough of Richmond upon Thames (LBRuT) plus some surrounding areas, as described in this Section. It is located south west of a large meander on the River Thames which flows to the east. Its general location is shown in Figure 2-1 and an aerial photo of the site is shown in Figure 2-2.

The Site comprises of a parcel of land extending to approximately 9.25 hectare (ha) predominantly occupied by the former Stag Brewery, as well as surrounding highways land including Chalkers Corner junction with the A316 (Clifford Avenue), A3003 (Lower Richmond Road) and A205 (South Circular), Mortlake High Street, and Sheen Lane. The proposed highways works are to be delivered by Section 278 works. There would be no change of land-use or impact on ground levels in this part of the Site. There are, accordingly, no flood risk implications of this part of the Site and it is not considered further in this FRA. The geographical coverage of this FRA covers the parcel of land predominantly occupied by the former Stag Brewery which is considered to be appropriate and robust for the purposes of the assessment.

Table 2-1 Grid reference details for the site (www.streetmap.co.uk)

Reference	Value
OS X (Eastings)	520341
OS Y (Northings)	176027
Nearest Post Code	SW14 7ET
Lat (WGS84)	N51:28:14 (51.470421)
Long (WGS84)	W0:16:08 (-0.268803)
Nat Grid	TQ203760 / TQ2034176027

Figure 2-1 General location of the proposed Development



Reproduced under Licence 100041271

Figure 2-2 Aerial photo of the Site

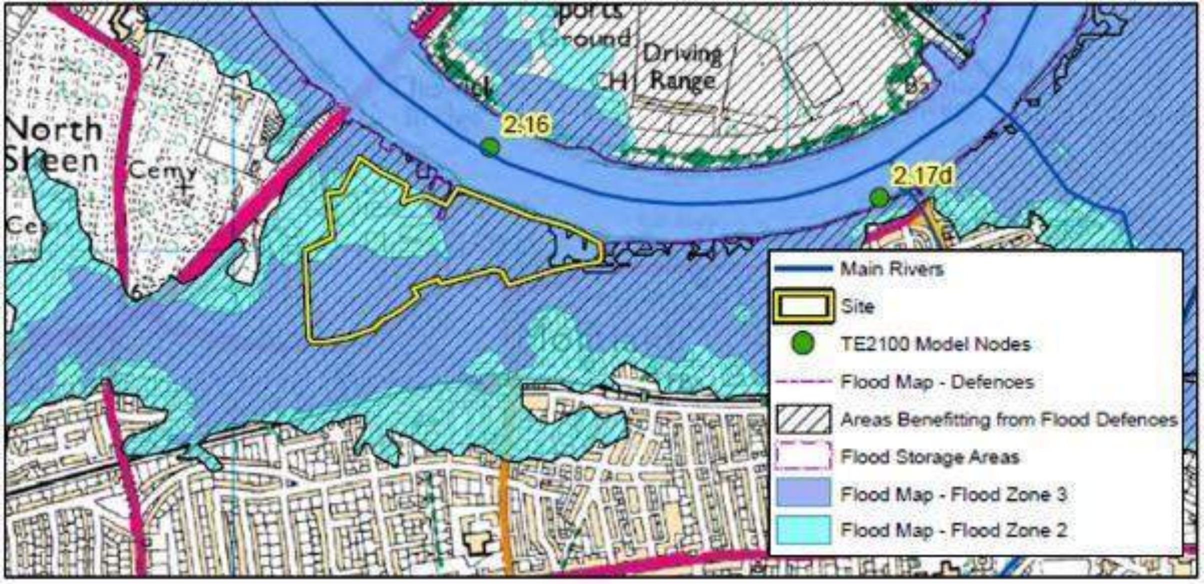
2.2 Environment Agency Flood Zone

The definitions of flood zones adopted by PPS25/NPPF are as follows:

- ***Zone 1: 'Low Probability'*** *– This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).*
- ***Zone 2: 'Medium Probability'*** *– This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year.*
- ***Zone 3a: 'High Probability'*** *– This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.*
- ***Zone 3b: 'The Functional Floodplain'*** *– This zone comprises land where water has to flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment* Agency, including water conveyance routes).

The Environment Agency have provided maps of the flood zones (Figure 2-3). This shows that the east and south of the Site is in flood zone 3 within the 0.5% Annual Exceedance Probability (AEP) flood event. The north east of the Site is located in flood zone 2 in the 0.1% AEP flood event.

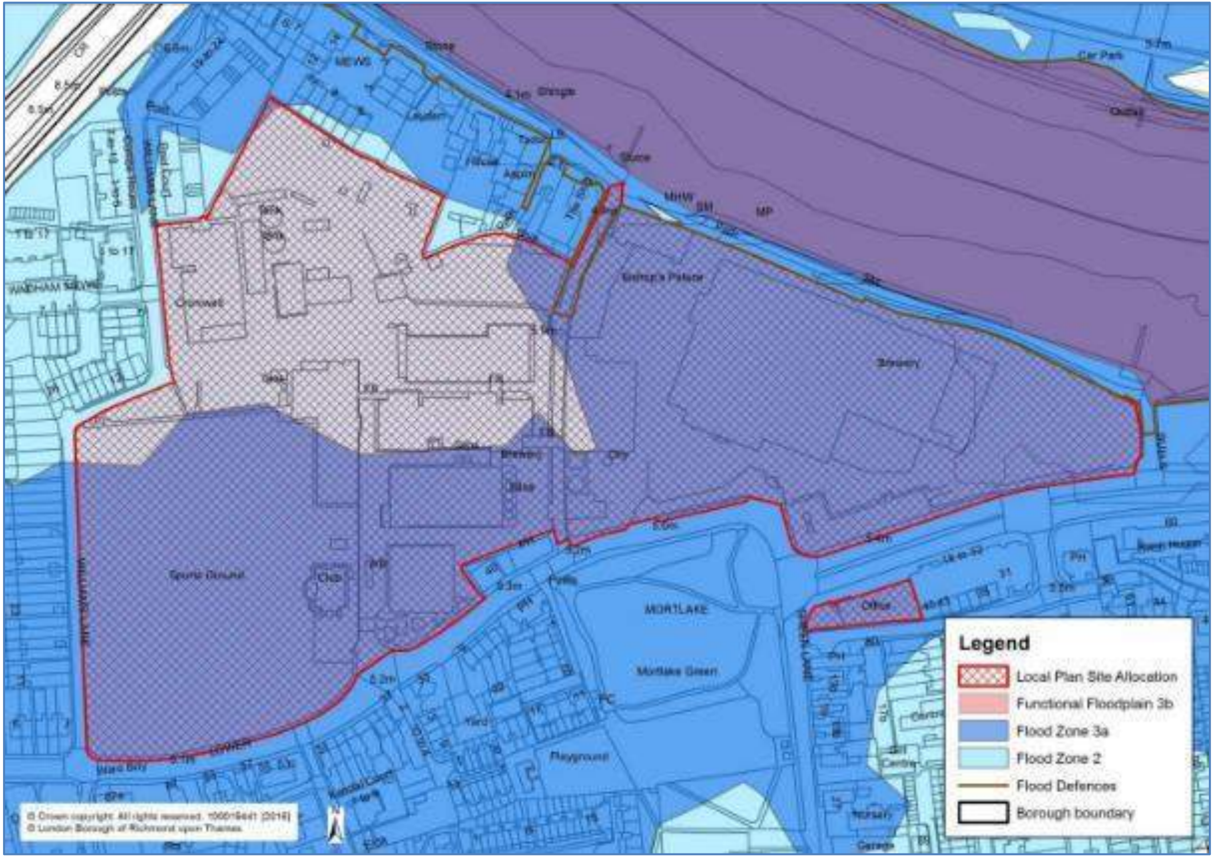
Figure 2-3 Environment Agency Flood Zones Map



Copyright Environment Agency. Note that identical maps were provided in Product 4 data sets in 2016 and 2017. This map shows a site boundary that has now been superseded.

It is also important for planning purposes, to establish if any of the site lies in the functional flood plain (termed flood zone 3b). The Flood Risk Sequential Test (LBRuT Council, 2016a) focuses on the Stag Brewery site and confirms that the site is not located in flood zone 3b (Figure 2-4).

Figure 2-4 Stag Brewery Flood Zone Map (LBRuT Council, 2016a)



This map shows a site boundary that has now been superseded.

2.3 The Strategic Flood Risk Assessment and Sequential Test

The Strategic Flood Risk Assessment (SFRA) has been prepared by the London Borough of Richmond upon Thames (LBRuT) Council (2016c). This has provided a useful source of information to guide this FRA. Mortlake is specifically mentioned as having a tidal and fluvial flood risk from the nearby River Thames. Other flood risks are also covered in this SFRA (see section 3.2).

The NPPF includes a table to highlight whether particular types of development are appropriate in each flood zone. This is reproduced as Table 2-2. The proposed development would be classed as a more vulnerable development in accordance with the classification in Table 2-2, since the **most vulnerable use classification class** is used across the development site. More vulnerable developments are considered to be appropriate in flood zone 2 but are subject to the exception test in flood zone 3a (Table 2-3).

Table 2-2 Flood risk vulnerability classification

More Vulnerable (MV)
Hospitals.
Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels.
Non–residential uses for health services, nurseries and educational establishments.
Landfill and sites used for waste management facilities for hazardous waste.
Sites used for holiday or short-let caravans and camping, **subject to a specific warning and evacuation plan**.
Less Vulnerable (LV)
Police, ambulance and fire stations which are not required to be operational during flooding
Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non–residential institutions not included in 'more vulnerable'; and assembly and leisure.
Land and buildings used for agriculture and forestry.
Waste treatment (except landfill and hazardous waste facilities).
Minerals working and processing (except for sand and gravel working).
Water treatment works which do not need to remain operational during times of flood

Table 2 from NPPF Technical Guide (Paragraph 066)
Text in bold italics denotes all land uses proposed for the Site

Table 2-3 Flood risk vulnerability and flood zone compatibility

Flood Zone	**Definition**	**Essential Infrastructure**	**Water compatible**	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**
1	T>1,000	✓	✓	✓	✓	✓
2	$100<T_{fluv}<1,000$ $200<T_{tidal}<1,000$	✓	✓	Exc	✓	✓
3a	$T_{fluv}<100$ $T_{tidal}<200$	Exc.	✓	✗	Exc	✓
3b (functional floodplain)	$T_{fluv}<20$	Exc	✓	✗	✗	✗

Based on Table 3 from the NPPF Technical Guide (Paragraph 067)

Notes:

✓	development is appropriate	T	return period (fluv = fluvial)
✗	development should not be permitted	Exc	exception test should be applied

The overall aim of decision-makers should be to steer new development away from Flood Zone 3, ideally to Flood Zone 1. Where there are no reasonably available sites in Flood Zone 1, then sites would be considered in Flood Zone 2 and then 3. The Sequential Test requires an assessment of available and equivalent sites in the LBRuT area to ascertain if others are available that are at lower risk of flooding. The Stag Brewery site has been commented on in the LBRuT council's Flood Risk Sequential Test (2016a) which states that:

"This is a site for major redevelopment and regeneration as the brewery has closed, and as such, it is not appropriate / possible to accommodate the proposed uses on an alternative site in the borough at lower probability of flooding. The sequential approach should be applied on the site and a site-specific FRA will be required. Flood Hazard and TE2100 levels will need to be taken into account."

The Sequential Test is therefore deemed to have been satisfied, and is confirmed in the pre-application advice from LBRuT subject to review by the Environment Agency (Appendix C.2).

The Exception Test now has two parts and the extent to which it satisfies these elements is described below:

(a) That the development supports wider sustainability benefit to the community that outweigh flood risk, informed by the SFRA.

This development meets this criterion, as confirmed from the pre-application advice from LBRuT which states:

"…the Council can confirm that development of this site in line with the draft Local Plan proposal site (SA23), as supported by the Flood Risk Sequential Test, will provide wider sustainability benefits because it is now a derelict site that is in need of regeneration, and the proposal will create a new village heart for Mortlake with a mix of uses, including enlivening the riverside frontage." (Appendix C.2)

(b) that the site can be safely developed without increasing flood risk elsewhere

This FRA provides the confirmation in Section 4 that there is no increase in flood risk elsewhere and can be made safe for residents.

Evidence is thus provided, or referred to in this FRA, to demonstrate that both the Sequential and Exception Tests have been satisfied.

2.4 Other relevant policies

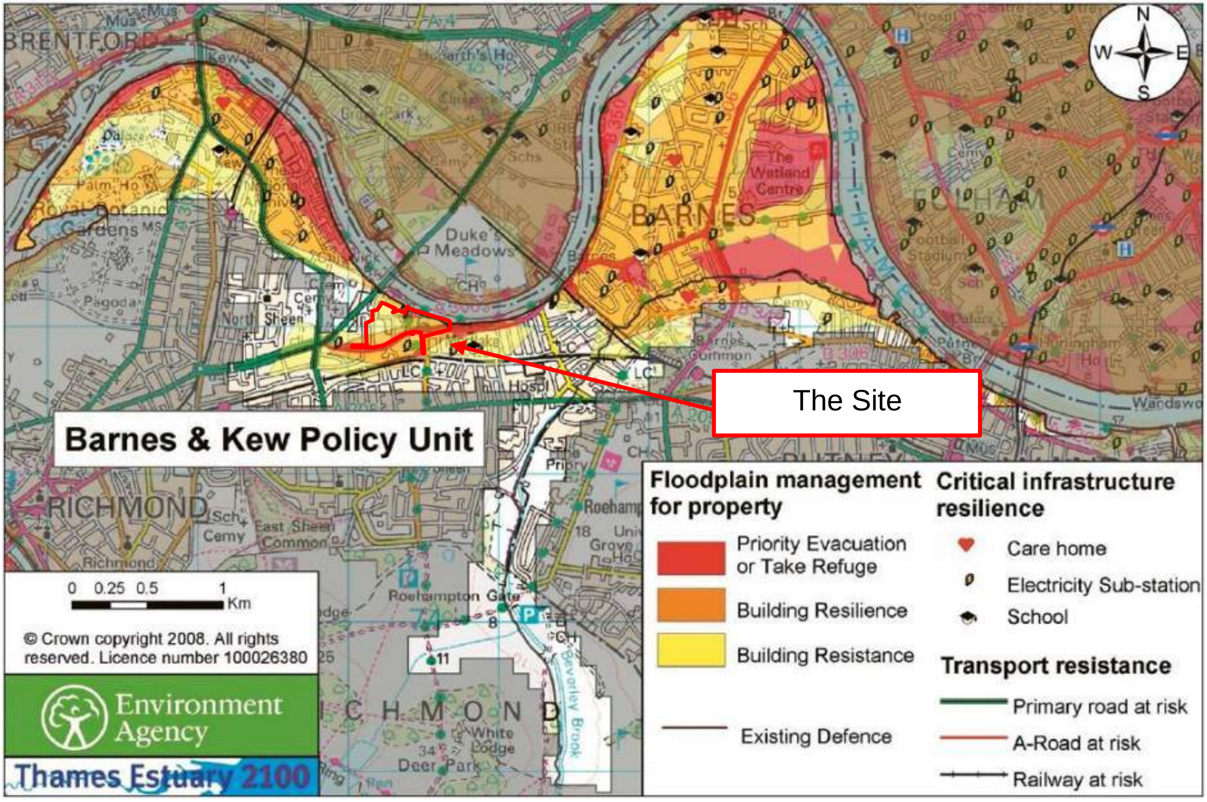
The **LBRuT Local Development Framework Core Strategy** (LBRuT, 2009) sets out the key planning policies of the borough council. Policy CP3 focusses on climate change and states that this must be accounted for within the development. This includes accounting for climate change in the drainage strategy and the flood risk posed by the River Thames.

The **Local Development Management Plan** (LBRuT, 2011) expands on the policies from the LBRuT Local Development Framework Core Strategy and includes a focus on sustainability. Policy DM SD 6 sets out the flood risk requirements which includes mitigation measures and states that a Flood Warning and Evacuation Plan would be required. Policy DM SD 7 focusses on Sustainable Drainage and states that wherever possible, Sustainable Drainage Systems (SuDS) must be used and surface water discharge from the site should be reduced to greenfield rates. Policy DM SD 8 considers flood defences and states that flood defences must be maintained and that any development within 16 m of the tidal River Thames will require consent from the Environment Agency.

The **LBRuT Local Plan** (LBRuT, 2018) supersedes the policies in the two preceding documents. The new policies for flood risk and sustainable drainage are covered in policy LP 21.

The tidal areas of the Thames Estuary are covered by the **Thames Estuary 2100** (TE2100) plan. This aims to manage and reduce the tidal flood risk from the estuary over the next 100 years. The site is located within action zone 1 under the Barnes and Kew policy unit. Within this area, the policy is to keep take action to reduce flood risk beyond that predicted by climate change. For the proposed development, it is indicated the floodplain management actions to be taken should be a combination of priority evacuation and building resilience and resistance. This is illustrated for the relevant Flood Plain Management Unit (Barnes and Kew) in Figure 2-5.

Figure 2-5 Floodplain Management for the Barnes and Kew Policy Unit of the TE2100 Plan



Environment Agency (2012)

The **London Plan** was published in 2021. Through Policy SI 12 (Flood Risk Management), *"Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers. ."*. Through Paragraph 9.12.3, the Plan endorses the Thames Estuary 2100 plan. However, of greatest relevance to this FRA is Policy SI 13 (Sustainable Drainage). This states that:

> *[B] Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:*
>
> 1. *rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)*
> 2. *rainwater infiltration to ground at or close to source*
> 3. *rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)*
> 4. *rainwater discharge direct to a watercourse (unless not appropriate)*
> 5. *controlled rainwater discharge to a surface water sewer or drain*
> 6. *controlled rainwater discharge to a combined sewer.*
>
> *[C] Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.*
>
> *[D] Furthermore, drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.*

3. Flood Hazard for Existing Site

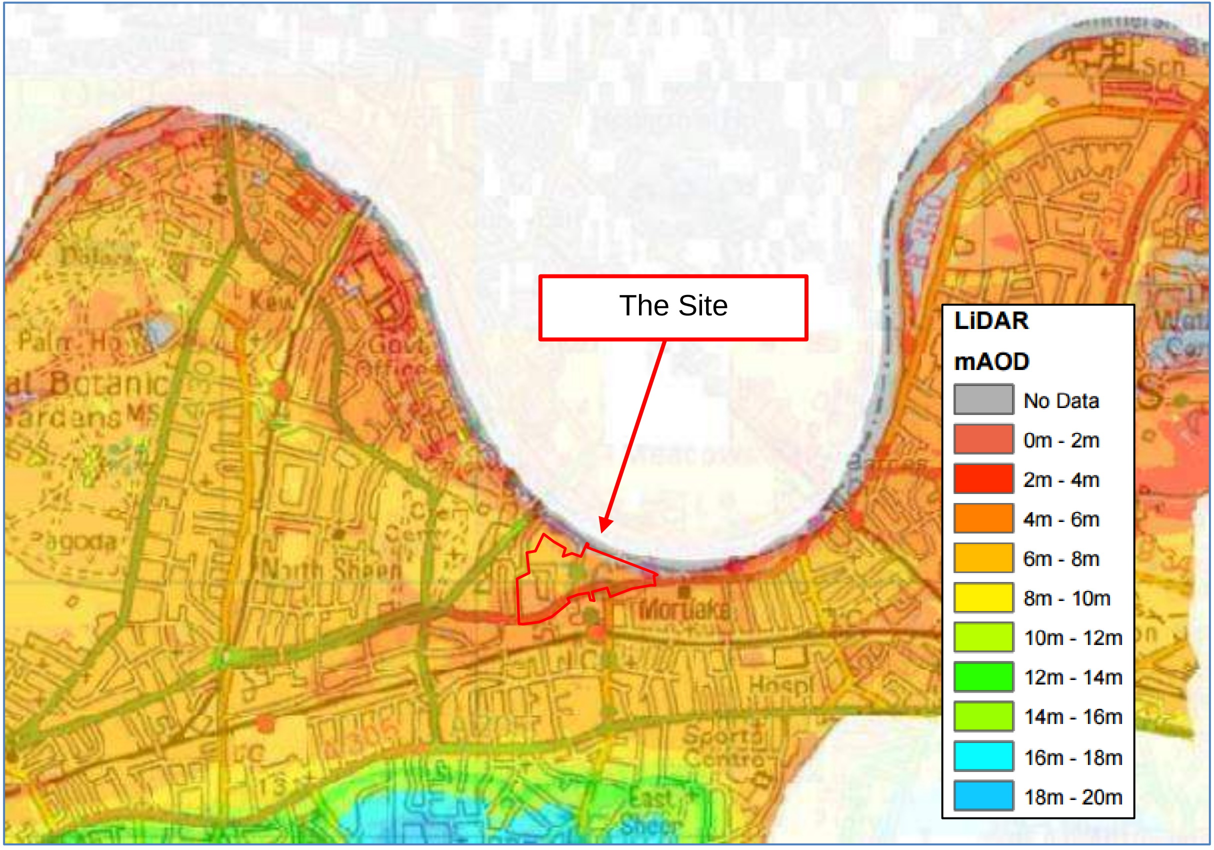
This Section reviews the characteristics of the catchment area that affect the Site. This provides the context for reviewing the sources of flooding to the site and the flood risk.

3.1 Site and Catchment Characteristics

3.1.1 Topography

The topography of the Site is relatively flat and is located on low lying land. The LiDAR map (Figure 3-1) indicates that it is lowest to the east of the Site (4 to 6 mAOD) and highest in the north west of the Site (8 to 10 mAOD).

Figure 3-1 Topography of the Site



3.1.2 Geology and soils

According to the Preliminary Environmental Risk Assessment (PERA) undertaken by Waterman IE, the geology throughout the Site is composed of Hardstanding, underlain by Made Ground, Alluvium, Kempton Park Gravel Formation, London Clay Formation, Lambeth Group, Thanet Formation and Chalk Group (Figure 3-2 shows Kempton Park Gravel as the main superficial deposit). It is anticipated shallow groundwater in the Alluvium and Kempton Park Gravel Formation is in hydraulic continuity with the River Thames directly adjacent to the Site. This presents a risk to the Site of water finding a pathway through the gravel when the River Thames is at a high water level, which could cause groundwater flooding. The Site is located on soils described as Soilscapes 6 which are "*Freely draining, slightly acid loamy soils*" (Figure 3-3). While this indicates that infiltration drainage techniques could be used, the Site's proximity to the River Thames indicates that infiltration could be inappropriate due to a high groundwater table.

Figure 3-2 The Geology Attributes at the Site

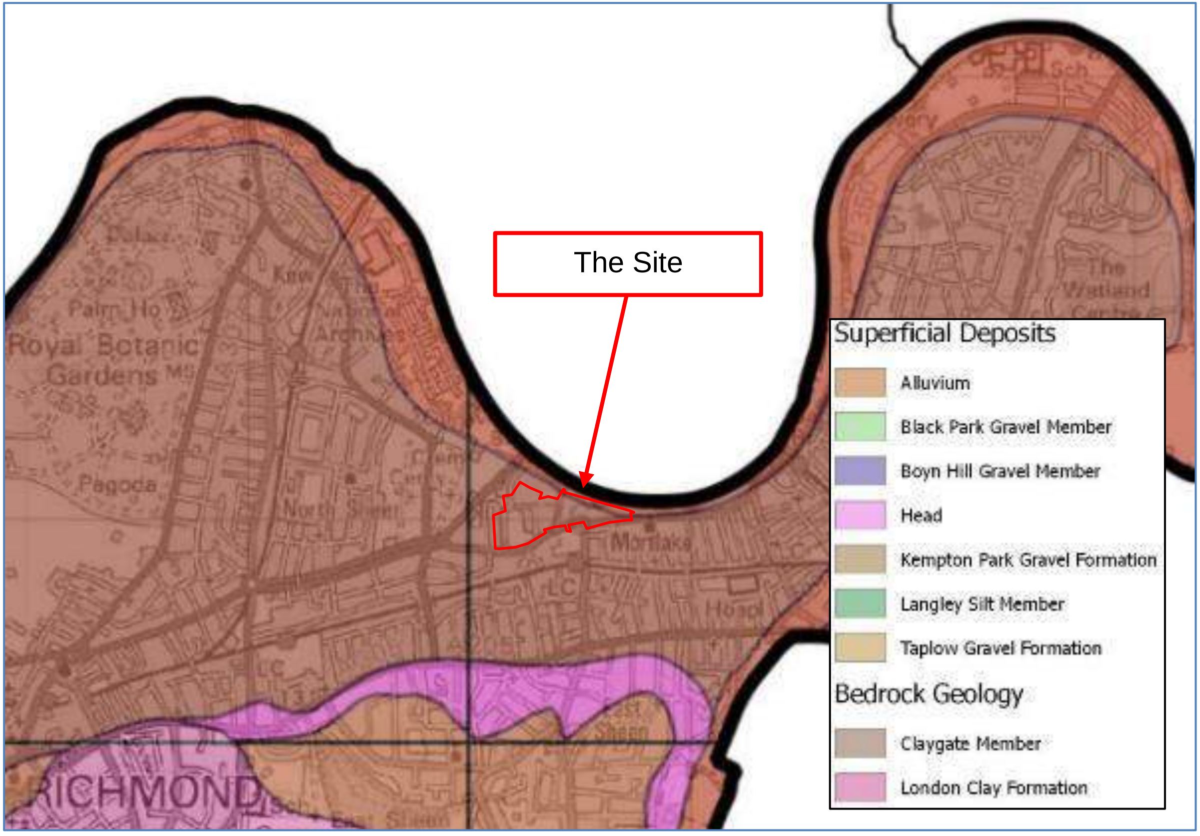
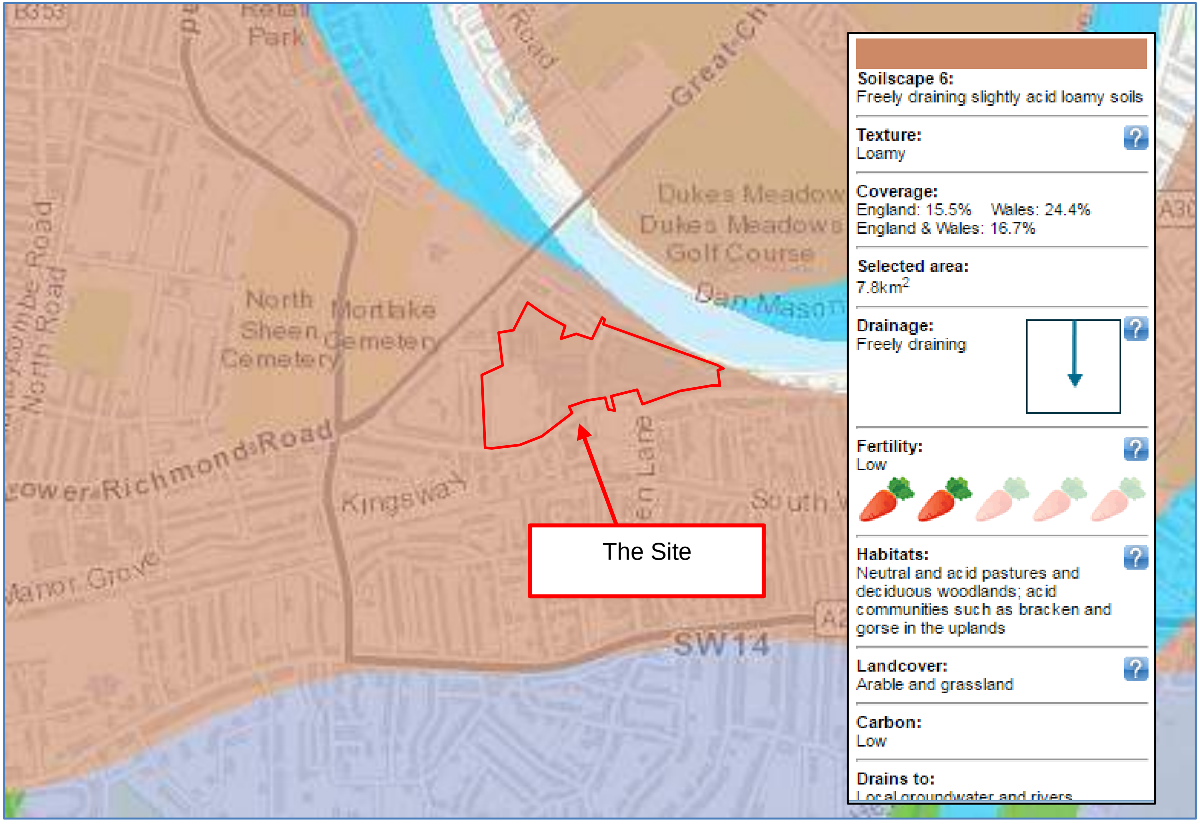


Figure 3-3 Soils underlying the Site



3.2 Sources of Flood Risk

The principal sources of flood risk are shown in Table 3-1. More detailed consideration is given in Section 3.3

Table 3-1 Possible sources of flood risk

Key sources of flooding	**Possibility at Site**
Fluvial (Rivers)	*Very low risk as fluvial levels would not overtop defences*
Tidal	*Moderate risk since it is located in the River Thames flood zones 3a and 2*
Groundwater	*Possible risk from its proximity to the River Thames*
Sewers	*Very low risk; No historical records*
Surface water	*Very low risk*
Infrastructure failure	*Very low risk associated with reservoirs located to west of London, namely Queen Elizabeth II and Queen Mary Reservoirs.*

Based on NPPF Practice Guide

3.3 Flood Mechanisms

3.3.1 Tidal

The dominant flood risk to the Site comes from the tides on the River Thames. This can occur from high tides combined with storm surges.

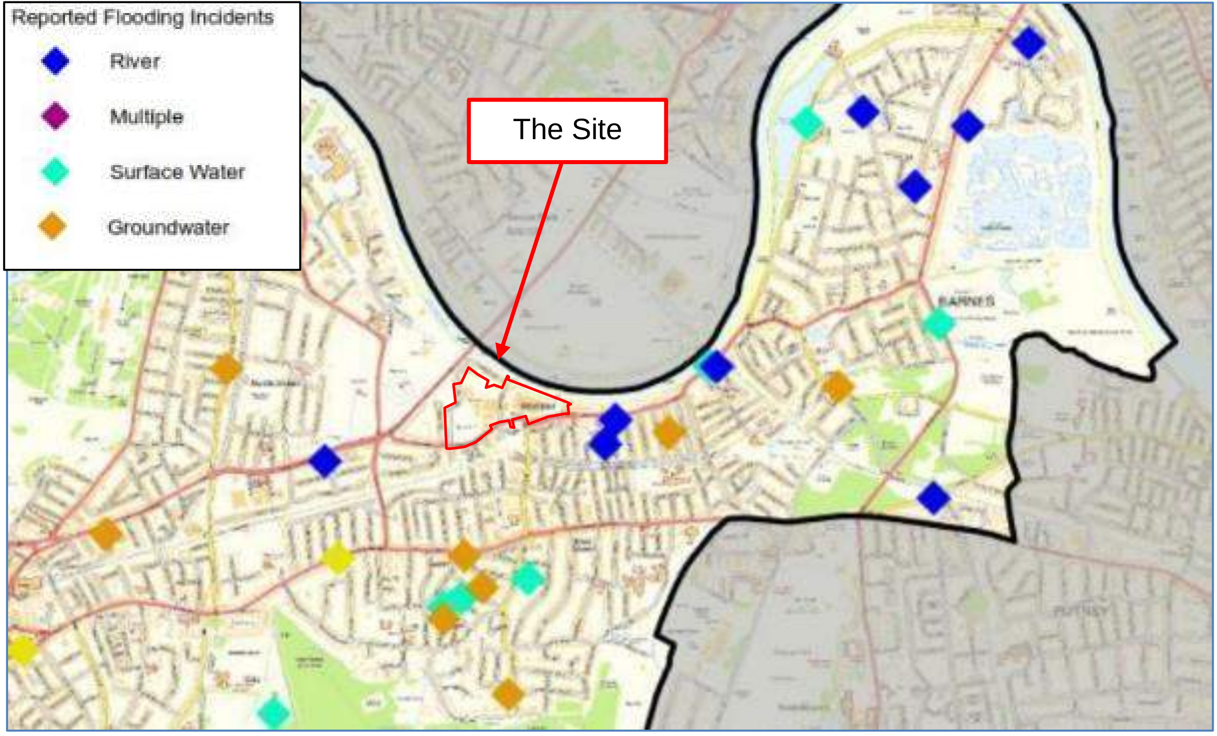
The Site is protected by formal Thames Tidal Flood defences, including the Thames Barrier. This controls the tidal water levels and, in combination with other defences, should limit flooding up to the 0.1% Annual Exceedance probability (AEP) flood event. Apart from the Thames Barrier, these defences are privately owned and it is the responsibility of the riparian owner to manage and maintain them. The boundary wall on the site of the Stag Brewery forms part of the flood defence at this location. In the cases that these defences were breached, different parts of the site would exhibit different hazards, ranging from low to extreme (see section 3.5).

The nearest tidal level station to the site is at Kew, as documented by the Port of London Authority (2016). This shows the following level information:

- Chart datum is 1.07 m below Ordnance Datum
- HAT (Highest astronomical tide) = 5.9 mACD = 4.8 mAOD
- MHWS (Mean High Water Springs) = 5.2 mACD = 4.1 mAOD
- MHWN (Mean High Water Neaps) = 4.2 mACD = 3.1 mAOD

While there are no reported historic flood incidents at the site (LBRuT, 2016a), there have been several flood incidents from the river near to the site (Figure 3-4).

Figure 3-4 Historic Flood Incidents



3.3.2 Groundwater

The BGS susceptibility to groundwater flooding map (Figure 3-5) indicates that the eastern and southern areas of the Site are susceptible to groundwater flooding at the surface. The remaining areas of the Site are susceptible to groundwater flooding below the ground. While no groundwater flood incidents have been recorded at the Site, there have been several groundwater flood incidents near the Site (Figure 3-4).

The mechanism for groundwater flooding could occur from two sources and the associated pathways. The first source is from high water levels in the River Thames. Since the Site is located on Kempton Gravel Formation, this could allow water to find a pathway through the gravel into the Site.

A second mechanism is from the minor aquifer over which the Site is located (Figure 3-6). This indicates a risk from groundwater flooding that could be caused by high seasonal rainfall which increases the groundwater levels in the aquifer. Since some areas of the Site have a low elevation (Figure 3-1), this could increase its susceptibility to groundwater flooding from a high water table.

AECOM was commissioned in 2015 to undertake an Environmental Site Assessment Report in preparation for the proposed planning application (AECOM 2015a and 2015b). This included a collation of available groundwater monitoring information and a new set of observations in September 2015.

The main findings of their investigations were:

- Observed water levels vary over the site from around 2 mAOD in the east of the Site to 1.3 mAOD in the west. The hydraulic gradient is thus downwards to the west in the western part of the Site. However, in the centre, the gradient is downwards to the south-west (Figure 3-7).

Figure 3-5 BGS Groundwater Map (LBRuT, 2016c)

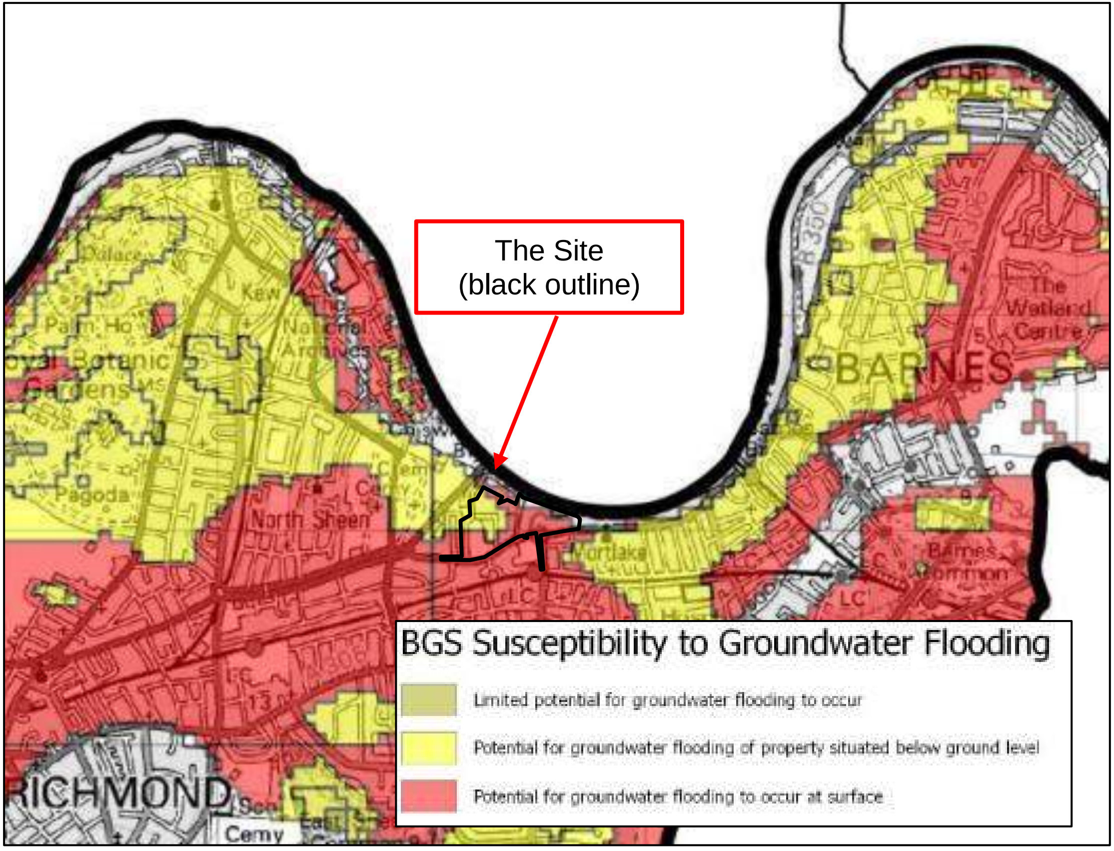
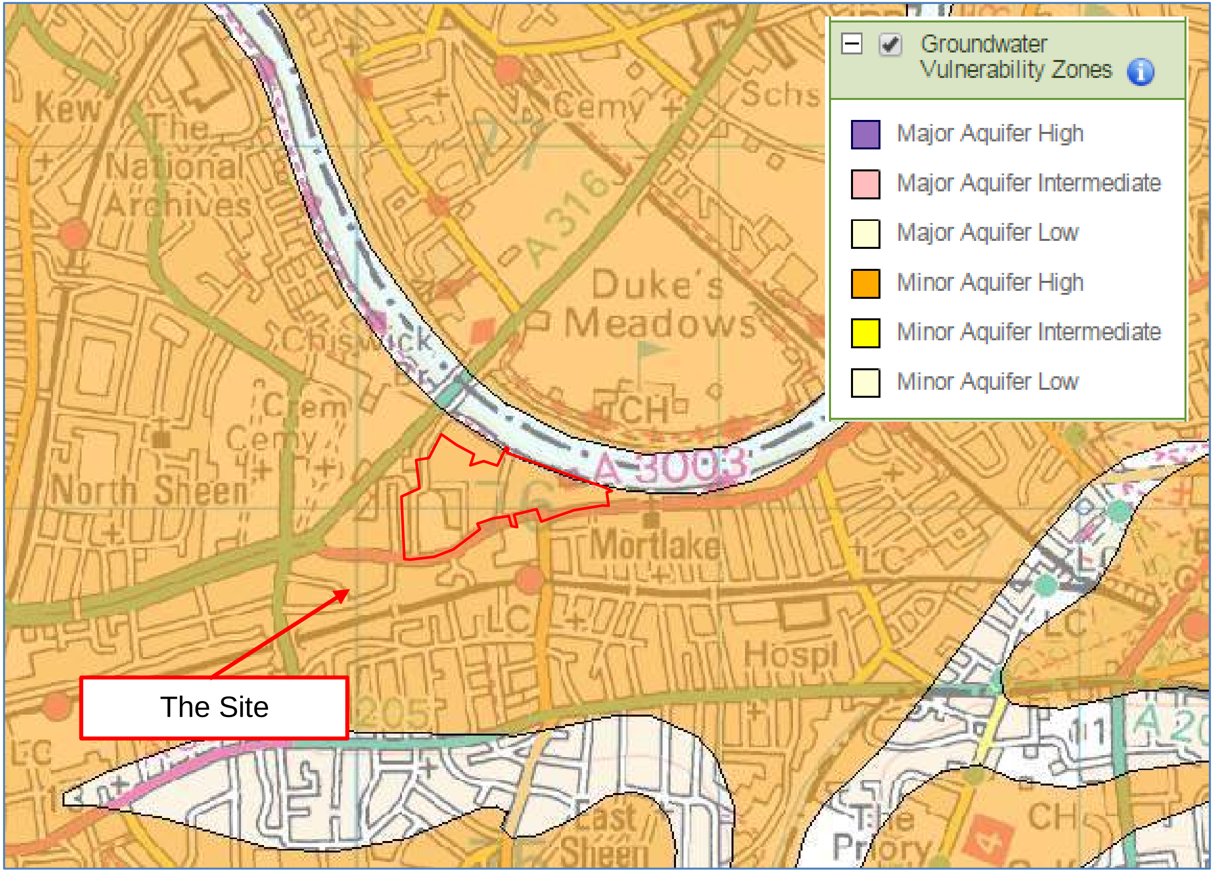


Figure 3-6 Environment Agency Groundwater Map



- The hydraulic gradient therefore contrasts with the topographic gradient which is downwards to the east across the Site.

- A review of water levels over time confirms that they vary systematically across the Site, with a typical range of about 0.5 m between the highest and lowest values (Figure 3-8).

- The influence of the tidal variation in the Thames was investigated through deployment of monitors at three of the boreholes. The closest borehole to the Thames that was monitored was BH201a, located approximately 20 m from the southern bank of the Thames. The record from BH201A shows a very subdued response to tidal variation centred around 2 mAOD over the time of observations (Figure 3-9), as expected because the borehole is located in the inter-tidal zone.

As part of their Environmental Risk Assessment in 2016 for the east part of the Site (east of Ship Lane), Waterman IE also made measurements of groundwater levels at a new set of boreholes. The locations of the additional boreholes are shown in Figure A.4 and the observations in Appendix D of Waterman IE (2016b). The observed water levels have been annotated in red on Figure 3-7. Based on the findings by AECOM and the observations by Waterman IE (2016b), the following hydrogeological interpretation can be made about the Site:

- Since the hydraulic gradient slopes downwards away from the river, the river appears to be acting as a “source” of groundwater flow when considered together with flows from existing surface water drainage arrangement (see Section 3.4) under wet weather conditions.

- Although the river levels are subject to tidal variation, the effects diminish with distance from the river, such that at 20 m for Borehole 201A, they are very subdued. The head boundary condition imposed by the Thames will therefore approximate to the average recorded water levels. This is logically around 2 mAOD (based on Figure 3-9) and which is consistent with the closest available water level recorders at Richmond (Figure 3-10) and Chelsea (Figure 3-11), for which average water levels are around 2.4 mAOD and 0.7 mAOD respectively.

- AECOM sought to investigate the hydrogeology of the east of the Site by drilling boreholes BH203 and BH203A. The borehole logs show that these had limited success since they encountered concrete (Figure 3-12 and Figure 3-13). The investigations by Waterman IE also sought to better understand the east of the Site through the drilling of additional boreholes, though these also encountered obstructions. These undermine any strong inferences about the hydrogeology of this part of the site.

- The general observations by Waterman IE are broadly consistent with the interpretation by AECOM. However, the picture is varied with some dry wells and other wells showing water levels within 2 to 3 m of the ground level. It seems likely that this variation reflects the complexity of the east of the Site and the numerous anthropogenic and building work interventions over a long period. It is possible (rather than probable) that the observed water levels of around 3 mAOD which were obtained in February 2016 and similar values obtained by Waterman IE in October 2016 represent a perched water table associated with the underlying Palaeogene minor aquifer. However, the relationship between the Palaeogene minor aquifer and the Kempton gravel formation does not support the assumption of a perched water table. The presence of building work artefacts in the eastern part of the Site may be responsible for the impermeable concrete encountered at various depths through the drilling of BH203 and BH203A as recorded in their borehole logs.

It is therefore concluded that the risk to the Site and the surrounding area from groundwater is low over the majority of the Site. However, in the extreme east, there is some uncertainty over the relative influence of the mechanisms controlling groundwater flow through the Site: flows through the high permeability Kempton gravels and / or groundwater flows in the underlying minor aquifer. The possible impacts of the proposed Development on groundwater risk are reviewed in Section 4. The investigations were commissioned at an early stage in the planning process. The findings have not demonstrated a need for further monitoring and none has been conducted.

Figure 3-7 Groundwater Contour Map (AECOM, 2015b) supplemented by Waterman IE's observations on 27 October 2016 in red

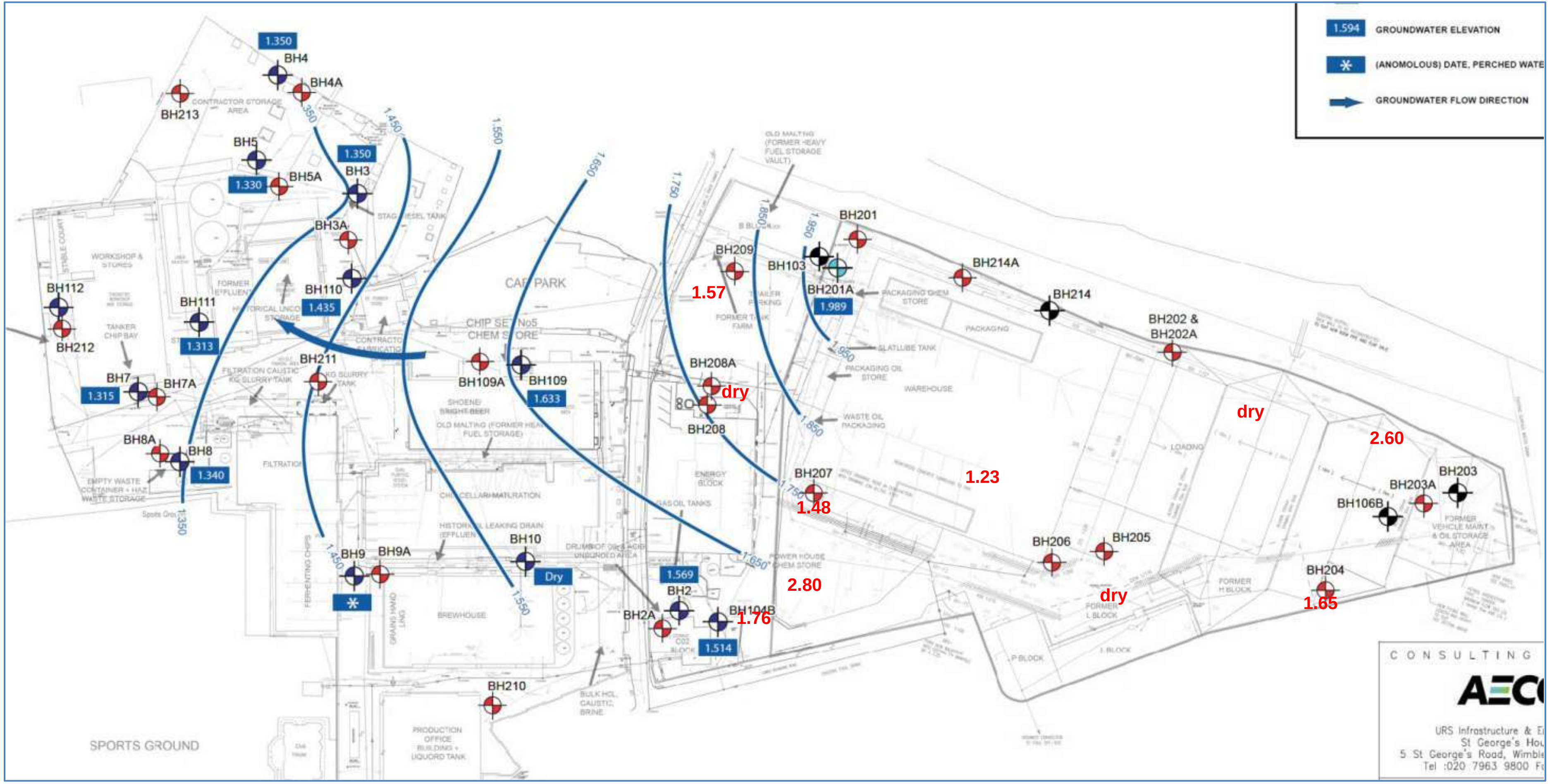


Figure 3-8 Selected Groundwater Levels over time (AECOM, 2015b)

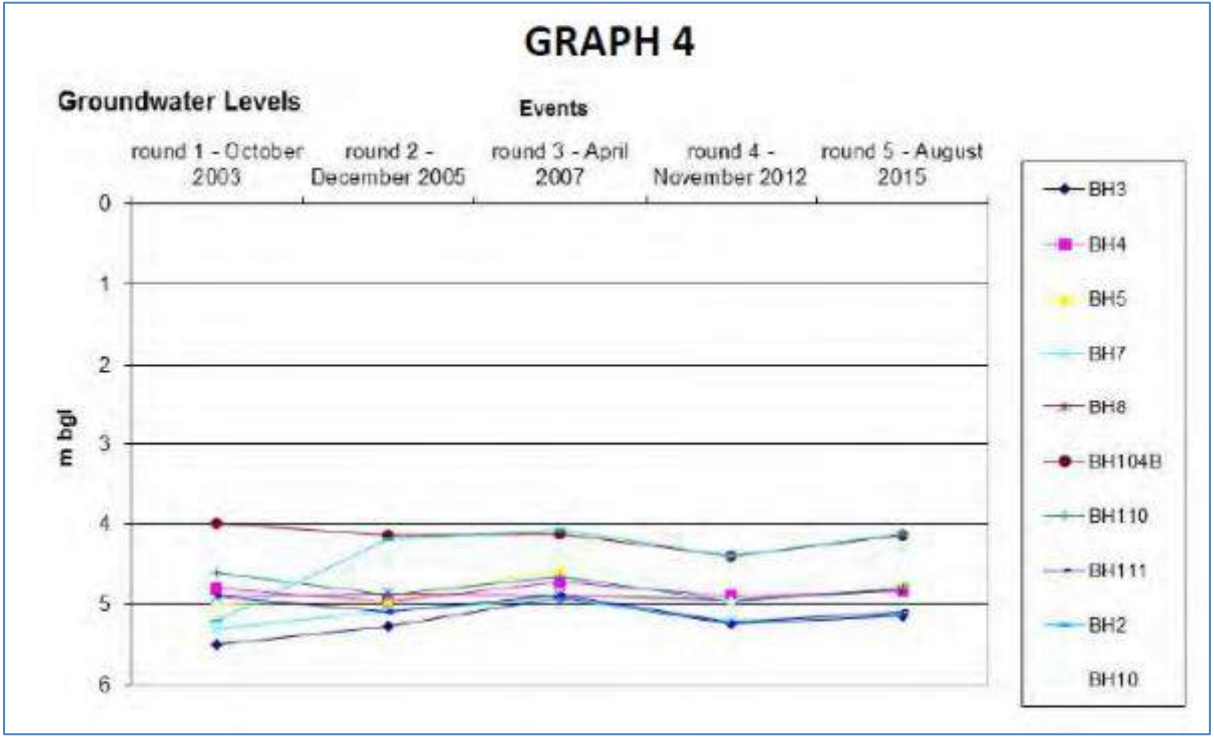


Figure 3-9 Level hydrograph for Borehole BH201A (AECOM, 2015b)

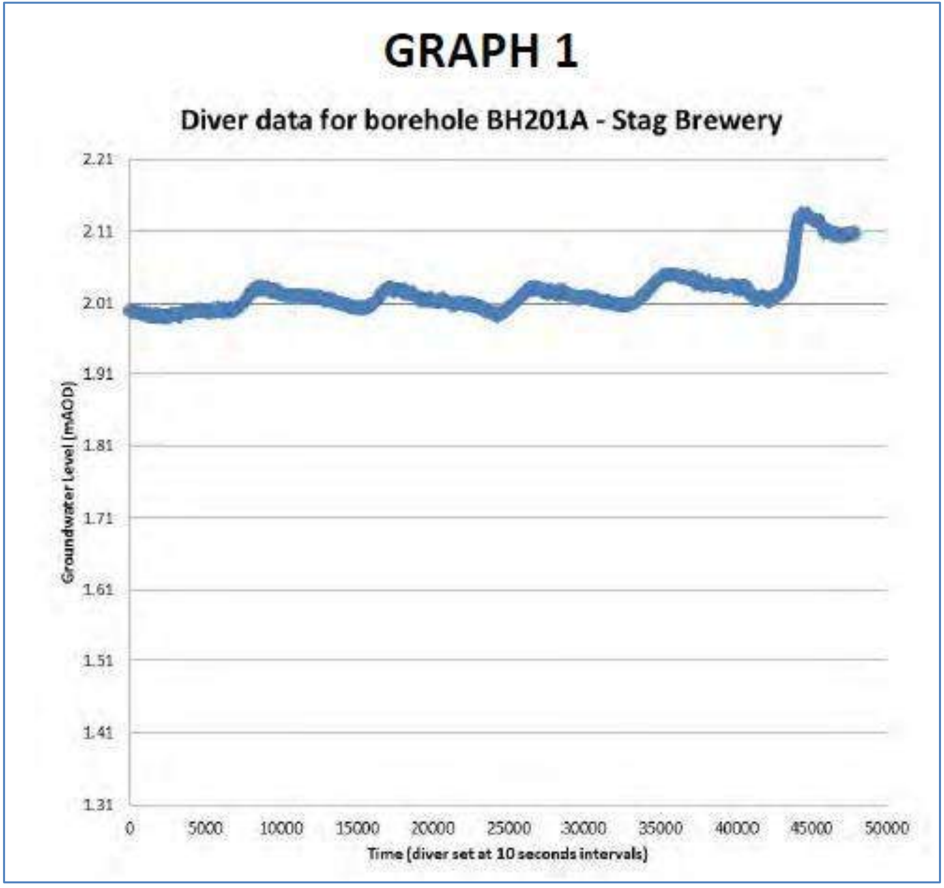


Figure 3-10 Level hydrograph for Richmond (Environment Agency)

Sea level at Richmond

Height
2.54m
at 7:15am today

Height over the last 5 days

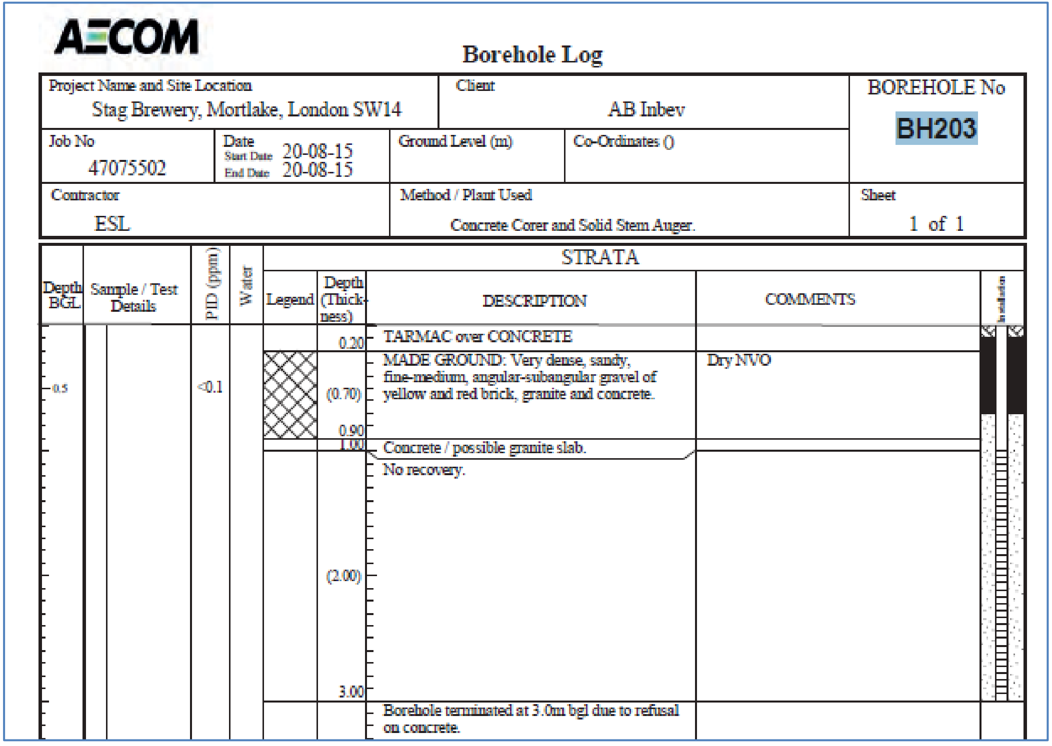
Figure 3-11 Level hydrograph for Chelsea (Environment Agency)

Sea level at Chelsea

Height
1.33m
at 7:15am today

Height over the last 5 days

Figure 3-12 Borehole Log BH203 (AECOM, 2015b)



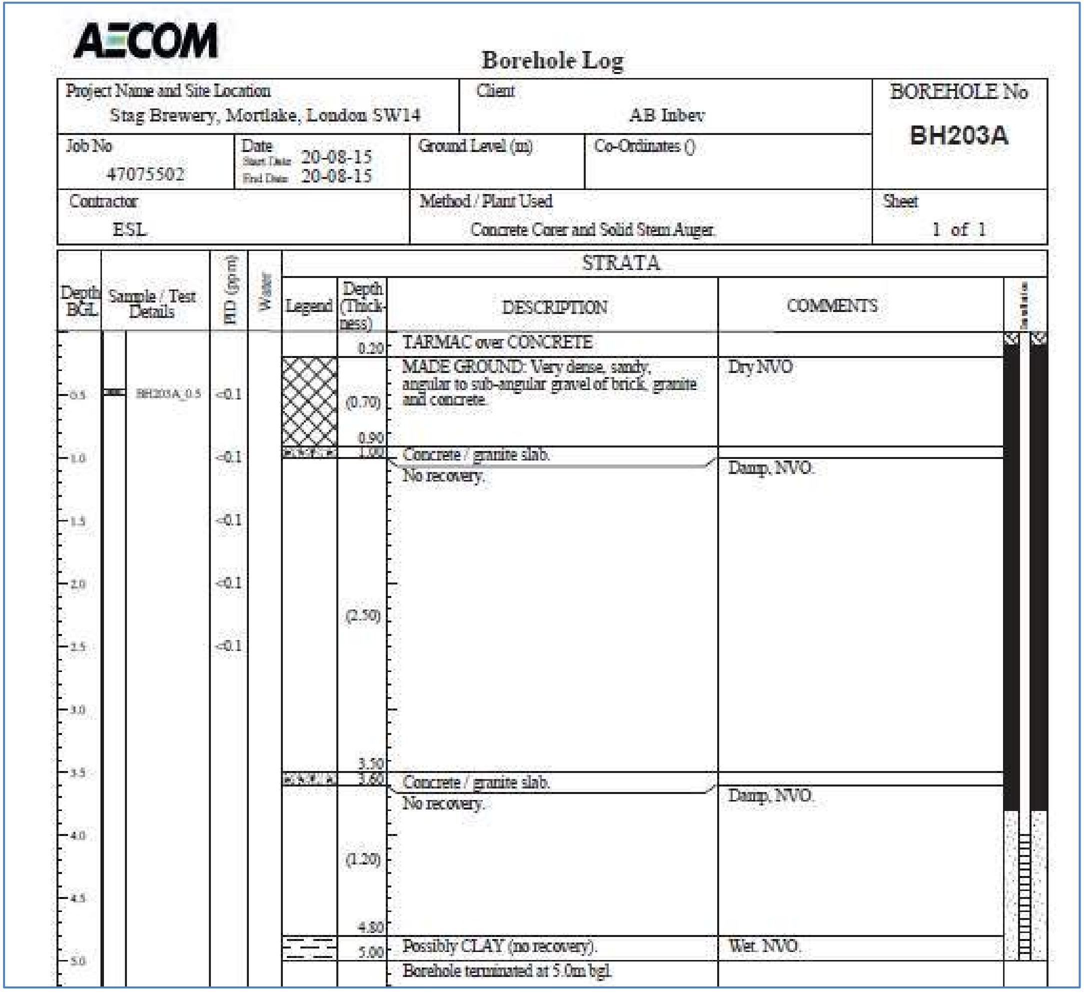
AECOM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14	Client AB Inbev		BOREHOLE No BH203
Job No 47075502	Date Start Date 20-08-15 End Date 20-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL	Method / Plant Used Concrete Corer and Solid Stem Auger.		Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.20	TARMAC over CONCRETE		
0.5		<0.1			(0.70) 0.90	MADE GROUND: Very dense, sandy, fine-medium, angular-subangular gravel of yellow and red brick, granite and concrete.	Dry NVO	
					1.00	Concrete / possible granite slab.		
					(2.00) 3.00	No recovery.		
						Borehole terminated at 3.0m bgl due to refusal on concrete.		

Figure 3-13 Borehole Log BH203A (AECOM, 2015b)



AECOM

Borehole Log

Project Name and Site Location Stag Brewery, Mortlake, London SW14	Client AB Inbev		BOREHOLE No BH203A
Job No 47075502	Date Start Date 20-08-15 End Date 20-08-15	Ground Level (m)	Co-Ordinates ()
Contractor ESL	Method / Plant Used Concrete Corer and Solid Stem Auger.		Sheet 1 of 1

Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thickness)	DESCRIPTION	COMMENTS	Installation
					0.20	TARMAC over CONCRETE		
0.5	BH203A_0.5	<0.1			(0.70) 0.90	MADE GROUND: Very dense, sandy, angular to sub-angular gravel of brick, granite and concrete.	Dry NVO	
					1.00	Concrete / granite slab.		
1.0		<0.1				No recovery.	Damp, NVO.	
1.5		<0.1						
2.0		<0.1			(2.50)			
2.5		<0.1						
3.0					3.50			
3.5					3.60	Concrete / granite slab.		
4.0					(1.20)	No recovery.	Damp, NVO.	
4.5					4.80			
5.0					5.00	Possibly CLAY (no recovery).	Wet. NVO.	
						Borehole terminated at 5.0m bgl.		

3.3.3 Sewers

Although surface water and foul sewers are laid under the Site, Thames Water have confirmed that there are no recorded historic sewer flooding records at the Site (Reference to their response to Waterman IE dated January 2016), extracts from which are shown in Appendix E

3.3.4 Surface Water

Surface water flooding can occur with ponding in low areas of the Site and surrounding area where the drainage is unable to deal with the incident rainfall. Surface water flood risk is available in the SFRA (LBRuT, 2016c) (Figure 3-14) and from the Environment Agency Web site (Figure 3-15). The latter shows that, for the low-risk scenario, the depths vary from 0 to about 300 mm along the Lower Richmond Road and Mortlake High Street to the east of the existing Sports Ground, as indicated on the map. Greater depths of surface water flooding are predicted in Lower Richmond Road adjacent to the Sports Ground (300 to 900 mm) and in the park, south of the Lower Richmond Road (in excess of 900 mm). Some of the surface water flooding on Lower Richmond Road may be linked to the blocked gully incidents (Figure 3-16). For the high-risk scenario, predicted surface water flooding is restricted to the carriageway of the Upper Richmond Road and the adjacent park and is of shallow depth.

Figure 3-14 Surface Water Map (LBRuT, 2016c)

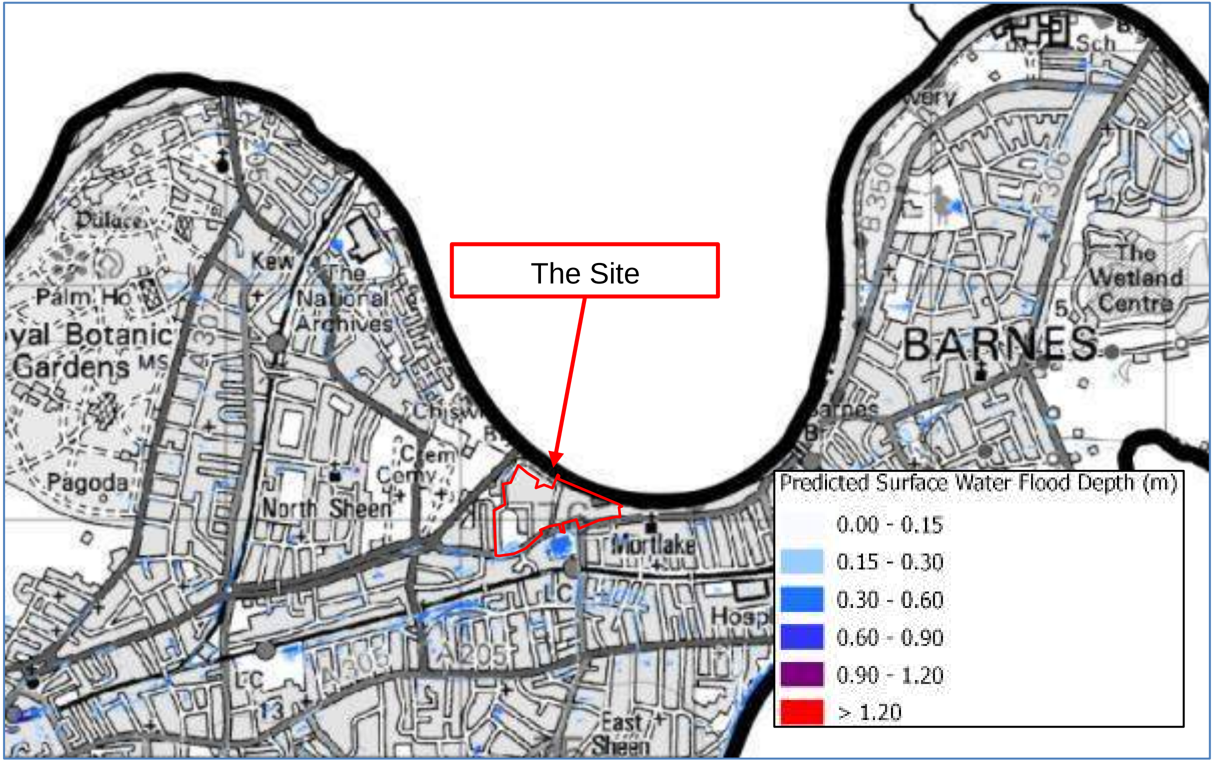
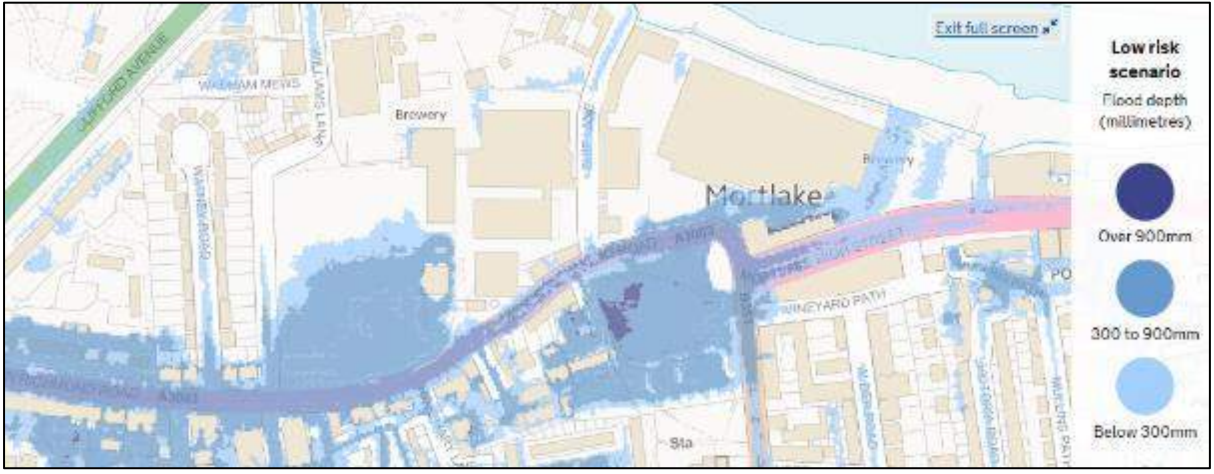
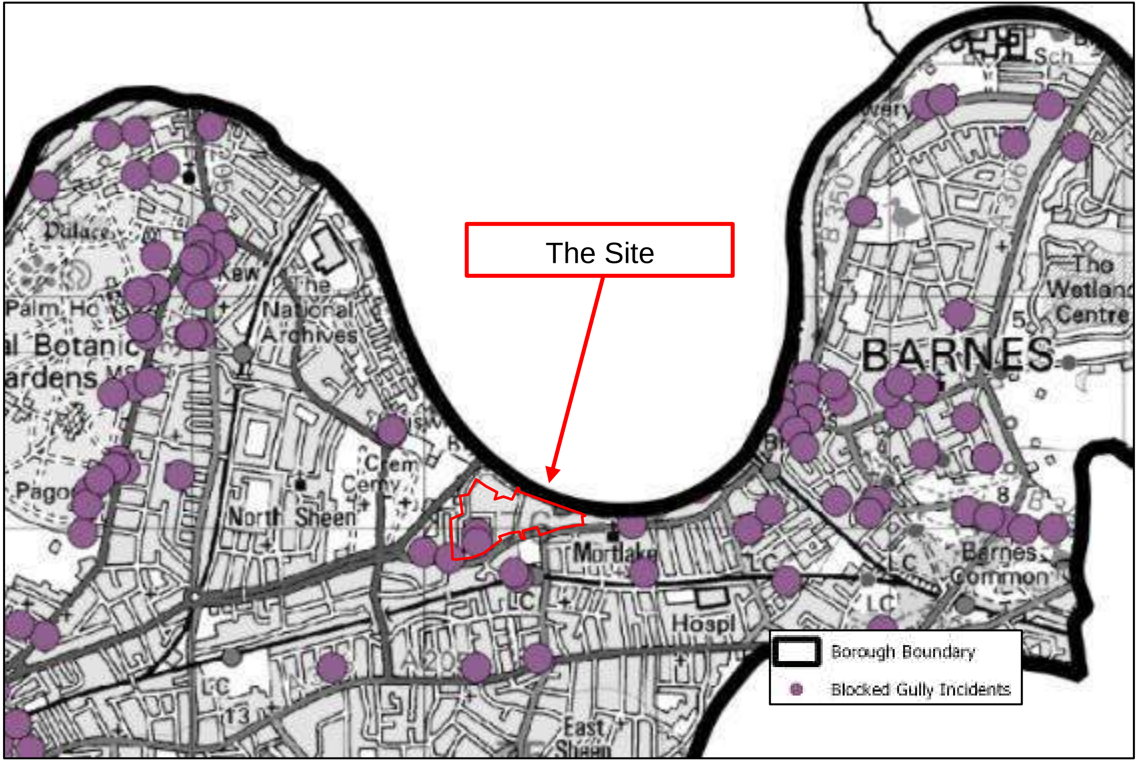


Figure 3-15 Surface Water Flood Depth Map



Environment Agency Web Site (Accessed 23rd October 2017 and identical on 7th December 2021))

Figure 3-16 Blocked Gully Locations



3.3.5 Infrastructure

The Site has a potential risk of flooding from the Queen Elizabeth II reservoir and the Queen Mary reservoir in Surrey (Figure 3-17). This could occur if the reservoirs were to fail, causing water to flood over the western and southern parts of the Site. However, these reservoirs located over 20 km upstream of the Site, they are managed and maintained by Thames Water and the risk of reservoir flooding is considered to be very low.

Figure 3-17 Environment Agency Reservoir Flood Risk Map

3.4 Existing Surface Water Drainage Arrangements

During the preliminary investigations for this Site, Waterman IE made a Developer Enquiry to Thames Water in respect of sewers and water mains. Extracts from the response in January 2016 are provided in Appendix E . These drawings show a variety of combined, surface and foul sewers around the Site. Whilst sewers traverse the Site along both Ship Lane and Bull's Alley, none are shown on the operational area of the former brewery.

The on-site drainage measures were inspected during the site visit in 16th June 2016. Virtually the entire Site comprises either rooves or hard standing (Figure 3-18). Roof drainage was via downpipes that are believed to outfall to the Thames whilst hard standing drains (Figure 3-19). runoff calculations are presented in the Drainage Strategy (Waterman IE, 2022).

Figure 3-18 General views of The Site

a) West **b) East**

Figure 3-19 Examples of drainage

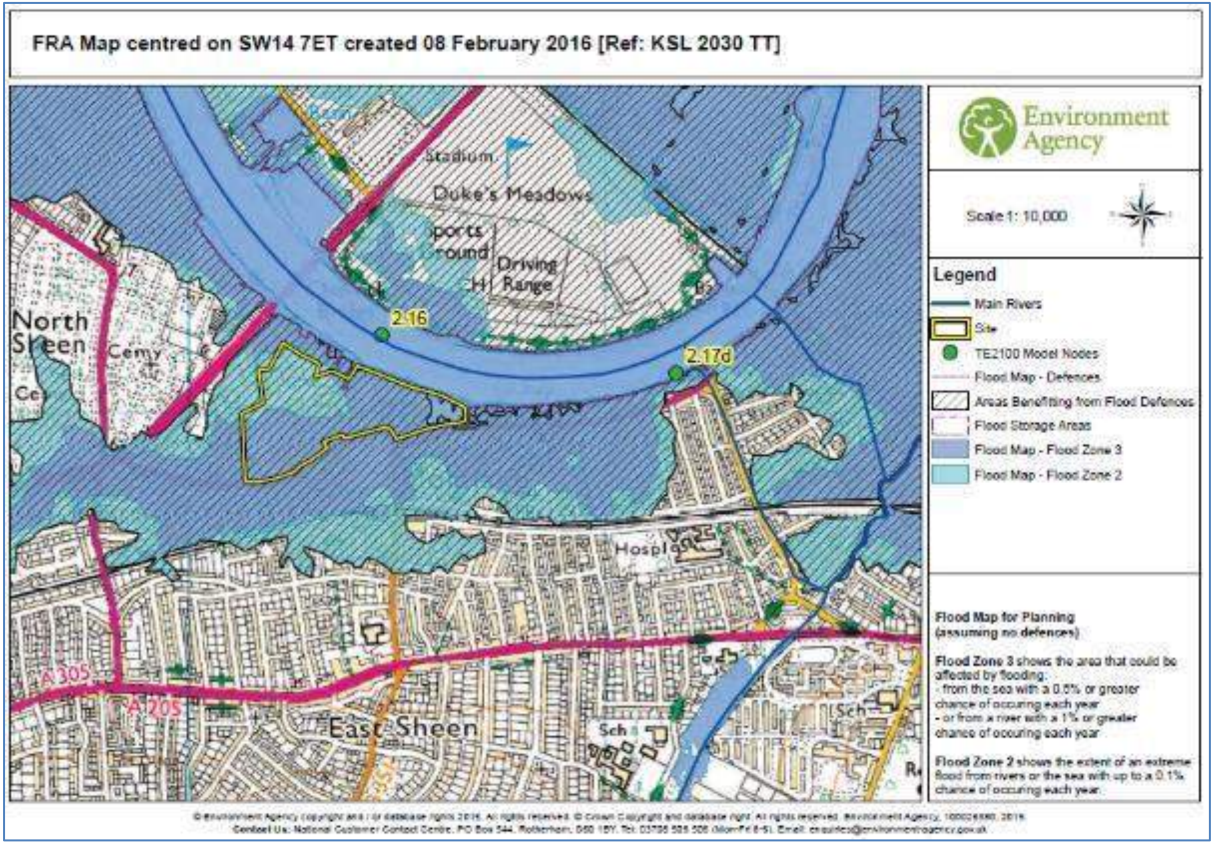
a) Roof **b) Hard standing**

3.5 Probability of Site Flooding

The assumed tidal water levels of the River Thames are based on the TE2100 model node 2.16 (Figure 3-20) which is adjacent to the Site. The modelled levels for node 2.16 are assumed to apply along the entire river frontage due to the river's shallow gradient.

The probability of the Site flooding due to the tides is limited by the tidal defences to protect up to a 0.1% Annual Exceedance Probability (AEP) event. However, there remains a risk from flood defences failing, with the outcomes being modelled on behalf of the Environment Agency, which has been provided as Product 4 data. This provides flood levels for the floodplain nodes in Figure 3-21 for different scenarios of flood defence failure.

Figure 3-20 Product 4 FRA data (source: Environment Agency)



An identical map was provided with the July 2017 Product 4 data set
This map shows a site boundary that has now been superseded.

The relevant levels have been provided by the Environment Agency for a range of return periods and projections. The most recent levels provided by the Environment Agency are from the following sources:

- TE2100 modelled node 2.16;
- Thames Breach Modelling; and
- Thames Tidal Upstream Inundation Modelling.

The TE2100 levels result from a large body of work commissioned by the Environment Agency in relation to flood risk management of the Thames Estuary. The operation of the Thames Barrier is critical in this strategy and the recent modelling addresses the frequency of Thames Barrier operation. The Thames Barrier manages tidal flood events up to a 0.1% AEP event. These TE2100 levels recently provided do not have return periods. The Environment Agency present them as “absolute maximum levels” and clarify this as follows:

> “*The levels upstream of the barrier are the highest levels permitted by the operation of the Thames Barrier. If levels and flows are forecast to be any higher, the Thames Barrier would shut, ensuring that the tide is blocked and the river maintained to a low level. For this reason, the probability of any given water level upstream of the Barrier is controlled and therefore any associated return period becomes irrelevant. The Thames Barrier and associated defence system has a 1 in 1000 year standard which means it ensures that flood risk is managed up to an event that has a 0.1% annual probability. The probability of water levels upriver is ultimately controlled by the staff at the Thames Barrier.”*